EQUABLE

State of Pensions 2025

Equable Institute's Annual Report | 6th Edition

America's Pensions are Surviving,
Not Thriving

The 2025 State of Public Pensions in the United States Remains Fragile

In April 2025, financial markets experienced a sudden and sharp decline, triggered by the Trump administration's aggressive tariff proposals. For public pension funds, it was another jarring market shock that wiped out hundreds of billions in asset values and threatened an already fragile system. Within a month, markets had rebounded as the White House rolled back the majority of its most destabilizing global economic policies, and public employee retirement dollars returned to their pre-Liberation day levels.

Like the Covid market crash of 2020 and multiple volatility shocks since then, state and local pension funds survived—but they haven't thrived. Not only did the need to recover losses from April mean missed opportunities for growth, but the episode revealed how reliant public plans were on political events breaking in their favor to produce improved returns. State and local pension fund assets aren't resilient as much they have been fortunate.

While markets did recover April losses, we estimate that the average 2025 investment return for state and local plans will be 5.41%— well short of the average 6.87% assumed rate of return. Fortunately for plan funded status, another year of record high contributions has been enough to balance out the underperformance and nudge up the national average funded ratio from 78.3% to 81.4% and shave total unfunded liabilities down from $1.51 trillion to $1.35 trillion. Unfortunately for state budgets, such high contribution rates are forecast to be a fixture of the next several years.

Pension funds survived, but they haven't thrived.

Click here for the Executive Director's complete report on the State of Pensions.

THE STATE OF PENSIONS IN 2025

Technical Note: As of this publication, some states had not yet released all FYE 2024 numbers. For these few plans, we've rolled forward 2023 figures to 2024 using actuarial modeling and asset allocation data. As new data are released, we will update our figures online. See methodology section in Appendix 3 for more details.

What Has Changed Since Last Year

- **Another Record High:** Contribution rates for state and local pension plans have reached another historic high, with government employers paying 31.65% of payroll on average across all 50 states and D.C. (Page 13).

- **Improved Funded Status:** While increasing contribution rates are hard on government budgets, the payments into state and local pension funds have helped improve funded status. We project that the national averaged funded ratio will grow from 78.3% to 81.4%, while unfunded liabilities will decline from $1.51 trillion to $1.35 trillion in 2025 (Pages 7 & 8).

- **Underperforming Returns:** This is notable since we also estimate the 2025 average investment return for all states combined — 5.41% — will underperform the average assumed return (6.87%) (Page 10). However, returns could have been worse had all asset losses in April's tariff-triggered market meltdown not been recovered (Page 22).

- **Interest on the Debt is Down:** The growing contributions have begun to stop the growth of interest on the debt (at least for now) as a contributing factor to cumulative national unfunded liabilities (Page 16). Since this data is only available through 2023, we anticipate the larger contribution rates in 2024 and 2025 will contribute to reducing interest on the debt among the factors causing today's unfunded liabilities.

- **Shifting Alternative Investments:** There was a slight decline in the share of assets allocated to real estate over the last two years (Page 12). This has been paired with a slight increase in fixed income as a share of allocations. That, in turn, has slightly reduced the national average level of valuation risk from 27% to 25% (Page 27).

Looking Forward for State Pensions

1. **Will Contribution Rates Keep Growing?** Employer contributions successfully offset poor investment performance this year and projections show contribution rates continuing to increase. However, economic instability from unpredictable policy changes, potential production declines from trade disputes, and state budget strain from federal cost-shifting could force states to slow or halt these necessary contribution increases.
2. **Will Assumed Returns Stay Flat?** Capital market assumptions published in the summer of 2025 are slightly improved compared to 2024, with generally consistent caveats about geopolitical risks. Combined with higher treasury yields and volatile tax revenues, public pension plans are unlikely to reduce their assumed rates of return in the near term, keeping expectations at current levels despite market uncertainties.
3. **Will Interest on the Debt Continue Its Decline?** There has been a two-year decline in the amount of unfunded liabilities caused by interest on the debt. This trend is a direct byproduct of rising contribution rates and relatively lower investment return assumptions. If contributions do keep rising that could help with reducing how much this factor is contributing to unfunded liabilities.

Multi-year, small, steady improvements have pushed the national average funded ratio above 80% and kept unfunded liabilities consistently between $1 trillion and $1.5 trillion. The upside of that is things aren't getting worse and there is reason for cautious optimism a positive trajectory could persist. The downside is that plans have just survived, not thrived. The costs of pension debt paralysis continue to grow while the fragile system remains vulnerable to market downturns and unpredictable political policy.

ABOUT
EQUABLE INSTITUTE

Equable is a bipartisan nonprofit that works with public retirement system stakeholders to solve complex pension funding challenges with data-driven solutions.

Read more about the State of Pensions report here.

For an interactive version of the report, visit here.

Some states have not released their final data points for 2024. We will be updating our digital graphics and figures throughout the year as more states release information.

About the Authors:

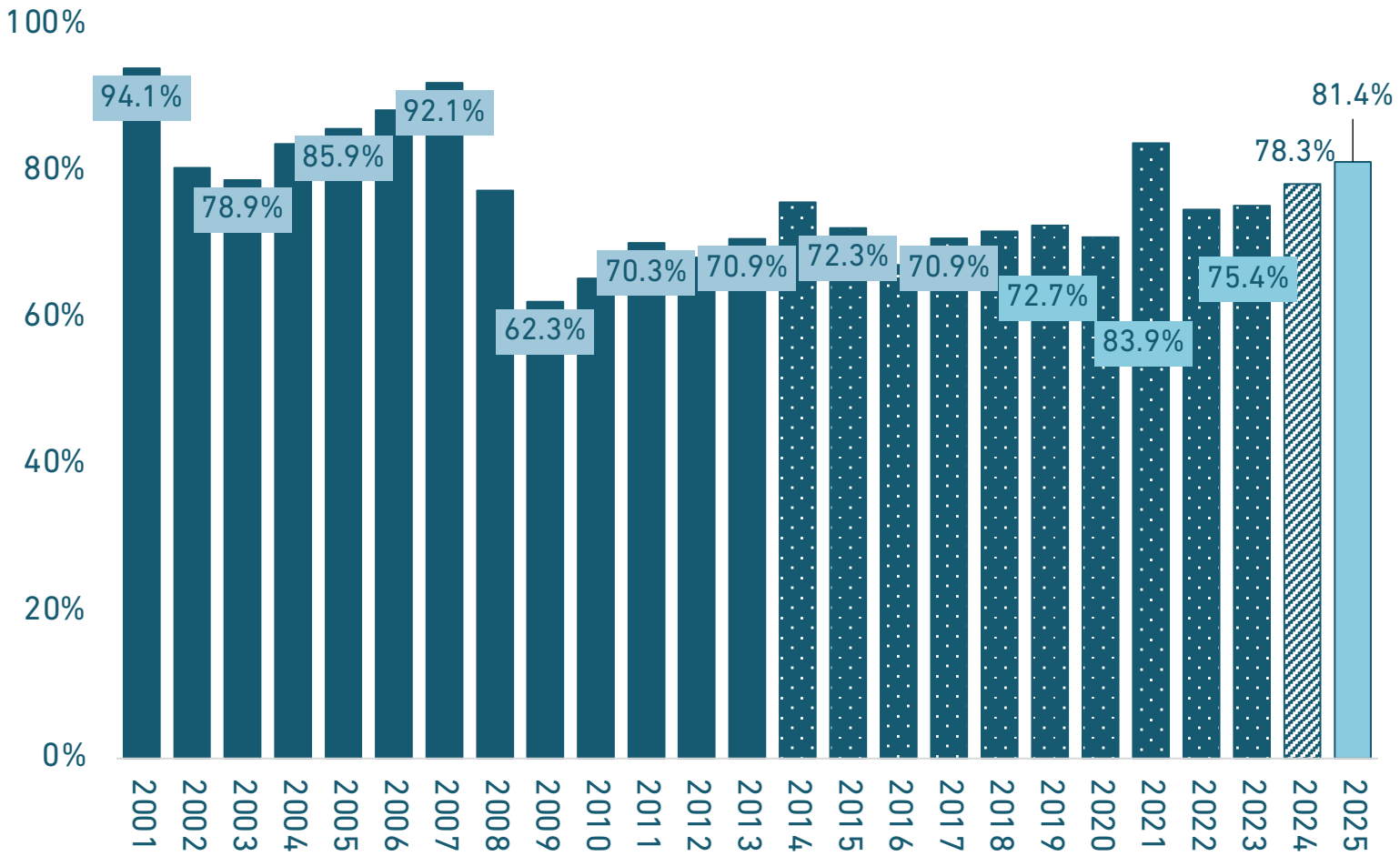
Anthony Randazzo (Executive Director) is a national expert on public sector pension policy and has provided technical assistance to more than a dozen states and cities on ways to improve retirement plan sustainability.

Jonathan Moody, PhD (Research VP) has developed a wide range of academic and policy research on municipal finance subjects, including public sector retirement systems, state budgeting and reserve funds, state credit ratings, state fiscal management, and public retirement benefits.

National Trends for State & Local Pension Plans

FUNDED RATIO AVERAGE

FOR STATE & LOCAL PENSION PLANS | 2001–2024 + 2025 Estimate



The 2025 aggregate state and local pension plan funded ratio (81.4%) is an incremental improvement from 2024.

This is the third straight year of improvement in funded status. However, the estimated 2025 funded status is still below the most recent high mark in 2021 (83.9%).

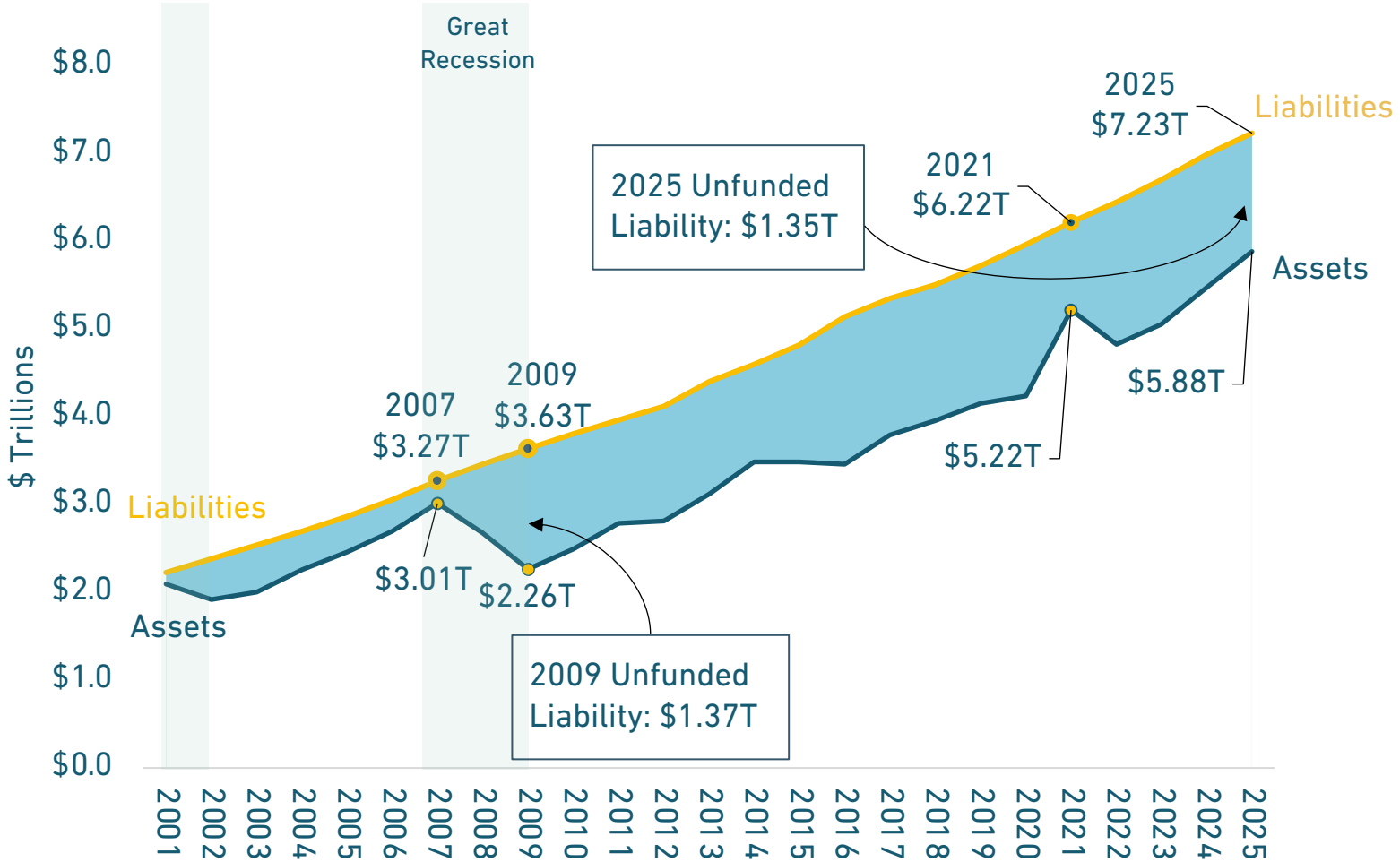
To view funded ratios by state, see Page 18.

- Based on Accrued Liabilities
- Based on Total Pension Liabilities
- Based on 2024 Data Availability
- 2025 Estimate Based on June 30 Benchmark Returns

Source: Equable Institute analysis of public plan valuation reports and ACFRs. Data for 2001 to 2013 reflect the "actuarially accrued liabilities" reported by public plans. Data from 2014 onward use the new GASB 67 "total pension liability" measurement. See methodology appendix for details on 2025 estimate.

TOTAL UNFUNDED LIABILITIES

FOR STATE & LOCAL PENSION PLANS | 2001–2024 + 2025 Estimate



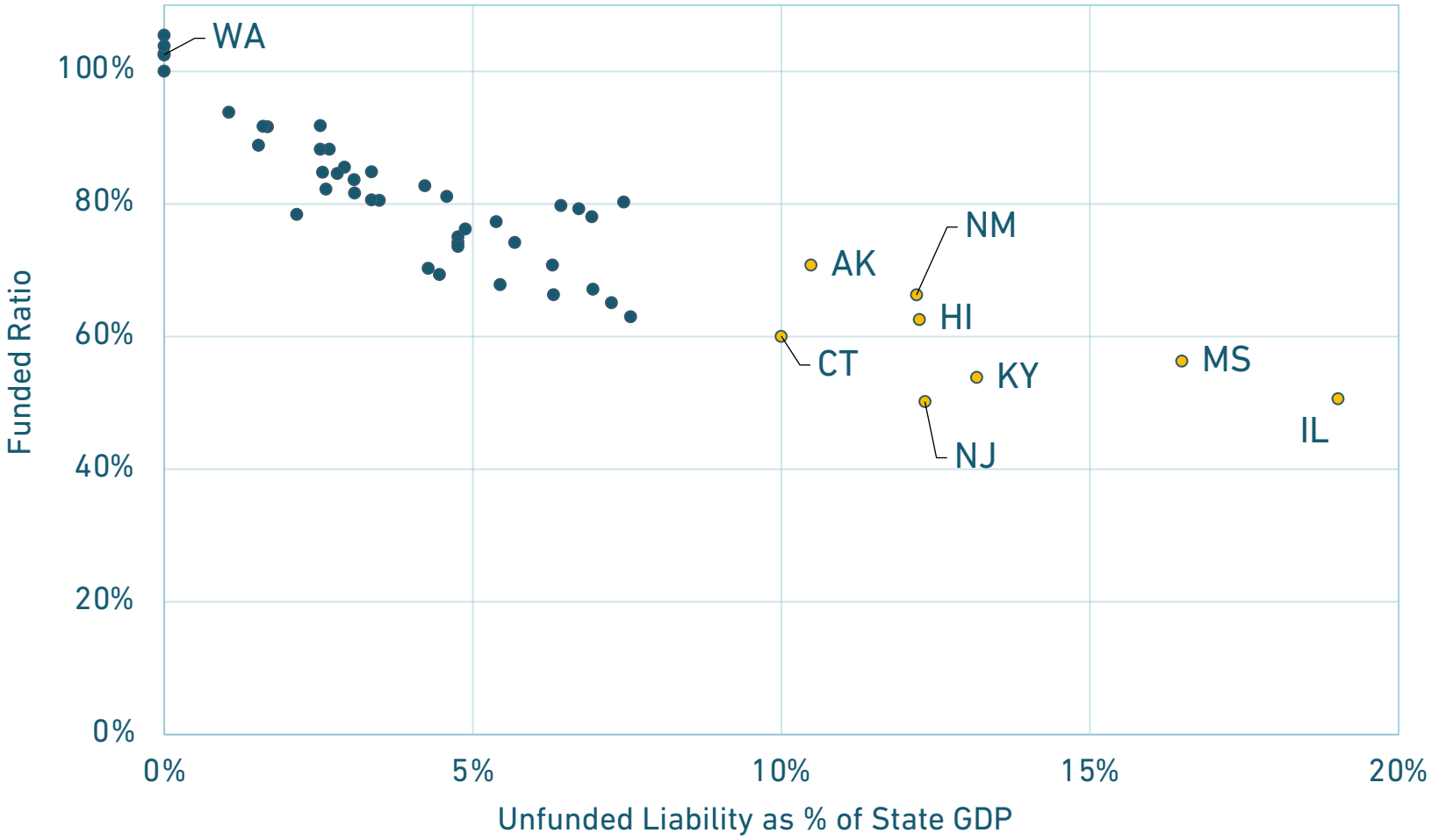
The national shortfall in assets for state and local pension plans shrank from ***$1.51 trillion*** in 2024 to an estimated ***$1.35 trillion*** shortfall in 2025.

This is nearly the same national unfunded liability level as in 2009 (***$1.37 trillion***).

There has been little meaningful change in public pension unfunded liabilities over the last fifteen years. Volatility in the funded ratio change from year to year spiked around the Global Financial Crisis and three years after the Covid Pandemic, but otherwise there has been national pension debt paralysis since 2008-09.

Source: Equable Institute analysis of public plan valuation reports and ACFRs. Trendline shown is based on market value of assets; using the "actuarial" value of assets shows a similar trend. See methodology section for details on 2025 estimate.

2024 FUNDED RATIO
AS A SHARE OF STATE ECONOMIC OUTPUT



Funded ratio and unfunded liability levels on their own are not perfect indicators of a retirement plan's fiscal health or sustainability.

It is helpful to understand the size of unfunded liabilities relative to the size of a state's economy. This provides a sense of what scale of local tax base resources are needed to improve retirement plan funded status.

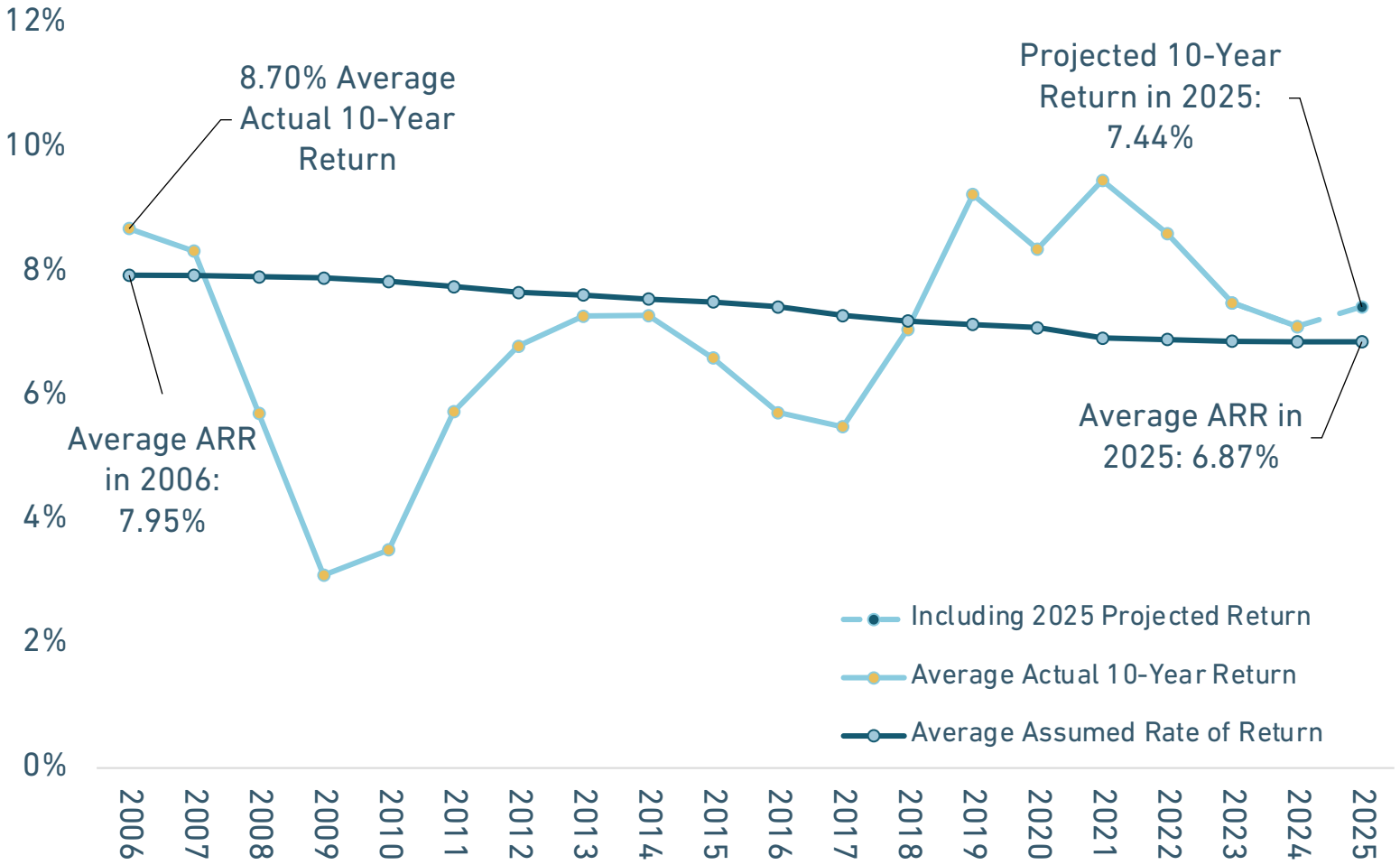
It may also be appropriate for state officials to consider their economic trajectory and demographic patterns to contextualize the funded health of their public pension plans.

Find your state with our interactive chart

Source: Equable Institute analysis of public plan valuation reports and ACFRs; Bureau of Economic Analysis data for state GDP estimate in 2024. Unfunded liability and funded ratio data include statewide retirement plans and municipally-managed retirement plans. Funded ratios reflect a weighted average of assets and liabilities for plans within each state.

INVESTMENT RETURN AVERAGES

COMPARED TO ASSUMED RATES OF RETURN | 2006–2025



We estimate the average investment return for 2025 will be 5.41% (based on data through June 30).

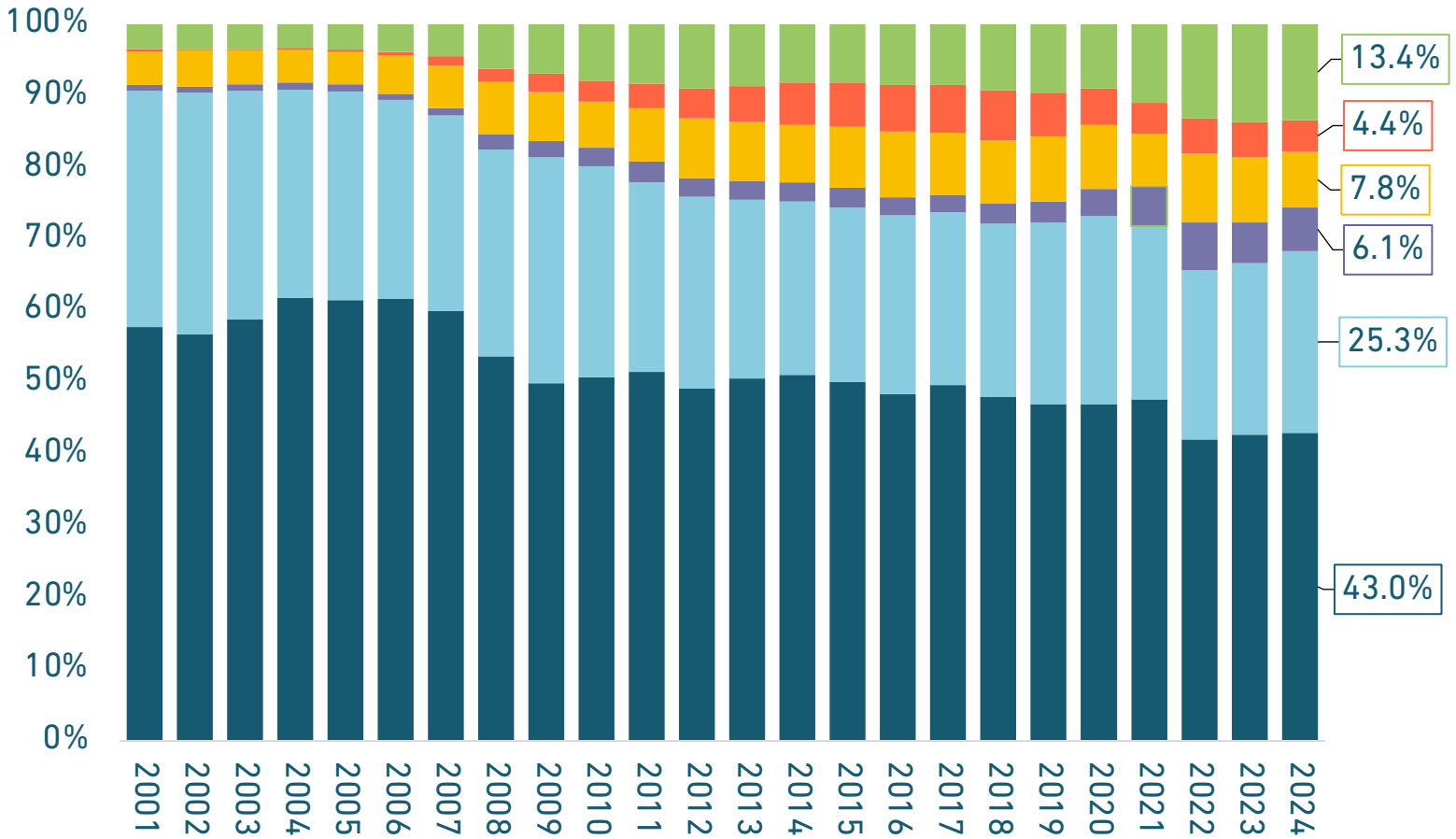
Progress in the reduction of assumed rates of return to levels with higher levels of probability has stalled since the Covid Pandemic.

On the upside, the 10-year rolling average (2016-2025) at 7.44% is slightly above the 6.87% average assumed return. On the downside, since 2021's asset bubble returns, the average return for plans (2022-25) is just 4.04% with significant volatility and market unpredictability forecast for the coming years.

Source: Equable Institute analysis of public plan valuation reports and ACFRs. Average 10-year return for 2024 and 2025 is based partially on Equable projected investment returns for each retirement system. See downloadable datasets for information on this graph going back to the year 2000.

ASSET ALLOCATION TREND

OF STATE & LOCAL PENSION FUNDS | 2001–2024



Public pension asset allocations have shifted away from transparent public equities and relatively safe fixed income investments into riskier categories as trustees search for stronger investment returns.

"Alternatives" are a third of pension fund investments (31.7%), driven by private capital investments (13.4%).

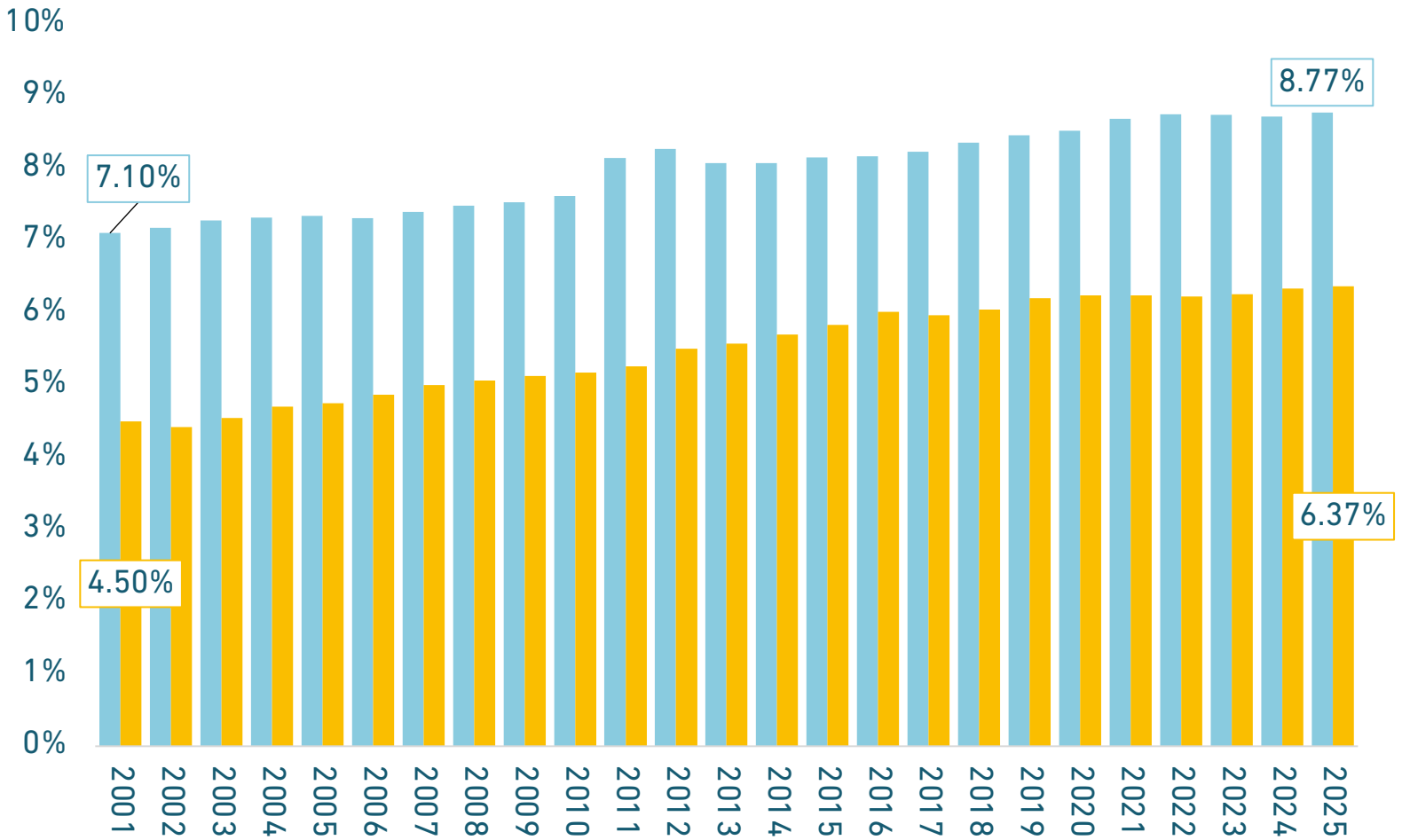
See Page 64 for asset class dollar values.

- Private Capital Investments (Equity & Debt)
- Hedge Fund Strategies
- Real Estate (Real Property, Infrastructure, and REITs)
- Commodities & Miscellaneous Alternatives
- Fixed Income & Cash Holdings
- Public Equities (U.S. & Global)

Source: Equable Institute analysis of public plan valuation reports and ACFRs. ***Note:*** "Misc. Alternative" investments include opportunistic funds, absolute return pools, tactical asset allocations, alpha strategies, etc. We have classified investments as each fund reports; ex. "private debt" may be allocated with "private equity" or "fixed income' depending on the fund.

AVERAGE MEMBER PAYROLL CONTRIBUTIONS

BASED ON SOCIAL SECURITY PARTICIPATION | 2001–2025



Public employee contribution rate increases have leveled off over the last four years. The contribution rate difference for employees of governments that participate in Social Security versus those who do not remains at around 2.4% percentage points.

The pace of assumed rate of return reduction slowed, which also slowed growth in normal costs. States also generally chose not pass along unfunded liability cost increases to public employees in the years after the Covid Pandemic.

Note: Public employees are not uniformly covered by Social Security. Some states never opted into Social Security and, therefore, typically have higher valued benefits and relatively higher contribution rates than for statewide systems where members also have access to Social Security benefits.

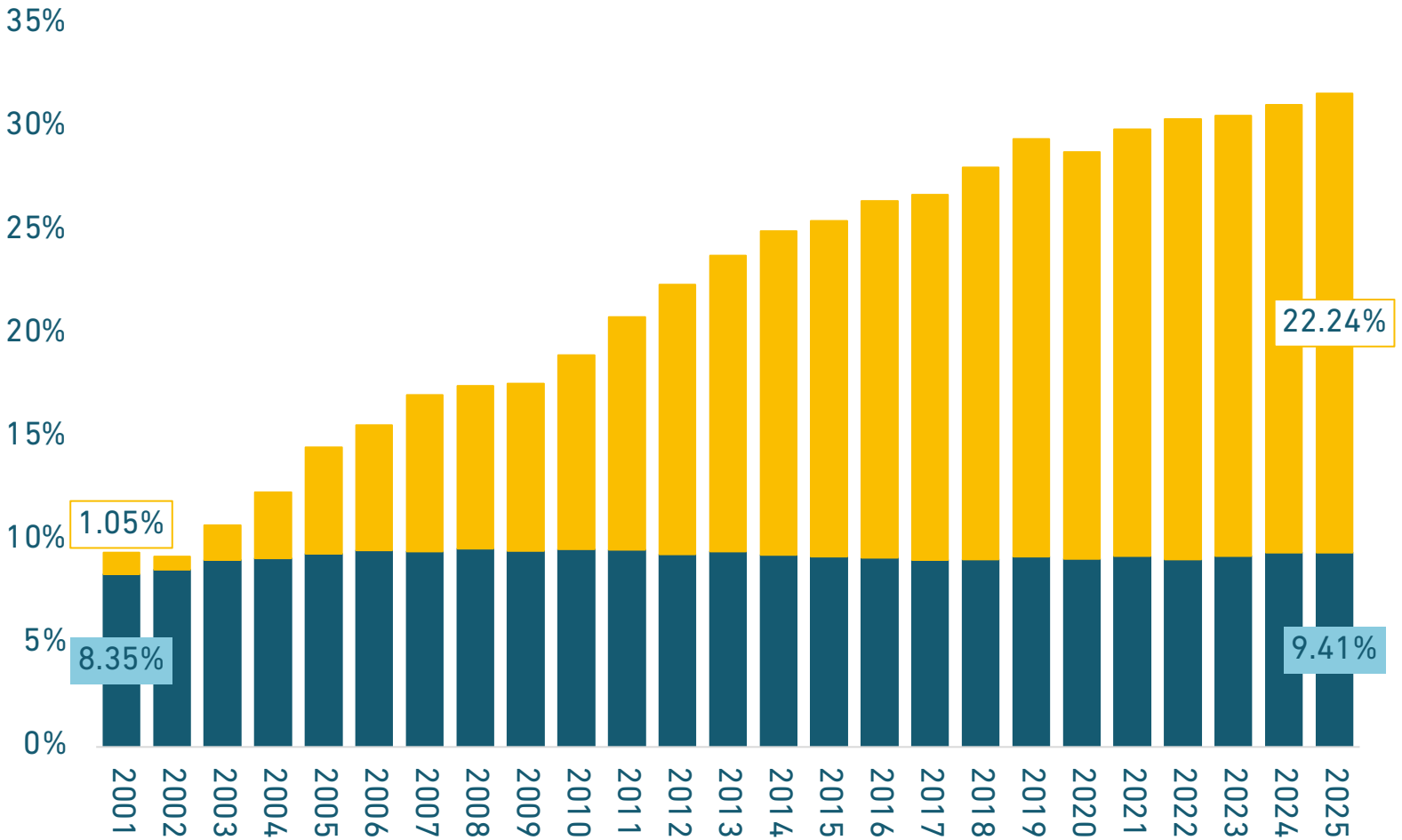
For Plans Not Participating in Social Security or with Mixed Levels of Participation

For Plans Participating in Social Security

Source: Equable Institute analysis of public plan valuation reports and ACFRs. Contribution rates show for the year actually paid. ***Notes:*** (1) Increased contributions do not increase the value of a pension, which is based on years of service and final average salary. (2) Contribution rates are required and set by the sponsoring government.

AVERAGE EMPLOYER CONTRIBUTION RATES

AS A PERCENTAGE OF PAYROLL | 2001–2025 Fiscal Year



Government employer contributions have steadily increased over the past two decades, mostly because of increased payments to cover pension funding shortfalls (e.g., unfunded liability amortization payments).

Combined state and local employer contributions in 2001 were *9.41%* of payroll. During the fiscal year ending 2025, employer contributions are *31.65%* of payroll.

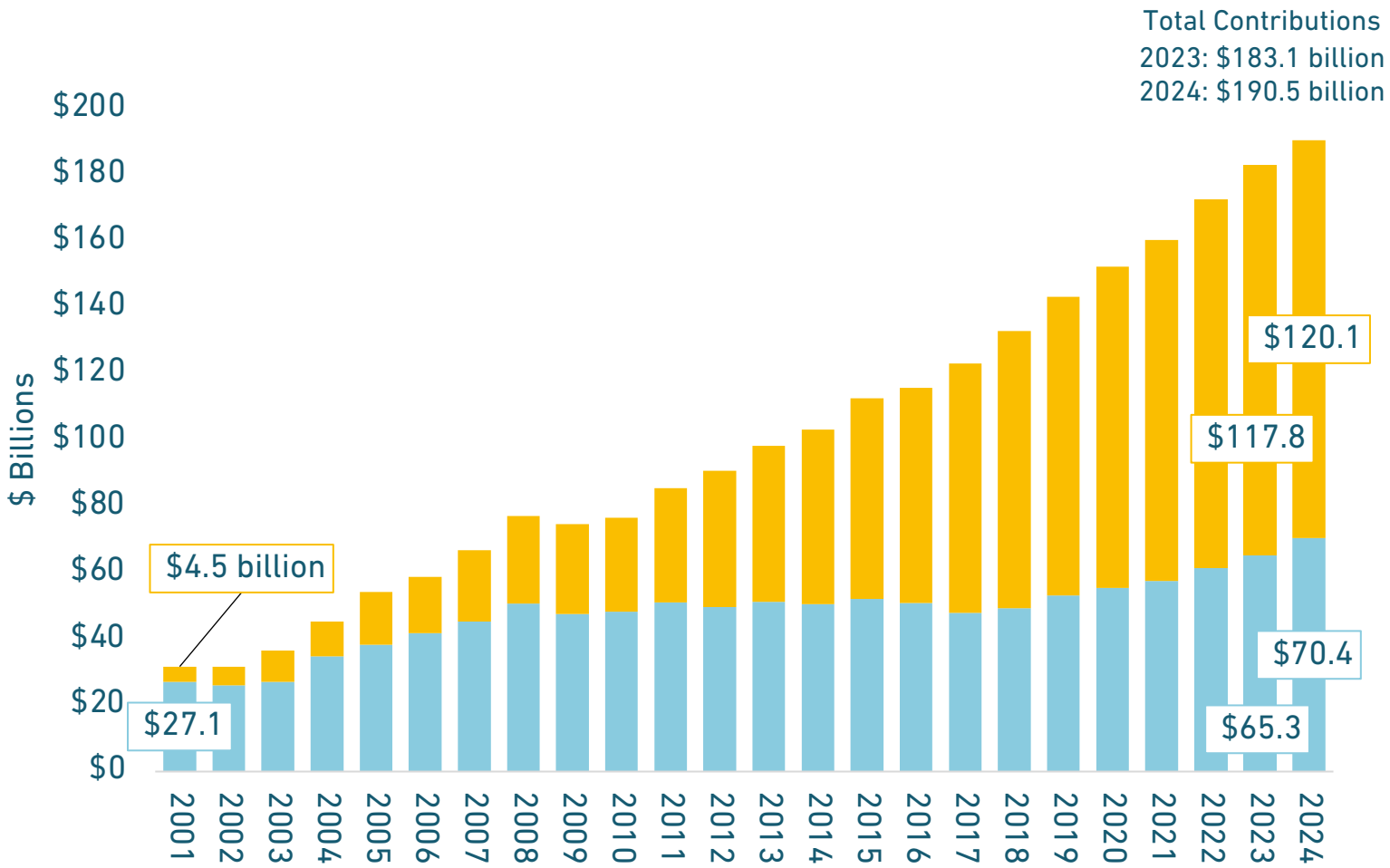
Unfunded Liability Amortization Payments

Normal Cost

Note: Normal cost is the contribution necessary to fund pension benefits earned each year, assuming some future investment income. The normal cost contributions pay in advance for pension benefits promised. Unfunded liability amortization payments are contributions made to close a pension plan's funding shortfall over time.

Source: Equable Institute analysis of public plan valuation reports and ACFRs. Contribution rates shown for the year actually paid.
Note: For a look at this trendline broken out by Social Security participation see Appendix 1.

EMPLOYER CONTRIBUTIONS TO NORMAL COST & PENSION DEBT PAYMENTS | 2001–2023 + 2024 Estimate



Between 2001 and 2024 the dollar payments toward normal cost more than doubled (*up 159%*), and for unfunded liability payments jumped over *2,541%*.

To put the dollar amounts paid for retirement benefits, specifically for unfunded liabilities, in context for any given state is it appropriate to compare these costs against other large expenditure categories financed with state-own source revenues.

Unfunded Liability Amortization Payments

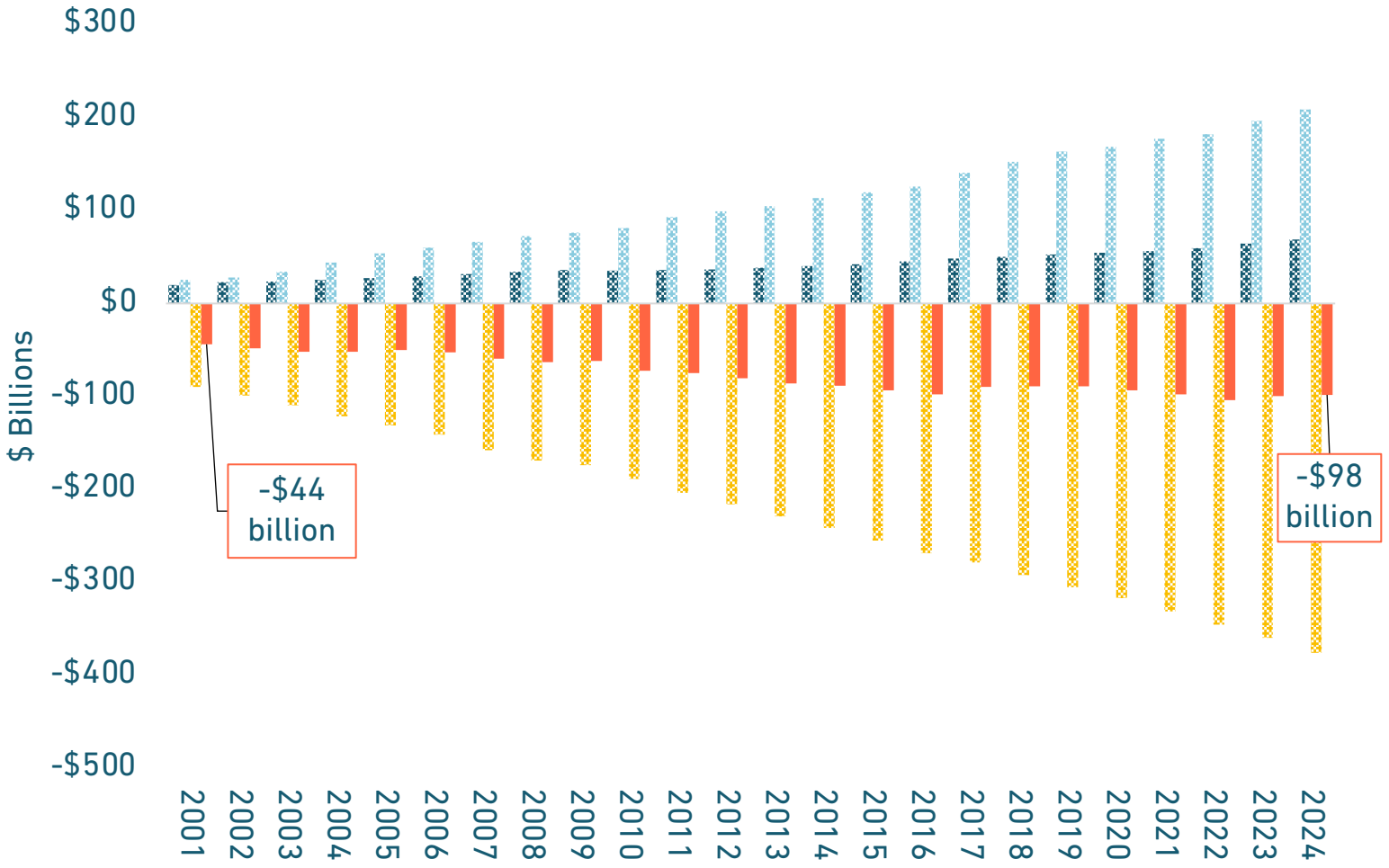
Normal Cost

Note: For all plans that have yet to release complete 2024 data, we've estimated their contributions paid using actual or rolled forward payroll and the formally published contribution rate for the year.

Source: Equable Institute analysis of public plan valuation reports and ACFRs. Contribution rates show for the year actually paid.
Note: Adjusted for inflation during the same period, normal cost grew *46%*, while unfunded liability payments rose *1,387%*.

NON-INVESTMENT CASH FLOW

FOR STATE & LOCAL PENSION PLANS | 2001–2024



See our interactive version for all values

Negative net cash flows from contributions and benefit payments have steadily increased over the past two decades, reflecting more "mature" pension plans.

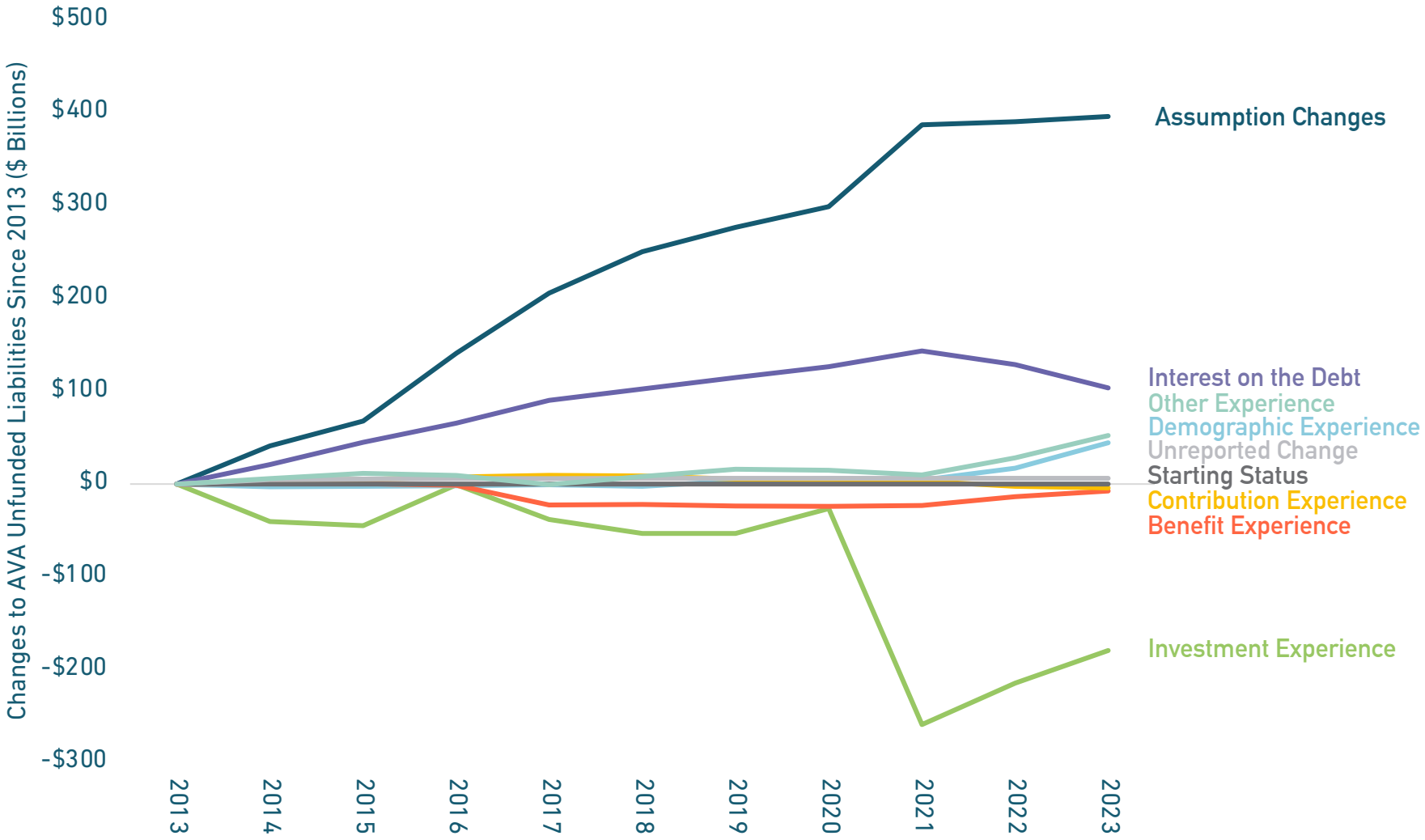
Larger negative cash flows put increased pressure on investment return income each year to make up the difference.

- Net Cash Flow
- Benefit Payments
- Employer Contributions
- Member Contributions

Source: Equable Institute analysis of public plan valuation reports and ACFRs.
Note: Contribution data for 2024 do not yet include retirement plans that haven't published final data, including CalPERS.

RECENT CAUSES OF UNFUNDED LIABILITIES

CHANGE IN GAIN/LOSS CONTRIBUTING FACTORS OVER TIME | 2014–2023



There are a range of factors that cause unfunded liabilities to increase or decrease each year. This chart shows the annual change in each category over the last 10 years, based on actuarially valued assets.

In 2013, actuarially valued unfunded liabilities were $920 billion and had mostly smoothed in losses from the Global Financial Crisis.

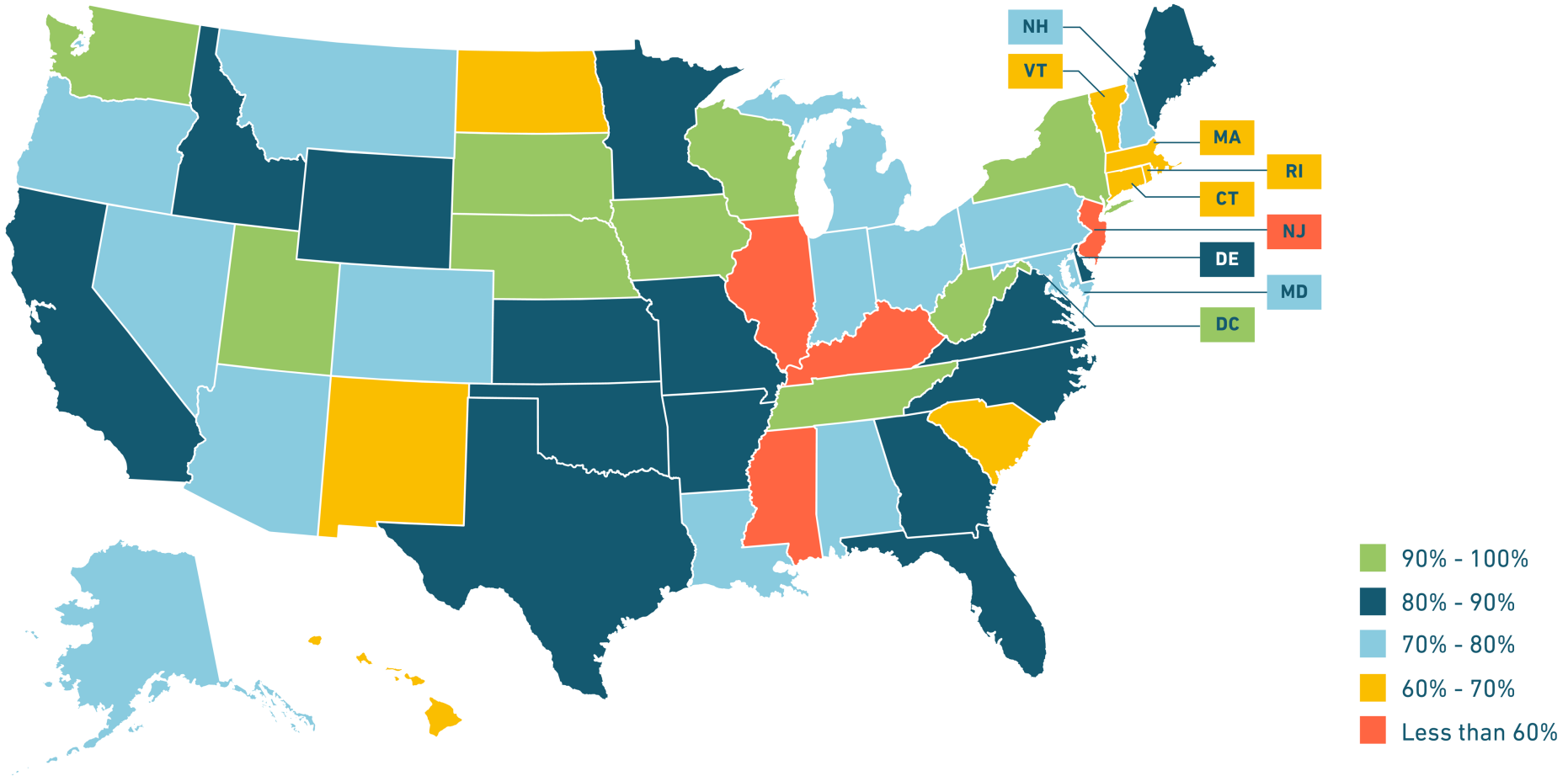
Since then, the changes to assumptions — mainly the assumed return — have been the largest driver of unfunded liabilities. Investment returns outperformed those lower assumptions over the last decade, reducing pension debt.

See Pages 34-36 for category descriptions and additional timeframe measurements

Source: Equable Institute analysis of actuarial gain/loss data in public plan valuation reports. *Note:* Data is based on actuarial valued assets (AVA), as this is the basis for gain/loss data. For any given year the AVA based data varies slightly from market valued data that is otherwise used in this report.

2024 FUNDED RATIOS BY STATE

BASED ON MARKET VALUED ASSETS REPORTED BY STATE & LOCAL PLANS



Statewide average funded ratios ranged from:

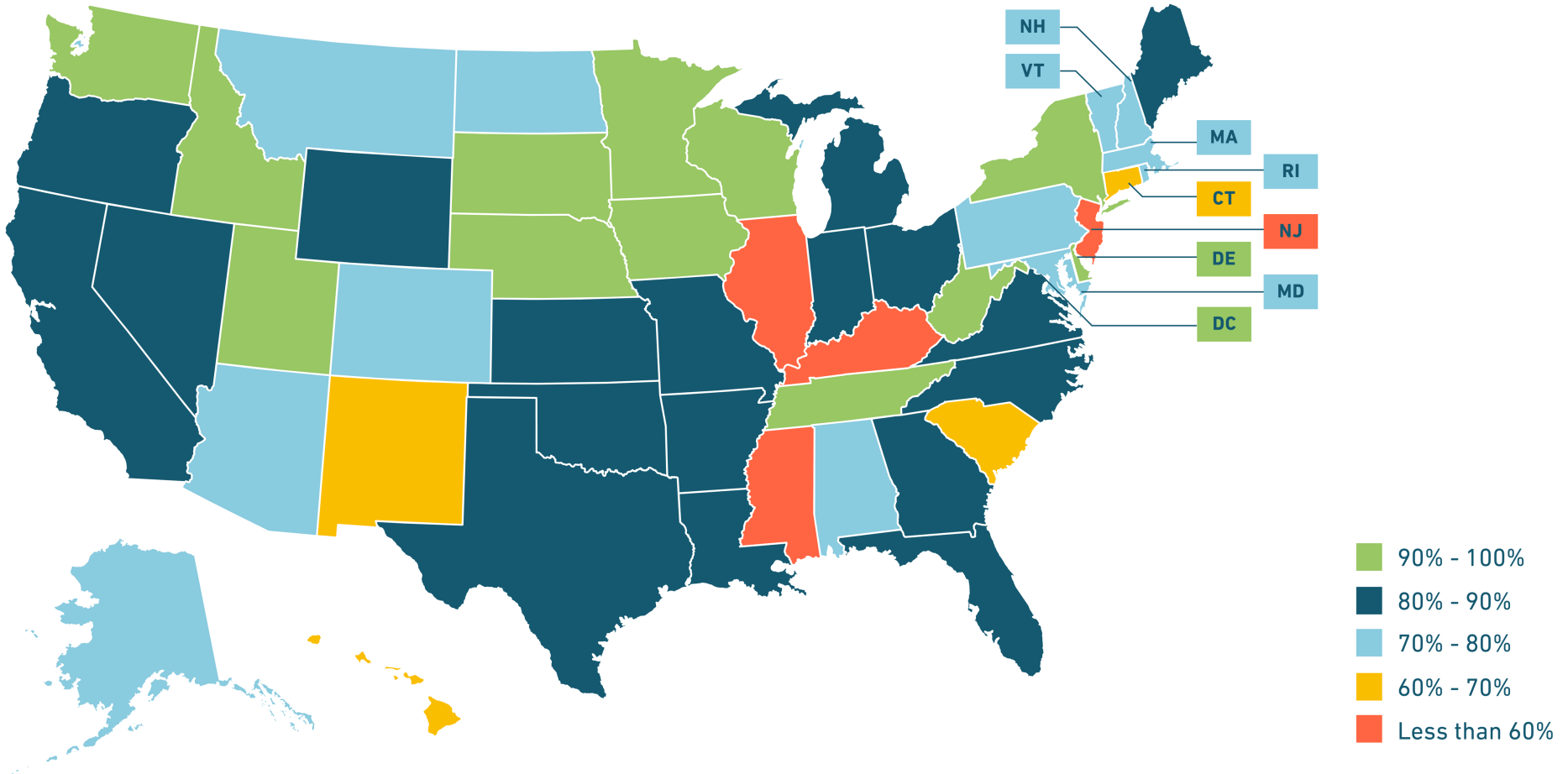
- Washington DC (110.3%) on the high end, to
- Ohio (77.8%) at the median, to
- Illinois (50.6%) and New Jersey (50.2%) at the bottom of the funded status range.

Note: State averages are asset-weighted across all state and local plans within a given state. A few statewide plans (9.1%) and local plans (19.2%) have yet to release final 2024 financial figures. For these we've used our previous 2023 estimates and rolled forward data one additional year.

Source: Equable Institute analysis of public plan valuation reports and ACFRs. The funded ratio for each state is the weighted average of all pension plans in that state.

2025 ESTIMATED FUNDED RATIOS BY STATE

BASED ON ESTIMATED ASSETS FOR STATE & LOCAL PENSION PLANS



There are 45 states that improved their funded status from 2024 to 2025, including Delaware, Idaho, Minnesota, and Maine that all moved up into the 90% to 100% funded ratio range.

There are four states that remain in a distressed status with less than 60% funding: New Jersey, Illinois, Kentucky, and Mississippi.

Source: Equable Institute forecast based on investment returns as of June 30, 2025, and reported asset allocation levels for each plan. For plans with fiscal year end dates after June 2025, the change in funded ratio shown is based only on the part of their fiscal year complete as of the measurement date. See methodology section for complete details.

Analysis: What We See in the National Trends

We estimate that unfunded liabilities declined between 2024 and 2025, from $1.51 trillion down to $1.35 trillion (Page 8). Similarly, our 2025 funded ratio forecast for state and local pension plans is improvement from 78.3% to 81.4% (Page 7). This reflects three years of slightly improved funded status.

However, collectively U.S. public pension plans are still stuck in pension debt paralysis. That's why pension fund investment managers have maintained high-risk, high-reward bets (Page 11) even as contribution rates are near historic highs (Page 13). Over the last five years pension funds have survived the Covid Pandemic and this April's tariff-triggered financial market collapse — but that doesn't mean pension funds have thrived.

- The steady decline in assumed rates of return that started after the Global Financial Crisis has slowed down over the last four years, with a multi-year average of 6.87% (Page 10).
- Increased employer contributions (Page 14) have not been sufficient to balance the steady increase in benefit payments (outflows) over the past two decades. As a result, pension plans collectively face consistent negative cash flow (Page 15). This puts pressure on investment returns to make up the difference between inflows/outflows.

Looking to the future: There is a theoretical limit to the contribution rates that state leaders will want to have drawing from their general funds, school district funding, or city budgets. The larger a state's unfunded liability relative to GDP, the harder it will be for that state's tax base to pay down the pension funding shortfall.

Trendlines for Projecting the Future: Pension Assets Amid Global Market Instability

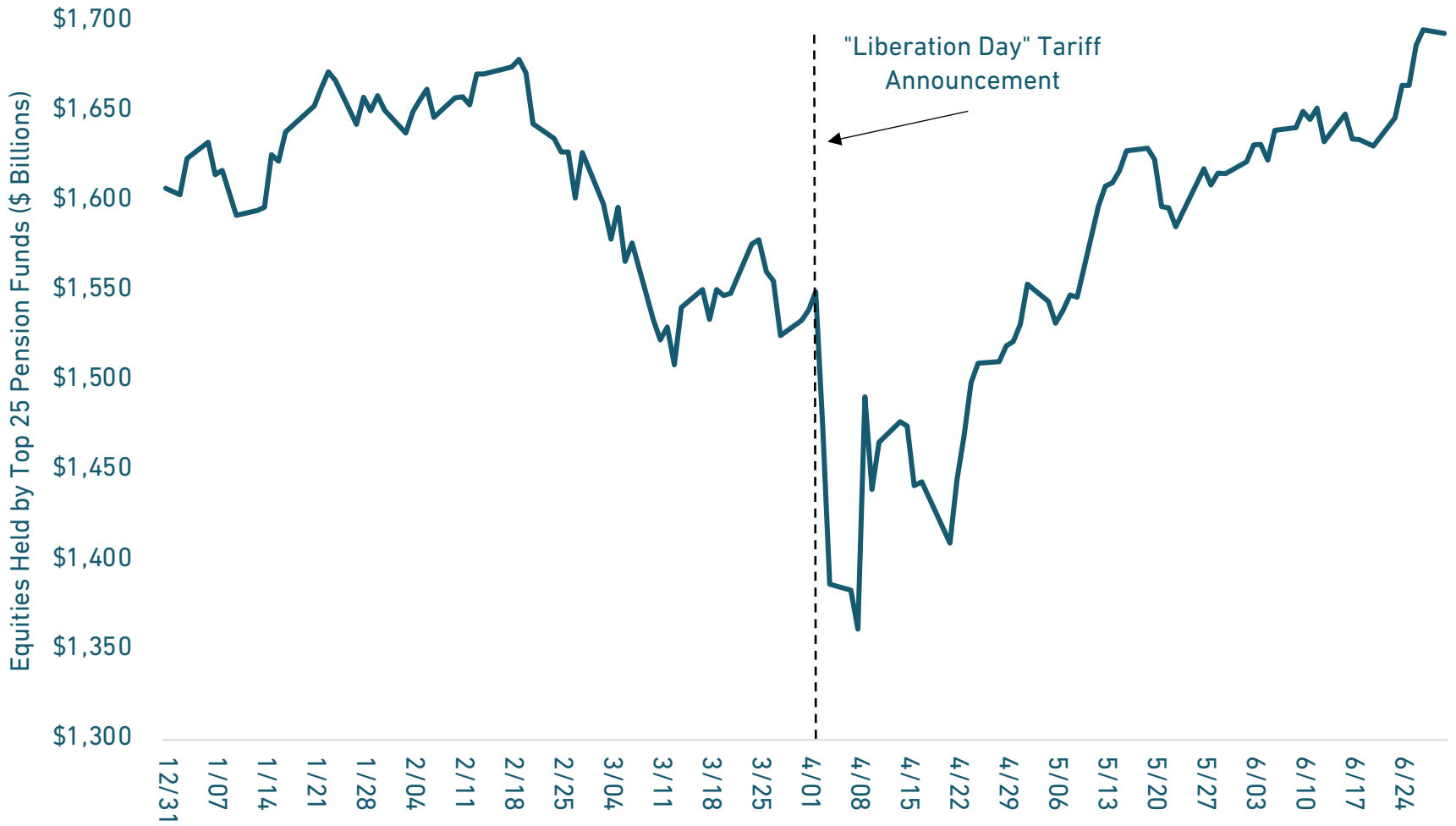
HOW THE TRUMP ADMINISTRATION'S ECONOMIC POLICY IS INFLUENCING PENSION ASSET VALUES

1. **Unpredictable Policy:** Most market analysts did not anticipate the scope or scale of Liberation Day tariff policy pronouncements, as reflected in the general panic from investors that followed the April 2 declaration. Along with other investors, state and local pension funds lost hundreds of billions in assets in the month of April and there was little clarity early as to whether recovery would be likely in the near-term. Fortunately for pension fund asset values, the Trump administration backed off the most aggressive parts of their trade policies and state and local retirement systems fully recovered (Page 22). It is important to emphasize, though, that state pension fund survival through April's market low points was unrelated to any degree of diversification or trading strategy — virtually all asset classes fell together, and the market rebound was related to the Trump administration backing down from its tariff threats. Pension fund values are at the mercy of market swings and favorable political policy change.

2. **Uncertain Future:** There is profound uncertainty about U.S. global economic policy in the coming years, with continuous signals from the White House that the Trump administration would tolerate downward pressure on the U.S. economy from adopting large and widespread tariffs on imported goods. The economic effects on businesses could translate both into depressed state tax revenues and reduced economic value, whether in publicly traded markets or the valuation of privately held companies who are negatively affected by tariffs.

PUBLIC PENSION ASSET VOLATILITY IN 2025

DAILY CHANGE IN EQUITY VALUE, TOP 25 PENSION FUNDS | JAN 1 - JUN 30



This chart shows the estimated value of global equities held by the top 25 pension funds during the period from January 1 to June 30, 2025.

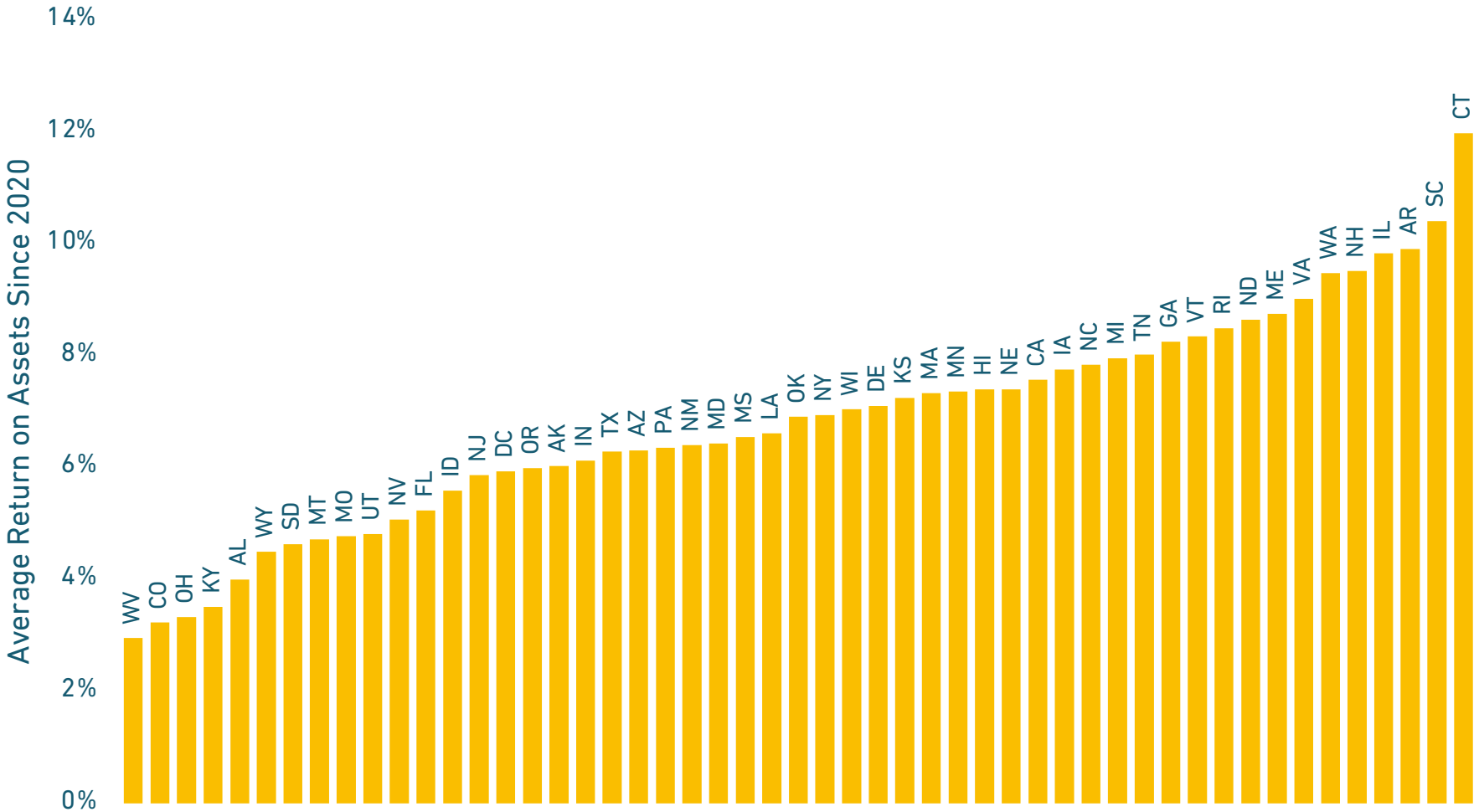
These 25 funds represent 63 pension funds, and manage 2/3rds of state and local pension fund assets.

As a proxy for how market volatility during 2025 has affected public pension assets, this provides a good directional sense of where total public plan asset values will have shifted.

See Page 21 for additional analysis of this trendline.

WORST TO BEST ASSET GROWTH SINCE THE PANDEMIC

AVERAGE ANNUAL ASSET GROWTH RATE 2020-2025, BY STATE



While state pension funds, as institutional investors, tend to have returns within a similar range year to year, there are some states that have navigated the financial market volatility of the post-pandemic years better than others. States have varied on how much in supplemental dollars they've put into their pension funds.

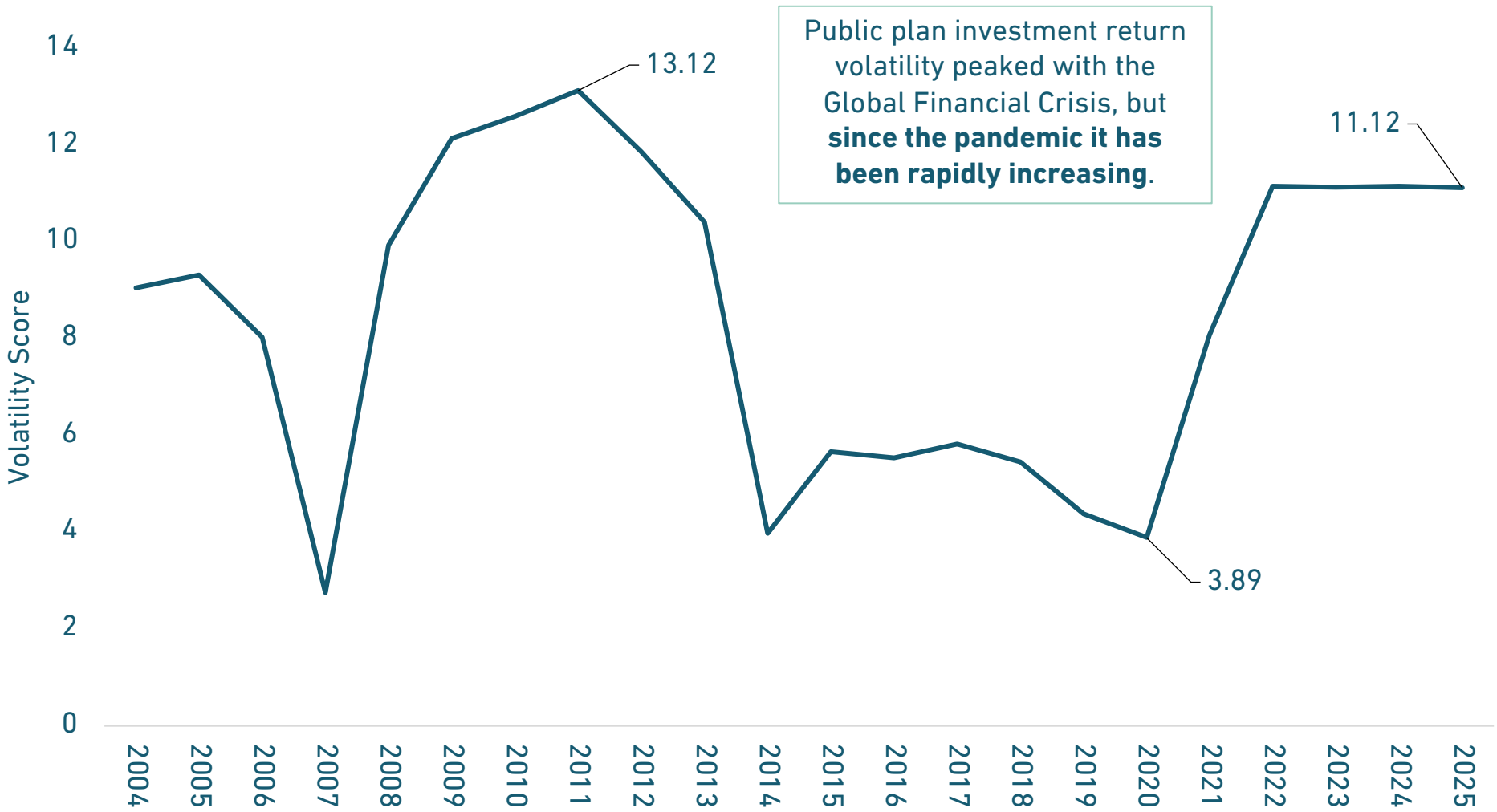
Since 2020, states with the most improved assets (for the period 2020-25) include: CT, SC, AR, IL, and NH.

These all have performance nearly 3x better than: WV, CO, OH, KY, and AL.

Source: Equable Institute analysis of public plan valuation reports and ACFRs and forecast of investment returns as of June 30, 2025. Each state's investment return is based on an asset-weighted average of performance by pension fund..

INCREASING INVESTMENT RETURN VOLATILITY

VOLATILITY IS NEAR GLOBAL FINANCIAL CRISIS ERA LEVELS



In finance, volatility is a measure uncertainty related to asset prices or investment returns.

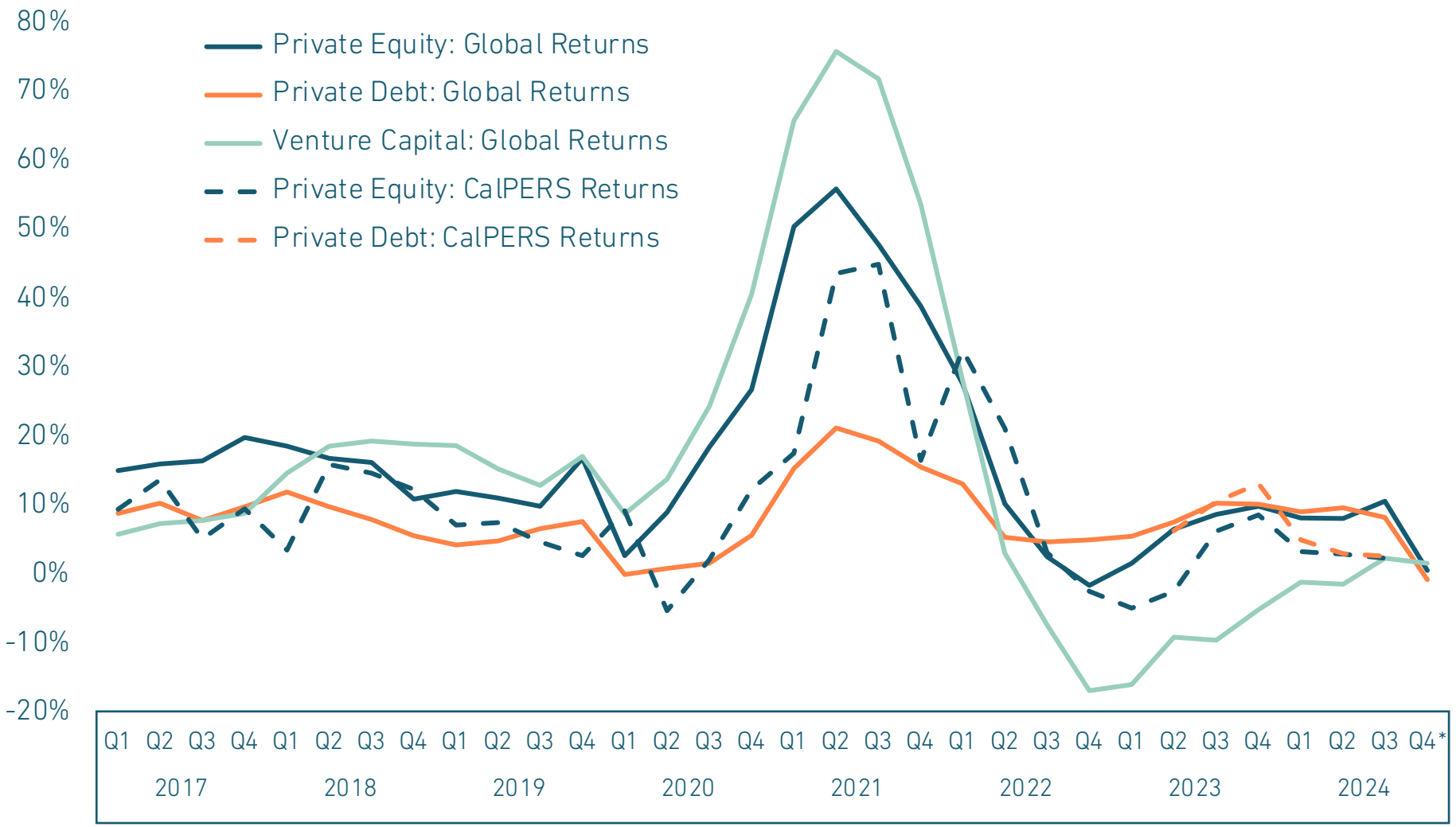
Savvy investors can use volatility to their advantage, including some pension funds. However, generally pension funds prefer stability because investment returns are important for determining contribution rates and for managing cash flow with regular required benefit payments.

This figure shows a "volatility score" where the higher the number, the more uncertainty there is around investment return patterns and trends.

Note: From a technical perspective, volatility is measured using the standard deviation of the financial instrument being examined. In the case of investments, this can be done by calculating the standard deviation of the year-over-year returns.

VOLATILITY IN PRIVATE CAPITAL RETURNS

ONE-YEAR ROLLING INTERNAL RATES OF RETURN | 2017–2024



The performance of the largest public pension alternatives portfolio (CalPERS) largely tracks with global returns for varying private capital asset classes.

This chart shows rolling one-year IRRs to account for the lagged reporting cycles that can muddy any given quarter's measurement.

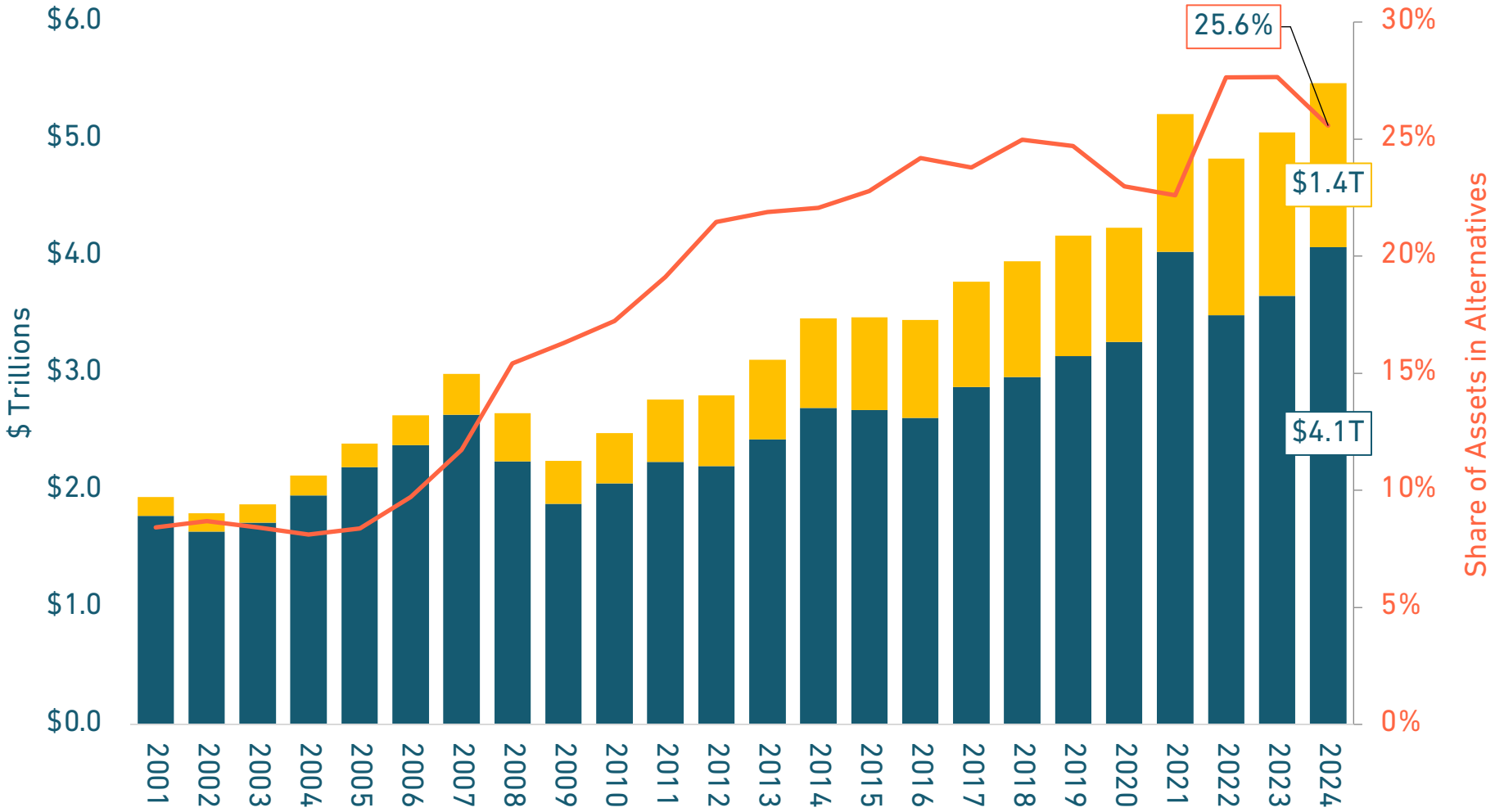
Returns in general show significant volatility, up dramatically in 2021, back down in 2022, and then leveling off in 2023 through 2024.

*2024 Q4 data is preliminary and subject to change

Sources: Global return data are published by PitchBook in "Global Fund Performance Report as of Q3 2024," May 2025. The CalPERS data come from quarterly performance reports provided to their board of trustees and reflects the published rolling one-year return figure (based on lagged data) as of that quarter.

Trendlines for Projecting the Future: Valuation Risk

VALUATION RISK: SHARE OF "VALUATION PRICED" ASSETS COMPARED TO "MARKET PRICED" ASSETS



Alternative investments, like private equity and real estate, generally, are priced based on valuations, not market-based pricing.

The share of pension fund assets priced based on valuations grew to 25.6% of assets as of 2024, up from an average of 9.1% between 2001–2007. This means the share of pension fund assets exposed to "valuation risk" has almost tripled since the Global Financial Crisis.

Share of Pension Fund Assets Based on Valuation Prices

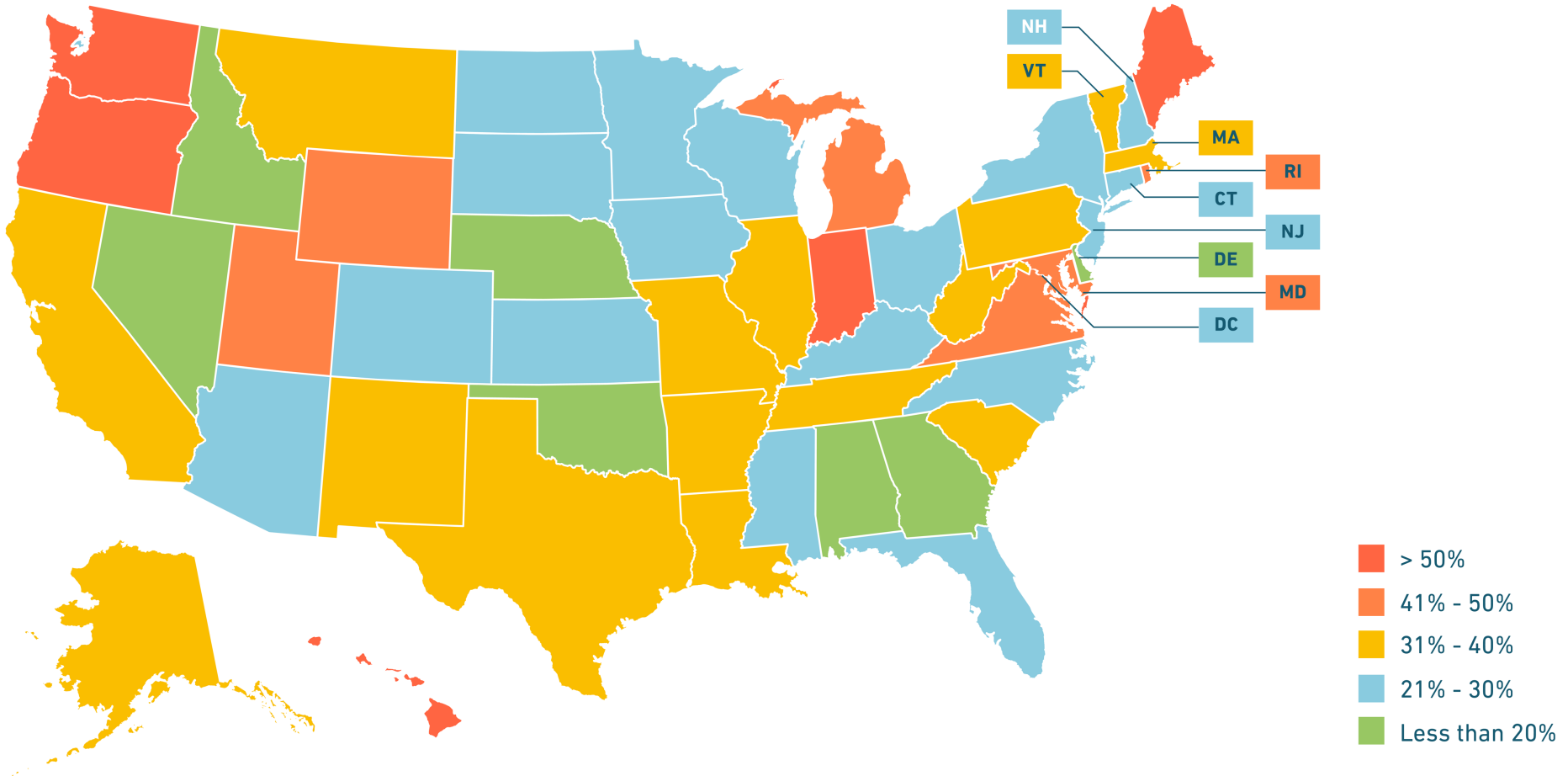
"Valuation Priced" Assets (Private Capital, Real Estate)

"Market Priced" Assets (Public Equities, Fixed Income)

Source: Equable Institute analysis of public plan valuation reports and ACFRs.
Note: "Valuation Priced" investments include assets defined by public plans as private equity, private debt, real estate, or hedge fund.

STATES BY SHARE OF PENSION ASSETS IN ALTERNATIVES

BASED ON 2024 ASSET ALLOCATION DATA AND ASSET VALUES

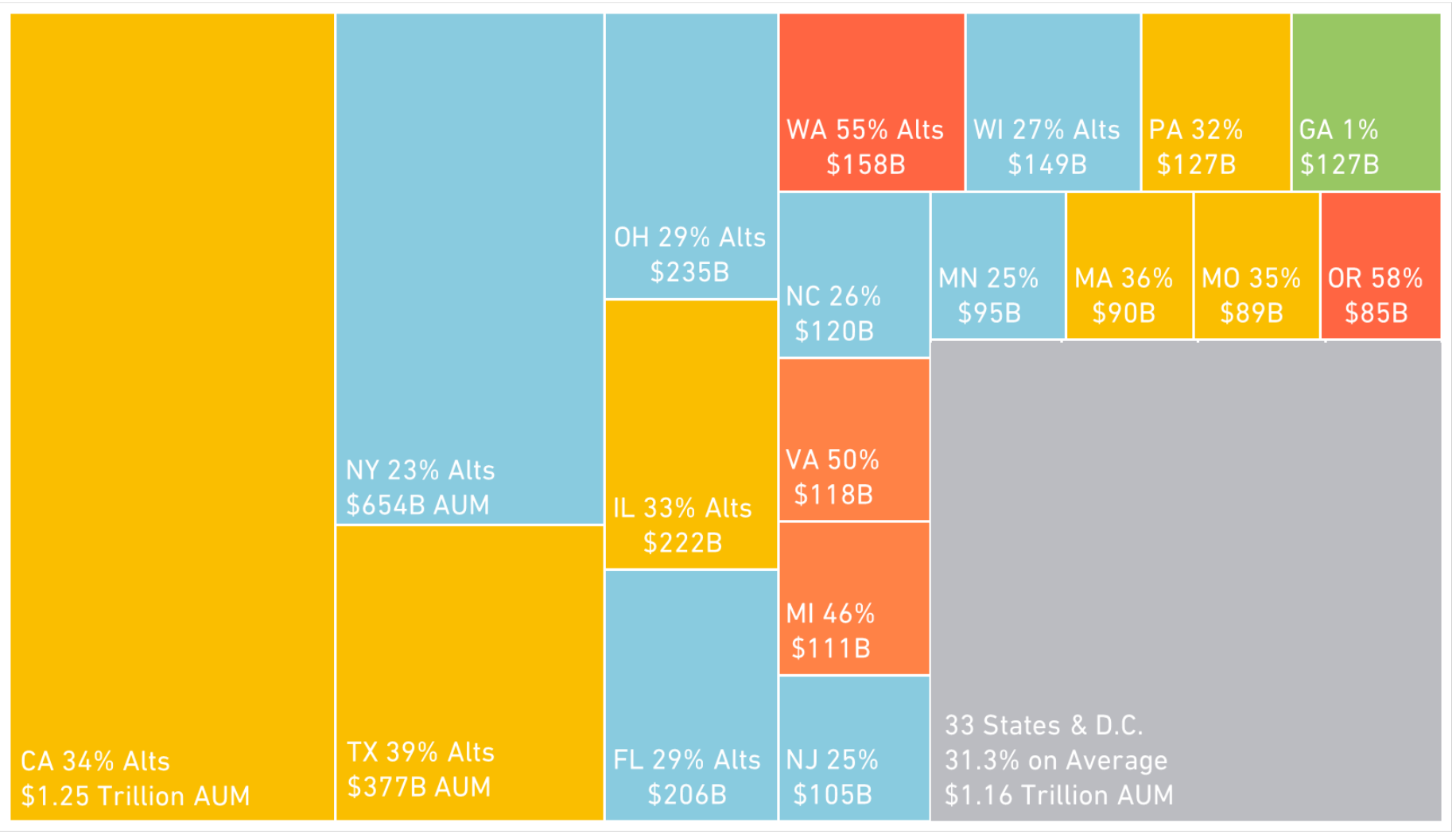


There is a wide variance in how much state and local pension funds have invested in alternatives.

Most states have between 20% and 40% of their collective pension fund investments allocated to alternative asset classes. However, a few outliers are more aggressive — some have over 50% of their pension fund money in alternatives — and a handful are more conservative.

Source: Equable Institute analysis of public plan valuation reports and ACFRs.
Note: "Alternative" investments include private capital, hedge funds, real estate, commodities, and tactical asset allocations.

STATES BY TOTAL ASSETS UNDER MANAGEMENT & SHARE OF INVESTMENTS IN ALTERNATIVES | 2024



This infographic shows states based on their assets under management (AUM) and the percentage of those assets invested in private capital, real estate, hedge funds, & misc. alts.

Five states (CA, NY, TX, OH, IL) manage half of all public pension assets in the U.S. So, the dollar allocations to alternative investments in these states are a major driver of national figures.

But the size of state pension fund assets is not related to their alternative investments. Some smaller states have over 50% of pension assets invested in alternatives.

Source: Equable Institute analysis of public plan valuation reports and ACFRs.
Note: "Alternative" investments include private capital, hedge funds, real estate, commodities, and tactical asset allocations.

TOP 20 PENSION INVESTMENT FUNDS BY SHARE OF ASSETS IN ALTERNATIVES | 2024

Rank	Investment Fund	Alts Share	ARR
#1	Louisiana School Employees' Retirement System	66.0%	6.80%
#2	Oregon Investment Council (Oregon PERS)	57.9%	6.90%
#3	Washington State Investment Board (Washington Retirement System)	55.4%	7.00%
#4	Indiana Public Employees Retirement System	54.8%	6.30%
#5	Employees' Retirement System of the State of Hawaii	54.0%	7.00%
#6	San Francisco City & County Employees' Retirement System	52.0%	7.20%
#7	Maine Public Employees Retirement System	50.9%	6.50%
#8	Virginia Retirement System	50.8%	6.80%
#9	Michigan Department of Treasury (MSERS & MPSERS)	49.5%	6.00%
#10	Illinois State Teachers' Retirement System	49.5%	7.0%

Rank	Investment Fund	Alts Share	ARR
#11	Louisiana Teachers' Retirement System	48.0%	7.20%
#12	Arkansas Teacher Retirement System	46.4%	7.20%
#13	Wyoming Retirement System	46.4%	6.80%
#14	Utah Retirement System	45.8%	6.80%
#15	Houston Firefighters Relief and Retirement Fund	45.0%	7.00%
#16	San Bernardino County Employees Retirement Association	44.4%	7.20%
#17	Missouri Dept of Transportation & Highway Patrol Retirement System	43.5%	6.50%
#18	Houston Police Officers' Pension System	43.4%	7.00%
#19	Rhode Island State Investment Commission	42.4%	7.00%
#20	Texas County & District Retirement System	42.1%	7.50%

Some pension funds have committed a particularly large share of their assets to alternative investments.

This list shows the 20 state and local pension funds (or investment commissions, if assets of multiple retirement plans are commingled) that have the largest share of assets in alternatives.

Pension funds or state investment commissions with over $50 billion in assets under management are highlighted in blue.

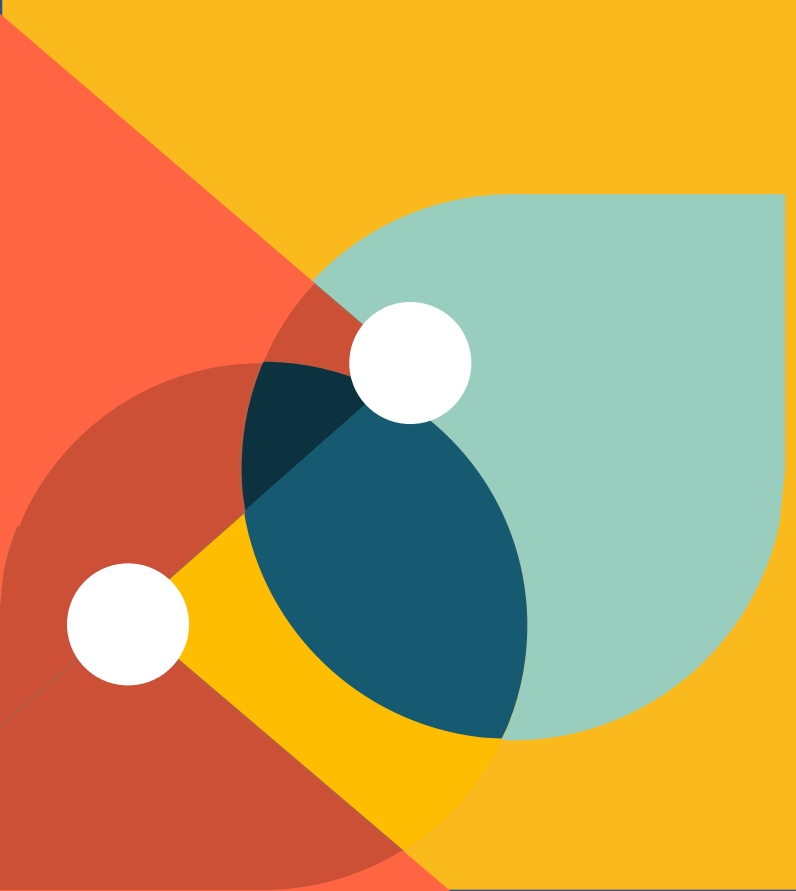
Note: ARR = Assumed rate of return, most recently reported; "Alts Share" is the percentage of the investment fund's assets allocated to alternative asset-classes.

UNDERSTANDING "VALUATION RISK"

- **"Valuation Risk"** is the risk to pension funds that the value of their assets as reported to them is inaccurate (e.g., understating or overstating the actual value) because the asset pricing method used is based on valuation models, as opposed to market-based prices.
  - If asset values are overstated today, then that means reported funding levels are overstated. This in turn can lead to lower than appropriate contribution rates, which will mean larger unfunded liabilities in the future than if assets were more accurately priced.
  - Overstated pension asset values can also lead to other policy decisions that could influence future funded status — such as raising the value of benefits or having lower political priority for supplemental funding to pay down unfunded liabilities faster than planned.
- This is in contrast to "opportunity risk" (the risk that a specific use of capital doesn't justify the risk-adjusted returns relative to other opportunities), or "asset risk" (the risk of losing money on an investment), or "management risk" (the risk that trustees will inefficiently allocate capital).

WHY GROWING VALUATION RISK IS A PROBLEM

- There is a sharply increasing share of pension fund investments with values based on valuation-methods instead of market prices, which means **an increasing share of pension portfolios are exposed to the risk of being overpriced**.
  - The significant lack of transparency in how pension funds invest in valuation-priced asset classes like private equity and real estate exacerbates concerns about valuation risk.
  - The growing rate of volatility in investment returns also adds to concerns about the scale of pension fund assets that are exposed to valuation risk.
- **Overstated portfolio values for asset classes like private capital and real estate can lead to significant unfunded liability problems in the future**.
  - Example: Consider that general partners managing a private equity fund often value their portfolio companies using the valuation of a recent funding round, which may or may not reflect an overstated price agreed to by a small set of exuberant investors. This potentially overstated pricing approach can lead to an overstated valuation of a pension fund's limited partner share in that private equity fund, which in turn can lead to reporting overvalued assets that translate to lower contribution rates than would be appropriate.



Trendlines for Projecting the Future: The Specific Causes of Today's Pension Debt

WHAT ARE THE SPECIFIC CAUSES OF UNFUNDED LIABILITIES TODAY?

Managing pension plans requires a wide range of assumptions about future events: investment returns, mortality rates, workforce turnover, salary growth, inflation, government contributions, and more. There are lots of places where actual experience may not line up with actuarial expectations — leading to unfunded liabilities or improved funding.

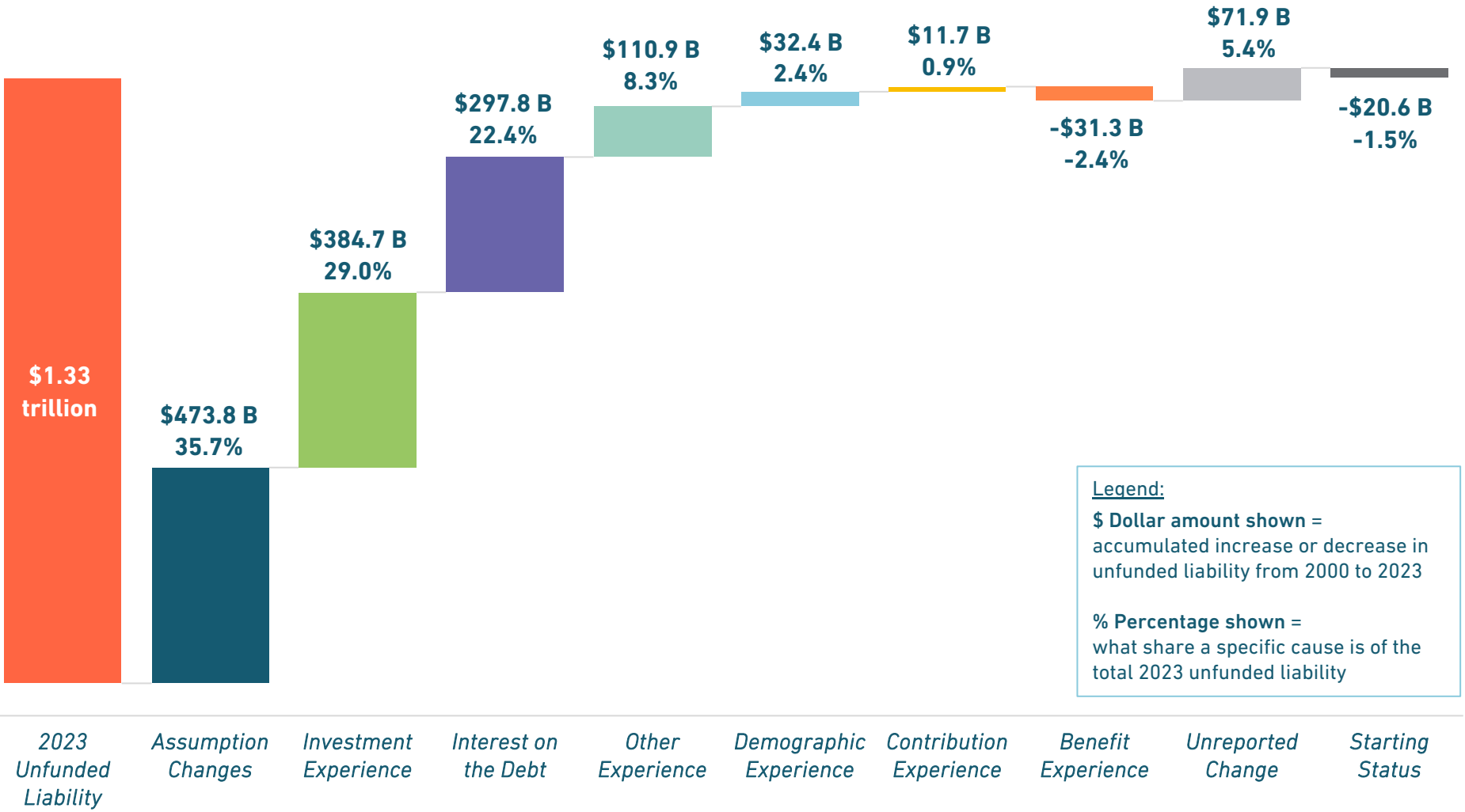
Pension funds compare actuarial and assumed experience every year, along with other factors that can change the value of liabilities.*

We can use the data to look at the internal structure of public pension plans and measure exactly which categories are causing the country's collective unfunded liabilities.

Assumption Changes	Changes to liabilities due to adopting new assumptions
Interest on the Debt	Expected contributions are greater or less than interest growth on liabilities
Investment Experience	Changes to assets due to investment returns higher/lower than assumed
Demographic Experience	Experience in retirement, payroll, mortality, etc. different than assumed
Benefit Experience	Changes to benefit values, COLA experience, different than assumed
Contribution Experience	Contributions paid are greater, the same, or less than expected
Other Experience	Changes to liabilities that are reported in a generic "other" category
Unreported Change	Changes to liabilities that are not documented in pension plan reporting
Starting Status	Funded status at the start of a plan's actuarial gain/loss data reporting

Note: This is typically called actuarial gain/loss data, or some equivalent. States vary in their degree of transparency on these data. For complete methodology see source paper.

THE SPECIFIC CAUSES OF UNFUNDED LIABILITIES THAT ACCUMULATED BETWEEN 2000–2023



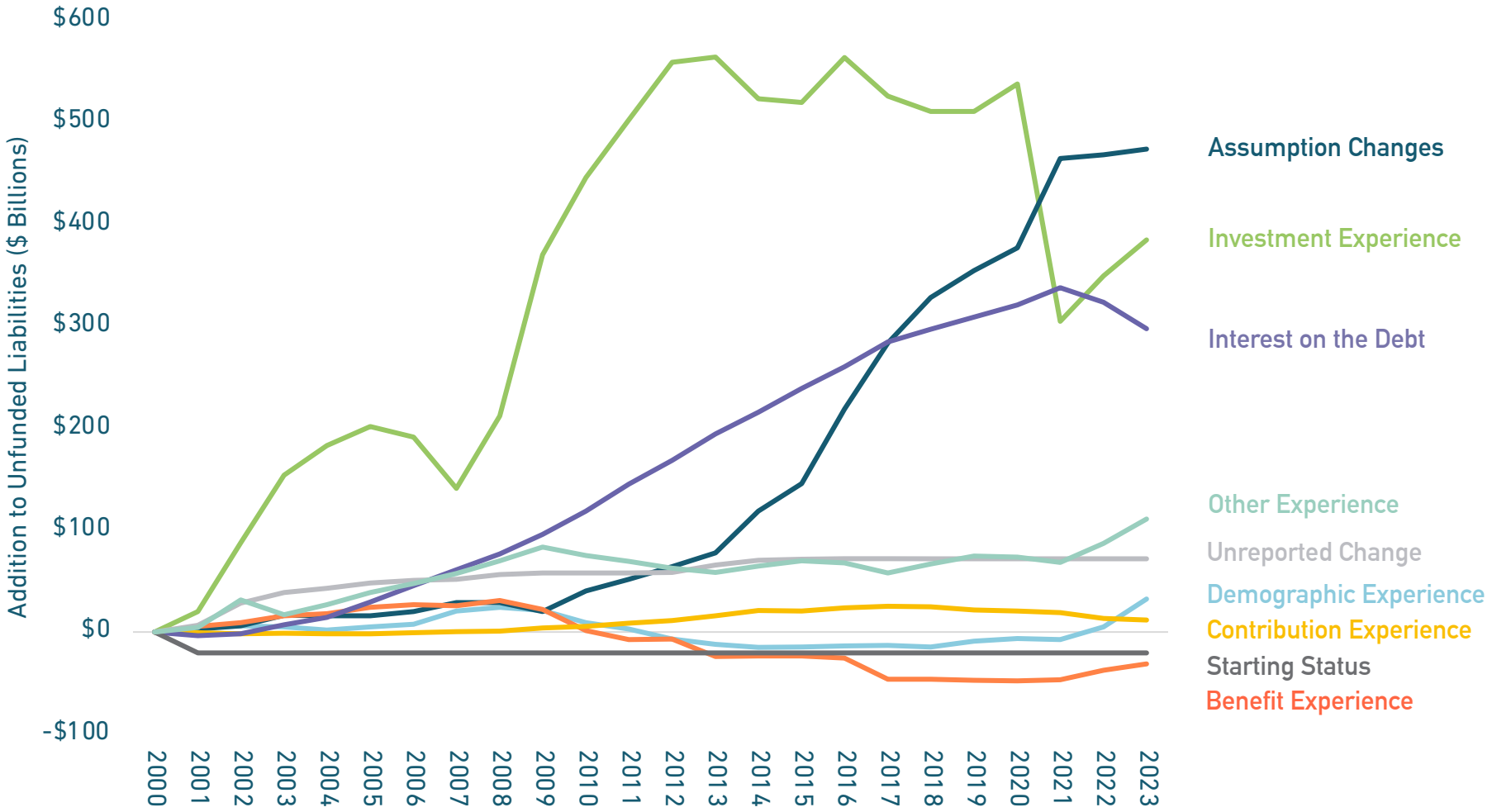
The largest contributor to the $1.33 trillion in unfunded liabilities as of 2023 was necessary improvements to actuarial assumptions: $473.8 billion accumulated since 2000 (35.7% of the total accumulated growth).

The next largest factors were underperforming investment returns (29.0% of the total) and interest growing faster than contributions paid (22.4%).

Note: State and local pension plans report their unfunded liability change data using "actuarially valued" assets, which vary slightly from market valued data. So, the 2023 total unfunded liability figure used here varies slightly from other market valued data in this report.

Source: Equable Institute analysis of actuarial gain/loss data in public plan valuation reports and methodology from Fuchsman, Hengerer, Moody, and Randazzo (2024). *Note:* Data is based on actuarial valued assets (AVA), as this is the basis for gain/loss data. For any given year the AVA based data varies slightly from market valued data that is otherwise used in this report.

THE SPECIFIC CAUSES OF UNFUNDED LIABILITIES, CHANGE IN ANNUAL AMOUNT OVER TIME | 2000–2023



Looking at how each of the causes of unfunded liabilities has changed over time provides some perspective on problems that have been largely solved by policy improvements versus existing challenges today.

Underperforming investment experience was the largest contributor to unfunded liabilities, until historically strong 2021 investment returns.

Interest on pension debt has been steadily increasing as a cause of unfunded liabilities for nearly two decades.

Benefit experience has gone from causing unfunded liabilities to reducing pension debt.

Source: Equable Institute analysis of actuarial gain/loss data in public plan valuation reports and methodology from Fuchsman, Hengerer, Moody, and Randazzo (2024). *Note:* Data is based on actuarial valued assets (AVA), as this is the basis for gain/loss data. For any given year the AVA based data varies slightly from market valued data that is otherwise used in this report.

ANALYSIS: TODAY'S PENSION DEBT IS NOT PRIMARILY BECAUSE OF INCREASED LIFESPANS, ENHANCED BENEFITS, OR STATES FAILING TO PAY 100% OF REQUIRED CONTRIBUTIONS

Three factors explain 87.1% of the collective $1.33 trillion in state and local unfunded liabilities as of 2023:

(1) Assumption Changes **e.g., Changes to actuarial assumptions** — These improvements in the quality of expectations about investment returns, payroll forecasts, mortality rates, etc. often mean an increase in the measured value of benefits or a decrease in expected investment returns, which can mean unfunded liabilities increase. While this additional reported funding shortfall does need to be paid down, it is a good thing that public pension plans are improving the accuracy of their accounting.

(2) Investment Experience **e.g., Underperforming investment returns** — While recent years have led to positive overall returns over the last two decades, there are still at nearly $400 billion in unfunded liabilities that have come from investments earning less than expected.

(3) Interest on the Debt **e.g., Interest growth on liabilities** — When contribution amounts are expected to be greater or less than interest accumulating on liabilities, this leads to an "expected change." Even when actuarially required contributions are fully paid, they may not be sufficient to reduce unfunded liabilities if the funding policy used to calculate those contributions allows for interest to continue adding to unfunded liabilities.

Factors such as increased longevity, benefit enhancements, or states failing to pay 100% of required contributions are all important and, for specific states, they are major contributors to unfunded liabilities. However, nationally they are all small components of the collective pension funding shortfall.

Within the Trends: 2024 Funded Status

- Funded Ratio
- Unfunded Liabilities

DEFINING "RESILIENT" FUNDED STATUS

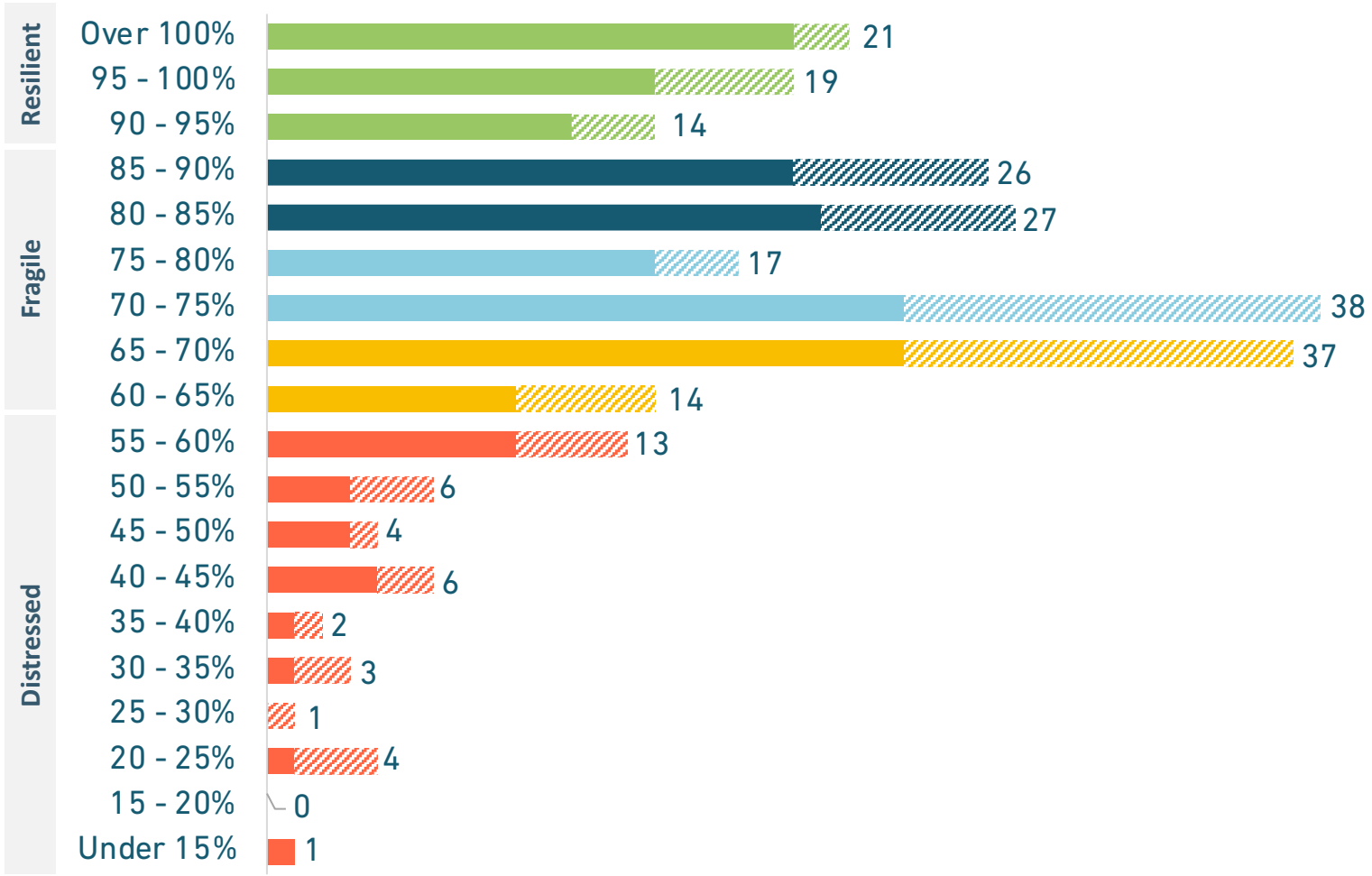
We think about the sustainability of state-managed pension funds in three groups: Resilient, Fragile, and Distressed. No single data point on its own should be used to measure a pension plan's fiscal health, so we use a multi-factor matrix when thinking about plan sustainability. This includes funded ratio, unfunded liability as a share of GDP, the assumed return, share of required contributions received, and availability of risk-sharing tools. Here is a breakdown of how we think about the first of these factors, the funded ratio:

Resilient: A resilient pension system has a funded ratio of 90% or more for at least three years in a row. These plans are generally in a strong position to recover from financial downturns as funding policy improvements are easier to make when the plan's finances are stable.

Fragile: A fragile pension fund is consistently between 60% and 90% funded. While these plans aren't going insolvent anytime soon, they will be building up unfunded liabilities that will gradually become a strain on budgets and government revenues. A plan that is 85% funded for several years in row is healthier than one 65% funded, but it is still exposed to risk. One or two asset shocks could send the plan into a downward spiral.

Distressed: Pension systems with funding levels below 60% should be looking to make immediate steps toward fixing their problems. While the specific threshold may vary across plans, at a certain point it is much harder for a plan to return to fiscal health.

STATE & LOCAL PENSION PLANS
2024 FUNDED RATIO



The funded ratio is a quick first look at the health of a pension plan but it is not the only factor to measure. Actuarial assumptions, funding policies, and governance also matter.

A pension plan's funded ratio might have dipped because the pension board adopted more realistic actuarial assumptions.

Solid Coloring Indicates Statewide Plans

Textured Patterning Indicates Local Plans

Source: Equable Institute analysis of public plan valuation reports and ACFRs. See notes for a list of plans that have fiscal years ending in December and have not yet reported complete 2024 data; for these plans the figure above is based on estimates of their assets using actual reported investment returns as of June 30, 2024.

2024: THE TOP 10 AND BOTTOM 10 STATEWIDE PLANS
AMONG STATE PLANS THAT HAVE REPORTED FYE 2024 DATA

Top 10 Statewide Plans, by Funded Ratio

Rank	Plan	Funded Ratio
#1	Michigan Public Schools Pension Plus 1 & 2*	152.8%
#2	Washington Law Officers Plans 1 & 2*	138.9%
#3	DC Police & Fire	115.2%
#4	Utah Firefighters	110.9%
#5	Arizona Public Safety Tier 3	109.2%
#6	Tennessee Teacher Plans*	107.4%
#7	Wisconsin Retirement System	106.2%
#8	Texas Law Enforcement (LECOS)	106.2%
#9	California Judges II	105.4%
#10	Washington Public Employees Plans 2 & 3	105.2%

Bottom 10 Statewide Plans, by Funded Ratio

Rank	Plan	Funded Ratio
#166	Missouri State Employees' Retirement System	52.0%
#167	New Jersey Public Employees State and Local Divisions*	51.3%
#168	New Jersey State Police Retirement System	51.1%
#169	Illinois Teachers	45.4%
#170	Illinois Judges	44.3%
#171	Illinois State Employees	43.3%
#172	Arizona Elected Officials	42.2%
#173	New Jersey Teachers	38.0%
#174	Kentucky State Employes Nonhazardous	26.0%
#175	California Judges**	2.2%

Source: Equable Institute analysis of public plan valuation reports and ACFRs. | *Notes:* * Indicates two plans administered by the same retirement system that have been averaged to produce this figure. **Indicates a pay-as-you-go plan that does not use traditional pre-funding methods.

2024: THE TOP 10 AND BOTTOM 10 LOCAL PLANS

AMONG LOCAL PLANS THAT HAVE REPORTED FYE 2024 DATA

Top 10 Local Plans, by Funded Ratio

Rank	Plan	Funded Ratio
#1	Detroit General Employees Plan 1	107.1%
#2	Los Angeles Fire and Police	101.0%
#3	Houston Firefighters	100.0%
#4	Los Angeles Water and Power	98.8%
#5	New York City Board of Education	97.4%
#6	Wichita Employees	96.2%
#7	Houston Police	95.4%
#8	Montgomery County MD Employees	94.6%
#9	Marin County Employees	93.2%
#10	Wichita Police and Fire	92.0%

Bottom 10 Local Plans, by Funded Ratio

Rank	Plan	Funded Ratio
#69	Chicago Transit	52.5%
#70	Jacksonville Police & Fire	47.2%
#71	Chicago Teachers	44.6%
#72	Chicago Laborers	40.3%
#73	Dallas Police and Firefighters	36.7%
#74	Chicago Parks	32.0%
#75	Providence Employees	28.7%
#76	Chicago Police	28.5%
#77	Chicago Municipal	25.0%
#78	Chicago Firefighters	23.7%

Source: Equable Institute analysis of public plan valuation reports and ACFRs.

TYPES OF PENSION FUNDS AND THEIR FUNDED STATUS | 2024

	Plan Count	*Unfunded Liabilities*	*Funded Ratio*
Statewide Systems & Local Plans for Teachers and Public School Employees Only*	*51 Plans*	*$578.8 billion*	*76.4%*
Statewide Systems for Higher Education Only	*California URS + Illinois SURS*	*$47.7 billion*	*72.0%*
Statewide Systems for All Public Employees Doing Any Public Service Job in the State	*10 Plans*	*$107.1 billion*	*84.5%*
Statewide Systems for State Employees Only	*22 Plans*	*$182.5 billion*	*65.7%*
Statewide Systems for Municipal Civilian Employees	*21 Plans*	*$51.7 billion*	*86.2%*
Municipally-Managed Systems for Civilian Employees**	*49 Plans*	*$124.9 billion*	*78.6%*
Statewide Systems for Public Safety Only***	*42 Plans*	*$55.7 billion*	*82.1%*
Municipally-Managed Systems for Public Safety Only***	*22 Plans*	*$43.9 billion*	*76.7%*

Funded ratio and unfunded liability figures vary depending on the kind of employees that the retirement system covers.

Retirement systems for educators are often the largest pension plans in a state, based on the value of promised benefits. The funded status of systems managed solely for public safety or municipalities are also generally better funded than plans for educators.

Notes:
* Includes standalone systems for teachers, standalone systems for public school employees, and plans for teachers or public school employees that are part of broader systems but are valued and reported on separately; does not include teacher benefits that are provided by statewide systems including other kinds of employees and blended without distinction (e.g., Florida or Mississippi).
** Does not include plans that are only for teachers or school staff.
*** Includes police-only systems, firefighter-only systems, general public safety systems, and public safety portion of statewide or local plans that is independently valued and reported.

Source: Equable Institute analysis of public plan valuation reports and ACFRs. | ***Note:*** There are 34 other plans in our data set not represented on this list because they had not yet released final data for 2024, including: CalPERS and 25 others that cover different combinations of state, local, public school, and public safety employees.

Analysis: What We See in the Funded Status Trends

Funded ratio and unfunded liability levels vary considerably from state to state.

- **A small group of states have historically Resilient statewide pension systems — including New York, South Dakota, Tennessee, and Wisconsin.** The majority of Utah and Washington State plans are consistently over 90% funded as well.
- **Roughly one-third of national unfunded liabilities are for retirement systems that cover teachers and public-school employees** (Page 43).
- After strong market returns in 2024, **only a few plans were above 90% funded: a quarter (25.1%) of major statewide plans and just 12.8% of municipally-managed plans** (Page 40).
- **A plurality of state and local plans (62.8%) is Fragile as of 2023,** with a funded ratio between 60% and 90% (Page 40).
- **More than 15% of all statewide plans and local plans were Distressed as of 2024** (Page 40). **These plans face a considerable uphill climb to recovery.** The costs of paying down unfunded liabilities for these plans (e.g., Illinois Teachers, Kentucky State) are challenging for state budgets, but the costs of insolvency and shifting to "pay-as-you-go" could be even more expensive.

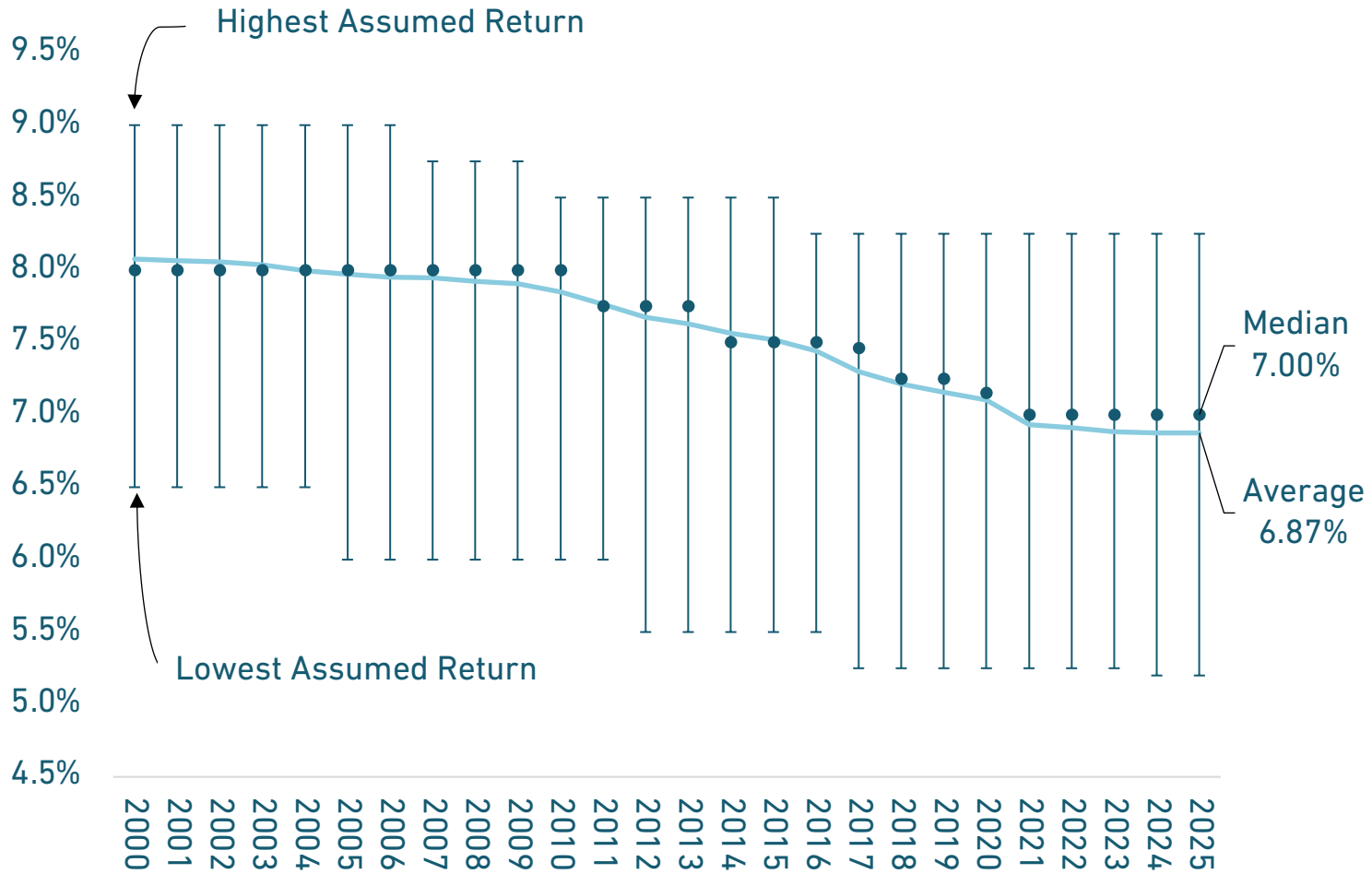
Looking to the future: States that have Fragile, but not Distressed, pension plans should be looking to make funding policy improvements while the costs of doing so are not prohibitively expensive, as is likely the case for states with some of the worst-funded plans.

Within the Trends: Investment Assumptions

- Interest Rates
- Assumed Rate of Return

AVERAGE & MEDIAN ASSUMED RATE OF RETURN

FOR STATE & LOCAL PLANS | 2001–2025



The average assumed rate of return has gradually declined from *8.07%* in 2001 to *6.87%* in 2025.

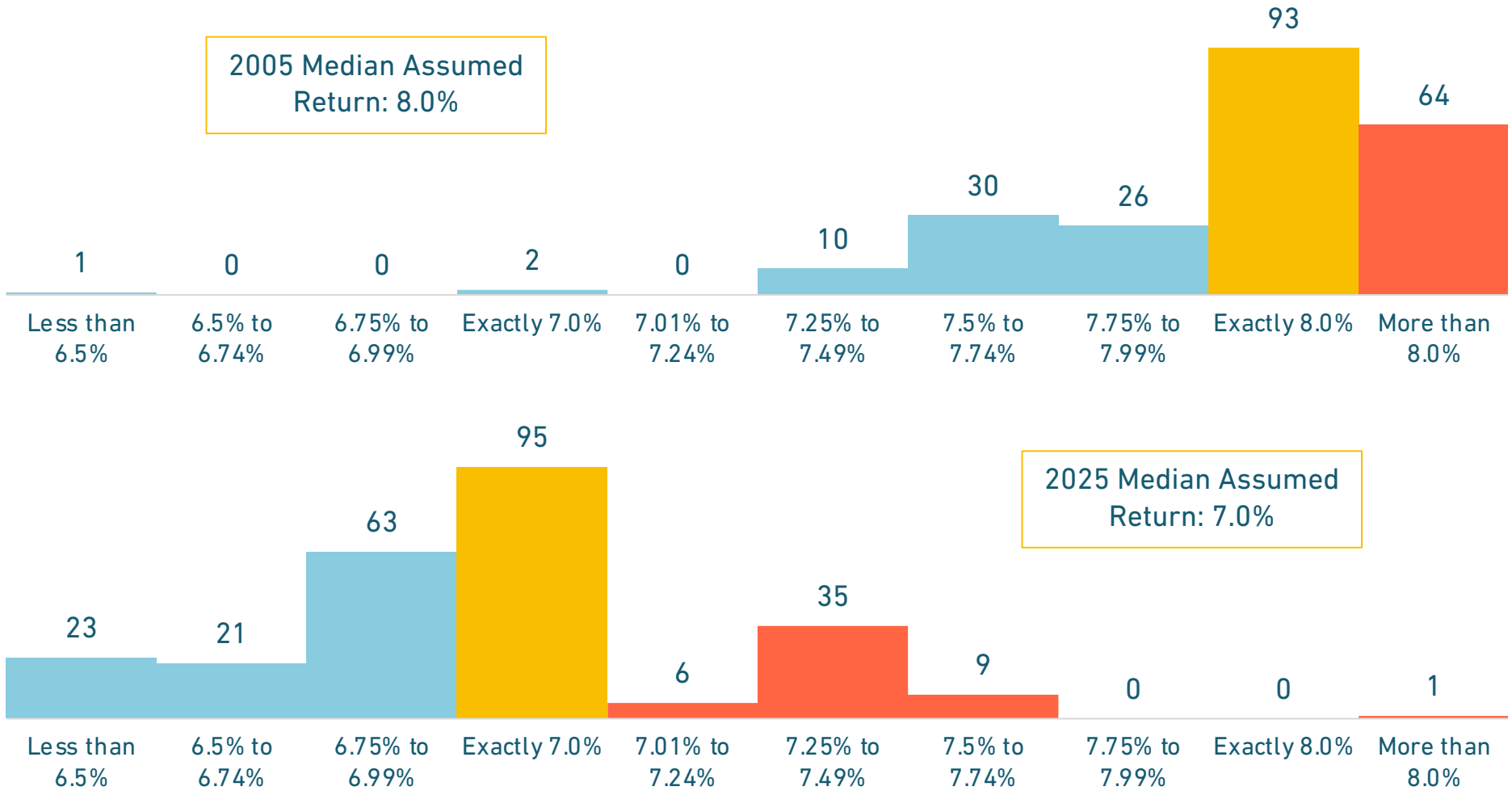
However, there is still a wide range of assumptions adopted by public pension plans.

The lowest rate adopted by any plan is *5.20%.* The highest rate currently used by a statewide plan is *7.50%*, and the highest rate by a local plan is *8.25%*.

Source: Equable Institute analysis of public plan valuation reports, ACFRs, and board of trustees reports.

DISTRIBUTION OF ASSUMED RATES OF RETURN

BY PENSION PLAN COUNT | AS OF JUNE 2005 & JUNE 2025



There were 223 major public pension plans with assumed rates of return higher than 7% in 2005. That has fallen to just 51 plans today, also down from 52 plans last year.

The average assumed return is 6.87%, which is generally unchanged since since 2020.

Still, 42 plans have assumed returns 6.5% or less (up from 41 last year). These plans are leading their peers in adopting more realistic future expectations.

Source: Equable Institute analysis of public plan valuation reports and ACFRs. Assumed rates of return for 2025 were cross-checked against published board materials, news reports, and other secondary sources to corroborate any changes in plan assumptions from 2024 to 2025.

PLANS BEING LEFT BEHIND

ASSUMED RETURNS HIGHER THAN 7.25%

AS OF ANNOUNCEMENTS THROUGH JUNE 2025

Plans with Assumed Rates of Return Above 7.25%			
Chicago Transit Authority Employees Retirement Plan	8.25%	Iowa Municipal Fire and Police	7.50%
Oklahoma Police (PPRS)	7.50%	Alabama Employees	7.45%
Arkansas State Highway Employees	7.50%	Alabama Teachers	7.45%
Texas County & District (CDRS)	7.50%	Philadelphia Muni Employees	7.30%
Oklahoma Firefighters	7.50%	Missouri Public Education (PEERS)	7.30%
Oklahoma Law Enforcement	7.50%	Missouri Public Schools (PSRS)	7.30%
Cincinnati Employees	7.50%	Austin Firefighters	7.30%
Ohio Police & Fire Pension Fund	7.50%	Montana Teachers	7.30%
Montgomery County (MD) Employees	7.50%	Montana Employees (PERS)	7.30%

The average pension fund in the U.S. has a less than 50% chance to earn 7% over the next 10 years. There is an even lower probability of earning rates above this. And yet there are still 18 plans that are assuming future investment returns greater than 7.25%.

Washington State Retirement System even broke with the national trend and *raised* their assumed return this year (because the legislature wanted to reduce required contribution rates), from 7% to 7.25%.

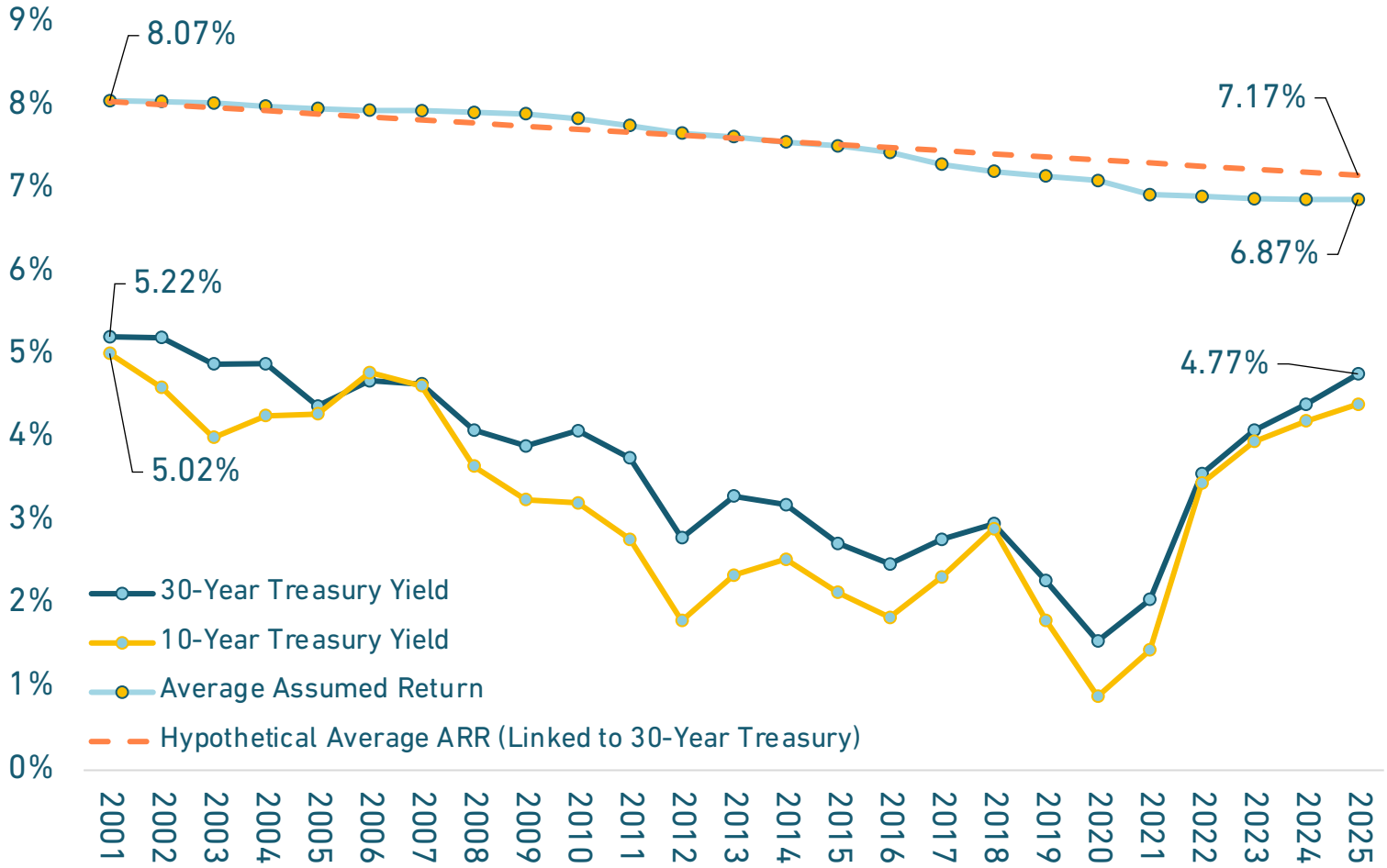
The decision-makers of the plans on this list (e.g., pension board trustees, state legislatures) are taking on high underperformance risk and/or using inappropriate assumptions to avoid recognizing additional unfunded liabilities.

Note: Assumed returns shown are reported in each plan's most recently published actuarial valuation. For most plans this is 2024.

Source: Equable Institute analysis of public plan valuation reports and ACFRs.

ASSUMED RETURN: ACTUAL COMPARED TO HYPOTHETICAL INTEREST RATE LINKED

ASSUMED RETURN VERSUS INTEREST RATES | 2001–2025



This chart shows the average assumed return since 2001 (light blue) and the historic change in interest rates, as represented by the 10-year and 30-year Treasury yield (yellow and dark blue lines).

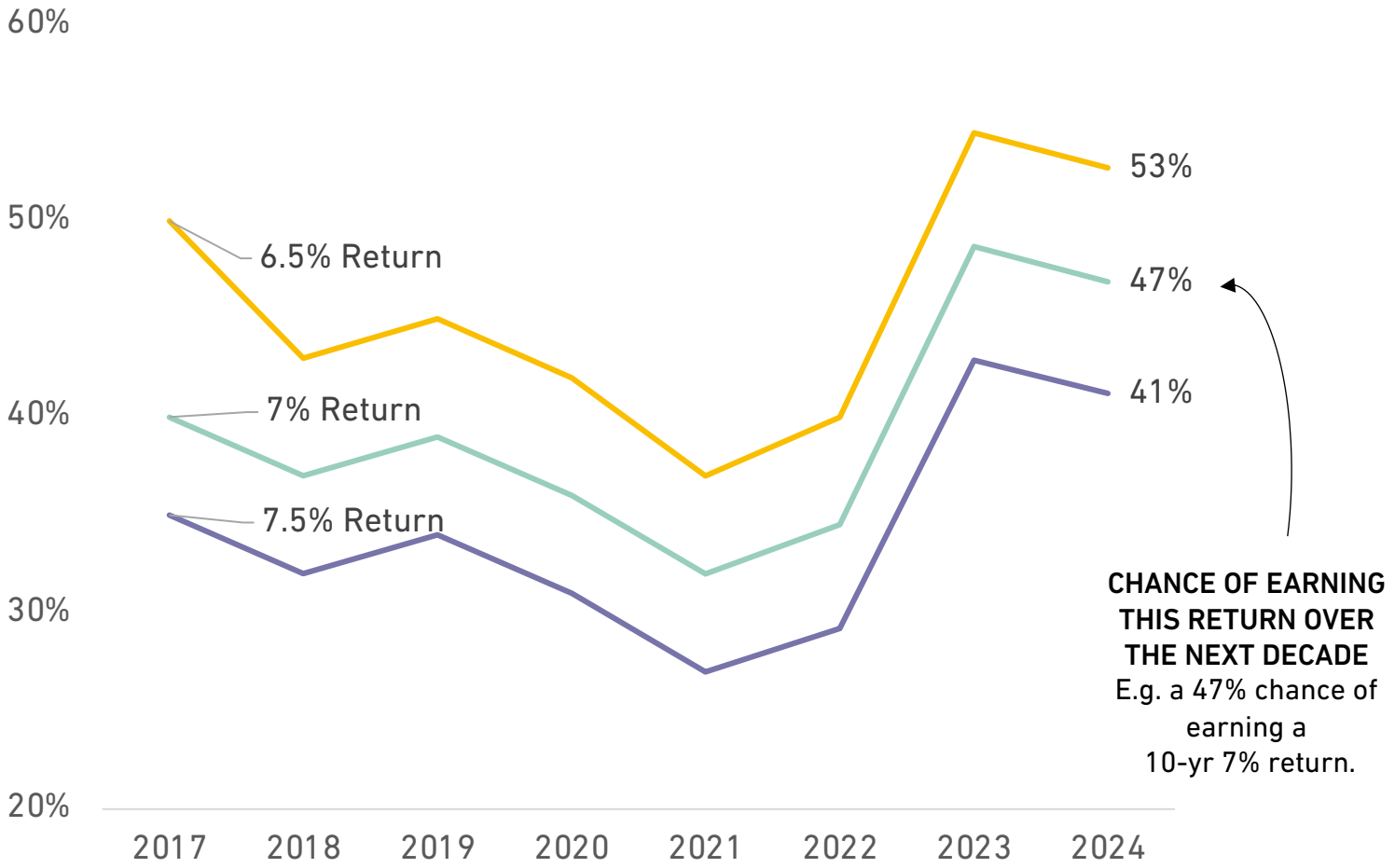
The chart also shows what a hypothetical average investment assumption would look like if public plans today kept the same relative risk tolerance they had in 2001.

The slow down in annual change in assumed returns around 2020 is in part connected to the sharp rise in interest rates since the pandemic.

Source: Equable Institute analysis of public plan valuation reports and ACFRs. | ***Notes:*** (1) Yields for 2025 are the average as of June 30, 2025; (2) No 30-year treasury bonds were issued between February 18, 2002, and February 8, 2006, but the Federal Reserve has imputed yields for those periods.

PROBABILITY OF A STANDARD PENSION FUND EARNING RETURNS BETWEEN 6.5% AND 7.5%

10-YEAR CAPITAL MARKET FORECAST AVERAGE



The increase in interest rates has driven up investment return expectations.

Where a 6.5% return assumption had a roughly 40% probability going into 2022, it had an over 50% probability going into 2025 (which public plans exceeded on average).

Notably, despite this improvement in the outlook for investment returns, there is still a less than 50% chance of an average pension fund earning a 7% return, which is the median assumption for state and local pension plans.

6.5% Return over 10 Years

7% Return over 10 Years

7.5% Return over 10 Years

Source: Horizon, "Survey of Capital Market Assumptions: 2024 Edition"
Note: The figures show the average capital market forecast for a typical multi-employer pension plan with an average diversified asset allocation.

Analysis: What We See in the Investment Trends

In 2020, there were 87 state and local pension plans using an assumed rate of return higher than 7.25% — but as of June 2025, 79% of those have since lowered their assumptions. Today there are only 18 plans using a greater than 7.25% assumed return rate or higher, most of whom were using even higher assumptions in 2020 (Page 49). Among those plans, three are municipally-managed plans with assumptions at or above 7.5%, and seven statewide plans with assumptions at 7.5%.

- It took states more than a decade to move away from unrealistic 8% investment return assumptions. Fortunately, it is taking less time to also move past a similarly optimistic 7.5% assumed rate of return. The new target for public plans to leave behind is a 7% assumed return, which is currently the median assumption (Page 10).

- The longer that states maintain assumptions 7% or higher, the longer they are going to have to take on asset risks (the risks associated with alternative investments that promise high returns, see Page 27) and underperformance risk (the risk that pension funds won't earn their targeted return, which in turn leads to a growth in unfunded liabilities, see Page 35).

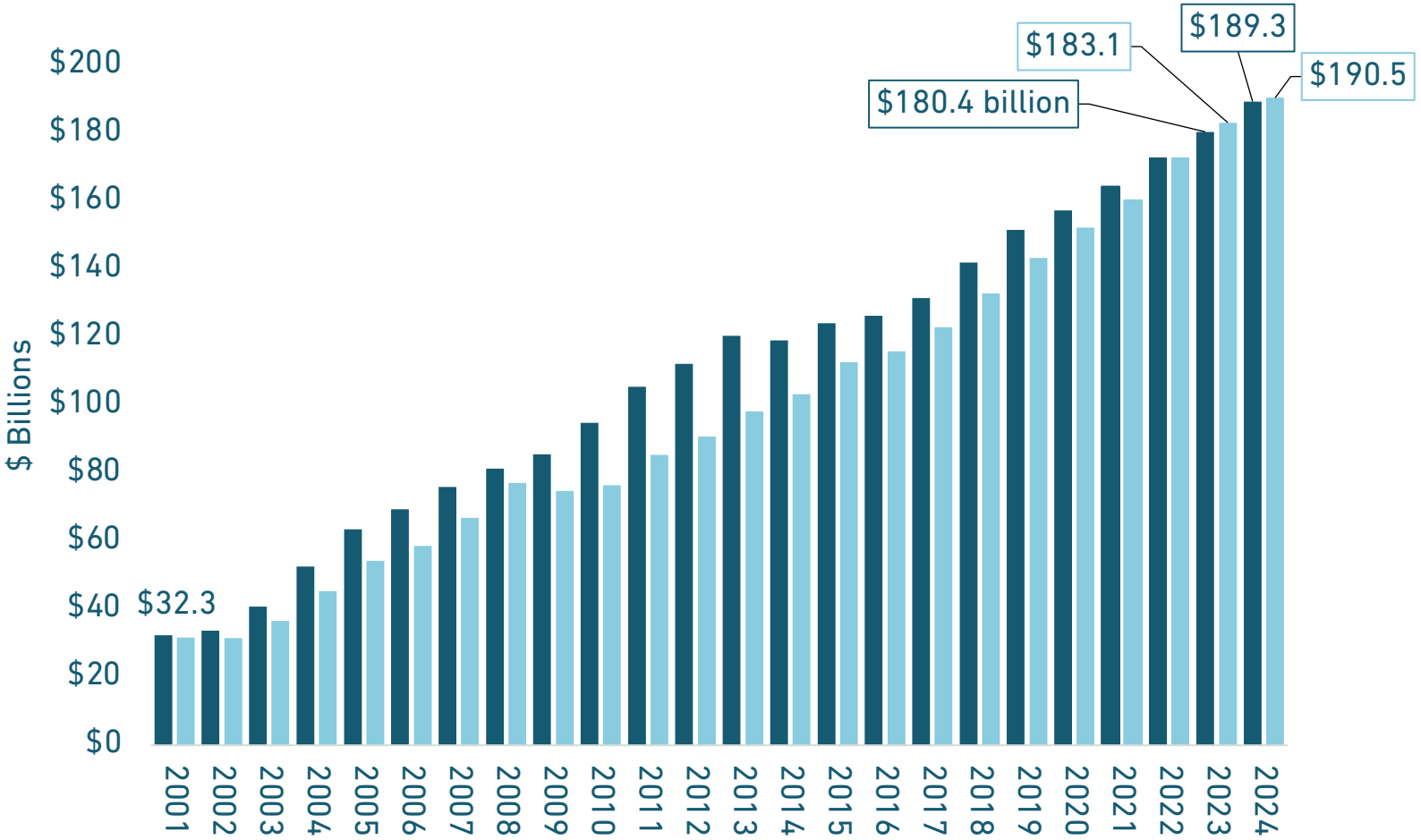
- The 6.87% average assumed rate of return (Page 49) is still very optimistic. Depending on whose capital market assumptions are used, the 50th percentile return — e.g., the return that has a 50/50 chance of being earned over the next decade — for a typical pension plan is between 6% and 7%.

Looking to the future: Public plans should continue the trend of lowering their assumed returns in the coming years due to lower probable actual returns—but recent history suggests that interest in adopting conservative assumptions has slowed.

Within the Trends: Contribution Policy

- Actuarially Determined Employer Contributions
- Funding Policy Trends

EMPLOYER CONTRIBUTIONS
ACTUAL v. REQUIRED | 2001–2024



Actuarially required contributions have grown steadily over the past two decades.

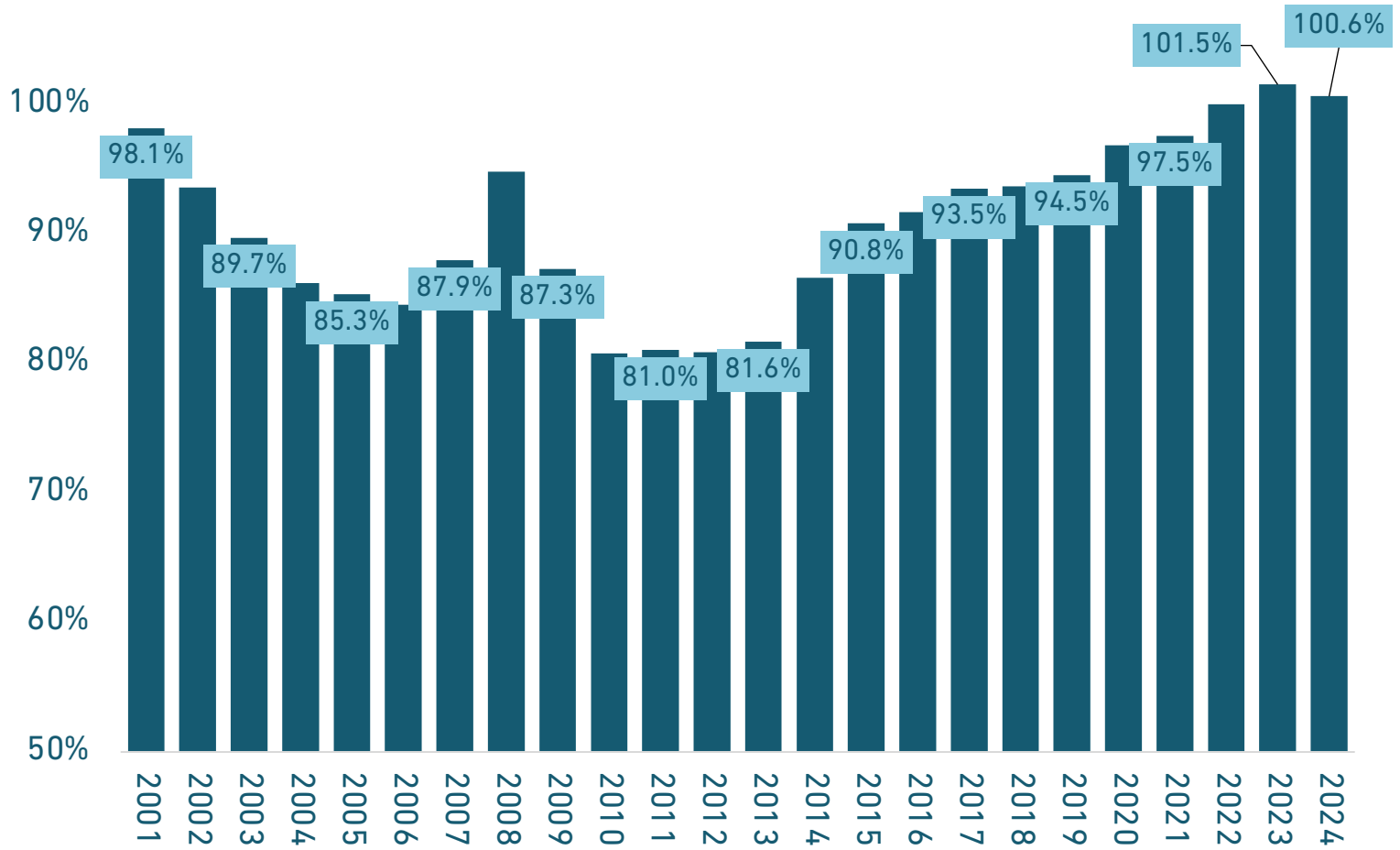
In recent years, states have paid all required contributions on average. In fact, supplemental contributions using budget surpluses have led to overpayment of required costs in fiscal years 2023 and 2024.

Actual Contributions (in billions)

Required Contributions (in billions)

Source: Equable Institute analysis of public plan valuation reports and ACFRs. "Required" based on GASB definitions for ARC and ADC. Plans that have not published their 2024 data were estimated based on reported contribution rates as a percentage of payroll and a roll-forward of payroll based on plan assumptions.

SHARE OF REQUIRED CONTRIBUTIONS PAID BY STATEWIDE PLANS | 2001–2024

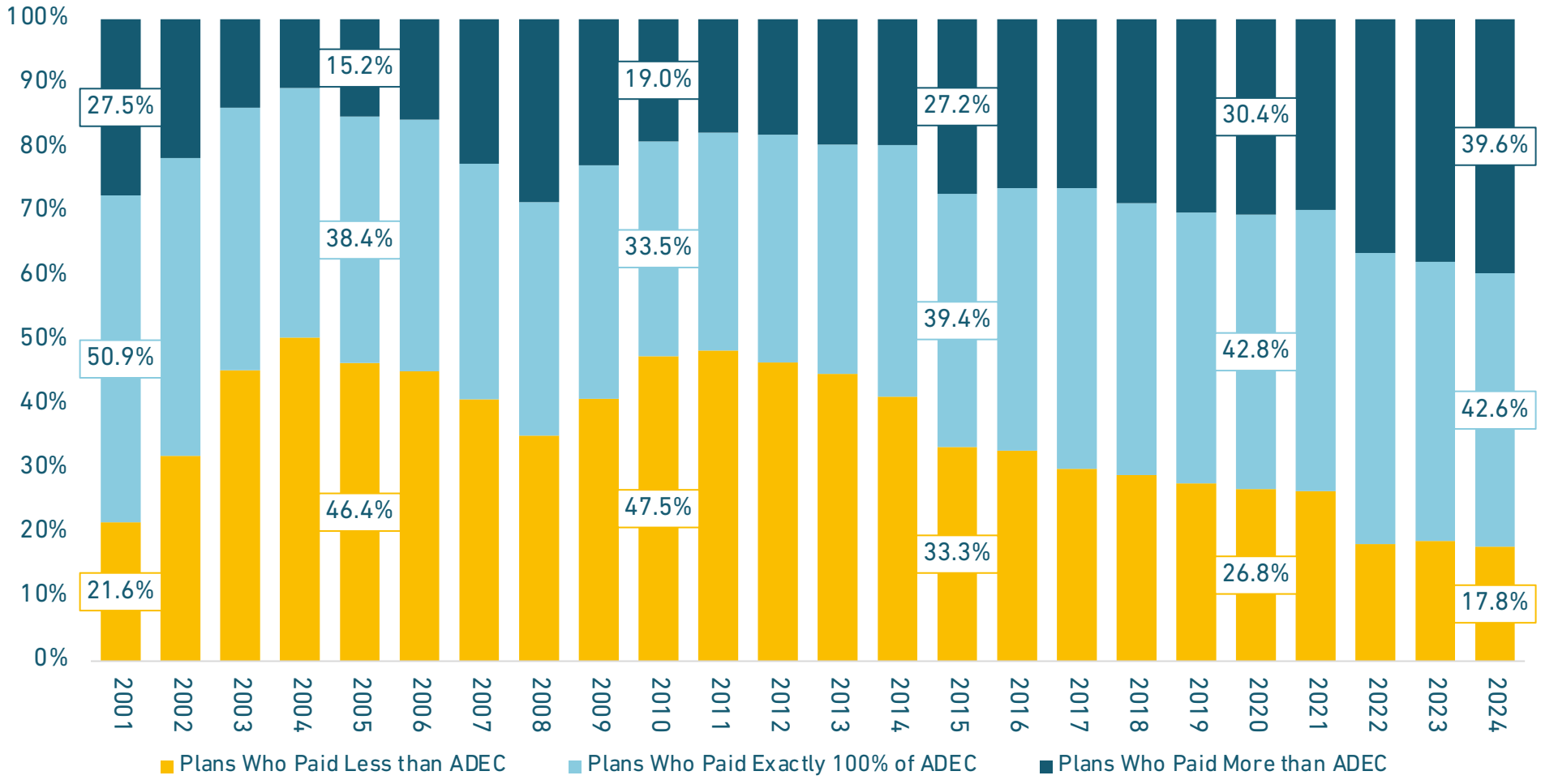


States have steadily improved their commitment to paying actuarially required contributions over the past several years after reaching a modern low point in 2012, following the Great Recession.

While a few states are still not paying 100% of required contributions, on net the country paid 100% in both 2023 and 2024 (due to supplemental payments in some states).

Source: Equable Institute analysis of public plan valuation reports and ACFRs. "Required" based on GASB definitions for ARC and ADC.

PERCENTAGE OF PLANS PAYING MORE OR LESS THAN ACTUARIALLY REQUIRED | 2001–2024



While the national average is over 100% of actuarially required contributions paid, this doesn't mean that every plan is paying 100% of the rate determined by actuaries. Some states or plans still pay less than required. However, increasingly, state and local plans are paying above their actuarially required rate — often with supplemental payments to get pension debt paid down faster.

Over the last decade the percentage of plans that pay above their required rate has been increasing, and the share that pay less than required is shrinking.

Source: Equable Institute analysis of public plan valuation reports and ACFRs. "Required" based on GASB definitions for ARC and ADC.

Analysis: What We See in the Contribution Trends

After decades of states failing to ensure they were paying at least the actuarially determined contribution rates, they now have a five-year stretch of paying at least 95% of their collective required contribution — including an estimated 100% paid in 2023 and 2024, among states that have reported data thus far (Page 54).

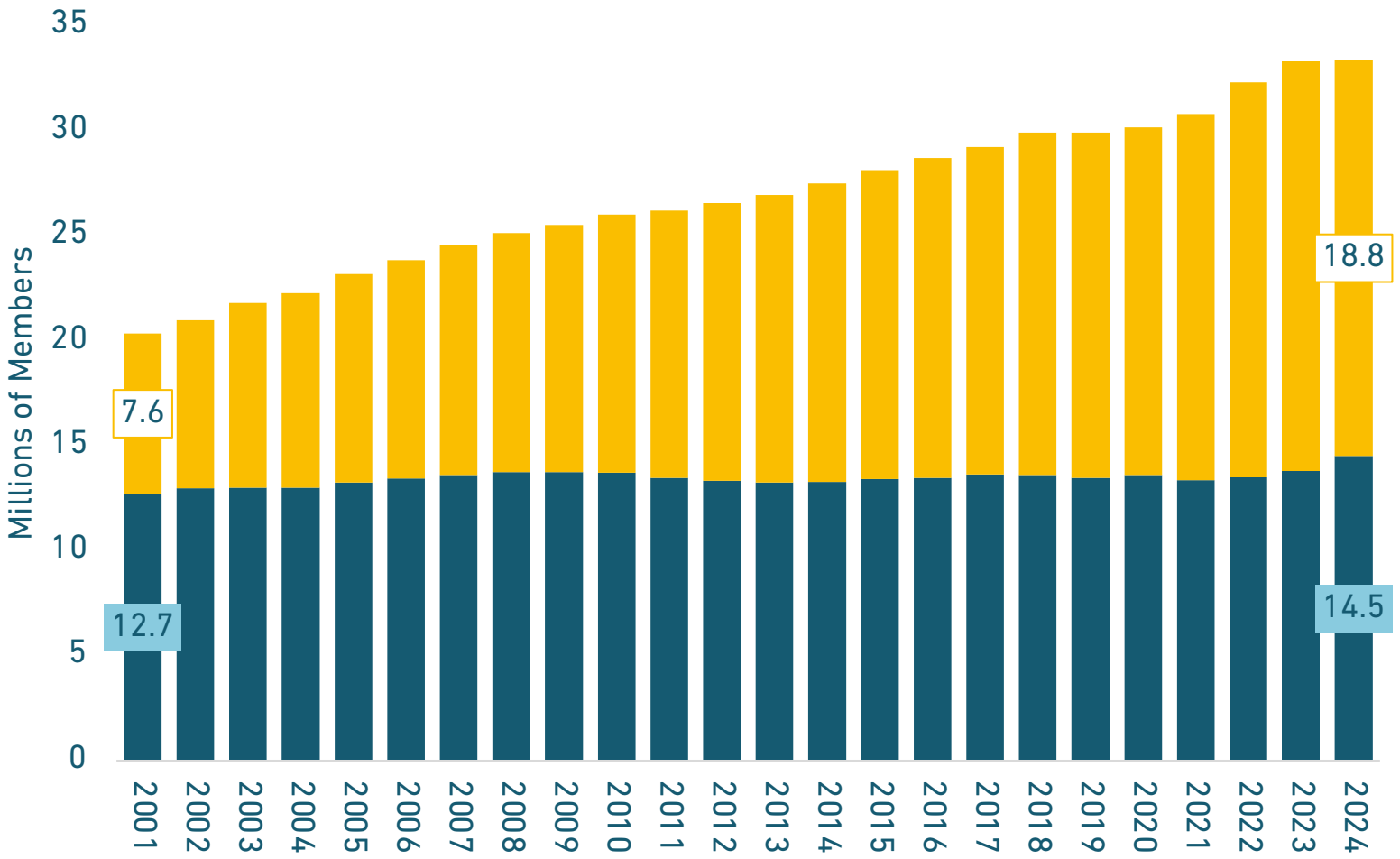
- **States have a historically inconsistent record with paying required contributions.** Even though pension funds are supposed to be pre-funded, many states did not get serious about trying to make such contributions until as late as the 1990s.
- **Contributions relative to requirements were particularly low in the years after the Great Recession.** Though the economy recovered, tax revenues took years to bounce back from their decline in 2008. Fortunately for state finances, federal fiscal stimulus in 2020 and early 2021 has helped prevent a similar economic catastrophe that might have led to similar underfunding behavior.
- **The year 2024 was the best on record for paying actuarially determined contributions**, even though there were still instances that did not have every plan paying their full actuarially determined contribution (e.g., Texas has a schedule in place that could result in making full required contributions as of fiscal year 2026).
- Notably, New Jersey made a full required contribution into its state pension funds starting with fiscal year 2022 and has continued the same trend for two more consecutive years.

Looking to the future: States on the cutting edge of pension plan management (e.g., MI, CO, NM) are focused on adopting risk-sharing policies that give pension boards tools to balance the goals of protecting benefits and ensuring a well-funded plan. The best-funded plans historically — South Dakota and Wisconsin — have benefited from risk-sharing tools built into their plans decades ago. More states would benefit from adopting similar policies now.

Within the Trends: Cash Flows & Maturing Plans

- Active Members-to-Retirees Ratio
- Benefit-to-Asset Ratio

RATIO OF ACTIVE MEMBERS TO RETIREES, A HISTORIC TREND | 2001–2024



The ratio of active workers to retirees provides a signal about cash flows into and out of pension funds.

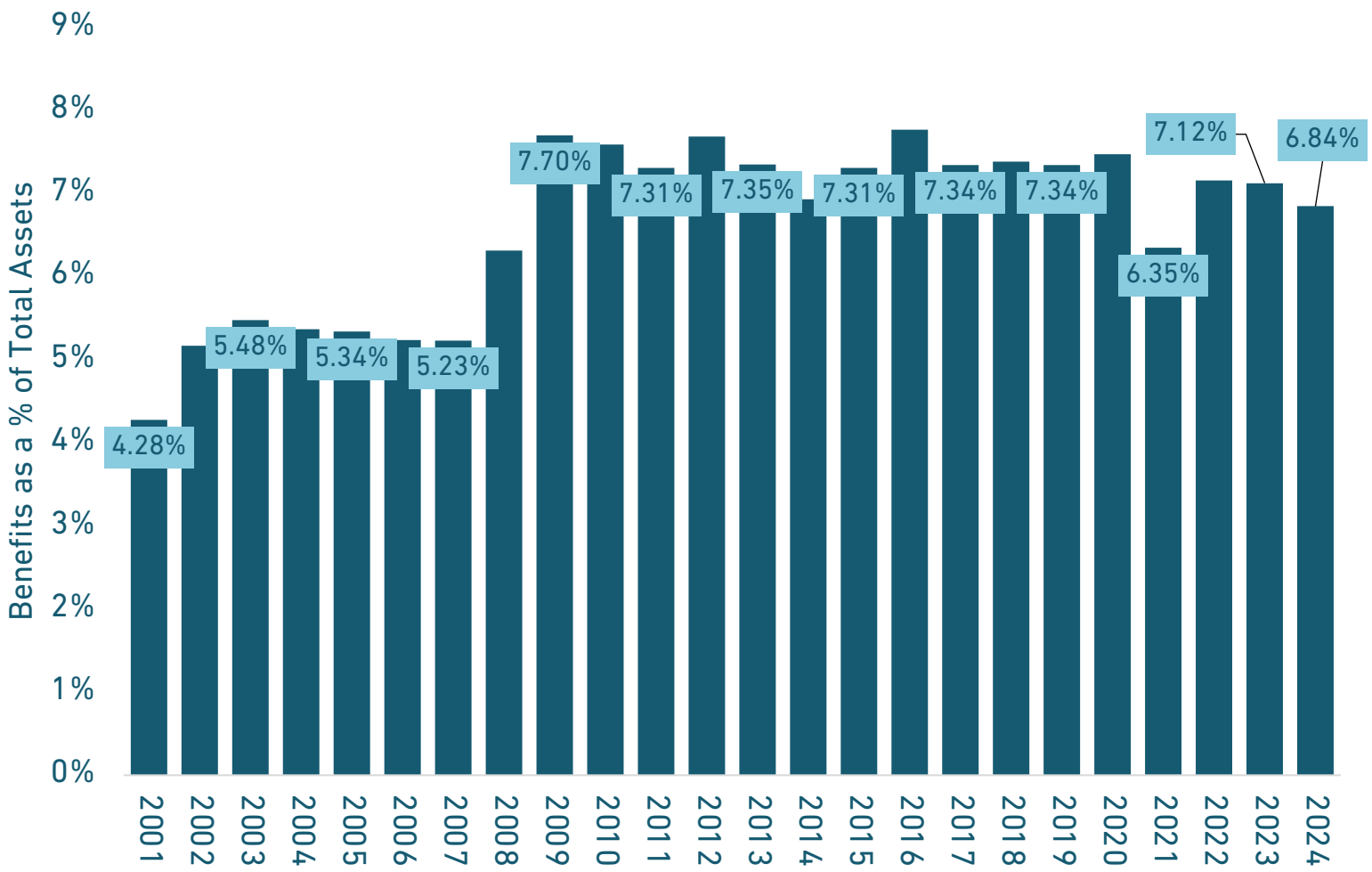
People are living longer and retiring faster (as the Baby Boomer generation phases out of the labor force). Public sector hiring rates slowed down after the Great Recession. The net result is active member counts have been relatively stable for the past few years, while the total number of retirees collecting benefits has grown.

Retired/Inactive

Active

Source: Equable Institute analysis of public plan valuation reports and ACFRs.

BENEFIT PAYMENTS
AS A SHARE OF ASSETS | 2001–2024



The benefit-to-asset ratio is a helpful metric for states and pension boards to monitor whether they are at risk of running into a liquidity crunch. The closer a pension plan is to a 1:1 ratio, the closer they are to running out of cash.

But beyond solvency, there is also an investment concern here: As more of the asset base is being used to pay benefits, there is less money that can be invested in long-term assets to earn returns.

Benefit : Asset Ratio	
1 : 23.4	*1 : 14.6*
2001	2024

Source: Equable Institute analysis of public plan valuation reports and ACFRs.

Analysis: What We See in the Cash Flow Trends

Public pension plans have increasing negative cash flows from benefit payments growing larger than contributions (Page 15). This is not inherently a problem so long as there is investment income to cover the difference, but that has not been consistent. And the available asset base to earn investments from is improving but is still at least a trillion dollars less than it should be (Page 8).

- It has now been 12 years since total retirees became greater than active members (Page 58). The growth in retirees is driving ever-increasing benefit payments. If plans were fully funded this wouldn't be a problem — but they are not.
- Benefit payments relative to assets are slightly below the ratios displayed throughout the 2010s (Page 59).
- As the Benefit-to-Asset measure of liquidity shifts toward 1:1, pension fund managers will find it increasingly harder to make investment decisions. There will simply be fewer assets that can be invested flexibly.

Looking to the future: It will be very difficult (in some cases impossible) for public plans to invest their way back to fiscal health. Contributions are being consumed by benefit payments, and pension funds are relying on investment returns to make up the balance (meaning less exponential investment growth). Each year investment returns underperform expectations it perpetuates a vicious cycle.

APPENDIX 1:
GLOSSARY & ADDITIONAL CHARTS

KEY TERMS TO KNOW

Liabilities

- *Accrued liability (AAL):* Total amount of promised pension benefits, counting up all expected pension checks for active members and retirees, and then reporting those in today's dollars.
- *Total pension liability (TPL):* A technical definition from the Governmental Accounting Standards Board for the value of promised benefits. All retirement systems that want to comply with GASB reporting requirements must measure their pension obligations in a particular way that sometimes can be slightly different from AAL.

Assets

- *Actuarial value of assets (AVA):* A "smoothed" value of assets, typically used for the purposes of determining contribution rates and measuring unfunded liabilities. Actuaries "smooth" any gains and losses of a particular number of years to minimize year-to-year changes in the value of the AVA. For example, actuaries typically smooth investment gains and losses over a five-year period, only recognizing 20% of the market valued return each year for the purposes of determining the AVA.
- *Market value of assets (MVA):* The actual fair market value of the plan's total assets, measured by the price that would be received to sell an asset in an orderly transaction.
- *Fiduciary net position:* A technical definition from the Governmental Accounting Standards Board for the market value of assets. All retirement systems that want to comply with GASB reporting requirements are required to measure the real value of their assets, instead of the actuarial value.

Pension Debt

- *Unfunded liabilities:* The difference between the value of promised benefits and assets available to pay those benefits. This is the shortfall in assets that should be in the pension fund and invested so that all promised benefits can be paid. An easy way to think about unfunded liabilities is as pension debt.
- *Net pension liability (NPL):* A technical definition from the Governmental Accounting Standards Board for pension funding shortfalls. All retirement systems that want to comply with GASB reporting requirements are required to measure their obligations as total pension liabilities, and their assets using a market value called fiduciary net position (FNP). The difference between these two accounting metrics is the net pension liability.
- *Pension debt:* A non-technical way to think about "unfunded liabilities," which is the difference between the value of promised benefits and the assets available to pay those benefits. Pension debt isn't like typical government debt. Money isn't borrowed and put into the pension fund. Instead, it is money the pension fund needs to make up for past contributions that weren't enough to appropriately pre-pay for benefits.

KEY TERMS TO KNOW

Contributions

- ***Actuarially determined contribution (ADC):*** Annual amount actuarially necessary to cover the normal cost and amortization payment (previously known as the "annual required contribution" or ARC payment).
- ***Actuarially determined employer contribution (ADEC):*** The value of the ADC after accounting for any employee contributions.
- ***Amortization payments:*** *C*ontributions necessary to pay down the unfunded liability shortfall over time. These can be stretched over varying periods of time and are based on an equal dollar-per-year basis or calculated as an equal percentage of payroll for each year of the amortization schedule.
- ***Funded ratio:*** The funded ratio measures the ratio of dollars in the pension fund compared to the value of promised lifetime income benefits.

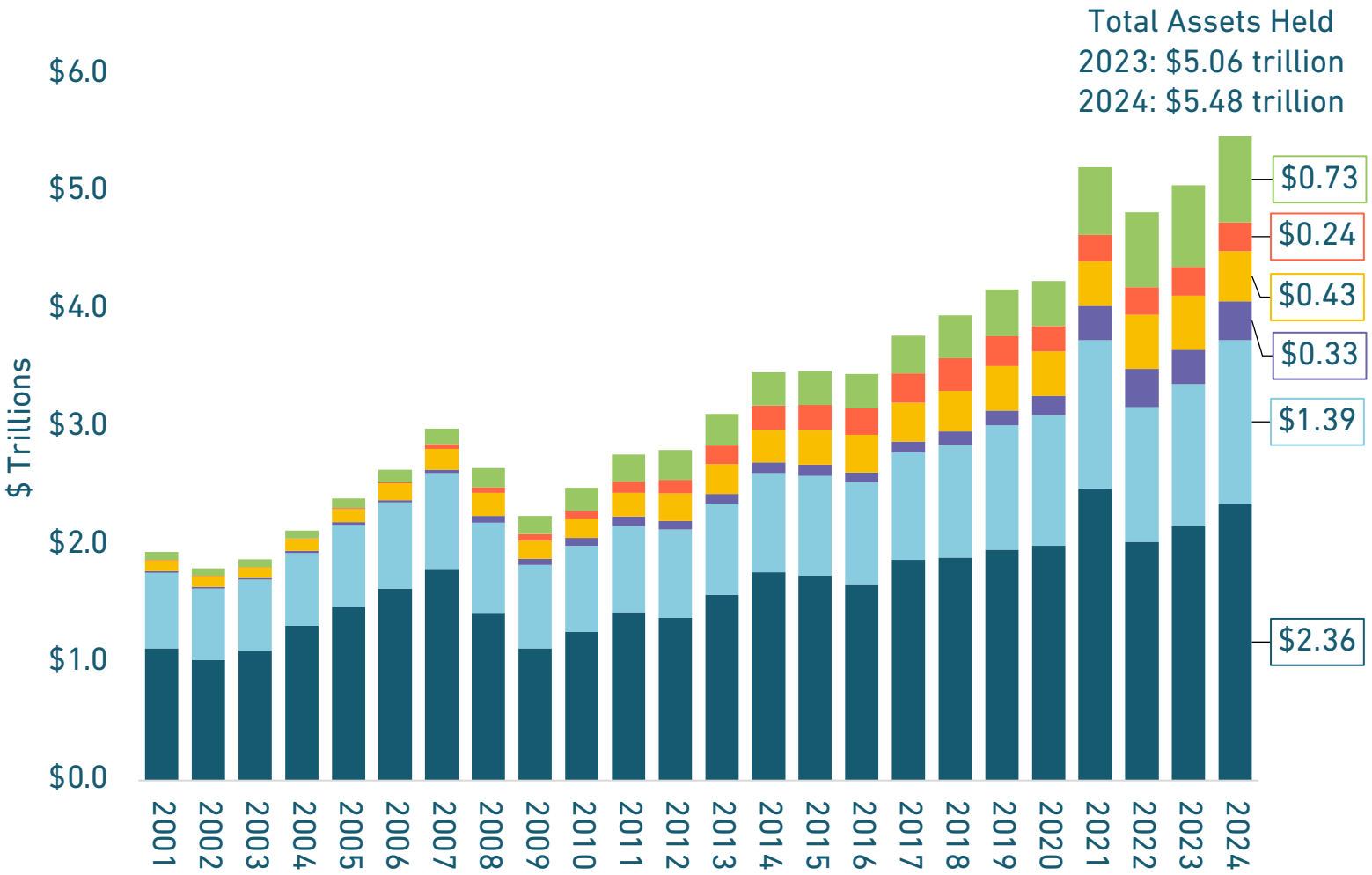
Assumptions

- ***Actuarial assumptions:*** Estimates used to forecast uncertain future events affecting future benefits or costs associated with a pension fund. Examples of these assumptions include investment rate of return, inflation, payroll growth, mortality, retirement patterns, and other demographic data.
- ***Assumed rate of return (ARR):*** The investment return on assets that the pension fund expects to earn over the long-term.
- ***Expected rate of return:*** This term is often used interchangeably with "assumed rate of return." Technically, the expected rate of return refers to the middle of the possible investment returns for a given pension fund's portfolio. Investment advisors forecast what the probability is for different rates of return based on a given portfolio (such as the mix of stocks and bonds). The 50th percentile — or 50% probability — in that forecast is formally known as the expected rate of return. Pension board trustees do not always choose the expected rate of return as the assumed rate of return, but they do use it as a guidepost.
- ***Payroll:*** The total amount paid to employees participating in a retirement system. The costs and contribution rates of a pension plan are often expressed as a percentage of the total plan payroll.

Benefits

- ***Cost-of-living adjustment (COLA):*** An annual change to a pension benefit for retirees, usually pegged to some measure of the rate of inflation.
- ***Defined benefit plan:*** A retirement plan that determines benefits by a formula in advance of retirement. This term is often used to refer to pensions, but technically it can refer to a range of retirement plan designs.
- ***Normal cost:*** The contribution necessary to pay for benefits earned each year. This amount gets invested, and the combined total is intended to pay all promised benefits. The normal cost "pre-funds" or "pays in advance" for promised pension benefits.
- ***Pension plan:*** A guaranteed income plan that provides a fixed, guaranteed monthly income based on two factors: (1) years worked; and (2) average salary during final working years. The years worked are usually multiplied by an accrual rate as a component of the benefit.

DOLLAR DISTRIBUTION OF PENSION FUND INVESTMENTS | BY ASSET CLASS, 2001–2024

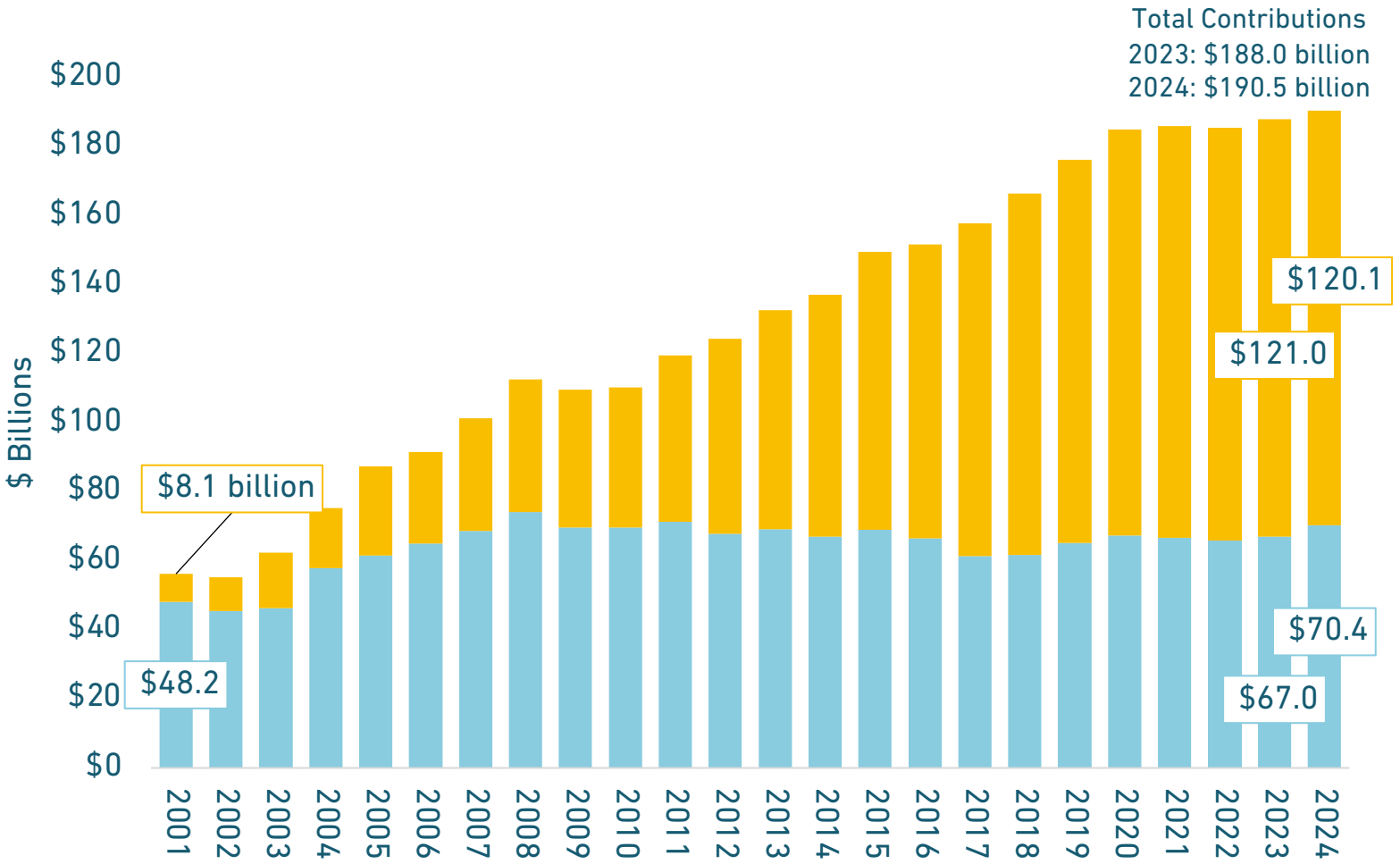


Dollar expansion to alternatives has grown from $418.6 billion in 2009 to $1.73 trillion in 2024. The largest component of that is private capital, now accounting for a reported $731.88 billion of public pension plan assets.

- Private Capital Investments (Equity & Debt)
- Hedge Fund Strategies
- Real Estate (Property & REITs)
- Miscellaneous Alternatives
- Fixed Income & Cash Holdings
- Public Equities (U.S. & Global)

Source: Equable Institute analysis of public plan valuation reports and ACFRs. Data for 2024 are incomplete pending the release of investment data from late-reporting systems.
Note: "Alternative" investments include private capital, hedge funds, real estate, commodities, and tactical asset allocations.

NC v. UAL: ACTUAL EMPLOYER CONTRIBUTIONS, INFLATION-ADJUSTED | 2001–2024



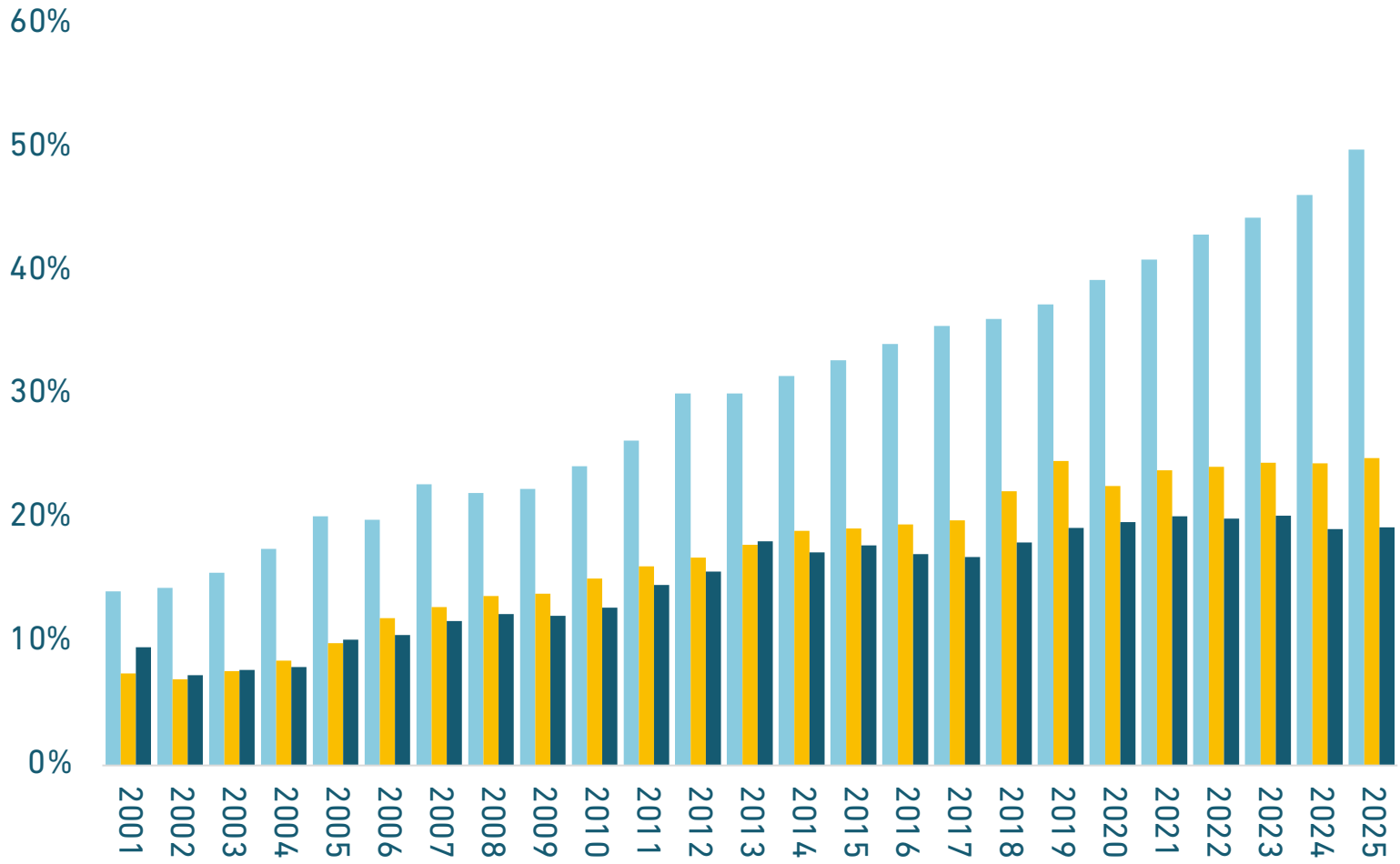
On an inflation-adjusted basis, there has been a slow increase in normal costs (due to lower discount rates), while unfunded liability amortization payments have increased from $8.1 billion in 2001 to $120.1 billion in 2024.

Unfunded Liability Amortization Payments

Normal Cost

Source: Equable Institute analysis of public plan valuation reports and ACFRs. "Required" based on GASB definitions for ARC and ADC.

AVERAGE STATE PLAN EMPLOYER CONTRIBUTIONS BY SOCIAL SECURITY PARTICIPATION | 2001–2025



The total employer contribution rates for state and local pension plans vary depending on the degree to which those employers participate in Social Security.

However, the overall trend of increases of employer contributions has been consistent across all three kinds of participation levels.

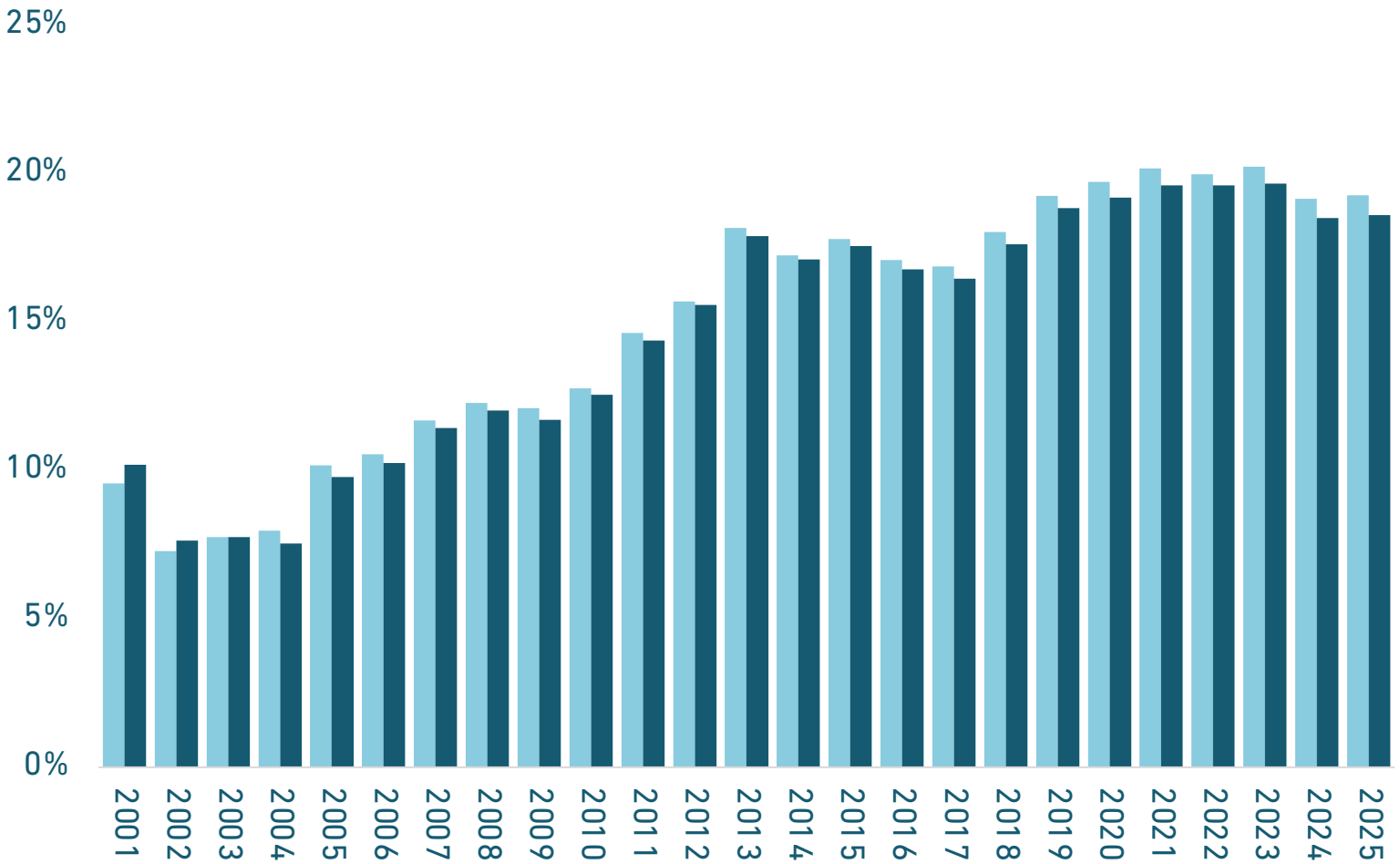
For Plans Not Participating in Social Security

For Plans Participating in Social Security

For Plans with Mixed Social Security Participation

Source: Equable Institute analysis of public plan valuation reports and ACFRs. Contribution rates show for the year actually paid.

AVERAGE STATE PLAN EMPLOYER CONTRIBUTIONS FOR MIXED SOCIAL SECURITY PARTICIPATION | 2001–2025



Unlike member contribution rates, there is a similar average employer contribution rate trendline for state and local pension plans with mixed participation in Social Security (SSA).

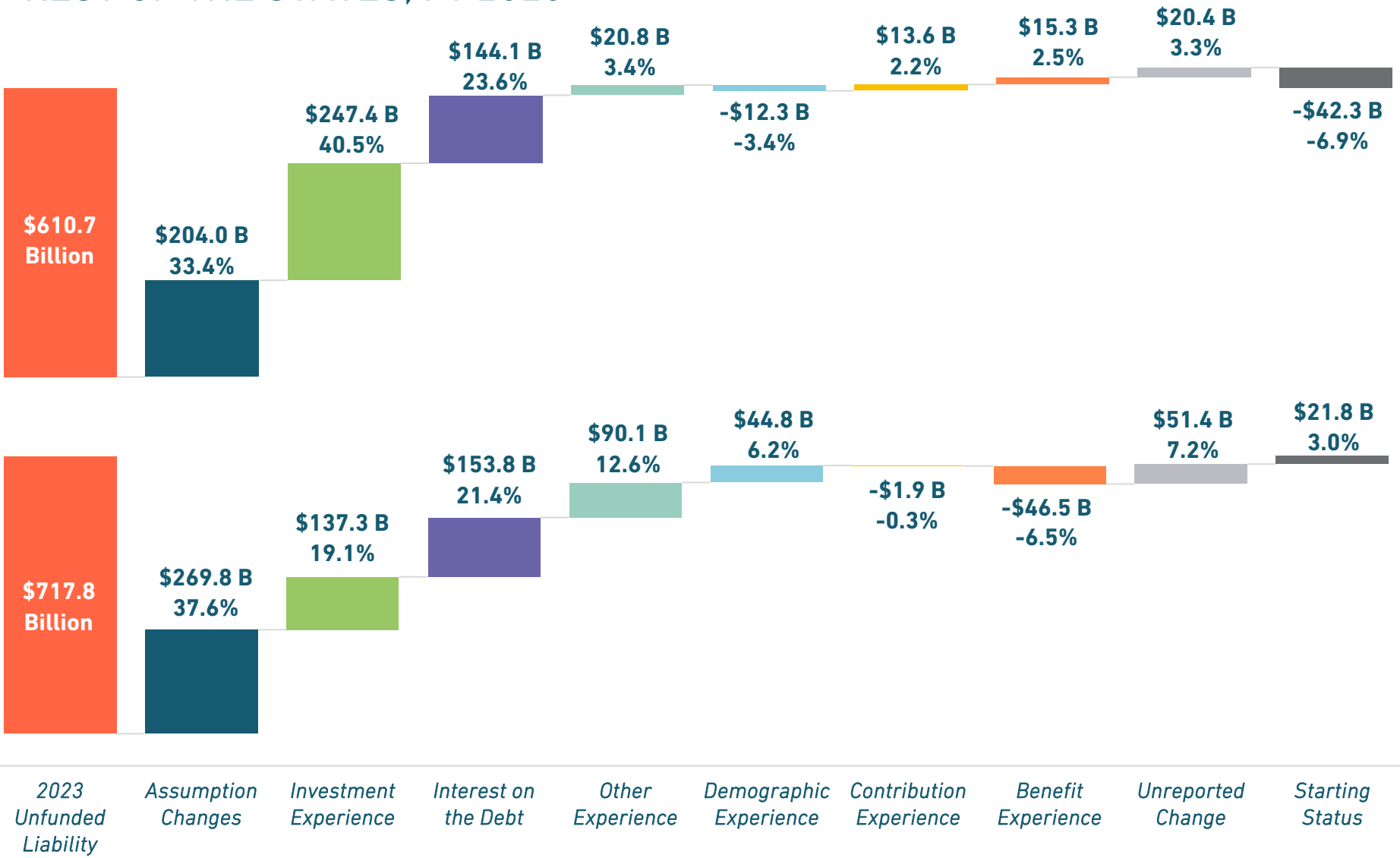
Like member contributions, the absolute average does increase slightly when adding CalPERS costs into the average.

For Plans With Mixed SSA, Including CalPERS

For Plans With Mixed SSA, Without CalPERS

Source: Equable Institute analysis of public plan valuation reports and ACFRs. Contribution rates show for the year actually paid. | ***Note:*** In these cases the pension benefit levels tend to be the same across all plans, so the contributions into the retirement system for members (and employers) are also the same even if Social Security taxes are collected at the same time.

CAUSES OF UNFUNDED LIABILITIES FOR FIVE LARGEST PENSION DEBT STATES COMPARED TO THE REST OF THE STATES, FY 2023



Top 5 States Measured by Unfunded Liabilities in 2023: California, Illinois, New Jersey, Pennsylvania, and Texas

All Other States and the District of Columbia

Source: Equable Institute analysis of actuarial gain/loss data in public plan valuation reports and methodology from Fuchsman, Hengerer, Moody, and Randazzo (2024). ***Note:*** Data is based on actuarial valued assets (AVA), as this is the basis for gain/loss data. For any given year the AVA based data varies slightly from market valued data that is otherwise used in this report.

Comparing Equable's 2024 Forecast Against 2024 Actual Experience

Pension funds use assumptions about the future to determine contribution rates and then are reviewed relative to those forecasts and predictions. Equable measures itself on a similar standard. Each year we review the projections we made in previous reports and measure them against actual experience.

- In July 2024, we used projected asset class benchmarks as of June 30 to estimate that the FYE 2024 average investment return for state and local retirement systems would be 7.4%. Using a mix of benchmark projections and preliminary reports that were released in the third quarter of 2024, we updated this estimate to a 10.3% average return in a January 2025 update to the 2024 State of Pensions.
  - The actual average return for FYE 2024 reported by state and local plans was 9.70%, using data published as of June 30, 2025.*
- We estimated a 80.6% market valued funded ratio among state and local plans ($1.34 trillion in unfunded liabilities), as of June 30, 2024.
  - The actual FYE 2024 funded ratio is 78.3%, among plans that have reported actual data.
  - Once the small number of plans who have outstanding 2024 actuarial valuations publish their reports, we anticipate the actual FYE 2024 unfunded liability number will be $1.51 trillion.*
- The primary drivers between our 2024 estimates and the actual funded status performance for 2024 were:
  - Stronger investment returns in the second half of the 2024 calendar year, which drove higher fiscal year returns for plans whose fiscal year ended in September through December compared to those whose fiscal year ended in June.
  - Liabilities growing larger than expected, leading to lower funded status than anticipated despite lower than projected assets. Factors that could have contributed to this could include increased retirements relative to actuarial assumptions, COLAs authorized higher than actuarially assumed, or other demographic experience varying from assumptions.

** There are still a handful of retirement systems that have yet to release actual figures for the fiscal year ending 2024. As of this publication, full actual FY 2024 data have been reported for approximately 84.5% of total pension liabilities in our data set. The "actual average return" figure above only includes these plans with reported data. The estimated funded status data points above include our 2024 estimates for plans that have not yet released actual data for 2024.*

APPENDIX 2: METHODOLOGICAL NOTES

WHO ARE WE COUNTING?

- For our analyses we focus on statewide and municipally-managed retirement systems and the various defined benefit plans within those systems. Eligible plans hold at least $1 billion in accrued liabilities.
- For certain retirement systems we separate their respective plans (e.g., Colorado PERA is split into four plans) and count each separately as they have independently measured and reported assets, liabilities, contribution rates, and other data.
- Numerous states have hybrid systems (e.g., Michigan, Pennsylvania, and Tennessee) that include both defined benefit and defined contribution portions. For those plans, we include the defined benefit portions in our data and analyses.
- We treat guaranteed return/cash balance plans in the same fashion as hybrid plans. We report defined benefit totals as they are presented in plan actuarial valuations and comprehensive annual financial reports.
- The result of this approach is a population of 175 statewide retirement plans and 78 municipally-managed retirement plans across the 50 states and Washington, D.C. In total, this results in 253 plans that provide benefits for both state and local public employees being included in our analyses. (Our data collection includes additional plans — Birmingham Police and Fire, Birmingham RRS, Georgia PSERS, Memphis RS, Nashville-Davidson ERS, New Castle County RS, Omaha Police & Fire, Omaha Employees, Portland FDPR, Richmond RS, and Utah Governors and Legislators Retirement System — however, these have been excluded from this analysis due to extremely limited public data availability which prevent us from estimating their funded levels and other important information.)
- A full list of included plans is available on Pages 78 to 82.

WHAT YEARS ARE WE MEASURING?

- Our analyses focus on the years 2001 through 2024 (for reported data) and 2025 for our projections.
- We use reported figures for fiscal year ending 2024 for all plans that have published their actuarial valuation reports or annual reports for that year. For all plans that do not yet report those values, we either roll them forward using the reported assumptions of the retirement system (e.g., payroll growth) or simply carry forward their reported values for FYE 2023 when a roll-forward is not possible.
- We will update this report later this year when all FYE 2024 data have been reported.
- We have also published a table online with each plan, the measurement date, the topline funding numbers, assumed returns, and other metrics used in our analyses. That table can be accessed here.

DATA SOURCES

- Our primary source for state plan data between 2001 and 2024 is the actuarial valuation published by the retirement system.
- For pension finance data not available in the valuation, we also use the system's ACFR and separately published GASB 67 statements.
- State GDP data are compiled from both the Bureau of Economic Analysis and Federal Reserve.
- State budget data are drawn from the National Association of Budget Officers' annual State Expenditure Report.
- Interest rate data and pre-2001 pension finance data are drawn from the Federal Reserve.
- Cost-of-living adjustment data are gathered from a range of sources, including public retirement system websites, public reports (ACFRs, valuation reports, etc.), and members communications (such as newsletters or other published materials).

HOW WE PRODUCED OUR 2025 FUNDED RATIO ESTIMATE

- We collected asset allocation data for each plan using their most recent published report, usually in the ACFR but occasionally via an investment report on the plan's website. We broke these data into the following categories: U.S. Equities, Global Equities, U.S. Fixed Income, Global Fixed Income, Private Capital, Hedge Funds, Real Estate, Commodities, and Cash.

- We collected actual returns for benchmarks for these categories and applied those benchmarks to each plan's allocation to get an approximate estimated return.

- This methodology has some clear disadvantages: It does not account for the actual strategies employed by each fund — for instance, the actual equity allocation may differ significantly from broad market metrics, and it does not account for special leverage or hedges that might aid or harm a fund's overall performance. However, as a tool for approximating a return, our methodology has the advantage of working with many plans. For some we will overestimate and others underestimate.

- We rolled forward each plan's liabilities using their TPL (or AAL if the TPL was not available) as the base. We rolled forward each plan's assets using their FNP (or MVA if the FNP was not available) and the approximate return generated by the above methodology. Back tests of these methodologies were with a reasonable range of actual figures on a one- and two-year roll-forward basis.

- We used these approximate figures for assets and liabilities to estimate 2025 unfunded liability and funded ratio levels.

- For plans with fiscal years ending later than June 2025, we only rolled their assets and liabilities forward as far as June 30, 2025. Their actual asset performance during the rest of their fiscal year may vary considerably based on market trends and could cause the final funded ratio figure for the full fiscal year ending 2025 to vary from our current estimate.

FACTORS DRIVING OUR ANALYSIS

Funded status matters because it reflects both the solvency of a pension fund and the underlying costs of providing the benefit.	There is no inherent reason that a pension fund needs to be exactly 100% funded every year. The funded level of a plan will fluctuate over time. However, if a pension fund remains at 70% or 80% funded perpetually, the costs of funding benefits will grow. A plan that is consistently below 100% funded for more than two to three years will have consistent unfunded liabilities. The costs of carrying unfunded liabilities for a long period of time can grow exponentially. While a pension fund that is 80% funded for 10 years in a row is at no risk of near-term insolvency, their unfunded liability amortization payments could very well double in that time frame, making the costs of providing the same benefit higher than necessary over the long term.
Reported funded ratio and unfunded liability numbers are only as good as the underlying assumptions.	Funded ratios and unfunded liability numbers depend on accurately measuring the value of promised liabilities and assets. This means the reported funded status is dependent on accurate assumptions like mortality rates used to measure promised benefits and valuation methods used to measure assets. There is an academic debate about whether pension plans should use the assumed rate of return on assets as the discount rate for liabilities. There is a separate debate about whether the assumed rates of return used by plans (current median is 7%) is too high. Moody's Analytics uses an alternative process for measuring liabilities from most actuaries and winds up with a discount rate usually 5% or less. Actuarial firm Milliman measures liabilities using an assumed rate of return (6.6%) that is much lower than the national average.
The most significant problem for pension fund investments currently is low interest rates.	Interest rates are an important trendline for retirement systems because they reflect the kind of financial market that pension funds are investing in. If interest rates are low, it makes it harder to earn higher returns from relatively safe, fixed income investments like bonds. Since the Great Recession, low interest rates have caused pension funds to shift their assets into higher risk categories to try and earn high returns.
The most important actuarial assumption for public pension Resilience is the assumed rate of return.	The assumed rate of return is used to help determine what the level of contributions is each year. The assumed rate of return is the annual target for a pension fund. Just earning a return greater than 0% is not good enough. If a state plan is assuming 7.25%, then anything less than that will add unfunded liabilities.
Ensuring the actuarially determined contribution rate is fully paid each year is the minimum states can do if their goal is to ensure resilient, sustainable retirement systems.	There are reasonable debates to be had over public policy priorities for any given state or municipality, including over-allocation of resources to various policy goals and what tax rates are appropriate or not. Whether states should use resources to pre-fund retirement benefits is often a part of these debates. While state and local leaders might have acceptable arguments for a choice that trades off fully funding a pension plan, if a state has the goal of maintaining a sustainable retirement system, then the bare minimum requirement each year is paying at least 100% of the ADC.
Actuarially determined contribution rates are only as sound as the underlying assumptions used to calculate them.	Actuarially determined contribution rates are based on numerous actuarial assumptions (i.e., investment returns, mortality, payroll growth, etc.) that factor into measuring liabilities. In addition, pension boards can set amortization policies that target 100% funding over an excessive period of time (more than 25 years), or in some cases target less than full funding in the first place. As a result, a number of states pay their full ADC every year but still have mounting unfunded liabilities. Just paying the actuarially required rate each year is not enough on its own to ensure full funding in the long term. If the assumptions and funding policies are flawed, then the ADC alone cannot put a pension plan on the path to full funding.
Simply hiring more people would improve near-term cash flows, but it would also mean faster growth of promised benefits which is already outpacing assets.	A frequently proposed solution to cash flow problems is hiring more people because this will mean more contributions. However, this also means more promised benefits. The existing challenge for statewide pension plans is that promised benefits are outpacing the growth of assets (Page 8). So, hiring more people could exacerbate the long-term problem. The additional "contributions" that come from hiring more workers are all coming from government resources in the first place — member contributions are from their paychecks; employer contributions are from taxpayer resources. If there is money available to hire more workers, then those funds, including the amounts for paychecks, in theory could be used to pay down existing funding shortfalls without taking on the additional liabilities that come from hiring more members. This is not to say governments should not hire more people — there are plenty of public policy reasons why that might or might not be appropriate for any given state at any given time. This is to say that hiring more people is not a solution to the cash flow problem.
If public plans were fully funded, the active-to-retiree and benefit-to-asset ratios would not be a concern.	Pensions are supposed to be "pre-funded" with contributions plus investment earnings. The benefits earned each year are supposed to be matched by contributions that will be sufficient to pay those benefits, assuming: (1) the value of the benefits was calculated correctly; and (2) the contributions earn assumed investment earnings. This means that new members and their contributions should not be necessary to pay retiree benefits. In practice, there isn't a problem with a pension fund paying out all its assets if there is enough to meet all promises. If a fully funded pension plan were to stop adding new members, it could be gradually wound down over time without fear of running out of money, because it was appropriately pre-funded. Each passing year the ratio of retirees to active members would grow and the benefit-to-asset ratio would shift toward 1:1 or worse, but that would be expected and not a problem.

APPENDIX 3: STATEWIDE AND MUNICIPAL RETIREMENT SYSTEMS IN OUR DATASET

RETIREMENT SYSTEMS IN OUR DATASET (Alabama ERS – Chicago Firemen)

Retirement System Full Name	Pension Plan Shorthand
Retirement Systems of Alabama	Alabama ERS
Retirement Systems of Alabama	Alabama TRS
Alameda County Employees' Retirement Association	Alameda County ERS
Alaska Public Employees' Retirement System	Alaska PERS
Alaska Teachers' Retirement System	Alaska TRS
Arizona Corrections Officers Retirement Plan	Arizona CORP
Arizona Corrections Officers Retirement Plan	Arizona CORP Tier 3
Arizona Elected Officials Retirement Plan	Arizona EORP
Arizona Public Safety Personnel Retirement System	Arizona PSPRS
Arizona Public Safety Personnel Retirement System	Arizona PSPRS Tier 3
Arizona State Retirement System	Arizona SRS
Arkansas State Highway Employees Retirement System	Arkansas DOT
Arkansas Local Police and Fire Retirement System	Arkansas Local P&F
Arkansas Public Employees Retirement System	Arkansas PERS
Arkansas Teacher Retirement System	Arkansas TRS
Atlanta General Employees' Pension Fund	Atlanta ERS
Atlanta Fireman's Pension Fund	Atlanta Fire
Atlanta Police Officers' Pension Fund	Atlanta Police
City of Austin Employees' Retirement System	Austin ERS
Austin Firefighters Relief and Retirement Fund	Austin FRS
Austin Police Retirement System	Austin Police
Baltimore Fire and Police Employees' Retirement System	Baltimore Fire and Police
Baton Rouge City Parish Employees' Retirement System	Baton Rouge City Parish RS
Boston Retirement System	Boston Employees
Boston Retirement System	Boston Teachers
California Public Employees Retirement Systems	California JRF
California Public Employees Retirement Systems	California JRF II
University of California Retirement System	California URS
California Public Employees Retirement Systems	CalPERS
California State Teachers' Retirement System	CalSTRS
Firemen's Annuity and Benefit Fund of Chicago	Chicago Firemen
Laborers' & Retirement Board and Employees' Annuity and Benefit Fund of Chicago	Chicago Laborers
Chicago Municipal Employees' Annuity Benefit Fund	Chicago Municipal
Park Employees' Annuity and Benefit Fund of Chicago	Chicago Parks
Chicago Policemen's Annuity Benefit Fund	Chicago Police
Public School Teachers' Pension and Retirement Fund of Chicago	Chicago Teachers
Retirement Plan for Chicago Transit Authority Employees	Chicago Transit
Chicago Metropolitan Water Reclamation District Retirement Fund	Chicago Water
Cincinnati Employees' Retirement System	Cincinnati ERS
Colorado Public Employees Retirement Association	Colorado DPS
Colorado Public Employees Retirement Association	Colorado Judges
Colorado Public Employees Retirement Association	Colorado Local
Colorado Fire and Police Pension Association	Colorado P&F
Colorado Public Employees Retirement Association	Colorado Schools
Colorado Public Employees Retirement Association	Colorado State
Connecticut Municipal Employees Retirement System	Connecticut MERS
Connecticut State Employees Retirement System	Connecticut SERS
Connecticut State Teachers' Retirement System	Connecticut STRS
Contra Costa County Employees' Retirement Association	Contra Costa County
Cook County Employees' Annuity Benefit Fund	Cook County ERS
District of Columbia Retirement Board	D.C. POFRP
District of Columbia Retirement Board	D.C. TRP
Employees' Retirement Fund of the City of Dallas	Dallas ERS
Dallas Police and Firefighters Retirement System	Dallas PFRS
Delaware State Employees' Pension Plan	Delaware Muni
Delaware State Employees' Pension Plan	Delaware Muni P&F
Delaware State Employees' Pension Plan	Delaware SEPP
Denver Employees Retirement System	Denver ERS
Retirement System of the City of Detroit	Detroit General RS 1
Retirement System of the City of Detroit	Detroit General RS 2
Retirement System of the City of Detroit	Detroit PFRS 1
Firemen's Annuity and Benefit Fund of Chicago	Chicago Firemen

RETIREMENT SYSTEMS IN OUR DATASET (Detroit PFRS 2 – Maryland ECS)

Retirement System Full Name	Pension Plan Shorthand
Retirement System of the City of Detroit	Detroit PFRS 2
Fairfax County Employees' Retirement System	Fairfax County ERS
Educational Employees' Supplementary Retirement System of Fairfax County	Fairfax County Schools
Florida Retirement System	Florida RS
Georgia Employees' Retirement System	Georgia ERS
Georgia Teachers Retirement System	Georgia TRS
Hartford Municipal Employees' Retirement Fund	Hartford MERF
Employees' Retirement System of the State of Hawaii	Hawaii ERS
Houston Municipal Employees Pension System	Houston MEPS
Houston Firefighters Relief and Retirement Fund	Houston PFRS
Houston Police Officers' Pension System	Houston Police
Public Employee Retirement System of Idaho	Idaho PERS
Judges' Retirement System of Illinois	Illinois JRS
Illinois Municipal Retirement Fund	Illinois MRF
Illinois State Employees Retirement System	Illinois SERS
Illinois State University Retirement System	Illinois SURS
Illinois State Teachers' Retirement System	Illinois TRS
Indiana Public Retirement System	Indiana 1977 P&F
Indiana Public Retirement System	Indiana PERF
Indiana Public Retirement System	Indiana TRF 1996
Indiana Public Retirement System	Indiana TRF Pre-96
Iowa Municipal Fire and Police Retirement System	Iowa MFPRS
Iowa Public Employees' Retirement System	Iowa PERS
Jacksonville General Employees Retirement Plan	Jacksonville ERS
Jacksonville Police and Fire Retirement Plan	Jacksonville P&F
Civilian Employees' Retirement System of the Police of Kansas City, Missouri	Kansas City Missouri Civilian Police
Kansas City Missouri Employees' Retirement System	Kansas City Missouri ERS
City of Kansas City Missouri Firefighters' Pension System	Kansas City Missouri Fire
Police Retirement System of Kansas City, Missouri	Kansas City Missouri Police
Kansas City Missouri Public School Retirement System	Kansas City Missouri Schools
Kansas Public Employees' Retirement System	Kansas JRS
Kansas Public Employees' Retirement System	Kansas PERS-L
Kansas Public Employees' Retirement System	Kansas PERS-S
Kansas Public Employees' Retirement System	Kansas PERS-T
Kansas Public Employees' Retirement System	Kansas PF
Kentucky Retirement System	Kentucky CERS H
Kentucky Retirement System	Kentucky CERS NH
Kentucky Retirement System	Kentucky ERS H
Kentucky Retirement System	Kentucky ERS NH
Kentucky State Police Retirement System	Kentucky SPRS
Kentucky Teachers' Retirement System	Kentucky TRS
Kern County Employees' Retirement Association	Kern County ERS
Los Angeles County Employees Retirement Association	LA County ERS
City of Lincoln Police and Fire Pension Fund	Lincoln P&F
Los Angeles City Employees' Retirement System	Los Angeles ERS
Los Angeles City Fire and Police Pension System	Los Angeles Fire and Police
Los Angeles Water and Power Employees' Retirement Plan	Los Angeles Water and Power
Firefighters Retirement System of Louisiana	Louisiana FRS
Louisiana State Employees' Retirement System	Louisiana LASERS
Louisiana Municipal Employees Retirement System	Louisiana MERS A
Louisiana Municipal Employees Retirement System	Louisiana MERS B
Louisiana Municipal Police Employees Retirement System	Louisiana MPERS
Louisiana State Parochial Employees Retirement System	Louisiana SPERS A
Louisiana State Parochial Employees Retirement System	Louisiana SPERS B
Louisiana State Police Retirement System	Louisiana SPRS
Louisiana School Employees' Retirement System	Louisiana SRS
Louisiana Teachers' Retirement System	Louisiana TRS
Maine Public Employees Retirement System	Maine CPPLD
Maine Public Employees Retirement System	Maine SETP
Marin County Employees Retirement Association	Marin County ERS
Maryland State Retirement and Pension System	Maryland ECS

RETIREMENT SYSTEMS IN OUR DATASET (Maryland TCS – Oklahoma LERS)

Retirement System Full Name	Pension Plan Shorthand
Maryland State Retirement and Pension System	Maryland TCS
Massachusetts State Employees' Retirement System	Massachusetts SERS
Massachusetts Teachers' Retirement System	Massachusetts TRS
Miami Firefighters' and Police Officers' Retirement Trust	Miami Fire and Police
City of Miami General Employees' and Sanitation Employees' Retirement Trust	Miami GESE
Michigan Municipal Employees' Retirement System	Michigan MERS
Michigan Public School Employees' Retirement System	Michigan PSERS
Michigan Public School Employees' Retirement System	Michigan PSERS PPP
Michigan Public School Employees' Retirement System	Michigan PSERS PPP2
Michigan State Employees' Retirement System	Michigan SERS
Michigan State Police Retirement System	Michigan SPRS
Milwaukee City Employees' Retirement System	Milwaukee City ERS
Milwaukee County Employees' Retirement System	Milwaukee County ERS
Minnesota Public Employees Retirement Association	Minnesota GERF
Minnesota Public Employees Retirement Association	Minnesota LCEP
Minnesota Public Employees Retirement Association	Minnesota PEPFP
Minnesota State Employees Retirement System	Minnesota SCEP
Minnesota State Employees Retirement System	Minnesota SERF
Minnesota State Employees Retirement System	Minnesota SPRS
Minnesota Teachers Retirement Association	Minnesota TRA
Public Employees' Retirement System of Mississippi	Mississippi PERS
Missouri Department of Transportation and Highway Patrol Employees' Retirement System	Missouri DOT
Missouri Local Government Employees Retirement System	Missouri LGERS
Missouri PSRS/PEERS Combined System	Missouri PEERS
Missouri PSRS/PEERS Combined System	Missouri PSRS
Missouri State Employees' Retirement System	Missouri SERS
Montana Public Employees' Retirement System	Montana PERS
Montana Teachers' Retirement System	Montana TRS
Montgomery County (MD) Employees' Retirement System	Montgomery County Maryland ERS
Nebraska Public Employees Retirement System - State Employees Cash Balance	Nebraska PERS-CB
Nebraska Public Employees Retirement Systems - School Employees Plan	Nebraska SEP
Public Employee's Retirement System of Nevada	Nevada PERS-PF
Public Employee's Retirement System of Nevada	Nevada PERS-R
New Hampshire Retirement System	New Hampshire RS
New Jersey Public Employees' Retirement System	New Jersey PERS-L
New Jersey Public Employees' Retirement System	New Jersey PERS-S
New Jersey Police & Firemen's Retirement System	New Jersey PFRS-L
New Jersey Police & Firemen's Retirement System	New Jersey PFRS-S
State Police Retirement System of New Jersey	New Jersey SPRS
New Jersey Teachers' Pension & Annuity Fund	New Jersey TPAF
New Mexico Educational Retirement Board	New Mexico ERB
New Mexico Public Employees Retirement Association	New Mexico PERA
Board of Education Retirement System of the City of New York	New York City BERS
New York City Employees' Retirement System	New York City ERS
New York City Fire Pension Fund	New York City Fire
New York Police Pension Fund	New York City Police
Teachers' Retirement System of the City of New York	New York City Teachers
New York State and Local Retirement System	New York SLRS ERS
New York State and Local Retirement System	New York SLRS PFRS
New York State Teachers' Retirement System	New York STRS
North Carolina Total Retirement Plans	North Carolina LGERS
North Carolina Total Retirement Plans	North Carolina TSERS
North Dakota Public Employees Retirement System	North Dakota PERS
North Dakota Teachers' Fund for Retirement	North Dakota TFR
Ohio Highway Patrol Retirement System	Ohio HRS
Ohio Public Employees' Retirement System	Ohio PERS
Ohio Police and Fire Pension Fund	Ohio PFPF
Ohio School Employees' Retirement System	Ohio SERS
Ohio State Teachers' Retirement System	Ohio STRS
Oklahoma Firefighters Pension & Retirement System	Oklahoma FRS
Oklahoma Law Enforcement Retirement System	Oklahoma LERS

* This year there were three plans in Equable's dataset that did not provide sufficient data to be included in State of Pensions analysis.

RETIREMENT SYSTEMS IN OUR DATASET (Oklahoma PERS – Washington SPRS 1/2)

Retirement System Full Name	Pension Plan Shorthand
Oklahoma Public Employees Retirement System	Oklahoma PERS
Oklahoma Police Pension and Retirement System	Oklahoma PPRS
Oklahoma Teachers' Retirement System	Oklahoma TRS
Orange County Employees Retirement System	Orange County ERS
Oregon Public Employees Retirement System	Oregon PERS
Pennsylvania Municipal Retirement System	Pennsylvania MRS
Pennsylvania Public School Employees' Retirement System	Pennsylvania PSERS
Pennsylvania State Employees' Retirement System	Pennsylvania SERS
Philadelphia Municipal Retirement System	Philadelphia Municipal
Phoenix Employees' Retirement System	Phoenix ERS
Providence Employee Retirement System	Providence ERS
Employees' Retirement System of Rhode Island	Rhode Island ERS-S
Employees' Retirement System of Rhode Island	Rhode Island ERS-T
Municipal Employees' Retirement System of Rhode Island	Rhode Island MERS
Sacramento County Employees' Retirement System	Sacramento County ERS
San Antonio Firemen's and Policemen's Pension Fund	San Antonio P&F
San Bernardino County Employees Retirement Association	San Bernardino ERA
San Diego City Employees' Retirement System	San Diego City ERS
San Diego County Employees Retirement Association	San Diego County
San Francisco City & County Employees' Retirement System	San Francisco City & County
City of San Jose Police and Fire Department Retirement Plan	San Jose P&F
Seattle Employees' Retirement System	Seattle ERS
South Carolina Police Officers' Retirement System	South Carolina PORS
South Carolina Retirement System	South Carolina RS
South Dakota Retirement System	South Dakota RS
St Louis Employees Retirement System	St. Louis Employees
St Louis Police Retirement System	St. Louis Police
Public School Retirement System of the City of St. Louis	St. Louis School Employees
St. Paul Teachers Retirement Fund	St. Paul Teachers
Tennessee Consolidated Retirement System	Tennessee TLPP
Tennessee Consolidated Retirement System	Tennessee TRP
Texas County & District Retirement System	Texas CDRS
Employees Retirement System of Texas	Texas ERS
Employees Retirement System of Texas	Texas LECOS
Texas Municipal Retirement System	Texas MRS
Texas Teachers Retirement System	Texas TRS
Tucson Supplemental Retirement System	Tucson Supplemental RS
Utah Retirement System	Utah CRS
Utah Retirement System	Utah CRS-T2
Utah Retirement System	Utah FRS
Utah Retirement System	Utah Judges
Utah Retirement System	Utah NRS
Utah Retirement System	Utah PSC
Utah Retirement System	Utah PSC-T2
Utah Retirement System	Utah PSN
Vermont Municipal Employees' Retirement System	Vermont Muni
Vermont State Employees' Retirement System	Vermont SERS
Vermont State Teachers' Retirement System	Vermont STRS
Virginia Retirement System	Virgina JRS
Virginia Retirement System	Virgina LORS
Virginia Retirement System	Virgina SPORS
Virginia Retirement System	Virginia RS-L
Virginia Retirement System	Virginia RS-S
Virginia Retirement System	Virginia RS-T
Washington Law Enforcement Officers' and Firefighters Retirement System	Washington LEOFF Plan 1
Washington Law Enforcement Officers' and Firefighters Retirement System	Washington LEOFF Plan 2
Washington Public Employees' Retirement System	Washington PERS 1
Washington Public Employees' Retirement System	Washington PERS 2/3
Washington Public Safety Employees' Retirement System	Washington PSERS 2
Washington School Employees' Retirement System	Washington SERS 2/3
Washington State Patrol Retirement System	Washington SPRS 1/2

RETIREMENT SYSTEMS IN OUR DATASET (Washington TRS 1 – Wyoming RS)

Retirement System Full Name	Pension Plan Shorthand
Washington Teachers Retirement System	Washington TRS 1
Washington Teachers Retirement System	Washington TRS 2/3
West Virginia Public Employees' Retirement System	West Virginia PERS
West Virginia Teachers' Retirement System	West Virginia TRS
Police and Fire Retirement System of Wichita, Kansas	Wichita P&F
Wichita Employees' Retirement System	Wichita WERS
Wisconsin Retirement System	Wisconsin RS
Wyoming Retirement System	Wyoming RS

ABOUT THIS REPORT

State of Pensions is an annual report on the status of statewide public pension systems, put into a historic context. State and local governments face a wide range of challenges in general — and some of the largest are growing and unpredictable pension costs. The scale and effects of these challenges are best understood by considering the context of multi-decade financial trends that have brought public sector retirement systems to this moment.

Our analyses begin with the topline aggregated trends over the past two decades and proceed by digging into some of those data points to show how the trends vary across the states and over time. Learning from history and looking beyond the headline figures is important for finding paths into the future that can bring states closer to sustainable and accountable retirement systems that ensure retirement security for all public workers. In effect, we can use patterns of behavior from the past two decades as a guide to what might happen in the coming decade and identify areas of concern that should be monitored closely or acted upon immediately.

We focus in this report on the largest statewide and municipal retirement systems (measured as those with at least $1 billion in promised benefits). We use publicly available data reported by the retirement systems themselves, primarily from valuation reports and annual comprehensive financial reports.

Reviewing historic trends is an important assessment tool because it allows us to avoid becoming too caught up in the moment-to-moment data. One of the best years on record for annualized investment returns (2021) was followed up by one of the worst years (2022), with widespread losses that nearly canceled out the previous year. And all of that was preceded by a highly volatile marketplace in 2020. At any point over the past several years pension funded status might have looked particularly good or bad. However, taken as a whole, the last four years have seen slight improvement.

Ultimately, the analysis of state and local retirement system trends leads to two enduring and essential points that should always be kept in mind when assessing a government pension plan:

There is a wide range of financial performance for pension plans; a few states are well managed, some states are on the brink of pension insolvency, and most are somewhere in between.

The problems facing states are not an inherent result of offering pensions in the first place; the problems stem from a political apathy toward the steadily growing rate of unfunded liabilities and the costs they produce.