Retirement Finance:

The changing landscape for finance officials

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Poll Question # 1

Poll Question:

- Question: What is the approximate average funded status of pension plans?

- 60%
- 70%
- 80%
- 90%

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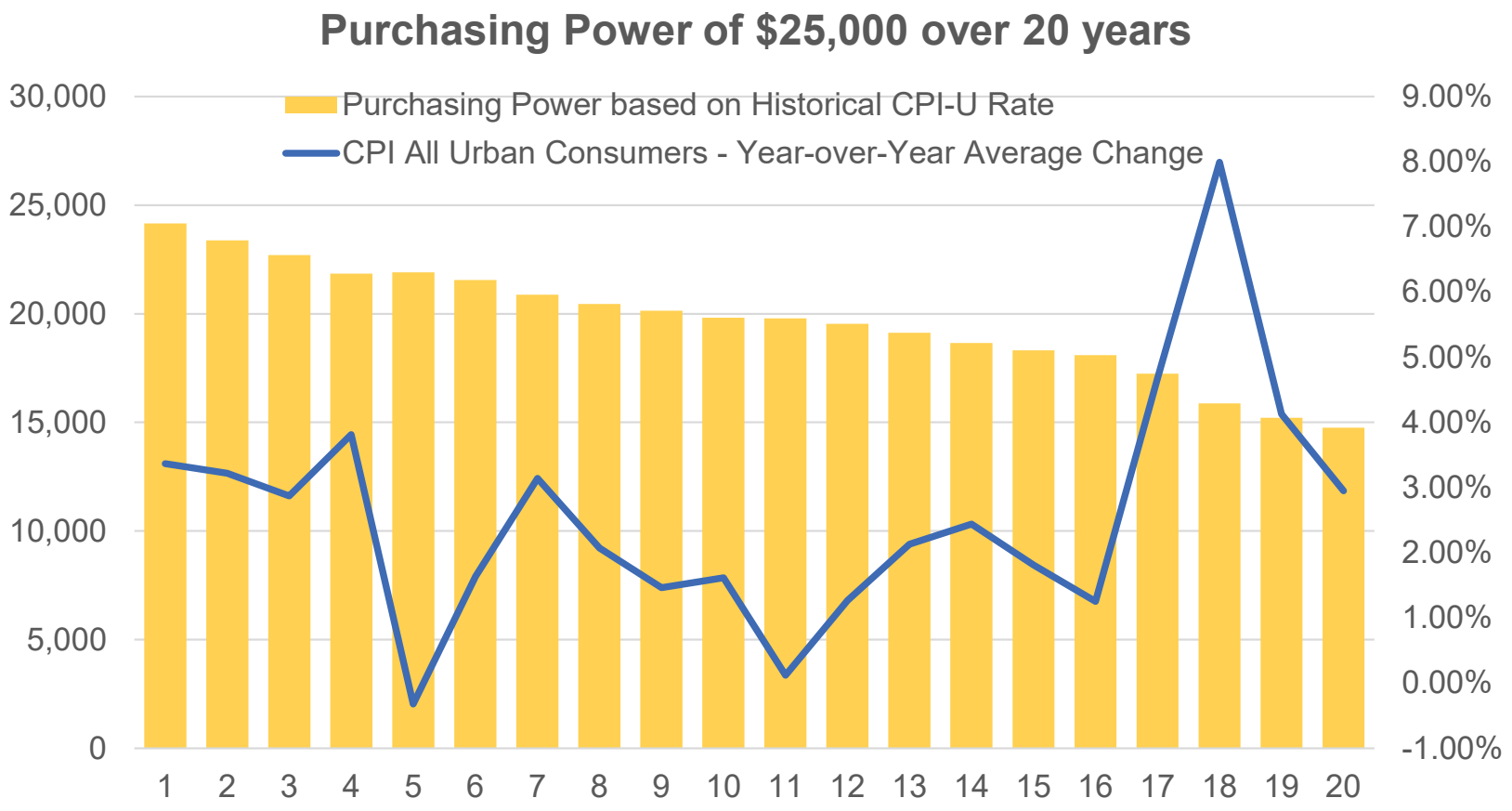
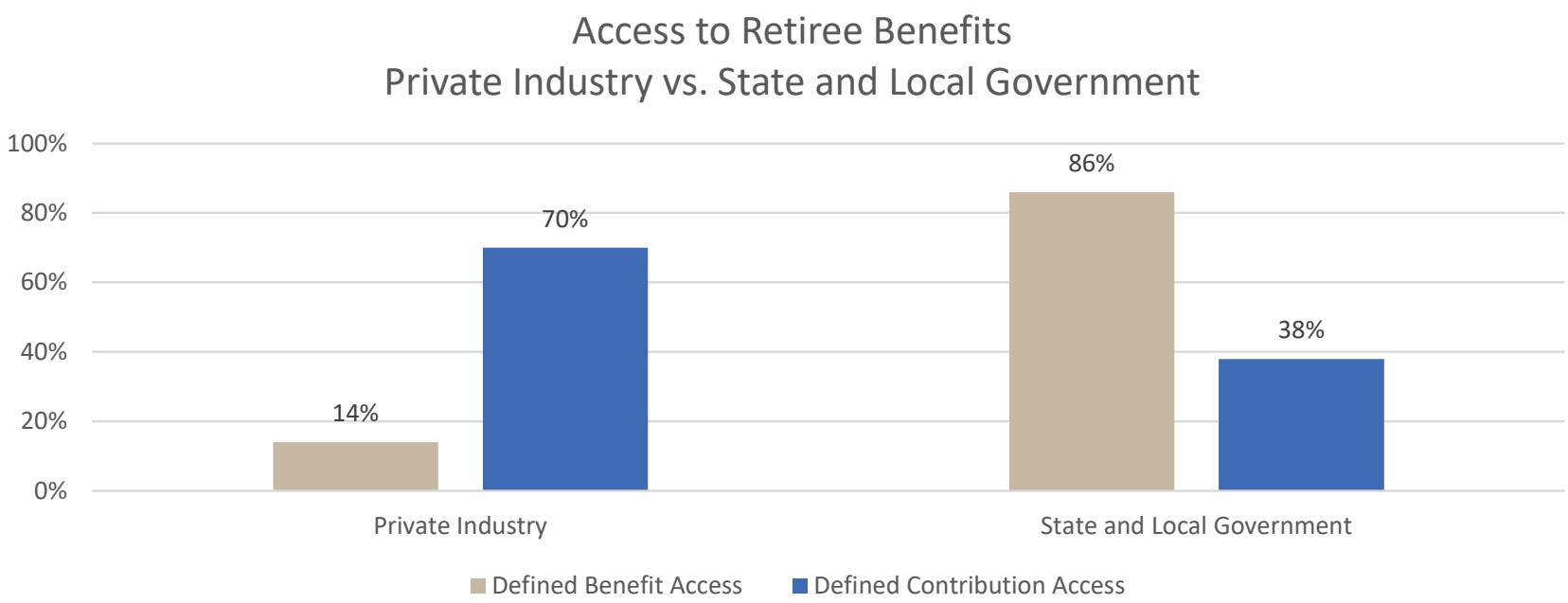
Inflation and Pension Benefit Purchasing Power



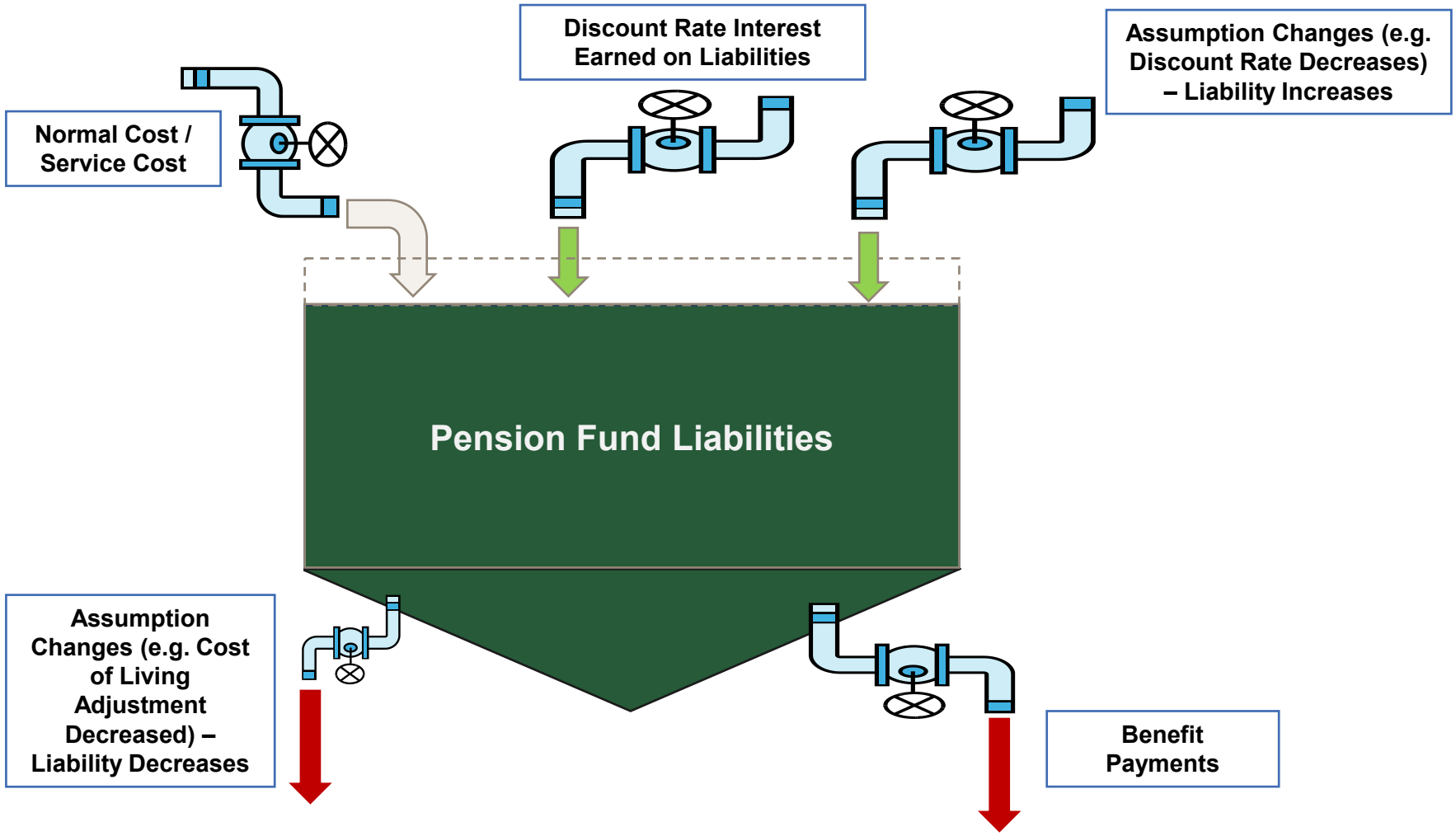
Source: Federal Reserve Bank of St. Louis, FRED

Pensions by Sector: Divergence

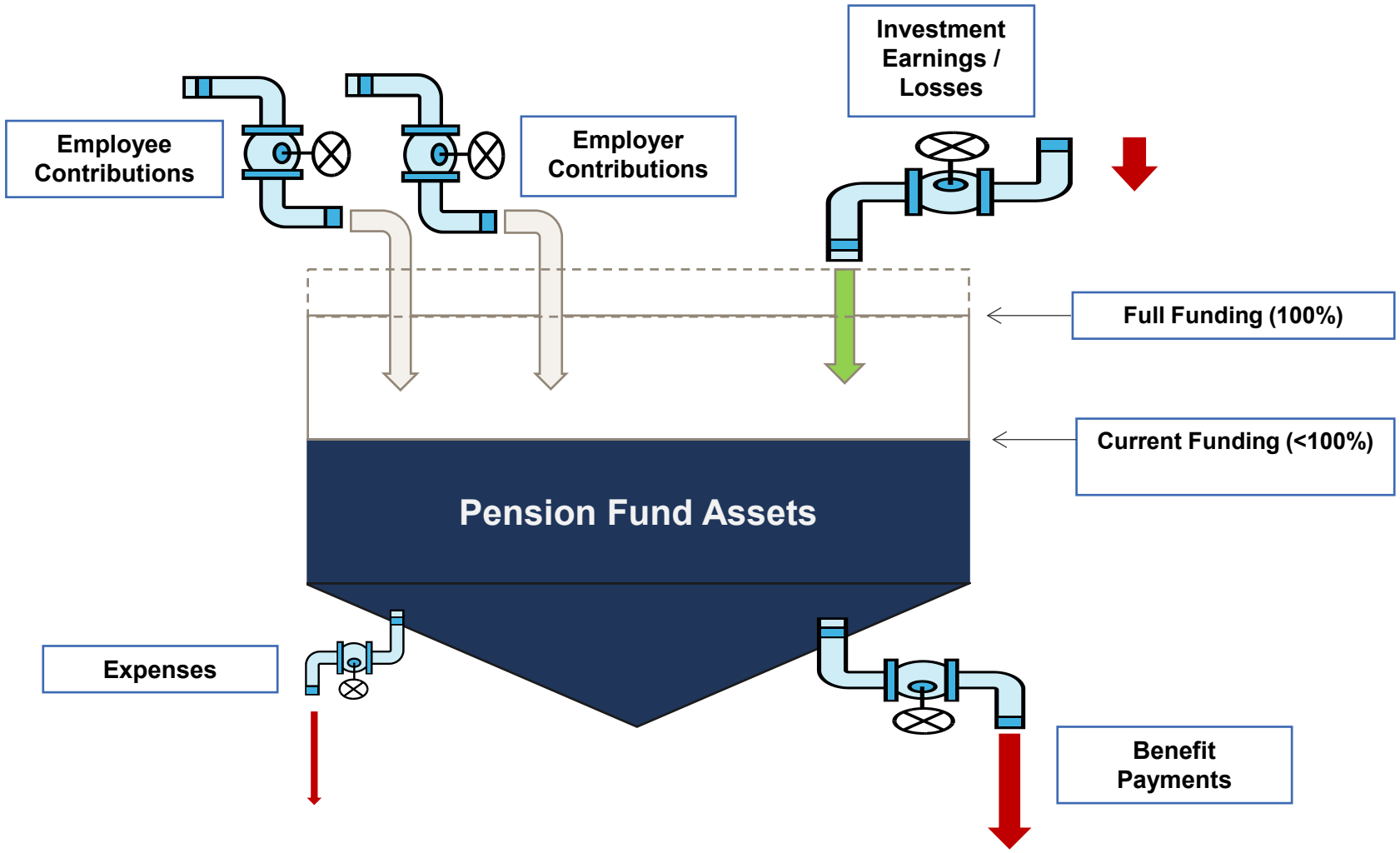


Source: Bureau of Labor Statistics Employee Benefits Survey, March 2025

Pension Fund Liabilities – Inflows and Outflows

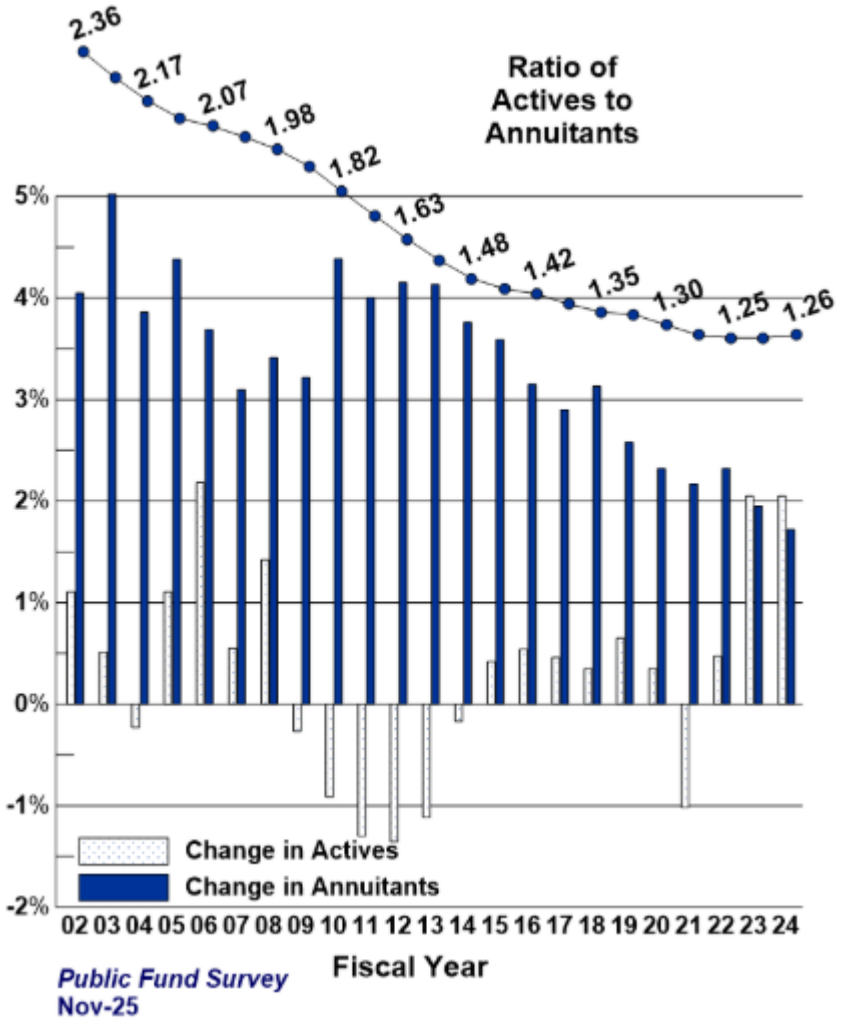


Pension Fund Assets – Inflows and Outflows



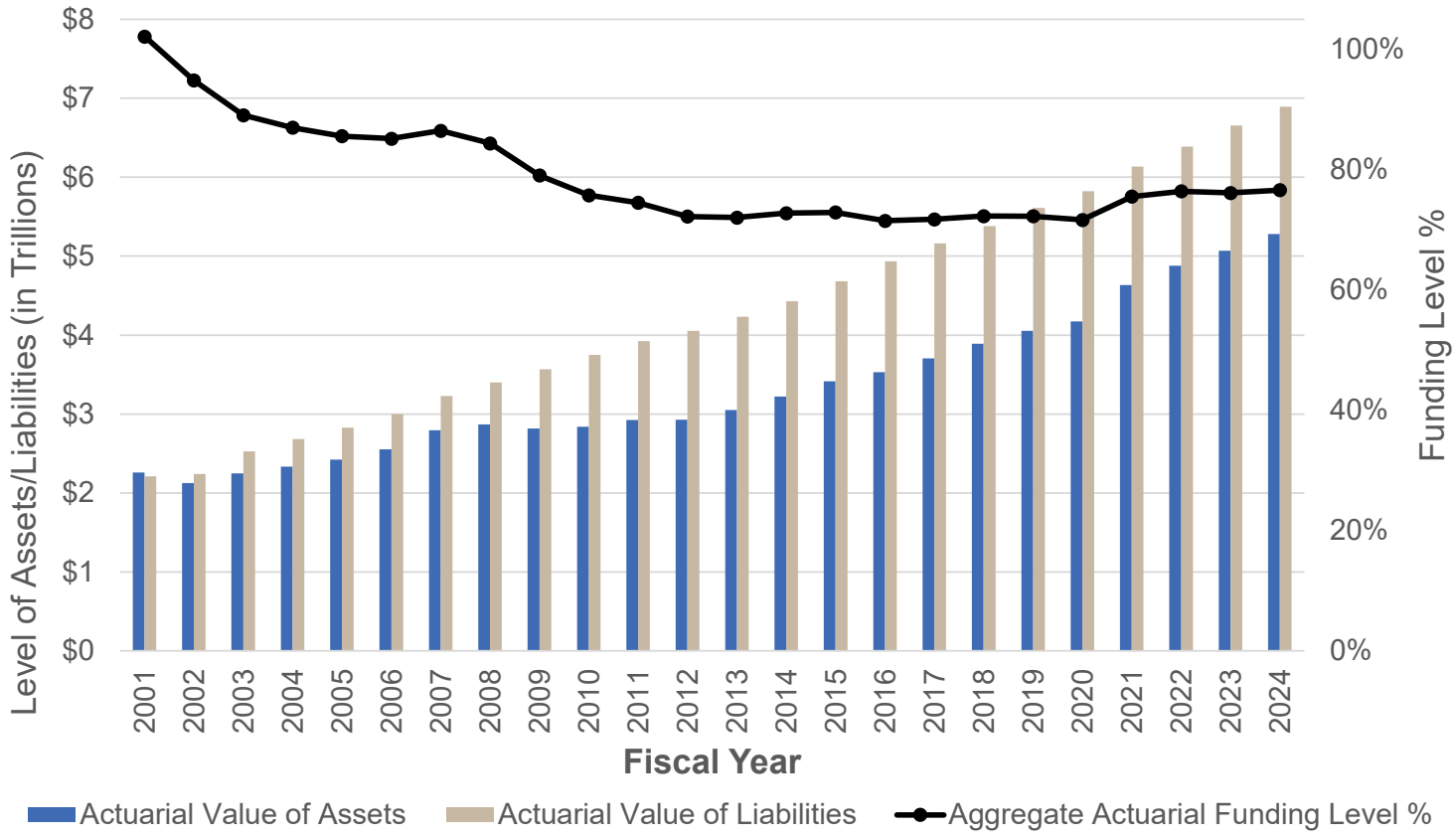
The Ratio of Actives to Annuitants Continues to Decline

- As the amount of public retirees increase relative to active workers, the burden of retirement funding, and catching up for under-funded plans becomes steeper and more costly.
- This dynamic can and does have a direct impact on budgets and prioritization of other initiatives.



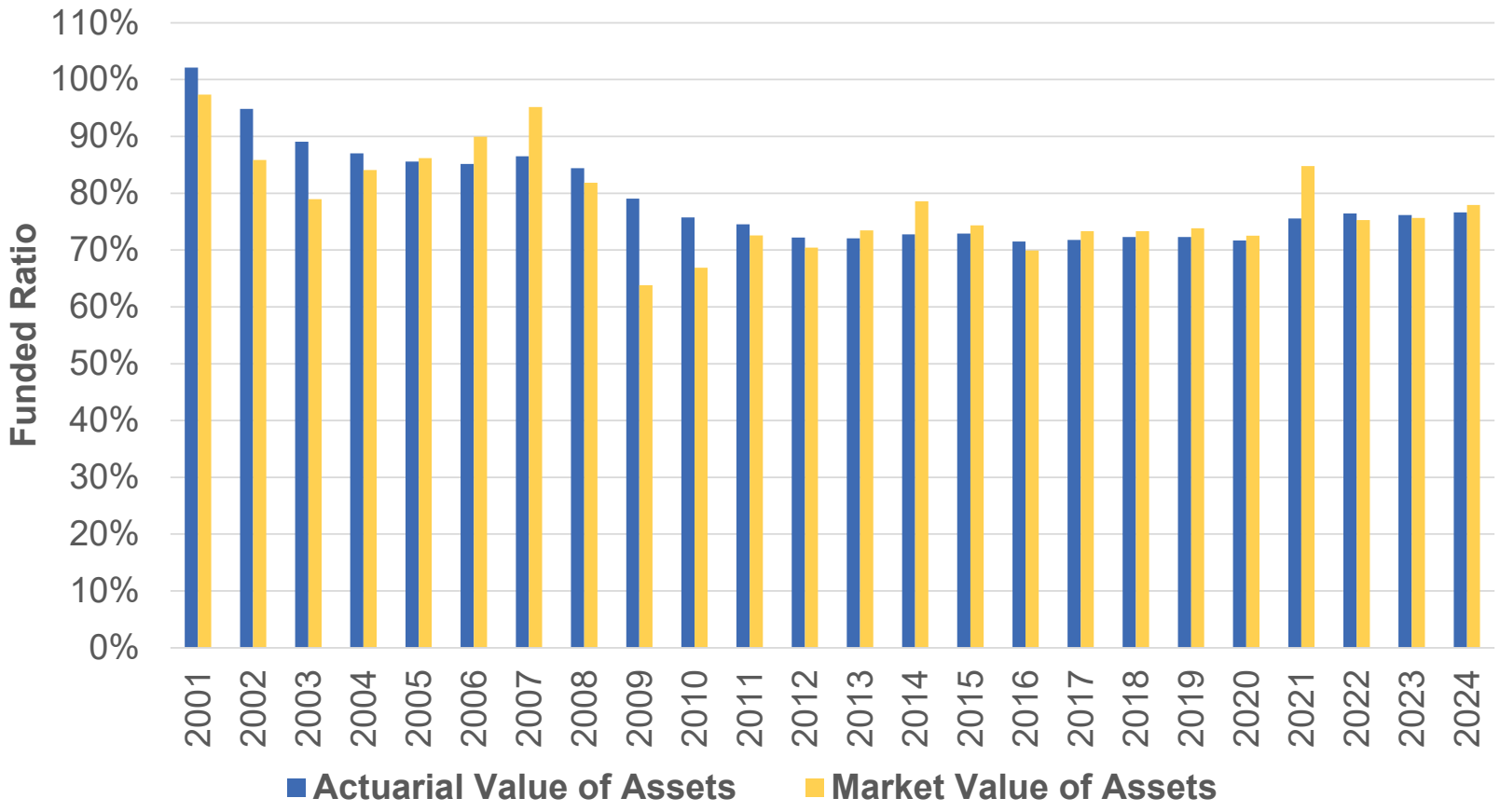
Source: *Public Fund Survey*, National Association of State Retirement Administrators, November, 2025; Public Plans Database

Liabilities Grow Ever Higher



Source: *Public Fund Survey*, National Association of State Retirement Administrators, November, 2025; Public Plans Database

Different Funding Perspectives



Source: *Public Fund Survey*, National Association of State Retirement Administrators, November, 2025; Public Plans Database

Poll Question # 2

Poll Question:

- Question: The ratio of active employees to annuitants is remaining at a flat and consistent level.

- True
- False

Arrow

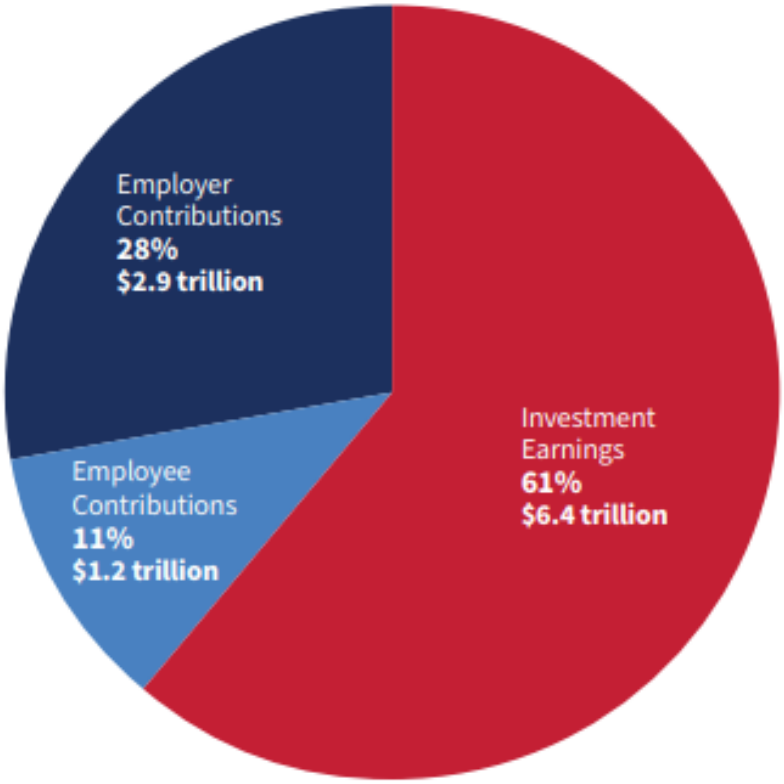
Poll Question:

- Question: The ratio of active employees to annuitants is remaining at a flat and consistent level.

- True
- False

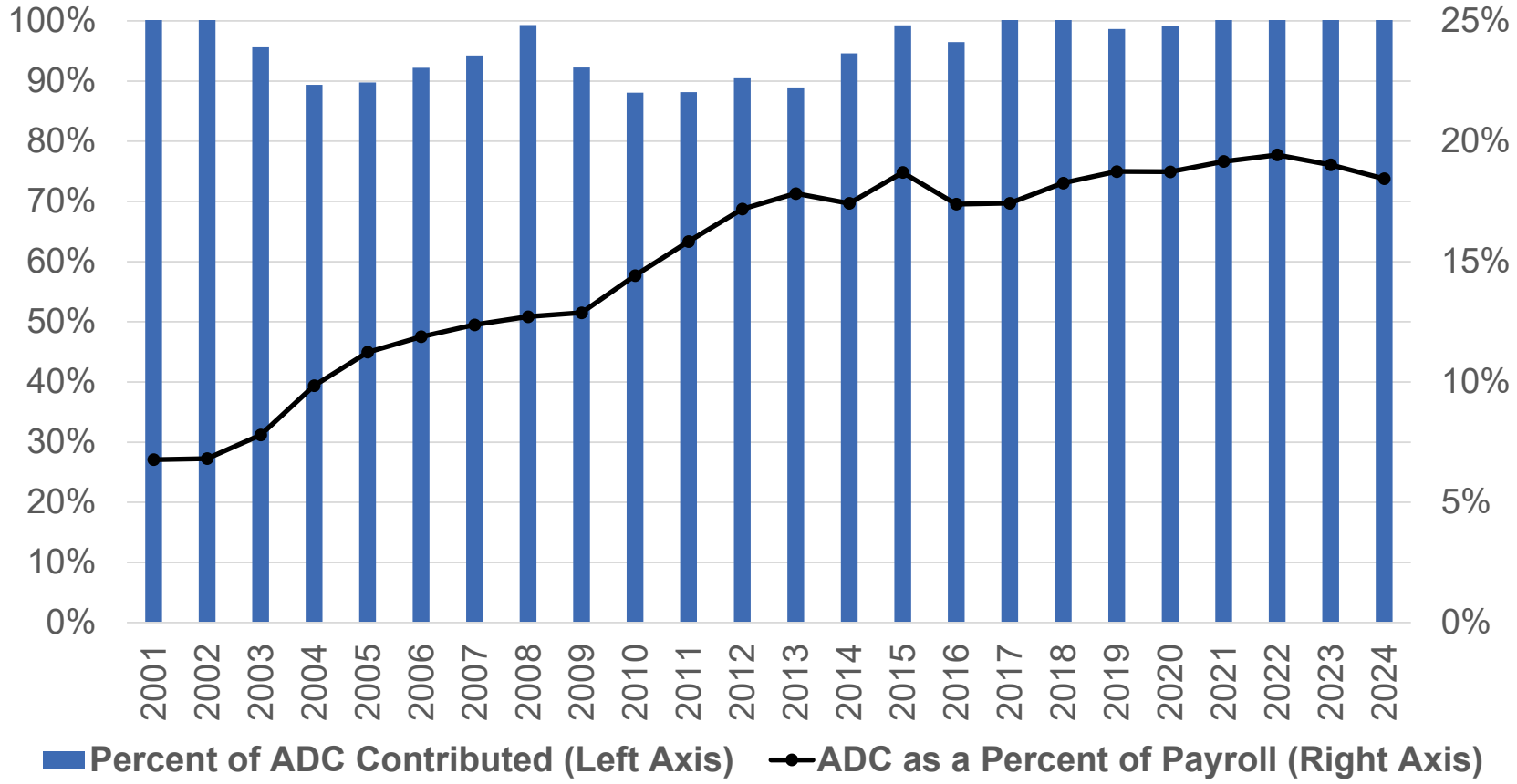
Arrow

Public Pension Sources of Revenue, 1993-2024



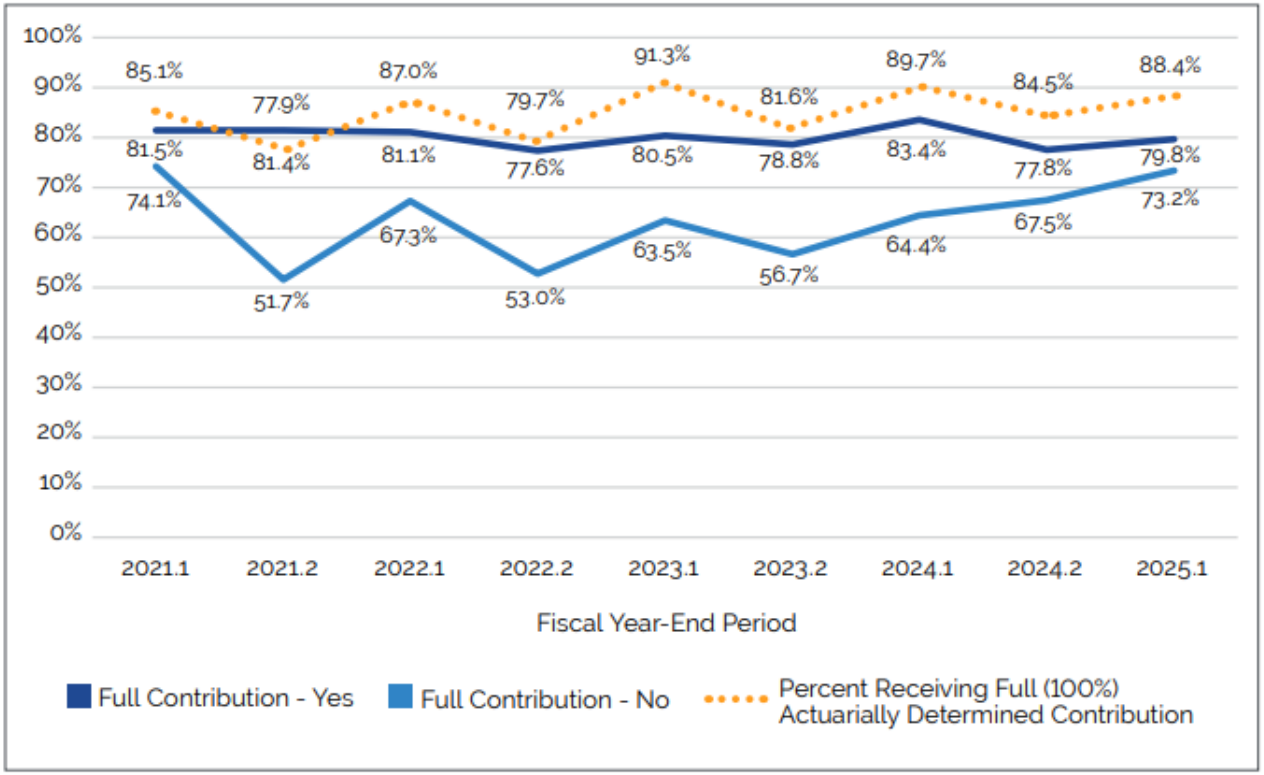
Source: *NASRA Issue Brief: Public Pension Plan Investment Return Assumptions*, National Association of State Retirement Administrators, June 2025

Pension Contributions Through the Years



Source: *Public Fund Survey*, National Association of State Retirement Administrators, November, 2025; Public Plans Database

Pension Contributions Through the Years – Levels of Contribution Matters!



Average funded ratio by whether systems received their full actuarially determined contribution, 2021.1–2025.1. For 2025.1, systems receiving their full ADC reported a mean funded ratio of 79.8% (median: 76.5%), compared with 73.2% (median: 63.3%) among systems that did not receive their full ADC— a gap of 6.6 percentage points in means and 13.2 percentage points in medians.

Source: NCPERS Public Retirement Systems Study: Trends in Fiscal, Operational, and Business Practices — 2026 Edition

Poll Question # 3

Poll Question:

- Question: Employer contributions generate the most revenue for a pension / OPEB plan.

- True
- False

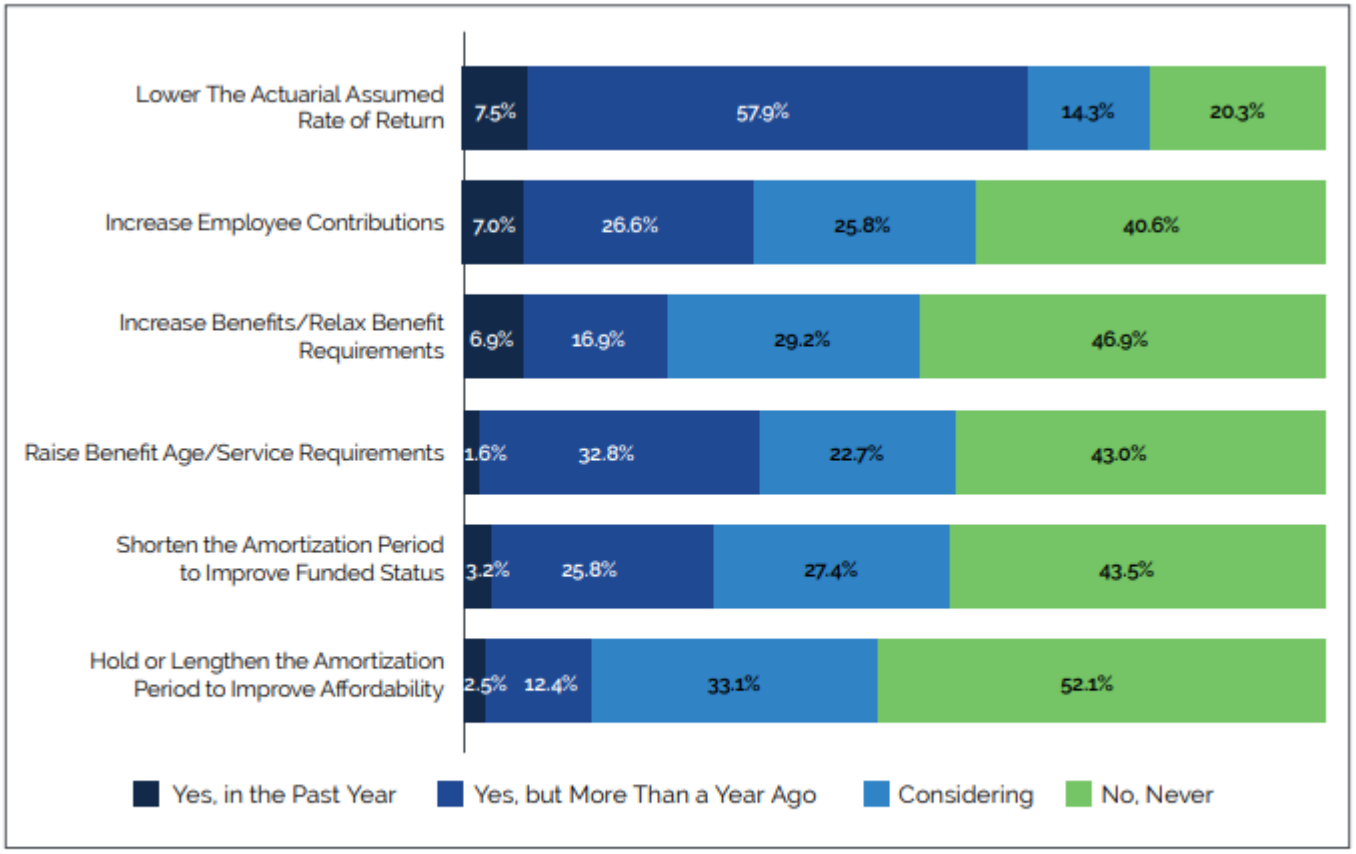
Poll Question:

- Question: Employer contributions generate the most revenue for a pension / OPEB plan.

- True
- False

Retirement Plan Trends

Trends in State and Local Government 2025 Retirement Plan Adjustments



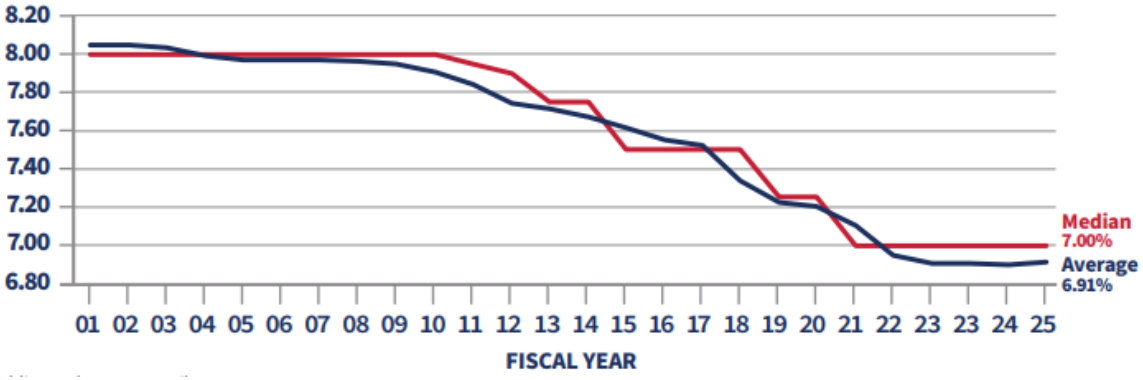
Changes made or under consideration among systems responding to the 2025 plan changes battery (n=132). Most systems (65%) have lowered their assumed rate of return at some point, and about one-third (34%) have increased employee contributions at some point.

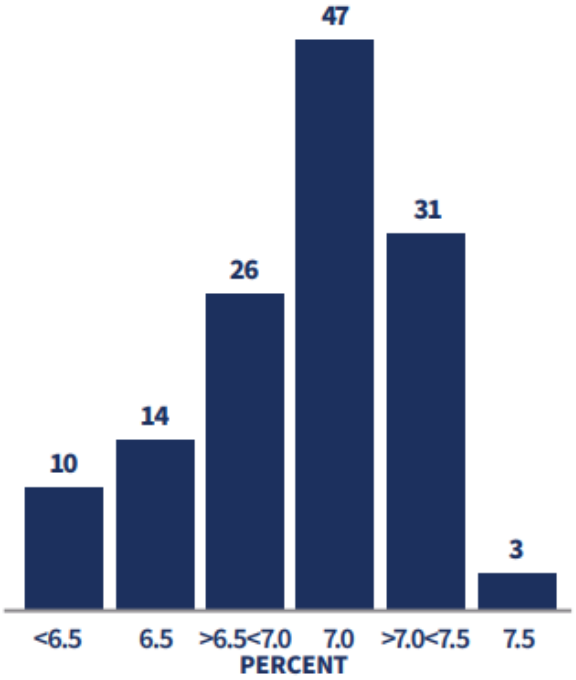
Source: NCPERS Public Retirement Systems Study: Trends in Fiscal, Operational, and Business Practices — 2026 Edition

Investment Return Assumptions Used By Public Plans

- Public plans continue to de-risk their plans by reducing the investment return assumption/ discount rate
  - The 2025 NASRA median of 7.0% was down from 8.0% in 2010
  - The average of 6.91% in 2025 is down from 7.90% in 2010

Change in Distribution of Public Pension Investment Return Assumptions FY01 to FY25

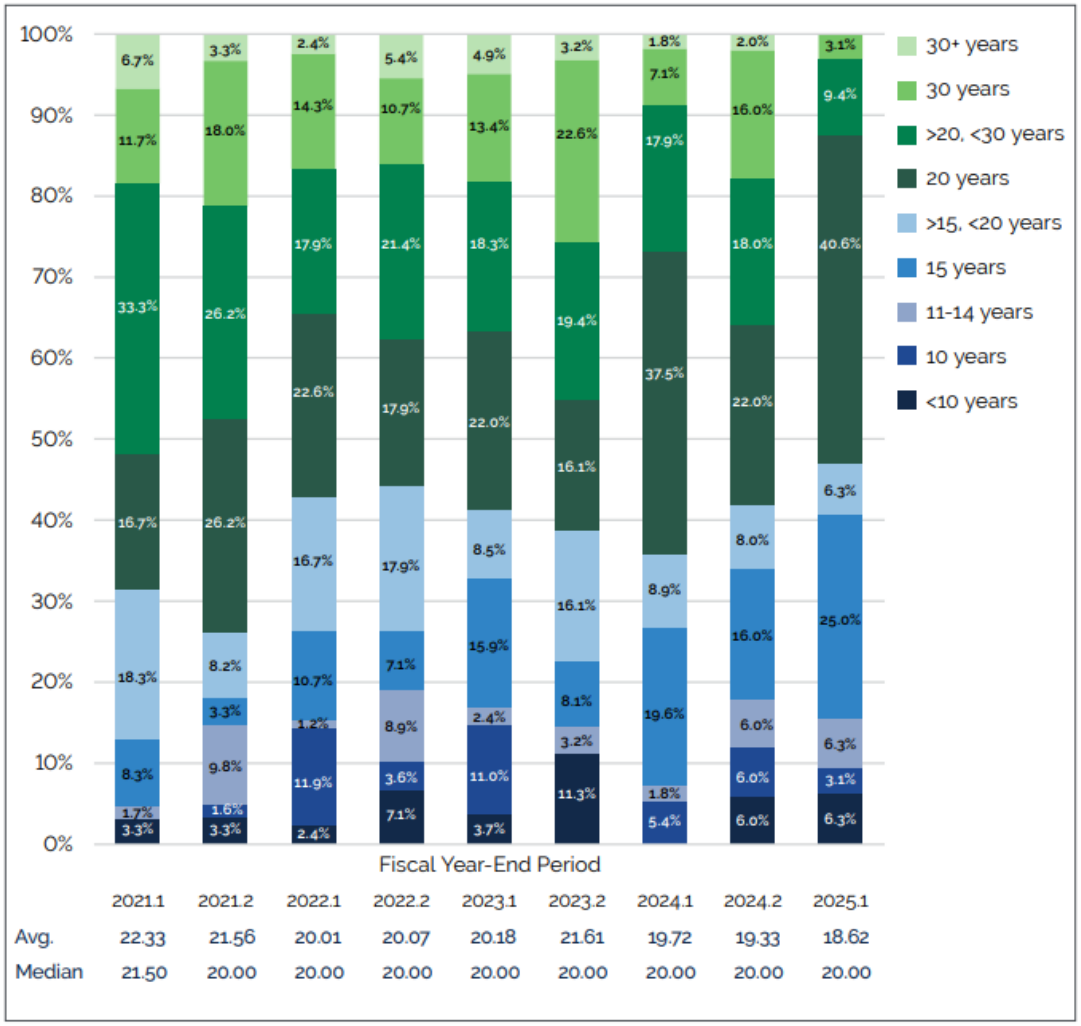




Source: *NASRA Issue Brief: Public Pension Plan Investment Return Assumptions*, National Association of State Retirement Administrators, June 2025

Amortization of Liability Assumptions Used By Public Plans

- Amortization of unfunded liability is another driver of cost and repayment economics.
- Most public funds amortize their liability over a period of 15-30 years.
  - FY 2025 Average: 18.6 years
  - This represents a downward trend in amortization period.



Amortization period distribution by fiscal period, 2021.1–2025.1. Mean amortization period for 2025.1: 18.6 years; Median: 20 years.

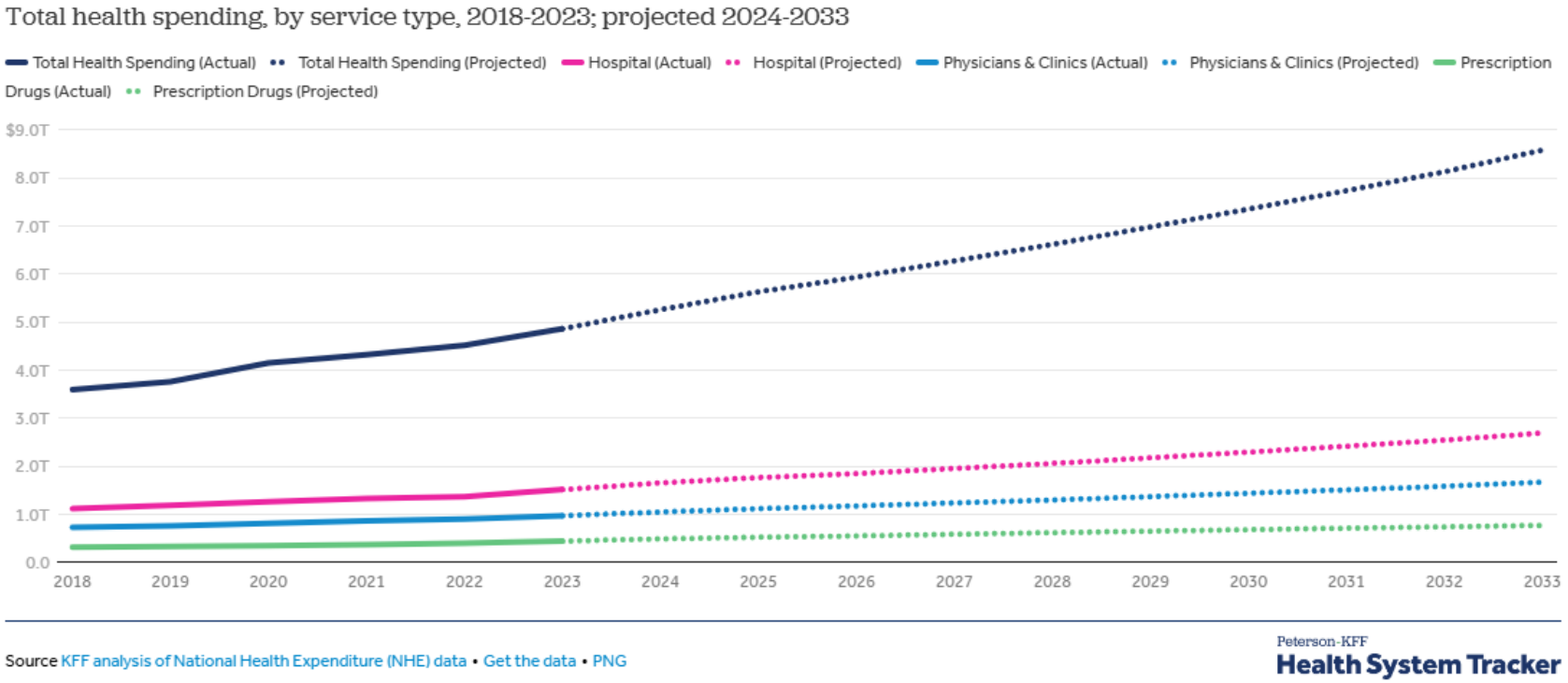
Source: NCPERS Public Retirement Systems Study: Trends in Fiscal, Operational, and Business Practices — 2026 Edition

Asset Allocation of Public Plan Funds

	Fiscal Year-End Period								
Asset Class	**2021.1**	**2021.2**	**2022.1**	**2022.2**	**2023.1**	**2023.2**	**2024.1**	**2024.2**	**2025.1**
Global Equity	13.0%	9.8%	10.5%	7.6%	12.8%	9.3%	16.9%	8.6%	13.8%
Domestic Equity	24.8%	27.7%	21.6%	29.7%	19.4%	28.5%	15.2%	25.4%	15.1%
International Equity	13.7%	12.3%	10.2%	12.6%	10.5%	12.2%	9.2%	11.5%	9.1%
Total Equities	**51.4%**	**49.8%**	**42.3%**	**49.9%**	**42.8%**	**50.0%**	**41.3%**	**45.5%**	**38.0%**
Global Fixed Income	4.5%	4.7%	4.2%	2.7%	5.0%	3.2%	6.1%	2.2%	5.3%
Domestic Fixed Income	15.5%	14.2%	15.8%	14.5%	12.9%	14.5%	13.2%	13.7%	13.2%
International Fixed Income	0.9%	0.6%	1.1%	0.5%	0.8%	0.4%	0.6%	0.6%	1.4%
High Yield Bond	1.2%	1.0%	1.5%	0.5%	1.1%	1.5%	1.5%	0.8%	4.5%
Total Fixed Income	**22.0%**	**20.5%**	**22.7%**	**18.2%**	**19.8%**	**19.6%**	**21.4%**	**17.3%**	**24.5%**
Real Estate	7.9%	10.0%	11.2%	11.6%	10.8%	10.2%	9.6%	7.7%	8.0%
Private Equity	9.9%	9.6%	12.6%	10.1%	11.9%	9.3%	11.1%	11.2%	11.2%
Hedge Fund	1.9%	2.9%	2.3%	3.2%	1.3%	3.3%	1.6%	3.4%	1.0%
Private Debt	1.6%	0.7%	2.4%	1.1%	4.1%	1.5%	4.3%	2.9%	3.4%
Commodities	2.8%	4.3%	4.2%	3.7%	5.5%	3.9%	4.8%	5.6%	7.5%
Other Alternatives	0.4%	0.5%	0.3%	0.5%	0.7%	0.4%	1.3%	0.4%	0.8%
Total Alternatives	**24.5%**	**28.0%**	**33.0%**	**30.1%**	**34.2%**	**28.6%**	**32.7%**	**31.3%**	**31.8%**
Cash Equivalents	2.1%	1.8%	2.0%	1.8%	3.2%	1.7%	4.6%	6.0%	5.7%

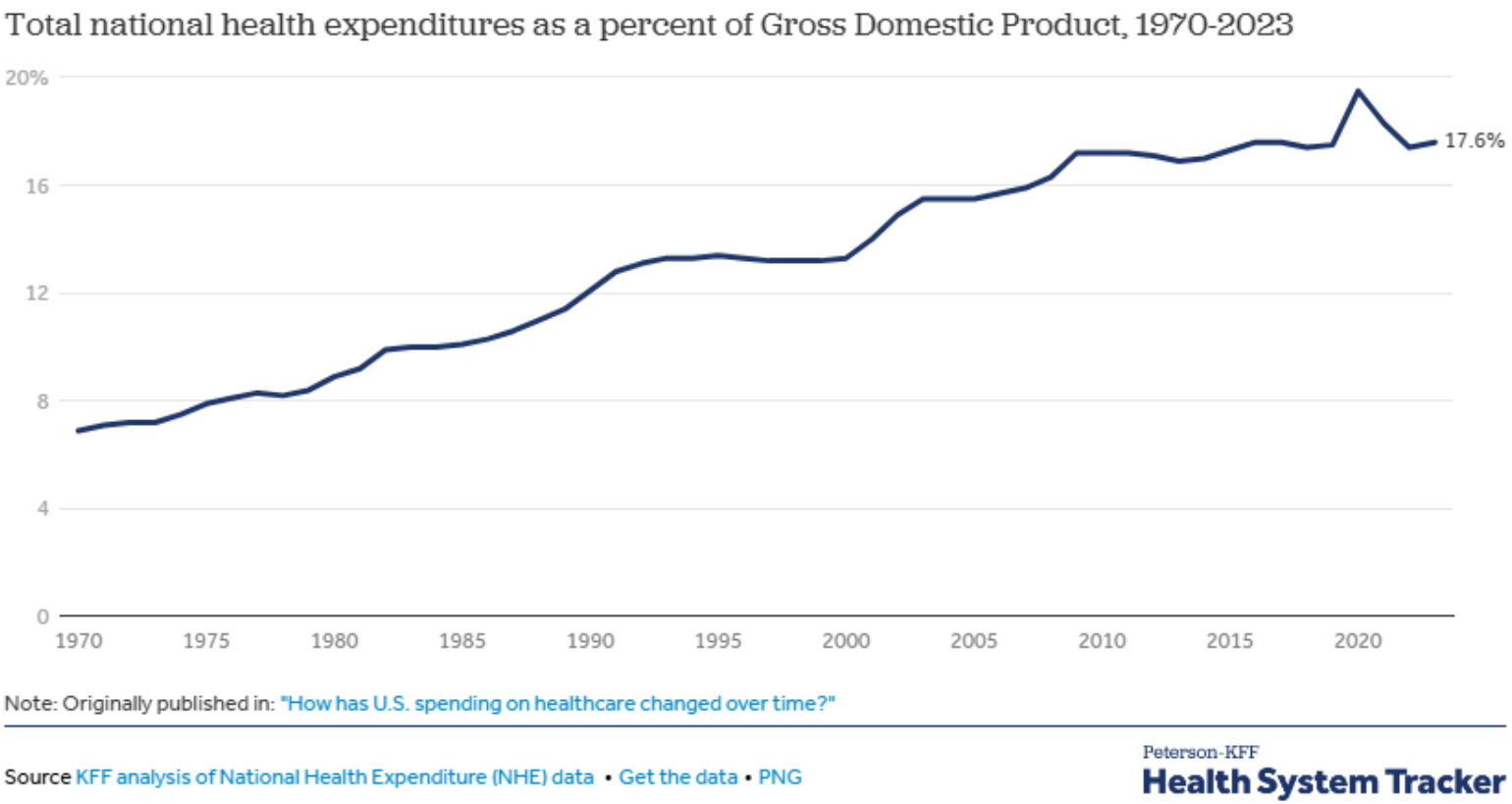
Source: NCPERS Public Retirement Systems Study: Trends in Fiscal, Operational, and Business Practices — 2026 Edition

OPEB/ Medical Cost Trends



Source: Kaiser Family Foundation analysis of National Health Expenditure (NHE) data from Centers for Medicare and Medicaid Services, Office of the Actuary, National Health Statistics Group, December 2022

OPEB/ Medical Cost Trends



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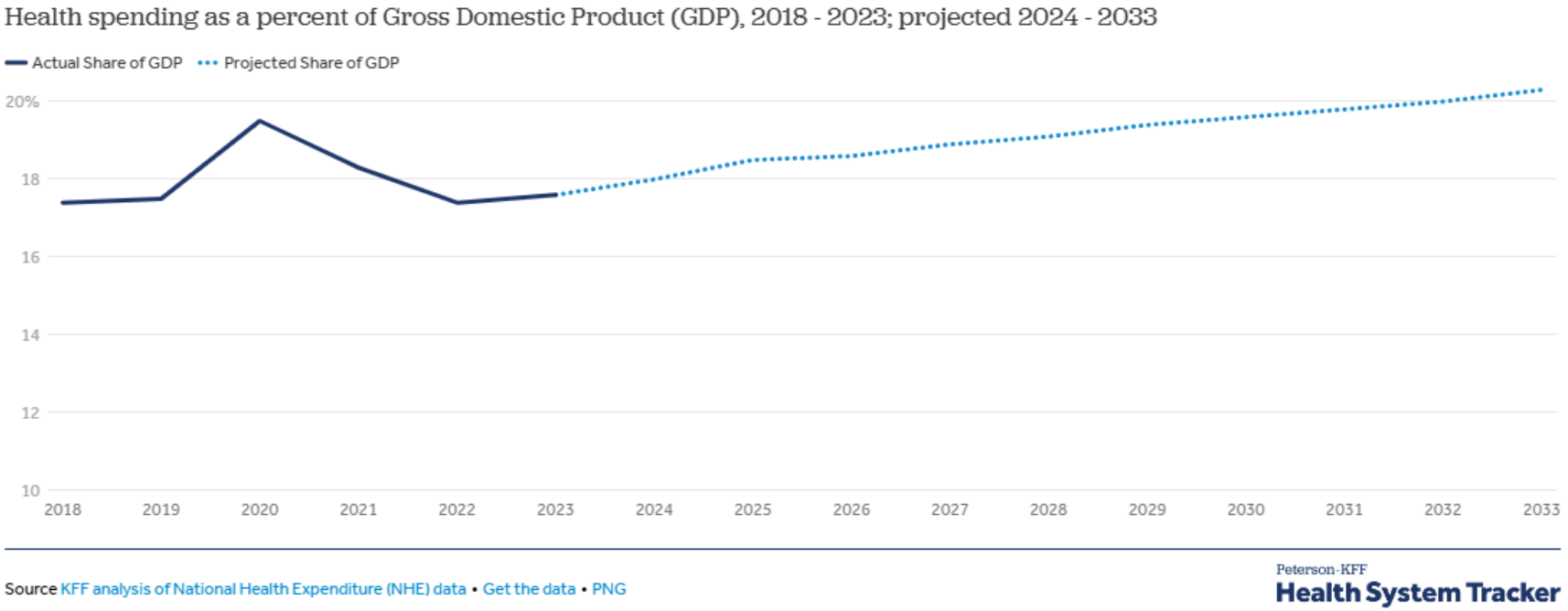

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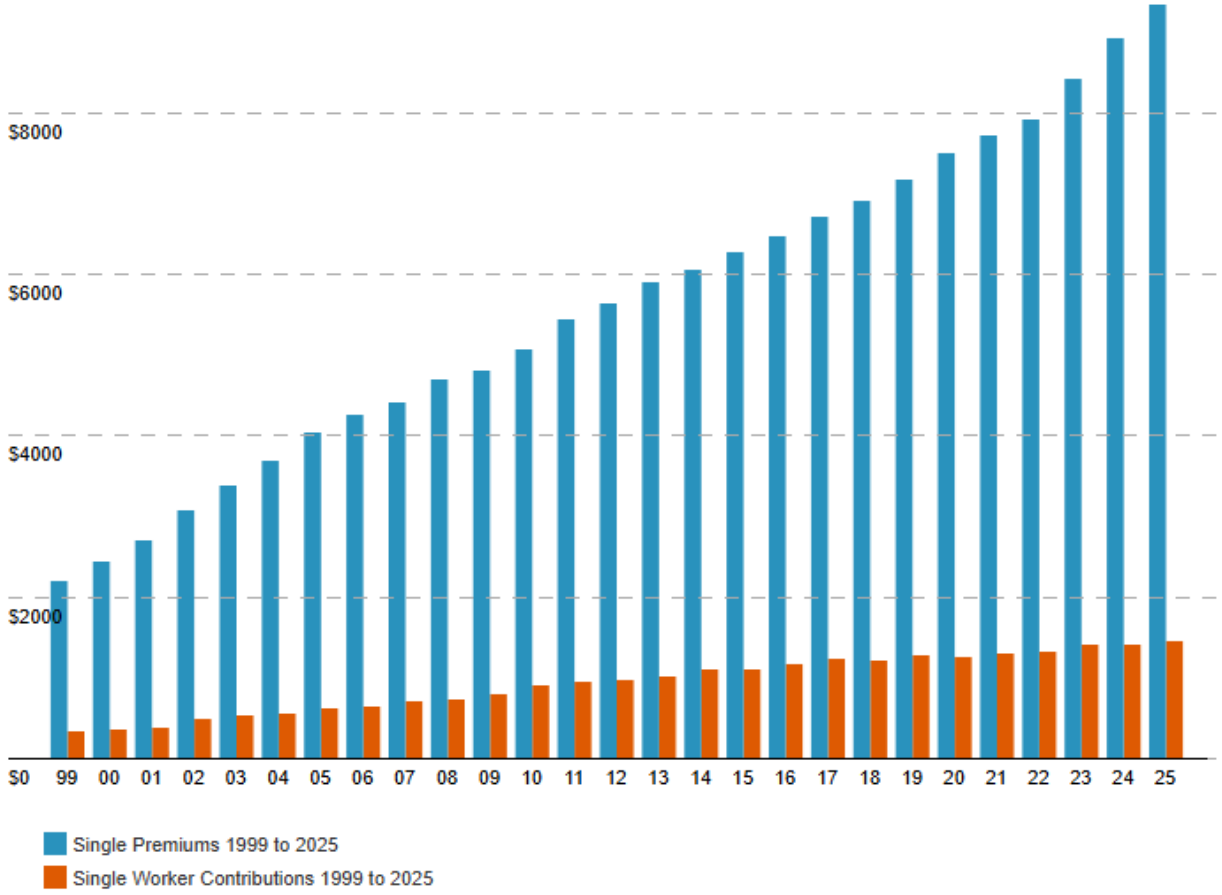
Premiums increasing, worker contributions remaining flat



Source: KFF and Kaiser/HRET Annual Surveys of Employer-Sponsored Health Benefits

Poll Question # 4

Poll Question:

- Question: What is the approximate median assumed rate of return for pension plans?
  - 6.50%
  - 6.75%
  - 7.00%
  - 7.25%

Poll Question:

- Question: What is the approximate median assumed rate of return for pension plans?

- 6.50%
- 6.75%
- 7.00%
- 7.25%

Tools for Addressing the Challenge

What Are the Tools?

Consistent Budgetary Funding	• Establish/Update a Funding Policy • Fund the ADEC • Rate Stabilization Fund
Manage Benefit Liabilities	• Plan Design Reform • Participant and Benefit Segmentation • Evaluate Exchanges
Risk Management	• Risk Sharing • Risk Transfer
Build Fund Assets	• Dedicated Taxes • Asset Monetization • Pension Obligation/OPEB Bonds

Funding Policy

- A funding policy must be established with specific objectives.
  - ✓Lay out a plan to fund pensions
  - ✓Provide guidance in making annual budget decisions
  - ✓Demonstrate affordable financial management practices to taxpayers
  - ✓Reassure bond rating agencies
  - ✓Assure employees how pensions will be funded
- Sustainability through policy implementation.
  - ✓Have a pension funding policy that is based on an actuarially determined contribution
  - ✓Build funding discipline into the policy to ensure that promised benefits can be paid
  - ✓Maintain intergenerational equity so that the cost of employee benefits is paid by the generation of taxpayers who receive services
  - ✓Make employer cost a consistent percentage of its current and projected payroll
  - ✓Require clear reporting to show how and when pension plans will be fully funded

Approved: December 11, 2014
Revised: March 25, 2021

Funding Policy of the Wisconsin Retirement System

The Wisconsin Retirement System (WRS) is a public trust established under state law as a governmental tax-qualified retirement plan. The funds of the trust can only be used for pension purposes. The WRS is a defined benefit plan, created to aid public employees in protecting themselves and their beneficiaries against the financial hardships of old age, disability, death, illness, and accident. The WRS provides retirement, disability, and death benefits to employees of the State of Wisconsin and employees of local government employers who elect to participate, and Milwaukee Public School District teachers. Employees of the City of Milwaukee and Milwaukee County do not participate in the WRS.

FINANCIAL OBJECTIVE

The main financial objective of the WRS is to fully fund the long-term cost of benefits provided by statute, through disciplined and timely accumulation of sufficient assets to deliver earned benefits on a continuing basis.

FUNDING GUIDELINES

This funding policy seeks to balance three main objectives:

- **Contribution Adequacy** — Contributions and current plan assets must be sufficient to provide for all benefits expected to be paid to members and their beneficiaries when due.
- **Contribution Stability and Predictability** — Contribution volatility must be controlled to the extent reasonably possible, consistent with other policy goals.
- **Inter-Generational Equity** — Costs of benefits should be paid for by the generation that receives the benefits.

FUNDING METHODS AND PRINCIPLES

The following methods and principles, most of which are stipulated by statute, will be used to implement this policy:

- Actuarial Cost Method – [Wis. Stat. § 40.05(2)(b)]. Normal cost[1] for the WRS is calculated using the *frozen initial liability* method, modified to adjust the normal cost by the amortization of the Experience Amortization Reserve (EAR)[2].

Actuarial Assumptions*

	Annual Budget Impact (Short-Term)		Plan Funded Ratio	
	Cost[1]	Risk/Volatility[2]	Short-Term Impact[3]	Long-Term Impact[4]
No actuarial or funding changes	↔	↔	↔	↑
Actuarial Assumptions (all else being equal)				
• Level Dollar Cost[5]	↑	↓	↑	↔
• Reduce UAAL Amortization Period	↑	↓	↑	↑
• Reduce the Discount Rate	↑	↓	↓	↔
• Reduce Asset Smoothing Period	↔	↑	↔	↔
• Reduce Wage Inflation[6]	↑	↓	↑	↑

1 – budget cost represents comprehensive governmental cost;
2 – risk/volatility represents potential annual budget variability introduced by change
3 – short-term represents likely change to pension funded status over 1 – 3 years;
4 – long-term represents likely change to pension funded status over more than 20 years
5 – assumes current cost method is level % of payroll
6 – assumes level % of payroll cost method
* For Illustrative Purposes Only - Actuarial assumption changes should be viewed within the comprehensive perspective of the plan, and reviewed based on calculations provided by your actuary.

Funding and Other Changes

	Annual Budget Impact (Short-Term)		Plan Funded Ratio Impact	
	Cost[1]	Risk/Volatility[2]	Short-Term[3]	Long-Term[4]
Funding Practices (all else being equal)				
• Fund ADEC (if current level of funding is less)	↑	↓	↑	↑
• Additional Funding Plan[5]	↑	↔	↑	↑
• Pension Obligation Bond	↓	↑	↑	↔
Other Changes (all else being equal)				
• New Tiers[6]	↔	↓	↔	↑
• Investment Risk Sharing[7]	↔	↓	↔	↔

1 – budget cost represents comprehensive governmental cost;
2 – risk/volatility represents potential annual budget variability introduced by change
3 – short-term represents likely change to pension funded status over 1 – 3 years;
4 – long-term represents likely change to pension funded status over more than 20 years
5 – additional funding plan could be one-time or planned from cash reserves, dedicated tax or other extra-budgetary measure
6 – new tiers would represent lower benefits at a given age/service or longer benefit qualification period
7 – investment risk sharing would introduce programmatic sharing of losses and, potentially, gains amongst all stakeholders

For Illustrative purposes

Poll Question # 5

Poll Question:

- Question: Lowering the assumed rate of return will decrease the amount an employer and/or employee needs to contribute to the fund.

- True
- False

Poll Question:

- Question: Lowering the assumed rate of return will decrease the amount an employer and/or employee needs to contribute to the fund.

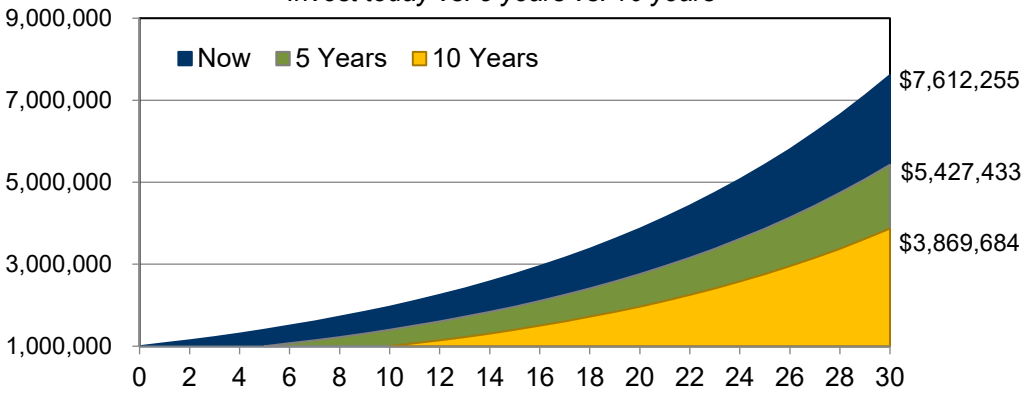
- True
- False

Why Fund OPEB?

- Earn a higher rate of return than cash – more efficient use of resources
- Reduce the unfunded liability that will be reported on the balance sheet following GASB 74/75 by:
  - Dedicating assets to decrease Net OPEB Liability
  - Allowing application of the higher discount rate to some portion of the liability
- Offset the 5%+ growth in costs of the medical benefits by investing in long-term assets
- The cost of the benefit is funded when earned, instead of passed to future taxpayers/ ratepayers

Growth of Initial $1 million Investment*

Invest today vs. 5 years vs. 10 years



**Example represents growth of original deposit at an annual earnings rate of 7%, which is an average long-term rate of return for a balanced fixed-income and equity portfolio; assumes no redemptions of funds.*

Model returns may not reflect material economic or market factors.

Returns are shown before any fees.

Do not assume that the recommendations made in the future will be profitable or will equal the performance cited.

Asset Monetization as a Funding Strategy

- Many governments own significant assets that provide a stable and long-term source of cash-flows. Governments may sell or lease these assets to match long-term cash-flows with the long-term liabilities associated with retirement systems

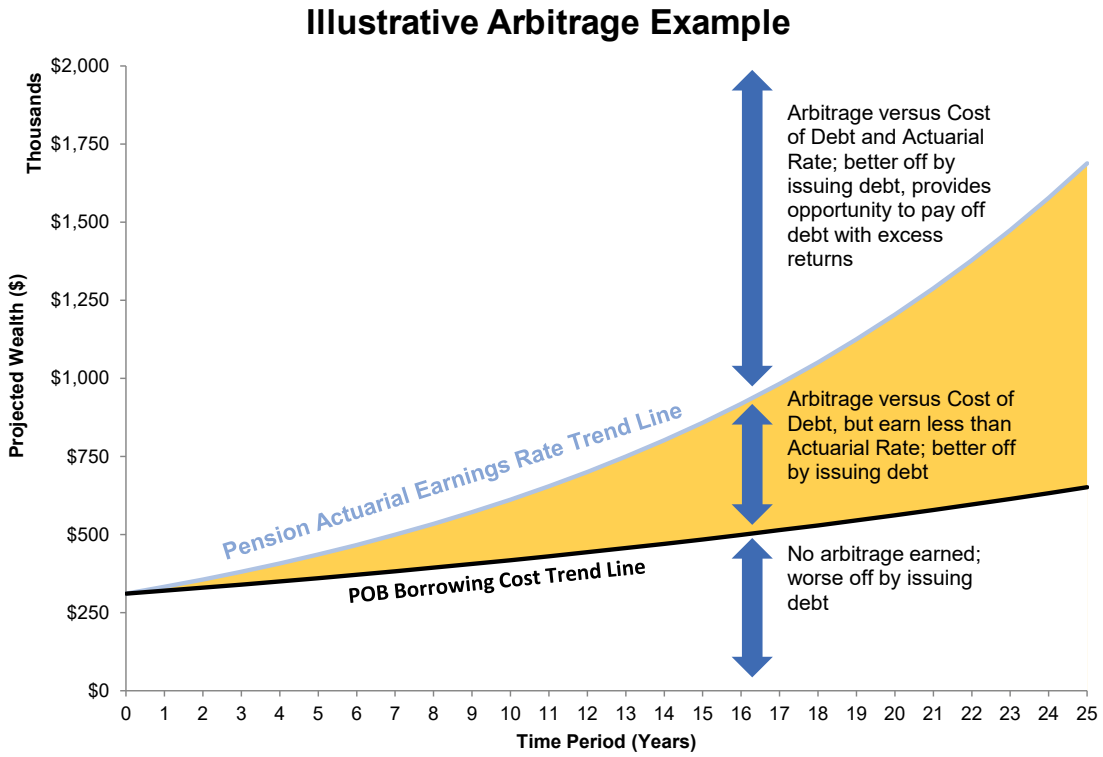
Pittsburgh, PA *rejected a bid of $453 million for a 50-year lease on parking revenues to fund its pension deficit. Instead, it sought to accomplish the same purpose by transferring the yearly parking revenue directly to the pension system. While the economics of this were similar, no changes were made to the pension system's benefits, and the funded ratio is falling.*

Allentown, PA *leased its water utility for 50 years to a public authority in return for $211.3 million, of which $160 million was used to reduce the unfunded pension liability. Future rate increases were limited and there was no initial cost to taxpayers. As a result, Standard & Poor's revised Allentown's ratings outlook from stable to positive.*

Scranton, PA *sold its wastewater system to Pennsylvania American Water for $195 million. The net proceeds of the transaction were utilized to pay off debt and a deposit to the pension system, which was roughly 25% funded in aggregate at 12/31/14. The City's Recovery Coordinator has recommended an exit within the next three years from the state's fiscally distressed status, which has been in place since 1992.*

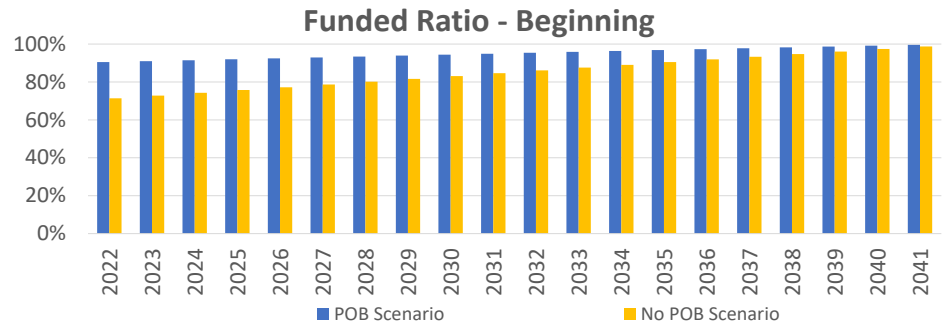
What is a Pension Obligation Bond?

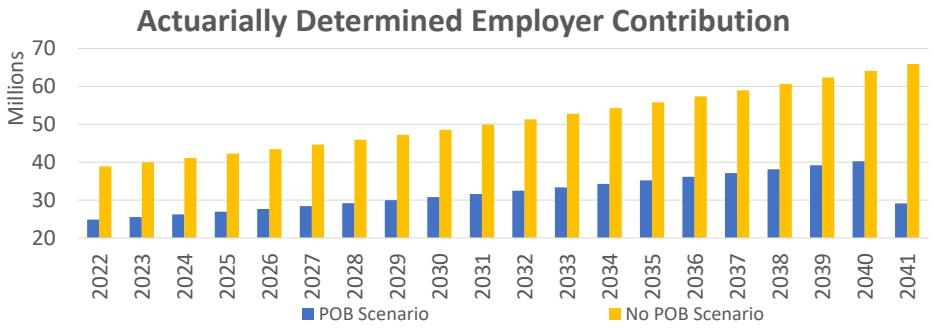
- Issuers of Pension Obligation Bonds ("POBs") issue debt in the taxable fixed rate markets and deposit the proceeds into their pension system
- POBs are a risk-bearing arbitrage strategy between the cost of financing and the long-term return on investment
  - Investment rates that are greater than borrowing costs will achieve net savings to the pension obligation
  - Where net pension savings are achieved, there can be budgetary relief and funding improvements
  - POB proceeds should be invested in asset classes that can generate an arbitrage balanced against the risk/return trade-off
- POBs replace a 'soft liability' with a 'hard liability'

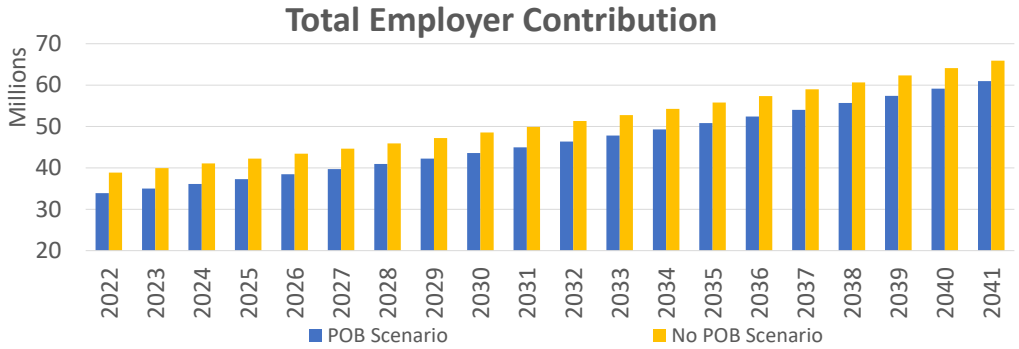


Generating Savings with POB

- A POB issuance may create budgetary cash flow savings by reducing the unfunded liabilities associated with a plan, and then replacing the UAAL amortization payments associated with those now funded liabilities with lower levels of debt service







For Illustrative purposes

POB Strategy Risks

- Failing to achieve the target rate could create additional costs that reduce, or exceed anticipated budgetary savings
  - If the pension system earns less over the life of the bonds than the interest paid on the POBs, then the issuance of the POBs become a net cost
  - Market timing greatly impacts the long-term economics of a POB
  - Investment losses soon after a POB issuance could contribute to a new unfunded liability and could require many years of future gains in order to reach a “breakeven” threshold
- Trading a soft cost (i.e., annual pension contribution requirement) for a hard cost (i.e., debt)
  - Actuarial assumptions and contribution policies have some flexibility which can be adjusted over time to better fit overall general budgetary needs
  - The issuer will no longer have the flexibility they once had to decide how to amortize the portion of the unfunded actuarial accrued liability (UAAL) that is funded via the POB as that will now have been converted to mandatory debt service requirements
- Improved financial health of the pension fund may possibly result in pressure to increase benefits

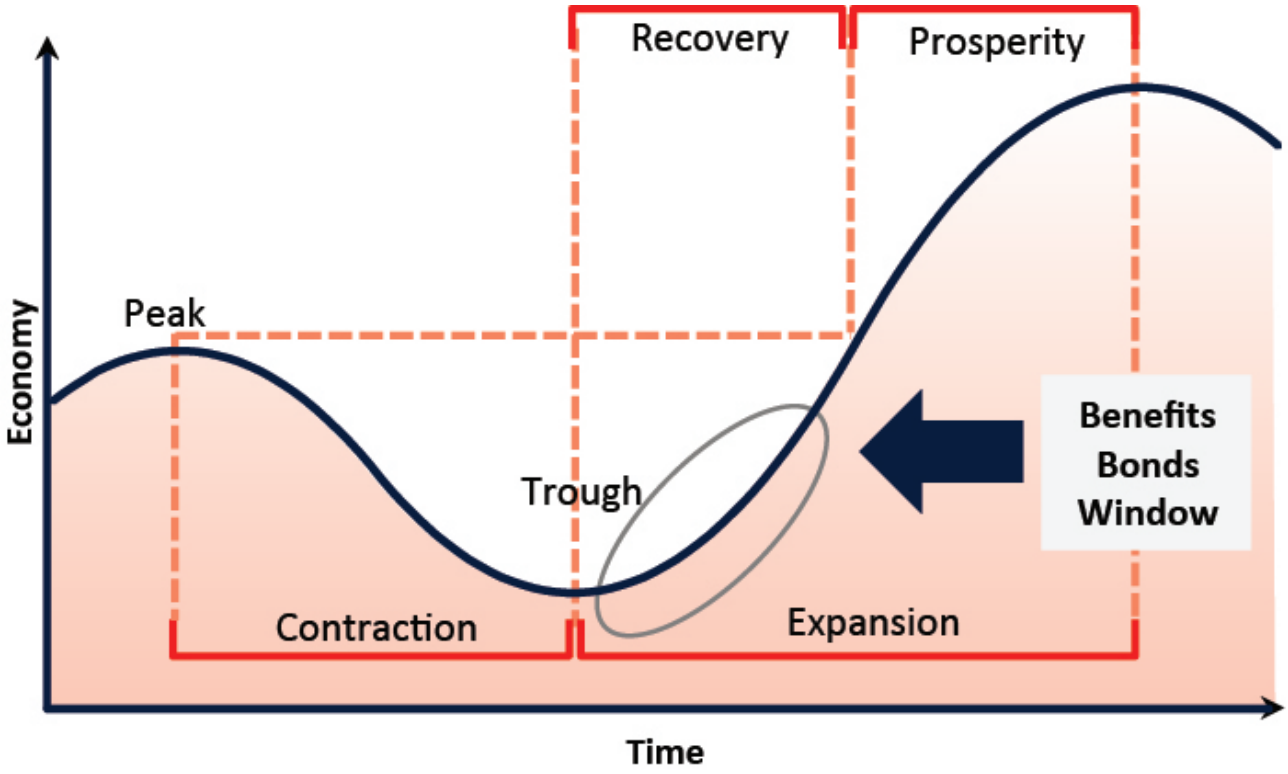
Considerations and Questions to Ask for POB Strategy Development

- What is the appropriate target funded ratio, and how will that impact the size of the POB?
  - If POB issuance is sizeable, consider multi-tranche approach
- What is the proper pension funding policy such that the client is in a better position to contribute 100% of Actuarially Determined Employer Cost (ADEC)?
  - Contributing 100% reduces the probability of compounding future losses through poor funding discipline
- Should adjustment to existing plan policies be implemented to enhance future sustainability of the plan? Examples of policy updates include:
  - COLAs will only be made if they are included fully in the actuarially determined employer contribution (ADEC)
  - No retroactive benefits will be provided unless fully funded up front
  - No new prospective benefits will be provided while the POB is outstanding
- Should a POB trust be created within or alongside the pension trust to hold and invest the POB assets?
- Should an investment policy be adopted that directs the specific investment of POB proceeds? Examples of policy include:
  - Fully invest proceeds in equities (or equivalents) for at least 10 years
  - If proceeds are managed in a pension stabilization trust, then the proceeds should be transitioned to the main corpus of the pension in a disciplined contribution pattern over the remaining life of the POB

What is the Pension Obligation Bond Window?

- The period of time an issuer of benefits bonds can most reasonably expect to invest bond proceeds in the stock market without witnessing lower stock prices in the subsequent economic recession

  - Measured from the bottom of the stock market (which typically corresponds to the trough of an economic business cycle) until the stock market 'breakeven' level with the subsequent stock market bottom
  - Theoretically, the period in which the risk of subsequent cycle loss is < 50%
  - Quantifiable only in hindsight.
  - No one can ever predict in real-time when there is a bottom



Investment of POB Proceeds

- Consider investing proceeds of a POB issuance differently than other retirement system assets
  - Typical pension plan investment strategies have asset allocation targets that include equities, fixed income, and other asset classes
  - Issuers may consider investment strategies for POB proceeds that are different than the typical asset allocation strategies of the plan, with heavier weighting applied to assets with greater potential for increased long-term returns.
  - Over a 20-year history, equity asset classes have typically out-performed fixed income classes, on a relative basis.

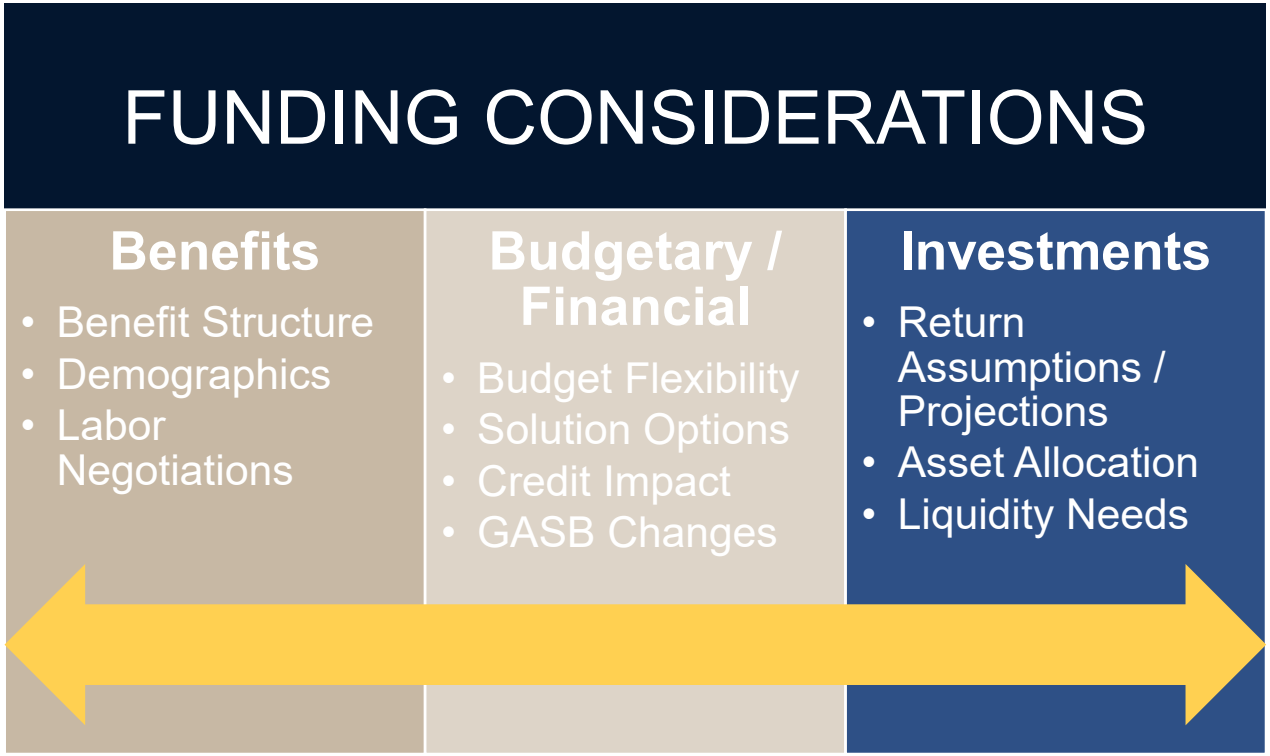
Annual Returns for Key Indices Ranked in Order of Performance (2006–2025)

2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Real Estate 42.12%	Emerging Market Equity 39.38%	U.S. Fixed Income 5.24%	Emerging Market Equity 78.51%	Small Cap Equity 26.85%	U.S. Fixed Income 7.84%	Real Estate 27.73%	Small Cap Equity 38.82%	Real Estate 15.02%	Large Cap Equity 1.38%	Small Cap Equity 21.31%	Emerging Market Equity 37.28%	Cash Equivalent 1.87%	Large Cap Equity 31.49%	Small Cap Equity 19.96%	Large Cap Equity 28.71%	Cash Equivalent 1.46%	Large Cap Equity 26.29%	Large Cap Equity 25.02%	Emerging Market Equity 33.57%
Emerging Market Equity 32.17%	Developed ex-U.S. Equity 12.44%	Global ex-U.S. Fixed 4.39%	High Yield 58.21%	Real Estate 19.63%	High Yield 4.98%	Emerging Market Equity 18.23%	Large Cap Equity 32.39%	Large Cap Equity 13.69%	U.S. Fixed Income 0.55%	High Yield 17.13%	Developed ex-U.S. Equity 24.21%	U.S. Fixed Income 0.01%	Small Cap Equity 25.52%	Large Cap Equity 18.40%	Real Estate 26.09%	High Yield -11.19%	Developed ex-U.S. Equity 17.94%	Small Cap Equity 11.54%	Developed ex-U.S. Equity 31.85%
Developed ex-U.S. Equity 25.71%	Global ex-U.S. Fixed 11.03%	Cash Equivalent 2.06%	Real Estate 37.13%	Emerging Market Equity 18.88%	Global ex-U.S. Fixed 4.36%	Developed ex-U.S. Equity 16.41%	Developed ex-U.S. Equity 21.02%	U.S. Fixed Income 5.97%	Cash Equivalent 0.05%	Large Cap Equity 11.96%	Large Cap Equity 21.83%	High Yield -2.08%	Developed ex-U.S. Equity 22.49%	Emerging Market Equity 18.31%	Small Cap Equity 14.82%	U.S. Fixed Income -13.01%	Small Cap Equity 16.93%	High Yield 8.19%	Large Cap Equity 17.88%
Small Cap Equity 18.37%	U.S. Fixed Income 6.97%	High Yield -26.16%	Developed ex-U.S. Equity 33.67%	High Yield 15.12%	Large Cap Equity 2.11%	Small Cap Equity 16.35%	High Yield 7.44%	Small Cap Equity 4.89%	Real Estate -0.79%	Emerging Market Equity 11.19%	Small Cap Equity 14.65%	Global ex-U.S. Fixed -2.15%	Real Estate 21.91%	Global ex-U.S. Fixed 10.11%	Developed ex-U.S. Equity 12.62%	Developed ex-U.S. Equity -14.29%	High Yield 13.44%	Emerging Market Equity 7.50%	Small Cap Equity 12.81%
Large Cap Equity 15.79%	Large Cap Equity 5.49%	Small Cap Equity -33.79%	Small Cap Equity 27.17%	Large Cap Equity 15.06%	Cash Equivalent 0.10%	Large Cap Equity 16.00%	Real Estate 3.67%	High Yield 2.45%	Developed ex-U.S. Equity -3.04%	Real Estate 4.06%	Global ex-U.S. Fixed 10.51%	Large Cap Equity -4.38%	Emerging Market Equity 18.44%	Developed ex-U.S. Equity 7.59%	High Yield 5.28%	Large Cap Equity -18.11%	Emerging Market Equity 9.83%	Cash Equivalent 5.25%	Real Estate 9.58%
High Yield 11.85%	Cash Equivalent 5.00%	Large Cap Equity -37.00%	Large Cap Equity 26.47%	Developed ex-U.S. Equity 8.95%	Small Cap Equity -4.18%	High Yield 15.81%	Cash Equivalent 0.07%	Cash Equivalent 0.03%	Small Cap Equity -4.41%	Developed ex-U.S. Equity 2.75%	Real Estate 10.36%	Real Estate -5.63%	High Yield 14.32%	U.S. Fixed Income 7.51%	Cash Equivalent 0.05%	Global ex-U.S. Fixed -18.70%	Real Estate 9.67%	Developed ex-U.S. Equity 4.70%	Global ex-U.S. Fixed 8.85%
Global ex-U.S. Fixed 8.16%	High Yield 1.87%	Developed ex-U.S. Equity -43.56%	Global ex-U.S. Fixed 7.53%	U.S. Fixed Income 6.54%	Real Estate -6.46%	U.S. Fixed Income 4.21%	U.S. Fixed Income -2.02%	Emerging Market Equity -2.19%	High Yield -4.47%	U.S. Fixed Income 2.65%	High Yield 7.50%	Small Cap Equity -11.01%	U.S. Fixed Income 8.72%	High Yield 7.11%	U.S. Fixed Income -1.54%	Emerging Market Equity -20.09%	Global ex-U.S. Fixed 5.72%	U.S. Fixed Income 1.25%	High Yield 8.62%
Cash Equivalent 4.85%	Small Cap Equity -1.57%	Real Estate -48.21%	U.S. Fixed Income 5.93%	Global ex-U.S. Fixed 4.95%	Developed ex-U.S. Equity -12.21%	Global ex-U.S. Fixed 4.09%	Emerging Market Equity -2.60%	Global ex-U.S. Fixed -3.09%	Global ex-U.S. Fixed -6.02%	Global ex-U.S. Fixed 1.49%	U.S. Fixed Income 3.54%	Developed ex-U.S. Equity -14.09%	Global ex-U.S. Fixed 5.09%	Cash Equivalent 0.67%	Emerging Market Equity -2.54%	Small Cap Equity -20.44%	U.S. Fixed Income 5.53%	Real Estate 0.94%	U.S. Fixed Income 7.30%
U.S. Fixed Income 4.33%	Real Estate -7.39%	Emerging Market Equity -53.33%	Cash Equivalent 0.21%	Cash Equivalent 0.13%	Emerging Market Equity -18.42%	Cash Equivalent 0.11%	Global ex-U.S. Fixed -3.08%	Developed ex-U.S. Equity -4.32%	Emerging Market Equity -14.92%	Cash Equivalent 0.33%	Cash Equivalent 0.86%	Emerging Market Equity -14.57%	Cash Equivalent 2.28%	Real Estate -9.04%	Global ex-U.S. Fixed -7.05%	Real Estate -25.10%	Cash Equivalent 5.01%	Global ex-U.S. Fixed -4.22%	Cash Equivalent 4.18%

*Source: Callan Institute, 2026, https://www.callan.com/99af199a-1bb0-4ad6-83c2-304aab95fa78

The Three Prongs of Retirement Funding

- To be effective and sustainable, a funding strategy must be considered across three primary areas.



Poll Question # 6

Poll Question:

- Question: Pension Obligation Bonds or OPEB Obligation Bonds are a riskless arbitrage strategy that will solve your pension troubles.

- True
- False

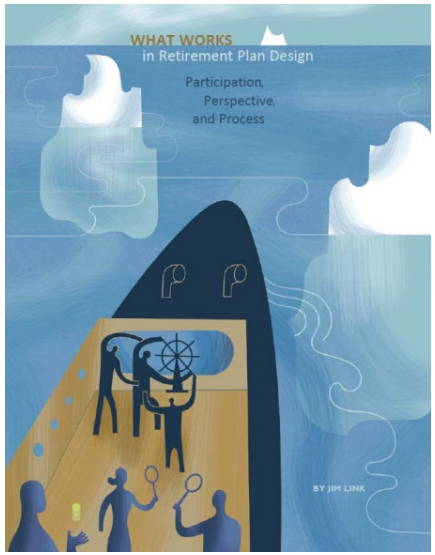
Poll Question:

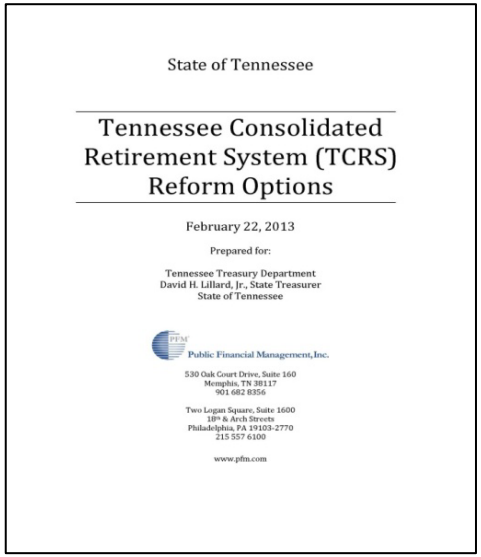
- Question: Pension Obligation Bonds or OPEB Obligation Bonds are a riskless arbitrage strategy that will solve your pension troubles.

- True
- False

Other Considerations for Pension Reform

- Evaluating costs in the context of balance sheets, budgets, and long-range fiscal capacity
- Considering opportunities for system redesign and legislative support
- Utilizing joint labor-management working groups to achieve benefits redesign and funding alternatives
- Other Post-Employment Benefit (OPEB) evaluation and policy development




State of Tennessee

Tennessee Consolidated Retirement System (TCRS) Reform Options

February 22, 2013

Prepared for:

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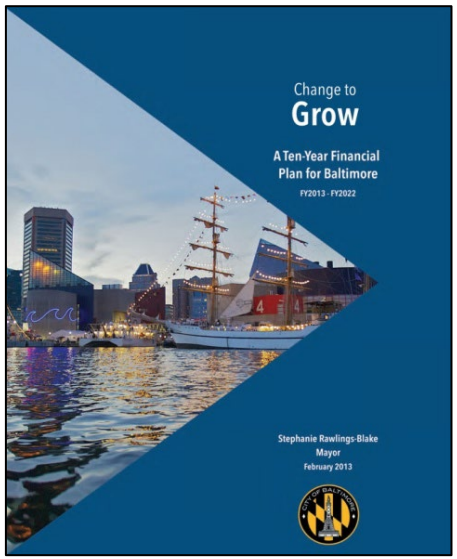

GFOA 2020 Award for Excellence Winner: City of Philadelphia, PA

- Improved funding
  - Dedicated sales tax revenue
  - Negotiated increases to employee contributions
- Shift in funding policy
  - Revenue recognition policy
  - Additional contribution(s) above Minimum Municipal Obligation
- Liability reduction
  - "Stacked hybrid" approach for non-uniformed employees ($65,000 cap)
- Reduced risk
  - Revised actuarial assumptions
  - Modified investment approach
  - Continually lowered assumed rate of return
- Stakeholder engagement
  - Intergovernmental working groups

CREATIVE SOLUTION TO A COMMON CHALLENGE

City of Philadelphia, Pennsylvania

Philadelphia's Road to Pension Recovery

BY JACQUELINE DUNN

In 2018, Philadelphia adopted a comprehensive plan to improve the long-term health of its pension system by paying down its unfunded liability more quickly while also reducing the rate at which future liabilities will grow. Its funding ratio has historically been below average compared to peer cities, and the funded level dropped 10 points from 2008 to 2009, to 45 percent. When reform discussions began in 2016, the fund was still only 44.8 percent funded, with just $4.9 billion available to cover $11 billion in liabilities.

To combat the underfunding, the city employed a bilateral approach, focusing on reforms that foster effective decision-making and fiscal discipline and wide-ranging partnerships that engage elected officials, union officials, and pension board members. These changes were made to improve the health of the pension fund and to reach full funding by 2033.

STRATEGY

The city's plan will improve the pension system's funded level to 80 percent by 2029 and 100 percent by 2033 by:

- Dedicating additional assets to the fund.
- Reducing the rate at which future liabilities grow.
- Reducing the plan's risk profile.

Additional funding comes from dedicated city sales tax revenue, additional employee contributions negotiated through collective bargaining, and payment of the full actuarially required contribution every year. The city created a revenue recognition policy to dedicate these revenues to the city's pension liabilities.

About Philadelphia

The City of Philadelphia, the economic and cultural anchor of the greater Delaware Valley, is the largest city in Pennsylvania and the sixth most populous city in the United States.

DECEMBER 2020 | GOVERNMENT FINANCE REVIEW 33

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