

## Investment Board Meeting Agenda

Friday, December 5, 2025

10:30 a.m. – 3:15 p.m.

IPERS Board Room, 7401 Register Drive, Des Moines, IA

Conference Telephone Number: 646-931-3860 | Meeting ID: 876-1570-2319

- 10:30 a.m. Call to Order**
- 10:30 a.m. Approval of Minutes from the September 24 and September 25, 2025, Board Meetings**
- 10:35 a.m. CEO Report**  
Greg Samorajski, *IPERS*
- 10:45 a.m. 2025 Actuarial Valuation Report**  
Patrice Beckham, Brent Banister and Bryan Hoge, *Cavanaugh Macdonald Consulting, LLC*
- 11:45 a.m. Annual Asset Allocation Review**  
*IPERS, Wilshire and Cavanaugh Macdonald Consulting, LLC*
- 12:15 p.m. Active Risk Budget Review**  
Greg Samorajski, *IPERS*
- 12:30 p.m. Lunch Break**
- 1:00 p.m. Absolute Return Search Manager Hiring Recommendations**  
John Fujiwara and Sheldon Lien, *IPERS*
- 1:15 p.m. CY2024 CEM Investment Benchmarking Review**  
Christopher Doll, *CEM Benchmarking Inc.*
- 1:45 p.m. CY2026 Private Markets Commitments**  
Pat Reinhardt, Marcus Dong and Craig Payne, *IPERS*
- 2:15 p.m. Real Estate Equity Search Manager Hiring Recommendations**  
Pat Reinhardt, Marcus Dong and Craig Payne, *IPERS*
- 2:30 p.m. IPERS Investment Staff Reports**
- Beta Report – Keith Scholten
  - Alpha Report – Investment Team
  - Private Market Program – Investment Team
  - Risk Report – Sriram Lakshminarayanan
  - FY2025 Investment Management Expenses – Keith Scholten
- 3:00 p.m. Other Business**
- 3:05 p.m. Public Comments**
- 3:10 p.m. Other Business**
- Confirm Next Meeting – Friday, March 27, 2026
  - Next BAC Meeting – Monday, January 26, 2026
- 3:15 p.m. Adjourn**



## INVESTMENT BOARD MEETING MINUTES

IPERS Board Room

7401 Register Drive, Des Moines, Iowa

September 24, 2025

The following people participated in the IPERS Investment Board Meeting held on Wednesday, September 24, 2025.

### **Members of the Board - Present**

Bill Bemis, Chair

Kris Rowley, Vice Chair

State Treasurer Roby Smith

Tami Loge

Brent Mathisen

Sara Meinders

Matt Watters

Representative Michael Bergan

Senator Molly Donahue

Senator Mark Lofgren

### **Members of the Board - Absent**

Representative Elizabeth Wilson

### **Administration and Staff**

Greg Samorajski, CEO

Sriram Lakshminarayanan, CIO

John Fujiwara, Head of Strategy

Sheldon Lien, Senior Investment Officer

Pat Reinhardt, Senior Investment Officer

Keith Scholten, Senior Investment Officer

Marcus Dong, Senior Investment Officer

Craig Payne, Senior Investment Officer

Kate Fishman, Retirement Investment Officer

Ankit Saw, Retirement Investment Officer

Melinda McElroy, Executive Assistant

Elizabeth Hennessey, General Counsel

Steve Herbert, Chief Benefits Officer

Shawna Lode, Chief Strategy Officer

Amanda Schwarz, Chief Financial Officer

Megan Schlesky, Legislative Liaison

### **Wilshire**

Thomas Toth

Ali Kazemi

### **Cavanaugh Macdonald**

Patrice Beckham

Bryan Hoge

## **Proceedings**

Chairperson Bill Bemis called the meeting to order at 1:00 p.m.

### **Actuarial Education Session**

Pat Beckham and Bryan Hoge of Cavanaugh Macdonald provided the Board with a comprehensive educational session explaining actuarial principles. They detailed the role of actuaries and the actuarial valuation process, highlighting how membership data, benefit provisions, asset data and actuarial assumptions are used to determine liabilities, contribution rates and funded status. The session moved into an analysis of the June 30, 2024, valuation results. Favorable investment returns resulted in an actuarial gain, reducing the system's unfunded actuarial liability and improving the funded ratio. While required contribution rates for Regular members and Protection Occupation remained unchanged, rates for Sheriffs and Deputies increased due to benefit enhancements. The session concluded with a risk analysis using stochastic modeling to project various future scenarios based on different asset allocations and return assumptions, demonstrating how market volatility and PERS' funding policy affect contribution rates, funded ratios and asset values over different time horizons.

### **Capital Market Update and Benchmark Education**

Thomas Toth and Ali Kazemi of Wilshire delivered a capital market update and benchmark education session, outlining Wilshire's forward-looking capital market assumptions based on expected returns, historical risk and correlations. These assumptions, which use a 30-year horizon, focus on passive public market returns and exclude active management. The session compared expected returns and risks across asset classes like U.S. equity, international equity, private equity, private credit and real assets. It then addressed the complexities of benchmarking private assets, noting challenges such as infrequent measurement and lack of passive alternatives. The presentation discussed the impact of the investment environment and the denominator effect, where strong private equity performance can skew allocations. Benchmarking options reviewed included custom benchmarks, private equity indices and public market indices with premiums, each with limitations. The concept of actionable versus inactionable tracking error was introduced, and the session concluded with an overview of IPERS' current policy benchmark, strategic asset allocation targets and excess return comparisons. Wilshire emphasized that no single benchmark is sufficient and recommended a multi-faceted approach, while also highlighting the total portfolio approach and best practices for benchmarking traditional and non-traditional assets.

### **Active Risk at IPERS**

Sriram Lakshminarayanan presented an overview of active risk management at IPERS, explaining that the Investment Board sets risk tolerance and strategic asset allocation, while staff implements these policies efficiently, managing both cost and risk. The Board also defines an active risk budget to guide value-added strategies without excessive deviation from passive benchmarks. IPERS currently maintains

low active risk with strong return-to-risk efficiency. The presentation explored how active risk can be deployed through asset allocation. It reviewed smart beta strategies adopted in 2017 to reduce costs and improve downside protection, though early implementations had limited factor exposure. The concept of pure alpha was discussed, noting its scarcity outside hedge funds but potential in absolute return strategies. Portable alpha strategies were also covered, allowing IPERS to pursue alpha sources independently of strategic allocation using beta overlays and careful leverage and liquidity management. As of June 30, 2025, the portfolio included long-only, portable alpha and cash overlay strategies. Looking ahead, IPERS plans to rebalance risk distribution, seek strategies that outperform traditional premia and potentially double active risk, emphasizing fee efficiency and favoring internal solutions unless external ones offer clear advantages.

### **Adjournment**

The meeting adjourned at 4:00 p.m.



## INVESTMENT BOARD MEETING MINUTES

IPERS Headquarters

7401 Register Drive, Des Moines, Iowa

September 25, 2025

The following people participated in the IPERS Investment Board meeting held on Thursday, September 25, 2025.

### Members of the Board - Present

Bill Bemis, Chair

Kris Rowley, Vice Chair

State Treasurer Roby Smith

Tami Loge

Brent Mathisen

Sara Meinders

Matt Watters

Representative Michael Bergan

Representative Elizabeth Wilson

Senator Molly Donahue

Senator Mark Lofgren

### Members of the Board - Absent

None

### Administration and Staff

Greg Samorajski, CEO

Sriram Lakshminarayanan, CIO

John Fujiwara, Head of Strategy

Sheldon Lien, Senior Investment Officer

Keith Scholten, Senior Investment Officer

Pat Reinhardt, Senior Investment Officer

Marcus Dong, Senior Investment Officer

Craig Payne, Senior Investment Officer

Ankit Saw, Retirement Investment Officer

Melinda McElroy, Executive Assistant

Elizabeth Hennessey, General Counsel

Steven Herbert, Chief Benefits Officer

Shawna Lode, Chief Strategy Officer

Amanda Schwarz, Chief Financial Officer

Megan Schlesky, Legislative Liaison

### Consultant - Wilshire

Thomas Toth

Ali Kazemi

Ned McGuire

## **Proceedings**

Chairperson Bill Bemis called the meeting to order at 8:30 a.m.

## **Election of Chair and Vice Chair**

Tami Loge nominated Bill Bemis as chair and Kris Rowley as vice chair. Matt Watters seconded the nominations. The motion carried by unanimous voice vote.

## **Approval of Minutes**

Sara Meinders moved to approve the meeting minutes from the June 19, 2025, and August 22, 2025, Investment Board meetings. Kris Rowley seconded. The motion carried by unanimous voice vote.

## **CEO Report**

Greg Samorajski provided a comprehensive update on staffing, organizational changes and strategic initiatives. IPERS received approval for additional full-time employees, which allowed the hiring of five new retirement benefit officers introduced during the meeting. Two key retirements—John Nelson and Rick Hindman—are expected early 2026, with Steve Herbert assuming expanded responsibilities as Chief Benefit Officer. To enhance efficiency, IPERS is increasingly leveraging vendor partnerships and technology, including the implementation of an AI-powered phone system (Amazon Connect), a cloud-based pension administration platform via Vitech and document management through OpenText. Concluding his report, Greg announced that Shawna Lode will lead the Strategy Division, Megan Schlesky was hired as IPERS' new legislative liaison and Rachel Simon will assume responsibility for external communications.

## **IPERS FY2027 Budget**

Greg Samorajski reviewed IPERS' proposed FY2027 budget noting that unlike most state government agencies, IPERS receives no funding from the state general fund or any other government source. Expenditures are paid entirely from the IPERS Trust Fund that is funded only with member and employer contributions. IPERS' administrative budget is subject to appropriation from the Iowa Legislature. IPERS' budget request includes a \$20,000 reduction from FY2026. The Board expressed their support of the budget request.

## **FY2025 Investment Performance Review**

Thomas Toth and Ali Kazemi of Wilshire presented IPERS' investment performance for the fiscal year ended June 30, 2025. The portfolio returned 9.87% (net of fees) during FY2025, slightly exceeding its policy benchmark return of 9.85% over the same period.

## **Annual Asset Allocation Review**

Thomas Toth, Ali Kazemi and Ned McGuire of Wilshire presented the annual asset allocation review, modeling potential portfolios with de-risking options. They concluded that IPERS' current portfolio is efficient, well diversified and provides ample liquidity. Given the current capital market, they identified opportunities to rotate out of growth assets, decrease risk and improve liquidity. The proposed 7% return portfolio improves liquidity and slightly increases the projected funded status. Using Wilshire's regime modeling, the proposed 7% return portfolio outperforms the current mix in modeled downside events.

Because of the long-term nature of the allocation strategy, it was agreed to postpone any action to gather more information. Two potential next steps were suggested: first, to request Wilshire to run the asset allocation using equilibrium assumptions to understand long-term implications; and second, to conduct an internal survey of forecasts from other firms to compare assumptions and run in-house allocation models. The Board agreed to defer decisions until December, after further analysis.

## **Annual Review of Investment Policy and Goal Statement**

No changes were made to the Investment Policy and Goal Statement or the Asset Allocation Policy.

## **Securities Lending Program Review**

Jina Bresson of the State Treasurer's Office provided an overview of the securities lending program and the earnings by fiscal year. For FY2025 earnings were slightly over \$1 million.

## **IPERS Investment Staff Reports**

### ***Beta Report***

Sriram Lakshminarayanan reported all asset classes were within acceptable policy ranges as of September 12, 2025, and the total fund market value estimate was \$48.1 billion on that date.

### ***Alpha Report***

The investment staff reviewed the alpha report noting minor performance concerns with fixed-income manager Man and LARS manager Welton Global. Also noted was a minor personnel concern for Mesirow, also a fixed-income manager.

### ***Private Markets Program***

Pat Reinhardt reviewed IPERS' private market managers noting material performance concerns with Heitman CREDIT, minor organizational concerns with Crestline and minor personnel concerns with BlackRock.

### ***Risk Report***

Sriram Lakshminarayan presented IPERS' risk monitoring report, which indicated plan-level total active risk of 0.23%. He also mentioned that staff are now tracking IPERS' ARP program along with staff-directed trades. He expects the passive risk to roll off towards the end of the fourth quarter.

### **Public Comments**

None

### **Confirm Next Meeting Date and Adjournment**

The next regularly scheduled IPERS Investment Board meeting is Friday, December 5, 2025. With no further business to address, Kris Rowley moved to adjourn the meeting, and Matt Watters seconded. The meeting adjourned at 11:50 a.m.



# Presentation of the IPERS June 30, 2025 Actuarial Valuation Results

Presented by: December 5, 2025



Patrice A. Beckham, FSA, EA, FCA, MAAA  
Brent A. Banister, PhD, FSA, EA, FCA, MAAA  
Bryan K. Hoge, FSA, EA, FCA, MAAA

- Actuarial Valuation Process
- June 30, 2025 Valuation Results
- FY 2025 GASB Results





## Performed Annually as of June 30

- Update previous valuation and reflect fiscal year 2025 events
- Comment on, and quantify, fiscal year 2025 events that impacted the June 30, 2025 valuation
- Assess and disclose key funding risks



## Funding Results

- Disclose key asset and liabilities measures
- Funded ratio and Unfunded Actuarial Liability (UAL) as of June 30, 2025
- Determine Actuarial and Required Contribution Rates for FY 2027



## Projection Results

- Using modeling tool, project System's funded status and Required Contribution Rates in the future, if all assumptions are met.
- Sensitivity analysis on projection results if investment returns vary from the assumed rate of return.

## Asset Experience

- Net market return for fiscal year 2025 of 9.87%.
- Due to asset smoothing, return on actuarial assets was 8.20%.
- **Resulted in an actuarial gain of \$506 million.**

## Liability and Other Experience

- Main sources of liability experience were from more retirements and higher than expected salary increases.
- **Net liability loss of \$241 million.**
- Contributions above the actuarial rate decreased the UAL by \$188 million.

## Legislative Changes

- House File 969 broadened the cancer coverage for accidental disability for Sheriffs/Deputies and Protection Occupation groups.
- Member share of contribution rate increased by a fixed rate of 0.125% to offset the potential cost.
- **No cost impact in valuation because disability assumption not changed.**

Builds funds during working careers.



Investment returns help pay for benefits.



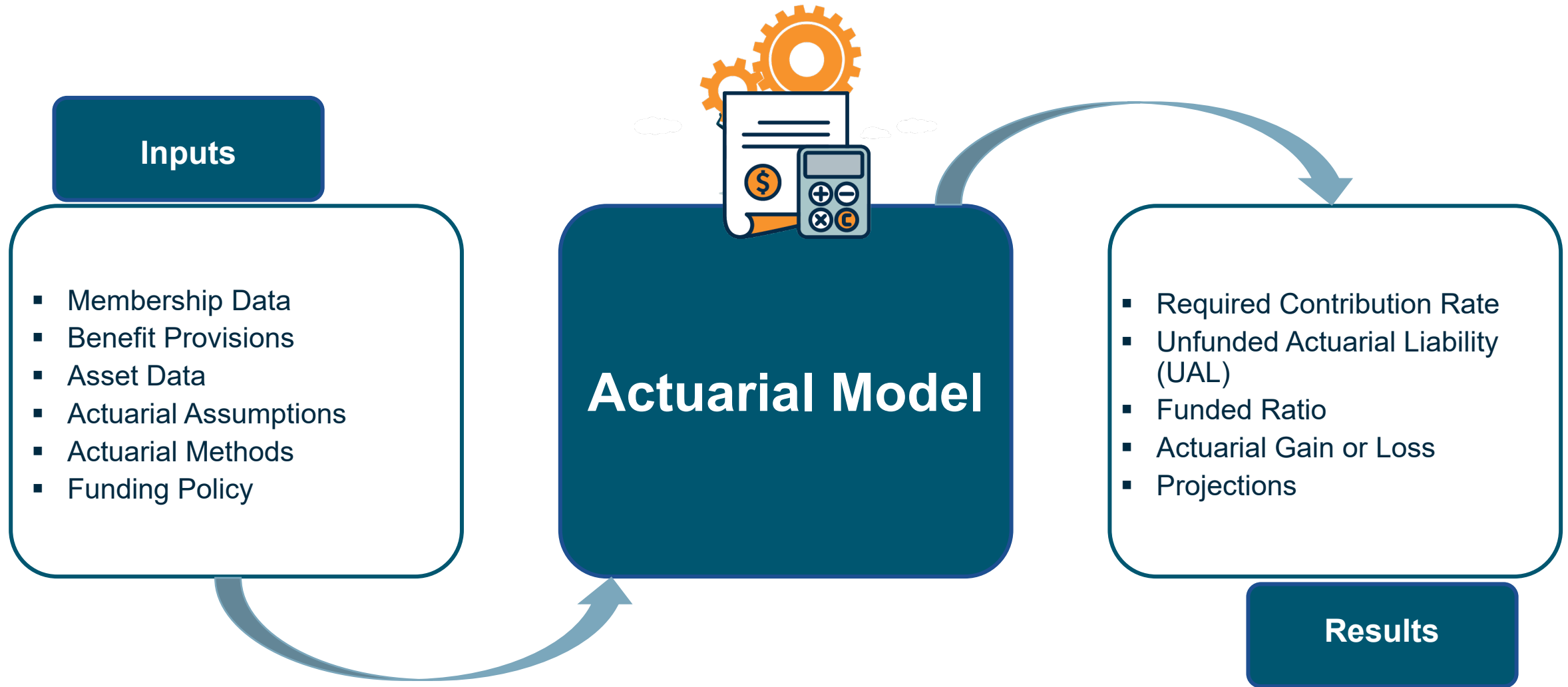
Actuarial valuation is mathematical model of financial future of system.



Actuarial cost method's goal is level contributions as percent of payroll.



Goal is contribution equity among generations of active members and taxpayers.



# Key Valuation Results for the Total System

	<u>June 30, 2025</u>	<u>June 30, 2024</u>
Actuarial Liability (\$M)	\$ 49,063	\$ 47,303
Actuarial Assets (\$M)	<u>45,222</u>	<u>42,927</u>
Unfunded Actuarial Liability (\$M)	\$ 3,841	\$ 4,375
Funded Ratio – AVA	92.17%	90.75%
Funded Ratio – MVA	95.27%	92.30%
Actuarial Contribution Rate*	13.10%	13.54%
Required Contribution Rate*	<u>(15.73%)</u>	<u>(15.73%)</u>
Shortfall/(Margin)*	(2.63%)	(2.19%)
* Regular members only		

Note: Numbers may not add due to rounding.

# Key Valuation Results By Member Group

Contribution Rate for FY 2027			
	Regular Membership	Sheriffs and Deputies	Protection Occupation
1. Normal Cost Rate	10.63%	20.10%	15.42%
2. Amortization of UAL	<u>2.47%</u>	<u>4.32%</u>	<u>0.00%</u>
3. Actuarial Contribution Rate	13.10%	24.42%	15.42%
4. Required Contribution Rate	15.73%	24.42%	15.52%
5. Shortfall/(Margin) (3) - (4)	(2.63%)	0.00%	(0.10%)
6. Employee Contribution Rate	6.29%	12.335%	6.335%
7. Employer Contribution Rate (4) - (6)	9.44%	12.085%	9.185%
8. Unfunded Actuarial Liability (\$M)	\$3,843	\$104	(\$107)
9. Funded Ratio	91.56%	90.94%	104.47%

The Required Contribution Rate remains unchanged for Regular Members as well as Protection Occupation members.





Due to extreme volatility, the market value of assets is not used directly in funding valuation

Asset valuation method is used to smooth the effect of market fluctuations and develop the “actuarial value of assets”

For IPERS, the actuarial value of assets is the expected value (based on the expected return of 7.0% and contributions and benefit payments) plus 25% of difference between the actual and expected values

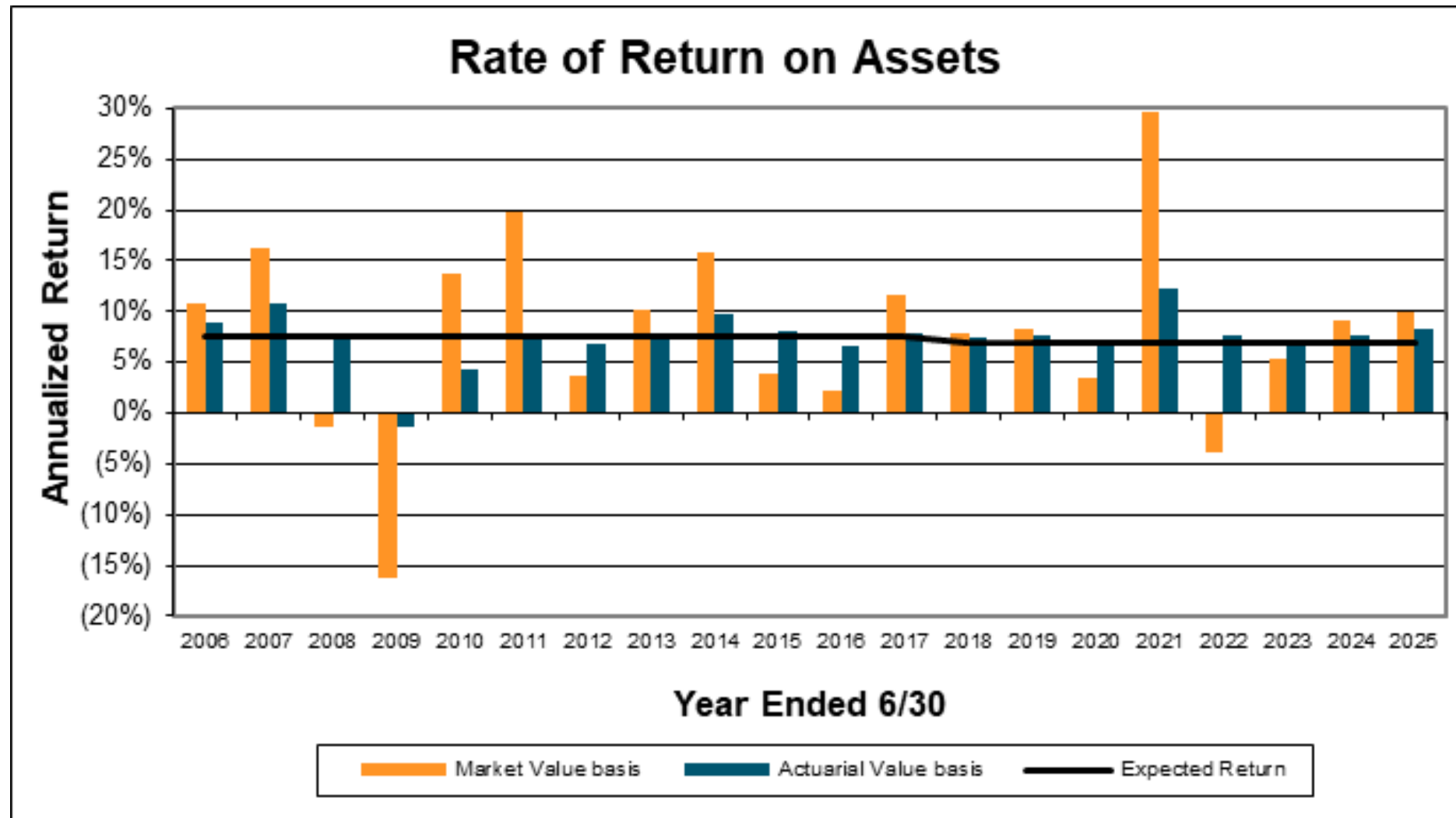
Resulting value of actuarial assets must be within a corridor of 80-120% of pure market value (corridor did not apply this year)

	<u>Market Value</u>	<u>Actuarial Value</u>
Assets, June 30, 2024	\$ 43,661	\$ 42,927
▪ Contributions	1,658	1,658
▪ Benefit Payments	(2,834)	(2,834)
▪ Investment Income	4,256	3,471
▪ FED Transfer	0	0
Assets, June 30, 2025	\$ 46,741	\$ 45,222
Estimated Rate of Return	9.87%*	8.20%

\* As reported by IPERS

The 8.20% return on actuarial value of assets resulted in a \$506 million actuarial gain. Due to unrecognized investment gains, the market value of assets is currently 103% of actuarial value.

# Historical Asset Returns

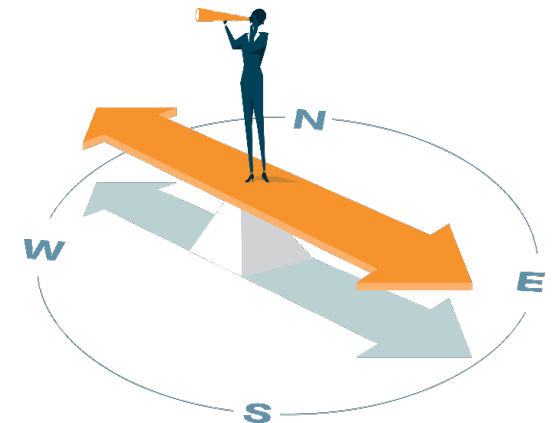


Expected return is 7.5% for all years through 2017 and 7.0% thereafter.

# UAL by Group (\$ in Millions as of 6/30/25)

	<u>Regular</u>	<u>Sheriffs &amp; Deputies</u>	<u>Protection Occupation</u>	<u>Total</u>
Actuarial Liability	\$45,527	\$1,150	\$2,386	\$49,063
Actuarial Value of Assets	<u>41,683</u>	<u>1,046</u>	<u>2,493</u>	<u>45,222</u>
Unfunded Actuarial Liability (UAL)	\$3,843	\$104	\$(107)	\$3,841
Funded Ratio	91.56%	90.94%	104.47%	92.17%

Note: Numbers may not add due to rounding.



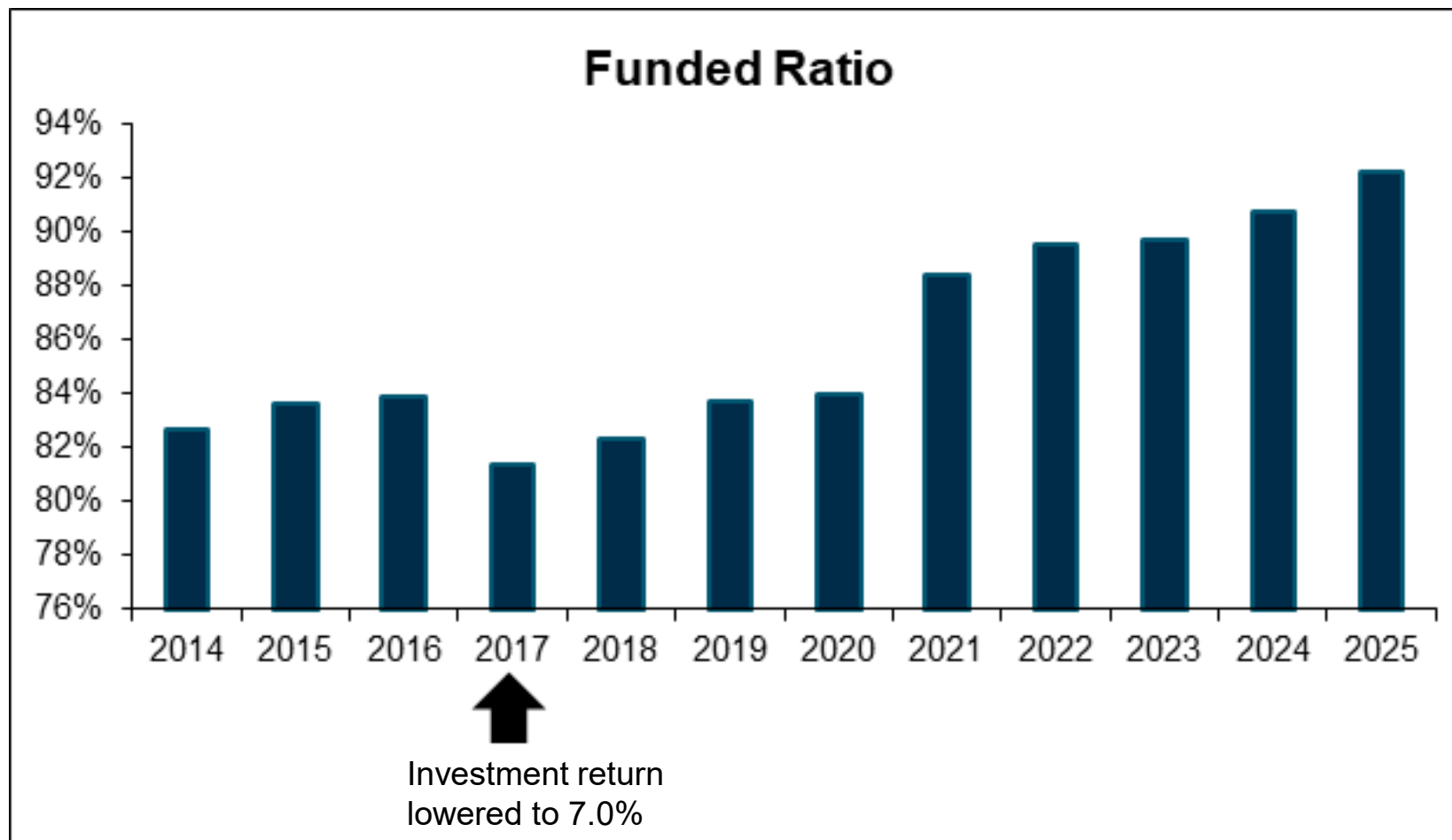
# Change in Unfunded Actuarial Liability (\$M)

	<u>Regular Members</u>	<u>Sheriffs &amp; Deputies</u>	<u>Protection Occupation</u>	<u>Total</u>
<b>UAL June 30, 2024</b>	\$4,370	\$88	\$(82)	\$4,375
Contributions above actuarial rate	(187)	0	(1)	(188)
Expected increase/(decrease)	(25)	12	(5)	(19)
Investment experience	(467)	(10)	(29)	(506)
Liability experience	212	14	15	241
Benefit changes	0	0	0	0
Other	<u>(59)</u>	<u>0</u>	<u>(3)</u>	<u>(62)</u>
<b>UAL June 30, 2025</b>	\$3,843	\$104	\$(107)	\$3,841

Note: Numbers may not add due to rounding.

Although HF 969, which was passed in the 2025 session, impacted the benefit provisions for Sheriffs & Deputies and Protection Occupation, there was no increase in the UAL reflected in this valuation because the disability assumption was not changed.

# Historical Funded Ratio (All Groups)



*The decrease in 2017 resulted from lowering the investment return assumption from 7.5% to 7.0%. Since then, the funded ratio has steadily improved, primarily due to a combination of favorable investment experience and contributions above the actuarial rate.*

Final FED payment was made in January 2014.

FED reserve account assets remain \$0 as of June 30, 2025.

Contribution Rate Funding Policy was modified by the Board to prevent higher contributions to pre-fund FED transfers.

No future transfers to FED reserve account are assumed in the valuation results.



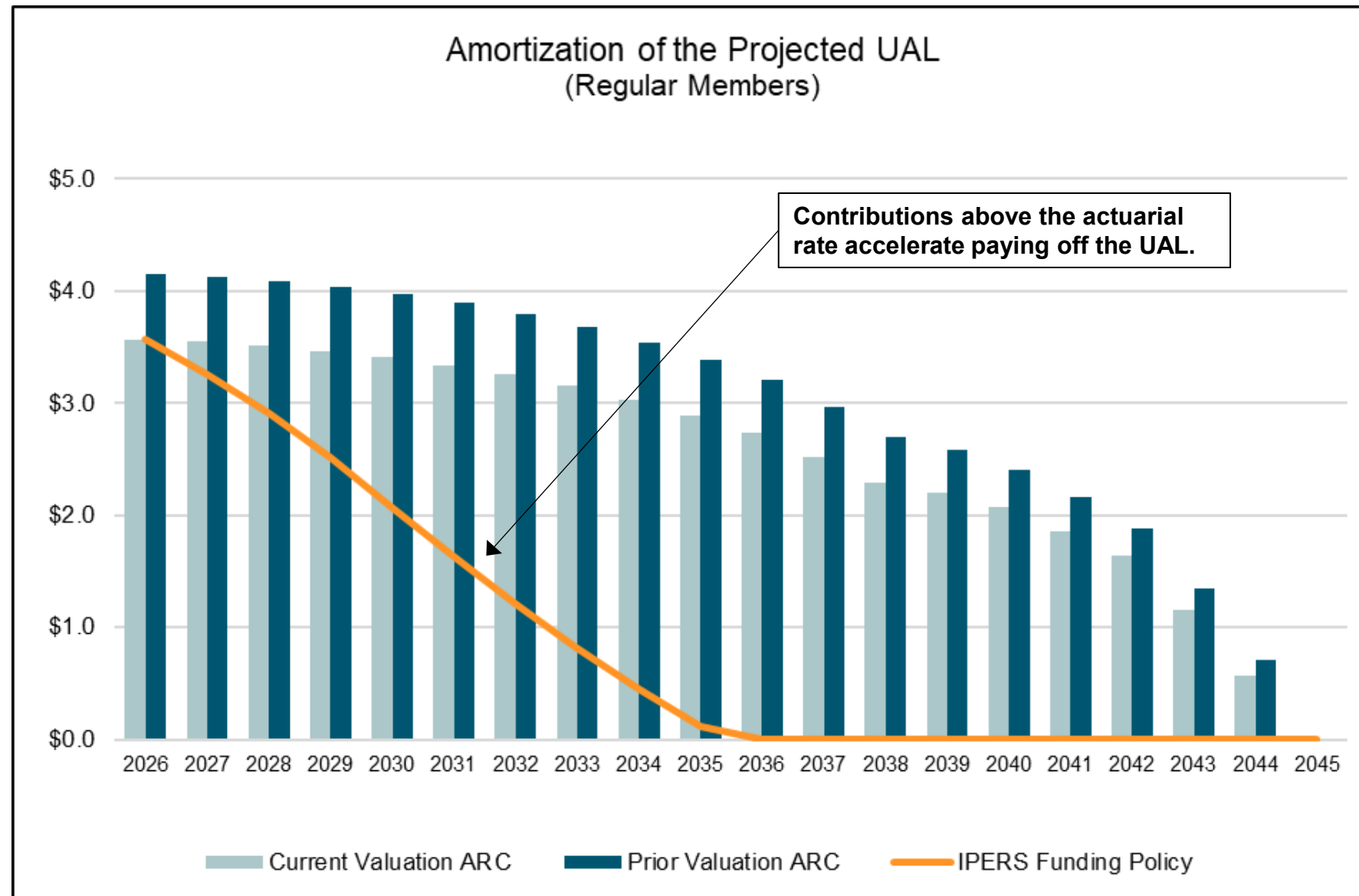
- Components
  - Normal Cost (ongoing cost for actives)
  - Amortization payment on the Unfunded Actuarial Liability (UAL)
  
- UAL Amortization Policy (Layered Amortization)
  - June 30, 2014 base (legacy base) is amortized over a closed 30-year period (19 years remaining).
  - After the 2014 valuation, variations in the expected vs. actual UAL are established as a new amortization base with a closed 20-year period.
  - Changes in UAL due to revised assumptions (2017, 2018 and 2022) were amortized over separate closed 20-year periods.
  - Once a group becomes 100% funded, all outstanding bases are eliminated, and the surplus (actuarial assets over actuarial liability) is amortized over an open 30-year period.

# UAL Amortization Bases (Regular Members)

Amortization Bases	Original Amount	Remaining Payments*	Projected July 1, 2026 Balance	Annual Payment**
2014 Initial UAL	\$ 5,592,056,086	19	\$ 6,070,744,758	\$ 447,058,242
2015 Experience	(193,648,198)	10	(158,813,639)	(19,187,737)
2016 Experience	21,763,596	11	18,584,133	2,075,630
2017 Experience	(158,062,524)	12	(139,384,108)	(14,509,450)
2017 Assumption Changes	1,435,708,789	12	1,266,049,558	131,791,800
2018 Experience	(310,129,854)	13	(282,245,473)	(27,572,462)
2018 Assumption Changes	75,130,979	13	68,375,805	6,679,609
2019 Experience	(384,733,612)	14	(359,261,561)	(33,128,520)
2020 Experience	67,832,112	15	64,666,182	5,657,013
2021 Experience	(1,670,503,783)	16	(1,618,793,624)	(134,930,228)
2022 Experience	(351,647,258)	17	(345,063,439)	(27,509,264)
2022 Assumption Changes	9,926,473	17	9,740,621	776,545
2023 Experience	19,791,982	18	19,600,564	1,499,585
2024 Experience	(471,153,951)	19	(469,496,451)	(34,574,384)
2025 Experience	(576,373,881)	20	(576,373,881)	(40,964,329)
<b>Total</b>			<b>\$ 3,568,329,445</b>	<b>\$ 263,162,050</b>

\* Payment amounts reflect mid-year timing and increase 3.25% with the assumed increase in payroll growth.

# UAL Balance Under Amortization Schedule



- Contribution Rate Funding Policy

- Compares Required Contribution Rate (RCR) from prior year to Actuarial Contribution Rate (ACR) in current year
- If  $ACR < \text{previous RCR}$ , then:
  - If difference is  $< 0.50\%$ , RCR is unchanged
  - If difference is  $\geq 0.50\%$ , RCR is lowered by  $0.50\%$  provided funded ratio is  $95\%$  or higher
- If  $ACR > \text{previous RCR}$ , then current RCR shall be:
  - Regular members: increased to ACR or  $1\%$  more than previous RCR, whichever is smaller
  - Sheriffs/Deputies: increased to ACR
  - Protection Occupation: increased to ACR



## Valuation Date

(Contribution Rates for FY 2027/FY 2026)

### REGULAR MEMBERS

	<u>June 30, 2025</u>	<u>June 30, 2024</u>
UAL Payment	2.47%	2.91%
Funded Ratio	91.6%	90.1%
Normal Cost	10.63%	10.63%
Applicable UAL Rate	<u>2.47%</u>	<u>2.91%</u>
Total Actuarial Contribution Rate	13.10%	13.54%
Employee Rate	6.29%	6.29%
Employer Rate	<u>9.44%</u>	<u>9.44%</u>
Required Contribution Rate	15.73%	15.73%
<b>Shortfall/(Margin)</b>	<b>(2.63%)</b>	<b>(2.19%)</b>

Note: The Regular membership group is less than 95% funded so the Required Contribution Rate does not change despite the reduction in the Actuarial Contribution Rate.

## SHERIFFS AND DEPUTIES

### Valuation Date

(Contribution Rates for FY 2027/FY 2026)

	<u>June 30, 2025</u>	<u>June 30, 2024</u>
UAL Payment	4.32%	4.12%
Funded Ratio	90.9%	91.8%
Normal Cost	20.10%	20.06%
Applicable UAL Rate	<u>4.32%</u>	<u>4.12%</u>
Total Actuarial Contribution Rate	24.42%	24.18%
Employee Rate	12.335%	12.09%
Employer Rate	<u>12.085%</u>	<u>12.09%</u>
Required Contribution Rate	24.420%	24.18%
<b>Shortfall/(Margin)</b>	<b>0.00%</b>	<b>0.00%</b>

Note: The ACR is greater than the prior year's RCR, so the RCR was increased to the ACR.

Note: Due to HF 969, the employee contribution rate is 50% of the Required Contribution Rate plus an additional fixed 0.125%. The employer contributes the remainder of the Required Contribution Rate.

## PROTECTION OCCUPATION

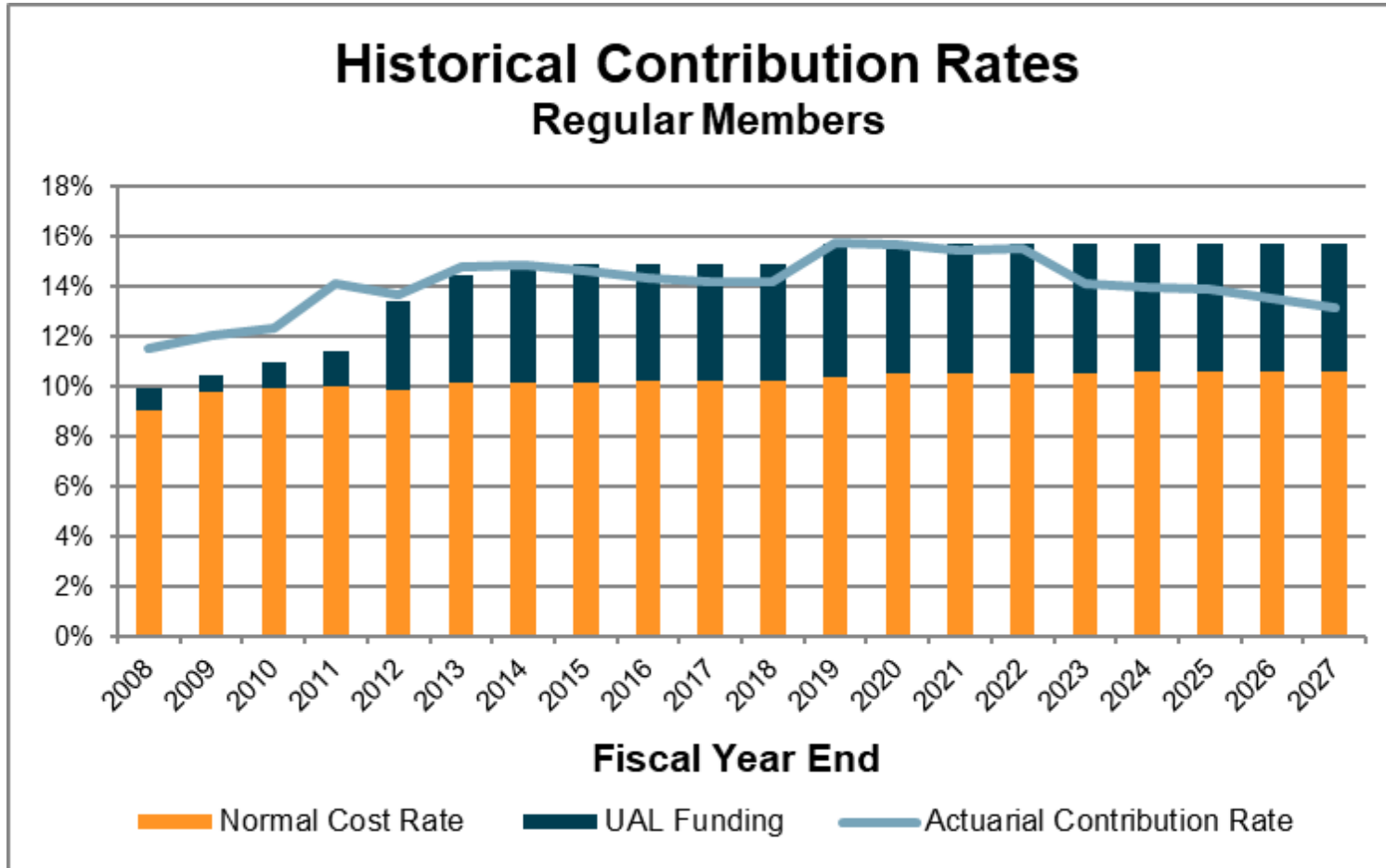
### Valuation Date (Contribution Rates for FY 2027/FY 2026)

	<u>June 30, 2025</u>	<u>June 30, 2024</u>
UAL Payment	(1.12%)	(0.92%)
Funded Ratio	104.5%	103.7%
Normal Cost	15.42%	15.43%
Applicable UAL Rate*	<u>0.00%</u>	<u>0.00%</u>
Total Actuarial Contribution Rate	15.42%	15.43%
Employee Rate	6.335%	6.21%
Employer Rate	<u>9.185%</u>	<u>9.31%</u>
Required Contribution Rate	15.520%	15.52%
<b>Shortfall/(Margin)</b>	<b>(0.10%)</b>	<b>(0.09%)</b>

Note: The ACR is not less than the prior year's RCR by more than 0.50% so the RCR was not decreased by 0.50%.

\*The UAL Rate is allowed to be negative only if the funded ratio was at least 110% for the last three years.

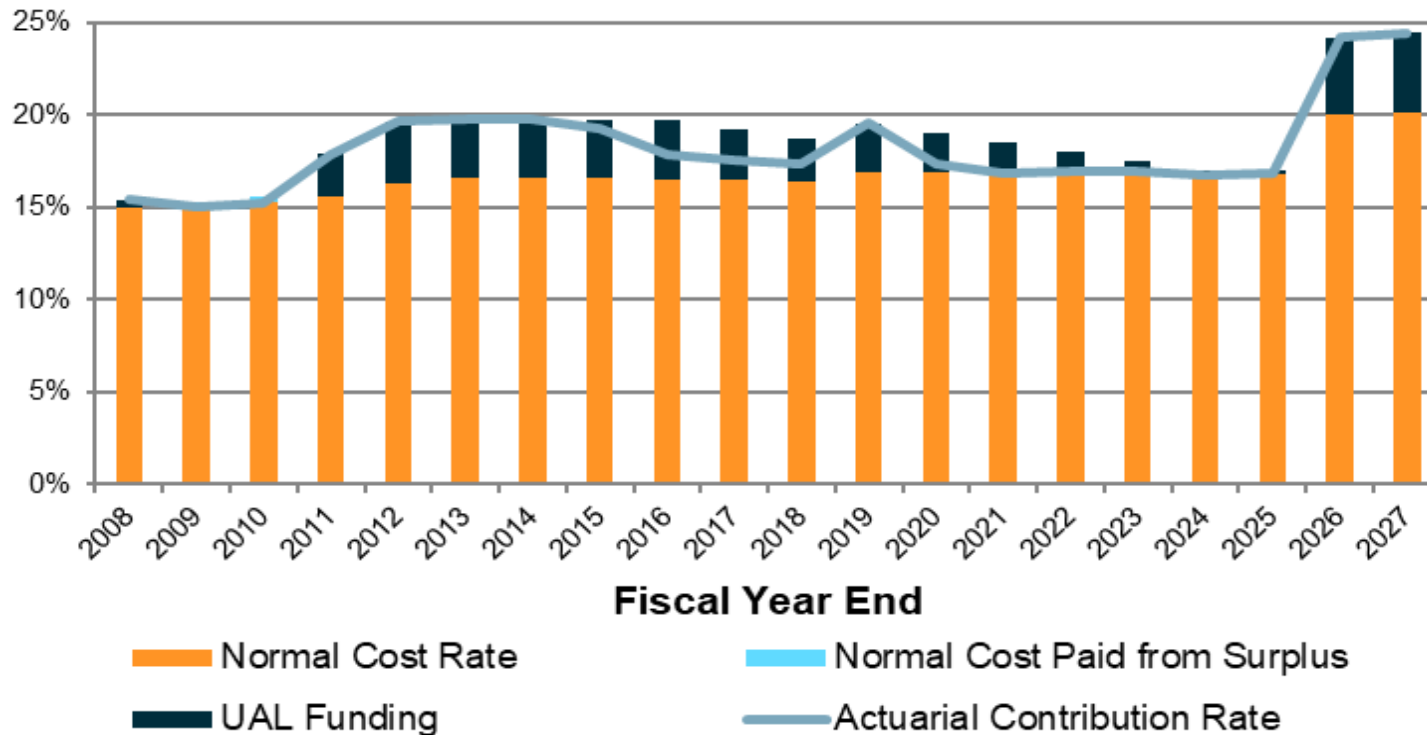
**Note: Due to HF 969, the employee contribution rate is 40% of the Required Contribution Rate plus an additional fixed 0.125%. The employer contributes the remainder of the Required Contribution Rate.**



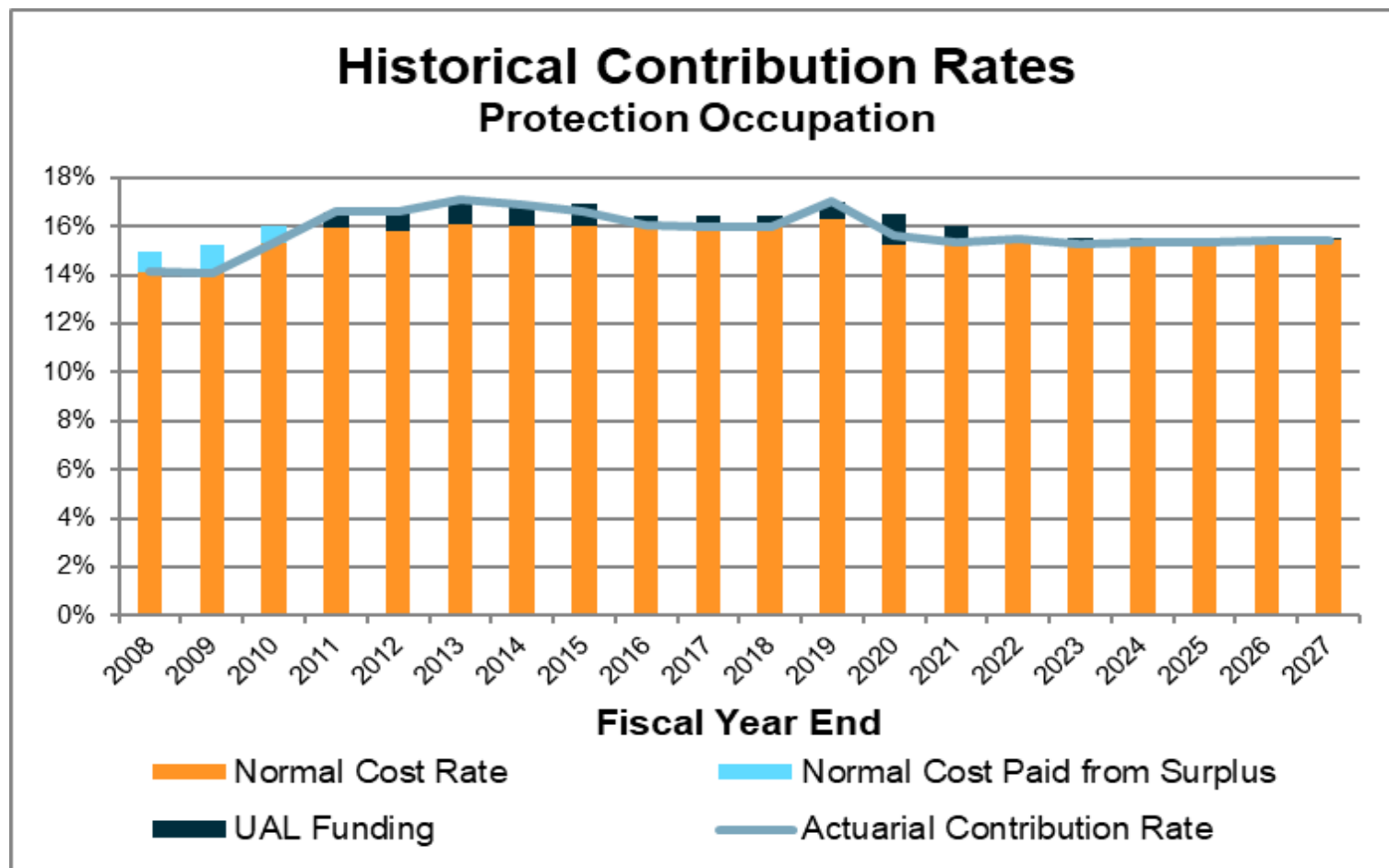
In the first part of this period, the contribution rates were fixed in statute. The ability for the IPERS Board to set the contribution rate beginning in 2013, within certain parameters, has resulted in an actual contribution rate equal to or above the actuarial contribution rate for the last fourteen years.



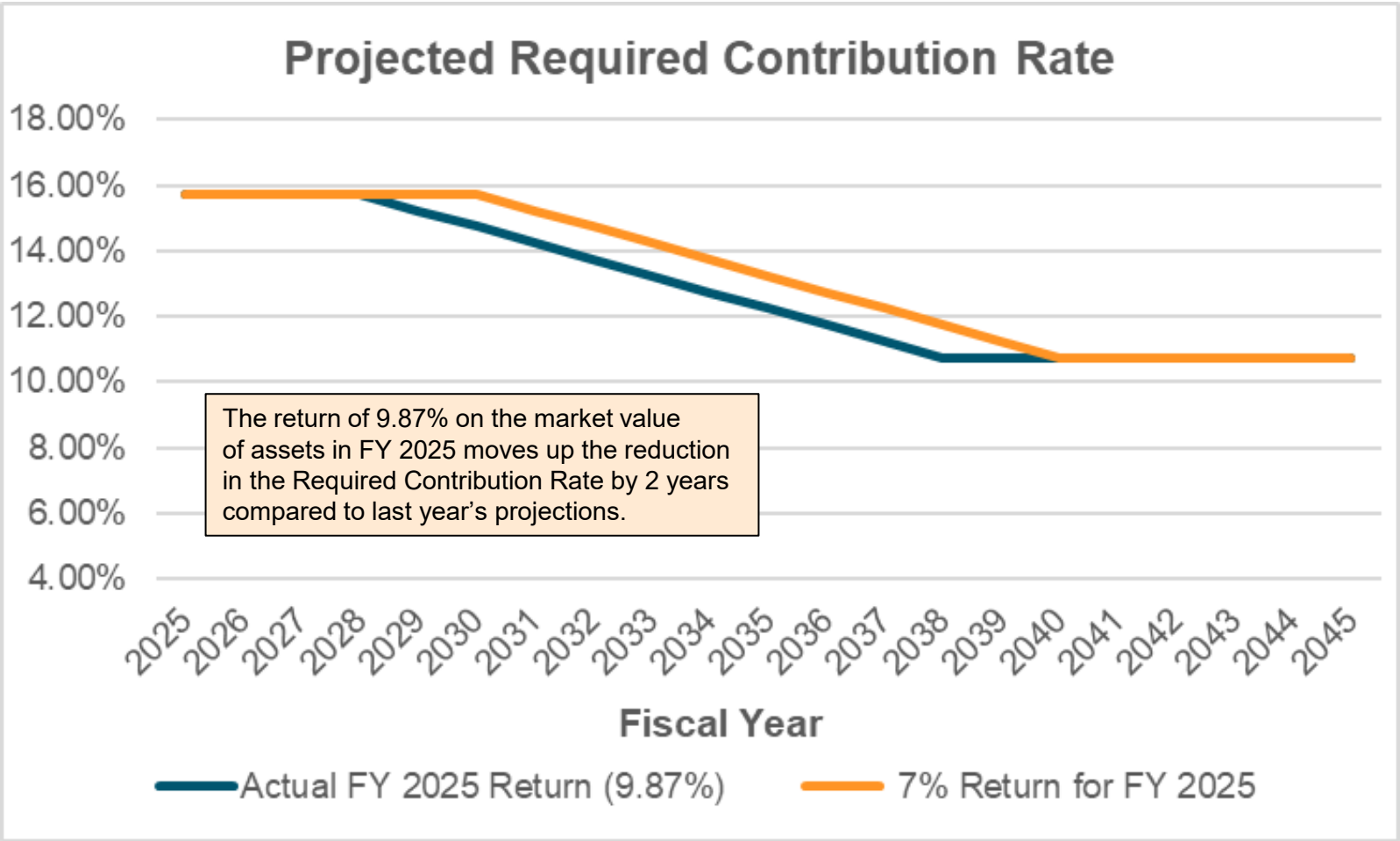
## Historical Contribution Rates Sheriffs & Deputies



In contrast to the Regular membership, the actuarial contribution rate has always been contributed for this group. With the implementation of the Contribution Rate Funding Policy, the same criteria applies to setting the Required Contribution Rate. The large increase in 2026 is due to benefit enhancements passed by the 2024 Legislature.

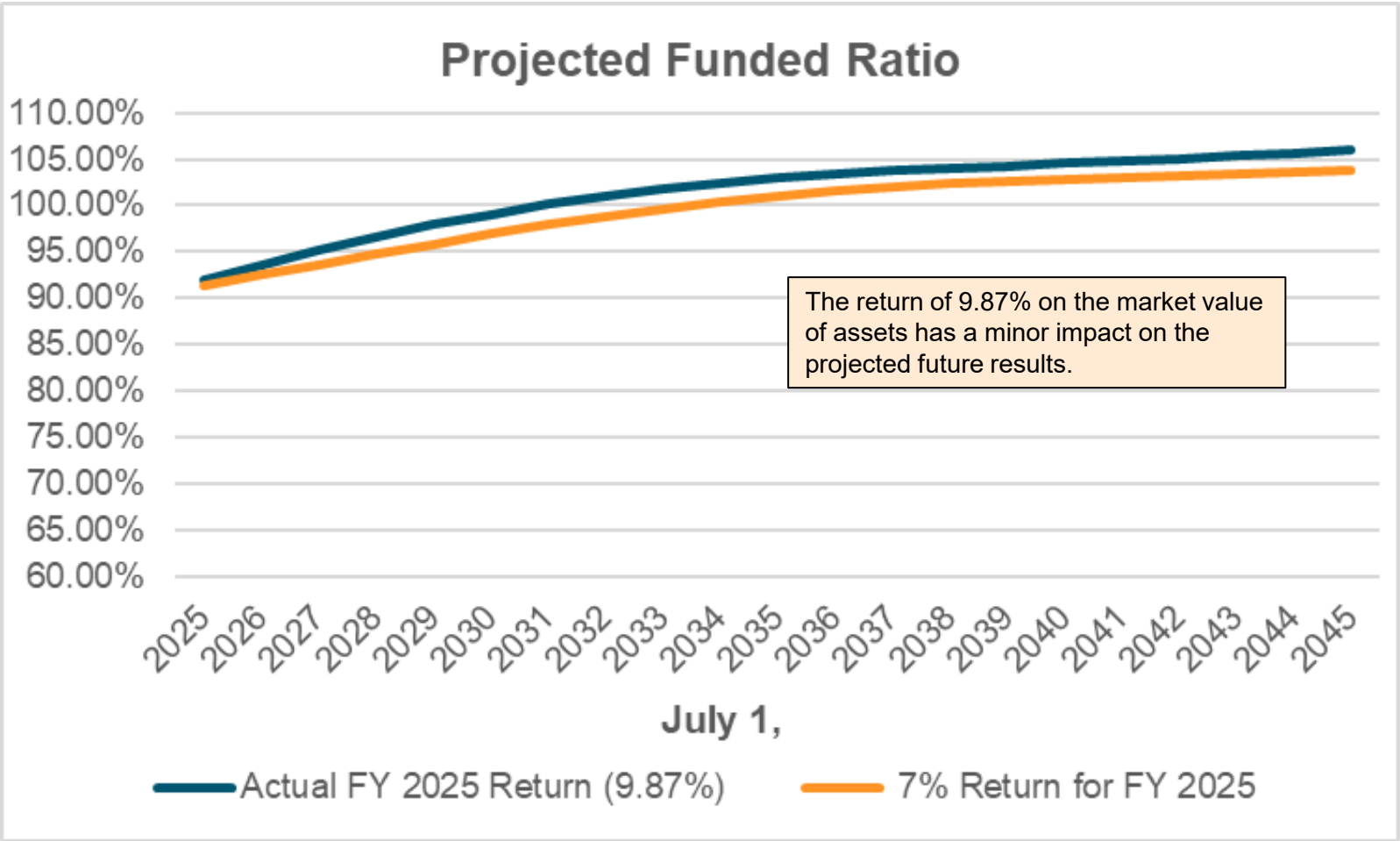


In contrast to the Regular membership, the actuarial contribution rate has always been contributed for this group. With the implementation of the Contribution Rate Funding Policy, the same criteria applies to setting the Required Contribution Rate.



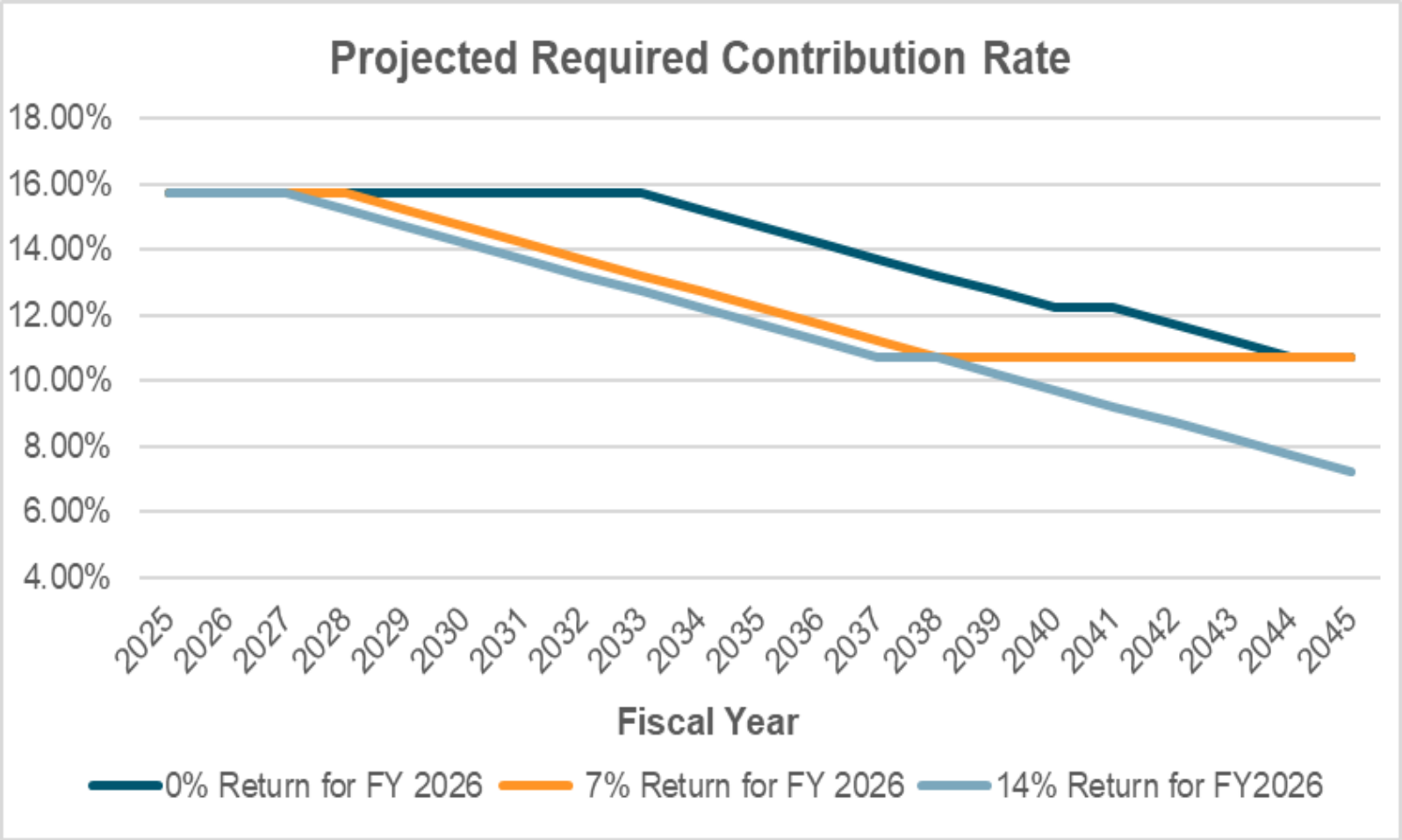
Projections are based on the 6/30/2024 valuation model.

6/30/2025 projections may differ from the blue line once demographic experience is reflected.



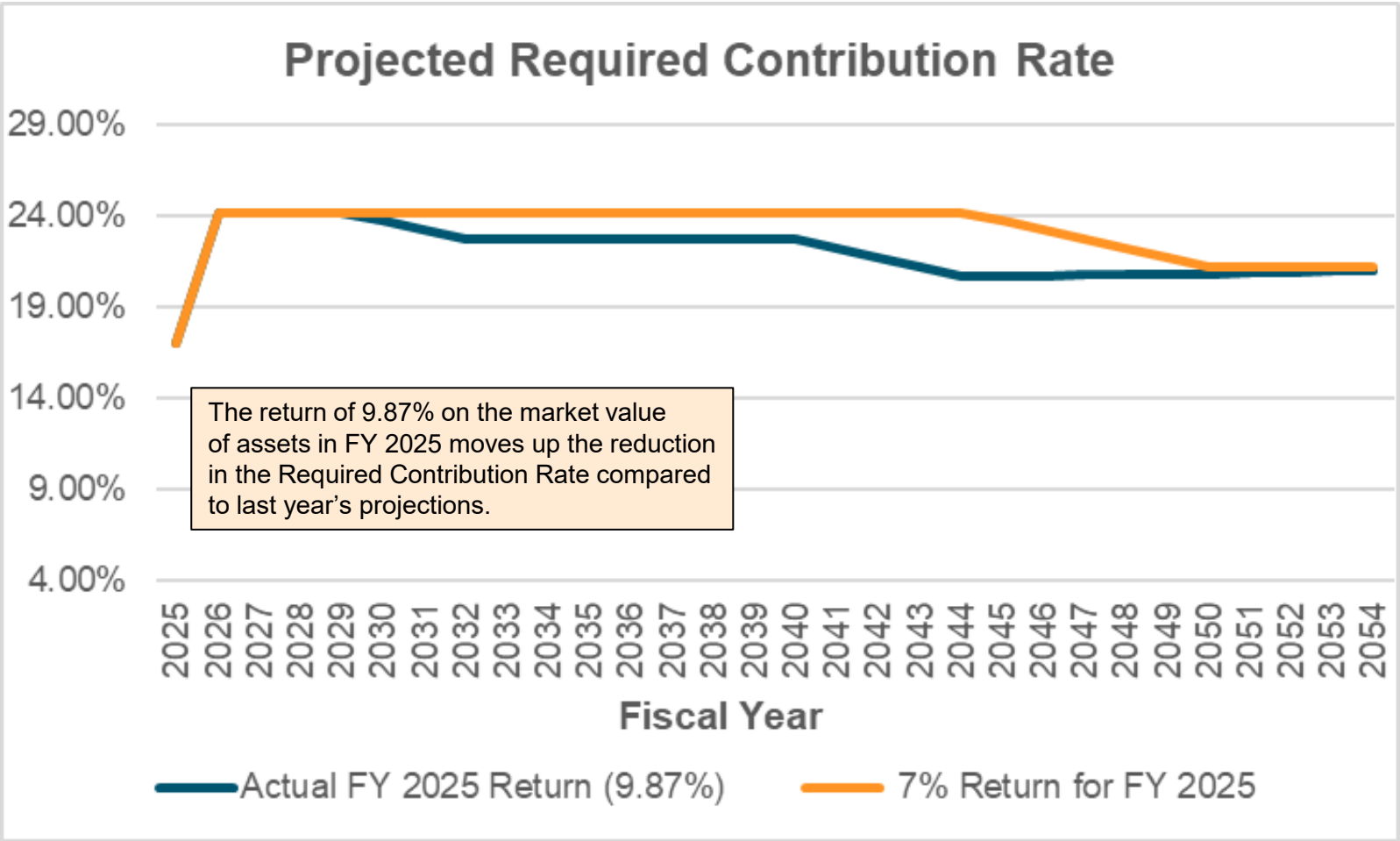
Projections are based on the 6/30/2024 valuation model.

6/30/2025 projections may differ from the blue line once demographic experience is reflected.



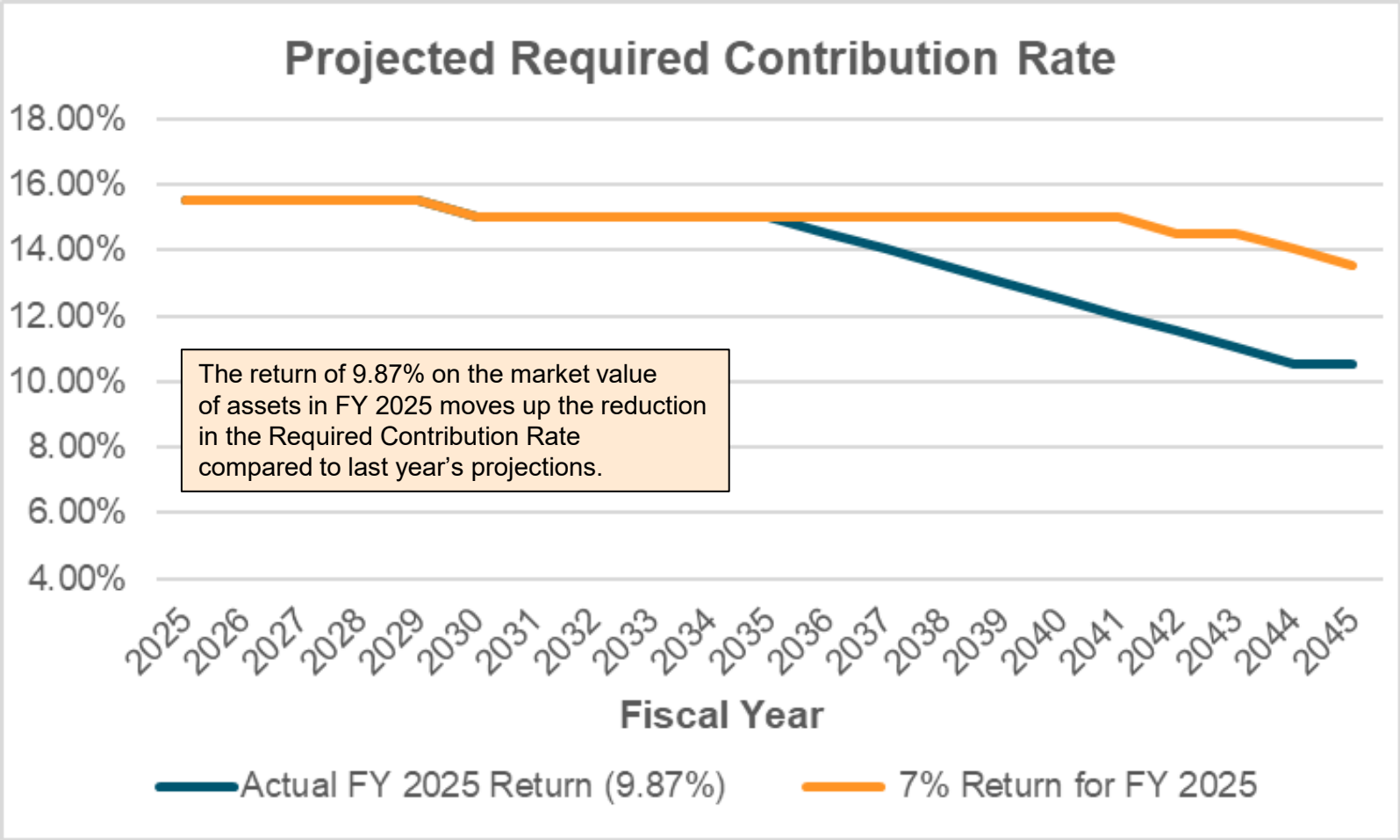
Projections are based on the 6/30/2024 valuation model with a return of 9.87% in FY 2025.

6/30/2025 projections may differ from the blue line once demographic experience is reflected.



Projections are based on the 6/30/2024 valuation model.

6/30/2025 projections may differ from the blue line once demographic experience is reflected.



Projections are based on the 6/30/2024 valuation model.

6/30/2025 projections may differ from the blue line once demographic experience is reflected.

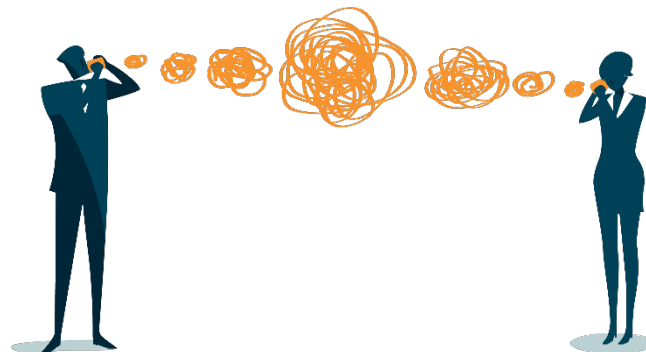
- Favorable actuarial experience (actual vs expected) for FY 2025
  - Return of 9.87% on market value of assets produced a return of 8.20% on actuarial assets, resulting in an actuarial gain of \$506 million.
  - Market value of assets now exceeds actuarial value by \$1.5 billion, up from \$734 million last year.
  - Net actuarial loss on liabilities of \$241 million, primarily due to retirement and salary experience.
  - Unfunded actuarial liability for entire System decreased from \$4.38 billion last year to \$3.84 billion in the 2025 valuation.
- Contribution Rate Funding Policy
  - Required Contribution Rate is unchanged for Regular members and Protection Occupation and remains greater than Actuarial Contribution Rate for FY 2027.
  - Required Contribution Rate increased 0.24% for Sheriffs & Deputies and is equal to the Actuarial Contribution Rate (no contribution margin exists).



- Effective since FY 2014
  - Applies only to disclosures in IPERS' Annual Comprehensive Financial Reporting
  - **Does not affect funding calculations**
- Requires some additional calculations
  - Projection to determine the Single Equivalent Interest Rate – using funding rate of 7.0% since fund is not depleted using GASB criteria
  - Liabilities are calculated using Entry Age Normal (the same as for funding)
  - Assets are on market value basis
  - Discount rate sensitivity must be disclosed (+/- 1%)



- Total Pension Liability (TPL)
  - For IPERS, same as Actuarial Liability in funding valuation
- Fiduciary Net Position (FNP)
  - The market value of assets
- Net Pension Liability (NPL)
  - $NPL = TPL - FNP$
  - Essentially the UAL on market value basis



## TOTAL SYSTEM

---

	<u>June 30, 2025</u>	<u>June 30, 2024</u>
Total Pension Liability (TPL)	\$ 49.063	\$ 47.303
Fiduciary Net Position (FNP)	<u>46.741</u>	<u>43.661</u>
Net Pension Liability (NPL)	\$ 2.323	\$ 3.641
Ratio of FNP to TPL	95.27%	92.30%

Dollar amounts shown are in billions. Numbers may not add due to rounding.

# GASB 67 Sensitivity Analysis

	1% Decrease (6.00%)	Current Discount Rate (7.00%)	1% Increase (8.00%)
TPL	\$ 55.104	\$ 49.063	\$ 44.009
FNP	<u>46.741</u>	<u>46.741</u>	<u>46.741</u>
NPL	\$ 8.363	\$ 2.323	\$ (2.732)
FNP/TPL	84.82%	95.27%	106.21%

Dollar amounts are shown in billions. Numbers may not add due to rounding.

Note: Because the TPL and the FNP are of similar magnitude, the NPL is significantly smaller than the TPL. When the TPL changes due to the discount rate change, the NPL changes by the same dollar amount, but it is a much larger proportionate amount.



We, Patrice A. Beckham, FSA, Brent A. Banister, FSA, and Bryan K. Hoge, FSA, are consulting actuaries with Cavanaugh Macdonald Consulting, LLC. We are members of the American Academy of Actuaries, Fellows of the Society of Actuaries, and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. We are available to answer any questions or provide additional information as needed.

A handwritten signature in purple ink that reads 'Patrice Beckham'.

Patrice A. Beckham, FSA, EA, FCA, MAAA  
Consulting Actuary

A handwritten signature in purple ink that reads 'Bryan K. Hoge'.

Bryan K. Hoge, FSA, EA, FCA, MAAA  
Principal and Consulting Actuary

A handwritten signature in purple ink that reads 'Brent A. Banister'.

Brent A. Banister, Ph.D., FSA, EA, FCA, MAAA  
Chief Actuary

THANK  
YOU



# Iowa Public Employees' Retirement System – IPERS

Annual Asset Allocation Review

December 2025

## Overview

- IPERS has liability discount rate assumption of 7.0% over the long term
- Analysis utilizes long term horizon asset class return expectations
- Board met in September to discuss SAA and decided to delay decision to December
- Focus for the updated set of candidate portfolios is reallocation of 5% Smart Beta strategic allocation to other public asset classes



## Risk Tolerance is Multi-Faceted (Checklist Approach)

- ☐ Employ a long-term horizon to avoid market timing - Behavioral risk
- ☐ Reducing funded status volatility – Time to UAL payoff risk
- ☐ Provide IPERS participants with retirement benefits – Liquidity risk
- ☐ Minimize need for increase in contributions - Contribution rate increase risk
- ☐ Reduce potential for permanent impairment – Extreme Tail risk

# Capital Market Assumptions

- Wilshire's Capital Market Assumptions as of June 30, 2025
- Wilshire's asset class return, risk and correlation assumptions are developed on multi-year forward looking expected rates of return and historical risk and correlation, adjusted to incorporate recent trends
- Public market return expectations represent a passive investment in the asset class (beta). They do not reflect value added from active management (alpha).

Asset Classes	Expected Return 30 Years	Expected Return Equilibrium	Risk	Cash Yield	Factor Exposure Growth	Factor Exposure Inflation	Liquidity Market Level	Liquidity Stressed Metric
U.S. Equity	6.10	7.90	17.00	1.25	8.00	-3.00	100	0
International Equity	6.90	8.15	19.05	2.80	8.00	0.15	90	0
Private Equity	7.95	9.70	29.65	0.00	14.00	-4.25	0	0
Global Smart Beta	6.45	8.10	17.00	1.75	8.00	-1.95	95	0
Public Credit	6.00	5.85	8.95	9.05	3.00	1.00	80	25
Private Credit	7.85	8.00	12.75	4.90	5.10	-1.50	0	0
Core (Plus) Fixed Income	4.90	4.80	4.75	5.75	-0.95	-2.60	100	80
Cash	3.40	3.25	0.75	3.55	0.00	0.00	100	100
Private Real Assets	6.85	7.60	13.45	3.60	4.80	2.10	0	0

# Portfolios Modeled

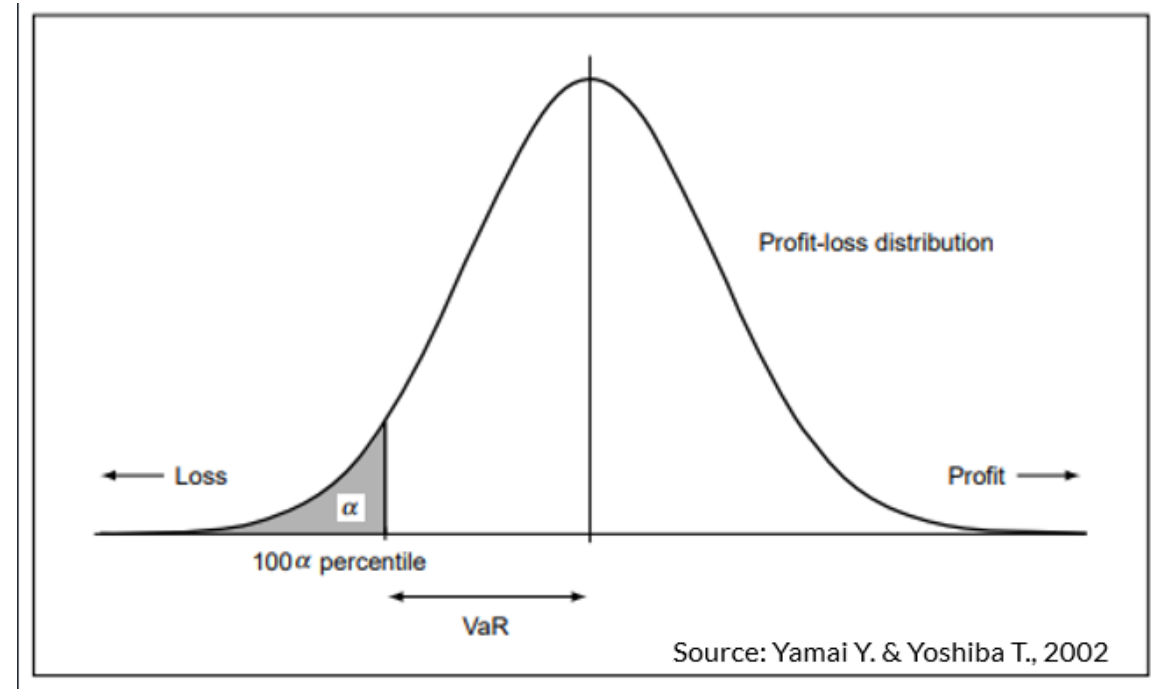
Asset Class	Current Target	Portfolio B Lower Risk (Cash 2%)	Portfolio C Lower Risk (Cash 1%)	Portfolio D Similar Risk (Optimized Equity)	Portfolio E Similar Risk (Market Cap Equity)
U.S. Equity	21.00%	21.00%	21.00%	21.00%	24.00%
International Equity	13.00%	13.00%	13.00%	18.00%	15.00%
Private Equity	17.00%	17.00%	17.00%	17.00%	17.00%
Global Smart Beta	<u>5.00%</u>	<u>0.00%</u>	<u>0.00%</u>	<u>0.00%</u>	<u>0.00%</u>
<b>Total Growth Assets</b>	<b>56.00%</b>	<b>51.00%</b>	<b>51.00%</b>	<b>56.00%</b>	<b>56.00%</b>
Public Credit	3.00%	7.00%	6.00%	3.00%	3.00%
Private Credit	<u>8.00%</u>	<u>8.00%</u>	<u>8.00%</u>	<u>8.00%</u>	<u>8.00%</u>
<b>Total Defensive Growth Assets</b>	<b>11.00%</b>	<b>15.00%</b>	<b>14.00%</b>	<b>11.00%</b>	<b>11.00%</b>
Core (Plus) Fixed Income	22.50%	22.50%	24.50%	22.50%	22.50%
Cash	<u>1.00%</u>	<u>2.00%</u>	<u>1.00%</u>	<u>1.00%</u>	<u>1.00%</u>
<b>Total Defensive / Rate Sensitive Assets</b>	<b>23.50%</b>	<b>24.50%</b>	<b>25.50%</b>	<b>23.50%</b>	<b>23.50%</b>
Private Real Assets	<u>9.50%</u>	<u>9.50%</u>	<u>9.50%</u>	<u>9.50%</u>	<u>9.50%</u>
<b>Total RA / Inflation Sensitive Assets</b>	<b>9.50%</b>	<b>9.50%</b>	<b>9.50%</b>	<b>9.50%</b>	<b>9.50%</b>
<b>Total Assets</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
<b>Expected Return - 30 Years (%)</b>	<b>7.0</b>	<b>7.0</b>	<b>7.0</b>	<b>7.1</b>	<b>7.0</b>
<b>Standard Deviation of Return (%)</b>	<b>13.1</b>	<b>12.5</b>	<b>12.5</b>	<b>13.1</b>	<b>13.1</b>
<b>+/(-) in Expected Return - 30 Years (bps)</b>		<b>(4)</b>	<b>(3)</b>	<b>3</b>	<b>0</b>
<b>Sharpe Ratio - 30 Years</b>	<b>0.28</b>	<b>0.29</b>	<b>0.29</b>	<b>0.28</b>	<b>0.28</b>

# Portfolios Modeled

Asset Class	Current Target	Portfolio B Lower Risk (Cash 2%)	Portfolio C Lower Risk (Cash 1%)	Portfolio D Similar Risk (Optimized Equity)	Portfolio E Similar Risk (Market Cap Equity)
Total Growth Assets	56.00%	51.00%	51.00%	56.00%	56.00%
Total Defensive Growth Assets	11.00%	15.00%	14.00%	11.00%	11.00%
Total Defensive / Rate Sensitive Assets	23.50%	24.50%	25.50%	23.50%	23.50%
Total RA / Inflation Sensitive Assets	9.50%	9.50%	9.50%	9.50%	9.50%
Total Assets	100.0%	100.0%	100.0%	100.0%	100.0%
Expected Return - 30 Years (%)	7.0	7.0	7.0	7.1	7.0
Standard Deviation of Return (%)	13.1	12.5	12.5	13.1	13.1
Contribution to Asset Volatility (%):					
Growth	82.7	79.8	79.9	82.8	82.7
Defensive Growth	6.8	9.1	8.6	6.8	6.8
Defensive/Rate Sensitive	2.8	3.0	3.4	2.7	2.8
RA/Inflation Sensitive	7.7	8.1	8.1	7.7	7.7
Cash Yield	3.0	3.4	3.3	3.1	3.1
Growth Factor	6.2	6.0	5.9	6.2	6.2
Inflation Factor	-1.9	-1.8	-1.8	-1.8	-1.9
Liquidity					
Market	63.4	62.8	63.0	63.1	63.4
Stressed	19.8	21.8	22.1	19.8	19.8






## CDaR (90%) – Conditional Drawdown at Risk

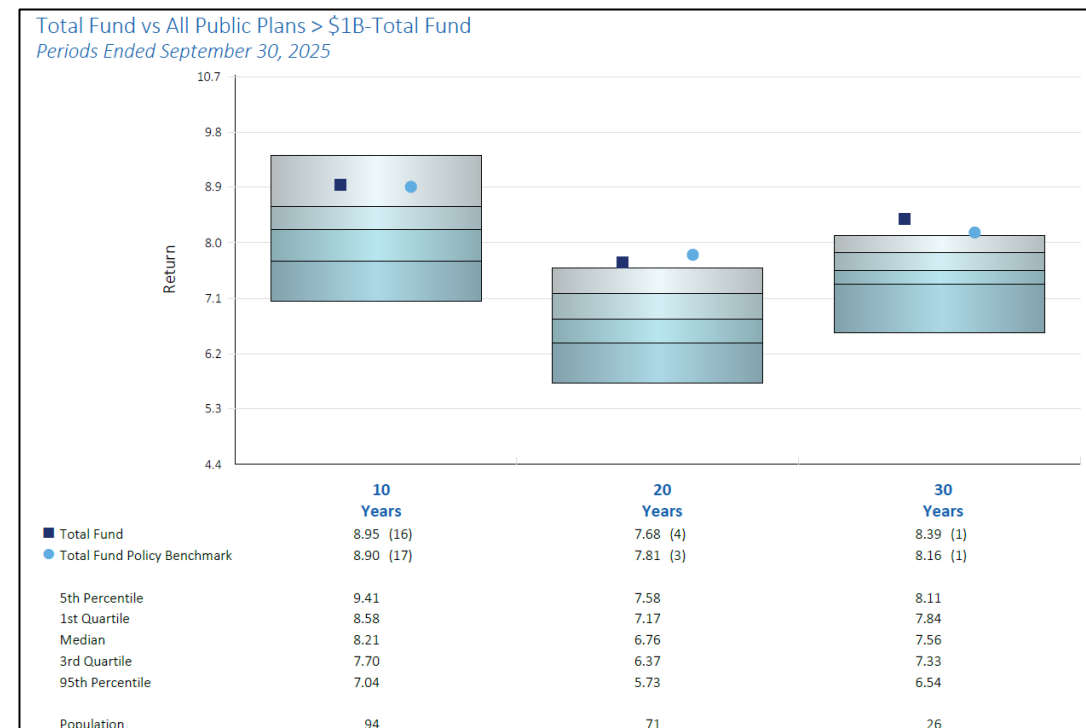
- Drawdowns are most impactful to decreasing funded status and increasing contribution rates
- Standard deviation measures volatility of all gains and losses
- Conditional drawdown measures the average loss of the worst ten percent of projected losses.
- Current Portfolio and Portfolios D and E have a CDaR of -16%
- Portfolios B and C have a CDAR of -15%



# Observations & Recommendation

# Revisit the Checklist and Some Observations

-  Behavioral risk  
Using 30 Year Assumptions (include Equilibrium)
-  Time to UAL payoff risk  
Expected 7% return for candidate portfolios
-  Liquidity risk  
Stressed Liquidity score shows ample liquidity
-  Contribution rate increase risk  
Actuarial simulations are very similar among candidates
-  Extreme Tail risk  
CDaR similar among candidate portfolios





# Appendix



## History of Asset Allocation Decisions – Last 8 Years\*

### ➤ 2019

1. Eliminate 7% allocation to public real assets (REITS, MLPs and TIPS)
2. International equities +2.5%, Global Smart Beta +3%
3. Core-plus Bond +1%, Public Credit +0.5%

### ➤ 2020

1. Core-plus Bond -8%
2. Private equity from +2%, Private credit +5%, Private real assets from +1%

### ➤ 2022

1. Core-plus Bond -1%, Public Credit -1%, All public equity allocations -1%
2. Private equity +4%, Private real assets +1%

### ➤ 2023

1. Core-plus Bond +3.5%,
2. International equity -3.5%

\*No Changes made to asset allocation in 2017, 2018, and 2021, 2024

# Risk Assessment Framework

Wilshire's multi-dimensional view of risk integrates organizational and investment considerations into a comprehensive framework for evaluating strategic decisions.

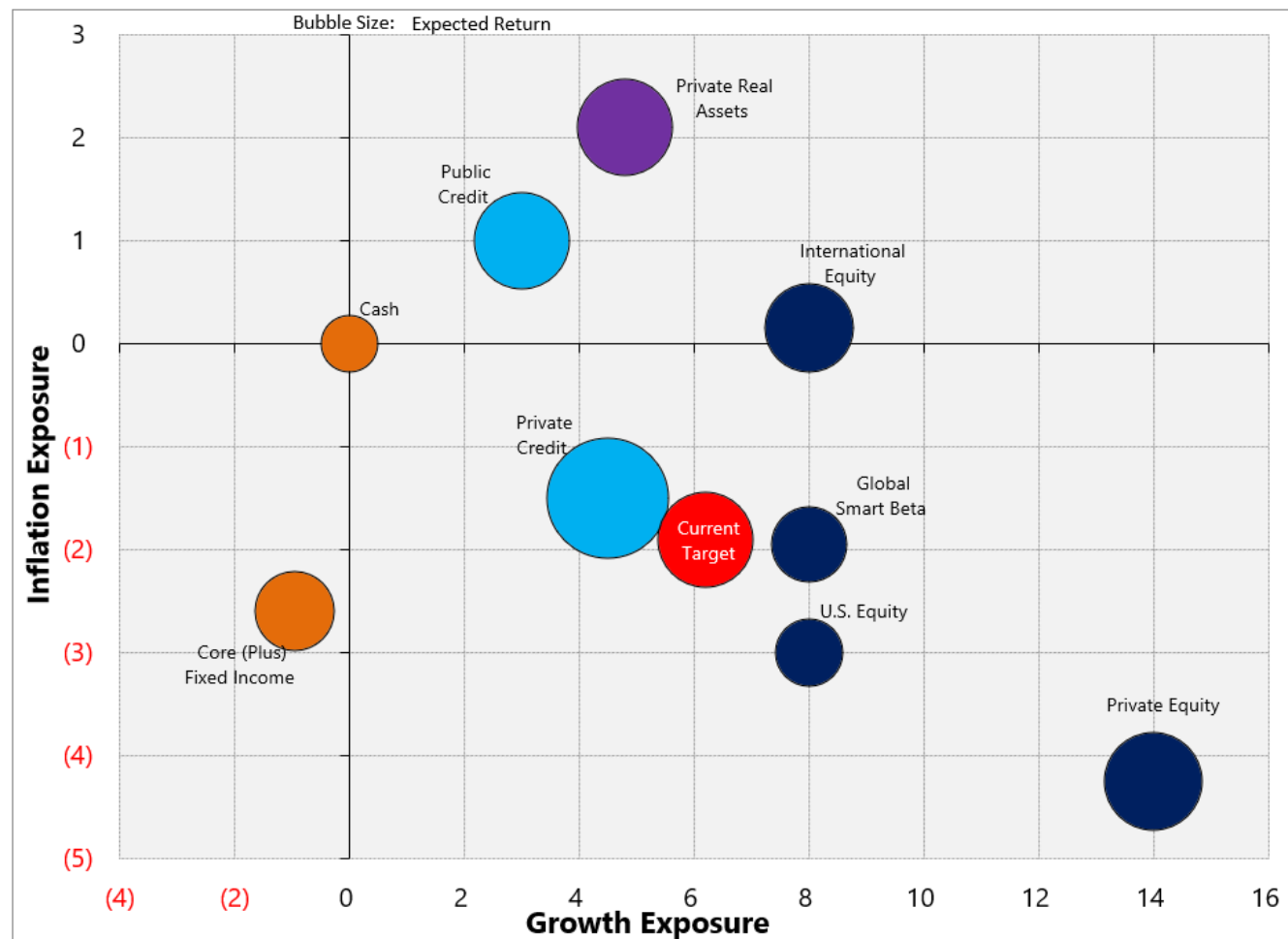
- **Shortfall:** Support distributions and long-term growth
- **Behavioral:** Instill strong governance
- **Drawdown:** Limit portfolio losses
- **Inflation:** Preserve long-term purchasing power
- **Liquidity:** Balance near-term needs, long-term opportunities
- **Active:** Ensure unique exposures



# Economic Factor Exposure – Asset Classes

Concentrated factor tilts can represent portfolio vulnerability (e.g., reliance on growth markets)

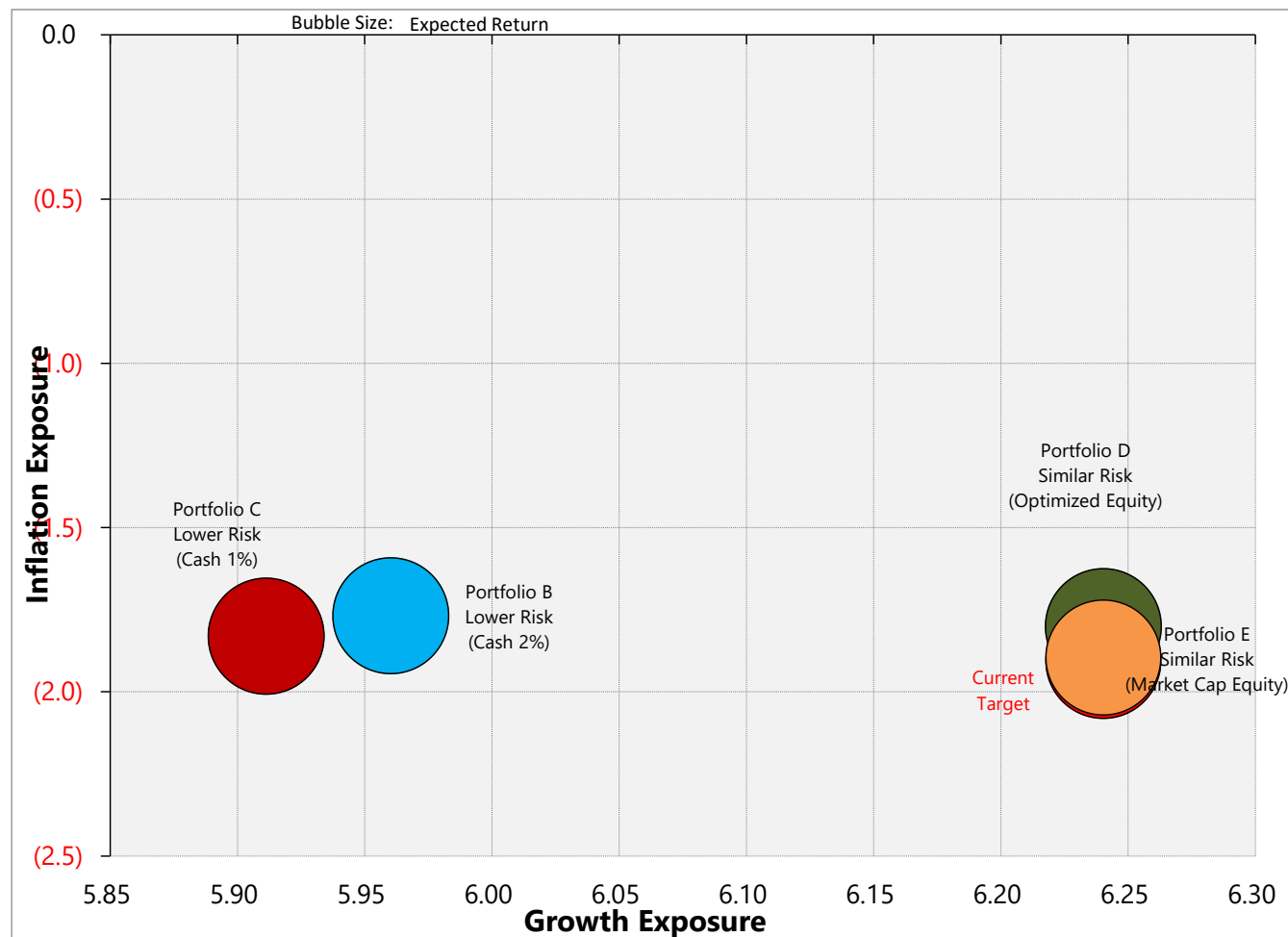
To the extent possible, a portfolio with factor neutrality is desirable for weathering unexpected future market environments



# Economic Factor Exposure – Potential Portfolios Modeled

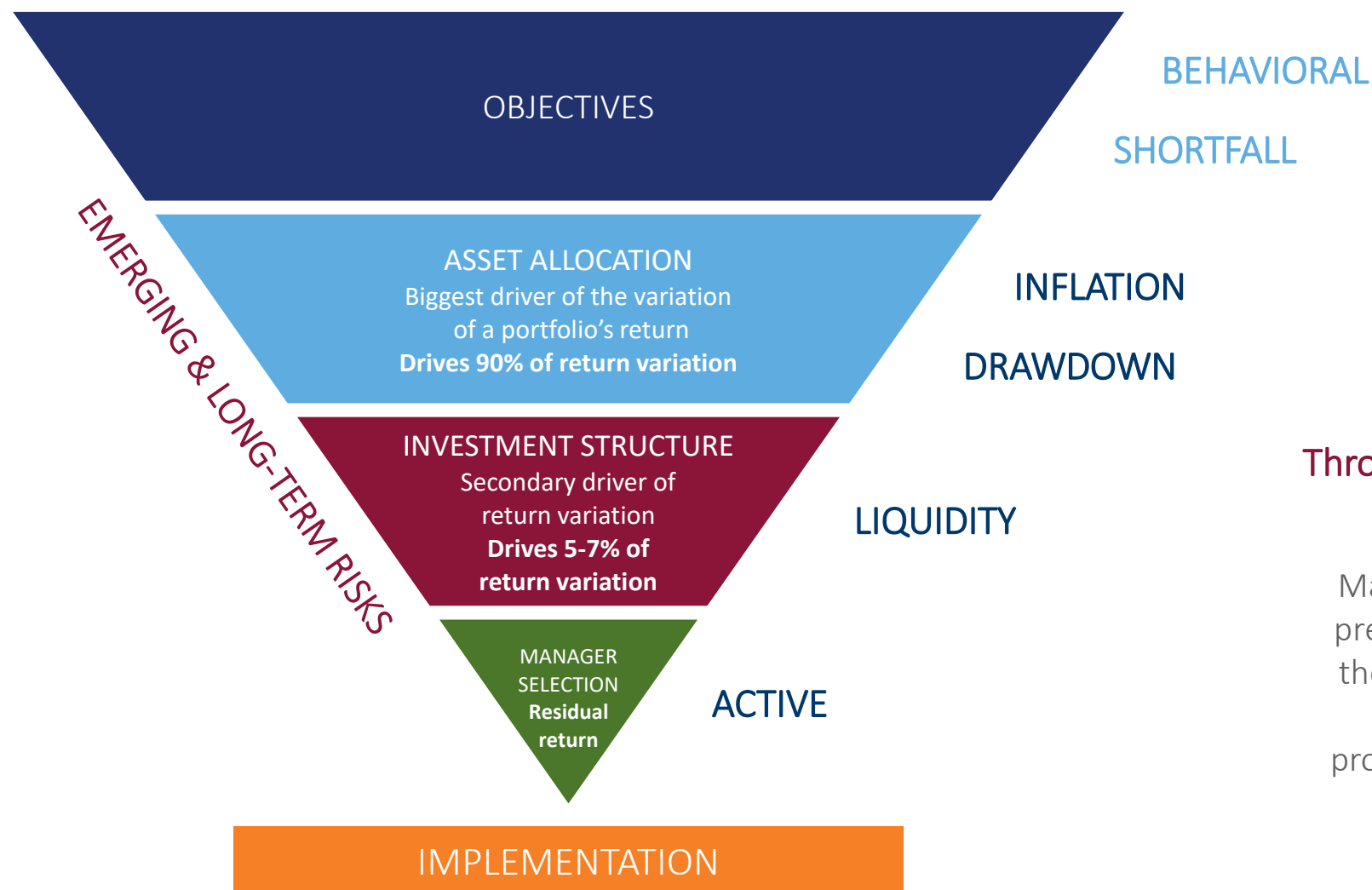
Concentrated factor tilts can represent portfolio vulnerability (e.g., reliance on growth markets)

To the extent possible, a portfolio with factor neutrality is desirable for weathering unexpected future market environments



# Asset Allocation Approach

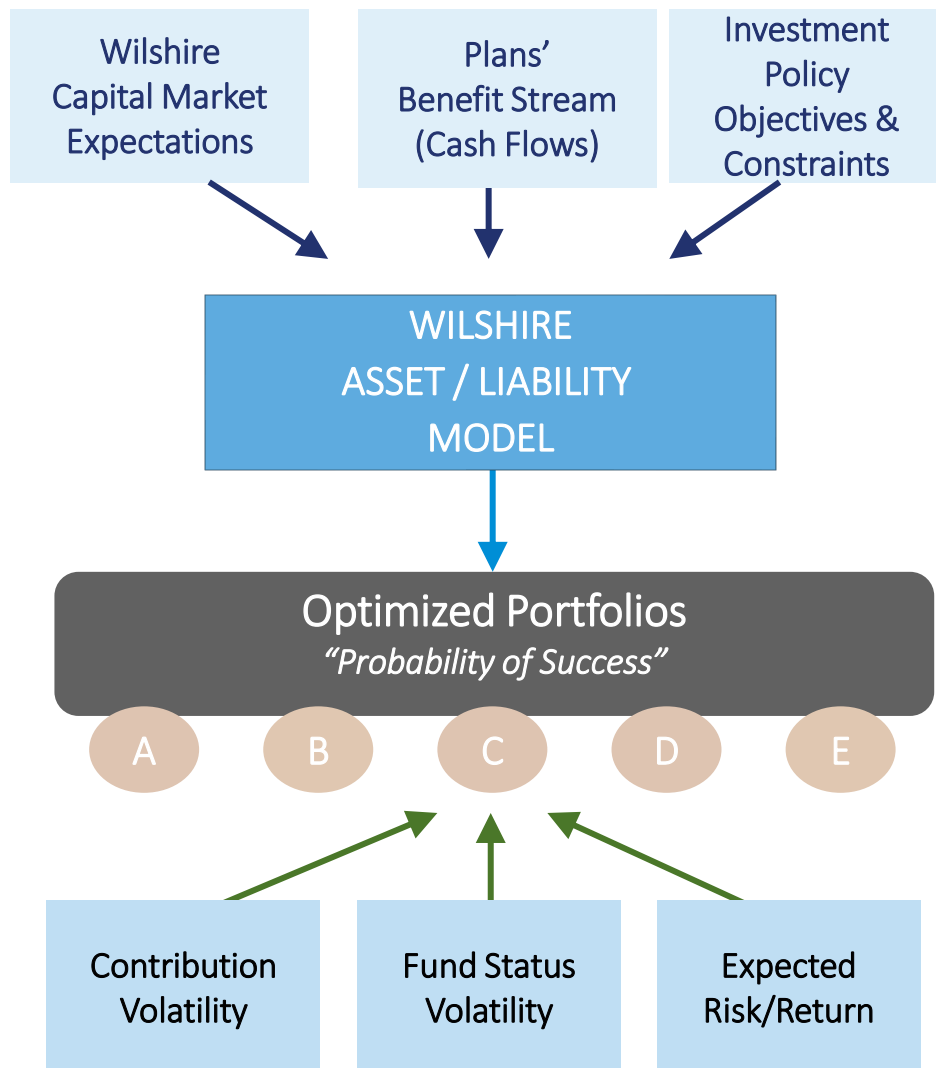
# Focus on Decisions That are Most Impactful



## Address Key Risks Throughout the Investment Process

Many of the six key risks are present at multiple points in the investment process, but each distinct step in the process is focused on one or two primary risks.

# Asset Allocation Process



- The mission of a defined benefit plan is to fund benefits promised to participants
- The role of asset allocation is to manage risk in order to fulfill that core mission
  - **Maximize safety** of promised benefits
  - **Minimize cost** of funding these benefits
- Wilshire's Asset Liability Model provides methodology for selecting a target portfolio that considers both goals
- Rigorously developed capital market assumptions for risk and return (see appendix)
- Given that short-term volatility is also important, we identify the impact of the asset allocation decision on funded ratios, annual contribution requirements, and other metrics
- Strategic asset allocation is not a guide to outperforming in every market ... but it should provide a roadmap for success over a market cycle



# Asset Allocation Inputs

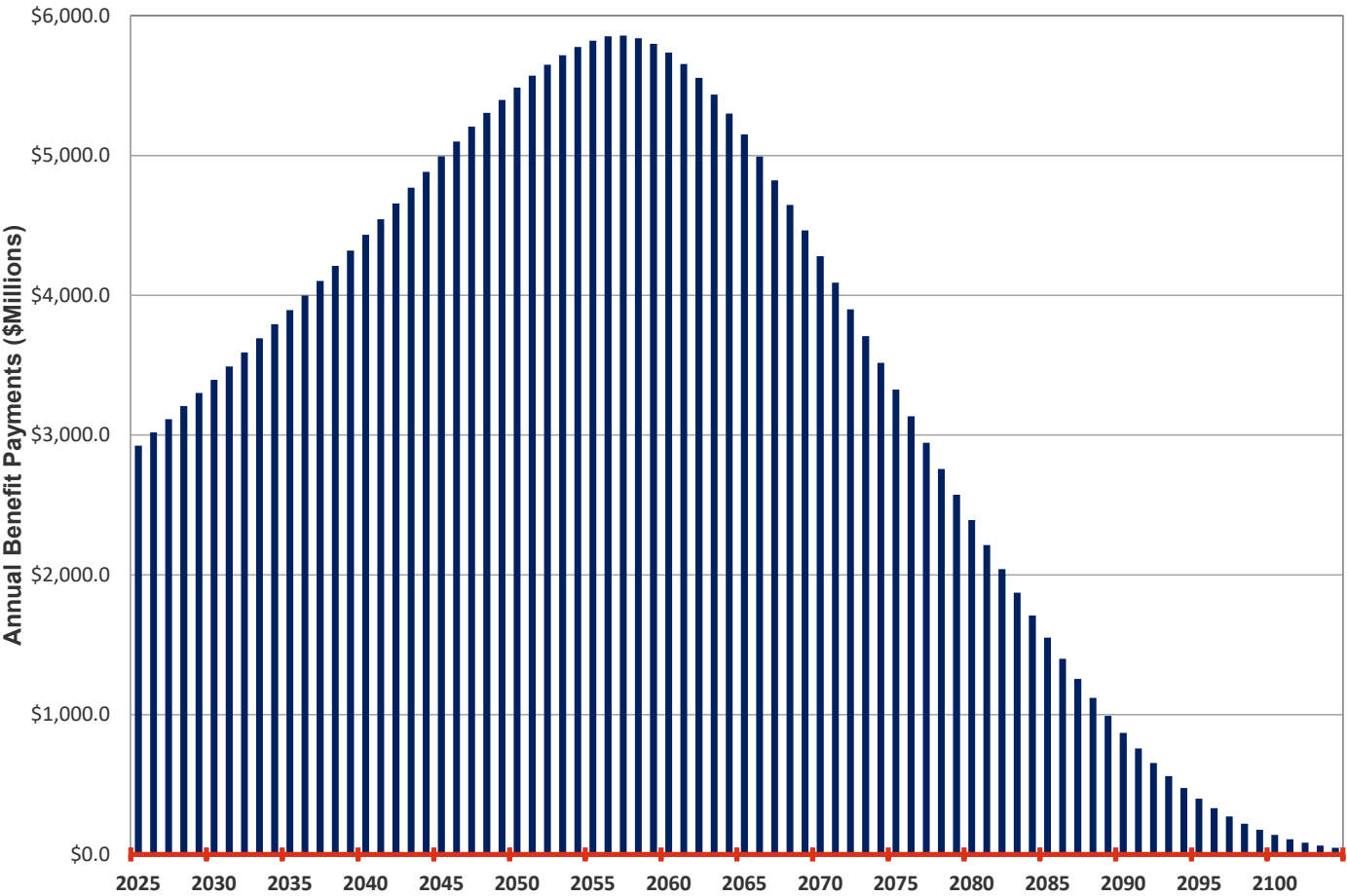


# Plan Status

\$ - Billion	June 30, 2024	June 30, 2025
<b>Asset and Liability Data</b>		
1. Actuarial Accrued Liability (AAL)	47.3	48.8
2. <u>Market Value of Assets (MVA)</u>	<u>43.7</u>	<u>46.7</u>
3. AAL MVA Funded Status (Unfunded Liability) (1. - 2.)	3.6	2.1
4. <u>AAL MVA Funded Ratio (2. / 1.)</u>	<u>92.3%</u>	<u>95.6%</u>
5. Actuarial Value of Assets (AVA)	42.9	45.2
6. AAL AVA Funded Status (Unfunded Liability) (1. - 5.)	4.4	3.6
7. <u>AAL AVA Funded Ratio (5. / 1.)</u>	<u>90.8%</u>	<u>92.6%</u>
<b>Economic Assumptions</b>		
Investment Return	7.00%	7.00%

- June 30, 2024, data was provided in the actuarial valuation reports by the plan actuary.
- June 30, 2025, liability data was provided by the plan actuary. Asset data is provided and calculated by Wilshire using data from the report and additional metrics provided by the actuary.

# Projected Benefit Payments

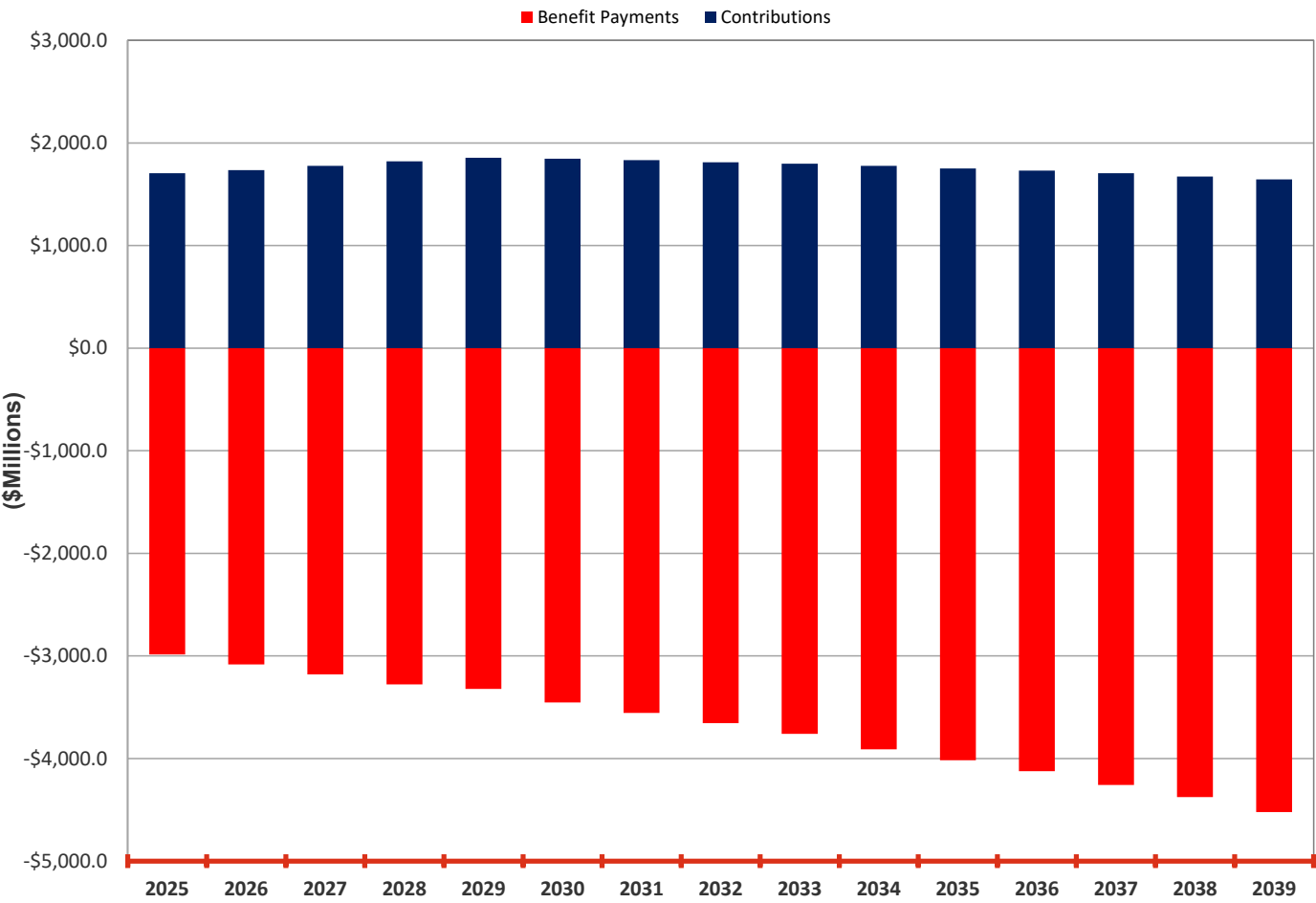


- *Benefit payments provided by plan actuary.*
- *Closed group population, i.e., no new entrants assumed*

## Current cash flow needs

The peak in liquidity needs (cash flow provided by actuary) for the current membership is in 33 years, when projected annual benefit payments increase from \$2.9 billion to \$5.8 billion.

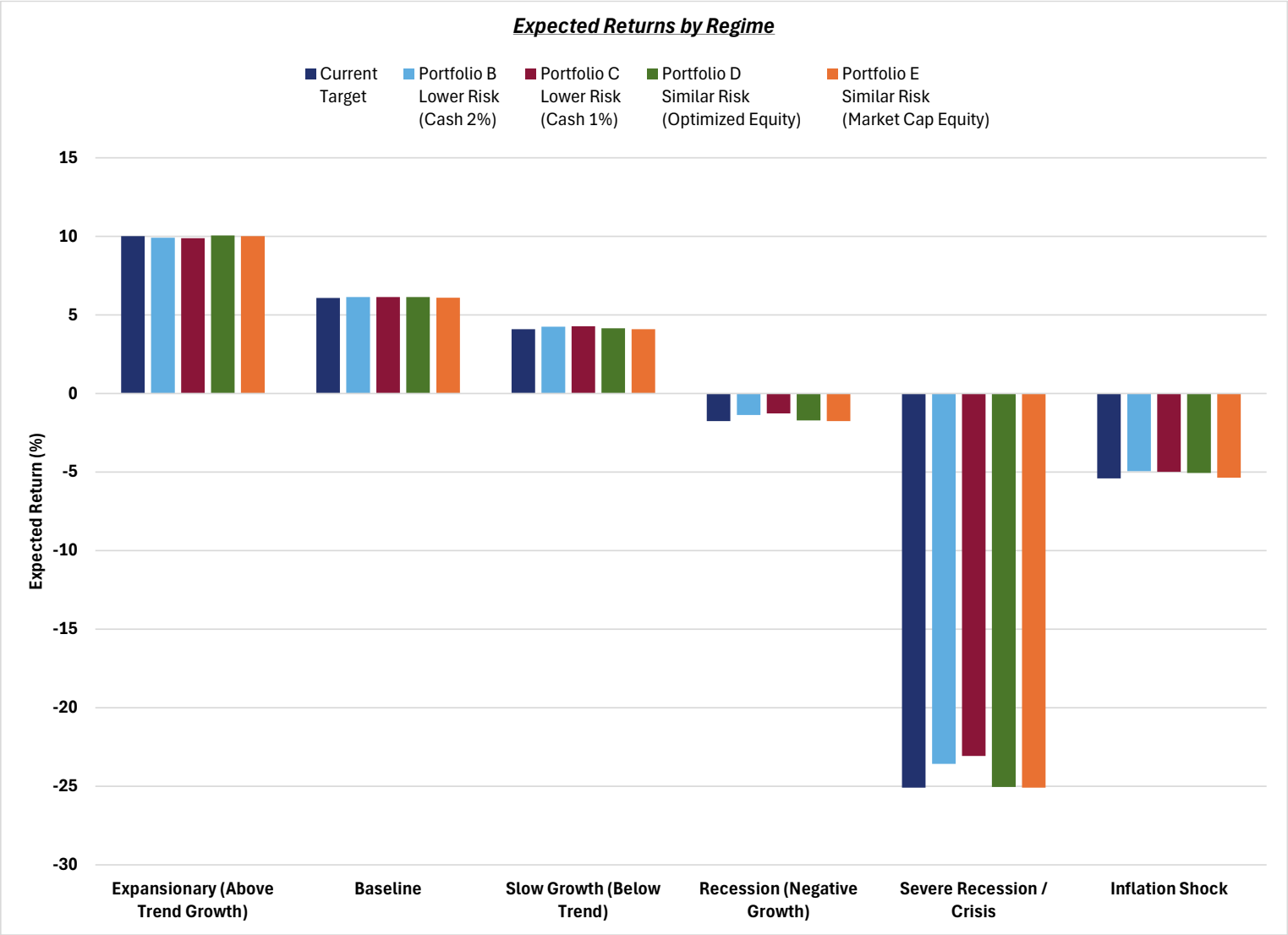
# Projected Cash In and Outflows



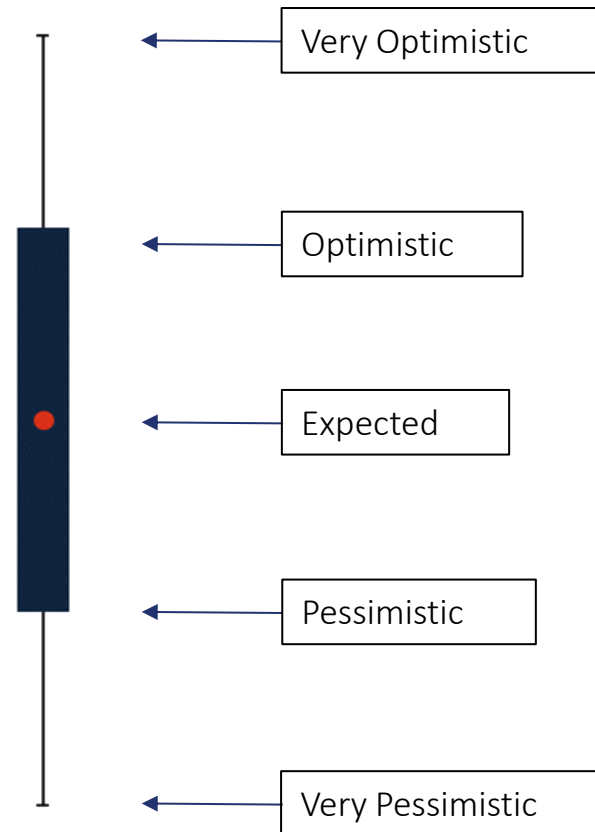
## Current cash flow needs

- Annual benefit payments are projected to increase, while annual contributions are projected to decrease over the long run
- The plan will remain cash flow negative over the foreseeable future
- This does not reflect any future contribution rate changes that may occur as funding status changes

# Stress Testing: Regime Assumptions



# Box and Whisker Graphs



In each year of the simulation, there are 5,000 independent economic trial results.

**Expected:** 50% of the potential scenarios result in higher than this value and 50% results in lower

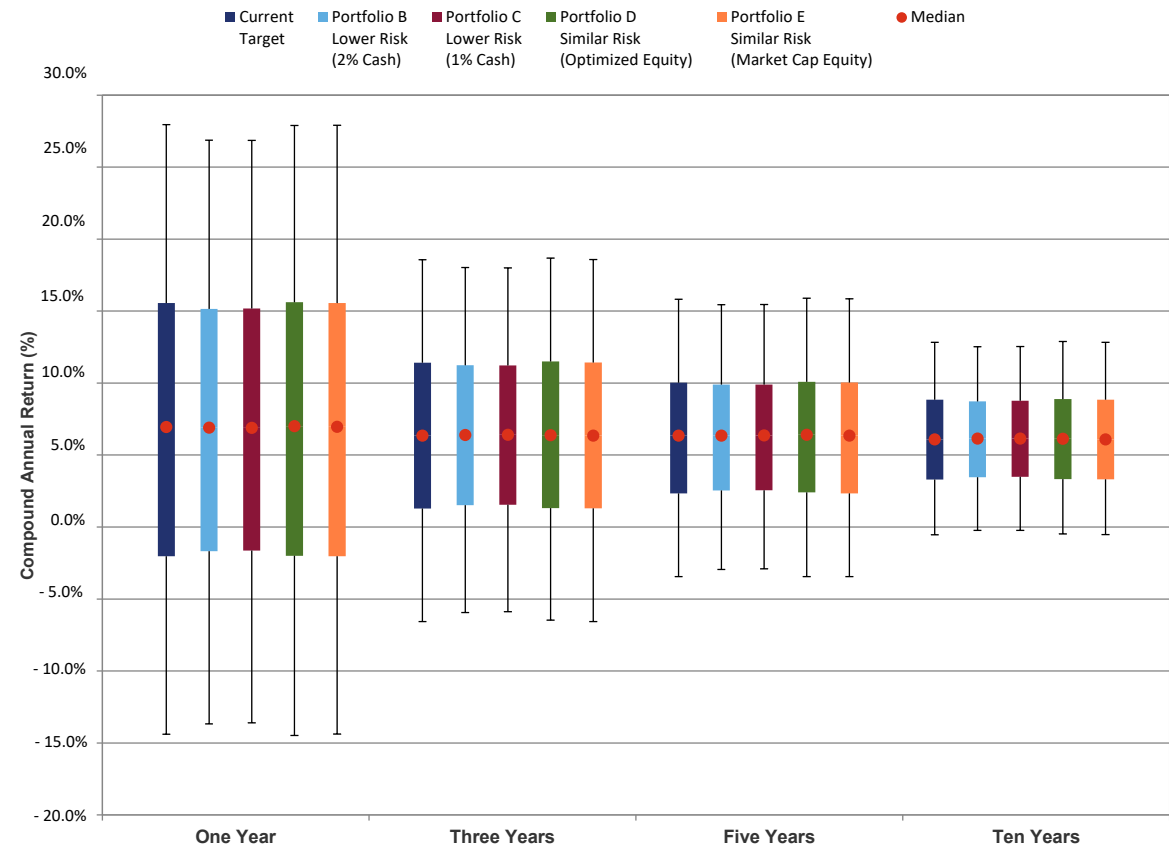
**Very optimistic:** Only 5% of the scenarios result in higher than this value and 95% result in lower

**Optimistic:** Only 25% of the scenarios result in higher than this value and 75% result in lower

**Pessimistic:** 75% of the scenarios results in higher than this value and 25% result in lower

**Very pessimistic:** 95% of the scenarios result in higher than this value and 5% result in lower

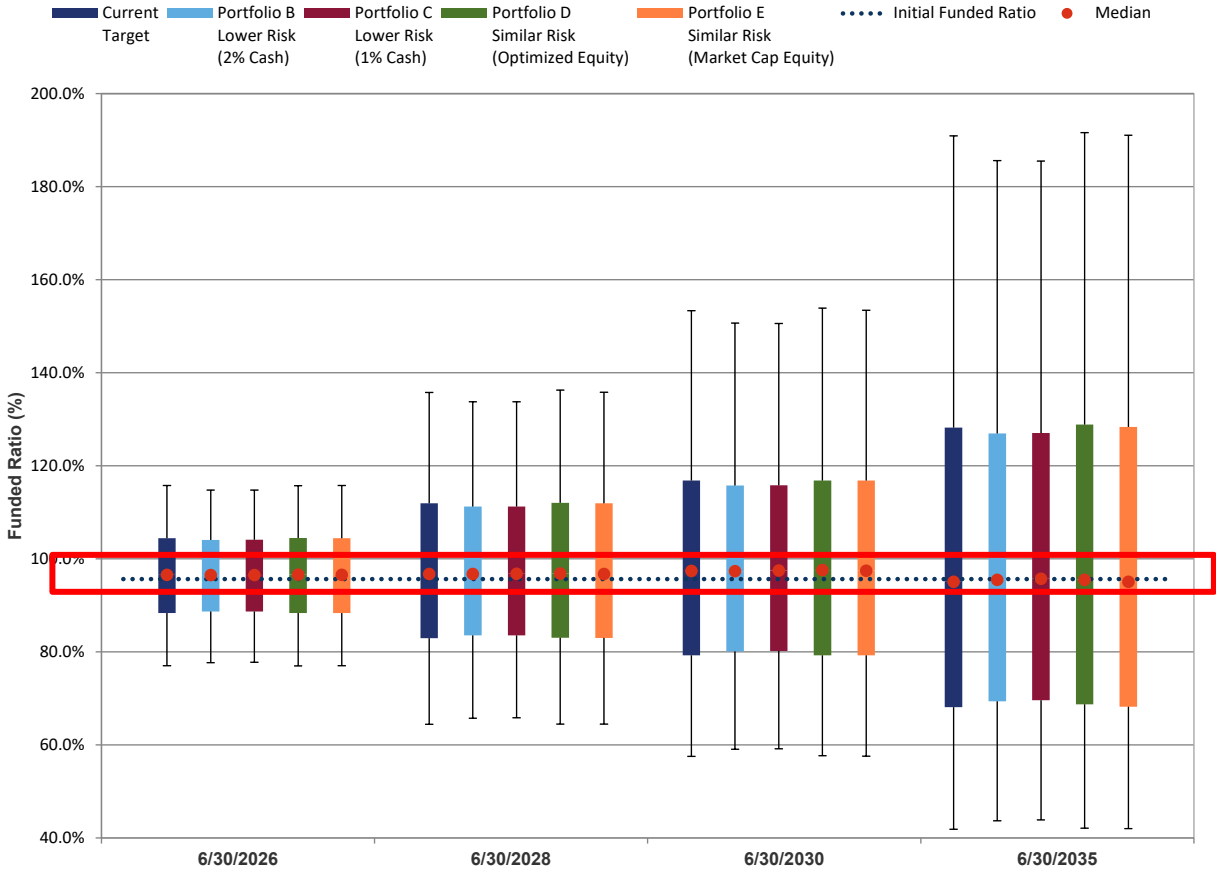
Distribution of Returns\*



(%)	One Year					Three Years					Five Years					Ten Years				
	Current Target	Portfolio B Lower Risk (2% Cash)	Portfolio C Lower Risk (1% Cash)	Portfolio D Similar Risk (Optimized Equity)	Portfolio E Similar Risk (Market Cap Equity)	Current Target	Portfolio B Lower Risk (2% Cash)	Portfolio C Lower Risk (1% Cash)	Portfolio D Similar Risk (Optimized Equity)	Portfolio E Similar Risk (Market Cap Equity)	Current Target	Portfolio B Lower Risk (2% Cash)	Portfolio C Lower Risk (1% Cash)	Portfolio D Similar Risk (Optimized Equity)	Portfolio E Similar Risk (Market Cap Equity)	Current Target	Portfolio B Lower Risk (2% Cash)	Portfolio C Lower Risk (1% Cash)	Portfolio D Similar Risk (Optimized Equity)	Portfolio E Similar Risk (Market Cap Equity)
Very Optimistic	27.95	26.87	26.86	27.89	27.91	18.56	18.03	18.00	18.68	18.59	15.82	15.44	15.45	15.90	15.85	12.82	12.52	12.54	12.88	12.83
Optimistic	15.55	15.15	15.18	15.62	15.56	11.42	11.24	11.22	11.50	11.42	10.03	9.89	9.90	10.09	10.04	8.84	8.73	8.77	8.90	8.85
Median (Expected)	6.94	6.90	6.89	7.01	6.96	6.35	6.39	6.40	6.38	6.34	6.35	6.35	6.37	6.41	6.36	6.08	6.14	6.14	6.14	6.09
Pessimistic	-2.02	-1.68	-1.64	-2.00	-2.03	1.28	1.52	1.55	1.31	1.29	2.34	2.55	2.56	2.41	2.34	3.30	3.46	3.49	3.33	3.31
Very Pessimistic	-14.40	-13.67	-13.61	-14.47	-14.38	-6.56	-5.95	-5.89	-6.47	-6.57	-3.45	-2.95	-2.91	-3.44	-3.45	-0.54	-0.23	-0.23	-0.49	-0.52

\*For periods longer than one year, returns are compound annual.

AAL MVA Funded Ratio



Shortfall Risk:

The potential for the current policy to have a lower median funded ratio than the alternative policies.

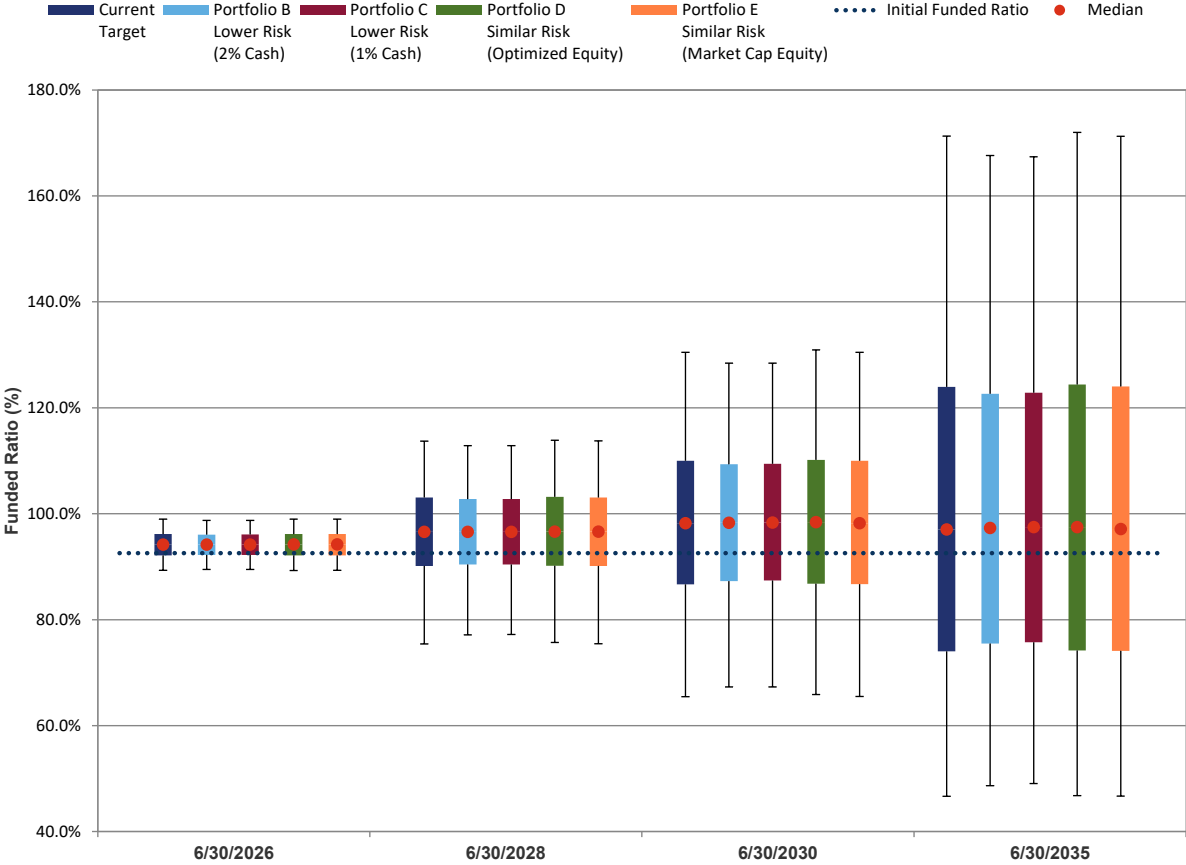
Drawdown Risk:

The potential for the current policy to have a lower “very pessimistic” funded ratio than the alternative policies.

Initial Funded Ratio = 95.6%

(%)	6/30/2026					6/30/2028					6/30/2030					6/30/2035				
	Current Target	Portfolio B Lower Risk (2% Cash)	Portfolio C Lower Risk (1% Cash)	Portfolio D Similar Risk (Optimized Equity)	Portfolio E Similar Risk (Market Cap Equity)	Current Target	Portfolio B Lower Risk (2% Cash)	Portfolio C Lower Risk (1% Cash)	Portfolio D Similar Risk (Optimized Equity)	Portfolio E Similar Risk (Market Cap Equity)	Current Target	Portfolio B Lower Risk (2% Cash)	Portfolio C Lower Risk (1% Cash)	Portfolio D Similar Risk (Optimized Equity)	Portfolio E Similar Risk (Market Cap Equity)	Current Target	Portfolio B Lower Risk (2% Cash)	Portfolio C Lower Risk (1% Cash)	Portfolio D Similar Risk (Optimized Equity)	Portfolio E Similar Risk (Market Cap Equity)
Very Optimistic	115.8	114.8	114.8	115.7	115.7	135.7	133.8	133.8	136.2	135.8	153.3	150.7	150.6	153.9	153.4	190.9	185.6	185.5	191.6	191.0
Optimistic	104.4	104.1	104.1	104.5	104.4	111.9	111.3	111.3	112.0	111.9	116.8	115.8	115.8	116.8	116.8	128.2	127.0	127.0	128.9	128.3
Median (Expected)	96.5	96.5	96.5	96.6	96.6	96.7	96.8	96.8	96.8	96.7	97.4	97.4	97.5	97.6	97.4	95.1	95.5	95.7	95.5	95.1
Pessimistic	88.3	88.7	88.7	88.4	88.3	83.0	83.5	83.6	83.0	83.0	79.3	80.1	80.2	79.2	79.3	68.1	69.4	69.6	68.7	68.2
Very Pessimistic	77.0	77.7	77.8	77.0	77.0	64.5	65.7	65.9	64.5	64.5	57.6	59.1	59.2	57.7	57.6	41.9	43.7	43.9	42.1	42.0

AAL AVA Funded Ratio



Shortfall Risk:

The potential for the current policy to have a lower median funded ratio than the alternative policies.

Drawdown Risk:

The potential for the current policy to have a lower “very pessimistic” funded ratio than the alternative policies.

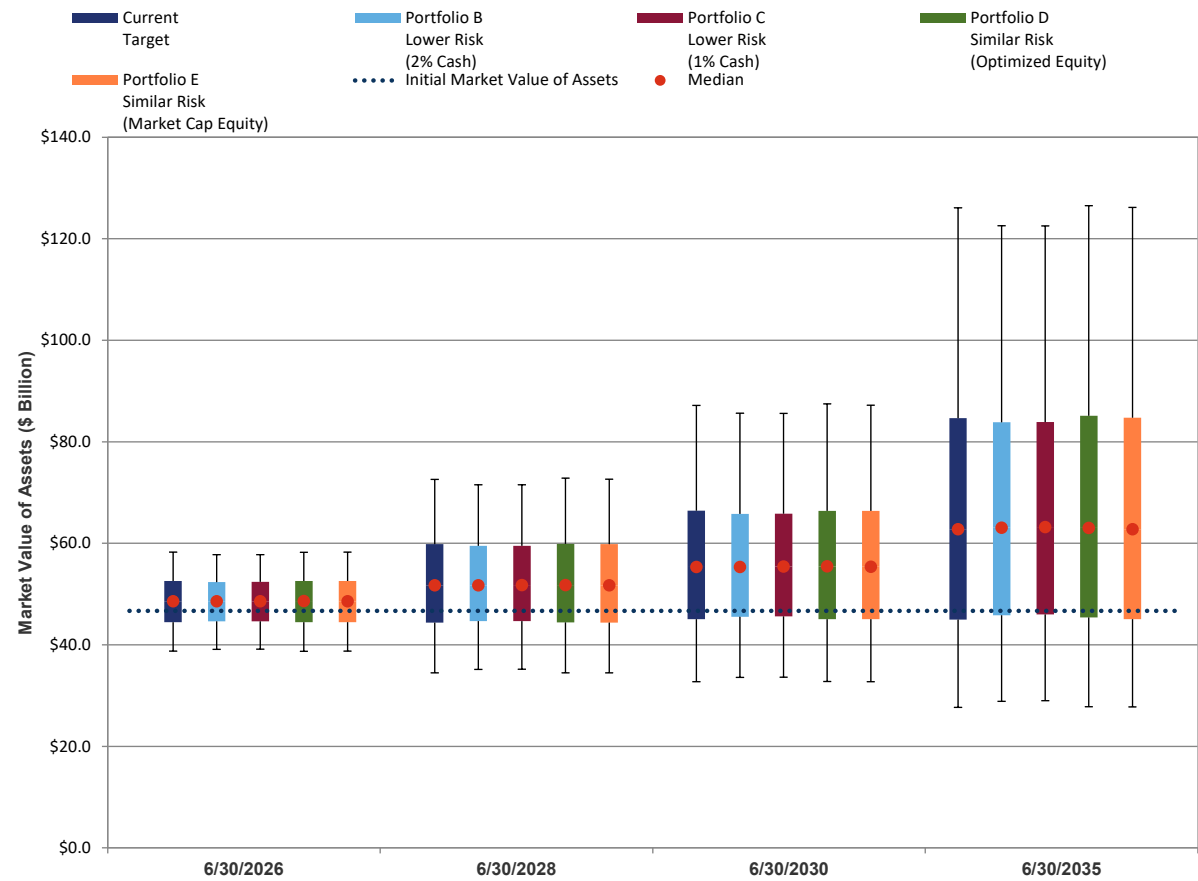
Initial Funded Ratio = 92.6%

(%)	6/30/2026					6/30/2028					6/30/2030					6/30/2035				
	Current Target	Portfolio B Lower Risk (2% Cash)	Portfolio C Lower Risk (1% Cash)	Portfolio D Similar Risk (Optimized Equity)	Portfolio E Similar Risk (Market Cap Equity)	Current Target	Portfolio B Lower Risk (2% Cash)	Portfolio C Lower Risk (1% Cash)	Portfolio D Similar Risk (Optimized Equity)	Portfolio E Similar Risk (Market Cap Equity)	Current Target	Portfolio B Lower Risk (2% Cash)	Portfolio C Lower Risk (1% Cash)	Portfolio D Similar Risk (Optimized Equity)	Portfolio E Similar Risk (Market Cap Equity)	Current Target	Portfolio B Lower Risk (2% Cash)	Portfolio C Lower Risk (1% Cash)	Portfolio D Similar Risk (Optimized Equity)	Portfolio E Similar Risk (Market Cap Equity)
Very Optimistic	99.0	98.8	98.8	99.0	99.0	113.7	112.9	112.8	113.9	113.7	130.5	128.4	128.4	130.9	130.5	171.3	167.6	167.4	172.0	171.3
Optimistic	96.2	96.1	96.1	96.2	96.2	103.1	102.8	102.8	103.2	103.1	110.0	109.4	109.4	110.2	110.0	124.0	122.6	122.8	124.4	124.0
Median (Expected)	94.2	94.2	94.2	94.2	94.2	96.6	96.6	96.6	96.6	96.6	98.2	98.3	98.3	98.4	98.2	97.1	97.3	97.5	97.5	97.1
Pessimistic	92.1	92.2	92.2	92.1	92.1	90.1	90.4	90.4	90.2	90.1	86.7	87.3	87.4	86.8	86.7	74.0	75.5	75.7	74.2	74.1
Very Pessimistic	89.3	89.5	89.5	89.3	89.3	75.4	77.1	77.2	75.7	75.5	65.5	67.3	67.3	65.9	65.5	46.7	48.7	49.1	46.8	46.7



# Potential Portfolios – Asset and Liability Modeling

# Market Value of Assets – MVA



## Shortfall Risk:

The potential for the current policy to have a lower median market value of assets than the alternative policies.

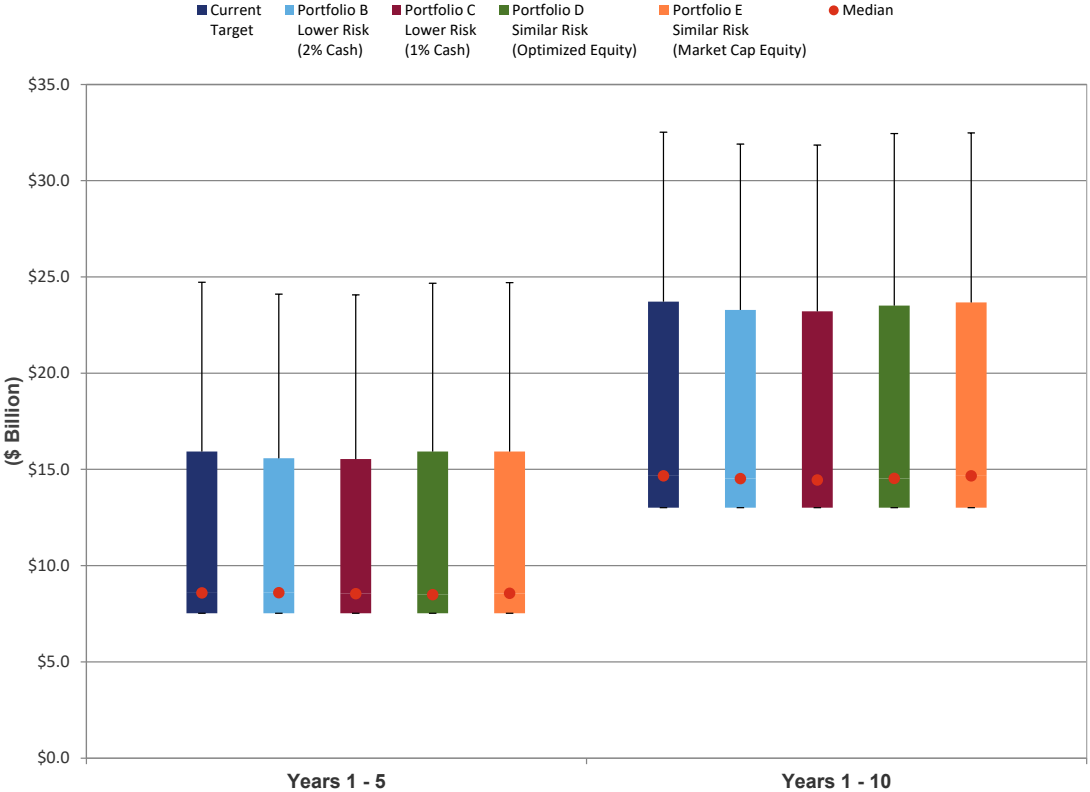
## Drawdown Risk:

The potential for the current policy to have a lower “very pessimistic” market value of assets than the alternative policies.

Initial MVA = \$46.7 Billion

(\$ Billion)	6/30/2026					6/30/2028					6/30/2030					6/30/2035				
	Current Target	Portfolio B Lower Risk (2% Cash)	Portfolio C Lower Risk (1% Cash)	Portfolio D Similar Risk (Optimized Equity)	Portfolio E Similar Risk (Market Cap Equity)	Current Target	Portfolio B Lower Risk (2% Cash)	Portfolio C Lower Risk (1% Cash)	Portfolio D Similar Risk (Optimized Equity)	Portfolio E Similar Risk (Market Cap Equity)	Current Target	Portfolio B Lower Risk (2% Cash)	Portfolio C Lower Risk (1% Cash)	Portfolio D Similar Risk (Optimized Equity)	Portfolio E Similar Risk (Market Cap Equity)	Current Target	Portfolio B Lower Risk (2% Cash)	Portfolio C Lower Risk (1% Cash)	Portfolio D Similar Risk (Optimized Equity)	Portfolio E Similar Risk (Market Cap Equity)
Very Optimistic	58.3	57.8	57.8	58.3	58.3	72.6	71.5	71.5	72.9	72.6	87.2	85.7	85.6	87.5	87.2	126.1	122.6	122.5	126.5	126.18
Optimistic	52.6	52.4	52.4	52.6	52.6	59.9	59.5	59.5	59.9	59.9	66.4	65.8	65.8	66.4	66.4	84.7	83.8	83.9	85.1	84.76
Median (Expected)	48.6	48.6	48.6	48.6	48.6	51.7	51.7	51.8	51.8	51.7	55.4	55.3	55.4	55.5	55.4	62.8	63.1	63.2	63.1	62.80
Pessimistic	44.5	44.6	44.6	44.5	44.5	44.4	44.7	44.7	44.4	44.4	45.1	45.5	45.6	45.0	45.0	45.0	45.8	46.0	45.4	45.07
Very Pessimistic	38.8	39.1	39.1	38.7	38.8	34.5	35.2	35.2	34.5	34.5	32.7	33.6	33.6	32.8	32.7	27.7	28.9	29.0	27.8	27.75

# MVA Economic Cost



Shortfall Risk:

The potential for the current allocation to have a higher median economic cost than the alternative policies.

Drawdown Risk:

The potential for the current allocation to have a higher “very pessimistic” economic cost than the alternative policies.

EROA = 7.00%

(\$ Billion)	Years 1 - 5					Years 1 - 10				
	Current Target	Portfolio B Lower Risk (2% Cash)	Portfolio C Lower Risk (1% Cash)	Portfolio D Similar Risk (Optimized Equity)	Portfolio E Similar Risk (Market Cap Equity)	Current Target	Portfolio B Lower Risk (2% Cash)	Portfolio C Lower Risk (1% Cash)	Portfolio D Similar Risk (Optimized Equity)	Portfolio E Similar Risk (Market Cap Equity)
Very Pessimistic	24.7	24.1	24.1	24.7	24.7	32.5	31.9	31.9	32.4	32.5
Pessimistic	15.9	15.6	15.5	15.9	15.9	23.7	23.3	23.2	23.5	23.7
Median (Expected)	8.6	8.6	8.5	8.5	8.6	14.7	14.5	14.4	14.5	14.7
Optimistic	7.5	7.5	7.5	7.5	7.5	13.0	13.0	13.0	13.0	13.0
Very Optimistic	7.5	7.5	7.5	7.5	7.5	13.0	13.0	13.0	13.0	13.0

Economic Cost is defined as the present value of contributions plus contributions necessary to fully fund the plan at the end of the projection period.



# Appendix

## Background & Overview

- The asset allocation decision is the most important decision an investor can make
  - The asset allocation decision drives 90% of return variability among portfolios
- The appropriate asset allocation policy is determined by an investor's risk tolerance and return expectation requirements
- Each investor's risk tolerance and return requirements should be viewed in the context of the liabilities that the assets are supporting
- Wilshire recommends revisiting the asset allocation decision every three to five years, or sooner, as market conditions warrant
  - IPERS reviews asset allocation annually and last reviewed in September 2023
- IPERS has liability discount rate assumption of 7.0% over the long term

# Capital Market Assumptions

- Wilshire’s Capital Market Assumptions as of June 30, 2025
- Wilshire’s asset class return, risk and correlation assumptions are developed on multi-year forward looking expected rates of return and historical risk and correlation, adjusted to incorporate recent trends
- Public market return expectations represent a passive investment in the asset class (beta). They do not reflect value added from active management (alpha).

Asset Classes	Expected Return 10 Years	Expected Return 20 Years	Expected Return 30 Years	Risk	Cash Yield	Factor Exposure Growth	Factor Exposure Inflation	Liquidity Market Level	Liquidity Stressed Metric
U.S. Equity	4.30	5.20	6.10	17.00	1.25	8.00	-3.00	100	0
International Equity	5.65	6.25	6.90	19.05	2.80	8.00	0.15	90	0
Private Equity	6.20	7.05	7.95	29.65	0.00	14.00	-4.25	0	0
Global Smart Beta	4.85	5.65	6.45	17.00	1.75	8.00	-1.95	95	0
Public Credit	6.15	6.10	6.00	8.95	9.05	3.00	1.00	80	25
Private Credit	7.75	7.80	7.90	13.25	4.90	4.50	-1.50	0	0
Core (Plus) Fixed Income	5.05	5.00	4.90	4.75	5.75	-0.95	-2.60	100	80
Cash	3.55	3.45	3.40	0.75	3.55	0.00	0.00	100	100
Private Real Assets	6.10	6.45	6.85	13.45	3.60	4.80	2.10	0	0

# Portfolios Modeled

Asset Class	Current Target	Portfolio B Lower Risk (Cash 2%)	Portfolio C Lower Risk (Cash 1%)	Portfolio D Similar Risk (Optimized Equity)	Portfolio E Similar Risk (Market Cap Equity)
U.S. Equity	21.00%	21.00%	21.00%	21.00%	24.00%
International Equity	13.00%	13.00%	13.00%	18.00%	15.00%
Private Equity	17.00%	17.00%	17.00%	17.00%	17.00%
Global Smart Beta	5.00%	0.00%	0.00%	0.00%	0.00%
<b>Total Growth Assets</b>	<b>56.00%</b>	<b>51.00%</b>	<b>51.00%</b>	<b>56.00%</b>	<b>56.00%</b>
Public Credit	3.00%	7.00%	6.00%	3.00%	3.00%
Private Credit	8.00%	8.00%	8.00%	8.00%	8.00%
<b>Total Defensive Growth Assets</b>	<b>11.00%</b>	<b>15.00%</b>	<b>14.00%</b>	<b>11.00%</b>	<b>11.00%</b>
Core (Plus) Fixed Income	22.50%	22.50%	24.50%	22.50%	22.50%
Cash	1.00%	2.00%	1.00%	1.00%	1.00%
<b>Total Defensive / Rate Sensitive Assets</b>	<b>23.50%</b>	<b>24.50%</b>	<b>25.50%</b>	<b>23.50%</b>	<b>23.50%</b>
Private Real Assets	9.50%	9.50%	9.50%	9.50%	9.50%
<b>Total RA / Inflation Sensitive Assets</b>	<b>9.50%</b>	<b>9.50%</b>	<b>9.50%</b>	<b>9.50%</b>	<b>9.50%</b>
<b>Total Assets</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
<b>Expected Return - 10 Years (%)</b>	<b>6.08</b>	<b>6.14</b>	<b>6.14</b>	<b>6.14</b>	<b>6.09</b>
<b>Expected Return - 30 Years (%)</b>	<b>7.04</b>	<b>7.00</b>	<b>7.01</b>	<b>7.07</b>	<b>7.04</b>
<b>Standard Deviation of Return (%)</b>	<b>13.01</b>	<b>12.44</b>	<b>12.41</b>	<b>13.04</b>	<b>13.01</b>
<b>+ / (-) in Expected Return - 10 Years (bps)</b>		<b>6</b>	<b>6</b>	<b>6</b>	<b>1</b>
<b>+ / (-) in Expected Return - 30 Years (bps)</b>		<b>(4)</b>	<b>(3)</b>	<b>3</b>	<b>0</b>
<b>+ / (-) in SD of Return (bps)</b>		<b>(57)</b>	<b>(60)</b>	<b>3</b>	<b>0</b>
<b>Sharpe Ratio - 10 Years</b>	<b>0.19</b>	<b>0.21</b>	<b>0.21</b>	<b>0.20</b>	<b>0.20</b>

# Capital Market Assumptions

- Wilshire's Capital Market Assumptions as of June 30, 2025
- Wilshire's asset class return, risk and correlation assumptions are developed on multi-year forward looking expected rates of return and historical risk and correlation, adjusted to incorporate recent trends
- Public market return expectations represent a passive investment in the asset class (beta). They do not reflect value added from active management (alpha).

	U.S. Equity	International Equity	Private Equity	Global Smart Beta	Public Credit	Private Credit	Core (Plus) Fixed Income	Cash	Private Real Assets
Return - 10-Year (%)	4.30	5.65	6.20	4.85	6.15	7.75	5.05	3.55	6.10
Return - 20-Year (%)	5.20	6.25	7.05	5.65	6.10	7.80	5.00	3.45	6.45
Return - 30-Year (%)	6.10	6.90	7.95	6.45	6.00	7.90	4.90	3.40	6.85
Risk (%)	17.00	19.05	29.65	17.00	8.95	13.25	4.75	0.75	13.45
Correlations									
U.S. Equity	1.00								
International Equity	0.84	1.00							
Private Equity	0.72	0.66	1.00						
Global Smart Beta	0.98	0.93	0.73	1.00					
Public Credit	0.58	0.59	0.40	0.61	1.00				
Private Credit	0.71	0.62	0.50	0.70	0.73	1.00			
Core (Plus) Fixed Income	0.27	0.08	0.30	0.21	0.31	0.25	1.00		
Cash	-0.05	-0.08	0.00	-0.06	-0.08	0.01	0.18	1.00	
Private Real Assets	0.69	0.68	0.61	0.71	0.70	0.71	0.17	-0.06	1.00



# Appendix – Asset Allocation Ranges

# Allowable Asset Allocation Ranges

Wilshire's Asset Allocation Committee (WAAC) maintains standard asset allocation parameters which reflect generally observed market practices for institutional asset owners. While Wilshire expects most client portfolios will fall within these asset allocation ranges. Wilshire recognizes and occasionally recommends portfolio allocations that may diverge from these general ranges based on a client's particular circumstances, goals or needs.

Asset Segment	Corporate DB	Public DB	E&F
Total Equity (Public+Private)	0% - 80%		
Private Equity (Aggregate)	0% - 15%	0% - 20%	0% - 30%
Fixed Income (Core/High-quality - Liquid IG)	10% - 100%	10% - 50%	
Other Fixed Income/Credit (Aggregate)	0% - 25%		
Private/Illiquid Credit (Aggregate)	0% - 15%		
High Yield	0% - 10%		
Other: EMD, Loans, Convertibles	0% - 7.5%		
Total Real Assets (Public + Private)	0% - 25%		
Total Real Estate (Public + Private)	0% - 25%		
RA Other: Commodities, Gold, Infra, GLI, MLPs, O&G, Timber	0% - 5%		
Marketable Alternatives (Aggregate)	0% - 12.5%		0% - 20%
Cash	0% - 5%		
Leverage	0% - 20%		
Total Private/Illiquid	0% - 25%	0% - 35%	0% - 50%

These thresholds were informed by allocation information from Greenwich Associates, and Wilshire Advisors, LLC, universe data and will be reviewed for reasonableness from time to time.

*\*Last Updated 04/2024*

# Appendix – Efficient Frontier

# Efficient Frontier Portfolios

Asset Class	Current Target	Optimization Constraints	Minimum Risk	Portfolio 2	Portfolio 3	Portfolio 4	Portfolio 5	Portfolio 6	Portfolio 7	Portfolio 8	Portfolio 9	Maximum Risk
U.S. Equity	21.00%	19% - 23%	23.00%	19.00%	19.00%	19.00%	19.00%	19.00%	19.00%	19.00%	19.00%	19.00%
International Equity	13.00%	11% - 15%	11.00%	14.00%	12.00%	11.00%	11.00%	11.50%	13.50%	15.00%	15.00%	15.00%
Private Equity	17.00%	15% - 19%	15.00%	15.00%	17.00%	18.00%	18.00%	19.00%	19.00%	19.00%	19.00%	19.00%
Global Smart Beta	5.00%	0% - 7%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.50%	3.00%	7.00%
<b>Total Growth Assets</b>	<b>56.00%</b>	<b>48% - 64%</b>	<b>49.00%</b>	<b>48.00%</b>	<b>48.00%</b>	<b>48.00%</b>	<b>48.00%</b>	<b>49.50%</b>	<b>51.50%</b>	<b>53.50%</b>	<b>56.00%</b>	<b>60.00%</b>
Public Credit	3.00%	0% - 6%	6.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	3.50%	1.00%	0.00%
Private Credit	8.00%	5% - 11%	5.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%
<b>Total Defensive Growth Assets</b>	<b>11.00%</b>	<b>6% - 16%</b>	<b>11.00%</b>	<b>16.00%</b>	<b>16.00%</b>	<b>16.00%</b>	<b>16.00%</b>	<b>16.00%</b>	<b>16.00%</b>	<b>14.50%</b>	<b>12.00%</b>	<b>11.00%</b>
Core (Plus) Fixed Income	22.50%	18.5% - 26.5%	26.50%	26.50%	26.50%	25.00%	22.50%	21.00%	19.00%	18.50%	18.50%	18.50%
Cash	1.00%	1% - 5%	5.00%	1.50%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
<b>Total Defensive / Rate Sensitive Assets</b>	<b>23.50%</b>	<b>15.5% - 31.5%</b>	<b>31.50%</b>	<b>28.00%</b>	<b>27.50%</b>	<b>26.00%</b>	<b>23.50%</b>	<b>22.00%</b>	<b>20.00%</b>	<b>19.50%</b>	<b>19.50%</b>	<b>19.50%</b>
Private Real Assets	9.50%	6.5% - 12.5%	8.50%	8.00%	8.50%	10.00%	12.50%	12.50%	12.50%	12.50%	12.50%	9.50%
<b>Total RA / Inflation Sensitive Assets</b>	<b>9.50%</b>		<b>8.50%</b>	<b>8.00%</b>	<b>8.50%</b>	<b>10.00%</b>	<b>12.50%</b>	<b>12.50%</b>	<b>12.50%</b>	<b>12.50%</b>	<b>12.50%</b>	<b>9.50%</b>
<b>Total Assets</b>	<b>100.0%</b>		<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
<b>Expected Return - 30 Years (%)</b>	<b>7.04</b>		<b>6.75</b>	<b>6.96</b>	<b>7.02</b>	<b>7.08</b>	<b>7.12</b>	<b>7.16</b>	<b>7.20</b>	<b>7.22</b>	<b>7.22</b>	<b>7.21</b>
<b>Standard Deviation of Return (%)</b>	<b>13.01</b>		<b>11.54</b>	<b>11.80</b>	<b>12.06</b>	<b>12.32</b>	<b>12.58</b>	<b>12.86</b>	<b>13.13</b>	<b>13.39</b>	<b>13.66</b>	<b>13.91</b>
<b>+ / (-) in Expected Return - 30 Years (bps)</b>			<b>(29)</b>	<b>(8)</b>	<b>(2)</b>	<b>4</b>	<b>8</b>	<b>12</b>	<b>16</b>	<b>18</b>	<b>18</b>	<b>17</b>
<b>+ / (-) in SD of Return (bps)</b>			<b>(147)</b>	<b>(121)</b>	<b>(95)</b>	<b>(69)</b>	<b>(43)</b>	<b>(15)</b>	<b>12</b>	<b>38</b>	<b>65</b>	<b>90</b>
<b>Sharpe Ratio - 30 Years</b>	<b>0.28</b>		<b>0.29</b>	<b>0.30</b>	<b>0.30</b>	<b>0.30</b>	<b>0.30</b>	<b>0.29</b>	<b>0.29</b>	<b>0.29</b>	<b>0.28</b>	<b>0.27</b>



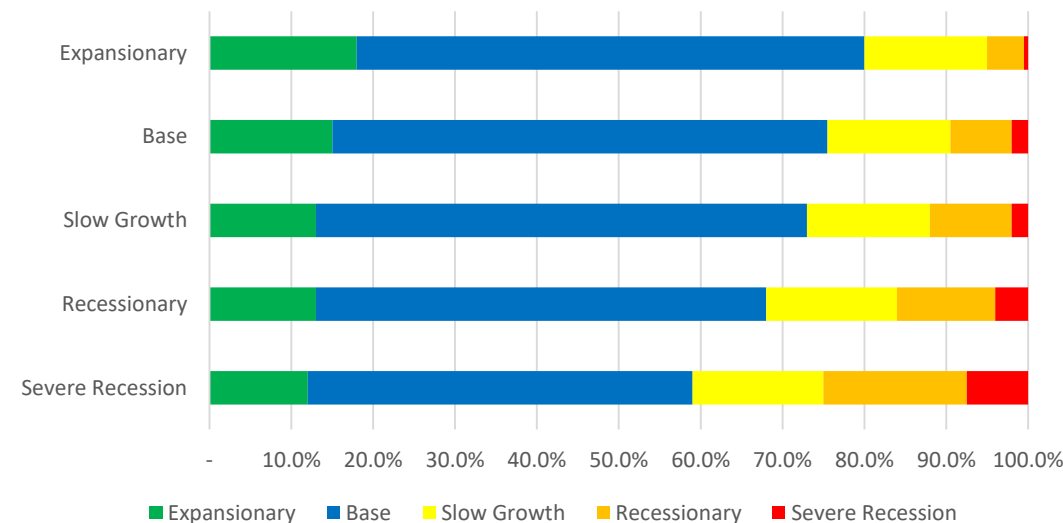
# Appendix – Regimes

# Efficient Frontier Portfolios

Managing drawdown risk – the “uncertainty around the uncertainty”

- Most simulation models assume returns are log-normally distributed\*
- Though reasonable in most years, left-tail events occur more frequently than predicted
- A regime switching model can help us pre-experience uncomfortable return paths that fall outside a normal distribution’s field of view

	expansionary	base	slow growth	recessionary	severe recession
18.0%	62.0%	15.0%	4.5%	0.5%	
15.0%	60.5%	15.0%	7.5%	2.0%	
13.0%	60.0%	15.0%	10.0%	2.0%	
13.0%	55.0%	16.0%	12.0%	4.0%	
12.0%	47.0%	16.0%	17.5%	7.5%	



\*Probability distribution of random outcomes whose logarithms are normally distributed with positive skewness versus those of a normal distribution with symmetry, equally distributed with both positive and negative

## Stress Testing: Regime Assumptions

- In below trend and worse environments, the portfolio's return expectations is materially lower and the volatility is materially higher
- Volatility in the below trend and worse environments are left-skewed, i.e. negative-skewed

	US Stocks	Dev ex-US Stocks	Emg Mkt Stock	Private Equity	Cash	Core Bonds	LT Core Bonds	TIPS	High Yield Bonds	US RE Securities	Private RE	Commodities	Current Target
<b>Expansionary/Above Trend Growth</b>													
Return (%)	9.65	10.65	10.90	15.55	3.55	4.40	3.55	2.45	8.95	9.65	8.90	4.80	10.09
Risk (%)	12.00	13.00	21.00	22.15	0.75	5.25	10.90	6.50	8.00	13.50	10.75	16.00	10.47
<b>Baseline/Trend Growth</b>													
Return (%)	4.30	5.30	5.55	6.20	3.55	5.05	5.25	4.45	6.30	5.65	6.45	4.80	6.08
Risk (%)	17.00	18.00	26.00	29.65	0.75	4.75	9.90	6.00	10.00	17.50	13.95	16.00	13.01
<b>Slow Growth/Below Trend</b>													
Return (%)	1.65	2.65	2.90	1.55	3.55	5.35	6.10	5.45	4.95	3.65	5.20	4.80	4.16
Risk (%)	22.00	23.00	31.00	37.15	0.75	5.75	11.90	7.50	12.00	21.50	17.15	18.00	17.11
<b>Recessionary/Negative Growth</b>													
Return (%)	(5.70)	(4.70)	(4.45)	(11.30)	3.55	6.25	8.45	8.20	1.30	(1.85)	1.85	4.80	(1.68)
Risk (%)	27.00	28.00	36.00	44.65	0.75	6.75	13.90	9.00	15.00	27.50	21.95	21.00	22.18
<b>Severe Recession/Crisis</b>													
Return (%)	(43.70)	(42.70)	(42.45)	(50.00)	3.55	10.75	20.55	22.45	(17.70)	(30.35)	(15.75)	4.80	(25.01)
Risk (%)	42.00	43.00	51.00	54.65	0.75	14.75	29.90	21.00	20.00	42.50	33.95	26.00	28.74
<b>Inflation Shock</b>													
Return (%)	(11.20)	(5.20)	5.05	(18.45)	3.55	(0.50)	(9.55)	13.70	(0.20)	2.15	5.25	34.80	(5.33)
Risk (%)	31.00	32.00	40.00	44.65	0.75	9.05	18.50	10.75	18.75	34.00	27.15	21.00	24.11

# Stress Testing: Regime Descriptions

## Regime Descriptions

- **Expansionary/Above Trend Growth** – Regime when the economy is coming out of a recession, or the economy is running above long-run capacity. Wilshire does not project the economy to remain in this regime over longer periods.
- **Baseline/Trend Growth** – The long term expected state of the economy. Wilshire's capital market assumptions are based on this regime.
- **Slow Growth/Below Trend** – Regime when the economy is running at less than full capacity.
- **Recessionary/Negative Growth** – Regime when the economy has below zero growth. Wilshire expects the economy would be in a recession.
- **Severe Recession/Deflation** – Regime when the economy defined by significantly negative growth. Wilshire does not project the economy to remain in this regime over longer periods.



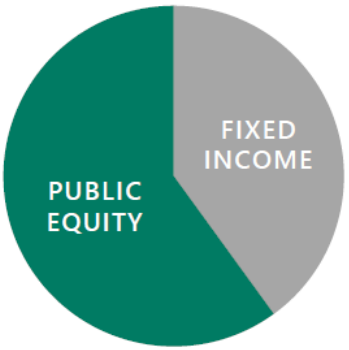
# Appendix – Asset Allocation Evolution

# Asset Allocation Evolution

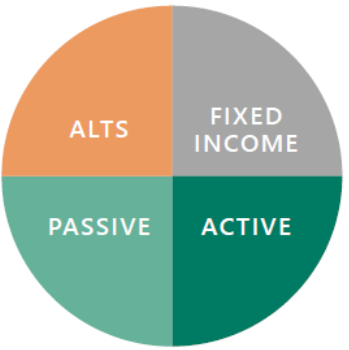
The evolution of asset allocation



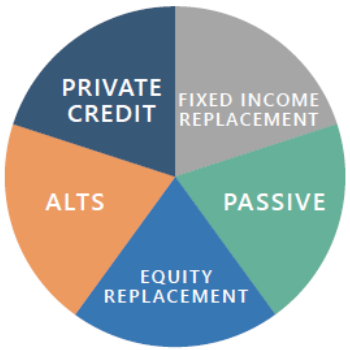
Foundations  
1930s–1980



Age of 60/40  
1980s–2000



Barbell Portfolio  
2001–2020



Replacement  
Now

Source: Apollo Chief Economist

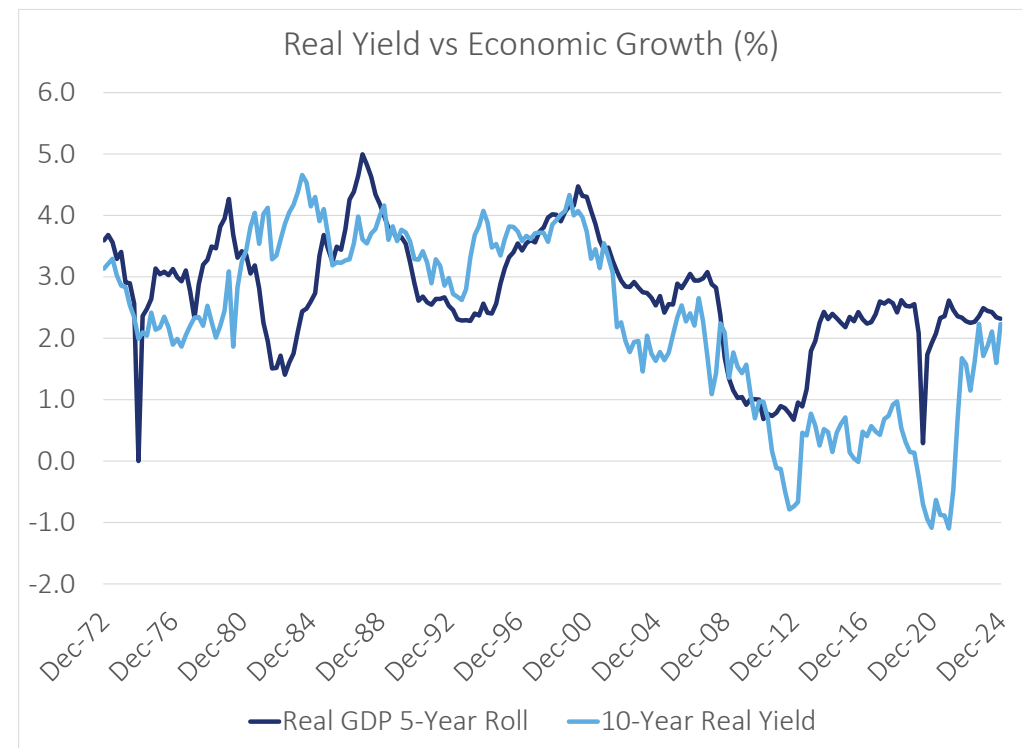
# Appendix – Economic Factor Exposures

## Why Introduce Factors?

- **Risk Assessment:** Including factors within the asset allocation process provides an opportunity to measure asset class (and portfolio) exposures to key economic factors
- **Economic Efficiency:** If the underlying economic activity that drives asset performance can be identified, perhaps it can be used to assist in building economically-efficient portfolios
- **Portfolio Stability:** Macroeconomic risk factors – when separated from the valuation component inherent in investment pricing – may exhibit more stable correlations and, therefore, can better inform the allocation process

## Growth Proxy

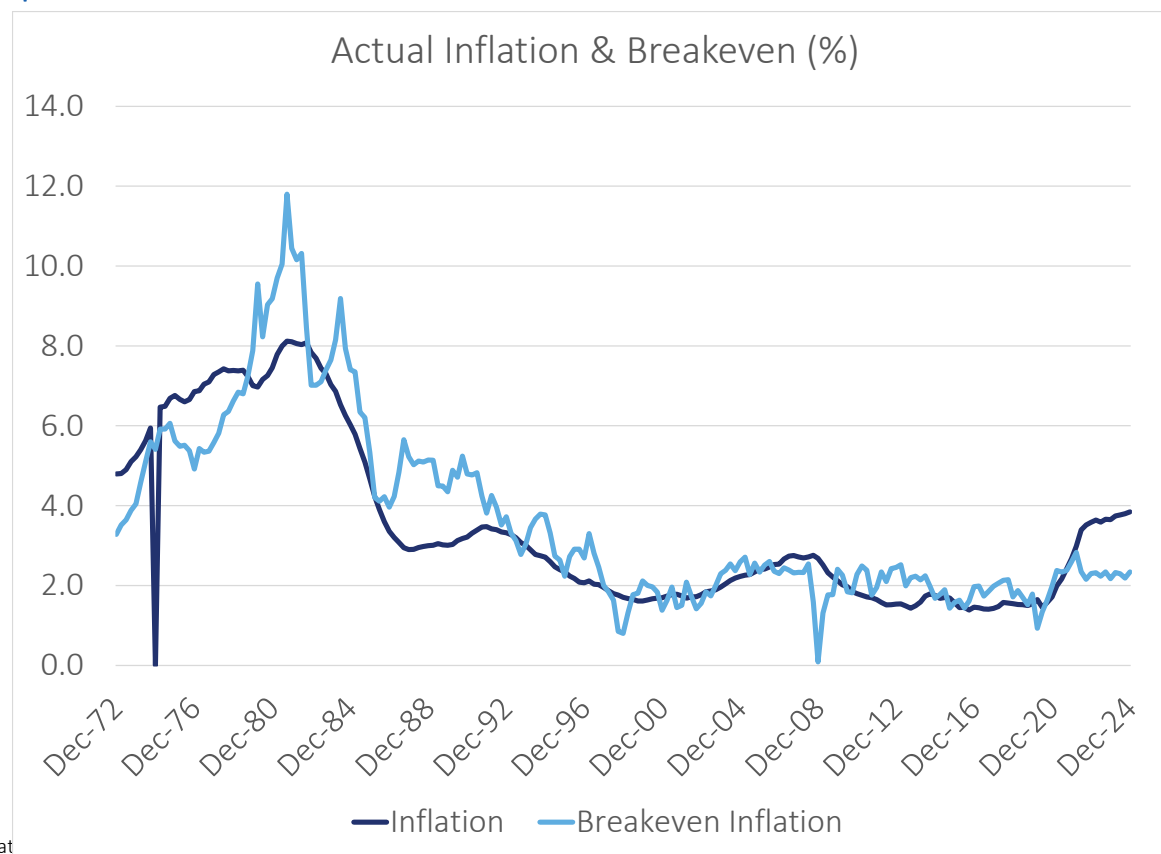
- Interest rates contain information and can reflect economic factors
- Nominal yields aggregate two important and distinct sources of economic information – real yields and expected inflation
- Disaggregating these factors should prove beneficial in developing a set of factors with improved explanatory power



Data Source: Federal Reserve, Bridgewater

## Inflation Proxy

- Breakeven inflation is the market's expectation for inflation
- Tends to follow closely with actual, recent inflation and can act as a timely signal of trends in consumer prices

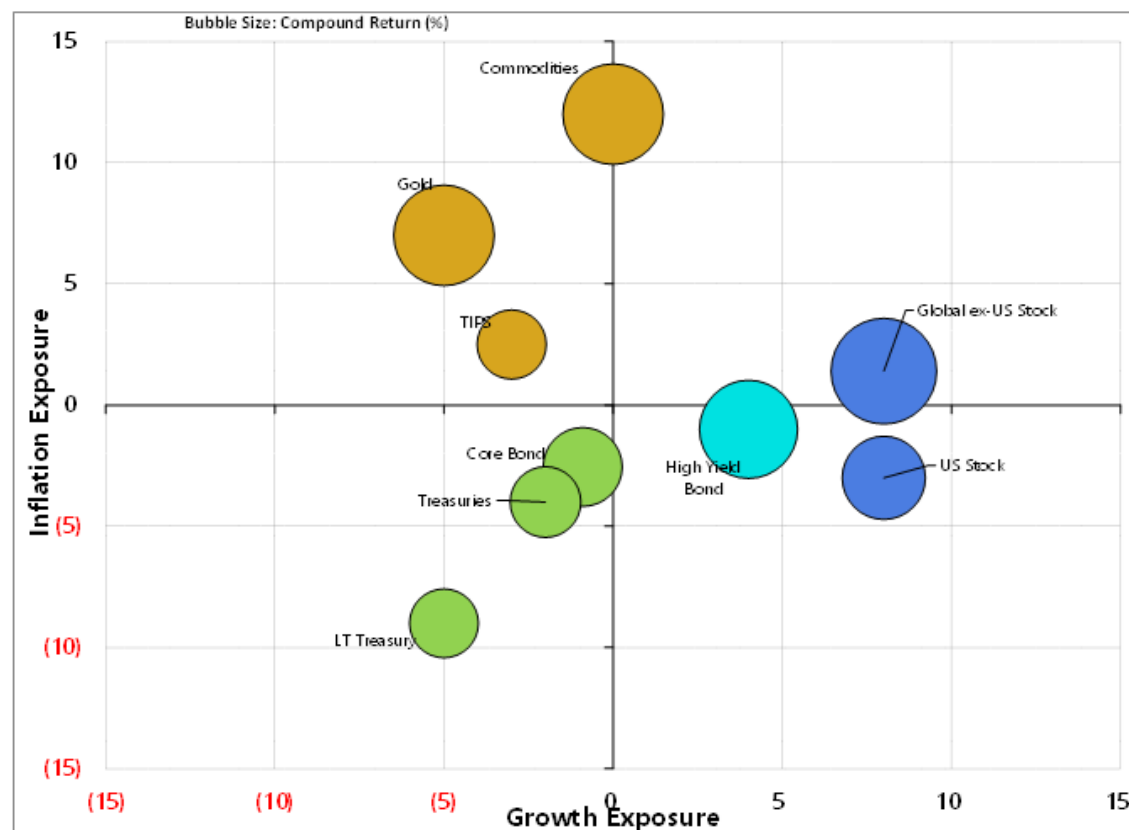


Data Source: Federal Reserve, Bridgewater



## Wilshire's Approach

- Employ a 2-factor regression model (growth and inflation) to formulate factor assumptions
- Growth proxy is enhanced by high yield bond spreads to better capture shifts in growth forecasts



# Appendix – Liquidity

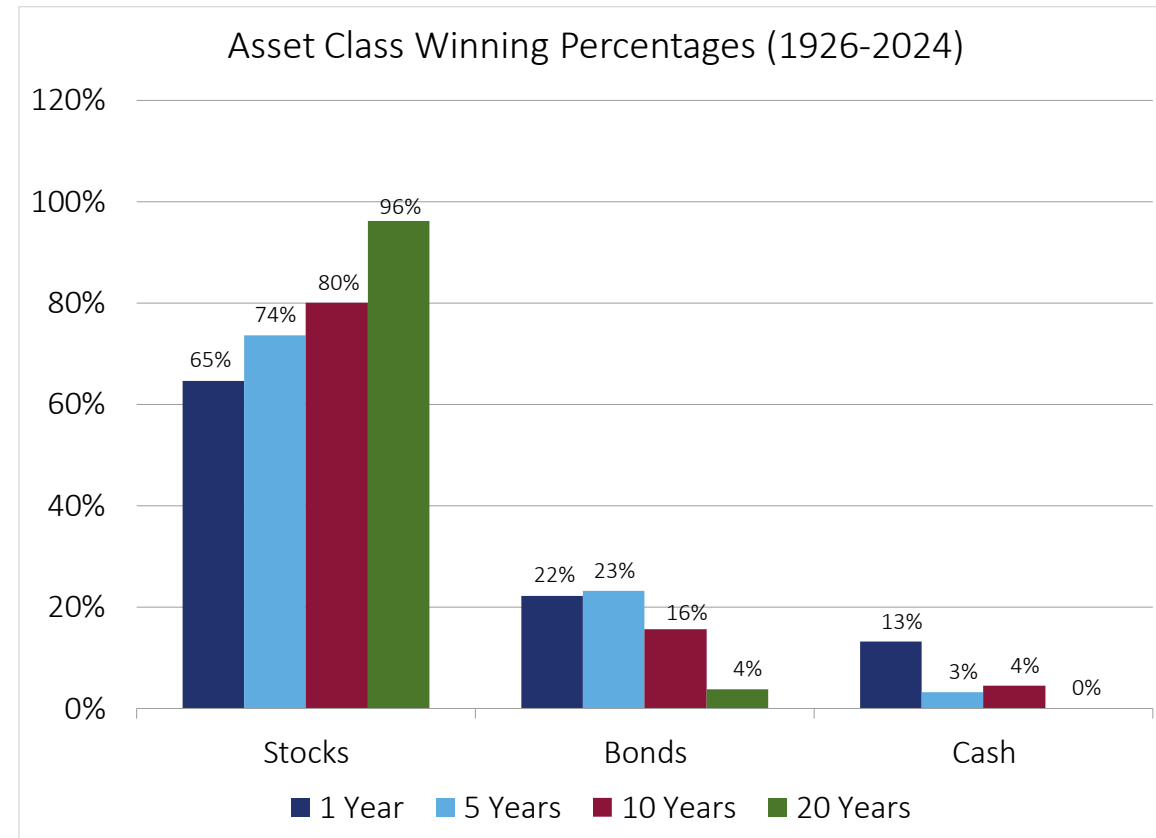


# Liquidity Risk: What Are The Consequences?

Default/Insolvency is the most severe outcome from having insufficient liquidity, but...

There are many other, more likely, disruptive impacts that a lack of liquidity can impose on an investment portfolio

- Liquidity breaches can rob an investor of their biggest advantage: a long-term investment horizon
- The timing and price of such sales dictated by liquidity needs rather than by explicit investment rationale
- Can destroy portfolio value and effectively strip a portfolio from its ability to recover from market sell-offs



# Wilshire Liquidity Metric

Wilshire's Liquidity Metric framework has two levels:

- **Market Level of Liquidity**
- **Overall Level of Liquidity**

## Market Level of Liquidity

- Quantified on scale from 0% (low liquidity) to 100% (high liquidity)
- Designed to capture general notion of marketable versus private/off-market transactions
  - Marketable asset classes typically reflect a 90% or 100%
  - Private asset classes reflect 0%
- Goal is to reflect the tradability of assets, which is helpful in connecting these values back to our definitional framework (i.e., to quantify the differences between Convertible Liquidity and Delayed Liquidity)

# Wilshire Liquidity Metric

Wilshire's Liquidity Metric framework has two levels:

- **Market Level of Liquidity**
- **Overall Level of Liquidity**

## Overall Liquidity Metric

Includes a penalty process to reflect the loss in practical liquidity due to asset class volatility and sensitivity to particular economic environments

Penalty components:

1. **Growth Penalty:**
  - Impacts asset classes with vulnerability to slowing growth
  - Recognizes the hit to liquidity that can occur during growth related bear markets
2. **Inflation Penalty:**
  - Impacts asset classes with vulnerability to rising inflation
  - Recognizes the hit to liquidity that can occur during inflation driven bear markets
3. **Volatility Penalty:**
  - Impacts higher volatility asset classes
  - Recognizes the hit to liquidity that can occur from any form of volatility

# Wilshire Stressed Liquidity Metric

## Stressed Level of Liquidity Metric

Asset Class	Market Liquidity	Liquidity Penalty Components			Applied Penalty	Stressed Liquidity
		Growth	Inflation	Volatility		
US Equity	100	50		24	50	0
Dev ex-US Equity	100	50		26	50	0
EM Equity	90	50		40	50	0
Private Equity	0	50		40	0	0
Cash Equivalents	100				0	100
Core Bonds	100		8		8	86
High Yield Bonds	80	40		10	40	0
US Real Estate Securities	90	50		24	50	0
Private Real Estate	0	50		18	0	0
Commodities	90			20	20	55

Applied Penalty = Min(Max(Growth + Inflation, Volatility), Market Liquidity)

Stressed Liquidity \* = Market Liquidity - (1.75 x Applied Penalty)

*\* If less than 20, Stressed Liquidity is assumed to be 0*

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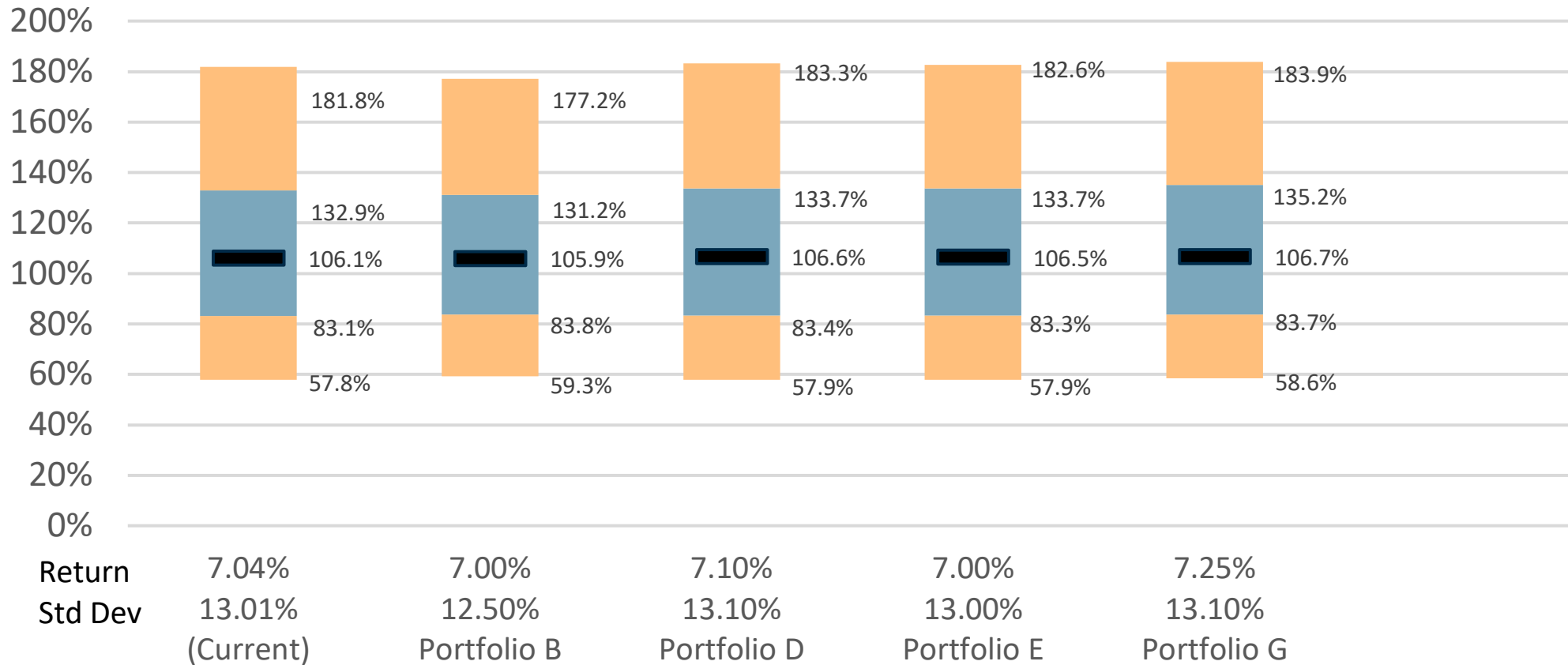
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# 2035 Funded Ratio

## Smart-Beta Reallocation Only



Portfolio B: Reallocate smart beta to Public Credit +4%, Cash +1%

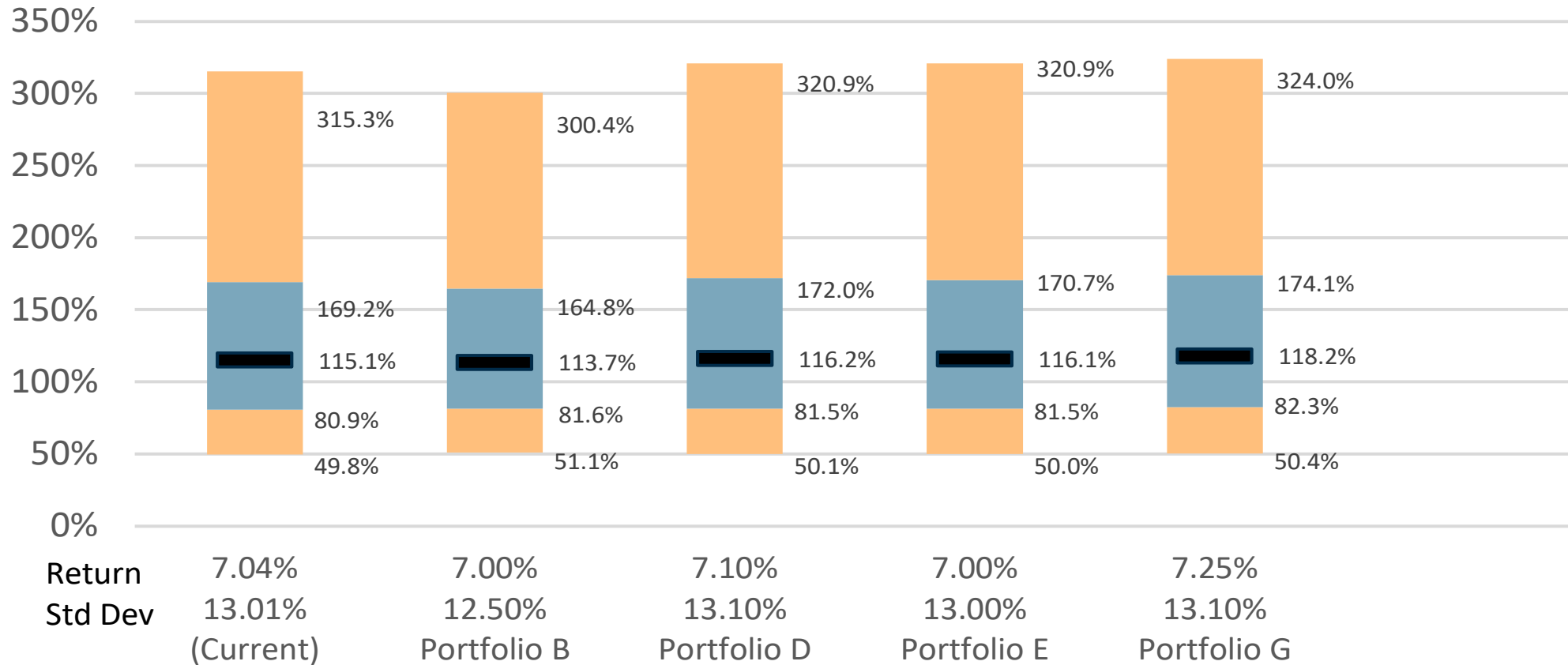
Portfolio D: Reallocate smart beta to International Equity +5%

Portfolio E: Reallocate smart beta to U.S. Equity +3%, International Equity +2%

Portfolio G: Same as Portfolio E, but increase Expected Return Assumption by 25 bps

# 2045 Funded Ratio

## Smart-Beta Reallocation Only



Portfolio B: Reallocate smart beta to Public Credit +4%, Cash +1%

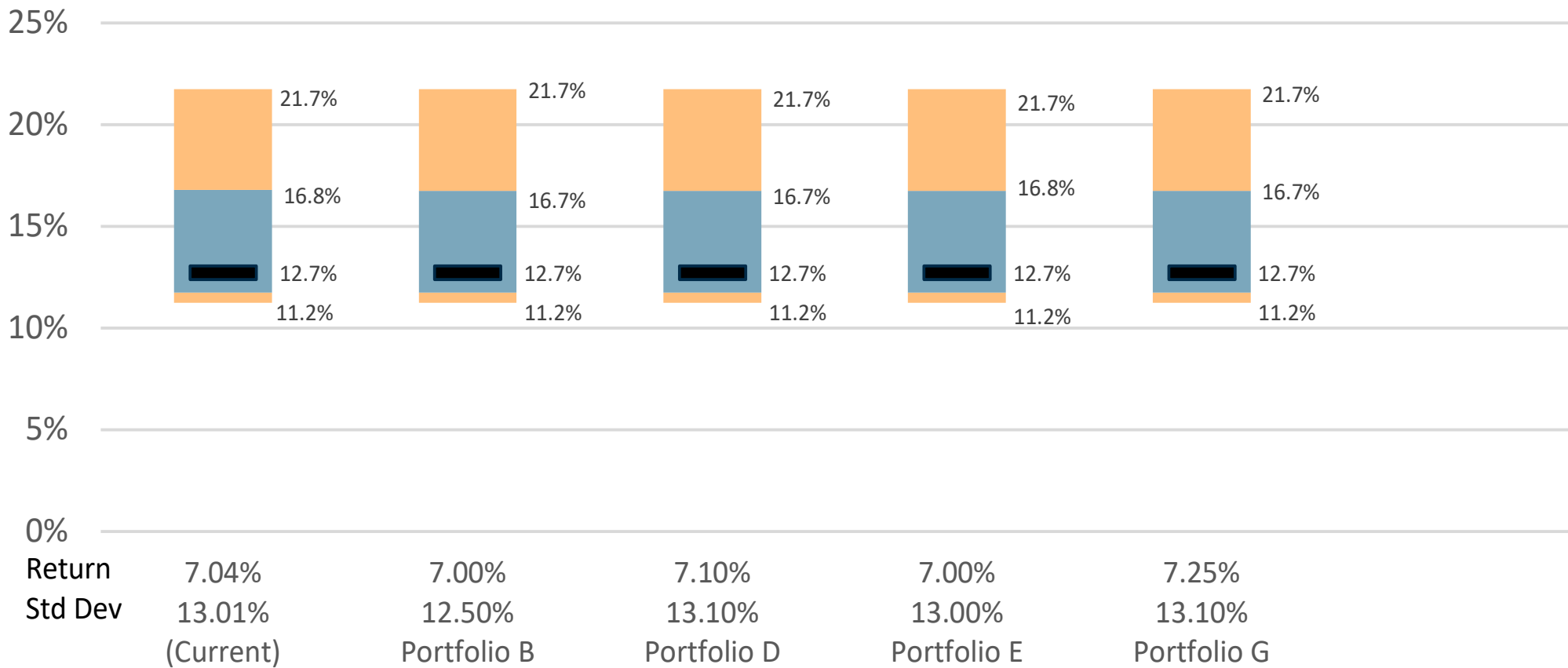
Portfolio D: Reallocate smart beta to International Equity +5%

Portfolio E: Reallocate smart beta to U.S. Equity +3%, International Equity +2%

Portfolio G: Same as Portfolio E, but increase Expected Return Assumption by 25 bps

# 2035 Required Contribution Rate

## Smart-Beta Reallocation Only



Portfolio B: Reallocate smart beta to Public Credit +4%, Cash +1%

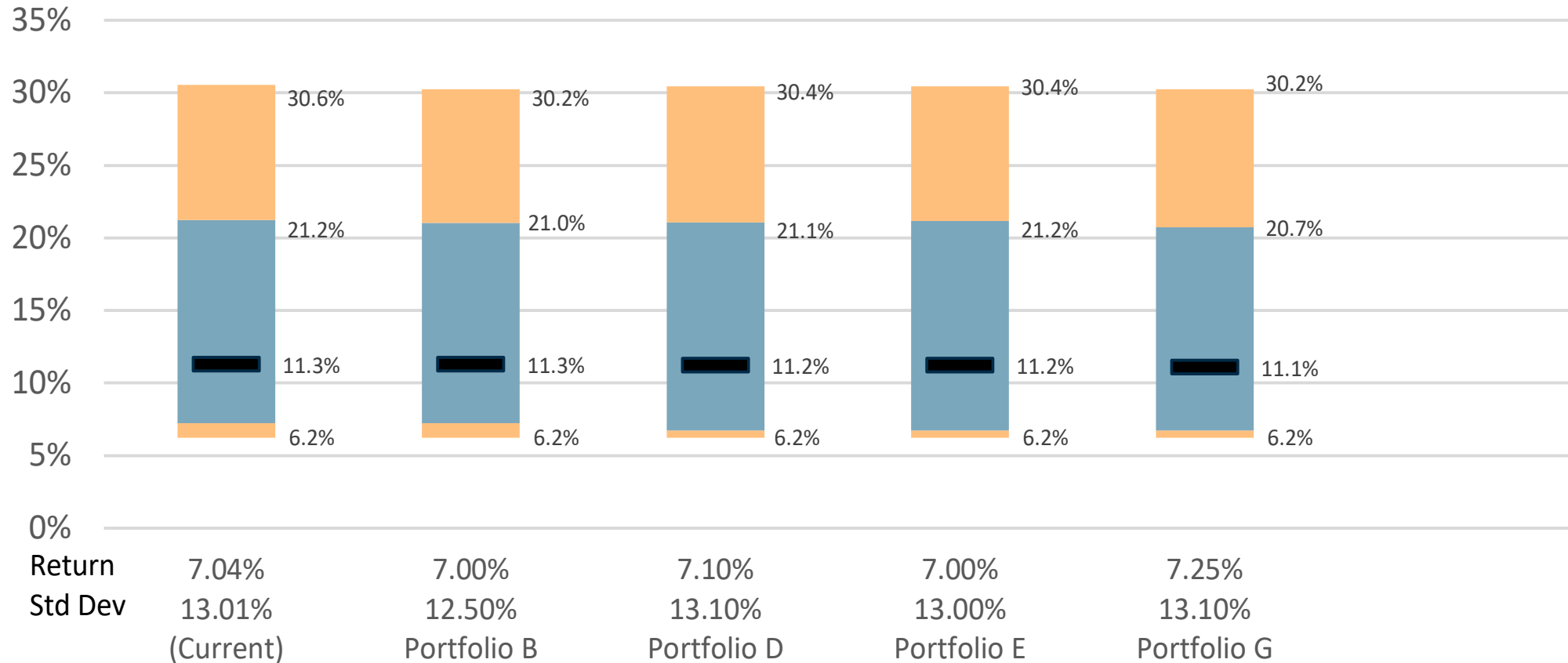
Portfolio D: Reallocate smart beta to International Equity +5%

Portfolio E: Reallocate smart beta to U.S. Equity +3%, International Equity +2%

Portfolio G: Same as Portfolio E, but increase Expected Return Assumption by 25 bps



## 2045 Required Contribution Rate Smart-Beta Reallocation Only



Portfolio B: Reallocate smart beta to Public Credit +4%, Cash +1%

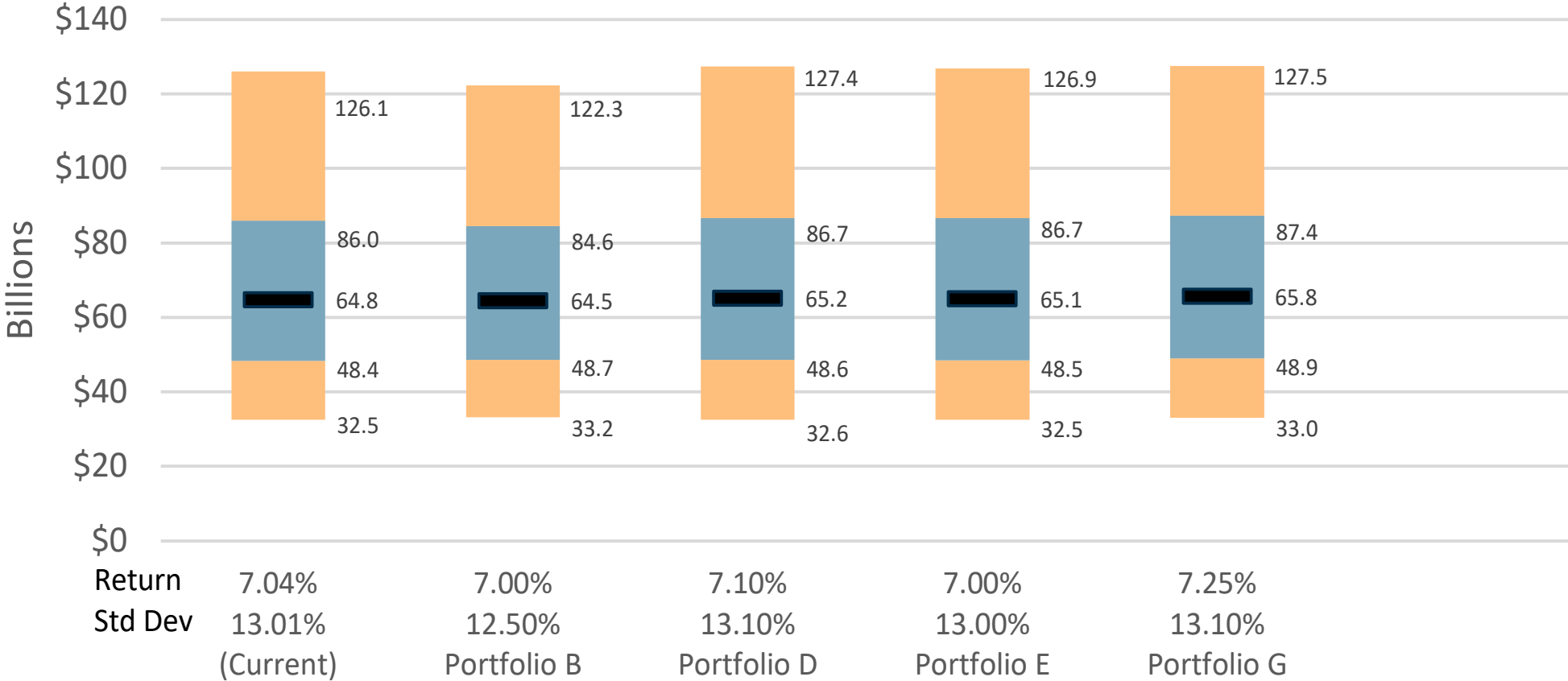
Portfolio D: Reallocate smart beta to International Equity +5%

Portfolio E: Reallocate smart beta to U.S. Equity +3%, International Equity +2%

Portfolio G: Same as Portfolio E, but increase Expected Return Assumption by 25 bps

# 2035 Market Value of Assets

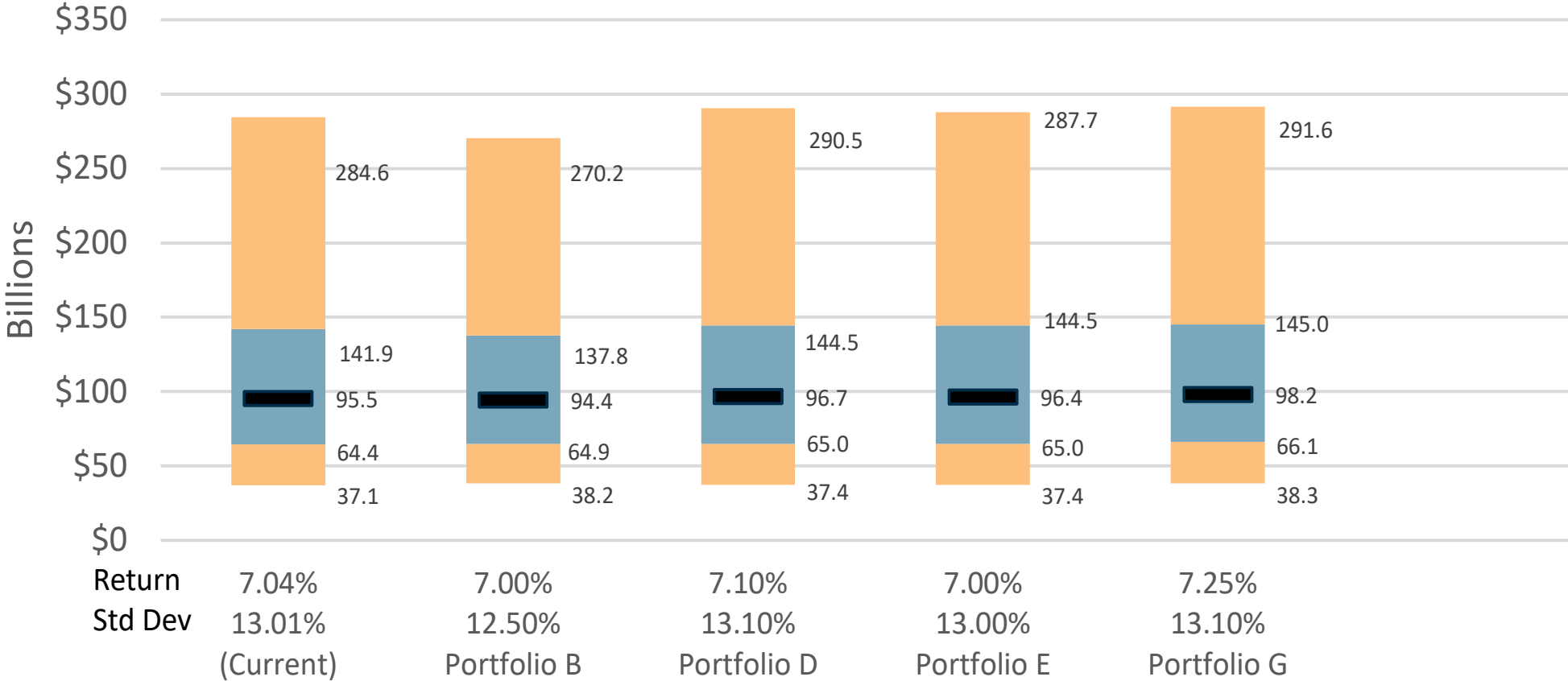
## Smart-Beta Reallocation Only



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Portfolio G: Same as Portfolio E, but increase Expected Return Assumption by 25 bps

# 2045 Market Value of Assets

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Portfolio B: Reallocate smart beta to Public Credit +4%, Cash +1%  
Portfolio D: Reallocate smart beta to International Equity +5%  
Portfolio E: Reallocate smart beta to U.S. Equity +3%, International Equity +2%  
Portfolio G: Same as Portfolio E, but increase Expected Return Assumption by 25 bps

## **Investment Policy and Goal Statement**

### **I. INTRODUCTION**

The Iowa Public Employees' Retirement System (IPERS or System) is governed by Iowa Code chapter 97B. System assets are held in trust and invested for the exclusive purposes of providing benefits to participants and their beneficiaries, minimizing contributions, and defraying reasonable expenses of administering the System. The investment activities of the System are governed by the "prudent person" rules as defined in §97B.7A. The investment policy and the investment strategies will be periodically reviewed to ensure they conform to §§97B.7A and 97B.8A.

The Investment Board (Board) is the trustee of the IPERS Trust Fund (Fund). The Board shall establish the System's tolerance for investment risk, and shall diversify the System's investments to minimize the risk of unacceptable large losses and to maximize the rate of return, unless under the circumstances it is clearly not prudent to do so. The Board also adopts the actuarial assumptions and methods, approves the retention of service providers in matters relating to the actuarial valuation of the System's assets and liabilities, and adopts the System's contribution rate funding policy. A list of the statutory and administrative duties of Board and staff is provided in Appendix A.

The chief investment officer (CIO), under the supervision of the chief executive officer (CEO), is responsible for the administration of the System's investment program pursuant to the policies of the Board.

### **II. INVESTMENT OBJECTIVES**

The investment activities will be designed to provide a return on the Fund that, when coupled with the periodic contributions of the membership and employers, will meet or exceed the benefit funding requirements of the plan over time while staying within the Board's tolerance for risk expressed in this policy.

The objective of the CIO is to execute the asset allocation policy established by the Board (the policy benchmark defined in this policy), and to attempt to add value relative to the policy benchmark while staying within the Board's tolerance for active risk.

### **III. DECISION MAKING**

The Board is responsible for establishing broad policy guidelines and benchmarks that will enable the Fund to achieve its investment objectives. Board decisions are required in the following areas:

1. Establish asset allocation targets through adoption of a policy benchmark
2. Establish acceptable ranges around the policy benchmark targets

3. Establish the Fund- and program-level benchmarks
4. Establish the active risk budget

Beyond these broad policy decisions, the Board delegates to the CIO all other decision-making relating to the investment of IPERS assets, subject to the guidelines established in this policy and any statutory requirements or prohibitions.

The Board may utilize the services of investment consultants to assist them in their decision-making. Such services include, but are not limited to, conducting asset-liability and asset allocation studies, investment performance reviews, policy reviews and topical studies.

#### IV. ASSET ALLOCATION

The Board's asset allocation policy is established in the policy benchmark and the asset class ranges specified in Appendix B. The policy benchmark weights set the Board's target exposure to each asset class, measured on a market value basis, while the asset class ranges establish the ranges within which actual weights may fluctuate. Positioning within a specified asset class range is acceptable and constitutes compliance with the policy benchmark.

IPERS' assets are divided into two groups for allocation purposes: *private markets* and *public markets*. Private market assets are generally illiquid, infrequently priced investments with long horizons. The Board has established a private markets investment policy specifying investment objectives, benchmarks, etc. for these types of assets. (See Appendix C)

It is the responsibility of the CIO to manage the allocation weights within the public market asset class ranges and keep them close to target, unless the CIO decides to tactically over- or under-weight a particular public market asset class. However, staff cannot quickly rebalance private markets to target weights due to the illiquid nature of private market assets, so any excess or deficiency between actual and target allocation for private market assets as a whole will be proportionately reallocated across all public market asset classes when rebalancing occurs.

The policy benchmark return is the sum of the products of the policy benchmark weights and the respective policy benchmark index returns for the period, with the exception that IPERS' actual weights and actual returns for each private market asset class shall be used in the calculation. If staff utilizes derivatives for rebalancing or tactical allocation decisions, the notional amount of derivatives contracts shall be used in calculating compliance with policy benchmark weights and asset class ranges.

## V. ACTIVE RISK ALLOCATION AND MANAGEMENT

“Alpha” is the excess return resulting from active management decisions. IPERS believes positive alpha can be earned by employing a combination of active strategies that have low return correlation with one another, exhibit low correlation with beta returns and higher correlation to liability returns.

The Board has established an active risk budget in Appendix B as a means of controlling the active risk in the IPERS Trust Fund. The active risk budget consists of two components: risk allocated for external active management and risk allocated for internal active management through tactical allocation decisions. Active risk is measured as tracking error, which is the standard deviation of excess returns.

IPERS will seek to maintain a diversified alpha portfolio, and may utilize any strategy that in the discretion of the CIO will enhance the risk-adjusted return of the alpha portfolio, including but not limited to traditional long-only, long/short, portable alpha, derivative overlay and leveraged strategies. The CIO must formally authorize any tactical allocation decisions, and each decision shall be documented and tracked for performance evaluation purposes. Tactical allocation decisions by staff shall not result in allocations that would violate the asset class ranges set by the Board.

IPERS’ investment in an investment manager’s actively managed strategies shall not exceed 20 percent of the manager’s total actively managed assets under management. The CIO shall have discretion to determine what types of similar products offered by a manager can be included in the definition of “actively managed strategies” for purposes of this calculation.

Cost efficiency is important, and the CIO should seek to implement active strategies with a high conversion ratio of active return (after fees) to the risk deployed. Active strategies shall use performance incentive fee structures, where appropriate, to ensure the economic interests of IPERS and the manager are properly aligned.

Investment staff has been granted the authority to buy and sell widely available, liquid and cost-efficient financial instruments, including but not limited to ETFs, futures, swaps and other derivatives for the purpose of implementing risk management or tactical asset allocation strategies. Tactical positions that are taken on assets that do not form a part of the policy will be accounted for in the Cash asset class on a net notional exposure basis. The Board authorizes staff to establish and maintain investment vehicles such as individually managed accounts, private limited partnerships, limited liability companies and other types of commingled fund structures to house the ARP Program and other authorized initiatives.

## **VI. EXTERNAL INVESTMENT MANAGEMENT**

The Board shall approve the hiring of investment management and investment consulting services. The CIO has full authority to terminate investment manager contracts provided the Board is notified of the termination prior to the effective date of the termination. The CIO also has full authority to negotiate and renegotiate contract terms and fees.

The CIO is responsible for ensuring that adequate due diligence is being performed in the evaluation of potential and existing investment managers. The CIO may hire operational due diligence consultants, attorneys, auditors and other service providers as needed to assist in the due diligence and performance evaluation of external investment management firms.

External investment managers shall have full discretion to direct and manage the investment and reinvestment of assets allocated to their accounts in accordance with this document, applicable federal and state statutes and regulations, and the executed contracts. Each contract for a public market active management strategy shall clearly define investment objectives, permitted investments, concentration limits, risk budgeting parameters and performance benchmarks.

Investment managers shall have full discretion to establish and execute trades through accounts with one or more securities broker/dealers as the managers may select. However, the System may require investment managers to clear trades through clearing brokers that are under contract to IPERS in order to control risk and costs. Investment managers will attempt to obtain “best execution” with respect to all transactions. Best execution is defined as the process and price that results in the best overall performance impact, taking into account market conditions at the time of the trade. IPERS will generally discourage a manager’s use of soft dollar arrangements for IPERS’ account, but may allow it if the usage is regularly monitored for reasonableness.

The CIO will provide the Board a summary of active management performance at least quarterly, and will highlight any concerns regarding performance, personnel turnover, or changes in the organization or investment process. The investment consultant will provide the Board semi-annual performance reviews of total Fund, asset class, and manager performance. To the extent possible, investment results will be reviewed in the context of risk-adjusted returns.

Any voting rights of securities held in any separate account, or any collective, common, or pooled fund will be exercised by the manager, trustees, or agents of said account or fund in accordance with their own proxy voting policies, provided that such policies have been reviewed by the System and deemed to be in the best economic interests of IPERS. The System shall periodically review each investment manager’s proxy voting policy and its compliance with such policies.

## **VII. RISK MANAGEMENT**

The Fund's risk management objectives are to: (1) maintain the asset allocation as close to the policy benchmark as possible through rebalancing, and (2) manage the active risk of the alpha portfolio such that its tracking error does not exceed the upper limit established in the active risk budget in Appendix B.

The CIO and Chief Risk Officer (CRO) shall develop appropriate policies and procedures for the measurement, monitoring, management and reporting of risk to the Board, CEO and staff. The CRO is responsible for obtaining and/or developing the appropriate systems, models, tools and reporting processes that will allow for the timely and efficient management of investment risk. The CRO shall report any breach of risk limits established in this policy to the Board as soon as possible after the discovery of any material breach.

## **VIII. CUSTODY**

The Treasurer of the State of Iowa (Treasurer) is the custodian of the Fund. The Treasurer will hold the System's assets in a custody/recordkeeping account in a master custody bank located in a national money center and in the international sub-custodian banks under contract to the custodian bank. The Treasurer shall consult with the Board prior to selecting the master custody bank. A formal written agreement shall be established between the Treasurer and any third-party custodian. The custodian bank agreement shall be reviewed periodically by the CIO and Board.

Certain strategies involving derivatives may require the use of a prime broker or clearing broker who will hold the System's cash or securities per the terms of a collateral agreement or futures clearing agreement. IPERS shall seek to ensure that such brokers do not require IPERS to post margin amounts that materially exceed the minimum required margin amounts set by an exchange or the terms of a collateral agreement.

## **IX. SECURITIES LENDING**

The primary objective of the securities lending program shall be to safely generate income from lending the System's securities to qualified borrowers. The program will only utilize lending agents that agree to indemnification provisions in the event of a counterparty insolvency.

Cash collateral received against loans of securities shall be prudently invested in a low-risk investment strategy that invests only in: (1) commingled funds or money market funds managed in accordance with the regulations and criteria specified in Rule 2(a)(7) promulgated under the Investment Company Act of 1940, or (2) separate accounts that have investment guidelines identical to those required of a 2(a)(7) fund, or (3) overnight repurchase agreements collateralized with obligations issued by the United States Treasury or obligations issued by agencies or government-sponsored entities of the



United States government. The key investment objectives for investing the cash collateral shall be to: (1) safeguard principal; (2) maintain adequate liquidity; and (3) consistent with the foregoing objectives, optimize the spread between the collateral earnings and the rebate paid to the borrower of securities.

The Investment Board may select its own securities lending agent or authorize the Treasurer to manage the securities lending program in accordance with the risk guidelines established herein. Staff shall execute a formal written agreement between any lending agent (or the Treasurer, as the case may be) and IPERS stipulating the risk parameters and performance benchmarks of the program, which shall be in accordance with these guidelines. The securities lending program will be annually reviewed by the Board, and the ongoing operation of such program shall be subject to periodic reauthorization by the Board.

## **X. DERIVATIVES**

The System recognizes that derivative instruments can be useful tools in portfolio and risk management, but can also introduce unique risks. The CIO shall develop written policies and procedures to control the risks associated with derivatives, but at a minimum such procedures shall require: (1) a counterparty credit rating equivalent to at least “A” for over-the-counter derivatives; (2) payment netting arrangements; (3) daily marking-to-market; and (4) collateralization of net amounts owed under the contracts after meeting minimum threshold for transfers.

The CIO shall ensure that the derivatives policies and procedures are addressed in any external management services contract, as necessary. The CIO shall develop procedures for monitoring the use and exposure of derivatives within an investment manager’s account. Mortgage-backed and asset-backed securities are not derivatives for the purpose of this policy.

## **XI. OTHER POLICIES**

### **A. Social Investing**

As fiduciaries, the IPERS Investment Board, staff and investment managers must perform their duties for the exclusive benefit and in the best economic interest of the System’s members and beneficiaries. The System and the Board will not support investment policies or strategies which seek to promote specific social issues or agendas through investment or divestment of IPERS’ assets. To act otherwise could be construed as a violation of fiduciary duty and could endanger the System’s tax-exempt status.

### **B. Securities Monitoring and Litigation**

IPERS has a fiduciary duty to preserve trust assets to meet the retirement promises made to its members. Included in this duty is the obligation to recover investments

in public securities that incur losses as a result of corporate mismanagement and/or fraud. To preserve trust assets, the Board has adopted a securities monitoring and litigation policy to guide the System's involvement in and monitoring of securities litigation. (See Appendix D)

#### C. Confidential Investment Information

Iowa Code §22.7 and §97B.17(2)e provide that certain records and information in IPERS' possession are considered confidential and thus are exceptions to Iowa's Open Records (chapter 22) laws. Included in the exceptions is information which, if released:

1. Could result in a loss to the System or to the provider of the information.
2. Would give advantage to competitors and serve no public purpose.
3. Would violate trade secrets which are recognized and protected by law.

While the staff shall provide the Board with all essential information about the investment program, communication of information that is confidential under the above Iowa Code provisions will be identified as such in the communication.

Iowa Code §97B.8A(5), an explicit exception to Iowa's Open Meetings (chapter 21) laws, reinforces the need and obligation to maintain the confidentiality of such information by expressly authorizing the Board to hold closed sessions for discussion of this information.

#### D. Ethics

Fiduciaries of the System must exercise the highest standards of care in acting for the exclusive benefit of the plan participants. IPERS has adopted an ethics policy to govern the activities of Board members, staff, consultants and managers as it relates to the System. (See Appendix E)

If the CEO, CIO, CRO, any investment officer, or any IPERS attorney is in possession of information which would lead a reasonable person familiar with such matters to conclude that an investment, a commitment to an investment, or a decision to engage or terminate a contracted service provider, contradicts the fiduciary duties of the party or parties having the final authority to take such actions, it is the Board's expectation that the issue will be placed on a Board meeting agenda for review.

#### E. Leverage

The CIO may utilize leverage within staff tactical decisions up to the maximum negative allocation allowed by the asset class ranges for cash as specified in Appendix B. The CIO may also allow the use of leverage within external active investment management strategies and products consistent with the active risk

budget. The private markets investment policy in Appendix C addresses the use of leverage for private market investments.

F. Board Meetings

Board meeting dates for the fiscal year shall be set by members of the Board at the first meeting of the fiscal year. At the first meeting in each fiscal year, the voting Board members shall elect a chair and vice chair.

Parties wishing to present items for the Board's next meeting agenda shall file a written request with the chair at least five business days prior to the meeting. To the extent there is no law, statute, or administrative rule governing a procedure, Board meetings shall be governed by the procedural rules established in the latest version of *Robert's Rules of Order*.

**APPENDIX A**  
**STATUTORY RESPONSIBILITIES OF THE INVESTMENT BOARD AND STAFF**

1. The Board shall annually adopt an Investment Policy and Goal Statement. *Iowa Code §§97B.7A and 97B.8A*
2. The Board shall at least annually conduct a review of the investment policies and procedures utilized by the System. *Iowa Code §97B.8A.2(a)*
3. The Board shall at least annually conduct a public meeting to review the policies and the investment performance of the Fund. *Iowa Code §97B.8A.2(a)*
4. With the approval of the Board, the Treasurer of State may conduct a program of lending securities in the IPERS portfolio. *Iowa Code §12.8.3*
5. The Board shall review and approve the hiring of each investment manager and investment consultant. *Iowa Code §97B.4.3(f)*
6. The Board shall select the actuary for the System, and shall adopt the mortality tables and actuarial assumptions and methods the actuary will use for the annual actuarial valuation. *Iowa Code §§97B.4.3(c) and 97B.8A.3*
7. The CEO will consult with the Board prior to employing a CIO. *Iowa Code §97B.4.3(a)*
8. The Board shall participate in the annual performance evaluation of the CIO. *Iowa Code §97B.8A.2(c)*
9. The CEO shall consult with the Board on the budget program for the System. *Iowa Code §97B.4.2(c)*
10. The Treasurer of State shall consult with the Board prior to selecting any bank or other third party for purposes of investment asset safekeeping, other custody, or settlement services. *Iowa Code §97B.7.2*
11. The Board shall consist of seven voting members and four nonvoting members. Four voting members of the Board shall constitute a quorum. *Iowa Code §97B.8A*
12. Staff shall provide advance notice to the public of the time, date, tentative agenda and place of each Board meeting in compliance with Iowa Code chapter 21.
13. The Board shall set the salary of the CEO. *Iowa Code §97B.3.1*

## APPENDIX B

### ASSET ALLOCATION POLICY AND ACTIVE RISK BUDGET

#### I. Asset Allocation Policy<sup>1</sup>

Asset Class	Asset Class Ranges	Policy Benchmark Weights	Policy Benchmark Index
<b>Equities</b>		<b>39%</b>	
Domestic Equities	+/- 3%	21%	Russell 3000
International Equities	+/- 3%	13%	MSCI ACWI ex-U.S. (Net)
Global Smart Beta Equities	+/- 3%	5%	Custom Index <sup>2</sup>
<b>Fixed Income</b>		<b>28%</b>	
Core Fixed Income	+/- 3%	25%	Bloomberg U.S. Aggregate
Public Credit	+/- 3%	3%	Custom Index <sup>3</sup>
<b>Cash</b>	+/- 3%	<b>1%</b>	Merrill Lynch 91-Day T-Bill
<b>TOTAL PUBLIC MARKETS</b>		<b>68%</b>	
	Asset Class Targets	Policy Benchmark Weights	Policy Benchmark Index
Private Equity	17%	Actual <sup>4</sup>	Portfolio <sup>5</sup>
Private Credit	6%	Actual <sup>4</sup>	Portfolio <sup>5</sup>
Private Real Assets	9%	Actual <sup>4</sup>	Portfolio <sup>5</sup>
<b>TOTAL PRIVATE MARKETS</b>		<b>32%</b>	

<sup>1</sup>On September 17, 2020, September 22, 2022, and September 28, 2023, the Investment Board revised the Asset Allocation Policy, as reflected in the table below. However, the Board stipulated that core fixed income assets should be reduced as needed to fund new allocations to the private markets. Therefore, beginning October 1, 2020, and revised as of October 1, 2022, and October 1, 2023, the target weight for private equity will be increased to 17 percent and core fixed income will be lowered to 22.5 percent, with target weights being adjusted quarterly in the future to reflect the progress in funding the increased allocations to private credit and private real assets.

Asset Class	Current Weight	Target Weight
Core Fixed Income	25%	22.5%
Private Credit	6%	8%
Private Real Assets	9%	9.5%

<sup>2</sup>This benchmark index is defined as 60 percent Russell 1000 Comprehensive Factor Index + 30 percent FTSE Developed ex U.S. Comprehensive Factor Index + 10 percent FTSE Emerging Comprehensive Factor Index.

<sup>3</sup>This benchmark index is defined as 67 percent Bloomberg U.S. High Yield 2% Issuer Capped Index + 33 percent JP Morgan EMBI Global Index.

<sup>4</sup>The benchmark weight for each private market asset class is the actual percentage of each asset class relative to the total fund portfolio.

<sup>5</sup>The benchmark index for each private market asset class is the return of the portfolio itself.

**II. Active Risk Budget**

	<b>Target<sup>6</sup></b>	<b>Upper Limit<sup>6</sup></b>
<b>Total Fund</b>	<b>1.50%</b>	<b>3.00%</b>
External Managers	1.00%	2.50%
Investment Staff	1.00%	2.50%

<sup>6</sup>Measured as tracking error (the standard deviation of excess return) at the Total Fund level.



**RFP I-2025-2**  
**Absolute Return Strategies**  
**Hiring Recommendations**  
**December 5, 2025**

**The Evaluation Committee recommends that the Investment Board approve the hiring of the following three investment firms/strategies for the Absolute Return search, subject to final due diligence and successful contract negotiations:**

<b>Firm Name</b>	<b>Strategy Name</b>
Florin Court Capital	Florin Court Capital Programme
Capital Fund Management SA	CFM ISTECH Program
AHL Partners LLP	AHL Cat Bond Program

IPERS issued an RFP on January 10, 2025, with the purpose of identifying absolute return investment products that could potentially be used in a portable alpha strategy. By the February 21, 2025, deadline, 125 respondents submitted proposals to the RFP. The evaluation of the strategies was conducted in three phases. Phase 1 consisted primarily of the collection of quantitative and certain qualitative information from potential Managers. The information was then blindly evaluated and scored based on a pre-determined algorithm to obtain a sub-group of the highest scoring strategies to advance to Phase 2. Of the 125 respondents, 33 were asked to apply to Phase 2 and 31 submitted applications.

Phase 2 of the RFP process was a questionnaire that again blindly evaluated the remaining potential strategies. Managers were notified and required to submit additional detailed information concerning their investment processes, portfolio construction and risk management processes, as well as other aspects of the strategy or firm. The Evaluation Committee comprised of Sriram Lakshminarayanan, Sheldon Lien and John Fujiwara read and scored each of the semifinalist's responses to the questionnaire. Based on the Evaluation Committee's scores, seven strategies were identified for further evaluation. The seven strategies identified for further evaluation next were revealed to the Evaluation Committee and virtual interviews were conducted with each Manager in September 2025. The virtual interviews narrowed the seven strategies down to three finalists to be advanced to Phase 3.

Phase 3 will consist of on-site interviews with the three firms and visits will be scheduled in a prudent manner. On-site visits will allow IPERS' staff to evaluate the potential Managers' operations, stability and ability to work with IPERS. IPERS reserves the right to modify the assessment process as necessary. Notices of intent to award will be issued after completion of Phase 3. Regardless of issuance of a notice of intent to award, a proposal may be rejected in IPERS' sole discretion if the bidder and IPERS cannot agree on contract terms and conditions.

Brief profiles of the three strategies recommended for hiring are provided on the following pages.

**FIRM NAME:** Florin Court Capital LLP

**Corporate Headquarters:** 20 Thayer Street, London, W1U 2QN, United Kingdom

**Ownership Structure:**

Florin Court Capital LLP is a limited liability partnership. The ownership structure of the firm is as follows:

- Partners: 60%
  - Dr. Douglas Greenig: CEO and CIO.
  - Dr. David Denison: Deputy CIO.
  - Anthony Vinitzky: COO and CRO.
- Brummer & Partners (UK) Ltd: 40% (affiliate of the seed investor).

Brummer & Partners AB, a Swedish hedge fund group, owns 40% of the investment manager through its 100% ownership of Brummer & Partners (UK) Ltd. Brummer & Partners AB is the parent company of the Brummer & Partners group and is based in Stockholm. The group also includes subsidiaries and associated companies primarily in Sweden, Great Britain and the United States. Including associated companies, the group has around 300 employees globally.

**Firm Wide Assets Under Management:** \$1,280.2 million (as of 31 October 2025)

**Product Name:** Florin Court Capital Programme

**Product Benchmark:**

The Florin Court Capital Programme is an absolute return strategy trading a specialised set of alternative markets not commonly traded by traditional systematic macro/CTA programmes and therefore it doesn't have a direct applicable benchmark.

**Product Asset Inception Date:**

The inception date of the current Florin Court Capital Programme is 1 April 2017.

**Product Assets Under Management:** \$1,280.2 million (as of 31 October 2025)

**Product Style Description:**

The Florin Court Capital Programme employs a systematic investment process focused on trend following and other systematic strategies. The programme's investment objective is to generate absolute returns having low long-term correlations with equity, bond, and commodity markets, whilst limiting downside risk and providing performance in extended crises and dislocations.

The programme is constructed using proprietary mathematical models implemented on computer systems and trades a diverse range of financial instruments, focused on operationally challenging and "alternative" markets not commonly traded by traditional systematic macro/CTA programmes. A particular focus is extracting the benefits of diversification through market selection from over 480 financial securities across all major asset classes including currencies, stocks, fixed income, credit, commodities and power. Examples of instruments traded by the programme include:



- Exotic commodities: Futures in Grains, Metals, Shipping, Oil Complex and Softs not commonly traded by systematic peers; Commodity Swaps
- Spread markets: Futures traded as intercommodity and intracommodity spreads; Oil and Gas locational spreads
- Rates/bonds: Cleared and uncleared EM and DM Interest Rate Swaps. Inflation Swaps.
- Equities: Futures, Sector and Developed Markets and Emerging Markets ETFs
- Credit: Cleared US, European and Asian CDX and ITRX Indices; Credit ETFs; Sovereign CDS
- FX: EM FX Forwards and Cryptocurrency derivatives
- Power: Futures in Electricity, Gas and Emissions

The Florin Court Capital Programme is not considered to be a “market neutral” or “beta one” type of strategy. The programme is designed to identify and profit primarily from trends, which can result in positive or negative correlations with broad market indices that vary over time depending on market conditions. Since inception, the programme has realised median betas (and absolute betas) of less than 0.4 versus equity, rates, credit and commodity markets (1 April 2017 to 30 June 2025).

#### **Historical Excess Returns and Risk (net of fees) vs. Product Benchmark:**

The Florin Court Capital Programme is an absolute return strategy trading a specialised set of alternative markets not commonly traded by traditional systematic macro/CTA programmes and therefore it doesn’t have a direct applicable benchmark.

Please note that the performance shown below is of the Florin Court Capital Fund Class A2 USD shares and is inclusive of 1% p.a. management fee and 20% incentive fee net of HWM with annual December crystallization and **no hurdle**. As detailed in Florin Court Capital LLP’s answer to Question 12 of IPERS I-2025-1 (Phase 2), there are various share classes available that vary by management fee and performance fee according to investment minimum.

	<b>Year Ended 6/30/25</b>	<b>3 years Ended 6/30/25</b>	<b>5 years Ended 6/30/25</b>
Annualized Return	-18.23%	-7.80%	3.75%
Annualized Risk	7.91%	9.67%	10.67%

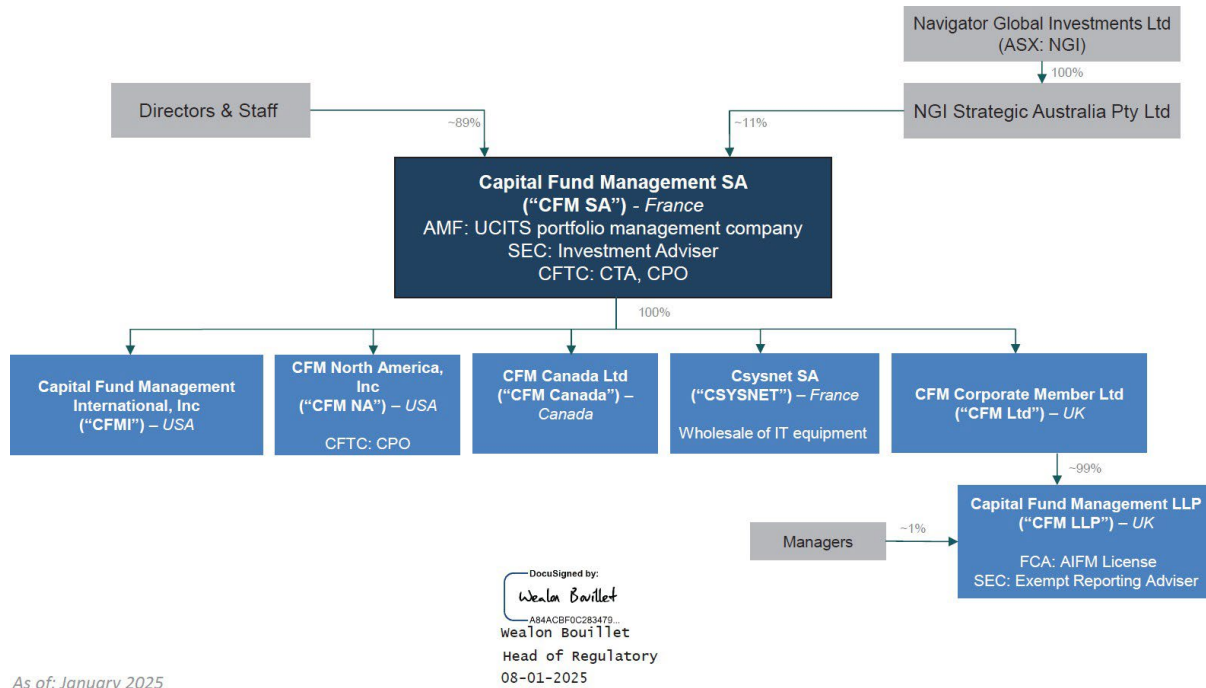
#### **Other IPERS Mandates:**

Not applicable. Florin Court Capital LLP does not currently manage an IPERS mandate.

**FIRM NAME:** Capital Fund Management SA (CFM SA)

**Corporate Headquarters:** 23, rue de l'Université 75007, Paris, France

**Ownership Structure:** CFM's ownership structure consists of 89% equity owned by its Board members and senior employees, with the remaining 11% owned by NGI Strategic Australia PTY Ltd, as a silent partner.



The firm is managed by a Board of five experienced executives: Jean-Philippe Bouchaud (Chairman & Chief Scientist), Philippe Jordan (President CFMI), Laurent Laloux (Chief Product Officer), Marc Potters (Chief Investment Officer), and Jacques Saulière (Chief Executive Officer). They have an average tenure at the Firm greater than 25 years, testimony of the stability and resilience of the company. In addition, there are seven Managing Directors who together with the Management Board form the Executive Committee of the Firm: Raphael Benichou (Head of Portfolio Research), Yves Lempérière (Head of Predictor research), Philip Seager (Head of Portfolio Strategy), Benjamin Roy (Head of Technology), Annabel Aslett (Head of HR and Administration), Martin Tornqvist (Head of Operations, Legal & Compliance), and Oliver Schupp (Head of Americas, co-Head of APAC).

**Firm Wide Assets Under Management:** \$19,031,626,851 in leveraged equity as of October 31, 2025

**Product Name:** CFM ISTECH Program (15% target volatility)

**Product Benchmark:** The Product is an absolute return strategy and is not managed against a specific benchmark. However, if an investor required a benchmark solely for performance monitoring, we would suggest the SG Trend Index (NEIXCTAT Index) or the SG CTA index (NEIXCTA Index).

**Product Asset Inception Date:** April 1, 2019

**Product Assets Under Management:** \$959,166,130 in leveraged equity as of October 31, 2025

**Product Style Description:** ISTECH is an absolute return strategy managed to a target volatility of either 10% or 15% with an expected Sharpe Ratio of 0.4 to 0.6 and seeking to achieve a nil or negative correlation to equity benchmarks. ISTECH is a trend following strategy seeking to provide convexity features on multiple timescales and a controlled exposure to equity market risk. It is expected to exhibit an enhanced convexity profile in periods of equity market drawdowns compared to a pure long term trend following strategy.

**Historical Excess Returns and Risk (net of fees) vs. Product Benchmark:**

Return and Risk figures are provided in absolute terms, net of headline management fees of 1.725% p.a. for ISTECH 15% target volatility. A fee grid was provided as part of the Phase 2 response.

	<b>Year Ended 6/30/25</b>	<b>3 years Ended 6/30/25</b>	<b>5 years Ended 6/30/25</b>
ISTECH Annualized Return	-3.07%	2.88%	8.00%
SG CTA Trend Index* Annualized Return	-15.04%	-4.56%	5.59%
Excess Return	11.97%	7.44%	2.41%
Annualized Risk	7.67%	15.90%	15.63%

**\*NEIXCTAT Index**

**Other IPERS Mandates:** None

**FIRM NAME:** AHL Partners LLP

**Corporate Headquarters:** Riverbank House, 2 Swan Ln, London EC4R 3AD, United Kingdom

**Ownership Structure:** AHL Partners LLP is a limited liability partnership which was incorporated in England and Wales on December 11, 2012, with registered number OC380907. Man Group plc is a publicly owned company listed on the London Stock Exchange. The Man AHL business, through AHL Partners LLP, is majority owned by Man Group plc ('Man Group').

**Firm Wide Assets Under Management:** Man AHL's AUM is \$ 53.9bn as of September 30, 2025. Man Group's total firm-wise assets are \$213.9bn as of September 30, 2025.

**Product Name:** AHL Cat Bond Program

**Product Benchmark:** Not applicable. There is no benchmark as this is an absolute return strategy.

**Product Asset Inception Date:** April 30, 2017

**Product Assets Under Management:** The combined assets under management of Man AHL's systematic strategies was \$53.9bn as of September 30, 2025. Assets under management of Man AHL's Cat Bond Program was \$1.0bn as of September 30, 2025.

**Product Style Description:** The AHL Cat Bond Program is an absolute return strategy that invests in catastrophe bonds and insurance-linked securities. The program provides exposure to natural catastrophe risk premiums by investing in bonds that transfer insurance risk related to natural disasters such as hurricanes, earthquakes, and other events. The strategy utilizes proprietary analytics and catastrophe modeling to assess expected losses, risk-return profiles, and position sizing. It seeks to generate risk-adjusted absolute returns with low correlation to traditional asset classes by capturing insurance risk premiums. The strategy has exhibited a historical annualized risk of approximately 4-6% over the past 5 years.

**Historical Excess Returns and Risk (net of fees) vs. Product Benchmark:**

No benchmark is applicable to the strategy. The returns below are absolute returns based on the AHL Cat Bond Program.

	Year Ended 6/30/25	3 years Ended 6/30/25	5 years Ended 6/30/25
Annualized Return	14.8%	13.0%	9.5%
Annualized Risk	4.4%	6.0%	4.9%

**Other IPERS Mandates:**

IPERS is invested in Man Institutional Portfolio Hawkeye LLC, a dedicated global macro vehicle that launched in October 2023. The strategy, overseen by Phil Yuhn, Man Emerging Markets Debt

Strategies Head, seeks risk-adjusted returns through a diversified portfolio of fixed income and FX (with an EM debt bias), taking long/short positions across asset classes.





Iowa PERS

# CEM Investment Benchmarking Report DB - 2024

December 5, 2025

# Key Takeaways

## Returns

- Your 5-year net total return was 7.6%. This was above both the U.S. Public median of 7.5% and the peer median of 6.3%.
- Your 5-year policy return was 6.8%. This was above both the U.S. Public median of 6.6% and the peer median of 5.0%.

## Value added

- Your 5-year net value added was 0.8%. This was equal to the U.S. Public median of 0.8% and above the peer median of 0.7%.

## Cost

- Your investment cost of 44.7 bps was below your benchmark cost of 54.0 bps. This suggests that your fund was low cost compared to your peers.
- Your fund was below benchmark cost because it had a lower cost implementation style.
- Your costs increased by 13.4 bps, from 31.3 bps in 2020 to 44.7 bps in 2024, because you had a higher cost asset mix and paid more in total for similar investment styles.

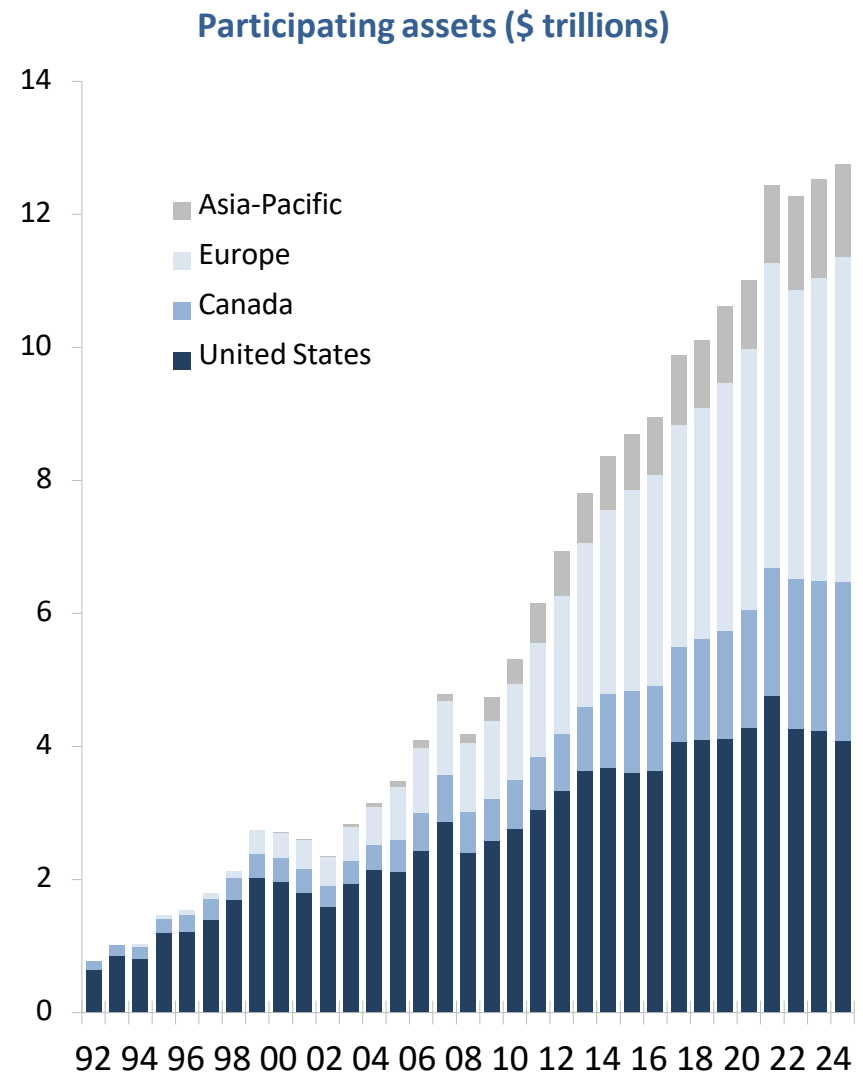
## Risk

- Your asset risk of 11.5% was equal to the U.S. Public median of 11.5%. Your asset-liability risk of 14.6% was above the U.S. Public median of 12.5%.
- Your 10-year realized Sharpe ratio of 0.66 was above the U.S. Public median of 0.63.
- Your 10-year realized information ratio of 0.48 was above the U.S. Public median of 0.33.

## This benchmarking report compares your cost and performance to the 249 funds in CEM's extensive pension database.

- 133 U.S. pension funds participate. The median U.S. fund had assets of \$8.5 billion and the average U.S. fund had assets of \$30.8 billion. Total participating U.S. assets were \$4.1 trillion.
- 60 Canadian funds participate with assets totaling \$2.4 trillion.
- 45 European funds participate with aggregate assets of \$4.9 trillion. Included are funds from the Netherlands, Norway, Sweden, Finland, Ireland, Denmark and the UK.
- 8 Asia-Pacific funds participate with aggregate assets of \$1.4 trillion. Included are funds from New Zealand, South Korea, and Australia.
- 3 funds from other regions participate.

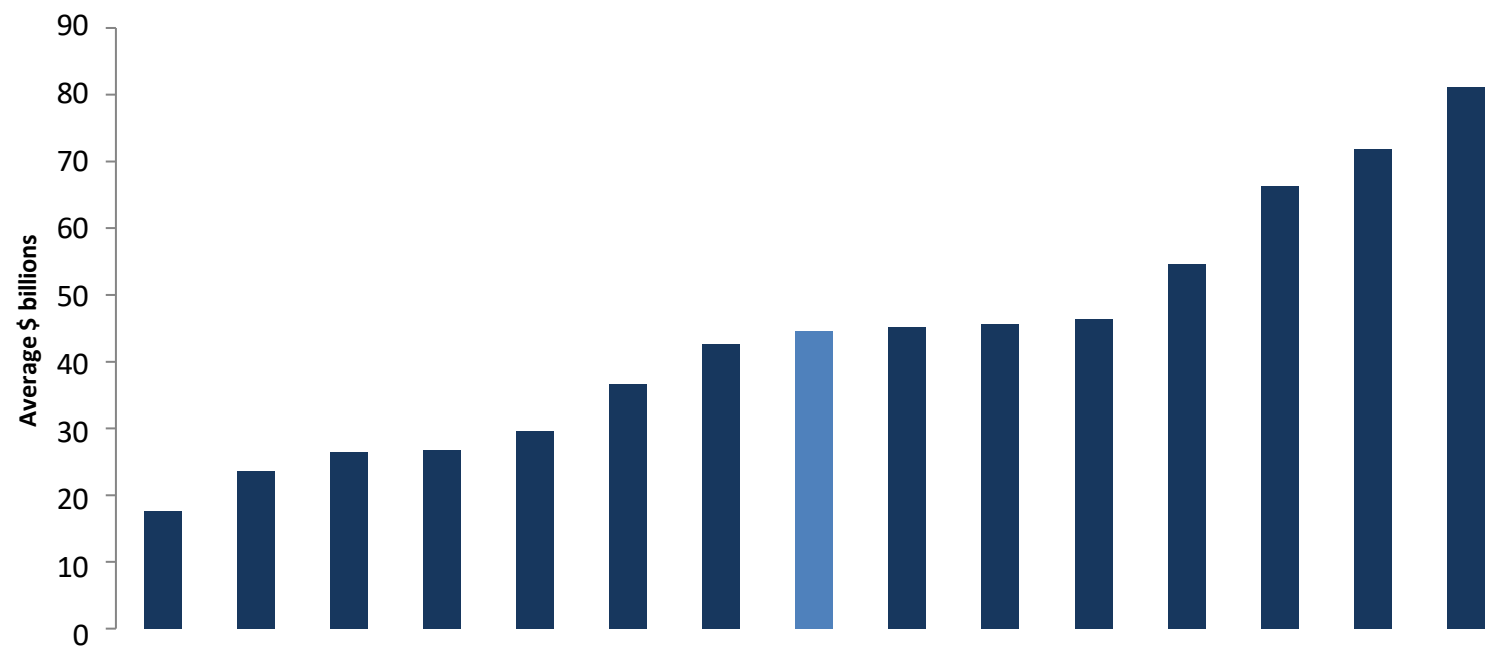
The most meaningful comparisons for your returns and value added are to the U.S. Public universe, which consists of 38 funds. The U.S. Public universe assets totaled \$3.0 trillion and the median fund had assets of \$45.3 billion.



The most valuable comparisons for cost performance are to your custom peer group because size impacts costs.

Peer group for Iowa Public Employees' Retirement System

- 15 U.S. sponsors from \$17.6 billion to \$81.2 billion
- Median size of \$44.6 billion versus your \$44.6 billion



To preserve client confidentiality, given potential access to documents as permitted by the Freedom of Information Act, we do not disclose your peers' names in this document.



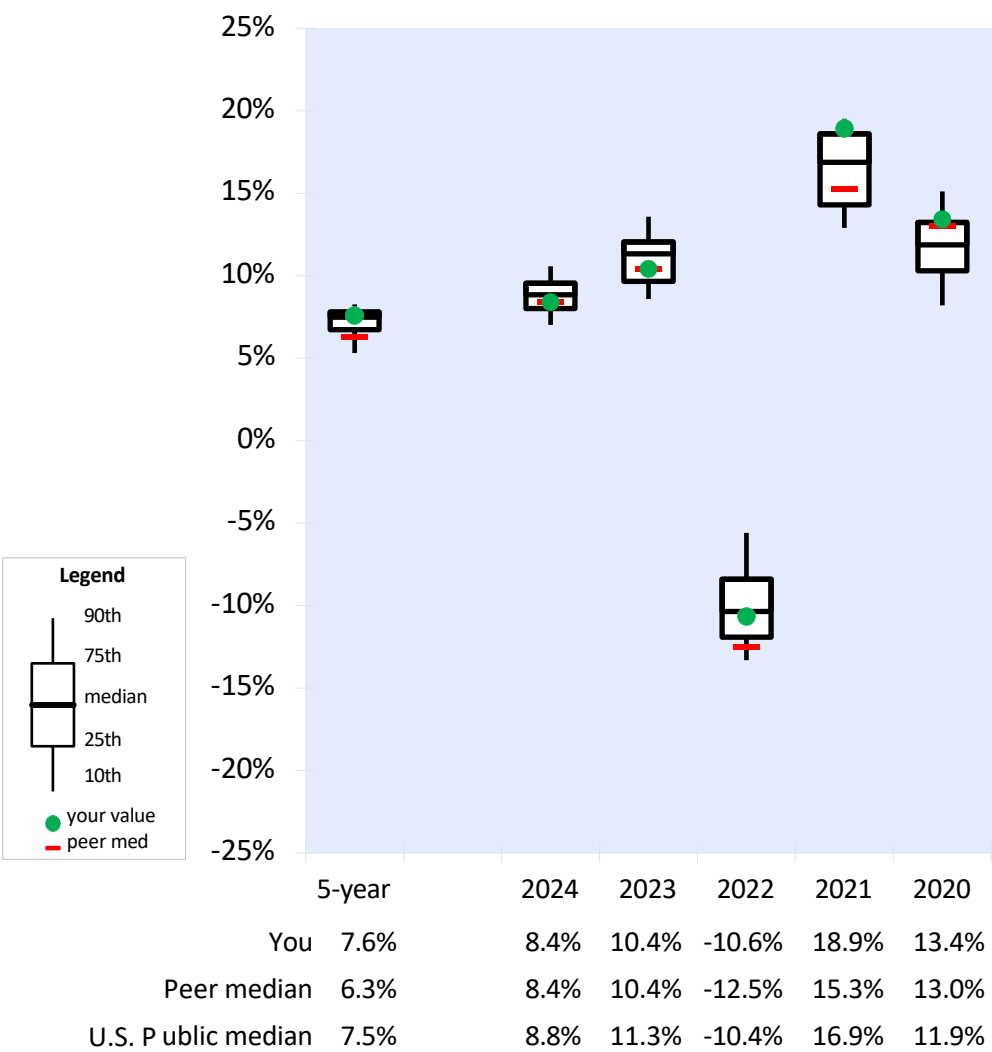
# Your 5-year net total return of 7.6% was above both the U.S. Public median of 7.5% and the peer median of 6.3%.

Total returns, by themselves, provide little insight into the reasons behind relative performance. Therefore, we separate total return into its more meaningful components: policy return and value added.

	Your 5-year
Net total fund return	7.6%
- Policy return	6.8%
= Net value added	0.8%

This approach enables you to understand the contribution from both policy mix decisions (which tend to be the board's responsibility) and implementation decisions (which tend to be management's responsibility).

U.S. Public net total returns - quartile rankings



# Your 5-year policy return of 6.8% was above both the U.S. Public median of 6.6% and the peer median of 5.0%.

Your policy return is the return you could have earned passively by indexing your investments according to your policy mix.

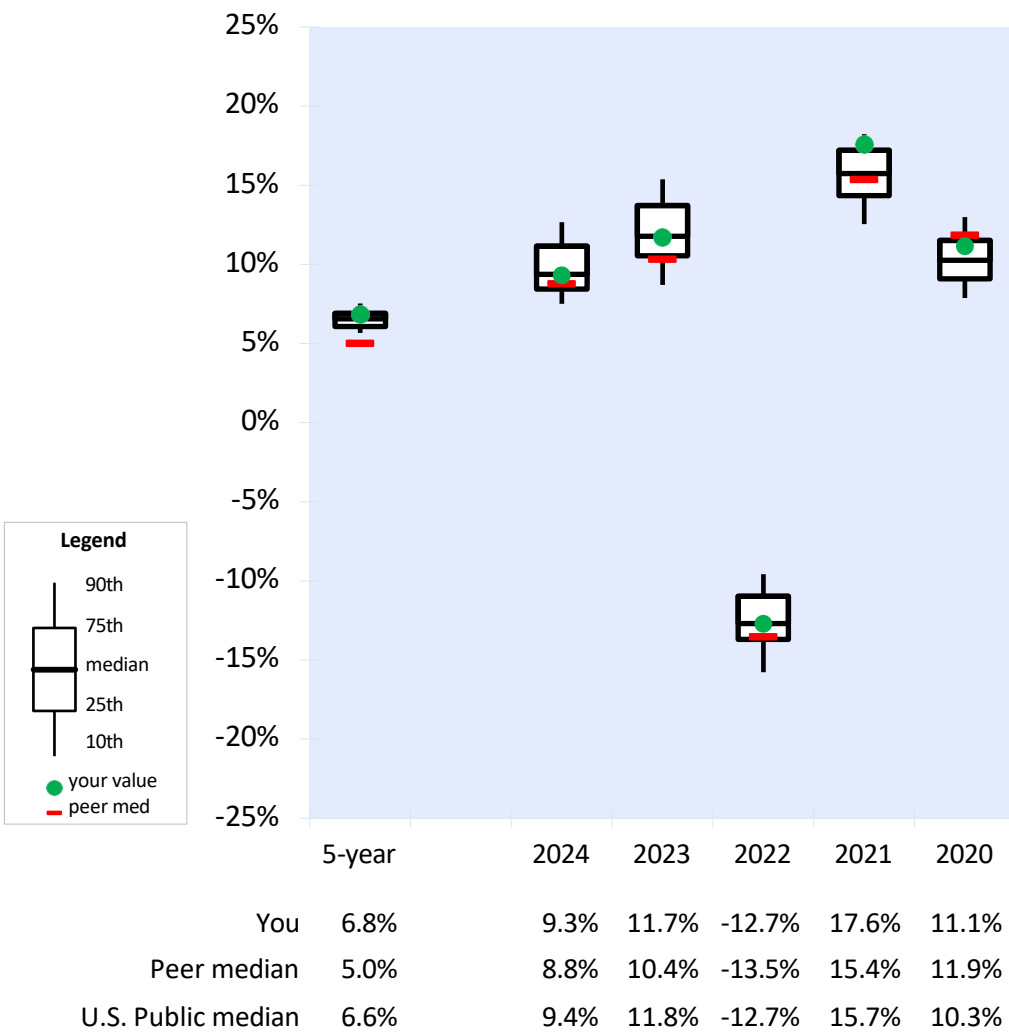
Having a higher or lower relative policy return is not necessarily good or bad. Your policy return reflects your investment policy, which should reflect your:

- Long term capital market expectations
- Liabilities
- Appetite for risk

Each of these three factors is different across funds. Therefore, it is not surprising that policy returns often vary widely between funds.

To enable fairer comparisons, the policy returns of all participants, including your fund, were adjusted to reflect private equity benchmarks based on lagged, investable, public-market indices. Prior to this adjustment, your 5-year policy return was 7.5%, 0.6% higher than your adjusted 5-year policy return of 6.8%. Mirroring this, your 5-year total fund net value added would be 0.6% lower.

U.S. Public policy returns - quartile rankings



## Your 5-year policy return of 6.8% was slightly above the U.S. Public median of 6.6% primarily because of:

- The positive impact of a higher benchmark return in total fixed income than the U.S. Public average.
- The positive impact of a higher allocation to private equity, one of the higher returning asset classes over the past 5 years.
- The offsetting impact of a higher allocation to total fixed income, one of the lower returning asset classes over the past 5 years.

1. 5-year weights are based only on plans with 5 years of continuous data.

2. Other fixed income includes: Fixed income - U.S. gov't, Fixed income - U.S. credits and Fixed Inc. - Inflation indexed. Other real assets include: Commodities and Natural resources.

3. A value of 'n/a' is shown if asset class returns are not available for the full 5 years or if they are broad and incomparable.

	5-year average policy mix <sup>1</sup>			5-year benchmark return	
	Your Fund	U.S. Publ Avg.	More/ Less	Your Fund	U.S. Publ Avg.
Stock - U.S.	24%	16%	8%	14.1%	13.5%
Stock - EAFE	0%	4%	-4%	n/a <sup>3</sup>	5.1%
Stock - ACWI x U.S.	18%	6%	12%	4.1%	4.3%
Stock - Global	0%	15%	-15%	n/a <sup>3</sup>	10.1%
Other Stock	0%	4%	-4%	n/a <sup>3</sup>	n/a <sup>3</sup>
Total Stock	42%	45%	-3%	10.1%	10.0%
Fixed Income - U.S.	25%	16%	9%	-0.2%	-0.3%
Fixed Income - Long bonds	0%	1%	-2%	n/a <sup>3</sup>	-6.6%
Cash	1%	-1%	2%	2.5%	2.4%
Other Fixed Income <sup>2</sup>	3%	8%	-5%	n/a <sup>3</sup>	n/a <sup>3</sup>
Total Fixed Income	30%	24%	6%	0.3%	-0.3%
Hedge funds	0%	3%	-3%	n/a <sup>3</sup>	4.2%
Infrastructure	1%	2%	-1%	n/a <sup>3</sup>	7.3%
Real estate incl. REITs	6%	10%	-3%	2.8%	3.0%
Other Real Assets <sup>2</sup>	1%	2%	-1%	n/a <sup>3</sup>	n/a <sup>3</sup>
Private equity	16%	12%	4%	9.8%	9.8%
Private debt	4%	3%	1%	7.3%	6.2%
Total	100%	100%			

# Net value added is the component of total return from active management. Your 5-year net value added was 0.8%.

Net value added equals total net return minus policy return.

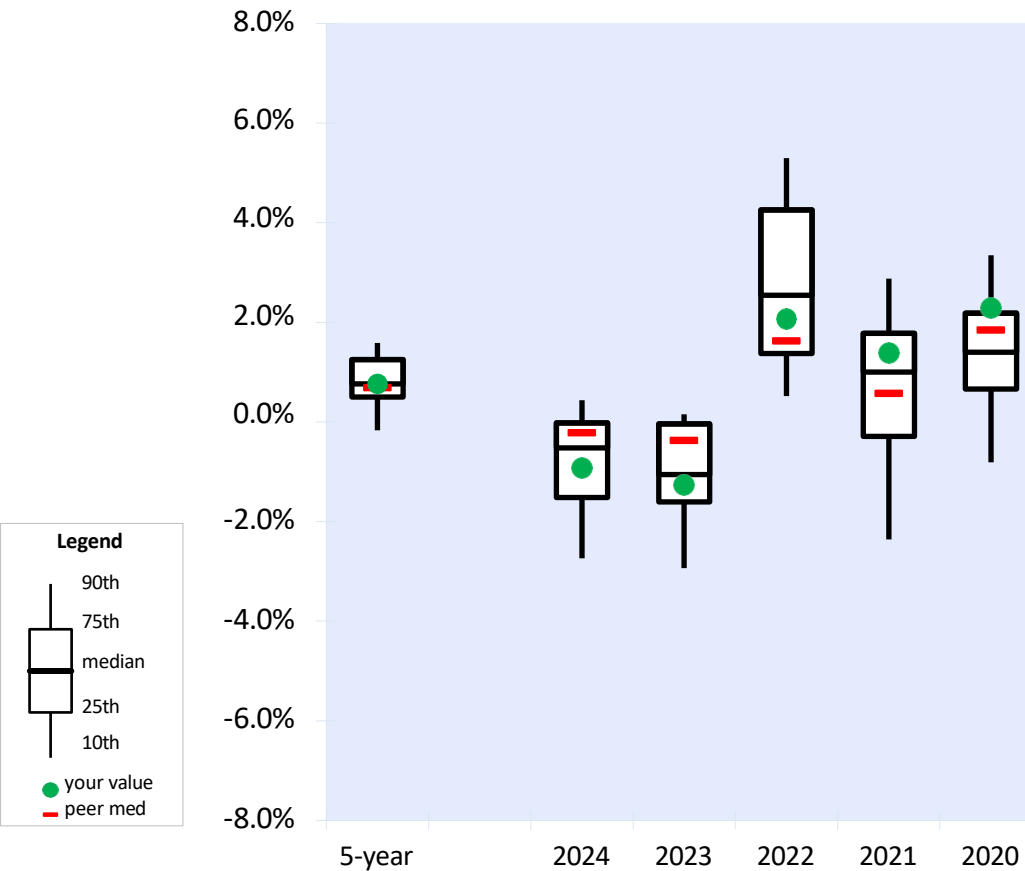
Value added for Iowa Public Employees' Retirement System

Year	Net return	Policy return	Net value added
2024	8.4%	9.3%	-0.9%
2023	10.4%	11.7%	-1.3%
2022	-10.6%	-12.7%	2.1%
2021	18.9%	17.6%	1.4%
2020	13.4%	11.1%	2.3%
5-Year	7.6%	6.8%	0.8%

Your 5-year net value added of 0.8% compares to a median of 0.7% for your peers and 0.8% for the U.S. Public universe.

To enable fairer comparisons, the value added for each participant including your fund was adjusted to reflect private equity benchmarks based on lagged, investable public market indices. Prior to this adjustment, your fund's 5-year total fund net value added was 0.1%.

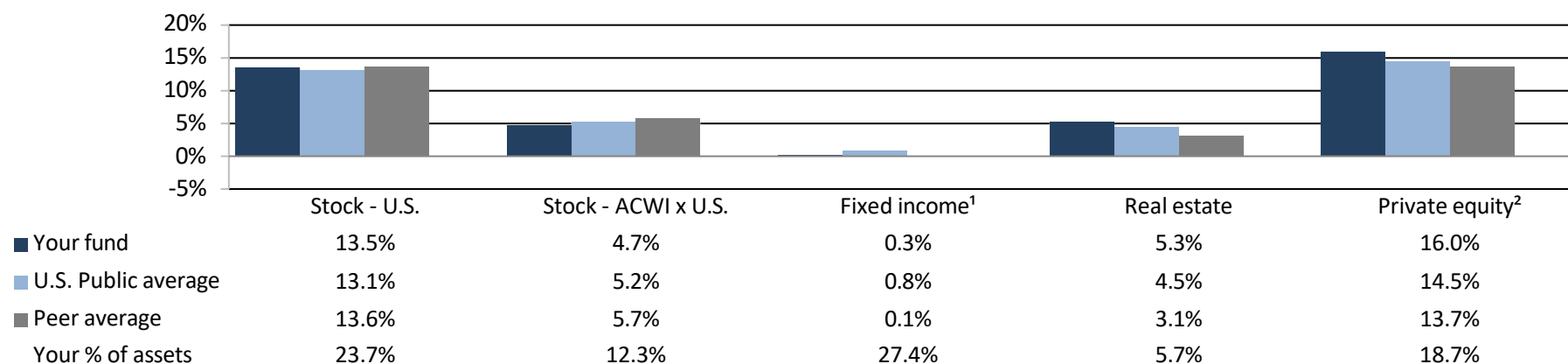
U.S. Public net value added - quartile rankings



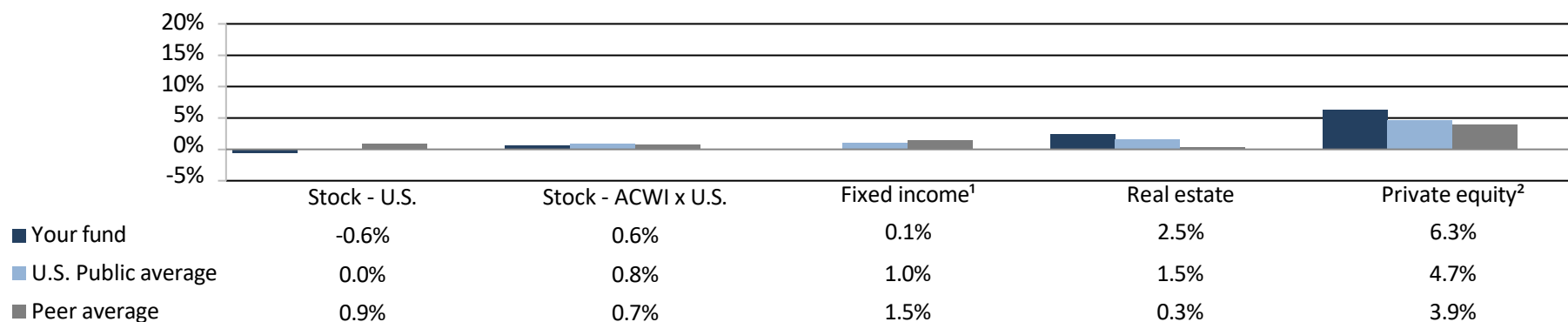
You	0.8%	-0.9%	-1.3%	2.1%	1.4%	2.3%
Peer median	0.7%	-0.2%	-0.4%	1.6%	0.6%	1.9%
U.S. Public median	0.8%	-0.5%	-1.1%	2.5%	1.0%	1.4%

# Comparisons of your 5-year net return and net value added by major asset class:

## 5-year average net return by major asset class



## 5-year average net value added by major asset class



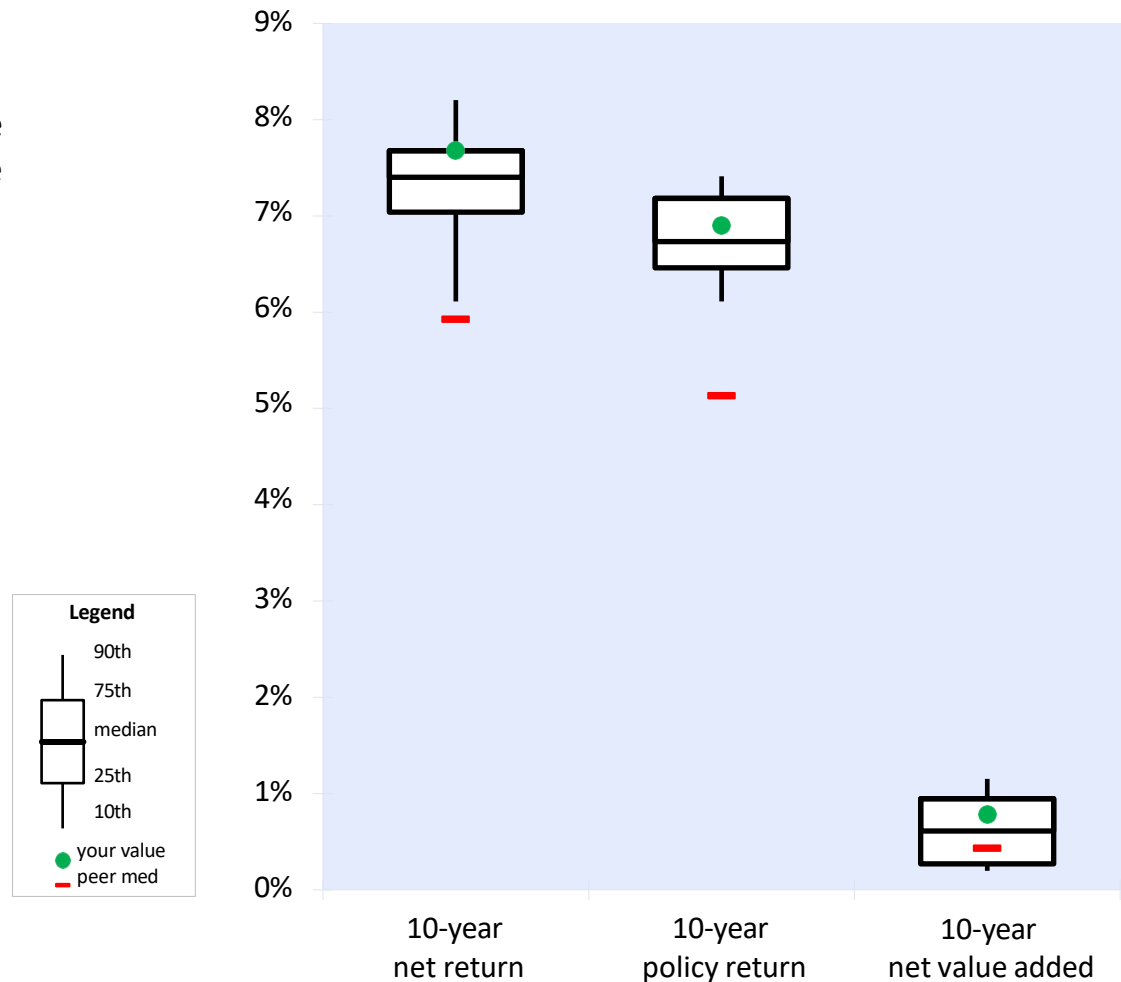
1. Excludes cash and leverage.

2. To enable fairer comparisons, the private equity benchmarks of all participants, including your fund were adjusted to reflect lagged, investable, public-market indices. Prior to this adjustment, your fund's 5-year private equity net value added was 0.3%.

## Your long-term net return of 7.7% was above the U.S. Public median of 7.4%.

- Your 10-year net return of 7.7% was above the U.S. Public median of 7.4% and above the peer median of 5.9%.
- Your 10-year policy return of 6.9% was above the U.S. Public median of 6.7% and above the peer median of 5.1%.
- Your 10-year net value added of 0.8% was above the U.S. Public median of 0.6% and above the peer median of 0.4%.

**U.S. Public long term returns and value add - quartile rankings**  
(10-year period ending December 31, 2024)



## Your investment costs, excluding private asset performance fees, were \$193.8 million or 44.7 basis points in 2024.

Asset management costs by asset class and style (\$000s)	Internal Overseeing of external	External Management			Total
		Passive fees	Active base fees	Perform. fees <sup>2</sup>	
Stock - U.S. broad/all		292	130	12,019	12,441
Stock - Emerging		146	628	3,683	4,457
Stock - ACWI x U.S.		442	213	9,860	10,516
Fixed income - U.S.		-335		3,567	3,232
Fixed income - Emerging				282	282
Fixed income - High yield			519	280	799
Cash			251		251
Infrastructure <sup>2</sup>			2,330	658	2,330
Natural resources <sup>2</sup>			2,374	165	2,374
Real estate ex-REITs <sup>2</sup>			9,262	1,214	9,262
Private equity - Diversified - LP/Value add <sup>1 2</sup>	10,002		105,234	81,550	115,236
Private equity - Diversified - Co-invest. <sup>2</sup>	1,685				1,685
Private credit - Core/Evergreen <sup>2</sup>			21,889		21,889
Derivatives/Overlays	466	148		4,319	4,933
Total excluding private asset performance fees					189,688
					43.7bp
<b>Oversight, custodial and other costs <sup>3</sup></b>					
Oversight of the fund					2,501
Trustee & custodial					684
Consulting and performance measurement					260
Audit					201
Other					426
Total oversight, custodial & other costs					4,072
					0.9bp
Total investment costs (excl. transaction costs & private asset performance fees)					193,760
					44.7bp

### Footnotes

1. Fees are the weighted average of the deal-based management costs calculated using the detailed limited partnership survey provided.

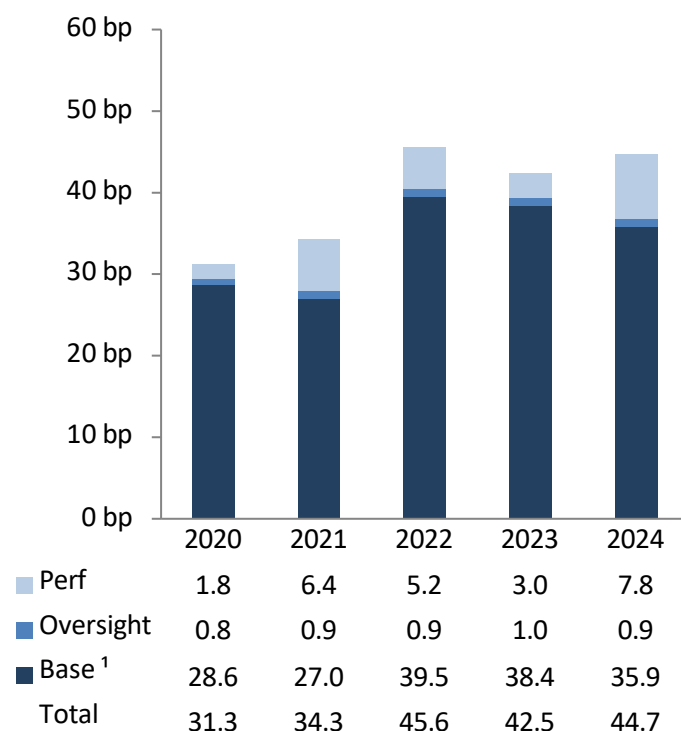
Refer to Appendix A for full details regarding the different forms of cost completion.

2. Total cost excludes carry/performance fees for real estate, infrastructure, natural resources and private equity. Performance fees are included for the public market asset classes and hedge funds.

3. Excludes non-investment costs, such as benefit insurance premiums and preparing cheques for retirees.

**Your costs increased by 13.4 bps, from 31.3 bps in 2020 to 44.7 bps in 2024, because you had a higher cost asset mix and paid more in total for similar investment styles.**

**Trend in cost**



**Reasons why your costs increased by 13.4 bps**

			Impact in bps
1. Higher cost asset mix			
• More Private equity: 2020 14% vs 2024 18%			7.0
• More Private debt: 2020 3% vs 2024 6%			2.8
• All other mix changes			0.5
			<hr/> 10.3
2. Lower cost implementation style			(0.5)
3. Paid more in total for similar investment styles			
	<u>2020 cost</u>	<u>2024 cost</u>	
• Higher external active U.S. Broad/All Stock costs	3.0 bp	47.8 bp	2.6
• Higher external active ACWI X U.S. Stock costs	2.5 bp	59.9 bp	2.2
• Lower Private Equity LP/Value add base fees	181.6 bp	169.6 bp	(1.9)
• Higher external active U.S. Fixed Income costs	2.7 bp	23.0 bp	0.7
• Higher oversight, custodial & other costs	0.8 bp	0.9 bp	0.1
• All other differences			(0.2)
			<hr/> 3.6
<b>Total increase</b>			<hr/> <b>13.4</b>

The cost trend model is based on your average assets.

1. Includes fees for managing internal assets and internal costs of monitoring external programs, where allocated.

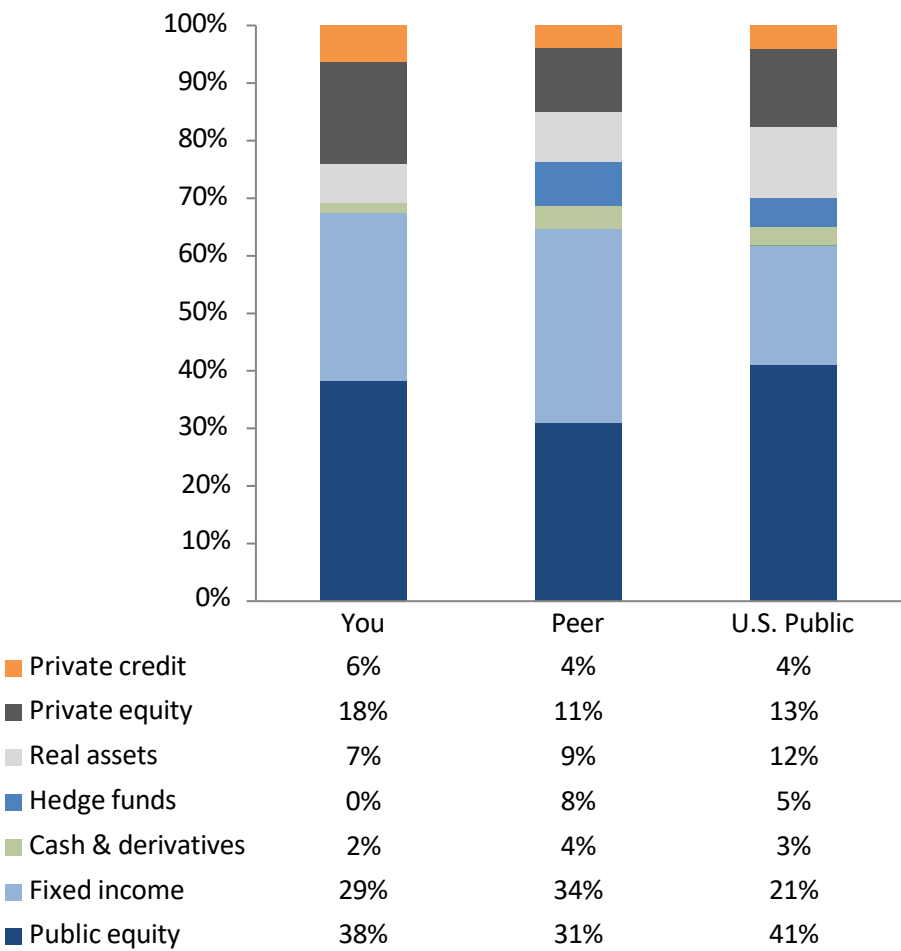


# High-cost assets equaled 31% of your assets at the end of 2024 versus a peer average of 31%.

Alternative asset classes, such as, real estate (excl. REITs), infrastructure, hedge funds, private equity and private credit are typically higher cost asset classes than public asset classes such as public equity and fixed income. You had a combined public market allocation, including cash and derivatives, of 69% at the end of 2024 versus a peer average of 69%.

Your alternative asset classes represent 31% of your assets, but 79% of your total costs.

2024 Actual asset allocation

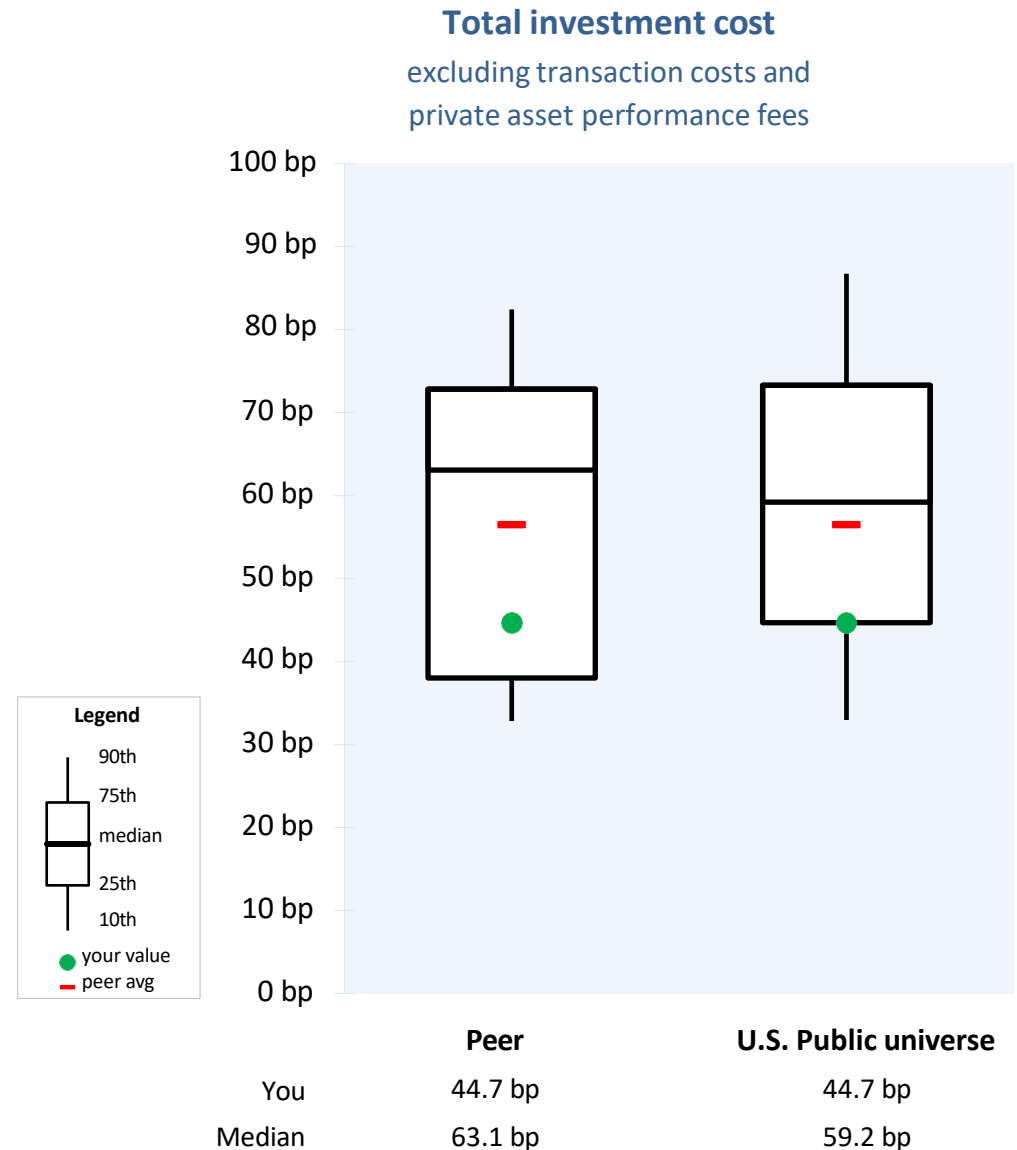


## Before adjusting for asset mix differences, your total investment cost of 44.7 bps was below the peer median of 63.1 bps.

Differences in total investment cost are often caused by two factors that are often outside of management's control:

- Asset mix - private asset classes are generally more expensive than public asset classes.
- Fund size - bigger funds have advantages of scale.

Therefore, to assess whether your costs are high or low given your unique asset mix and size, CEM calculates a benchmark cost for your fund. This analysis is shown on the following page.



**Benchmark cost analysis suggests that, after adjusting for fund size and asset mix, your fund was below benchmark cost by 9.4 basis points in 2024.**

Your benchmark cost is an estimate of what your cost would be given your actual asset mix and the median costs that your peers pay for similar services. It represents the cost your peers would incur if they had your actual asset mix.

Your total cost of 44.7 bp was below your benchmark cost of 54.0 bp. Thus, your cost savings were 9.4 bp.

**Your cost versus benchmark**

	\$000s	basis points
Your total investment cost	193,760	44.7 bp
Your benchmark cost	234,545	54.0 bp
Your excess cost	(40,785)	(9.4) bp

## Your fund was below benchmark cost because it had a lower cost implementation style.

### Reasons for your low cost status

	Excess Cost/ (Savings)	
	\$000s	bps
1. Lower cost implementation style		
• Less active management, more lower cost passive	(25,539)	(5.9)
• More external management, less lower cost internal	1,117	0.3
• Less LPs as a percentage of external	(11,070)	(2.6)
• Less fund of funds	(1,534)	(0.4)
• More co-investment as a percentage of LP/Co	(7,513)	(1.7)
• More overlays	2,656	0.6
	(41,883)	(9.7)
2. Paying more than peers for some services		
• External investment management costs	5,488	1.3
• Oversight, custodial & other costs	(4,390)	(1.0)
	1,098	0.3
Total savings	(40,785)	(9.4)

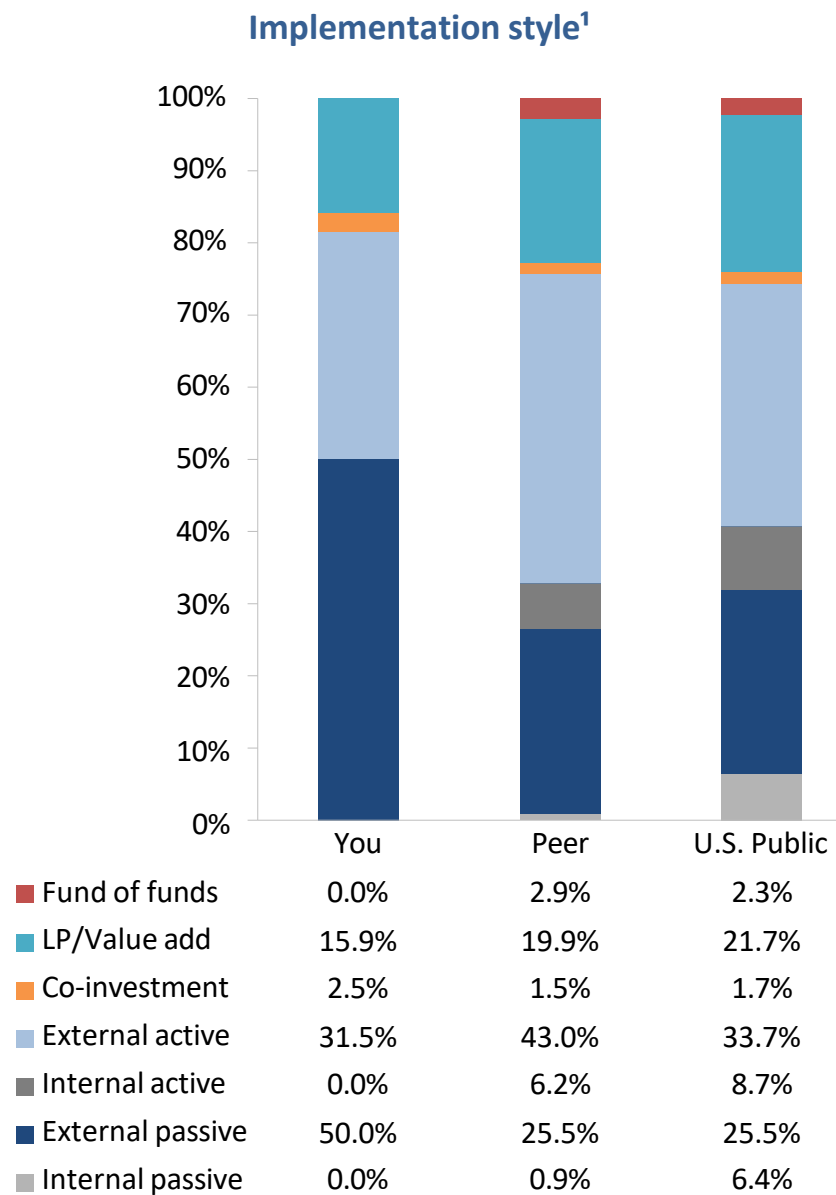
## Your implementation style was 9.7 bps lower cost than the peer average.

Implementation style is the way in which your fund implements asset allocation. Each implementation choice has a cost. Your first choice is how much to implement passively or actively. The table below summarizes your aggregate choices versus peers and their cost impact.

Implementation choices	Impact
Less active, more passive	(5.9) bp
Less internal as a % of passive	0.1 bp
Less internal as a % of active	0.2 bp
Less LPs as a % of external	(2.6) bp
Less fund of funds	(0.4) bp
More co-investment as a percentage of LP/Co	(1.7) bp
More overlays	0.6 bp
<b>Total impact</b>	<b>(9.7) bp</b>

The peer and universe style was adjusted to match your asset mix. It equals their average style for each asset class weighted by your fee basis for the asset class. It shows how the average peer would implement your asset mix.

1. Implementation style is shown as a % of total fund fee basis because the fee basis is the primary driver of cost for private assets (e.g., new private equity LP commitments increase costs before LP NAV increases). Style weights are based on average holdings. Cash and derivatives are excluded.



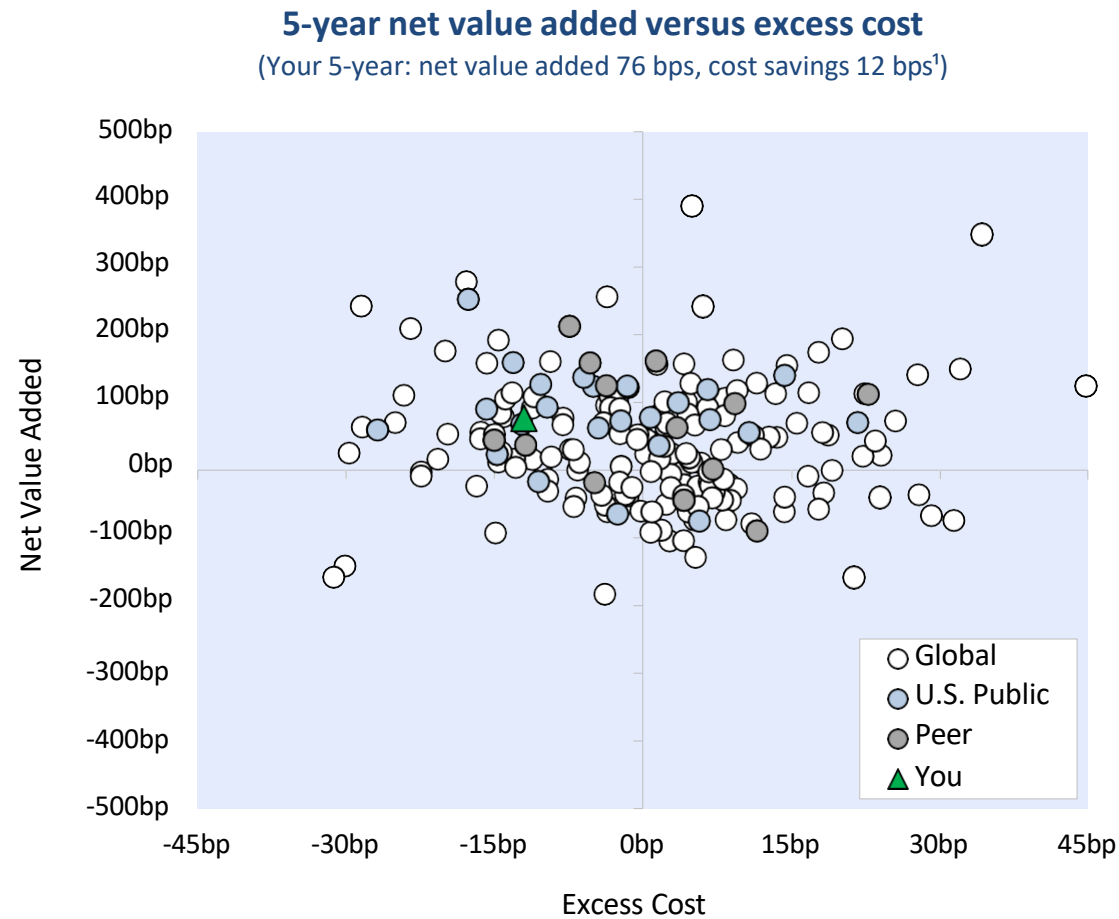
## The table below summarizes why your fund is high/low cost relative to the peer-median by asset class.

### Why are you high/(low) cost by asset class?

Asset class/category	Style weighted cost			Your average assets (or fee basis) <sup>2</sup>	Due to impl. style	Due to paying more/(less)	Total more/(less)
	Your cost	Peer median <sup>1</sup> = Benchmark	More/(less)				
	(A)	(B)	(C = A - B)	(D)			(C x D)
<b>Asset management costs</b>							
Stock - U.S. broad/all	12.1 bp	22.6 bp	(10.5) bp	10,248	(9,354)	(1,408)	(10,762)
Stock - Emerging	24.5 bp	44.0 bp	(19.5) bp	1,819	(2,776)	(768)	(3,544)
Stock - ACWI x U.S.	22.6 bp	33.1 bp	(10.5) bp	4,652	(5,851)	980	(4,871)
Fixed income - U.S.	2.9 bp	8.8 bp	(5.9) bp	11,072	(6,725)	194	(6,531)
Fixed income - Emerging	6.3 bp	29.9 bp	(23.6) bp	446	0	(1,053)	(1,053)
Fixed income - High yield	9.1 bp	28.3 bp	(19.2) bp	880	130	(1,818)	(1,688)
Real estate ex-REITs	38.2 bp	82.6 bp	(44.5) bp	2,427	(3,630)	(7,167)	(10,797)
Infrastructure	70.9 bp	95.8 bp	(24.9) bp	329	(680)	(139)	(818)
Natural resources	71.8 bp	102.4 bp	(30.5) bp	330	(1,276)	267	(1,009)
Private equity - Diversified	148.5 bp	146.6 bp	1.9 bp	7,876	(9,046)	10,512	1,466
Private credit	84.6 bp	82.5 bp	2.2 bp	2,587	(5,330)	5,887	556
Derivatives/Overlays	1.1 bp	0.5 bp	0.6 bp	43,394	2,656	0	2,656
Total asset management	43.7 bp	52.1 bp	(8.4) bp	43,394	(41,883)	5,488	(36,395)
<b>Oversight, custody and other costs<sup>3</sup></b>							
Oversight of the Fund	0.6 bp	0.9 bp	(0.4) bp				
Trustee & Custodial	0.2 bp	0.3 bp	(0.1) bp				
Consulting	0.1 bp	0.2 bp	(0.2) bp				
Audit	0.0 bp	0.1 bp	(0.0) bp				
Other	0.1 bp	0.1 bp	0.0 bp				
Total oversight, custody & other	0.9 bp	1.9 bp	(1.0) bp	43,394	n/a	(4,390)	(4,390)
Total	44.7 bp	54.0 bp	(9.4) bp	43,394	(41,883)	1,098	(40,785)

1. The weighted peer median cost for asset management is the style-weighted average of the peer median costs for all implementation styles (e.g., internal passive, external active, fund of fund, etc.).
2. Total fund average holdings is used as the base when calculating the relative cost impact of the overlay programs.
3. Benchmarks for oversight total and individual lines are based on peer medians. Sum of the lines may be different from the total.

## Your 5-year performance placed in the positive value added, low cost quadrant of the cost-effectiveness chart.



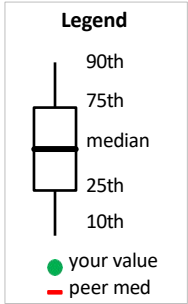
1. Your 5-year savings of 12.0 basis points is the average of your peer-based savings for the past 5 years.

	5-year <sup>1</sup>	2024	2023	2022	2021	2020
Net value added	76.3bp	(92.5) bp	(126.5) bp	206.7bp	138.4bp	228.7bp
Excess cost	(12.0) bp	(9.4) bp	(14.4) bp	(13.4) bp	(9.0) bp	(14.0) bp

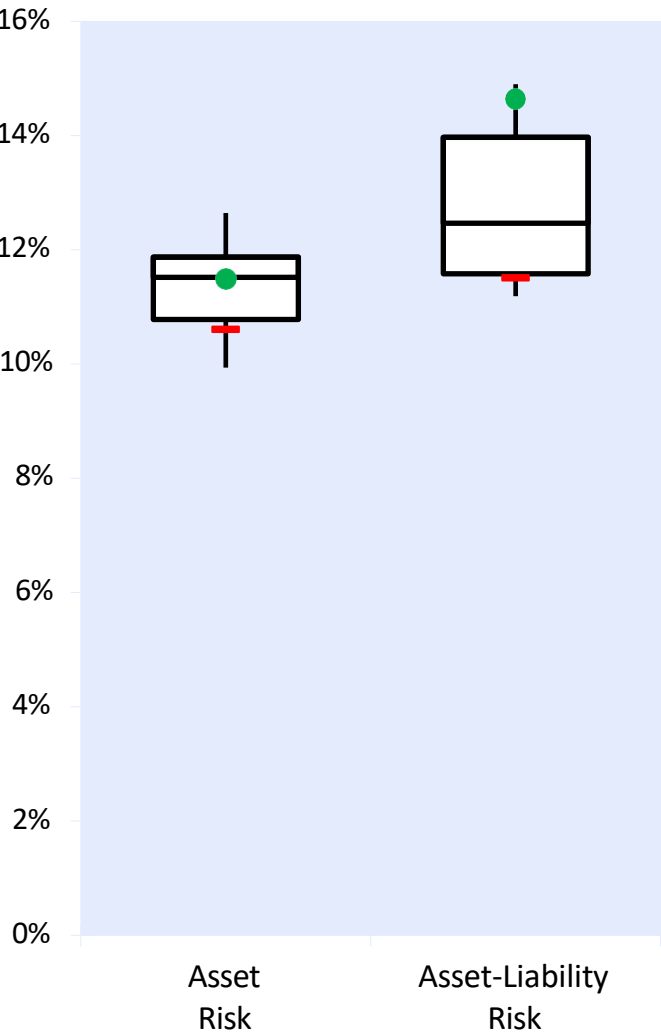
**Your asset risk of 11.5% was equal to the U.S. Public median of 11.5% and your asset-liability risk of 14.6% was above the U.S. Public median of 12.5%.**

Asset risk is the standard deviation of your policy return. It is based on the historical variance of, and covariance between, the asset classes in your policy mix.

Asset-liability risk is the standard deviation of funded status caused by market factors. It is a function of the standard deviations of your asset risk, your marked-to-market liabilities and the correlation between the two.



**U.S. Public risk levels at December 31, 2024**



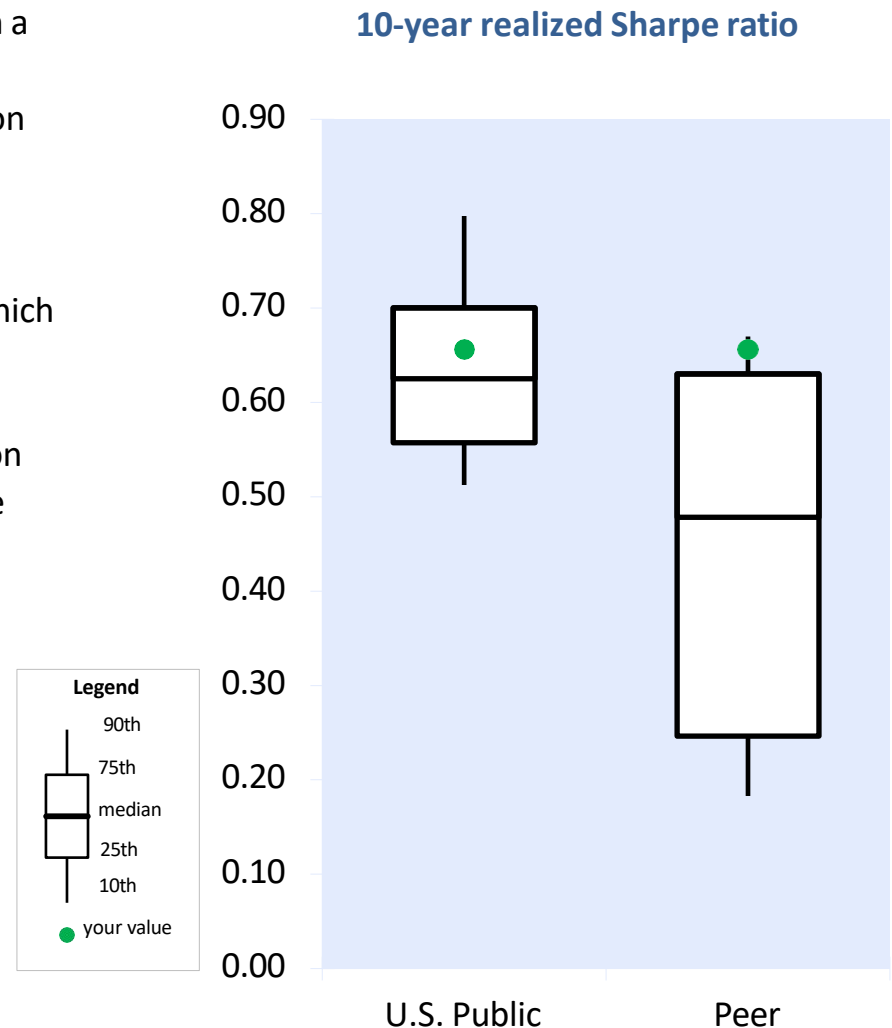


## Your 10-year realized Sharpe ratio of 0.66 was above the U.S. Public median of 0.63.

Realized Sharpe ratio measures your portfolio's performance on a risk-adjusted basis. It is calculated as your portfolio's actual net return, minus the risk-free rate, divided by the standard deviation (often called volatility) of your portfolio's excess return.

Sharpe ratios tend to be positive when equity markets have positive returns. Your 10-year realized Sharpe ratio was 0.66, which was higher than the U.S. Public universe median of 0.63.

A higher Sharpe ratio can be obtained through some combination of higher net returns and lower volatility. Lower volatility can be the result of either having less risky assets or having better diversification.



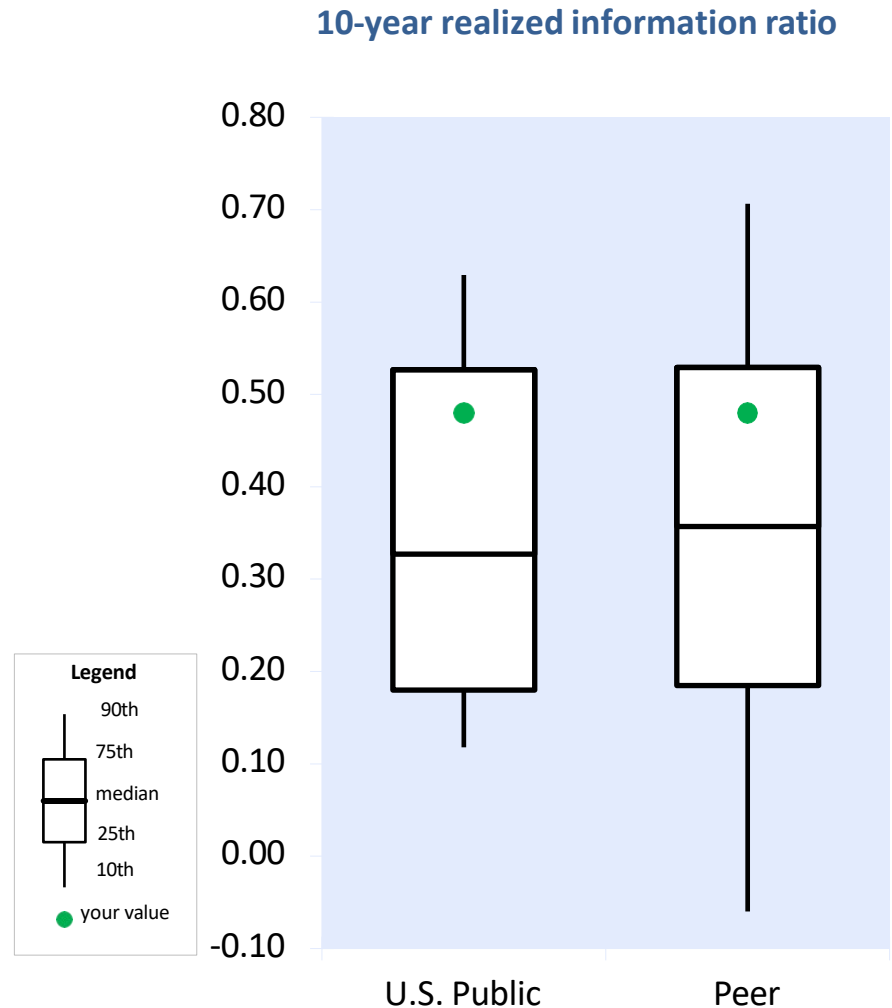
## Your 10-year realized information ratio of 0.48 was above the U.S. Public median of 0.33.

Realized information ratio measures your portfolio's active return per unit of active risk. It is calculated as your portfolio's net value added divided by the standard deviation of your portfolio's net value added, which is often called the active risk or tracking error of the portfolio.

Your 10-year realized information ratio of 0.48 was above the U.S. Public median of 0.33.

Information Ratio is positive when net value added is positive, and it is negative when net value added is negative. The median 10-year information ratio in the U.S. Public universe was 0.33, meaning that most plans managed to generate positive net value added.

Using information ratio as a measure of risk-adjusted performance allows the comparison of success in generating positive net value between funds with different levels of active risk.



# Summary of key takeaways

## Returns

- Your 5-year net total return was 7.6%. This was above both the U.S. Public median of 7.5% and the peer median of 6.3%.
- Your 5-year policy return was 6.8%. This was above both the U.S. Public median of 6.6% and the peer median of 5.0%.

## Value added

- Your 5-year net value added was 0.8%. This was equal to the U.S. Public median of 0.8% and above the peer median of 0.7%.

## Cost

- Your investment cost of 44.7 bps was below your benchmark cost of 54.0 bps. This suggests that your fund was low cost compared to your peers.
- Your fund was below benchmark cost because it had a lower cost implementation style.
- Your costs increased by 13.4 bps, from 31.3 bps in 2020 to 44.7 bps in 2024, because you had a higher cost asset mix and paid more in total for similar investment styles.

## Risk

- Your asset risk of 11.5% was equal to the U.S. Public median of 11.5%. Your asset-liability risk of 14.6% was above the U.S. Public median of 12.5%.
- Your 10-year realized Sharpe ratio of 0.66 was above the U.S. Public median of 0.63.
- Your 10-year realized information ratio of 0.48 was above the U.S. Public median of 0.33.

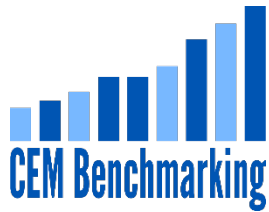
# Thank you

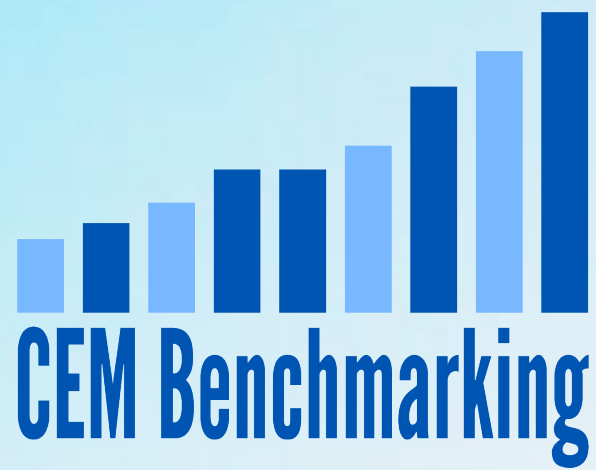


Christopher Doll  
Co-Head, Client Coverage

—

ChrisD@cembenchmarking.com  
CEMbenchmarking.com





# Private Markets - Annual Commitment Plan

CY2026

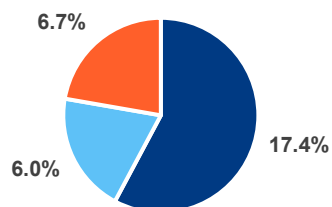
Pat Reinhardt, Marcus Dong, Craig Payne

December 5, 2025



# Portfolio Exposures

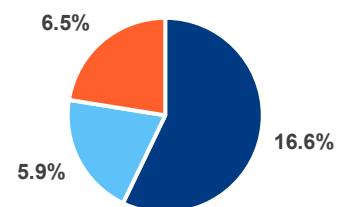
Last Year



■ Private Equity ■ Private Credit ■ Private Real Assets

Unaudited as of November 8, 2024

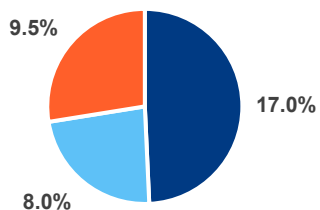
Now



■ Private Equity ■ Private Credit ■ Private Real Assets

Unaudited as of November 7, 2025

Long-Term Target



■ Private Equity ■ Private Credit ■ Private Real Assets

**Equity (-0.4%); In-line with Target (for now?)**

**Credit (-2.1%); Measured Commitments**

**Real Assets (-3.0%); Liquidations and Ramping Up**

# CY2025 Review

Asset Class	2025 Plan	2025 Actual <sup>1</sup>
Private Equity	\$700	\$700
Private Credit	\$650	\$120 <sup>2</sup>
Private Real Assets	\$1,000	\$279 <sup>3</sup>
<b>Private Market Program</b>	<b>\$2,350</b>	<b>\$1,099</b>

1. As of November 7, 2025

2. Includes fund commitments and IC approved co-investments

3. Includes fund commitments, IC approved co-investments, and loan paydowns in the Real Estate portfolio

- **Private Credit**

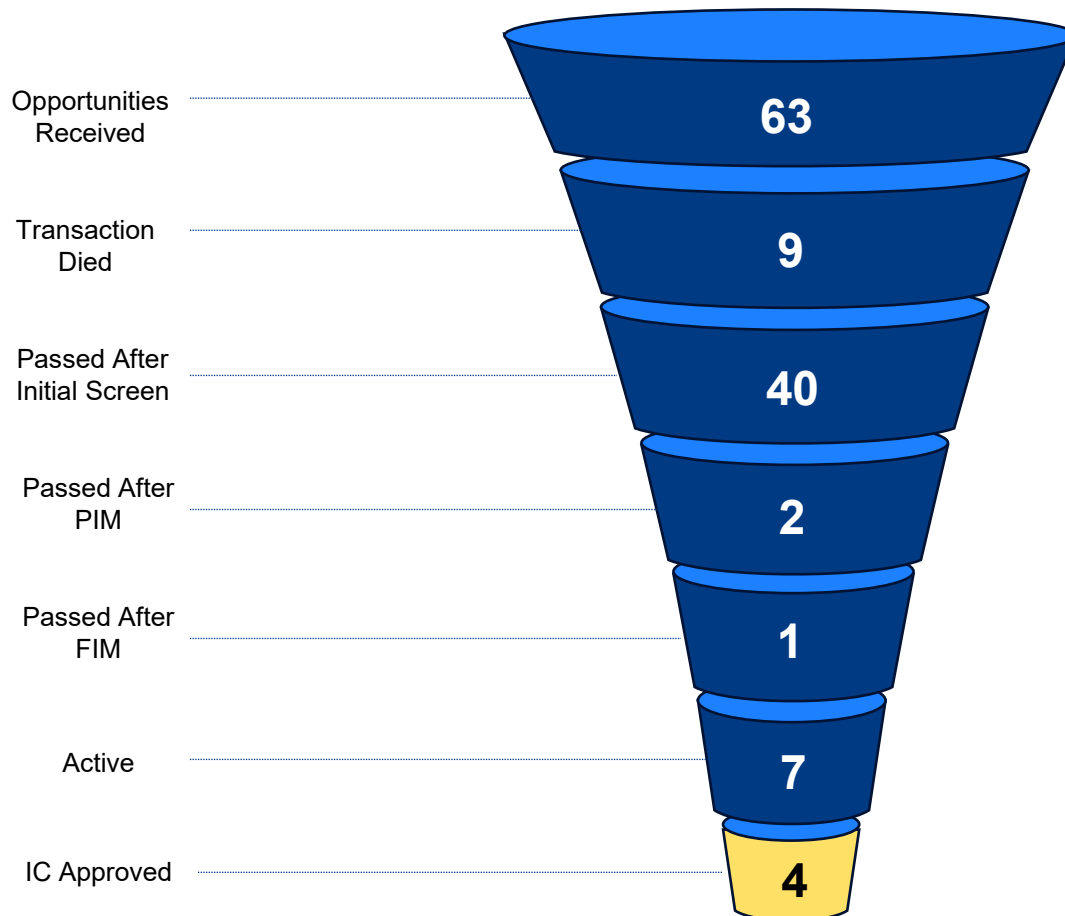
- Manager specific issues have delayed commitment decisions
- Completed one commitment to an opportunistic credit mandate
- Funded first co-investment and approved a second

- **Private Real Assets**

- Liberation day delayed due-diligence / commitments
- Completed one commitment to an infrastructure mandate
- Funded first co-investment and approved a second



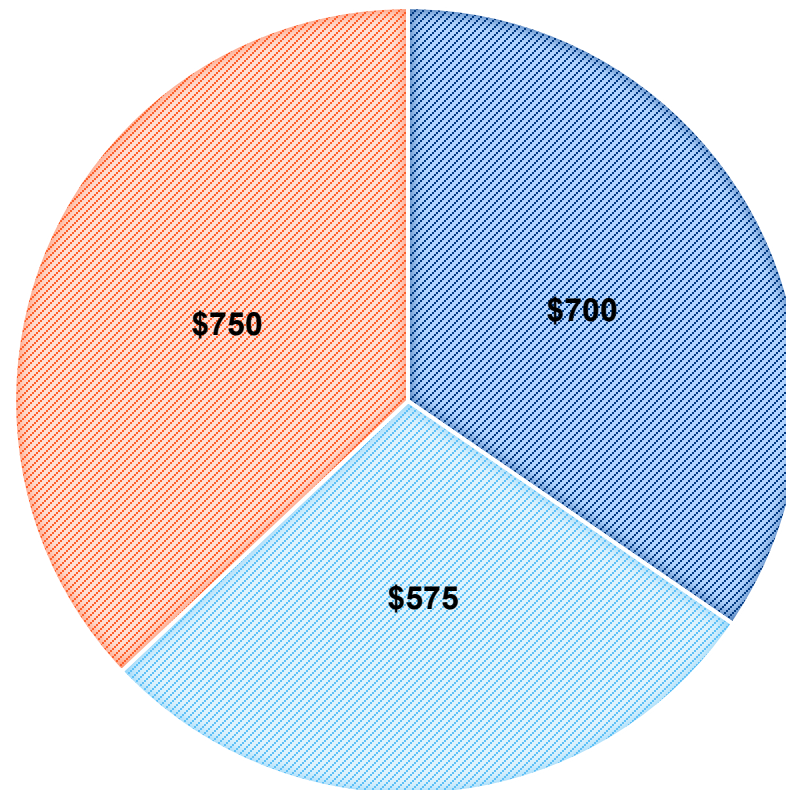
# Co-Investments – Deal Flow Statistics (since 10/24)



- Deal flow is strong across Private Credit and Real Assets
- Staff remains highly selective: Return / Risk, Deal Structures, Track Record, Timing

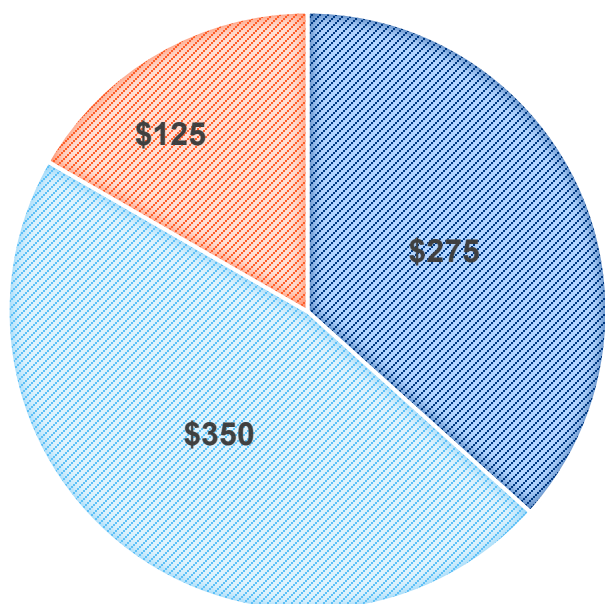
# CY2026 Anticipated Commitments (in Millions)

■ Private Equity ■ Private Credit ■ Private Real Assets



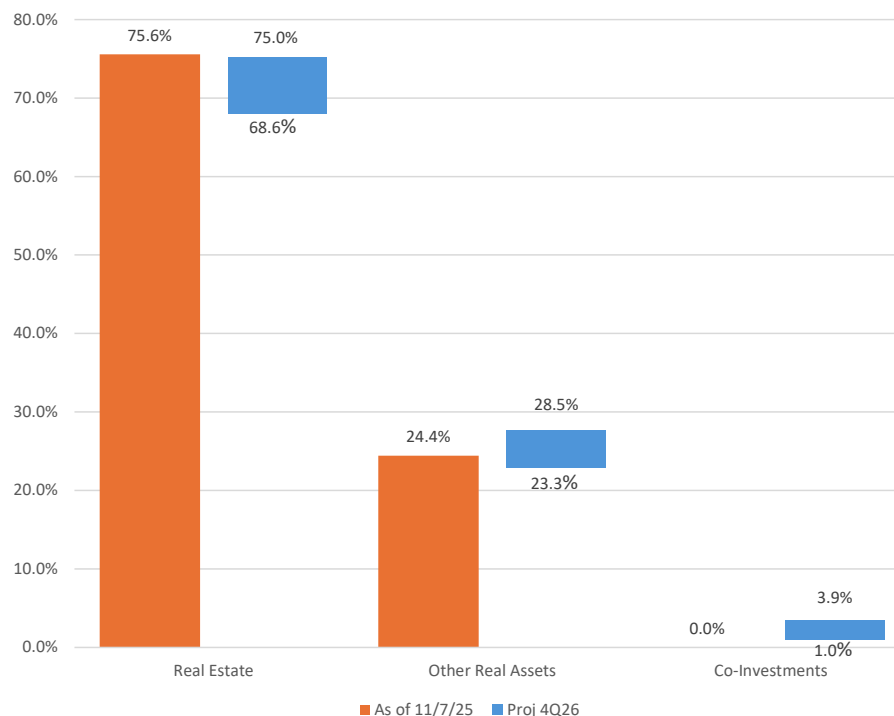
# Private Real Assets – Ramping Up

**CY2026 COMMITMENTS**  
(IN MILLIONS)



■ Real Estate    ■ Other Real Assets  
■ Co-Investments

**Sub-Portfolio Exposures\***



\* Proj 4Q26 exposure ranges represent commitments of \$0 to the maximum projected for each sub-portfolio in CY2026.

# Private Real Assets

- CY2026 – Commitments of **\$750 million**
- Real Estate (Up to \$300 million)
  - Recycle real estate disposition proceeds
  - On-board NNN real estate mandate
  - Allocations to new and existing core / core-plus real estate managers
- Other Real Assets (Up to \$600 million)
  - On-board infrastructure mandates
- Co-Investments (Up to \$125 million)
  - Anticipate 4-6 investments for CY2026

# Private Real Assets – Projected Exposure (in Millions)

Private Real Assets Current Exposure	\$3,175
Contributions from Unfunded Commitments	\$ 146
Contributions from CY2026 Commitments	\$ 304
Return of Capital	\$ 192
CY2026 Private Real Assets Exposure	\$3,432
 Total Fund Value Range <sup>1</sup>	 \$45,059 to \$52,365
 <b>CY2026 Projected Exposure (<i>Funded</i>)</b>	 <b>7.6% to 6.6%</b>
<b>CY2026 Projected Exposure (<i>Committed</i>)</b>	<b>8.6% to 7.4%</b>

<sup>1</sup>Based on the Fund's market value as of November 7, 2025, \$48,712M +/- 7.5%.

# Private Equity – Maintain Target

(\$mm)	2019	2020	2021	2022	2023	2024	2025 <sup>1</sup>	2026 <sup>2</sup>
Commitments	\$700	\$740	\$960	\$998	\$698	\$698	\$700 <sup>3</sup>	\$700
Contributions	\$766	\$747	\$782	\$853	\$609	\$658	\$611	\$850-\$950

1 Unaudited as of November 7, 2025

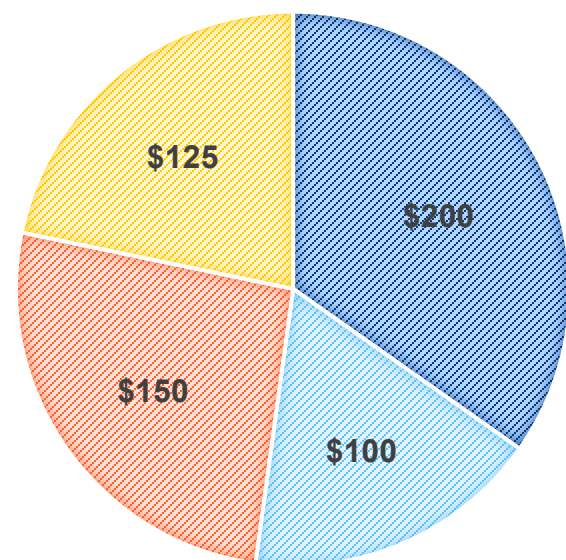
2 Projected commitments and contributions

3 Includes closed and IC approved deals as of November 7, 2025

- CY2026 - Maintain steady state on commitments, **\$700 million**
- CY2025 contributions split between primaries (64%), co-investments (20%) and secondaries (16%) - in line with the portfolio's long-term targeted exposures.
- Based on the Pathway 3Q25 report, unfunded commitments in Private Equity were ~ \$2.3 billion. The pace of drawdown is assumed to be 7 years.

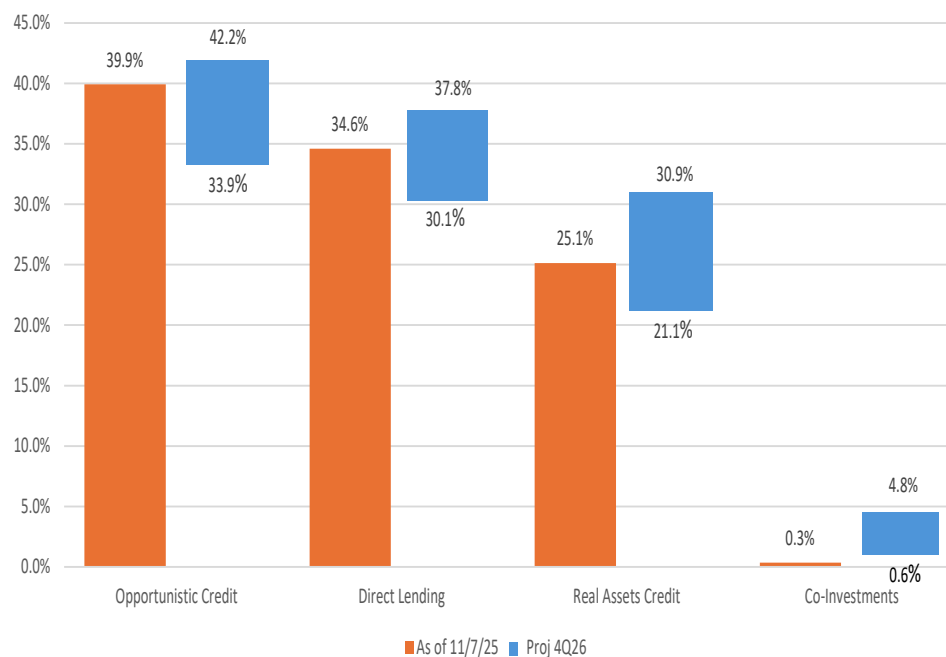
# Private Credit – Measured Commitments

**CY2026 COMMITMENTS**  
(IN MILLIONS)



■ Opportunistic    ■ Direct Lending  
■ Real Assets Credit    ■ Co-Investments

**Sub-Portfolio Exposures\***



- Proj 4Q26 exposure ranges represent commitments of \$0 to the maximum projected for each sub-portfolio in CY2026.

# Private Credit

- CY2026 – Commitments of **\$575 million**
- Opportunistic private credit (Up to \$200 million)
  - Potential commitments to existing mandates
- Direct Lending Sub-Portfolio (Up to \$300 million)
  - Potential commitments to existing mandates
  - Potential for a Direct Lending search
- Real Assets Credit Sub-Portfolio (Up to \$350 million)
  - Potential for an Infrastructure Debt search
  - Re-up / add-on commitments to existing strategies
- Co-Investment (Up to \$125 million)
  - Anticipate 6-8 investments for CY2026



# Private Credit – Projected Exposure (in Millions)

Private Credit Current Exposure	\$2,883
Contributions from Unfunded Commitments	\$ 267
Contributions from CY2026 Commitments	\$ 408
Return of Capital	\$ 246
CY2026 Private Credit Exposure	\$3,312
 Total Fund Value Range <sup>1</sup>	 \$45,059 to \$52,365
 <b>CY2026 Projected Exposure (<i>Funded</i>)</b>	 <b>7.4% to 6.3%</b>
<b>CY2026 Projected Exposure (<i>Committed</i>)</b>	<b>7.7% to 6.6%</b>

<sup>1</sup>Based on the Fund's market value as of November 7, 2025, \$48,712M +/- 7.5%.



**RFP I-2025-2**  
**Real Estate Equity Strategies**  
**Hiring Recommendations**  
**December 5, 2025**

**The Evaluation Committee recommends the Investment Board approve the hiring of two firms for the Real Estate Equity portfolio. Manager recommendations are contingent on final due diligence and successful contract negotiations prior to funding.**

<b>Firm Name</b>	<b>Strategy</b>
BentallGreenOak (BGO)	U.S. Core Plus
CBRE Group, Inc. (CBRE)	U.S. Core

IPERS issued an RFP on March 7, 2025, with the purpose of identifying core and/or core-plus real estate equity products across property types and geographic locations within the United States. By the April 18, 2025, deadline, 44 respondents submitted proposals to the RFP. The evaluation of the responses was conducted in two phases. Phase 1 was an evaluation of the minimum qualifications. Of the 44 respondents, nine did not meet the minimum qualifications.

Phase 2 consisted of reviewing and scoring the remaining 35 responses and conducting finalists' interviews. Upon completion of the reviews and scoring, five finalists were selected for interviews, which were held the week of November 3, 2025. After completing the interviews, two firms were selected for Board recommendations as summarized above. Notices of intent to award will be issued upon Board approval.

Brief profiles of the two strategies are provided on the following pages.

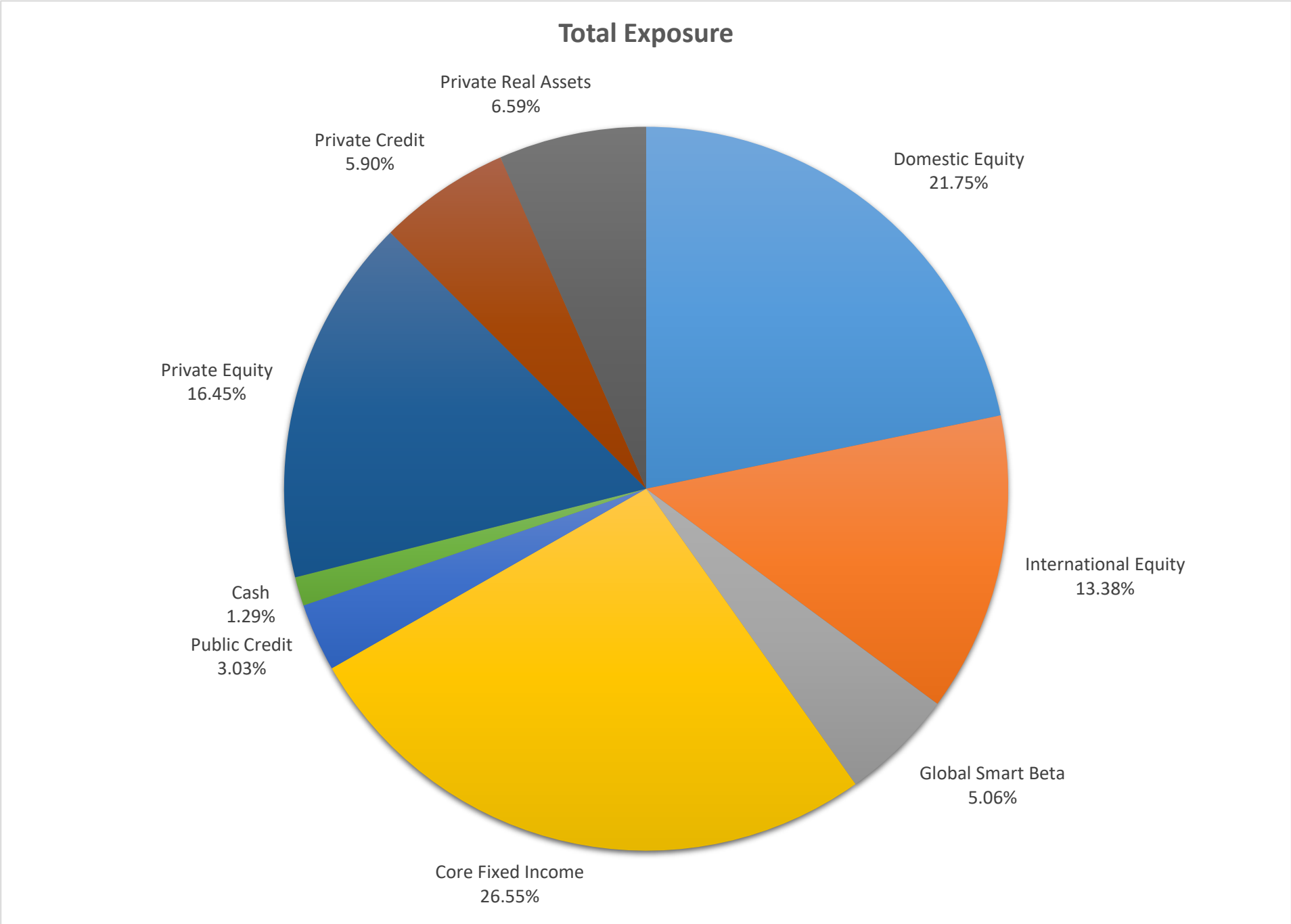


<b><u>FIRM NAME:</u></b>	BentallGreenOak (BGO)
<b>Corporate Headquarters:</b>	Boston, MA
<b>Ownership Structure:</b>	Sun Life Financial Inc. 51%, Tetragon Financial Group 12.8%, BGO leadership 36.2%
<b>Firm Wide Assets Under Management:</b>	\$89 billion as of 6/30/25
<b>Product Name:</b>	Separately Managed Account
<b>Product Asset Inception Date:</b>	2020
<b>Product Assets Under Management:</b>	\$2.3/\$1.6 billion Gross/Net Asset Value, respectively, as of 9/30/25
<b>Product Description:</b>	The Product will invest primarily in assets that meet emerging demographic shifts and demand trends that fit the Core Plus strategy. Asset types include primarily industrial and multifamily, as well as infrastructure-oriented commercial assets including cold storage, medical office, and R&D/advanced manufacturing uses.

<b><u>FIRM NAME:</u></b>	CBRE Group, Inc.
<b>Corporate Headquarters:</b>	New York, NY
<b>Ownership Structure:</b>	Public Company (NYSE: CBRE)
<b>Firm Wide Assets Under Management:</b>	\$155.7 billion as of 9/30/25
<b>Product Name:</b>	Separately Managed Account
<b>Product Asset Inception Date:</b>	2013
<b>Product Assets Under Management:</b>	\$11.1/\$8.2 billion Gross/Net Asset Value, respectively, as of 9/30/25
<b>Product Style Description:</b>	U.S. Core Partners has a research-driven, thematic investment approach to investing, focused on constructing a high-quality, diversified, direct real estate portfolio. Asset types include primarily industrial and multifamily, and to a lesser extent expanded subtypes, including life science, self-storage, retail, and student housing.

BETA REPORT  
IOWA PUBLIC EMPLOYEES' RETIREMENT SYSTEM PORTFOLIO  
PRELIMINARY (Unreconciled) MARKET VALUES AT  
11/21/2025

	Actual	Overlay	Total	Policy	Difference
PUBLIC MARKETS					
Domestic Equity	21.57%	0.18%	21.75%	21.94%	-0.19%
International Equity	13.32%	0.06%	13.38%	13.58%	-0.20%
Global Smart Beta	5.06%		5.06%	5.22%	-0.16%
Total Equities	39.95%		40.19%	40.74%	-0.55%
Core Fixed Income	26.16%	0.39%	26.55%	26.11%	0.44%
Public Credit	3.03%		3.03%	3.13%	-0.10%
Cash	1.92%	-0.63%	1.29%	1.05%	0.24%
PRIVATE MARKETS					
	28.94%		28.94%	28.97%	-0.03%
Private Equity	16.45%		16.45%	16.57%	-0.12%
Private Credit	5.90%		5.90%	5.90%	0.00%
Private Real Assets	6.59%		6.59%	6.50%	0.09%
TOTAL FUND	100.00%			100.00%	0.00%



BETA REPORT					
IOWA PUBLIC EMPLOYEES' RETIREMENT SYSTEM PORTFOLIO					
PRELIMINARY (Unreconciled) MARKET VALUES AT					
11/21/2025					
PUBLIC PORTFOLIO	\$	34,406,776,577			
Manager Name	Total Market Value		Manager Name	Total Market Value	
BlackRock - Russell 1000 SAE	\$	2,490,125,905	Mesirow - EM Currency	\$	260,034,708
BlackRock - Russell 2000 SAE	\$	254,544,003	Man - EM Global Macro	\$	130,904,472
Terminated Managers	\$	-	BlackRock - Universal Alpha	\$	332,723,492
DOMESTIC EQUITY - ACTIVE	\$	2,744,669,908	BlackRock - Universal Beta	\$	374,370,788
Mellon - Russell 1000 Index	\$	7,464,450,963	PGIM - GLRV Alpha	\$	306,859,200
Mellon - Russell 2000 Index	\$	191,442,935	PGIM - GLRV Beta	\$	278,691,209
Parametric - Domestic Equity	\$	42,706,712	Terminated Managers	\$	5,984,575
Terminated Managers	\$	-	CORE FIXED INCOME - ACTIVE	\$	1,689,568,444
DOMESTIC EQUITY - PASSIVE	\$	7,698,600,609	Mellon - SLH Agg	\$	10,941,857,254
TOTAL DOMESTIC EQUITY	\$	10,443,270,517	Parametric - Core Fixed Income	\$	33,126,053
BlackRock - Canada	\$	542,159,868	CORE FIXED INCOME - PASSIVE	\$	10,974,983,306
BlackRock - EAFE	\$	1,980,669,304	TOTAL CORE FIXED INCOME	\$	12,664,551,750
Mellon - Emerging Markets	\$	1,134,669,100	PGIM - High Yield	\$	484,522,025
Parametric - International Equity	\$	34,554,562	Aegon - USA High Yeild	\$	481,425,815
Terminated Managers	\$	-	Prudential - EMD	\$	501,656,577
INTERNATIONAL EQUITY - PASSIVE	\$	3,692,052,834	Terminated Managers	\$	1,895,138
BlackRock - EAFE SAE	\$	1,458,434,286	TOTAL PUBLIC CREDIT	\$	1,469,499,556
BlackRock - EM SAE	\$	494,040,436	UBS - US	\$	1,458,042,761
PanAgora - Dynamic EAFE	\$	463,221,023	UBS - Developed ex US	\$	744,447,731
Wellington - Emerging Markets	\$	326,728,387	UBS - EM	\$	249,290,226
Terminated Managers	\$	13,172,756	TOTAL GLOBAL SMART BETA EQUITIES	\$	2,451,780,718
INTERNATIONAL EQUITY - ACTIVE	\$	2,755,596,889	Cash Account	\$	669,223,887
TOTAL INTERNATIONAL EQUITY	\$	6,447,649,723	LARS Liquid Assets	\$	221,755,657
			Staff Directed Trades	\$	39,044,770
			Pending Cash	\$	-
			TOTAL CASH	\$	930,024,314
PRIVATE PORTFOLIO	\$	14,011,763,865			
Manager Name	Total Market Value		Manager Name	Total Market Value	
Pathway PE Fund XXV	\$	7,316,938,726	RREEF	\$	962,965,436
Pathway Legacy Portfolio	\$	648,266,732	Clarion Partners	\$	51,143,865
TOTAL PRIVATE EQUITY	\$	7,965,205,458	Kayne Anderson - KAREP VII	\$	65,985,737
BlackRock	\$	319,368,312	Invesco	\$	817,412,229
Pathway XXV - B	\$	259,656,659	UBS Realty	\$	502,256,729
Monroe Capital	\$	416,931,748	REAL ESTATE	\$	2,399,763,995
DIRECT LENDING	\$	995,956,718	Brookfield - BSIP	\$	341,873,876
ArrowMark	\$	215,411,170	Ioway Investments	\$	15,000,001
Crestline Series I	\$	158,327,088	Macquarie - MIP VI	\$	143,298,614
Crestline Series II	\$	98,804,415	Forest Investment Associates	\$	178,807,293
Audax Mezzanine Fund V	\$	46,261,439	UBS Farmland Investors	\$	111,849,045
Marathon	\$	245,042,489	OTHER REAL ASSETS	\$	790,828,829
KKR	\$	283,524,332	TOTAL PRIVATE REAL ASSETS	\$	3,190,592,824
Ares Private Credit Solutions II	\$	78,843,685			
Audax Mezzanine Co-Invest IA	\$	13,123,396			
OPPORTUNISTIC	\$	1,139,338,013			
Oaktree - RECIF	\$	64,786,799			
Principal - OEDF	\$	24,186,916			
ITE	\$	68,032,865			
IFM - USIDF	\$	93,144,485			
PGIM - Real Esate Global Debt	\$	122,921,504			
PGIM - PREDS	\$	71,526,489			
Kayne Anderson - KARED IV	\$	66,616,642			
JP Morgan - GTIF	\$	103,002,377			
Ioway Investments	\$	10,000,772			
Heitman - CREDIT	\$	96,452,002			
Terminated Managers	\$	-			
REAL ASSETS CREDIT	\$	720,670,852			
TOTAL PRIVATE CREDIT	\$	2,855,965,583			
			RECENT MARKET VALUES		
			11/21/2025	\$	48,418,540,442
			11/14/2025	\$	48,820,341,050
			11/7/2025	\$	48,711,627,575
			10/31/2025	\$	48,897,969,539
			10/24/2025	\$	48,669,344,574
			10/17/2025	\$	48,280,700,417
			10/10/2025	\$	47,936,565,185
			10/3/2025	\$	48,329,407,530
			9/26/2025	\$	48,078,728,577
			9/19/2025	\$	48,195,383,708
			Public Markets	\$	34,406,776,577
			Private Markets	\$	14,011,763,865
			Total	\$	48,418,540,442

# Alpha Report

For periods ending September 30, 2025

*α*

# IPERS' Active Manager Alpha Scorecard

Net of Fees as of 3Q25	3Q25	1 Year	3 Year	5 Year	SI	Perf	Org	People	Process
<b>Domestic Equity</b>									
BlackRock - Russell 1000 SAE	1.05%	0.03%	0.82%	NA	0.52%				
BlackRock - Russell 2000 SAE	0.04%	0.10%	0.74%	0.75%	1.27%				
<b>International Equity</b>									
BlackRock – EAFE SAE	0.76%	4.42%	2.74%	2.22%	1.70%				
PanAgora - Dynamic EAFE	1.39%	3.60%	2.64%	2.46%	1.18%				
Wellington - Emerging Markets	3.09%	6.06%	0.95%	0.47%	0.29%				
BlackRock - Emerging Markets SAE	-0.68%	-0.65%	-0.31%	-0.88%	-0.62%				
<b>Core Fixed Income</b>									
BlackRock - Universal	0.15%	-0.84%	0.41%	NA	0.90%				
PGIM - Universal	1.06%	2.80%	2.72%	NA	0.57%				
Man EM Global Macro	-11.93%	-14.19%	NA	NA	-16.64%				
Mesirow EM Currency	2.98%	4.30%	NA	NA	-0.12%				
<b>Public Credit</b>									
PGIM - High Yield	0.14%	1.06%	0.11%	0.80%	0.71%				
Aegon USA - High Yield	-0.31%	-0.35%	-0.82%	-0.01%	0.18%				
PGIM - Emerging Market Debt	-0.03%	0.77%	1.77%	1.08%	0.87%				
<b>LARS</b>									
Aspect Capital	4.05%	-7.46%	-0.21%	NA	2.46%				
Graham Capital Management	5.16%	-3.31%	-4.57%	0.31%	2.49%				
P/E Global	2.12%	1.07%	-3.38%	0.19%	2.89%				
PIMCO	7.34%	-2.42%	7.97%	NA	6.80%				
Welton Global	2.69%	-12.63%	-11.86%	NA	-4.07%				
ARP	0.18%	-1.27%	NA	NA	-2.08%				
DCM	4.27%	NA	NA	NA	14.80%				
<b>Staff Directed Trades</b>									
Staff Directed Trades	8.36%	NA	NA	NA	8.36%				



No Concerns



Minor Concerns



Material Concerns



# IPERS' Active Manager Listing

MANAGER	INCEPTION DATE	MANDATE	BENCHMARK
<b>Domestic Equity</b>			
BlackRock - Russell 1000 SAE	May 2022	Large Cap	Russell 1000
BlackRock - Russell 2000 SAE	May 2019	Small Cap	Russell 2000
<b>International Equity</b>			
BlackRock – EAFE SAE	May 2019	Developed EAFE	MSCI EAFE Index (net)
PanAgora - Dynamic EAFE	May 2019	Developed EAFE	MSCI EAFE Index (net)
Wellington - Emerging Markets	February 2009	Global Emerging Markets	MSCI Emerging Markets (net)
BlackRock - Emerging Markets SAE	May 2019	Global Emerging Markets	MSCI Emerging Markets (net)
<b>Core Fixed Income</b>			
BlackRock - Universal	November 2020	Relative Value	Bloomberg U.S. Aggregate
PGIM - Universal	March 2021	Relative Value	Bloomberg U.S. Aggregate
Man EM Global Macro	October 2023	Relative Value	Bloomberg U.S. Aggregate
Mesirow EM Currency	October 2023	Relative Value	Bloomberg U.S. Aggregate
<b>Public Credit</b>			
PGIM - High Yield	June 2019	High Yield	Bloomberg U.S. HY 2% Capped Index
Aegon USA - High Yield	February 2012	High Yield	High Yield Policy Index
PGIM - Emerging Market Debt	April 2016	Emerging Market Debt	JP Morgan EMBI Global
<b>LARS</b>			
Aspect Capital	March 2022	Diversified Trend	Absolute Return
Graham Capital Management	December 2016	Tactical Trend	Absolute Return
P/E Global	December 2016	FX Strategy	Absolute Return
PIMCO	July 2022	Commodity Alpha	Absolute Return
Welton Global	June 2021	Welton Global	Absolute Return
ARP	November 2022	Alternative Risk Premium	Absolute Return
DCM	March 2025	Diversified Alpha	Absolute Return
<b>Staff Directed Trades</b>			
Staff Directed Trades	July 2025	Internal Tactical Trend	Absolute Return

# **Private Market Program Manager Updates**

For periods ending September 30, 2025

# IPERS' PMP Manager Scorecard

	1 Year	5 Year	10 Year	SI	Performance	Organization	People	Process
<b>Private Equity</b>								
Multi-Strategy								
Pathway	8.98%	14.72%	15.22%	12.79%				
<b>Private Credit</b>								
Direct Lending								
BlackRock	6.17%	7.02%	N/A	6.97%				
Monroe Capital	7.72%	7.71%	N/A	7.37%				
Pathway XXV-B	10.14%	N/A	N/A	9.20%				
Opportunistic								
Arrowmark	9.96%	N/A	N/A	9.97%				
Ares Private Credit Solutions II	11.59%	N/A	N/A	7.49%				
Audax Mezzanine Fund V	9.79%	N/A	N/A	15.22%				
Audax Mezzanine Co-Invest IA	13.20%	N/A	N/A	12.34%				
Crestline Series I	4.24%	N/A	N/A	7.29%				
Crestline Series II	10.71%	N/A	N/A	7.57%				
KKR	7.84%	8.40%	N/A	7.82%				
Marathon	7.99%	N/A	N/A	6.72%				
Real Assets								
Heitman – CREDIT	3.10%	N/A	N/A	-1.20%				
IFM – USIDF	6.45%	N/A	N/A	4.74%				
PGIM Real Estate Global Debt	13.34%	8.52%	N/A	7.84%				
Principal – PREDF II	15.85%	7.96%	N/A	8.09%				
Kayne Anderson – KARED IV	10.74%	N/A	N/A	9.22%				
JP Morgan – GTIF	10.57%	N/A	N/A	9.53%				
ITE	6.30%	N/A	N/A	9.51%				
PGIM – PREDS	9.26%	N/A	N/A	6.84%				
Oaktree – RECIF	6.75%	N/A	N/A	5.26%				
Principal – OEDF	7.95%	N/A	N/A	5.01%				



No Concerns




Minor Concerns




Material Concerns

# IPERS' PMP Manager Scorecard

	1 Year	5 Year	10 Year	SI	Performance	Organization	People	Process
<b>Private Real Assets</b>								
<b>Real Estate</b>								
Clarion Partners	0.54%	-6.42%	-1.59%	3.13%				
Invesco	3.41%	9.71%	11.09%	9.88%				
RREEF	3.26%	6.20%	7.41%	8.93%				
UBS Realty	8.32%	10.26%	10.30%	9.68%				
Kayne Anderson – KAREP VII	N/A	N/A	N/A	-2.99%				
<b>Other Real Assets</b>								
Brookfield – BSIP	8.77%	N/A	N/A	7.65%				
Forest Investment Associates	-1.57%	6.71%	4.86%	5.56%				
UBS Farmland	2.53%	5.30%	N/A	6.59%				
Macquarie - MIP VI	N/A	N/A	N/A	-8.60%				

 No Concerns

 Minor Concerns

 Material Concerns

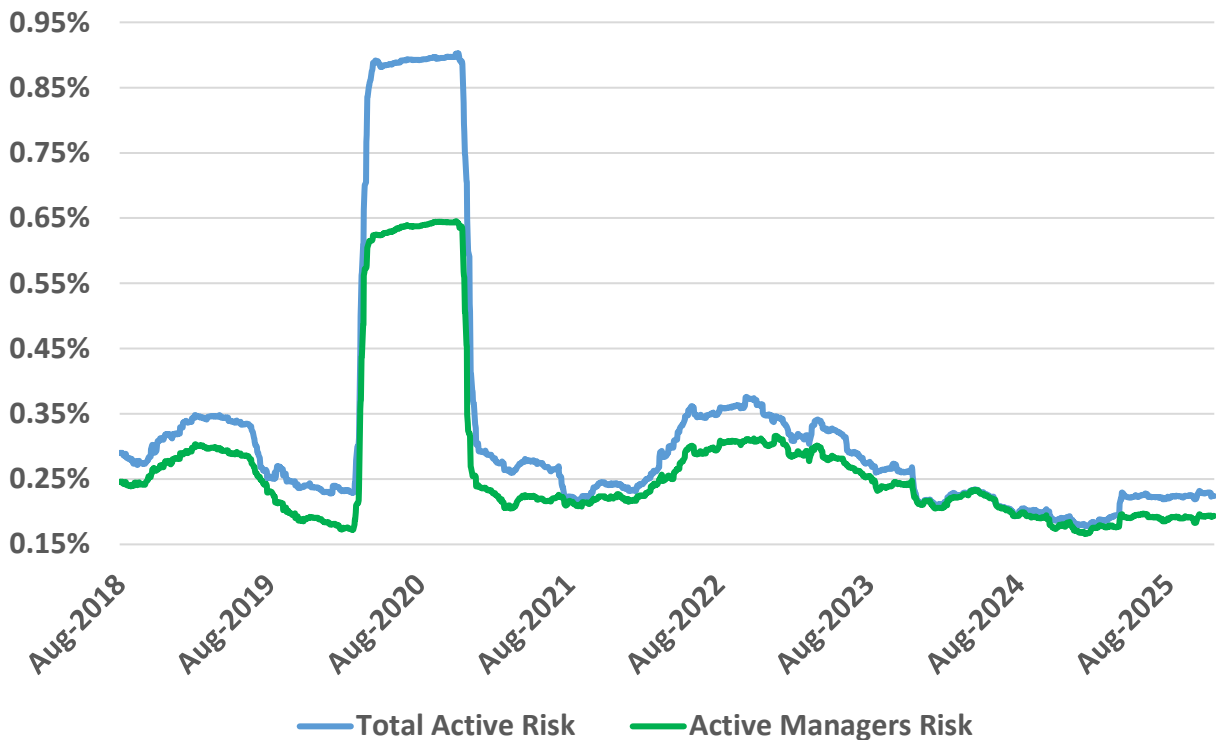
## Active Risk –180 Days (Nov 2025)

	Active	Passive	Misfit	Total
<b>Equities</b>				
Domestic Equities	0.07%	0.09%	0.00%	0.12%
International Equities	0.09%	0.05%	0.00%	0.11%
Global Smart Beta Equities	-	0.01%	0.00%	0.01%
<b>Fixed Income</b>				
Core Fixed Income	0.10%	0.02%	0.00%	0.10%
Public Credit	0.03%	-	0.00%	0.03%
<b>LARS (External)</b>	0.05%	-	-	0.05%
<b>Internal (ARP+SDT)</b>	0.03%	-	-	0.03%
<b>Asset Allocation</b>	-	0.05%	-	0.05%
<b>Total Public Markets</b>	<b>0.19%</b>	<b>0.14%</b>	<b>0.00%</b>	<b>0.23%</b>

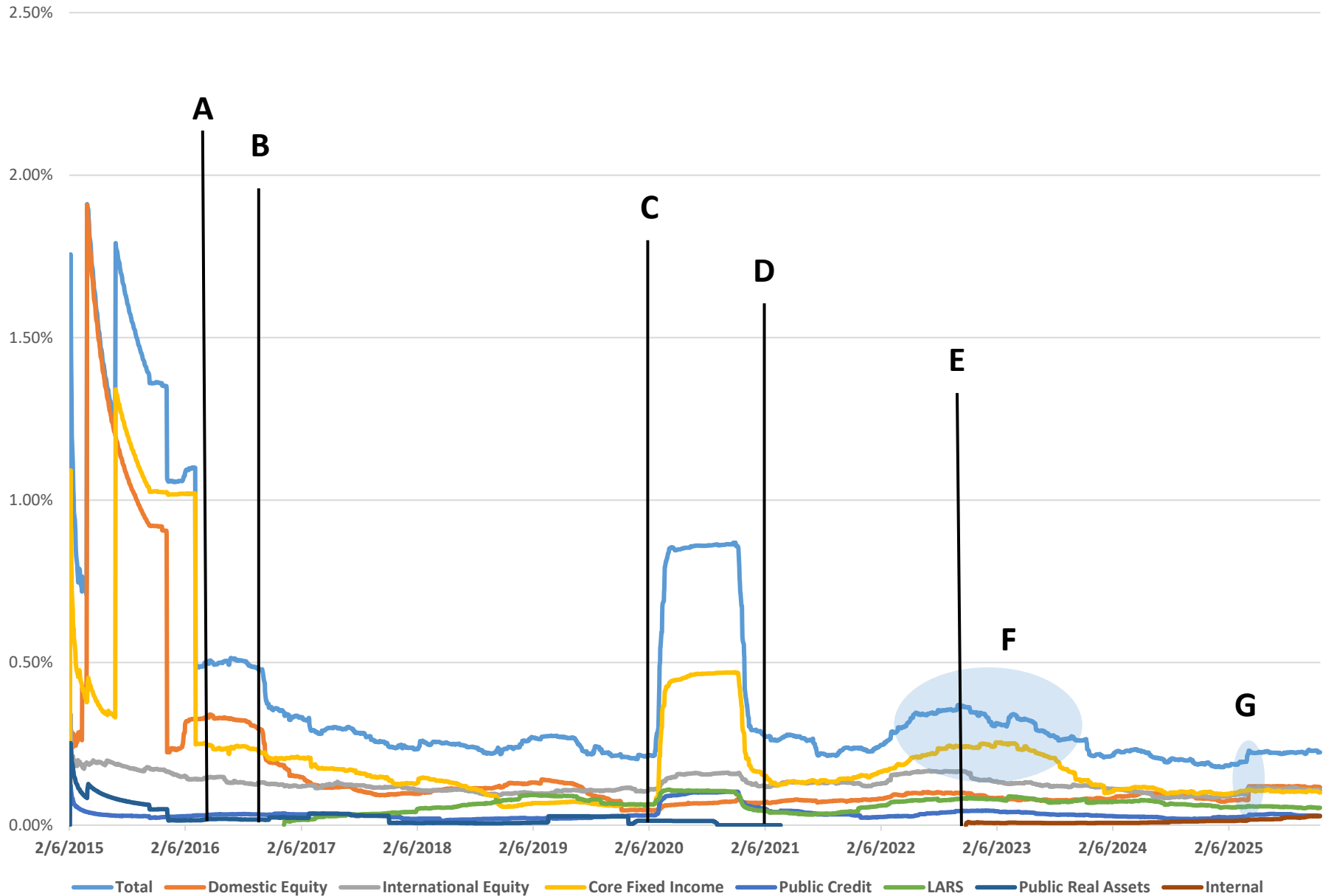
<b>Target</b>	1.50%
<b>Upper Limit</b>	3.00%

- Plan-level Total Active Risk at 0.23%
- No new active mandates added. We hope to add a few in the upcoming quarters.

## External Active Risk –180 Days (Nov 2025)



## "Actionable" Active Risk – Memory Lane



# Investment Management Expenses

FY2025

**Keith Scholten – Senior Investment Officer**

December 5, 2025



# Investment Management Expenses

<b>PRELIMINARY</b>	<b>FY25</b>	<b>FY25 Incentive/</b>	<b>FY25</b>	<b>FY25 Average</b>	<b>Cost as % of</b>
	<b>Mgmt/Base Fee</b>	<b>Performance Fee</b>	<b>Total Fees</b>	<b>Market Value</b>	<b>Avg. Assets</b>
<b><u>Investment Manager Fees</u></b>					
Core Fixed Income - Passive	(\$225,754)	N.A.	(\$225,754)	\$9,961,434,509	-0.002%
Core Fixed Income - Active	42	\$106,805	106,847	1,614,643,852	0.007%
Public Credit	542,645	1,388,962.84	1,931,607	1,396,216,075	0.138%
Domestic Equity - Passive	(80,182)	N.A.	(80,182)	7,313,226,527	-0.001%
Domestic Equity - Active	-	195,173.68	195,174	2,379,752,152	0.008%
International Equity - Passive	701,030	N.A.	701,030	3,633,063,781	0.019%
International Equity - Active	524,314	1,201,892.75	1,726,207	2,378,568,819	0.073%
Global Smart Beta	746,259	N.A.	746,259	2,307,488,954	0.032%
Cash - STIF*	-	N.A.	-	286,957,616	0.000%
Cash - LARS	-	1,006,728.69	1,006,729	219,752,642	0.458%
Private Equity**	11,942,411	N.A.	11,942,411	7,916,446,758	0.151%
Private Real Assets	14,993,993	N.A.	14,993,993	3,096,177,410	0.484%
Private Credit***	21,172,037	N.A.	21,172,037	2,791,985,106	0.758%
<b>Total Manager Fees</b>	<b>\$50,316,794</b>	<b>\$3,899,563</b>	<b>\$54,216,357</b>	<b>\$45,295,714,201</b>	<b>0.120%</b>
<b><u>Investment Related Services Fees</u></b>					
Investment Consultants	210,000	N.A.	210,000	45,295,714,201	0.000%
Custody & Reimbursement Fees	1,116,072	N.A.	1,116,072	45,295,714,201	0.002%
<b>Total Services Fees</b>	<b>\$1,326,072</b>	<b>N.A.</b>	<b>\$1,326,072</b>	<b>\$45,295,714,201</b>	<b>0.003%</b>
<b><u>Administrative Costs</u></b>					
Commission Expenses	2,486,119	N.A.	2,486,119	45,295,714,201	0.005%
Investment Staff & Board Expenses	2,666,367	N.A.	2,666,367	45,295,714,201	0.006%
Miscellaneous Expenses	1,381,970	N.A.	1,381,970	45,295,714,201	0.003%
<b>Total Administrative Costs</b>	<b>\$6,534,456</b>	<b>N.A.</b>	<b>\$6,534,456</b>	<b>\$45,295,714,201</b>	<b>0.014%</b>
<b>TOTAL</b>	<b>\$58,177,322</b>	<b>\$3,899,563</b>	<b>\$62,076,885</b>	<b>\$45,295,714,201</b>	<b>0.137%</b>

\* Short Term Investment Fund (STIF) is managed by BNY. A management fee of 10 bps per annum is netted from the earnings credited to the STIF.

\*\* Management fees and incentive fees paid to private equity partnerships are not recorded as an investment management expense, but are recorded as a reduction in the net appreciation in the fair value of private equity investments.

\*\*\* Incentive fees paid to private credit funds are not recorded as an investment management expense, but are recorded as a reduction in the net appreciation in the fair value of private credit investments.

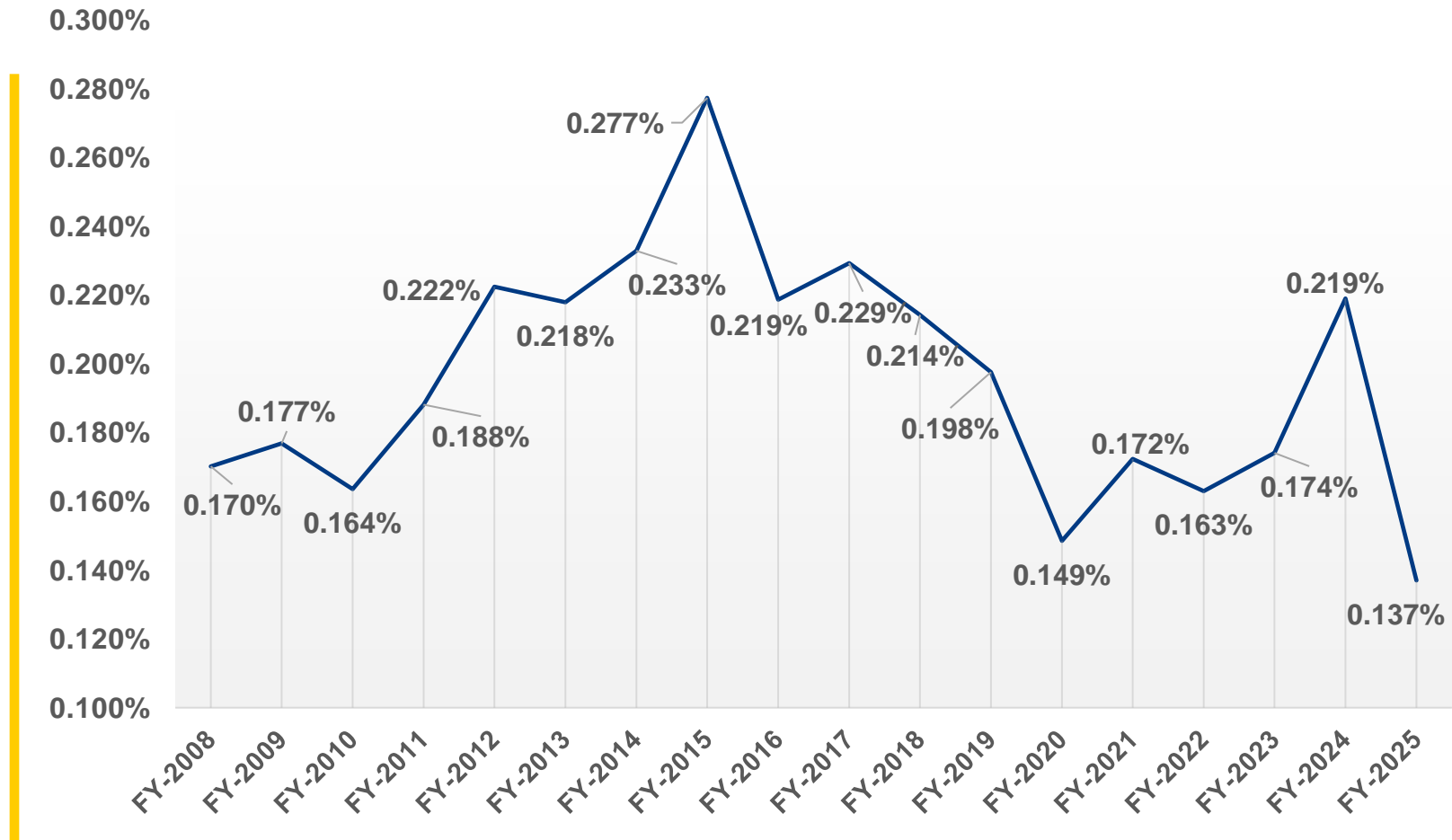


# Year-Over-Year Changes in Costs

<b>Fee Category</b>	<b>FY25 Expenses</b>	<b>FY24 Expenses</b>	<b>Change in Dollars</b>	<b>Percentage Change</b>
<b><u>Investment Manager Fees</u></b>				
Core Fixed Income	(\$118,907)	\$3,225,885	(\$3,344,792)	-103.7%
Public Credit	1,931,607	1,052,834	878,773	83.5%
Domestic Equity	114,992	12,141,734	(12,026,742)	-99.1%
International Equity	2,427,237	15,269,313	(12,842,076)	-84.1%
Global Smart Beta	746,259	681,879	64,380	9.4%
Cash - LARS	1,006,729	4,735,607	(3,728,878)	-78.7%
Private Equity*	11,942,411	11,455,362	487,049	4.3%
Private Real Assets	14,993,993	15,354,192	(360,199)	-2.3%
Private Credit	21,172,037	19,880,978	1,291,059	6.5%
<b>Total Manager Fees</b>	<b>\$54,216,357</b>	<b>\$83,797,784</b>	<b>(\$29,581,427)</b>	<b>-35.3%</b>
<b><u>Investment Related Services Fees</u></b>				
Investment Consultants	210,000	365,000	(155,000)	-42.5%
Custody & Reimbursement Fees	1,116,072	899,309	216,763	24.1%
<b>Total Services Fees</b>	<b>\$1,326,072</b>	<b>\$1,264,309</b>	<b>\$61,763</b>	<b>4.9%</b>
<b><u>Administrative Costs</u></b>				
Commission Expenses	2,486,119	3,174,817	(688,698)	-21.7%
Investment Staff & Board Expenses	2,666,367	2,658,913	7,455	0.3%
Miscellaneous Expenses	1,381,970	1,858,531	(476,561)	-25.6%
<b>Total Administrative Costs</b>	<b>\$6,534,456</b>	<b>\$7,692,261</b>	<b>(\$1,157,805)</b>	<b>-15.1%</b>
<b>TOTAL</b>	<b>\$62,076,885</b>	<b>\$92,754,354</b>	<b>(\$30,677,468)</b>	<b>-33.1%</b>

\*FY25 PE fees are lagged by a quarter to match performance data. FY24 PE fees were restated to show fees on a comparable lagged basis for this report.

# Historical Cost as % of Avg Assets Trend



# Comments

- **Investment Management expenses were 0.137% (13.7 basis points) of the Fund's FY2025 average market value**
- **Total investment management expenses decreased 33.1% from FY2024**
  - Investment manager fees decreased by 35.3%
  - Investment Related Services fees increased by 4.9%
  - Administrative costs decreased by 15.1%

# 2026

## Board Meetings

JANUARY						
S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

FEBRUARY						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

MARCH						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

APRIL						
S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

MAY						
S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

JUNE						
S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

JULY						
S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

AUGUST						
S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

SEPTEMBER						
S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

OCTOBER						
S	M	T	W	T	F	S
			1	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

NOVEMBER						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

DECEMBER						
S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

**March 27, 2026**

CY2025 Investment Performance

**June 18, 2026**

Private Markets Program Review

**September 23-24, 2026**

Continuing Education Session

FY2025 Investment Performance Review

Asset Allocation

Investment Policy & Goal Statement

**December 4, 2026**

Actuarial Valuation Presentation