



FINANCIAL MODELING

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

Presented by:

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December 5, 2025

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Introduction

- July: Board adopted updated valuation methods and assumptions, including updated mortality assumption and maintaining 6.90% rate of return
- September: Milliman presented system-average results from the advisory December 31, 2024 valuation
 - December 31, 2025 actuarial valuation will be rate-setting for July 2027 – June 2029
- **Today: Long-term financial modeling projections reflecting published investment results through September 30**
 - System average contribution rates
 - System funded status
 - System unfunded actuarial liability (UAL)

Models and Inputs

- System financials are projected using two different models
 - Steady return model – consistent year-to-year future investment returns
 - Variable return model – future investment returns vary from year to year
- Modeling starts with liabilities and actuarial assumptions from the 12/31/2024 system-wide actuarial valuation report
 - This includes the current Board-adopted 6.90% return assumption for valuing liabilities
- Modeling uses 12/31/2024 assets adjusted for **published regular account returns of +7.32% through September 2025**
 - Returns for October through December 2025 vary in our models based on scenario

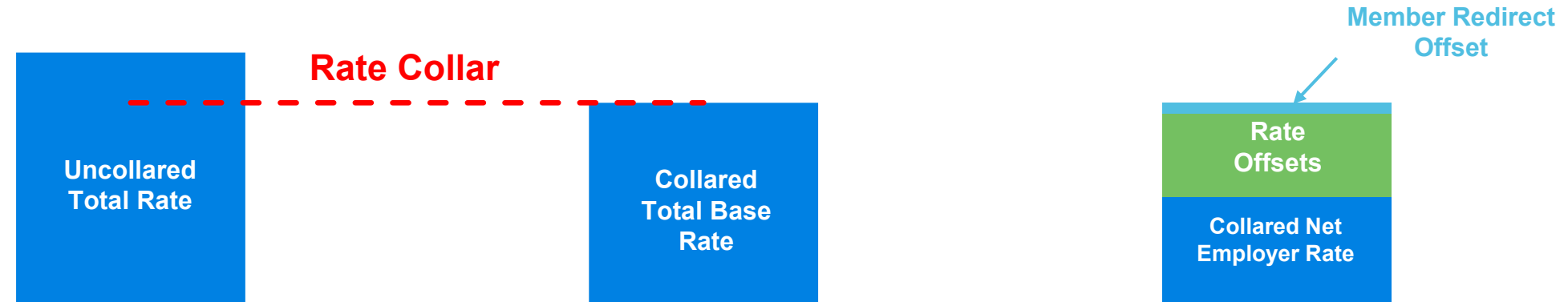
Financial Modeling - Comments on System Average Rates

- Projections depict **system average** funded status and employer contribution rates
- Rates shown in this presentation are “employer” rates
 - Redirected member contributions serve as an offset to “total” rate
- No single employer pays the system average rate
 - Contribution rates vary both by experience pooling group, employer, and type of payroll
- At the median scenario, average base employer rates for the 2027-2029 biennium are projected to remain fairly level, but average net employer rates are expected to increase due to expiration of side accounts
 - Actual outcome will vary by rate pool and employer
 - Also, **the -1.68% of payroll SB 849 adjustment to 2025-27 School District rates is NOT depicted in the model**
- Rates shown do not include:
 - Contribution rates for the Individual Account Plan (IAP)
 - Employer contribution rates for the RHIA & RHIPA retiree healthcare programs
 - Debt service payments on employer-specific pension obligation bonds

Rate Collaring

- In the December 31, 2023 rate-setting valuation, the rate collar policy had different effects on different components of the 2025-2027 contribution rates
- **Tier One/Tier Two UAL rate**
 - Large rate pools (Schools & SLGRP): held the UAL rate constant (above the uncollared UAL rate)
 - This provides a partial buffer against potential poor investment returns during the 2024 and 2025 calendar years and reduces the biennium-to-biennium increase in contribution rates resulting from any underperformance
 - Independent employers: effect depends on employer – nearly half saw no adjustment due to rate collar, while for some collar either increased or decreased final net rate
- **OPSRP UAL rate**
 - Collared rate is 0.19% of payroll below the uncollared rate (affects all employers)

Overview of Rate Calculation Structure

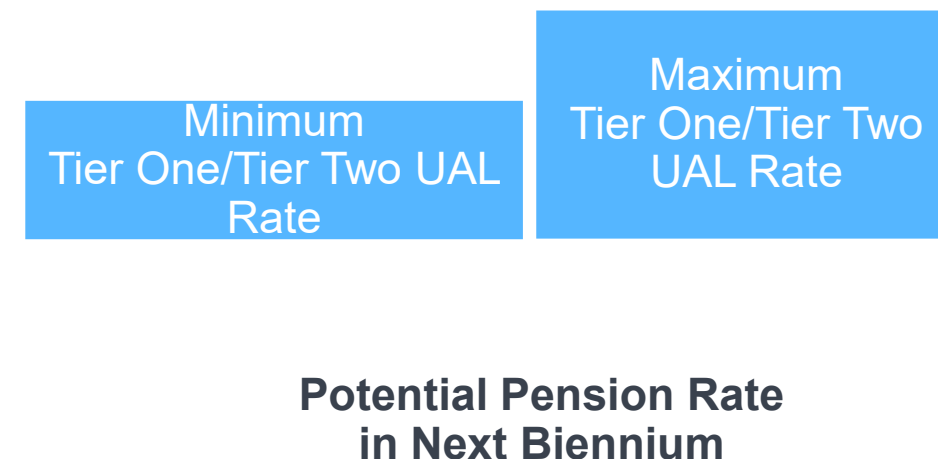
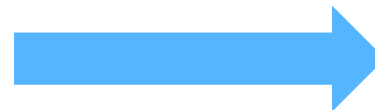
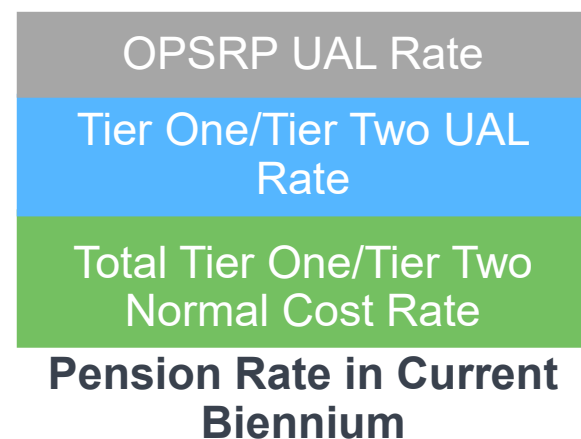


- The ***uncollared total rate*** is the theoretical contribution rate to reach 100% funded status over a specified amortization period if:
 - Contributions at that rate started on the actuarial valuation date, and
 - Actual future experience mirrors the actuarial valuation's assumptions, and
 - The normal cost rate does not change in subsequent years
- The rate collar sets a biennium's ***collared total base rate***, limiting the base rate change for a single biennium when there is a large change in the uncollared rate
- ***Member redirect offset*** reflects estimated portion of collared total base rate paid by redirected member contributions
- Employers pay the ***collared net employer rate***, which reflects the member redirect offset and any rate offset adjustments from:
 - Side account rate offsets for employers with side accounts
 - SLGRP charges/offsets (e.g., Transition Liability/Surplus)

Rate Collar Design

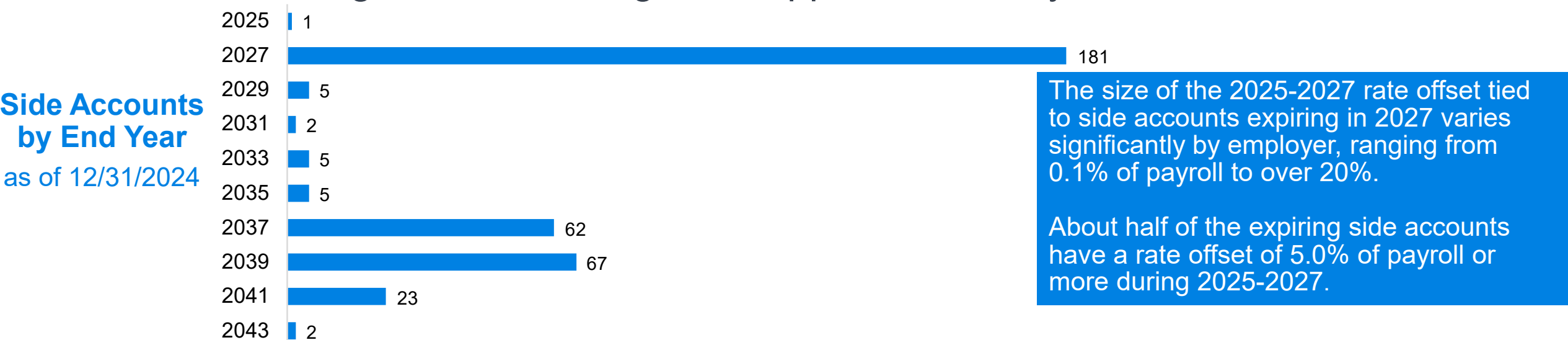
- Rate collar focuses on the biennium-to-biennium change in the UAL Rate component
 - Normal Cost Rate component is always paid in full and is not subject to a rate collar limitation
- The maximum biennium-to-biennium change in UAL Rate permitted by the rate collar is:
 - **SLGRP and School District Pools Tier One/Tier Two UAL Rates:** 3% of pay
 - **OPSRP UAL rate:** 1% of pay
 - **Tier One/Tier Two UAL Rates of Independent Employers:** greater of 4% of pay or 1/3rd of the difference between the collared and uncollared Tier One/Tier Two UAL Rates at the last rate-setting valuation
- UAL Rate is not allowed to decrease at all unless funded status excluding side accounts is at least 87%, and a full collar width decrease is not allowed unless funded status is at least 90%

**Illustration of
Rate Collar for
Tier One/Tier Two
UAL Rate
(funded status
<87%)**



Side Accounts Rate Offsets & SLGRP Transition Charges/Offsets

- Adjustments to employer “base” contributions for side account offsets and SLGRP-related charges or offsets vary by employer
- For purposes of the projection, amounts are aggregated and treated as if the system was a single employer
- A large portion of these rate adjustments will expire soon:
 - Over half of side account balances are scheduled to amortize by December 31, 2027; rate offsets will not apply starting in the 2027-2029 biennium rates
 - Almost all SLGRP transition adjustments are scheduled to last apply for the 2027-2029 contribution rates; many employers currently have transition offsets and so may experience rate increases in 2029-2031
- We have reflected this timing in our modeling at an approximated, system-wide level





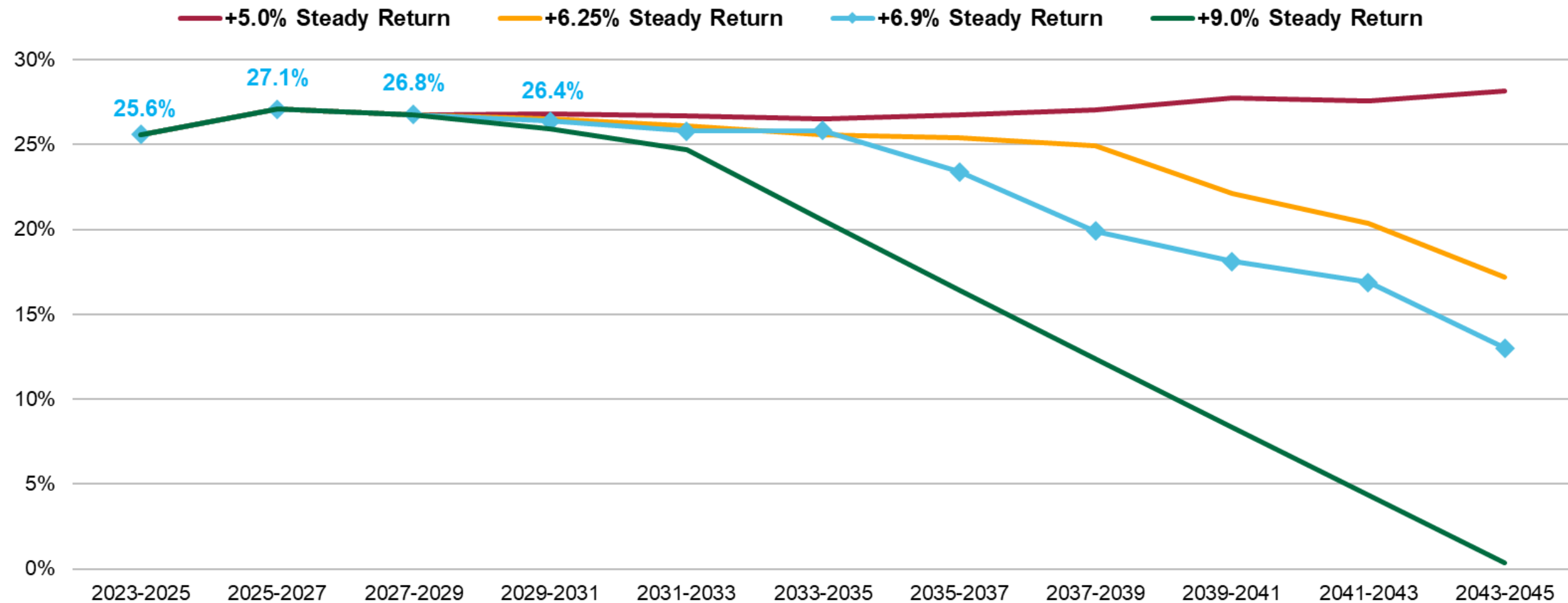
Steady Return Model

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Steady Return Model

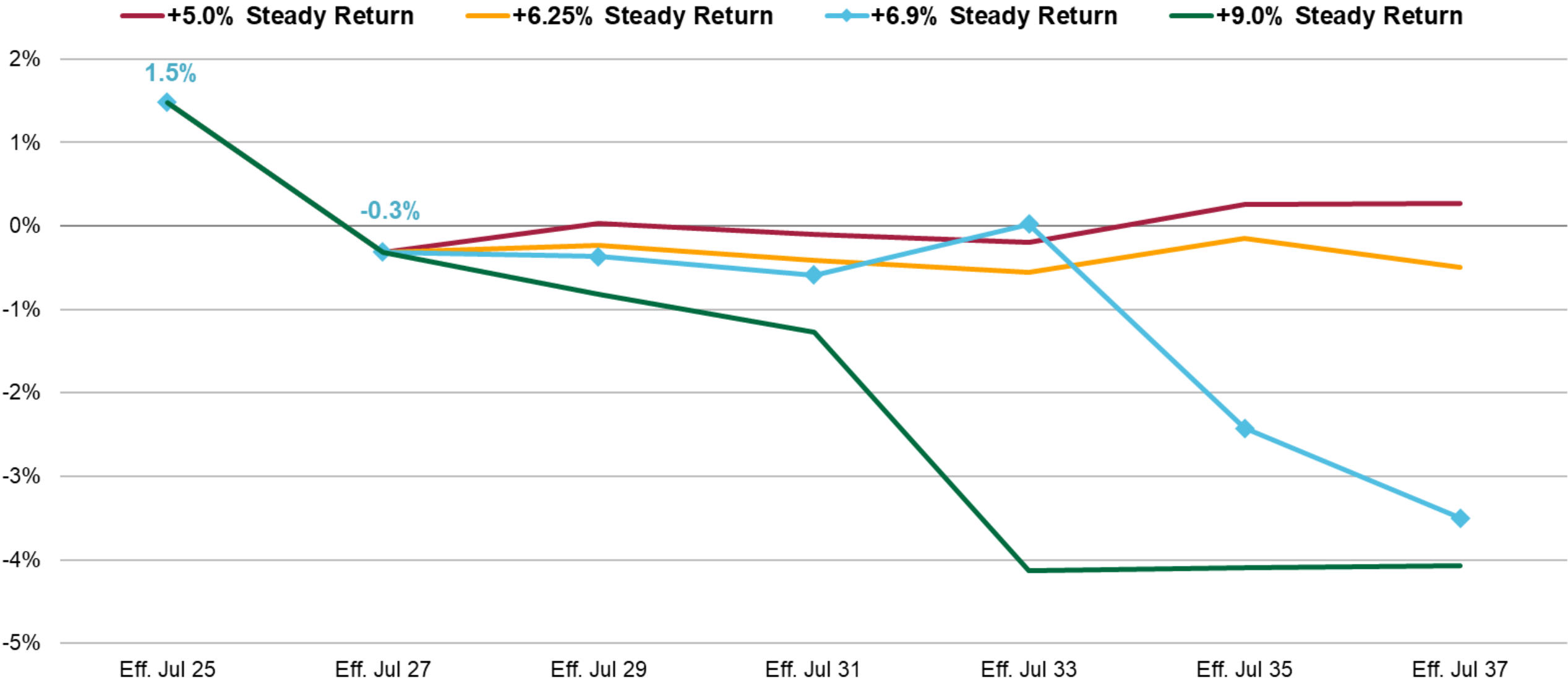
- The next four slides show financial projections under the current rate setting structure
 - Employer rates adjust each biennium, with changes limited by the rate collar
- Four scenarios for **steady annual actual future investment** return are shown
 - **+5.0%; +6.25%; +6.9%; +9.0%**
- While actual future returns won't be steady year-to-year, the steady return model clearly illustrates the financial dynamics
 - More realistic “noisy” future returns will be shown in the variable return model later in this presentation
 - The effects of near-term and/or long-term future annualized returns worse than +5.0% are captured in the variable return model
- Model incorporates published returns through September 2025 of 7.32%

Employer Collared Base Pension Rates (System Average)



- System average employer collared base pension rates in 2027-29 are projected to be similar to 2025-27 rates
- Blue line: rates decrease as new OPSRP members replace exiting Tier One / Tier Two members
- Final 2027-29 rates will be based on asset returns through December 31, 2025
- Material rate decreases begin when funded status nears 90%

Biennial Change in Employer Collared Base Rate (System Average)

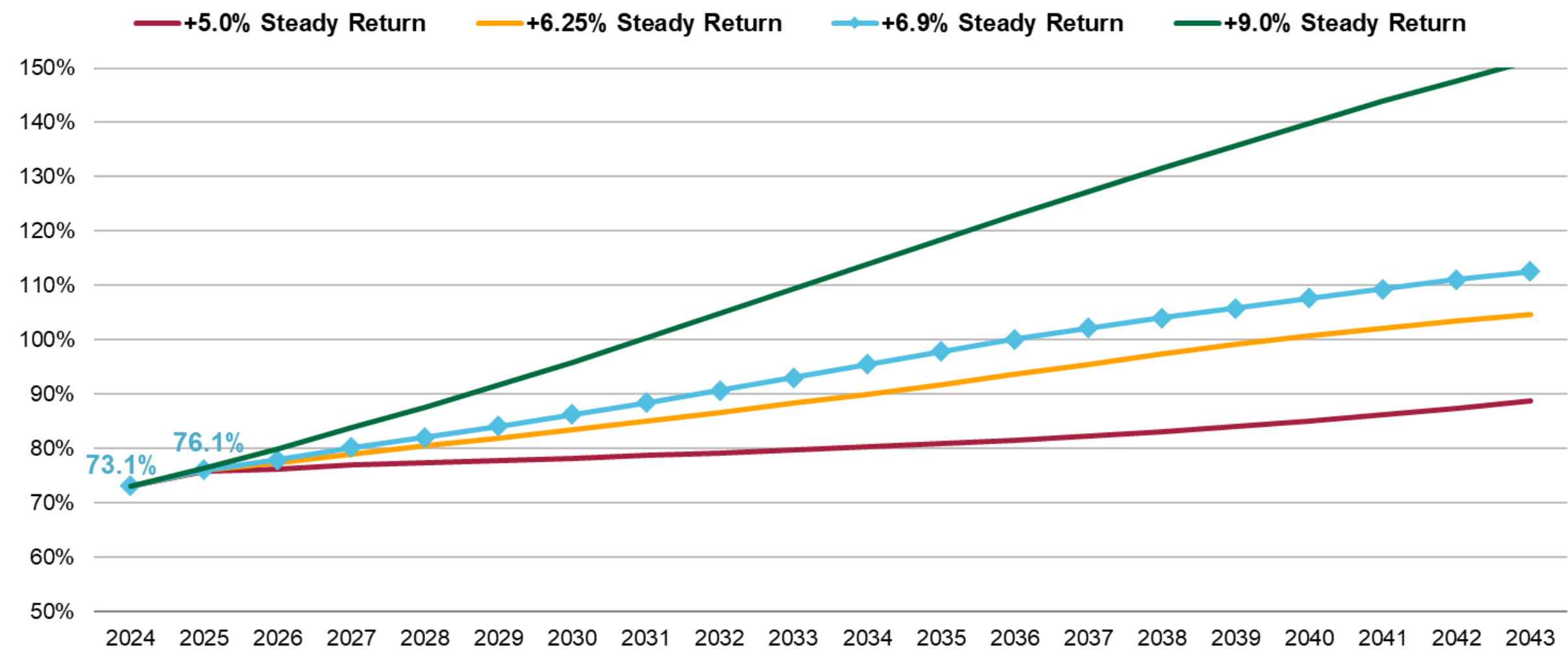


Analysis is on a system-wide level and does not reflect SB 849 reduction of 1.68% to 2025-27 School District Pool contribution rates

At 6.9% steady return, the average employer collared base rate:

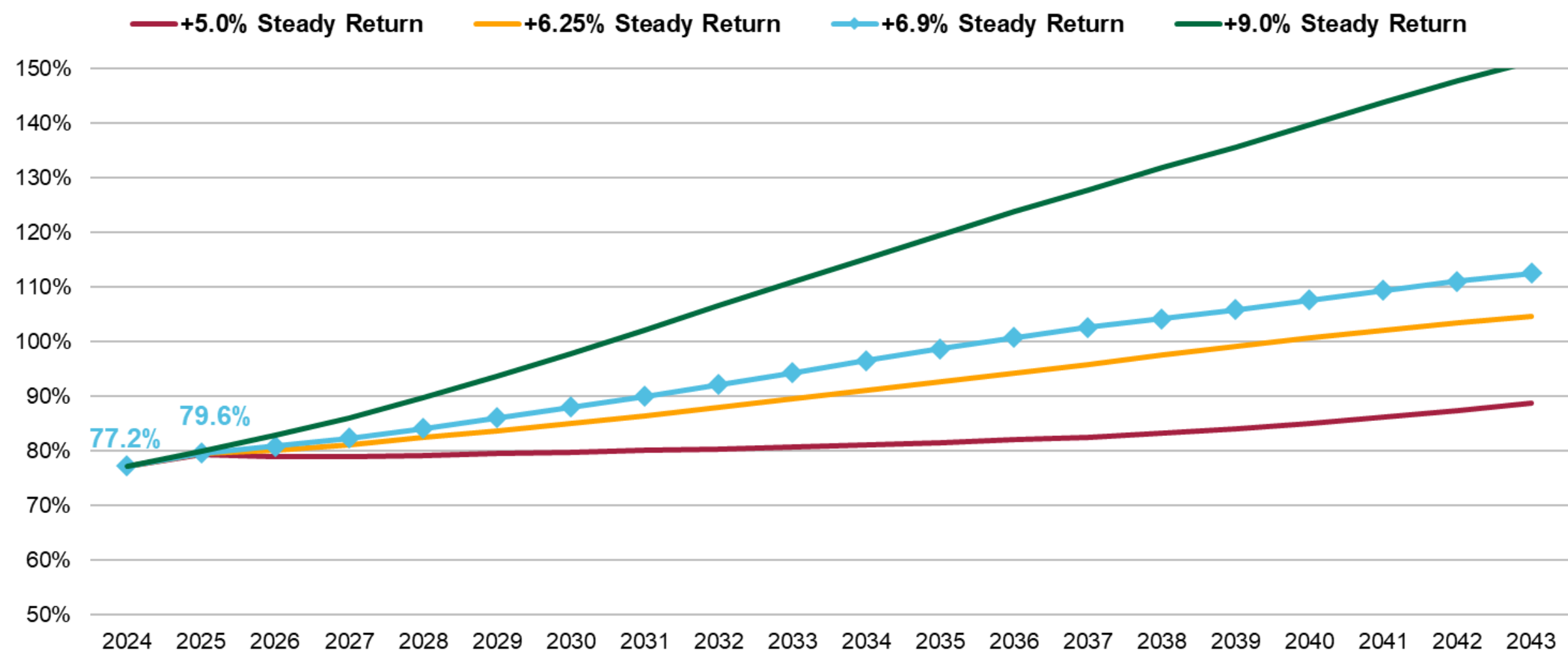
- Decreases modestly through July 2031 due to OPSRP members replacing Tier One/Tier Two; in July 2033 member contribution projected to switch off
- Drops 3%-4% in July 2037 once Tier One/Tier Two funded status exceeds 90%, allowing a decrease in collared UAL rates

System Funded Status (Excluding Side Accounts)



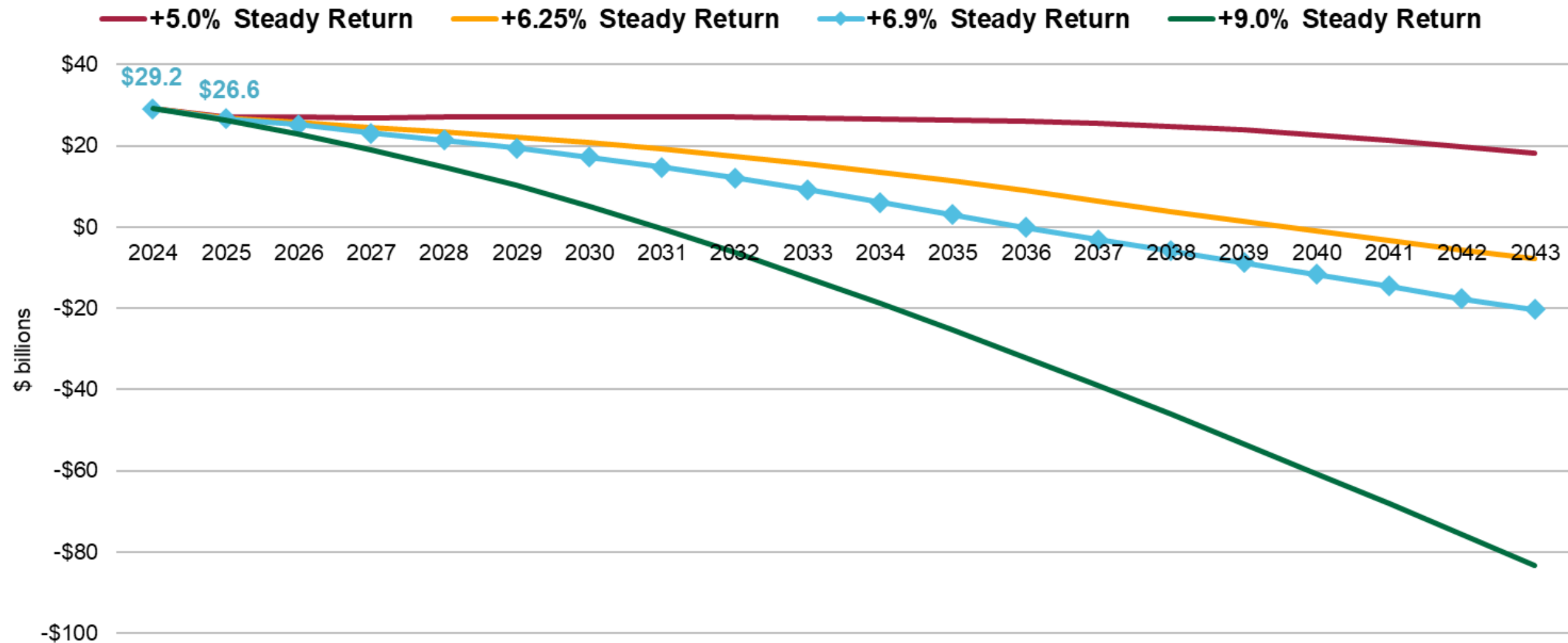
- 2025 funded status increases due to estimated year-end 2025 investment returns and contributions
- In steady +6.9% return scenario, funded status projected to reach 100% in 2036

System Funded Status (Including Side Accounts)



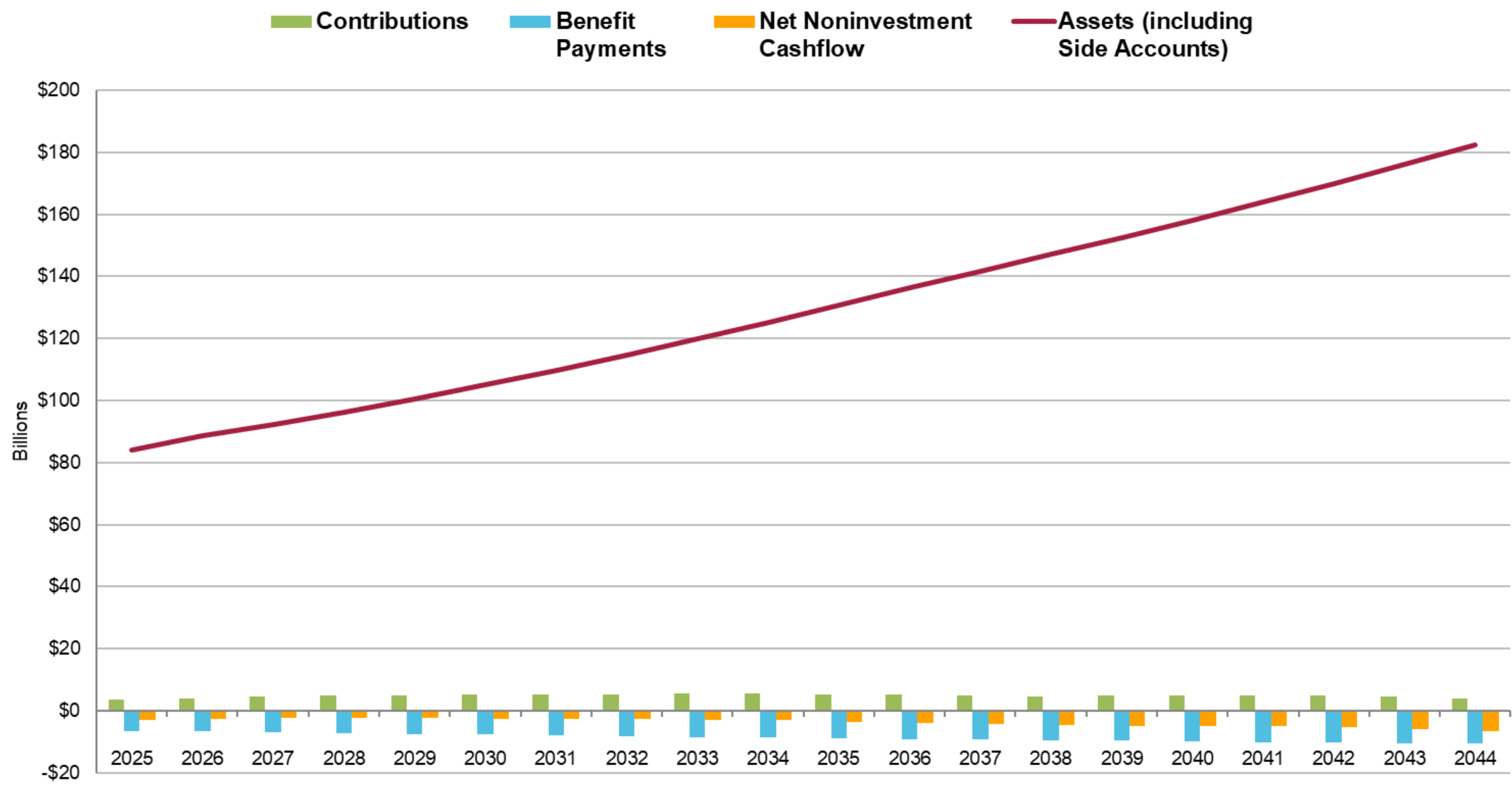
- 2025 funded status increases due to estimated year-end 2025 investment returns and contributions
- In steady +6.9% return scenario, funded status projected to reach 100% in 2036

UAL (Unfunded Actuarial Liability) Excluding Side Accounts

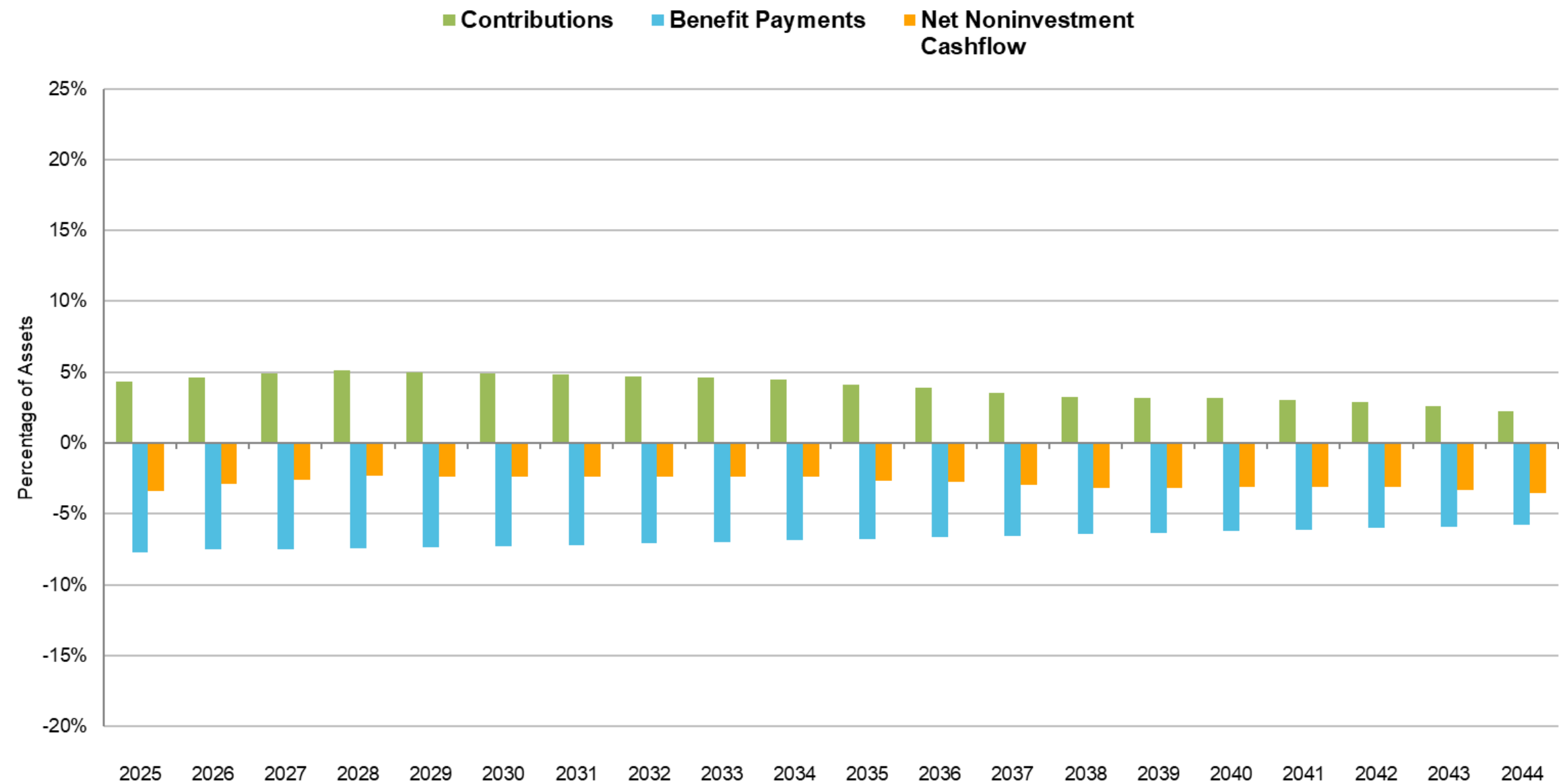


- 2025 UAL decreases due to estimated year-end 2025 investment returns and contributions
- At steady +6.9% return, UAL declines steadily, reaching \$0 at year-end 2036

Cash Flow and Asset Balance at +6.90% Actual Return in All Future Years

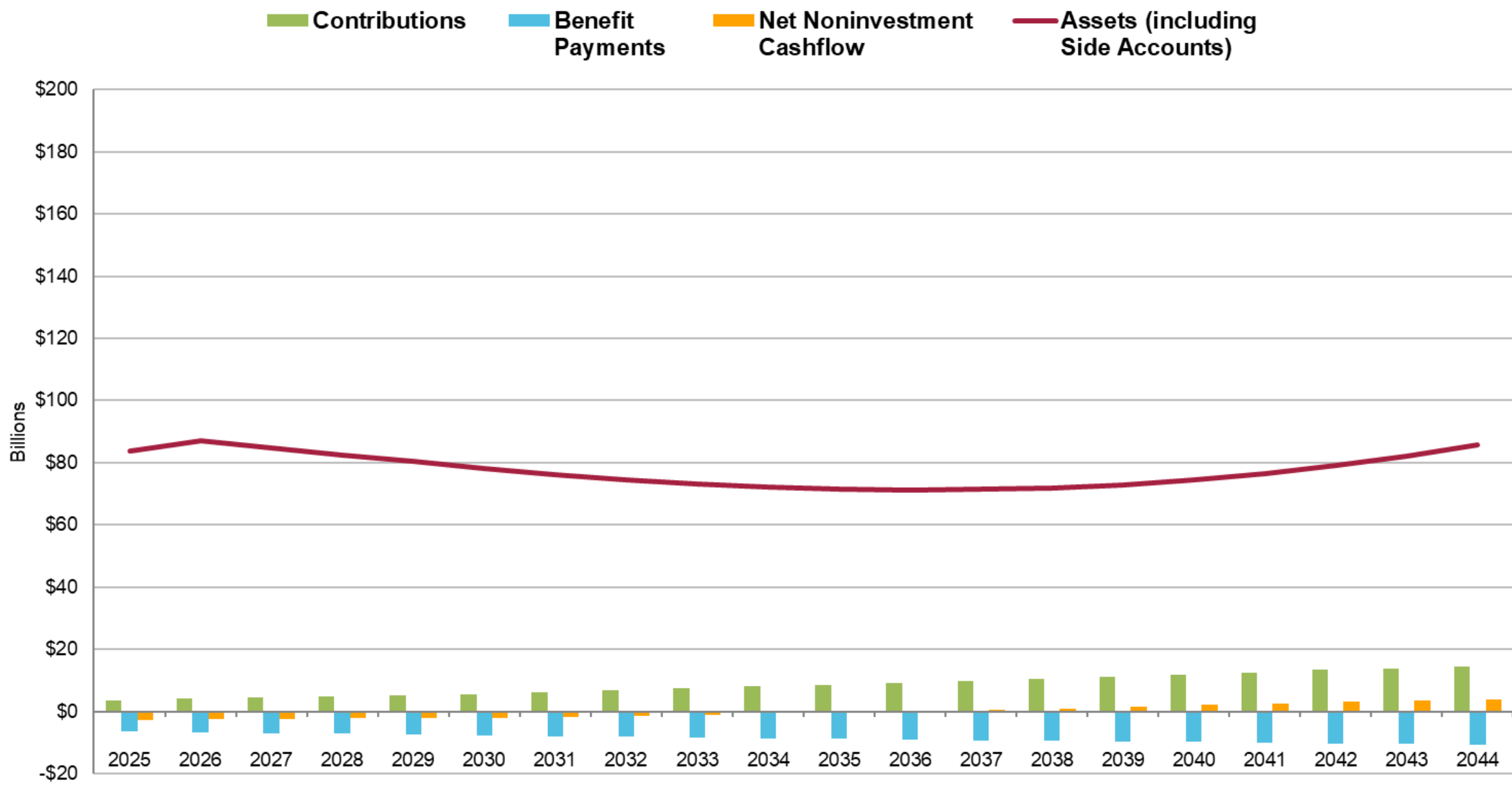


Cash Flows as % of Assets at +6.90% Actual Return in All Future Years

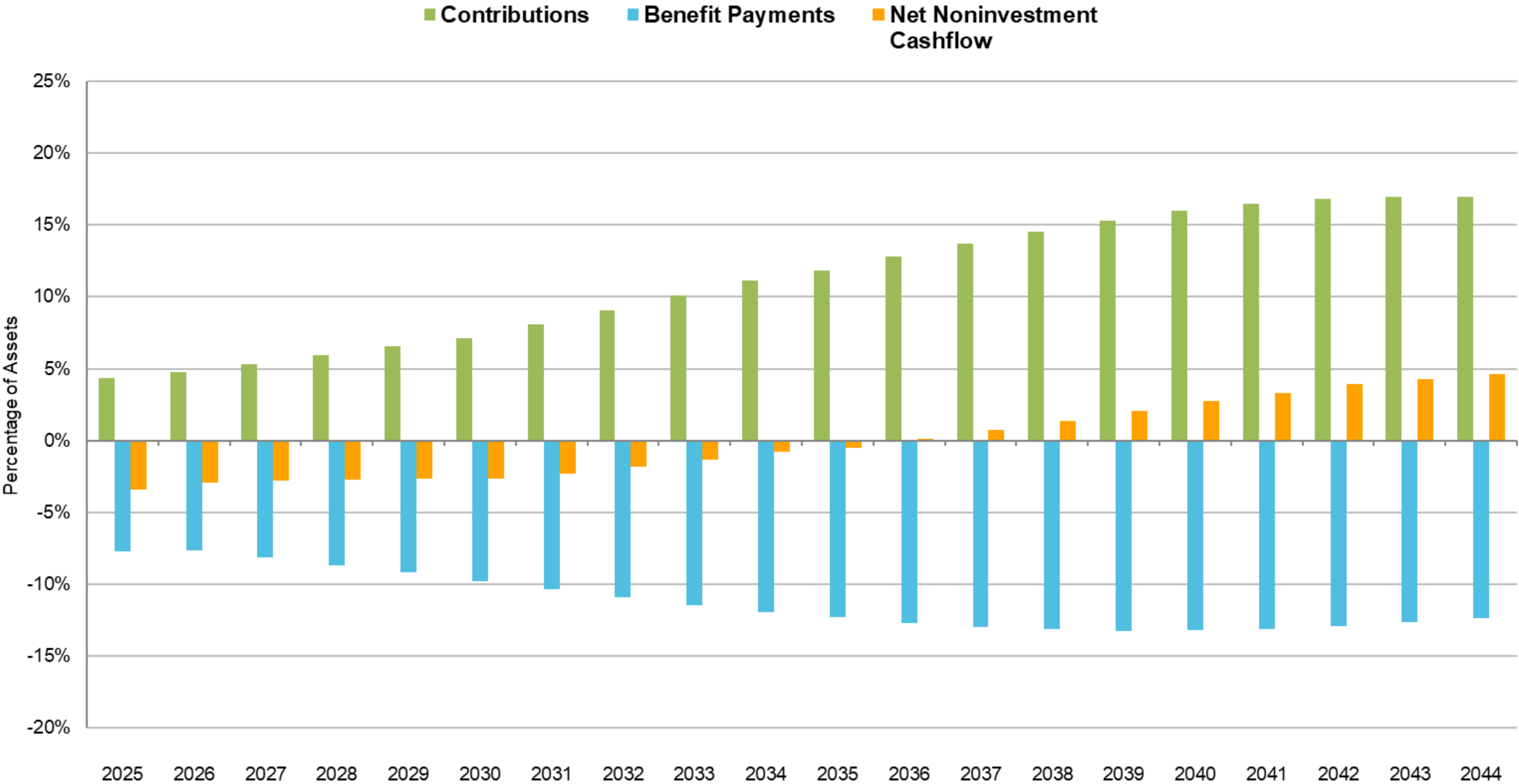


Net Noninvestment Cashflow = Contributions – Benefit Payments

Cash Flow and Asset Balance at +0.00% Actual Return in All Future Years



Cash Flows as % of Assets at +0.00% Actual Return in All Future Years



Net Noninvestment Cashflow = Contributions – Benefit Payments



Variable Return Model

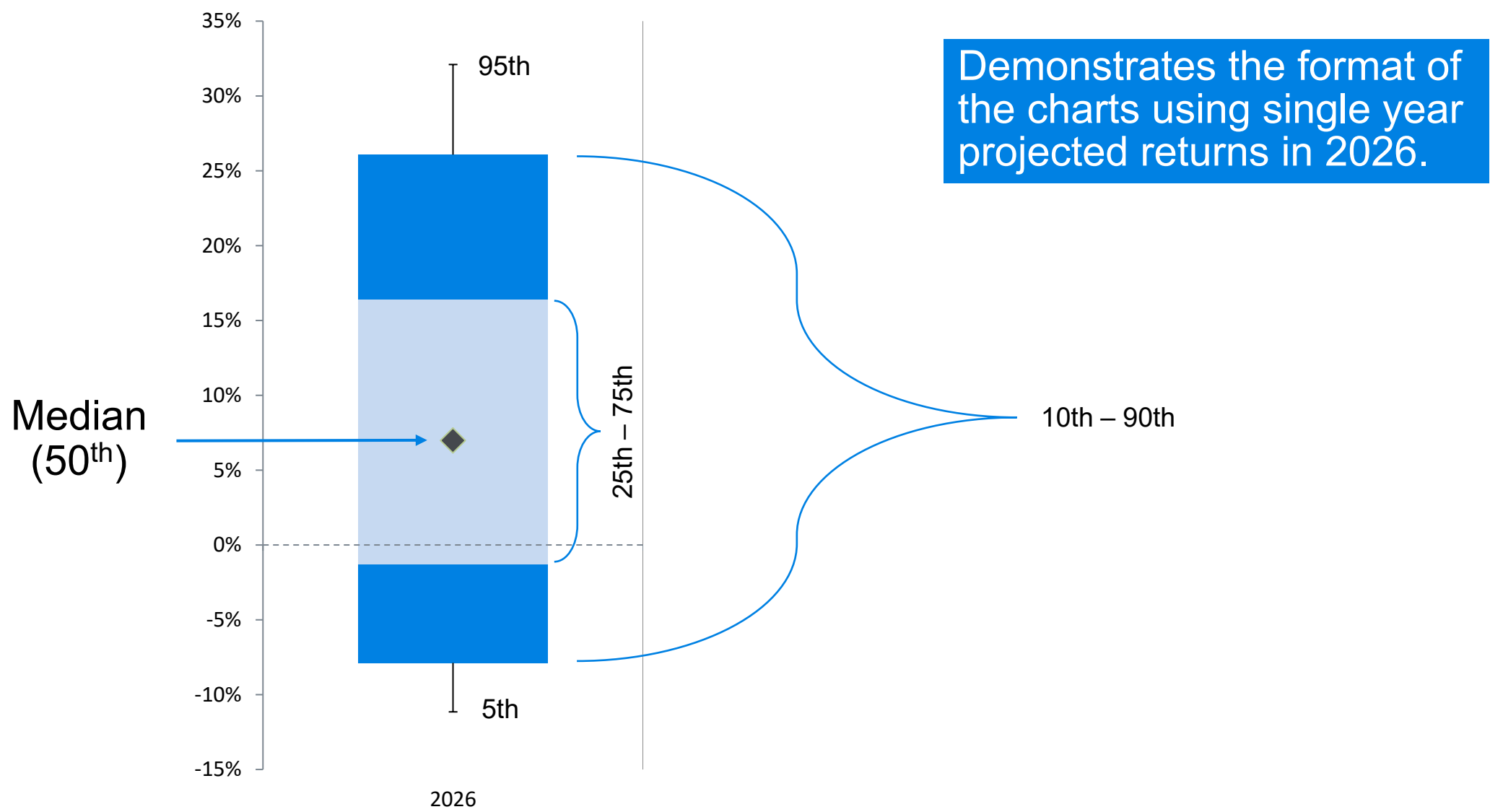
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Variable Return Model

- Model results are likelihood ranges instead of a single amount
 - The range's distribution is based on a stochastic simulation using 10,000 trials
 - Scenarios were developed by our national capital market specialists, and use the OPERF target asset allocation policy (reflecting recent proposed changes as described in the appendix); for these scenarios, the **median annualized average geometric 20-year return is 7.44%**, the same as last year's model
 - **Model incorporates published returns through September 2025**
- In our results charts, the dots represent median (50th percentile) outcomes
- We display model results from the 5th to 95th percentiles
 - Ten percent of model outcomes fall outside of the depicted range
- The chart format is demonstrated on the next slide

PERS Fund Rate of Return

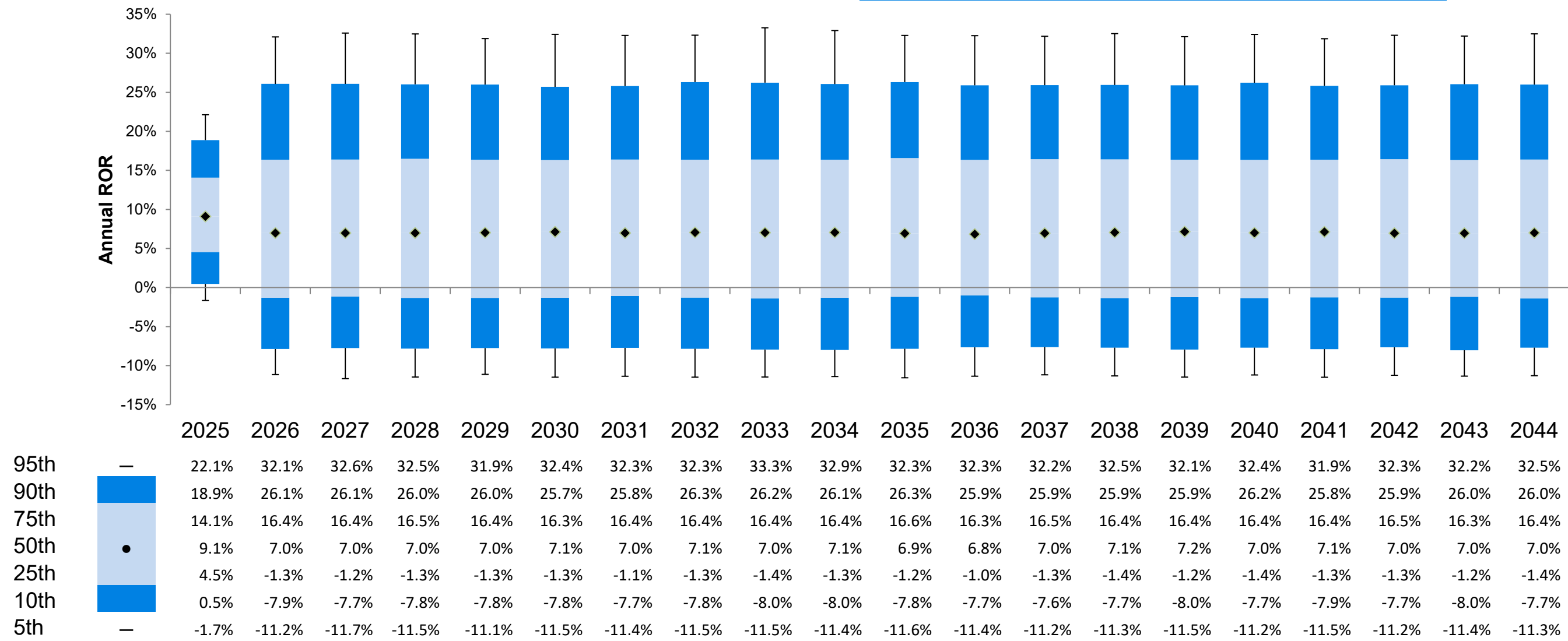
Projected 2026 Investment Returns



PERS Fund Rate of Return

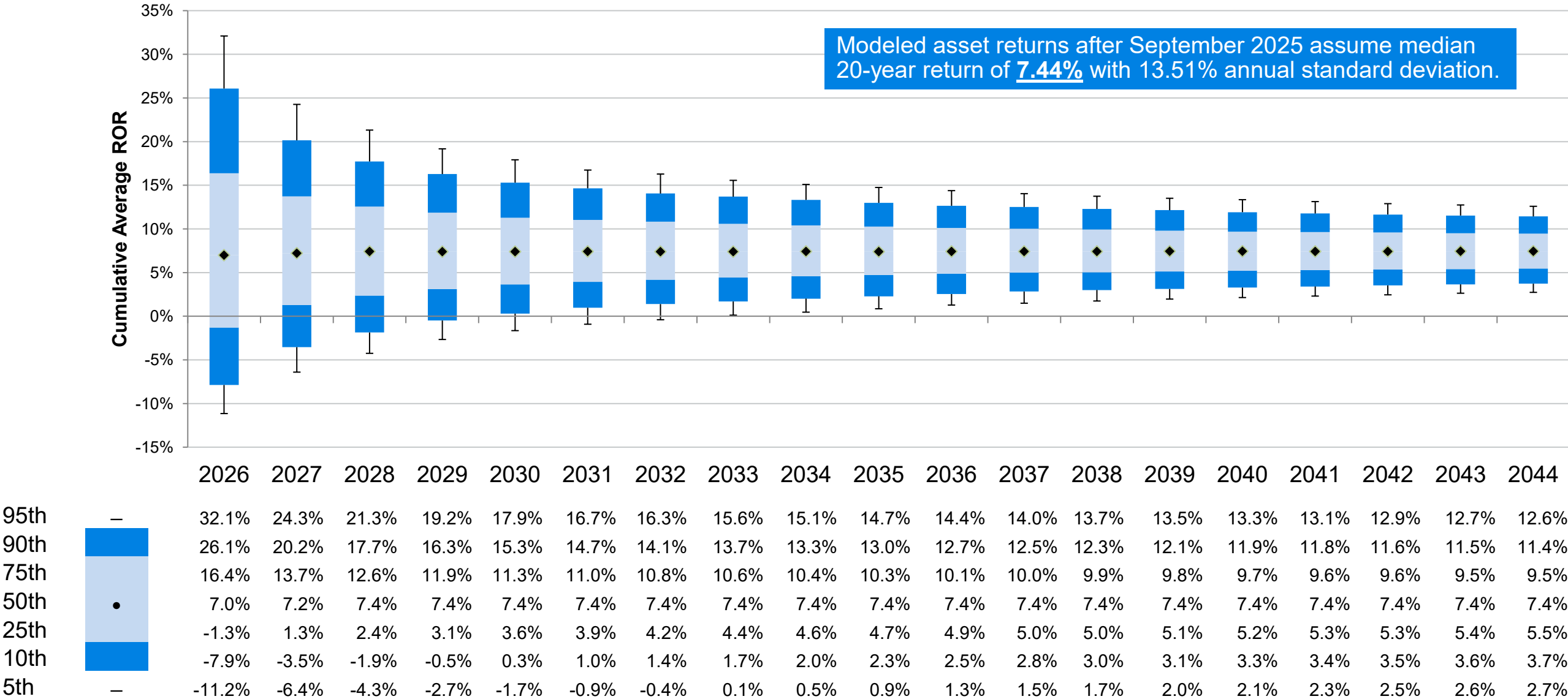
Single Calendar Year Investment Returns

The distribution of returns for 2025 reflects known results through September combined with modeled results for the last quarter of the year. Starting in 2026, our capital market outlooks model projects similar return ranges throughout the modeling period.



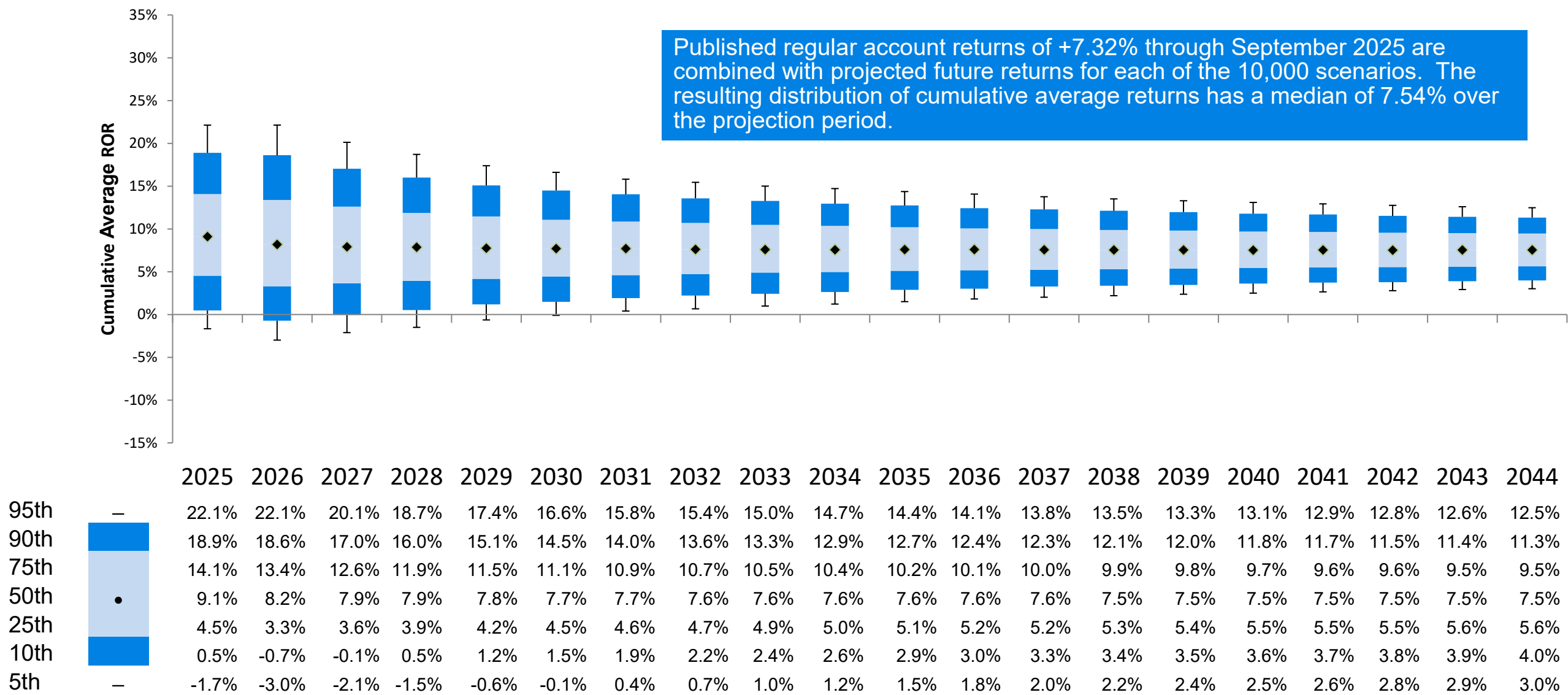
Average Annualized Rate of Investment Return

Post-2025 Modeled Returns (Geometric Average)



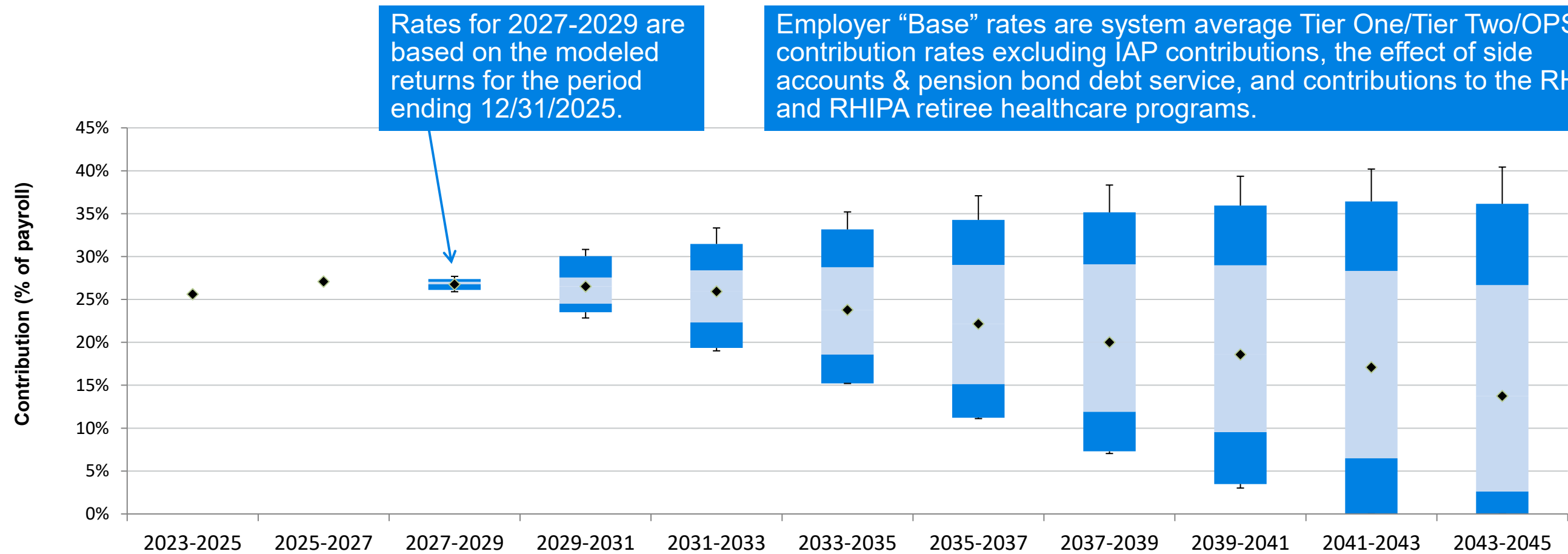
Average Annualized Rate of Investment Return

Post-2024 Modeled Returns (Geometric Average)



Employer Collared Base Pension Rates (System Average)

Analysis is on a system-wide level and does not reflect SB 849 reduction of 1.68% to 2025-27 School District Pool contribution rates

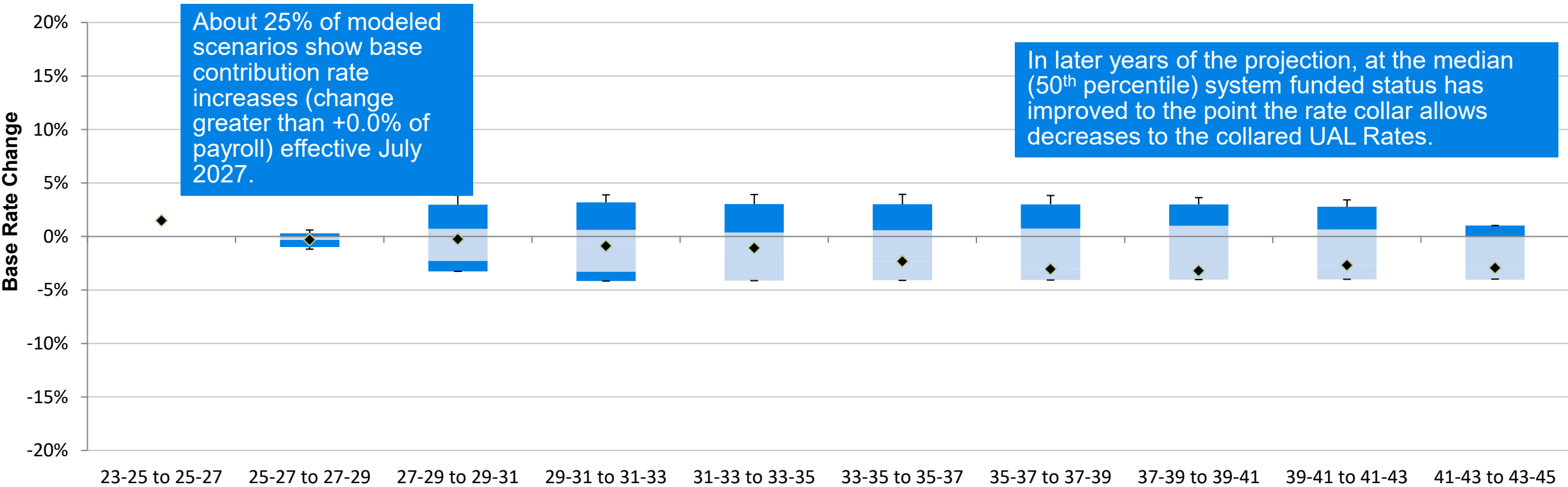


5th	—	25.6%	27.1%	27.7%	30.8%	33.3%	35.2%	37.1%	38.3%	39.4%	40.2%	40.4%
10th		25.6%	27.1%	27.4%	30.0%	31.5%	33.2%	34.3%	35.1%	35.9%	36.4%	36.1%
25th		25.6%	27.1%	27.1%	27.6%	28.4%	28.7%	29.0%	29.1%	29.0%	28.3%	26.7%
50th	•	25.6%	27.1%	26.8%	26.5%	25.9%	23.8%	22.1%	20.0%	18.6%	17.1%	13.7%
75th		25.6%	27.1%	26.8%	24.5%	22.3%	18.6%	15.1%	11.9%	9.5%	6.5%	2.6%
90th		25.6%	27.1%	26.1%	23.5%	19.3%	15.2%	11.2%	7.3%	3.5%	0.0%	0.0%
95th	—	25.6%	27.1%	25.9%	22.8%	19.0%	15.2%	11.1%	7.0%	3.0%	0.0%	0.0%

Biennial Change in Employer Collared Base Pension Rate

Analysis is on a system-wide level and does not reflect SB 849 reduction of 1.68% to 2025-27 School District Pool contribution rates

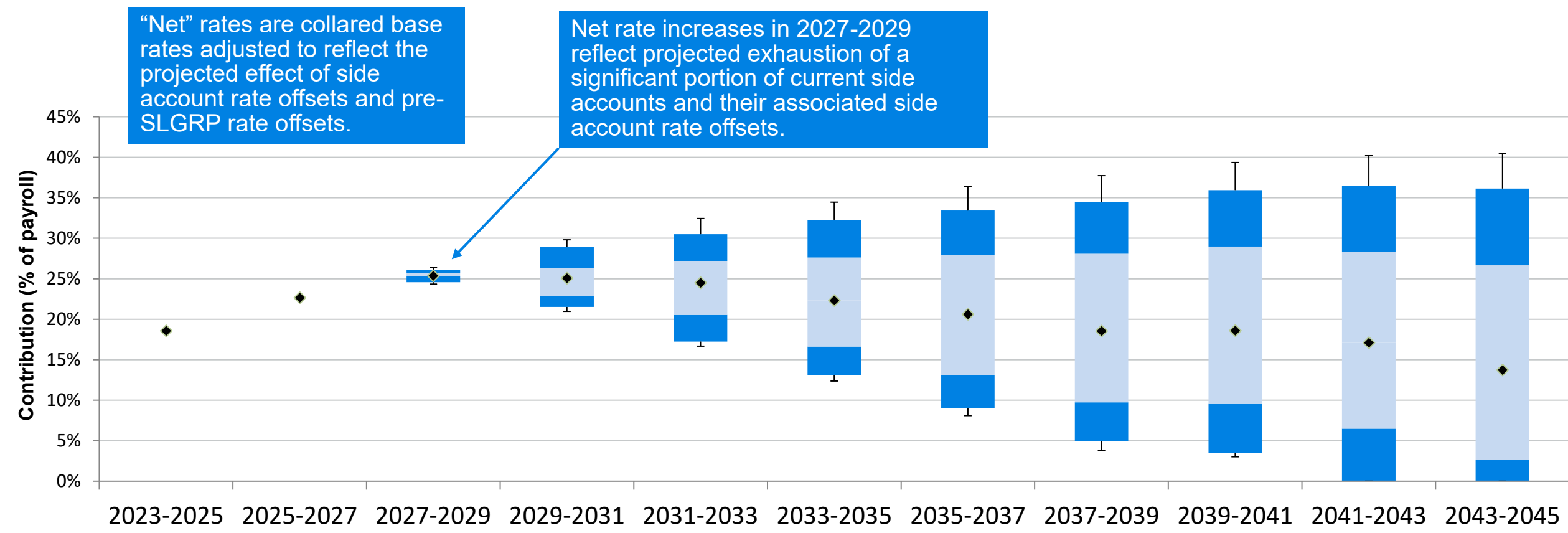
System Average Rates



5th	—	1.5%	0.6%	3.8%	3.9%	3.9%	3.9%	3.8%	3.6%	3.4%	1.0%
10th		1.5%	0.3%	3.0%	3.2%	3.0%	3.0%	3.0%	3.0%	2.8%	1.0%
25th		1.5%	0.0%	0.7%	0.6%	0.4%	0.6%	0.7%	1.0%	0.7%	0.0%
50th	•	1.5%	-0.3%	-0.3%	-0.9%	-1.1%	-2.3%	-3.1%	-3.2%	-2.7%	-2.9%
75th		1.5%	-0.3%	-2.3%	-3.3%	-4.1%	-4.1%	-4.1%	-4.0%	-4.0%	-4.0%
90th		1.5%	-1.0%	-3.3%	-4.2%	-4.1%	-4.1%	-4.1%	-4.0%	-4.0%	-4.0%
95th	—	1.5%	-1.2%	-3.3%	-4.2%	-4.1%	-4.1%	-4.1%	-4.0%	-4.0%	-4.0%

Employer Collared Net Pension Rates (System Average)

Analysis is on a system-wide level and does not reflect SB 849 reduction of 1.68% to 2025-27 School District Pool contribution rates



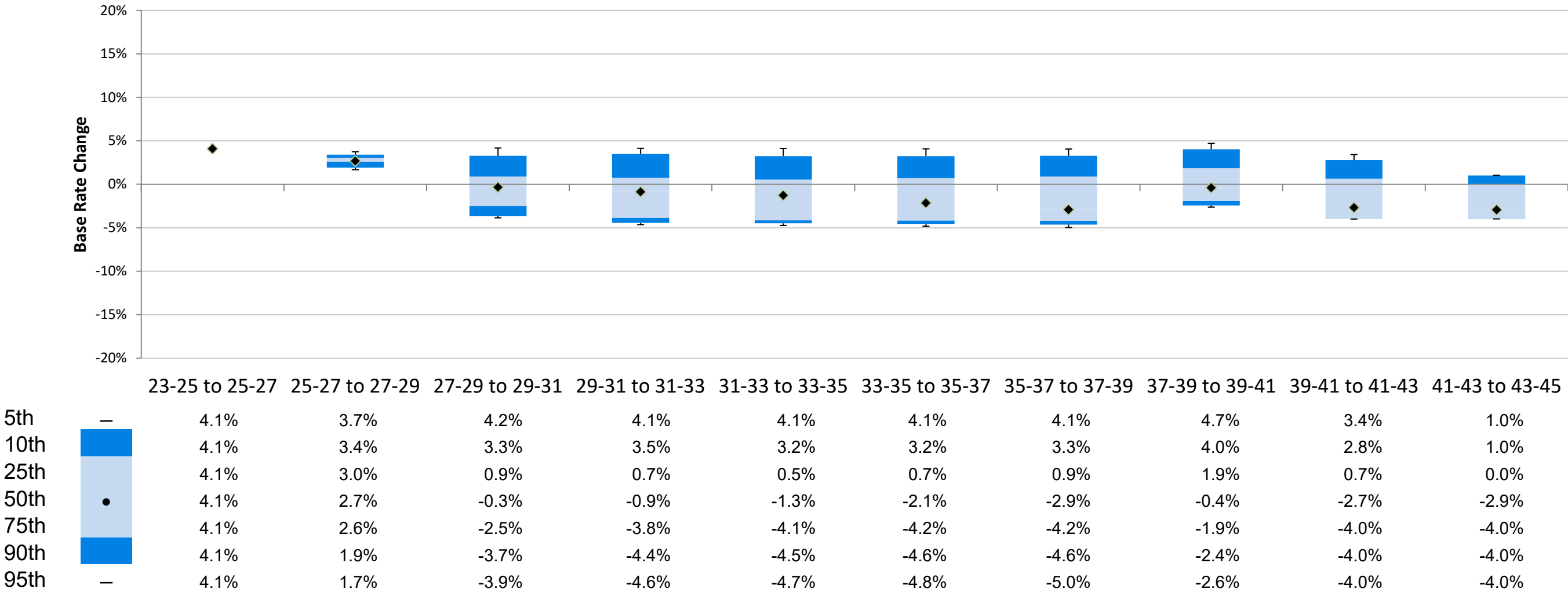
5th	—	18.6%	22.7%	26.4%	29.8%	32.4%	34.5%	36.4%	37.7%	39.4%	40.2%	40.4%
10th		18.6%	22.7%	26.1%	29.0%	30.5%	32.3%	33.4%	34.4%	35.9%	36.4%	36.1%
25th		18.6%	22.7%	25.7%	26.3%	27.2%	27.6%	27.9%	28.1%	29.0%	28.3%	26.7%
50th	•	18.6%	22.7%	25.3%	25.1%	24.5%	22.3%	20.6%	18.5%	18.6%	17.1%	13.7%
75th		18.6%	22.7%	25.3%	22.9%	20.5%	16.6%	13.1%	9.7%	9.5%	6.5%	2.6%
90th		18.6%	22.7%	24.6%	21.5%	17.2%	13.1%	9.0%	4.9%	3.5%	0.0%	0.0%
95th	—	18.6%	22.7%	24.3%	21.0%	16.7%	12.4%	8.1%	3.8%	3.0%	0.0%	0.0%

Biennial Change in Employer Collared Net Pension Rate

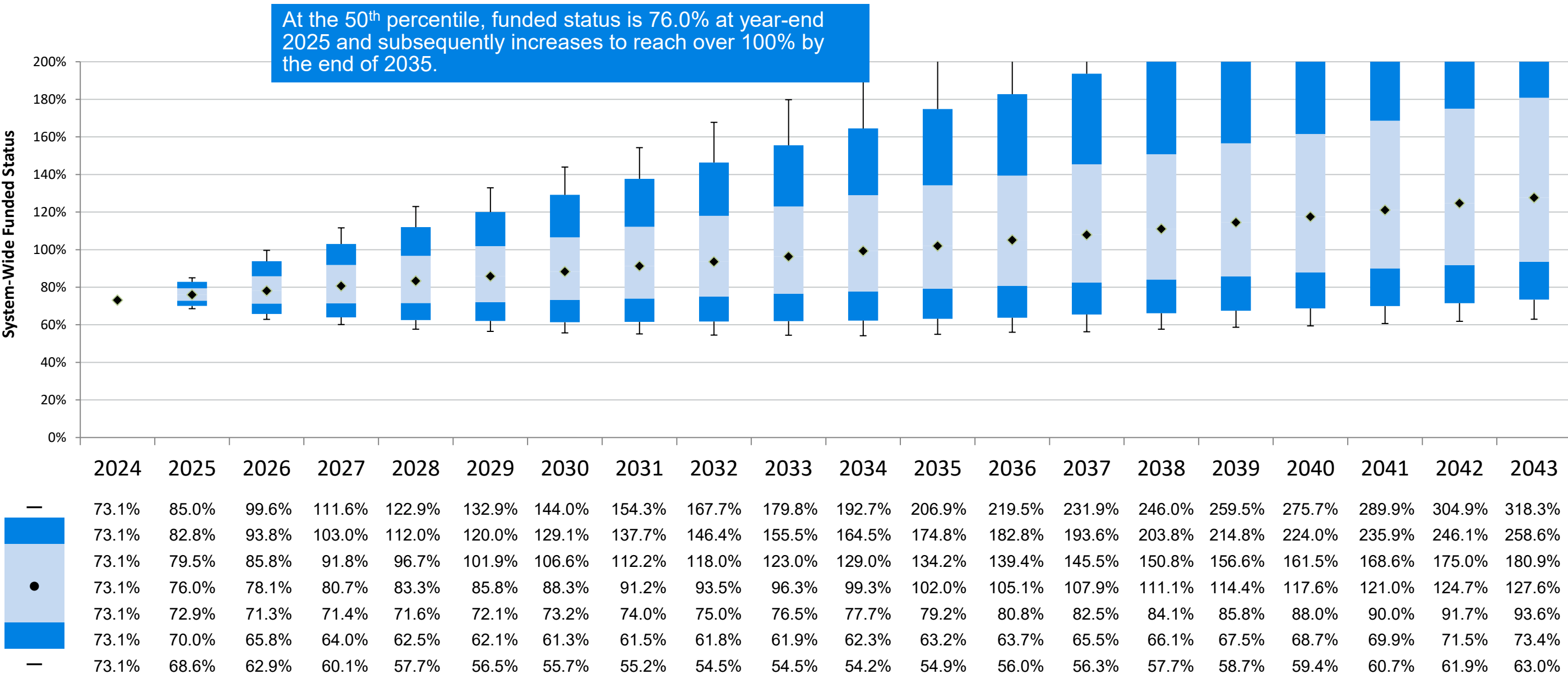
Analysis is on a system-wide level and does not reflect SB 849 reduction of 1.68% to 2025-27 School District Pool contribution rates

System Average Rates

The July 2027 increase is related to the projected exhaustion of a significant portion of current side accounts rate offsets prior to the expiration of the Tier One/Tier Two UAL rate amortization charges.

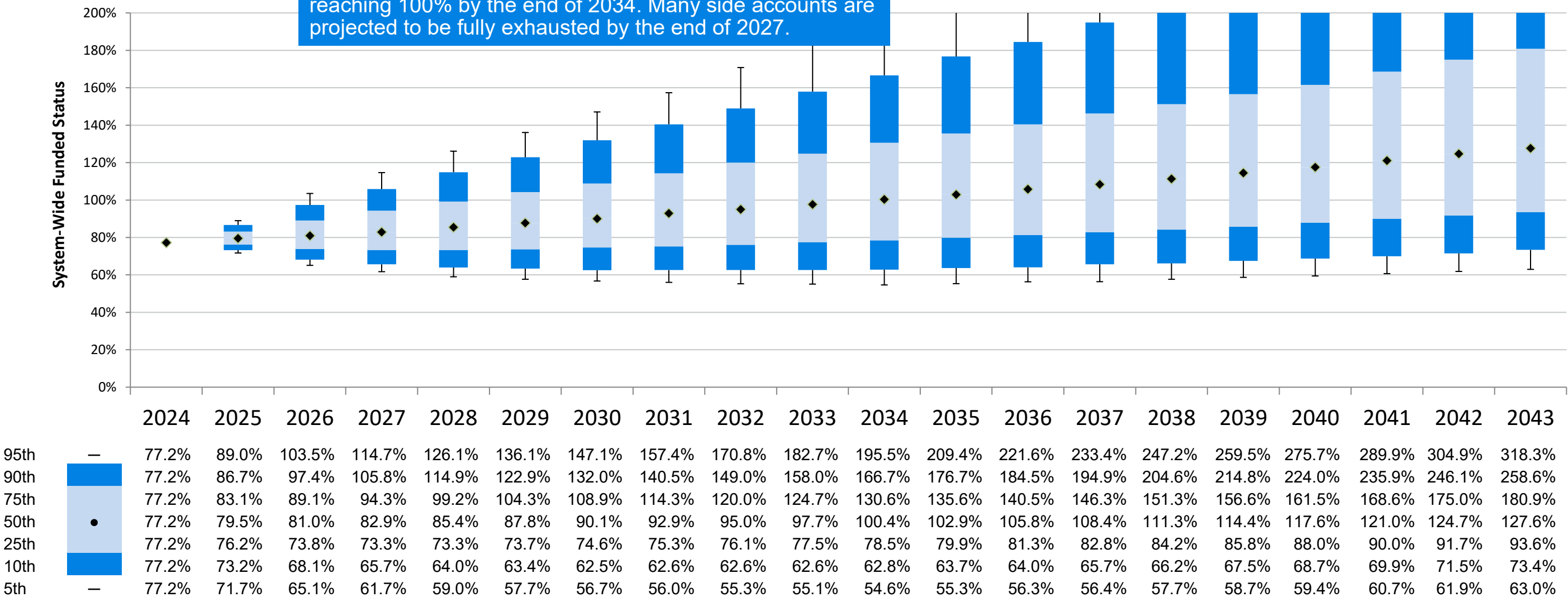


Funded Status (Excluding Side Accounts)



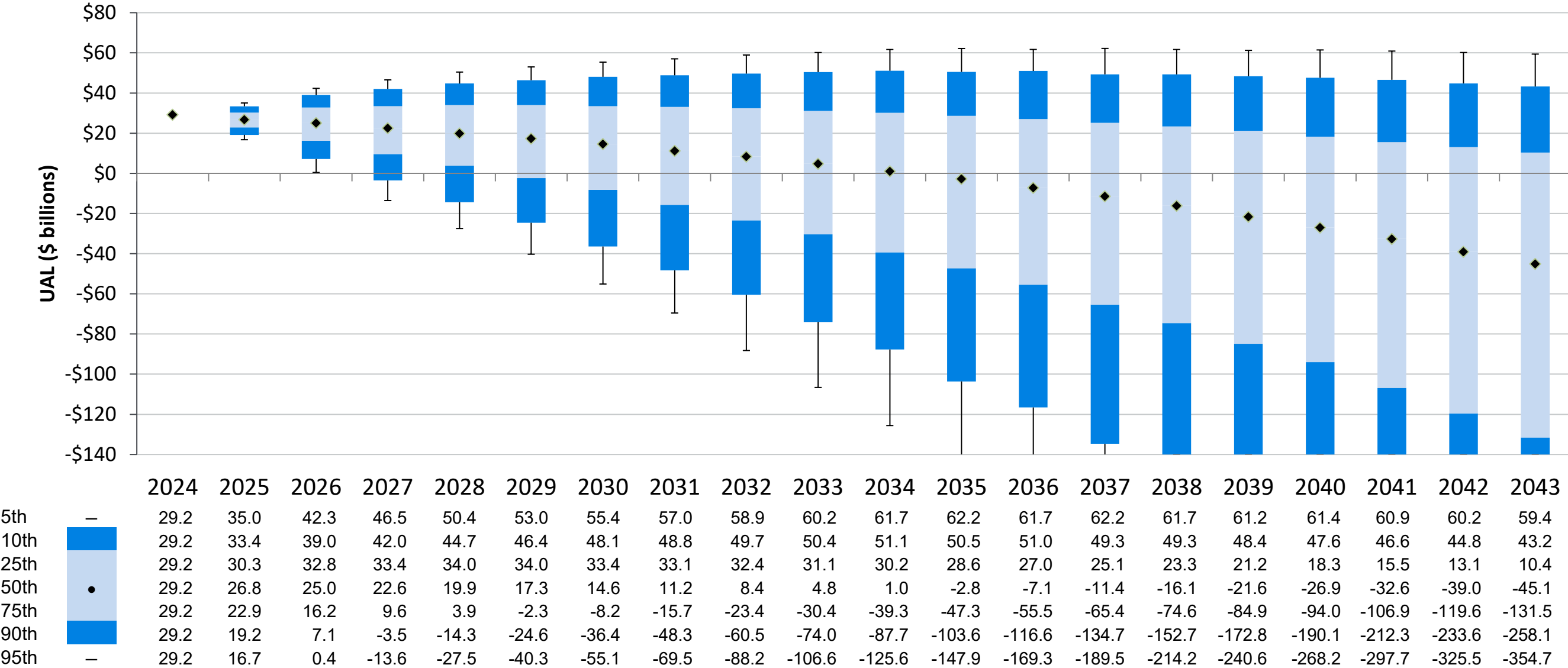
Funded Status (Including Side Accounts)

At the 50th percentile, funded status including side accounts is 79.5% at year-end 2025 and subsequently improves, reaching 100% by the end of 2034. Many side accounts are projected to be fully exhausted by the end of 2027.



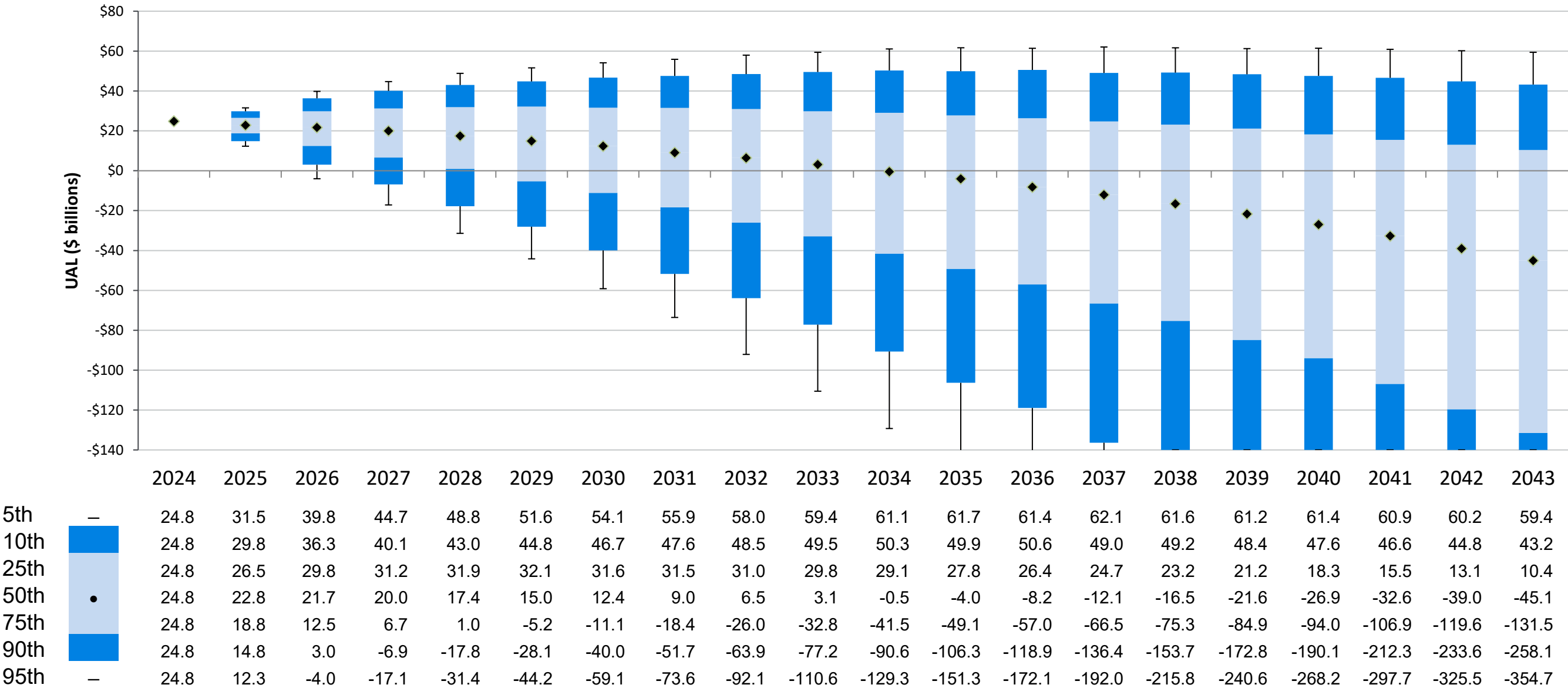
UAL (Excluding Side Accounts)

At the 50th percentile, the UAL excluding side accounts is \$26.8 billion at year-end 2025 and subsequently declines to less than \$0 by the end of 2035.



UAL (Including Side Accounts)

At the 50th percentile, the UAL including side accounts is \$22.8 billion at year-end 2025 and subsequently declines to less than \$0 by the end of 2034. Many side accounts are projected to be fully exhausted by the end of 2027.



Variable Return Model Stress Test

- As in recent years, we also used the variable return model to do a “stress test” of the likelihood of certain events in the 10,000 scenarios modeled
 - Testing is done at a system-average level; results for individual rate pools or employers may vary
- The percentage of modeled scenarios with funded status above a specified threshold at the end of the projection period is shown below
 - Median projected funded status excluding side accounts at year-end 2025 is 76.0%

Likelihood of Event Occurring at End of 20-Year Projection Period		Prior Year's Results
Funded Status (Excluding Side Accounts) > 100%	70%	68%
Funded Status (Excluding Side Accounts) > 90%	78%	76%
Funded Status (Excluding Side Accounts) > 80%	85%	84%
Funded Status (Excluding Side Accounts) > 70%	92%	90%
Funded Status (Excluding Side Accounts) > 60%	96%	95%

Variable Return Model Stress Test

- Median projected funded status excluding side accounts at year-end 2025 is 76.0%
- The likelihood of specified events occurring at some valuation date during the 20-year projection period is shown below

Likelihood of Event Occurring at Some Valuation Date in Next 20 Years		Prior Year's Results
Funded Status (Excluding Side Accounts) > 100%	87%	84%
Funded Status (Excluding Side Accounts) < 60%	27%	31%
Funded Status (Excluding Side Accounts) < 40%	2%	2%

Variable Return Model Stress Test

- The likelihood of specified events occurring during the 20-year projection period is shown below

Likelihood of Event Occurring in at Least One Biennium in Next 20 Years		Prior Year's Results
Employer Collared Base Rate (Excluding Retiree Healthcare) < 10% of Pay	42%	40%
Employer Collared Base Rate (Excluding Retiree Healthcare) > 30% of Pay	33%	44%
Employer Collared Base Rate (Excluding Retiree Healthcare) > 40% of Pay	6%	10%

- The system-average employer base rate for the 2025-2027 biennium is about 27.1%, per the December 31, 2023 valuation

Variable Return Model Stress Test

- Table shows likelihood in the model of an employer collared base rate increase exceeding a selected threshold at the July 2029 rate change dates

Likelihood of the Employer Collared Base Rate Increase Exceeding Threshold	
<u>Threshold Increase</u>	<u>July 2029</u>
2% of Pay	15%
3% of Pay	10%
4% of Pay	<1%

- Changes in net rates will vary by employer** depending on the size and amortization schedule of any side account(s) or SLGRP adjustments the employer may have
 - Rate offsets and charges for most SLGRP adjustments are scheduled to expire July 2029**, which will influence the net rate change for affected employers

Wrap Up / Next Steps

- At the January 30, 2026 meeting, preliminary year-end 2025 investment results will be available
 - We can then comment as warranted on estimated impact on the rate-setting 12/31/2025 actuarial valuation, which will develop 2027 – 2029 contribution rates



Appendix

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Certification

This presentation summarizes deterministic and stochastic modeling for the Oregon Public Employees Retirement System (“PERS” or “the System”) over a 20-year period beginning December 31, 2024 under a wide range of potential economic scenarios. The results are based upon the same assumptions, methods, and plan provisions as described in the 2024 Experience Study and the December 31, 2024 System-Wide Actuarial Valuation Report, except where noted otherwise.

Actuarial computations presented in this report are for purposes of determining the recommended funding amounts consistent with the adopted funding policy of the System. The computations prepared for other purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System’s funding policy. The calculations in this report have been made on a basis consistent with our understanding of the plan provisions described in the appendix of this report. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System’s staff. This information includes, but is not limited to, statutory provisions, employee data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different, and our calculations may need to be revised.

Actuarial assumptions, including discount rates, mortality tables, and others identified in this report, and actuarial cost methods are adopted by the PERS Board, which is responsible for selecting the plan’s funding policy, actuarial valuation methods, asset valuation methods, and assumptions. The policies, methods, and assumptions used in this valuation are those that have been so adopted and are described in this report. The System is solely responsible for communicating to Milliman any changes required thereto. All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which, in our professional opinion, are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System and are expected to have no significant bias. The valuation results were developed using models intended for valuations that use standard actuarial techniques. We have reviewed the models, including their inputs, calculations, and outputs for consistency, reasonableness, and appropriateness to the intended purpose and in compliance with generally accepted actuarial practice and relevant actuarial standards of practice.

Certification

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While the valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct. Determining results using alternative assumptions is outside the scope of our engagement.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements. Our December 31, 2024 Actuarial Valuation Report provides additional discussion of the System's risks. The PERS Board has the final decision regarding the appropriateness of the assumptions and actuarial cost methods.

Milliman's work is prepared solely for the internal business use of the Oregon Public Employees Retirement System. Milliman does not intend to benefit or create a legal duty to any third-party recipient of this report. No third-party recipient of Milliman's work product should rely upon this report. Such recipients should engage qualified professionals for advice appropriate to their own specific needs. No third-party recipient of Milliman's work product should rely upon Milliman's work product. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel. The actuaries are independent of the plan sponsors. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the principles prescribed by the Actuarial Standards Board and the *Code of Professional Conduct and Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States* published by the American Academy of Actuaries. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Appendix

Actuarial Basis

Data

We have based our calculation of the liabilities on the data supplied by the Oregon Public Employees Retirement System and summarized in the Valuation Report.

Assets as of December 31, 2024, were based on values provided by Oregon PERS reflecting the Board's earnings crediting decisions for 2024, as shown in the Valuation Report. Financial model projections reflect September 30, 2025 investment results for regular and variable accounts as published by Oregon State Treasury.

Methods / Policies

Actuarial Cost Method: Entry Age Normal, adopted effective December 31, 2012.

UAL Amortization: The UAL for OPSRP and Retiree Health Care as of December 31, 2007 were amortized as a level percentage of combined valuation payroll over a closed 16-year period for OPSRP and a closed 10-year period for Retiree Health Care. For the Tier One/Tier Two UAL, the amortization period was reset at 20 years as of December 31, 2013. Senate Bill 1049 was signed into law in June 2019 and required a one-time re-amortization of Tier One/Tier Two UAL over a closed 22-year period at the December 31, 2019 rate-setting valuation, which set actuarially determined contribution rates for the 2021-2023 biennium. Gains and losses between subsequent odd-year valuations are amortized as a level percentage of combined valuation payroll over the amortization period (20 years for Tier One/Tier Two, 16 years for OPSRP, 10 years for Retiree Health Care) from the odd-year valuation in which they are first recognized.

For the Retiree Health Care programs (RHIA and RHIPA), beginning with the December 31, 2021 rate-setting valuation the amortization policy when a program is over 100% funded status will be to amortize the actuarial surplus over Tier One/Tier Two payroll using a rolling 20-year amortization basis. The resulting negative UAL Rate will offset the normal cost rate for the program, but not below 0.0%. If either program subsequently fell below 100%, the UAL would be amortized over combined payroll following the 10-year closed, layered amortization policy.

Appendix

Actuarial Basis

Methods / Policies (cont'd)

Contribution rate stabilization method: The UAL Rate contribution rate component for a rate pool (e.g. Tier One/Tier Two SLGRP, Tier One/Tier Two School Districts, OPSRP) is confined to a collared range based on the prior biennium's collared UAL Rate contribution rate component (prior to consideration of side account offsets, SLGRP transition liability or surplus rates, or pre-SLGRP liability rate charges or offsets).

Collar Width: the rate pool's new UAL Rate contribution rate component will generally not increase or decrease from the prior biennium's collared UAL Rate contribution rate component by more than the following amount:

- Tier One/Tier Two SLGRP and Tier One/Tier Two School District Pool: 3% of payroll
- OPSRP: 1% of payroll
- Tier One/Tier Two rates for independent employers: greater of 4% of payroll or one-third of the difference between the collared and uncollared UAL Rate at the prior rate-setting valuation. In addition, the UAL Rate will not be allowed to be less than 0.00% of payroll for any Tier One/Tier Two independent employer with a funded status (excluding side accounts) less than 100%.

UAL Rate decrease restrictions: the UAL Rate for any rate pool will not be allowed to decrease if the pool's funded status is 87% (excluding side accounts) or lower; the allowable decrease will phase into the full collar width from 87% funded to 90% funded.

Expenses: System-wide administration expenses are assumed to be equal to \$72.0M. The assumed expenses are allocated between Tier One/Tier Two and OPSRP based on projected payroll and are added to the respective normal costs.

Actuarial Value of Assets: Equal to Market Value of Assets excluding Contingency and Tier One Rate Guarantee Reserves. The Tier One Rate Guarantee Reserve is not excluded from assets if it is negative (i.e. in deficit status). The Actuarial Value of Assets includes the value of Employee Pension Stability Accounts (EPSA).

Assumptions

Assumptions for valuation calculations are as described in the 2024 Experience Study Report.

Provisions

Provisions valued are as detailed in the December 31, 2024 System-Wide Actuarial Valuation Report.

Appendix

Rate Projection Basis

Assumptions

In general, all assumptions are as described in the 2024 Experience Study Report.

The major actuarial valuation assumptions used in our projections are shown below. They are aggregate average assumptions that apply to the whole population and were held constant throughout the projection period. The economic experience adjustments were allowed to vary in future years given the conditions defined in each economic scenario.

- Valuation interest rate – 6.90%
- Tier One Regular account growth – 6.90%
- Actual fund investment return – Varies by scenario according to capital market assumptions
- Variable account growth – Equal to investment return on public equity portion of the fund
- Inflation assumption – 2.40%
- Inflation experience – Varies by scenario according to capital market assumptions
- Wage growth assumption – 3.40%
- Wage growth experience – 1.00% greater than inflation experience
- Demographic experience – as described in 2024 Experience Study Report
- New entrant experience – New members are assumed to be hired at the rate necessary to keep the total number of members in each job class (General Service, School District, Police & Fire, and Judges) constant over the duration of the projection. All new entrants other than judges are assumed to join as OPSRP members. New entrant pay is assumed to grow at the rate necessary for overall system payroll to increase with wage growth experience, as described above.

Appendix

Rate Projection Basis

Reserve Projection

Contingency Reserve as of 12/31/2024 was \$50.0M. No future increases or decreases to this reserve were assumed.

The Tier One Rate Guarantee Reserve (“RGR”) was \$741.1 M as of 12/31/2024. The RGR was assumed to grow with excess returns above the 6.90% target growth on Tier One Member Accounts. When modeled aggregate returns were below 6.90%, applicable amounts from the RGR were assumed to transfer to Tier One Member Accounts to maintain the 6.90% target growth rate. The RGR is allowed to be negative, but the reserve is not excluded from valuation assets when it is negative. We did not include in rates any potential additional employer levy that could be required to eliminate a persistent negative RGR.

Offset for Member Redirect Contributions

Under Senate Bill 1049, a portion of the 6% of pay member contribution previously made to the IAP was redirected to fund Tier One/Tier Two and OPSRP defined benefits beginning July 1, 2020. For Tier One/Tier Two members, the redirected amount will be 2.50% of pay, and for OPSRP it will be 0.75% of pay. Members with less than \$2,500 in monthly pay (indexed in future years) will be exempt from the redirection.

For the rate projection, member redirect contributions are assumed to offset the contribution rates paid by employers. The offset is assumed to be 2.40% of total payroll for Tier One/Tier Two and 0.65% of total payroll for OPSRP.

Redirected member contributions are assumed to cease in a biennium following a rate-setting valuation where the funded status, including side accounts, is 90% or greater.

Work After Retirement Contributions

Under Senate Bill 1049, starting in 2020 and ending December 31, 2024, employers are required to pay PERS contribution rates on rehired retiree payroll. In 2023, HB 2296 extended the end date for this provision to December 31, 2034. For 2025, rehired retiree payroll was assumed to be approximately \$281.0M for Tier One/Tier Two members and \$26.3M for OPSRP members. After 2025, rehired retiree payroll was assumed to increase with the wage growth assumption.

Appendix

Rate Projection Basis

Capital Market Model

For each 20-year projection, we ran 10,000 stochastic scenarios for inflation and asset class rates of return. The scenarios were calibrated to represent Milliman's capital market assumptions in terms of expected average real returns, the expected year-to-year volatility of the returns, and the expected correlation between the returns of different asset classes. Annual rates of return for each of the asset classes and inflation are generated from a multivariate lognormal probability distribution. Rates of return are independent from year to year.

The variable return model includes 10,000 projected scenarios for possible future year-by-year system investment returns and levels of inflation. In developing that model, per Actuarial Standards of Practice we disclose reliance upon a Milliman colleague who is a credentialed actuary and also a credentialed investment professional with expertise in preparing capital outlook modeling. We reviewed overall model results for reasonability while, as part of his work, our investment professional colleague reviewed the investment projections for internal consistency.

For this purpose, we considered the Oregon PERS Fund to be allocated among the model's asset classes as shown on the following slide. This allocation is based on input provided by Meketa (OIC's primary consultant) and reflects changes to the OIC's target allocation for the Oregon PERS fund adopted at the January 25, 2023 OIC meeting.

Appendix

Rate Projection Basis

Capital Market Model

Reflects Milliman’s capital market assumptions as of July 1, 2025.

	Annual Arithmetic Mean	20-Year Annualized Geometric Mean	Annual Standard Deviation	Policy Allocation
Global Equity	8.24%	6.67%	18.34%	27.500%
Private Equity	12.60%	8.53%	30.00%	25.500%
Real Estate	8.14%	6.82%	16.82%	12.250%
US Core Fixed Income	4.75%	4.65%	4.57%	25.000%
Hedge Fund – Macro	5.75%	5.54%	6.10%	5.625%
Hedge Fund – Equity Hedge	6.90%	6.15%	11.81%	0.625%
Hedge Fund – Multistrategy	6.37%	6.01%	8.70%	1.250%
Infrastructure	8.02%	6.62%	17.35%	1.500%
Master Limited Partnerships	9.12%	5.92%	26.23%	0.750%
US Inflation (CPI-U)	2.40%	2.40%	1.47%	N/A
Fund Total (reflecting asset class correlations)	8.30%	7.51%*	13.51%	100.00%

* The model’s 20-year annualized geometric median is 7.44%.

Retirement System Risks

- Oregon PERS, like all defined benefit systems, is subject to various risks that will affect future system liabilities and contribution requirements, including:
 - **Investment risk:** the potential that investment returns will be different than assumed
 - **Demographic risks:** the potential that mortality experience, retirement behavior, or other demographic experience for the system membership will be different than assumed
 - **Contribution risk:** the potential that actual future contributions will be materially different than expected, for example if there are material changes in the system's covered payroll
- The results of an actuarial valuation are based on one set of reasonable assumptions, but it is almost certain that future experience will not exactly match the assumptions.
- Further discussion of system risks and historical information regarding system experience are shown in our annual actuarial valuations. In addition, our annual financial modeling presentation to the PERS Board illustrates future outcomes under a wide range of future scenarios reflecting variation in key risk factors.