



Financial Statement Overview

July 1, 2022-June 30, 2023

Oct. 19, 2023

- Fiscal year unaudited financial statements and highlights are reported annually after financial reporting close
- Financial statements are prepared in conformity with generally accepted accounting principles (GAAP) and the Governmental Accounting Standards Board (GASB)
 - GASB issued GASB Statement No. 96, *Subscription-Based Information Technology Arrangements* (effective date is for reporting periods after June 15, 2022)
- Annual financial statements are used by the external actuary for the pension and health care actuary valuations
- Financial statements are audited annually by Crowe LLC, under the oversight of the Ohio Auditor of State

- Financial statements show reporting by plan – defined benefit, defined contribution and health care
- *Statements of Fiduciary Net Position* – snapshot of financial assets and liabilities as of June 30
- *Statements of Changes in Fiduciary Net Position* – shows additions and deductions for the fiscal year
- STRS Ohio issues comparative financial statements

- **June**
 - Crowe begins external financial statement audit
- **August**
 - Plan participant data file provided to external actuary (Cheiron) and Crowe
 - Audit Committee meeting with Crowe
- **September**
 - IT systems review completed by Crowe
 - Albourne validation of fiscal year management fees
 - Fiscal year financial reporting cutoff
- **October**
 - Unaudited financial statements provided to Crowe, Cheiron and the Board
 - Cheiron presents pension and health care valuations to the Board

- **November**

- Unaudited *Annual Comprehensive Financial Report* (ACFR) provided to Crowe and the Auditor of State

- **December**

- Crowe completes financial statement audit and issues opinion letter
- Audit Committee meeting with Crowe – required communications provided
- Final audited ACFR submitted to the Auditor of State and Government Finance Officers Association (GFOA)

- **February**

- Crowe completes GASB 68 and 75 audits and issues opinion letter
- GASB 68 and 75 reports submitted to the Auditor of State and STRS Ohio's employers

Statement of Changes in Fiduciary Net Position – Additions

At June 30 (in thousands)



	FYE June 30, 2023	FYE June 30, 2022
ADDITIONS		
Contributions:		
Member contributions	\$1,884,375	\$1,806,217
Employer contributions	1,893,646	1,828,258
Transfers from Defined Contribution Plan	19,315	24,051
Government reimbursements	100,515	97,713
Other retirement systems	67,166	104,114
Total contributions	3,965,017	3,860,353
Investment income:		
Investment income (loss)	7,696,036	(4,966,300)
Less internal investment expenses	(44,348)	(45,141)
Less external asset management fees	(256,153)	(254,770)
Net investment income (loss)	7,395,535	(5,262,211)
TOTAL ADDITIONS	\$11,360,552	\$(1,401,858)

Statements of Changes in Fiduciary Net Position – Deductions

At June 30 (in thousands)



	FYE June 30, 2023	FYE June 30, 2022
DEDUCTIONS		
Benefit payments:		
Service retirement	\$6,883,424	\$6,777,083
Disability retirement	176,371	181,521
Survivor benefits	125,985	124,048
Transfers to DB Plan	19,315	24,051
Health Care	265,603	193,572
Other	56,485	40,381
Total benefit payments	7,527,183	7,340,656
Refunds to members who have withdrawn	329,921	319,846
Administrative expenses	76,315	68,648
TOTAL DEDUCTIONS	7,933,419	7,729,150
NET INCREASE (DECREASE) IN NET POSITION	3,427,133	(9,131,008)
Fiduciary net position:		
Beginning of year	87,604,239	96,735,247
End of year	\$91,031,372	\$87,604,239

- **STRS Ohio receives an external audit annually from Crowe, performed under the oversight of the Ohio Auditor of State**
- **Financial statements and notes adhere to GAAP and GASB requirements**
- ***Annual Comprehensive Financial Report (ACFR)***
 - Comprehensive 90-page financial reporting publication including external auditor opinion
 - Includes financial, investment, actuarial and statistical information
- **Final ACFR available in December and provided to the Ohio Auditor of State and GFOA**
- **GFOA's annual Certification of Achievement for Excellence in Financial Reporting has been received for more than three decades**



Questions?

This material is intended for use by the board of the State Teachers Retirement System of Ohio (STRS Ohio) and not by any other party. STRS Ohio makes no representations, guarantees, or warranties as to the accuracy, completeness, currency, or suitability of the information provided in this material. Nothing included herein is either a legal reference or a complete statement of the laws or administrative rules of STRS Ohio. In any conflict between the information provided herein and any applicable laws or administrative rules, the laws and administrative rules shall prevail. This material is not intended to provide tax, legal or investment advice. STRS Ohio disclaims any liability for any claims or damages that may result from reliance on this material or the information it contains, including any information obtained from third parties.

State Teachers Retirement System of Ohio



Pension Actuarial Valuation as of June 30, 2023

October 19, 2023

Presented by

Bonnie Rightnour, FSA

Mike Noble, FSA

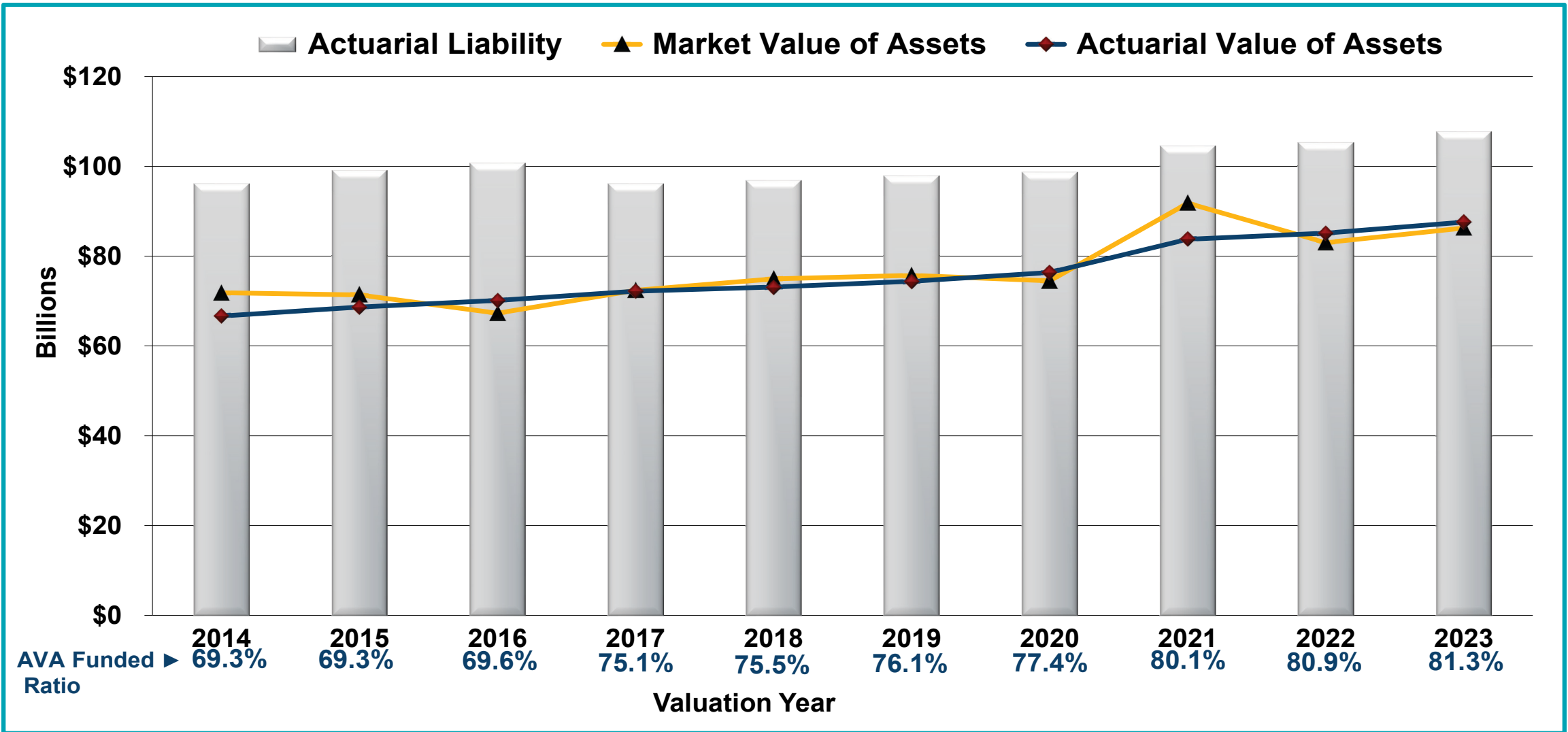


- STRS Ohio Historical Trends
- Summary of June 30, 2023 Valuation Results
- Projected Outlook
 - Baseline
 - Stress Testing Scenarios

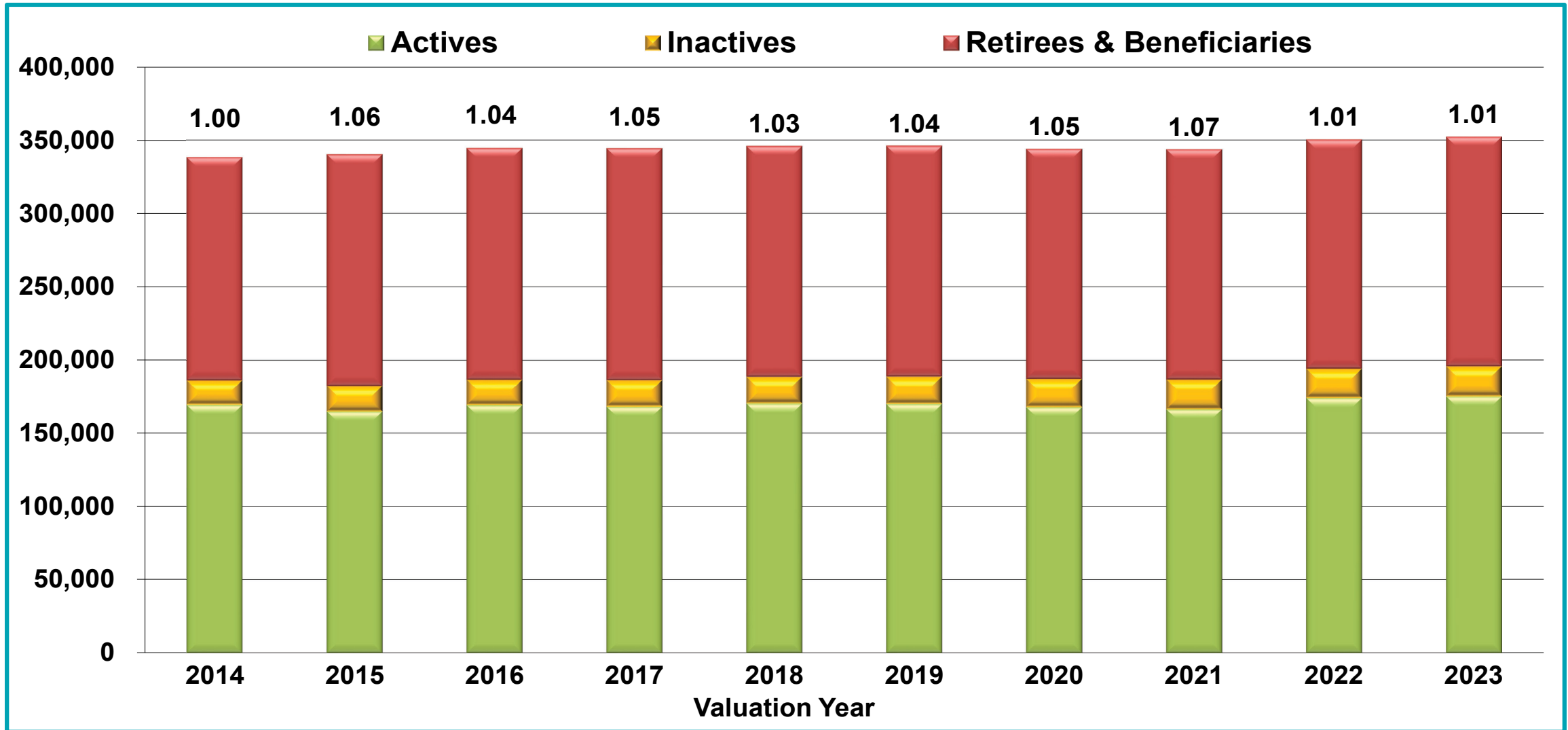


Historical Trends

Assets and Liabilities

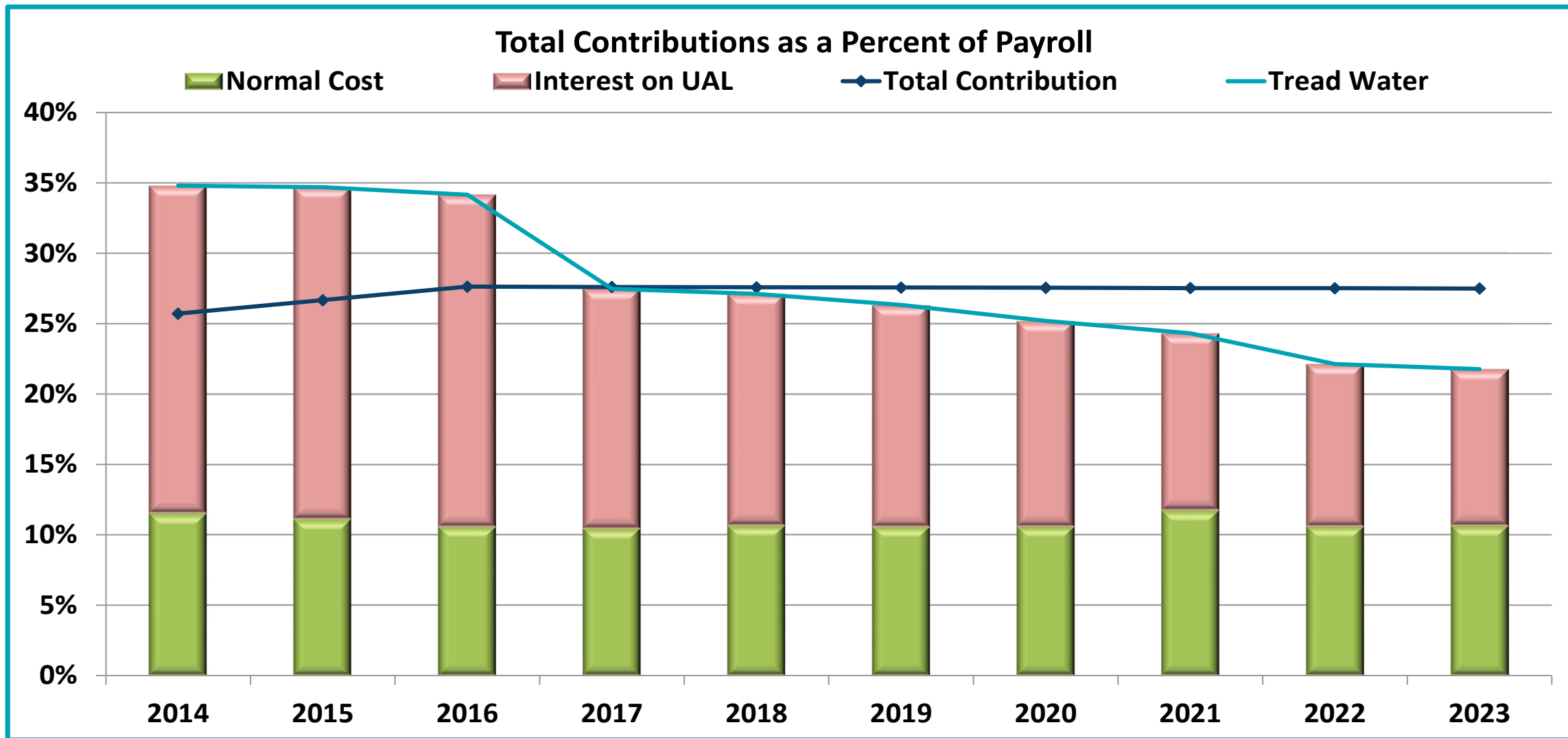


Membership Trends



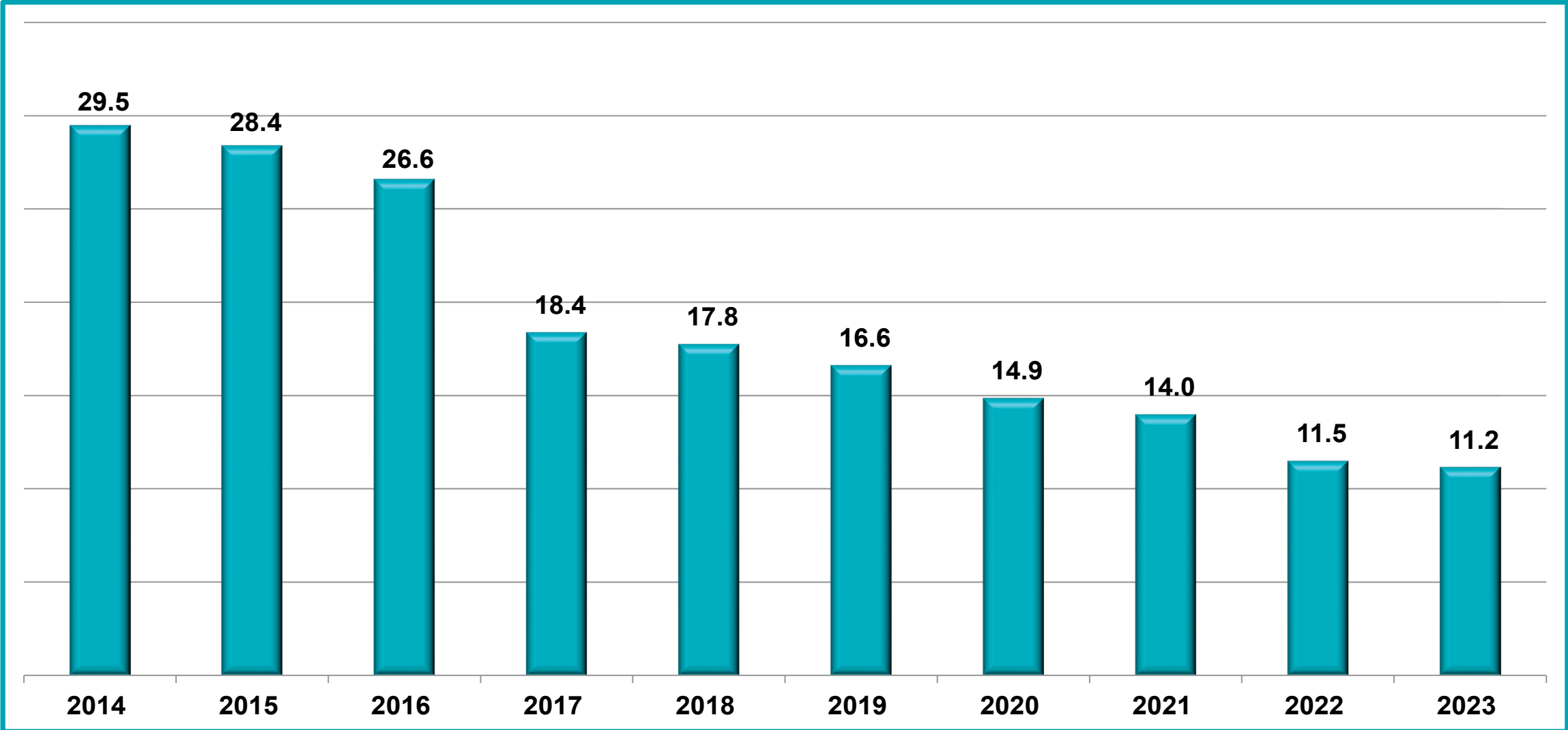
**The support ratio above the chart is (Retirees & Beneficiaries + Inactives) / Actives*

Total vs. "Tread Water"* Contributions

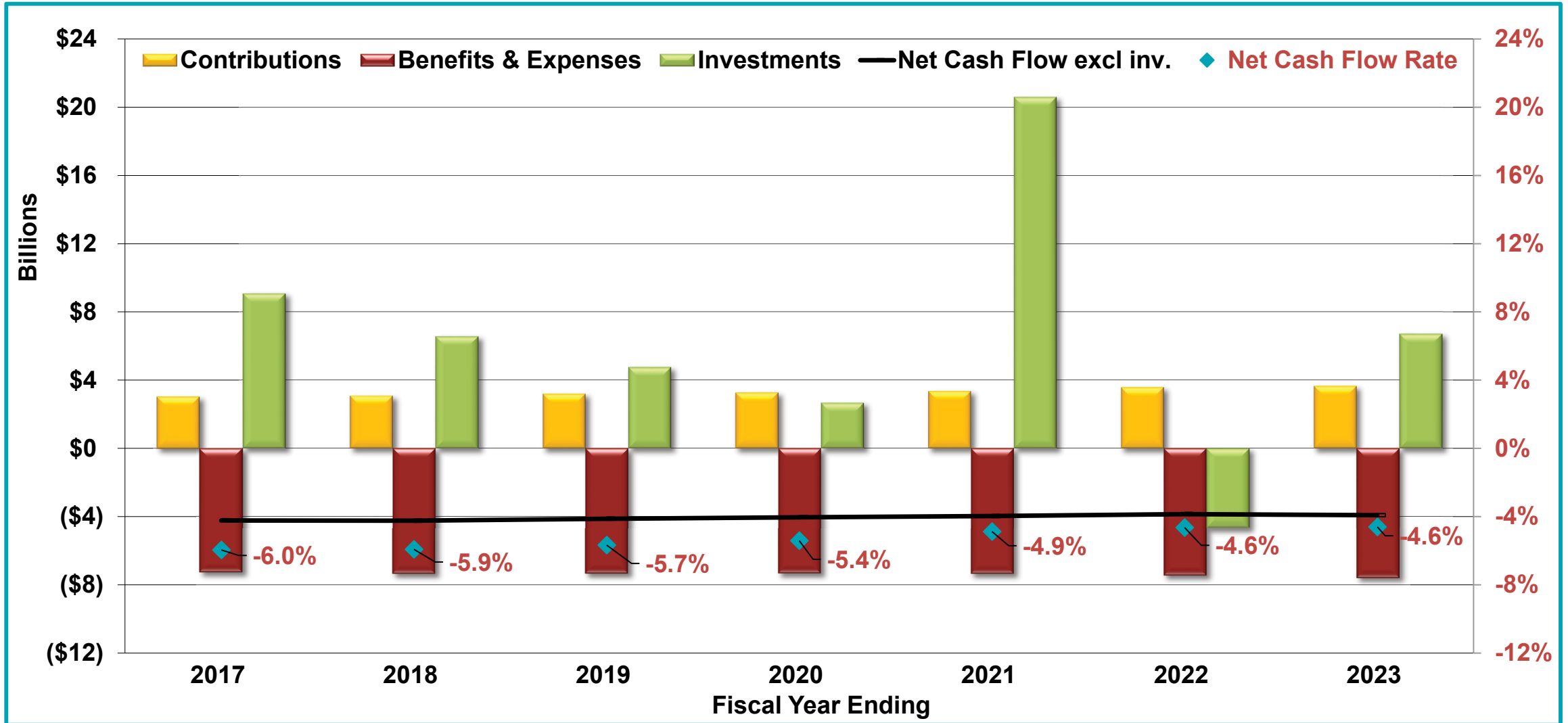


**Tread Water equals Normal Cost + interest on the Unfunded Actuarial Liability*

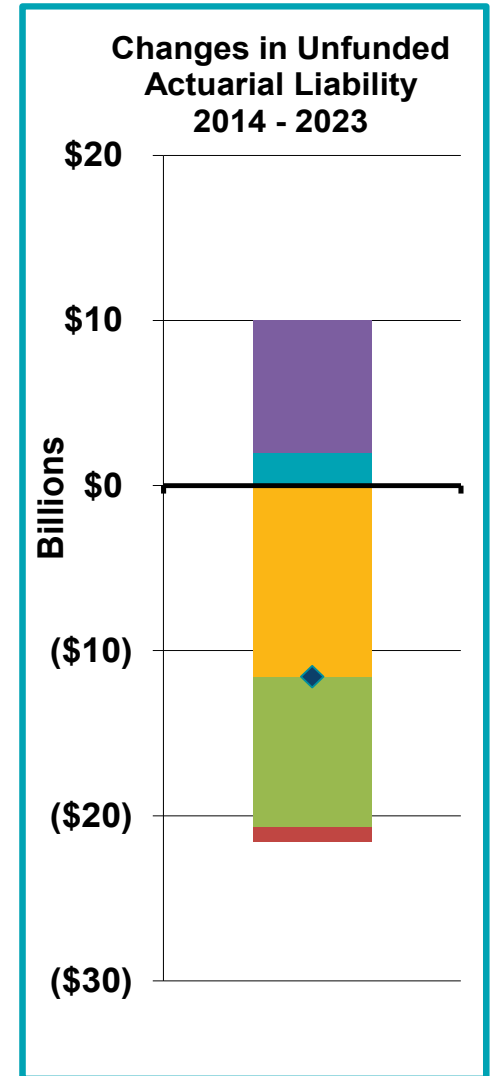
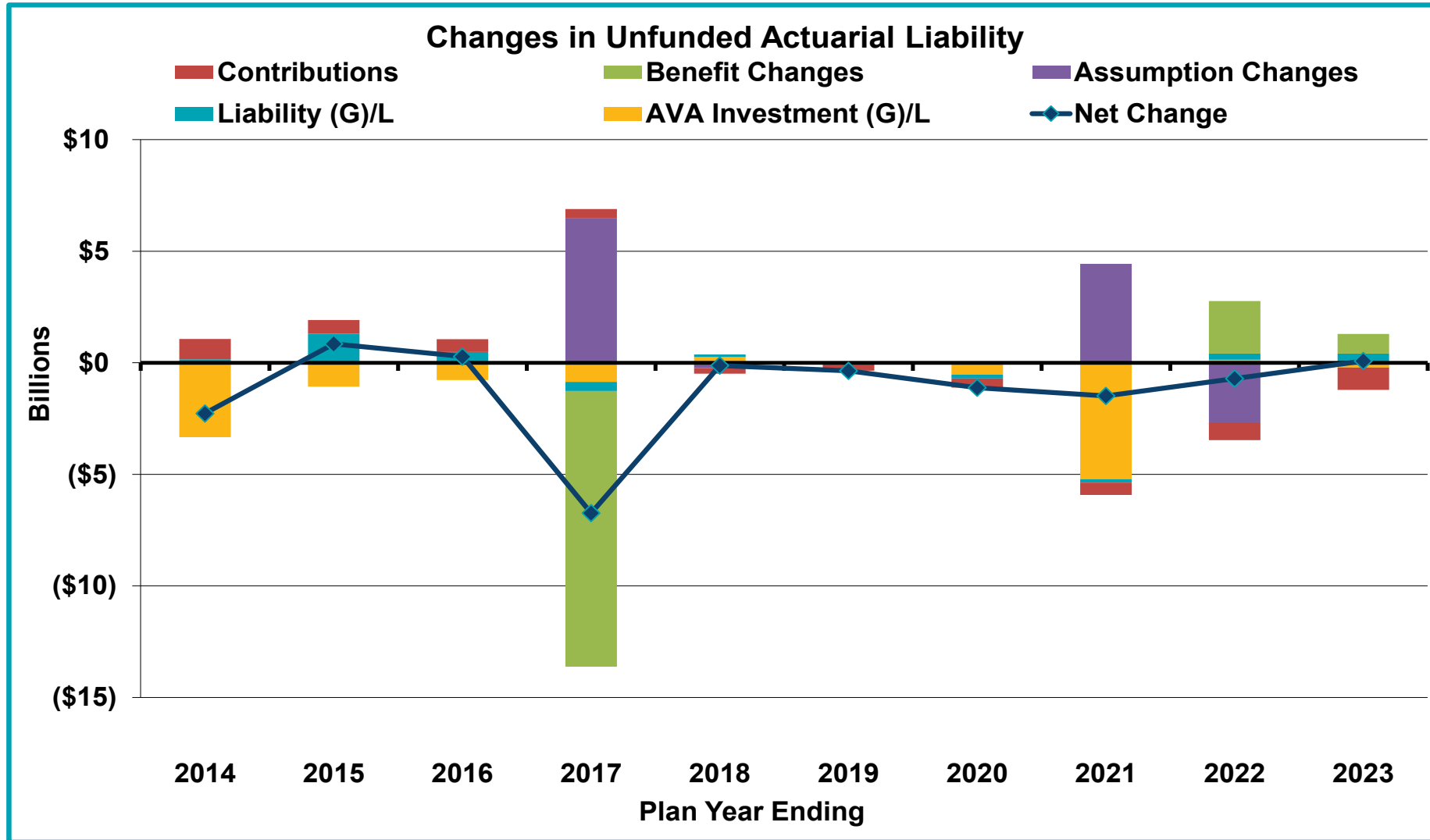
Amortization Periods



Cash Flows – Defined Benefit Only



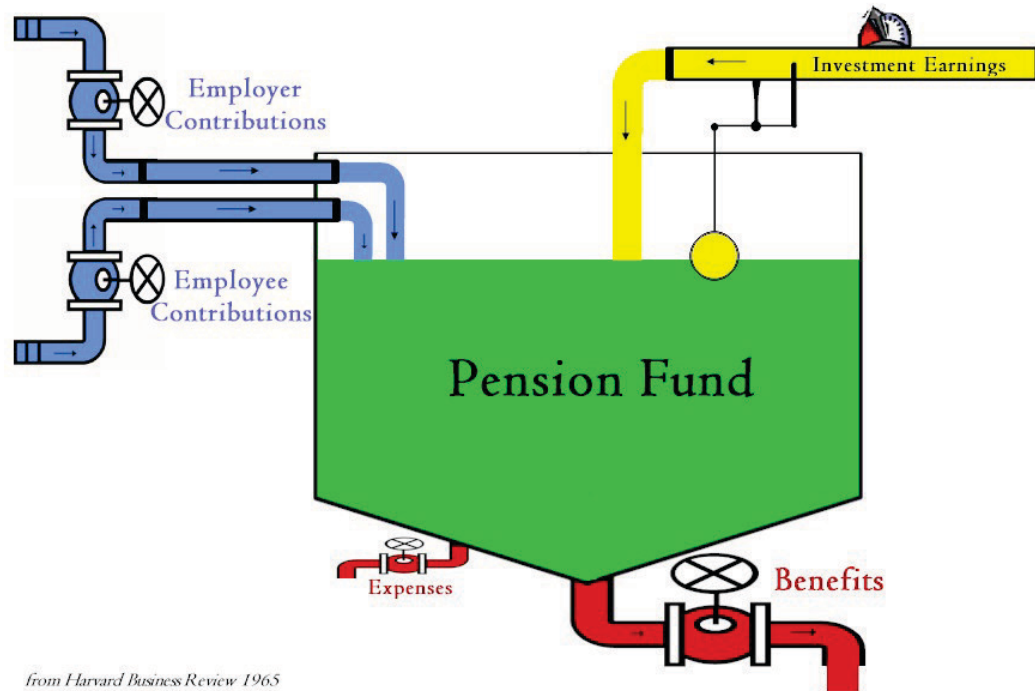
Changes in UAL





June 30, 2023 Actuarial Valuation Results

The Actuarial Valuation Process



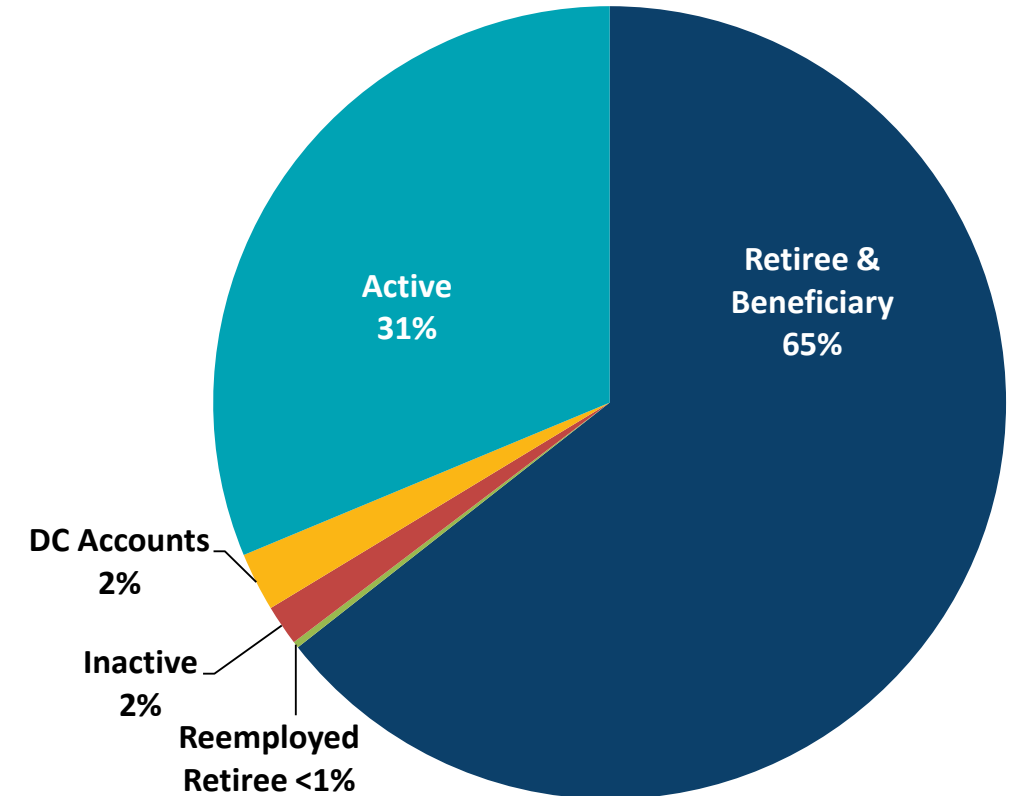
1. Collect information
 - Member data
 - Plan provisions
 - Asset information
2. Apply assumptions
 - Demographic
 - Economic
3. Project all future benefit payments
4. Determine a present value of the benefits
5. Compare to assets
6. Calculate employer and employee contributions

Key Valuation Results



- The plan changes increased liabilities \$0.89 billion
- Asset experience vs. assumed return
 - Market (MVA) – \$1.13 billion more than assumed
 - Actuarial (AVA) – \$0.21 billion more than assumed
- Liability experience – \$411 million loss
- Funded Status (Assets/Liabilities)
 - AVA - improved from 80.9% to 81.3%
 - MVA - improved from 78.9% to 80.0%
- Funding period improved from 11.5 years to 11.2 years

Actuarial Liability = \$107.8B



Valuation Results



	June 30, 2023	June 30, 2022	% Change
Assets and Liabilities (\$millions)			
Actuarial Liability	107,783	105,264	2.39%
Actuarial Value of Assets (AVA)	87,580	85,142	2.86%
Unfunded Actuarial Liability (UAL)	20,203	20,122	0.40%
AVA Funded Ratio	81.3%	80.9%	
Market Value of Assets (MVA)	86,248	83,034	3.87%
MVA Funded Ratio	80.0%	78.9%	
Funding Period	11.2 years	11.5 years	-0.3 years
Contribution Rates			
Employer Rate	14.00%	14.00%	
Member Rate*	13.50%	13.52%	
Total Contribution Rate	27.50%	27.52%	
Allocation of Total Contribution Rate			
Normal Cost	10.66%	10.61%	
Unfunded Liability	16.84%	16.91%	

**The Member Rate is a blend of the DB participant rate of 14% and the CO member rate of 2%.*

Valuation Results

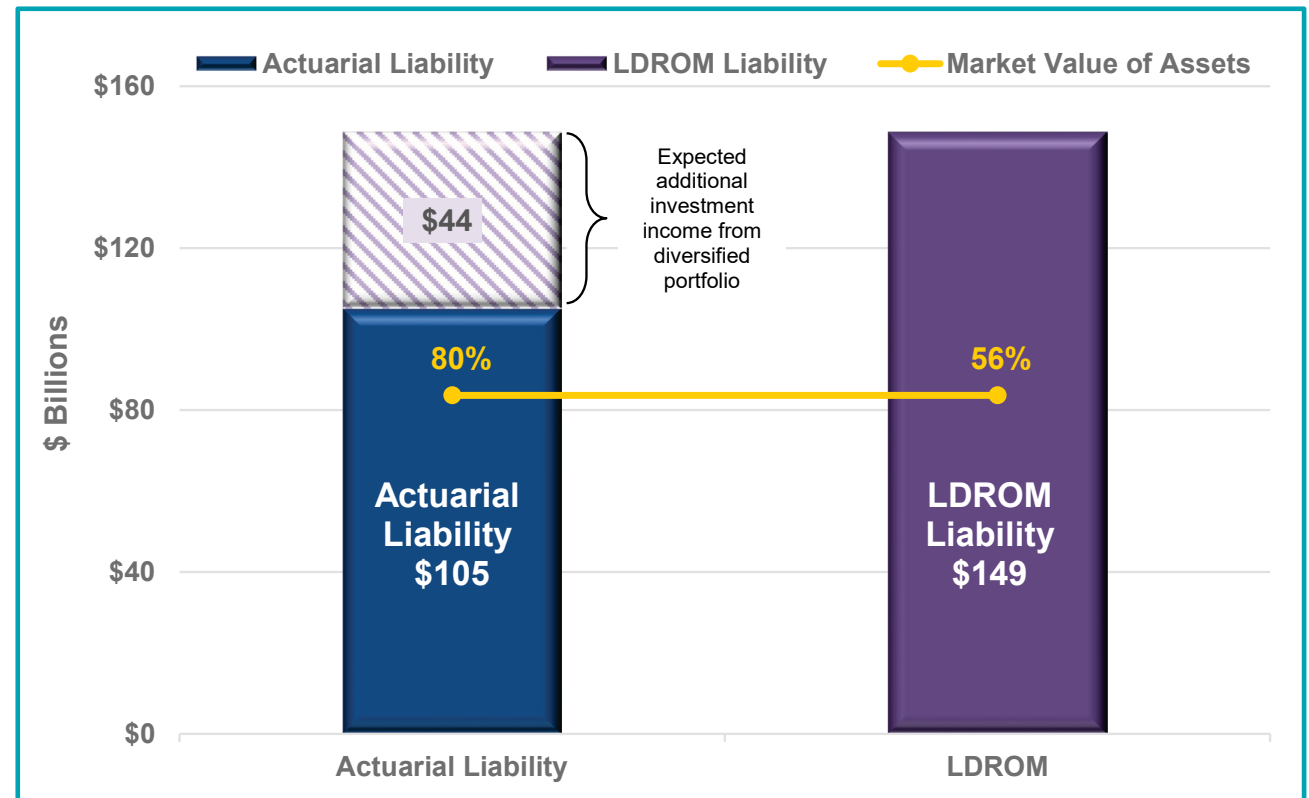


Summary of Plan Demographics	June 30, 2023	June 30, 2022	% Change
Membership (Defined Benefit + Combined + DC)			
Active Members	186,243	184,865	0.75%
Reemployed Retirees	16,915	17,110	(1.14%)
Inactive Members	177,082	170,128	4.09%
Retirees and Beneficiaries	156,511	156,225	0.18%
Total	536,751	528,328	1.59%
Payroll (\$ millions)			
Defined Benefit and Combined	\$ 12,733	\$ 12,224	4.16%
Defined Contribution and ARP	\$ 1,479	\$ 1,400	5.60%
Total	\$ 14,212	\$ 13,625	4.31%
Total Annual Benefits (\$ millions)	\$ 7,270	\$ 7,168	1.42%
Average Annual Benefit	\$ 46,448	\$ 45,882	1.23%

Low-Default-Risk Obligation Measure (LDRROM)



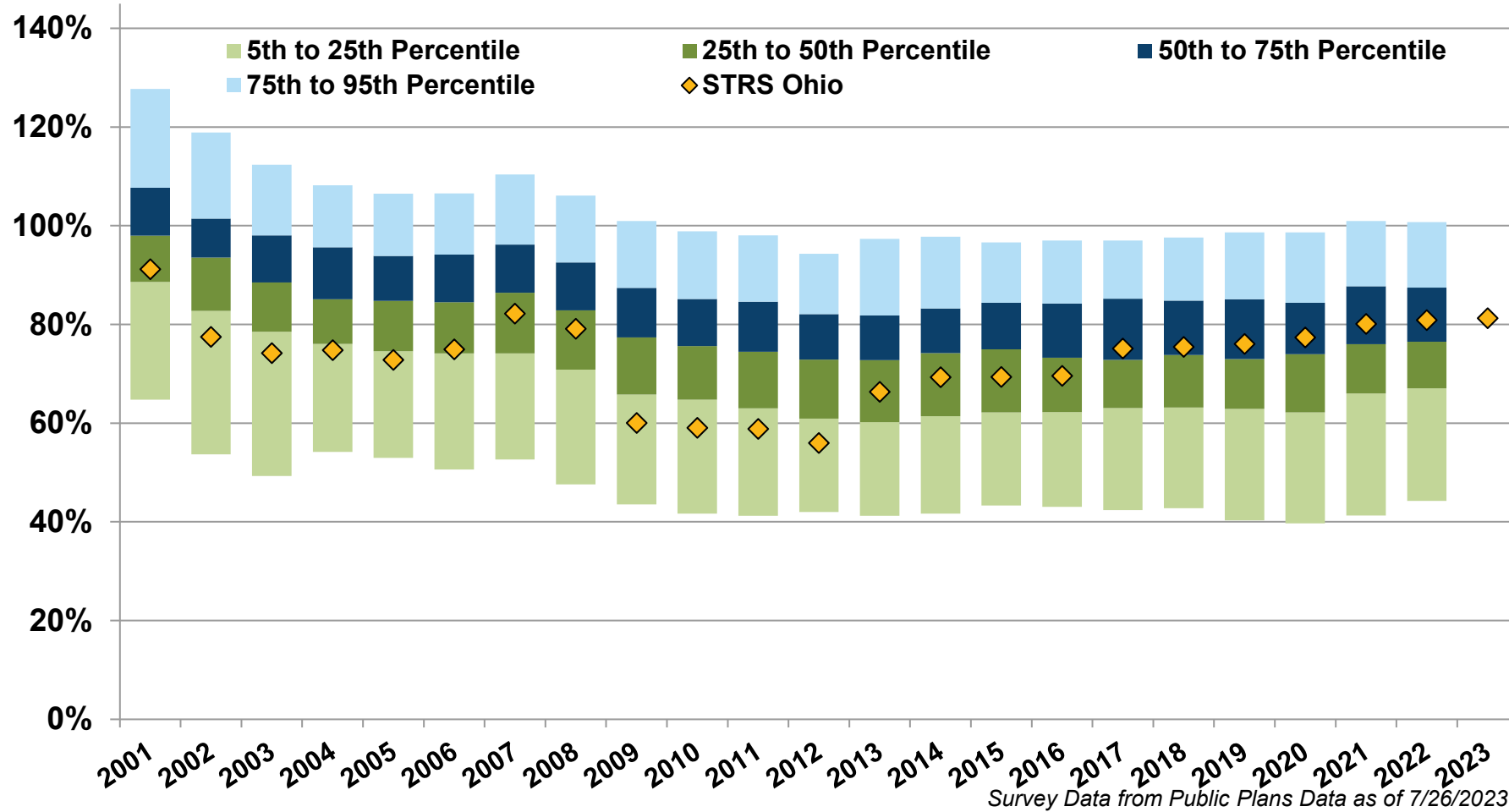
- New requirement to show the System's obligation if evaluated with low-risk investment
 - Shows the value of investing in a diversified portfolio
 - Investing in US Treasuries on valuation date of 6/30/2023 would be equivalent to a 3.91% discount rate



Funded Ratio Comparison



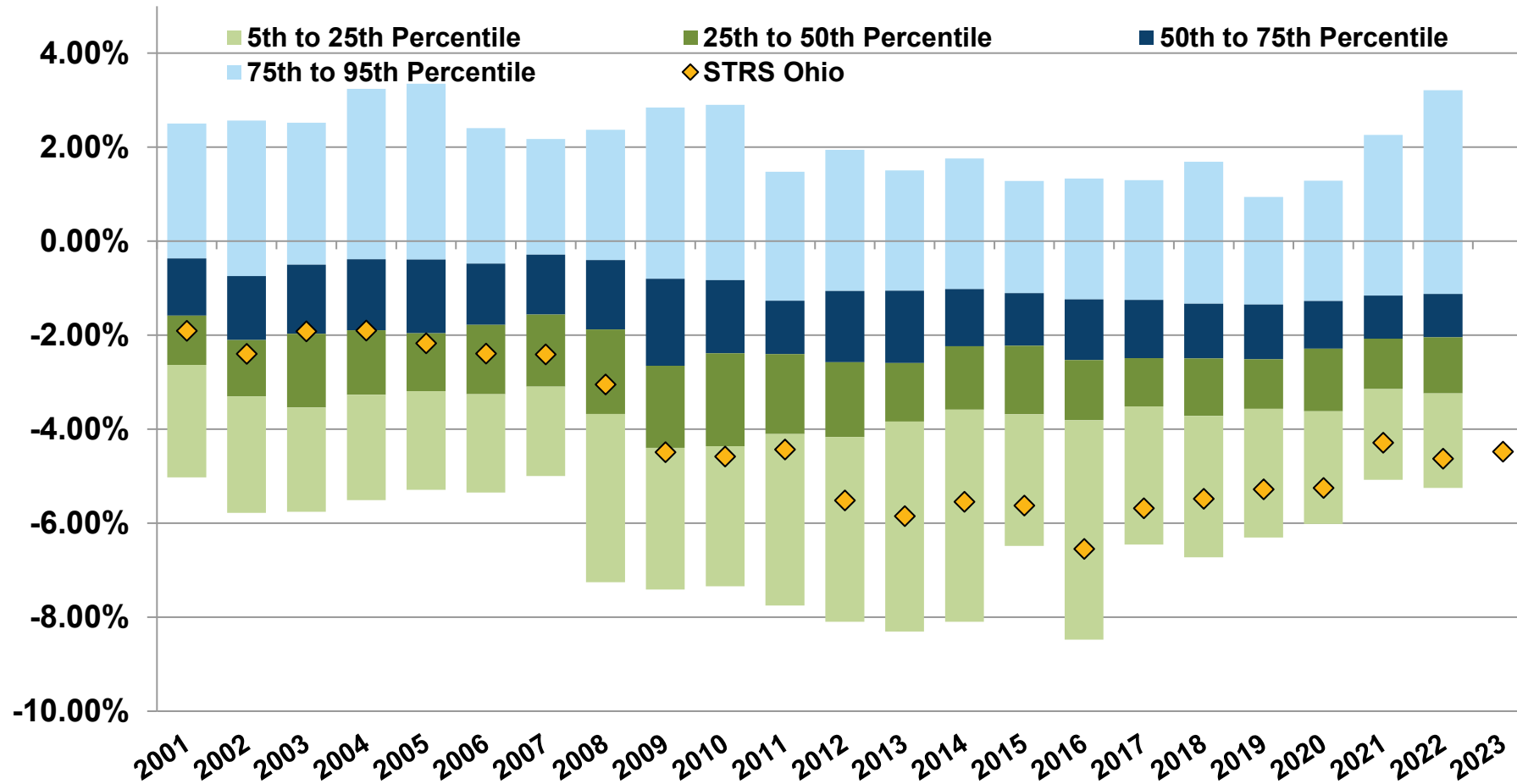
AVA Funded Ratio



Net Cash Flow as a % of Assets



Net Cash Flow Rate



Survey Data from Public Plans Data as of 7/26/2023

Projections - Baseline



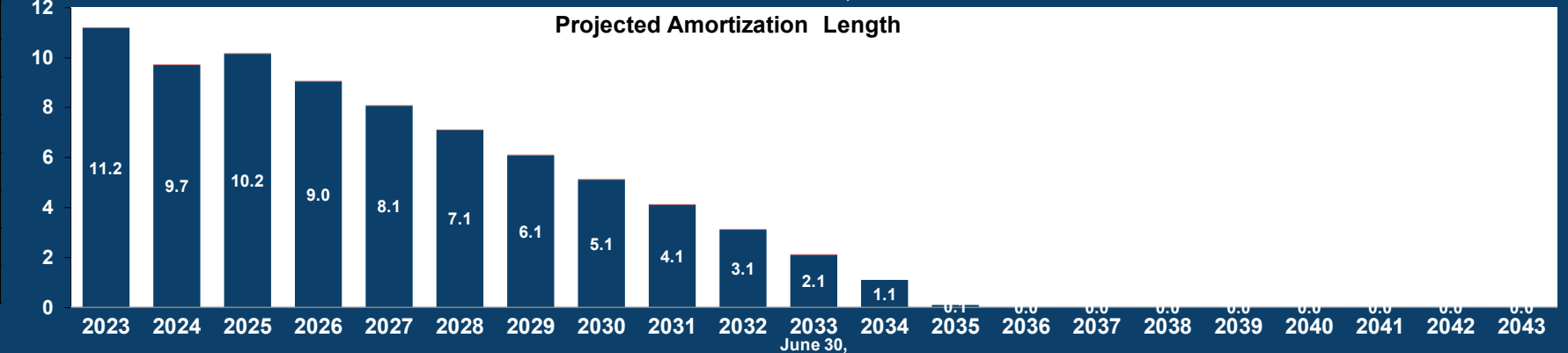
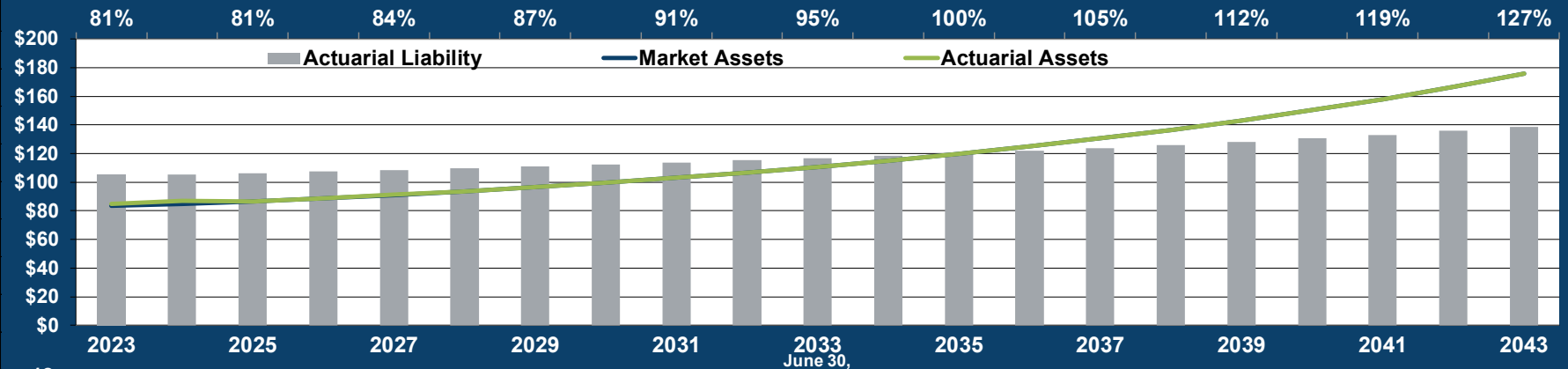
Stress Testing

PYE	EE Contr. %	ER Contr. %
2024	7.00%	14.00%
2025	7.00%	14.00%
2026	7.00%	14.00%
2027	7.00%	14.00%
2028	7.00%	14.00%
2029	7.00%	14.00%
2030	7.00%	14.00%
2031	7.00%	14.00%
2032	7.00%	14.00%
2033	7.00%	14.00%
2034	7.00%	14.00%
2035	7.00%	14.00%
2036	7.00%	14.00%
2037	7.00%	14.00%
2038	7.00%	14.00%
2039	7.00%	14.00%
2040	7.00%	14.00%
2041	7.00%	14.00%
2042	7.00%	14.00%
2043	7.00%	14.00%
Avg	7.00%	



Yes Use STRS Ohio historical returns

Discount Rate	7.00%
Payroll Growth	3.00%
0.0: 2023 Baseline	



Amortization Length



Projections – 1 Year Shock



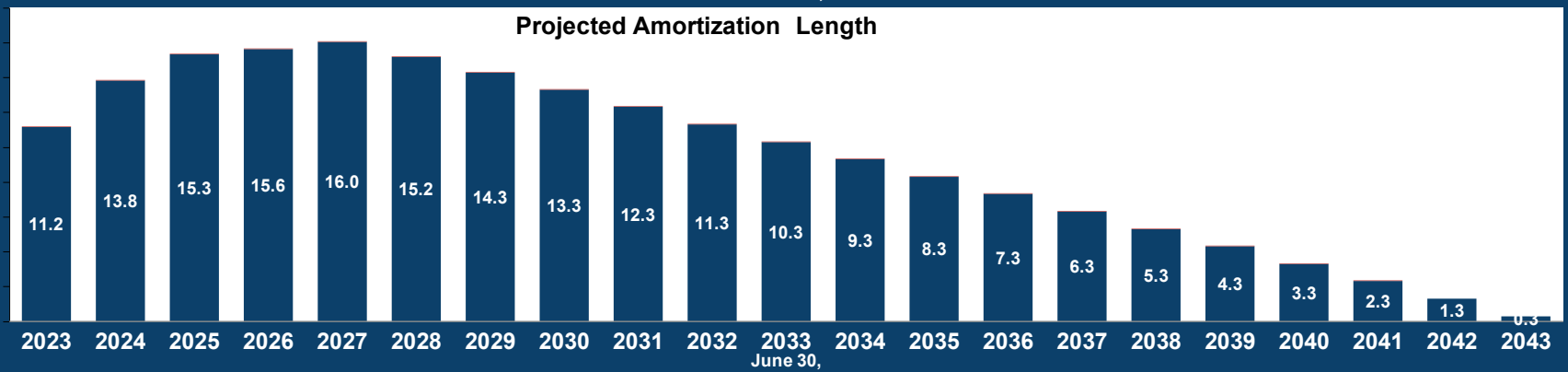
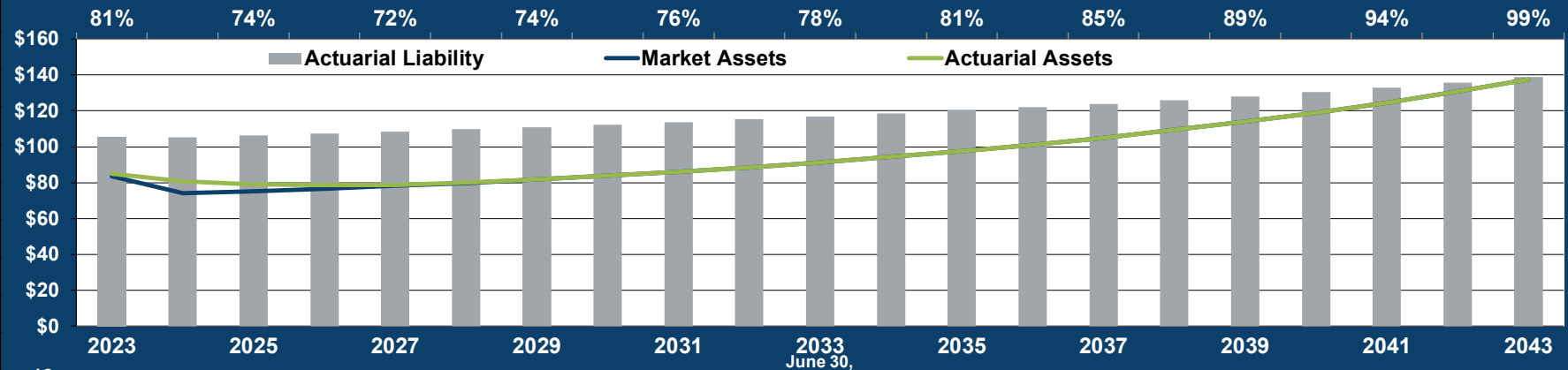
Stress Testing

PYE	EE Contr. %	ER Contr. %
2024	-6.00%	14.00%
2025	7.00%	14.00%
2026	7.00%	14.00%
2027	7.00%	14.00%
2028	7.00%	14.00%
2029	7.00%	14.00%
2030	7.00%	14.00%
2031	7.00%	14.00%
2032	7.00%	14.00%
2033	7.00%	14.00%
2034	7.00%	14.00%
2035	7.00%	14.00%
2036	7.00%	14.00%
2037	7.00%	14.00%
2038	7.00%	14.00%
2039	7.00%	14.00%
2040	7.00%	14.00%
2041	7.00%	14.00%
2042	7.00%	14.00%
2043	7.00%	14.00%
Avg	6.31%	



Yes Use STRS Ohio historical returns

Discount Rate	7.00%
Payroll Growth	3.00%
0.0: 2023 Baseline	



Amortization Length

Projections – 1 Year Shock Followed by Recovery



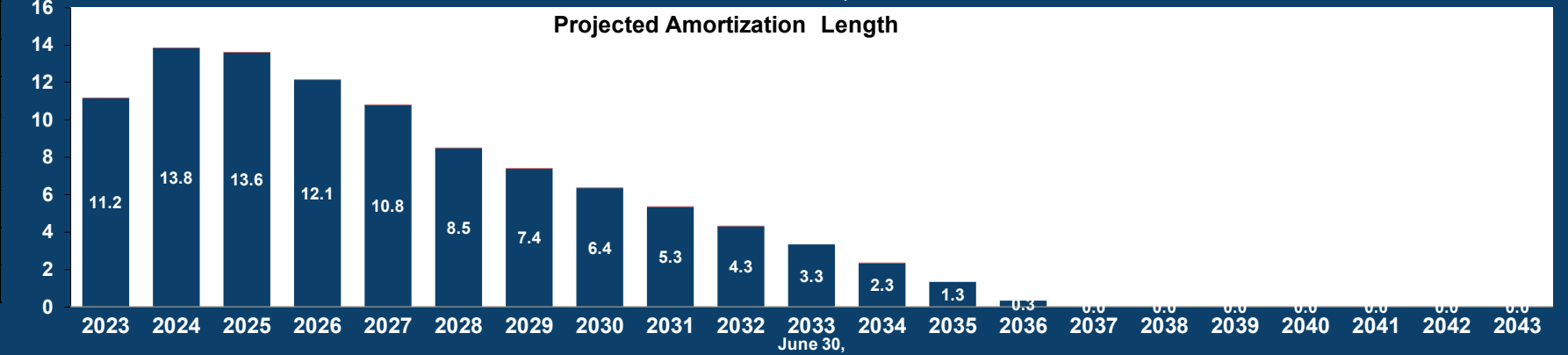
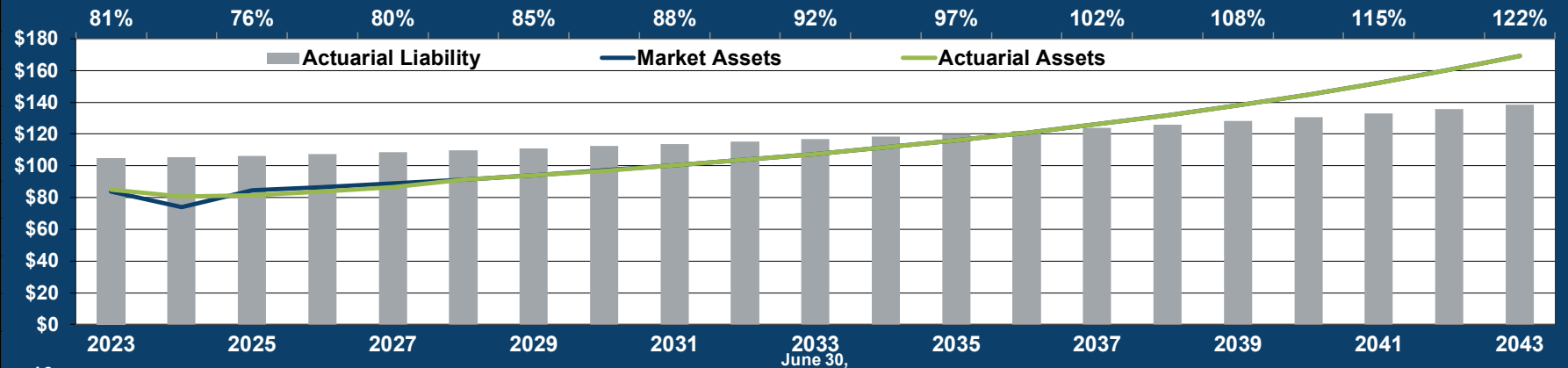
Stress Testing

PYE	EE Contr. %	ER Contr. %
2024	-6.00%	14.00%
2025	20.00%	14.00%
2026	7.00%	14.00%
2027	7.00%	14.00%
2028	7.00%	14.00%
2029	7.00%	14.00%
2030	7.00%	14.00%
2031	7.00%	14.00%
2032	7.00%	14.00%
2033	7.00%	14.00%
2034	7.00%	14.00%
2035	7.00%	14.00%
2036	7.00%	14.00%
2037	7.00%	14.00%
2038	7.00%	14.00%
2039	7.00%	14.00%
2040	7.00%	14.00%
2041	7.00%	14.00%
2042	7.00%	14.00%
2043	7.00%	14.00%
Avg	6.92%	



Yes Use STRS Ohio historical returns

Discount Rate **7.00%**
 Payroll Growth **3.00%**
0.0: 2023 Baseline



Amortization Length

Projections – Actual Returns Past 20 years



Stress Testing

PYE	EE Contr. %	ER Contr. %
2024	17.20%	14.00%
2025	11.90%	14.00%
2026	13.50%	14.00%
2027	20.60%	14.00%
2028	-5.60%	14.00%
2029	-22.00%	14.00%
2030	13.50%	14.00%
2031	22.50%	14.00%
2032	1.70%	14.00%
2033	13.50%	14.00%
2034	16.50%	14.00%
2035	5.20%	14.00%
2036	0.40%	14.00%
2037	14.10%	14.00%
2038	9.51%	14.00%
2039	6.59%	14.00%
2040	3.62%	14.00%
2041	29.04%	14.00%
2042	-5.40%	14.00%
2043	8.43%	14.00%
Avg	8.12%	

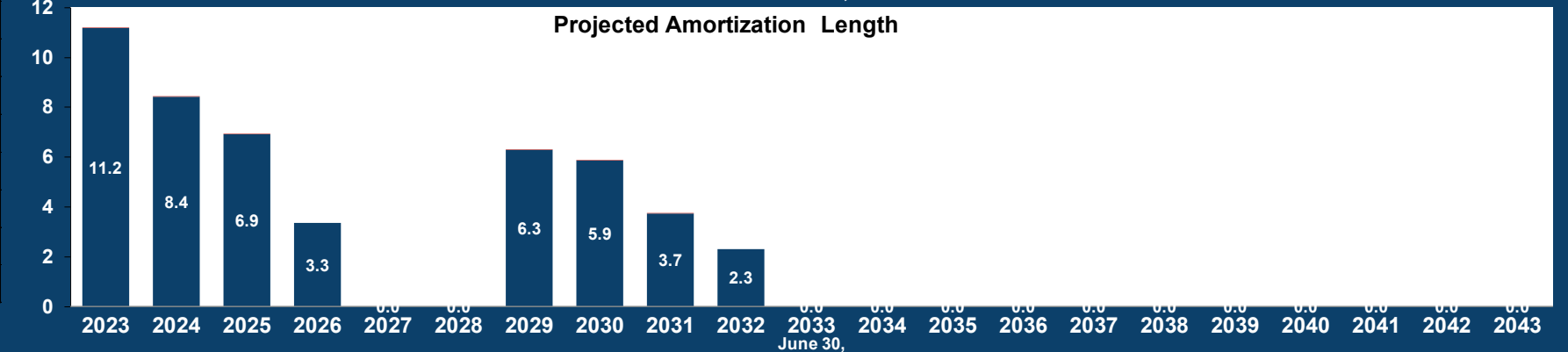
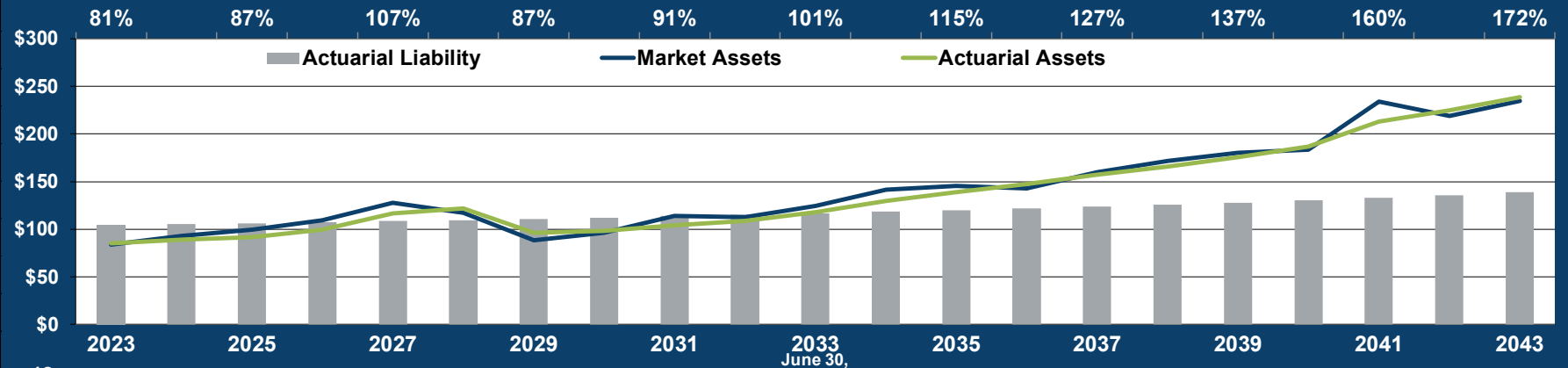


Yes Use STRS Ohio historical returns

Discount Rate **7.00%**

Payroll Growth **3.00%**

0.0: 2023 Baseline



Amortization Length

Projections – Volatile Returns approximately 6.00%

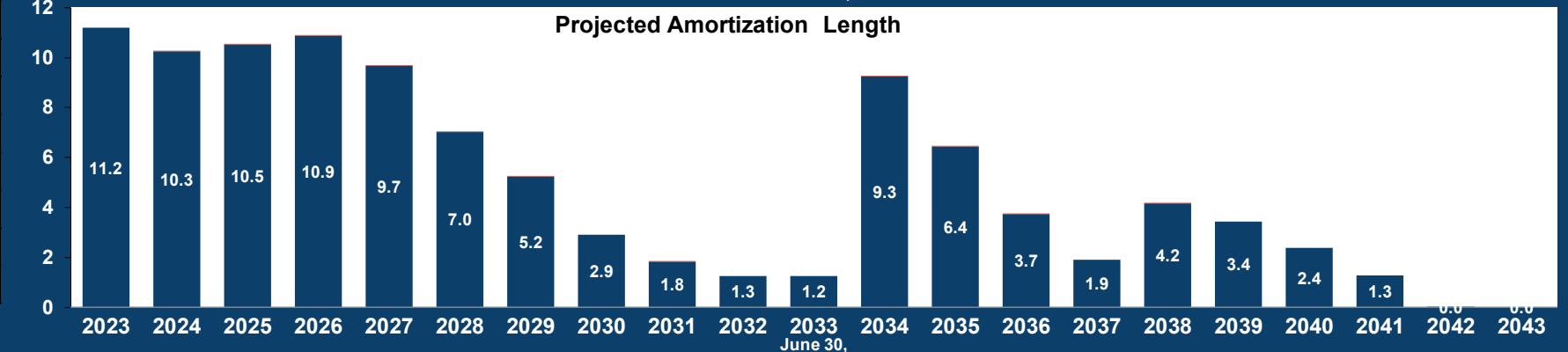
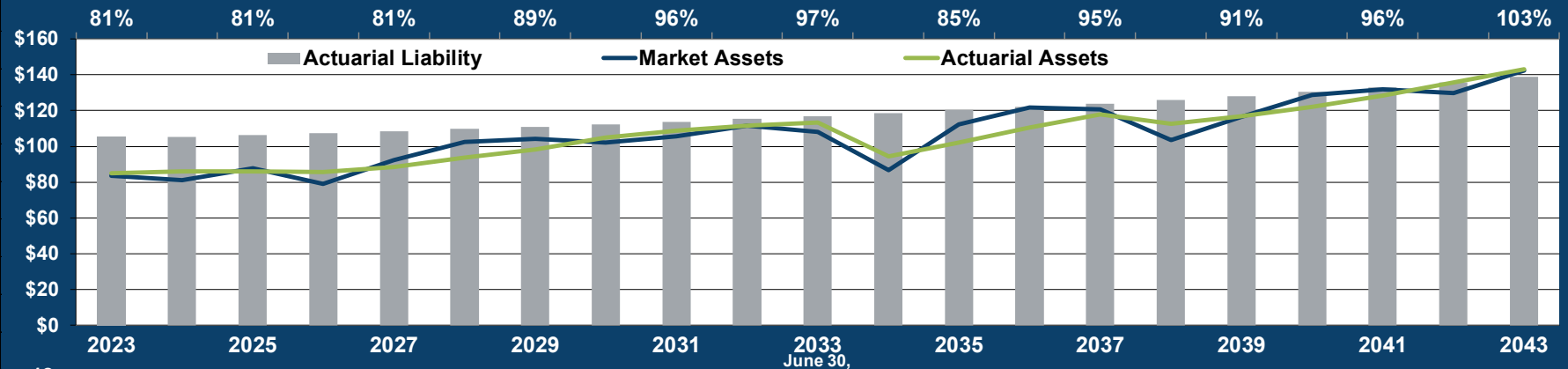


PYE	EE Contr. %	ER Contr. %
2024	2.78%	14.00%
2025	13.13%	14.00%
2026	-5.72%	14.00%
2027	22.21%	14.00%
2028	15.02%	14.00%
2029	5.29%	14.00%
2030	1.56%	14.00%
2031	6.81%	14.00%
2032	9.01%	14.00%
2033	-0.03%	14.00%
2034	-17.15%	14.00%
2035	33.77%	14.00%
2036	11.31%	14.00%
2037	1.74%	14.00%
2038	-11.95%	14.00%
2039	15.70%	14.00%
2040	12.94%	14.00%
2041	4.70%	14.00%
2042	0.41%	14.00%
2043	11.60%	14.00%
Avg	6.06%	



1960
No Use STRS Ohio historical returns

Discount Rate 7.00%
Payroll Growth 3.00%
0.0: 2023 Baseline



Amortization Length

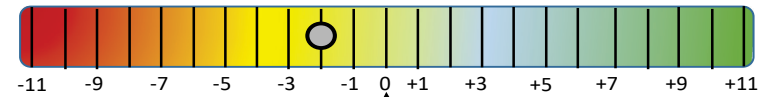


Funding Policy Dashboard



Funding Policy Dashboard - June 30, 2023

	Actual	Upside Advisory Level	Downside Advisory Level	Contribution to Summary Score	Range
Funded Ratio					
Current year	79.5%	100.0%	69.0%	-1	-3 to +3
Prior year	78.4%	100.0%	68.5%	-1	-2 to +2
Funding Period					
Current year	11.2 years	0 years	22 years	+1	-2 to +2
Chance of a major negative event*					
Funded Ratio under 50%	12.5%	2.5%	10.0%	-1	-1 to +1
Funding Period over 100 yrs	1.8%	2.5%	10.0%	+1	-1 to +1
Economic Considerations**					
10-year returns	7.5%	NA	NA	0	-1 to +1
Spread between 10y and 3m Treasuries	-1.62%	NA	NA	-1	-1 to +1
Summary Score				-2	-11 to +11
				Prior year score	-1

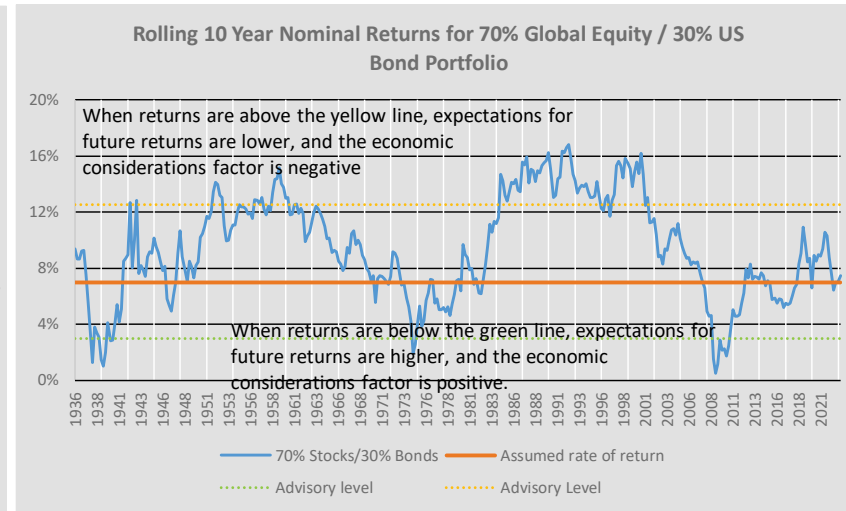
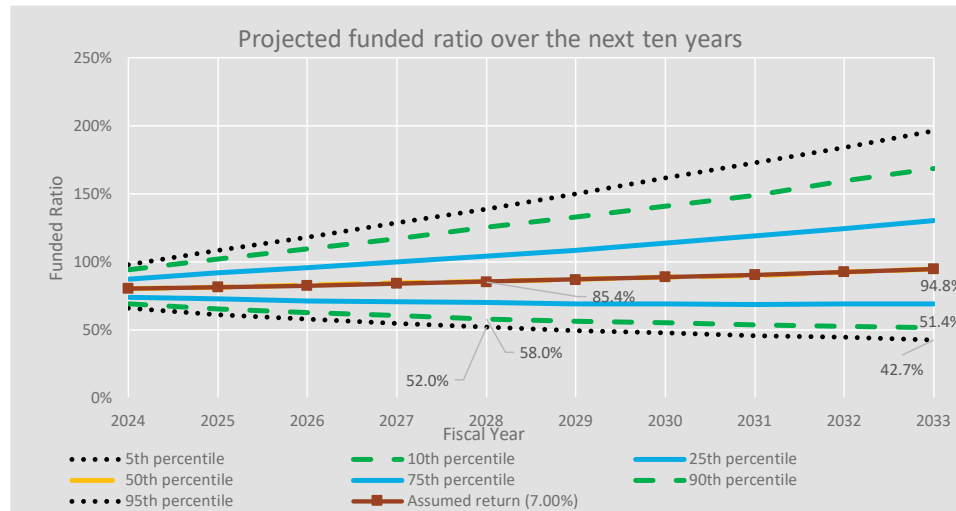


Strong support for benefit reductions or contribution increases

Neutral - status quo may be acceptable

Strong support for contribution reductions or benefit increases

% of payroll paid to amortize the UAAL (DB)	17.1%
Estimated volatility of the investment portfolio	11.82%
Assumed rate of return for valuation	7.00%
Risk-free rate of return (10-year Treasury)	3.81%
Risk premium required to hit return target	3.19%
Inflation over trailing 12 months	2.97%



*Estimated chance that the result is worse than some catastrophic threshold (<50% for funded ratio, >100 years for funding period) on any valuation date in the next 10 years

** Rolling average 10-year return for a portfolio of 70% equity and 30% bonds, rebalanced quarterly



- November – Plan Design Lever Report
 - Will be incorporated in the final valuation
 - Will provide estimated impacts of potential plan changes
- February-March – Economic Assumptions Review
- February-April – SBEP Calculations of Budget & Costs of Enhancements

Required Disclosures



The purpose of this presentation is to present actuarial the valuation results for the State Teachers Retirement System of Ohio. This presentation is for the use of the Board and System staff.

In preparing our presentation, we relied on information, some oral and some written, supplied by the State Teachers Retirement System of Ohio. This information includes, but is not limited to, the plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23.

The actuarial assumptions, data, and methods are those used in the preparation of the Actuarial Valuation Report as of June 30, 2023.

The assumptions reflect our understanding of the likely future experience of the System, and the assumptions as a whole represent our best estimate for the future experience of the System. The results of this presentation are dependent upon future experience conforming to these assumptions. To the extent that future experience deviates from the actuarial assumptions, the true cost of the System could vary from our results.

Cheiron utilizes and relies upon ProVal, an actuarial valuation software leased from Winklevoss Technologies for the intended purpose of calculating liabilities and projected benefit payments. Projected results of future valuations in this presentation were developed using P-scan, our proprietary tool for the intended purpose of developing projections. As part of the review process for this presentation, we have performed a number of tests to verify that the results are reasonable and appropriate. We are not aware of any material inconsistencies, unreasonable output resulting from the aggregation of assumptions, material limitations or known weaknesses that would affect this presentation.

We hereby certify that this presentation and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices and our understanding of the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board as well as applicable laws and regulations. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this presentation. This presentation does not address any contractual or legal issues. We are not attorneys, and our firm does not provide any legal services or advice.

This presentation was prepared exclusively for the State Teachers Retirement System of Ohio for the purpose described herein. Other users of this presentation are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to any other user.



Board Member Requests

Oct. 19, 2023

- **Board member requested proposals for benefit changes**
 - Proposal to phase-in retirement eligibility changes based on hire date
 - Proposal to provide a CPI-triggered COLA
 - Proposal to change to fractional years for early retirement factors
- **Legislative, actuarial and administrative considerations and next steps**

Proposal to Phase-in Changes Based on Hire Date

- The proposed change would establish more lenient requirements for eligibility for unreduced retirement, with those most impacted by pension reform benefiting the most quickly
- This could be accomplished by dividing the active membership into different groups based upon when they joined the system
- Those groups who joined earliest would see their requirements for unreduced retirement eligibility loosened before those who joined later
- Example (Illustrative only, not based on the specific request)
 - Group A is all those who joined the system prior to July 1, 2012; Group B is everyone else
 - In year one, the Sustainable Benefit Enhancement Plan (SBEP) budget is used to reduce the service requirement for Group A to 33 years from 34, while Group B is maintained at 34 years

Proposal to Provide a CPI-Triggered COLA

- **Change to a COLA that is triggered by varying factors:**
 - If CPI is $< 2\%$ – No COLA or provide a 1% COLA
 - If CPI is 2% to 5% – Provide a 1.5% to 2% COLA
 - If CPI is $> 5\%$ – Provide a 3% COLA

Proposal to Change to Fractional Years for Early Retirement Factors



- **Change early retirement reduction factors to be based on fractional years rather than full years**
 - Currently, you need 34 years of service to retire with an unreduced benefit; if you have 33.00 to 33.99 years, you are subject to the reduction factor for retiring one year early
 - The proposed change would consider fractional years in the reduction factor, and the reduction for retiring at 33.50 years, for example, would only be half of the reduction that would apply for retiring at 33.00 years
- **Note that the current benefit calculation does consider fractional years (e.g., 33.50 years x 2.2 multiplier)**

- **Legislative analysis**

- Research and discussion would be needed to evaluate potential legal and/or legislative issues
- If the board wishes to proceed with any of these changes, the next step could be to refer the proposals to the board's legislative committee to explore the possibility of making the necessary changes to Ohio Revised Code

- **Actuarial analysis**

- All proposed changes would add to the system's liabilities
- The impact of any proposed changes would need to be evaluated by Cheiron
- The requisite modeling and analysis will require substantial effort, with an associated cost

- **Administrative and other considerations**
 - Board and staff will need to further consider the impact of the proposed changes, in particular regarding:
 - Programming and administrative costs
 - Effect on those already retired
 - Communications to members
 - Consistency with other plan design elements of the current plan

Questions?

This material may contain “forward-looking” information that is not purely historical in nature. Such information may include, among other things, projections, forecasts, and estimates of yields or returns. No representation is made that the information presented will be achieved by STRS Ohio, or that every assumption made in achieving, calculating or presenting either the forward-looking information or any historical performance information has been considered or stated in preparing this material. Any changes to assumptions that may have been made in preparing this material could have a material impact on the investment returns presented herein. Past performance is no guarantee of future results.

OPEB Actuarial Valuation as of June 30, 2023

October 19, 2023

Presented by
Margaret Tempkin, FSA
Gaelle Gravot, FSA





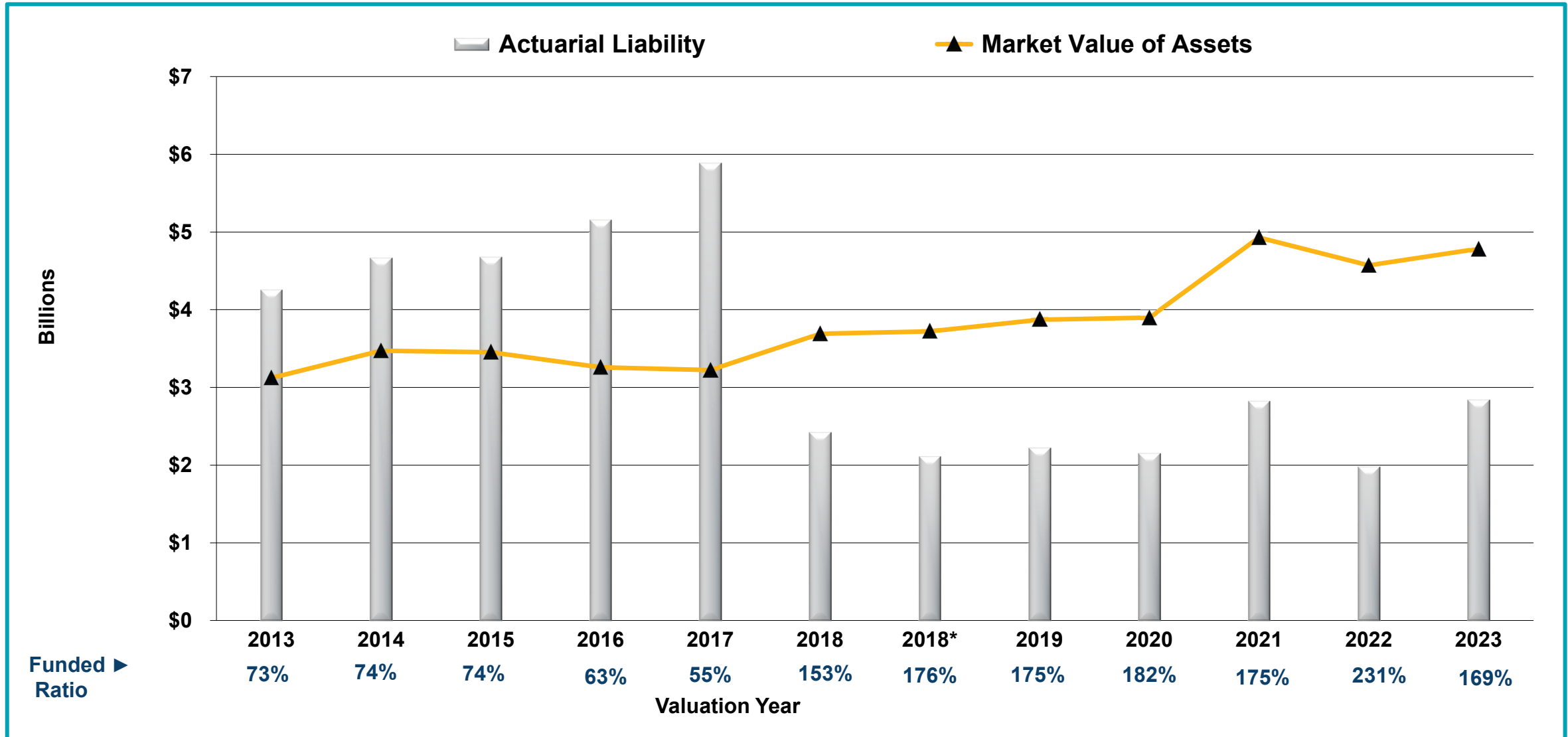
- STRS Ohio Historical Trends
- Summary of June 30, 2023 Valuation Results
- STRS Ohio Plan Benefit Changes and Regulation Updates
- Stress Testing
- Healthcare Scorecard



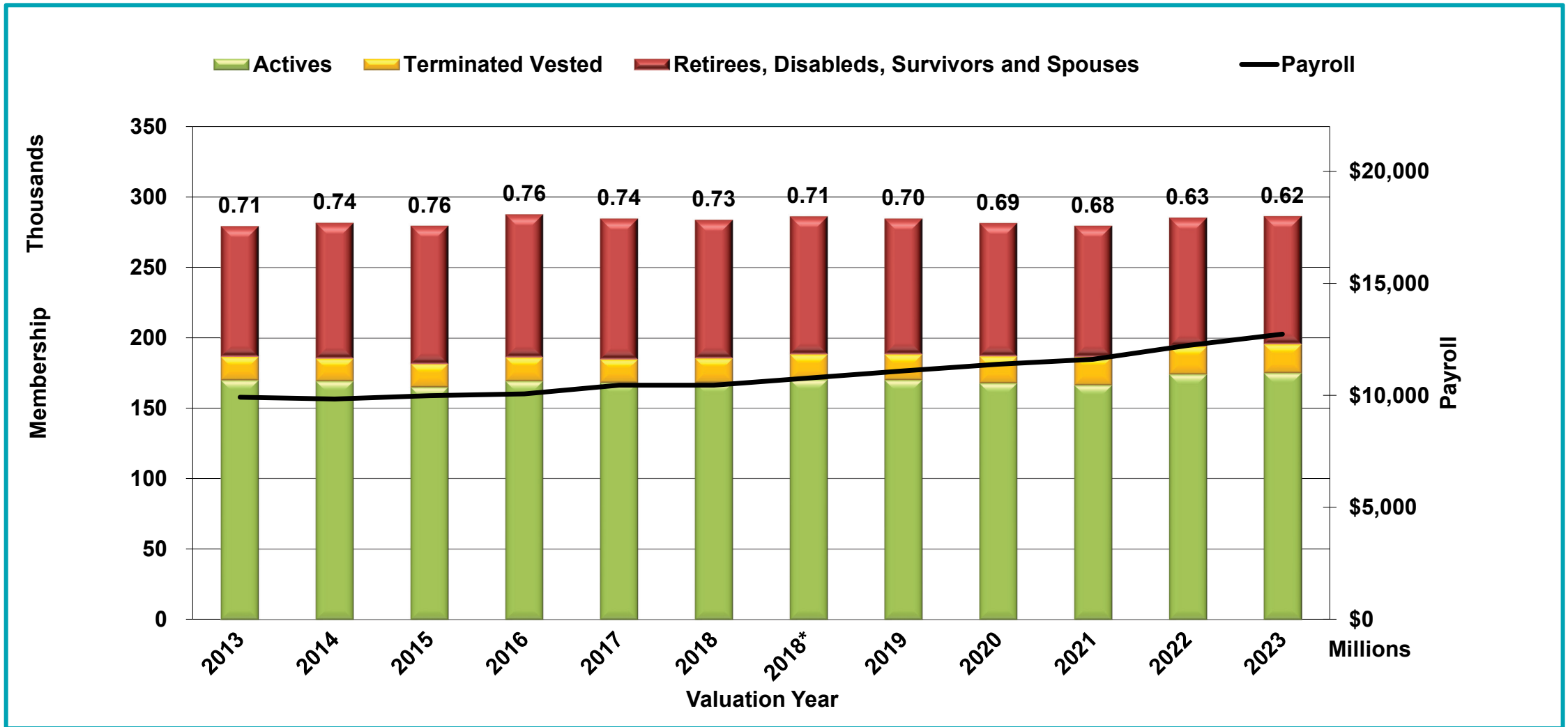
Historical Trends



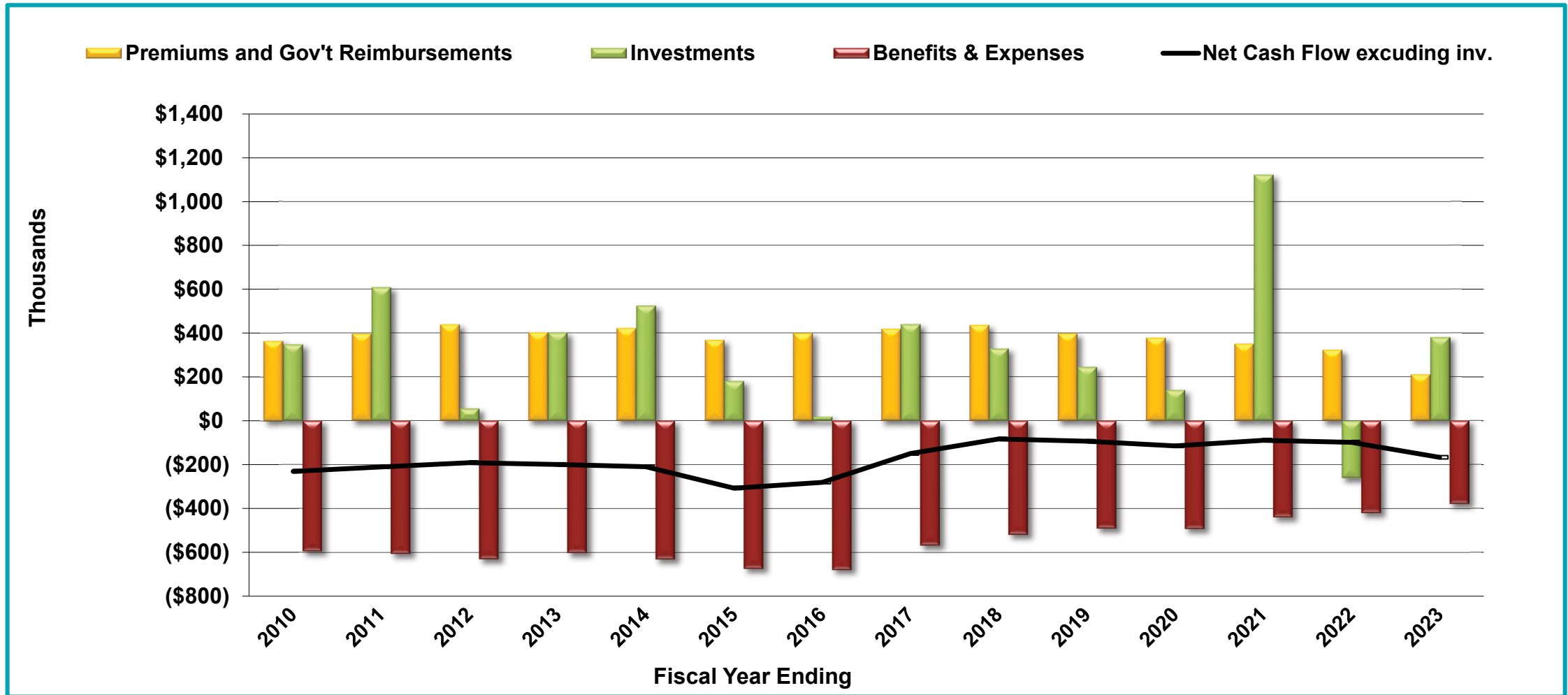
Assets and Liabilities



Membership Trends



Cash Flows





June 30, 2023 Actuarial Valuation Results





Summary of Key Valuation Results

Valuation Date	June 30, 2023	June 30, 2022
Discount Rate	7.00%	7.00%
Actuarial Liability		
Current retirees, beneficiaries, and dependents	\$ 1,186,115,669	\$ 1,159,768,056
Current active members	1,643,818,049	816,952,414
Terminated members entitled but not yet eligible	8,608,785	3,987,139
Total Actuarial Liability	\$ 2,838,542,503	\$ 1,980,707,609
Health care fund assets	4,783,404,347	4,570,039,934
Unfunded actuarial liability (UAL)	\$ (1,944,861,844)	\$ (2,589,332,325)
Funded Ratio	168.52%	230.73%



Calculation of Actuarially Determined Contribution (ADC) (\$ thousands)

For Fiscal Year Ending	June 30, 2024	June 30, 2023
Normal cost	\$ 61,724	\$ 26,796
Amortization of UAL	(106,741)	(142,111)
Interest adjustment	(3,151)	(8,072)
Total ADC (not less than \$0)	\$ 0	\$ 0
Projected payroll	\$ 13,274,839	\$ 12,829,357
ADC as a percentage of pay	0.00%	0.00%
Expected/Actual Net Benefit Payments	\$ 158,862	\$ 165,088

Sources of Change – Gain/(Loss)



Benefit Changes

- Increase subsidy for Non-Medicare Eligible retirees
- Unfreeze premiums subsidy for Non-Medicare Eligible retirees
- Uncap premiums subsidy for Medicare Eligible retirees
- Extension of 34 years for unreduced pension through July 2028

Census Changes

- Retiree population declined
- Lower enrollment elections

Claims and Trends

- New contract terms
- Benefit improvements (i.e., lower retiree out-of-pocket expenses)

Reconciliation of Actuarial Liability (\$ thousands)

Actuarial Liability at June 30, 2022	\$ 1,980,707
Normal Cost	26,796
Net Benefits paid throughout the year	(165,088)
Interest	134,747
Expected Actuarial Liability at June 30, 2023	\$ 1,977,162
Actuarial Liability at June 30, 2023	2,838,543
Gain or (Loss)	\$ (861,381)
Gain or (Loss) due to:	
Benefit changes	\$ (628,670)
Census changes	(3,465)
Demographic Assumption changes	-
Claims and Trends Assumption changes	(229,246)
Total changes	\$ (861,381)



Plan Benefit Changes and Regulation Updates





January 1, 2024

- Consolidation and New contract with vendors
- Removal of Subsidy freeze (Non-Medicare Eligible) and cap increase (Medicare Eligible).
- Benefit improvements (e.g., elimination of deductible and Primary Care Physician copay for Medicare Advantage plan)

January 1, 2025

- Potential changes to EGWP Part D Benefits



- Cap member out of pocket expenses to \$2,000 for EGWP Part D
- Changes recovery amounts (Federal subsidies and Pharmaceutical discounts)

The impact on plans is unknown and therefore not reflected in this valuation.

Inflation Reduction Act: 2026 and beyond

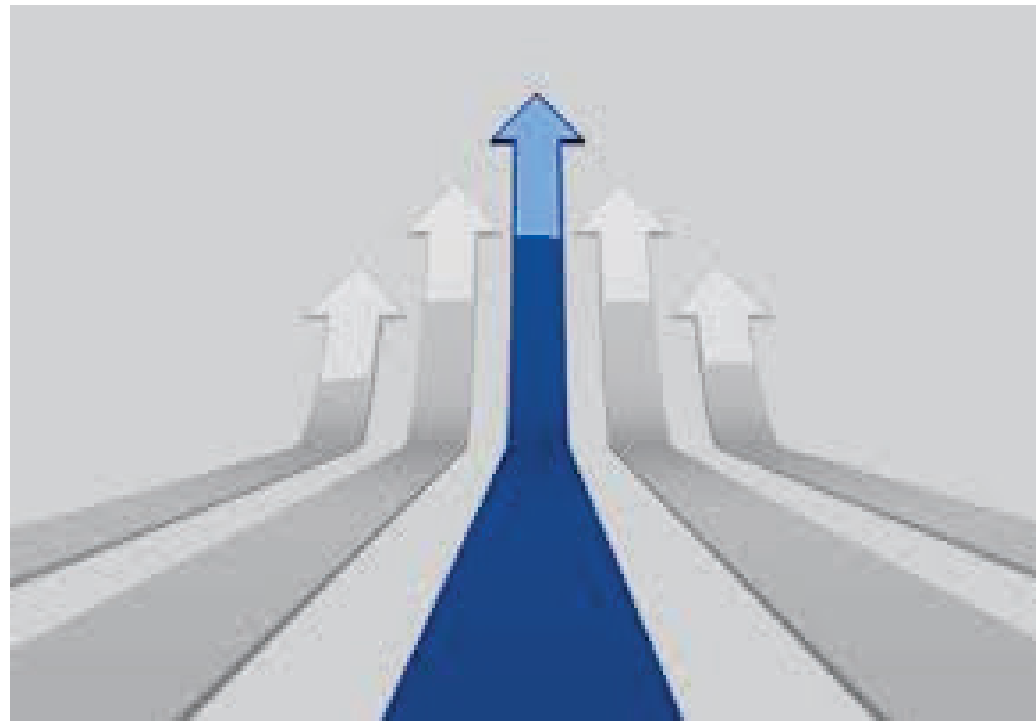


CMS negotiates drug prices directly with manufacturers for certain drugs

2026	2027	2028	2029
10 Part D Drugs	15 Part D Drugs	15 Part D and Part B Drugs	20 Part D and Part B Drugs
Eliquis	<p>Names of Drugs to be announced by CMS later</p>		
Jardiance			
Xarelto			
Januvia			
Farxiga			
Entresto			
Enbrel			
Imbruvica			
Stelara			
Fiasq, Fiasq FlexTouch, Fiasq PenFill, NovoLog, NovoLog FlexPen, NovoLog PenFill			



A Look Ahead



Projections



H-scan

Stress Testing

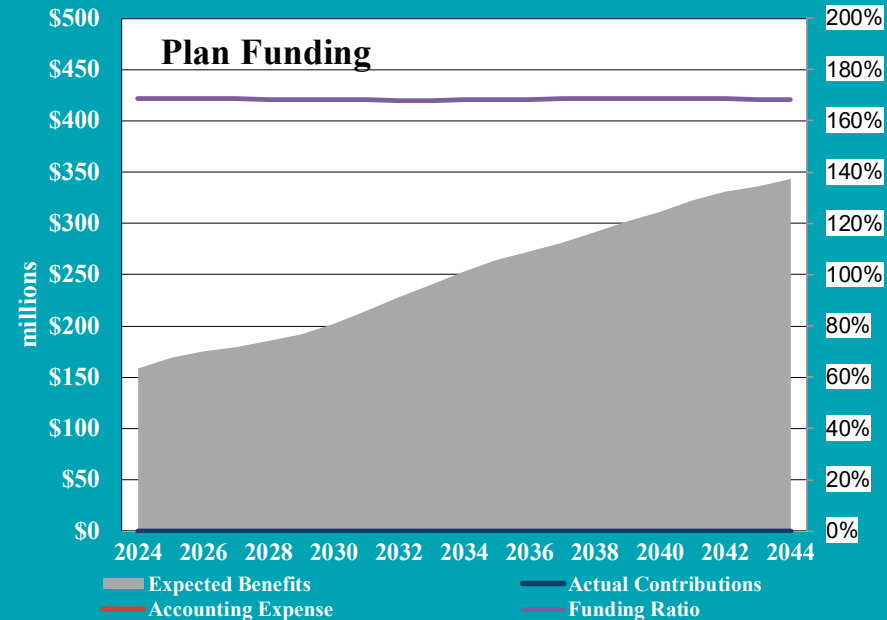
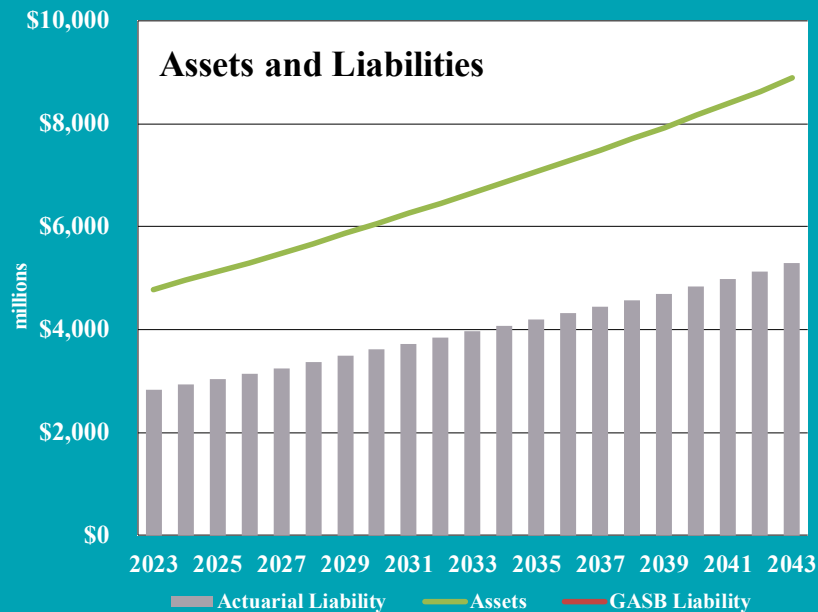


Show Benefit Change

	Initial Trend	First Year	Second Year	Ultimate Trend	Years to Ultimate
Healthcare					
Pre-Medicare	4.54%	7.06%	6.20%	4.14%	20
Post-Medicare	5.25%	9.23%	8.43%	4.14%	20
Investment Return		7.00%			
Discount Rate		7.00%			
				Baseline	
				Historical	
				1963	60%

BASELINE RESULTS			
Year at:	2042	2062	2082
Funding Ratio	168%	134%	60%
Average Return (2037-2081)	7.00%		
Adjust Trends (+1/-1%)	0.00%		
Average Salary Increases	3.00%		

2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	14 yr Average Return
7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%



Healthcare Scorecard



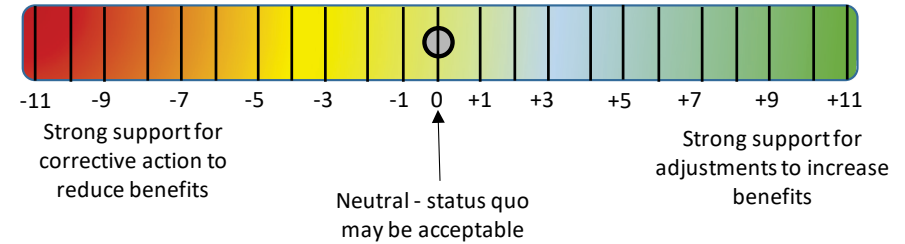
Health Care Plan Management Policy Scorecard - 2023

Category	Metric	Current Value	Score Range	2023 Score	2022 Score
Risk measure	Probability of 60+ years of solvency	54%	-3 to +3	0	+3
Current status	Funded ratio	169%	-2 to +2	+2	+2
Stress tests	Gov't subsidies & investment returns	72%	-2 to +2	-1	+2
	Pre-Med. enrollees & investment returns	68%	-1 to +1	-1	+1
Funding potential	Pension funding period	11.2	-1 to +1	+1	+1
Economic context	10-year returns	7.5%	-1 to +1	0	0
	Spread between 10Y & 3M Treasuries	-1.62%	-1 to +1	-1	0

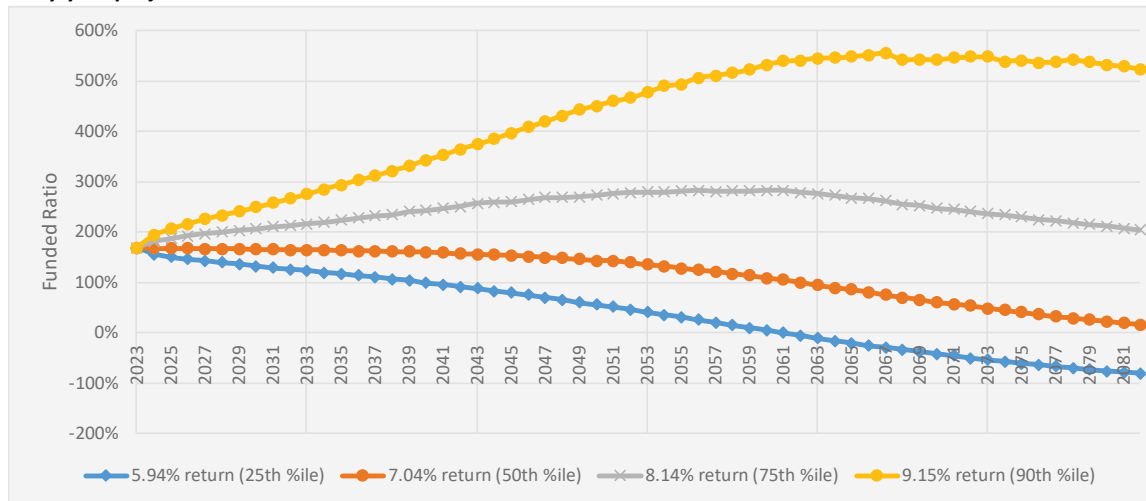
Current Summary Score	0
Prior Year Summary Score	9

A summary score below -5 suggests corrective action to reduce benefits may be necessary.

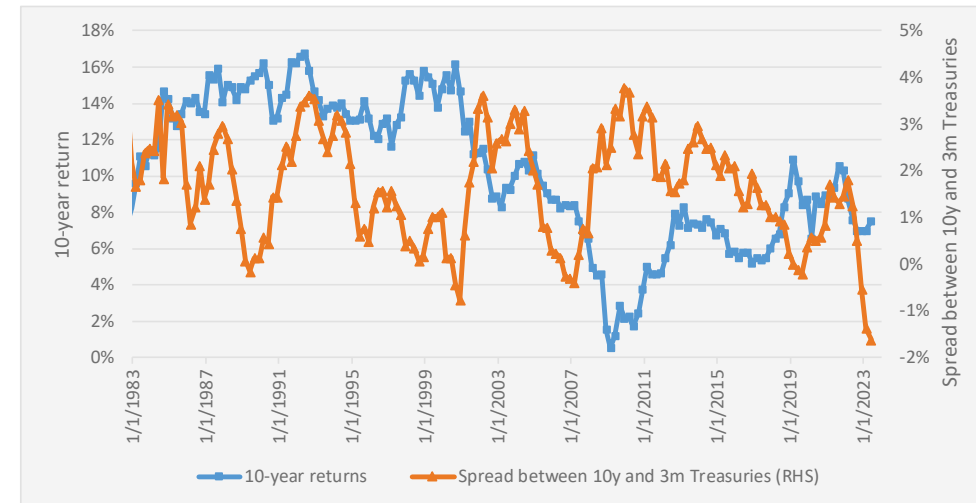
A summary score above +5 suggests adjustments to increase benefits may be supportable.



Sixty-year projection of Health Care Fund Funded Ratio



Economic context



Required Disclosures



The purpose of this presentation is to present actuarial valuation results for the State Teachers Retirement System of Ohio. This presentation is for the use of the Board and System staff.

In preparing our presentation, we relied on information, some oral and some written, supplied by the State Teachers Retirement System of Ohio. This information includes, but is not limited to, the plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23.

We hereby certify that, to the best of our knowledge, this presentation and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices that are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this presentation. This presentation does not address any contractual or legal issues. We are not attorneys, and our firm does not provide any legal services or advice.

This presentation was prepared exclusively for the State Teachers Retirement System of Ohio for the purpose described herein. This presentation is not intended to benefit any third party, and Cheiron assumes no duty or liability to any such party.

The actuarial assumptions, data, and methods are those used in the preparation of the actuarial valuation reports as of June 30, 2023. Please see our report, dated October 2023 for further details. This presentation is subject to the same caveats and limitations disclosed in the report.

The assumptions reflect our understanding of the likely future experience of the Plan, and the assumptions as a whole represent our best estimate for the future experience of the Plan. The results of this presentation are dependent upon future experience conforming to these assumptions. To the extent that future experience deviates from the actuarial assumptions, the true cost of the Plan could vary from our results.