

Fiscal Year 2024

Oct. 17, 2024





- Financial Reporting Timeline & Background
- Statement of Changes in Fiduciary Net Position
- Financial Reporting Summary
- Actuarial Reporting Background
- Payroll Growth
- Actuarial Reporting Next Steps

Financial Reporting Timeline



• June

- External auditor (Crowe) begins external financial statement audit
- August
 - Plan participant data file provided to external actuary (Cheiron) and Crowe
 - Verification and performance examination completed by external firm (ACA)
 - Audit Committee meeting with Crowe and ACA

September

- IT systems review completed by Crowe
- Validation of investment management fees by external firm (Albourne)
- Fiscal year financial reporting cutoff

October

- Unaudited financial statements provided to Crowe, Cheiron and the board
- Cheiron presents initial pension and health care actuary valuations to the board
- Actuary valuations provided to Crowe

Financial Reporting Timeline (continued)

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November

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

• December

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

February

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



- 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

Consolidated Statement of Changes in Fiduciary Net Position – Additions At June 30 (in thousands)



6

	FYE June 30, 2024	FYE June 30, 2023	
ADDITIONS	Julie 30, 2024	Julie 30, 2023	
Contributions:			
Member contributions	\$ 1,944,25 2	\$ 1,884,375	
Employer contributions	1,953,855	1,893,646	
Transfers from Defined Contribution Plan	15,525	19,315	
Government reimbursements	91,900	100,515	
Other retirement systems	68,756	67,166	
Total contributions	4,074,288	3,965,017	
nvestment income:			
Investment income (loss)	9,444,405	7,696,036	
Less internal investment expenses	(47,715)	(44,348)	
Less external asset management fees	(264,362)	(256,153)	
Net investment income (loss)	9,132,328	7,395,535	
TOTAL ADDITIONS	\$13,206,616	\$11,360,552	

Consolidated Statement of Changes in Fiduciary Net Position – Deductions At June 30 (in thousands)

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	FYE	FYE June 30, 2023	
	June 30, 2024		
DEDUCTIONS			
Benefit payments:			
Service retirement	\$ 7,057,219	\$ 6,883,424	
Disability retirement	172,667	176,371	
Survivor benefits	127,251	125,986	
Transfers to DB Plan	15,525	19,315	
Health Care	182,827	265,603	
Other	36,879	56,485	
Total benefit payments	7,592,368	7,527,184	
Refunds to members who have withdrawn	398,187	329,921	
Administrative expenses	73,047	76,314	
TOTAL DEDUCTIONS	8,063,602	7,933,419	
NET INCREASE (DECREASE) IN NET POSITION	5,143,014	3,427,133	
Fiduciary net position:			
Beginning of year	91,031,372	87,604,239	
End of year	\$96,174,386	\$91,031,372	

The detailed statement of changes in fiduciary net position is in the board materials file named FY_2024_UNAUDITED_FINANCIAL_STMTS_HIGHLIGHTS on pages 6-7



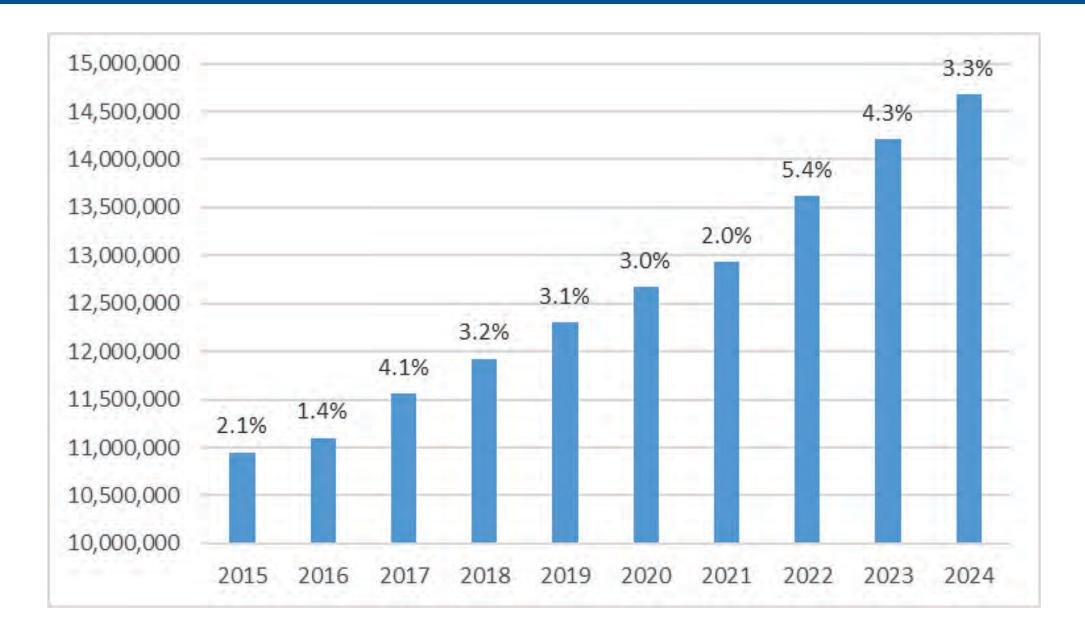
- Fiscal year unaudited financial statements and highlights are reported annually after financial reporting close
- Financial statements are prepared in accordance with generally accepted accounting principles (GAAP) and the Governmental Accounting Standards Board (GASB)
- Financial statements are audited annually by Crowe LLC, under the oversight of the Ohio Auditor of State
- 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



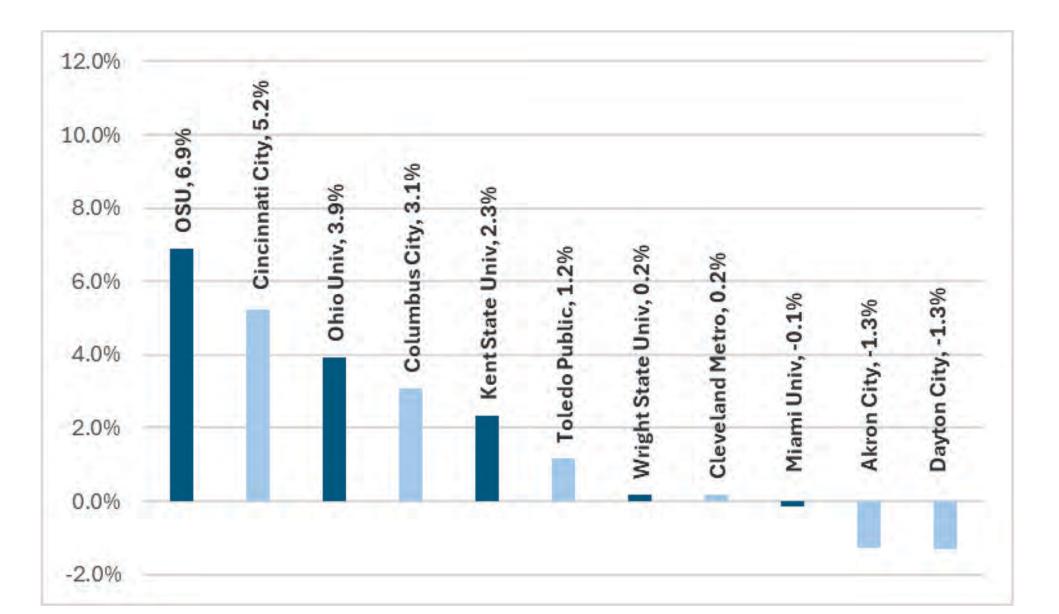
- Every five years (next one in 2027)
 - Experience review actuarial assumptions are updated
 - This includes demographic factors such as mortality, service and other experience
- Every year
 - The annual actuary valuation is performed by Cheiron
 - Economic assumptions are reviewed including discount rate, inflation, and wage growth

Payroll Growth





Payroll Growth for Selected Employers





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October

- Presentation of initial actuary valuation results to board (pension and health care)
- Supplemental Benefit discussion
- Pension Funding Policy review and potential approval

November

- Board Education and Planning Session
- Cheiron presents Preliminary Plan Design Lever Report to the board

December

- Board accepts final actuary pension and health care valuations, including lever report

February/March

- Capital market projections on proposed asset mix
- Economic assumption setting

• March/April

- Sustainable Benefit Plan - discussion and decisions





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Classic Values, Innovative Advice

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Pension Actuarial Valuation as of June 30, 2024

Michael Noble, FSA, EA Bonnie Rightnour, FSA, EA

October 17, 2024





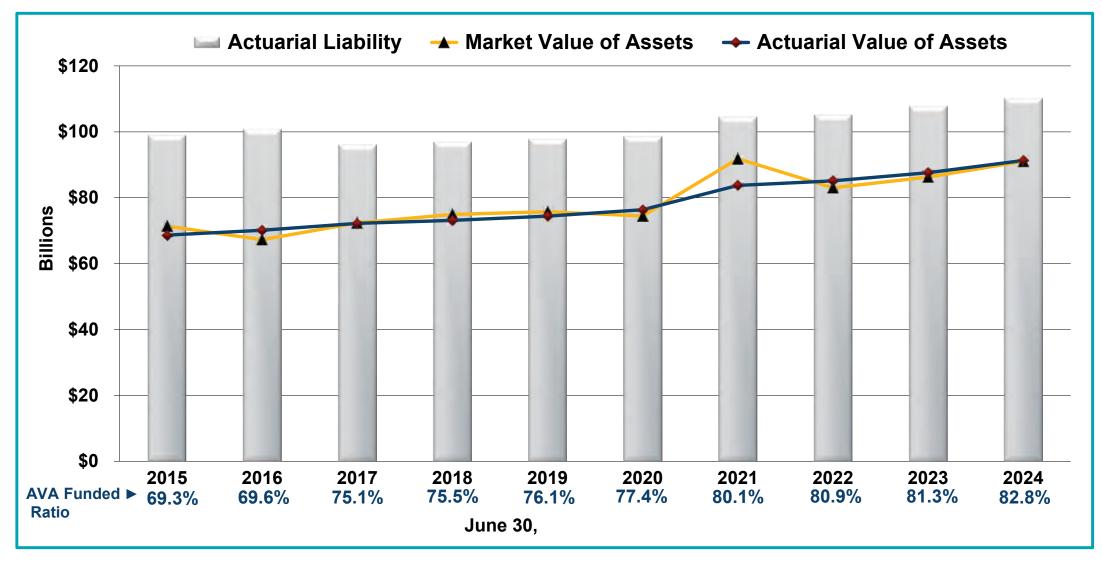
STRS Ohio Historical Trends

- Summary of June 30, 2024 Valuation Results
- Projected Outlook
 - Baseline
 - Stress Testing Scenarios



Historical Trends

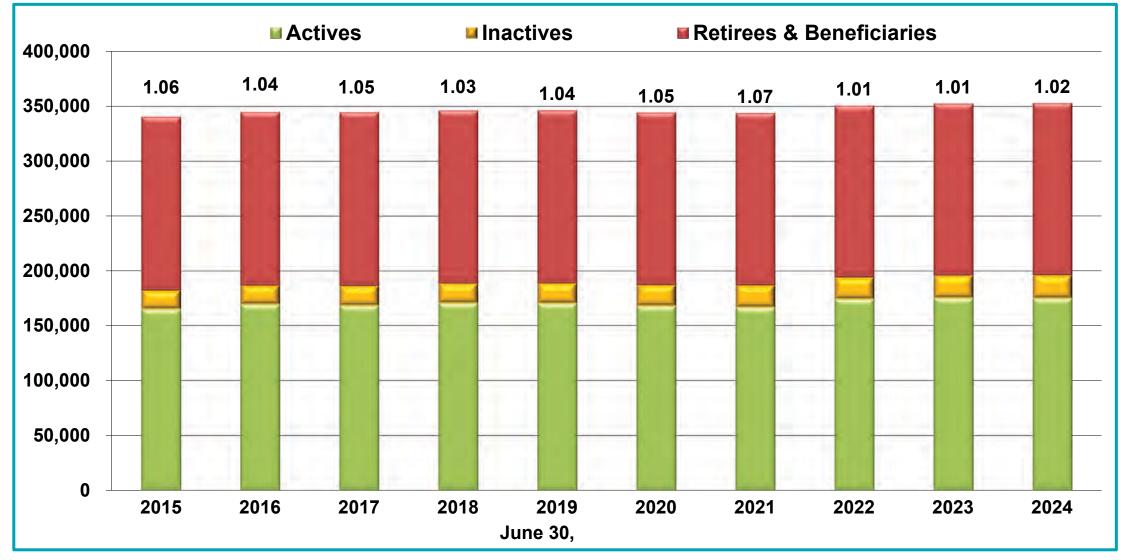
Improving funded ratio over the past decade





The population has been stable

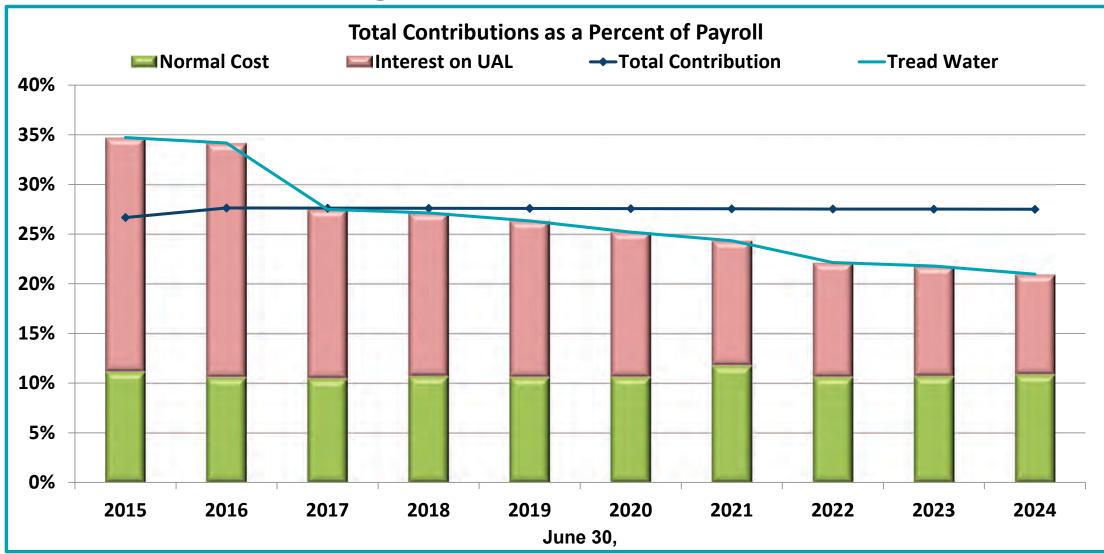
CHEIRON J



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

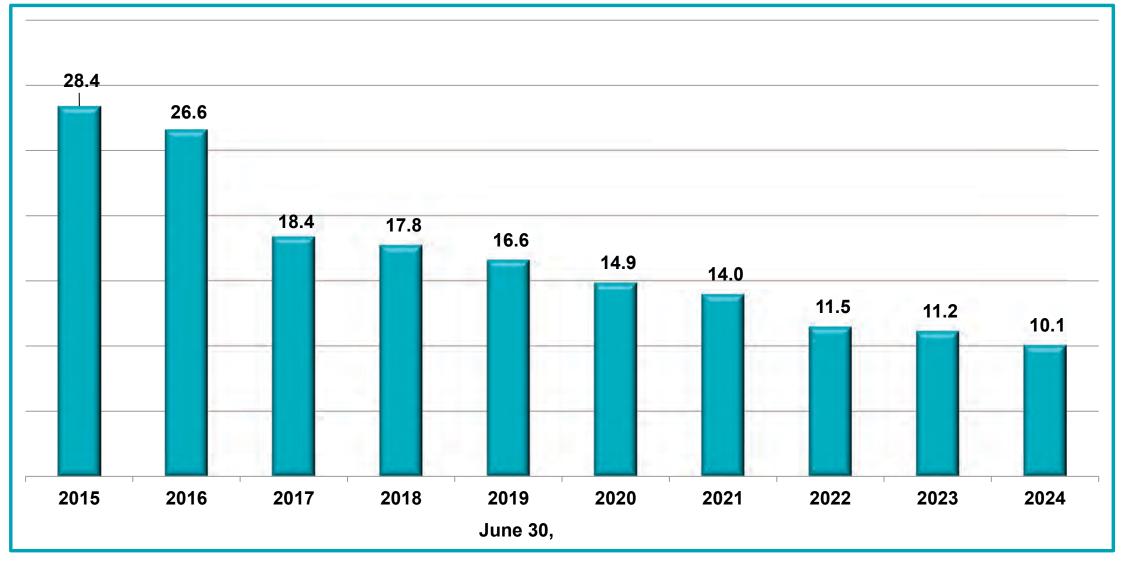
Contributions exceeding "tread water*"

CHEIRON 3



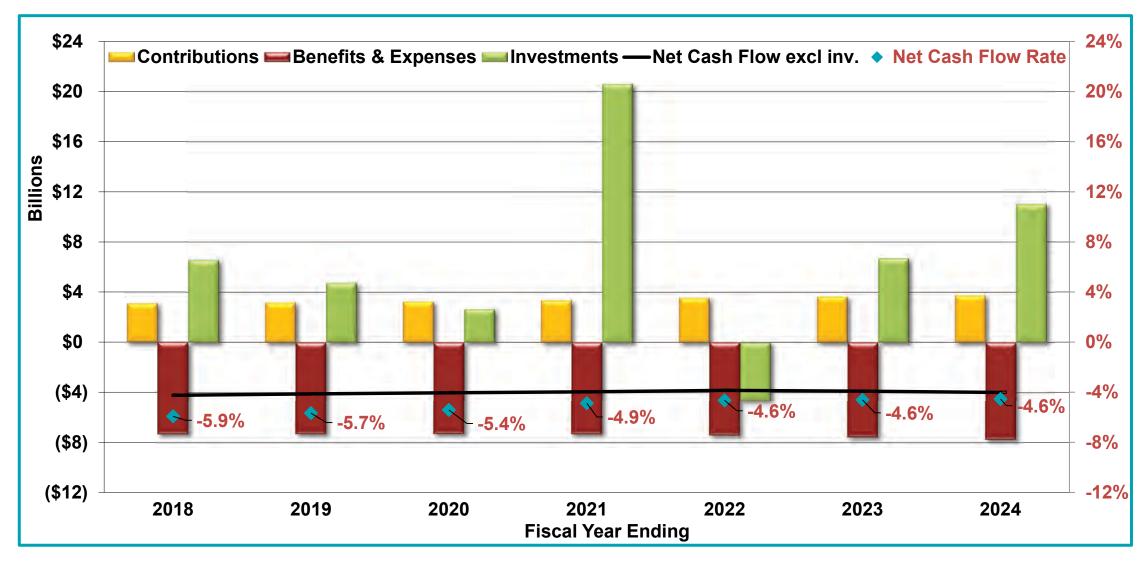
*Tread Water equals Normal Cost + interest on the Unfunded Actuarial Liability

Equivalent amortization period continuing to improve



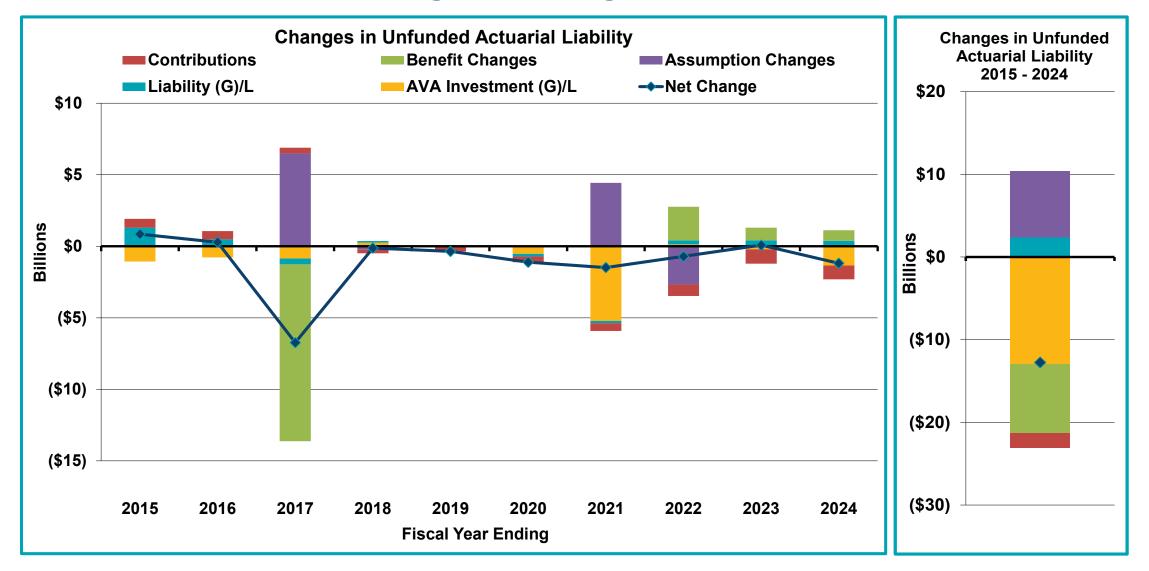


System has significant negative net cash flow

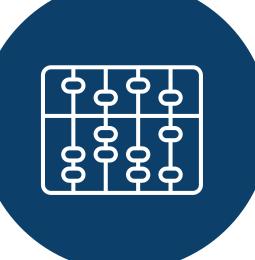




Plan and assumption changes are significant to UAL



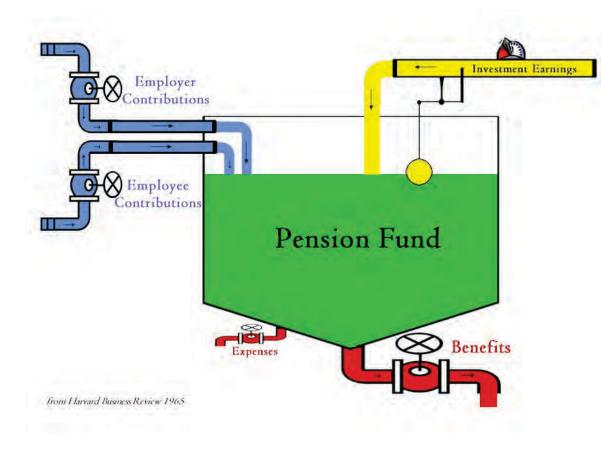




June 30, 2024 Actuarial Valuation Results

The Actuarial Valuation Process

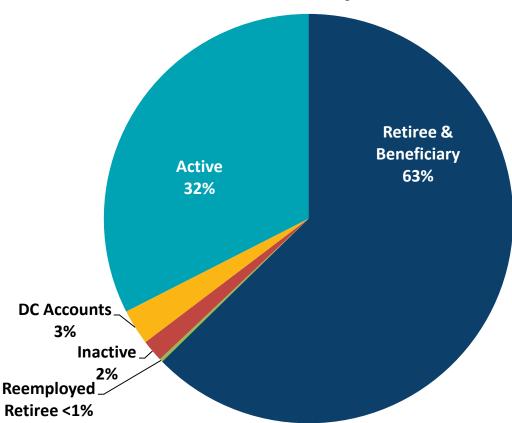
- 1. Collect information
 - Member data
 - Plan provisions
 - Asset information
- 2. Apply assumptions
 - Demographic
 - Economic
- 3. Project all future benefit payments
- 4. Determine a present value of the benefits
- 5. Compare to assets
- 6. Calculate employer and employee contributions





Key Valuation Results

- The benefit changes increased liabilities
 \$741 million
- Asset experience vs. expected return
 - Assets returned \$2.46 billion more than expected on a market value basis
 - Assets returned \$1.34 billion more than expected on an actuarial value basis
- Liability experience \$383 million loss
- Funded Status (Assets/Liabilities)
 - AVA improved from 81.3% to 82.8%
 - MVA improved from 80.0% to 82.5%
- Equivalent amortization period improved from 11.2 years to 10.1 years







Valuation Results

	June 30, 2024	June 30, 2023	% Change
Assets and Liabilities (\$millions)			
Actuarial Liability	110,249	107,783	2.29%
Actuarial Value of Assets (AVA)	<u>91,313</u>	87,580	4.26%
Unfunded Actuarial Liability (UAL)	18,936	20,203	(6.27%)
AVA Funded Ratio	82.8%	81.3%	
Market Value of Assets (MVA) MVA Funded Ratio	91,008 82.5%	86,248 80.0%	5.52%
Funding Period	10.1 years	11.2 years	-1.1 years
Contribution Rates			
Employer Rate	14.00%	14.00%	
Composite Member Rate*	13.48%	13.50%	
Total Contribution Rate	27.48%	27.50%	
Allocation of Total Contribution Rate			
Normal Cost	10.84%	10.66%	
Unfunded Liability	16.64%	16.84%	



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

Valuation Results

Summary of Plan Demographics	Jun	e 30, 2024	June	30, 2023	% Change
Membership (Defined Benefit + Combined + DC)					
Active Members		186,247		186,243	0.00%
Reemployed Retirees		17,139		16,915	1.32%
Inactive Members		183,960		177,082	3.88%
Retirees and Beneficiaries		156,594	-	156,511	0.05%
Total		543,940		536,751	1.34%
Payroll (\$ millions)					
Defined Benefit and Combined	\$	13,119	\$	12,733	3.03%
Defined Contribution and ARP	\$	1,556	\$	1,479	5.24%
Total	\$	14,675	\$	14,212	3.26%
Total Annual Benefits (\$ millions)	\$	7,319	\$	7,270	0.68%
Average Annual Benefit	\$	46,740	\$	46,448	0.63%



Low-Default-Risk Obligation Measure (LDROM)

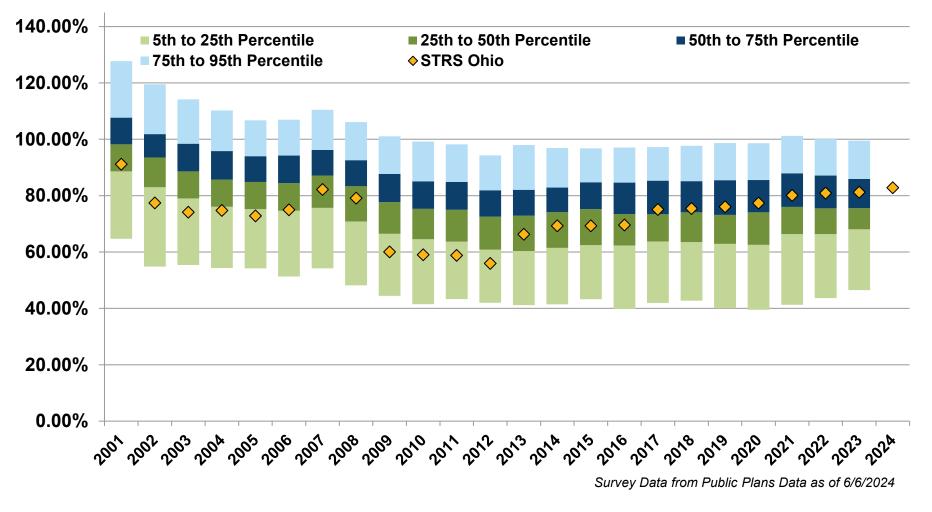
- Requirement to show the System's obligation if evaluated with low-risk investment
 - Shows the value of investing in a diversified portfolio
 - Investing in US Treasuries on valuation date of 6/30/2024 would be equivalent to a 4.44% discount rate





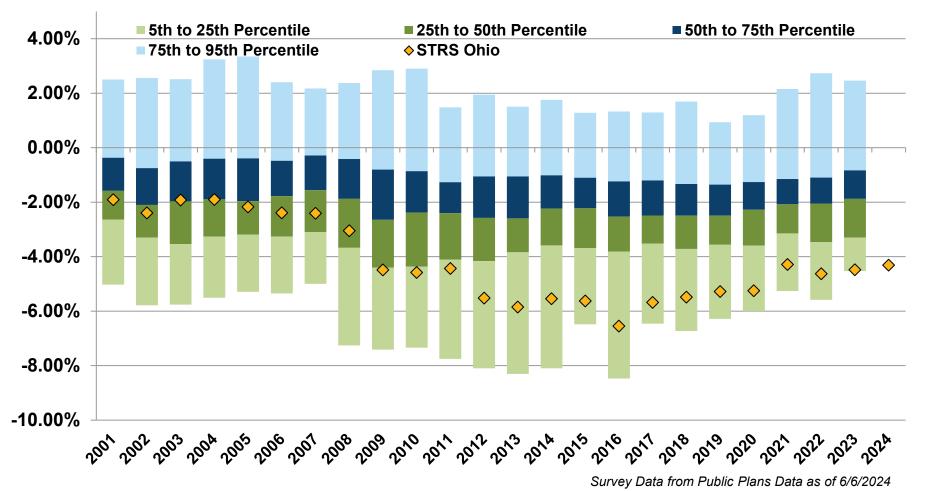
Funded ratio comparison shows STRS improving

AVA Funded Ratio





Net cash flow (% of MVA) shows STRS in bottom quartile



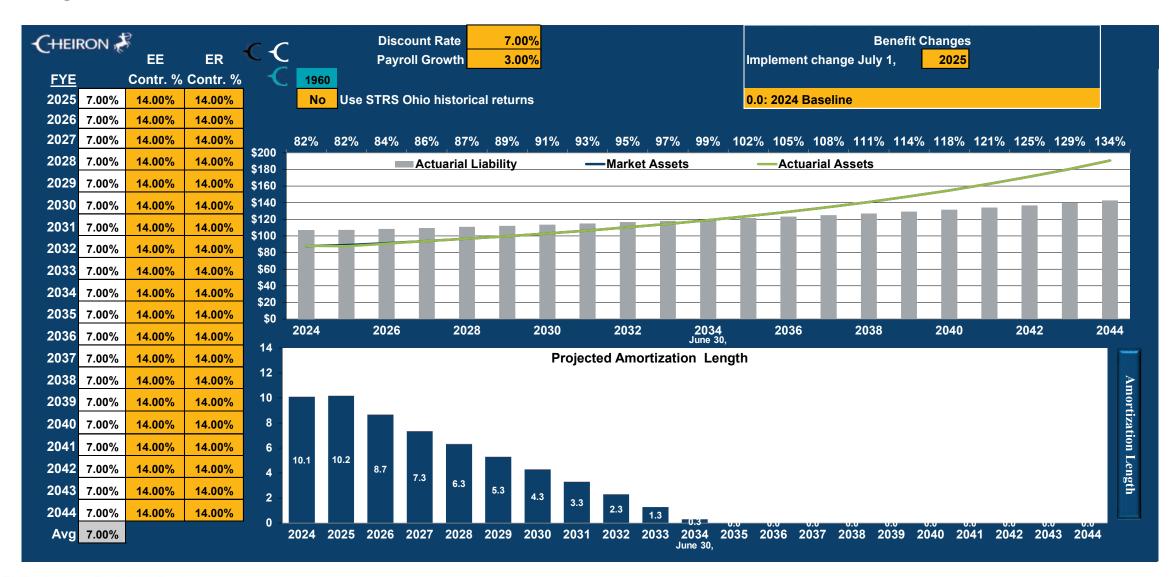
Net Cash Flow Rate





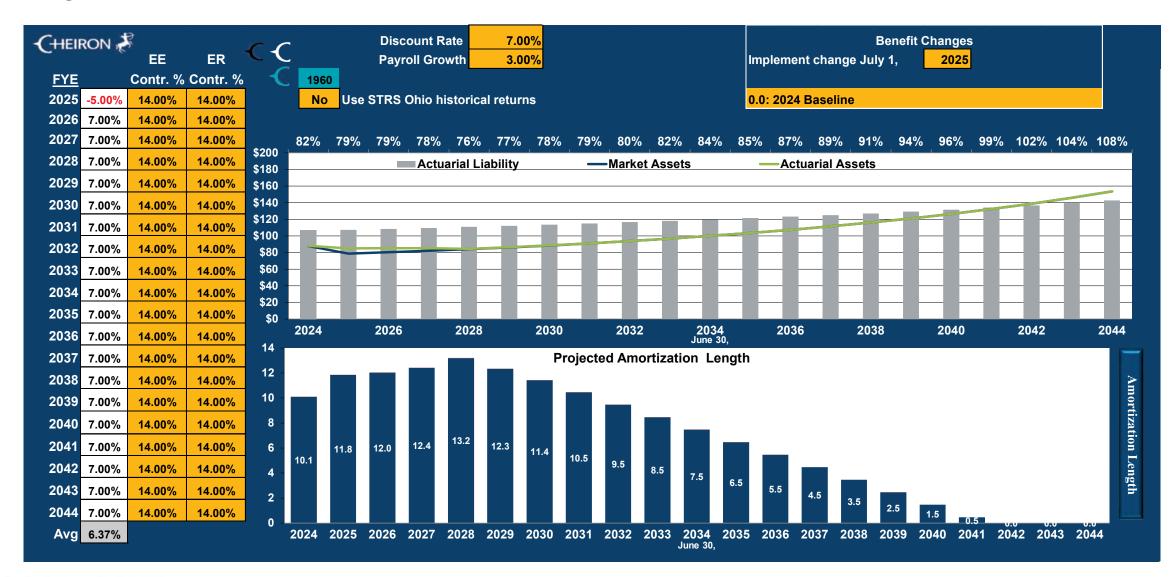
Projections

Projections – Baseline



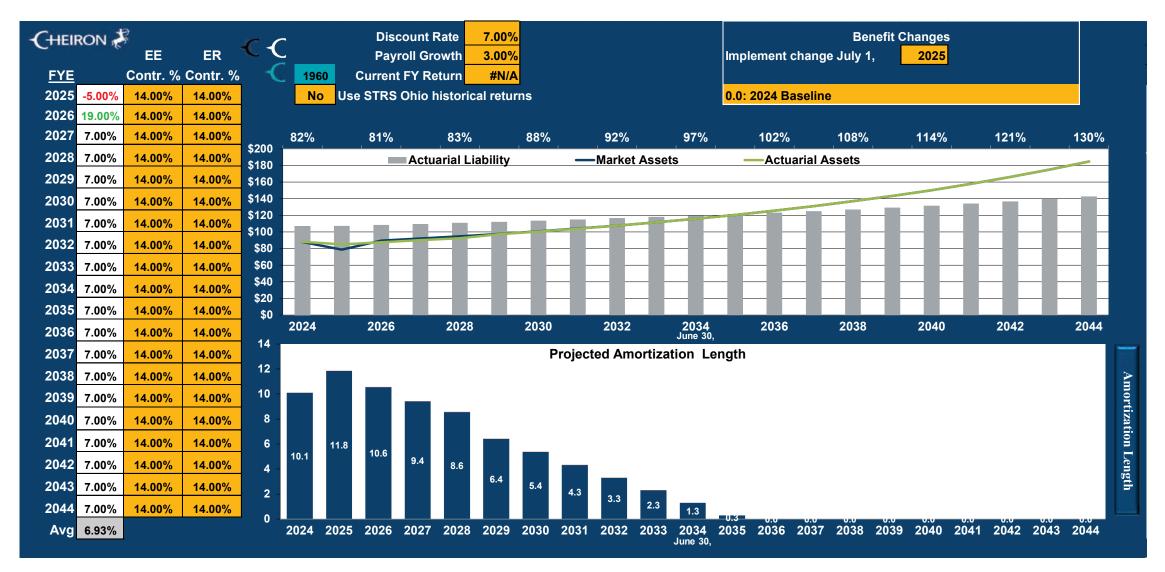


Projections – 1-Year shock



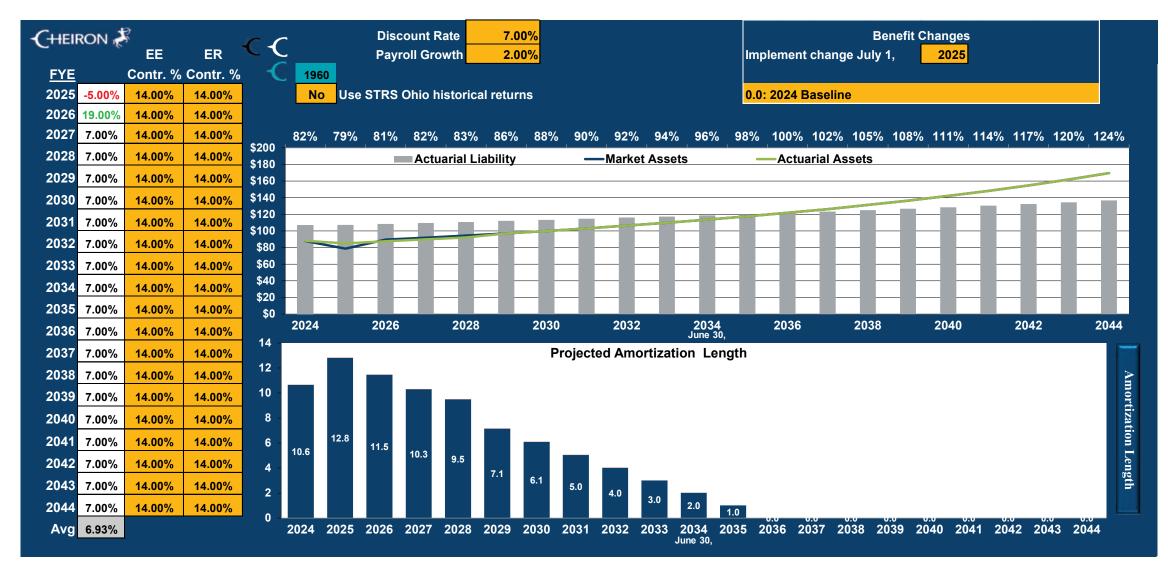


Projections – 1-Year shock followed by recovery



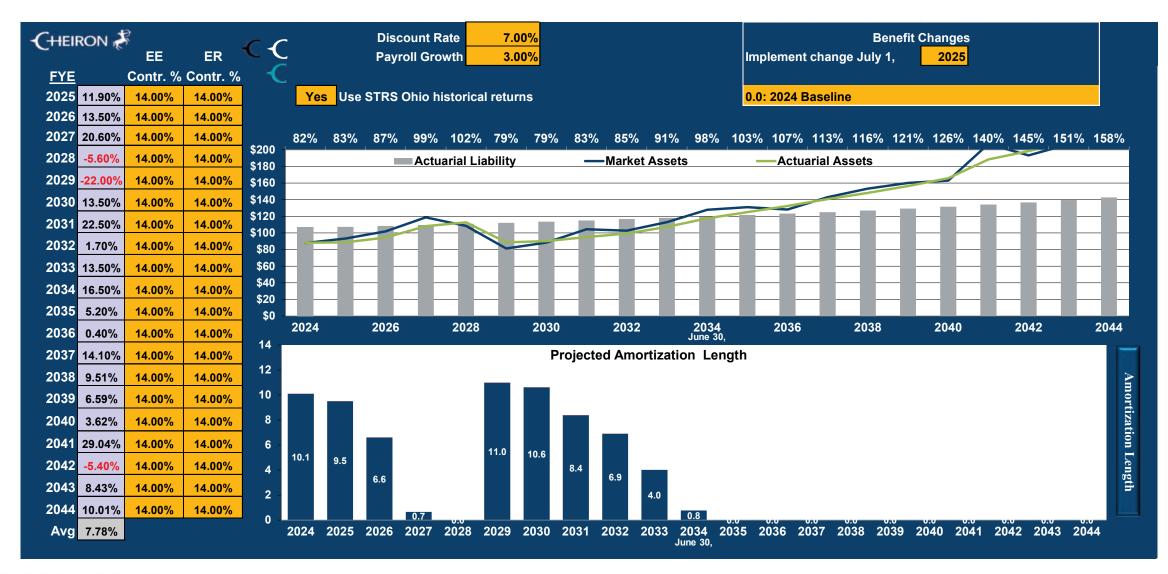


Projections – 1-year shock, recovery, slower payroll growth



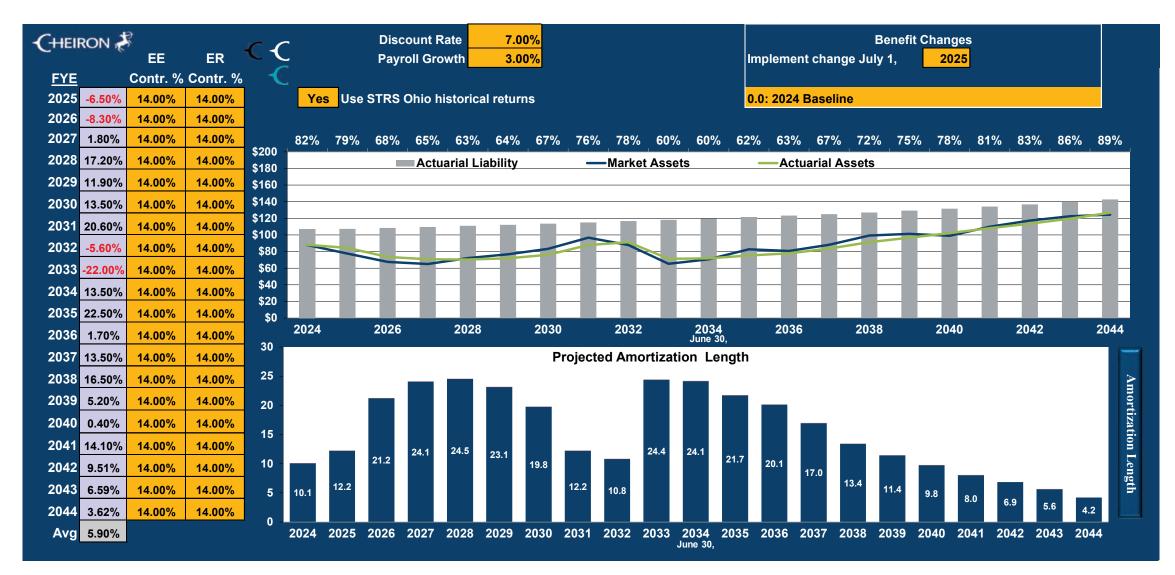


Projections – Actual returns over the past 20 years





Projections – Volatile returns of approximately 6.00%





Next Steps

•November

- Board Education and Planning Session
- Preliminary Lever Report presented to the Board
 - Will be incorporated into the final Actuarial Valuation Report
 - Will provide estimated impact of some potential plan changes
- •February/March
 - Economic Assumptions Review
- March/April
 - Sustainable Benefit Plan discussion and decisions





Required Disclosures

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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.

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Michael Noble, FSA, EA, MAAA, FCA Principal Consulting Actuary Bonnie Rightnour, FSA, EA, MAAA Principal Consulting Actuary



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STRS Ohio

OPEB Actuarial Valuation as of June 30, 2024

Daniel J. Rhodes, FSA, MAAA, FCA Alison Chafin, FSA, EA, MAAA

October 17, 2024





Historical Trends

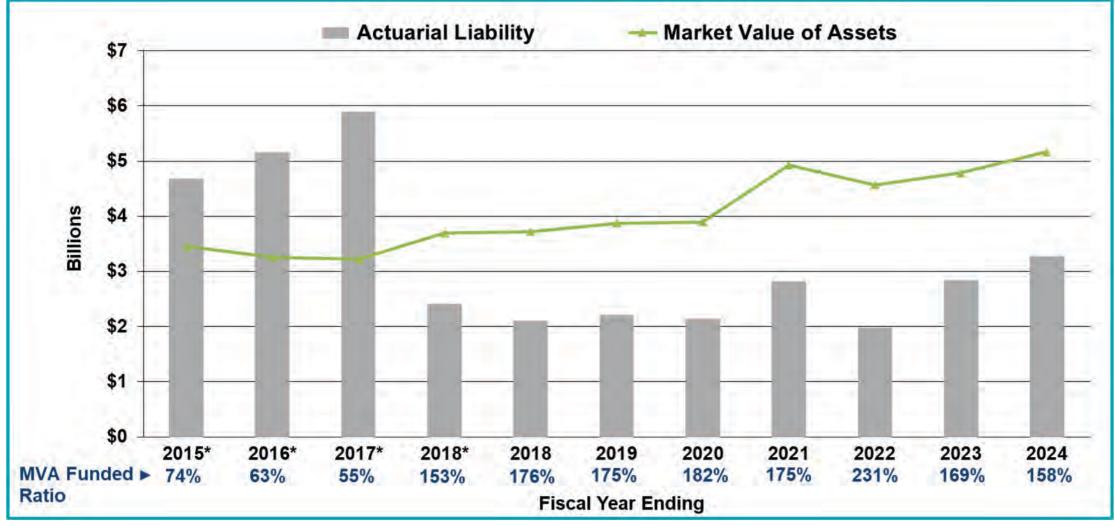
- •June 30, 2024 Valuation Results
- •STRS Ohio Plan Benefit Changes and Regulation Updates
- Stress Testing
- Healthcare Scorecard



Historical Trends

Assets and Liabilities

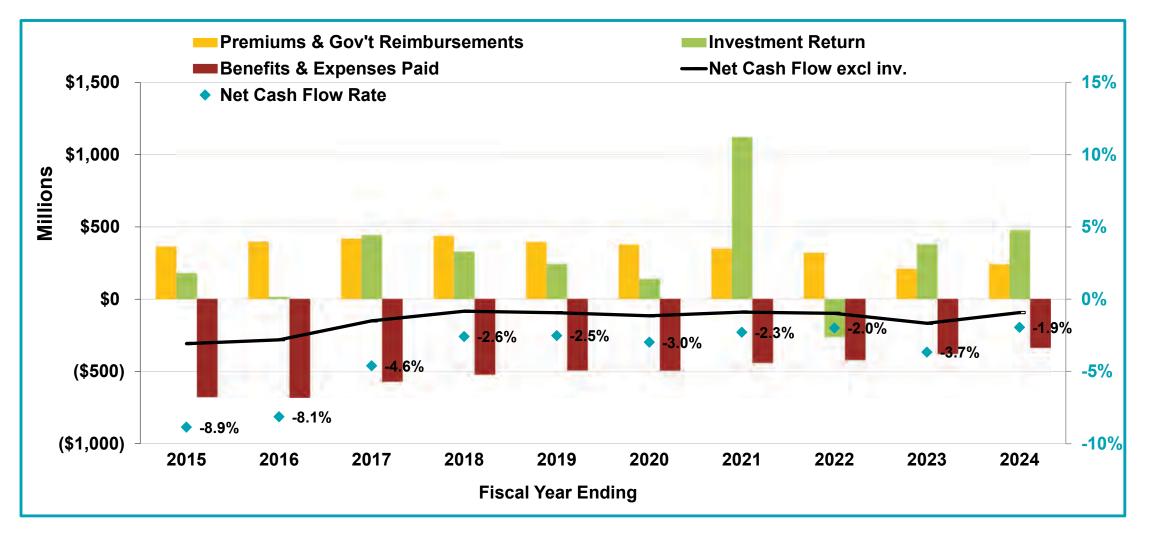
There are no projected employer contributions to fund the Plan on an ongoing basis.



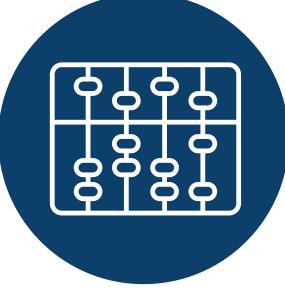
*January 1 valuation date



Cash Flows



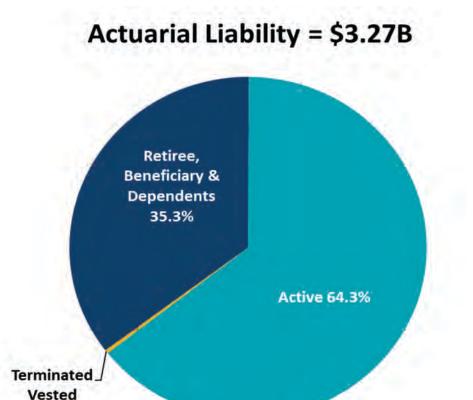




June 30, 2024 Actuarial Valuation Results

Key Valuation Results

- The benefit changes increased liabilities by \$0.25 billion
 - –New subsidy reimbursement levels adopted March & May 2024
 - -Extension of retirement eligibility (Unreduced to 34 years, Reduced to 29 years)
- Assets returned \$0.14 billion more than expected on a market-value basis
- Liability experience & assumption changes had an offsetting impact (\$8 million loss)
- Funded Status (Assets/Liabilities) decreased from 168.5% to 158.0%



There are no projected employer contributions to fund the Plan on an ongoing basis.

0.3%



Valuation Results

Discount Rate	7.00%	7.00%	
Assets and Liabilities	June 30, 2024	June 30, 2023	% Change
Actuarial Liability	\$ 3,269,878	\$ 2,838,543	15.2%
Market Value of Assets (MVA)	\$ 5,166,687	\$ 4,783,404	8.0%
Unfunded Actuarial Liability (UAL)	\$ (1,896,809	9) \$ (1,944,862)	-2.5%
MVA Funded Ratio	158.01	% 168.52%	
Participant Counts			
Actives	174,832	2 175,028	-0.1%
Terminated Vested	21,417	20,908	2.4%
Retirees & Beneficiaries	96,681	97,623	-1.0%
Actuarially Determined Contribution (ADC)	Fiscal Year Ending June 30, 2025	g Fiscal Year Ending June 30, 2024	
Normal Cost	\$ 75,534	\$ 61,724	22.4%
Amortization of UAL	(104,103	3) (106,741)	-2.5%
Interest Adjustment	(2,000)) (3,151)	-36.5%
Total ADC (not less than \$0)	\$ 0) \$ 0	
Expected / Actual Net Benefit Payment	\$ 166,772	2 \$ 90,928	83.4%





STRS Ohio Plan Benefit Changes and Regulation Updates

Future Changes to Medicare Rx Plans

January 1, 2025

- Cap member out of pocket expenses to \$2,000
- Increase in some recovery amounts (direct subsidy and rebates)
- Premium stabilization program

January 1, 2026 and Beyond

 Prescription drug price negotiations with CMS

Impact reflected in this valuation through 2025 plan rates.

Impact on STRS plan has not been measured and therefore not reflected in this valuation.

Inflation Reduction Act: 2026 and beyond

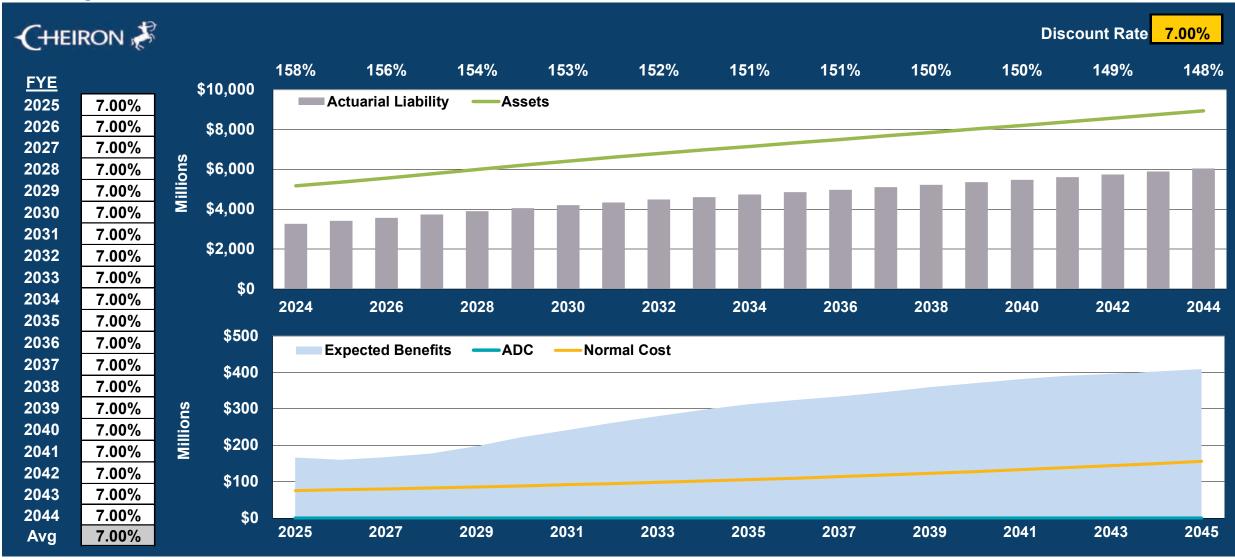
2026	2027	2028	2029
10 Part D Drugs	15 Part D Drugs	15 Part D and Part B Drugs	20 Part D and Part B Drugs
Eliquis			
Jardiance	Names of Drugs to be announced by CMS lat (2027 drugs to be announced by Feb. 2025)		
Xarelto			
Januvia			
Farxiga			ed by CMS later
Entresto			
Enbrel			<i>by</i> 1 001 2020)
Imbruvica			
Stelara]		
Fiasq, Fiasq FlexTouch, Fiasq PenFill, NovoLog, NovoLog FlexPen, NovoLog PenFill			

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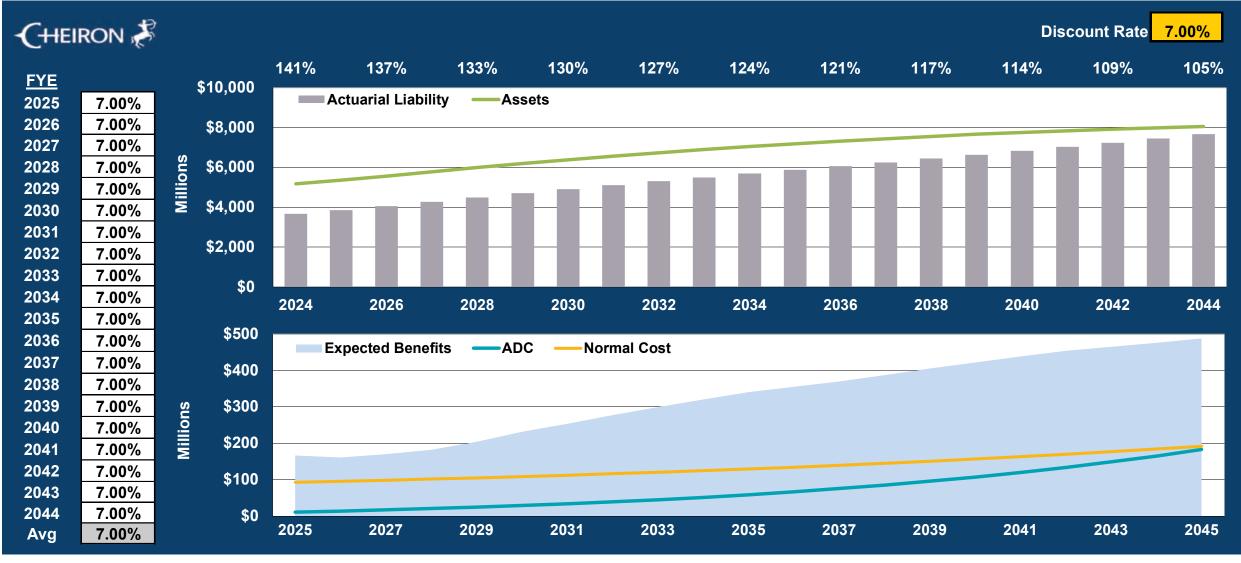
Stress Testing

Projections - Baseline

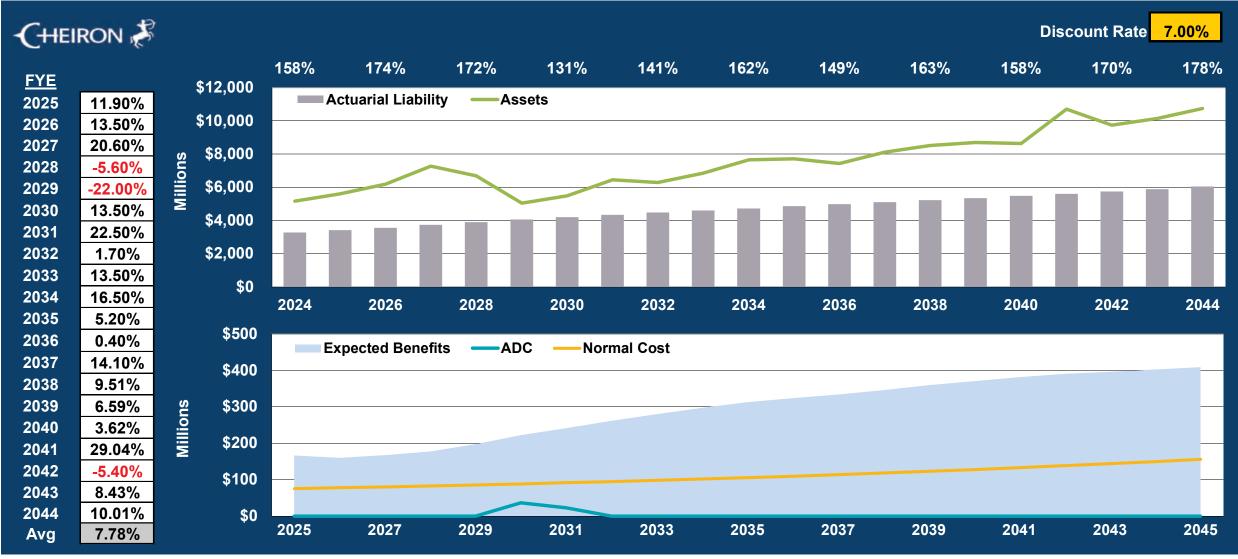




Projections – 1% Increase in Healthcare Trend for All Years



Projections – Actual Returns Past 20 years (pension plan)





Projections – Volatile Returns approximately 6.00%







Healthcare Scorecard



Health Care Plan Management Policy Scorecard - 2024

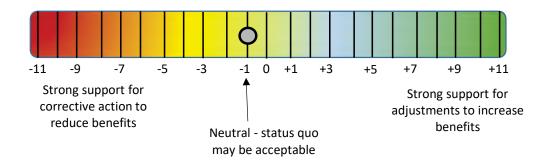
		Current	Score	2024	2023
Category	Metric	Value	Range	Score	Score
Risk measure	Probability of 60+ years of solvency ¹	47%	-3 to +3	0	0
Current status	Funded ratio	158%	-2 to +2	+2	+2
Stress tests	Gov't subsidies & investment returns ²	69%	-2 to +2	-2	-1
	Pre-Med. enrollees & investment return ³	59%	-1 to +1	-1	-1
Funding potential	Pension funding period	10.1	-1 to +1	+1	+1
Economic context	10-year returns	7.1%	-1 to +1	0	0
	Spread between 10Y & 3M Treasuries	-1.12%	-1 to +1	-1	-1

Current Summary Score	-1
Prior Year Summary Score	0

1 Based on 20-year average return of 6.68% and standard deviation of 10.90%

2 Discount Rate and Investment Returns based on the 40th percentile of 20-year average return of 6.32% Assumes Medicare subsidies decreases by 25% relative to baseline over next five years.

3 Discount Rate and Investment Returns based on the 40th percentile of 20-year average return of 6.32% Assumes pre-Medicare enrollment increases by 25% relative to baseline over next five years



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.

Healthcare Scorecard

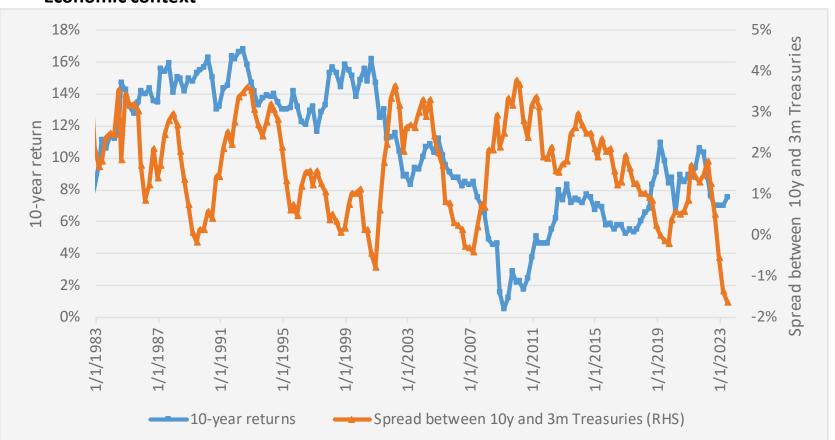


Sixty-year projection of Health Care Fund Funded Ratio



18

Healthcare Scorecard



Economic context



19



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Daniel J. Rhodes, FSA, MAAA Principal Consulting Actuary Alison Chafin, FSA, EA, MAAA Consulting Actuary



Supplemental Benefit Overview

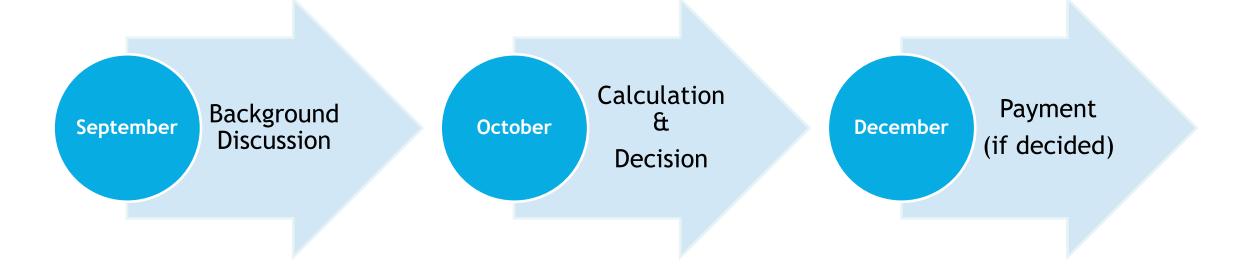
Oct. 17, 2024

1





- The Supplemental Benefit Payment has not been utilized since 2000
- The decision process as follows:





The Supplemental Benefit Payment is defined in statute 3307.671

- The board may determine the amount to be paid
- The amount cannot exceed 25% of the investment income from the prior fiscal year after allocations to other funds are made
- The board's actuary does not need to determine if the amount paid impairs fiscal integrity; however, Cheiron will incorporate any amount into the Sustainable Benefit Plan budget

Updated decision framework to determine if a payment should be made

Updated Decision Framework

STRS * * * *

Critical factors (if any one is no, then stop)

- 1. Is at least de-minimis spending available?
- 2. Does the market return exceed the assumed rate of return?
- 3. Does the five-year average market return exceed the assumed rate of return by at least 50 bps?

2024

- 1. Yes, \$882 de-minimis is available
- 2. Yes, 10.5% compared to 7.0% assumed
- 3. Yes, 8.8% compared to 7.2%

Additional factors

(if two or more are no, then stop)

- 4. No new programs that need funding?
- 5. No existing programs or funds that require additional allocation?
- 6. Was the investment return for the first quarter of the current fiscal year at least positive?

2024

- 4. Yes, there are no new programs that require funding
- 5. Yes, there are no additional allocations required to be made to a fund or program
- 6. Yes, the first quarter return of fiscal 2025 is 4.1% net



If Decision is Yes, Steps to Payment



Step 1: Decide the benefit amount

- Start with calculation set in statute
- Reduce to be less than de-minimis if necessary
- Board decides final value

Step 2: Calculate the unit value

- 1. Statutory limit = \$554M
 - This is less than de-minimis so no further adjustment is necessary
 - Illustration a 1% payment on base benefits = ~61.2M
- 2. Unit value = \$61.2M ÷ 6.9M, rounded down to the nearest dollar = \$8



Steps 3 & 4: Determine each individual's number of units and eligible payment

- Roger a member who retired with 34 years of service and has been retired for 21 years has 55 units and would receive a \$440 payment*
- Donna a disability recipient with 25 years of service and 10 years as a benefit recipient has 35 units and would receive a \$280 payment*
- Jennifer a joint and survivor annuitant of a member who retired 30 years ago with 30 years of service has 60 units and would receive a \$480 payment*

*Illustrative. Gross amount, Supplemental Benefit Payment is taxable.

Supplemental Benefit Payment compared to COLA



Supplemental Benefit Payment:

- Defined in statute R.C. 3307.671
- Determined by the Board subject to the investment performance of the prior fiscal year
- Specific eligibility rules. For example, no waiting period
- One-time payment. It is not included in future benefit amounts, nor will a payment in one year determine if a payment can be made the following year
- Individual amount varies based on length of service & time receiving benefits which can help address purchasing power erosion
- Amount included in Sustainable Benefit Plan spending

COLA:

- Defined in statute R.C. 3307.67
- Reviewed annually by the Board subject to actuary's determination of fiscal integrity
- Specific eligibility rules. For example, has a 5-year waiting period
- Amount is included in future benefit payments
- Individual amount based on a percentage of base benefit
- Amount included in Sustainable Benefit Plan spending





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COLA Comparison

Oct. 17, 2024

1



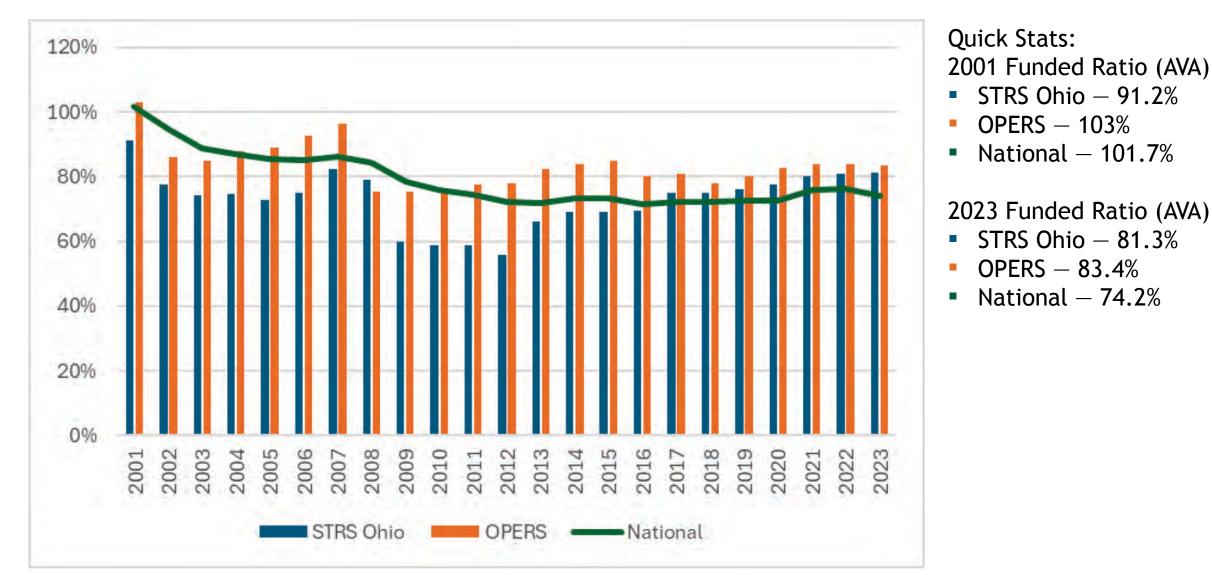
September – discussed how OPERS is able to pay a COLA

- By statute, COLA is automatic for OPERS, where STRS Ohio must pass fiscal integrity before a benefit can be added
- No two pensions are exactly alike, and great care needs to be taken in comparing just one benefit; discussed several important differences between the systems
- OPERS has sought authority similar to STRS Ohio to adjust benefits

Today – review four key funding metrics

1 – Funded Ratio





Source: Public Plans Database

Closer Look: 2000-2010



- 2000-2010 experienced two major financial crises
- Both systems entered 2000 strong, which was needed to withstand the Tech Crisis that would come in 2000-2002
- 2003-2007 gave a chance to recover with strong investment returns, but progress was slower
- Following the Great Financial Crisis of 2008, in 2009 the funding period went infinite, and action was necessary

In less than 10 years, we went from approaching full funding to being at risk of severe impairment

Funded Ratio (Actuarial Value)		
FY End	STRS Ohio	OPERS
2001	91 %	103%
2002	77%	86%
2007	82%	96 %
2009	60%	75%
2010	59 %	76%

2 – Investment Return





Quick Stats: Trailing 5-Year Return STRS Ohio — 9.8%

• OPERS - 8.2%

Trailing 10-Year Return

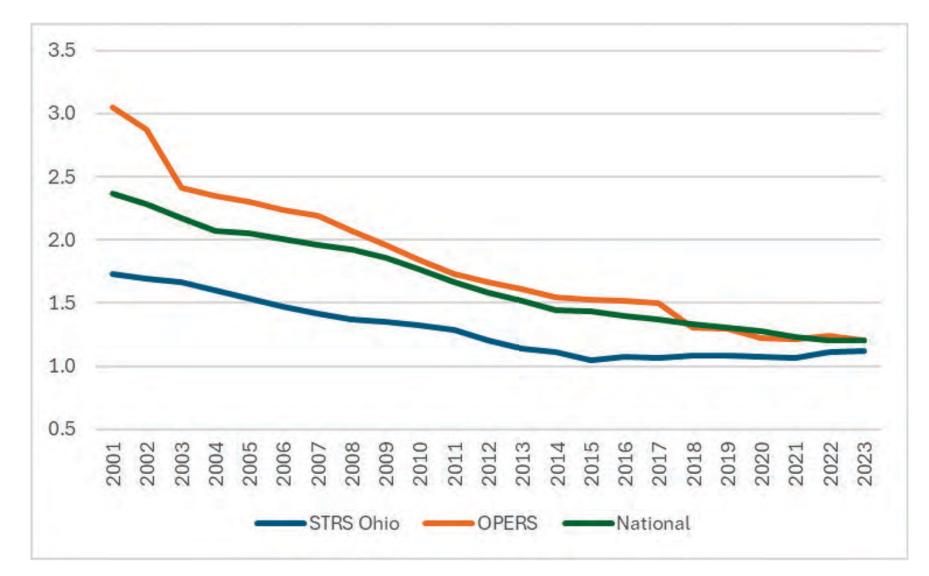
■ STRS Ohio - 8.0%

• OPERS - 6.9%

Source: ORSC History Report (2001-2022), 2023 ORSC Investment Performance Report (2023) Returns are calendar year, gross of fees 2001 - 2013, net of fees 2014 - 2023

3 – Actives/Beneficiaries





Quick Stats: 2001 Actives/Beneficiaries

- STRS Ohio 1.7 (1.7 actives for every 1 beneficiary)
- OPERS 3.1
- National 2.4

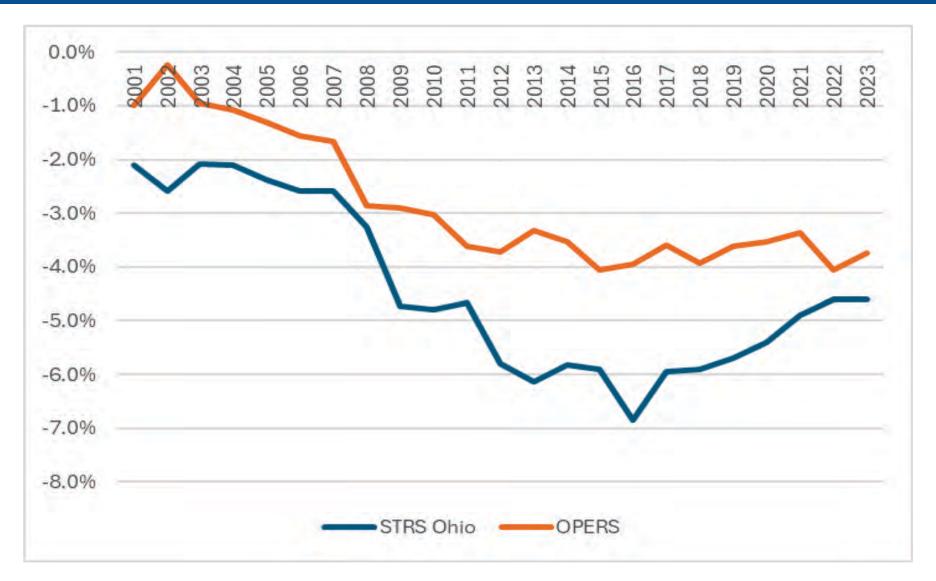
2023 Actives/Beneficiaries

- STRS Ohio 1.1
- OPERS 1.2
- National 1.2

Source: Public Plans Database, 2023 OPERS ACFR

4 – Cash Flow/Assets





Quick Stats: 2001 Cash Flow/Assets STRS Ohio — (2.1)% OPERS — (1.0)%

2023 Cash Flow/Assets

- STRS Ohio (4.6)%
- OPERS (3.7)%

Source: Public Plans Database, 2023 OPERS ACFR



- Pensions must be able to withstand market swings; full funding over the long term is critical
- In times of market reward, having a large unfunded liability means those assets aren't available to increase returns
- Cash flows/demographics matter, negative cash flows make the system heavily reliant on investment earnings





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