



Retirement Board Agenda November 17 & 18, 2022

Click Link to Join Zoom Meeting:

<https://ohsers.zoom.us/j/99973853482?pwd=TFRSWWRDaCtwNTBhNGhLM2FTZ2hKdz09>

Meeting ID: 999 7385 3482

Password: 768973

To join by phone, dial: (929) 205-6099 and enter the Meeting ID: **999 7385 3482** and Password: **768973** when prompted.

PLEDGE OF ALLEGIANCE

1. Roll Call

CONSENT AGENDA (R)

2. Approval of Minutes of the **October 20, 2022**, Retirement Board Meeting
3. Summary of Investment Transactions - **September 1, 2022, to September 30, 2022**
4. Retirement Report
 - a. Superannuation and Survivor Benefits
 - b. Special Cases
5. Disability Report
 - a. Approval of Disability Benefits
 - b. Disapproval of Disability Benefits
 - c. Approval of Disability Benefits - Additions
 - d. Disapproval of Appeal of Termination – Any Occupation - Additions

INVESTMENT REPORT

6. Annual Portfolio Review – Fixed Income
7. Wilshire Quarterly Performance Report as of September 30, 2022
8. Monthly Investment Report as of September 30, 2022

EXECUTIVE DIRECTOR'S REPORT

9. Pension and Health Care Annual Actuarial Valuations
10. Allocation of Employer Contributions (R)
11. Health Care Surcharge (R)
12. Executive Director's Update
13. Review of Administrative Expenses
14. Final Filing of Proposed Amended Administrative Rule (R)
15. Executive session pursuant to R.C. 121.22 (G)(2) to discuss the sale of property (R)

RETIREMENT REPORT

16. Executive Session pursuant to R.C. 121.22 (G)(5) to review applications for Disability Retirement Benefits (R) *if needed*

BOARD COMMUNICATION AND POLICY ISSUES

17. Calendar Dates for Future Board Meetings
18. Continued or New Business
 - Board Information Requests and Follow-up Items

RECESS TO RECONVENE FRIDAY MORNING

Friday, November 18, 2022, 8:30 a.m.

EXECUTIVE DIRECTOR'S REPORT (cont.)

19. Healthcare Sustainability Discussion

Click Link to Join Zoom Meeting:

<https://ohsers.zoom.us/j/94341693401?pwd=U291OHVrQStKZmk5MVVQSGRZTG1qQT09>

Meeting ID: 943 4169 3401 **Password:** 730263

To Join by Phone Dial: (929) 205-6099 and Enter the Meeting ID: **943 4169 3401** and Password: **730263** When Prompted.

ADJOURNMENT

FY2023 SERS Board Roll Call

Jeffrey DeLeone	_____
Frank Weglarz	_____
Hugh Garside	_____
James Haller	_____
Matthew King	_____
Catherine Moss	_____
Barbra Phillips	_____
James Rossler	_____
Daniel Wilson	_____

CONSENT AGENDA

1. Minutes of the **October 20, 2022**, Retirement Board meeting
2. Summary of Investment Transactions
 - September 1 to September 30, 2022
3. Retirement Report
 - Superannuation and Survivor Benefits
 - Special Cases
4. Disability Report
 - Approval of Disability Benefits
 - Disapproval of Disability Benefits
 - Approval of Disability Benefits – Additions
 - Disapproval of Appeal of Termination – Any Occupation – Additions

APPROVAL OF CONSENT AGENDA

_____ moved and _____ seconded the motion to approve the Consent Agenda, which includes the following items:

1. Minutes of the **October 20, 2022**, Retirement Board meeting
2. Summary of Investment Transactions
 - September 1 to September 30, 2022
3. Retirement Report
 - Superannuation and Survivor Benefits
 - Special Cases
4. Disability Report
 - Approval of Disability Benefits
 - Disapproval of Disability Benefits
 - Approval of Disability Benefits – Additions
 - Disapproval of Appeal of Termination – Any Occupation – Additions

Upon roll call, the vote was as follows:

<u>ROLL CALL:</u>	<u>YEA</u>	<u>NAY</u>	<u>ABSTAIN</u>
Frank Weglarz	_____	_____	_____
Hugh Garside	_____	_____	_____
James Haller	_____	_____	_____
Matthew King	_____	_____	_____
Catherine Moss	_____	_____	_____
Barbra Phillips	_____	_____	_____
James Rossler	_____	_____	_____
Daniel Wilson	_____	_____	_____
Jeffrey DeLeone	_____	_____	_____

SERS Retirement Board Meeting Minutes

October 20, 2022

The nine hundredth and fifty-third meeting of the Retirement Board of the School Employees Retirement System was held in the boardroom at 300 E. Broad Street, Columbus, Ohio, and streamed via Zoom videoconferencing on Thursday, October 20, 2022.

Pledge of Allegiance

The SERS Retirement Board meeting convened at 8:30 a.m. with the Pledge of Allegiance.

Roll Call

Following the Pledge of Allegiance, the roll call was as follows: Jeffrey DeLeone, Frank Weglarz, James Haller, Matthew King, Catherine Moss, Barbra Phillips, James Rossler, and Daniel Wilson. Absent: Hugh Garside. Also attending in person was Lisa Reid, representative of the Ohio Attorney General's Office and various members of the SERS staff. Attending virtually was several SERS staff members and members of the public.

Consent Agenda

The consent agenda for October 20, 2022, included:

- Minutes from the **September 15, 2022**, Board Meeting
- Summary of Investment Transactions for the period of **August 1, 2022, through August 30, 2022**.
- Retirement Report – Superannuation and Survivor Benefits and Special Cases
- Disability Report - Approval of Disability Benefits, Disapproval of Disability Benefits, Disapproval of Appeal of Termination – Any Occupation

Barbra Phillips moved and Frank Weglarz seconded the motion to approve the Consent Agenda of the Retirement Board meeting held on Thursday, October 20, 2022. Upon roll call, the vote was as follows: Yea: Frank Weglarz, James Haller, Matthew King, Catherine Moss, Barbra Phillips, James Rossler, Daniel Wilson, and Jeffrey DeLeone. Absent: Hugh Garside. The motion carried.

Investment Report

Annual Portfolio Review – Private Equity

SERS Chief Investment Officer, Farouki Majeed, introduced SERS Investment Staff members Steve Price and Phil Sisson who provided a Global Private Equity Portfolio review. Mr. Price began his presentation by summarizing the SERS Private Equity portfolio which currently has a \$2.21 billion market value. There are 24 general partners, 68 funds, 9 co-investments, and \$1.50 billion in unfunded commitments.

Mr. Price continued his report stating that the focus of the portfolio positioning is to continuously review and improve portfolio construction & management, to stay aware of trends and enhance implementation, and continue active participation in the Institutional Limited Partners Association (ILPA).

Mr. Price reported on the FY2022 portfolio performance, stating there were 34.4% 1-Year Net Return vs. 22.3% Benchmark Return and co-investments are generating solid returns (23.8% 5-Year Return). There has been value-added performance across all periods.

Mr. Price wrapped up his report stating that ten-year return exceeds PE benchmark with premium to public equity returns and distributions increased significantly in recent years.

Phil Sisson continued the annual portfolio review with a report on the new fund commitments. Mr. Sisson reported that \$597 million has been committed to new investments. The new investments are broadly diversified and include eight funds, two new managers, and four co-investment vehicles. To maintain consistent investment discipline, there is a focus on portfolio fit, performance, people, process, and product when evaluating new investments. Mr. Sisson also stated SERS did not re-engage with several managers who no longer meet the mentioned criteria.

SERS Retirement Board Meeting Minutes

October 20, 2022

Mr. Sisson continued, stating that the FY2023 objectives are to:

- Manage the Private Equity portfolio and fiscal year commitments to reflect the investment allocation of 12%, subject to identifying opportunities that meet SERS' investment criteria.
- Review the private equity portfolio strategy and structure and develop a plan to improve risk and return characteristics of the portfolio, achieve fee reductions, and optimize manager count as appropriate.
- Actively seek co-investment opportunities where appropriate with current SERS' private equity general partners who meet co-investment criteria, as outlined in the private equity co-investment guidelines.
- Research and identify new and innovative investment opportunities with managers who offer compelling return expectations. These new opportunities may be used for a combination of purposes to replace current managers who no longer meet SERS' investment criteria or to target strategies that are not currently a directly invested component of the private equity portfolio.

After a robust discussion, the board thanked Mr. Price and Mr. Sisson for their presentations.

Monthly Investment Report

SERS Chief Investment Officer, Farouki Majeed, provided a monthly investment report. Mr. Majeed reported on several factors affecting SERS investments, including the US and Global economies. Although the US is not officially in a recession, the rate of growth is slowing. Inflation is at 8.2%, which is slightly lower than last month.

SERS investments continue to perform better than the benchmarks, but this fiscal year will be a challenging one. SERS Investment staff will continue to look for ways to reduce fees and increase performance whenever possible. Following a robust discussion, the board thanked Mr. Majeed for his presentation.

Executive Director's Report

Ohio Retirement Study Council

Richard Stensrud, SERS Executive Director, began his report stating the October ORSC meeting was cancelled. The next meeting is scheduled for November 10, 2022, or at the call of the chair. The next meeting will occur after the election and activity is expected to ramp up at the statehouse at that time.

Federal Legislative Activity

Mr. Stensrud continued, reporting the US House Ways and Means Committee held a mark-up on September 20th of legislation (H.R. 82) that would repeal the application of the Windfall Elimination Provision (WEP) and the Government Pension Offset (GPO) for Social Security benefits payable after December 2021. However, the Committee reported the bill on a voice vote, without recommendation, thereby short-circuiting proponents' efforts to have the measure fast-tracked for consideration by the full House. The bill is continuing to stall out. The hope is that the lack of movement will be an impetus for Neal & Brady to find a compromise.

The final repeal of these two provisions is less likely than before, but some believe it could spur efforts to find a compromise on reform of the WEP. At the mark-up, Chairman Neal (D-MA) said "I'm committed to finding a path forward and will continue working closely with Ranking Member Brady (R-TX) to find meaningful relief to those who have spent their lives in service of their communities."

Joint Trustee Training Reminder

Mr. Stensrud reported the 2022 Ohio Trustee Joint Training Event is scheduled for Wednesday, November 9th, at OPERS. The event will begin with breakfast at 9:00am with the programming beginning at 9:30am. The event will be onsite at OPERS. Several board members plan to attend along with SERS leadership staff.

SERS Retirement Board Meeting Minutes

October 20, 2022

Employee Charitable Initiatives

Mr. Stensrud reported the SERS annual United Way campaign took place this month. United Way provides resources to support the most vulnerable people living in central Ohio. Staff could participate through online pledges as well as other fun activities. This year, over \$17K has been collected/pledged so far. Mr. Stensrud thanked the staff for their continued support and generosity.

Member and Employer Outreach

Mr. Stensrud provided several publications to the board members to illustrate the outreach and communications sent out to SERS members and employers. Mr. Stensrud also let the board know there have been several virtual conferences, webinars, and other training opportunities for members and employers hosted by SERS staff. SERS continues to score highly with respect to the Q&A sessions and the overall experience. Scores have been 4.8 out of 5. Programs are being held jointly with SERS staff from Member Services and the Communications Team.

November 10, there will be a 30-minute training session over lunch to learn about the SERS and the defined benefit plan. SERS staff also intends to educate members on the importance of saving for retirement. SERS staff hopes to make this type of training a regularly scheduled event.

Mr. Stensrud also reported the Healthcare team held two in-person meetings and attendance was relatively low as there haven't been many changes to the plan. Employer services also held two webinars and sent out an employer bulletin.

Myths and Misconceptions

Mr. Stensrud continued his report with the latest rendition of "Myths and Misconceptions". This month, Mr. Stensrud addressed the recent claim by the CFA Institute that 94% of public pensions invest in cryptocurrency. The CFA Institute is a widely respected global non-profit organization that provides financial education to investment professionals. The CFA Institute did not make this claim, the author of the study made this claim.

Mr. Stensrud reported this was not a study but rather a survey taken from a pool of 151 institutional investors, which is not a relatively large sample size. Of the 151 investors who were voluntarily surveyed, 7-8 pension fund investors are investing in cryptocurrencies. This number equates to 5% of those surveyed.

Mr. Stensrud wants to ensure the board and the public that SERS **does not** invest in cryptocurrency and SERS staff will put together additional communication to further debunk this myth and misconception.

CBBC

SERS staff has been meeting with legislators regarding CBBC, the Contribution-Based Benefit Cap. SERS staff will continue to advocate on behalf of this anti-spiking legislation after the November election.

ESG – Environmental, Social, and Governance Factors

Mr. Stensrud continued his report noting that ESG investments have become a buzzword lately. Environmental, Social, and Governance factors are non-financial factors investors use as part of their analysis process to identify material risks and growth opportunities. Mr. Stensrud wanted to ensure the board and the public that SERS does not use these factors to determine how to invest. SERS investment staff ask managers to determine the risk involved and invest based on their knowledge and professional expertise.

Quarterly Financial Update

SERS Chief Financial Officer, Marni Hall, provided an update on the SERS quarterly financials. With no questions, the board thanked Ms. Hall for her presentation.

The board took a break at 10:14 a.m.

The board reconvened at 10:27 a.m.

SERS Retirement Board Meeting Minutes

October 20, 2022

Executive Session

Barbra Phillips moved and Frank Weglarz seconded the motion that the board convene in executive session pursuant to R.C. 121.22 (G)(2) to discuss the purchase of property. Upon roll call, the vote was as follows: Yea: Frank Weglarz, James Haller, Matthew King, Catherine Moss, Barbra Phillips, James Rossler, Daniel Wilson, and Jeffrey DeLeone. Absent: Hugh Garside. The motion carried.

The board went into executive session at 10:28 a.m.

The board reconvened in open session at 10:57 a.m.

Technology Committee Update

Matt King, Chair of the Technology Committee, provided an update on the work being done by the Technology Committee. The committee last met on September 15. SERS staff provided updates on key projects including updating the member portal, upgrading the telecommunications platform, and so far, things are going smoothly. The committee was introduced to the concept of Agile Teams and there was an update from SERS staff on information security and disaster recovery. Mr. King advised the board that the Technology is scheduled to meet again in December. Following the update, the board thanked Mr. King for his presentation.

Retirement Report

There was no retirement report.

Board Communication and Policy Issues

The board reviewed the meeting dates for the remainder of 2022 and for 2023. James Rossler advised that he will be absent from the board meeting in December.

AUDIT COMMITTEE MEETINGS

December 14, 2022 - 2:30 p.m. (Weds.)

COMPENSATION COMMITTEE MEETINGS

December 15, 2022 - 7:30 a.m. (Thurs.)

TECHNOLOGY COMMITTEE MEETINGS

December 15, 2022 – 12:30 p.m. (Thurs.)

BOARD MEETINGS

October 20-21, 2022 – 8:30 a.m. (Thurs. and Fri.)
November 17-18, 2022 – 8:30 a.m. (Thurs. and Fri.)
December 15-16, 2022 – 8:30 a.m. (Thurs. and Fri.)

SERS Retirement Board Meeting Minutes

October 20, 2022

CALENDAR DATES FOR SERS BOARD MEETINGS FOR 2023

AUDIT COMMITTEE MEETINGS

March 15, 2023 – 2:30 p.m. (Weds.)
June 14, 2023 – 2:30 p.m. (Weds.)
September 20, 2023 - 2:30 p.m. (Weds.)
December 20, 2023 – 2:30 p.m. (Weds.)

COMPENSATION COMMITTEE MEETINGS

March 16, 2023 – 7:30 a.m. (Thurs.)
June 15, 2023 – 7:30 a.m. (Thurs.)
July 20, 2023 – 7:30 a.m. (Thurs.) * ***Special Meeting*** *
September 21, 2023 – 7:30 a.m. (Thurs.)
December 21, 2023 – 7:30 a.m. (Thurs.)

TECHNOLOGY COMMITTEE MEETINGS

March 16, 2023 – 12:30 p.m. (Thurs.)
June 15, 2023 – 12:30 p.m. (Thurs.)
September 21, 2023 – 12:30 p.m. (Thurs.)
December 21, 2023 – 12:30 p.m. (Thurs.)

BOARD MEETINGS

February 16 – 17, 2023 - 8:30 a.m. (Thurs. and Fri.)
March 16 – 17, 2023 - 8:30 a.m. (Thurs. and Fri.)
April 20 – 21, 2023 - 8:30 a.m. (Thurs. and Fri.)
May 18 – 19, 2023 - 8:30 a.m. (Thurs. and Fri.)
June 15 – 16, 2023 - 8:30 a.m. (Thurs. and Fri.)
July 20 – 21, 2023 - 8:30 a.m. (Thurs. and Fri.)
September 21 – 22, 2023 - 8:30 a.m. (Thurs. and Fri.)
October 19 – 20, 2023 - 8:30 a.m. (Thurs. and Fri.)
November 16 – 17, 2023 - 8:30 a.m. (Thurs. and Fri.)
December 21 – 22, 2023 - 8:30 a.m. (Thurs. and Fri.)

Continued or New Business

The Board continued with the review of continued or new business.

Adjournment

Jeffrey DeLeone moved to adjourn to meet on Thursday, November 17, 2022, at 8:30 a.m. for the SERS regularly scheduled Retirement Board meeting.

The SERS board meeting adjourned at 11:04 a.m.

Jeffrey DeLeone, Board Chair

Richard Stensrud, Secretary

SCHOOL EMPLOYEES RETIREMENT BOARD OF OHIO

Summary of Investment Transactions to be
Reported to the Retirement Board for
Ratification in November

The following is a summary of the investment transactions made during the period of September 1, 2022 through September 30, 2022. A detailed list of these transactions can be found in the Board Agenda mailed prior to the Retirement Board Meeting.

A. PURCHASES

Asset Class	Approximate Cost (in millions)
Global Equities	\$ 137.4
Fixed Income	397.9
Private Equity Capital Calls	28.2
Real Asset Capital Calls	2.1
Opportunistic & Tactical	1.7
Global Private Credit	26.5
Cash Equivalents	427.7

B. SALES

Asset Class	Approximate Net Proceeds (in millions)	Approximate Gain/(Loss) (in millions)
Global Equities	\$ 276.5	\$ 52.8
Fixed Income	396.6	(11.2)
Private Equity distributions	19.0	n/a
Real Asset distributions	7.2	n/a
Opportunistic & Tactical	10.9	7.1
Global Private Credit	n/a	n/a
Cash Equivalents	357.3	n/a



GLOBAL FIXED INCOME PORTFOLIO REVIEW

As of September 30, 2022

Presented by Investment Staff:

Jason Naber

Meeting Date: November 2022

Agenda



- Portfolio Summary & Structure
- Performance
- Portfolio Activity/Goals Review
- Outlook
- Appendix

As of September 30, 2022



FIXED INCOME

Portfolio Summary

\$2.1 Billion Market Value

- 13 Active Mandates across 3 Strategies (Core, Core Plus & Tactical)
 - 12 ranked as B or higher (9 ranked as A)
 - 1 ranked as C
- Fixed Income Allocation is Underweight at 12.6% versus 19% Target Allocation

Fixed Income Performance

- Total Return for 1 Year ending September 2022 was -14.2%
- Excess Net Return was 0.36% for 1 Year
- Long-Term Net Excess Returns for 3, 5, & 10 Years are Positive

Portfolio Structure

- Portfolio is Tilted Towards Capital Preservation & Diversification
- Core Bond Exposure Increased by 5% to 49%
- Emerging Market Debt Exposure has been Reduced by \$55 Million
- Portfolio Management Fee Average is 31 bps

Offer Diversification & Risk Reduction to Total Fund

Contribution to Total Fund Risk is 1.2% while Portfolio Weight is 12.6%

As of September 30, 2022



FIXED INCOME

Characteristics

Strategy	Average Quality Rating	Yield to Maturity	Effective Duration
Core	AA	4.95%	6.16 yrs.
Core Plus	A+	6.24%	5.87 yrs.
Tactical & Diversifying	BBB	6.43%	2.98 yrs.
Portfolio	A+	5.05%	5.70 yrs.
Bloomberg US Aggregate Index	AA	4.68%	6.20 yrs.

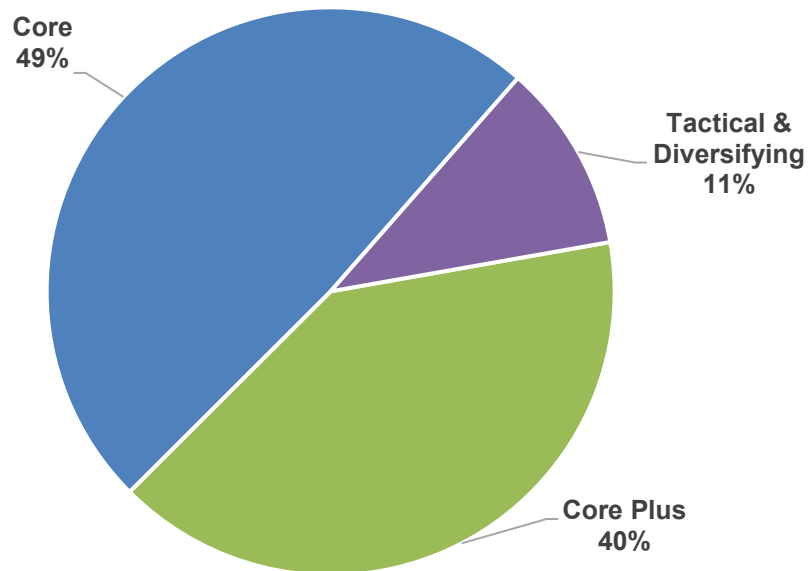
As of September 30, 2022



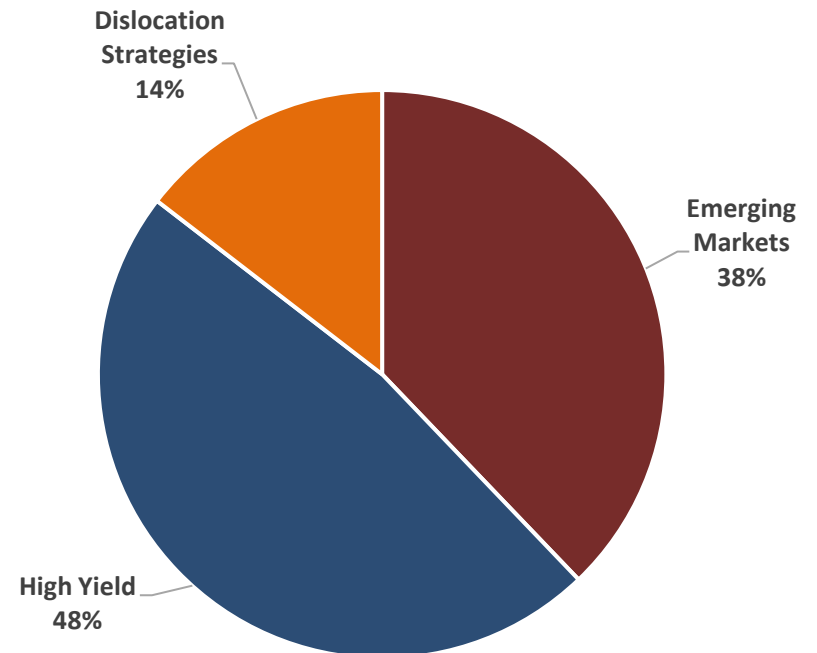
FIXED INCOME

Portfolio Structure

Portfolio Strategy



Tactical & Diversifying: Strategy Breakout

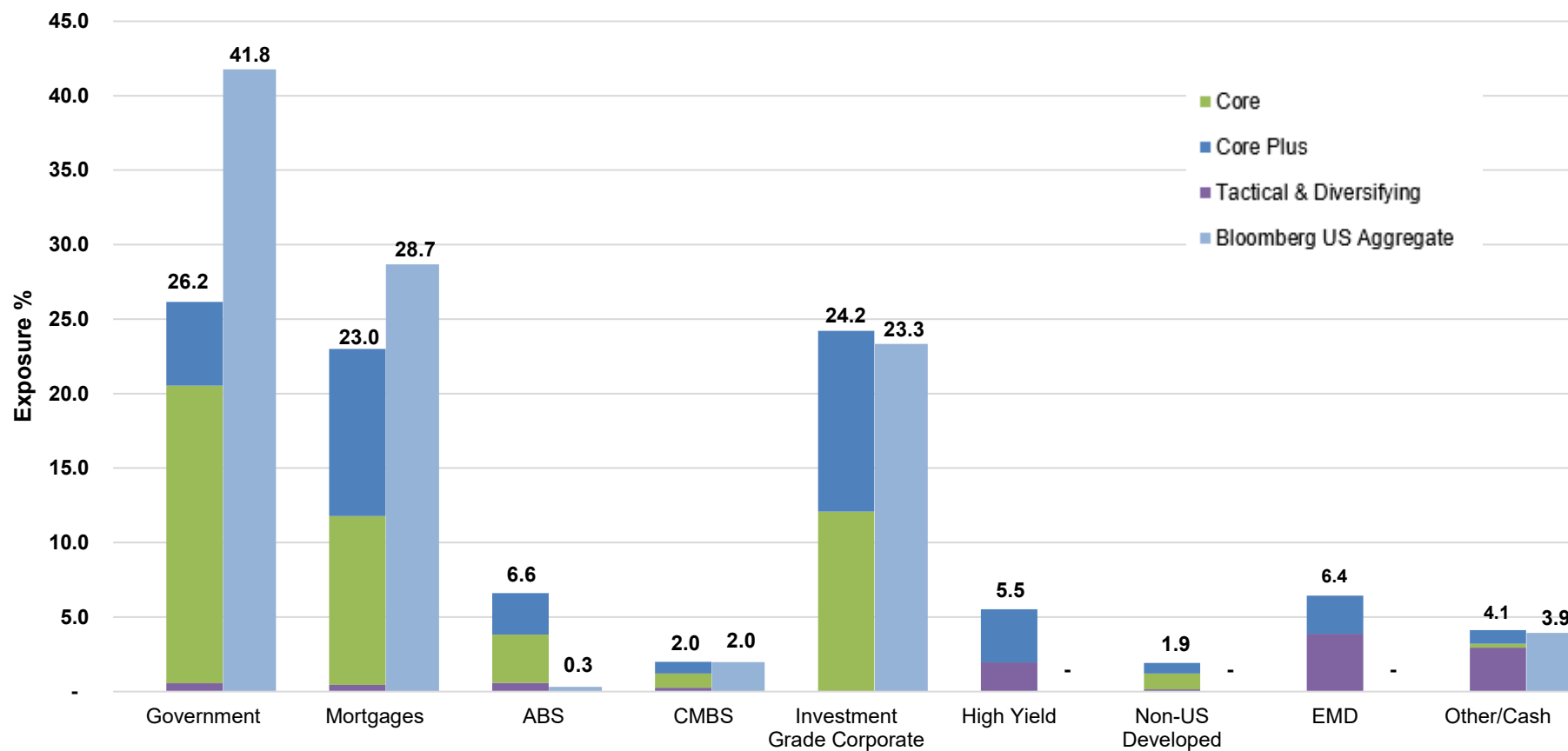


As of September 30, 2022



FIXED INCOME

Security Sector Exposures



As of September 30, 2022



FIXED INCOME

Market Performance

YTD	One Year	Three Years	Five Years	Ten Years
Asset-Backed -5.06%	Asset-Backed -5.61%	U.S. TIPS 0.79%	U.S. TIPS 1.95%	High Yield 3.94%
CMBS -11.81%	U.S. TIPS -11.57%	Asset-Backed -0.24%	High Yield 1.57%	Inv. Grade Corp. 1.70%
U.S. Treasury -13.09%	CMBS -12.38%	High Yield -0.45%	Asset-Backed 1.02%	CMBS 1.57%
U.S. TIPS -13.61%	U.S. Treasury -12.94%	CMBS -2.07%	CMBS 0.63%	Asset-Backed 1.17%
Agency MBS -13.66%	Agency MBS -13.98%	U.S. Treasury -3.11%	Inv. Grade Corp. -0.03%	U.S. TIPS 0.98%
U.S. Aggregate -14.61%	High Yield -14.14%	U.S. Aggregate -3.25%	U.S. Treasury -0.23%	U.S. Aggregate 0.89%
High Yield -14.74%	U.S. Aggregate -14.60%	Inv. Grade Corp. -3.65%	U.S. Aggregate -0.27%	EMD Blend 0.84%
EMD Blend -17.02%	EMD Blend -17.06%	Agency MBS -3.67%	Agency MBS -0.92%	Agency MBS 0.51%
Inv. Grade Corp. -18.72%	Inv. Grade Corp. -18.53%	EMD Blend -3.79%	EMD Blend -1.10%	U.S. Treasury 0.50%

Source: Bloomberg

As of September 30, 2022



FIXED INCOME

Net of Fee Performance

	One Year	Three Years	Five Years	Ten Years
Fixed Income	-14.24%	-1.88%	0.61%	1.75%
-Core (49%)	-13.90	-2.60	0.21	1.41
-Core Plus (40%)	-15.79	-2.28	0.44	1.86
-Tactical & Diversifying (11%)	-9.13	0.05	-0.01	-0.85
Fixed Income Benchmark*	-14.60%	-3.26%	-0.27%	0.89%
Excess Return	0.36%	1.38%	0.88%	0.86%

Portfolio Return & Relative Performance Driven By:

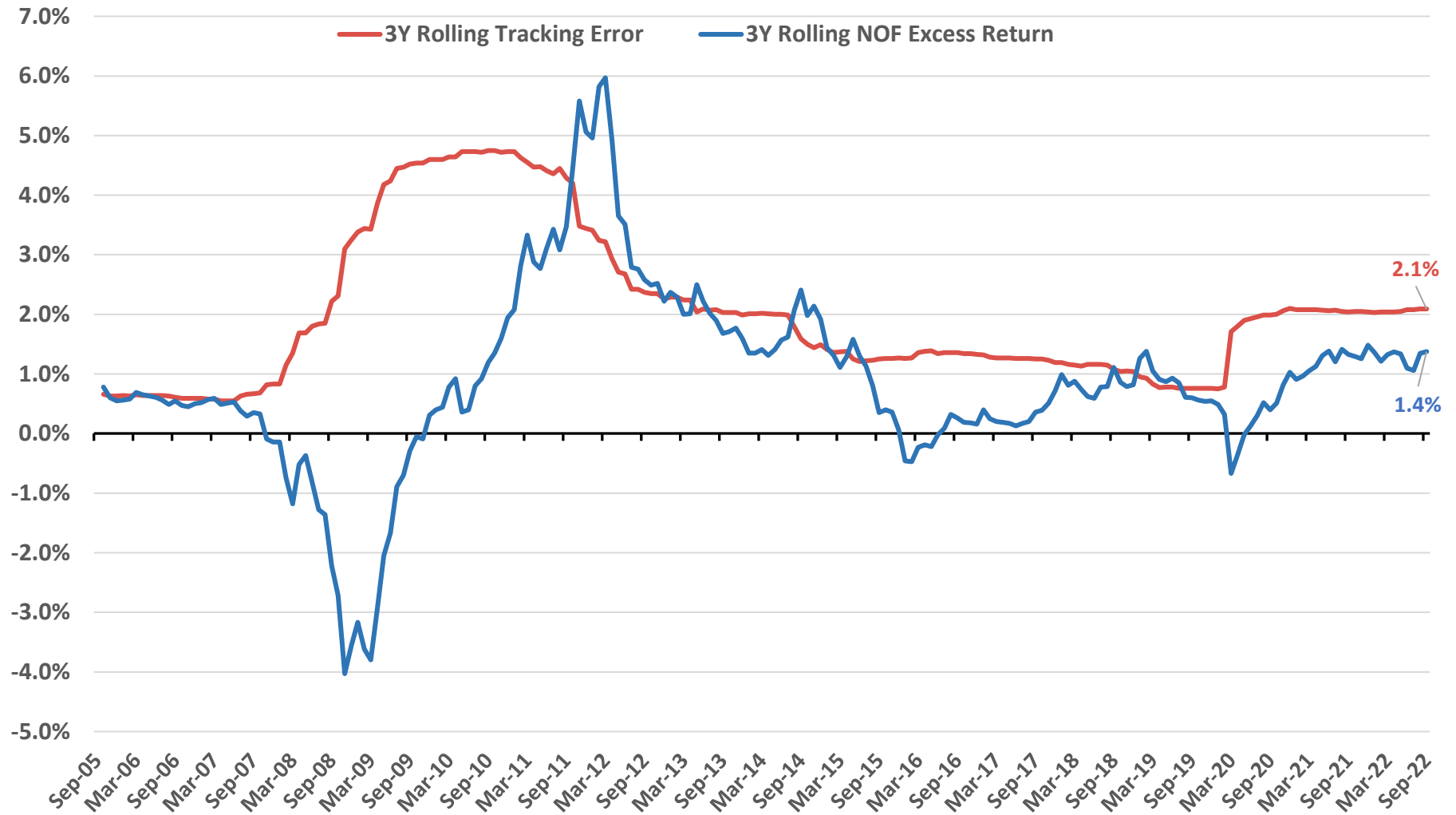
- Positive Drivers:
 - Duration Relative to the US Aggregate Index in a Rising Rate Environment
 - Portfolio Overweight to ABS, High Yield
 - Cash Flows: US Treasuries/TIPS/Agencies, EMD, Long Duration Core Plus manager
- Negative Drivers:
 - Overweight to Investment Grade and Emerging Market Debt
 - Cash Flows: EM Macro, Core manager

*Fixed Income Benchmark is the Bloomberg U.S. Aggregate Bond Index

As of September 30, 2022

FIXED INCOME

Three Year Risk and Return



As of September 30, 2022



FIXED INCOME

Portfolio Activity and Goals Review

Tactically Managed Strategy Allocations

- \$35 Million Contributed to Core
- \$82 Million Withdrawn from Core Plus
- \$107 Million Withdrawn from Tactical & Diversifying

Manager Updates

- Replaced EMD Manager in October
- FI Arbitrage Strategy was Terminated at Year End
- Credit Dislocation Strategy Returned Assets in December
- Securitized Asset Dislocation Strategy Investment Period Ended in June

Portfolio Management

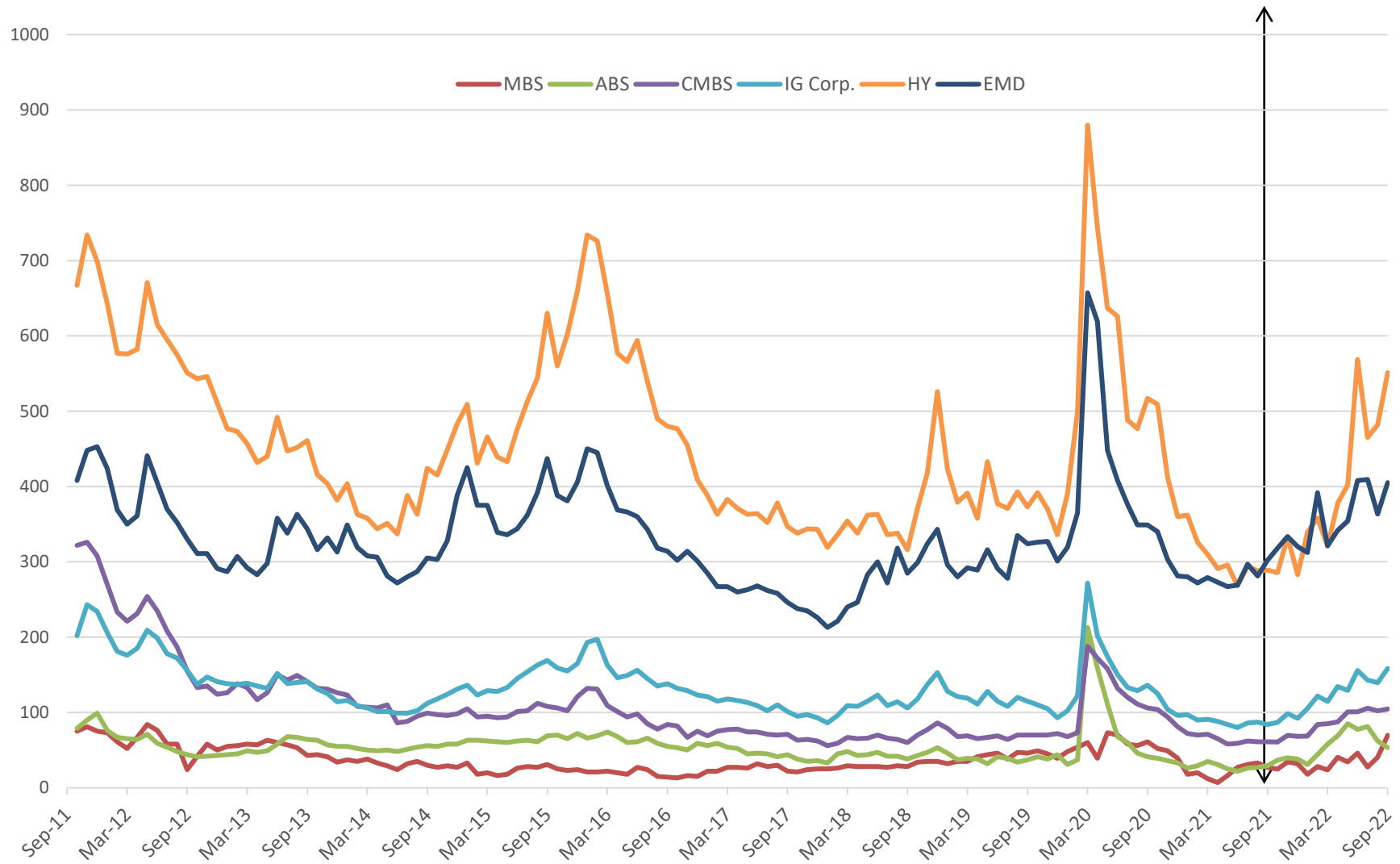
- Portfolio has been Underweight vs Strategic Allocation Target to Protect Capital
- Strategy Positioning has a Higher Allocation to Core to Reduce Risk
- Yield to Maturity Up 3.2% While Duration Underweight has Decreased 0.5 Years
- Fully Renegotiated Two Manager IMAs

As of September 30, 2022



FIXED INCOME

Security Sector Spreads



Source: Bloomberg

As of September 30, 2021



FIXED INCOME

Fixed Income Outlook

Current Fixed Income Markets

- Yields Across Fixed Income Sectors Are Most Attractive in 10 Years
- Higher Yields Can Provide a Buffer Against Any Capital Losses Going Forward
- Credit Spreads Have Widened, But Could Widen Further if a Recession Occurs
- Market has Experienced High Volatility with Elevated Risk

Potential Portfolio Changes

- Increase Fixed Income Allocation to Reduce Underweight as Yields Become More Attractive
- Opportunities to Invest in High Yield and Dislocation Strategies if Credit Spreads Rise

Future Portfolio Impact

- Interest Payments will Provide Higher Fixed Income Returns Going Forward
- Negative Returns from Rising Interest Rates Expected to Abate in 2023
- Long-Term Fixed Income Returns Expected to be Closer to Current Portfolio Yield of 5.05%



Core: Mandates holding securities like the index

Core Plus: Mandates that hold core securities plus higher yielding, riskier securities. Riskier securities include high yield, Non-U.S. and emerging market debt.

Tactical & Diversifying: Mandates with non-index holdings in emerging market debt and high yield as well as non-traditional strategies like long/short credit, sovereign bond arbitrage and emerging market macro.

ABS: Asset Backed Security

CMBS: Commercial Mortgage Backed Security

EMD: Emerging Market Debt

HY: High Yield

IG Corp: Investment Grade Corporates

MBS: Residential Mortgage-Backed Security

NOF: Net of Fee

U.S. TIPS: United States Treasury Inflation Protected Securities

Wilshire



Executive Summary of Investment Performance

As of September 30, 2022

Market Commentary

U.S. Equity

The U.S. stock market was down -4.4% for the third quarter and is now down -24.4% for all of 2022. Most sectors were down for the quarter. The worst performing were Communication Services (-12.5%), Real Estate (-10.9%) and Materials (-6.7%). From a size perspective, small-cap outperformed large by 100 basis points. Growth stocks outperformed value for the quarter but trail meaningfully for the year-to-date.

The U.S. equity market is in the midst of one of the worst sell-offs in the past 20 years, ahead of only the global financial crisis and COVID shutdown. Stock indexes produced gains during the first half of the quarter on strong earnings reports, particularly in technology and energy. While earnings have been falling short of expectations this year, they continue to trend higher versus 2021. The rally collapsed, however, after Federal Reserve Chair Jerome Powell stated in August that the Fed would continue to combat inflation in a way that could cause “some pain” for the U.S. economy. Rising rates have been the story of 2022 as investors are now able to capture a positive real return from bonds, which has allowed them to redirect dollars away from riskier assets.

Non-U.S. Equity

In Europe, monetary policy tightening and an energy crisis due, in part, to restricted Russian gas supplies weighed on stocks. In late September, the Bank of England found it necessary to intervene in the bond market after a massive sell-off of UK government bonds, announcing a temporary purchase program of long-dated bonds. China is currently struggling on several fronts – slowing growth, record high youth unemployment and a collapsing housing market. Its zero-COVID policy is arguably making matters worse, as full or partial lockdowns announced in late September will affect approximately 125 million people.

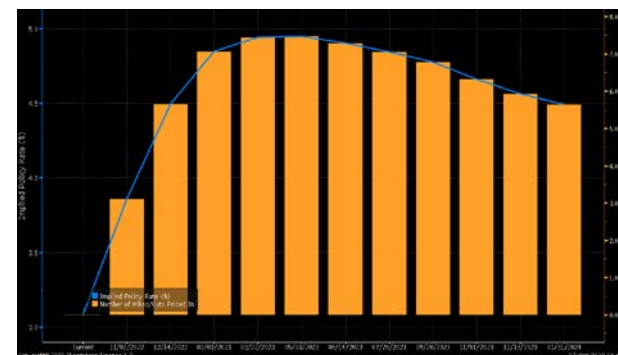
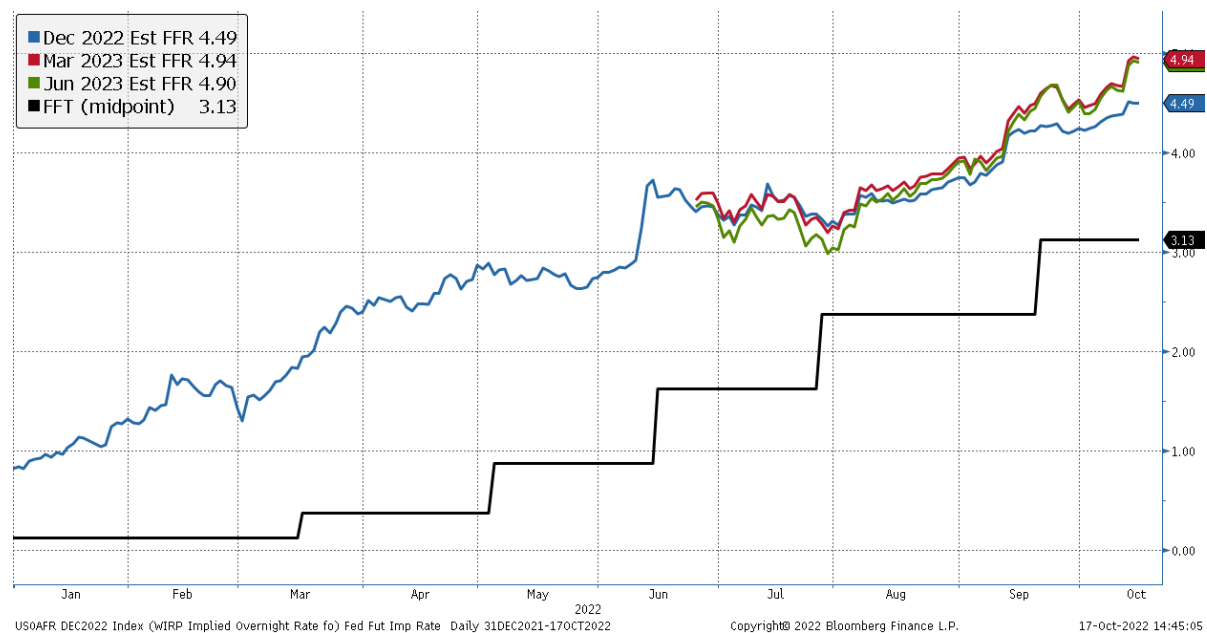
Fixed Income

The U.S. Treasury yield curve was up meaningfully across all maturities during the quarter. The 10-year Treasury yield ended the quarter at 3.83%, up 81 basis points from June. The FOMC increased their overnight rate by 0.75% in both July and September, targeting a range of 3.00% to 3.25%. Equity markets reacted negatively to Fed Chair Jerome Powell’s “pain” speech in August where he clearly stressed the committee’s current goal of taming inflation.

September 2022 Asset Class Assumptions

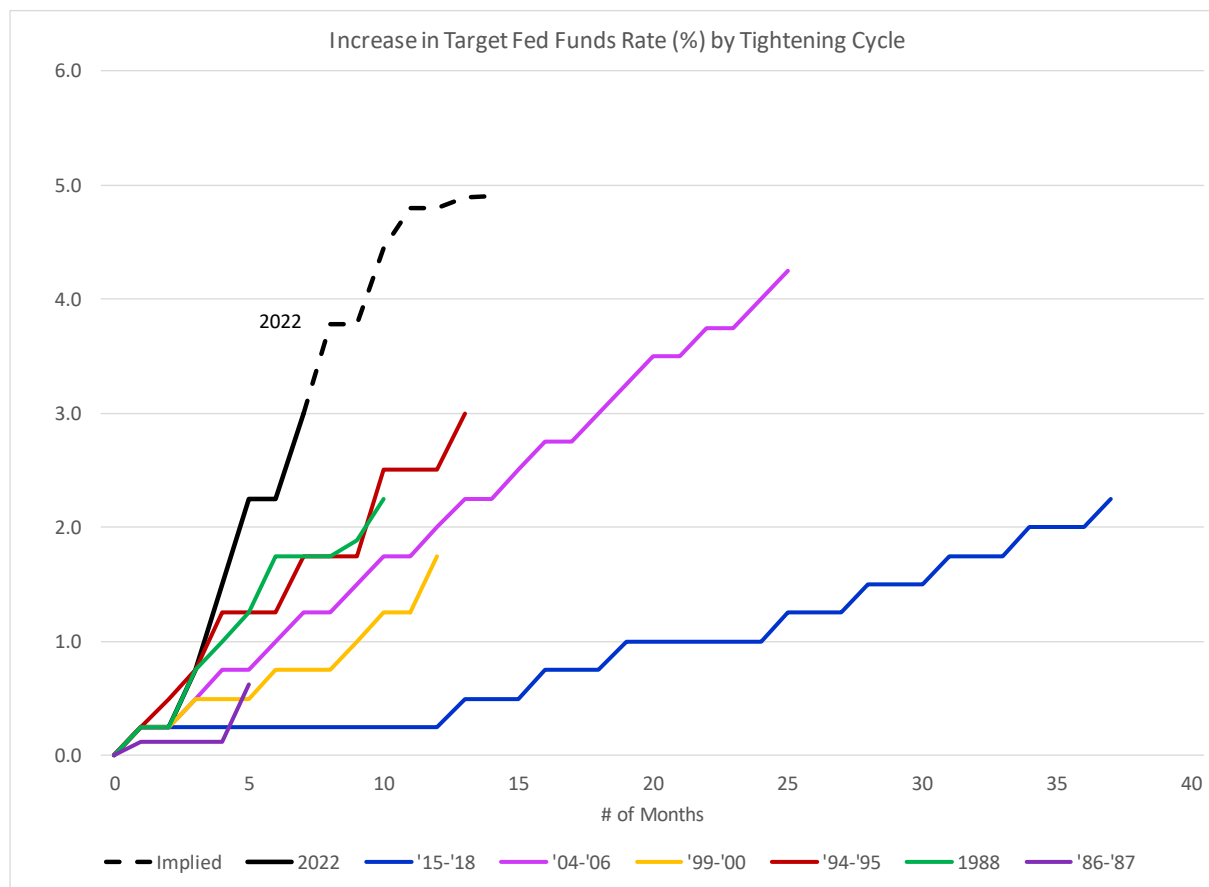
	Equity						Fixed Income					Real Assets						
	US Stock	Dev ex-US Stock	Emg Stock	Global ex-US Stock	Global Stock	Private Equity	Cash	Core Bond	LT Core Bond	TIPS	High Yield	Dev ex-US Bond (Hdg)	US RES	Global RES	Private RE	Cmdty	Real Assets	US CPI
Compound Return (%)	6.75	7.50	7.75	7.85	7.30	10.25	3.65	4.90	5.10	4.05	6.85	2.85	5.65	5.80	6.35	5.90	7.05	2.25
Expected Risk (%)	17.00	18.00	26.00	19.10	17.10	28.00	0.75	4.25	8.90	6.00	10.00	4.25	17.50	16.45	14.00	16.00	10.35	1.75
Cash Yield (%)	1.80	3.45	2.95	3.30	2.40	0.00	3.65	5.10	5.20	4.30	9.65	3.50	3.95	3.95	2.30	3.65	2.75	0.00
Growth Exposure	8.00	8.00	8.00	8.00	8.00	13.50	0.00	-0.85	-2.25	-3.00	4.00	-1.00	6.00	6.00	3.50	0.00	1.80	0.00
Inflation Exposure	-3.00	0.00	5.00	1.50	-1.25	-3.80	0.00	-2.50	-6.70	2.50	-1.00	-3.00	1.00	1.80	1.00	12.00	4.85	1.00
Correlations																		
US Stock	1.00																	
Dev ex-US Stock (USD)	0.81	1.00																
Emerging Mkt Stock	0.74	0.74	1.00															
Global ex-US Stock	0.83	0.96	0.87	1.00														
Global Stock	0.95	0.92	0.83	0.94	1.00													
Private Equity	0.74	0.64	0.62	0.67	0.74	1.00												
Cash Equivalents	-0.05	-0.09	-0.05	-0.08	-0.07	0.00	1.00											
Core Bond	0.28	0.13	0.00	0.09	0.20	0.31	0.19	1.00										
LT Core Bond	0.31	0.16	0.01	0.12	0.23	0.32	0.11	0.92	1.00									
TIPS	-0.05	0.00	0.15	0.05	0.00	-0.03	0.20	0.59	0.47	1.00								
High Yield Bond	0.54	0.39	0.49	0.45	0.51	0.34	-0.10	0.25	0.32	0.05	1.00							
Dev ex-US Bond (Hdg)	0.16	0.25	-0.01	0.17	0.18	0.26	0.10	0.66	0.65	0.39	0.26	1.00						
US RE Securities	0.58	0.47	0.44	0.49	0.56	0.50	-0.05	0.17	0.23	0.10	0.56	0.05	1.00					
Global RE Securities	0.64	0.58	0.56	0.61	0.65	0.58	-0.05	0.17	0.22	0.11	0.61	0.03	0.96	1.00				
Private Real Estate	0.54	0.44	0.44	0.47	0.52	0.51	-0.05	0.19	0.25	0.09	0.57	0.05	0.77	0.75	1.00			
Commodities	0.25	0.34	0.39	0.38	0.32	0.27	0.00	-0.02	-0.02	0.25	0.29	-0.10	0.25	0.28	0.25	1.00		
Real Assets	0.48	0.51	0.58	0.57	0.54	0.47	-0.02	0.23	0.25	0.39	0.56	0.05	0.70	0.75	0.70	0.65	1.00	
Inflation (CPI)	-0.10	-0.15	-0.13	-0.15	-0.13	-0.10	0.10	-0.12	-0.12	0.15	-0.08	-0.08	0.05	0.03	0.05	0.44	0.26	1.00

Center Stage: Fed Actions & Expectations



Data Source: Bloomberg

Most Aggressive Tightening in Modern Era... When/If it Bites, It Might Hurt



Data Source: Bloomberg

“While higher interest rates, slower growth, and softer labor market conditions will bring down inflation, they will also bring some pain to households and businesses. These are the unfortunate costs of reducing inflation. But a failure to restore price stability would mean far greater pain.”



Jerome Powell

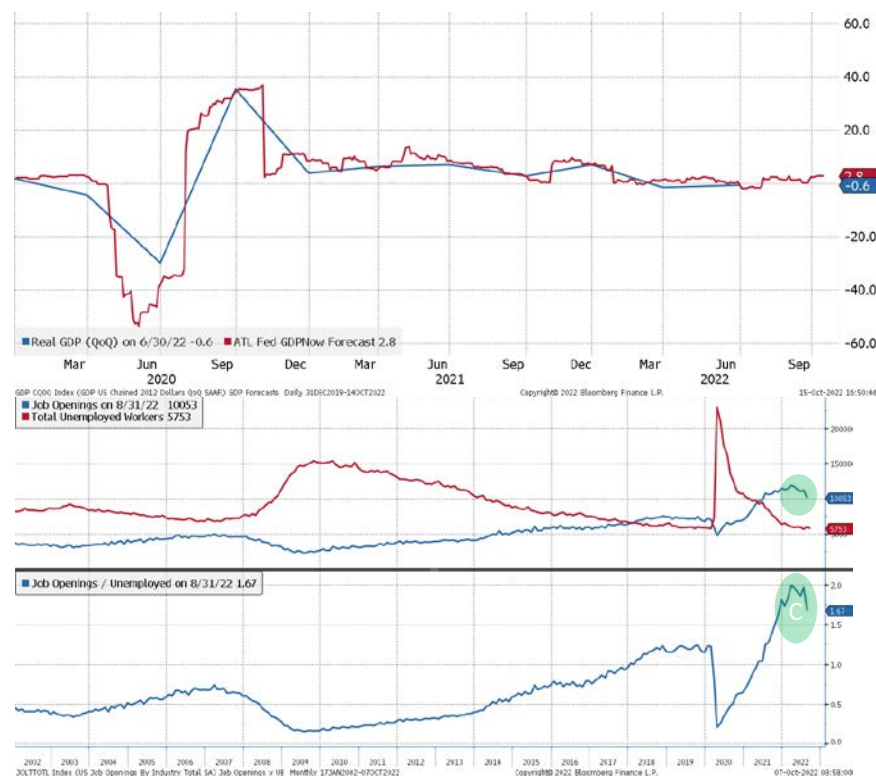
August 2022, Jackson Hole

The Fed's Dashboard: Realized & Expected Inflation



- Realized inflation remains stubbornly high
 - Sept & Oct Core CPI exceeded expectations
 - Core CPI (YoY) has ticked higher in recent months (as we anticipated last quarter)
 - Wage inflation & labor market imbalances add to inflation persistency/stickiness
- Inflation expectations have come down
 - Suggests that inflation anchoring at high levels may not yet be fully entrenched in consumer/business sentiment
 - Expectational anchoring at higher-levels would make the Fed's job even more challenging

The Fed's Dashboard: Economic Growth & Labor Market



- The odds of a “soft landing” diminish as inflation persists (as the Fed is pressured to tighten aggressively)
 - Potential outcome may be somewhere between a hard and soft landing
 - Powell’s “Sully” Sullenberger moment...

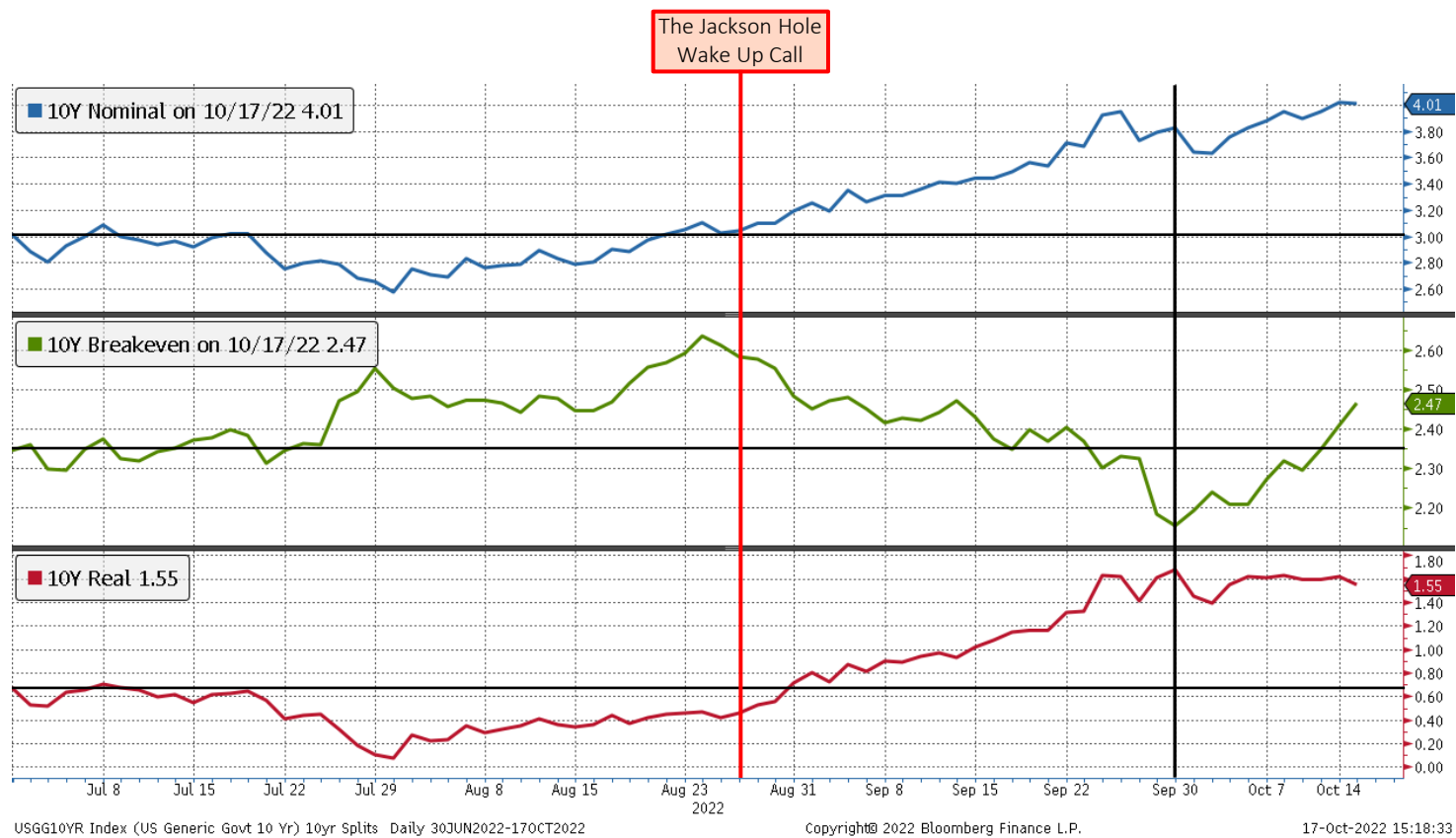


“We’re going to be in the Hudson”

Chesley Burnett "Sully" Sullenberger III
Pilot of US Airways 1549, January 15, 2009

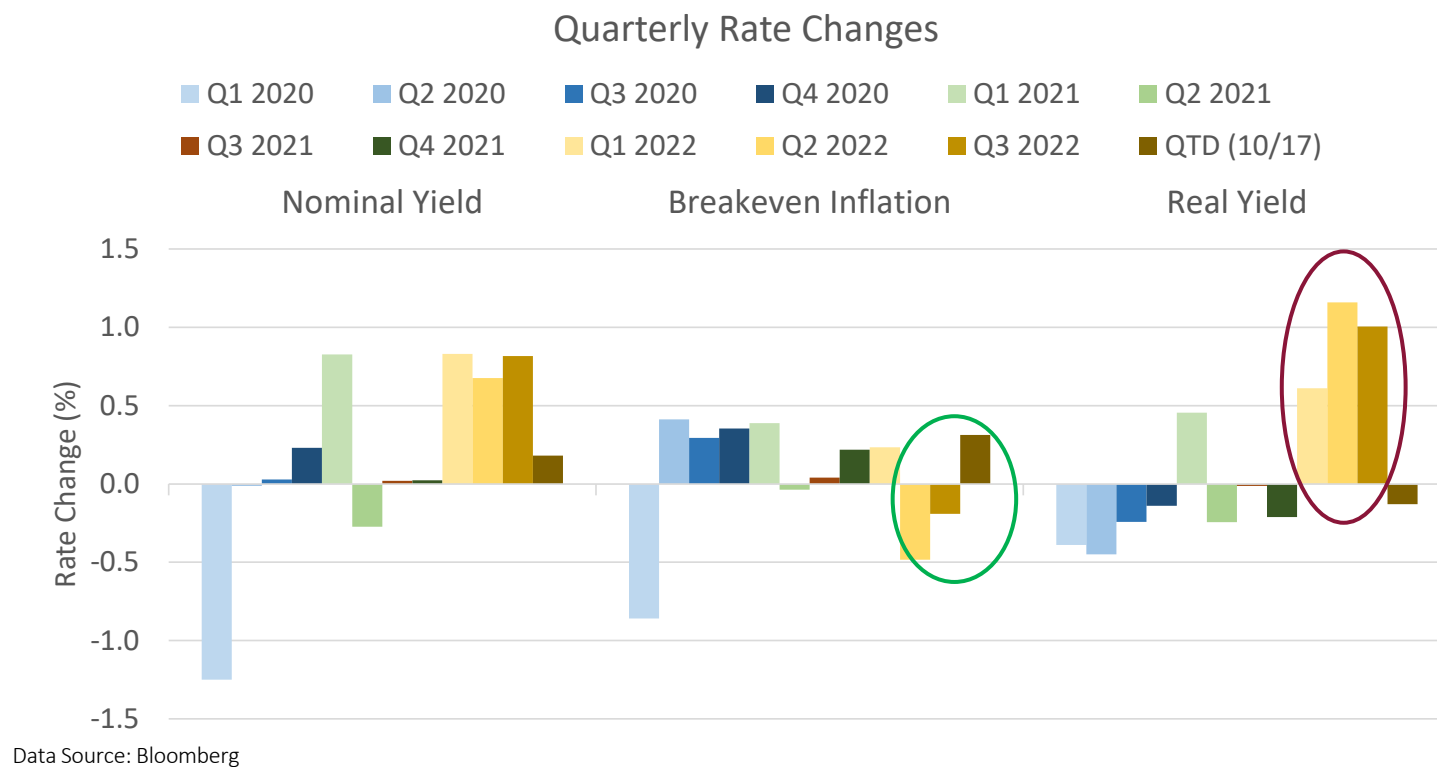
- Labor markets remain historically tight
 - Difficult to see inflation pressures easing to acceptable levels without these tensions reversing
 - Recent jobs reports remain strong (good news is bad news as it relates to the Fed’s current objectives)

Rate Moves (10Y Nominal, Real & BEI)

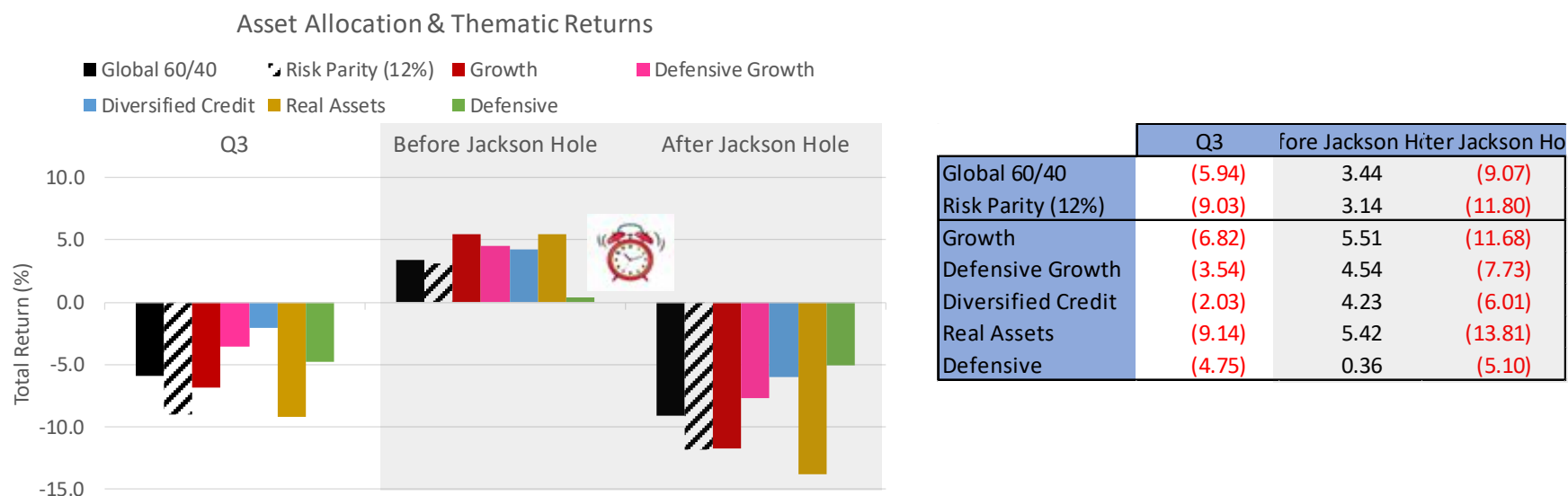


Data Source: Bloomberg

Rate Changes (2020 – YTD 2022) – Tightening the screws..

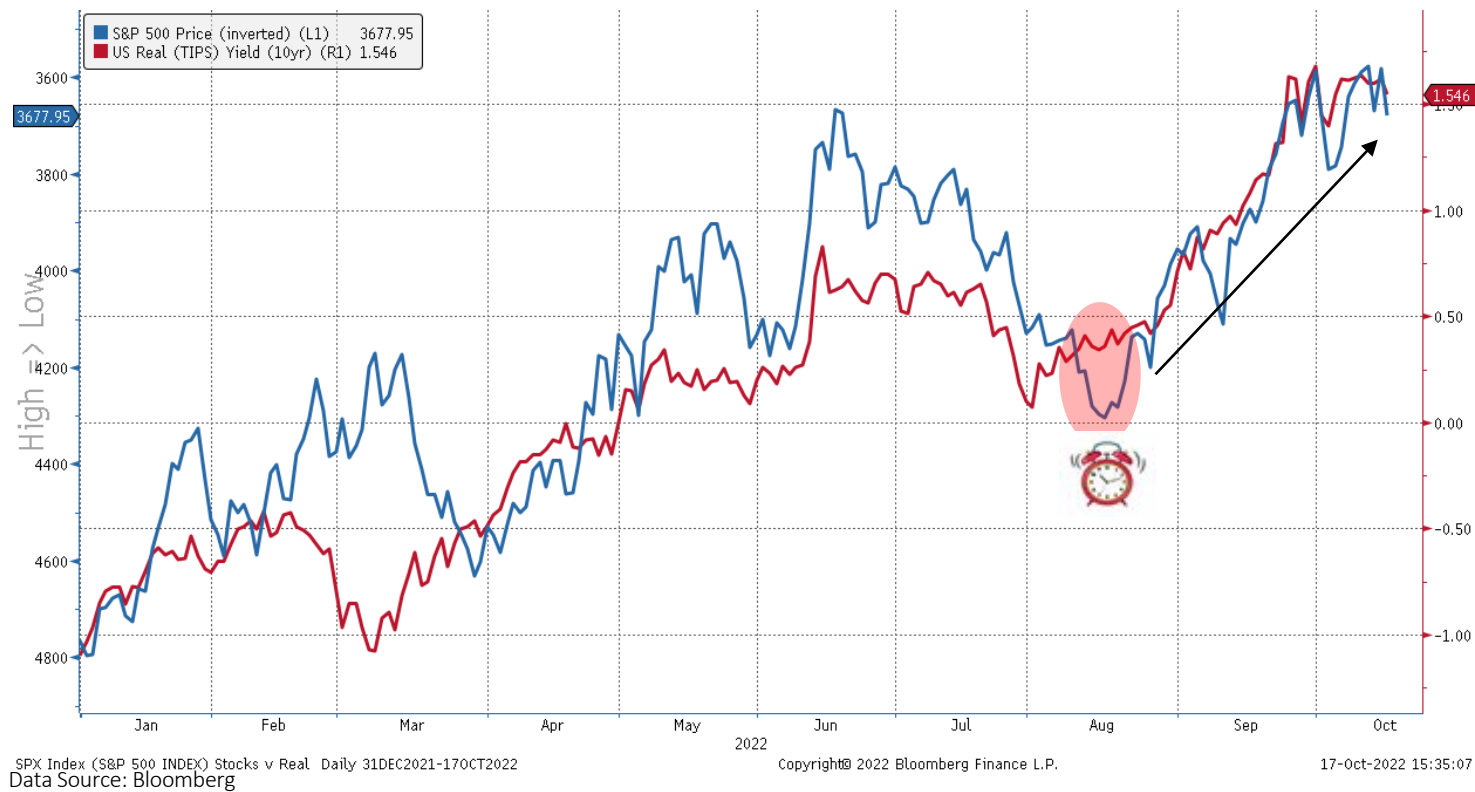


Q3 Market Returns: Before & After Jackson Hole



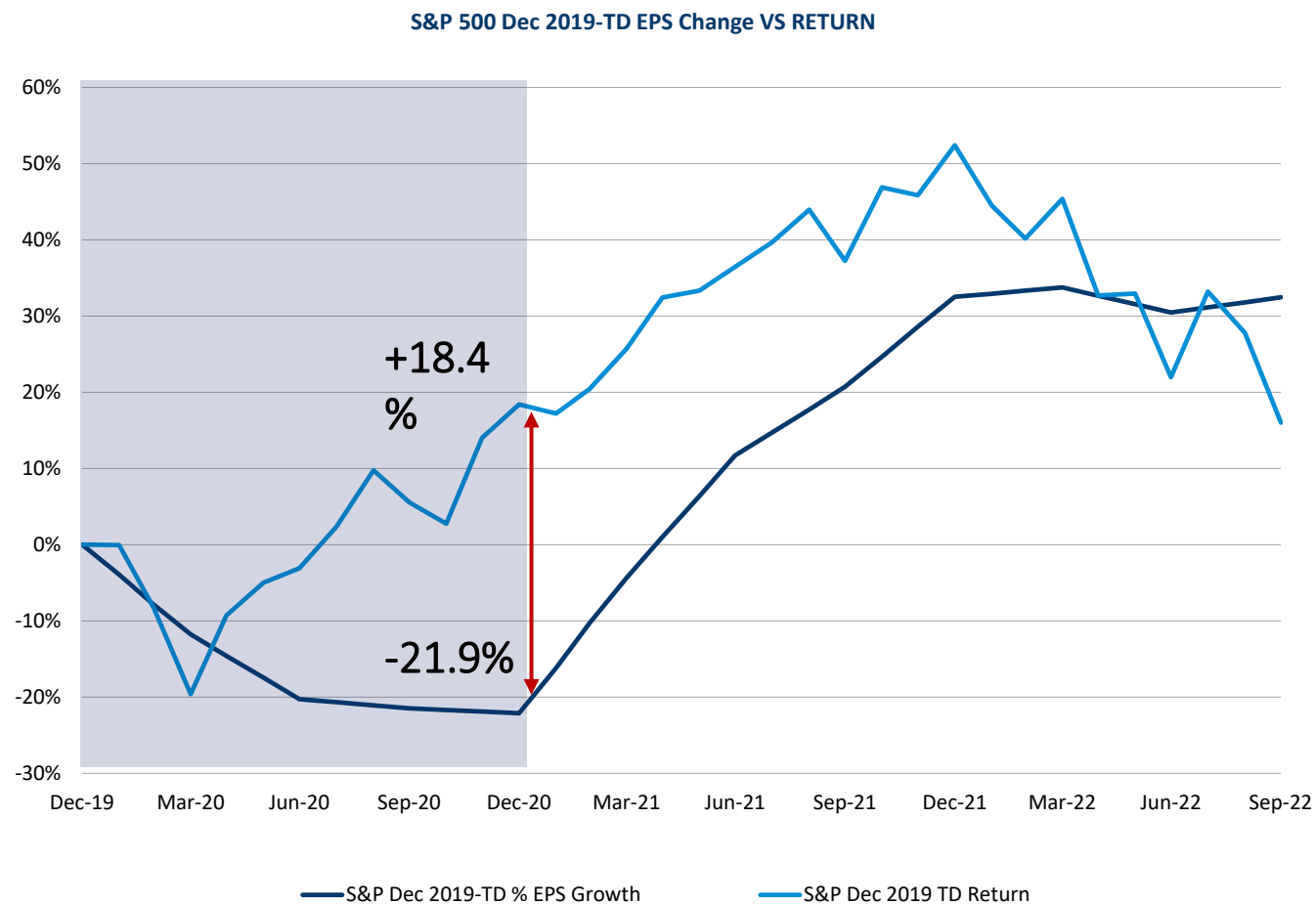
Data Source: Bloomberg, Wilshire

Liquidity/Rates-driven Market: Plenty of downside left if fundamentals deteriorate



Data Source: Bloomberg

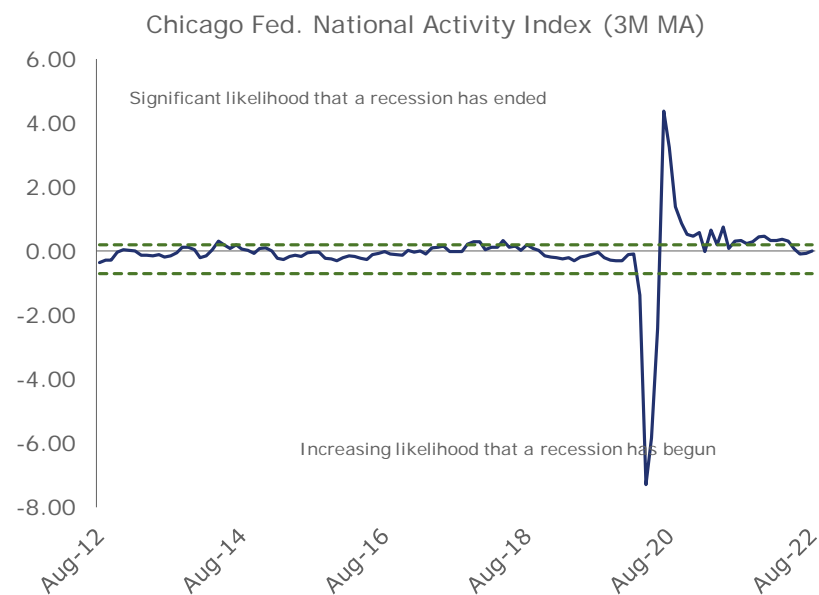
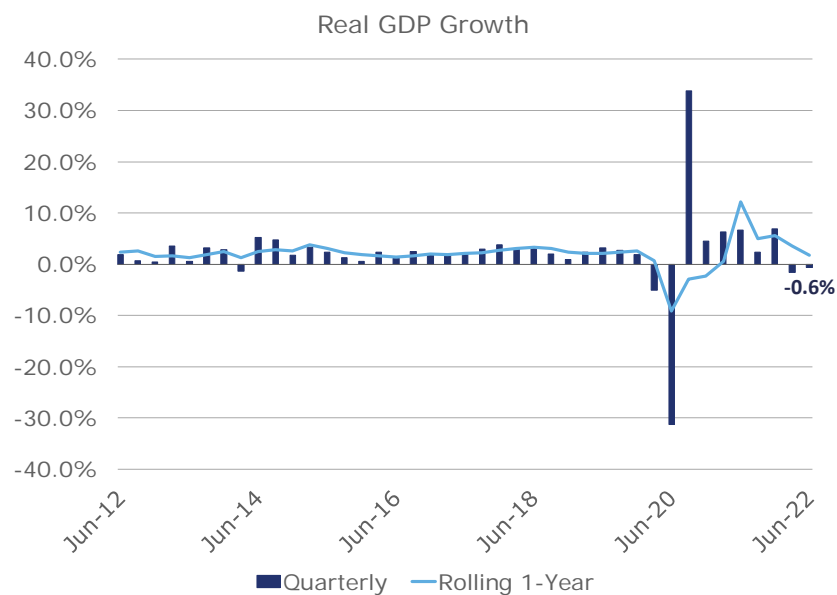
EPS Growth since Dec 2020 (prices down as growth stalls)



Data Source: Bloomberg

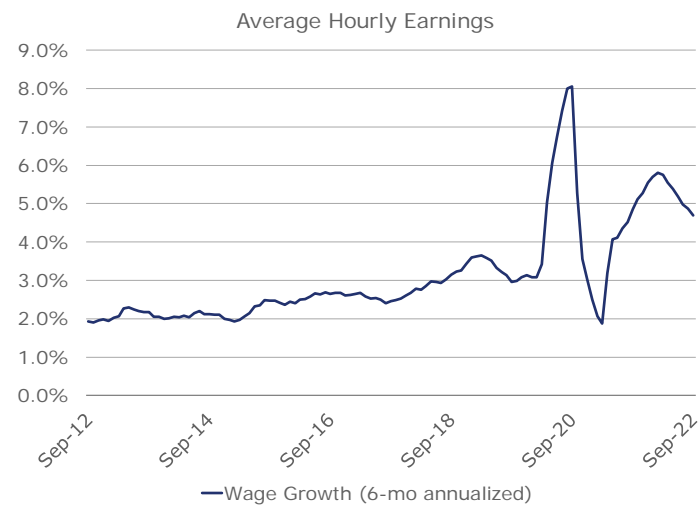
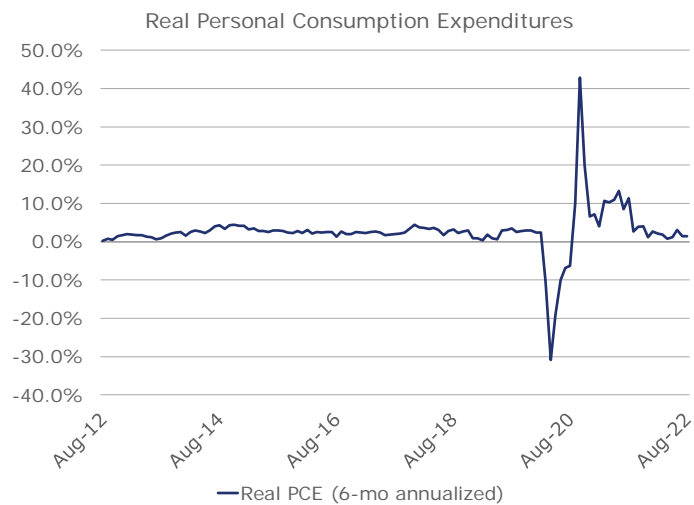
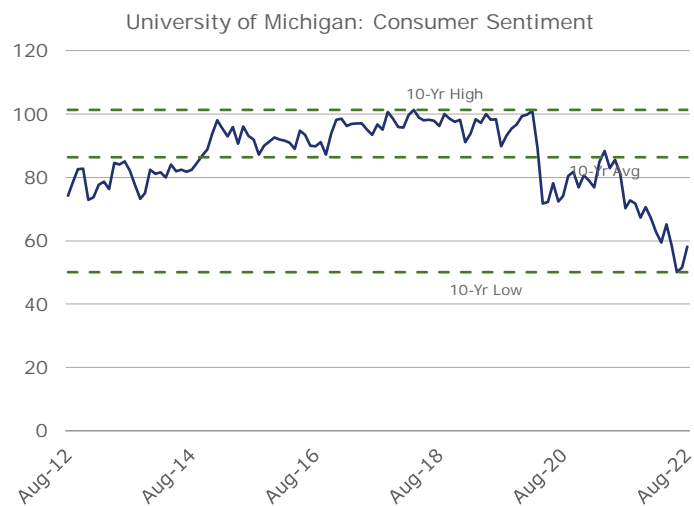
Economic/Market Activity

Economic Growth



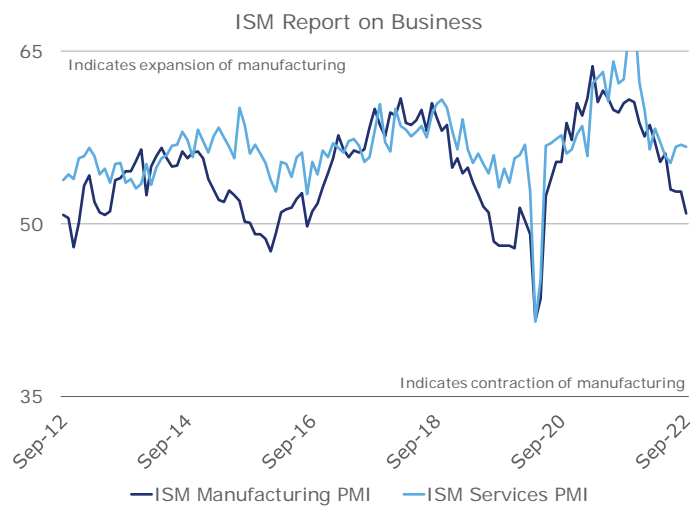
Data Sources: Bloomberg

Consumer Activity



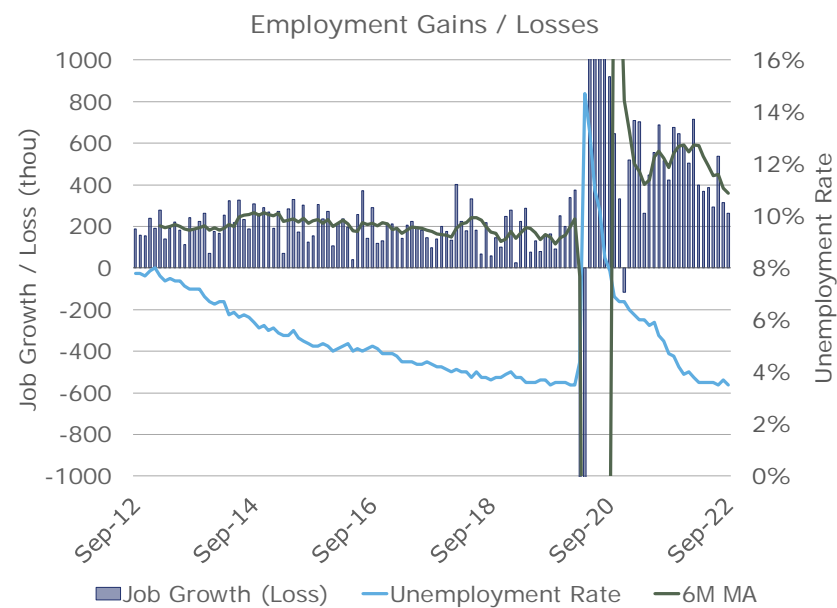
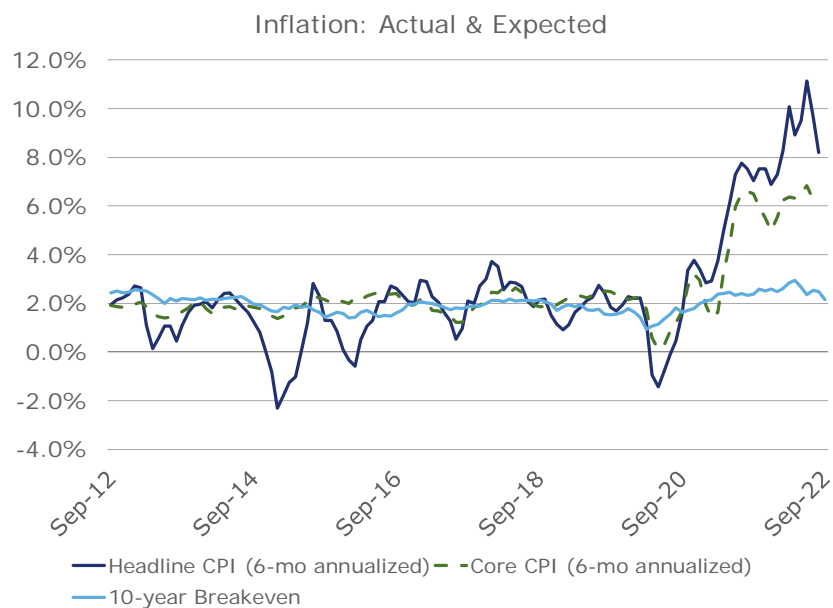
Data Sources: Bloomberg

Business Activity



Data Sources: Bloomberg

Inflation and Employment

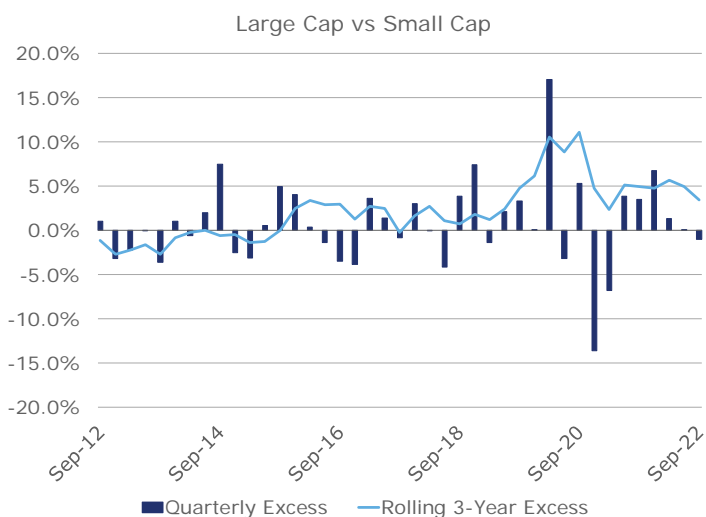
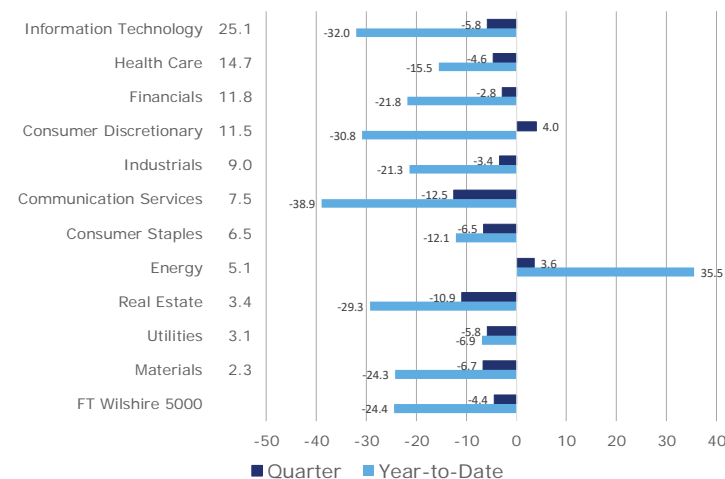


Data Sources: Bloomberg

U.S. Equity Market

As of 9/30/2022	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
FT Wilshire 5000	-4.4	-24.4	-17.2	8.1	8.8	11.5
Wilshire U.S. Large Cap	-4.5	-24.4	-16.6	8.4	9.3	11.8
Wilshire U.S. Small Cap	-3.5	-24.6	-22.1	4.8	4.2	9.2
Wilshire U.S. Large Growth	-3.3	-30.1	-22.0	10.7	11.4	13.4
Wilshire U.S. Large Value	-5.8	-16.9	-9.8	6.0	7.2	10.1
Wilshire U.S. Small Growth	-2.0	-28.2	-26.9	4.1	4.5	9.3
Wilshire U.S. Small Value	-4.9	-21.1	-17.3	5.4	3.8	8.9
Wilshire REIT Index	-10.2	-29.7	-17.6	-2.2	2.9	6.1
MSCI USA Min. Vol. Index	-5.4	-17.3	-8.7	2.9	7.7	10.7
FTSE RAFI U.S. 1000 Index	-5.7	-17.7	-10.3	8.2	7.9	11.1

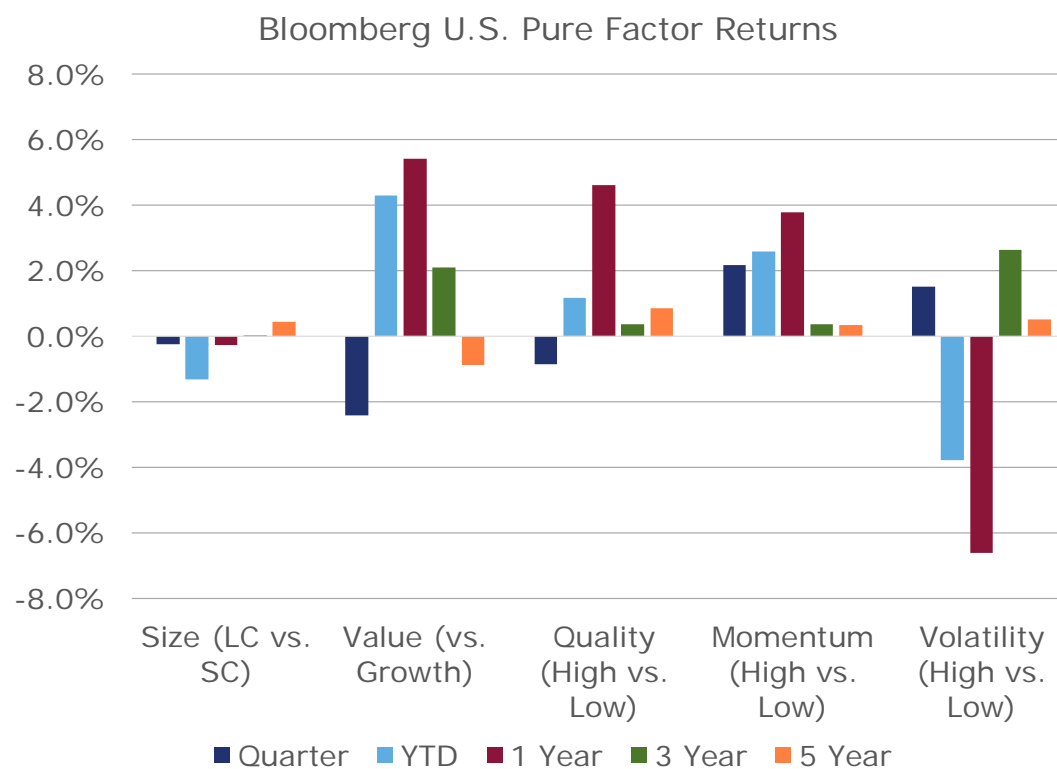
U.S. Sector Weight and Return (%)



Data Sources: Bloomberg, Wilshire Atlas

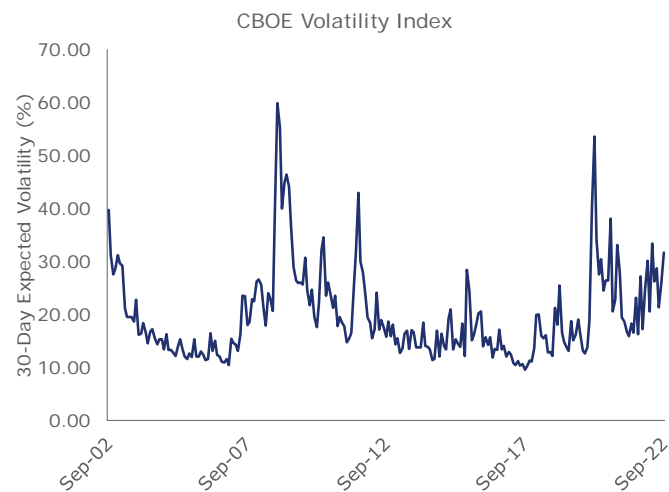
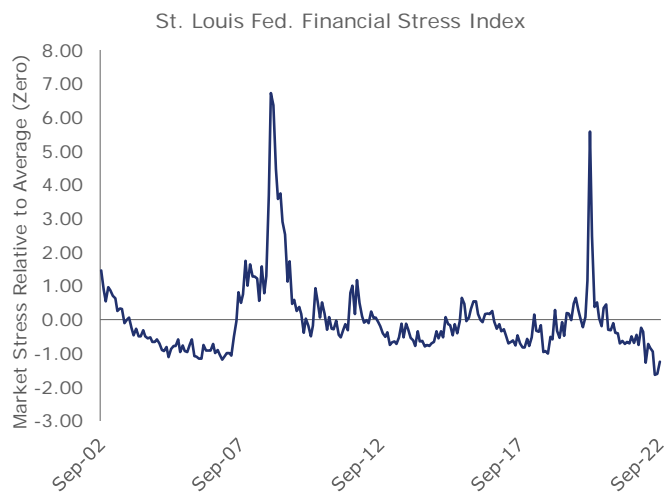
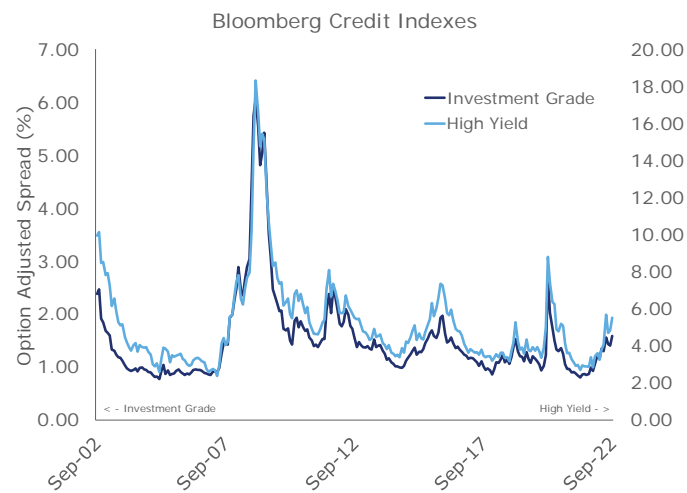
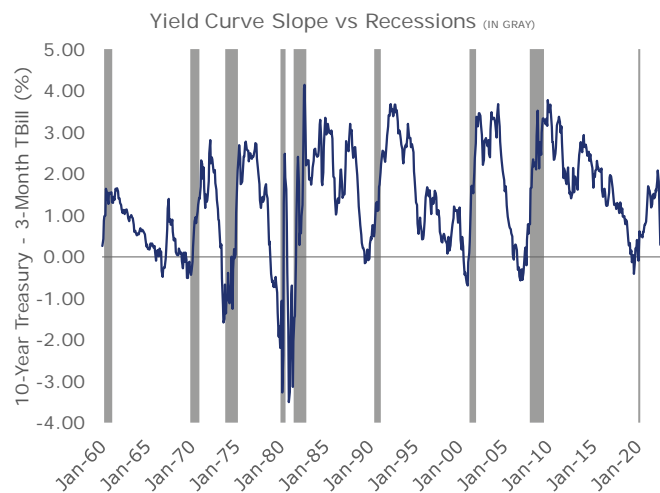
U.S. Factor Returns

- Factor returns represent the contribution from large cap, value, etc. stocks within Bloomberg's Portfolio & Risk Analytics module
- Low volatility has mostly outperformed this year, except during Q3



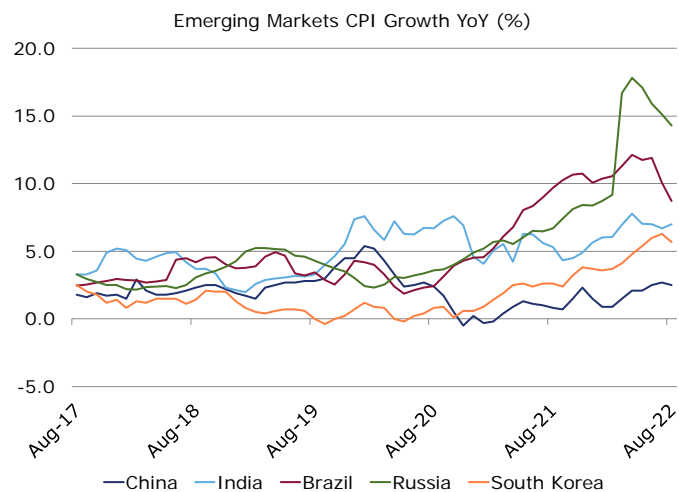
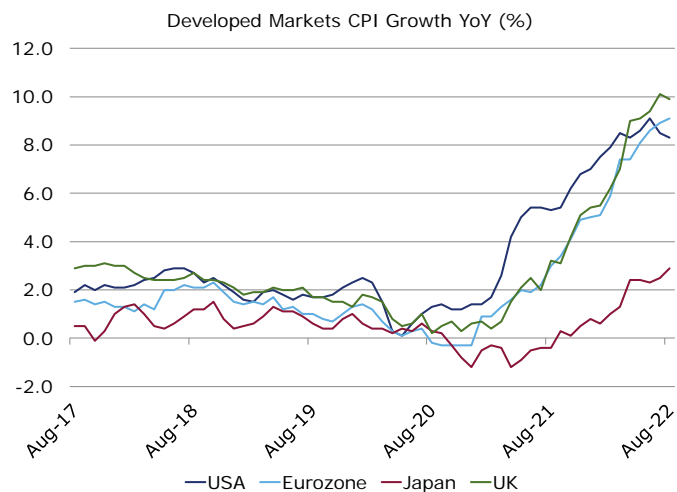
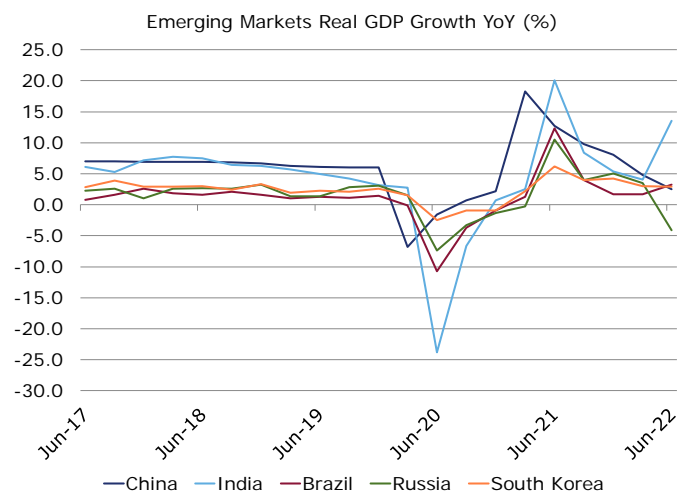
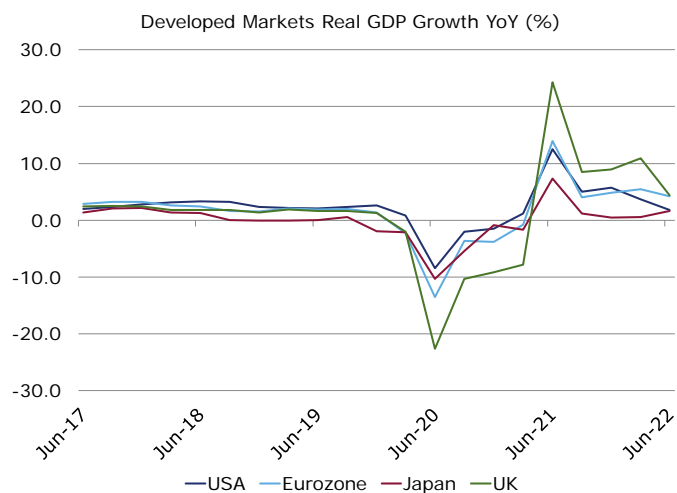
Data Sources: Bloomberg

Risk Monitor



Data Sources: Bloomberg

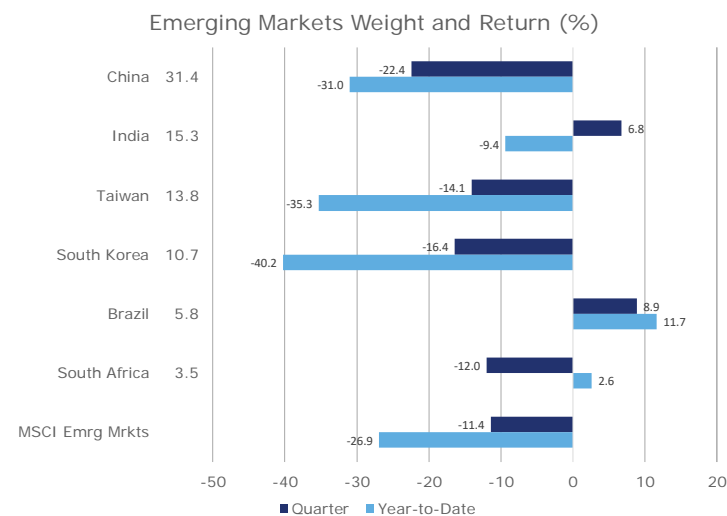
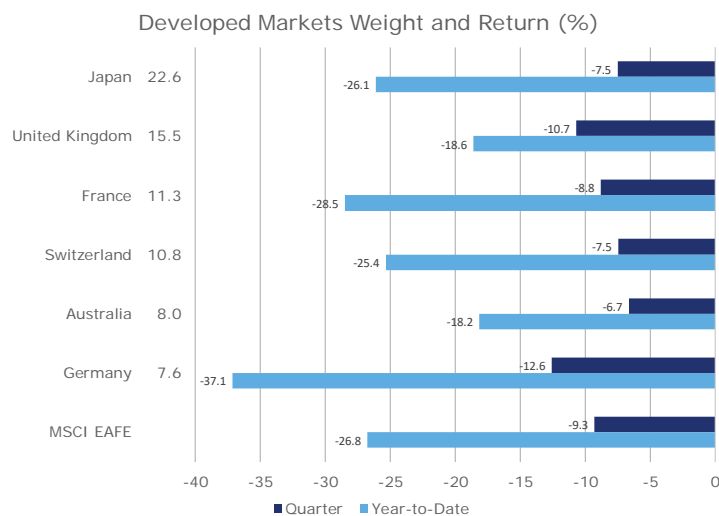
Non-U.S. Growth and Inflation



Data Sources: Bloomberg

Non-U.S. Equity Market

As of 9/30/2022	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
MSCI ACWI ex-US (\$G)	-9.8	-26.2	-24.8	-1.1	-0.3	3.5
MSCI EAFE (\$G)	-9.3	-26.8	-24.7	-1.4	-0.4	4.2
MSCI Emerging Markets (\$G)	-11.4	-26.9	-27.8	-1.7	-1.4	1.4
MSCI Frontier Markets (\$G)	-8.6	-24.8	-23.3	-6.4	-4.6	-0.1
MSCI ACWI ex-US Growth (\$G)	-9.3	-31.6	-30.0	-1.1	0.5	4.3
MSCI ACWI ex-US Value (\$G)	-10.1	-21.1	-20.1	-1.3	-1.4	2.8
MSCI ACWI ex-US Small (\$G)	-8.2	-29.1	-28.6	0.8	-0.2	4.8
MSCI ACWI Minimum Volatility	-5.9	-16.9	-11.6	0.4	4.5	7.4
MSCI EAFE Minimum Volatility	-9.3	-24.1	-22.2	-5.0	-1.1	3.9
FTSE RAFI Developed ex-US	-10.1	-23.1	-21.1	-0.4	-0.8	3.9
MSCI EAFE LC (G)	-3.5	-14.1	-10.7	3.0	3.3	7.9
MSCI Emerging Markets LC (G)	-8.0	-20.5	-21.1	1.4	1.5	4.8

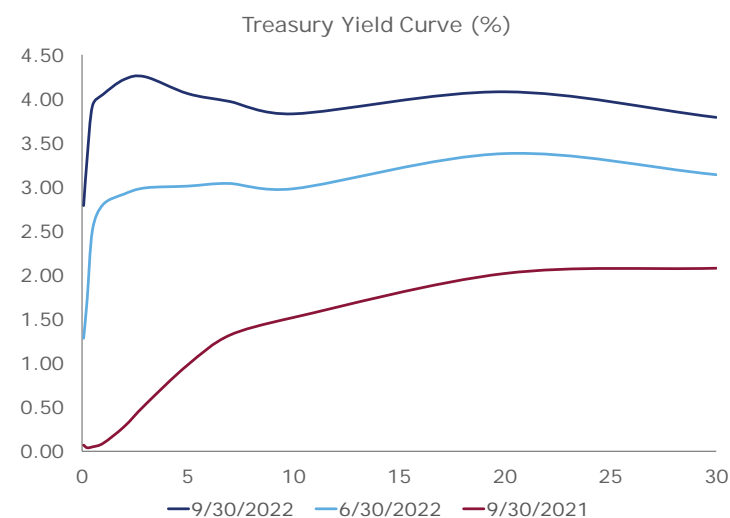
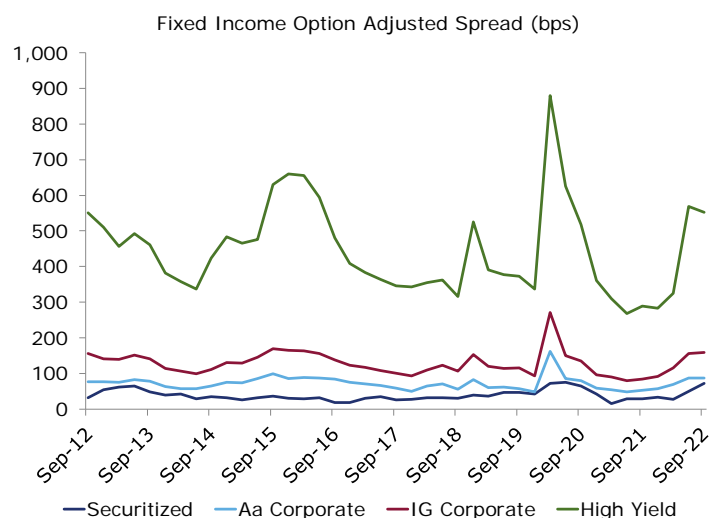


Data Sources: Bloomberg

U.S. Fixed Income

As of 9/30/2022	YTW	DUR.	QTR	YTD	1 YR	3 YR	5 YR	10 YR
Bloomberg Aggregate	4.8	6.2	-4.8	-14.6	-14.6	-3.3	-0.3	0.9
Bloomberg Treasury	4.1	6.1	-4.3	-13.1	-12.9	-3.1	-0.2	0.5
Bloomberg Gov't-Rel.	4.7	5.1	-3.9	-12.7	-12.7	-2.9	0.0	1.0
Bloomberg Securitized	4.9	5.8	-5.2	-13.4	-13.8	-3.5	-0.8	0.6
Bloomberg Corporate	5.7	7.1	-5.1	-18.7	-18.5	-3.7	0.0	1.7
Bloomberg LT Gov't/Credit	5.0	14.3	-9.0	-28.9	-27.4	-7.3	-1.2	1.4
Bloomberg LT Treasury	4.0	16.3	-9.6	-28.8	-26.6	-8.5	-1.6	0.6
Bloomberg LT Gov't-Rel.	5.7	11.6	-7.9	-25.8	-24.4	-7.2	-1.3	1.4
Bloomberg LT Corporate	5.9	12.8	-8.7	-29.4	-28.4	-7.0	-1.1	1.8
Bloomberg U.S. TIPS *	3.8	7.8	-5.1	-13.6	-11.6	0.8	2.0	1.0
Bloomberg High Yield	9.7	4.1	-0.6	-14.7	-14.1	-0.5	1.6	3.9
S&P/LSTA Leveraged Loan	8.0	0.3	1.4	-3.3	-2.5	2.2	3.0	3.5
Treasury Bills	3.2	0.3	0.4	0.4	0.4	0.6	1.1	0.7

* Yield and Duration statistics are for a proxy index based on similar maturity, the Bloomberg Barclays U.S. Treasury 7-10 Year Index

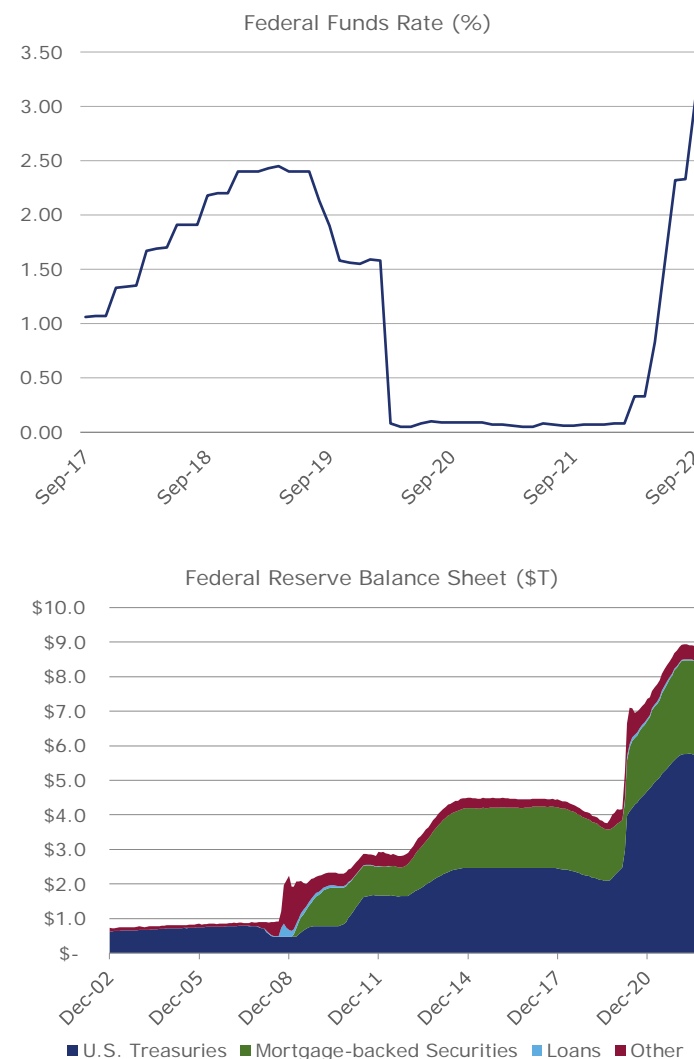


Data Sources: Bloomberg

Federal Reserve

- After 150 basis point increase in the Fed-funds rate through June, the FOMC increased the rate an additional 150 basis points during Q3
- Federal Reserve has added more than \$4.5 trillion in assets to their balance sheet during the past two years
- QE4 is now larger than the 3 phases of quantitative easing – combined – following the global financial crisis

	Announced	Closed	Amount (bil)
QE1	11/25/2008	3/31/2010	\$1,403
QE2	11/3/2010	6/29/2012	\$568
QE3	9/13/2012	10/29/2014	\$1,674
QE4	3/23/2020	3/15/2022	\$4,779

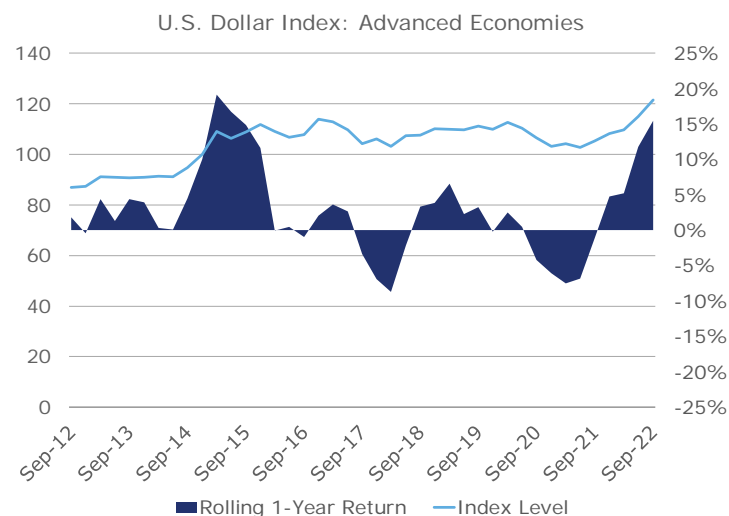
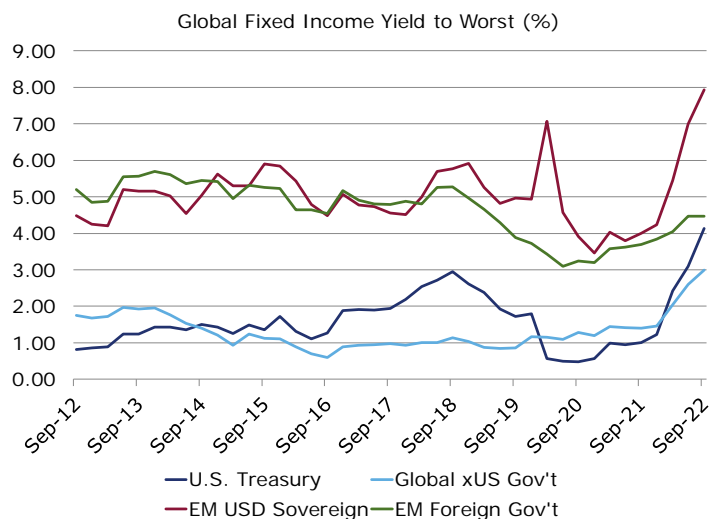


Data Sources: Bloomberg

Non-U.S. Fixed Income

As of 9/30/2022	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
Developed Markets						
Bloomberg Global Aggregate xUS	-8.8	-23.9	-24.8	-7.8	-4.0	-2.4
Bloomberg Global Aggregate xUS *	-2.2	-9.9	-9.9	-3.0	0.7	2.2
Bloomberg Global Inflation Linked xUS	-13.4	-33.5	-31.5	-8.9	-4.3	-1.0
Bloomberg Global Inflation Linked xUS *	-5.9	-19.7	-16.9	-4.7	0.6	3.2
Emerging Markets (Hard Currency)						
Bloomberg EM USD Aggregate	-4.1	-20.5	-20.9	-5.3	-1.6	1.4
Emerging Markets (Foreign Currency)						
Bloomberg EM Local Currency Gov't	-5.0	-13.5	-13.2	-2.3	-0.6	0.0
Bloomberg EM Local Currency Gov't *	0.6	-4.5	-4.9	-0.8	1.6	1.9
Euro vs. Dollar	-6.5	-13.8	-15.4	-3.5	-3.7	-2.7
Yen vs. Dollar	-6.2	-20.5	-23.1	-9.3	-4.9	-6.0
Pound vs. Dollar	-8.3	-17.5	-17.1	-3.1	-3.6	-3.6

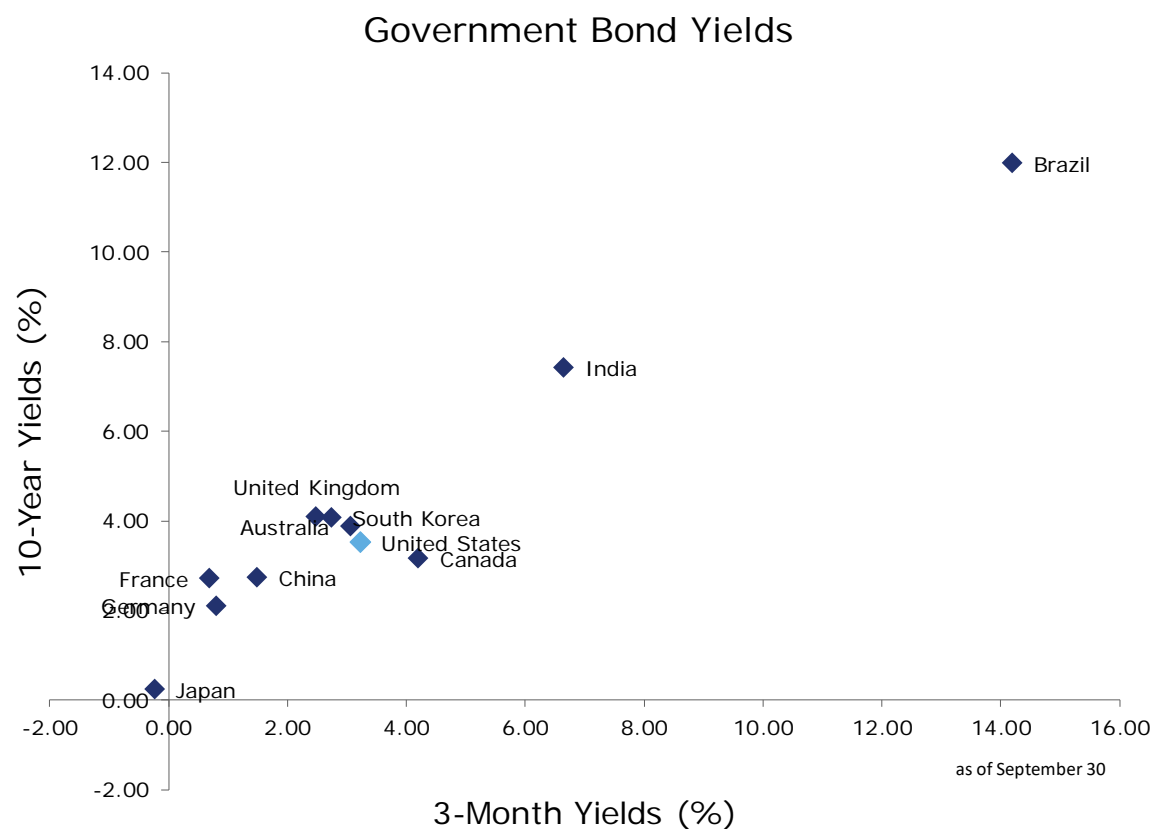
* Returns are reported in terms of local market investors, which removes currency effects.



Data Sources: Bloomberg

Global Interest Rates

Short-term rates have turned positive in most larger countries; longer-term rates around 4% in the U.K., Australia, South Korea and the U.S.

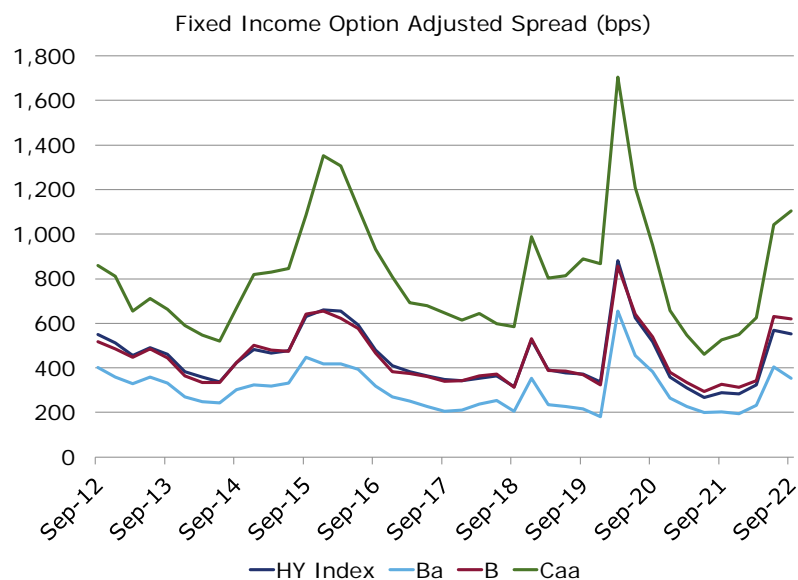


Data Sources: Bloomberg

High Yield Bond Market

As of 9/30/2022

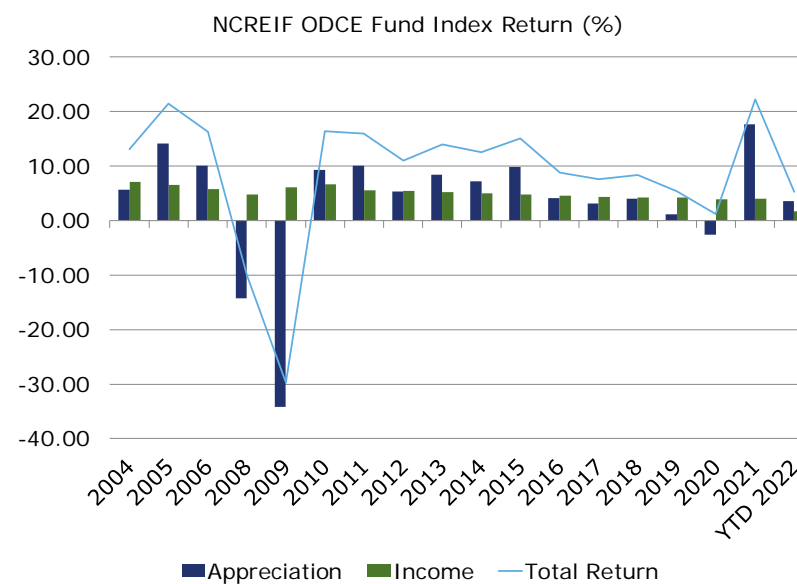
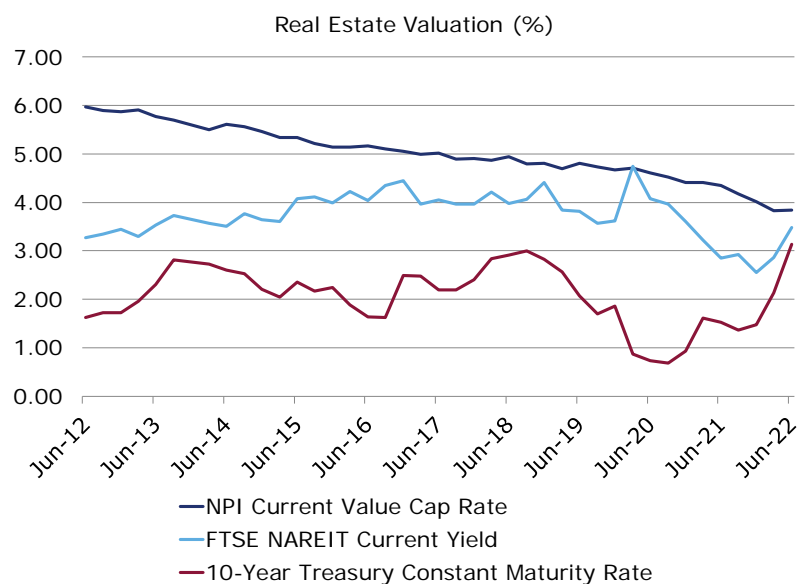
		YTW	QTR	YTD	1 YR	3 YR	5 YR	10 YR
Bloomberg High Yield		9.7	-0.6	-14.7	-14.1	-0.5	1.6	3.9
S&P LSTA Leveraged Loan		8.0	1.3	-4.3	-3.9	1.4	2.5	3.0
High Yield Quality Distribution	Weight							
Ba U.S. High Yield	51.6%	7.8	-0.7	-14.5	-13.8	0.3	2.2	4.2
B U.S. High Yield	36.7%	10.2	-0.7	-14.5	-13.8	-1.3	1.3	3.5
Caa U.S. High Yield	10.9%	15.2	-0.4	-16.7	-16.3	-1.4	-0.3	3.7
Ca to D U.S. High Yield	0.7%	34.0	-3.0	-21.3	-31.5	-5.6	-2.0	-5.6



Data Sources: Bloomberg

Real Assets

As of 9/30/2022	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
Bloomberg U.S. TIPS	-5.1	-13.6	-11.6	0.8	2.0	1.0
Bloomberg Commodity Index	-4.1	13.6	11.8	13.5	7.0	-2.1
Bloomberg Gold Index	-7.9	-9.3	-5.7	2.8	4.2	-1.5
Wilshire Global RESI Index	-11.2	-29.4	-20.1	-4.3	1.0	4.6
NCREIF ODCE Fund Index	0.5	13.1	22.1	12.4	10.2	10.9
FTSE Global Core Infrastructure 50/50	-8.9	-12.3	-5.5	0.6	4.1	7.3
Alerian Midstream Energy	-1.0	12.1	11.7	6.7	5.0	n.a.
Bitcoin	3.7	-58.1	-55.3	33.1	36.0	108.7



Data Sources: Bloomberg, National Council of Real Estate Investment Fiduciaries

Asset Class Performance

Asset Class Returns - Best to Worst

2017	2018	2019	2020	2021	2022 YTD
Emrg Mkts 37.7%	T-Bills 1.9%	U.S. Equity 31.0%	U.S. Equity 20.8%	REITs 46.2%	Commodities 13.6%
Developed 25.6%	Core Bond 0.0%	REITs 25.8%	Emrg Mkts 18.7%	Commodities 27.1%	T-Bills 0.4%
U.S. Equity 21.0%	U.S. TIPS -1.3%	Developed 22.7%	U.S. TIPS 11.0%	U.S. Equity 26.7%	U.S. TIPS -13.6%
High Yield 7.5%	High Yield -2.1%	Emrg Mkts 18.9%	Developed 8.3%	Developed 11.8%	Core Bond -14.6%
REITs 4.2%	REITs -4.8%	High Yield 14.3%	Core Bond 7.5%	U.S. TIPS 6.0%	High Yield -14.7%
Core Bond 3.6%	U.S. Equity -5.3%	Core Bond 8.7%	High Yield 7.1%	High Yield 5.3%	U.S. Equity -24.4%
U.S. TIPS 3.0%	Commodities -11.2%	U.S. TIPS 8.4%	T-Bills 0.7%	T-Bills 0.0%	Developed -26.8%
Commodities 1.7%	Developed -13.4%	Commodities 7.7%	Commodities -3.1%	Core Bond -1.5%	Emrg Mkts -26.9%
T-Bills 0.8%	Emrg Mkts -14.2%	T-Bills 2.3%	REITs -7.9%	Emrg Mkts -2.2%	REITs -29.7%

Annualized 5-Year as of 9/22

U.S. Equity 8.8%
Commodities 7.0%
REITs 2.9%
U.S. TIPS 2.0%
High Yield 1.6%
T-Bills 1.1%
Core Bond -0.3%
Developed -0.4%
Emrg Mkts -1.4%

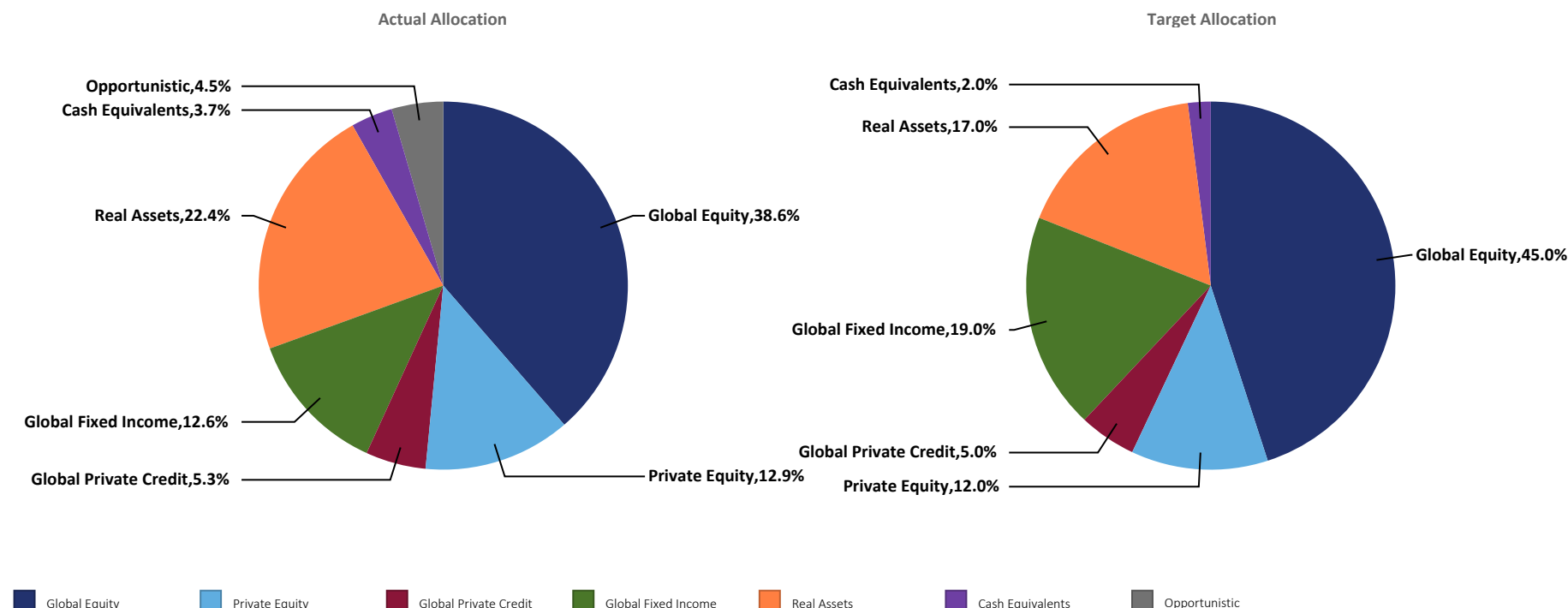
Data Sources: Bloomberg Note: Developed asset class is developed equity markets ex-U.S., ex-Canada

Total Fund

Asset Allocation Compliance

Total Fund

Periods Ended As of September 30, 2022



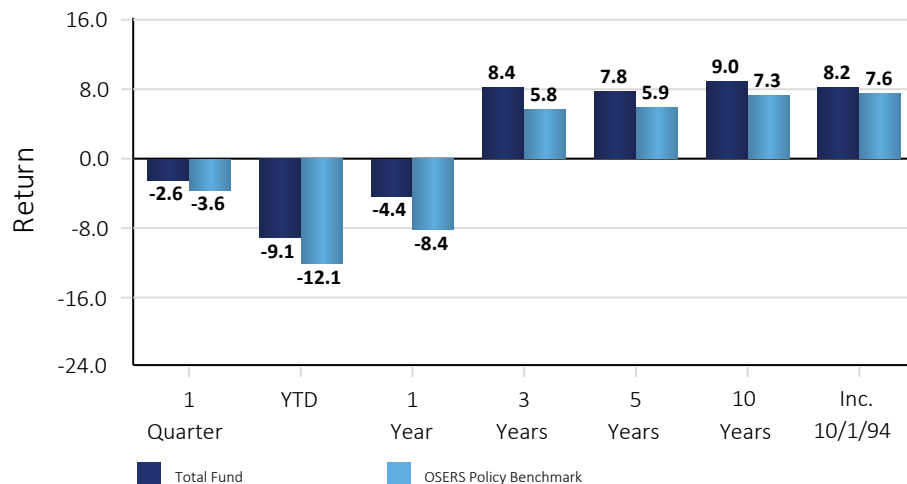
	Asset Allocation \$	Asset Allocation (%)	Target Allocation (%)	Differences (%)
Total Fund	<u>16,527,286,785</u>	<u>100.0</u>	<u>100.0</u>	<u>0.0</u>
Global Equity	6,384,649,746	38.6	45.0	-6.4
Private Equity	2,132,738,389	12.9	12.0	0.9
Global Private Credit	873,032,663	5.3	5.0	0.3
Global Fixed Income	2,086,877,953	12.6	19.0	-6.4
Real Assets	3,697,929,669	22.4	17.0	5.4
Cash Equivalents	605,063,544	3.7	2.0	1.7
Opportunistic	746,994,821	4.5	0.0	4.5

Composite Performance Summary

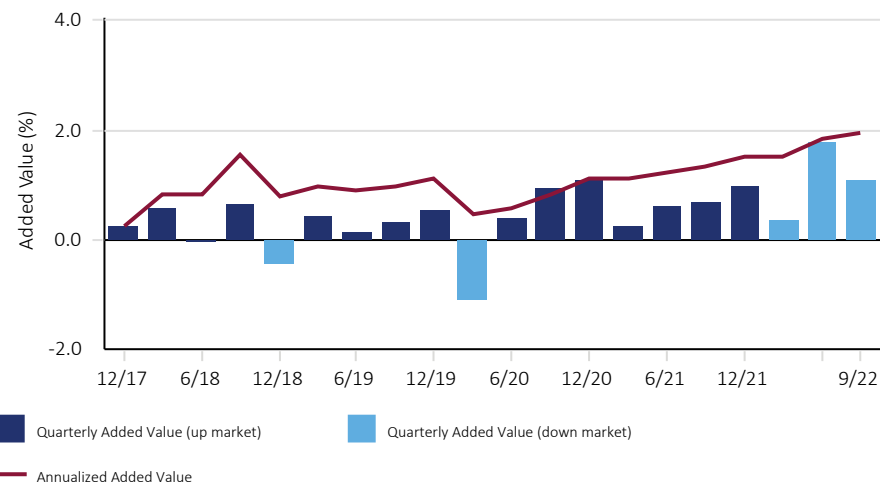
Total Fund

Periods Ended September 30, 2022

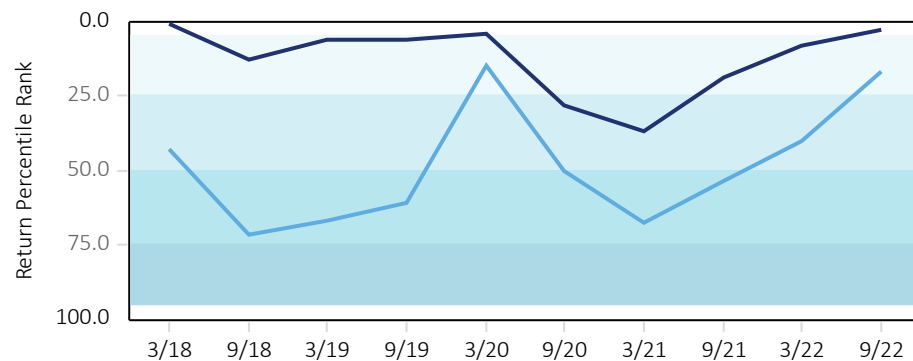
Comparative Performance



Added Value History

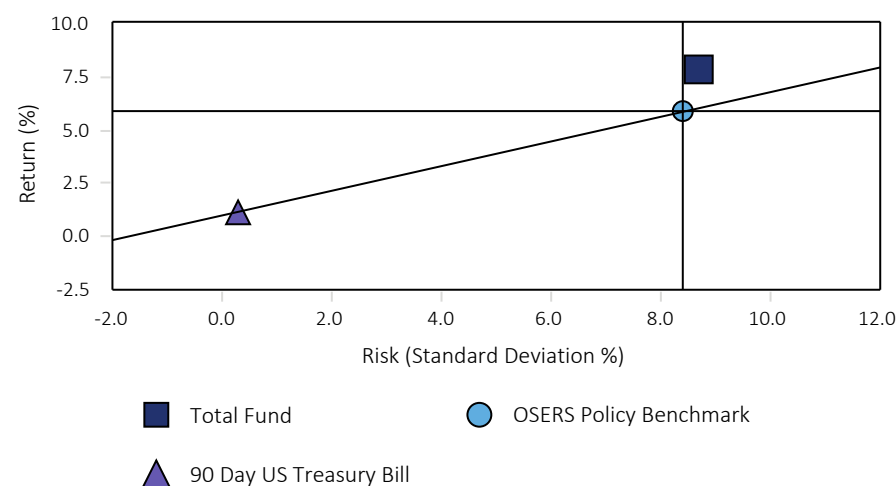


Rolling Percentile Rank: All Public Plans-Total Fund



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
— Total Fund	10	8 (80%)	2 (20%)	0 (0%)	0 (0%)
— Benchmark	10	2 (20%)	3 (30%)	5 (50%)	0 (0%)

Risk and Return 10/1/17 - 09/30/22

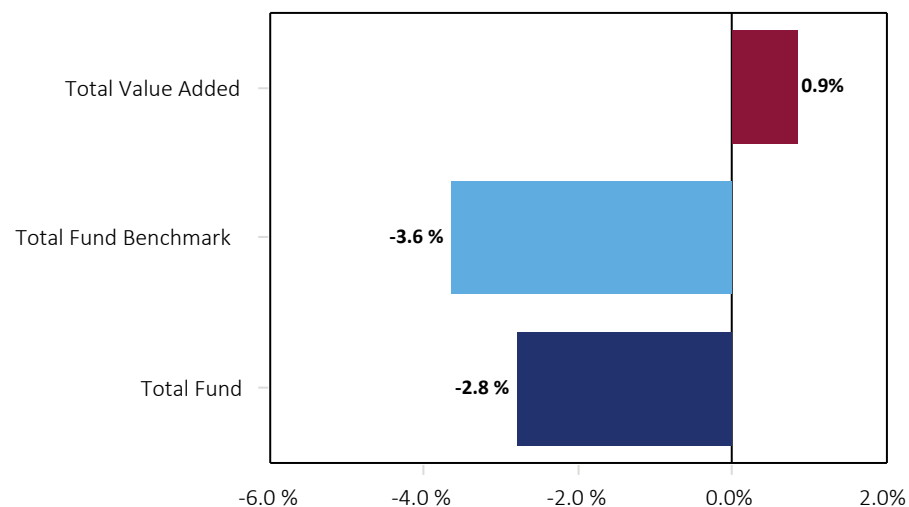


Total Fund Attribution

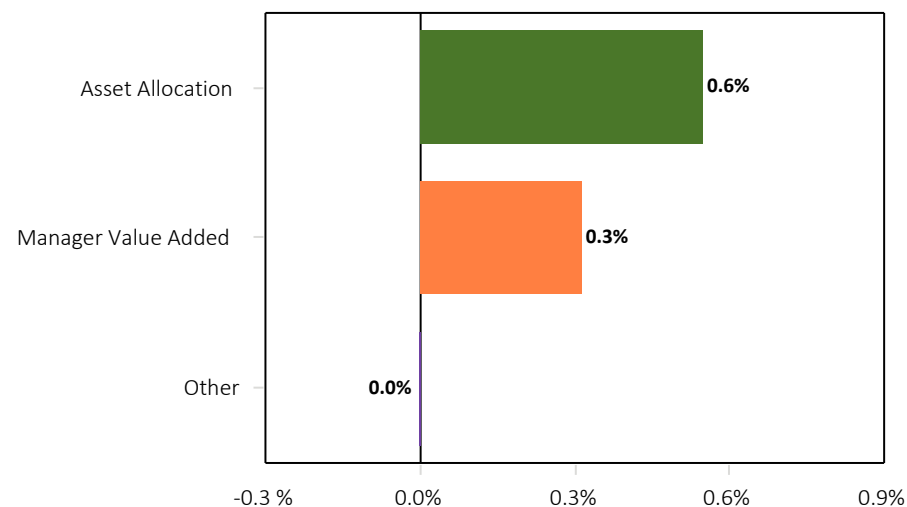
Total Fund

Periods Ended 1 Quarter Ending September 30, 2022

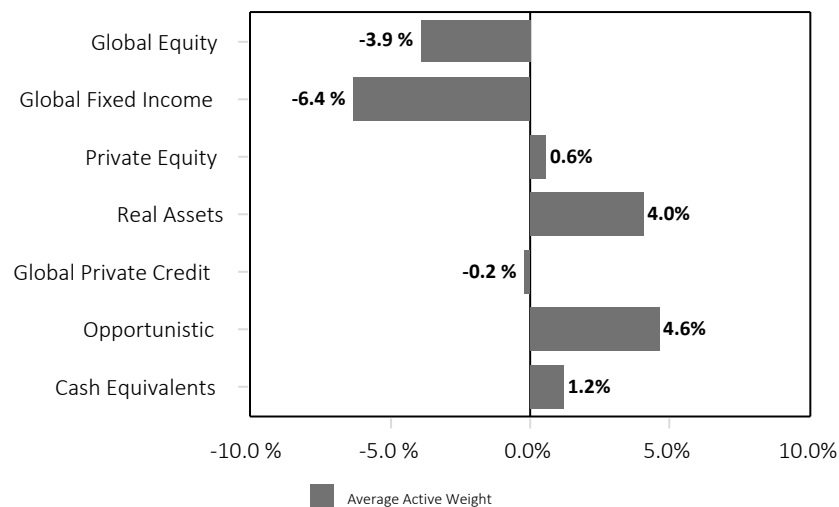
Total Fund Performance



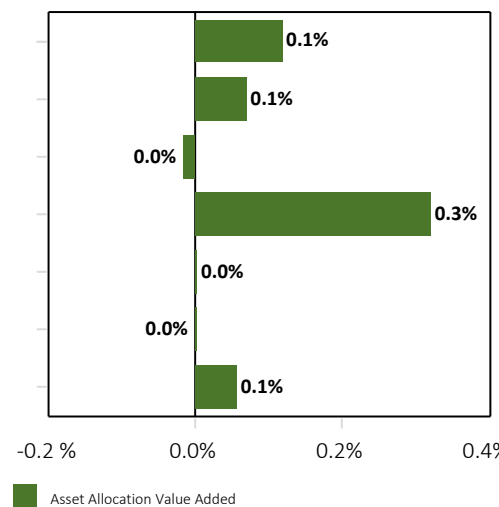
Total Value Added:0.9%



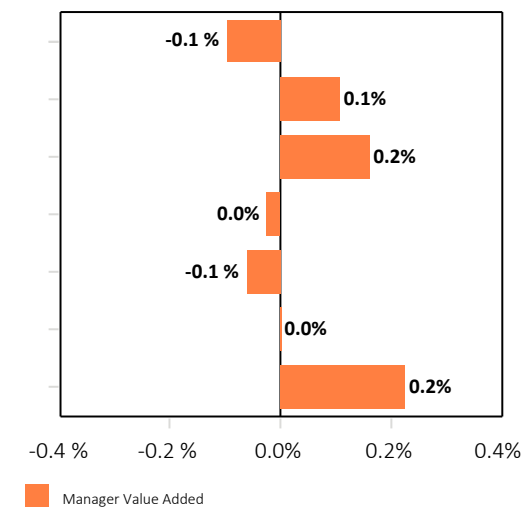
Total Asset Allocation:0.6%



Asset Allocation Value Added:0.6%



Total Manager Value Added:0.3%

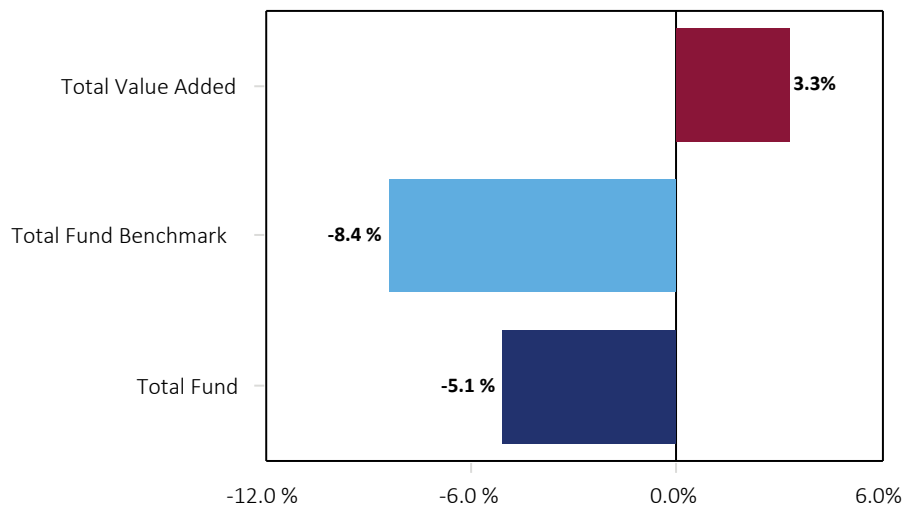


Total Fund Attribution

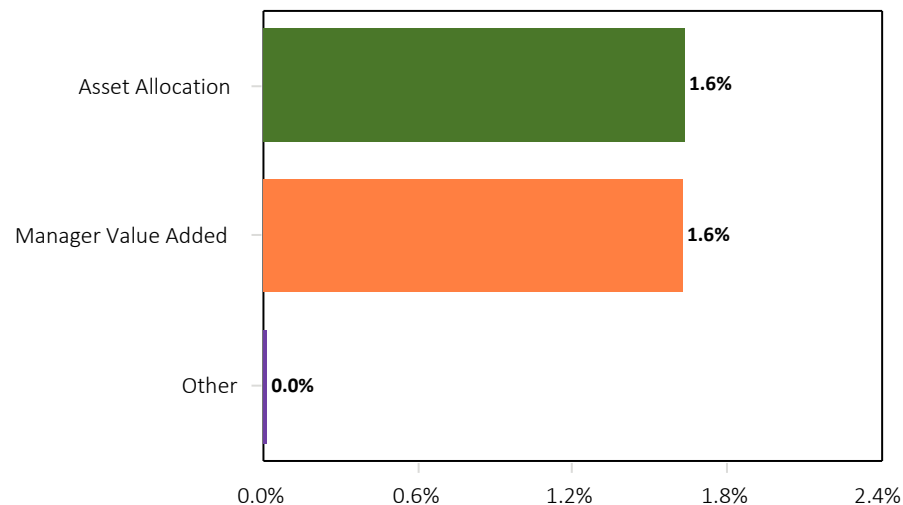
Total Fund

Periods Ended 1 Year Ending September 30, 2022

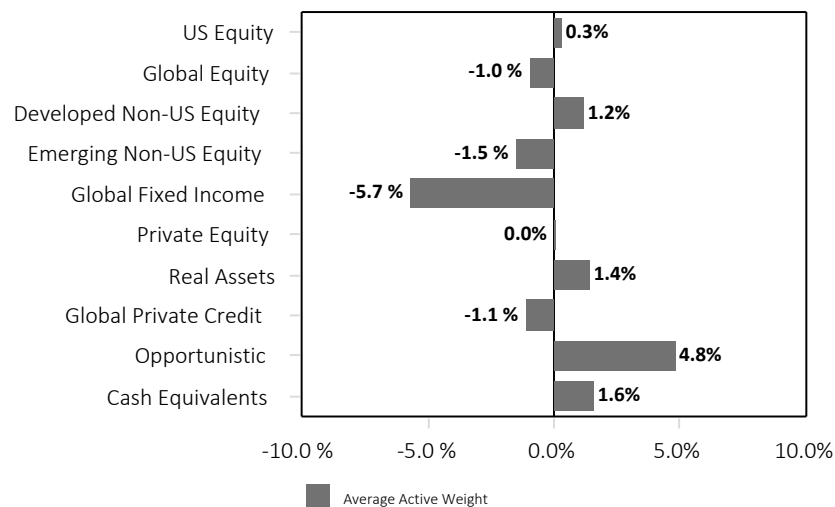
Total Fund Performance



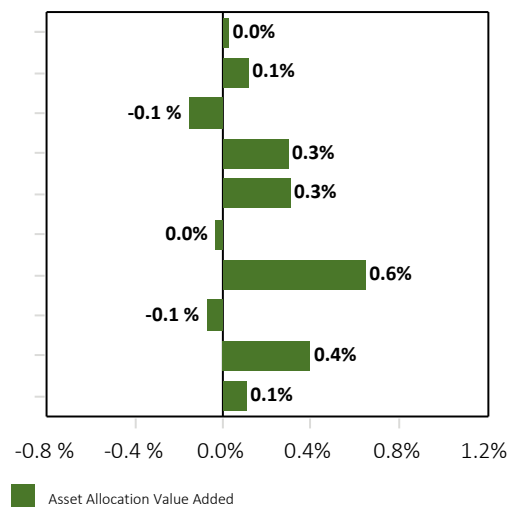
Total Value Added:3.3%



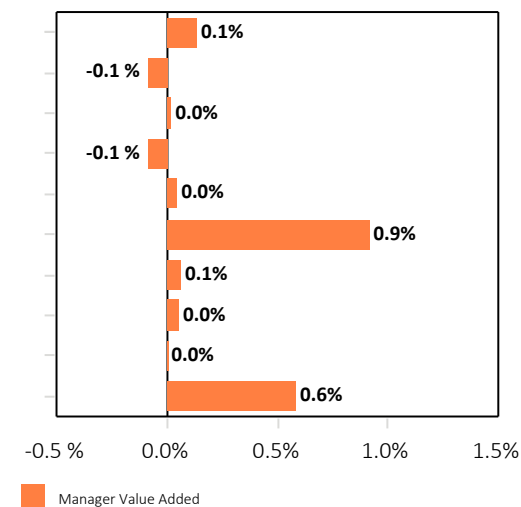
Total Asset Allocation:1.6%



Asset Allocation Value Added:1.6%



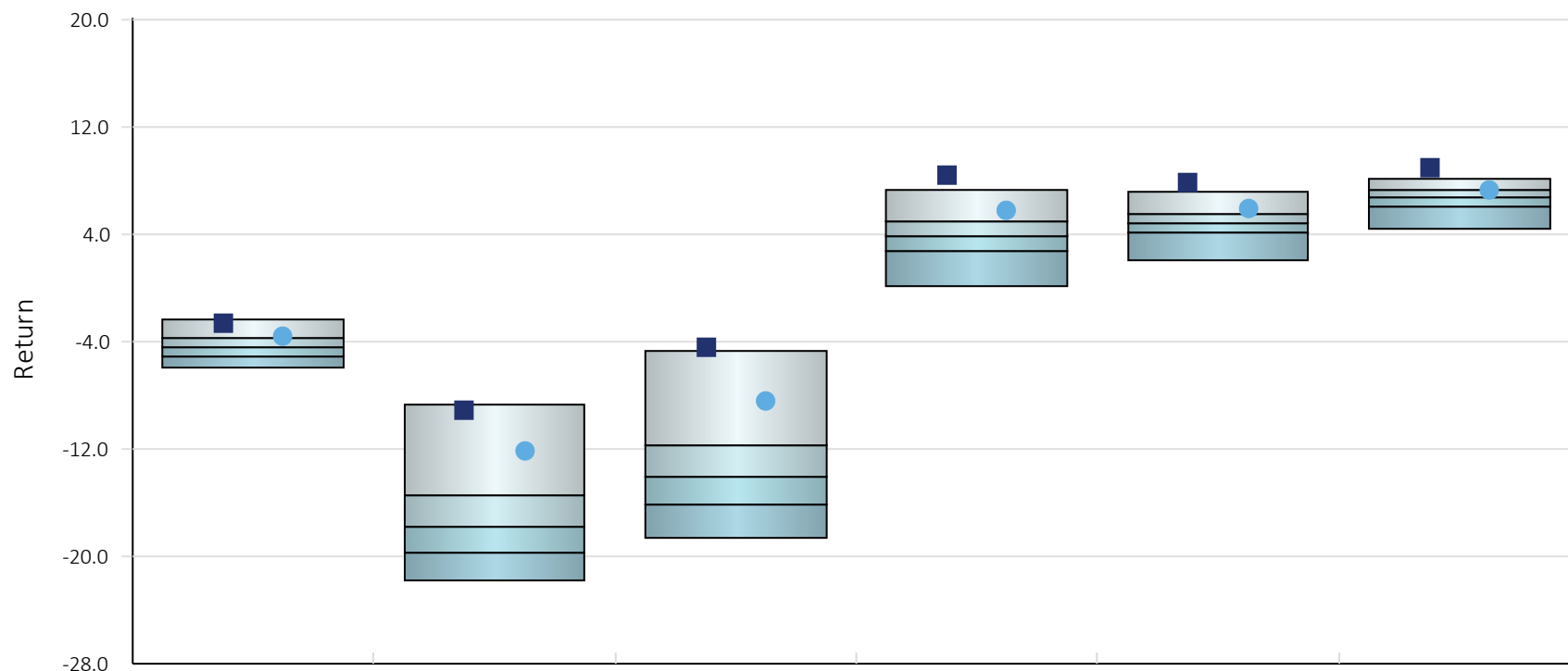
Total Manager Value Added:1.6%



Plan Sponsor Peer Group Analysis

Total Fund vs All Public Plans-Total Fund (GOF)

Periods Ended September 30, 2022



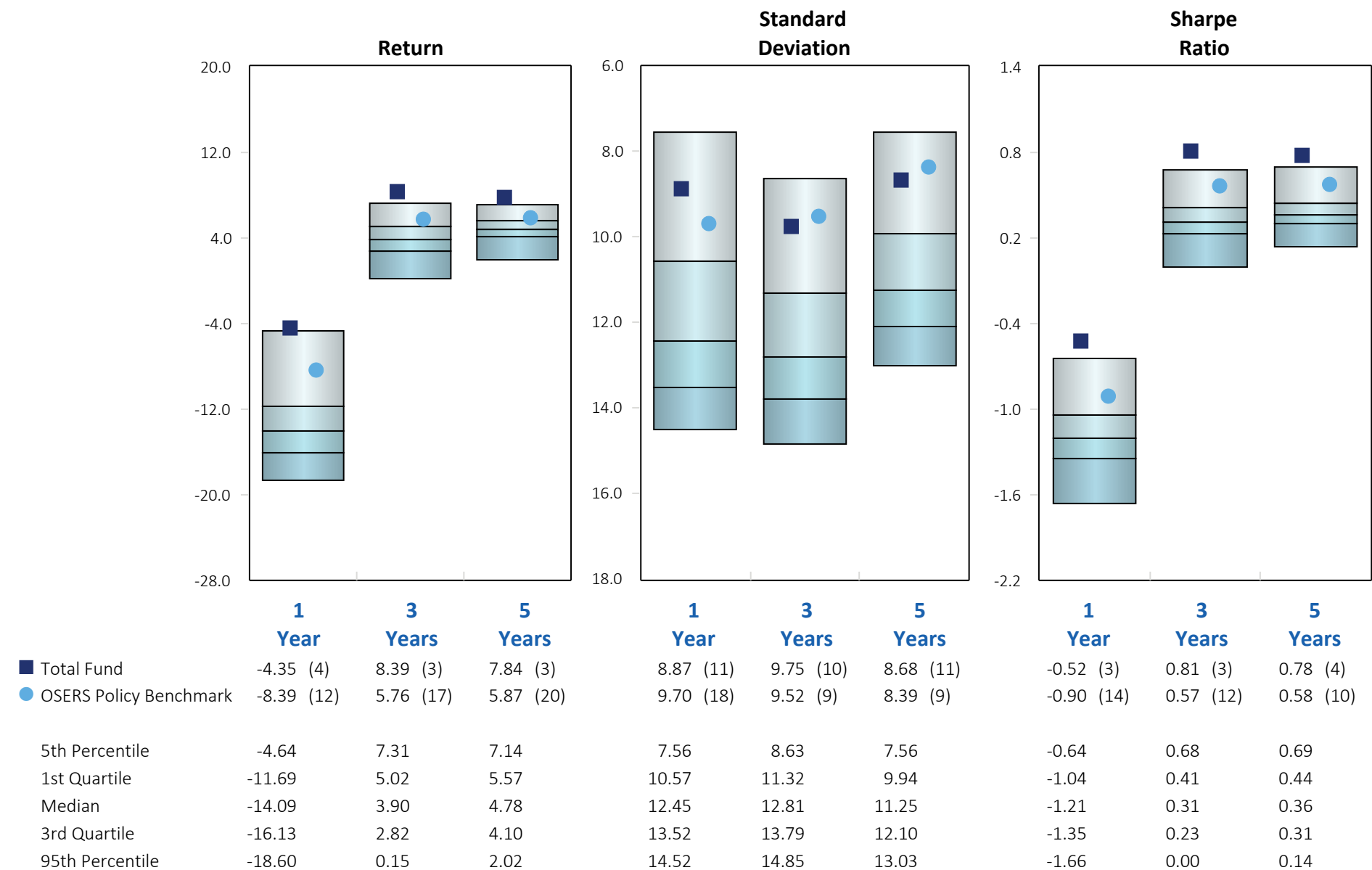
	QTD	YTD	1 Year	3 Years	5 Years	10 Years
■ Total Fund	-2.57 (7)	-9.12 (6)	-4.35 (4)	8.39 (3)	7.84 (3)	8.99 (1)
● OSERS Policy Benchmark	-3.65 (22)	-12.13 (12)	-8.39 (12)	5.76 (17)	5.87 (20)	7.31 (25)
5th Percentile	-2.38	-8.69	-4.64	7.31	7.14	8.20
1st Quartile	-3.77	-15.44	-11.69	5.02	5.57	7.27
Median	-4.41	-17.74	-14.09	3.90	4.78	6.78
3rd Quartile	-5.11	-19.67	-16.13	2.82	4.10	6.05
95th Percentile	-5.91	-21.73	-18.60	0.15	2.02	4.36
Population	317	306	304	296	285	240

Parentheses contain percentile rankings.
Calculation based on monthly periodicity.
Ohio SERS performance is Gross of Fees

Plan Sponsor Peer Group Analysis - Multi Statistics

Total Fund vs All Public Plans-Total Fund (GOF)

Periods Ended September 30, 2022

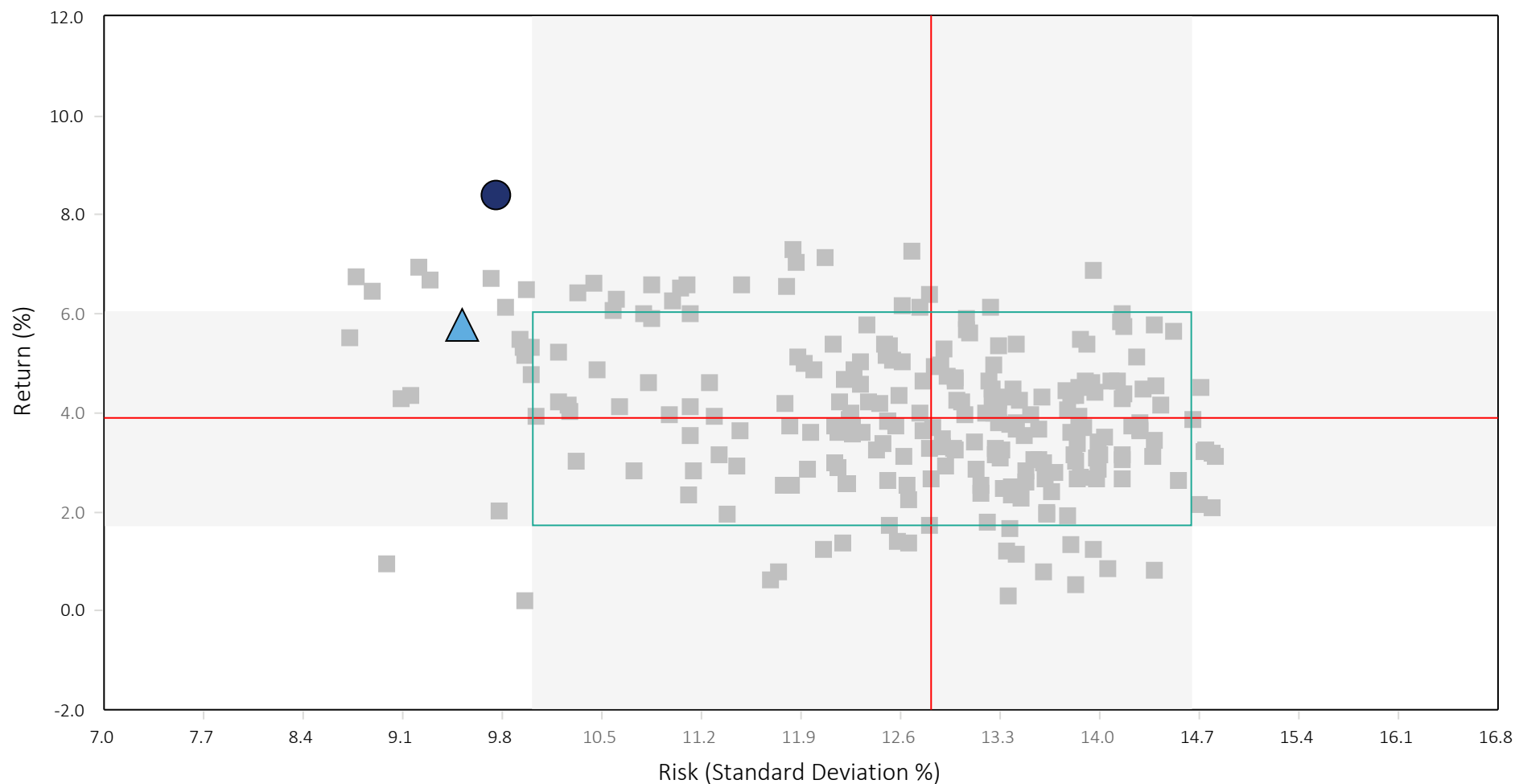


Parentheses contain percentile rankings.
Calculation based on monthly periodicity.
Ohio SERS performance is Gross of Fees

Plan Sponsor Scattergram

Total Fund vs All Public Plans-Total Fund

Periods Ended October 1, 2019 To September 30, 2022

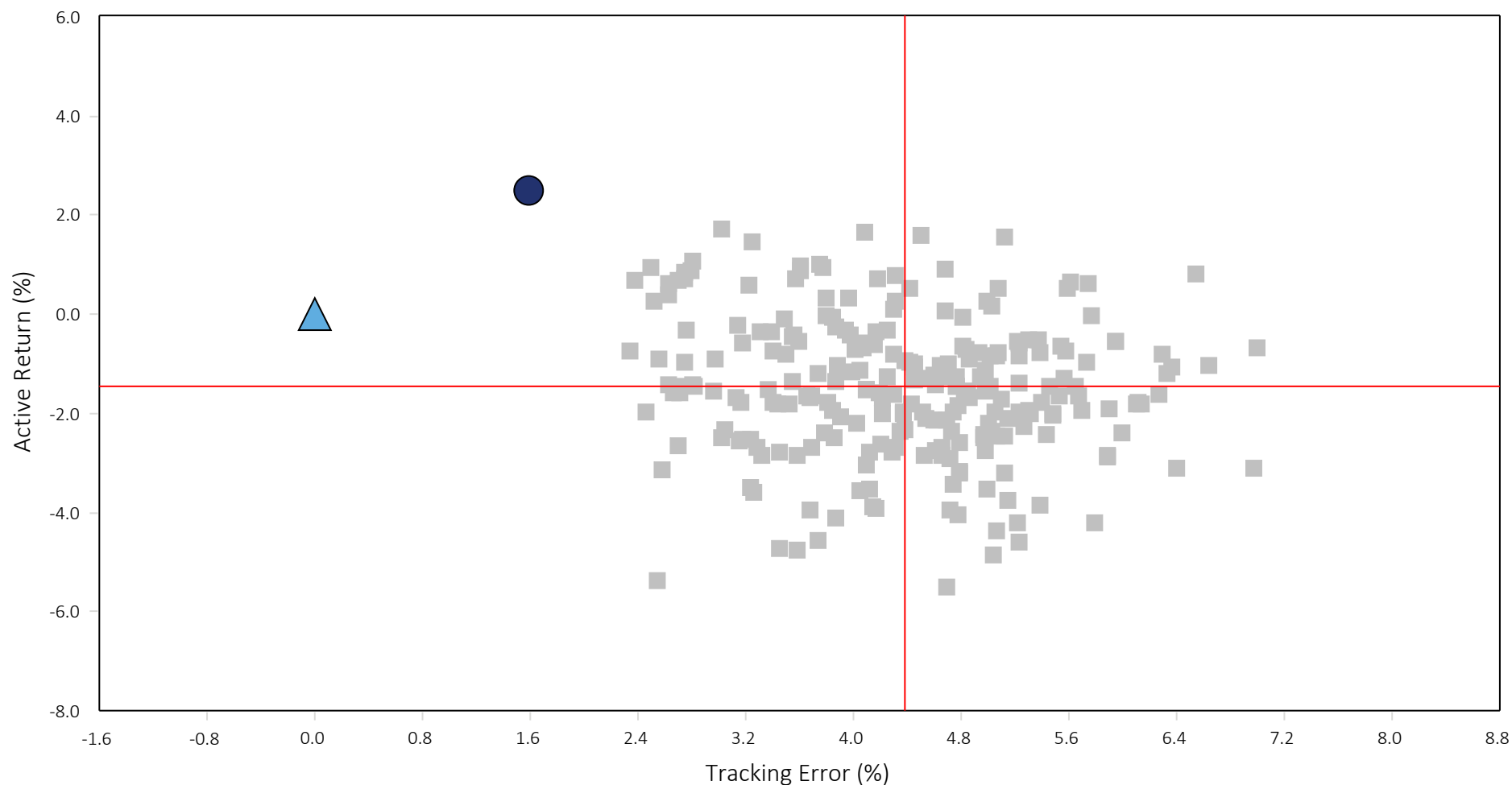


	Return	Standard Deviation
● Total Fund	8.39	9.75
▲ OSERS Policy Benchmark	5.76	9.52
— Median	3.90	12.81

Plan Sponsor Scattergram

Total Fund vs All Public Plans-Total Fund

Periods Ended October 1, 2019 To September 30, 2022



	Active Return	Tracking Error
● Total Fund	2.49	1.59
▲ OSERS Policy Benchmark	0.00	0.00
— Median	-1.45	4.39

Asset Allocation & Performance

Total Fund

Periods Ended September 30, 2022

	Allocation		Performance (%) net of fees									
	Market Value \$000	%	1 Quarter	YTD	FYTD	1 Year	3 Years	5 Years	10 Years	20 Years	Since Inception	Inception Date
Total Fund	16,527,287	100.00	-2.79	-9.65	-2.79	-5.09	7.73	7.17	8.30	7.75	7.65	10/1/1994
OSERS Policy Benchmark			-3.65	-12.13	-3.65	-8.39	5.76	5.87	7.31	7.50	7.57	
Value Added			0.86	2.48	0.86	3.30	1.97	1.30	0.99	0.25	0.08	
Global Equity	6,384,650	38.63	-7.01	-25.48	-7.01	-21.02	4.35	4.55	7.88	8.01	6.82	7/1/2002
Global Equity Benchmark			-6.82	-25.32	-6.82	-20.97	3.37	4.06	7.39	7.63	6.49	
Value Added			-0.19	-0.16	-0.19	-0.05	0.98	0.49	0.49	0.38	0.33	
Global Private Equity	2,132,738	12.90	-2.26	7.01	-2.26	15.32	23.90	20.58	18.88	11.95	13.55	10/1/1994
Global PE Benchmark			-3.52	0.79	-3.52	6.33	19.88	17.48	16.23	12.23	13.23	
Value Added			1.26	6.22	1.26	8.99	4.02	3.10	2.65	-0.28	0.32	
Global Private Credit	873,033	5.28	0.32	4.68	0.32	7.25					11.96	7/1/2020
Global Private Credit Benchmark			1.57	4.01	1.57	5.21					4.92	
Value Added			-1.25	0.67	-1.25	2.04					7.04	
Global Fixed Income	2,086,878	12.63	-3.91	-14.06	-3.91	-14.24	-1.88	0.61	1.75	3.98	5.22	10/1/1994
Blmbg. U.S. Aggregate			-4.75	-14.61	-4.75	-14.60	-3.26	-0.27	0.89	3.08	4.59	
Value Added			0.84	0.55	0.84	0.36	1.38	0.88	0.86	0.90	0.63	
Cash Equivalents	605,064	3.66	7.73	19.06	7.73	20.61	7.04	5.22	3.16	2.68	2.66	7/1/2002
FTSE 1 Month T-Bill			0.48	0.59	0.48	0.61	0.51	1.07	0.62	1.13	1.13	
Value Added			7.25	18.47	7.25	20.00	6.53	4.15	2.54	1.55	1.53	

Asset Allocation & Performance

Total Fund

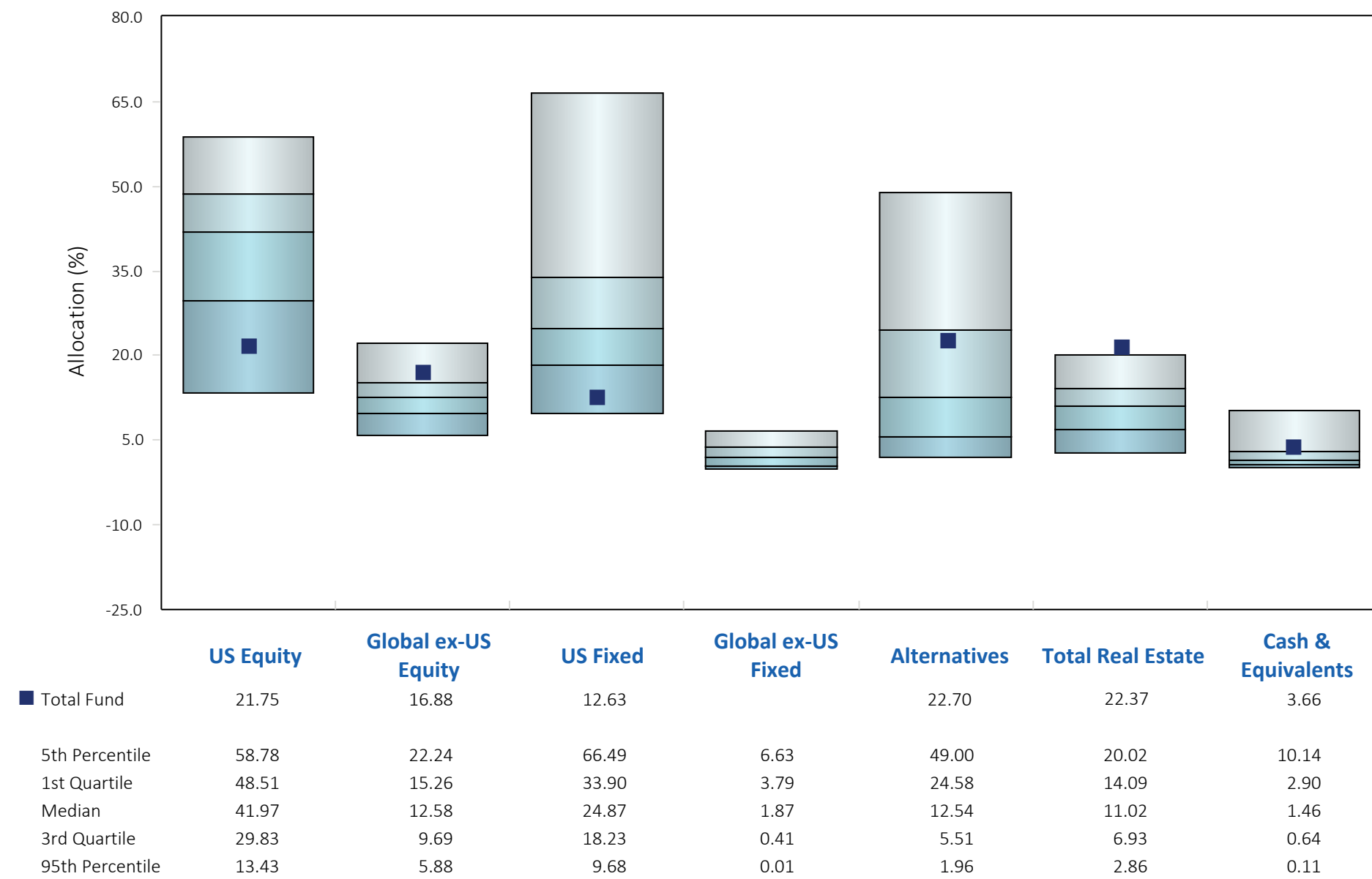
Periods Ended September 30, 2022

	Allocation		Performance (%) net of fees									
	Market Value \$000	%	1 Quarter	YTD	FYTD	1 Year	3 Years	5 Years	10 Years	20 Years	Since Inception	Inception Date
Global Real Assets	3,697,930	22.37	3.40	15.42	3.40	23.25	12.36	11.21	11.20	7.79	8.04	10/1/1994
Real Assets Benchmark			3.23	15.42	3.23	21.45	10.22	8.86	9.67	9.35	9.64	
Value Added			0.17	0.00	0.17	1.80	2.14	2.35	1.53	-1.56	-1.60	
Opportunistic & Tactical	746,995	4.52	-3.55	-3.59	-3.55	-0.04	5.85	6.36			6.79	6/1/2013
Opportunistic Benchmark			-4.28	-13.33	-4.28	-12.89	-2.93	0.56			3.90	
Value Added			0.73	9.74	0.73	12.85	8.78	5.80			2.89	

Plan Sponsor TF Asset Allocation

Total Fund vs All Public Plans-Total Fund

Periods Ended September 30, 2022



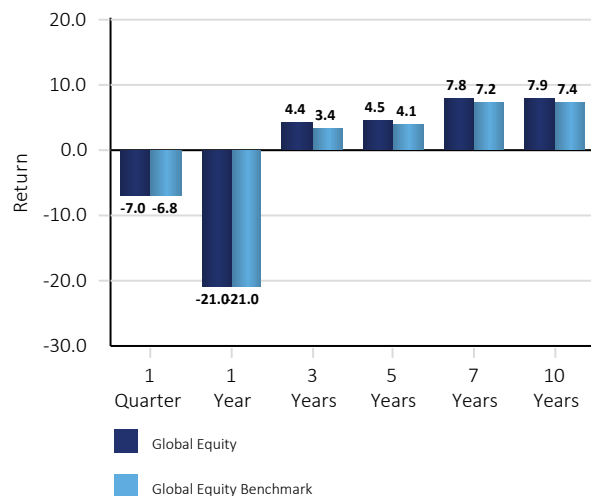
Global Equity

Performance Summary

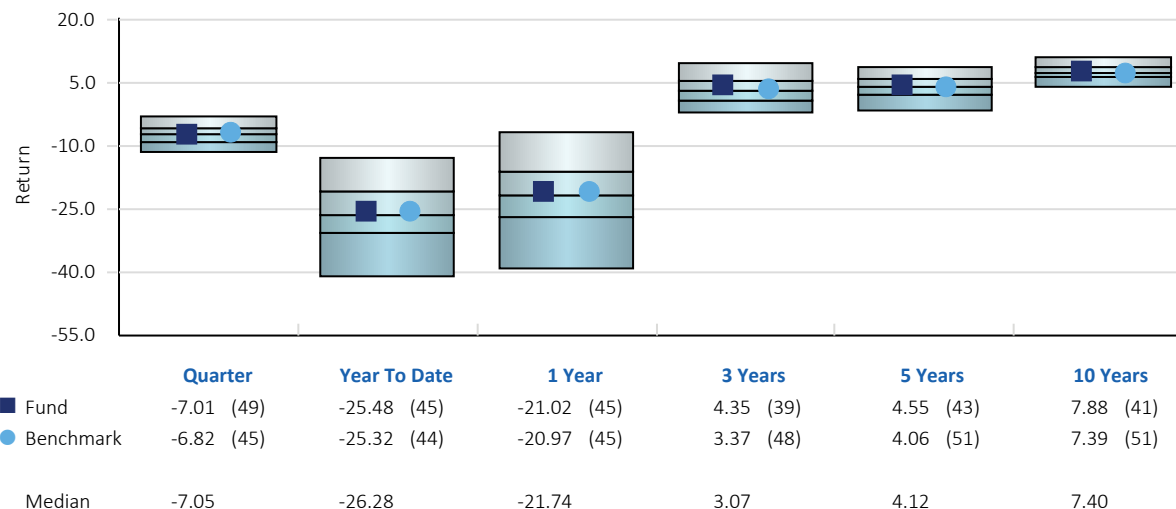
Global Equity

Periods Ended September 30, 2022

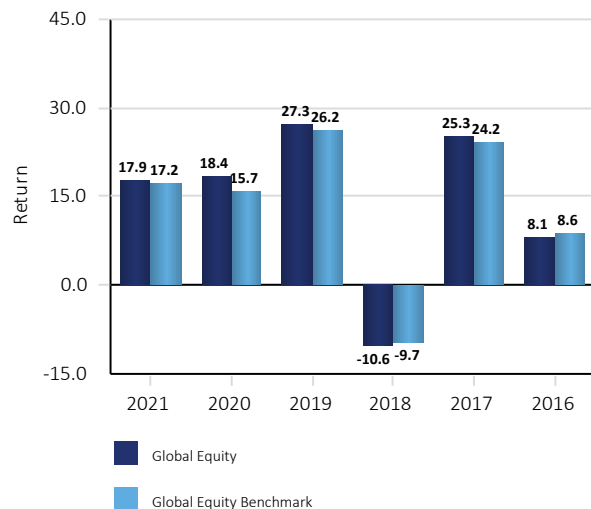
Comparative Performance



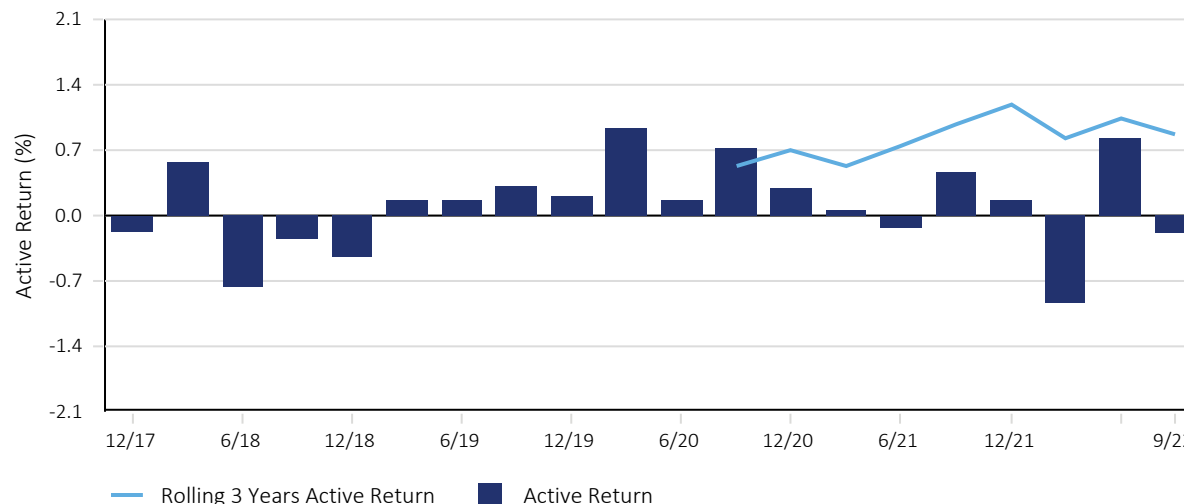
Peer Group Analysis: IM Global Equity (SA+CF)(NOF)



Comparative Performance



Quarterly Active Return



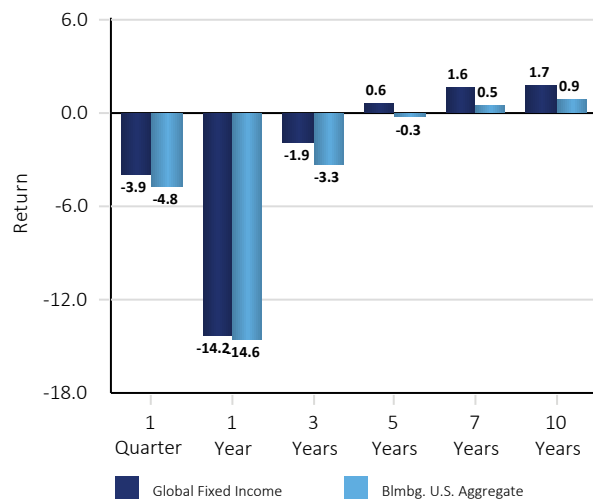
Global Fixed Income

Performance Summary

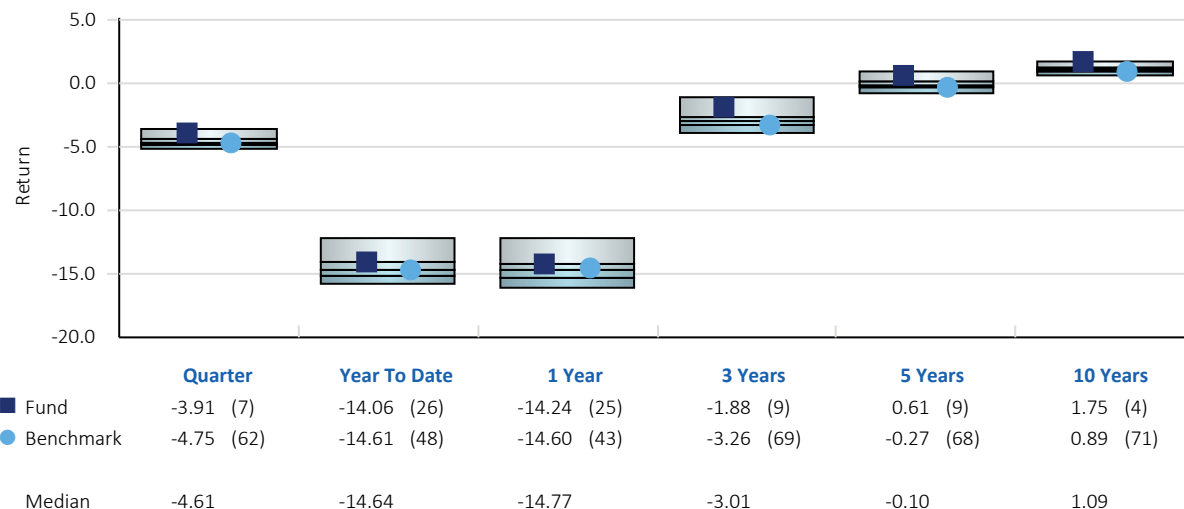
Global Fixed Income

Periods Ended September 30, 2022

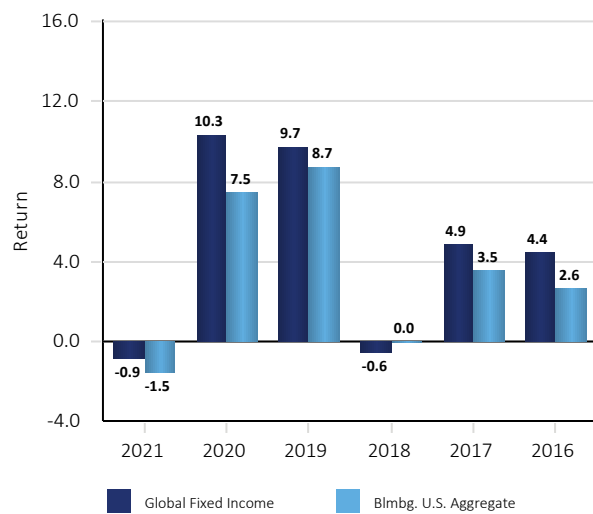
Comparative Performance



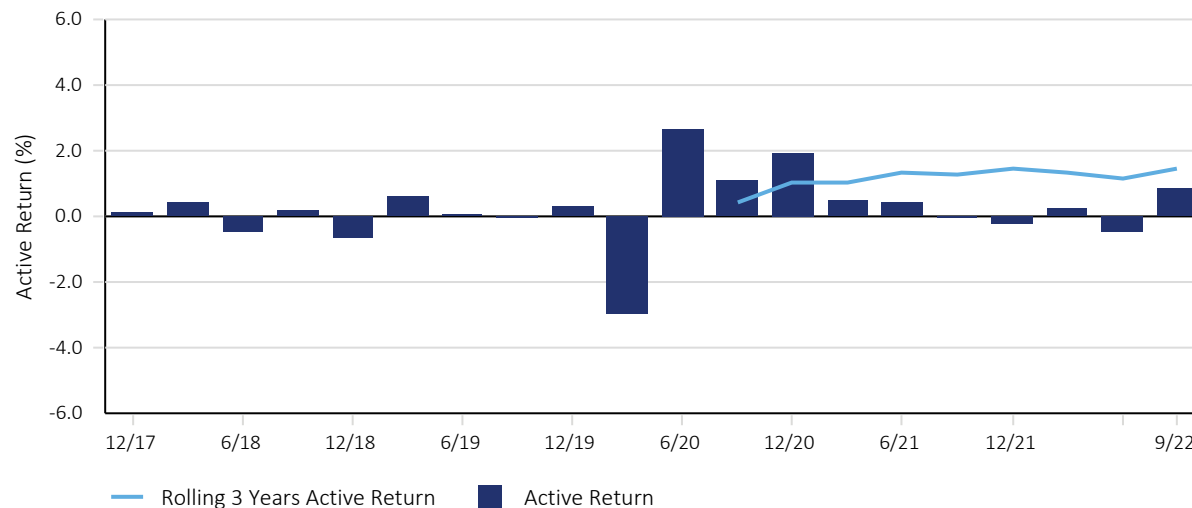
Peer Group Analysis: IM U.S. Broad Market Core Fixed Income (SA+CF) (NOF)



Comparative Performance



Quarterly Active Return



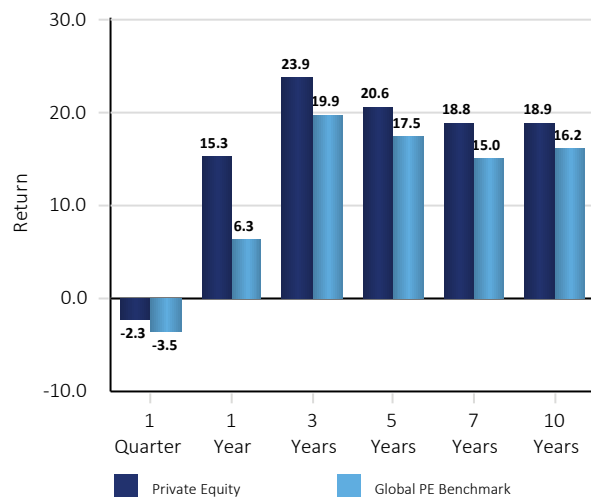
Global Private Equity

Performance Summary

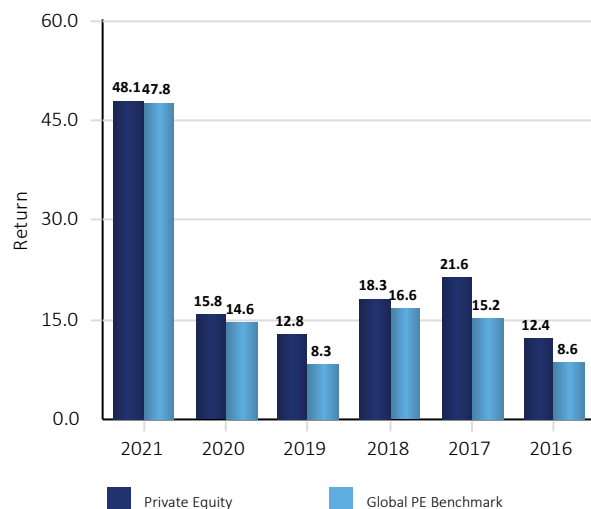
Global Private Equity

Periods Ended September 30, 2022

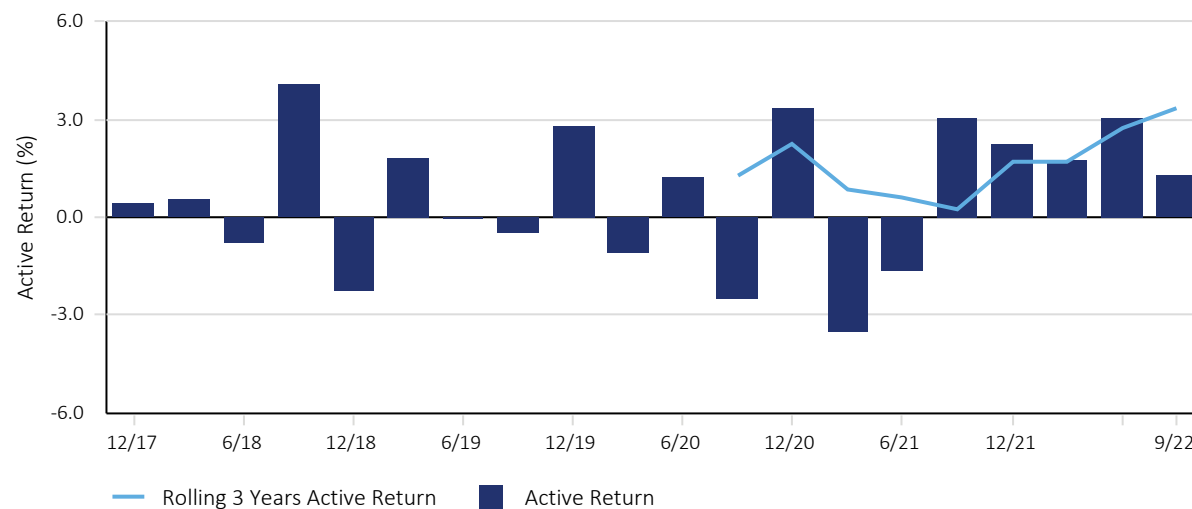
Comparative Performance



Comparative Performance



Quarterly Active Return



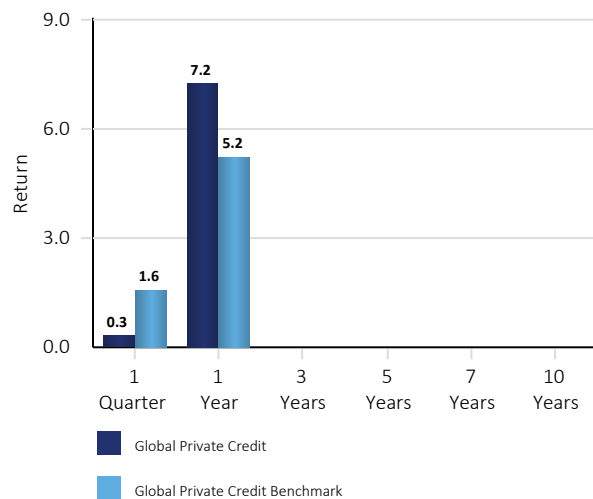
Global Private Credit

Performance Summary

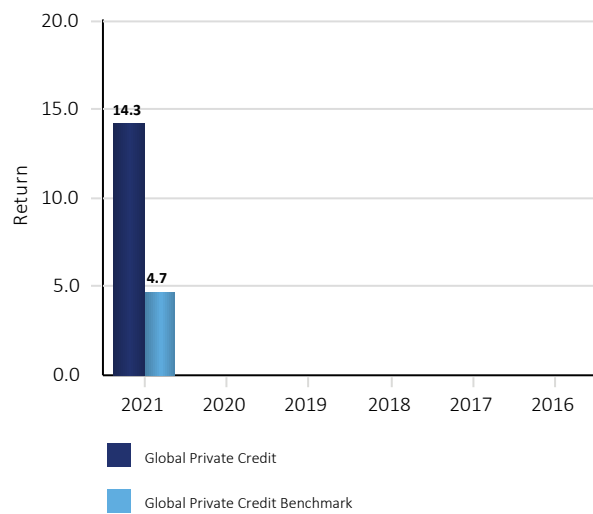
Global Private Credit

Periods Ended September 30, 2022

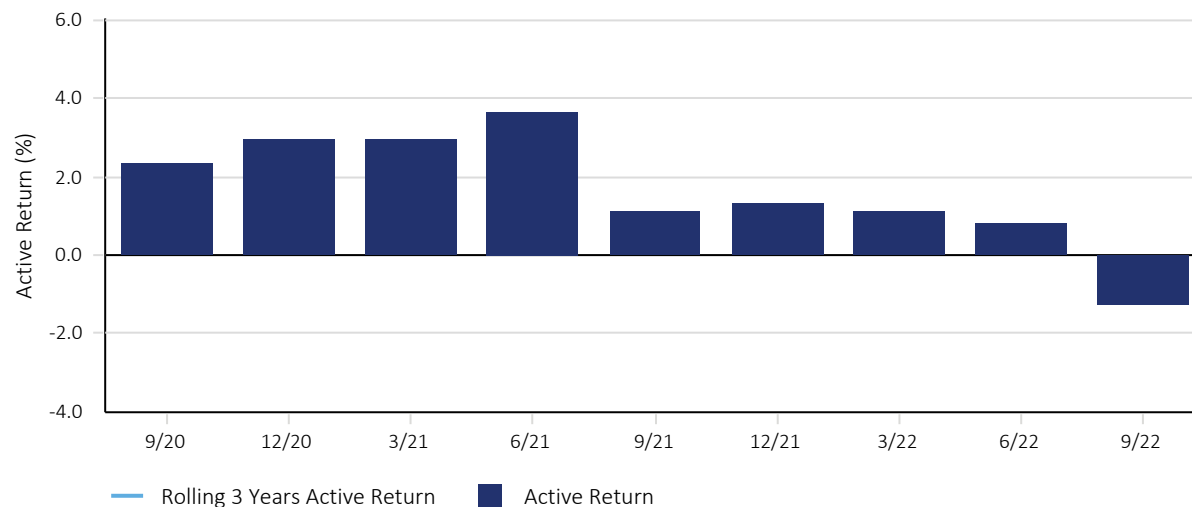
Comparative Performance



Comparative Performance



Quarterly Active Return



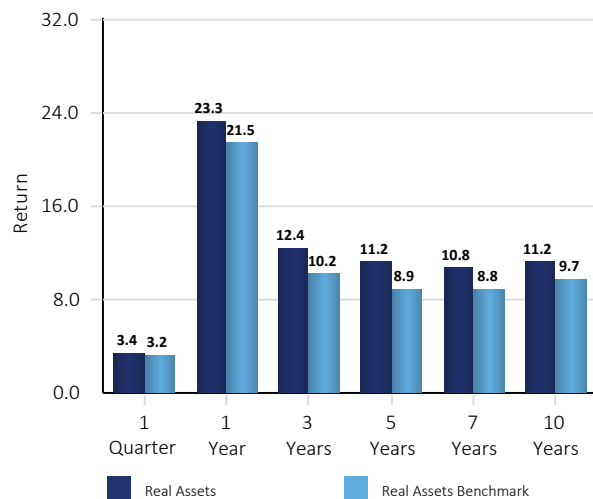
Global Real Assets

Performance Summary

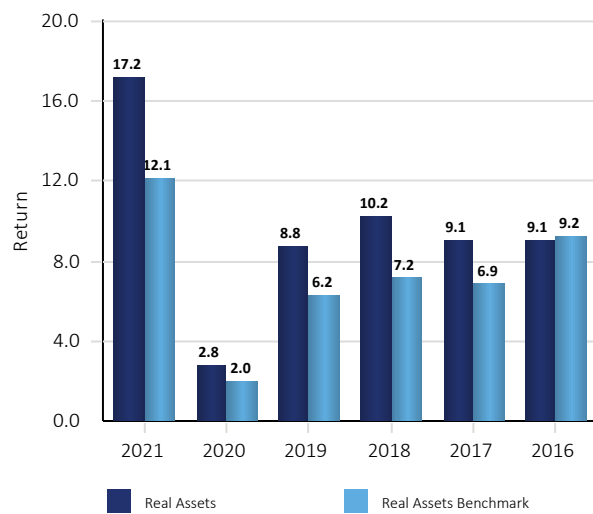
Global Real Assets

Periods Ended September 30, 2022

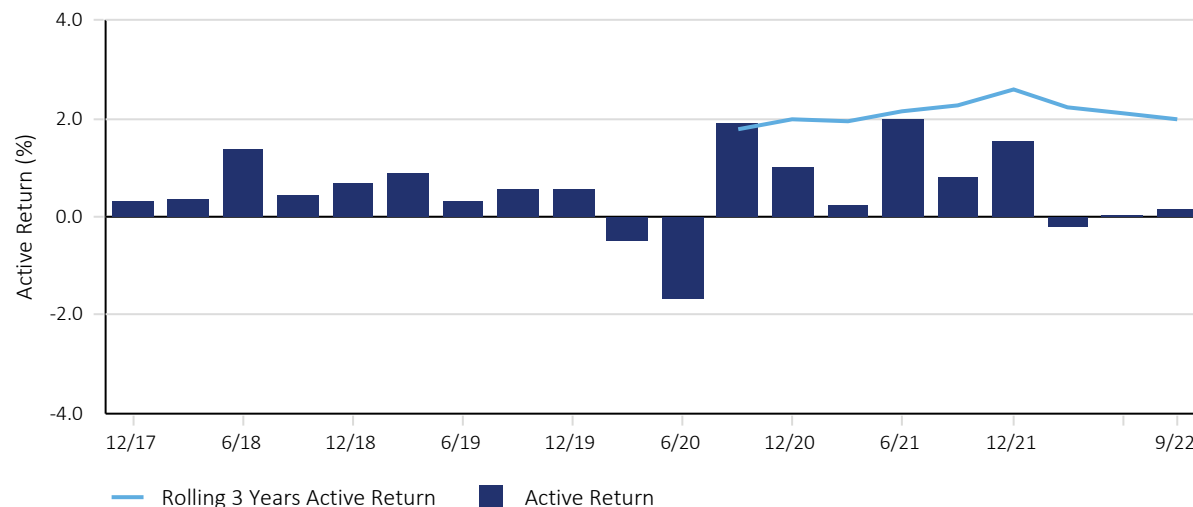
Comparative Performance



Comparative Performance



Quarterly Active Return



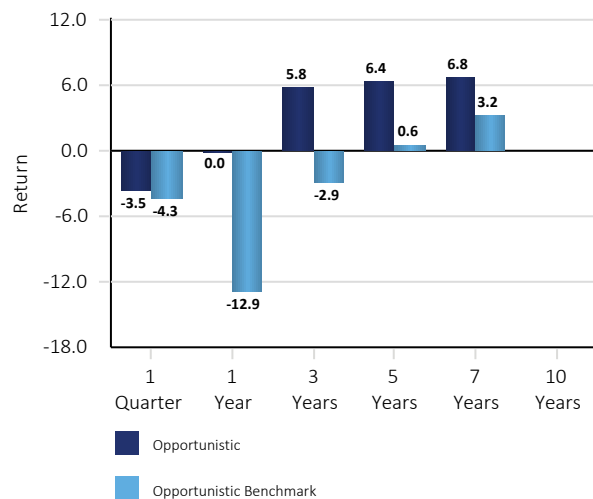
Opportunistic & Tactical

Performance Summary

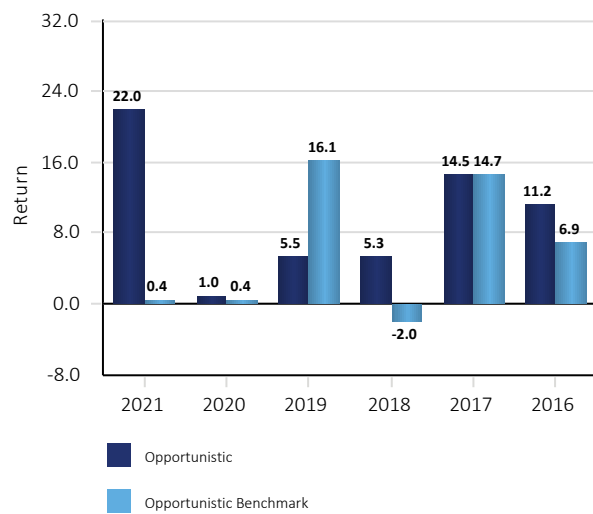
Opportunistic & Tactical

Periods Ended September 30, 2022

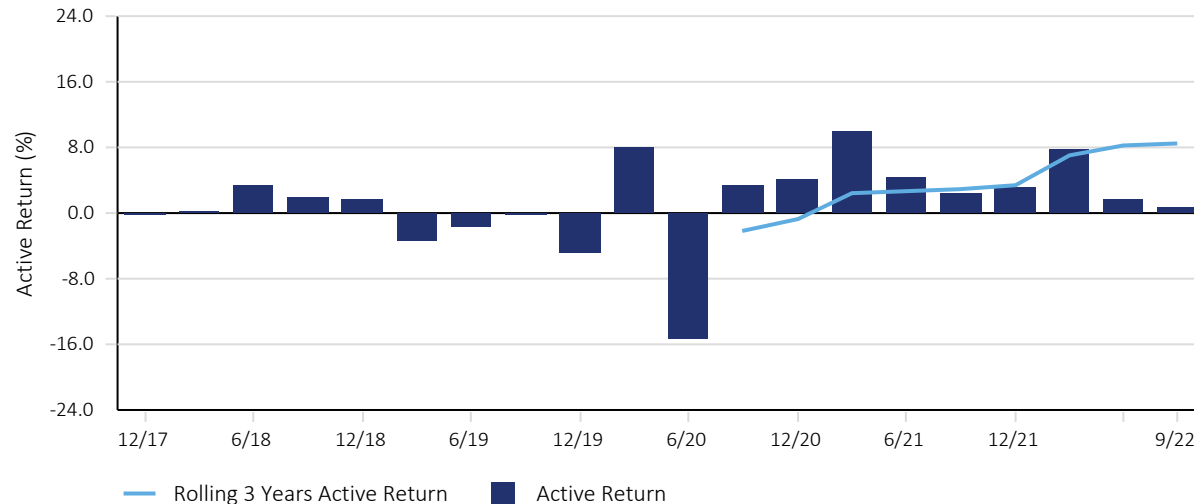
Comparative Performance



Comparative Performance



Quarterly Active Return





Ohio SERS Investment Report

Quarterly Report to the Board

For the period ending: September 30, 2022

Prepared by Investment and IAD Staff

Farouki Majeed, Chief Investment Officer

Meeting Date: November 2022



Investment Agenda

- Annual Portfolio Review – Fixed Income
- Wilshire Quarterly Performance Report (September 30, 2022)
- Quarterly Investment Report (September 30, 2022)



Economic and Financial Market Outlook

- US growth rate turned positive 2.6% in Q3, after two consecutive negative quarters. The big driver of the growth was the surge in net exports. The consumer spending growth remained solid at 1.4% although decreased slightly from the previous quarter. (*Source: Bureau of Economic Analysis*)
- US labor market was strong in September with 263,000 jobs added and unemployment rate still low at 3.5%. The labor force participation rate was 62.3%, remaining below the pre-pandemic level 63.3%, indicating a tight labor market. (*Sources: Bureau of Labor Statistics and Department of Labor*)
- US headline inflation was 8.2% and the core rate was 6.6% in September. The energy index and the food index increased 19.8% and 11.2% for the last 12 months, respectively. Blue Chip Consensus projected the headline rate to be 8.3% in Q3 and 7.4% in Q4 2022 (*Source: Bureau of Labor Statistics and Blue Chip Economic Indicators*)
- The 10-year Treasury nominal yield was 4.10% in October, increased from 3.83% in September. The current 10-year real yield, estimated by the gap between the 10-year Treasury nominal yield and the current headline inflation, increased although remained in a deep negative level of (4.37%) in September. The Fed increased the interest rate by 0.75% in November, pushing the Fed Fund rate to a range of 3.75-4.0%. It was the Fed's sixth interest rate hike during 2022 to curb inflation.
- The S&P Case-Shiller 20-City home price index was down 1.6% for the month and up 13.1% for the last 12 months as of August. Both monthly and annual figures are lower than the previous month by noticeable margins, indicating house prices continue cooling down.
- Consumer Sentiment Index released by Thomson Reuters and University of Michigan improved to 59.9 in October but remained below the historical average. October US Economic Surprise index remained positive at 8.1, although down from the previous month. The Leading Economic Index (LEI) issued by the Conference Board was down to 115.9 in September. The LEI index has trended down for several months.
- The US manufacturing PMI was down to 50.2 in October, indicating a very soft expansion while the Global Manufacturing PMI reading was down to 49.4, indicating a marginal deterioration. Worldwide supply disruptions, high inflation especially in energy and food prices, labor shortages, and tightening financial conditions across the world continue to be the largest challenges to the global economy. (*Source: Institute for Supply Management, S&P Global*).
- Equity markets were mixed in October. US market (Russell 3000) and Non-US developed markets (MSCI World ex-USA) were up 8.2% and 5.51%, respectively. Emerging markets were down 3.11%.
- The US fixed income market, Bloomberg Barclay's US Aggregate Bond Index, was down 1.30% in October.

Notes: Acronym – PMI – Purchasing-Managers' Index



ECONOMY

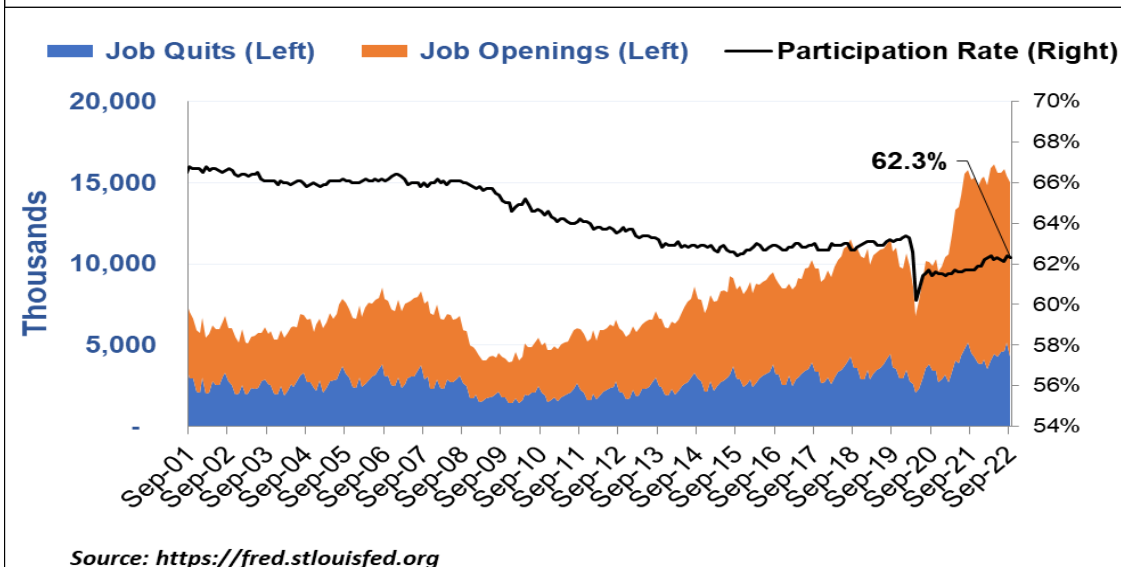
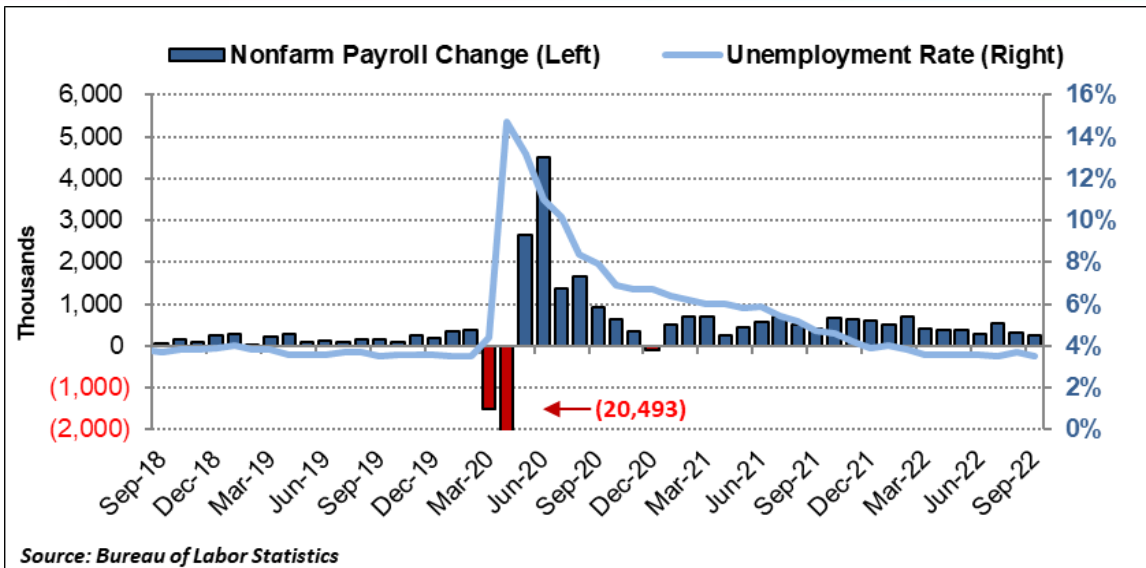
US Real Gross Domestic Product





ECONOMY

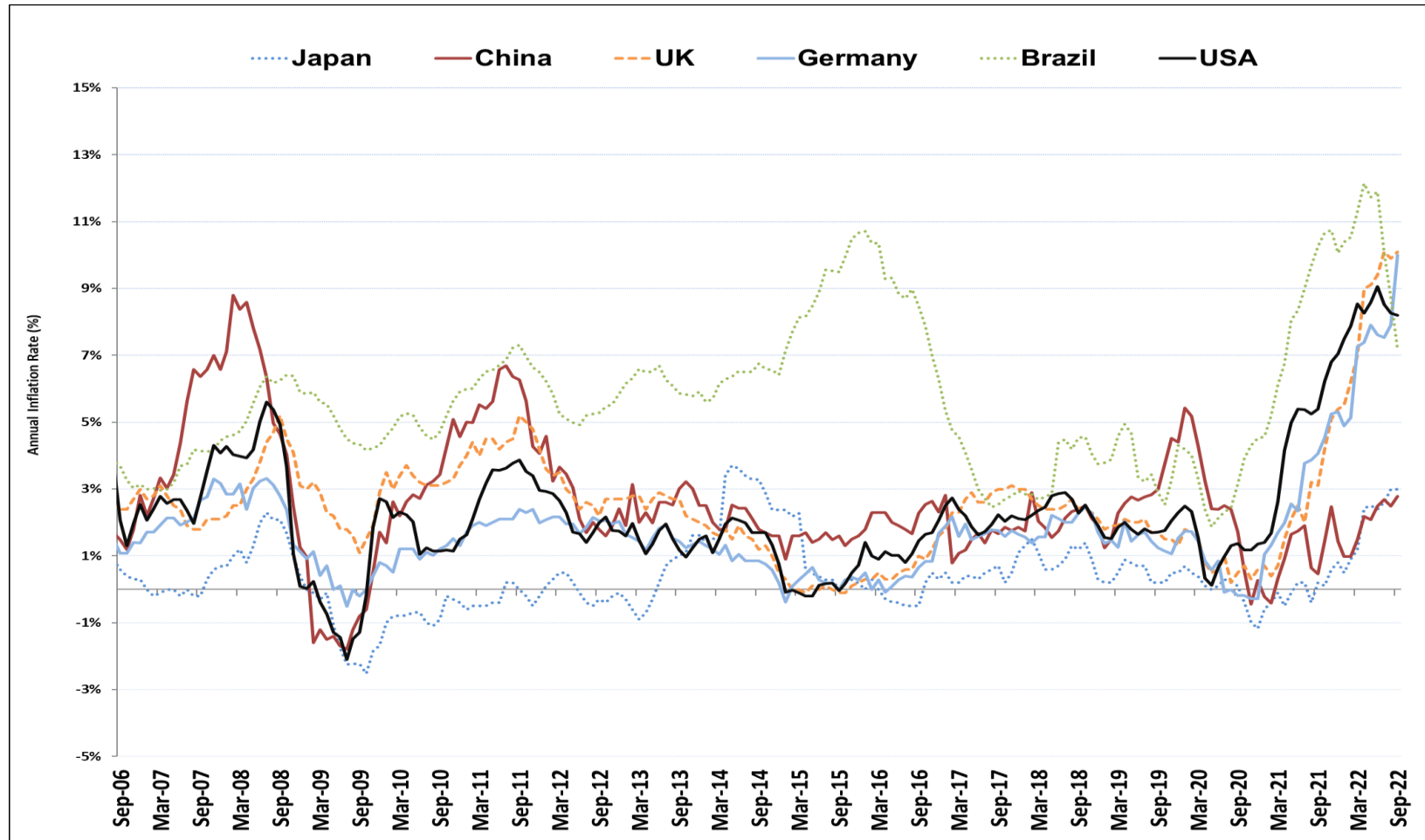
US Labor Market





ECONOMY

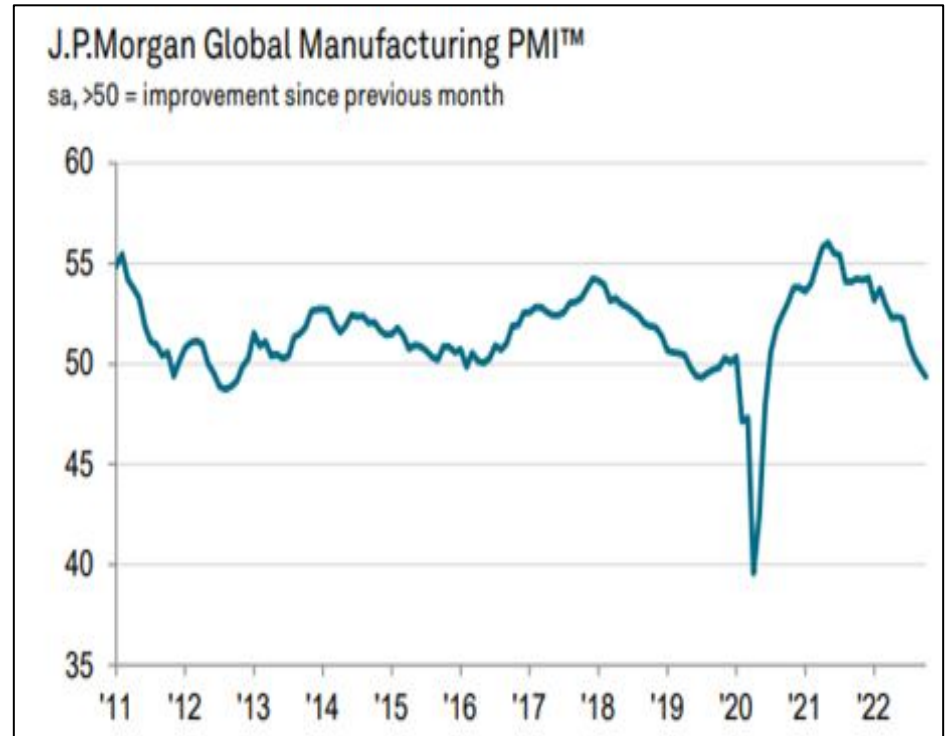
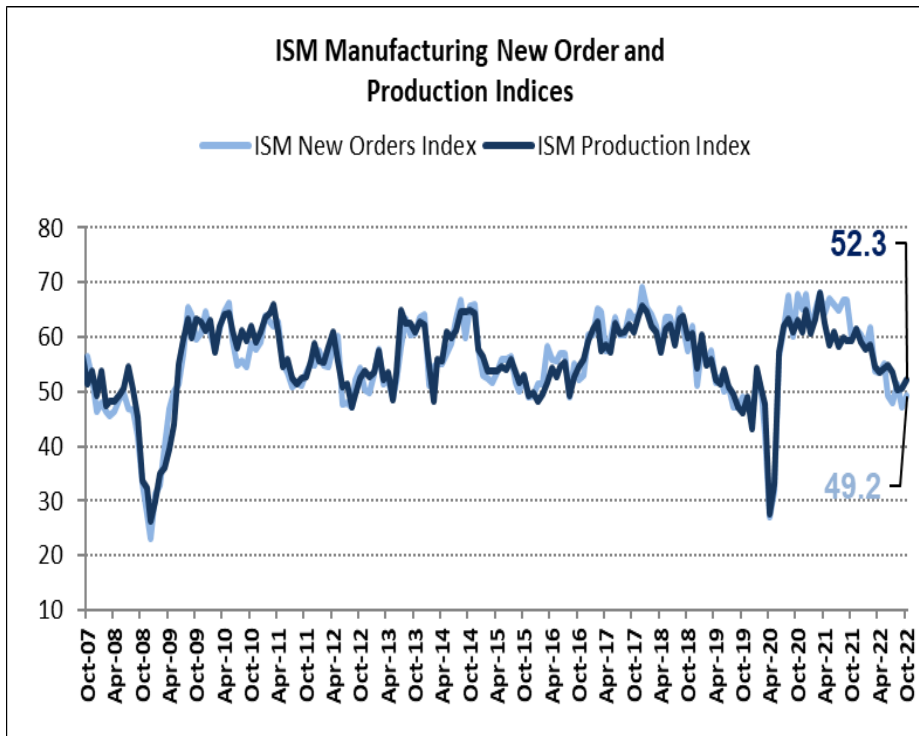
Headline Inflation



	Japan	China	UK	Germany	Brazil	USA
Sep-22	3.0	2.8	10.1	10.0	7.2	8.2

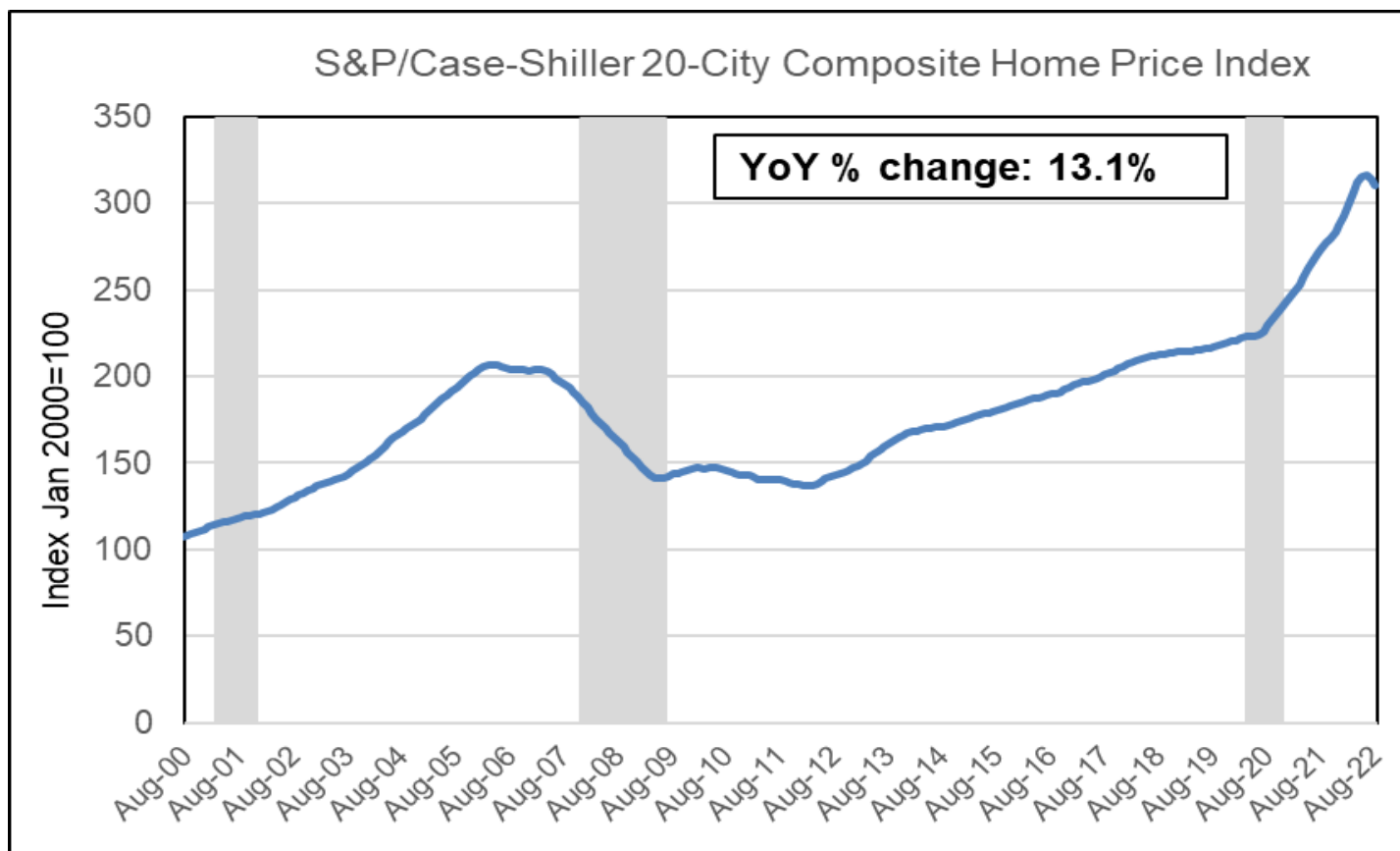


ECONOMY US & Global Manufacturing Activities





ECONOMY US Housing Market

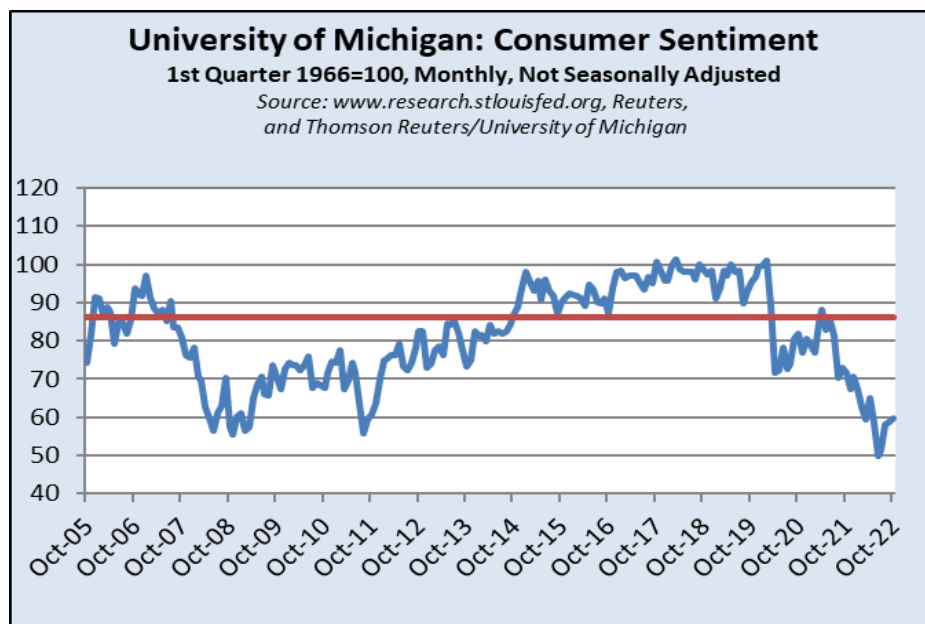


Date	S&P Case-Shiller 20-City Home Price Index January 2000 = 100, Seasonally Adjusted
Jul-19	216.09
Jul-20	225.47
Jul-21	270.66
Jul-22	314.01
Aug-22	309.87

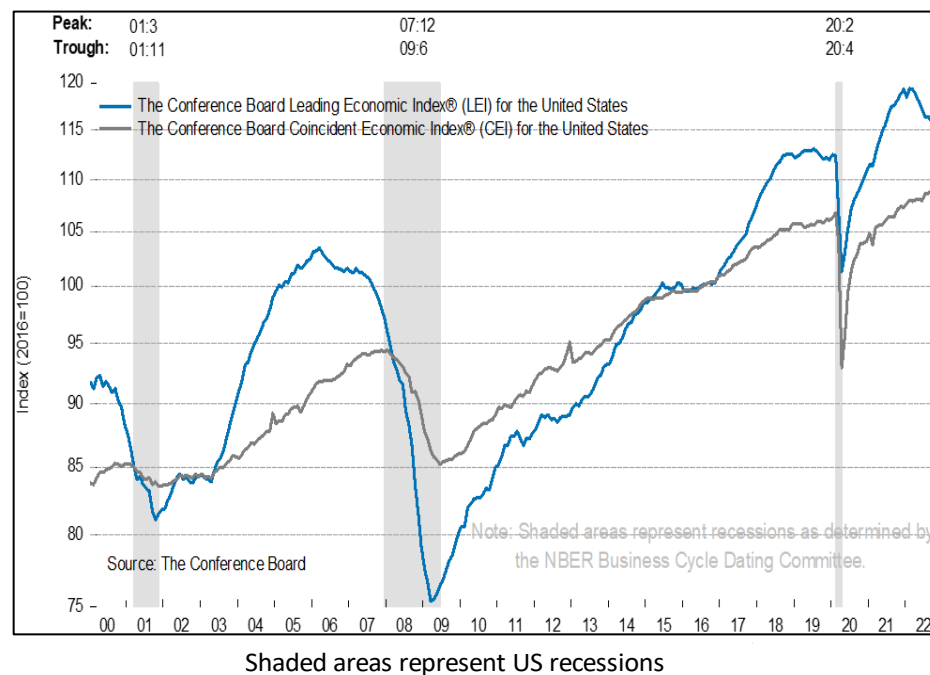


ECONOMY

Consumer Sentiment



The Leading Economic Index (LEI) and Coincident Economic Index (CEI) for the United States



Index of Consumer Sentiment

Sep-22	Oct-22	Oct-21	M-M Change	Y-Y Change
58.6	59.9	71.7	2.2%	-16.5%

Index	Aug-22	Sep-22	Month -Month Percent Change	6-Month Percent Change (Mar-Sep)
LEI	116.3 r	115.9 p	-0.4	-2.8
CEI	108.7 r	108.9 p	0.2	0.9

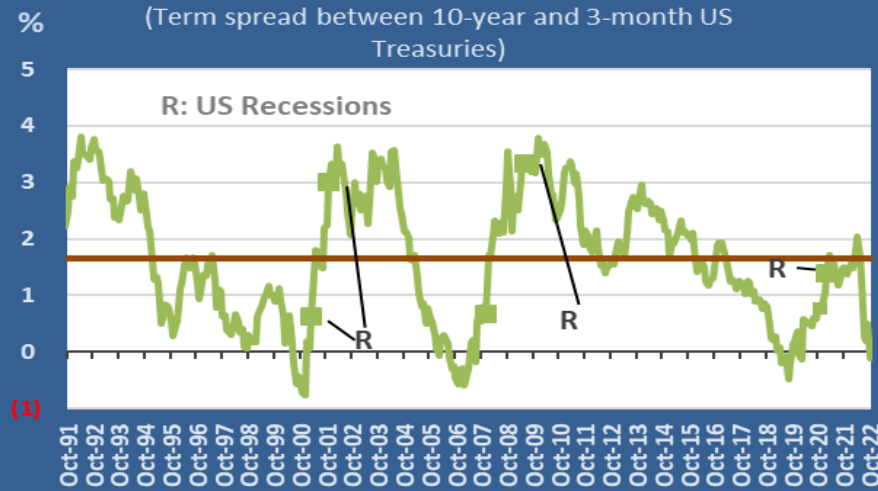
p Preliminary; r Revised; Indexes equal 100 in 2016



ECONOMY

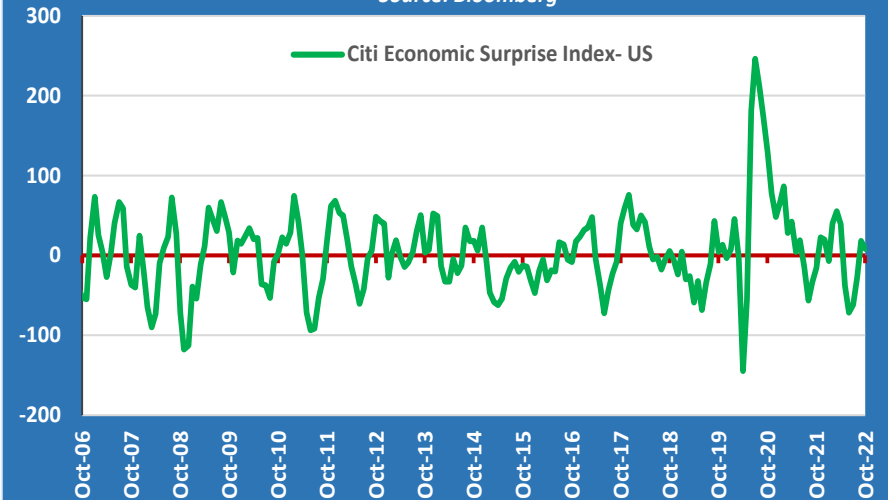
US Yield Curve's Slope

(Term spread between 10-year and 3-month US Treasuries)



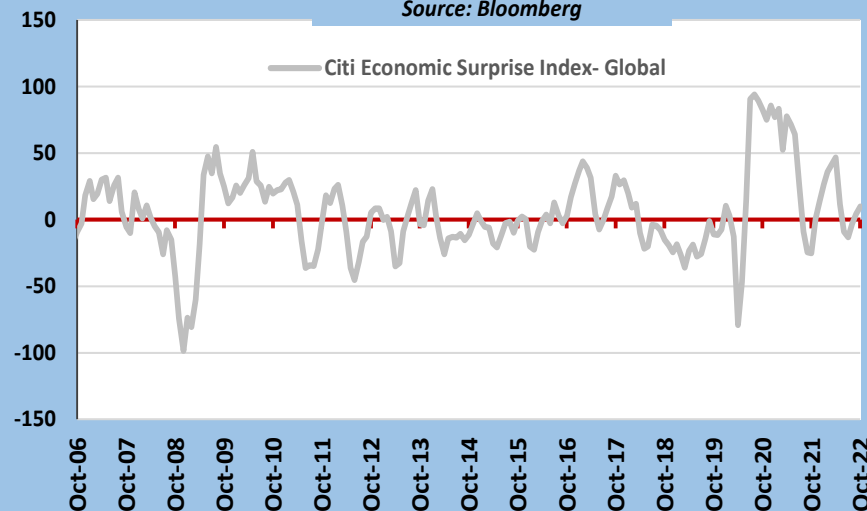
US Growth Surprise

Source: Bloomberg



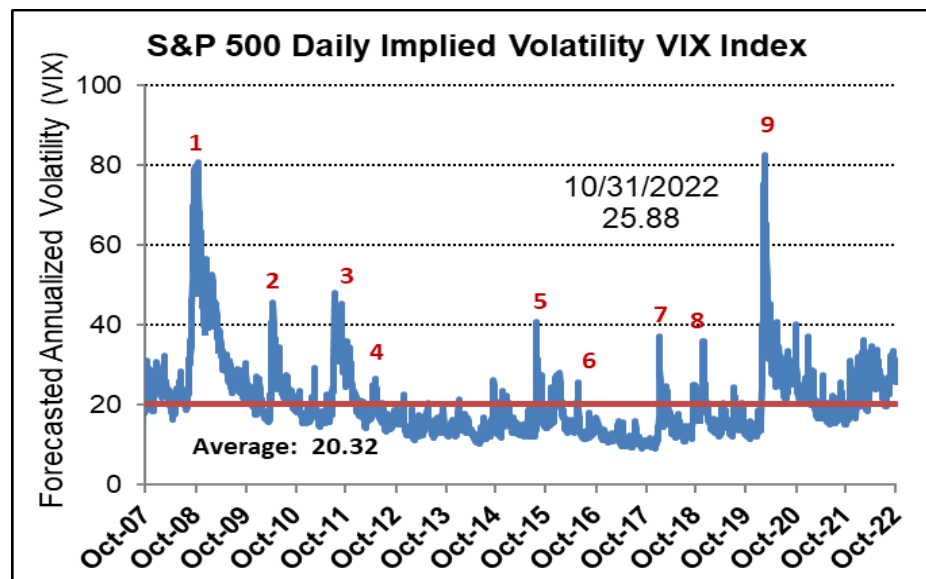
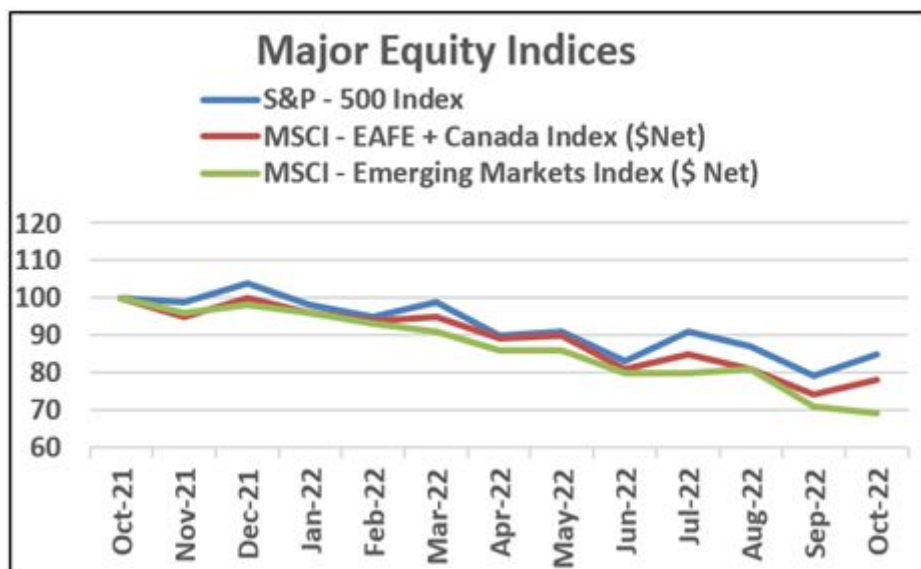
Global Growth Surprise

Source: Bloomberg





MARKETS Equity

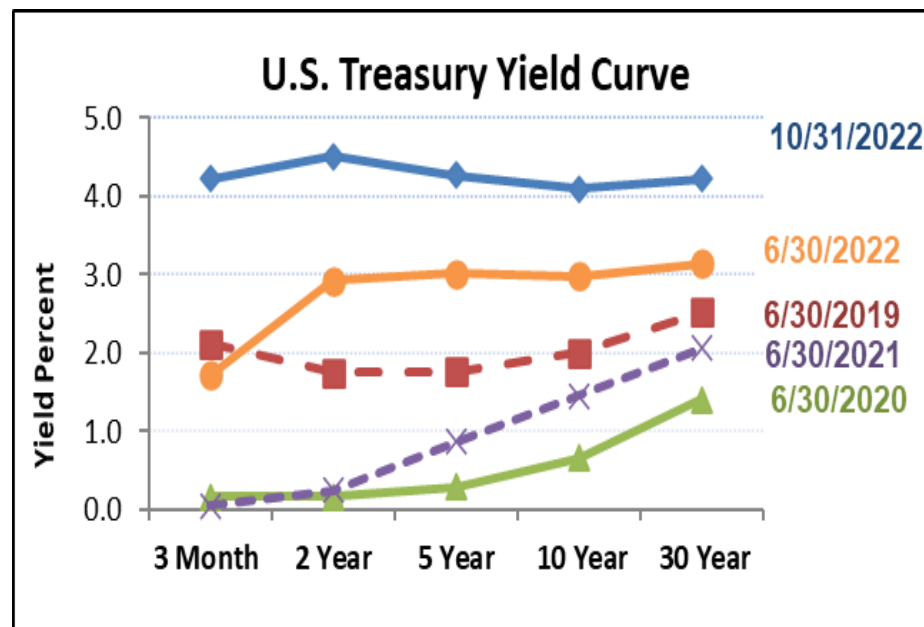
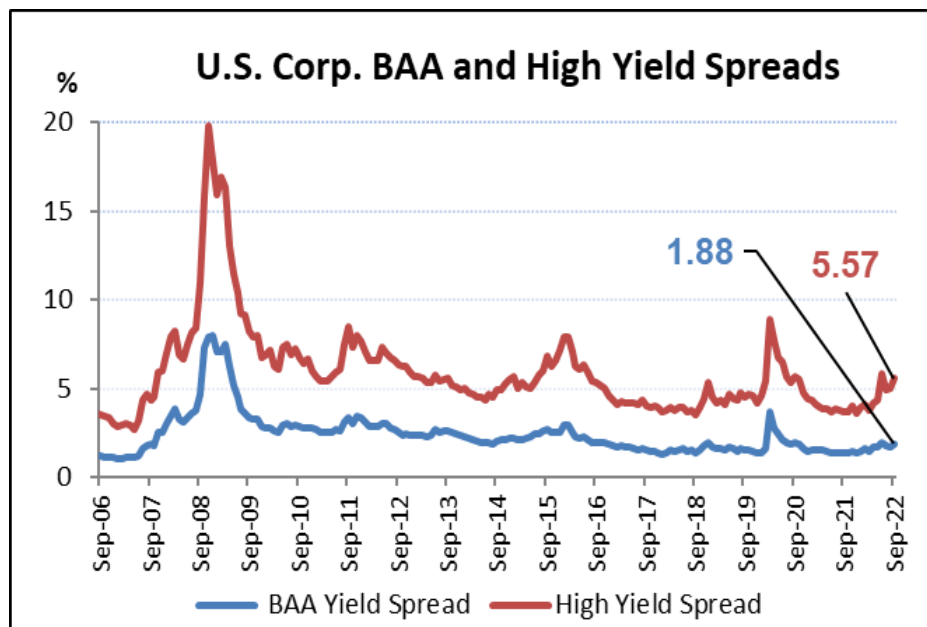


	Return as of 10/31/2022	
	1 Year	FYTD
S&P 500	(14.61)	2.82
MSCI - EAFE + Canada Index (\$Net)	(22.04)	(4.19)
MSCI - Emerging Markets Index (\$Net)	(31.03)	(14.32)

- 1 2008 (Nov.) Financial Crisis S&P 500: -48.8%
- 2 2010 (May) Flash crash; Europe/ Greece debt S&P 500: -16%
- 3 2011 (Aug.) US downgrade, Europe periphery S&P 500: -19.4%
- 4 2012 (June) Eurozone double dip S&P 500: -9.9%
- 5 2015 (Aug.) Global slowdown, China, Fed S&P 500: -12.4%
- 6 2016 (Feb.) Oil crash, US recession fear, China S&P 500: -10.5%
- 7 2018 (Feb.) Inflation, trade, tech S&P 500 : -10.2%
- 8 2018 (Dec.) Interest rate hike, trade tension, global slowdown S&P 500: -10.5%
- 9 2020 (Mar.) Coronavirus, S&P 500 : -23.7%

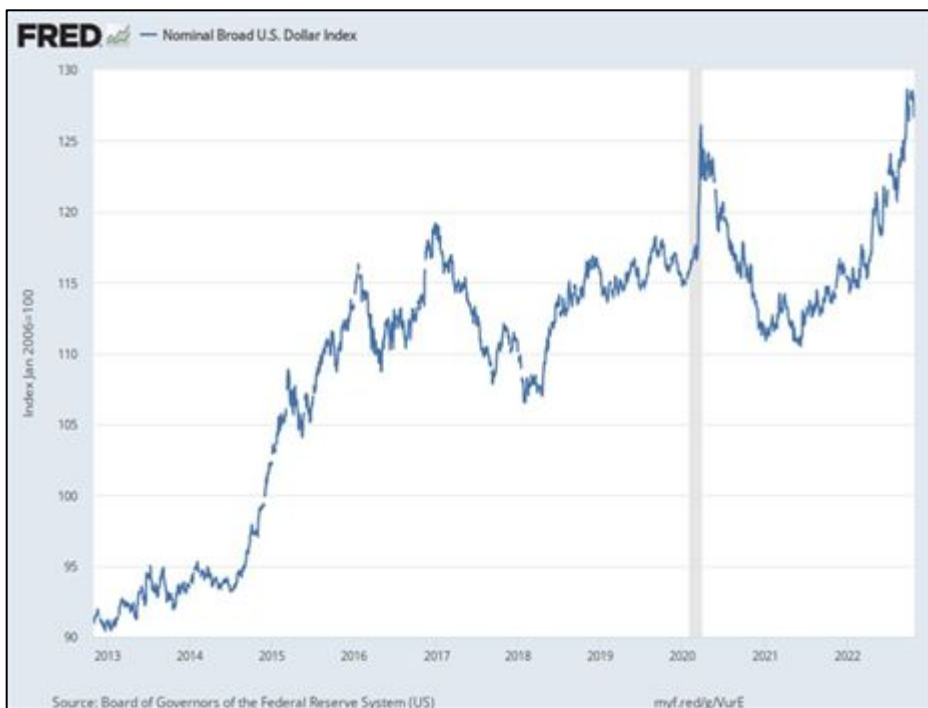


MARKETS Fixed Income





MARKETS Foreign Exchange



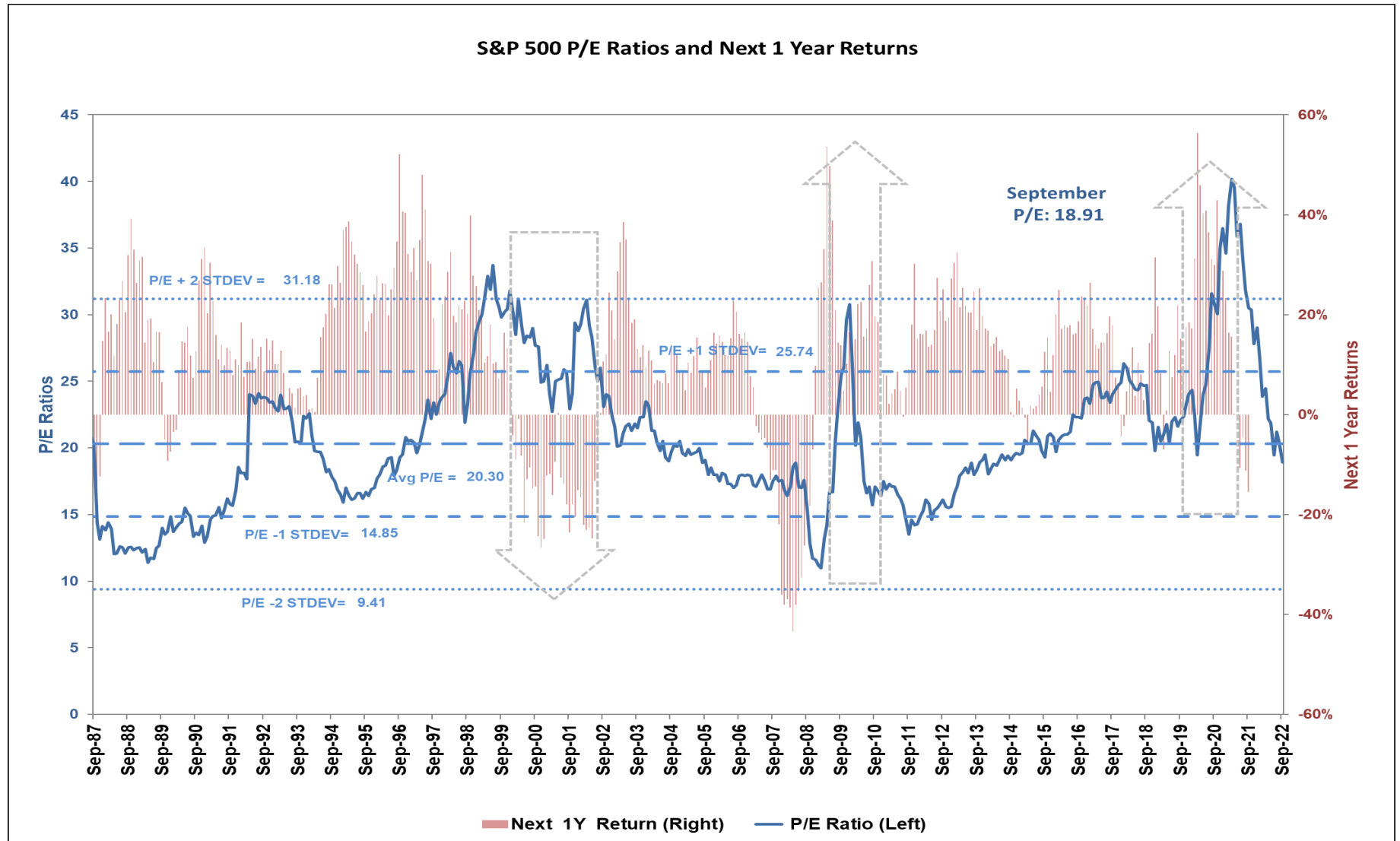
Date	Nominal Broad U.S. Dollar Index January 2006=100
June-19	114.56
June-20	120.86
June-21	112.85
June-22	121.05
10/28/2022	127.39



Date	U.S. / Euro Foreign Exchange Rate U.S. Dollars to One Euro
June-19	1.14
June-20	1.12
June-21	1.18
June-22	1.05
10/28/2022	0.99

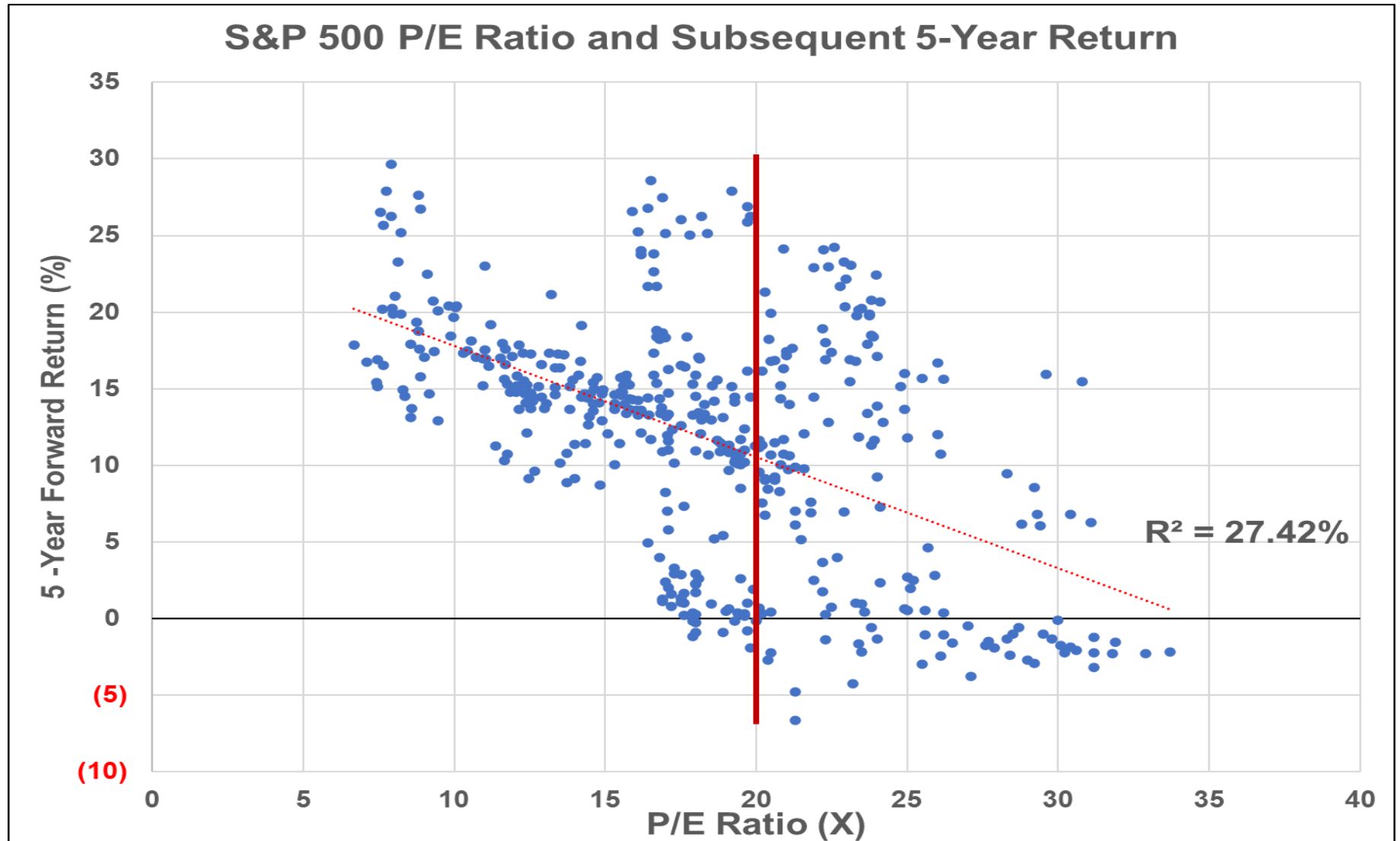


VALUATION US Equity



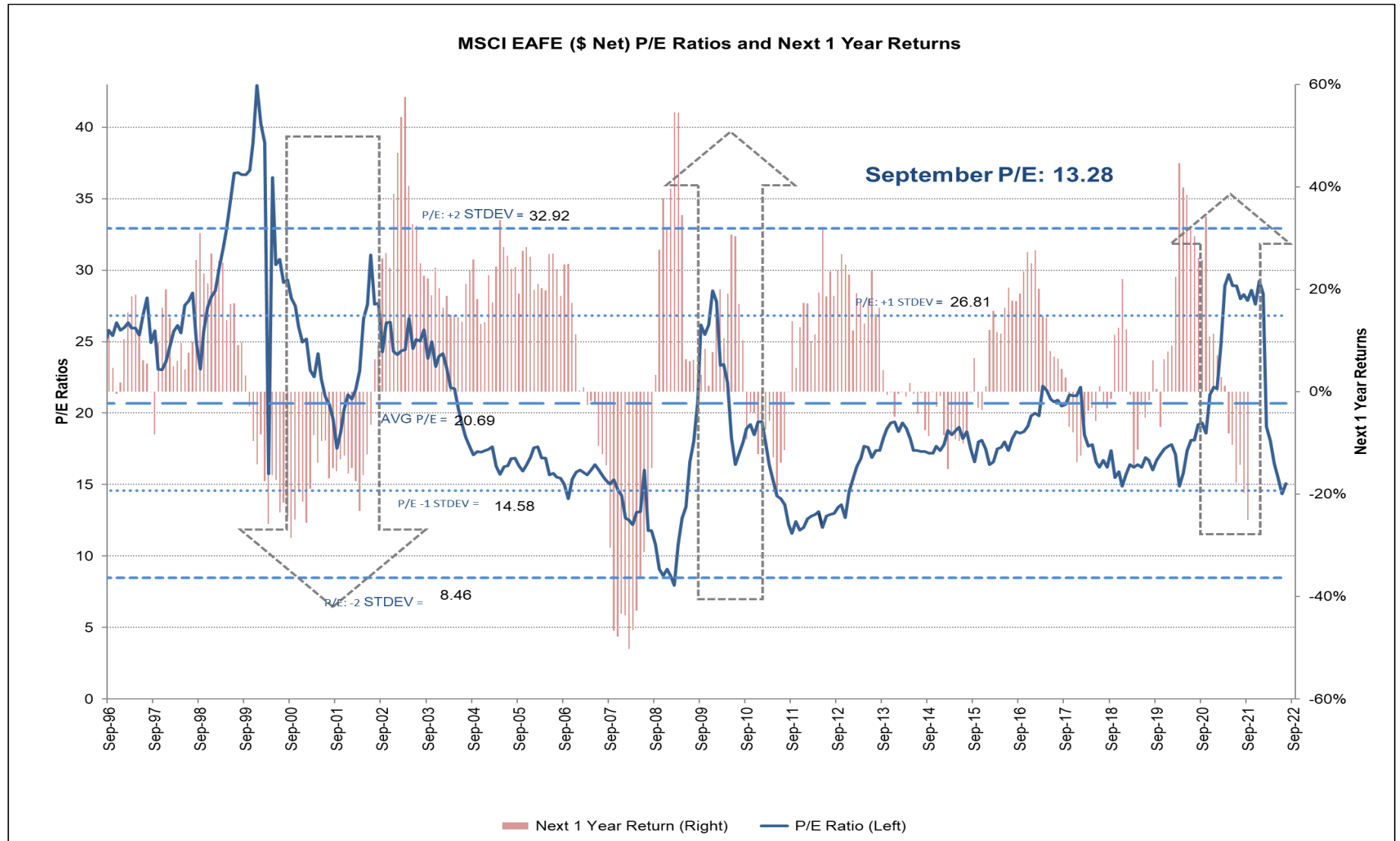


VALUATION US Equity



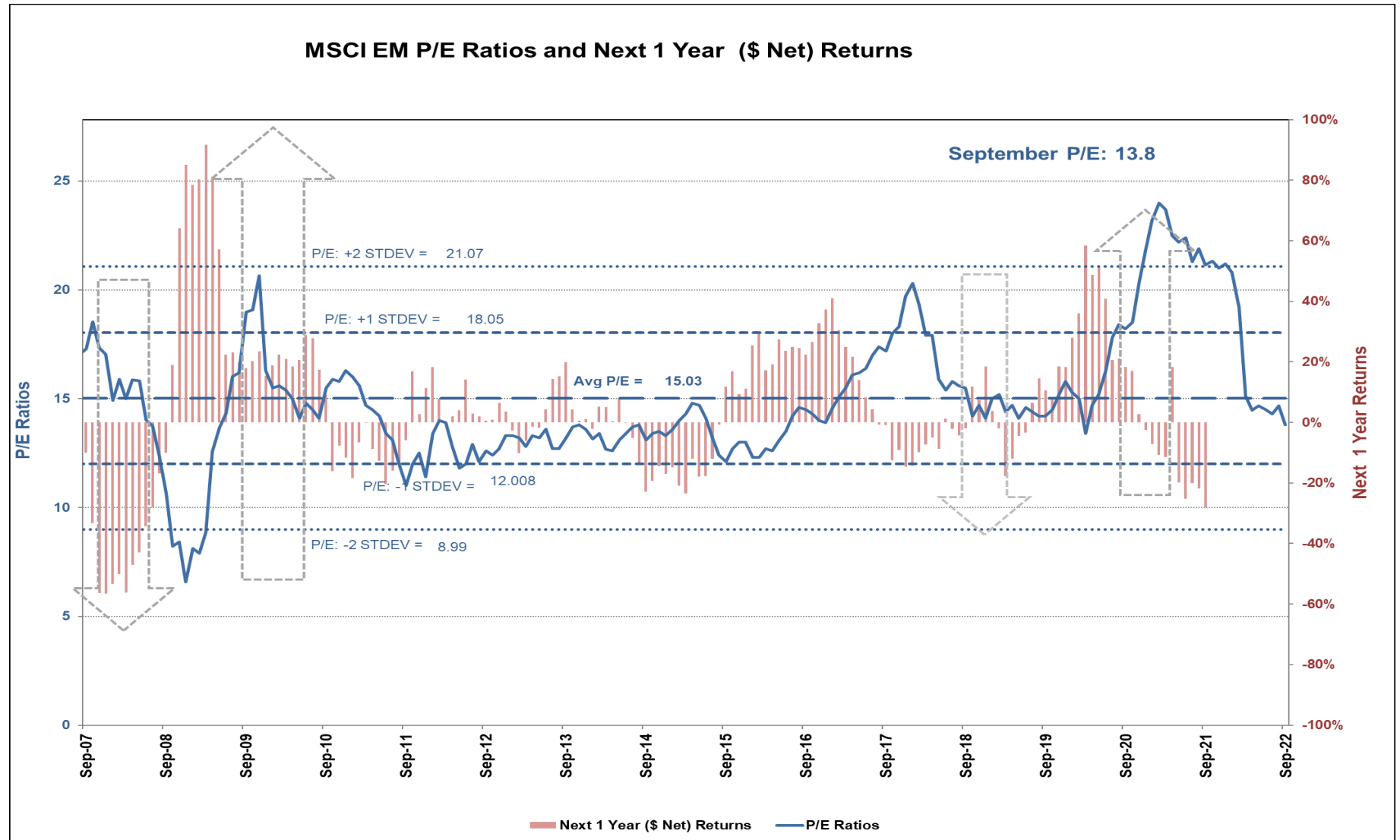


VALUATION Non US Developed Market Equity



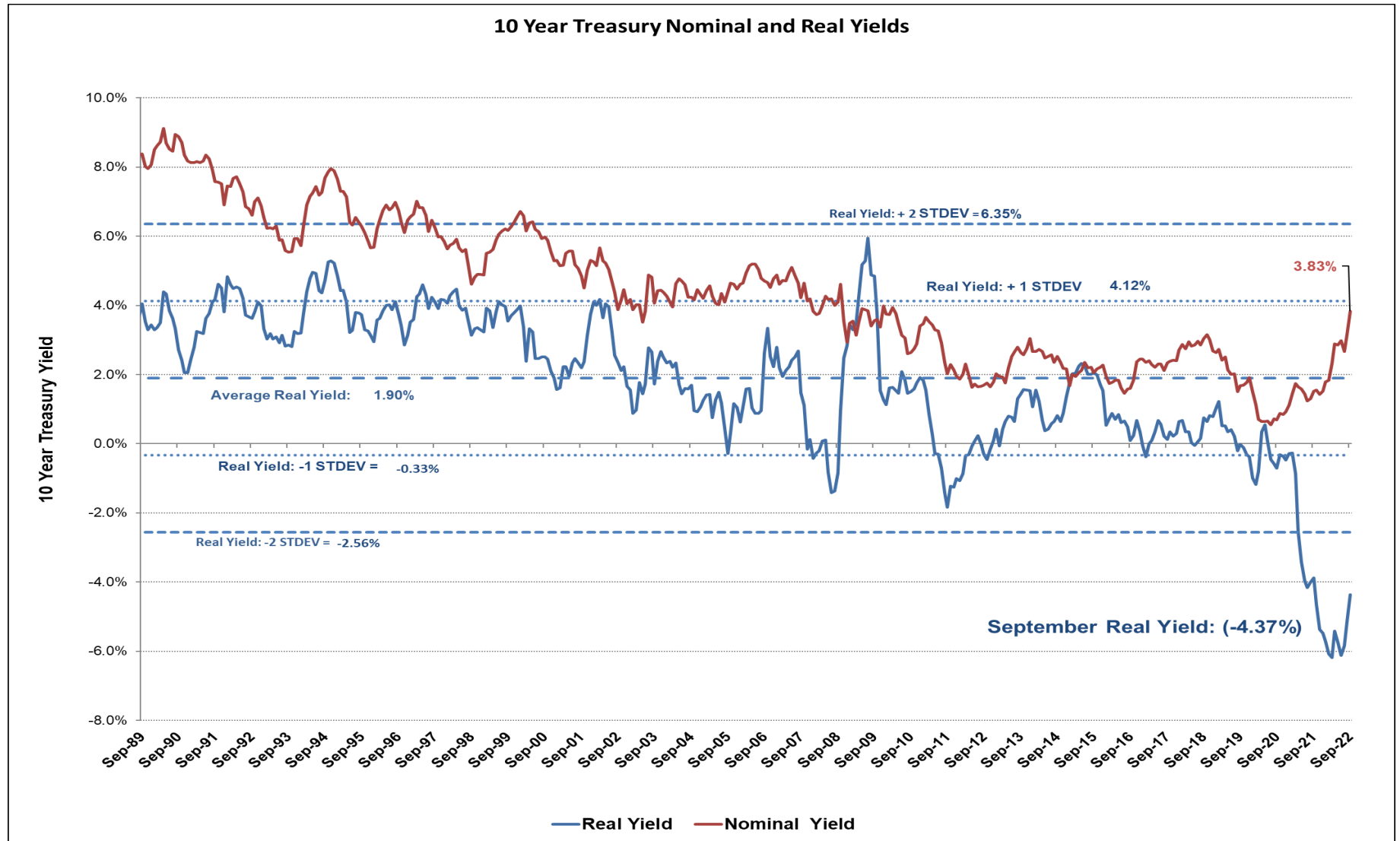


VALUATION Emerging Market Equity





VALUATION US Treasury Bonds





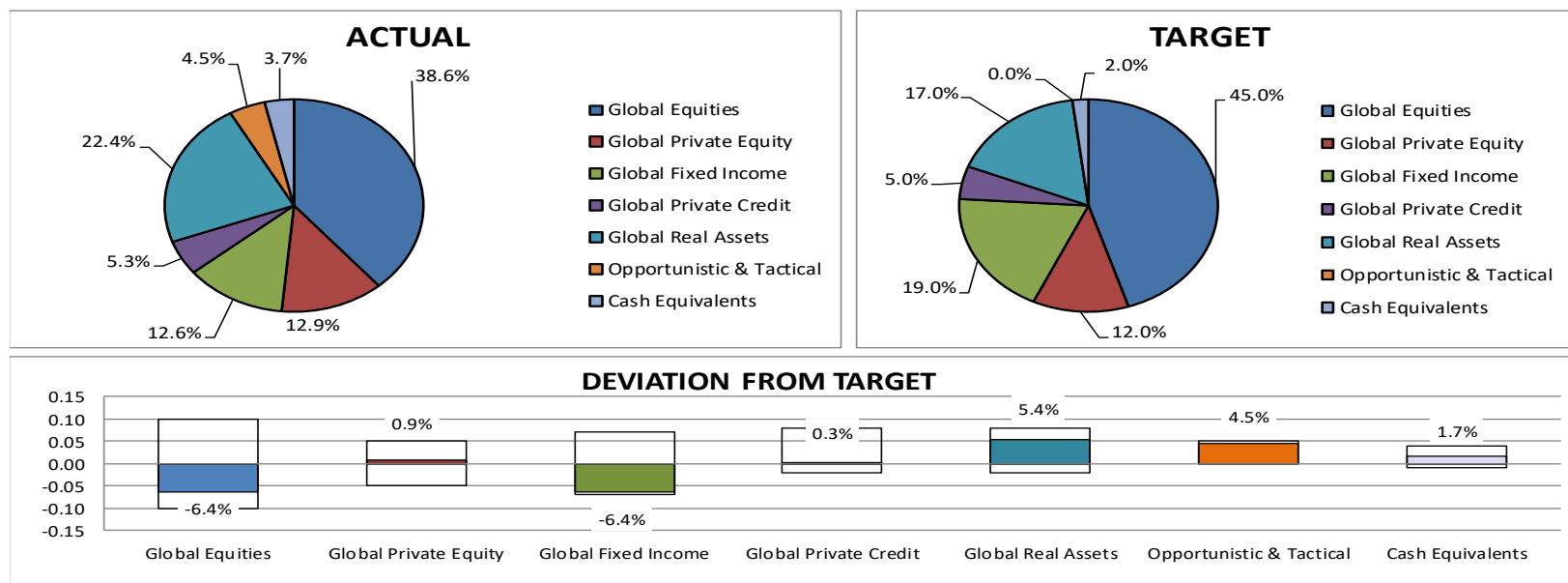
SERS' Investment Portfolios Review



Total Fund Asset Allocation

Asset Class	Market Value \$	Actual	Target	Range
Global Equities	6,384,649,746	38.6%	45.0%	35% - 55%
Global Private Equity	2,132,738,389	12.9%	12.0%	8% - 16%
Global Fixed Income	2,086,877,953	12.6%	19.0%	12% - 26%
Global Private Credit	873,032,663	5.3%	5.0%	3% - 7%
Global Real Assets	3,697,929,669	22.4%	17.0%	14% - 22%
Opportunistic & Tactical	746,994,821	4.5%	0.0%	0% - 7%
Cash Equivalents	605,063,544	3.7%	2.0%	0% - 5%
Short-Term	555,991,963	3.4%	2.0%	
Russell EA Overlay	-3,040,487	0.0%	0.0%	
Aegis - Alpha Overlay	12,484,831	0.1%	0.0%	
Direct Rebalance Overlay	0	0.0%	0.0%	
Transition / Operational Account	1,833,398	0.0%	0.0%	
Currency Overlay	37,793,839	0.2%	0.0%	
Total Fund	16,527,286,785	100.0%	100.0%	

Source: BNY Mellon GRS





Total Fund Change in Net Assets

CHANGE IN NET ASSETS

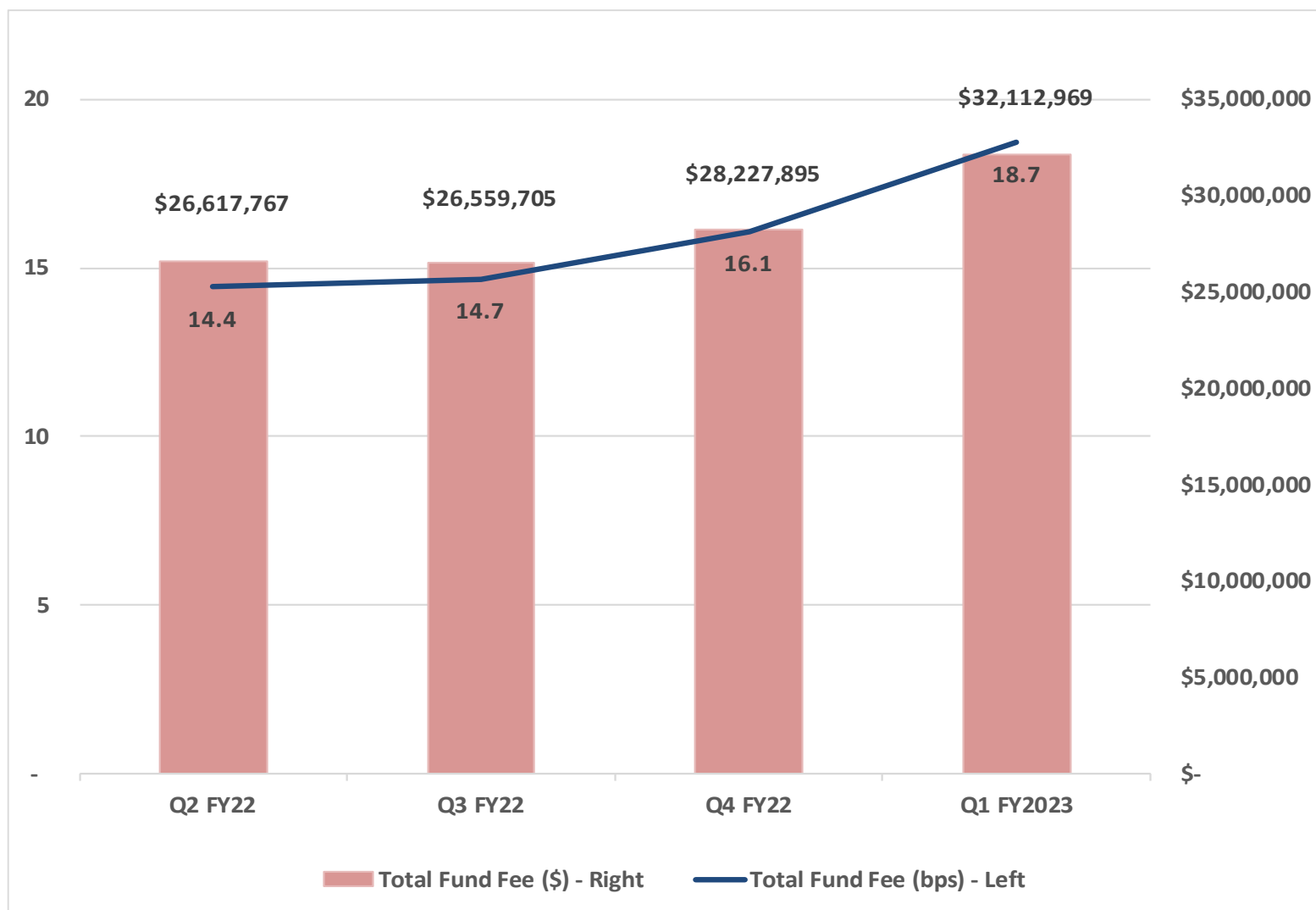
	vs. One Year Ago, since 10/01/2021	vs. Three Years Ago, since 10/01/2019
Beginning Market Value	17,959,433,379	14,628,509,356
Gain/Loss	(781,067,293)	3,805,236,618
Expenses	(101,079,302)	(244,255,169)
Net Transfer	(550,000,000)	(1,662,204,020)
End of Period Market Value	16,527,286,785	16,527,286,785

**Sources of Net Transfer*

<i>Dividends/Interest</i>	<i>193,686,747</i>
<i>Net Distributions</i>	<i>356,313,253</i>
<i>Cash on Hand</i>	<i>Not Required</i>



Total Fund Fees by Quarter





Total Fund Performance

Current Benchmark:

45% MSCI ACWI (Net Dividends)

12.00% Burgiss All Private Equity

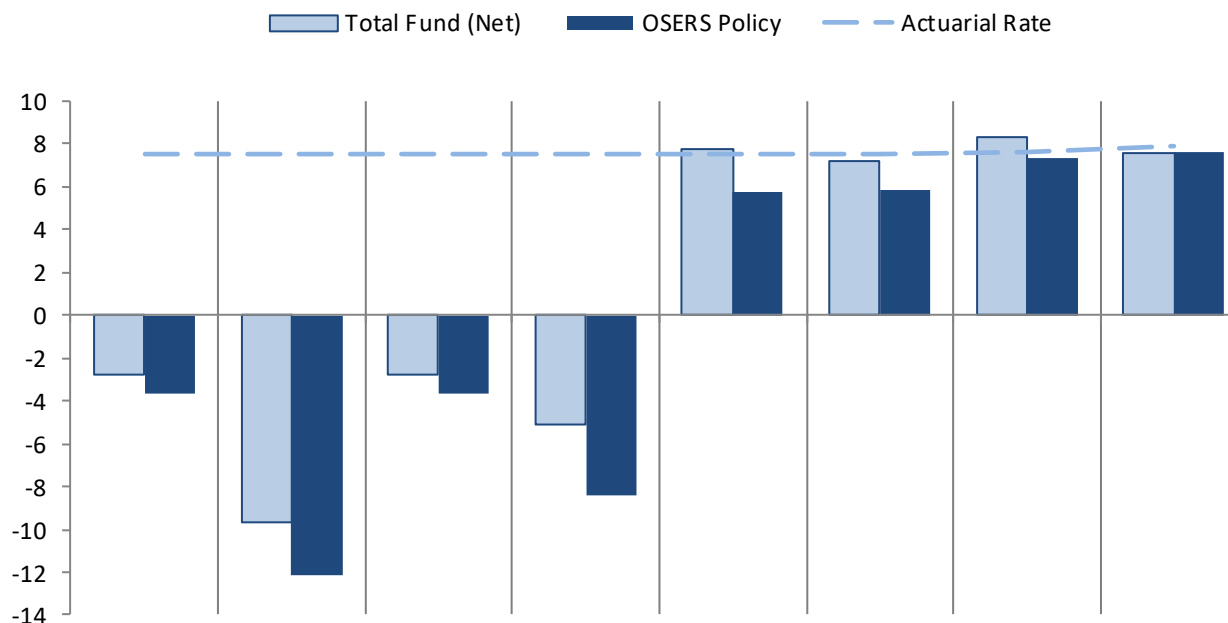
benchmark (1q lag) (BAPE)

19.00% Bloomberg Aggregate Bond

17.00% NCREIF Property (1q lag)

5.00% 90 Day T-Bill + 4.5%

2.00% Citigroup 30 Day US T-Bill



Actuarial Rate

(7.0% effective 7/1/21, adopted 4/15/21)

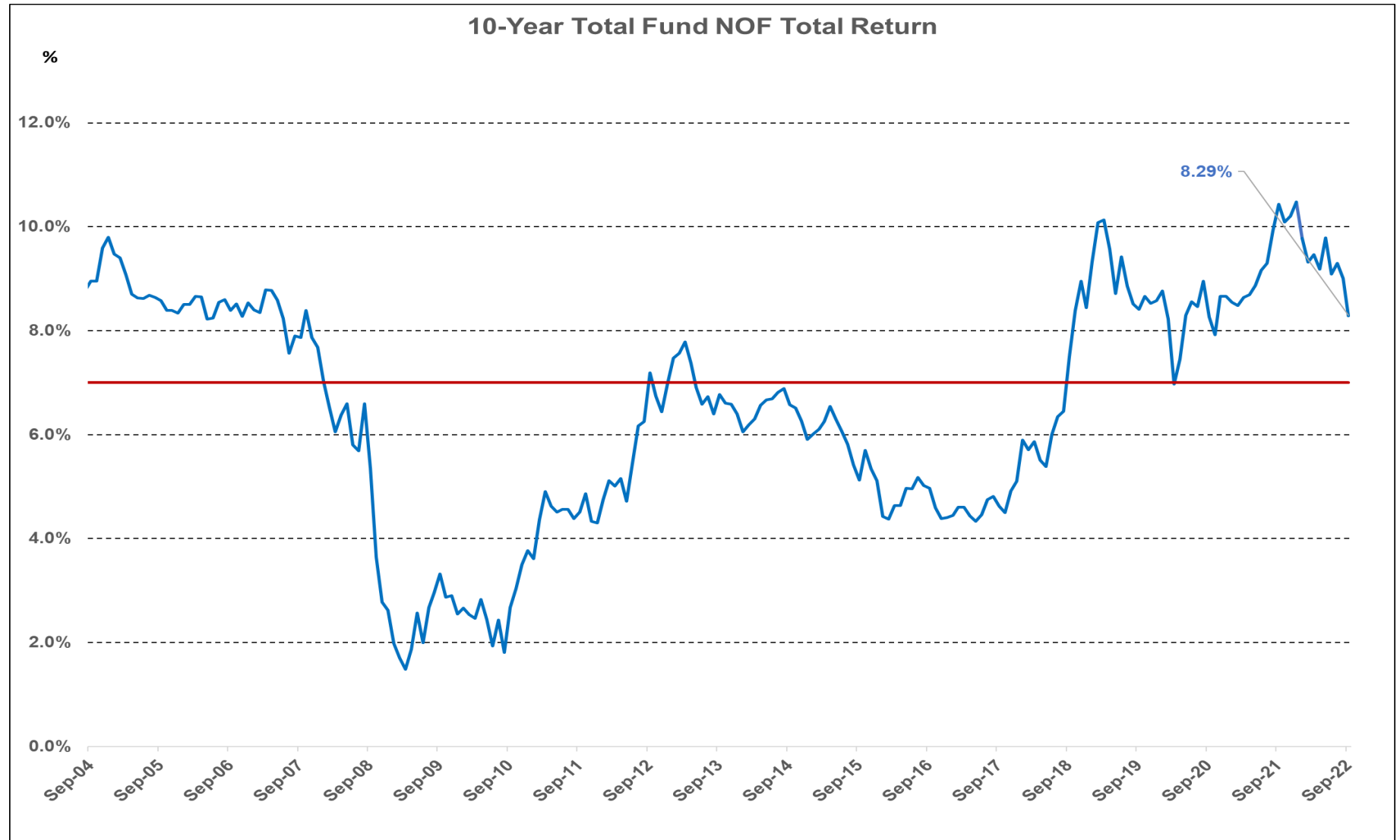
	Qtr	CYTD	FYTD	1 Year	3 Year	5 Year	10 Year	ITD*
Total Fund (Gross)	(2.57)	(9.12)	(2.57)	(4.35)	8.40	7.84	8.99	8.18
Total Fund (Net)	(2.79)	(9.65)	(2.79)	(5.10)	7.72	7.16	8.29	7.65
OSERS Policy	(3.65)	(12.13)	(3.65)	(8.39)	5.76	5.87	7.31	7.57
Value Added (Net of Fee)	0.86	2.48	0.86	3.29	1.95	1.29	0.98	0.08

Source: BNY Mellon GRS

*ITD is Inception date 10/1/1994 (28 years and 0 months)

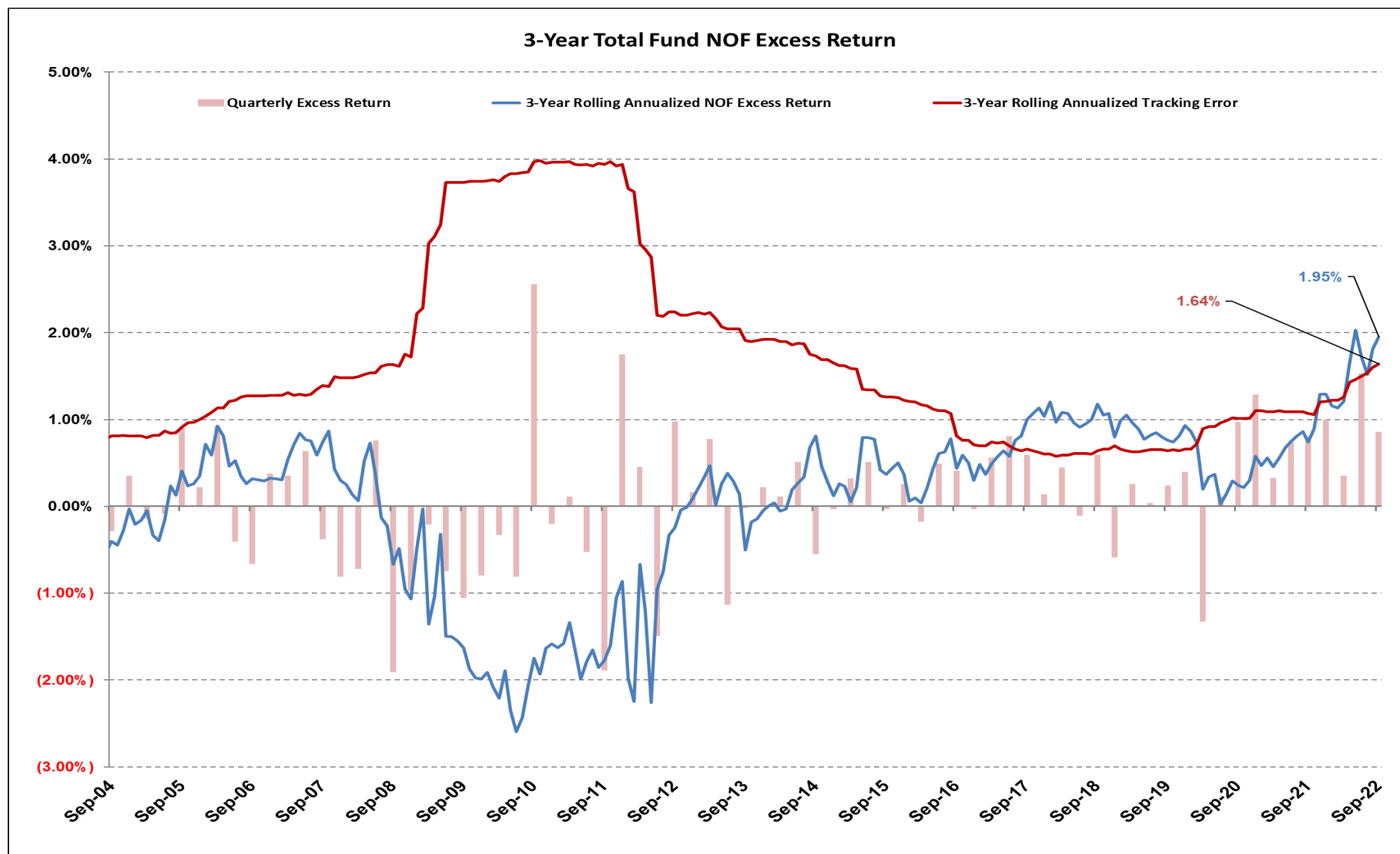


Total Fund Performance



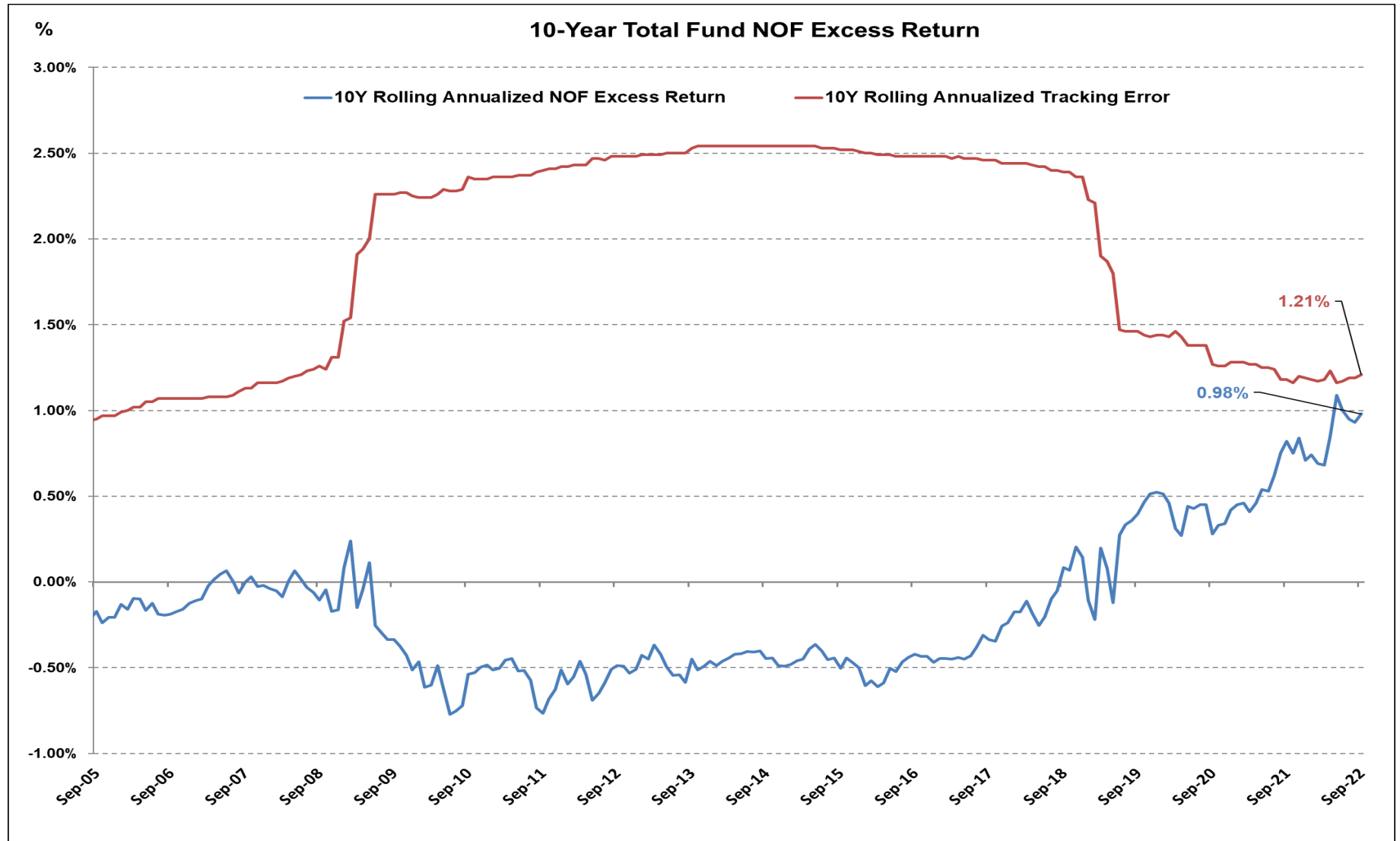


Total Fund Performance



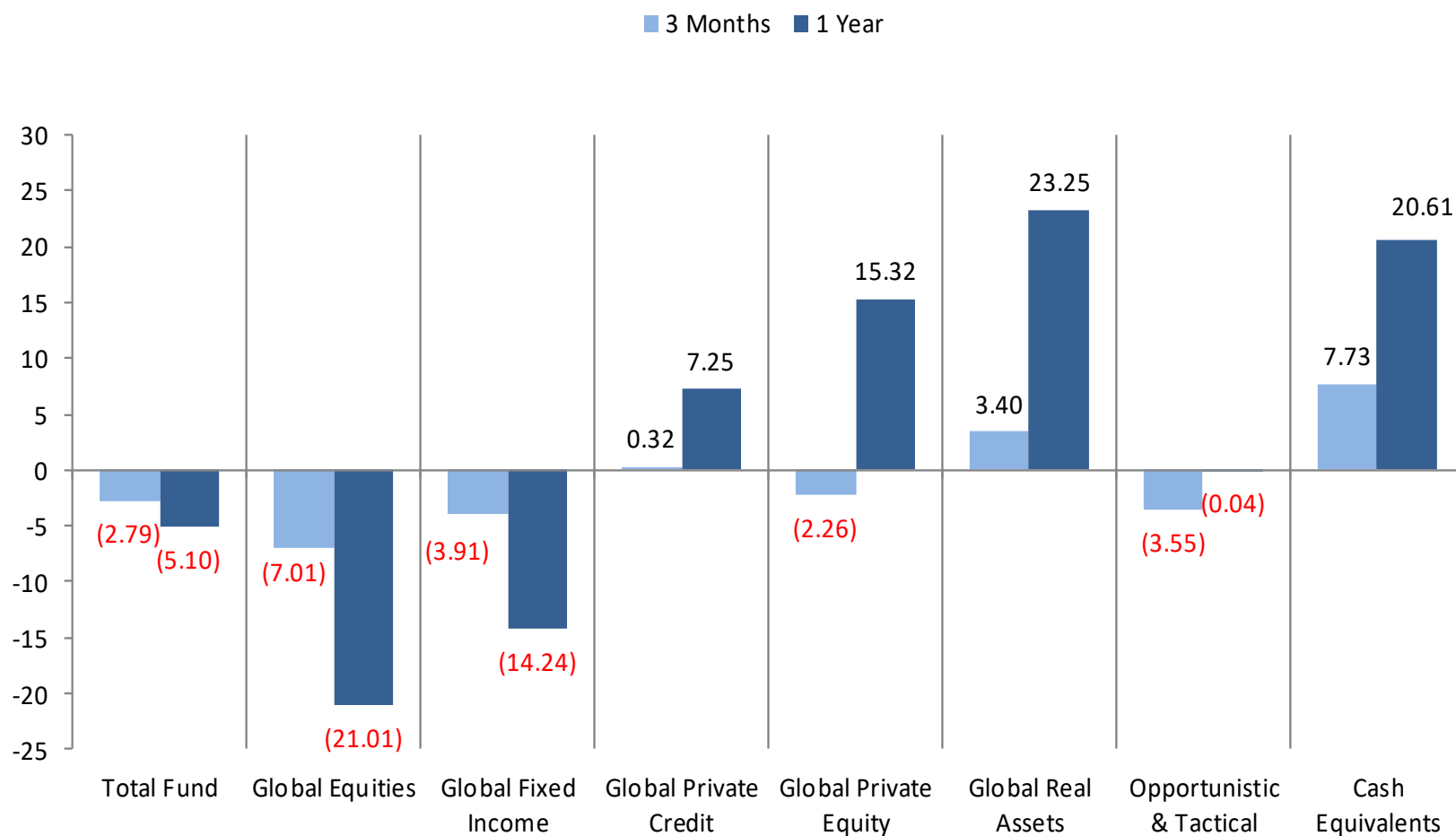


Total Fund Performance





Total Fund and Asset Class Performance (Net)

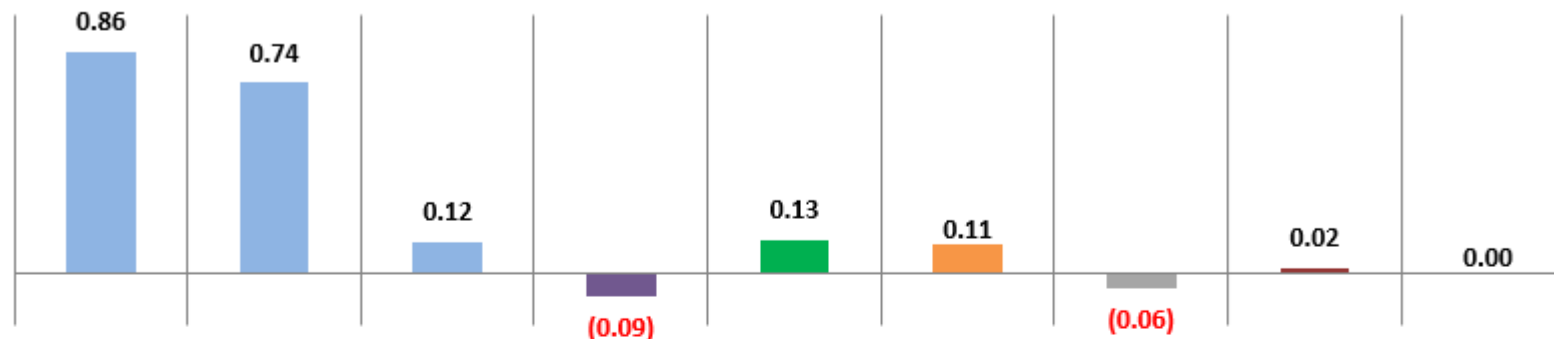


Source: BNY Mellon GRS

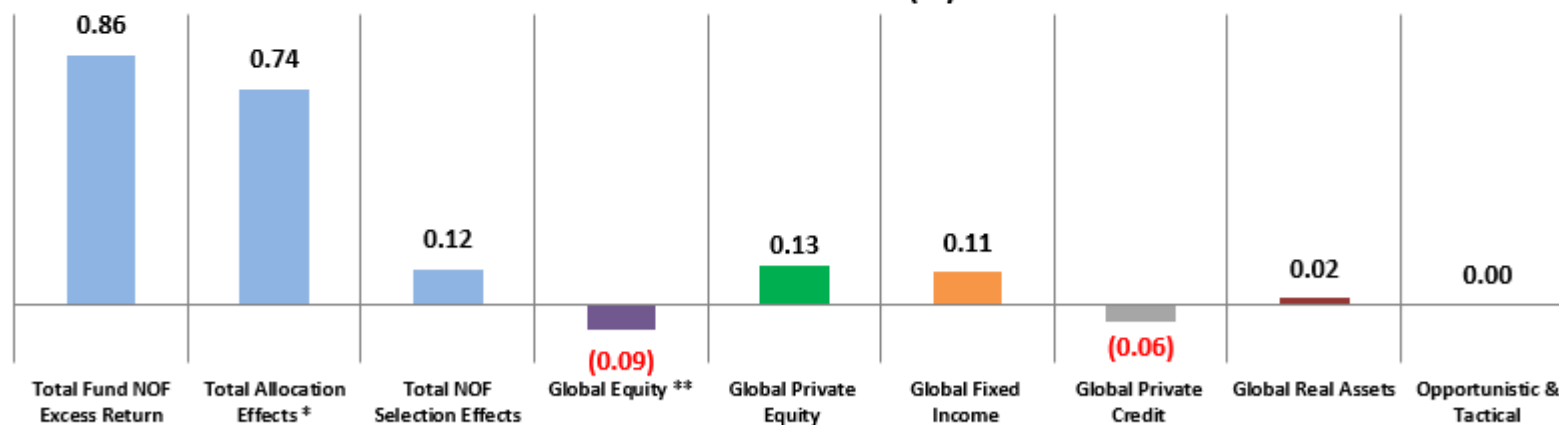


Total Fund Attribution

3 Month Attribution (%)



FYTD Attribution (%)

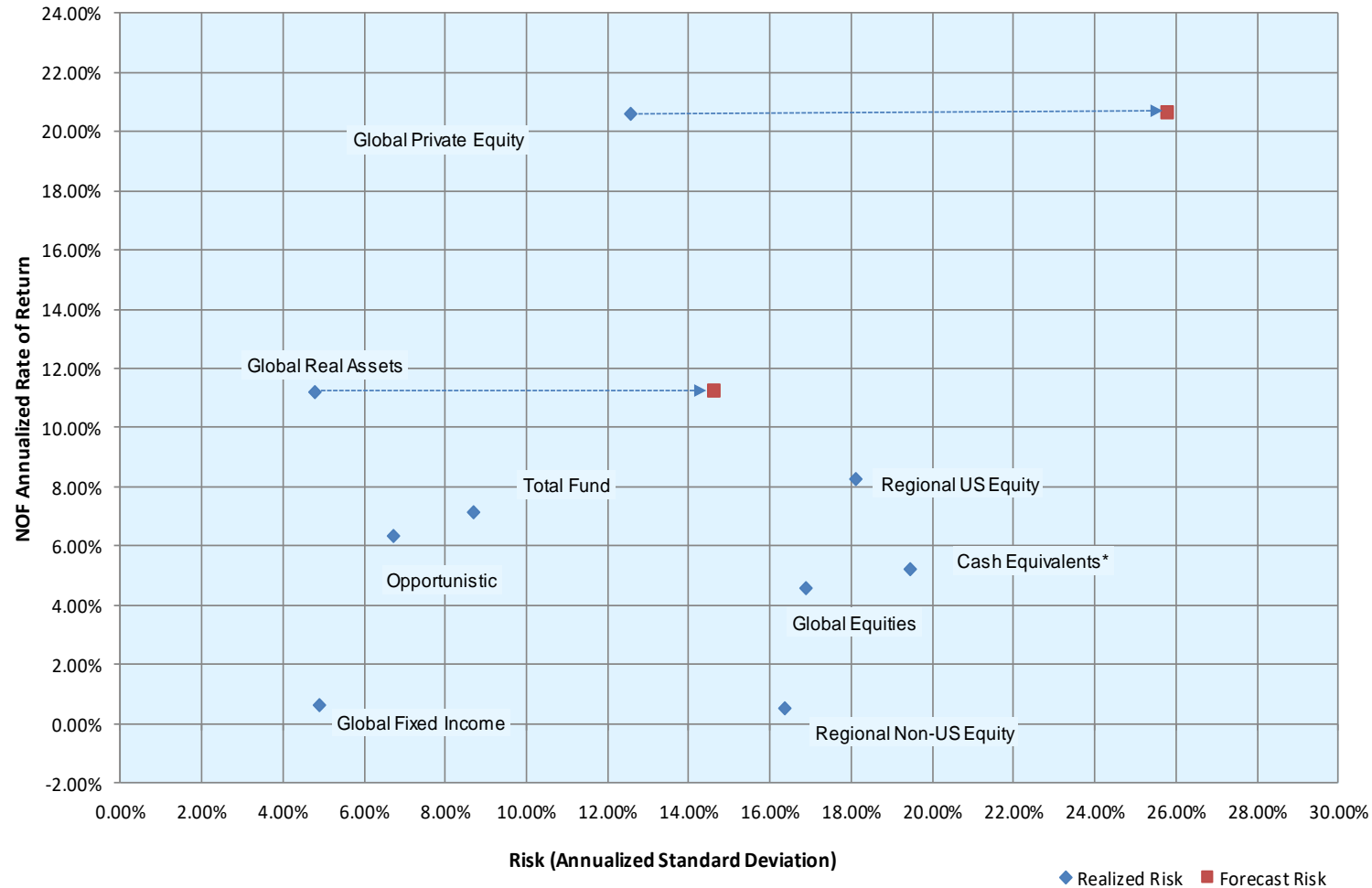


* Total Allocation Effects include net contributions from the Enhanced Asset Allocation and Currency Overlay Programs

** Global Equity including US Equity, Non-US Equity Developed Market and Non-US Equity Emerging Market Portfolios



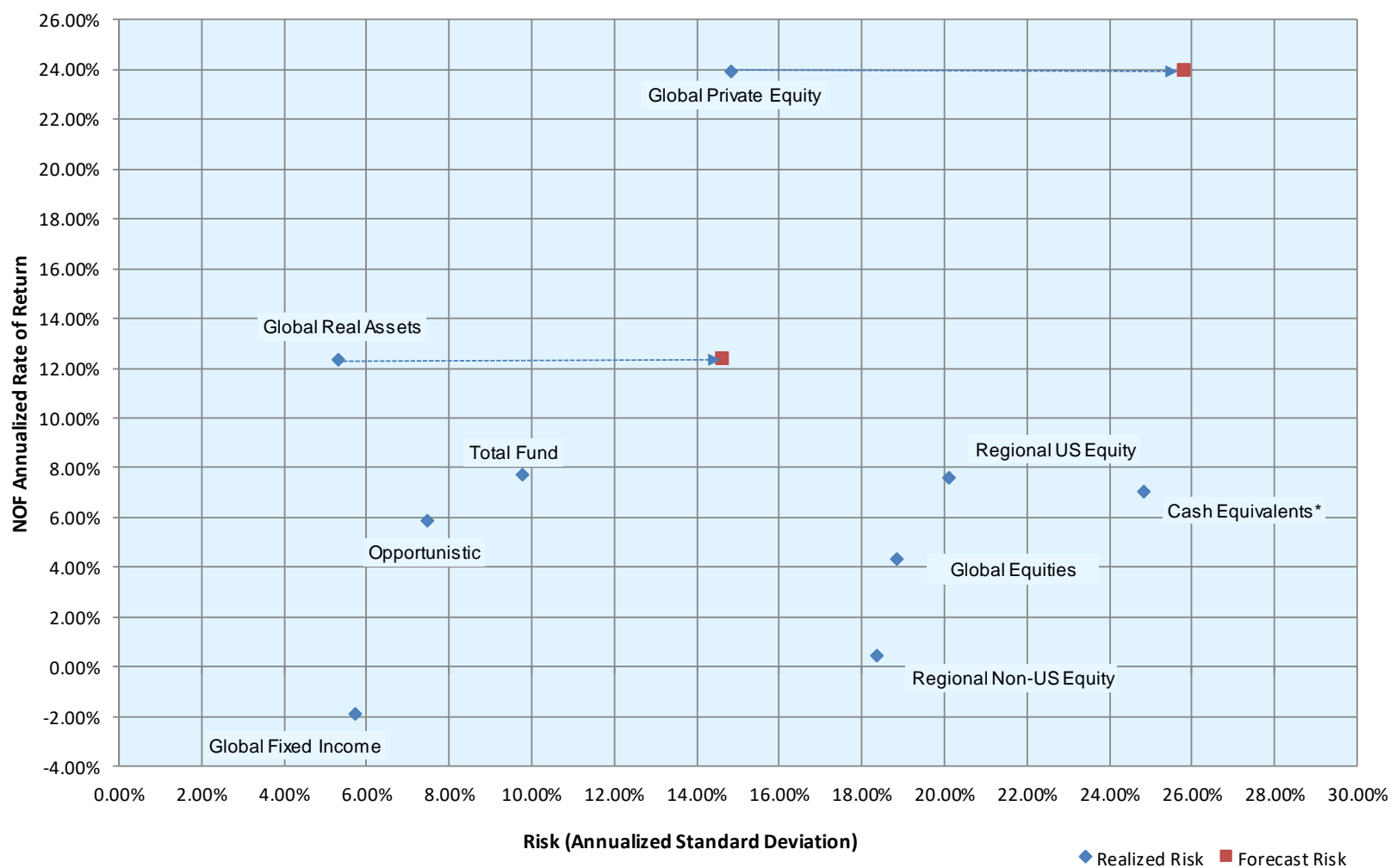
5 Year Risk and Return



*Cash Equivalents include Short-Term, Enhanced Allocation Overlay and Currency Overlay



3 Year Risk and Return



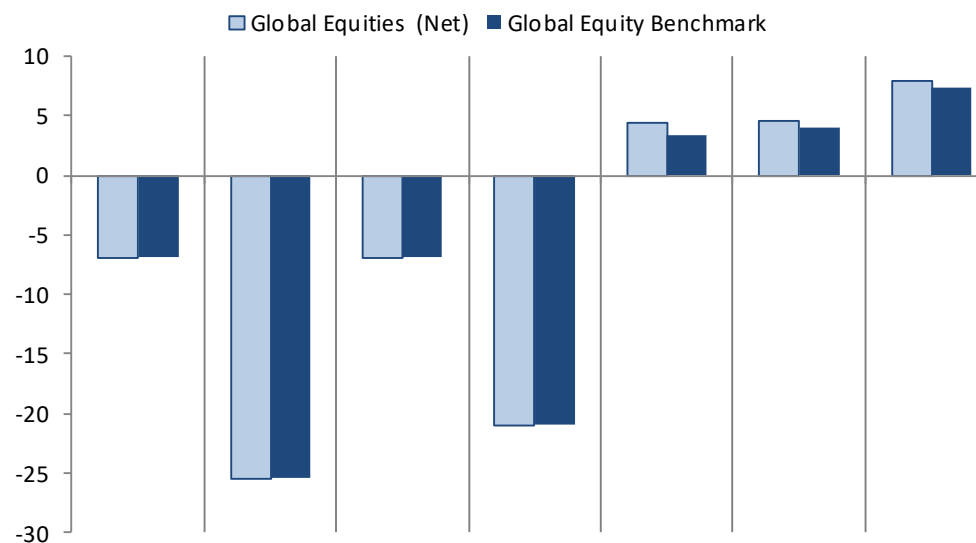
*Cash Equivalents include Short-Term, Enhanced Allocation Overlay and Currency Overlay



Global Equities Performance

Current Benchmark:

MSCI ACWI (Net Dividends)



	Qtr	CYTD	FYTD	1 Year	3 Year	5 Year	10 Year
Global Equities (Gross)	(6.97)	(25.29)	(6.97)	(20.76)	4.66	4.87	8.23
Global Equities (Net)	(7.01)	(25.48)	(7.01)	(21.01)	4.35	4.55	7.89
Global Equity Benchmark	(6.82)	(25.32)	(6.82)	(20.97)	3.37	4.06	7.39
Value Added (Net of Fee)	(0.19)	(0.17)	(0.19)	(0.04)	0.98	0.49	0.49
Regional US Equity	(4.58)	(24.44)	(4.58)	(17.21)	7.60	8.26	11.24
Russell 3000 Index	(4.46)	(24.62)	(4.46)	(17.63)	7.70	8.62	11.39
Value Added (Net of Fee)	(0.12)	0.18	(0.12)	0.42	(0.10)	(0.36)	(0.15)
Regional Non-US Equity	(10.43)	(27.12)	(10.43)	(25.88)	0.47	0.51	4.37
Custom Non-US Equity BM	(9.91)	(26.44)	(9.91)	(25.23)	(1.60)	(0.86)	3.18
Value Added (Net of Fee)	(0.53)	(0.68)	(0.53)	(0.66)	2.08	1.38	1.19

Source: BNY Mellon GRS

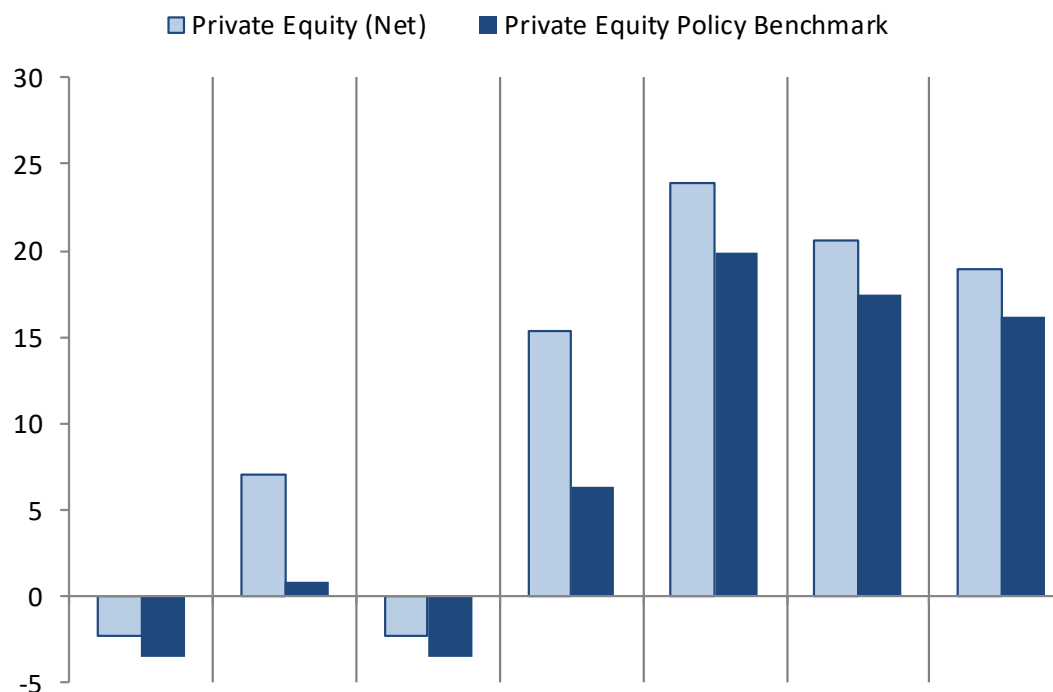


Global Private Equity Performance

Results as of: 09/30/2022

Current Benchmark:

Burgiss All Private Equity Index



	Qtr	CYTD	FYTD	1 Year	3 Year	5 Year	10 Year
Private Equity (Gross)	(1.79)	8.22	(1.79)	17.28	25.82	22.34	20.60
Private Equity (Net)	(2.26)	7.01	(2.26)	15.32	23.90	20.58	18.88
Private Equity Policy Benchmark	(3.52)	0.79	(3.52)	6.33	19.88	17.48	16.23
Value Added (Net of Fee)	1.26	6.22	1.26	8.99	4.01	3.10	2.65

Source: BNY Mellon GRS

The difference between Gross and Net is management fee only. Performance based fees are captured in the Gross return.

Global Private Equity performance is reported one quarter in arrears.



Public vs Private Equity Performance (Net)

Public vs Private Equity - Performance (Net)

	3 Year	5 Year	10 Year
Regional US Equity	7.60	8.26	11.24
Global Equity	4.35	4.55	7.89
Private Equity	23.90	20.58	18.88

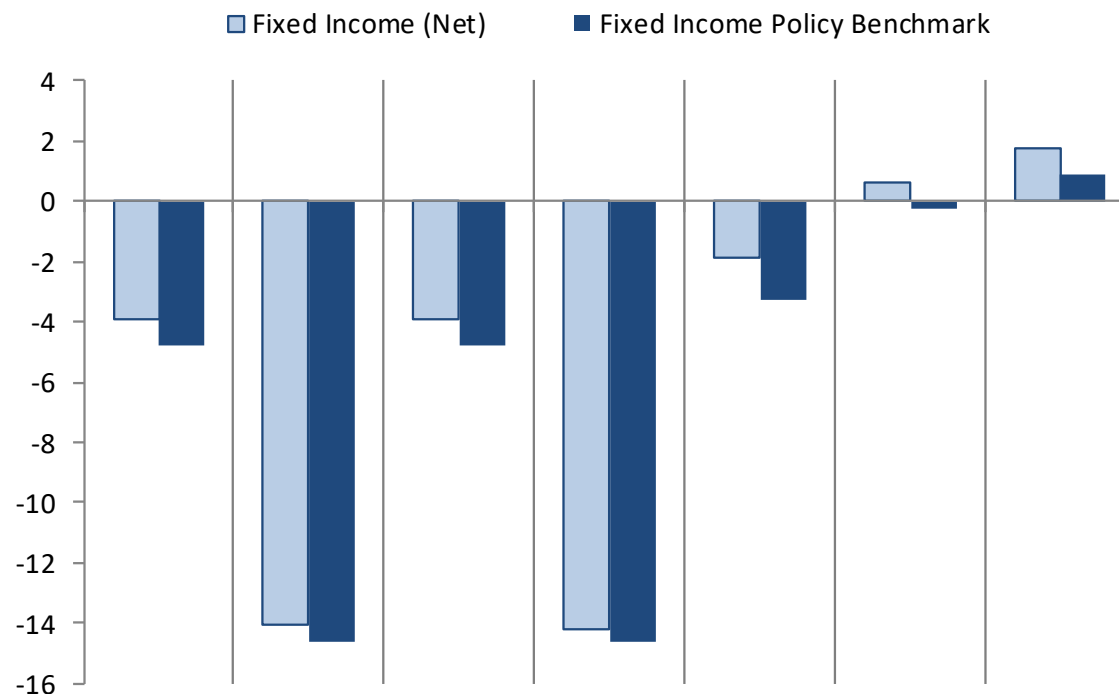
* Private Equity returns are lagged one quarter



Global Fixed Income Performance

Current Benchmark:

Bloomberg Aggregate Bond Index



	Qtr	CYTD	FYTD	1 Year	3 Year	5 Year	10 Year
Fixed Income (Gross)	(3.85)	(13.89)	(3.85)	(14.00)	(1.63)	0.85	1.99
Fixed Income (Net)	(3.91)	(14.06)	(3.91)	(14.24)	(1.88)	0.61	1.75
Fixed Income Policy Benchmark	(4.75)	(14.61)	(4.75)	(14.60)	(3.26)	(0.27)	0.89
Value Added (Net of Fee)	0.84	0.55	0.84	0.36	1.38	0.88	0.86

Source: BNY Mellon GRS

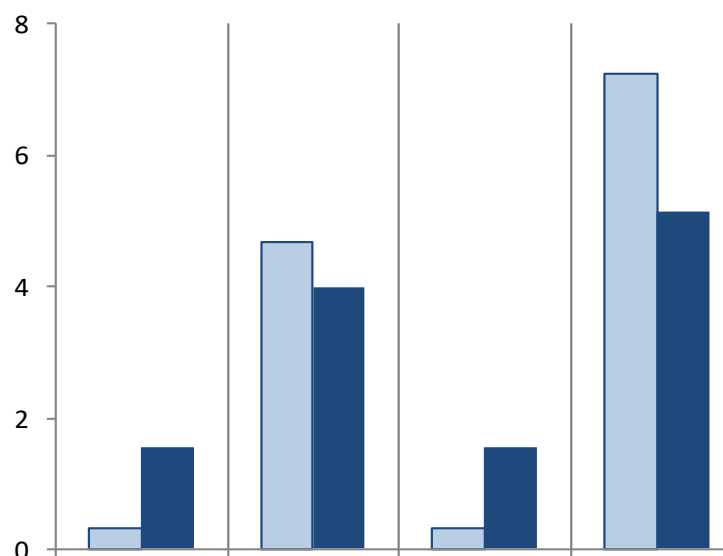


Global Private Credit Performance

Current Benchmark:

90 Day T-Bill + 4.5%

Global Private Credit (Net)
Global Private Credit Policy Benchmark



	Qtr	CYTD	FYTD	1 Year
Global Private Credit (Gross)	0.68	5.57	0.68	8.51
Global Private Credit (Net)	0.32	4.68	0.32	7.25
Global Private Credit Policy Benchmark	1.55	3.97	1.55	5.15
Value Added (Net of Fee)	(1.22)	0.71	(1.22)	2.10

Source: BNY Mellon GRS

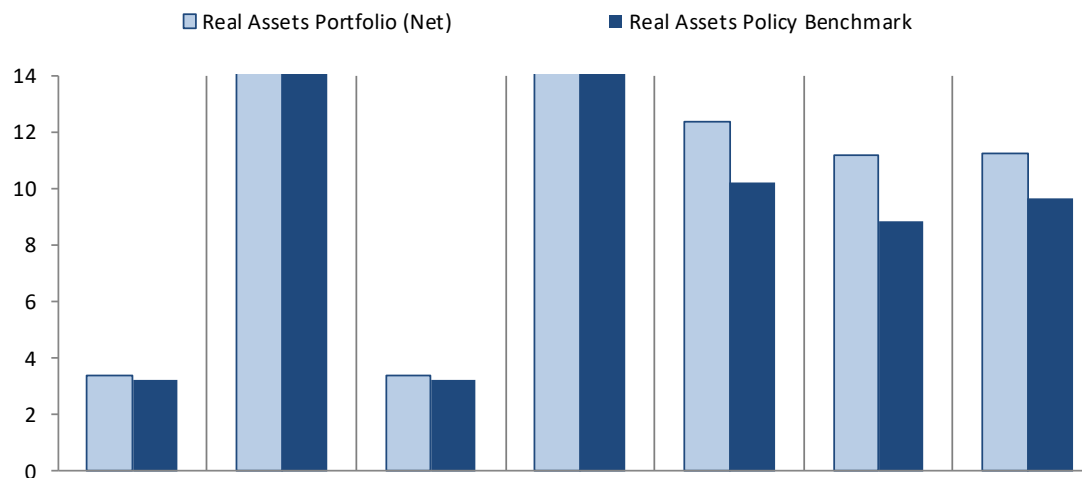
The difference between Gross and Net is management fee only. Performance based fees are captured in the Gross return.



Global Real Assets Performance

Results as of: 09/30/2022

Current Benchmark:
NCREIF Property Index (1q lag)



	Qtr	CYTD	FYTD	1 Year	3 Year	5 Year	10 Year
Real Assets Portfolio (Gross)	3.62	16.14	3.62	24.48	13.26	12.21	12.27
Real Assets Portfolio (Net)	3.40	15.42	3.40	23.25	12.36	11.19	11.21
Real Assets Policy Benchmark	3.23	15.42	3.23	21.45	10.22	8.86	9.67
Real Assets Value Added (NOF)	0.17	0.00	0.17	1.80	2.13	2.34	1.54
Real Assets Core (Net)	5.52	24.76	5.71	35.08	16.08	13.35	12.59
Real Assets Policy Benchmark	3.23	15.42	3.23	21.45	10.22	8.86	9.67
Real Assets Core Value Added (NOF)	2.29	9.34	2.48	13.63	5.86	4.49	2.92
Real Assets Non-Core (Net)	(0.67)	8.19	(0.67)	16.32	8.67	8.81	10.55
Real Assets Policy Benchmark	3.23	15.42	3.23	21.45	10.22	8.86	9.67
Real Assets Non-Core Value Added (NOF)	(3.90)	(7.23)	(3.90)	(5.13)	(1.55)	(0.05)	0.88
Real Assets Infrastructure (Net)	0.54	4.42	0.54	7.16	8.70	10.98	10.55
Real Assets Policy Benchmark	3.23	15.42	3.23	21.45	10.22	8.86	n/a
Real Assets Infrastructure Value Added (NOF)	(2.69)	(11.00)	(2.69)	(14.29)	(1.52)	2.12	n/a

Source: BNY Mellon GRS

The difference between Gross and Net is management fee only. Performance based fees are captured in the Gross return.

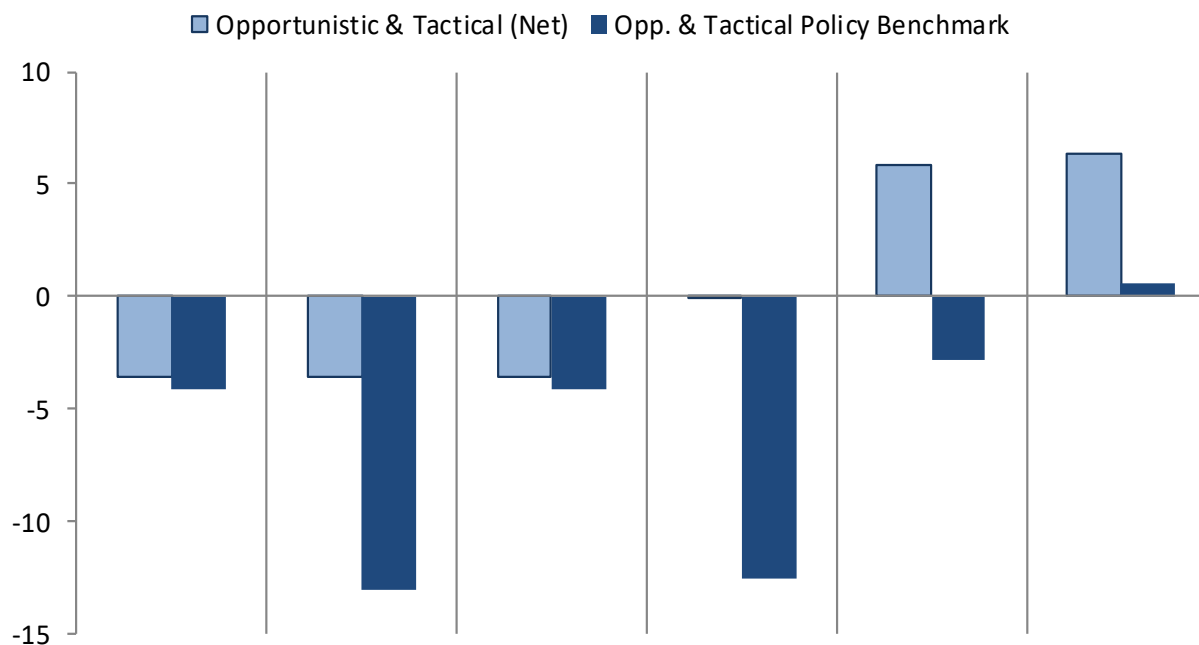
Global Real Assets performance is reported one quarter in arrears.



Opportunistic & Tactical Performance

Current Benchmark:

*Bloomberg Aggregate
Bond Index + 2%*



	Qtr	CYTD	FYTD	1 Year	3 Year	5 Year
Opportunistic & Tactical (Gross)	(3.24)	(2.79)	(3.24)	1.12	7.24	7.84
Opportunistic & Tactical (Net)	(3.55)	(3.59)	(3.55)	(0.04)	5.84	6.36
Opp. & Tactical Policy Benchmark	(4.17)	(13.04)	(4.17)	(12.60)	(2.82)	0.63
	0.62	9.46	0.62	12.56	8.66	5.73

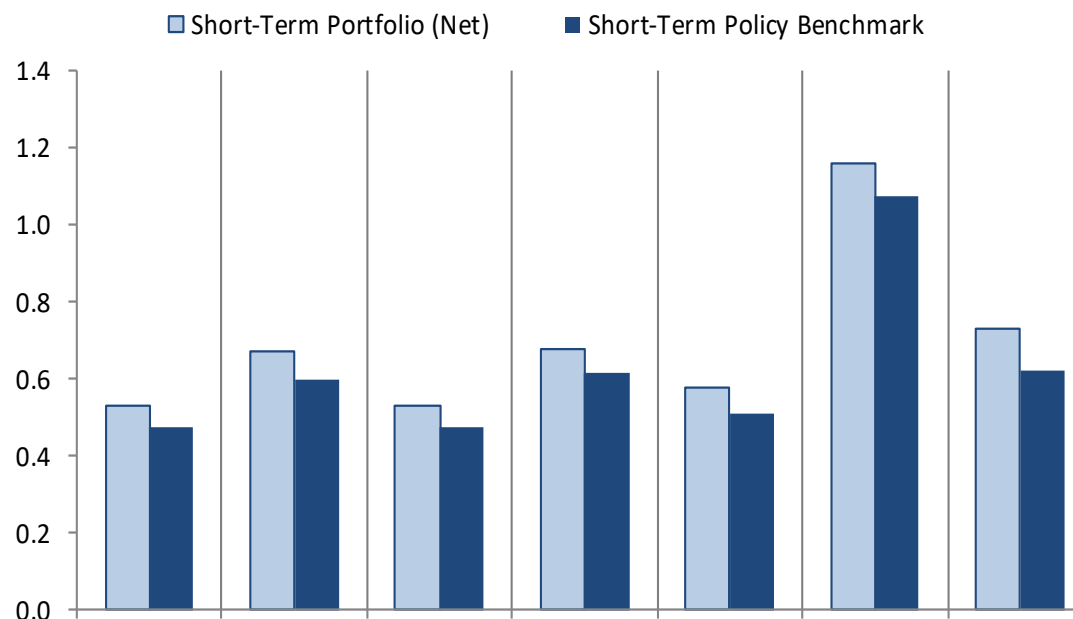
Source: BNY Mellon GRS



Short-Term Performance

Current Benchmark:

Citigroup 30 Day Treasury Bill Index

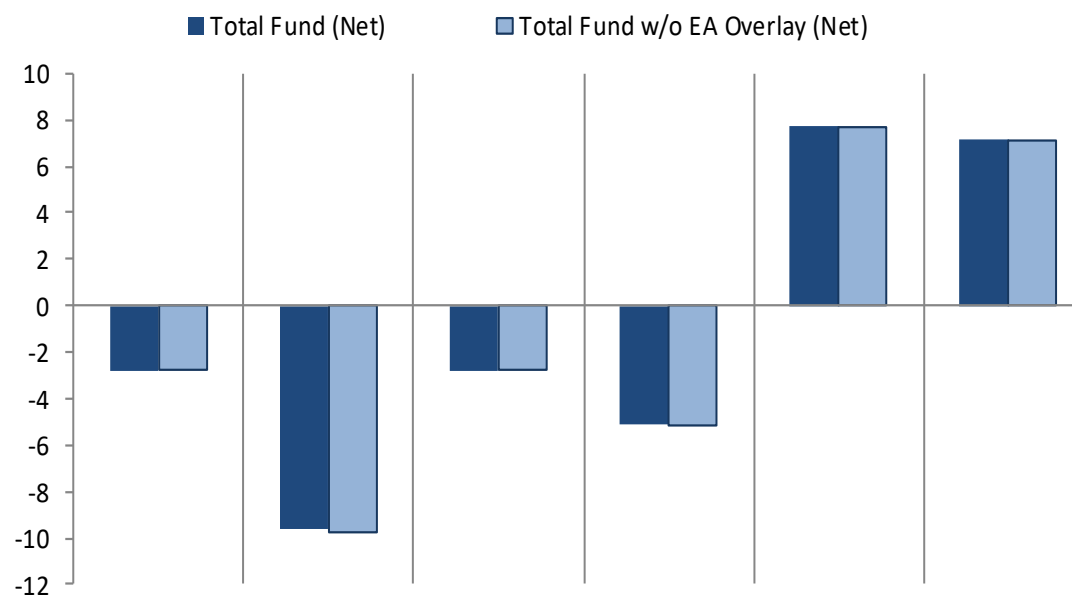


	Qtr	CYTD	FYTD	1 Year	3 Year	5 Year	10 Year
Short-Term Portfolio (Gross)	0.53	0.67	0.53	0.67	0.58	1.16	0.73
Short-Term Portfolio (Net)	0.53	0.67	0.53	0.67	0.58	1.16	0.73
Short-Term Policy Benchmark	0.48	0.59	0.48	0.61	0.51	1.07	0.62
Value Added (Net of Fee)	0.05	0.08	0.05	0.06	0.07	0.08	0.12

Source: BNY Mellon GRS



Enhanced Asset Overlay Performance

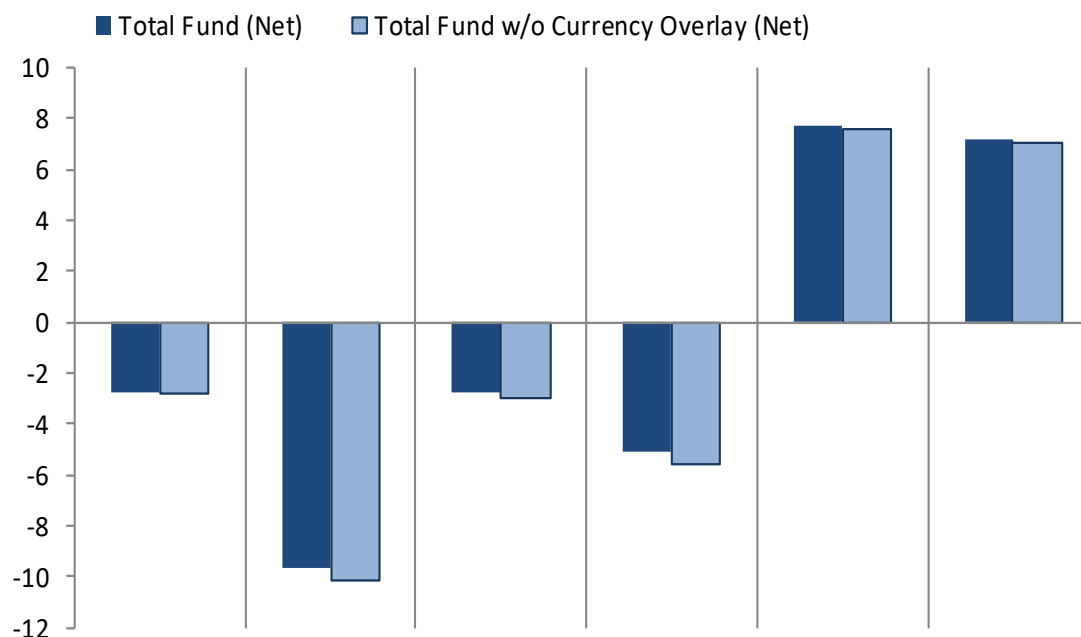


	Qtr	CYTD	FYTD	1 Year	3 Year	5 Year
Total Fund (Gross)	(2.57)	(9.12)	(2.57)	(4.35)	8.40	7.84
Total Fund w/o EA Overlay (Gross)	(2.59)	(9.23)	(2.59)	(4.48)	8.30	7.76
Total Fund (Net)	(2.79)	(9.65)	(2.79)	(5.10)	7.72	7.16
Total Fund w/o EA Overlay (Net)	(2.80)	(9.73)	(2.80)	(5.20)	7.64	7.10
EA Overlay Impact (Net of Fee)	0.02	0.09	0.02	0.10	0.08	0.06

Source: BNY Mellon GRS



Currency Overlay Performance



	Qtr	CYTD	FYTD	1 Year	3 Year	5 Year
Total Fund (Gross)	(2.57)	(9.12)	(2.57)	(4.35)	8.40	7.84
Total Fund w/o Currency Overlay (Gross)	(2.59)	(9.68)	(2.85)	(4.96)	8.24	7.72
Total Fund (Net)	(2.79)	(9.65)	(2.79)	(5.10)	7.72	7.16
Total Fund w/o Currency Overlay (Net)	(2.80)	(10.13)	(3.01)	(5.62)	7.60	7.07
Currency Overlay Impact (Net of Fee)	0.02	0.48	0.23	0.53	0.12	0.08

Source: BNY Mellon GRS



Proposed Investment Agenda – Next Meeting

- Annual Portfolio Review – Opportunistic & Tactical
- Monthly Investment Report (October 31, 2022)

Memo

To: SERS Retirement Board

From: Richard Stensrud, Executive Director

CC: Karen Roggenkamp, Deputy Executive Director
Marni Hall, Chief Financial Officer

Date: November 10, 2022

Re: **Presentation of Pension and Health Care Actuarial Valuations
as of June 30, 2022**

The basic financial objective of SERS is to establish and receive contributions which, when expressed in terms of percentages of active member payroll, remains approximately level from generation to generation, and which, when combined with present assets and future investment returns, will be sufficient to meet the present and future financial obligations of SERS. An actuarial valuation is performed annually to measure progress toward this objective and to establish the allocation of the employer contribution to the Pension, Death Benefit and Medicare B Funds. To that end, the pension actuarial valuation as of June 30, 2022 is attached for your review and consideration.

As you will see, the June 30, 2022 valuation reports that the funded ratio of the Basic Benefits increased to 75.48% from the 74.46% funded ratio reported in 2021 and the amortization period of the unfunded actuarial accrued liability decreased to 22 years. While the current year investment earnings were below the assumed rate of return of 7.0%, the actuarial value of the assets increased due to the smoothing method as further described below.

The following discussion addresses some key information in the Pension Valuation.

Actuarial Funded Ratio vs. Market Value Funded Ratio

The most commonly referenced funded ratio in the Pension Valuation is based on the actuarial value of assets. The actuarial value of assets utilizes the value of the assets as determined under a four year asset smoothing process whereby each year the investment experience over or under the

investment return assumption is divided into four equal parts, with one fourth of that experience recognized in the current year and the remaining three fourths recognized in the three subsequent years. This rolling recognition of deferred gains and losses means that the actuarial value of assets may be higher or lower than the market value of assets, which is the current non-smoothed value of the assets.

While the investment performance in FY 21-22 was weak and below the investment return assumption, due to the strong investment performance in FY 20-21, as of June 30, 2022 the market value of assets remained slightly higher than the actuarial value of assets by \$75.72 million. As a result, the funded ratio based on the market value of assets is 75.82%, which is higher than the 75.48% funded ratio based on the actuarial value of assets. Put another way, if all the deferred gains and losses currently in the smoothing process were recognized immediately, the pension fund would be 75.82% funded. See pages 3-5 and 12 of the Pension Valuation.

Under the asset smoothing process described above, the remaining portion of each year's gain or loss is deferred and recognized over the rest of the smoothing period. Due to the strong investment performance in FY 20-21, \$743,716,320 will be recognized annually as investment income over FY 22-24. This will be offset by the weak performance in FY 21-22 with deferred losses of (\$411,136,059) recognized annually over FY 23-25. The recognition of deferred losses from FY 21-22 after the full recognition of deferred gains from FY 20-21 will result in downward pressure on the funded status in FYs 24-25. Downward pressure will increase if the investment performance falls short of the 7% actuarial investment return assumption in FYs 23-25. See page 26 of the Pension Valuation.

Unfunded Actuarial Accrued Liability

The unfunded actuarial accrued liability (UAAL) is the difference between the actuarial value of assets and the actuarial accrued liability. Changes in the UAAL occur for various reasons, including changes in actuarial assumptions, investment experience or liability experience that is above or below actuarial assumptions, and changes in the methodology used to perform the actuarial valuation. Over the past twenty years, periods of investment experience below the investment return assumption along with changes in the investment return assumption itself have applied upward pressure on the UAAL. Over the same period, investment experience above the investment return assumption and positive experience relative to demographic actuarial assumptions have pushed downward on the UAAL. In addition, the UAAL has been positively impacted by various pension sustainability measures implemented by the SERS Board, such as changes in retirement eligibility and the retiree COLA.

In FY 21-22, SERS experienced a slight decrease of \$13.6 million in the UAAL largely due to these latter factors – i.e., net positive investment performance, demographic experience, and the impact of sustainability measures, particularly the change in the retiree COLA. These factors have also led to improvement in the funded status of the pension fund since 2012. See pages 4, 5, 14 and 16 of the Pension Valuation. See page 48 of the Pension Valuation for a breakdown of the annual actuarial gains and losses since 2013.

Active Members

The number of active members in the Pension Valuation was approximately 8,400 higher as of June 30, 2022, as compared to June 30, 2021 as schools recovered from reduced staffing during the pandemic. As noted in FY 20-21, active members decreased by nearly 10,000 as many employers appear to have shifted away from their normal practices when filling vacant positions and addressing short term or part time needs with part time or temporary employees, and instead, employers appear to have used current employees to cover those situations. It is unclear at this point if the return to the pre-pandemic level of active members is permanent or only a short-term result of employers having higher levels of pandemic-related funding. See pages 8 and 10 of the Pension Valuation.

Other Pension Valuation Information of Note:

- After declining the previous three years from 81,024 in 2019 to 80,851 in 2020, and 80,721 in 2021, the total number of retirees increased to 81,151 in 2022. Unlike the previous three years, more retirees were added in FY 21-22 than passed away. See page 36 of the Pension Valuation.
- 49.5% of current service retirees receive an annual benefit of \$12,000 or less. 67.0% of current service retirees receive an annual benefit of \$18,000 or less. See page 38 of the Pension Valuation.
- 90.9% of current service retirees are age 65 or older. 28.5% of current service retirees are age 80 or older. 14.9% of current service retirees are age 85 or older. 4,309 (6%) of current service retirees are age 90 or older. Nine (9) current benefit recipients are age 105 or older. See page 39 and 41 of the Pension Valuation.
- 73.8% of current benefit recipients are female, 26.2% are male. See page 41 of the Pension Valuation.
- 71.8% of current active members have less than 10 years of service. 53.4% have less than 4 years of service. The percentage of active members declines as service increases and drops to 5.6% when you get to 25 or more years of service. See page 43 of the Pension Valuation. This shows that while many people are in SERS for a few years, the active members who stay and ultimately draw a benefit are longer, career employees. See page 51 of the Pension Valuation.
- 49.7% of current active members make less than \$20,000 annually. 81.4% make less than \$40,000 annually. 18.6% make more than \$40,000 annually. See page 46 of the Pension Valuation.
- Salary growth for active members for the year was higher than the level expected; 5.49% actual compared to 4.88% expected. See page 50 of the Pension Valuation.
- 73.7% of service retirees in 2022 had 20 years or more of service. 53.6% of service retirees in 2022 had 25 or more years of service. 33.1% had 30 or more years of service. Again, this reflects

that a high percentage of SERS' retirees are career employees. See page 51 of the Pension Valuation.

- 57.4% of service retirees in 2022 were age 65 or older at retirement. See page 51 of the Pension Valuation.

Although health care is not funded on an actuarial basis, an annual valuation of the Health Care Fund ('Health Care Valuation') is performed to fulfill the requirements of GASB Statement 74 - Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans and Statement 75 - Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions.

The Health Care Valuation highlights include:

- The balance of the Health Care Fund as of June 30, 2022 is \$611,574,409, up from \$600,330,188 as of June 30, 2021. This represents a new high in the balance in the Health Care Fund. See page 1, 6 and 12 of the Health Care Valuation.
- The funded ratio of the Health Care Fund as of June 30, 2022 is 45.36%, down slightly from 46.56% as of June 30, 2021. As a point of reference, the funded ratio in 2012 and 2013 was approximately 13%. See page 1 and 12 of the Health Care Valuation.
- The solvency period of the Health Care Fund as of June 30, 2022 is 38 years, up from 36 years as of June 30, 2021. FY 21-22 solvency increased while the funded ratio decreased due to higher-than-expected salary growth coupled with lower-than-expected claims. This is the longest solvency period for the Health Care Fund to date. As a point of reference, during the 2017 to 2019 period, the solvency period was approximately 15-17 years, which itself was a marked improvement from previous periods. See page 16 of the Health Care Valuation.

John Garrett, Todd Green and Alisa Bennett from Cavanaugh Macdonald Consulting, LLC will present the results of the FY2022 Pension and Health Care Actuarial Valuations and the recommended surcharge level to your Board on Thursday.

With regard to these valuations, there are two resolutions for your vote: (1) The actuary's recommended allocation of employer contributions to the Pension, Death Benefit, Medicare B and Health Care Funds for fiscal year 2023; and (2) The actuary's recommendation establishing the minimum compensation amount for purposes of the fiscal year 2024 Health Care employer surcharge.

If you have any questions, please feel free to contact me.



Cavanaugh Macdonald
CONSULTING, LLC
The experience and dedication you deserve

School Employees Retirement System of Ohio

November 17, 2022

2022 Valuation Results

Todd B. Green, ASA, EA, FCA, MAAA
Alisa Bennett, FSA, EA, FCA, MAAA
John Garrett, ASA, FCA, MAAA



Basic Retirement Funding Formula



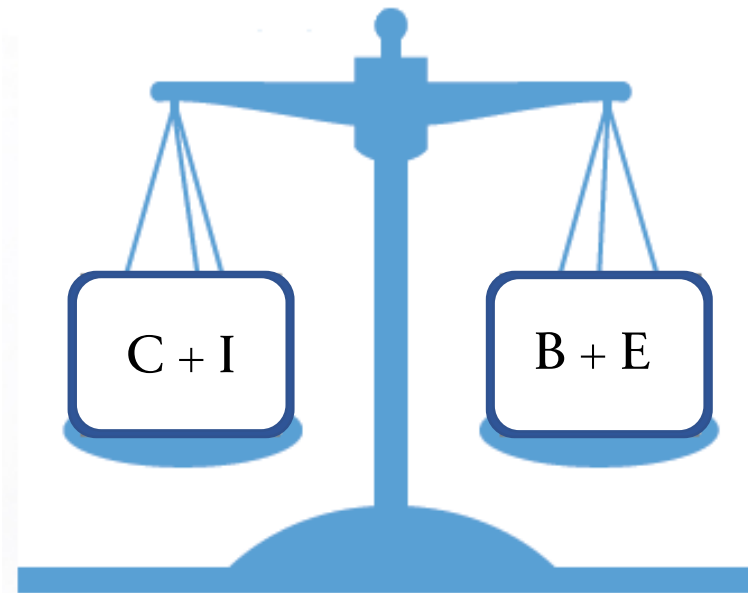
$$\text{C} + \text{I} = \text{B} + \text{E}$$

C = Contributions

I = Investment Income

B = Benefits Paid

E = Expenses



“Money In = Money Out”

Key Findings



- Funded status for Basic Benefits increased from 74.46% to 75.48%.
- Actuarially determined contribution rate decreased from 12.50% to 11.22% for Basic Benefits.
- Board-adopted funding policy requires at least a 13.50% employer contribution rate for funding of Basic Benefits since funded ratio is greater than 70%, but less than 80%.
- Based on Board Resolution dated September 15, 2022, the entire employer contribution of 14% will be allocated to Basic Benefits.
- Based on Board Resolution, 2.50% COLA has been adopted for calendar year 2023
- Health Care Fund will receive the 1.50% employer surcharge, with no additional contribution from employer.



Funded Status



Benefit	June 30, 2022	June 30, 2021
Pension Benefits	75.7%	74.8%
Medicare Part B	63.2%	56.9%
Post-Retirement Death Benefits	71.7%	67.7%
Health Care	45.4%	46.6%





Pension Results



Comments on Pension Valuation



- Total market value investment return was (2.04)%.
 - Market value investment return for Health Care Fund was (1.82)%
 - Market value investment return for Basic Benefits Fund was (2.05)%
- Total blended smoothed actuarial value return for entire fund 8.31%
 - Return for funds that support Health Care was (1.82)%
 - Smoothed return for funds that support Basic Benefits was 8.70%
- Funded ratio increased from 74.46% to 75.48%.

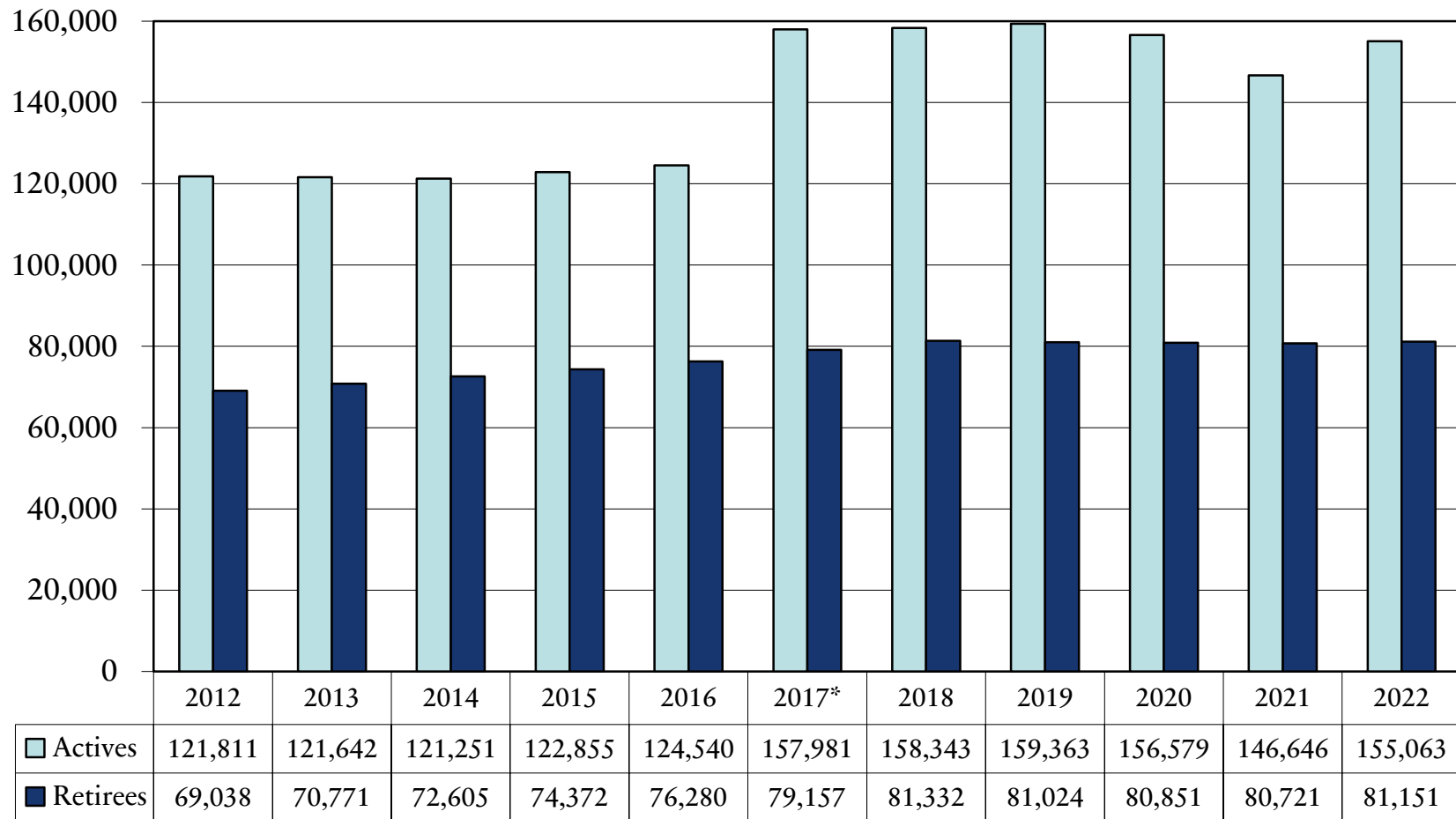
Comments on Pension Valuation



- Actuarially determined contribution rate decreased from 12.50% to 11.22% on current 22-year amortization schedule.
- \$75.7 million of unrecognized investment gains, which will be recognized as investment gains/(losses) over the next three years.
 - 2022/2023 - \$154.3 Million
 - 2023/2024 - \$332.6 Million
 - 2024/2025 - \$(411.1) Million
- Board approved COLAs of 2.5% for calendar years 2022 and 2023 have been reflected in the results.
- Funded rate on a market value of assets basis is 75.82%



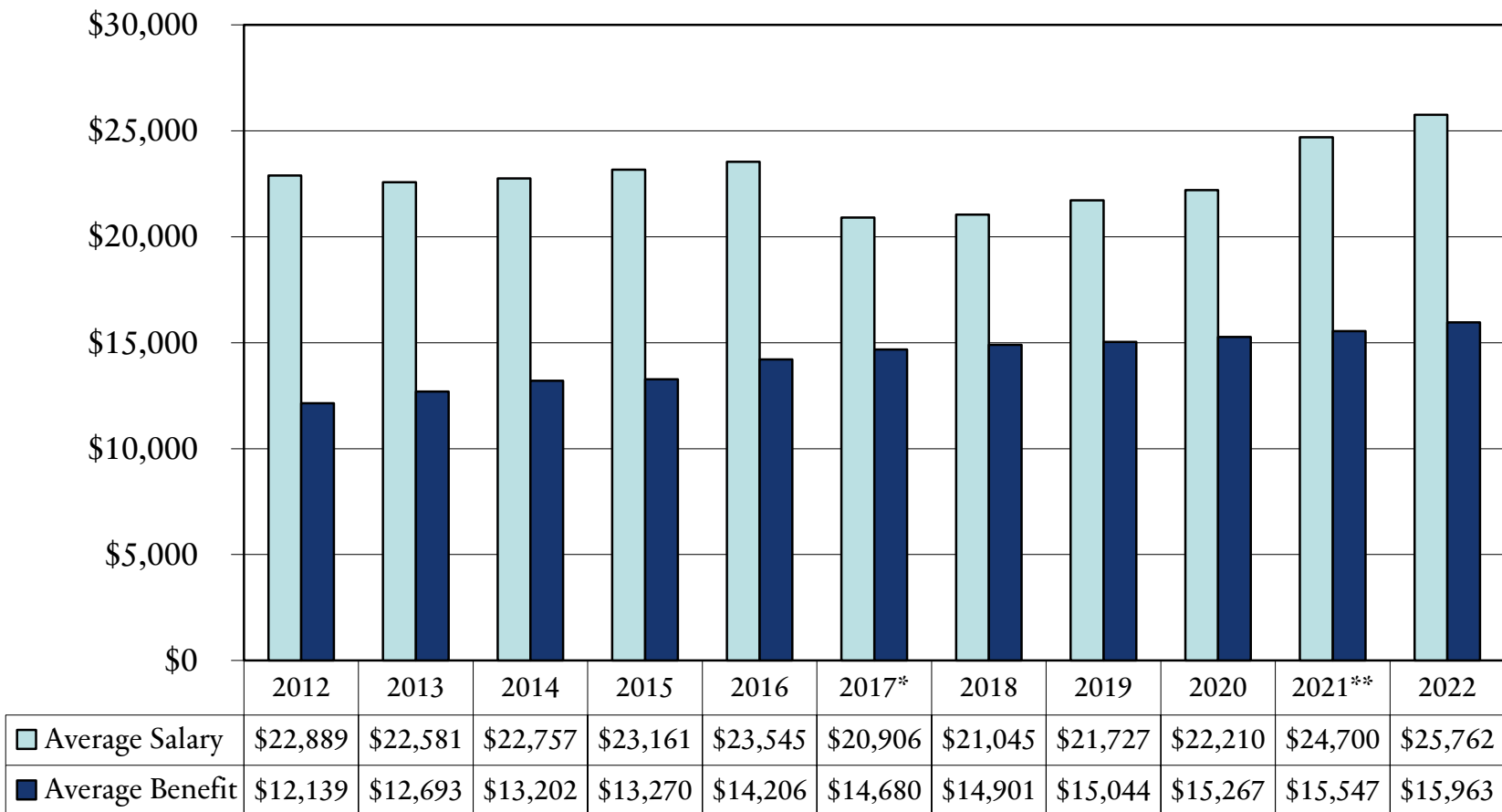
Active and Retired Membership



* 2017 active membership reflects an increase of 32,641 members with 0.25 or less years of service who have been re-categorized from inactive to active status.



Average Salary and Benefits

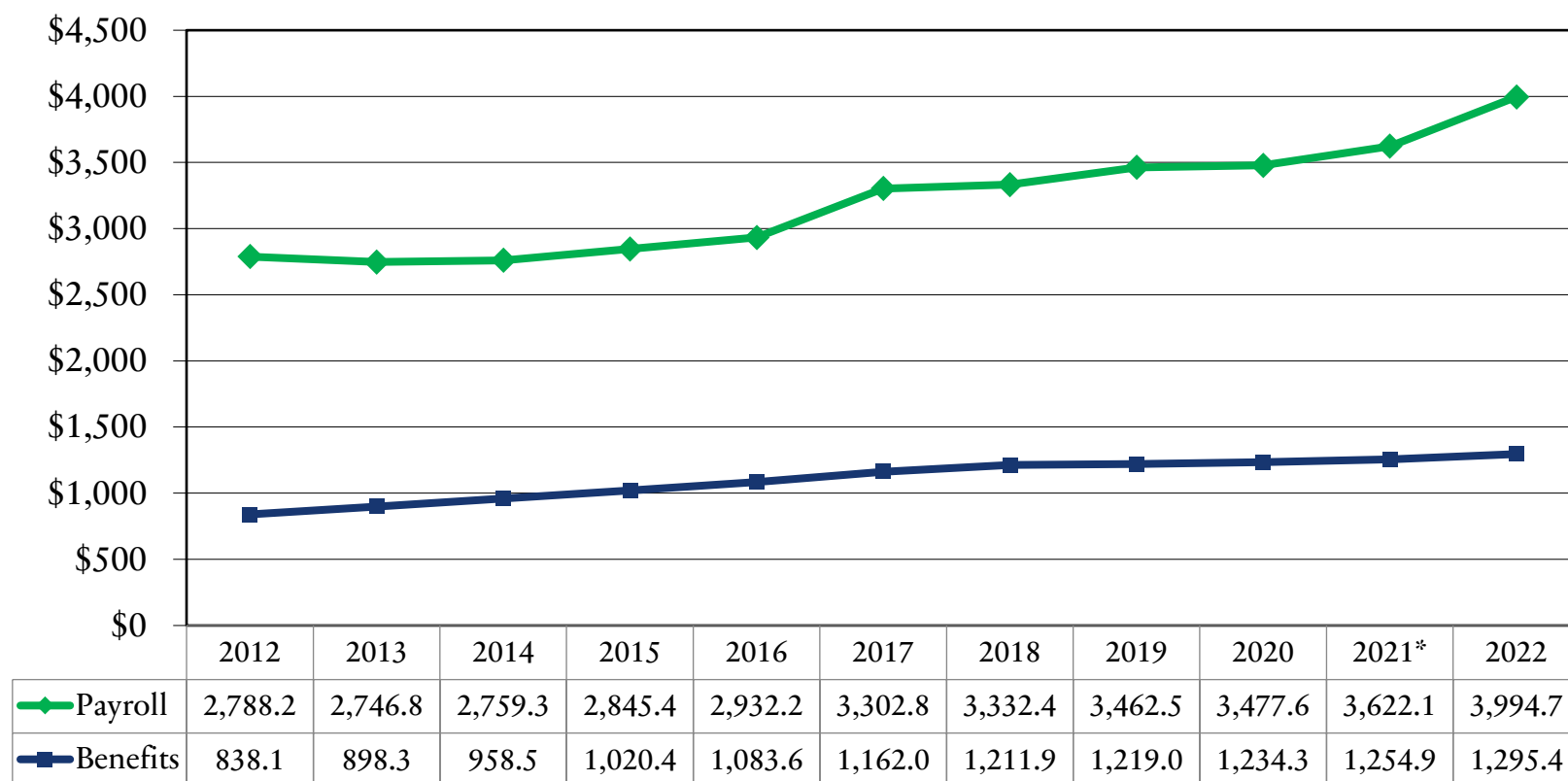


* Average annual salary in 2017 reflects the re-categorization of 32,641 members. The average annual salary for this group was \$7,518.

** Average annual salary in 2021 reflects average salaries for valuation purposes



Payroll and Benefits (\$ Millions)



* 2021 payroll is projected with expected salary increases to align with the valuation year.



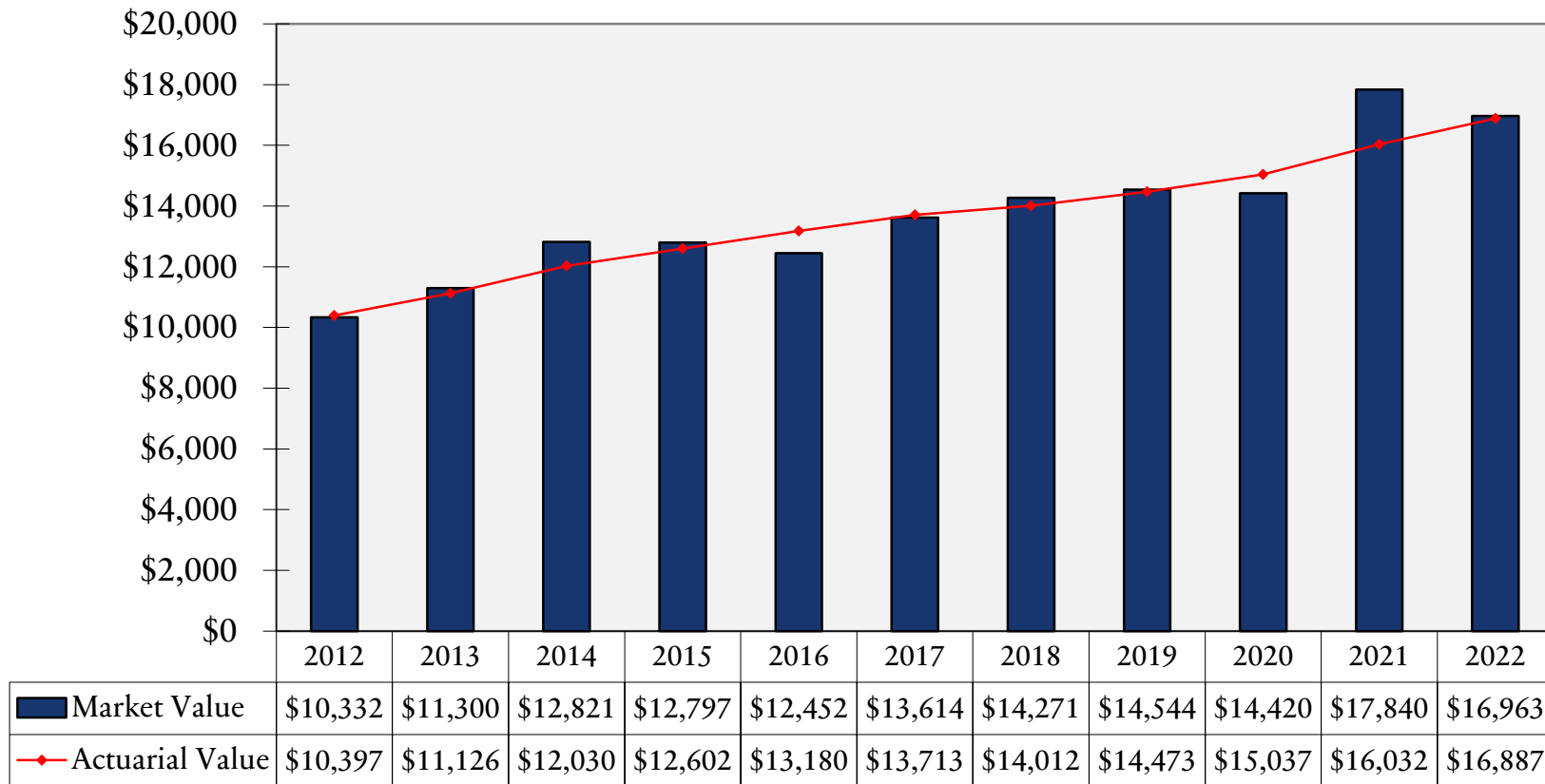
Average Age and Service



	June 30, 2022	June 30, 2021
Active Average Age	47.2	47.7
Active Average Service	7.6	8.1
Average Age Retirees and Beneficiaries	75.2	75.0
Average Age Disabilities	67.0	66.7
Average Age Survivors	72.5	72.6



Assets (\$ Millions)



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Market Return	(0.5)%	12.4%	16.7%	3.2%	0.6%	12.9%	9.0%	5.7%	2.7%	28.0%	(2.04)%
Actuarial Return	1.0%	10.1%	11.5%	8.3%	7.9%	7.5%	6.3%	7.1%	7.6%	10.4%	8.31%



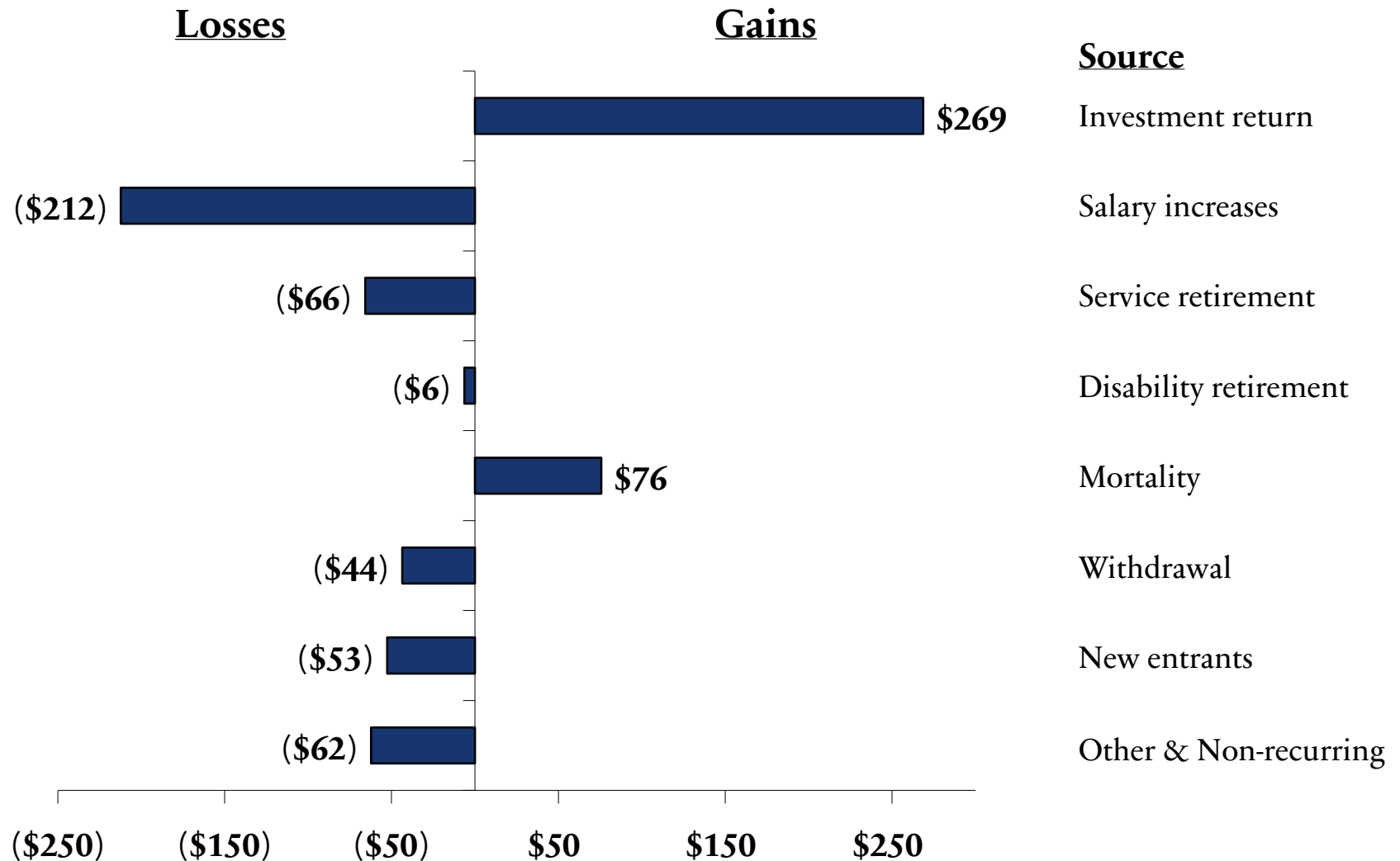
Pension Funding Results



	June 30, 2022 Valuation			
	Pension	Death Benefits	Medicare Part B	Total
Total Normal Cost Rate	10.52%	0.02%	0.27%	10.81%
Less Member Rate	10.00%	0.00%	0.00%	10.00%
Employer Normal Cost Rate	0.52%	0.02%	0.27%	0.81%
Rate to Amortize UAL	10.12%	0.02%	0.27%	10.41%
Actuarially Determined Contribution Rate	10.64%	0.04%	0.54%	11.22%
Funded Policy Contribution Rate				14.00%
Unfunded Accrued Liability (\$ millions)	\$5,330	\$11	\$143	\$5,484
Amortization Period	22	22	22	22
	June 30, 2021 Valuation			
Actuarially Determined Contribution Rate	11.82%	0.05%	0.63%	12.50%
Unfunded Accrued Liability (\$ millions)	\$5,316	\$13	\$169	\$5,498
Amortization Period	23	23	23	23



2022 Pension Gain/Loss Analysis (\$ Millions)





Health Care Fund Results





Covid-19 Update

- The impact of the COVID-19 pandemic was considered in this valuation.
- Due to the uncertainty regarding the long-term impact of COVID-19, the continuation of the projected high cost trend of prescription drugs and the uncertainty regarding the future changes to Medicare Part D, we have reset the first year health care trend assumption at 7.00%, stepping down 0.25% per year to the ultimate rate of 4.40% in 2033, which is 2% plus price inflation.
- We will continue to monitor the impact going forward.

Inflation Reduction Act – Health Care Items

- The bill's health reforms primarily impact those with Medicare coverage. Specifically, the bill implements the following measures:
 - It allows the Secretary of Health and Human Services to negotiate the prices of certain Medicare drugs each year. The negotiations will take effect in 2026 for 10 drugs covered by Medicare, increasing to 20 drugs in 2029.
 - Beginning in 2023, the cost of insulin will be capped at \$35 per month for people with diabetes enrolled in Medicare.
 - Beginning in 2025, out-of-pocket prescription drug costs will be capped at \$2,000 per year for Medicare beneficiaries.
 - The bill also implements a three-year extension on increased health insurance subsidies for coverage purchased through an Exchange. These enhanced subsidies were originally provided as part of the American Rescue Plan Act, a COVID-19 relief bill, and were set to expire at the end of 2022.



Funded Ratio

- Market value of assets used for valuation purposes. Investment return was (1.8%) versus assumed rate of 7.00%.
- Funded ratio was 46.56% as of June 30, 2021, and funded ratio is 45.36% as of June 30, 2022. Decrease largely due to change in health care trend assumption and investment losses.

ADEC

- For funding valuation purposes, UAL amortization period remains 30 years.
- Actuarially Determined Employer Contribution (ADEC) was 2.46% as of June 30, 2021, ADEC is 2.51% as of June 30, 2022.

Funding Policy

- Funding policy requires at least 13.50% of 14.00% employer contribution rate to be allocated to Pension.
- Based on Board Resolution dated September 15, 2022, the Health Care Fund will not receive any employer contribution other than 1.50% surcharge.





Health Care Fund Projections

- If the Health Care Fund receives only the 1.50% in future years, and **all other actuarial assumptions are met**, the Health Care Fund is projected to remain solvent through 2060; 38 years of solvency.

Projection Assumptions

- The projections are based on a 7.00% future asset rate of return assumption, on a payroll growth assumption of 1.75% per year, and on the assumption that the health care contribution rate will be 0.00%, plus a health care surcharge of 1.50%, or 1.50%.
- These projections assume there will be no health care cost changes due to such things as ACA law changes, the Inflation Reduction Act or COVID-19 impact other than anticipated health care trend.



SERS Wraparound HRA

- Valuation reflects the SERS Wraparound HRA. SERS offers a Health Reimbursement Arrangement (HRA) option as an alternative to SERS' non-Medicare group plans.
- Members first select a health care plan from the Health Insurance Marketplace with the assistance of HealthSCOPE Benefits.
- The SERS Wraparound HRA will then provide reimbursement for eligible expenses such as deductibles, co-pays, and other costs. Reimbursement is capped at \$1,950 per participating family per calendar year, indexed for inflation for plan years beginning after December 31, 2022, in accordance with federal limits.
- Based on current enrollment, SERS staff estimates that the SERS Wraparound HRA creates a savings of approximately \$3M per year.

American Rescue Plan Act of 2021

- The American Rescue Plan Act of 2021 (COVID-19 relief) law passed in March 2021 expands Marketplace subsidies above 400% of poverty and increases subsidies for those making between 100% and 400% of the poverty level, for two years (2021 and 2022). This could make the SERS Wraparound HRA plan more attractive to members, creating a cost savings for SERS.



Health Care Fund Results

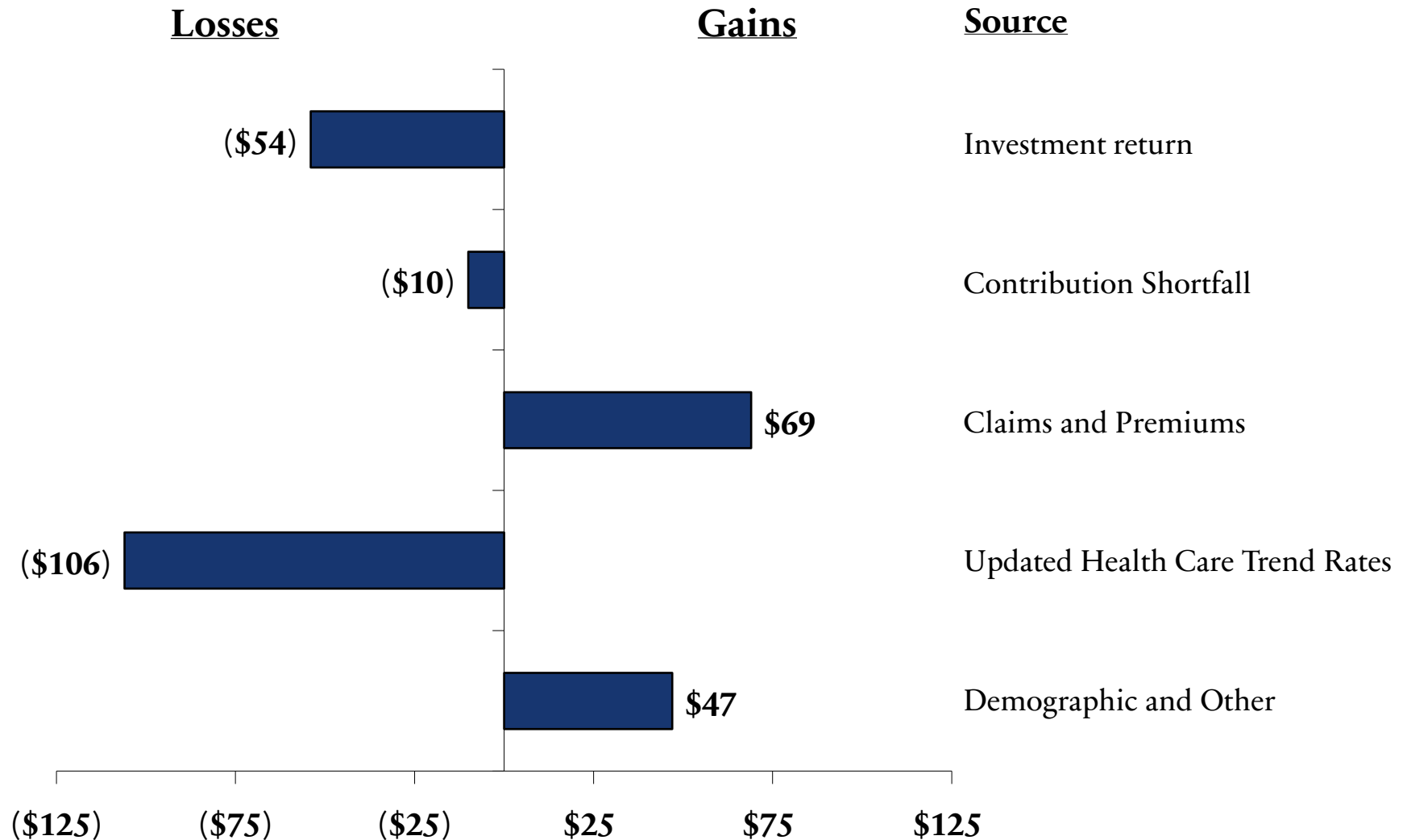


	June 30, 2022	June 30, 2021
Total Normal Cost Rate	1.31%	1.24%
Less Member Rate	<u>0.00%</u>	<u>0.00%</u>
Employer Normal Cost Rate	1.31%	1.24%
Rate to Amortize UAL	<u>1.20%</u>	<u>1.22%</u>
Total Recommended Employer Contribution Rate	2.51%	2.46%
Unfunded Accrued Liability*	\$ 737	\$ 689
Employer Contribution Toward Health Care	1.50%	1.50%
Amortization Period	30	30

* \$ Millions



2022 Health Care Gain/Loss Analysis (\$ Millions)





- The current surcharge level is \$25,000 for the 2022-2023 fiscal year.
- For the 2023-2024 fiscal year, our calculations show a level slightly under \$25,000 would be required to meet the stated funding policy goal, assuming that the Health Care Fund receives no employer contribution in the future. However, due to data limitations and uncertainty from the COVID-19 pandemic, we recommend retaining \$25,000 as the required level.
- The surcharge level is limited to 2.00% of each individual employer's payroll and 1.50% of total System payroll



ASOP 4



- Effective for measurement dates on/after February 15, 2023 (July 1, 2023 valuation for SERS)
- Changes Impacting Public Plans
 - Disclose Low-Default Risk Obligation Measure (LDROM)
 - Disclose Reasonable Actuarially Determined Contribution (ADC)
 - New guidance on amortization of the unfunded actuarial accrued liability
 - Assess implications of Contribution Allocation Procedure (CAP) or Funding Policy
 - Other changes
 - Output Smoothing Methods
 - Addressing contribution lag
 - Gain/loss analysis

ASOP 4 (Low Default Risk Obligation Measure)



- Liability measure that must use a discount rate that reflects low default risk fixed income securities whose cash flows are reasonably consistent with the benefits expected to be paid
- Can be interpreted that the difference in the LDROM and AAL measures the reduction in liability (savings) from investing in a diversified portfolio
- Only the liability measure must be disclosed, not the funded status, unfunded portion of the liability or amortization period
- Communication of the measure may prove challenging
Some may call the LDROM the “true cost” of the plan





- With any funding valuation, the actuary should calculate and disclose a reasonable actuarially determined contribution (ADC) except when assumptions/methods are set by law
- New guidance on UAAL amortization states that each individual base must be either:
 - Fully amortized in a reasonable period of time or
 - Reduces outstanding balance by reasonable amount each year
- Fixed contribution rate plans must determine if fixed rate is the ADC or a different ADC is determined
 - 30-year period may not meet criteria of reasonable
- **Actuarial profession CANNOT force systems to change their funding – these are just disclosures**



Cavanaugh Macdonald
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**Report on the Annual Basic Benefits Valuation of the
School Employees Retirement System of Ohio**

Prepared as of June 30, 2022





Cavanaugh Macdonald

CONSULTING, LLC

The experience and dedication you deserve

November 7, 2022

Board of Trustees
School Employees Retirement System of Ohio
300 East Broad Street, Suite 100
Columbus, OH 43215-3746

Dear Members of the Board:

Presented in this report are the results of the annual actuarial valuation of the basic benefits provided under the School Employees Retirement System of Ohio (SERS) as of June 30, 2022. The purpose of the valuation was to measure the System's funding progress and to calculate the actuarially determined employer contribution rates for the fiscal year beginning July 1, 2022.

The valuation is based upon data, furnished by the SERS staff, concerning active, inactive and retiree members along with pertinent financial information. The complete cooperation of the SERS staff in furnishing materials requested is hereby acknowledged with appreciation.

In order to prepare the results in this report we have utilized appropriate actuarial models that were developed for this purpose. These models use assumptions about future contingent events along with recognized actuarial approaches to develop the needed results.

Future actuarial results may differ significantly from the current results 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. Since the potential impact of such factors is outside the scope of a normal annual actuarial valuation, an analysis of the range of results is not presented herein.

The undersigned are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,

Todd B. Green, ASA, EA, FCA, MAAA
President

John J. Garrett, ASA, FCA, MAAA
Principal and Consulting Actuary

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**REPORT ON THE ANNUAL VALUATION OF THE
SCHOOL EMPLOYEES RETIREMENT SYSTEM OF OHIO**

PREPARED AS OF JUNE 30, 2022

EXECUTIVE SUMMARY

The School Employees Retirement System of Ohio (SERS or System) is a defined benefit public pension fund that provides pensions and access to health care coverage for retired school employees who are covered in nonteaching positions. This includes bus drivers, custodians, treasurers, business officials, administrative assistants, food service providers, and educational aides. This report presents the results of the June 30, 2022, actuarial funding valuation of the System. The primary purposes of performing the actuarial funding valuation are to:

- determine the sufficiency of the Statutory Contribution Rate as set forth in the Ohio statutes;
- determine the experience of the System since the last valuation date;
- disclose asset and liability measures as of the valuation date; and
- analyze and report on trends in System contributions, assets, and liabilities over the past several years.

The actuarial valuation results provide a “snapshot” view of the System’s financial condition on June 30, 2022. Actuarial gains and losses result when the actual experience of the plan (such as asset return, pay increases, turnover, deaths, etc.) is different from that expected by the actuarial assumptions. The System’s unfunded actuarial accrued liability (UAAL) was expected to be \$5,386.0 million as of June 30, 2022, taking into account contributions from the employers and members of \$900.1 million. The actual UAAL is \$5,484.5 million. The net increase of \$98.5 million is attributable to liability and investment gains and losses which are detailed in Section V. The remaining amortization period of the UAAL is 22 years as of June 30, 2022.

The valuation is based on a set of actuarial assumptions which were adopted by the Board based on the five-year experience study for the period ending June 30, 2020. These assumptions are presented in Schedule C.



A summary of the key results from the June 30, 2022 actuarial valuation is shown below. Further detail on the valuation results can be found in the following sections of this Executive Summary.

	June 30, 2022 Valuation Results	June 30, 2021 Valuation Results
Actuarially Determined Contribution Rate	11.22%	12.50%
Employer Contribution Rate	14.00%	14.00%
Sufficiency/(Deficiency)	2.78%	1.50%
Remaining Amortization Period	22	23
Unfunded Actuarial Accrued Liability (\$M)	\$5,484.5	\$5,498.1
Basic Benefit Funded Ratio (Actuarial Assets)	75.48%	74.46%

The funded ratio of the basic benefits is 75.48%. Since this is greater than 70%, per the Board-adopted funding policy, the basic benefits may receive an employer contribution between 13.50% and 14.00% of compensation for FY2023. The Health Care Fund may receive an employer contribution of up to 0.50%. Based on a Board Resolution dated September 15, 2022, the valuation assumes an allocation of the entire 14.00% to the basic benefits and 0.00% allocated to health care consistent with SERS' funding policy. The funding policy requires at least 13.50% of the employers' contributions be allocated to SERS' basic benefits when the funded ratio is 70% but less than 80%, with the remainder (if any) allocated to health care.

Under Ohio Revised Code 3309.374(B), on September 15, 2022, the Board granted an annual cost-of-living-adjustment of 2.5% for eligible SERS members for the 2023 calendar year. This has been included in the valuation for funding purposes.

EXPERIENCE FOR THE LAST PLAN YEAR

Numerous factors contributed to the change in the System's assets, liabilities, and actuarial contribution rate between June 30, 2021 and June 30, 2022. The components are examined in the following discussion. Since the most recent experience study was completed, we note that inflation has been significantly higher than assumed. Inflation is a component of several assumptions so the effects of higher inflation as a component of one assumption may be partially offset by the effect of higher inflation in another. We do not want to give too much credibility to recent experience, but we cannot ignore that current rates of inflation are the highest in the past 40 years. We will continue to monitor inflation in subsequent valuations to assess the reasonableness of the assumed inflation used in the valuation.

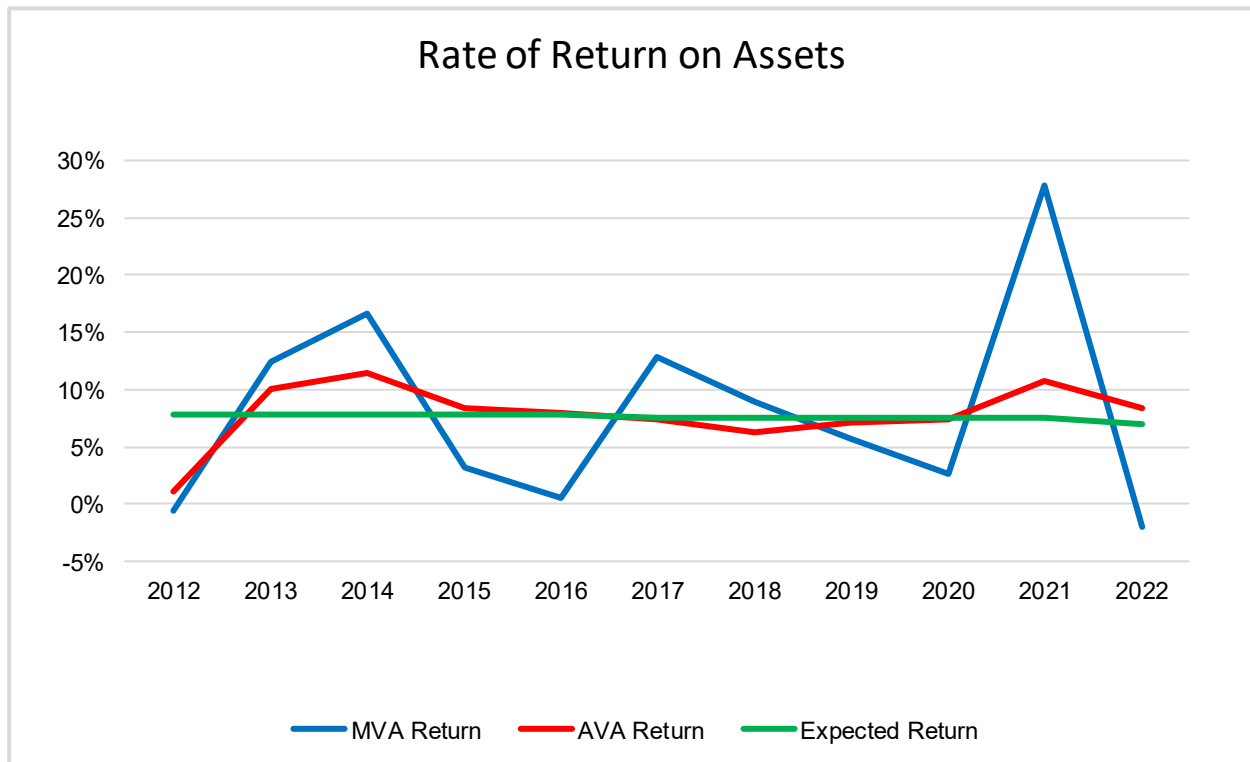
ASSETS

As of June 30, 2022, SERS' basic benefits had net assets of \$16,962,691,005, when measured on a market value basis. This was a decrease of \$877,355,983 from the previous year. The market value of assets is not used directly in the calculation of the unfunded actuarial accrued liability and the actuarially determined contribution. The asset valuation smoothing method, which recognizes the annual unexpected portion of market value investment returns over a four-year period, attempts to reduce the effect of market volatility. The resulting amount is called the "actuarial value of assets" and is utilized to determine the actuarial valuation results. In this year's valuation, the actuarial value of assets as of June 30, 2022, was \$16,886,972,559, an increase of \$855,359,767 from the value in the prior year. The components of change in the asset values are shown in the table below.



	Actuarial Value	Market Value
Net Assets, June 30, 2021	\$ 16,031,612,792	\$ 17,840,046,988
- Employer and Member Contributions	+ 900,194,639	+ 900,194,639
- Benefit Payments	- 1,417,613,777	- 1,417,613,777
- Investment Gains	+ 1,372,778,905	+ (359,936,845)
Net Assets, June 30, 2022	16,886,972,559	16,962,691,005

The estimated investment return on the market value of assets for FY2022 was (2.04)%. Due to the investment experience gain for FY 2021, the resulting return on the smoothed actuarial value of assets was 8.31%. The return on the funds supporting Basic Benefits was 8.70%. As this rate of return was greater than the assumed rate of 7.00%, there was an actuarial investment experience gain of \$268.6 million. The return on the Health Care Fund is (1.82)%. Please see Section III, Schedule B, and Schedule F of this report for more detailed information on the market and actuarial value of assets.



Market value returns have been very volatile. As can be seen in this graph, the return on actuarial assets is much smoother than the return on market value. The asset smoothing method impacts only the timing of when the actual market experience is recognized in the valuation process. The remaining deferred investment experience net gain of \$76 million will be absorbed in future years.

LIABILITIES

The actuarial accrued liability is the portion of the present value of future benefits allocated to service performed up to the valuation date. The difference between this liability and the actuarial value of assets is called the unfunded actuarial accrued liability (UAAL). The dollar amount of unfunded actuarial accrued liability is reduced if the contributions to the System exceed the normal cost for the year, plus interest on the prior year's UAAL.



The unfunded actuarial accrued liability is shown as of June 30, 2022 in the following table:

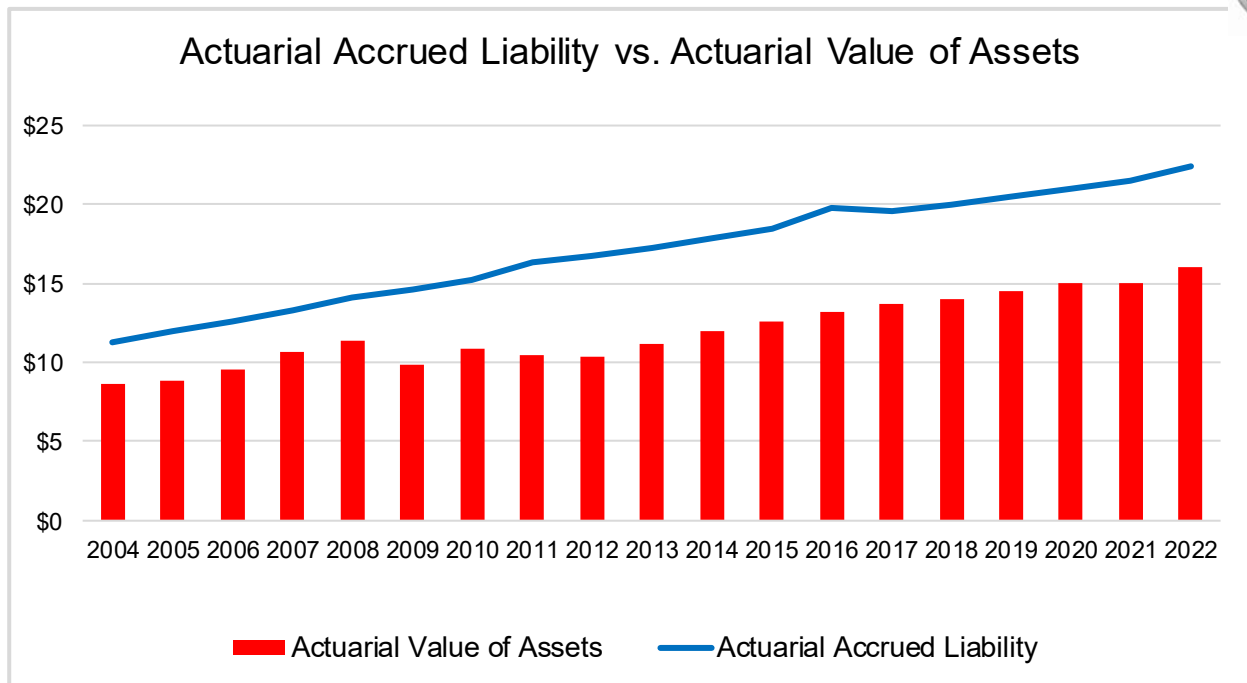
	Actuarial Value of Assets	Market Value of Assets
Actuarial Accrued Liability	\$22,371,468,812	\$22,371,468,812
Value of Assets	\$16,886,972,559	\$16,962,691,005
Unfunded Actuarial Accrued Liability*	\$5,484,496,253	\$5,408,777,807
Funded Ratio	75.48%	75.82%

* See Appendix B of the report for the detailed development of the unfunded actuarial accrued liability.

Changes in the UAAL occur for various reasons. The net decrease in the UAAL from June 30, 2021, to June 30, 2022, was \$13,647,959. The components of this net change are shown in the table below:

Unfunded Actuarial Accrued Liability, June 30, 2021		
(\$ Millions)		\$5,498.1
Expected increase due to amortization method	(\$112.1)	
Investment experience	(\$268.6)	
Liability experience	\$330.1	
Assumption Changes	\$37.0	
Total		(\$13.6)
Unfunded Actuarial Accrued Liability, June 30, 2022		\$5,484.5

As shown above, various components impacted the UAAL. Actuarial gains (losses) result from actual experience that is more (less) favorable than anticipated based on the actuarial assumptions. The amounts are measured as the difference between the expected unfunded actuarial accrued liability and the actual unfunded actuarial accrued liability net of any impact due to changes in actuarial assumptions and methods or benefit provisions. Overall, the System experienced a net decrease to the UAAL of \$13.6 million. The net UAAL decrease is comprised primarily of experience and investment gains; the largest sources of liability losses were due to retirement experience, termination experience and salary experience. Finally, there was an additional increase in the UAAL due to recognition of the 2.50% cost-of-living adjustment granted by the Board for all eligible SERS members for calendar year 2023.

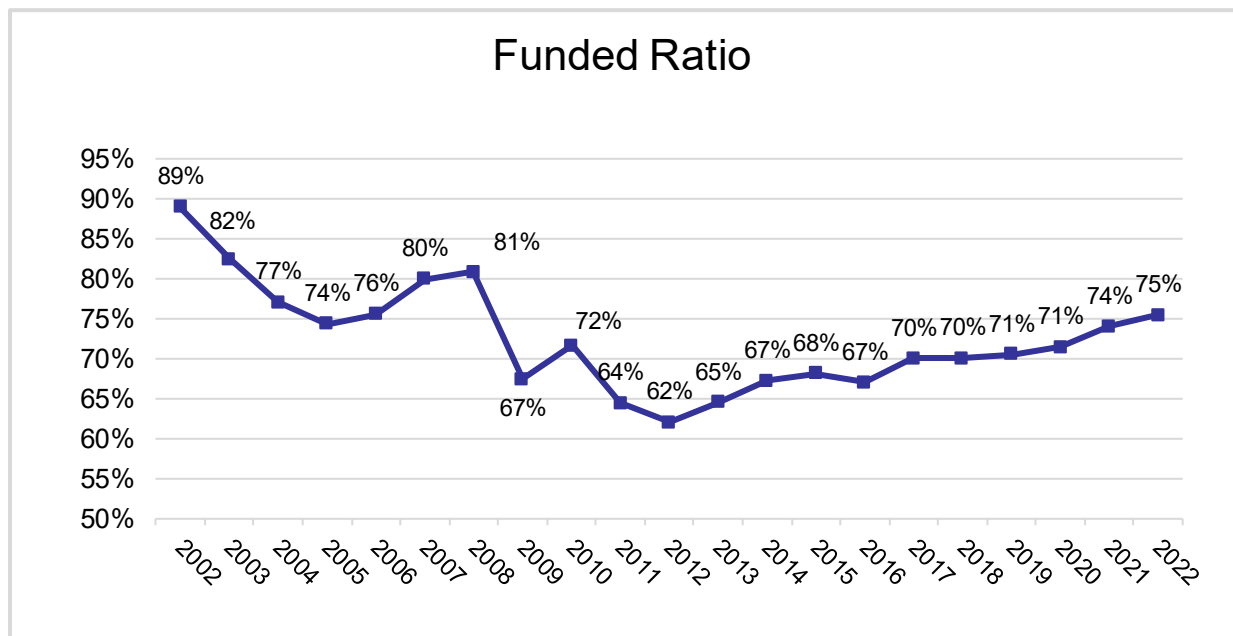


Since June 30, 2004, the actuarial accrued liability has been higher than the actuarial value of assets. Investment experience below the assumed rate of return was the primary source of the increased difference between the actuarial accrued liability and actuarial assets. SERS implemented pension reform to improve the System's funding progress. In addition, the Board adopted a new funding policy that will allocate a higher portion of the employer contribution toward the basic benefits until the fund achieves a funded status of 90%. An evaluation of the unfunded actuarial accrued liability on a pure dollar basis may not provide a complete analysis since only the difference between the assets and liabilities (which are both very large numbers) is reflected. Another way to evaluate the unfunded actuarial accrued liability and the progress made in its funding is to track the funded ratio, the ratio of the actuarial value of assets to the actuarial accrued liability.

	6/30/18	6/30/19	6/30/20	6/30/21	6/30/22
Funded Ratio	70.07%	70.51%	71.49%	74.46%	75.48%
Unfunded Actuarial Accrued Liability (\$M)	\$ 5,985.5	\$ 6,054.2	\$ 5,997.1	\$ 5,498.1	\$5,484.5



The longer-term historical funded ratio information is shown in the chart below.



Investment returns are the primary source of decreases in the funded ratio as can be seen during the 2002-2003 “tech bubble” recession and the “great” recession of 2008-2009. Board actions which led to legislation to modify the Plan in combination with improved experience of the System are attributable to the improved funded ratio since 2016.

CONTRIBUTION RATE

Under the Entry Age Normal cost method, the actuarial contribution rate consists of two components:

- a "normal cost" for the portion of projected liabilities allocated by the actuarial cost method to service of members during the year following the valuation date which is funded by both member and employer contributions, and
- an "unfunded actuarial accrued liability contribution" for the excess of the portion of projected liabilities allocated to service-to-date over the actuarial value of assets.



See Section VI of the report for the detailed development of these contribution rates which are summarized in the following table:

Contribution Rates	June 30, 2022	June 30, 2021
1. Employer Portion of Normal Cost Rate	0.81%	1.26%
2. UAAL Contribution Rate	10.41%	11.24%
3. Total Actuarial Determined Contribution Rate (1) + (2)	11.22%	12.50%
4. Funded Ratio	75.48%	74.46%
5. Total Employer Contribution Rate	14.00%	14.00%
6. Amount Allocated to Basic Benefits	14.00%	14.00%

As discussed earlier, SERS' basic benefits includes retirement, disability and survivor benefits, along with Medicare Part B reimbursements and lump sum retiree death benefits. SERS also provides access to health care coverage for retiree members. The Health Care Fund is partially supported by employer contributions that are not required for actuarially funding basic benefits. The funding policy is expected to accelerate the pace at which SERS' basic benefits will achieve a funded ratio equal to 90%.



**REPORT ON THE ANNUAL VALUATION OF THE
SCHOOL EMPLOYEES RETIREMENT SYSTEM OF OHIO**

PREPARED AS OF JUNE 30, 2022

SECTION I – SUMMARY OF PRINCIPAL RESULTS

1. This report, prepared as of June 30, 2022, presents the results of the annual actuarial valuation of the basic benefits provided under the System, including pension, Medicare Part B reimbursement and post-retirement death benefits. For convenience of reference, the principal results of the valuation and a comparison with the preceding year's results are summarized in the following table.

SUMMARY OF PRINCIPAL RESULTS

	June 30, 2022	June 30, 2021
Active members included in valuation		
Number	155,063	146,646
Annual Compensation*	\$3,994,657,693	\$3,622,097,199
Retirees		
Number	81,151	80,721
Annual allowances	\$1,295,438,626	\$1,254,934,762
Deferred Vesteds		
Number	6,118	5,972
Annual deferred allowances	\$41,365,993	\$38,777,532
Assets (net of Health Care Assets)		
Market related actuarial value	\$16,886,972,559	\$16,031,612,792
Market value	\$16,962,691,005	\$17,840,046,988
Unfunded Accrued Liability	\$5,484,496,253	\$5,498,144,212
Funded Ratio (AVA/AAL)		
All Basic Benefits	75.48%	74.46%
Pension Benefits	75.71%	74.80%
Medicare Part B	63.21%	56.94%
Post-retirement Death Benefits	71.68%	67.71%
Actuarially Determined Contribution Rate		
Normal	0.81%	1.26%
Accrued liability	10.41%	11.24%
Total	11.22%	12.50%
Funding Policy Contribution Rate	14.00%	14.00%
Accrued liability amortization period (years)	22	23

* The annual compensation as of June 30, 2021 reflect imputed salaries.



2. The statute sets a contribution cap of 24% of payroll: 14% from employers and 10% from employees. Employer contributions in excess of those required to support the basic benefits may be allocated to retiree health care funding. If the funded ratio is less than 70%, the entire 14% employers' contribution shall be allocated to SERS' basic benefits. If the funded ratio is 70% but less than 80%, at least 13.50% of the employers' contribution shall be allocated to SERS' basic benefits, with the remainder (if any) allocated to the Health Care Fund. If the funded ratio is 80% but less than 90%, at least 13.25% of the employers' contribution shall be allocated to SERS' basic benefits, with the remainder (if any) allocated to the Health Care Fund. If the funded ratio is 90% or greater, the Health Care Fund may receive any portion of the employers' contribution that is not needed to fund SERS' basic benefits.
3. The valuation balance sheet showing the results of the valuation is given in Schedule A.
4. Comments on the valuation results are given in Section IV, comments on the experience and the sources of actuarial gains and losses during the valuation year are given in Section V, and the rates of contribution payable by employers are given in Section VI.
5. Schedule B of this report presents the development of the actuarial value of assets. Schedule C details the actuarial assumptions and methods employed. Schedule D gives a summary of the benefit and contribution provisions of the plan.



SECTION II – MEMBERSHIP DATA

Data regarding the membership of the System for use as a basis for the valuation was furnished by the System's staff. The following tables summarize the membership of the system as of June 30, 2022, upon which the valuation was based. Detailed tabulations of the data are given in Schedule E.

Active Members

Number	Payroll	Group Averages		
		Salary	Age	Service
155,063	\$3,994,657,693	\$25,762	47.2	7.6

The total number of active members includes 43,724 vested members and 111,339 non-vested members. Those who reached 25 years of service on or before August 1, 2017 were eligible to retire under the previous age and service credit eligibility requirements.

The following table shows a six-year schedule of active member valuation data.

SCHEDULE OF SERS ACTIVE MEMBER VALUATION DATA

Valuation Date	Number	Annual Payroll	Annual Average Pay	% Increase in Average Pay
6/30/2017	157,981	\$3,302,805,662	\$20,906	(11.2)%
6/30/2018	158,343	3,332,395,171	21,045	0.7
6/30/2019	159,363	3,462,524,396	21,727	3.2
6/30/2020	156,579	3,477,578,726	22,210	2.2
6/30/2021	146,646	3,622,097,199 *	24,700	11.2
6/30/2022	155,063	3,994,657,693	25,762	4.3

* Effective June 30, 2021, the annual compensation reflects imputed salaries.



The following table shows the number and annual retirement allowances payable to retiree members and their beneficiaries on the roll of the Retirement System as of the valuation date as well as certain group averages.

Retiree Lives

Type of Benefit Payment	Number	Annual Benefits	Group Averages	
			Benefit	Age
Retirees and Beneficiaries	72,330	\$1,169,392,175	\$16,167	75.2
Disability	4,656	85,499,173	18,363	67.0
Survivors	4,165	40,547,278	9,735	72.5
Total in SERS	81,151	\$1,295,438,626	\$15,963	74.6

This valuation also includes 276,880 inactive members eligible for a contribution refund only (including 259,359 members reported separately who had completed one or more years of service before terminating). Their contributions totaled \$247,134,048 as of June 30, 2022. There were also 6,118 terminated vested members with annual deferred pension benefits of \$41,365,993. Included in the “Retiree” numbers in the above table are 12,670 reemployed retirees with account balances of \$131,843,689 (including employer contributions and interest), 856 reemployed retirees receiving only an annuity from their contributions and their employers’ matching contributions, and 1,026 reemployed retirees receiving such annuities in addition to their regular pension benefits. The sum of the annuity payments attributable to these reemployed retirees is \$8,349,862.



SECTION III – ASSETS

1. As of June 30, 2022, the total market value of assets amounted to \$17,574,265,414. All figures include the combined Pension Trust Fund, Medicare B Fund, Death Benefit Fund, and Health Care Fund, but exclude the QEBA Fund. The return on the combined funds including the Health Care Fund is (2.04)%. The return on the funds supporting Basic Benefits is (2.05)%. The return on the Health Care Fund is (1.82)%.

Asset Summary Based on Market Value			
(1)	Assets at June 30, 2021	\$	18,440,377,176
(2)	Contributions and Misc. Revenue		1,051,344,069
(3)	Investment Gain (Loss)		(371,045,165)
(4)	Benefit Payments		(1,546,410,666)
(5)	Assets at June 30, 2022 (1) + (2) + (3) + (4)	\$	17,574,265,414
(6)	Annualized Rate of Return*		(2.04) %

2. The four-year smoothed market related actuarial value of assets used for the current valuation was \$17,498,546,968. Schedule B shows the development of the actuarial value of assets as of June 30, 2022. Again all figures include the combined Pension Trust Fund, Medicare B Fund, Death Benefit Fund, and Health Care Fund, but exclude the QEBA Fund. The return on the combined funds including the Health Care Fund is 8.31%. The return on the funds supporting Basic Benefits is 8.70%. The return on the Health Care Fund is (1.82)%.

Asset Summary Based on Actuarial Value			
(1)	Assets at June 30, 2021	\$	16,631,942,980
(2)	Contributions and Misc. Revenue		1,051,344,069
(3)	Investment Gain (Loss)		1,361,670,585
(4)	Benefit Payments		(1,546,410,666)
(5)	Assets at June 30, 2022 Before Application of Corridor (1) + (2) + (3) + (4)	\$	17,498,546,968
(6)	Annualized Rate of Return*		8.31 %

*Based on the approximation formula: $I / [0.5 \times (A + B - I)]$, where

I = Investment Gain (Loss)
 A = Beginning of year asset value
 B = End of year asset value



SECTION IV - COMMENTS ON VALUATION

Schedule A of this report contains the valuation balance sheet which shows the present and prospective assets and liabilities of the System as of June 30, 2022.

1. The total retirement benefit valuation balance sheet shows that the System has total future retirement benefit liabilities of \$26,077,955,316, of which \$13,266,785,507 is for the future benefits payable for present retiree members and beneficiaries of deceased members; \$769,819,680 is for the future benefits payable for present inactive members; and \$12,041,350,129 is for the future benefits payable for present active members. Against these retirement benefit liabilities, the System has a total present actuarial value of assets of \$16,886,972,559 as of June 30, 2022. The difference of \$9,190,982,757 between the total liabilities and the total present actuarial value of assets represents the present value of contributions to be made in the future for retirement benefits. Of this amount, \$3,486,942,734 is the present value of future contributions expected to be made by members, and the balance of \$5,704,040,023 represents the present value of future contributions payable by the employers.
2. The employers' contributions to the System on account of retirement benefits consist of normal contributions, accrued liability contributions and contributions for administrative expenses. The valuation indicates that employer normal contributions at the rate of 0.52% of payroll for basic pension benefits, 0.02% of payroll for post-retirement death benefits, and 0.27% of payroll for Medicare Part B benefits are required to provide the benefits of the System for the average member of SERS. Prospective employer normal contributions on account of retirement benefits at the above rates have a present value of \$219,543,770.
3. For pension benefits, it is recommended that the unfunded accrued liability contribution rate payable by the employers on account of retirement benefits be set at 10.12% of payroll. For post-retirement death benefits, it is recommended that the unfunded accrued liability contribution rate payable by the employers on account of retirement benefits be set at 0.02% of payroll. Finally, for Medicare Part B benefits, it is recommended that the unfunded accrued liability contribution rate payable by the employers on account of retirement benefits be set at 0.27% of payroll. These rates are sufficient to amortize the unfunded accrued liability of \$5,484,496,253 over 22 years based on the assumption that the aggregate payroll for SERS members will increase by 1.75% each year.
4. The present value of the total future contributions to be made by the employers for basic benefits is the sum of the future employer normal contributions and the unfunded accrued liability contributions and equals \$5,704,040,023.



SECTION V – DERIVATION OF EXPERIENCE GAINS AND LOSSES

Actual experience will never (except by coincidence) match exactly with assumed experience. It is assumed that gains and losses will be in balance over a period of years, but sizable year-to-year fluctuations are common. Detail on the derivation of the experience gain (loss) for the year ended June 30, 2022, is shown below in \$ millions.

Experience (Gain/Loss)

Total Basic Benefits June 30:		2022	2021	2020	2019	2018	2017
(1)	UAAL from last valuation	\$ 5,498.1	5,997.1	6,054.2	5,985.5	5,875.3	6,591.1
(2)	Normal cost from last valuation	406.2	347.6	344.1	330.6	342.4	312.5
(3)	Contributions	900.1	830.6	843.9	809.9	759.9	804.4
(4)	Interest accrual: [(1) + (2) - (3)*.5] x .07	381.8	444.8	448.3	443.3	437.8	487.6
(5)	Expected UAAL before changes: (1) + (2) - (3) + (4)	\$ 5,386.0	5,958.9	6,002.7	5,949.5	5,895.6	6,586.8
(6)	Change due to plan amendments	0.0	0.0	0.0	0.0	357.6	998.5
(7)	Change due to new actuarial assumption or methods	(37.0)	(126.5)	0.0	0.0	0.0	0.0
(8)	Expected UAAL after changes: (5) - (6) - (7)	\$ 5,423.0	6,085.4	6,002.7	5,949.5	5,538.0	5,588.3
(9)	Actual UAAL from this valuation	\$ 5,484.5	5,498.1	5,997.1	6,054.2	5,985.5	5,875.3
(10)	Total Gain/(Loss): (8) - (9)	\$ (61.5)	587.3	5.6	(104.7)	(447.4)	(287.0)
(11)	Investment Gain/(Loss):	\$ 268.6	431.3	7.1	(44.1)	(161.1)	(12.2)
(12)	Non-Investment Gain/(Loss)	\$ (330.1)	155.8	(1.5)	(60.6)	(286.3)	(274.8)

Pension June 30:		2022	2021	2020	2019	2018	2017
(1)	UAAL from last valuation	\$ 5,316.4	5,789.8	5,822.7	5,735.1	5,611.3	6,315.7
(2)	Normal cost from last valuation	395.0	338.8	335.4	322.1	334.1	305.6
(3)	Contributions	871.7	803.0	814.0	780.6	731.8	778.7
(4)	Interest accrual: [(1) + (2) - (3)*.5] x .07	369.3	429.6	431.4	425.0	418.5	467.4
(5)	Expected UAAL before changes: (1) + (2) - (3) + (4)	\$ 5,209.0	5,755.2	5,775.5	5,701.6	5,632.1	6,310.0
(6)	Change due to plan amendments	0.0	0.0	0.0	0.0	357.6	998.5
(7)	Change due to new actuarial assumption or methods	(37.0)	(120.9)	0.0	0.0	0.0	0.0
(8)	Expected UAAL after changes: (5) - (6) - (7)	\$ 5,246.0	5,876.1	5,775.5	5,701.6	5,274.5	5,311.5
(9)	Actual UAAL from this valuation	\$ 5,329.7	5,316.4	5,789.8	5,822.7	5,735.1	5,611.3
(10)	Total Gain/(Loss): (8) - (9)	\$ (83.7)	559.7	(14.3)	(121.1)	(460.6)	(299.8)
(11)	Investment Gain/(Loss):	\$ 264.7	425.4	6.4	(44.1)	(159.0)	(12.3)
(12)	Non-Investment Gain/(Loss)	\$ (348.4)	134.3	(20.7)	(77.0)	(301.6)	(287.5)



SECTION V – DERIVATION OF EXPERIENCE GAINS AND LOSSES
(\$ Millions)

Medicare Part B June 30:		2022	2021	2020	2019	2018	2017
(1)	UAAL from last valuation	\$ 168.5	194.0	217.4	235.4	249.1	259.7
(2)	Normal cost from last valuation	10.5	8.3	8.2	8.0	7.8	6.4
(3)	Contributions	26.2	26.3	28.3	27.3	26.3	24.1
(4)	Interest accrual: [(1) + (2) - (3)*.5] x .007	11.6	14.1	15.8	17.2	18.3	19.0
(5)	Expected UAAL before changes: (1) + (2) - (3) + (4)	\$ 164.4	190.1	213.1	233.3	248.9	261.0
(6)	Change due to plan amendments	0.0	0.0	0.0	0.0	0.0	0.0
(7)	Change due to new actuarial assumption or methods	0.0	(4.5)	0.0	0.0	0.0	0.0
(8)	Expected UAAL after changes: (5) - (6) - (7)	\$ 164.4	194.6	213.1	233.3	248.9	261.0
(9)	Actual UAAL from this valuation	\$ 143.1	168.5	194.0	217.4	235.4	249.1
(10)	Total Gain/(Loss): (8) - (9)	\$ 21.3	26.1	19.1	15.9	13.5	11.9
(11)	Investment Gain/(Loss):	\$ 3.5	5.2	0.7	0.1	(1.9)	0.1
(12)	Non-Investment Gain/(Loss)	\$ 17.8	20.9	18.4	15.8	15.4	11.8

Post-Retirement Death Benefits June 30:		2022	2021	2020	2019	2018	2017
(1)	UAAL from last valuation	\$ 13.2	13.3	14.1	15.0	14.9	15.7
(2)	Normal cost from last valuation	0.7	0.5	0.5	0.5	0.5	0.5
(3)	Contributions	2.2	1.4	1.5	2.0	1.8	1.6
(4)	Interest accrual: [(1) + (2) - (3)*.5] x .007	0.9	1.0	1.0	1.1	1.1	1.2
(5)	Expected UAAL before changes: (1) + (2) - (3) + (4)	\$ 12.6	13.4	14.1	14.6	14.7	15.8
(6)	Change due to plan amendments	0.0	0.0	0.0	0.0	0.0	0.0
(7)	Change due to new actuarial assumption or methods	0.0	(1.1)	0.0	0.0	0.0	0.0
(8)	Expected UAAL after changes: (5) - (6) - (7)	\$ 12.6	14.5	14.1	14.6	14.7	15.8
(9)	Actual UAAL from this valuation	\$ 11.7	13.2	13.3	14.1	15.0	14.9
(10)	Total Gain/(Loss): (8) - (9)	\$ 0.9	1.3	0.8	0.5	(0.3)	0.9
(11)	Investment Gain/(Loss):	\$ 0.4	0.7	0.0	(0.1)	(0.2)	0.0
(12)	Non-Investment Gain/(Loss)	\$ 0.5	0.6	0.8	0.6	(0.1)	0.9



ANALYSIS OF FINANCIAL EXPERIENCE

Gains and (Losses) in Accrued Liabilities Resulting from Difference Between Assumed Experience and Actual Experience (\$ Millions)

Type of Activity	Pension	Medicare Part B	Post- Retirement Death Benefit	Total Basic Benefits
Age & Service Retirements. If members retire at older ages, there is a gain. If younger ages, a loss.	\$ (69.6)	\$ 2.7	\$ 1.1	\$ (65.8)
Disability Retirements. If disability claims are less than assumed, there is a gain. If more claims, a loss.	(6.3)	(0.1)	0.0	(6.4)
Pre-Retirement Death Benefits. If survivor claims are less than assumed, there is a gain. If more claims, there is a loss.	(6.6)	(0.4)	0.0	(7.0)
Withdrawal From Employment. If more liabilities are released by withdrawals than assumed, there is a gain. If smaller releases, a loss.	(46.9)	3.2	0.2	(43.5)
Pay Increases. If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.	(212.3)	0.0	0.0	(212.3)
New Members. Additional accrued liability attributable to members who entered the plan since the last valuation.	(50.7)	(1.8)	(0.1)	(52.6)
Investment Income. If there is a greater investment income than assumed, there is a gain. If less income, a loss.	264.7	3.5	0.4	268.6
Death After Retirement. If retired members live longer than assumed, there is a loss. If not as long, a gain.	67.3	16.1	(0.7)	82.7
Other. Miscellaneous gains and losses resulting from changes in valuation software, data adjustments, timing of financial transactions, etc.	<u>(23.3)</u>	<u>(1.9)</u>	<u>0.0</u>	<u>(25.2)</u>
Gain (or Loss) During Year From Financial Experience	\$ (83.7)	\$ 21.3	\$ 0.9	\$ (61.5)
Non-Recurring Items. Adjustments for plan amendments, assumption changes and method changes	<u>(37.0)</u>	<u>0.0</u>	<u>0.0</u>	<u>(37.0)</u>
Composite Gain (or Loss) During Year	\$ (120.7)	\$ 21.3	\$ 0.9	\$ (98.5)



SECTION VI – ACTUARIALLY DETERMINED CONTRIBUTION RATES

The valuation balance sheet gives the basis for determining the percentage rates for contributions to be made by employers to the Retirement System. The following table shows the rates of contribution payable by employers.

Actuarially Determined Contribution Rates

Contribution for	Pension	Post-Retirement Death Benefit	Medicare Part B	Total Basic Benefits
A. Normal Cost:				
(1) Service retirement benefits	7.25%			
(2) Disability benefits	0.88			
(3) Survivor benefits	0.34			
(4) Refunds	2.05			
(5) Total	10.52%	0.02%	0.27%	10.81%
B. Member Contributions	10.00%	0.00%	0.00%	10.00%
C. Employer Normal Cost: [A(5) - B]	0.52%	0.02%	0.27%	0.81%
D. Unfunded Actuarial Accrued Liability Contributions	10.12%	0.02%	0.27%	10.41%
E. Total Recommended Employer Contribution Rate:[C+D]	10.64%	0.04%	0.54%	11.22%

The statute sets a contribution cap of 24% of payroll: 14% from employers and 10% from employees. Employer contributions in excess of those required to support the basic benefits may be allocated to retiree health care funding. If the funded ratio is less than 70%, all 14% of the employers' contribution shall be allocated to SERS' basic benefits. If the funded ratio is 70% but less than 80%, at least 13.50% of the employers' contribution shall be allocated to SERS' basic benefits, with the remainder (if any) allocated to the Health Care Fund. If the funded ratio is 80% but less than 90%, at least 13.25% of the employers' contribution shall be allocated to SERS' basic benefits, with the remainder (if any) allocated to the Health Care Fund. If the funded ratio is 90% or greater, the Health Care Fund may receive any portion of the employers' contribution that is not needed to fund SERS' basic benefits. Based on a Board Resolution dated September 15, 2022, the entire 14% of the employers' contribution will be allocated to SERS' basic benefits.



SECTION VII – SCHEDULE OF FUNDING PROGRESS
(\$ Millions)

Actuarial Valuation Date	Value of Plan Assets (a)	Actuarial Accrued Liability (AAL) Entry Age (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll (b - a) / (c)
Pension Benefits						
6/30/2017	\$ 13,537	\$ 19,148	\$ 5,611	70.7%	\$ 3,303	169.9%
6/30/2018	13,824	19,559	5,735	70.7	3,332	172.1
6/30/2019	14,267	20,090	5,823	71.0	3,463	168.1
6/30/2020	14,811	20,601	5,790	71.9	3,478	166.5
6/30/2021	15,781	21,097	5,316	74.8	3,622	146.8
6/30/2022	16,611	21,941	5,330	75.7	3,995	133.4
Medicare Part B						
6/30/2017	\$ 153	\$ 402	\$ 249	38.0%	\$ 3,303	7.5%
6/30/2018	164	400	236	41.1	3,332	7.1
6/30/2019	180	397	217	45.3	3,463	6.3
6/30/2020	199	393	194	50.6	3,478	5.6
6/30/2021	223	391	169	57.0	3,622	4.6
6/30/2022	246	389	143	63.2	3,995	3.6
Post-Retirement Death Benefits						
6/30/2017	\$ 23	\$ 38	\$ 15	60.5%	\$ 3,303	0.5%
6/30/2018	24	39	15	61.5	3,332	0.5
6/30/2019	26	40	14	65.0	3,463	0.4
6/30/2020	27	40	13	67.5	3,478	0.4
6/30/2021	28	41	13	68.3	3,622	0.4
6/30/2022	30	41	11	73.2	3,995	0.3



SECTION VIII – RISK CONSIDERATIONS

A typical retirement plan faces many different risks, but the greatest risk is the inability to make benefit payments when due. If plan assets are depleted, benefits may not be paid which could create legal and litigation risk or the plan could become “pay as you go”. The term “risk” is most commonly associated with an outcome with undesirable results. However, in the actuarial world, risk can be translated as uncertainty. The actuarial valuation process uses many actuarial assumptions to project how future contributions and investment returns will meet the cash flow needs for future benefit payments. Of course, we know that actual experience will not unfold exactly as anticipated by the assumptions and that uncertainty, whether favorable or unfavorable, creates risk. ASOP 51 defines risk as the potential of actual future measurements to deviate from expected results due to actual experience that is different than the actuarial assumptions.

The various risk factors for a given plan can have a significant impact – positive or negative – on the actuarial projection of liability and contribution rates.

There are a number of risks inherent in the funding of a defined benefit plan. These include:

- economic risks, such as investment return and price inflation;
- demographic risks such as mortality, payroll growth, aging population including impact of baby boomers, and retirement ages;
- contribution risk, i.e., the potential for contribution rates to be too high for the plan sponsor/employer to pay and
- external risks such as the regulatory and political environment.

There is a direct correlation between healthy, well-funded retirement plans and consistent contributions equal to the full actuarial contribution rate each year. The System is primarily funded by member and employer contributions to the trust fund, together with the earnings on these accumulated contributions. These contributions fund benefit accruals for current active members and administrative expenses. The remainder of the contributions amortizes the unfunded actuarial accrued liability. The contribution rates are set by state statute and are intended to provide the needed amounts to fund the system over time. The purpose of the valuation is to determine if the fixed employer and member contributions remain sufficient to fund the Plan. Due to the fixed nature of the contributions actuarial gains and losses are reflected in the amortization period. Generally, the largest source of actuarial gains and losses are caused by investment volatility. In addition, the unfunded liability is amortized as a level percentage of pay assuming payroll will grow by 1.75% per year. A key risk factor to the System’s funding is that over time, the Statutory Contribution Rates will be insufficient to accumulate enough funds, with investment income, to fund the promised benefits. The funding insufficiency can be caused by amortization periods that are too long or by payroll not growing at the assumed rate.

The other significant risk factor for the System is investment return because of the volatility of returns and the size of plan assets compared to payroll. A perusal of historical returns over 10-20 years reveals that the actual return each year is rarely close to the average return for the same period. This is to be expected, given the underlying capital market assumptions and the System’s asset allocation. To the extent market rates of interest affect the expected return on assets, there is a risk of change to the discount rate which determines the present value of liabilities and actuarial valuation results.



A key demographic risk for the Retirement System is improvements in mortality (longevity) greater than anticipated. Mortality risk arises because there is unexpected mortality improvement, perhaps from a significant medical breakthrough that could quickly increase liabilities. While this is an exposure to risk, it represents a small probability.

The following exhibits summarize some historical information that helps indicate how certain key risk metrics have changed over time. Many are due to the maturing of the retirement system.

**Historical Asset Volatility Ratios
(in 1,000's)**

As a retirement system matures, the size of the market value of assets increases relative to the covered payroll of active members, on which the System is funded. The size of the plan assets relative to covered payroll, sometimes referred to as the asset volatility ratio, is an important indicator of the contribution risk for the System. The higher this ratio, the more sensitive a plan's contribution rate is to investment return volatility. In other words, it will be harder to recover from investment losses with increased contributions.

Fiscal Year End	Market Value of Assets (\$ Millions)	Covered Payroll (\$ Millions)	Asset Volatility Ratio
6/30/2009	\$8,134	\$2,787	2.92
6/30/2010	9,072	2,843	3.19
6/30/2011	10,619	2,852	3.72
6/30/2012	10,332	2,788	3.71
6/30/2013	11,300	2,747	4.11
6/30/2014	12,821	2,759	4.65
6/30/2015	12,797	2,845	4.50
6/30/2016	12,452	2,932	4.25
6/30/2017	13,614	3,303	4.12
6/30/2018	14,271	3,332	4.28
6/30/2019	14,544	3,463	4.20
6/30/2020	14,420	3,478	4.15
6/30/2021	17,840	3,622	4.93
6/30/2022	16,963	3,995	4.25

The assets at June 30, 2022 are 425% of payroll, so underperforming the investment return assumption by 1.00% (i.e., earn 6.00% for one year) is equivalent to 4.25% of payroll. While the actual impact in the first year is mitigated by the asset smoothing method and amortization of the UAL, this illustrates the risk associated with volatile investment returns.



Historical Cash Flows

Plans with negative cash flows will experience increased sensitivity to investment return volatility. Cash flows, for this purpose, are measured as contributions less benefit payments and administrative expenses. If the System has negative cash flows and then experiences returns below the assumed rate, there are fewer assets to be reinvested to earn the higher returns that typically follow. While any negative cash flow will produce such a result, it is typically a negative cash flow of more than 5% of MVA that may cause significant concerns. The System has negative cash flows which range from 3% to 4% for the prior five years, so there is no immediate concern.

Fiscal Year End	Market Value of Assets (\$ Millions)	Contributions (\$ Millions)	Benefit Payments & Expenses (\$ Millions)	Net Cash Flow (\$ Millions)	Net Cash Flow as % of Market Value
6/30/2009	\$8,134	\$587	\$779	(\$192)	(2.36%)
6/30/2010	9,072	704	822	(118)	(1.30)
6/30/2011	10,619	682	880	(197)	(1.86)
6/30/2012	10,332	697	946	(249)	(2.41)
6/30/2013	11,300	695	1,020	(325)	(2.88)
6/30/2014	12,821	701	1,069	(368)	(2.87)
6/30/2015	12,797	702	1,156	(455)	(3.56)
6/30/2016	12,452	751	1,203	(452)	(3.63)
6/30/2017	13,614	804	1,256	(451)	(3.31)
6/30/2018	14,271	760	1,335	(575)	(4.03)
6/30/2019	14,544	810	1,368	(558)	(3.84)
6/30/2020	14,420	844	1,354	(510)	(3.54)
6/30/2021	17,840	831	1,387	(556)	(3.12)
6/30/2022	16,963	900	1,439	(539)	(3.18)



Liability Maturity Measurement

Most public sector retirement systems have been in operation for many years. As a result, they have aging plan populations, and in some cases declining active populations, resulting in an increasing ratio of retirees to active members and a growing percentage of retiree liability. The retirement of the remaining baby boomers over the next decade is expected to further exacerbate the aging of the retirement system population. With more of the total liability residing with retirees, investment volatility has a greater impact on the funding of the system since it is more difficult to restore the system financially after losses occur when there is comparatively less payroll over which to spread costs. Below are two tables which demonstrate the ratio of the System's retiree liability compared to the total accrued liability and the ratio of the number of retirees and beneficiaries to the number of active members.

Fiscal Year End	Retiree Liability (\$ Millions)	Total Actuarial Liability (\$ Millions)	Retiree Percentage
6/30/2009	\$7,592	\$14,582	0.52
6/30/2010	7,942	15,222	0.52
6/30/2011	8,605	16,325	0.53
6/30/2012	9,250	16,755	0.55
6/30/2013	9,793	17,247	0.57
6/30/2014	10,437	17,882	0.58
6/30/2015	11,047	18,503	0.60
6/30/2016	11,702	19,771	0.59
6/30/2017	11,679	19,588	0.60
6/30/2018	12,399	19,998	0.62
6/30/2019	12,629	20,527	0.62
6/30/2020	12,949	21,034	0.62
6/30/2021	13,346	21,530	0.62
6/30/2022	13,658	22,371	0.61



Historical Member Statistics

Fiscal Year End	Active Count	Retiree Count	Active to Retiree Ratio
6/30/2009	125,465	65,757	1.91
6/30/2010	126,015	66,127	1.91
6/30/2011	125,337	67,221	1.86
6/30/2012	121,811	69,038	1.76
6/30/2013	121,642	70,771	1.72
6/30/2014	121,251	72,605	1.67
6/30/2015	122,855	74,372	1.65
6/30/2016	124,540	76,280	1.63
6/30/2017*	157,981	79,157	2.00
6/30/2018	158,343	81,332	1.95
6/30/2019	159,363	81,024	1.97
6/30/2020	156,579	80,851	1.94
6/30/2021	146,646	80,721	1.82
6/30/2022	155,063	81,151	1.91

*Effective in FY2017, the active member headcount reflects an increase of members who have been re-categorized from inactive to active status.



SCHEDULE A

Valuation Balance Sheet and Solvency Test

The following valuation balance sheet shows the assets and liabilities of the retirement system as of the current valuation date of June 30, 2022, and, for comparison purposes, as of the immediately preceding valuation date of June 30, 2021. The items shown in the balance sheet are present values actuarially determined as of the relevant valuation date.

VALUATION BALANCE SHEET SHOWING THE ASSETS AND LIABILITIES OF THE SCHOOL EMPLOYEES RETIREMENT SYSTEM OF OHIO

	June 30, 2022	June 30, 2021
ASSETS		
Current actuarial value of assets	\$ 16,886,972,559	\$ 16,031,612,792
Prospective contributions		
Member contributions	\$ 3,486,942,734	\$ 3,207,536,291
Employer normal contributions	219,543,770	326,395,435
Unfunded accrued liability contributions	<u>5,484,496,253</u>	<u>5,498,144,212</u>
Total prospective contributions	<u>\$ 9,190,982,757</u>	<u>\$ 9,032,075,938</u>
Total assets	<u><u>\$ 26,077,955,316</u></u>	<u><u>\$ 25,063,688,730</u></u>
LIABILITIES		
Present value of benefits payable on account of present retired members and beneficiaries	\$ 13,266,785,507	\$ 12,985,430,420
Present value of benefits payable on account of active members	12,041,350,129	11,359,283,752
Present value of benefits payable on account of inactive and deferred vested members	<u>769,819,680</u>	<u>718,974,558</u>
Total liabilities	<u><u>\$ 26,077,955,316</u></u>	<u><u>\$ 25,063,688,730</u></u>



The following table provides the solvency test for SERS members. The table allocates the valuation assets of the System to its liabilities based on an order of precedence. The highest order of precedence is active member contributions. The second highest order of precedence are members in pay status, and vested and non-vested terminated members. The lowest order of precedence is the employer financed portion of active member accrued benefits. The liabilities are determined using the System's assumed rate of return.

Solvency Test
(\$ Millions)

Valuation Date	Aggregate Accrued Liabilities For				Portion of Accrued Liabilities Covered by Reported Asset		
	(1) Active Member Contributions	(2) Retired Members & Beneficiaries	(3) Active Members (Employer Financed Portion)	Actuarial Value of Assets	(1)	(2)	(3)
Pension Benefits							
6/30/2017	\$ 3,010	\$ 11,690	\$ 4,448	\$ 13,537	100.0%	90.0%	0.0%
6/30/2018	2,733	12,427	4,399	13,824	100.0	89.2	0.0
6/30/2019	2,842	12,666	4,582	14,268	100.0	90.2	0.0
6/30/2020	2,934	13,009	4,658	14,811	100.0	91.3	0.0
6/30/2021	2,986	13,434	4,677	15,781	100.0	95.2	0.0
6/30/2022	3,040	13,773	5,128	16,611	100.0	98.5	0.0
Medicare Part B							
6/30/2017	\$ 0	\$ 251	\$ 151	\$ 153	100.0%	61.0%	0.0%
6/30/2018	0	251	149	164	100.0	65.3	0.0
6/30/2019	0	244	153	180	100.0	73.8	0.0
6/30/2020	0	236	157	199	100.0	84.3	0.0
6/30/2021	0	238	154	223	100.0	93.7	0.0
6/30/2022	0	231	158	246	100.0	100.0	9.5
Post-Retirement Death Benefits							
6/30/2017	\$ 0	\$ 30	\$ 8	\$ 23	100.0%	76.7%	0.0%
6/30/2018	0	31	8	24	100.0	77.4	0.0
6/30/2019	0	31	8	25	100.0	80.6	0.0
6/30/2020	0	31	8	27	100.0	87.1	0.0
6/30/2021	0	33	7	28	100.0	84.8	0.0
6/30/2022	0	33	8	30	100.0	90.9	0.0



SCHEDULE B
Development of Actuarial Value of Assets

Valuation date June 30:		2021	2022	2023	2024	2025
A.	Actuarial Value Beginning of Year	\$ 15,519,346,628	\$ 16,631,942,980			
B.	Market Value End of Year	18,440,377,176	17,574,265,414			
C.	Market Value Beginning of Year	14,902,210,105	18,440,377,176			
D.	Cash Flow					
D1.	Contributions	\$ 884,166,838	\$ 953,961,187			
D2.	Other Revenue	84,050,104	97,382,882			
D3.	Benefit Payments	(1,497,119,145)	(1,538,412,277)			
D4.	Net Transfers	(5,424,513)	(7,998,389)			
D5.	Net	\$ (534,326,716)	\$ (495,066,597)			
E.	Investment Income					
E1.	Market Total: B.-C.-D5.	\$ 4,072,493,787	\$ (371,045,165)			
E2.	Assumed Rate (Net of Expenses)	7.50%	7.00%			
E3.	Amount for Immediate Recognition	1,097,628,506	1,273,499,071			
E4.	Amount for Phased-In Recognition	2,974,865,281	(1,644,544,236)			
F.	Phased-In Recognition of Investment Income					
F1.	Current Year: 0.25 * E4.	\$ 743,716,320	\$ (411,136,059)	\$ 0	\$ 0	\$ 0
F2.	First Prior Year	(178,306,015)	743,716,320	(411,136,059)	0	0
F3.	Second Prior Year	(66,102,732)	(178,306,015)	743,716,320	(411,136,059)	0
F4.	Third Prior Year	49,986,989	(66,102,732)	(178,306,015)	743,716,320	(411,136,059)
F5.	Total Recognized Investment Gain/(Loss)	\$ 549,294,562	\$ 88,171,514	\$ 154,274,246	\$ 332,580,261	\$ (411,136,059)
G.	Preliminary Actuarial Value End of Year:					
A.	+D5.+E3.+F5.	\$ 16,631,942,980	\$ 17,498,546,968			
H.	Corridor					
H1.	80% of Market Value	\$ 14,752,301,741	\$ 14,059,412,331			
H2.	120% of Market Value	\$ 22,128,452,611	\$ 21,089,118,497			
I.	Actuarial Value End of Year:					
G.	Not Less than H1. or Not Greater than H2.	\$ 16,631,942,980	\$ 17,498,546,968			
J.	Difference Between Market & Actuarial Values	\$ 1,808,434,196	\$ 75,718,446	\$ (78,555,799)	\$ (411,136,059)	\$ 0
K.	Health Care Valuation Assets	\$ 600,330,188	\$ 611,574,409			
L.	Basic Benefits Valuation Assets (G. - K.)	\$ 16,031,612,792	\$ 16,886,972,559			

The Actuarial Valuation of Assets recognizes assumed investment income (line E3) fully each year. Differences between actual and assumed investment income (line E4) are phased in over a closed four-year period. During periods when investment performance exceeds the assumed rate, Actuarial Value of Assets will tend to be less than market value. During periods when investment performance is less than the assumed rate, Actuarial Value of Assets will tend to be greater than market value. If assumed rates are exactly realized for four consecutive years, actuarial value will become equal to market value.



SCHEDULE C

STATEMENT OF ACTUARIAL ASSUMPTIONS AND METHODS

The assumptions and methods used in the valuation were based on the actuarial experience study for the five-year period ending June 30, 2020, adopted by the Board on April 15, 2021.

INTEREST RATE: 7.00% per annum, compounded annually (net after all System expenses).

SEPARATIONS FROM ACTIVE SERVICE: Representative values of the assumed rates of separation from active service are as follows:

Service	Annual Rates of Withdrawal
0	40.00%
1	19.00
2	11.00
3	9.00
4	8.00
5	6.50
10	3.50
15	2.25

Age	Annual Rates of			
	Death *		Disability	
	Male	Female	Male	Female
20	.041%	.013%	.020%	.010%
25	.041	.012	.039	.010
30	.052	.019	.071	.028
35	.068	.030	.127	.059
40	.096	.047	.214	.106
45	.143	.072	.313	.180
50	.218	.107	.414	.300
55	.320	.157	.530	.450
60	.466	.238	.590	.450
65	.682	.380	.533	.300
70	1.025	.627	.300	.200
74	1.461	.937	.300	.200

* Pre-retirement mortality is based on the PUB-2010 General Amount Weighted Below Median Employee Mortality Table with fully generational projection using the MP-2020 projection scale. The above rates represent the base rates used.



Annual Rates of								
Age	Retirement Eligible prior to 8/1/17				Retirement Eligible after 8/1/17			
	Reduced	Reduced (55/25)	First Eligible Unreduced	Subsequent Unreduced	Reduced	Reduced (60/25)	First Eligible Unreduced	Subsequent Unreduced
50			21%	19%				
55		10%	27%	19%				
57		10%	27%	19%			30%	19%
60	43%	15%	27%	19%		6%	30%	19%
62	43%	15%	27%	19%	5%	6%	30%	19%
65			50%	33%	15%	17%	30%	19%
68			50%	33%			30%	18%
70			50%	33%			30%	18%
75			100%	100%			100%	100%

SALARY INCREASES: Representative values of the assumed annual rates of salary increases are as follows:

Annual Rates of			
Service	Merit & Seniority (A)	Base (Economy) (B)	Increase Next Year $(1+(A))*(1+(B))$
0	10.00%	3.25%	13.58%
1	3.00	3.25	6.35
2	1.75	3.25	5.06
3	1.25	3.25	4.54
4	1.00	3.25	4.28
5-9	0.75	3.25	4.02
10-15	0.50	3.25	3.77
16-17	0.25	3.25	3.51
18 & over	0.00	3.25	3.25

PAYROLL GROWTH: 1.75% per annum, compounded annually.

PRICE INFLATION: 2.40% per annum, compounded annually.

ANNUAL COLA: Increase of 2.00% of initial retirement allowance on anniversary of retirement date. On and after April 1, 2018, COLAs for future retirees will be delayed for until the fourth anniversary of benefit commencement.

DEATH AFTER RETIREMENT: These assumptions are used to measure the probabilities of each benefit payment being made after retirement.

SERVICE RETIREMENT: PUB-2010 General Employee Amount Weighted Below Median Healthy Retiree mortality table projected to 2017 with ages set forward 1 year and adjusted 94.20% for males and set forward 2 years and adjusted 81.35% for females. Future improvement in mortality rates is reflected by applying the MP-2020 projection scale generationally.



DISABLED RETIREMENT: PUB-2010 General Disabled Retiree mortality table projected to 2017 with ages set forward 5 years and adjusted 103.3% for males and set forward 3 years and adjusted 106.8% for females. Future improvement in mortality rates is reflected by applying the MP-2020 projection scale generationally.

CONTINGENT SURVIVOR: PUB-2010 General Amount Weighted Below Median Contingent Survivor mortality table projected to 2017 with ages set forward 1 year and adjusted 105.5% for males and adjusted 122.5% for females. Future improvement in mortality rates is reflected by applying the MP-2020 projection scale generationally.

MARRIAGE ASSUMPTION: 80% married with the husband three years older than his wife.

VALUATION METHOD: Entry age normal cost method. Entry age is established on an individual basis.

ASSET VALUATION METHOD: Actuarial value, as developed in Schedule A. The actuarial value of assets recognizes a portion of the difference between the market value of assets and the expected market value of assets, based on the assumed valuation rate of return. The amount recognized each year is 25% of the difference between market value and expected market value. The actuarial value of assets cannot be less than 80% or more than 120% of market value.

FUNDING POLICY: If the funded ratio is less than 70%, the entire 14% employers' contribution shall be allocated to SERS' basic benefits. If the funded ratio is 70% but less than 80%, at least 13.50% of the employers' contribution shall be allocated to SERS' basic benefits, with the remainder (if any) allocated to the Health Care Fund. If the funded ratio is 80% but less than 90%, at least 13.25% of the employers' contribution shall be allocated to SERS' basic benefits, with the remainder (if any) allocated to the Health Care Fund. If the funded ratio is 90% or greater, the Health Care Fund may receive any portion of the employers' contribution that is not needed to fund SERS' basic benefits.



SCHEDULE D

SCHOOL EMPLOYEES RETIREMENT SYSTEM OF OHIO Summary of Benefit and Contribution Provisions

Contributions for Basic Benefits	Members contribute 10% of pay and employers contribute 14% of pay. Employer contributions not required to finance basic benefits may be allocated to the health care fund.
Final Average Salary	Average annual salary over the member's three highest years of service.
Normal Retirement	
Condition for Retirement	
<i>Retire before August 1, 2017 or have 25 years of service or more on or before August 1, 2017</i>	Attainment of age 65 with at least 5 years of creditable service, or completion of 30 years of creditable service, regardless of age.
<i>Members attaining 25 years of service after August 1, 2017</i>	Attainment of age 67 with at least 10 years of creditable service, or attainment of age 57 with at least 30 years of creditable service. Buy-up option was available.
Amount of Allowance	<p>The annual retirement allowance payable shall not be greater than 100% of final average salary, and is the greater of:</p> <ol style="list-style-type: none">1. Money Purchase - the greater of: The sum of:<ol style="list-style-type: none">a. An annuity based on the value of the member's accumulated contributions at retirementb. A pension equal to the annuityc. For members who have 10 or more years of service credit prior to 10/1/1956, an annual benefit of \$180.2. Defined Benefit - the greater of: The sum of:<ol style="list-style-type: none">a. 2.2% of final average salary multiplied by the member's years of service up to 30,b. 2.5% of final average salary multiplied by the member's years of service in excess of 30,or:<ol style="list-style-type: none">c. \$86 multiplied by the years of service.



Early Retirement

Condition for Early Retirement

*Retire before August 1, 2017
or have 25 years of service
or more on or before August
1, 2017*

Not eligible for unreduced service retirement but has attained age 55 with at least 25 years of service, or age 60 with 5 years of service.

*Members attaining 25
years of service after
August 1, 2017*

Attainment of age 62 with at least 10 years of creditable service, or attainment of age 60 with at least 25 years of creditable service.

Amount of Allowance

*Retire before August 1, 2017
or have 25 years of service
or more on or before August
1, 2017*

Normal retirement allowance accrued to the date of early retirement. The Defined Benefit amount determined above is adjusted by the following percentages based on attained age or years of service:

<u>Attained Age</u>	<u>Years of Ohio Service Credit</u>	<u>Percentage</u>
58	25	75%
59	26	80
60	27	85
61		88
	28	90
62		91
63		94
	29	95
64		97

*Members attaining 25
years of service after
August 1, 2017*

Actuarial equivalent of the normal retirement allowance accrued to the date of early retirement. The Defined Benefit amount determined above is actuarially adjusted for the years before age 65 (age 67 if after August 1, 2017) or 30 years of service, whichever is shorter, but in no event is the adjusted benefit less than the following percentages of the Defined Benefit amount based on years of service:

<u>Years of Ohio Service Credit</u>	<u>Percentage</u>
25	75%
26	80
27	85
28	90
29	95

Disability Retirement

Condition for Retirement

An allowance is paid upon becoming permanently disabled after completion of at least 5 years of total service credit.

Amount of Allowance

1. For those who were active members prior to July 29, 1992 and did not elect the benefit structure outlined below, an allowance based on service to date of disablement, plus, if the age at disablement is less than 60, continuous



service to age 60. The allowance is computed in the same manner as the defined benefit service retirement allowance, subject to a minimum of 30% of FAS and a maximum of 75% of FAS. It is payable for life, unless terminated.

2. For those who became active members after July 28, 1992, and for those who were active members prior to July 29, 1992 who so elected, an allowance equal to the greater of (i) 45% of FAS, or (ii) the lesser of 60% of FAS, or the allowance computed in the same manner as the defined benefit service retirement allowance. The allowance will continue until:
 - a. The date the member is granted a service retirement benefit, or
 - b. The date the allowance is terminated, or
 - c. The later of the date the member attains age 65 or the date the disability allowance has been paid for the minimum duration in accordance with the following schedule:

<u>Age at Disability</u>	<u>Minimum Duration In Months</u>
60 and earlier	60
61	60
62	48
63	48
64	36
65	36
66	24
67	24
68	24
69 and older	12

Death Benefits Prior to Retirement

Death While Eligible to Retire

If a member dies in service after becoming eligible to retire with a service allowance and leaves a surviving spouse or other sole dependent beneficiary, the survivor may elect to receive the same amount that would have been paid had the member retired the last day of the month of death and elected the 100% joint and survivor form of payment.

Survivor (Death-in-Service) Allowances

Condition for Benefit

Upon the death of a member with at least 1.5 years of Ohio service credit and with at least 0.25 year of Ohio contributing service credit within 2.5 years prior to the date of death, the survivor allowances are payable as follows:

1. **Qualified Spouse:** A monthly allowance commencing at age 62, except that the benefit is payable immediately if: (1) the qualified deceased member had 10 or more years of Ohio service credit; or (2) is caring for a surviving child, or (3) is incompetent.
2. **Qualified Child:** For allowances that commenced before January 7, 2013, an allowance is payable to a deceased



member's qualified child who is under age 18 and never been married, under age 22 and in school, or adjudged incompetent prior to the member's death and the child attaining age 18 or age 22 if attending school. For allowances that commence on or after January 7, 2013, an allowance is payable to a deceased member's qualified child who is under age 19 and never been married or adjudged incompetent prior to the member's death and the child attaining age 19.

3. **Qualified Parent's Allowance:** A monthly allowance is payable to a dependent parent age 65 or more.

Amount of Allowances

Except when survived by a qualified child(ren), upon the death of a member prior to retirement, the accumulated contributions of the member without interest is payable. Alternatively, the beneficiary may elect the following amounts, payable monthly while eligible:

<u>Number of Qualified Survivors</u>	<u>Annual Benefit as Percent of Member's FAS</u>	<u>Minimum Monthly Allowance</u>
1	25%	\$96
2	40	186
3	50	236
4	55	236
5 or more	60	236

If the deceased member had attained at least 20 years of service, the total benefits payable to all qualified survivors are not less than:

<u>Years of Service</u>	<u>Annual Benefit as Percent of Member's FAS</u>
20	29%
21	33
22	37
23	41
24	45
25	48
26	51
27	54
28	57
29 or more	60

Termination Benefits

Refund of Members' Accumulated Contributions

In the event a member leaves service before any monthly benefits are payable on his/her behalf, the member's accumulated contributions, without interest, may be refunded.

Deferred Benefits

Members who retire prior to August 1, 2017 must have at least 5 years of service credit and those members who retire on and after August 1, 2017 must have at least 10 years of service credit and are eligible to draw the benefit the first of the month following their 62nd birthday.



Normal Form of Benefit

Single Life Annuity

Optional Forms of Benefit

A member upon retirement may elect to receive an allowance in one of the following forms that are computed to be actuarially equivalent to the applicable retirement allowance:

Upon the death of a retiree, 50%, 100%, or some other percentage of his/her reduced retirement allowance shall be continued throughout the life of, and paid to, a designated beneficiary.

A reduced retirement allowance shall be continued throughout the life of the pensioner, but with further payment to the pensioner, his/her beneficiary or estate for a specified number of years certain.

A member can select a partial lump sum option at retirement. Under this option, the partial lump sum shall not be less than 6 times and not more than 36 times the unreduced monthly benefit, and the monthly benefit will be actuarially reduced. In addition, the monthly benefit payable cannot be less than 50% of the unreduced amount.

Post-Retirement Death Benefit

Regardless of the form of benefit selected, a lump sum benefit of \$1,000 is paid at the death of the retiree.

Post-Retirement Increases

Pre 1/1/2018: On each anniversary of the initial date of retirement, the allowances of all retirees and survivors are increased by 3% of the base benefit.

On and after 1/1/2018: On each anniversary of the initial retirement, the allowance of all retirees and survivors may be increased by the annual rate of increase in the CPI-W measured as of the June preceding the beginning of the applicable calendar year. The annual rate of increase shall not be less than 0% nor greater than 2.5%. COLAs shall be suspended for calendar years 2018, 2019, and 2020.

On and after 4/1/2018: COLAs for future retirees will be delayed until the fourth anniversary of benefit commencement.

Medicare Part B

Each recipient of a service retirement benefit, a disability benefit, or a survivor benefit who was credited with at least 10 years of service and has paid Medicare Part B premiums and has chosen the health care option, is reimbursed \$45.50 per month for premiums. The reimbursement will continue to the spouse upon the death of the retiree in cases where the retiree elected a Joint and Survivor payment form.



Reemployed Retirants

Eligibility Effective	July 1, 1991, service retirees of SERS, or service or disability retirees of one of the other four Ohio retirement systems who are employed in a SERS-covered position are required to contribute to a money purchase annuity, a type of defined contribution plan.
Amount of Allowance	Upon termination of employment, a reemployed retirant who has attained age 65 is eligible to receive an annuity based on the amount of his/her accumulated contributions, and an equal amount of employer contributions, plus interest to the effective date of retirement. Effective July 1, 2006 the amount of employer contributions will be determined by the Board. Interest is granted on the reemployed retirant's prior fiscal year account balance, calculated using a rate determined by the SERS Board, compounded annually. The benefit is payable as a lump sum or as an annuity if the amount of such annuity is at least \$25. Upon termination of employment, a reemployed retirant who has not attained age 65 may request a lump sum refund of his/her own contributions; there is no payment of employer contributions or interest.
Benefits Payable Upon Death	<p>If a reemployed retirant dies while employed, a lump sum payment of the monthly annuity, discounted to the present value using the current actuarial assumption rate of interest, will be paid to his/her beneficiary.</p> <p>If a reemployed retirant dies while receiving a monthly annuity, a lump sum payment will be made to a beneficiary in an amount equal to the excess, if any, of the lump sum payment the reemployed retirant would have received at the effective date of retirement over the sum of the annuity payments received by the reemployed retirant to the date of death.</p>
Member Contributions	Each reemployed retirant is required to contribute 10% of his/her pay by payroll deductions.
Employer Contributions	Employer contributions are expressed as percents of member covered payroll. Employers are required to contribute 14% of payroll.
Other Benefits	Reemployed retirants of SERS are not eligible to receive any of the other benefits provided to SERS members.
Member Contributions	10% of salary.



SCHEDULE E

DETAILED TABULATIONS OF THE DATA

**Schedule of Retiree Members Added to and Removed From Rolls
Last Six Fiscal Years**

Year Ending June 30:	2017	2018	2019	2020	2021	2022
<u>Number of Retiree Members</u>						
Beginning of Year	76,280	79,157	81,332	81,024	80,851	80,721
Added	5,499	5,339	3,055	2,902	3,928	3,867
Removed	2,622	3,164	3,363	3,075	4,058	3,437
End of Year	79,157	81,332	81,024	80,851	80,721	81,151
<u>Annual Retirement Allowances</u>						
Beginning of Year	\$ 1,083,621,579	\$ 1,162,015,515	\$ 1,211,935,636	\$ 1,218,955,506	\$ 1,234,342,326	\$ 1,254,934,762
Added	70,973,748	74,311,354	56,557,169	52,895,232	70,415,860	67,062,445
Removed	(7,420,188)	24,391,233	49,537,299	37,508,412	49,823,424	26,558,581
End of Year	\$ 1,162,015,515	\$ 1,211,935,636	\$ 1,218,955,506	\$ 1,234,342,326	\$ 1,254,934,762	\$ 1,295,438,626
 % Increase in Allowances	 7.23%	 4.30%	 0.58%	 1.26%	 1.67%	 3.23%
 Average Annual Allowance	 \$ 14,680	 \$ 14,901	 \$ 15,044	 \$ 15,267	 \$ 15,547	 \$ 15,963



**Schedule of Retiree Members Receiving a Medicare Part B Reimbursement
Added to and Removed from Rolls
Last Three Fiscal Years**

Year Ending June 30:	2020	2021	2022
<u>Number of Retiree Members</u>			
Beginning of Year	43,534	42,464	41,360
Added	2,257	1,996	2,057
Removed	3,327	3,100	2,826
End of Year	42,464	41,360	40,591
<u>Annual Retirement Allowances</u>			
Beginning of Year	\$ 23,769,564	\$23,185,344	\$22,582,560
Added	1,232,322	1,089,816	1,123,122
Removed	1,816,542	1,692,600	1,542,996
End of Year	\$ 23,185,344	\$22,582,560	\$22,162,686
 % Increase in Allowances	 (2.46)%	 (2.60)%	 (1.86)%
 Average Annual Allowance	 \$ 546	 \$ 546	 \$ 546



**Annuity and Pension Reserve Fund
Retiree Information as of June 30, 2022
Tabulated by Type of Benefit**

Amount of Monthly Benefit		Total	Service	Disability	Survivor
\$ 1 - \$	250	9,304	8,623	23	658
251 -	500	10,852	9,580	245	1,027
501 -	750	10,698	9,374	521	803
751 -	1,000	9,629	8,252	770	607
1,001 -	1,500	14,435	12,667	1,204	564
1,501 -	2,000	9,125	8,105	789	231
Over	2,000	<u>17,108</u>	<u>15,729</u>	<u>1,104</u>	<u>275</u>
		81,151	72,330	4,656	4,165

Average Monthly Benefit

\$ 1,347

\$ 1,530

\$ 811

Average Age

75.2

67.0

72.5

The 72,330 service retirees shown in the table above are comprised of 66,781 service retirees and 5,549 beneficiaries of deceased retirees. Excluded from the 66,781 service retirees are 856 reemployed retirees who are receiving a pension-only benefit resulting from the annuitization of the contributions accumulated during active membership.



**Annuity and Pension Reserve Fund
Retiree Information as of June 30, 2022
Tabulated by Attained Ages**

Attained Age	Retirement		Disability Retirement		Total	
	Number	Annual Benefits	Number	Annual Benefits	Number	Annual Benefits
Under 45	48	\$ 367,113	42	\$ 609,264	90	\$ 976,377
45-49	39	\$ 635,678	95	\$ 1,412,779	134	\$ 2,048,456
50-54	219	\$ 7,380,834	273	\$ 4,723,881	492	\$ 12,104,715
55-59	1,105	\$ 39,193,181	652	\$ 11,705,448	1,757	\$ 50,898,629
60-64	5,142	\$ 124,013,570	1243	\$ 23,648,095	6,385	\$ 147,661,665
65-69	15,806	\$ 262,601,686	758	\$ 17,217,980	16,564	\$ 279,819,667
70-74	16,393	\$ 268,579,309	590	\$ 12,388,208	16,983	\$ 280,967,517
75-79	12,977	\$ 199,803,518	459	\$ 7,537,664	13,436	\$ 207,341,182
80-84	9,815	\$ 138,461,809	299	\$ 3,997,526	10,114	\$ 142,459,334
85-89	6,477	\$ 81,230,658	178	\$ 1,746,534	6,655	\$ 82,977,192
90 & Over	4,309	\$ 43,260,689	67	\$ 511,795	4,376	\$ 43,772,484
Totals	72,330	\$ 1,165,528,044	4,656	\$ 85,499,173	76,986	\$ 1,251,027,217

The 72,330 service retirees shown in the table above are comprised of 71,474 unique service retirees, and 856 unique reemployed retirees. The reemployed retirees included in the tabulation above are those who are receiving a pension-only benefit resulting from the annuitization of the contributions accumulated during active membership.



**Annuity and Pension Reserve Fund
Survivors of Annuitants Information as of June 30, 2022
Tabulated by Attained Ages**

Attained Age	Life Annuities		Periods Certain		Total	
	Number	Annual Benefits	Number	Annual Benefits	Number	Annual Benefits
Under 45	48	\$ 367,113	0	\$ -	48	\$ 367,113
45-49	28	\$ 216,905	0	\$ -	28	\$ 216,905
50-54	47	\$ 371,239	0	\$ -	47	\$ 371,239
55-59	79	\$ 963,231	0	\$ -	79	\$ 963,231
60-64	191	\$ 2,574,319	0	\$ -	191	\$ 2,574,319
65-69	424	\$ 5,973,085	3	\$ 41,924	427	\$ 6,015,009
70-74	717	\$ 8,814,669	10	\$ 104,137	727	\$ 8,918,806
75-79	955	\$ 10,711,169	9	\$ 108,445	964	\$ 10,819,614
80-84	1,128	\$ 11,253,717	2	\$ 28,063	1,130	\$ 11,281,780
85-89	1,040	\$ 9,391,702	0	\$ -	1,040	\$ 9,391,702
90 & Over	868	\$ 6,688,257	0	\$ -	868	\$ 6,688,257
Totals	5,525	\$ 57,325,406	24	\$ 282,569	5,549	\$ 57,607,975



**All Benefit Recipients
Male and Female Demographic Breakdown
June 30, 2022**

Attained Age	Number of		Total Number
	Males	Females	
Under 20	22	36	58
20-24	2	2	4
25-29	3	3	6
30-34	6	17	23
35-39	13	22	35
40-44	30	41	71
45-49	54	122	176
50-54	221	373	594
55-59	766	1,192	1,958
60-64	2,103	4,739	6,842
65-69	4,391	12,896	17,287
70-74	4,774	12,927	17,701
75-79	3,696	10,410	14,106
80-84	2,651	7,990	10,641
85-89	1,601	5,414	7,015
90-94	726	2,785	3,511
95-99	160	825	985
100	6	48	54
101	2	39	41
102	2	16	18
103	1	12	13
104	0	3	3
105 & Over	1	8	9
Total	21,231	59,920	81,151



Survivor Benefit Fund
Survivors of Deceased Active Members Information as of June 30, 2022
Tabulated by Attained Ages

Attained Age	Number	Annual Benefits
Under 45	107	\$ 1,216,116
45-49	42	\$ 562,439
50-54	102	\$ 1,424,846
55-59	201	\$ 2,581,201
60-64	457	\$ 4,917,204
65-69	723	\$ 7,321,743
70-74	718	\$ 7,494,989
75-79	670	\$ 6,275,021
80-84	527	\$ 4,474,464
85-89	360	\$ 2,696,376
90 & Over	258	\$ 1,582,877
Totals	4,165	\$ 40,547,276



**Total Active Members as of June 30, 2022
Tabulated by Attained Ages and Years of Service**

Attained Age	Years of Service to Valuation Date							Totals
	0-4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30+	
Under 20	2,804							2,804
Avg Pay	\$11,088							\$11,088
20-24	9,629	94						9,723
Avg Pay	\$12,984	\$31,584						\$13,164
25-29	9,617	1,142	26					10,785
Avg Pay	\$16,270	\$33,323	\$43,478					\$18,141
30-34	8,827	2,293	368	39				11,527
Avg Pay	\$17,326	\$35,293	\$46,235	\$52,499				\$21,942
35-39	9,424	3,111	780	343	39			13,697
Avg Pay	\$17,839	\$34,305	\$46,705	\$54,939	\$61,129			\$24,275
40-44	10,078	4,287	1,284	746	425	29		16,849
Avg Pay	\$16,865	\$31,925	\$42,655	\$52,878	\$57,588	\$69,085		\$25,374
45-49	8,780	4,505	1,754	1,133	819	264	11	17,266
Avg Pay	\$16,140	\$30,797	\$37,258	\$45,982	\$55,557	\$57,234	\$59,779	\$26,594
50-54	7,893	4,503	2,707	2,139	1,769	685	177	19,873
Avg Pay	\$17,147	\$31,511	\$34,485	\$39,734	\$47,094	\$59,253	\$61,873	\$29,710
55-59	6,027	3,585	2,567	2,926	3,346	1,520	513	20,484
Avg Pay	\$16,963	\$31,313	\$34,194	\$36,941	\$41,130	\$47,611	\$56,046	\$31,688
60-64	4,739	2,803	1,995	2,452	3,695	2,302	934	18,920
Avg Pay	\$15,494	\$29,954	\$33,933	\$36,446	\$38,823	\$41,770	\$49,504	\$31,728
65-69	2,960	1,341	779	746	1,126	844	729	8,525
Avg Pay	\$12,263	\$25,326	\$31,184	\$36,967	\$40,268	\$41,028	\$44,367	\$27,501
70 & over	2,098	803	405	283	271	223	527	4,610
Avg Pay	\$9,904	\$19,727	\$26,066	\$29,057	\$33,745	\$38,798	\$38,366	\$20,263
Totals	82,876	28,467	12,665	10,807	11,490	5,867	2,891	155,063
Avg Pay	\$15,848	\$31,341	\$36,192	\$39,852	\$42,753	\$45,936	\$48,136	\$25,761

Averages:

Age: 47.2

Service: 7.6

Annual Pay: \$25,761



Male Active Members as of June 30, 2022
Tabulated by Attained Ages and Years of Service

Attained Age	Years of Service to Valuation Date							Totals
	0-4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30+	
Under 20	1,462							1,462
Avg Pay	\$11,509							\$11,509
20-24	3,971	39						4,010
Avg Pay	\$13,898	\$36,657						\$13,374
25-29	3,922	531	16					4,469
Avg Pay	\$16,266	\$38,848	\$46,319					\$19,056
30-34	3,118	836	186	27				4,167
Avg Pay	\$17,917	\$41,335	\$52,726	\$57,160				\$24,423
35-39	2,775	894	357	202	24			4,252
Avg Pay	\$18,743	\$44,147	\$52,761	\$60,013	\$68,317			\$29,181
40-44	3,137	979	409	315	215	13		5,068
Avg Pay	\$17,217	\$42,942	\$56,990	\$65,389	\$69,301	\$79,552		\$30,760
45-49	3,140	949	410	270	277	131	6	5,183
Avg Pay	\$14,491	\$40,412	\$50,670	\$63,018	\$72,735	\$63,436	\$62,415	\$29,032
50-54	3,003	1,065	504	376	359	270	86	5,663
Avg Pay	\$15,952	\$39,018	\$47,453	\$59,248	\$67,631	\$74,020	\$69,421	\$32,825
55-59	2,384	1,040	545	460	460	300	203	5,392
Avg Pay	\$17,410	\$37,637	\$47,386	\$55,117	\$60,193	\$67,934	\$64,118	\$35,777
60-64	1,973	975	590	505	515	283	245	5,086
Avg Pay	\$16,794	\$35,338	\$42,146	\$50,217	\$56,973	\$61,658	\$66,841	\$35,584
65-69	1,243	604	330	215	221	113	139	2,865
Avg Pay	\$13,515	\$28,343	\$35,872	\$45,898	\$52,112	\$58,718	\$59,707	\$28,648
70 & over	992	424	215	114	69	44	49	1,907
Avg Pay	\$10,533	\$22,561	\$28,591	\$32,989	\$40,834	\$48,900	\$49,533	\$19,569
Totals	31,120	8,336	3,562	2,484	2,140	1,154	728	49,524
Avg Pay	\$15,842	\$38,195	\$46,620	\$55,514	\$61,837	\$65,811	\$63,823	\$27,665

Averages:

Age: 45.6

Service: 5.9

Annual Pay: \$27,665

Female Active Members as of June 30, 2022
Tabulated by Attained Ages and Years of Service



Attained Age	Years of Service to Valuation Date							Totals
	0-4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30+	
Under 20	1,342							1,342
Avg Pay	\$10,643							\$10,643
20-24	5,658	55						5,713
Avg Pay	\$12,350	\$26,524						\$12,486
25-29	5,695	611	10					6,316
Avg Pay	\$16,277	\$28,557	\$39,037					\$17,501
30-34	5,709	1,457	182	12				7,360
Avg Pay	\$17,005	\$31,840	\$39,667	\$42,222				\$20,543
35-39	6,649	2,217	423	141	15			9,445
Avg Pay	\$17,459	\$30,339	\$41,638	\$47,790	\$49,791			\$22,069
40-44	6,941	3,308	875	431	210	16		11,781
Avg Pay	\$16,704	\$28,660	\$35,970	\$43,783	\$45,690	\$60,645		\$23,059
45-49	5,640	3,556	1,344	863	542	133	5	12,083
Avg Pay	\$17,056	\$28,223	\$33,163	\$40,649	\$46,802	\$51,195	\$56,706	\$25,546
50-54	4,890	3,438	2,203	1,763	1,410	415	91	14,210
Avg Pay	\$17,882	\$29,179	\$31,507	\$35,561	\$41,856	\$49,690	\$54,813	\$28,465
55-59	3,643	2,545	2,022	2,466	2,886	1,220	310	15,092
Avg Pay	\$16,676	\$28,730	\$30,631	\$33,536	\$38,071	\$42,603	\$50,790	\$30,221
60-64	2,766	1,828	1,405	1,947	3,180	2,019	689	13,834
Avg Pay	\$14,574	\$27,092	\$30,488	\$32,867	\$35,865	\$38,959	\$43,342	\$30,305
65-69	1,717	737	449	531	905	731	590	5,660
Avg Pay	\$11,365	\$22,875	\$27,762	\$33,353	\$37,362	\$38,272	\$40,739	\$26,921
70 & over	1,106	379	190	169	202	179	478	2,703
Avg Pay	\$9,348	\$16,588	\$23,248	\$26,422	\$31,318	\$36,301	\$37,194	\$20,759
Totals	51,756	20,131	9,103	8,323	9,350	4,713	2,163	105,539
Avg Pay	\$15,854	\$28,505	\$32,114	\$35,174	\$38,373	\$41,059	\$42,854	\$24,867

Averages:

Age: 47.9

Service: 8.4

Annual Pay: \$24,867



**Active Members as of June 30, 2022
Tabulated by Annual Pay**

Annual Pay	Number of Active Members			Portion of Total Number	
	Men	Women	Totals	Group	Cumulative
Less than \$1,000	1,853	2,957	4,810	3.1%	3.1%
\$1,000 - 1,999	2,232	2,811	5,043	3.3%	6.4%
2,000 - 2,999	2,987	2,952	5,939	3.8%	10.2%
3,000 - 3,999	2,999	2,823	5,822	3.8%	13.9%
4,000 - 4,999	2,572	2,449	5,021	3.2%	17.2%
5,000 - 5,999	1,936	2,335	4,271	2.8%	19.9%
6,000 - 6,999	1,515	2,305	3,820	2.5%	22.4%
7,000 - 7,999	1,206	2,296	3,502	2.3%	24.7%
8,000 - 8,999	1,032	2,197	3,229	2.1%	26.7%
9,000 - 9,999	827	2,156	2,983	1.9%	28.7%
10,000 - 11,999	1,537	4,461	5,998	3.9%	32.5%
12,000 - 13,999	1,367	4,844	6,211	4.0%	36.5%
14,000 - 15,999	1,312	5,216	6,528	4.2%	40.7%
16,000 - 17,999	1,353	5,445	6,798	4.4%	45.1%
18,000 - 19,999	1,355	5,740	7,095	4.6%	49.7%
20,000 - 24,999	3,255	14,635	17,890	11.5%	61.2%
25,000 - 29,999	2,538	11,116	13,654	8.8%	70.0%
30,000 - 35,999	2,674	8,613	11,287	7.3%	77.3%
36,000 - 39,999	1,990	4,314	6,304	4.1%	81.4%
40,000 - 49,999	4,710	7,526	12,236	7.9%	89.3%
50,000 - 59,999	3,331	3,995	7,326	4.7%	94.0%
60,000 and over	4,943	4,353	9,296	6.0%	100.0%
Totals	49,524	105,539	155,063		



SCHEDULE F

GAIN/LOSS ANALYSIS DETAILS

COMMENTS

Regular actuarial valuations measure the Retirement System's present financial position and contributions adequacy by calculating and financing the liabilities created by the present benefit program. This process involves discounting to present values the future benefit payments on behalf of present active and Retiree members and their survivors. However, valuations do not produce information regarding the amount of increases or decreases in unfunded actuarial accrued liabilities (UAAL) -- gain/loss analyses do.

The overall gain/loss to the Retirement System is the difference between the actual UAAL and the expected UAAL. A gain/loss analysis shows the breakdown of the overall system gain/loss by economic and non-economic risk areas. The economic risk areas are investment return and pay increases. The non-economic risk areas are service retirement, disability retirement, death in active service, termination (vested and non-vested), retiree mortality, and new members. Gains and losses resulting from data adjustments, timing of financial transactions, etc. are included separately as a miscellaneous item.

It is expected that actual experience will not coincide with assumed experience. It is assumed that gains and losses will be in balance over a period of years, but sizable year-to-year fluctuations are common. Changes in actuarial assumptions should be made for risk areas when the differences between actual and expected experience are consistently sizable over a period of years. Differences over a relatively short period of time may or may not be indicative of long-term trends, which are the basis of actuarial assumptions.

The actuarial assumptions used in this analysis were adopted by the Board in April 15, 2021.



School Employees Retirement System of Ohio
Experience Gains and Losses By Risk Area
Comparative Schedule
(\$ Millions)

	Gain (Loss) by Risk Area										
	Economic		Non-Economic								
Year Ending June 30	Pay Increases	Investment	Age & Service Retirement	Disability	Death In Service	Withdrawal	New Members	Retiree Mortality	Other ⁺	\$	% of AAL
2013	219.2	241.0	(121.9)	(53.6)	0.0	61.1	(35.1)	2.9	1.9	315.5	1.8
2014	103.4	403.3	(122.6)	(56.0)	0.1	48.3	(28.2)	3.1	(2.1)	349.3	2.0
2015	53.3	62.1	(123.0)	(53.1)	0.0	65.1	(47.7)	55.8	(0.2)	12.3	0.1
2016	70.0	50.6	(140.9)	(50.6)	(28.5)	30.4	(44.0)	113.9	(0.6)	0.3	0.0
2017	(69.2)	(12.0)	(211.8)	(37.7)	(0.6)	21.9	(48.1)	97.3	(26.8)	(287.0)	(1.5)
2018	85.2	(161.1)	(209.7)	(14.7)	(6.6)	(124.5)	(35.7)	15.0	4.7	(447.4)	(2.2)
2019	20.3	(44.1)	7.8	(9.5)	(4.0)	(106.3)	(22.4)	(24.9)	78.4	(104.7)	(0.5)
2020	136.2	7.1	(94.0)	(3.1)	(5.4)	(104.2)	(22.2)	28.9	62.3	5.6	0.0
2021	136.7	431.3	(96.2)	(5.0)	(4.7)	(107.5)	(16.6)	59.8	189.3	587.1	2.7
2022	(212.3)	268.6	0.0	(6.4)	(7.0)	(43.5)	(52.6)	82.7	(25.2)	4.3	0.0

⁺ Includes effect of changes in data, timing of financial transactions, etc.



The market related actuarial value of assets is based on a four-year average of adjusted market value returns. The difference between the actual returns at market value for the year and expected returns is determined. Twenty-five percent (25%) of that difference is added to the expected value along with corresponding amounts from each of the prior three years.

The actuarial value of assets for the basic benefits as of June 30, 2022, was \$16,886,972,559. The value for the previous year was \$16,031,612,792.

School Employees Retirement System of Ohio Development of Gain (Loss) for Basic Benefits From Investment Return For the Year Ended June 30, 2022 (\$ Millions)		<u>\$ Millions</u>
1.	Actuarial value of assets as of June 30, 2021	\$ 16,031.6
2.	Actuarial value of assets as of June 30, 2022	
	a. Actual	16,887.0
	b. If 7.00% assumed investment return were achieved for all phased-in years recognized in the asset method	16,618.4
3.	Gain (Loss): 2a minus 2b	<u>\$ 268.6</u>



**Pay Increases During the FY2022 Valuation Year
To Members Active at Beginning and End of Year**

Central Age Group Beginning of Year	Number	Pay Increases	
		Actual	Expected
Under 25	7,389	(11.40)%	10.60%
25	6,901	1.67	7.03
30	8,084	4.90	6.09
35	10,833	6.42	5.57
40	13,351	6.19	5.20
45	15,102	5.94	4.73
50	17,137	6.58	4.38
55	18,847	6.20	4.04
60	14,886	6.24	3.92
65 & Over	8,161	6.87	4.17
Total	120,691	5.49	4.88



**Members Who Became Age & Service Retirees During the FY2022 Valuation Year
(Retirement With Allowance Beginning Immediately)**

Attained Age	Years of Service to Valuation Date							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30 plus	
Under 50	0	0	0	0	0	0	10	10
50	0	0	0	0	0	0	8	8
51	0	0	0	0	0	0	12	12
52	0	0	0	0	0	0	13	13
53	0	0	0	0	0	0	14	14
54	0	0	0	0	0	0	13	13
55	0	0	0	0	0	1	19	20
56	0	0	0	0	0	2	18	20
57	0	0	0	0	0	0	39	39
58	0	0	0	0	0	2	44	46
59	0	0	0	0	0	2	36	38
60	0	0	0	1	2	76	42	121
61	0	0	0	0	0	56	48	104
62	0	0	52	73	125	55	47	352
63	0	0	24	28	53	67	50	222
64	0	0	30	31	38	40	64	203
65	0	2	58	63	108	84	130	445
66	0	0	36	37	52	39	69	233
67	0	0	43	43	96	53	55	290
68	0	0	28	16	23	35	39	141
69	0	0	15	16	21	13	27	92
70 & Over	0	2	91	73	64	68	163	461
Totals	0	4	377	381	582	593	960	2,897

	Years of Service to Valuation Date							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30 plus	
Avg. Monthly Benefit	\$ 0	\$ 295	\$ 524	\$ 807	\$ 1,091	\$ 1,502	\$ 2,656	\$ 1,581
Avg. FAS	\$ 0	\$ 18,527	\$ 29,980	\$ 32,986	\$ 34,730	\$ 36,638	\$ 46,838	\$ 38,250
Number of Retirees	0	4	377	381	582	593	960	2,897

Average Age: 65.2
Average Service: 24.8



**Members Who Died in the FY2022 Valuation Year
With a Death-in-Service Allowance Payable**

Central Age Group Beginning of Year	Number
Under 25	0
25	0
30	2
35	0
40	6
45	3
50	10
55	10
60	19
65	22
70 & Over	15
Total	87

Average Age: 59.5
Average Service: 16.4



**Members Who Died in the FY2022 Valuation Year
and Received a Refund of Contributions**

Central Age Group Beginning of Year	Number
Under 25	0
25	0
30	2
35	0
40	2
45	0
50	3
55	3
60	2
65	7
70 & Over	7
Total	26

Average Age: 59.7
Average Service: 5.4



**Members Who Became Disability Retirees
During the FY2022 Valuation Year**

Central Age Group Beginning of Year	Number
Under 25	0
25	0
30	0
35	4
40	7
45	11
50	33
55	63
60	76
65	36
70 & Over	2
Total	232

Average Age: 56.3
Average Service: 17.7
Average FAS: \$34,437



**Members Receiving a Refund of Contributions
or Becoming Inactive Without a Refund in
the FY2022 Valuation Year
(Non-vested Terminations)**

Central Age Group Beginning of Year	Number
Under 25	2,183
25	3,109
30	2,027
35	1,678
40	1,730
45	1,678
50	1,612
55	1,217
60	891
65	521
70 & Over	358
Total	17,004

Average Age: 38.0
Average Service: 1.5



**Members Who Became Inactive
in the FY2022 Valuation Year
with a Deferred Allowance
(Vested Terminations)**

Central Age Group Beginning of Year	Number
Under 25	0
25	0
30	2
35	16
40	37
45	73
50	123
55	210
60	254
65	83
70 & Over	18
Total	816

Average Age: 55.3

Average Service: 15.9



SCHEDULE G

GLOSSARY

Actuarial Accrued Liability. The difference between (i) the actuarial present value of future plan benefits, and (ii) the actuarial present value of future normal cost. Sometimes referred to as "accrued liability" or "past service liability".

Accrued Service. The service credited under the plan which was rendered before the date of the actuarial valuation.

Actuarial Assumptions. Estimates of future plan experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and salary increases. Decrement assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.

Actuarial Cost Method. A mathematical budgeting procedure for allocating the dollar amount of the "actuarial present value of future plan benefits" between the actuarial present value of future normal cost and the actuarial accrued liability. Sometimes referred to as the "actuarial funding method".

Actuarial Equivalent. A series of payments is called an actuarial equivalent of another series of payments if the two series have the same actuarial present value.

Actuarial Present Value. The amount of funds presently required to provide a payment or series of payments in the future. It is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Amortization. Paying off an interest-bearing liability by means of periodic payments of interest and principal, as opposed to paying it off with a lump sum payment.

Experience Gain (Loss). A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions during the period between two actuarial valuation dates, in accordance with the actuarial cost method being used.

Normal Cost. The annual cost assigned, under the actuarial funding method, to current and subsequent plan years. Sometimes referred to as "current service cost". Any payment toward the unfunded actuarial accrued liability is not part of the normal cost.

Plan Termination Liability. The actuarial present value of future plan benefits based on the assumption that there will be no further accruals for future service and salary. The termination liability will generally be less than the liabilities computed on a "going concern" basis and is not normally determined in a routine actuarial valuation.

Reserve Account. An account used to indicate that funds have been set aside for a specific purpose and are not generally available for other uses.

Unfunded Actuarial Accrued Liability. The difference between the actuarial accrued liability and valuation assets. Sometimes referred to as "unfunded accrued liability".

Valuation Assets. The value of current plan assets recognized for valuation purposes. Generally based on book value plus a portion of unrealized appreciation or depreciation.



APPENDIX A

ACTUARIAL ACCRUED LIABILITIES AS OF JUNE 30, 2022

Present Value of:	Pension Benefits	Medicare Part B	Post-Retirement Death Benefit	Total Basic Benefits
Future benefits to present retirees and survivors	\$13,025,447,789	\$209,633,866	\$31,703,852	\$13,266,785,507
Benefits and refunds to present inactive members	747,231,253	21,444,734	1,143,693	769,819,680
Allowances to present active members				
Service	7,572,081,193	141,850,108	7,846,080	7,721,777,381
Disability	277,718,558	3,970,254	351,184	282,039,996
Survivor benefits	175,915,692	3,039,315	0	178,955,007
Withdrawal	<u>142,659,299</u>	<u>9,012,218</u>	<u>419,724</u>	<u>152,091,241</u>
Total Active AAL	8,168,374,742	157,871,895	8,616,988	8,334,863,625
Total AAL	<u>\$21,941,053,784</u>	<u>\$388,950,495</u>	<u>\$41,464,533</u>	<u>\$22,371,468,812</u>



APPENDIX B

BREAKDOWN OF TOTAL AND ACCRUED LIABILITIES AS OF JUNE 30, 2022

	Total Liability	Accrued Liability
Active Members		
Retirement	\$10,051,836,184	\$7,572,081,193
Death	285,611,221	175,915,692
Disability	590,047,057	277,718,558
Termination	863,192,009	142,659,299
Medicare Part B	237,396,013	157,871,895
Death after Retirement	<u>13,267,645</u>	<u>8,616,988</u>
Total	\$12,041,350,129	\$8,334,863,625
Retirees		
Retirement/Survivor/Disability	\$13,025,447,789	\$13,025,447,789
Medicare Part B	209,633,866	209,633,866
Death after Retirement	<u>31,703,852</u>	<u>31,703,852</u>
Total	\$13,266,785,507	\$13,266,785,507
Deferred Vested Members	390,841,943	390,841,943
Inactive Members	<u>378,977,737</u>	<u>378,977,737</u>
Total Actuarial Values	\$26,077,955,316	\$22,371,468,812
Actuarial Value of Assets		<u>16,886,972,559</u>
Unfunded Actuarial Accrued Liability		\$5,484,496,253



APPENDIX C

COMPARATIVE SCHEDULE AS OF JUNE 30, 2022

Valuation Date June 30	Active Members				Retired Lives				Accrued Liability			Valuation Assets	UAAL
					Number		Annual Benefits						
		Payroll	Average Salary			Active / Retired							
	Number	\$ Millions	\$	% Increase	Retired	Retired	\$ Millions	% of Payroll	\$ Millions				
2013	121,642	2,747	22,581	(1.3)	70,771	1.7	898.3	32.7	17,247	11,126	6,121		
2014	121,251	2,759	22,757	0.8	72,605	1.7	958.5	34.7	17,882	12,030	5,851		
2015	122,855	2,845	23,161	1.8	74,372	1.7	1,020.4	35.9	18,503	12,602	5,902		
2016	124,540	2,932	23,545	1.7	76,280	1.6	1,083.6	37.0	19,771	13,180	6,591		
2017	157,981	3,303	20,906	(11.2)	79,157	2.0	1,162.0	35.2	19,588	13,713	5,875		
2018	158,343	3,332	21,045	0.7	81,332	1.9	1,211.9	36.4	19,998	14,012	5,986		
2019	159,363	3,463	21,727	3.2	81,024	2.0	1,219.0	35.2	20,527	14,473	6,054		
2020	156,579	3,478	22,210	2.2	80,851	1.9	1,234.3	35.5	21,034	15,037	5,997		
2021	146,646	3,622	24,700	11.2	80,721	1.8	1,254.9	34.6	21,530	16,032	5,498		
2022	155,063	3,995	25,762	4.3	81,151	1.9	1,295.4	32.4	22,371	16,887	5,484		



Cavanaugh Macdonald
CONSULTING, LLC

The experience and dedication you deserve



**Report on the Retiree Health Care
Valuation of the
School Employees Retirement System of Ohio**

Prepared as of June 30, 2022





Cavanaugh Macdonald

CONSULTING, LLC

The experience and dedication you deserve

November 7, 2022

Board of Trustees
School Employees Retirement System of Ohio
300 East Broad Street, Suite 100
Columbus, OH 43215-3746

Dear Members of the Board:

We have submitted the results of the annual actuarial valuation of the Retiree Health Care Fund of the School Employees Retirement System of Ohio (SERS) prepared as of June 30, 2022. While not verifying the data at the source, the actuary performed tests for consistency and reasonability. The valuation indicates that an actuarially determined contribution of 2.51% of active payroll payable for the fiscal year ending June 30, 2022 is required to fund the benefits.

Separate reports will be prepared to provide accounting information under Governmental Accounting Standards Board Statements No. 74 and 75, when applicable.

The medical and drug benefits of the Plan are included in the actuarially calculated contribution rates which are developed using the entry age normal cost method with the normal cost rate determined as a level percentage of payroll. GASB requires the discount rate used to value a plan be based on the likely return of the assets held in trust to pay benefits. The discount rate used in this valuation is 7.00%. Gains and losses are reflected in the unfunded accrued liability that is amortized by regular annual contributions as a level percentage of payroll within a 30-year period, on the assumption that payroll will increase by 1.75% annually. The assumptions recommended by the actuary are, in the aggregate, reasonably related to the experience under the Plan and to reasonable expectations of anticipated experience under the Plan.

The impact of the Affordable Care Act (ACA) was addressed in this valuation. Review of the information currently available did not identify any specific provisions of the ACA that are anticipated to significantly impact results other than plan design features.

In order to prepare the results in this report we have utilized appropriate actuarial models that were developed for this purpose. These models use assumptions about future contingent events along with recognized actuarial approaches to develop the needed results.

We note that as we are preparing this report, the world is in the midst of a pandemic. We have considered available information, but do not believe that there is yet sufficient data to warrant the modification of any of our assumptions, other than our annual re-evaluation of health care cost trend. We will continue to monitor the situation and advise the Board in the future of any adjustments that we believe would be appropriate. Due to the uncertainty regarding the long-term impact of COVID-19, the continuation of the projected high cost trend of prescription drugs and the uncertainty regarding the future changes to Medicare Part D, we have reset the first-year health care trend assumption at 7.00%, stepping down 0.25% per year to the ultimate rate of 4.40% in 2032, which is 2.00% plus price inflation.



November 7, 2022
Board of Trustees
Page 2

To the best of our knowledge, this report is complete and accurate. The valuation was performed by, and under the supervision of, independent actuaries who are members of the American Academy of Actuaries with experience in performing valuations for public retirement systems. The undersigned are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

The valuation was prepared in accordance with the principles of practice prescribed by the Actuarial Standards Board.

Future actuarial results may differ significantly from the current results 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. Since the potential impact of such factors is outside the scope of a normal annual actuarial valuation, an analysis of the range of results is not presented herein.

The actuarial calculations were performed by qualified actuaries according to generally accepted actuarial procedures and methods. The calculations are based on the current provisions of the system, and on actuarial assumptions that are, in the aggregate, internally consistent and reasonably based on the actual experience of the system.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read 'Alisa Bennett', with a stylized, cursive script.

Alisa Bennett, FSA, FCA, EA, MAAA
President

A handwritten signature in blue ink, appearing to read 'John J. Garrett', with a stylized, cursive script.

John J. Garrett, ASA, FCA, MAAA
Principal and Consulting Actuary

AB/JJG:jf



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**REPORT ON THE ANNUAL VALUATION OF THE
SCHOOL EMPLOYEES RETIREMENT SYSTEM OF OHIO**

PREPARED AS OF JUNE 30, 2022

SECTION I – SUMMARY OF PRINCIPAL RESULTS

1. This report, prepared as of June 30, 2022, presents the results of the annual actuarial valuation of retiree health care offered to SERS members. For convenience of reference, the principal results of the valuation and a comparison with the preceding valuation results are summarized in the following table.

	June 30, 2022	June 30, 2021
Active members included in valuation		
Number	155,063	146,646
Annual Compensation	\$3,994,657,693	\$3,622,097,199
Service Retirees		
Number	30,569	30,898
Disability Retirees		
Number	2,391	2,580
Spouses of Retirees		
Number	4,909	5,023
Spouses of Deceased Retirees		
Number	1,431	1,502
Survivor Benefit Recipients		
Number	581	618
Non-Spouse Dependents		
Number	250	276
Deferred Vested		
Number	6,118	5,972
Assets		
Market Value	\$611,574,409	\$600,330,188
Unfunded Accrued Liability	\$736,679,661	\$689,066,742
Actuarial Accrued Liability	\$1,348,254,070	\$1,289,396,930
Funded Ratio (MVA/AAL)	45.36%	46.56%
Employer Contribution Rate		
Normal	1.31%	1.24%
Accrued Liability	<u>1.20%</u>	<u>1.22%</u>
Total	2.51%	2.46%
Employer Contribution Toward Health Care*	1.50%	1.50%
Accrued liability amortization period	30	30

* Includes 1.50% of payroll surcharge



2. The funding policy requires at least 13.50% of the employers' contributions be allocated to SERS' basic benefits when the funded ratio is 70% but less than 80%, with the remainder (if any) allocated to the health care fund. However, based on a Board Resolution in September, the entire 14.00% employer contribution will be allocated to SERS' basic benefits, therefore setting the health contribution rate at 0.00%, plus a health care surcharge of 1.50%. This rate includes the anticipated revenue from the minimum surcharge level for FY2023 of \$25,000.
3. The valuation balance sheet showing the results of the valuation is given in Schedule A.
4. Comments on the valuation results are given in Section IV, comments on the experience and actuarial gains during the valuation year are given in Section V, and the rates of contribution payable by the employer are given in Section VI. Since the previous valuation, there were no changes to the plan provisions, however changes were also made to the assumed initial per capital health care costs and future cost increases. See Schedule B for more details on assumptions and methods used.
5. The impact of the COVID-19 pandemic was considered in this valuation. Due to the uncertainty regarding the long-term impact of COVID-19, the continuation of the projected high cost trend of prescription drugs and the uncertainty regarding the future changes to Medicare Part D, we have reset the first-year health care trend assumption at 7.00%, stepping down 0.25% per year to the ultimate rate of 4.40% in 2033, which is 2% plus price inflation.
6. Since the most recent experience study was completed, we note that inflation has been significantly higher than assumed. Inflation is a component of several assumptions so the effects of higher inflation as a component of one assumption may be partially offset by the effect of higher inflation in another. We do not want to give too much credibility to recent experience, but we cannot ignore that current rates of inflation are the highest in the past 40 years. We will continue to monitor inflation in subsequent valuations to assess the reasonableness of the assumed inflation used in the valuation.
7. The following changes were reflected in this valuation:

Medicare Eligible

Premiums

Premiums will remain the same in 2023.

Benefits

Primary Care Office Visit co-pay will decrease to \$10 from \$20.

Outpatient Rehabilitation Therapies (speech, physical, occupational) co-pay will decrease to \$15 from \$20.

Cardiac Rehabilitation Services and Pulmonary Rehabilitation Services co-pays will decrease to \$15 from \$20.



Pharmacy Network

An Express Scripts Broad Performance Medicare Network was effective January 1, 2022. A new formulary will take effect on January 1, 2023. Enrollees who fill prescriptions at a pharmacy not in the network will pay 100% of the cost.

Non-Medicare Eligible

Premiums

There will be no change in premiums in 2023 for enrollees in the Aetna Choice POS II Plan.

There will be a premium increase in 2023 for enrollees in the AultCare PPO Plan.

Benefits

There are no co-pay or cost-sharing changes. However, a few prescription drugs may change to non-preferred. A new formulary will take effect on January 1, 2023 with expected rebate improvements.

SERS Wraparound HRA

The Health Reimbursement Arrangement (HRA) limit is increasing to \$1,950 from \$1,800 per family per calendar year.

8. The statute sets a contribution cap of 24.00% of payroll: 14.00% from employers and 10.00% from employees. The funding policy states that employer contributions in excess of those required to support the basic benefits may be allocated to retiree health care funding. If the funded ratio is less than 70%, the entire 14.00% employers' contribution shall be allocated to SERS' basic benefits. If the funded ratio is 70% but less than 80%, at least 13.50% of the employers' contribution shall be allocated to SERS' basic benefits, with the remainder (if any) allocated to the Health Care Fund. If the funded ratio is 80% but less than 90%, at least 13.25% of the employers' contribution shall be allocated to SERS' basic benefits, with the remainder (if any) allocated to the Health Care Fund. If the funded ratio is 90% or greater, the Health Care Fund may receive any portion of the employers' contribution that is not needed to fund SERS' basic benefits.



SECTION II – MEMBERSHIP DATA

Data regarding the membership of the System for use as a basis for the valuation were furnished by the System's office. The following tables summarize the membership of the system as of June 30, 2022 upon which the valuation was based. Detailed tabulations of the data are given in Schedule D.

Active Members

Number	Payroll	Group Averages		
		Salary	Age	Service
155,063	\$3,994,657,693	\$25,762	47.2	7.6

The following table shows a six-year schedule of active member valuation data.

SCHEDULE OF SERS ACTIVE MEMBER VALUATION DATA

Valuation Date	Number	Annual Payroll	Annual Average Pay	% Increase in Average Pay
6/30/2017	157,981*	3,302,805,662	20,906	(11.2%)
6/30/2018	158,343	3,332,395,171	21,045	0.7
6/30/2019	159,363	3,462,524,396	21,727	3.2
6/30/2020	156,579	3,477,578,726	22,210	2.2
6/30/2021	146,646	3,622,097,199**	24,700	11.2
6/30/2022	155,063	3,994,657,693	25,762	4.3

** Effective in FY2017, the active member headcount reflects an increase of members who have been re-categorized from inactive to active status.*

***Effective June 30, 2021, the annual compensation reflects imputed salaries.*



The following table shows the number of retiree members and their beneficiaries receiving health care as of the valuation date as well as average ages.

Retiree Lives

Type of Benefit Recipient	Number	Average
		Age
Service Retirees	30,569	75.9
Disability Retirees	2,391	70.1
Spouses	6,921	77.9
Non-Spouse Dependents	250	32.6
Total	40,131	75.7

This valuation also includes 6,118 deferred vested members eligible for health care.



SECTION III – ASSETS

1. As of June 30, 2022 the total market value of assets amounted to \$611,574,409.

Asset Summary Based on Market Value			
(1)	Assets at June 30, 2021	\$	600,330,188
(2)	Contributions and Misc. Revenue		151,149,430
(3)	Investment Gain (Loss)		(11,108,320)
(4)	Benefit Payments		<u>(128,796,889)</u>
(5)	Assets at June 30, 2022	\$	611,574,409
	(1) + (2) + (3) + (4)		
(6)	Annualized Rate of Return*		(1.82) %

*Based on the approximation formula: $I/[0.5 \times (A + B - I)]$, where

I = Investment Gain (Loss)

A = Beginning of year asset value

B = End of year asset value



SECTION IV - COMMENTS ON VALUATION

Schedule A of this report contains the valuation balance sheet which shows the present and prospective assets and liabilities of the System as of June 30, 2022.

1. The total health care valuation balance sheet shows that the System has total future health care liabilities of \$1,863,235,831 of which \$519,877,530 is for the future benefits payable for present retiree members and beneficiaries of deceased members; \$12,285,673 is for the future benefits payable for current deferred vested members; and \$1,331,072,628 is for the future benefits payable for present active members. Against these health care liabilities, the System has a total market value of assets of \$611,574,409 as of June 30, 2022. The difference of \$1,251,661,422 between the total liabilities and the total present actuarial value of assets represents the present value of contributions to be made in the future for health care. Of this amount, no future contributions are expected to be made by members, and the balance of \$1,251,661,422 represents the present value of future contributions payable by SERS.
2. SERS' contributions on account of health care consists of normal contributions and accrued liability contributions. The valuation indicates that employer normal contributions at the rate of 1.31% of payroll are required to provide the benefits of the System for the average new member of SERS.
3. Prospective employer normal contributions on account of health care at the above rates have a present value of \$514,981,761. When this amount is subtracted from \$1,251,661,422 which is the present value of the total future contributions to be made by the employer, there remains \$736,679,661 as the amount of future accrued liability contributions.
4. It is recommended that the accrued liability contribution rate payable by SERS on account of health care be set at 1.20% of payroll. This rate is sufficient to liquidate the unfunded accrued liability of \$736,679,661 over 30 years on the assumption that the aggregate payroll for members will increase by 1.75% each year.



SECTION V – DERIVATION OF EXPERIENCE GAINS AND LOSSES

Actual experience will never (except by coincidence) coincide exactly with assumed experience. It is assumed that gains and losses will be in balance over a period of years, but sizable year-to-year fluctuations are common. Detail on the derivation of the experience gain (loss) for the year ended June 30, 2022 is shown below.

Experience Gain/(Loss) (\$ Thousands)

(1)	UAAL* as of 6/30/21	\$ 689,067
(2)	Normal cost from last valuation	44,135
(3)	Expected employer contributions	98,269
(4)	Interest accrual: [(1) + (2)] x .070 - (3) x .070/2	47,885
(5)	Expected UAAL before changes: (1) + (2) - (3) + (4)	\$ 682,818
(6)	Change due to claims and retiree premiums	69,417
(7)	Change due to updated health care trend rates	(106,177)
(8)	Expected UAAL after changes: (5) - (6) - (7)	\$ 719,578
(9)	Actual UAAL* as of 6/30/22	736,680
(10)	Total gain/(loss): (8) - (9)	\$ (17,102)
(a)	Contribution shortfall	(10,335)
(b)	Investment Gain/(Loss)	(53,914)
(c)	Experience Gain/(Loss) (10) - (10a) - (10b)	\$ 47,147
(11)	Accrued Liabilities as of 6/30/22	\$ 1,348,254
(12)	Experience Gain/(Loss) as percent of actuarial accrued liabilities at end of year (10c) / (11)	3.5%

* unfunded actuarial liability



ANALYSIS OF FINANCIAL EXPERIENCE
Gains and Losses in Accrued Liabilities
Resulting from Difference Between
Assumed Experience and Actual Experience
(\$ Millions)

Type of Activity	\$ Gain (or Loss) For Year Ending 6/30/22
Age & Service Retirements. If members retire at older ages or participate in lower numbers, there is a gain. If younger ages or higher participation, a loss.	\$ (1.0)
Disability Retirements. If disability claims are less than assumed, there is a gain. If more claims, a loss.	(0.3)
Death-in Service Benefits. If survivor claims are less than assumed, there is a gain. If more claims, there is a loss.	(1.5)
Withdrawal From Employment. If more liabilities are released by withdrawals than assumed, there is a gain. If smaller releases, a loss.	21.5
Claims Increases (Including Wrap Plan). If there are smaller claims increases than assumed creates a gain; larger, a loss.	69.4
New Members. Additional accrued liability attributable to members who entered the plan since the last valuation.	(10.3)
Investment Income. If there is a greater investment income than assumed, there is a gain. If less income, a loss.	(53.9)
Contribution Shortfall. If there are more contributions than the ARC, there is a gain. If less contributions, a loss.	(10.3)
Death After Retirement. If retiree members live longer than assumed, there is a loss. If not as long, a gain.	15.9
Other. Miscellaneous gains and losses resulting from changes in valuation software, data adjustments, timing of financial transactions, etc.	22.8
Gain (or Loss) During Year From Financial Experience	\$ 52.3
Non-Recurring Items. Adjustments for plan amendments, assumption changes and method changes	(106.2)
Composite Gain (or Loss) During Year	\$ (53.9)



SECTION VI – REQUIRED CONTRIBUTION RATES

The valuation balance sheet gives the basis for determining the percentage rates for contributions to be made by employers to the Retirement System. The following tables show the rates of contribution payable by employers as determined from the present valuation for FY2022.

Required Contribution Rates

Contribution for	Amount	% of Payroll
A. Normal Cost	\$ 54,040,758	1.31%
B. Member Contributions*	\$ 0	0.00%
C. Employer Normal Cost: [A - B]	\$ 54,040,758	1.31%
D. Unfunded Actuarial Accrued Liability**	\$ 48,027,846	1.20%
E. Total Recommended Employer Contribution Rate: [C + D]	\$ 102,068,604	2.51%
F. Employer Contribution Toward Health Care ⁺	\$ 60,715,990	1.50%

* The liabilities are net of retiree contributions towards their health care.

** Based on 30-year amortization of the UAAL from June 30, 2022.

+ Includes 1.50% payroll surcharge.

Thirteen-Year History of Employer Contribution Rates

Fiscal Year Ending June 30	Employer Health Care Contribution Rate	Surcharge Percentage	Total Health Care Contribution Rate
2010	0.46%	1.50%	1.96%
2011	1.43	1.50	2.93
2012	0.55	1.50	2.05
2013	0.16	1.50	1.66
2014	0.14	1.50	1.64
2015	0.82	1.50	2.32
2016	0.00	1.50	1.50
2017	0.00	1.50	1.50
2018	0.50	1.50	2.00
2019	0.50	1.50	2.00
2020	0.00	1.50	1.50
2021	0.00	1.50	1.50
2022	0.00	1.50	1.50



SECTION VII - ACCOUNTING INFORMATION

Governmental Accounting Standards Board Statements 74 and 75 set forth certain items of required supplementary information to be disclosed in the financial statements of the System and the employer. The information presented in the required supplementary schedules was determined as part of the actuarial valuation at June 30, 2022. Additional information will be provided in separate reports.

Valuation date	6/30/2022
Actuarial cost method	Entry Age
Amortization	Level Percent Open
Remaining amortization period	30 years
Asset valuation method	Market Value
Actuarial assumptions	
Investment rate of return*	7.00%
* Includes price inflation at	2.40%
Wage increases	1.75%
Medical Trend Assumption	7.00% - 4.40%
Year of Ultimate Trend	2033



Eleven-Year Schedule of Funding Progress
(\$ Millions)

Actuarial Valuation Date	Value of Plan Assets (a)	Actuarial Accrued Liability (AAL) Entry Age (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b - a) / (c))
6/30/2012	\$355	\$2,691	\$2,336	13.2%	\$2,788	83.8%
6/30/2013	379	2,918	2,539	13.0	2,747	92.4
6/30/2014	414	2,476	2,062	16.7	2,759	74.7
6/30/2015	408	2,425	2,016	16.8	2,845	70.9
6/30/2016	370	2,407	2,037	15.4	2,932	69.5
6/30/2017	382	2,396	2,014	15.9	3,303	61.0
6/30/2018	436	2,525	2,089	17.3	3,332	62.7
6/30/2019	464	2,199	1,735	21.1	3,463	50.1
6/30/2020	483	1,797	1,314	26.9	3,478	37.8
6/30/2021	600	1,289	689	46.5	3,622	19.0
6/30/2022	612	1,348	736	45.4	3,995	18.4



Eleven-Year Schedule of Employer Contributions

Year Ended	Annual Required Contribution (ARC) (a)	Employer Contribution (b)	Federal Subsidies and Other Receipts (c)	Total Contribution (d) = (b)+(c)	Percentage of ARC Contributed (e) = (d)/(a)
June 30, 2012	\$155,857,785	\$56,476,230	\$0	\$56,476,230	36.2%
June 30, 2013	171,402,038	45,489,443	0	45,489,443	26.5
June 30, 2014	190,390,431	46,097,206	29,200,200	75,297,406	39.5
June 30, 2015	164,182,107	68,904,867	20,084,826	88,989,693	54.2
June 30, 2016	161,566,234	44,855,441	32,493,250	77,348,691	47.9
June 30, 2017	178,034,717	47,672,886	17,341,005	65,013,891	36.5
June 30, 2018	176,950,184	63,539,354	36,517,382	100,056,736	56.5
June 30, 2019	190,092,589	65,877,673	16,067,175	81,944,848	43.1
June 30, 2020	161,011,895	48,187,050	32,349,114	80,536,164	50.0
June 30, 2021	132,930,967	53,533,333	20,059,596	73,592,929	55.4
June 30, 2022	98,268,579	53,766,548	34,516,422	88,282,970	89.8



SCHEDULE A
VALUATION BALANCE SHEET

The following valuation balance sheet shows the assets and liabilities of the retirement system as of the current valuation date of June 30, 2022 and, for comparison purposes, as of the immediately preceding valuation date of June 30, 2021.

VALUATION BALANCE SHEET
SHOWING THE ASSETS AND LIABILITIES OF THE
SCHOOL EMPLOYEES RETIREMENT SYSTEM OF OHIO

	June 30, 2022	June 30, 2021
ASSETS		
Current market value of assets	\$ 611,574,409	\$ 600,330,188
Prospective contributions		
Employer normal contributions	514,981,761	440,016,749
Unfunded accrued liability contributions	736,679,661	689,066,742
Total prospective contributions	<u>\$ 1,251,661,422</u>	<u>\$ 1,129,083,491</u>
 Total assets	 <u><u>\$ 1,863,235,831</u></u>	 <u><u>\$ 1,729,413,679</u></u>
LIABILITIES		
Present value of benefits payable on account of present retiree members and beneficiaries	\$ 519,877,530	\$ 533,055,355
 Present value of benefits payable on account of active members	 1,331,072,628	 1,185,107,982
 Present value of benefits payable on account of deferred vested members	 <u>12,285,673</u>	 <u>11,250,342</u>
 Total liabilities	 <u><u>\$ 1,863,235,831</u></u>	 <u><u>\$ 1,729,413,679</u></u>



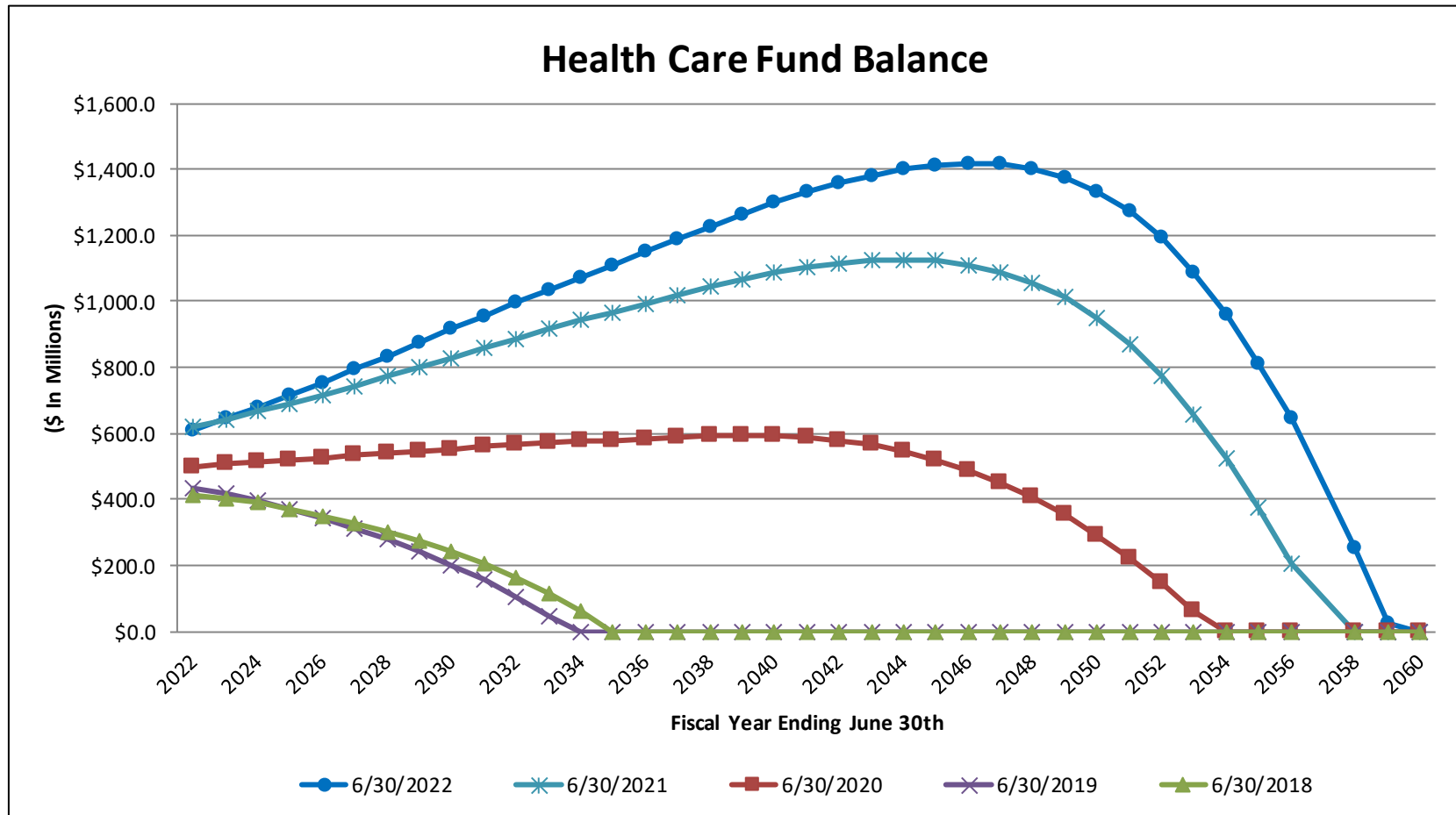
The following 11-year table provides the solvency test for SERS members. The table allocates the valuation assets of the System to its liabilities based on an order of precedence. The highest order of precedence is active member contributions. The second highest order of precedence are members in pay status and vested and non-vested terminated members. The lowest order of precedence is the employer financed portion of active member accrued benefits. The liabilities are determined using the System's assumed rate of return.

Solvency Test
(\$ Millions)

Valuation Date	Aggregate Accrued Liabilities For				Portion of Accrued Liabilities Covered by Reported Asset		
	(1) Active Member Contributions	(2) Retiree Members & Beneficiaries	(3) Active Members (Employer Financed Portion)	Actuarial Value of Assets	(1)	(2)	(3)
6/30/2012	\$0	\$1,074	\$1,617	\$355	100.0%	33.1%	0.0%
6/30/2013	0	1,157	1,761	379	100.0	32.8	0.0
6/30/2014	0	968	1,508	414	100.0	42.8	0.0
6/30/2015	0	979	1,507	408	100.0	41.7	0.0
6/30/2016	0	918	1,489	370	100.0	40.3	0.0
6/30/2017	0	916	1,480	382	100.0	41.7	0.0
6/30/2018	0	968	1,557	436	100.0	45.0	0.0
6/30/2019	0	813	1,386	464	100.0	57.0	0.0
6/30/2020	0	626	1,171	483	100.0	77.1	0.0
6/30/2021	0	544	745	600	100.0	100.0	7.5
6/30/2022	0	532	816	612	100.0	100.0	9.8

Solvency Chart

The following chart shows the projected Health Care Fund Balances from the five most recent valuations. The prior year projections were based on the funding policy and assumptions in effect on the prior year valuation dates. The current year projection is based on a 7.00% future asset rate of return assumption, on a payroll growth assumption of 1.75% per year, and on the assumption that the health contribution rate will be 0.00%, plus a health care surcharge of 1.50%. These projections assume there will be no health care cost increases due to ACA law changes or COVID-19 impact other than anticipated health care trend.





SCHEDULE B

STATEMENT OF ACTUARIAL ASSUMPTIONS AND METHODS

The decremental assumptions used in the valuation were adopted by the Board on April 15, 2021.

INTEREST RATE: 7.00% per annum, compounded annually (net after all System expenses).

HEALTH CARE COST TREND RATES: Following is a chart detailing trend assumptions:

Calendar Year	
2022	7.00%
2023	6.75
2024	6.50
2025	6.25
2026	6.00
2027	5.75
2028	5.50
2029	5.25
2030	5.00
2031	4.75
2032	4.50
2033 and beyond	4.40

AGE RELATED MORBIDITY: Per capita costs are adjusted to reflect expected cost changes related to age. The increase to the net incurred claims was assumed to be:

Participant Age	Annual Increase	
	Medical	Prescription Drug
Under 41	0.00%	0.00%
41 – 45	2.50	1.25
46 – 50	2.60	1.30
51 – 55	3.20	1.60
56 – 60	3.40	1.70
61 – 65	3.70	1.85
66 – 70	3.20	1.60
71 – 75	2.40	1.20
76 – 80	1.80	0.90
81 – 85	1.30	0.65
Over 85	0.00	0.00



ANTICIPATED PLAN PARTICIPATION: The assumed annual rates of retiree participation and spouse coverage are as follows:

Retiree Gender	Spouse Coverage	Dependent Child Coverage
Male	25.0%	0.0%
Female	25.0%	0.0%

Wives are assumed to be three years younger than husbands.

Pre-65 Participants:

Years of Service	Service Retiree Participation	Disabled Retiree Participation	Deferred Vested Retiree Participation	Death in Service Surviving Spouse Participation
1.5 – 4	N/A	N/A	N/A	100.0%
5 – 9	N/A	25.0%	N/A	100.0
10 – 14	25.0%	25.0	50.0%	100.0
15 – 19	25.0	45.0	50.0	100.0
20 – 24	45.0	50.0	50.0	100.0
25 – 29	50.0	75.0	50.0	100.0
30 – 34	75.0	75.0	50.0	100.0
35 and over	90.0	90.0	50.0	100.0

Post-65 Participants:

Years of Service	Service Retiree Participation	Disabled Retiree Participation	Deferred Vested Retiree Participation	Death in Service Surviving Spouse Participation
1.5 – 4	N/A	N/A	N/A	100.0%
5 – 9	N/A	70.0%	N/A	100.0
10 – 14	25.0%	70.0	50.0%	100.0
15 – 19	45.0	70.0	50.0	100.0
20 – 24	70.0	75.0	50.0	100.0
25 – 29	75.0	75.0	50.0	100.0
30 – 34	85.0	85.0	50.0	100.0
35 and over	90.0	90.0	50.0	100.0



ANTICIPATED PLAN ELECTIONS: The assumed annual rates of member plan elections are as follows:

Plan Type	Future Retirees	
	Non-Medicare	Medicare
PPO	90.0%	100.0%
Wraparound HRA	10.0%	N/A

Anticipated plan elections within the above plan types are further expanded below:

Plan Type	Future Retirees*	
	Non-Medicare	Medicare
<u>PPO</u>		
Aetna Choice POS II	96.0%	0.0%
Aetna Medicare SM Plan	0.0%	100.0%
AultCare PPO	4.0%	0.0%

**Future disabled retirees assumed 85% Non-Medicare coverage and 15% Medicare coverage before age 65.*

ANTICIPATED MEDICARE COVERAGE AT AGE 65: The assumed annual rates of future retirees obtaining Medicare coverage at age 65 are as follows:

Medicare Coverage	Percent Covered
No Medicare at age 65	1.0%
Medicare Part A	98.0%
Medicare Part B Only	1.0%

Current service retirees, disabled benefit recipients, spouses, and dependent children under age 65 were assumed to have similar Medicare coverage at age 65 as their post-Medicare counterparts.

Effective September 30, 2021, an individual who fails to enroll in Medicare Part B during their Medicare initial or special enrollment period will lose eligibility for SERS health care coverage. If an individual enrolls in Medicare Part B coverage but then fails to maintain the coverage, the individual must re-enroll during Medicare's first available general enrollment period.

HEALTH CARE PREMIUM DISCOUNT PROGRAM PARTICIPATION: Current Medicare-eligible service retirees, disabled benefit recipients, spouses and dependent children reported as qualifying for the health care Premium Discount Program were assumed to continue participating in the program for their lifetime. The health care premium Discount Program is not available for non-Medicare participants.



MONTHLY EXPECTED MEDICAL/PRESCRIPTION DRUG CLAIMS COSTS (INCLUDES ADMINISTRATIVE EXPENSES): Following are charts detailing expected claims for the year following the valuation date.

Retiree Costs			
Medicare Status	Aetna Choice POS II and Aetna Medicare SM	Aetna Traditional Choice	AultCare PPO
Non-Medicare	\$1,483	N/A	\$1,071
Medicare A	\$159	\$659	N/A
Medicare B Only	\$159	N/A	N/A

Spouse Costs			
Medicare Status	Aetna Choice POS II and Aetna Medicare SM	Aetna Traditional Choice	AultCare PPO
Non-Medicare	\$1,186	N/A	\$856
Medicare A	\$159	\$659	N/A
Medicare B Only	\$159	N/A	N/A

Children Costs			
Medicare Status	Aetna Choice POS II and Aetna Medicare SM	Aetna Traditional Choice	AultCare PPO
Non-Medicare	\$371	N/A	\$189
Medicare A	\$159	\$659	N/A

The above amounts are shown as average costs and represent premiums paid to insurers.



ANNUAL EXPECTED MEDICAL/PRESCRIPTION DRUG COSTS (INCLUDES ADMINISTRATIVE EXPENSES) (continued): In the valuation, the premium costs are converted to age 65 amounts, age adjusted and blended based on actual elections for current retirees, current disabled retirees, current retiree spouses and current dependent children, and based on projected elections for future retirees and future spouses. For this valuation, we have assumed 10% participation in the SERS Marketplace Wraparound HRA for pre-Medicare retirees. The age adjusted and blended amounts are as follows:

Annual Medical and Prescription Drug Blended Costs Age Adjusted to 65							
	Future Service Retirees	Future Disabled Retirees	Future Spouses	Current Service Retires	Current Disabled Retirees	Current Retiree Spouses	Current Dependent Children
Pre-65	\$17,172	\$14,862	\$14,004	\$17,652	\$10,656	\$9,468	\$6,708
65 & Older	1,776	1,776	1,728	1,656	1,776	1,632	N/A



SEPARATIONS FROM ACTIVE SERVICE: Representative values of the assumed rates of separation from active service are as follows:

Service	Annual Rates of Withdrawal
0	40.00%
1	19.00
2	11.00
3	9.00
4	8.00
5	6.50
10	3.50
15	2.25

Annual Rates of				
Age	Death *		Disability	
	Male	Female	Male	Female
20	.041%	.013%	.020%	.010%
25	.041	.012	.039	.010
30	.052	.019	.071	.028
35	.068	.030	.127	.059
40	.096	.047	.214	.106
45	.143	.072	.313	.180
50	.218	.107	.414	.300
55	.320	.157	.530	.450
60	.466	.238	.590	.450
65	.682	.380	.533	.300
70	1.025	.627	.300	.200
74	1.461	.937	.300	.200

* Pre-retirement mortality is based on the PUB-2010 General Amount Weighted Below Median Employee Mortality Table with fully generational projection using the MP-2020 projection scale. The above rates represent the base rates used.



Annual Rates of								
Age	Retirement Eligible prior to 8/1/17				Retirement Eligible after 8/1/17			
	Reduced	Reduced (55/25)	First Eligible Unreduced	Subsequent Unreduced	Reduced	Reduced (60/25)	First Eligible Unreduced	Subsequent Unreduced
50			21%	19%				
55		10%	27%	19%				
57		10%	27%	19%			30%	19%
60	43%	15%	27%	19%		6%	30%	19%
62	43%	15%	27%	19%	5%	6%	30%	19%
65			50%	33%	15%	17%	30%	19%
68			50%	33%			30%	18%
70			50%	33%			30%	18%
75			100%	100%			100%	100%

SALARY INCREASES: Representative values of the assumed annual rates of salary increases are as follows:

Annual Rates of			
Service	Merit & Seniority (A)	Base (Economy) (B)	Increase Next Year $(1+(A))*(1+(B))$
0	10.00%	3.25%	13.58%
1	3.00	3.25	6.35
2	1.75	3.25	5.06
3	1.25	3.25	4.54
4	1.00	3.25	4.28
5-9	0.75	3.25	4.02
10-15	0.50	3.25	3.77
16-17	0.25	3.25	3.51
18 & over	0.00	3.25	3.25

PAYROLL GROWTH: 1.75% per annum, compounded annually.

PRICE INFLATION: 2.40% per annum, compounded annually.



DEATH AFTER RETIREMENT: These assumptions are used to measure the probabilities of each benefit payment being made after retirement.

SERVICE RETIREMENT: PUB-2010 General Employee Amount Weighted Below Median Healthy Retiree mortality table projected to 2017 with ages set forward 1 year and adjusted 94.20% for males and set forward 2 years and adjusted 81.35% for females. Future improvement in mortality rates is reflected by applying the MP-2020 projection scale generationally.

DISABLED RETIREMENT: PUB-2010 General Disabled Retiree mortality table projected to 2017 with ages set forward 5 years and adjusted 103.3% for males and set forward 3 years and adjusted 106.8% for females. Future improvement in mortality rates is reflected by applying the MP-2020 projection scale generationally.

CONTINGENT SURVIVOR: PUB-2010 General Amount Weighted Below Median Contingent Survivor mortality table projected to 2017 with ages set forward 1 year and adjusted 105.5% for males and adjusted 122.5% for females. Future improvement in mortality rates is reflected by applying the MP-2020 projection scale generationally

VALUATION METHOD: Entry age normal cost method. Entry age is established on an individual basis.

ASSET VALUATION METHOD: Market value.



SCHEDULE C

SCHOOL EMPLOYEES RETIREMENT SYSTEM OF OHIO Summary of Main Plan Provisions as of June 30, 2022

ELIGIBILITY FOR ACCESS TO RETIREE HEALTH CARE:

Normal Retirement:

Retire before August 1, 2017 or have 25 years of service or more on or before August 1, 2017: Attainment of age 65 with at least 10 years of creditable service, or completion of 30 years of creditable service, regardless of age.

Members attaining 25 years of service after August 1, 2017: Attainment of age 67 with at least 10 years of creditable service, or attainment of age 57 with at least 30 years of creditable service. Buy-up option available.

Early Retirement:

Retire before August 1, 2017 or have 25 years of service or more on or before August 1, 2017: Not eligible for unreduced service retirement but has attained age 55 with at least 25 years of service, or age 60 with 10 years of service.

Members attaining 25 years of service after August 1, 2017: Attainment of age 62 with at least 10 years of creditable service, or attainment of age 60 with at least 25 years of creditable service.

Disability Retirement: Permanently disabled after completion of at least 5 years of total service credit.

Survivor Allowances: Beneficiary must be receiving monthly benefits due to the death of a member, age and service retiree or disability benefit recipient.

Termination: Members that terminated with at least 10 years of creditable service and have attained age 60 (age 62 for those retiring after August 1, 2017).

PREMIUM PAYMENTS:

Retirees, spouses and dependent children pay either all or a portion of the cost of health care and prescription drug coverage as well as a \$35 monthly surcharge. The remainder of the cost is paid by SERS.

Medicare-eligible retirees, spouses and dependent children may qualify for the health care Premium Discount Program if their household income falls at or below a specified level. Income limits are updated annually. Retirees, spouses and dependent children qualifying for the program will receive a 25% discount in their monthly health care premiums.



PREMIUM PAYMENTS (Continued):

The following schedule lists the percentage of the retiree premium paid by service retirees:

Years of Service	Retirement Date on or before July 1, 1989	Retirement Date August 1, 1989 through July 1, 2008	Retirement Date on or after August 1, 2008
	Service Retiree Premium Contribution Percentage		
5 – 9	50.0%	N/A	N/A
10 – 14	17.5	100.0%	100.0%
15 – 19	17.5	50.0	100.0
20 – 24	17.5	25.0	50.0
25 – 29	17.5	17.5	30.0
30 – 34	17.5	17.5	20.0
35 and over	17.5	17.5	15.0*

* Additional 1% reduction for each year over 35.

The following schedule lists the percentage of the retiree premium paid by disability benefit recipients:

Years of Service	Disabled Benefit Recipient Premium Contribution Percentage
5 – 9	50.0%
10 – 24	33.0
25 and over	17.5

The following schedule lists the percentage of the spouse premium paid by spouses of retirees:

Service Retiree, Disability Recipient, or Member's Qualified Years of Service	Spouse Premium Contribution Percentage
1.5 – 24	100.0%
25 – 29	90.0
30 and over	80.0

Dependent children pay 70.0% of the child premium.

In addition, SERS offered a new coverage option beginning in 2017, the Marketplace Wraparound HRA. This option is only available to health care participants who are not eligible for Medicare and who are not enrolled in Medicaid. Participants will be able to choose insurance from any insurer offering coverage in the federal Marketplace, and if eligible, receive a federal subsidy to lower the premium and cost-sharing amounts. The SERS Marketplace Wraparound HRA offers additional benefits to help pay for deductibles, co-pays, and other costs.



OTHER POST-EMPLOYMENT BENEFITS: Health care and prescription drug coverage is provided in all post-employment group health care plan options. Dental and vision coverage are made available to retirees, spouses, and dependent children at the full cost.

2023 RETIREE HEALTH CARE PLAN OPTIONS:

Options available to members without Medicare

- ◇ Aetna Choice POS II with Express Scripts prescription drug coverage
- ◇ AultCare PPO with AultCare prescription drug coverage
- ◇ Wraparound HRA

Options available to members with Medicare:

- ◇ Aetna MedicareSM Plan (PPO) with Express Scripts Medicare Part D Prescription Drug Plan
- ◇ Aetna Traditional Choice with Express Scripts Medicare Part D Prescription Drug Plan (only available to members with special circumstances)

The following pages contain information that was provided by SERS in the 2023 *Open Enrollment Guide* and the 2023 *Member Health Care Guide*.



2023 Contribution Rates

Years of Service	Aetna Choice POS II and Aetna MedicareSM	Aetna Traditional Choice	AultCare PPO
Service Retirement Date on or before July 1, 1989 Premiums			
5-9.999 years			
Without Medicare	\$780		\$571
With Medicare A & B	\$117	\$408	
With Medicare B Only	\$297		
10-24.999 years			
Without Medicare	\$296		\$222
With Medicare A & B	\$64	\$166	
With Medicare B Only	\$127		
25 years & over			
Without Medicare	\$296		\$222
With Medicare A & B	\$64	\$166	
With Medicare B Only	\$64		

Years of Service	Aetna Choice POS II and Aetna MedicareSM	Aetna Traditional Choice	AultCare PPO
Service Retirement Date August 1, 1989 through July 1, 2008 Premiums			
10-14.999 years			
Without Medicare	\$1,524		\$1,106
With Medicare A & B	\$198	\$781	
With Medicare B Only	\$558		
15-19.999 years			
Without Medicare	\$780		\$571
With Medicare A & B	\$117	\$408	
With Medicare B Only	\$297		
20-24.999 years			
Without Medicare	\$407		\$303
With Medicare A & B	\$76	\$222	
With Medicare B Only	\$166		
25 years & over			
Without Medicare	\$296		\$222
With Medicare A & B	\$64	\$166	
With Medicare B Only	\$64		



**2023 Contribution Rates
(continued)**

Years of Service	Aetna Choice POS II and Aetna MedicareSM	Aetna Traditional Choice	AultCare PPO
Service Retirement Date on or after August 1, 2008 Premiums*			
10-19.999 years			
Without Medicare	\$1,524		\$1,106
With Medicare A & B	\$198	\$781	
With Medicare B Only	\$558		
20-24.999 years			
Without Medicare	\$780		\$571
With Medicare A & B	\$117	\$408	
With Medicare B Only	\$297		
25-29.999 years			
Without Medicare	\$482		\$356
With Medicare A & B	\$84	\$259	
With Medicare B Only	\$84		
30-34.999 years*			
Without Medicare	\$333		\$249
With Medicare A & B	\$68	\$184	
With Medicare B Only	\$68		

* Further reductions for each year over 35.

Years of Service	Aetna Choice POS II and Aetna MedicareSM	Aetna Traditional Choice	AultCare PPO
Disability Benefit Recipient Premiums			
5-9.999 years			
Without Medicare	\$780		\$571
With Medicare A & B	\$117	\$408	
With Medicare B Only	\$297		
10-24.999 years			
Without Medicare	\$526		\$389
With Medicare A & B	\$89	\$281	
With Medicare B Only	\$208		
25 years & over			
Without Medicare	\$296		\$222
With Medicare A & B	\$64	\$166	
With Medicare B Only	\$64		



**2023 Contribution Rates
(continued)**

Years of Service	Aetna Choice POS II and Aetna MedicareSM	Aetna Traditional Choice	AultCare PPO
Spouse Premiums (Service Retiree, Disability Recipient, or Member's Qualified Service)			
Up to 25 years			
Without Medicare	\$1,227		\$891
With Medicare A & B	\$198	\$781	
With Medicare B Only	\$558		
25-29.999 years			
Without Medicare	\$1,108		\$805
With Medicare A & B	\$182	\$706	
With Medicare B Only	\$182		
30 years & over			
Without Medicare	\$989		\$720
With Medicare A & B	\$166	\$632	
With Medicare B Only	\$166		

Years of Service	Aetna Choice POS II and Aetna MedicareSM	Aetna Traditional Choice	AultCare PPO
Child Premiums			
Child w/o Medicare A	\$296		\$167
Child with Medicare A & B	\$149	\$557	



SERS' Non-Medicare Plans

Non-Medicare plans are available to benefit recipients and dependents under age 65 and not Medicare eligible. Beginning 1/1/2021, however, members who are under age 65 that are eligible for Medicaid are not eligible for the SERS Health Care Plan coverage. Beginning September 2021, plan enrollees eligible for Medicare B lose eligibility for SERS coverage if they do not enroll in Medicare B.

Aetna Choice POS II

This is a Preferred Provider Organization (PPO) plan with prescription drug coverage by Express Scripts. The plan is available throughout the United States.

To enroll in this plan, a member must:

- Be under age 65 and not eligible for Medicare

Use of out-of-network providers will increase out-of-pocket costs.

AultCare PPO

This is a Preferred Provider Organization (PPO) plan with prescription drug coverage by AultCare.

To enroll in this plan, a member must:

- Be under age 65 and not eligible for Medicare.
- Live in one of the Ohio counties listed on the map in the *2023 Open Enrollment Guide*.

Use of out-of-network providers will increase out-of-pocket costs.

2023 SERS Marketplace Wraparound HRA

The SERS Marketplace Wraparound HRA is available to participants who are not eligible for Medicare and who are not enrolled in Medicaid. Participants are able to choose insurance from any insurer offering coverage in the federal Marketplace. If eligible, participants receive a federal subsidy to lower the premium and cost-sharing amounts. The SERS Market place Wraparound HRA offers additional benefits to help pay for deductibles, co-pays, and other costs up to a federally established annual reimbursement limit.



SERS' Medicare Plans

Aetna Medicare Plan (PPO)

This is a Medicare Advantage plan with Medicare Part D prescription drug coverage administered by Express Scripts.

Ohio Residents: Aetna has a preferred provider network. Use of out-of-network providers will increase out-of-pocket costs.

Non-Ohio Residents: Can use any medical provider that accepts Medicare patients and agrees to file claims with Aetna.

This plan is available throughout the United States. To enroll, members must have:

- Medicare Part B
- Medicare Part A, if eligible

Aetna Traditional Choice Plan

This plan is NOT available for optional enrollment. It is only available in special circumstances. SERS determines when enrollment is appropriate. Medicare Part D prescription drug coverage is administered through Express Scripts.



Prescription Drug Coverage

Prescription drug coverage is included in SERS' health care coverage and does not require a separate premium. Express Scripts provides the prescription drug coverage for Aetna. AultCare provides their own prescription coverage. All prescription plans have a formulary of covered medications. These are referred to as preferred medications. Medications not on the formulary are referred to as non-preferred. The amount members are responsible for paying, known as the co-pay, is based on the medication's preferred status. Members pay the least for generic medications. Members pay the most for brand-name medications that are not preferred. Members can get prescriptions at retail pharmacies or through the mail. Members save money by having prescriptions for maintenance medications mailed to their homes.

The following is a partial list of situations or types of medications that are not covered.

- Prescriptions or medications dispensed in a hospital. These are typically covered under the medical plan.
- Prescriptions covered by Workers' Compensation.
- Prescriptions for fertility, erectile dysfunction, or cosmetic drugs.
- Over-the-counter drugs and herbal preparations, including homeopathic preparations.

With the exception of insulin, Express Scripts does not cover non-preferred medications. Members pay the full amount for non-preferred medications, and these costs do not count toward any out-of-pocket maximum or the Medicare coverage gap.

All prescription plans include these common coverage rules:

- Prior Authorization - For some medications, the doctor must contact the drug plan before certain prescriptions can be filled. The prescription is only covered if the doctor is able to confirm that the medication is necessary.
- Quantity Limits - Limits how much of a specific medication members can get at a time.
- Step Therapy - A process where certain medications that have proven to be safe and effective are tried as the first choice rather than starting with a more expensive prescribed medication.

Medicare Part D Prescription Drugs

SERS' health plan participants enrolled in a Medicare plan are automatically covered under a Medicare Part D prescription drug plan through SERS and should not enroll in a separate Medicare Part D plan. Enrolling in another Part D plan would cause cancellation of SERS coverage for both medical and prescription drug benefits per federal law.



Non-Medicare Plan Benefits

	Aetna Choice POS II (In-Network)	AultCare PPO (In Network)
Annual Combined Medical & Prescription Drug Out-of-Pocket Maximum	\$7,350/person \$14,700/family	\$7,350/person \$14,700/family
Deductible	\$2,000/person \$4,000/family	\$2,000/person \$4,000/family
Primary Care Office Visit	\$20 co-pay	\$20 co-pay
Specialist Office Visit	\$40 co-pay	\$40 co-pay
Outpatient Diagnostic X-Ray and Lab	20% coinsurance	20% coinsurance
Retail Walk-In Clinic	\$20 co-pay	\$20 co-pay
Urgent Care	\$40 co-pay	\$40 co-pay
Emergency Room	\$150 co-pay	\$150 co-pay
Ambulance	20% coinsurance	20% coinsurance
Inpatient Hospital	20% coinsurance after \$250 co-pay	20% coinsurance after \$250 co-pay
Outpatient Surgery	20% coinsurance	20% coinsurance
Skilled Nursing Facility (100-day max)	20% coinsurance	20% coinsurance
Home Health Care	20% coinsurance	20% coinsurance
Hospice Health Care	100% coverage	Inpatient: 100% coverage Outpatient: 20% coinsurance
Outpatient Short-Term Rehab	20% coinsurance	20% coinsurance
Chiropractic	20% coinsurance	20% coinsurance
Durable Medical Equipment	20% coinsurance	20% coinsurance
Prescription Drugs	Express Scripts <u>Retail 30-day max:</u> \$7.50 generic, 25% preferred brand (\$25 min, \$100 max) <u>Mail order 90-day max:</u> \$15 generic, 25% preferred brand (\$45 min, \$200 max) <u>Insulin Retail:</u> \$25 preferred brand, 25% or \$45 max non-preferred brand <u>Insulin Mail Order:</u> 25% preferred brand (\$45 min, \$60 max), 25% or \$115 max non-preferred brand <u>Specialty medications:</u> 25% of cost (\$25 min, \$100 max) <u>Specialty Mail order 90-day max:</u> 25% of cost (\$15 min, \$67 max per 30-day supply)	AultCare <u>Retail 30-day max:</u> \$7.50 generic, 25% preferred brand (\$25 min, \$100 max) <u>Mail order 90-day max:</u> \$15 generic, 25% preferred brand (\$45 min, \$200 max) Non-preferred at 100% <u>Insulin Retail:</u> \$30 preferred brand, \$45 non-preferred brand <u>Insulin Mail Order:</u> \$60 preferred brand, \$115 non-preferred brand <u>Specialty medications:</u> \$100 co-pay <u>Specialty Mail order:</u> \$100 co-pay; 30-day supply only



**Non-Medicare Plan Benefits
(continued)**

SERS Marketplace Wraparound HRA

Benefit	Maximum Reimbursement
Deductible	Reimbursements are limited to \$1,950 per family, per calendar year in accordance with federal limits.*
Covered prescription drugs	
Physician office visit co-pay	
Inpatient hospital admission co-pay or coinsurance	
Imaging (X-rays, CT/PET Scans, MRI) co-pay or coinsurance	
<p>*All benefit category costs in the aggregate are subject to the overall total Maximum Amount under this Plan. Such costs can be used in various combinations but shall not, in the aggregate, exceed the Maximum Amount. Reimbursement is limited to cost sharing after the Participant's Marketplace plan has adjudicated any claim(s). Actual reimbursement may vary according to the Participant's Marketplace plan's terms, but will in no event exceed the Participant's actual out-of-pocket expenses under the applicable Marketplace plan.</p>	
<p>The SERS Wraparound HRA eligible expenses noted above only apply to covered services under your Marketplace plan. Claims for non-covered services are not eligible for reimbursement.</p>	



Medicare Plan Benefits

Aetna MedicareSM Plan (PPO)

Annual Out-of-Pocket Maximum	\$3,000 per person
Deductible	None
Primary Care Office Visit	\$10 co-pay
Specialist Office Visit	\$30 co-pay
Outpatient Diagnostic X-Ray	\$25 co-pay
Outpatient Diagnostic Lab	100% coverage
Urgent Care	\$40 co-pay
Emergency Room	\$100 co-pay
Ambulance	\$80 co-pay
Inpatient Hospital	\$150 co-pay per day 1-5, then 100%
Outpatient Surgery /Procedures	15% coinsurance up to \$200 max
Skilled Nursing Facility (100-day max)	Co-pay: \$0 per day 1-10, \$25 per day 11-20, \$50 per day 21-100
Home Health Care	100% coverage
Hospice	Covered per Medicare
Outpatient Short-Term Rehab	\$15 co-pay
Chiropractic	\$20 co-pay limited to Medicare coverage
Durable Medical Equipment	20% coinsurance
Prescription Drugs	Express Scripts Medicare D PDP <u>Retail 30-day max:</u> \$7.50 generic, 25% preferred brand (\$25 min,\$100 max) <u>Mail order 90-day max:</u> \$15 generic, 25% preferred brand (\$45 min, \$200 max) <u>Insulin Retail:</u> \$25 preferred brand, 25% or \$35 max non-preferred brand <u>Insulin Mail Order:</u> 25% preferred brand (\$45 min, \$60 max), 25% or \$90 max non-preferred brand <u>Specialty medications:</u> 25% of cost (\$25 min,\$100 max) <u>Specialty Mail order 90-day max:</u> 25% of cost (\$15 min,\$67 max per 30-day supply)



SCHEDULE D
DETAILED TABULATIONS OF THE DATA

All Retirees, Spouses and Dependents Receiving Health Care
Male and Female Demographic Breakdown
As of June 30, 2022
Tabulated by Attained Ages

Attained Age	Number of		Total Number
	Males	Females	
Under 20	24	38	62
20-24	45	34	79
25-29	17	18	35
30-34	1	2	3
35-39	2	3	5
40-44	10	6	16
45-49	12	15	27
50-54	73	91	164
55-59	303	467	770
60-64	1,083	2,009	3,092
65-69	2,374	5,107	7,481
70-74	2,493	5,761	8,254
75-79	1,895	5,081	6,976
80-84	1,637	4,514	6,151
85-89	1,077	3,057	4,134
90-94	455	1,688	2,143
95-99	82	559	641
100	4	31	35
101	1	34	35
102	1	11	12
103	1	6	7
104	0	2	2
105 & Over	1	6	7
Total	11,591	28,540	40,131



Schedule of Retiree Members Added to and Removed from Rolls
Last Eleven Fiscal Years

Year Ended	Added to Rolls		Removed from Rolls*		Rolls at Year-End		% Increase in Projected Benefits	Average Projected Benefits
	Number	Projected Benefits	Number	Projected Benefits	Number	Projected Benefits		
6/30/2012	2,073	9,280,779	3,785	5,391,796	46,439	90,708,513	11.49%	1,953
6/30/2013	2,110	8,977,566	3,217	4,370,993	45,332	100,514,730	10.81%	2,217
6/30/2014	2,251	8,658,731	2,873	4,834,922	44,710	87,007,272	(13.44)%	1,946
6/30/2015	2,329	8,897,861	2,932	4,682,901	44,107	90,855,858	4.42%	2,060
6/30/2016	2,820	10,209,470	2,650	4,258,016	44,277	90,484,518	(0.41)%	2,044
6/30/2017	2,355	10,099,985	2,774	4,834,866	43,858	91,554,056	1.18%	2,088
6/30/2018	2,383	7,833,624	2,820	5,004,204	43,421	90,696,175	(0.94)%	2,089
6/30/2019	1,791	6,375,244	2,665	4,496,857	42,547	82,778,168	(8.73)%	1,946
6/30/2020	2,058	6,645,569	2,749	4,275,713	41,856	69,600,381	(15.92)%	1,663
6/30/2021	2,213	7,152,506	3,172	4,050,170	40,897	69,028,349	(0.82)%	1,688
6/30/2022	2,245	6,676,697	3,011	4,299,770	40,131	63,016,244	(8.71)%	1,570

* The benefits removed from rolls do not include subsidies that were changed due to premium changes, plan election changes or reductions due to members obtaining Medicare eligibility.



Deferred Vested Members Eligible for Health Care
Male and Female Demographic Breakdown
As of June 30, 2022
Tabulated by Attained Ages

Attained Age	Number of		Total Number
	Males	Females	
Under 35	6	9	15
35-39	60	56	116
40-44	122	209	331
45-49	155	422	577
50-54	250	851	1,101
55-59	344	1,435	1,779
60 & Over	370	1,829	2,199
Total	1,307	4,811	6,118



Total Active Members as of June 30, 2022
Tabulated by Attained Ages and Years of Service

Attained Age	Years of Service to Valuation Date							Totals
	0-4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30+	
Under 20	2,804							2,804
Avg Pay	\$11,088							\$11,088
20-24	9,629	94						9,723
Avg Pay	\$12,984	\$31,584						\$13,164
25-29	9,617	1,142	26					10,785
Avg Pay	\$16,270	\$33,323	\$43,478					\$18,141
30-34	8,827	2,293	368	39				11,527
Avg Pay	\$17,326	\$35,293	\$46,235	\$52,499				\$21,942
35-39	9,424	3,111	780	343	39			13,697
Avg Pay	\$17,839	\$34,305	\$46,705	\$54,939	\$61,129			\$24,275
40-44	10,078	4,287	1,284	746	425	29		16,849
Avg Pay	\$16,865	\$31,925	\$42,655	\$52,878	\$57,588	\$69,085		\$25,374
45-49	8,780	4,505	1,754	1,133	819	264	11	17,266
Avg Pay	\$16,140	\$30,797	\$37,258	\$45,982	\$55,557	\$57,234	\$59,779	\$26,594
50-54	7,893	4,503	2,707	2,139	1,769	685	177	19,873
Avg Pay	\$17,147	\$31,511	\$34,485	\$39,734	\$47,094	\$59,253	\$61,873	\$29,710
55-59	6,027	3,585	2,567	2,926	3,346	1,520	513	20,484
Avg Pay	\$16,963	\$31,313	\$34,194	\$36,941	\$41,130	\$47,611	\$56,046	\$31,688
60-64	4,739	2,803	1,995	2,452	3,695	2,302	934	18,920
Avg Pay	\$15,494	\$29,954	\$33,933	\$36,446	\$38,823	\$41,770	\$49,504	\$31,728
65-69	2,960	1,341	779	746	1,126	844	729	8,525
Avg Pay	\$12,263	\$25,326	\$31,184	\$36,967	\$40,268	\$41,028	\$44,367	\$27,501
70 & over	2,098	803	405	283	271	223	527	4,610
Avg Pay	\$9,904	\$19,727	\$26,066	\$29,057	\$33,745	\$38,798	\$38,366	\$20,263
Totals	82,876	28,467	12,665	10,807	11,490	5,867	2,891	155,063
Avg Pay	\$15,848	\$31,341	\$36,192	\$39,852	\$42,753	\$45,936	\$48,136	\$25,761

Averages:
Age: 47.2
Service: 7.6
Annual Pay: \$25,761



Male Active Members as of June 30, 2022
Tabulated by Attained Ages and Years of Service

Attained Age	Years of Service to Valuation Date							Totals
	0-4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30+	
Under 20	1,462							1,462
Avg Pay	\$11,509							\$11,509
20-24	3,971	39						4,010
Avg Pay	\$13,898	\$36,657						\$13,374
25-29	3,922	531	16					4,469
Avg Pay	\$16,266	\$38,848	\$46,319					\$19,056
30-34	3,118	836	186	27				4,167
Avg Pay	\$17,917	\$41,335	\$52,726	\$57,160				\$24,423
35-39	2,775	894	357	202	24			4,252
Avg Pay	\$18,743	\$44,147	\$52,761	\$60,013	\$68,317			\$29,181
40-44	3,137	979	409	315	215	13		5,068
Avg Pay	\$17,217	\$42,942	\$56,990	\$65,389	\$69,301	\$79,552		\$30,760
45-49	3,140	949	410	270	277	131	6	5,183
Avg Pay	\$14,491	\$40,412	\$50,670	\$63,018	\$72,735	\$63,436	\$62,415	\$29,032
50-54	3,003	1,065	504	376	359	270	86	5,663
Avg Pay	\$15,952	\$39,018	\$47,453	\$59,248	\$67,631	\$74,020	\$69,421	\$32,825
55-59	2,384	1,040	545	460	460	300	203	5,392
Avg Pay	\$17,410	\$37,637	\$47,386	\$55,117	\$60,193	\$67,934	\$64,118	\$35,777
60-64	1,973	975	590	505	515	283	245	5,086
Avg Pay	\$16,794	\$35,338	\$42,146	\$50,217	\$56,973	\$61,658	\$66,841	\$35,584
65-69	1,243	604	330	215	221	113	139	2,865
Avg Pay	\$13,515	\$28,343	\$35,872	\$45,898	\$52,112	\$58,718	\$59,707	\$28,648
70 & over	992	424	215	114	69	44	49	1,907
Avg Pay	\$10,533	\$22,561	\$28,591	\$32,989	\$40,834	\$48,900	\$49,533	\$19,569
Totals	31,120	8,336	3,562	2,484	2,140	1,154	728	49,524
Avg Pay	\$15,842	\$38,195	\$46,620	\$55,514	\$61,837	\$65,811	\$63,823	\$27,665

Averages:
Age: 45.6
Service: 5.9
Annual Pay: \$27,665



Female Active Members as of June 30, 2022
Tabulated by Attained Ages and Years of Service

Attained Age	Years of Service to Valuation Date							Totals
	0-4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30+	
Under 20	1,342							1,342
Avg Pay	\$10,643							\$10,643
20-24	5,658	55						5,713
Avg Pay	\$12,350	\$26,524						\$12,486
25-29	5,695	611	10					6,316
Avg Pay	\$16,277	\$28,557	\$39,037					\$17,501
30-34	5,709	1,457	182	12				7,360
Avg Pay	\$17,005	\$31,840	\$39,667	\$42,222				\$20,543
35-39	6,649	2,217	423	141	15			9,445
Avg Pay	\$17,459	\$30,339	\$41,638	\$47,790	\$49,791			\$22,069
40-44	6,941	3,308	875	431	210	16		11,781
Avg Pay	\$16,704	\$28,660	\$35,970	\$43,783	\$45,690	\$60,645		\$23,059
45-49	5,640	3,556	1,344	863	542	133	5	12,083
Avg Pay	\$17,056	\$28,223	\$33,163	\$40,649	\$46,802	\$51,195	\$56,706	\$25,546
50-54	4,890	3,438	2,203	1,763	1,410	415	91	14,210
Avg Pay	\$17,882	\$29,179	\$31,507	\$35,561	\$41,856	\$49,690	\$54,813	\$28,465
55-59	3,643	2,545	2,022	2,466	2,886	1,220	310	15,092
Avg Pay	\$16,676	\$28,730	\$30,631	\$33,536	\$38,071	\$42,603	\$50,790	\$30,221
60-64	2,766	1,828	1,405	1,947	3,180	2,019	689	13,834
Avg Pay	\$14,574	\$27,092	\$30,488	\$32,867	\$35,865	\$38,959	\$43,342	\$30,305
65-69	1,717	737	449	531	905	731	590	5,660
Avg Pay	\$11,365	\$22,875	\$27,762	\$33,353	\$37,362	\$38,272	\$40,739	\$26,921
70 & over	1,106	379	190	169	202	179	478	2,703
Avg Pay	\$9,348	\$16,588	\$23,248	\$26,422	\$31,318	\$36,301	\$37,194	\$20,759
Totals	51,756	20,131	9,103	8,323	9,350	4,713	2,163	105,539
Avg Pay	\$15,854	\$28,505	\$32,114	\$35,174	\$38,373	\$41,059	\$42,854	\$24,867

Averages:
Age: 47.9
Service: 8.4
Annual Pay: \$24,867



Active Members as of June 30, 2022

Tabulated by Annual Pay

Annual Pay	Number of Active Members			Portion of Total Number	
	Men	Women	Totals	Group	Cumulative
Less than \$1,000	1,853	2,957	4,810	3.1%	3.1%
\$1,000 - 1,999	2,232	2,811	5,043	3.3%	6.4%
2,000 - 2,999	2,987	2,952	5,939	3.8%	10.2%
3,000 - 3,999	2,999	2,823	5,822	3.8%	13.9%
4,000 - 4,999	2,572	2,449	5,021	3.2%	17.2%
5,000 - 5,999	1,936	2,335	4,271	2.8%	19.9%
6,000 - 6,999	1,515	2,305	3,820	2.5%	22.4%
7,000 - 7,999	1,206	2,296	3,502	2.3%	24.7%
8,000 - 8,999	1,032	2,197	3,229	2.1%	26.7%
9,000 - 9,999	827	2,156	2,983	1.9%	28.7%
10,000 - 11,999	1,537	4,461	5,998	3.9%	32.5%
12,000 - 13,999	1,367	4,844	6,211	4.0%	36.5%
14,000 - 15,999	1,312	5,216	6,528	4.2%	40.7%
16,000 - 17,999	1,353	5,445	6,798	4.4%	45.1%
18,000 - 19,999	1,355	5,740	7,095	4.6%	49.7%
20,000 - 24,999	3,255	14,635	17,890	11.5%	61.2%
25,000 - 29,999	2,538	11,116	13,654	8.8%	70.0%
30,000 - 35,999	2,674	8,613	11,287	7.3%	77.3%
36,000 and over	14,974	20,188	35,162	22.7%	100.0%
Totals	49,524	105,539	155,063		



SCHEDULE E

GLOSSARY

Actuarial Accrued Liability. The difference between (i) the actuarial present value of future plan benefits, and (ii) the actuarial present value of future normal cost. Sometimes referred to as "accrued liability" or "past service liability".

Accrued Service. The service credited under the plan which was rendered before the date of the actuarial valuation.

Actuarial Assumptions. Estimates of future plan experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and salary increases. Decrement assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.

Actuarial Cost Method. A mathematical budgeting procedure for allocating the dollar amount of the "actuarial present value of future plan benefits" between the actuarial present value of future normal cost and the actuarial accrued liability. Sometimes referred to as the "actuarial funding method".

Actuarial Equivalent. A series of payments is called an actuarial equivalent of another series of payments if the two series have the same actuarial present value.

Actuarial Present Value. The amount of funds presently required to provide a payment or series of payments in the future. It is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Age-Related Morbidity. Assumed increase to the net incurred claims related to increase in age.

Amortization. Paying off an interest-bearing liability by means of periodic payments of interest and principal, as opposed to paying it off with a lump sum payment.

Experience Gain (Loss). A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions during the period between two actuarial valuation dates, in accordance with the actuarial cost method being used.

Health Care Cost Trend Rates. The annual assumed rate of increase for both claims and contributions.

Normal Cost. The annual cost assigned, under the actuarial funding method, to current and subsequent plan years. Sometimes referred to as "current service cost". Any payment toward the unfunded actuarial accrued liability is not part of the normal cost.

Plan Termination Liability. The actuarial present value of future plan benefits based on the assumption that there will be no further accruals for future service and salary. The termination liability will generally be less than the liabilities computed on a "going concern" basis and is not normally determined in a routine actuarial valuation.

Reserve Account. An account used to indicate that funds have been set aside for a specific purpose and are not generally available for other uses.



Unfunded Actuarial Accrued Liability. The difference between the actuarial accrued liability and valuation assets. Sometimes referred to as "unfunded accrued liability".

Valuation Assets. The value of current plan assets recognized for valuation purposes. Generally based on book value plus a portion of unrealized appreciation or depreciation.

ACTUARIAL VALUATION REPORT

ALLOCATION OF EMPLOYER CONTRIBUTIONS

_____ moved and _____ seconded that after review and discussion of the actuary's *Report on the Annual Basic Benefits Valuation of the School Employees Retirement System of Ohio* (prepared as of June 30, 2022) at the November 2022 Board meeting, the Board accept the actuary's recommended allocation of the 14% employer contribution for fiscal year 2023 as follows: Pension Fund (10.64%), Death Benefit Fund (0.04%), Medicare B Fund (0.54%) and Health Care Fund (0.00%). The Board indicated that no allocation should be made to the Health Care Fund during the September 2022 Board meeting, preferring to enhance the funding levels for Basic Benefits. The remainder (2.78%) will also be allocated proportionately to the Pension Fund, Death Benefit Fund and Medicare B Fund in accordance with the funding policy approved by the Board on June 18, 2015.

Upon roll call, the vote was as follows:

<u>ROLL CALL:</u>	<u>YEA</u>	<u>NAY</u>	<u>ABSTAIN</u>
Frank Weglarz	_____	_____	_____
Hugh Garside	_____	_____	_____
James Haller	_____	_____	_____
Matthew King	_____	_____	_____
Catherine Moss	_____	_____	_____
Barbra Phillips	_____	_____	_____
James Rossler	_____	_____	_____
Daniel Wilson	_____	_____	_____
Jeffrey DeLeone	_____	_____	_____

HEALTH CARE SURCHARGE LEVEL FOR FY2024

_____ moved and _____ seconded the motion to accept the recommendation of SERS's actuary, Cavanaugh Macdonald Consulting, LLC, and establish \$25,000 as the minimum compensation amount for purposes of the fiscal year 2024 Health Care surcharge.

Upon roll call, the vote was as follows:

<u>ROLL CALL:</u>	<u>YEA</u>	<u>NAY</u>	<u>ABSTAIN</u>
Frank Weglarz	_____	_____	_____
Hugh Garside	_____	_____	_____
James Haller	_____	_____	_____
Matthew King	_____	_____	_____
Catherine Moss	_____	_____	_____
Barbra Phillips	_____	_____	_____
James Rossler	_____	_____	_____
Daniel Wilson	_____	_____	_____
Jeffrey DeLeone	_____	_____	_____

Memo

To: Retirement Board
From: Chris Collins
cc: Richard Stensrud, Karen Roggenkamp
Date: November 4, 2022
Re: **Federal Legislative Report**

OVERVIEW

Elections 2022

Democrats and Republicans have just a handful of days left to convince voters who should control Congress before voting in the November 8th midterm elections ends.

Ohio Secretary of State Frank LaRose announced on November 1st that requests for early in-person and absentee ballots totaled 1,243,505, a 2.6 percent increase over the same point in the 2018 gubernatorial statewide election. As a part of that total, 265,062 Ohioans had voted early in-person and 978,443 had requested an absentee ballot by mail. Among Ohioans who requested to vote absentee, 56.5% had already returned their ballot, an increase from 53.9% at the same point in the last gubernatorial election. Overall, 817,644 Ohioans had already cast their ballot, up from 736,464 in 2018.

Sabato's Crystal Ball, an election forecasting newsletter, expects control of the U.S. Senate—now split 50-50 between the parties—to come down to two pivotal states, Georgia and Nevada. The newsletter predicts the remaining Senate races as favoring Democrats or Republicans, though some ratings could change in the days to come.

The director of the Community Research Institute at Baldwin Wallace University believes the vote gap could tell the story in Ohio's U.S. Senate race between Democratic Rep. Tim Ryan and Republican J.D. Vance when voting ends.

Baldwin Wallace's final poll for the midterm elections showed Ryan leading 50.2% to 46%. Ryan, in the U.S. House since 2003, and Vance are trying to secure the U.S. Senate seat occupied by outgoing Republican Sen. Rob Portman, who was first elected in 2010.

The same poll showed Republican Gov. Mike DeWine with nearly a 20-point lead over Democratic challenger Nan Whaley. It's the gap between eventual vote totals of DeWine and Vance that Sutton believes could be most telling.

In the U.S. House, Sabato's Crystal Ball predicts that 218 seats, the minimum number to control that chamber, are at least leaning toward Republicans with 195 as safe, likely or leaning toward Democratic wins. The remaining 22 races are rated as toss-ups.

In Ohio, the new congressional map includes very few competitive seats. However, three races are considered potentially competitive: OH 1st district where Republican incumbent Steve Chabot faces Greg Landsman, OH 9th district where longest-serving Ohio Democrat Marcy Kaptur faces JR Majewski, and open seat race in OH 13th between Democrat Emilia Sykes vs. Republican Madison Gesiotto.

Republicans gaining control of the U.S. House, even if they don't pick up the Senate, would lead to substantial changes in the bills that come to the floor and how the chamber functions.

Republican House leaders' so-called Commitment to America, released in September, outlines the party's legislative goals should they regain control. And while it's short on actual details, it says the GOP would reduce government spending, advance abortion legislation and make changes to Social Security and Medicare.

House Republicans are also eyeing the debt limit and government funding deadlines as a way to force Democrats to the negotiating table for spending cuts, should the GOP regain control of Congress following the midterm elections.

FEDERAL APPROPRIATIONS / DEBT CEILING

In an effort to short circuit those plans top Democrats are privately discussing the possibility of using the budget reconciliation process in the upcoming lame-duck session to raise the statutory debt limit if Republicans retake one or both chambers in the midterms.

No decisions have been made, and the path to enacting another filibuster-proof budget bill in the short time allotted between November 14th return to Washington and December 16th, when lawmakers would like to wrap up the 117th Congress, is procedurally treacherous. And there's also a planned week off for Thanksgiving included as well.

But the motive would be to take the issue off the table before Republicans assume control in January and use a "must-pass" debt ceiling bill as leverage to try and extract spending cuts that are opposed by Democrats and the White House.

The appetite for reconciliation in the lame-duck session will also be impacted by a significant number of other must-pass bills, including fiscal 2023 appropriations (the current Continuing Resolution funding the federal government expires on December 16th) and the defense authorization act. Lawmakers are also looking at an "extenders" bill for expiring tax and health care provisions.

SOCIAL SECURITY ADMINISTRATION (SSA)

The Social Security Administration announced the COLA for 2023 for Social Security benefits and Supplemental Security Income payments in October. Federal benefit rates increase when the cost-of-living rises, as measured by the Department of Labor's Consumer Price Index (CPI-W). The increase will be 8.7%, which is the highest increase in a number of years.

RETIREMENT SECURITY

The package of three retirement reform bills, known as "SECURE 2.0," are expected to be consolidated and passed sometime this December, adding to 2019 legislation aimed at increasing retirement plan access and savings in the U.S. Expectations are that the latest legislation will be consolidated into a single bill and passed sometime in December, during the lame duck period before the new Congress is sworn in next year. The final bill would likely be attached to must-pass

legislation, such as a funding bill to replace the current continuing budget resolution. Though there are many differences between the three bills, none are likely to prevent final passage.

WINDFALL ELIMINATION PROVISION (WEP) AND GOVERNMENT PENSION OFFSET (GPO)

Although total repeal of WEP and GPO appears unlikely this congressional session, there is still two possible paths forward.

A bi-partisan solution in this session to help people right now could still be found. Discussions about WEP formula reform are ongoing between Ways and Means Chairman Neal and Ranking Member Brady. Each has a bill that are largely similar, and advocates feel more optimistic that before that an agreement may be possible. Brady's bill is HR 5834 and Neal's bill is HR 2337

Alternatively long-term solvency discussion about Social Security is more likely to take place in the new Congress with a more comprehensive debate possible. However, the nature of that debate will hinge on the results of the mid-term election.

HEALTH CARE

Executive Action

On Friday October 11th, President Biden signed an executive order urging the Department of Health and Human Services (HHS) to take further action to lower drug prices. The executive order will build on provisions included in the Inflation Reduction Act. HHS will use its Innovation Center, created under the Affordable Care Act (ACA), to explore new methods to lower drug costs and promote access to new drug therapies for Medicare beneficiaries. The agency will have 90 days to report its plan to use the Innovation Center to lowering drug costs.

Health Care Roundtable Conference

The Public Sector Health Care Roundtable conference returns to in-person meeting this year from November 9-11 in Alexandria, Va. The conference provides members and guests a unique opportunity to hear presentations by high level government officials and key experts – from Congress and the Administration, academics, benefit consultants, plan administrators, advocates and industry leaders in an intimate dialogue-oriented setting. Topics on the agenda include:

- COVID-19: Latest Congressional Action, Lessons Learned, and Implications of Emergency Waivers
- Congressional Action: Affordable Care Act Reforms and their Impact on Public Purchasers
- Containing Drug Costs...Biden Administration Policies and Federal Legislation to Address Soaring Prices
- Medicare Advantage: Trends, Threats, and Opportunities for Group Public Sector Plans

SERS staff will be in attendance to hear from speakers from health care experts from the Bipartisan Policy Center, Families USA, and The Commonwealth Fund, as well as representatives from the Biden administration's Centers for Medicare and Medicaid Services and White House Domestic Policy Council.

FEDERAL LEGISLATION BOARD REPORT
117th United States Congress
(Prepared by Chris Collins as of November 4, 2022)

H.R.82

SPONSOR: Rep. Rodney Davis (R-IL)

LAST ACTIONS: House - 09/21/2022 Placed on the Union Calendar, Calendar No. 372.

CAPTION: Social Security Fairness Act of 2021

COMMENT: Repeals the GPO and WEP. 305 co-sponsors; ten Ohioans

H.R.328

SPONSOR: Rep. Peter DeFazio (D-OR)

LAST ACTION: House - 01/15/2021 Referred to the House Committee on Ways and Means.

CAPTION: To amend the Internal Revenue Code of 1986 to impose a tax on certain trading transactions.

COMMENT: 28 co-sponsors; one Ohioan

H.R.1319

SPONSOR: Rep. John Yarmuth (D-KY)

LAST ACTIONS: 03/11/2021 Became Public Law No: 117-2.

CAPTION: American Rescue Plan Act of 2021

COMMENT: Provides additional relief to address the continued impact of COVID-19 on the economy, public health, state and local governments, individuals, and businesses.

H.R.2337

SPONSOR: Rep. Richard Neal (D-MA)

LAST ACTIONS: House - 04/01/2021 Referred to the House Committee on Ways and Means.

CAPTION: To amend title II of the Social Security Act to provide an equitable Social Security formula for individuals with noncovered employment and to provide relief for individuals currently affected by the Windfall Elimination Provision.

COMMENT: 190 cosponsors; three Ohioans

S.1302

SPONSOR: Sen. Sherrod Brown (D-OH)

LAST ACTIONS: Senate - 04/22/2021 Read twice and referred to the Committee on Finance.

CAPTION: A bill to amend title II of the Social Security Act to repeal the Government pension offset and windfall elimination provisions.

COMMENT: 42 cosponsors

H.R.3

SPONSOR: Rep. Frank Pallone (D-NJ)

LAST ACTIONS: House - 04/27/2021 Referred to the Subcommittee on Oversight and Investigations

CAPTION: Elijah E. Cummings Lower Drug Costs Now Act

COMMENT: 92 cosponsors; three Ohioans

H.R.5376

SPONSOR: Rep. John Yarmuth (D-KY)

LAST ACTIONS: 08/16/2022 Became Public Law No: 117-169. (All Actions)

CAPTION: Inflation Reduction Act of 2022

COMMENT: This bill provides funding, establishes programs, and otherwise modifies provisions relating to a broad array of areas, including education, labor, child care, health care, taxes, immigration, and the environment.

H.R.5834

SPONSOR: Rep. Kevin Brady (R-TX)

LAST ACTIONS: House - 11/03/2021 Referred to the House Committee on Ways and Means

CAPTION: Equal Treatment of Public Servants Act of 2021

COMMENT: 54 cosponsors; four Ohioans

H.R.5723

SPONSOR: Rep. Larson, John B. [D-CT-1]

LAST ACTIONS: House - 10/26/2021 Referred to the Committee on Ways and Means, and in addition to the Committees on Education and Labor, and Energy and Commerce, for a period to be subsequently determined by the Speaker, in each case for consideration of such provisions as fall within the jurisdiction of the committee concerned

CAPTION: Social Security 2100: A Sacred Trust

COMMENT: 202 cosponsors; four Ohioans

STATE LEGISLATION BOARD REPORT
(Prepared by Chris Collins as of November 4, 2022)

134th General Assembly

HB110 OPERATING BUDGET Scott Oelslager (R- North Canton) To make operating appropriations for the biennium beginning July 1, 2021, and ending June 30, 2023, to levy taxes, and to provide authorization and conditions for the operation of state programs.

Current Status: 07/01/2021 SIGNED BY GOVERNOR; effective 7/1/21

HB14 REGARDS STATE RETIREMENT SYSTEM Diane Grendell (R – Chesterland) Regarding state retirement system fiduciary duties, Public Employees Retirement System management fees and employee pay, and creating the Committee on Pension Salaries and Fees.

Current Status: 02/04/2021 Referred to Financial Institutions Committee

SB233 SCHOOL NURSE LICENSURE, RETIREMENT Louis Blessing III (R - Cincinnati) Regarding licensure and state retirement system membership for school nurses.

Current Status: 02/15/2022 Senate Primary and Secondary Education, (Second Hearing)

HB416 AUTO-ENROLLMENT RETIREMENT PROGRAM FOR PRIVATE EMPLOYEES Juanita Brent, (D – Cleveland) Stephanie Howse (D – Cleveland) To establish an auto-enrollment retirement savings program for private sector employees.

Current Status: 10/27/2021 House Insurance, (First Hearing)

HB499 ALLOW ELECTED OPERS/SERS RECIPIENTS TO RECEIVE BENEFITS (Miller, A) - To allow a Public Employees Retirement System or School Employees Retirement System disability benefit recipient elected to certain offices to continue receiving a disability benefit during the term of office.

Current Status: 6/1/2022 Third Hearing, All Testimony, SUBSTITUTE BILL

HB512 POLICE, FIRE PENSION FUND (Abrams, C; Baldrige, B) - To increase employer contributions to the Ohio Police and Fire Pension Fund.

Current Status: 03/30/2022 House Insurance, (Second Hearing)

HB539 STATE RETIREMENT SYSTEMS - PUBLIC BROADCAST (Kelly, B; Ghanbari, H) - To require the state retirement systems to publicly broadcast board meetings.

Current Status: 02/15/2022 Referred to Insurance Committee

HB540 STATE RETIREMENT SYSTEMS – FINANCIAL INFORMATION (Kelly, B; Ghanbari, H) - To require the state retirement system boards to disclose certain financial information regarding alternative investments.

Current Status: 5/25/2022 - House Insurance, (First Hearing)

HB541 STATE RETIREMENT SYSTEMS – FORMER EMPLOYEES (Kelly, B; Ghanbari, H) - Regarding the prohibition against the state retirement systems doing business with a former state retirement system employee, officer, or board member.

Current Status: 5/25/2022 - House Insurance, (First Hearing)

HB601 STRS COST-OF-LIVING ADJUSTMENTS (Lightbody, M; Miller, A) - Regarding increasing contributions for employers to the State Teachers Retirement System and School Employees Retirement System, establishing minimum amounts for certain STRS cost-of-living adjustments, and eliminating an age-related eligibility criterion for retirement in STRS.

Current Status: 04/06/2022 House Insurance, (First Hearing)

SB308 DIVESTMENT, RESTRICTIONS-RUSSIA (Antani, N) - To prohibit state and local governments from investing in, granting incentives to, or contracting with Russia or companies based in Russia, to require Ohio's pension and other investment funds to divest from any such holdings, and to declare an emergency.

Current Status: 03/16/2022 Referred to General Government Budget Committee

SB347 SERS CONTRIBUTION BENEFIT CAP (Schuring, K; Hottinger, J) - To establish a contribution based benefit cap in calculating a School Employees Retirement System member's retirement benefit.

Current Status: 05/31/2022 Referred to Insurance Committee

SB348 SERS MEMBERSHIP DETERMINATION PROCEDURE (Reineke, W) To establish a School Employees Retirement System membership determination procedure and to limit the amount that the retirement system can charge for late contributions.

Current Status: 06/01/2022 Referred to Senate Insurance

School Employees Retirement System of Ohio

Summary of administrative operation expenses during the period October 1, 2022-October 31, 2022.

Actuals
Oct-2022

Account	Amount
Salaries & Wages	1,125,543.05
Salaries & Wages- Overtime	11,883.11
Vacation Leave Expense	100,079.20
Sick Leave Expense	48,345.93
Employer Contributions- PERS	167,844.05
Group Life	9,389.18
Long Term Disability	3,274.94
Short Term Disability	2,546.58
Group Health Claims	189,083.86
Group Health- Admin Fees	7,096.42
Prescription Claims	66,669.11
Group Health- Stop Loss Admin	15,189.17
Group Health- Stop Loss Claims	(32,881.69)
Vision Claims	1,717.94
Vision Admin Fees	122.40
Group Health- Employee Cost	(30,962.57)
Group Health- Wellness Incentive	3,695.00
Group Health- Tobacco Premiums	(760.00)
Medicare Premium- Employer	17,262.51
Workers Compensation	3,452.75
Deferred Compensation Match	4,740.00
Actuarial Services	12,000.00
Custodial Fees	57,601.20

Custodial Banking	17,030.51
Master Recordkeeper Fees	97,987.02
Investment Advisory Fees	44,223.75
Performance/ Analytics Fee	34,401.66
Other Prof. Inv. Related Consulting	40,500.00
Medical Consultant	3,750.00
Special Counsel	2,640.00
Technical	95,568.33
Other Professional Services	18,025.93
Postage	4,097.04
Telecommunications Services	17,714.09
Member/Employer Education	(46.43)
Printing Paper	2,176.00
Communications & Publications	21,470.27
Hardware Maintenance	352.00
Software Maintenance	35,000.00
Software Subscriptions	45,574.28
Equipment Repairs & Maintenance	44,139.93
Office Supplies & Expenses	1,018.69
Records Storage	1,854.00
Seminars & Conferences	25,459.91
Travel & Transportation	18,579.26
Subscriptions	866.76
Memberships	2,530.00
Management and Liability Insurance	399,837.00
Operations Maintenance	2,543.74
Interior Landscaping	1,356.37
Vehicle Expense	41.50

Staff Support	6,110.50
Recruiting Expense	1,872.96
Board Member- School Board Reimb.	678.48
Ohio Retirement Study Council	12,096.53
Reimbursement of Leased Svcs.	(25,416.67)
Total Administrative Expenses	2,756,965.55

School Employees Retirement System of Ohio
REVIEW OF ADMINISTRATIVE EXPENSES
22-Oct

<u>Expense Account</u>	<u>Vendor</u>		<u>Amount</u>
53100 - Salaries & Wages	ADP, LLC		1,125,543.05
		Subtotal	1,125,543.05
53110 - Salaries & Wages - Overtime	ADP, LLC		11,883.11
		Subtotal	11,883.11
53111 - Vacation Leave Expense	ADP, LLC		100,079.20
		Subtotal	100,079.20
53112 - Sick Leave Expense	ADP, LLC		48,345.93
		Subtotal	48,345.93
53200 - Employer Contributions - PERS	Ohio Public Emp. Retirement System Ohio Public Emp. Retirement System		167,844.42
			(0.37)
		Subtotal	167,844.05
53300 - Group Life	American United Life Insurance Company		9,389.18
		Subtotal	9,389.18
53310 - Long Term Disability	American United Life Insurance Company		3,274.94
		Subtotal	3,274.94
53315 - Short Term Disability	American United Life Insurance Company		2,546.58
		Subtotal	2,546.58
53320 - Group Health Claims	Aetna Daily Wires - ESERS Aetna Daily Wires - ESERS		31,214.43
			157,869.43
		Subtotal	189,083.86
53321 - Group Health - Admin Fees	Aetna Admin - ESERS		7,096.42
		Subtotal	7,096.42
53322 - Prescription Claims	Express Scripts - ESERS		66,669.11
		Subtotal	66,669.11
53324 - Group Health - Stop Loss Admin	Aetna Admin - ESERS		15,189.17
		Subtotal	15,189.17
53325 - Group Health - Stop Loss Claims	Aetna Admin - ESERS stop loss credit		(32,881.69)
		Subtotal	(32,881.69)
53326 - Vision Claims	VSP - (OH)		1,717.94
		Subtotal	1,717.94
53327 - Vision Admin Fees	VSP - (OH)		122.40
		Subtotal	122.40
53330 - Group Health - Employee Cost	Employee Premiums COBRA premium		(29,295.31)
			(1,667.26)
		Subtotal	(30,962.57)
53331 - Group Health - Wellness Incentive	ADP, LLC		3,695.00
		Subtotal	3,695.00
53332 - Group Health - Tobacco Premiums	ADP, LLC		(760.00)
		Subtotal	(760.00)
53340 - Medicare Premium - Employer	ADP, LLC ADP, LLC		17,262.49
			0.02
		Subtotal	17,262.51
53350 - Workers Compensation	Ohio Bureau Of Workers Compensation		3,452.75
		Subtotal	3,452.75
53380 - Deferred Compensation Match	ADP, LLC		4,740.00
		Subtotal	4,740.00
54100 - Actuarial Services	Cavanaugh MacDonald Consulting, LLC		12,000.00
		Subtotal	12,000.00
54310 - Custodial Fees	BNY Mellon Asset Servicing/Fifth Third Bank		57,601.20
		Subtotal	57,601.20
54320 - Custodial Banking	Huntington National Bank		17,030.51
		Subtotal	17,030.51
54410 - Master Recordkeeper Fees	BNY Mellon Asset Servicing		97,987.02
		Subtotal	97,987.02

54420 - Investment Advisory Fees	Wilshire/Aksia		44,223.75
		Subtotal	44,223.75
54430 - Performance/Analytics Fee	BNY Mellon Asset Servicing		34,401.66
		Subtotal	34,401.66
54450 - Other Prof. Inv. Related Consulting	Institutional Shareholder Services		40,500.00
		Subtotal	40,500.00
54520 - Medical Consultant	Borchers, M.D., Glen G.		3,750.00
		Subtotal	3,750.00
54610 - Special Counsel	Ice Miller LLP		2,640.00
		Subtotal	2,640.00
54620 - Technical	Sagitec Solutions, LLC		44,814.00
	LexisNexis Risk Data Management, Inc		6,790.13
	ComResource		3,450.00
	Velosio		1,117.50
	CGI, Inc.		4,620.00
	Vaco, LLC		5,276.70
	Merative US L.P.		29,500.00
		Subtotal	95,568.33
54630 - Other Professional Services	Vorys Advisors LLC		3,333.33
	Attorney General		12,739.60
	Impact Training and Development, Inc		1,953.00
		Subtotal	18,025.93
55100 - Postage	Notifii LLC		237.00
	Pitney Bowes Inc.		1,353.18
	Postmaster		1,100.00
	Columbus Courier & Freight LLC		283.78
	Postmaster		275.00
	Unishippers Association		530.08
	Quadient		318.00
		Subtotal	4,097.04
55200 - Telecommunications Services	Verizon Wireless		417.02
	XO Communications		1,792.34
	Nextel Communications		55.76
	AT&T		40.10
	LUMEN		5,171.12
	Spectrum		6,290.59
	Spectrum AWS		2,571.16
	Everstream		1,376.00
		Subtotal	17,714.09
55300 - Member/Employer Education	Fifth Third Bank		(9.99)
	Employer Training Fees		(60.00)
	Vaughan, Cameron		23.56
		Subtotal	(46.43)
55400 - Printing Paper	Sterling Paper Company		2,176.00
		Subtotal	2,176.00
55420 - Communications & Publications	Tension Envelope Corporation		21,470.27
		Subtotal	21,470.27
56020 - Hardware Maintenance	Radiant Technology		352.00
		Subtotal	352.00
56030 - Software Maintenance	Sagitec Solutions, LLC		35,000.00
		Subtotal	35,000.00
56035 - Software Subscriptions	NAVEX Global, Inc.		5,806.30
	ADP, LLC		2,923.99
	Liquid Web Inc		321.59
	Zoho Corporation		7,332.00
	Zoom		556.81
	Wellable LLC		465.40
	Expedient		12,957.00
	Amazon Web Services		245.19
	Software Information Resource Corp		14,966.00
		Subtotal	45,574.28
56110 - Equipment Repairs & Maintenance	Ricoh USA, Inc		783.74
	Digital Print Solutions		1,855.47
	Canon Financial Services, Inc		2,191.27
	LD Products Inc.		935.88
	Quadient		38,373.57
		Subtotal	44,139.93
56130 - Office Supplies & Expenses	Staples Business Advantage		1,018.69
		Subtotal	1,018.69
56160 - Records Storage	Vital Records Holdings, LLC		1,854.00
		Subtotal	1,854.00
56210 - Seminars & Conferences	Ohio G.F.O.A.		260.00
	Project Management Institute		199.00
	Employers Resource Association		485.00
	Rossler, James		586.91

	Public Pension Financial Forum	3,075.00
	Gartner, Inc	9,950.00
	Global Arc	325.00
	NASIO	2,500.00
	Microsoft Corp.	1,895.00
	International Foundation of Employee Benefit Plans	2,195.00
	Global Knowledge	2,395.00
	Workday Inc.	299.00
	Improving	1,295.00
	Subtotal	25,459.91
56310 - Travel & Transportation	Holman, Carlisa	1,893.23
	Greer, David	745.93
	Phillips, Jennifer	14.05
	Kamat, Suresh	1,477.41
	Stensrud, Richard	450.80
	Kroger	38.69
	Rossler, James	841.39
	Haller, James	431.48
	Rider, Trisha	1,434.60
	Phillips, Barbra	447.13
	Sam's Club	28.86
	Trickett, Kirk	881.33
	Majeed, Farouki	1,559.22
	Robinson, Maria	1,602.65
	Moss, Catherine	449.19
	Castle, Chris	1,527.28
	Browning, Michael	224.14
	City Barbeque, Inc.	546.81
	Wilson, Daniel L.	360.00
	Easterday, Stacy	439.21
	King, Matt	237.53
	Patel, Jay	657.75
	Weglarz, Frank	252.32
	Messerschmitt, Adam	464.20
	Hall, Marni	1,526.06
	Shuttlefare.com	48.00
	Subtotal	18,579.26
56410 - Subscriptions	Wall Street Journal	116.97
	Constant Contact	295.00
	Shutterstock, Inc.	29.00
	SurveyMonkey.com	412.80
	Toledo Blade	12.99
	Subtotal	866.76
56420 - Memberships	NCPERS	2,530.00
	Subtotal	2,530.00
56510 - Management Liability Insurance	ARC Excess & Surplus, LLC.	399,837.00
	Subtotal	399,837.00
56610 - Operations Maintenance	AT&T	253.32
	Amtrec, LLC	1,666.00
	South Central Power Company	453.00
	Northeast Ohio Natural Gas Corp.	171.42
	Subtotal	2,543.74
56630 - Interior Landscaping	Ambius Inc. (05)	1,356.37
	Subtotal	1,356.37
56640 - Vehicle Expense	Moo Moo Car Wash	14.00
	Turkey Hill	27.50
	Subtotal	41.50
56620 - Staff Support	Franklin Services	639.31
	ADP, LLC	3,524.43
	Premier ProduceOne	297.00
	Lowes	41.96
	Rider, Trisha	84.10
	Giant Eagle	170.75
	Amazon.com	256.61
	PayFlex Systems USA, Inc.	336.00
	Sam's Club	49.64
	Unisan, LLC	60.70
	Aetna Behavioral Health, LLC	282.60
	Jenny's Tasty Treats	367.40
	Subtotal	6,110.50
56621 - Recruiting Expense	ADP Screening & Selection Services	139.40
	Indeed	1,733.56
	Subtotal	1,872.96
56710 - Board Member - School Board Reimb.	Ashland City School District	678.48
	Subtotal	678.48
56820 - Ohio Retirement Study Council	Ohio Retirement Study Council	12,096.53
	Subtotal	12,096.53
56900 - Reimbursement of Leased Svcs	Reimbursement of Leased Services	(25,416.67)
	Subtotal	(25,416.67)
	Total SERS Administrative Expense	2,756,965.55

FY2023 Administrative Budget
Board Expense to Budget Reporting
Year-to-Date Through October 31, 2022

Major Category/Sub-Major Category	Line Item	Vendor	FY2023 Budget	Year to Date Expense	Budgeted Y/N?	Additional Information
PROFESSIONAL SERVICES			\$ 6,502,883.00	\$ 2,026,244.59		
ACTUARIAL ADVISORS			\$ 421,008.00	\$ 88,957.00		
	Actuarial	Cavanaugh Macdonald	272,508.00	88,957.00	Y	Actuarial Consultant
AUDITING			\$ 244,000.00	\$ 110,000.00		
	Auditing	RSM	184,000.00	85,000.00	Y	External Auditor
BANKING FEES			\$ 1,268,466.00	\$ 408,213.27	Y	
	Custodial Banking		1,073,544.00	361,177.04		
		Huntington/Fifth Third	302,004.00	82,633.17	Y	Domestic Custodian
		BNYM	765,000.00	278,543.87	Y	International Custodian
	Administrative Banking	Huntington National Bank/ TOS	194,922.00	47,036.23	Y	Banking Services
INVESTMENT RELATED			\$ 2,664,622.00	\$ 899,402.51		
	Master Recordkeeper		1,116,000.00	370,992.62	Y	
	Investment Consulting & Advisory Services		650,000.00	185,890.42		
		Aksia	200,000.00	35,890.42	Y	Investment Consulting
		Wilshire	450,000.00	150,000.00	Y	Investment Consulting
	Performance Analytics Services		690,263.00	279,449.22		
		Barra-One Risk Mgmt Sys	238,445.00	119,222.50	Y	Investment Risk Analytics
		BNY Mellon GRS	412,800.00	137,606.64	Y	Investment Performance Analytics
TECHNICAL			\$ 1,859,787.00	\$ 504,671.81		
	Special Counsel		235,020.00	32,519.50	Y	
	Technical		1,202,316.00	252,691.97		
		Merative US L.P.	118,000.00	29,500.00	Y	Data Warehouse
		Sagitec	550,000.00	137,676.00	Y	SMART Development Resources
	Other Professional Services		422,451.00	219,460.34		
OTHER OPERATING EXPENSE			\$ 3,607,379.00	\$ 1,715,042.10		
COMPUTER SUPPORT SERVICES			\$ 2,343,770.00	\$ 975,452.69		
	Software Maintenance		1,004,851.00	538,583.72		
		Hyland	110,529.00	114,482.38	Y	ImageNow
		Dell	240,000.00	236,639.52	Y	Microsoft Enterprise Agreement
		Sagitec	420,000.00	105,000.00	Y	SMART Silver Support
	Software Subscriptions		1,183,234.00	372,759.69	Y	
		DRaaS	158,000.00	47,218.68	Y	Expedient
		Dynamo	128,000.00	128,800.00	Y	Dynamo Software, INC
		Carahsoft	124,688.00	109,855.20	Y	ServiceNow System
PROPERTY MANAGEMENT LIABILITY INSURANCE						
	Management Liability Insurance		518,000.00	519,591.00		
		Cyber Liability Insurance	118,000.00	105,264.25	Y	ARC Excess & Surplus, LLC
		Crime Fiduciary D&O Insurance	400,000.00	414,326.75	Y	ARC Excess & Surplus, LLC

PROJECT ITEMS

Major Category/Sub-Major Category	Line Item	Project	FY2023 Budget	YTD Expense	Budgeted Y/N?	Additional Information
PROFESSIONAL SERVICES						
TECHNICAL						
		CBBC Programming	150,000.00	-	Y	CBBC programming

SERS

UNBUDGETED PROJECT ITEMS

Major Category/Sub-Major Category	Line Item	Project	FY2023 Budget	YTD Expense	Budgeted Y/N?	Expense Reallocation
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OSERS BROAD STREET, LLC

UNBUDGETED PROJECT ITEMS

Major Category	Line Item	Project	FY2023 Budget	YTD Expense	Budgeted Y/N?
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FINAL FILING OF PROPOSED AMENDED ADMINISTRATIVE RULE

Legal Counsel discussed with the Retirement Board filing with JCARR the following proposed amended rule: 3309-1-26, Determination of ~~statutory~~ beneficiary that has been reviewed by JCARR and is ready for final adoption by the Board.

_____ moved and _____ seconded that proposed amended rule 3309-1-26 be adopted.

3309-1-26 Determination of ~~statutory~~ beneficiary.

- (A) This rule amplifies divisions (B), (C) and (D) of section 3309.44 and section 3309.50 of the Revised Code.
- (B) An individual who does not survive a member or retiree by one hundred twenty hours will be deemed to have predeceased the member or retiree.
- (C) For purposes of division (B) of section 3309.44 of the Revised Code, when a designated beneficiary dies more than one hundred twenty hours after the member, but before receiving payment, the payment shall be paid to the estate of the designated beneficiary.
- (D) For purposes of divisions (C) and (D) of section 3309.44 and section 3309.50 of the Revised Code, a person is considered "not located" and ceases to qualify as beneficiary if:
 - (1) No valid mailing address can reasonably be determined for the person; or
 - (2) The person fails to file an application for payment within one hundred eighty days from the date the school employees retirement system first notifies the person of beneficiary status.

History: 7/27/15
Promulgated Under: 111.15
Statutory Authority: 3309.04
Rule Amplifies: 3309.44, 3309.50
Review Date: 2/1/24

Upon roll call, the vote was as follows:

<u>ROLL CALL:</u>	<u>YEA</u>	<u>NAY</u>	<u>ABSTAIN</u>
Frank Weglarz	_____	_____	_____
Hugh Garside	_____	_____	_____
James Haller	_____	_____	_____
Matthew King	_____	_____	_____
Catherine Moss	_____	_____	_____
Barb Phillips	_____	_____	_____

James Rossler
Daniel Wilson
Jeff DeLeone

EXECUTIVE SESSION

_____ moved and _____ seconded the motion that the Committee convene in Executive Session pursuant to R.C. 121.22 (G)(2) to discuss the purchase of property.

IN EXECUTIVE SESSION AT _____ A.M./P.M.

Upon roll call, the vote was as follows:

<u>ROLL CALL:</u>	<u>YEA</u>	<u>NAY</u>	<u>ABSTAIN</u>
Frank Weglarz	_____	_____	_____
Hugh Garside	_____	_____	_____
James Haller	_____	_____	_____
Matthew King	_____	_____	_____
Catherine Moss	_____	_____	_____
Barbra Phillips	_____	_____	_____
James Rossler	_____	_____	_____
Daniel Wilson	_____	_____	_____
Jeffrey DeLeone	_____	_____	_____

RETURN TO OPEN SESSION AT _____ A.M. / P.M.

Only If Needed

EXECUTIVE SESSION

_____ moved and _____seconded the motion that the Board go into Executive Session pursuant to R.C. 121.22 (G)(5) to review applications for Disability Retirement Benefits.

IN EXECUTIVE SESSION AT _____ A.M. / P.M.

<u>ROLL CALL:</u>	<u>YEA</u>	<u>NAY</u>	<u>ABSTAIN</u>
Frank Weglarz	_____	_____	_____
Hugh Garside	_____	_____	_____
James Haller	_____	_____	_____
Matthew King	_____	_____	_____
Catherine Moss	_____	_____	_____
Barbra Phillips	_____	_____	_____
James Rossler	_____	_____	_____
Daniel Wilson	_____	_____	_____
Jeffrey DeLeone	_____	_____	_____

RETURNED TO OPEN SESSION AT _____ A.M. / P.M.

CALENDAR DATES FOR SERS BOARD MEETINGS FOR 2022

AUDIT COMMITTEE MEETINGS

December 14, 2022 - 2:30 p.m. (Weds.)

COMPENSATION COMMITTEE MEETINGS

December 15, 2022 - 7:30 a.m. (Thurs.)

TECHNOLOGY COMMITTEE MEETINGS

December 15, 2022 – 12:30 p.m. (Thurs.)

BOARD MEETINGS

December 15-16, 2022 – 8:30 a.m. (Thurs. and Fri.)

****NOTE:** *The above dates are **tentative**.*

CONTINUED OR NEW BUSINESS

Board Information Requested

HEALTH CARE SUSTAINABILITY DISCUSSION

ADJOURNMENT(R)

_____ moved that the SERS Retirement board adjourn to meet on for their next regularly scheduled meeting.

The meeting adjourned at _____ p.m.

Jeffrey DeLeone - Chair

Richard Stensrud, Secretary