



**Retirement Board Agenda
November 18 & 19*, 2021**

Click Link to Join Zoom Meeting:

<https://ohsers.zoom.us/j/94699552542?pwd=ZVA3aU1RcV2bjlmNGIDZHREbGRiZz09>

Meeting ID: 946 9955 2542

Password: 206809

To join by phone, dial: (929) 205-6099 and enter the Meeting ID: **946 9955 2542** and Password: **206809** when prompted.

PLEDGE OF ALLEGIANCE

1. Roll Call

CONSENT AGENDA (R)

2. Approval of Minutes of the **October 21, 2021**, Retirement Board Meeting
3. Summary of Investment Transactions - **September 1, 2021, to September 30, 2021**
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. Termination of Disability Benefits – Any Occupation
 - d. Disapproval of Appeal of Termination – Any Occupation

EXECUTIVE DIRECTOR'S REPORT

6. Pension and Health Care Annual Actuarial Valuations
7. Allocation of Employer Contributions (R)
8. Health Care Surcharge (R)

INVESTMENT REPORT

9. Annual Portfolio Review – Fixed Income
10. Wilshire Quarterly Performance Report
11. Monthly Investment Report

EXECUTIVE DIRECTOR'S REPORT (cont.)

12. Executive Director's Update
13. Review of Administrative Expenses
14. Executive Session pursuant to R.C. 121.22 (G)(5) to discuss a matter required to be kept confidential by law (R)
 - Member Appeal – **11:00 a.m.**

RETIREMENT REPORT

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

TECHNOLOGY COMMITTEE REPORT

16. Technology Committee Update

BOARD COMMUNICATION AND POLICY ISSUES

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

EXECUTIVE DIRECTOR'S REPORT (cont.)

19. Pension Sustainability Discussion

Adjournment (R)

* = The SERS Retirement Board will meet on November 19, 2021, only if necessary

**Retirement Board Meeting
November 18, 2021**

_____ A.M.

Roll Call:

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

CONSENT AGENDA

1. Minutes of the **October 21, 2021**, Retirement Board meeting
2. Summary of Investment Transactions **September 1, 2021, to September 30, 2021**
3. Retirement Report
 - a. Superannuation and Survivor Benefits
 - b. Special Cases
4. Disability Report
 - a. Approval of Disability Benefits
 - b. Disapproval of Disability Benefits
 - c. Termination of Disability Benefits – Any Occupation
 - d. Disapproval of Appeal of Termination – Any Occupation

APPROVAL OF CONSENT AGENDA

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

- 5. Minutes of the **October 21, 2021**, Retirement Board meeting
- 6. Summary of Investment Transactions - **September 1, 2021, to September 30, 2021**
- 7. Retirement Report
 - a. Superannuation and Survivor Benefits
 - b. Special Cases
- 8. Disability Report
 - a. Approval of Disability Benefits
 - b. Disapproval of Disability Benefits
 - c. Termination of Disability Benefits
 - d. Disapproval of Appeal of Termination – Any Occupation

Upon roll call, the vote was as follows:

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

SERS Retirement Board Meeting Minutes

October 21, 2021

The nine hundredth and forty-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 21, 2021.

Pledge of Allegiance

The SERS Retirement Board meeting convened at 8:36 a.m. with the Pledge of Allegiance.

Roll Call

Following the Pledge of Allegiance, the roll call was as follows: Barbra Phillips, Hugh Garside, James Haller, Matthew King, Catherine Moss, James Rossler, Frank Weglarz, and Daniel Wilson. 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 Joanna Bewick and David Lindberg of Wilshire Associates, along with other members of the public in person and viz Zoom.

Consent Agenda

The consent agenda for October 21, 2021, included:

- Minutes from the **September 16 and 17, 2021**, board meeting
- Summary of Investment Transactions for the period of **August 1, 2021**, through **August 31, 2021**
- 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, and additions (including Disapproval of Disability Benefits, Disapproval of Appeal on Personal Appearance – Any Occupation, and Disapproval of Appeal of Termination – Any Occupation)

Jeffrey DeLeone moved and Hugh Garside seconded the motion to approve the Consent Agenda of the Retirement Board meeting held on Thursday, September 16, 2021. Upon roll call, the vote was as follows: Yea: Jeffrey DeLeone, Hugh Garside, James Haller, Matthew King, Catherine Moss, James Rossler, Frank Weglarz, Daniel Wilson, and Barbra Phillips. The motion carried.

Investment Report

Annual Portfolio Review

SERS Staff provided an overview of SERS \$1.9 billion global private equity portfolio. Since 2013, SERS' global private equity portfolio has matured to the point that it is self-sufficient, meaning it has provided positive cash flow to the portfolio. Staff is preparing to completely exit the fund of funds space due to the higher fees associated with that type of investment and reduce exposure to Special Situations because there are better value options elsewhere. They also plan to increase exposure to co-investments in FY2022. Also, in FY2022, staff will begin looking for opportunities to make direct investments in venture capital managers.

Education Session under R.C. 171.50 and 3309.051 – Total Fund Leverage

Joanna Bewick and David Lindberg of Wilshire Advisors, SERS' independent investment consultant, provided an education session on using leverage to reduce risks and enhance returns in an investment portfolio. They reported on two types of leverage: accounting leverage, where total assets are greater than net assets through the use of borrowed capital like a home mortgage; and economic leverage, where additional market exposure is gained synthetically using the difference between the market value of a security (its current price) and the notional value (its future value based on a futures contract).

Wilshire's research focused on using economic leverage in SERS' total fund portfolio. The board asked several questions and after a robust discussion, the board thanked Wilshire Advisors for their presentation.

SERS Retirement Board Meeting Minutes

October 21, 2021

Monthly Investment Report

Farouki Majeed, SERS Chief Investment Officer, provided a summary of the Investment report for the periods ending August 2021. Mr. Majeed reported the total fund as of July 31, 2021, was \$17.81 billion and as of August 31, 2021 was \$17.97 billion. As of August 31, 2021, the FYTD return was 1.70%. Following comments, the Board thanked Mr. Majeed and his team for their presentations.

Following the investment report, the board took a break at 10:30 a.m.

Executive Director's Report

COVID-19 Health Care Report

Richard Stensrud, SERS Executive Director, reported that there have been 3,543 COVID-19 cases to-date in SERS' Pre-Medicare plan. The vaccination rate for Pre-Medicare plan members is 52%. This does not include the members who may have been vaccinated by public health agencies.

Mr. Stensrud noted there were 24 more Covid-19 related deaths in the Medicare plan, bringing the total to 313.

Ohio Retirement Study Council

Mr. Stensrud reported the ORSC met on September 23, 2021, and the actuarial reports submitted by OPERS and HPRS were reviewed. The ORSC also discussed retiree health care challenges at the Highway Patrol Retirement System. One of the more notable challenges discussed was that the mandatory retirement age is before Medicare eligibility.

Mr. Stensrud noted that he provided a summary of SERS' FY21 Disability Report, which was submitted to the Governor, ORSC, and relevant House and Senate committee chairs.

Mr. Stensrud reported that the ORSC met again on October 14th. At that meeting, the ORSC received an investment report from the Council's investment consultant RVK.

The next ORSC meeting is scheduled for November 11th subject to the call of the chairman. Meetings are streamed on the Ohio channel.

Advocacy Groups

Mr. Stensrud reported that staff will be creating a series of informational videos about key topics to share with stakeholders. These videos will be particularly helpful given the cancellation of numerous in-person stakeholder events due to the ongoing effects of the pandemic. The first video will be on the Board's decision to provide a retiree COLA of 2.5% in 2022.

Federal Legislative Activity

Mr. Stensrud reported SERS continues to monitor congressional negotiations over the contents of the potential reconciliation legislative package as well as increasing the debt ceiling and funding federal agencies past December 3rd. Mr. Stensrud also stated SERS will continue to work with other plan sponsors, industry organizations and providers to educate Congress on Employer Group Waiver Plans (EGWP) like the health care plan administered by SERS and how such plans could be adversely affected by Medicare Part D changes being considered. SERS will also continue to work through the Public Sector HealthCare Roundtable to find opportunities to address the high cost of prescription drugs.

SERS Retirement Board Meeting Minutes

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Employee Charitable Initiatives

Mr. Stensrud reported on staff participation in the annual United Way campaign. SERS staff participated through online pledges as well as fun fundraising activities. SERS has already raised \$2,000 more than last year's total.

Results From Member Service Surveys

Mr. Stensrud reported on the results of recent customer service surveys.

The response to the survey of members who received Counseling services, showed 74% met a counselor in person, 10% met via the telephone, and 7% met via Zoom. When asked about their satisfaction with their counseling appointment, 95% rated 5 out of 5 and 98% felt their counselor answered their questions and was helpful.

Mr. Stensrud reported that for the month of September, the average quality monitoring score for members who interfaced with the Member Service Team (MST) was 98.58 out of 100.

Mr. Stensrud also reported SERS' benefits processing team received the 3rd highest customer service score of 17 peers in a survey group, with a 92 out of 100.

Board member Frank Weglarz thanked the Member Services staff for their continued hard work.

Communication With Stakeholders

Mr. Stensrud commented on several topics that had recently been addressed in news articles but were not correct with respect to SERS. Mr. Stensrud noted that the suggestion that some retirement systems were taking on greater investment risk in pursuit of returns was not true at SERS and pointed to recent report by RVK to the ORSC which showed that SERS has the lowest standard deviation/return volatility, a common measure of risk, and highest Sharpe ratio, the measure of return per unit of risk, of all the Ohio retirement systems. Mr. Stensrud further noted that per the discussion in the investment segment of the meeting, the largest source of risk in the investment portfolio is equity risk exposure and that SERS had reduced that risk and had moved closer to true risk diversification. Mr. Stensrud also noted that unlike in some other states, SERS' participating employers had made their retirement contributions in full and on schedule. Finally, he noted that the SERS Board was not relying solely on investment returns to assure the pension fund was sustainable but had taken proactive steps to strengthen sustainability by pursuing adjustments in the benefit structure.

Board members concurred with those comments and suggested that this would be good information for a video to document how prudent SERS is when it comes to investing.

Actuarial Valuation Report - Allocation of Employer Contributions – Health Care Fund

Mr. Stensrud provided information to the Board regarding their discretionary decision on whether to allocate funding to the Health Care Fund from the employer pension contribution. Pursuant to SERS' funding policy, if the funded ratio of the Pension Fund is above 70%, but less than 80% as of the preceding June 30th, the Board has the discretion to allocate between 0% and .50% of the 14% employer pension contribution to the Health Care Fund in the following calendar year. Mr. Stensrud noted that while the official actuarial valuation will be presented to the Board in November, preliminary results of the valuation are typically provided in October to assist the Board in determining whether to make an allocation.

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Mr. Stensrud reported that Cavanaugh MacDonald, SERS' actuary, is advising that the funded status of the Pension Fund as of June 30, 2021 will be approximately 74.46%, up from 71.49% as of June 30, 2020. Accordingly, the Board will have the opportunity to exercise its discretion on whether to allocate between 0% and .50% of the 14% employer contribution to the Health Care Fund in 2022.

Mr. Stensrud provided some information the Board may want to consider in making its decision:

- The projected balance of the Health Care Fund as of June 30, 2021 is \$600,333,188, up from \$482,611,478 as of June 30, 2020. This represents a new high in the balance in the fund.
- The projected funded ratio of the Health Care Fund as of June 30, 2021, is 46.56%, up from 26.86% as of June 30, 2020. This is a new funded ratio high. As a point of reference, the funded ratio in 2012 and 2013 was approximately 13%.
- The projected solvency period of the Health Care Fund as of June 30, 2021, is 36 years, up from 34 years as of June 30, 2020. 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.
- The improvement in the fiscal condition of the Health Care Fund has largely been achieved through factors other than an allocation from the employer pension contribution. Since the adoption of the funding policy in 2016, a 0.5% allocation was provided in only 2018 and 2019. The primary drivers of the improved fiscal condition have been increased federal reimbursements; the employer health care surcharge; plan design changes; changes in ACA-based taxes; investment returns; and plan experience.
- The full 1.5% employer health care surcharge, totaling approximately \$49.6 million, has been collected.
- The previously noted improvement in the funded status of the Pension Fund was largely based on strong investment performance for the year (approximately 27%). The positive impact of that investment performance will continue to be felt over the next three years via the smoothing of investment returns, with approximately \$743.7 million in deferred gains being recognized in each of those years.
- While the phasing-in of substantial deferred gains over the next three years will help support and/or improve the funded ratio of the Pension Fund in that period, the funded ratio will also be impacted by future investment experience and possible negative actuarial experience relative to assumptions (e.g., COLAs higher than assumed).
- The fiscal year to-date investment experience is approximately 2.93%.

Mr. Stensrud answered the board's questions about the information presented following a robust discussion.

James Rossler moved and Matthew King seconded that after a discussion with Cavanaugh Macdonald regarding the preliminary results of the annual basic benefits valuation (to be prepared as of June 30, 2021) at the October 2021 Board meeting, the Board elects to allocate 0.00% of the 14% employer contribution to the Health Care Fund for fiscal year 2022 in accordance with the funding policy approved by the Board on June 18, 2015. Upon roll call, the vote was as follows: Yea: Jeffrey DeLeone, Hugh Garside, James Haller, Matthew King, Catherine Moss, James Rossler, Frank Weglarz, Daniel Wilson, and Barbra Phillips. The motion carried.

SERS Retirement Board Meeting Minutes

October 21, 2021

Member Appeal

Jeffrey DeLeone moved and James Haller seconded the motion that the board convene in Executive Session pursuant to R.C. 121.22 (G)(5) to discuss a matter required to be kept confidential by law. Upon roll call, the vote was as follows: Yea: Jeffrey DeLeone, Hugh Garside, James Haller, Matthew King, Catherine Moss, James Rossler, Frank Weglarz, Daniel Wilson, and Barbra Phillips. The motion carried.

The board convened in executive session at 11:15 a.m.

The board reconvened in open session at 11:30 a.m.

Member Appeal – Affirm Final Staff Determination

Catherine Moss moved and Jeffrey DeLeone seconded the motion to affirm the Final Staff Determination to not permit the purchase of service credit as specified in the Resignation Agreement between Benjamin Local Schools and a former school employee. Upon roll call, the vote was as follows: Yea: Jeffrey DeLeone, Hugh Garside, James Haller, Matthew King, Catherine Moss, James Rossler, Frank Weglarz, Daniel Wilson, and Barbra Phillips. The motion carried.

Compensation Committee Report

Daniel Wilson, Chair of the SERS Compensation Committee, provided an update on the work of the committee. Mr. Wilson updated the board on the work being done on the SERS Compensation Study. Mr. Wilson stated the Compensation Study working group is working to identify the most appropriate peer groups for comparison. The study is moving forward, and the Compensation Committee is comfortable with the groups presented. The Compensation Study is on target and working towards a positive outcome. The board thanked Mr. Wilson for his report.

Technology Committee Report

Matthew King, Chair of the SERS Technology Committee, provided an update on the work of the committee. The last Technology Committee meeting was held on September 16, 2021 and covered the SERS disaster recovery plan and timelines for the requests for proposals for the cloud migration. Mr. King also provided an update on the Cyber-Response table-top exercise that took place October 5 and 6, 2021. Mr. King reported the table-top exercise went well and was very productive. More detail would be shared in the Technology Committee meeting scheduled for later today. Mr. King also reminded the board that there is a Technology Committee repository of information available in Diligent Board Books with articles related to technology issues. Mr. King invited available board members to sit in on this afternoon's Technology Committee meeting to learn more. The board thanked Mr. King for his report.

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Board Communication and Policy Issues

CALENDAR DATES FOR SERS BOARD MEETINGS FOR 2021 - 2022

REMAINING CALENDAR DATES FOR 2021

AUDIT COMMITTEE MEETINGS

December 15, 2021 - 2:30 p.m. (Weds.)

COMPENSATION COMMITTEE MEETINGS

December 16, 2021 - 7:30 a.m. (Thurs.)

TECHNOLOGY COMMITTEE MEETINGS

December 16, 2021 – 1:00 p.m. (Thurs.) or immediately following the board meeting

BOARD MEETINGS

November 18 and 19, 2021 - 8:30 a.m. (Thurs. and Fri.)

December 16 and 17, 2021 - 8:30 a.m. (Thurs. and Fri.)

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

SERS Retirement Board Meeting Minutes

October 21, 2021

CALENDAR DATES FOR SERS BOARD MEETINGS FOR 2022 **

AUDIT COMMITTEE MEETINGS

March 16, 2022 - 2:30 p.m. (Weds.)
June 15, 2022 - 2:30 p.m. (Weds.)
September 14, 2022 - 2:30 p.m. (Weds.)
December 14, 2022 - 2:30 p.m. (Weds.)

COMPENSATION COMMITTEE MEETINGS

March 17, 2022 - 7:30 a.m. (Thurs.)
June 16, 2022 - 7:30 a.m. (Thurs.)
September 15, 2022 - 7:30 a.m. (Thurs.)
December 15, 2022 - 7:30 a.m. (Thurs.)

TECHNOLOGY COMMITTEE MEETINGS

March 17, 2022 - 1:00 p.m. (Thurs.)
June 16, 2022 - 1:00 p.m. (Thurs.)
September 15, 2022 - 1:00 p.m. (Thurs.)
December 15, 2022 - 1:00 p.m. (Thurs.)

BOARD MEETINGS

February 17-18, 2022 - 8:30 a.m. (Thurs. and Fri.)
March 17-18, 2022 - 8:30 a.m. (Thurs. and Fri.)
April 21-22, 2022 - 8:30 a.m. (Thurs. and Fri.)
May 19-20, 2022 - 8:30 a.m. (Thurs. and Fri.)
June 16-17, 2022 - 8:30 a.m. (Thurs. and Fri.)
July 21-22, 2022 - 8:30 a.m. (Thurs. and Fri.)
September 15-16, 2022 - 8:30 a.m. (Thurs. and Fri.)
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.)

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

SERS Retirement Board Meeting Minutes
October 21, 2021

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 18, 2021, at 8:30 a.m. for the SERS regularly scheduled Retirement Board meeting. The SERS board meeting adjourned at 12:15 p.m.

Barbra Phillips, Chairperson

Richard Stensrud, Secretary

DRAFT

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, 2021 through September 30, 2021**. 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	\$ 174.3
Fixed Income	376.0
Private Equity Capital Calls	63.7
Real Asset Capital Calls	25.0
Opportunistic & Tactical	6.7
Global Private Credit	45.5
Cash Equivalents	199.8

B. SALES

Asset Class	Approximate Net Proceeds (in millions)	Approximate Gain/(Loss) (in millions)
Global Equities	\$172.6	\$ 16.2
Fixed Income	357.5	1.4
Private Equity distributions	63.8	n/a
Real Asset distributions	7.2	n/a
Opportunistic & Tactical	0.9	n/a
Global Private Credit	n/a	n/a
Cash Equivalents	243.1	n/a

Upon roll call, the vote was as follows:

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

**School Employees
Retirement System of Ohio**

Memo

To: SERS Retirement Board
From: Richard Stensrud, Executive Director
cc: Karen Roggenkamp, Deputy Executive Director
Tracy Valentino, Chief Financial Officer
Date: November 11, 2021
Re: **Presentation of Pension and Health Care Actuarial Valuations
as of June 30, 2021**

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 fund actuarial valuation as of June 30, 2021 ('Pension Valuation') is attached for your review and consideration.

As you will see, the June 30, 2021 Pension Valuation reports that the funded ratio of the Basic Benefits increased to 74.46% from the 71.49% funded ratio reported in 2020 and the amortization period of the unfunded actuarial accrued liability decreased to 23 years. As discussed in more detail below, the improvement in the funded status is largely attributable to very strong FY 20-21 investment earnings plus actuarial gains due to the changes in the retiree cost-of-living adjustment (COLA).

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 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.

Due to the strong investment performance in FY 20-21, as of June 30, 2021, the market value of assets is greater than the actuarial value of assets by \$1.808 billion. As a result, the funded ratio based on the market value of assets is 82.86%, which is higher than the 74.46% 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 82.86% funded. See pages 3-5 and 13 of the Pension Valuation.

Under the asset smoothing process described above, the remaining three fourths of the investment gains from FY 20-21 will be phased into the actuarial value of assets over the next three years. The \$743,716,319 in deferred gains being recognized each year will provide strong support for continued improvement in the funded status over the next few years. See page 28 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 20-21, SERS experienced a decrease of \$499 million in the UAAL largely due to these latter factors – i.e., strong investment performance, positive 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 5, 6, 15 and 17 of the Pension Valuation. See page 50 of the Pension Valuation for a breakdown of the annual actuarial gains and losses since 2012.

Active Members

The number of active members included in the Pension Valuation was nearly 10,000 lower as of June 30, 2021 as compared to June 30, 2020. This does not appear to be due to broad-based

downsizing of the workforce, but rather, appears to be a product of the pandemic, in that many employers 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. This was consistent with what was seen with respect to the collection of the employer health care surcharge in 2021. This also explains why the percentage increase in average pay was higher than normal – i.e., the total annual payroll was higher than 2020 but the active member headcount was lower. See pages 9 and 11 of the Pension Valuation.

Other Pension Valuation Information of Note:

- The total number of retirees has declined in each of the last three years, dropping from 81,024 in 2019 to 80,851 in 2020 and to 80,721 in 2021. This is because more retirees have passed away each year than have been added through retirements. See page 38 of the Pension Valuation.
- 50.6% of current service retirees receive an annual benefit of \$12,000 or less. 68.1% of current service retirees receive an annual benefit of \$18,000 or less. See page 40 of the Pension Valuation.
- 89.4% of current service retirees are age 65 or older. 28.4% of current service retirees are age 80 or older. 15% of current service retirees are age 85 or older. 4,314 (6%) of current service retirees are age 90 or older. See page 41 of the Pension Valuation. The meaningful percentage of retirees over age 80 is a key factor in the decline in the total number of retirees noted above.
- 73.7% of current benefit recipients are female, 26.3% are male. 7 current benefit recipients are age 105 or older. See page 43 of the Pension Valuation.
- 69.3% of current active members have less than 10 years of service. 51% have less than 4 years of service. The percentage of active members declines as service increases and drops below 5% when you get to 25 or more years of service. See page 45 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 53 of the Pension Valuation.
- 50.8% of current active members make less than \$20,000 annually. 82.6% make less than \$40,000 annually. 9.6% make more than \$40,000 annually. See page 48 of the Pension Valuation.
- Salary growth for active members for the year was considerably below the level expected – 0.54% actual compared to 4.97% expected. See page 52 of the Pension Valuation.

- 75.1% of service retirees in 2021 had 20 years or more of service. 57.7% of service retirees in 2021 had 25 or more years of service. 36% had 30 or more years of service. See page 53 of the Pension Valuation.
- 58% of service retirees in 2021 were age 65 or older at retirement. See page 53 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, 2021 is \$600,333,188, up from \$482,611,478 as of June 30, 2020. 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, 2021 is 46.56%, up from 26.86% as of June 30, 2020. This is a new funded ratio high. 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, 2021 is 36 years, up from 34 years as of June 30, 2020. 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 FY2021 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 2022; and (2) The actuary's recommendation establishing the minimum compensation amount for purposes of the fiscal year 2023 Health Care employer surcharge.

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



School Employees Retirement System of Ohio 2021 Actuarial Valuation Results

November 19, 2021



Benefit Financing



➤ Basic Retirement Funding Equation

$$C + I = B + E$$

C = Contributions

I = Investment Income

B = Benefits Paid

E = Expenses (administration)



Key Findings



- Funded status for Basic Benefits increased from 71.49 % to 74.46%.
- Actuarially determined contribution rate increased from 10.86% to 12.50% 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 October 21, 2021, the entire employer contribution of 14% will be allocated to Basic Benefits.
- Health Care Fund will receive the 1.50% employer surcharge, with no additional contribution from employer.



Key Findings

- Since the previous valuation, the assumptions used in the valuation have been updated based on an experience study for the five-year period ending June 30, 2020.
- Updated Economic Assumptions
 - Investment Rate of Return
 - Inflation
 - Wage Inflation
 - Payroll Growth Assumption
 - Cost-of-Living Adjustments
- Demographic Assumptions
 - Merit Base Salary Scale Component
 - Retirements, Withdrawals, Disabilities
 - Pre & Post Mortality



Funded Status



<u>Benefit</u>	<u>June 30, 2021</u>	<u>June 30, 2020</u>
Pension Benefits	74.8%	71.9%
Medicare Part B	56.9%	50.7%
Post-Retirement Death Benefits	67.7%	66.8%
Health Care	46.6%	26.9%



Pension Results



Comments on Pension Valuation



- Since the previous valuation, the assumptions used in the valuation have been changed due to the experience study for the five-year period ending June 30, 2020.
 - Increased Unfunded Accrued Liability (UAL) by \$126.6 million
- Total market value investment return was 27.8%.
 - Market value investment return for Health Care Fund was 22.2%
 - Market value investment return for Basic Benefits Fund was 28.0%
- Total blended smoothed actuarial value return for entire fund 10.8%.
 - Smoothed (market value) return for funds that support Health Care was 22.2%
 - Smoothed return for funds that support Basic Benefits was 10.4%
- Funded ratio increased from 71.49% to 74.46%.



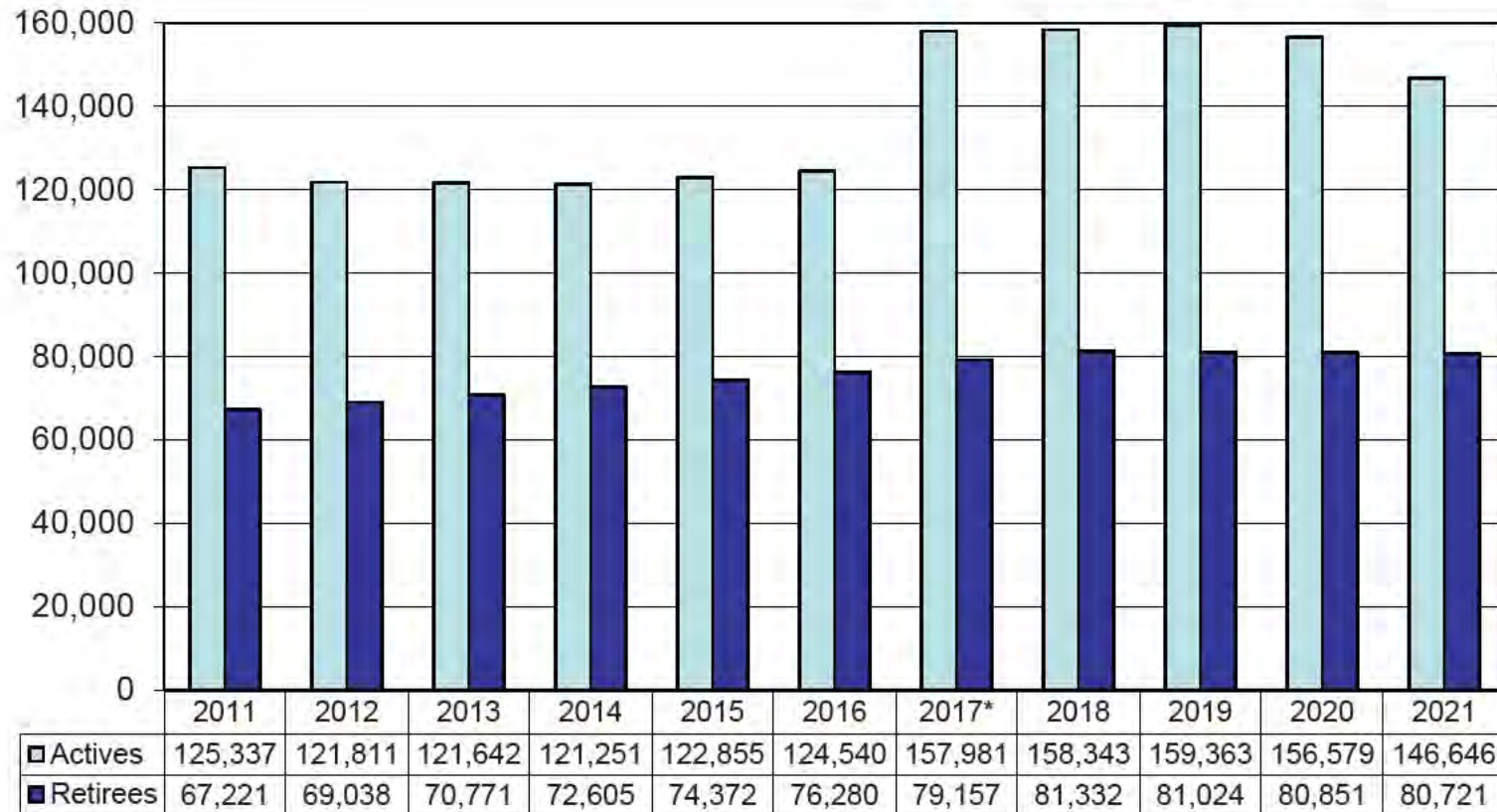
Comments on Pension Valuation



- Actuarially determined contribution rate increased from 10.86% to 12.50% on current 23-year amortization schedule.
- \$1,808 million of unrecognized investment gains, which will be recognized as investment gains over the next three years.
 - 2021/2022 - \$499 Million
 - 2022/2023 - \$565 Million
 - 2023/2024 - \$744 Million
- Board approved COLAs of 0.5% for calendar year 2021 and 2.5% for calendar year 2022 have been reflected in the results.
- Funded rate on a market value of assets basis is 82.86%



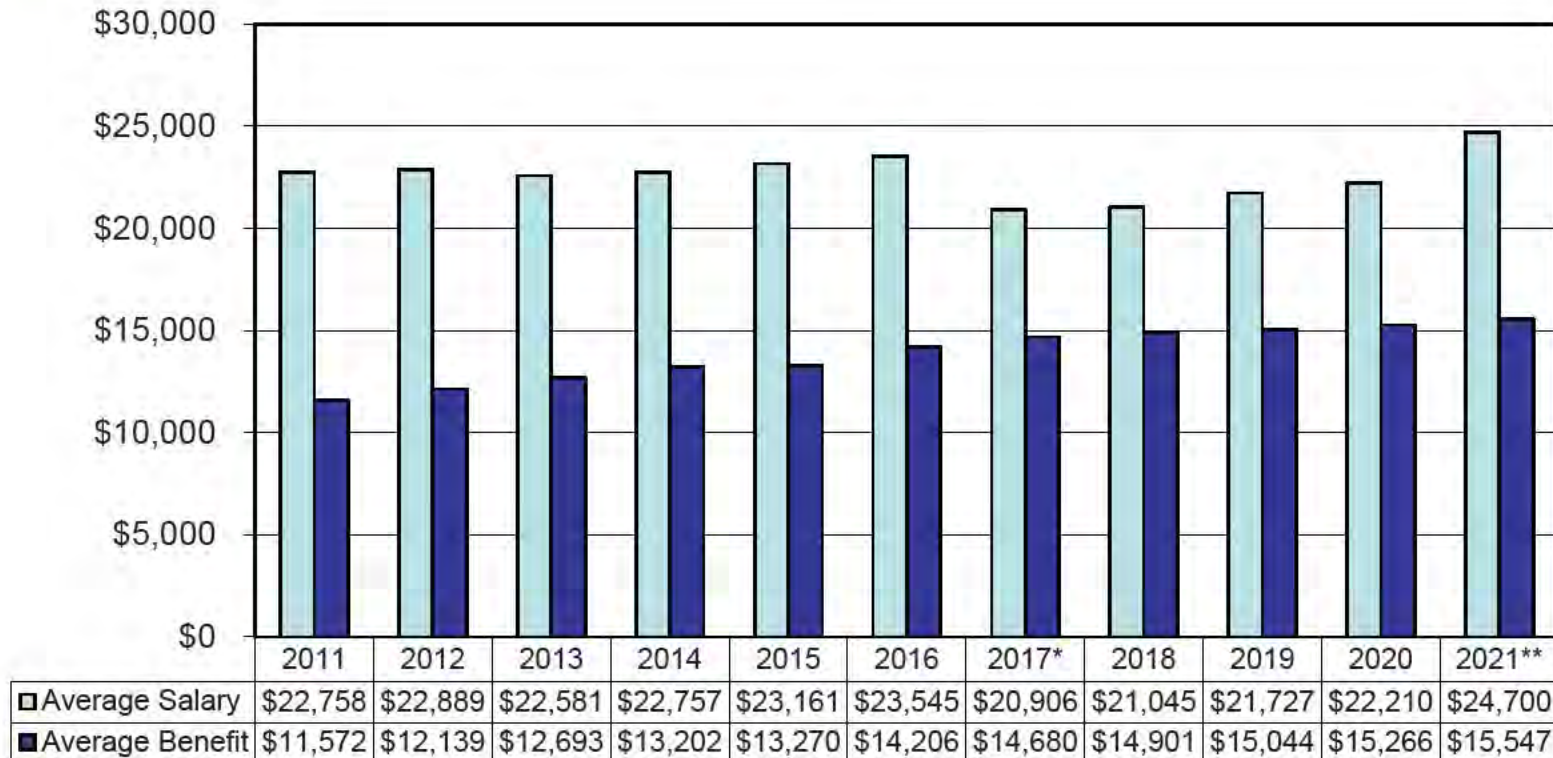
Active and Retired Membership



* 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

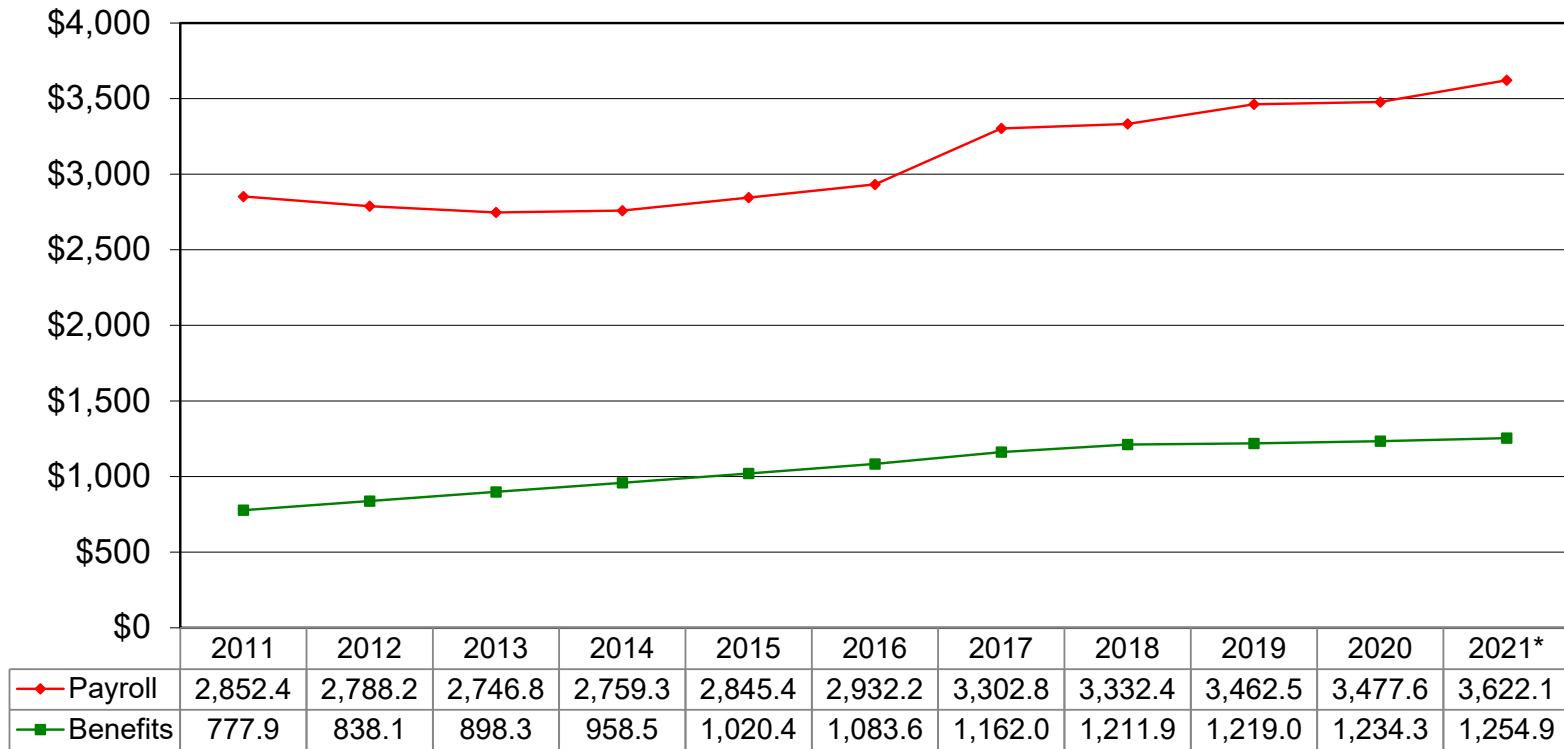


*Average annual salary in 2017 reflects the re-categorization of 32,641 members. The average annual salary for this group was \$7,518.

** 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, 2021	June 30, 2020
Active Average Age	47.7	47.5
Active Average Service	8.1	7.7
Average Age Retirees and Beneficiaries	75.0	74.9
Average Age Disabilities	66.7	66.5
Average Age Survivors	72.6	72.7



Assets (\$ Millions)



■ Market Value	\$10,619	\$10,332	\$11,300	\$12,821	\$12,797	\$12,452	\$13,614	\$14,271	\$14,544	\$14,420	\$17,840
—● Actuarial Value	\$10,513	\$10,397	\$11,126	\$12,030	\$12,602	\$13,180	\$13,713	\$14,012	\$14,473	\$15,037	\$16,032



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Market Return	19.0%	(0.5)%	12.4%	16.7%	3.2%	0.6%	12.9%	9.0%	5.7%	2.7%	28.0%
Actuarial Return	(1.6)%	1.0%	10.1%	11.5%	8.3%	7.9%	7.5%	6.3%	7.1%	7.6%	10.4%



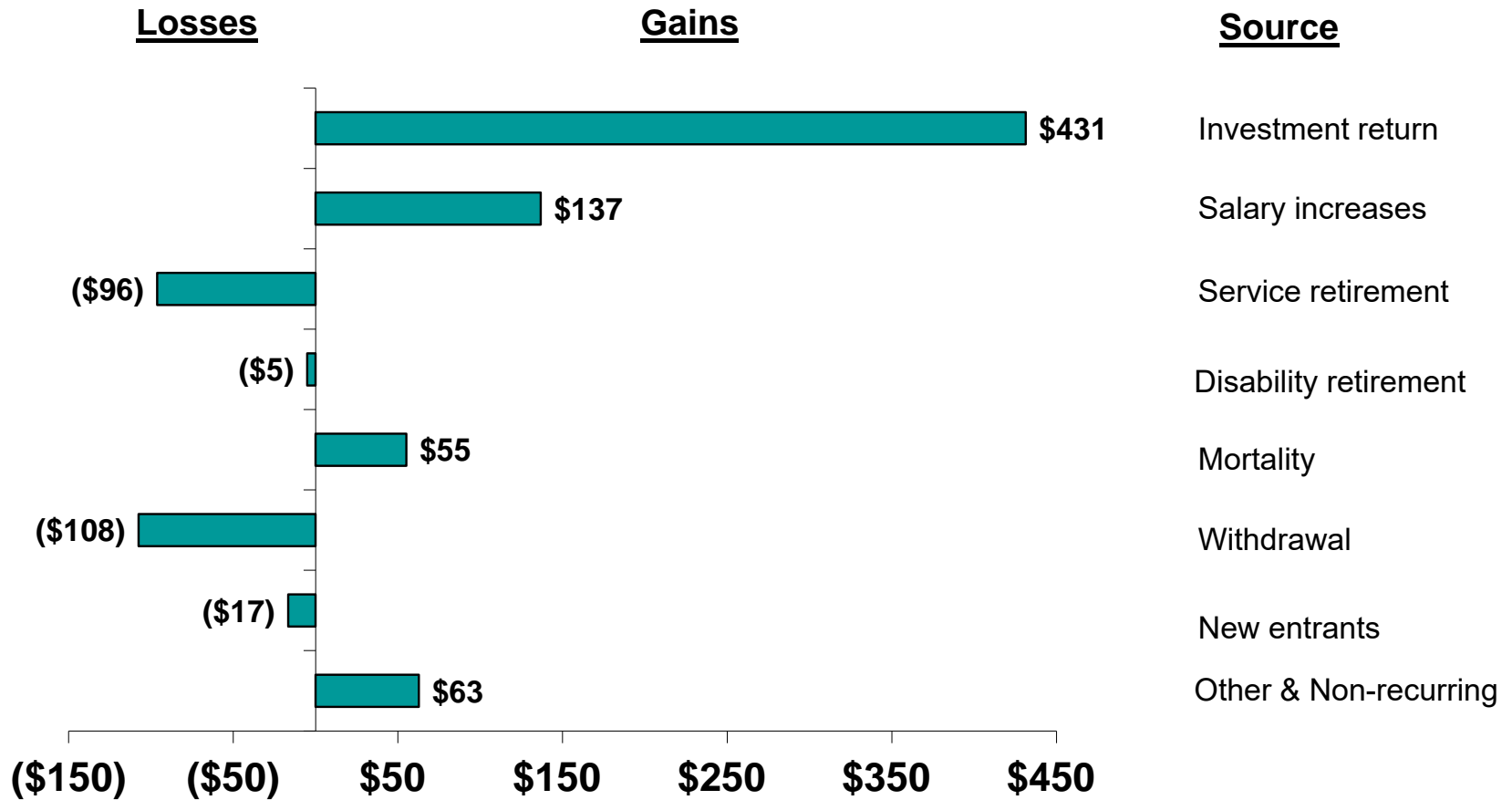
Pension Funding Results



	June 30, 2021 Valuation			
	Pension	Death Benefits	Medicare Part B	Total
Total Normal Cost Rate	10.95%	0.02%	0.29%	11.26%
Less Member Rate	<u>10.00%</u>	<u>0.00%</u>	<u>0.00%</u>	<u>10.00%</u>
Employer Normal Cost Rate	0.95%	0.02%	0.29%	1.26%
Rate to Amortize UAL	<u>10.87%</u>	<u>0.03%</u>	<u>0.34%</u>	<u>11.24%</u>
Actuarially Determined Contribution Rate	11.82%	0.05%	0.63%	12.50%
Funded Policy Contribution Rate				14.00%
Unfunded Accrued Liability (\$ millions)	\$5,316	\$13	\$169	\$5,498
Amortization Period	23	23	23	23
	June 30, 2020 Valuation			
Actuarially Determined Contribution Rate	10.24%	0.03%	0.59%	10.86%
Unfunded Accrued Liability (\$ millions)	\$5,790	\$13	\$194	\$5,997
Amortization Period	24	24	24	24



2021 Pension Gain/Loss Analysis (\$ Millions)





Health Care Fund Results



Comments on OPEB Valuation



- OPEB valuation recognizes actuarial gains due to the impact of assumptions based on the new Experience Study and investment returns. The Experience Study increased the rate of return assumption for the funding valuation to 7%.
- No explicit changes were incorporated at this time for COVID-19 due to the level of uncertainty regarding the impact on both plan costs and contribution levels going forward (e.g., the impact of routine care being deferred, direct COVID-19 treatment and prevention costs, changes in contribution and budget projections). We will continue to monitor the impact going forward.
- Funded ratio was 26.86% as of June 30, 2020, funded ratio is 46.56% as of June 30, 2021. Increase largely due to change in rate of return assumption and investment gains.



Comments on OPEB Valuation



- Market value of assets used for valuation purposes. Investment return was 22.2% versus assumed rate of 5.25%. The assumed rate in future years has been increased to 7.00% based on the new Experience Study.
- For funding valuation purposes, UAL amortization period remains 30 years.
- Actuarially Determined Employer Contribution (ADEC) was 3.67% as of June 30, 2020, ADEC is 2.46% as of June 30, 2021.
- Funding policy requires at least 13.50% of 14.00% employer contribution rate to be allocated to Pension.
- Based on Board Resolution dated October 21, 2021, the Health Care Fund will not receive any employer contribution other than 1.50% surcharge.



Comments on OPEB Valuation



- 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 2058; 37 years of solvency.
- 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 increases due to ACA law changes or COVID-19 impact other than anticipated health care trend.



Comments on OPEB Valuation



- 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 \$1,800 per participating family, per calendar year in accordance with federal limits.



Health Care Fund Results



Health Care Fund		
	June 30, 2021	June 30, 2020
Total Normal Cost Rate	1.22%	2.09%
Less Member Rate	<u>0.00%</u>	<u>0.00%</u>
Employer Normal Cost Rate	1.22%	2.09%
Rate to Amortize UAL	<u>1.24%</u>	<u>1.58%</u>
Total Recommended Employer Contribution Rate	2.46%	3.67%
Unfunded Accrued Liability*	\$ 689	\$1,314
Employer Contribution Toward Health Care	1.50%	1.50%
Amortization Period	30	30

* \$ millions



2021 Health Care Experience Gain/(Loss) (\$ Millions)



(1) Unfunded Actuarial Accrued Liability (UAAL) as of 6/30/2020	\$1,314
(2) Normal Cost from last valuation	73
(3) Expected employer contributions	133
(4) Interest accrual: $[(1)+(2)] \times 0.0525 - (3) \times 0.0525/2$	<u>69</u>
(5) Expected UAAL before changes: $(1)+(2)-(3)+(4)$	\$1,323
(6) Gain/(Loss) due to claims experience	(8)
(7) Gain/(Loss) due to assumptions	561
(8) Expected UAAL after changes: $(5)-(6)-(7)$	\$ 770
(9) Actual UAAL as of 6/30/2021	\$ 689
(10) Total gain/(loss): $(8)-(9)$	\$ 81
(a) Contribution shortfall	(61)
(b) Investment gain/(loss)	83
(c) Experience gain/(loss): $(10)-(10a)-(10b)$	\$ 59
(11) Accrued liabilities as of 6/30/2021	\$1,289
(12) Experience gain/(loss) as % of AAL at end of year: $(10c)/(11)$	4.6%



Surcharge Level



- The current surcharge level is \$25,000 for the 2021-2022 fiscal year.
- For the 2022-2023 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



Cavanaugh Macdonald
CONSULTING, LLC

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

Prepared as of June 30, 2021



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CONSULTING, LLC

The experience and dedication you deserve

October 29, 2021

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, 2021. 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, 2021.

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.

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. We will continue to monitor the situation and advise the Board in the future of any adjustments that we believe would be appropriate.

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.

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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,

A handwritten signature in blue ink that reads 'Todd B. Green' followed by a horizontal flourish.

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

A handwritten signature in blue ink that reads 'John J. Garrett' with a stylized, sweeping flourish at the end.

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

TBG/JJG:bvb



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

PREPARED AS OF JUNE 30, 2021

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, 2021, 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.

Since the previous valuation, there were no changes to the plan provisions, however the actuarial methods and assumptions were updated to reflect an experience study performed over the five-year period ending June 30, 2020. Any measures of experience gains and losses for the year ending June 30, 2021 are based the assumptions and methods in use for the June 30, 2020 valuation. The experience study reviewed the actuarial assumptions and methods used in the actuarial valuation process. The assumptions fall into two categories. The first includes economic assumptions which include price inflation, wage inflation and investment return. The second category includes demographic assumptions such as assumed rates of mortality, service retirement, disability retirement, withdrawal, and salary increases for merits and promotions.

Summary of Assumptions Changes	
Economic Assumptions	
Salary	Composed of Inflation component, Real Rate of Salary Increase component and Merit/Promotion Scale
Inflation	Reduction to annual assumed rate of inflation assumption from 3.00% to 2.40%.
Wage Inflation	Increase to annual assumed rate from real salary increase assumption from 0.50% to 0.85%
Investment Rate of Return	Composed of Inflation component (2.40% from above) and Real Rate of Return component equal to 4.60%. Reduction from 7.50% to 7.00% net investment return assumption.
Payroll Growth	Reduce from 3.50% to 1.75%.
Annual Cost-of-Living Adjustments	Reduce from 2.50% to 2.00%.



Summary of Assumptions Changes	
Demographic Assumptions	
Withdrawal	Adjusted rates of withdrawal
Retirement	Adjusted rates of normal and early retirement
Disability	Adjusted rates of disability retirement
Base Mortality	<p>Healthy Retirees – 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.</p> <p>Disabled Retirees – 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.</p> <p>Contingent Survivors - 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.</p> <p>Actives – PUB-2010 General Amount Weighted Below Median Employee mortality table.</p>
Mortality Projection	Mortality rates are projected using a fully generational projection with Scale MP-2020.

Since the previous valuation, the normal cost method has been updated to align the normal cost calculation with imputed compensation. Imputed salaries are estimated from the previous year's salary by applying the salary scale to the reported compensation for the period ending June 30, 2021. The annual compensation as of June 30, 2021 shown throughout the report reflects imputed salaries.

The actuarial valuation results provide a "snapshot" view of the System's financial condition on June 30, 2021. 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 \$5,958.9 million as of June 30, 2021, taking into account contributions from the employers and members of \$830.6 million. The actual UAAL is \$5,498.1 million. The net decrease of \$460.8 million is attributable to liability and investment gains and losses which are detailed in Section V. The remaining amortization period of the UAAL is 23 years as of June 30, 2021.

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, 2021 actuarial valuation is shown below. Further detail on the valuation results can be found in the following sections of this Executive Summary.

	June 30, 2021 Valuation Results	June 30, 2020 Valuation Results
Actuarially Determined Contribution Rate	12.50%	10.86%
Employer Contribution Rate	14.00%	14.00%
Sufficiency/(Deficiency)	1.50%	3.14%
Remaining Amortization Period	23	24
Unfunded Actuarial Accrued Liability (\$M)	\$5,498.1	\$5,997.1
Basic Benefit Funded Ratio (Actuarial Assets)	74.46%	71.49%

The funded ratio of the basic benefits is 74.46%. 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 FY2022. The Health Care Fund may receive an employer contribution of up to 0.50%. Based on a Board Resolution dated October 21, 2021, 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.

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, 2020 and June 30, 2021. The components are examined in the following discussion.

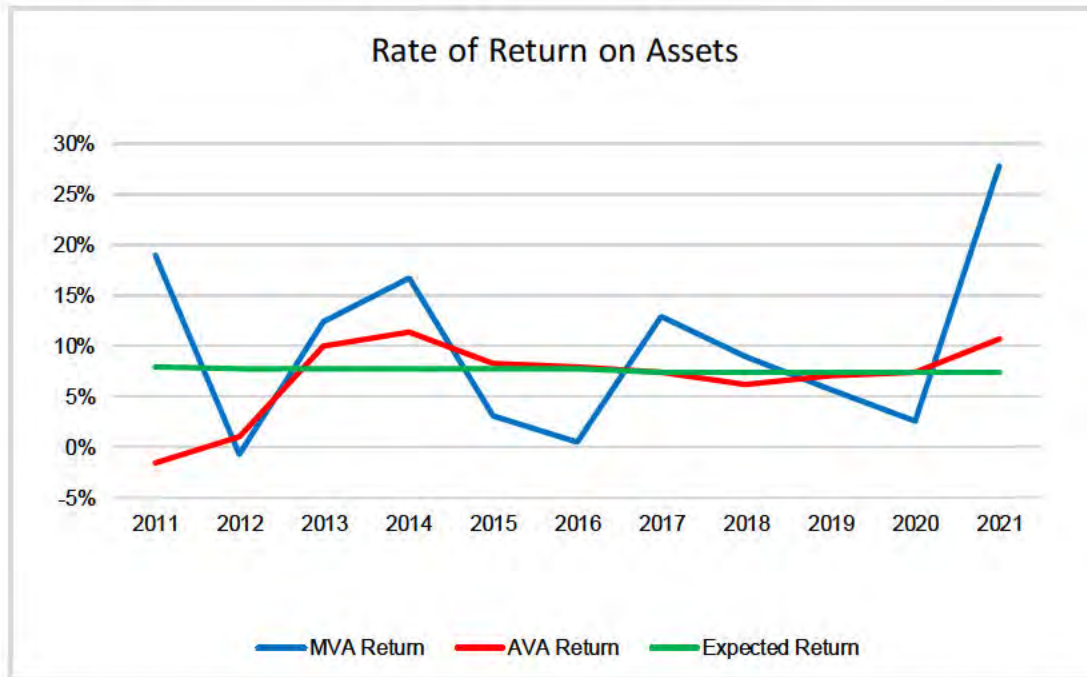
ASSETS

As of June 30, 2021, SERS' basic benefits had net assets of \$17,840,046,988, when measured on a market value basis. This was an increase of \$3,420,448,361 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, 2021, was \$16,031,612,792, an increase of \$994,877,642 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, 2020	\$ 15,036,735,150	\$ 14,419,598,627
- Employer and Member Contributions	+ 830,633,505	+ 830,633,505
- Benefit Payments	- 1,374,410,677	- 1,374,410,677
- Investment Gains	+ 1,538,654,814	+ 3,964,225,533
Net Assets, June 30, 2021	16,031,612,792	17,840,046,988



The estimated investment return on the market value of assets for FY2021 was 27.83%. Due to the investment experience gain for FY 2021, the resulting return on the smoothed actuarial value of assets was 10.80%. The return on the funds supporting Basic Benefits was 10.42%. As this rate of return was greater than the assumed rate of 7.50%, there was an actuarial investment experience gain of \$431.3 million. The return on the Health Care Fund is 22.23%. 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 \$1,808 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, 2021 in the following table:

	Actuarial Value of Assets	Market Value of Assets
Actuarial Accrued Liability	\$21,529,757,004	\$21,529,757,004
Value of Assets	\$16,031,612,792	\$17,840,046,988
Unfunded Actuarial Accrued Liability*	\$5,498,144,212	\$3,689,710,016
Funded Ratio	74.46%	82.86%

* 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, 2020, to June 30, 2021, was \$498,929,957. The components of this net change are shown in the table below:

Unfunded Actuarial Accrued Liability, June 30, 2020		\$5,997.1
(\$ Millions)		
Expected increase due to amortization method	(\$38.5)	
Investment experience	(\$431.3)	
Liability experience	(\$155.8)	
Assumption Changes	\$126.6	
Total		(\$499.0)
Unfunded Actuarial Accrued Liability, June 30, 2021		\$5,498.1

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 \$499.0 million. The net UAAL decrease is comprised primarily of experience and investment gains; the largest sources of liability losses were retirement and termination experience, which were offset by a salary experience and investment experience gains.

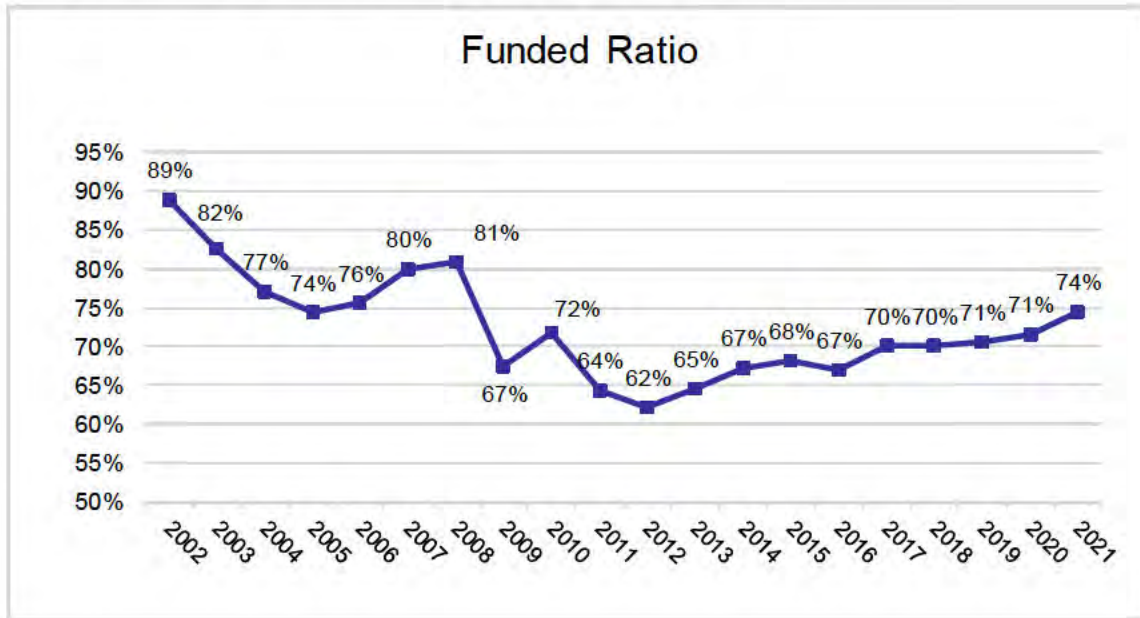


Since June 30, 2004, the actuarial accrued liability has been higher than the actuarial value of assets. Investment experience below the assumed rate of return was the primary source of the increased difference between the actuarial accrued liability and actuarial assets. SERS implemented pension reform 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.

	6/30/17	6/30/18	6/30/19	6/30/20	6/30/21
Funded Ratio	70.01%	70.07%	70.51%	71.49%	74.46%
Unfunded Actuarial Accrued Liability (\$M)	\$ 5,875.3	\$ 5,985.5	\$ 6,054.2	\$ 5,997.1	\$5,498.1



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, 2021	June 30, 2020
1. Employer Portion of Normal Cost Rate	1.26%	0.06%
2. UAAL Contribution Rate	11.24%	10.80%
3. Total Actuarial Determined Contribution Rate (1) + (2)	12.50%	10.86%
4. Funded Ratio	74.46%	71.49%
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, 2021

SECTION I – SUMMARY OF PRINCIPAL RESULTS

1. This report, prepared as of June 30, 2021, 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, 2021	June 30, 2020
Active members included in valuation		
Number	146,646	156,579
Annual Compensation*	\$3,622,097,199	\$3,477,578,726
Retirees		
Number	80,721	80,851
Annual allowances	\$1,254,934,762	\$1,234,342,326
Deferred Vesteds		
Number	5,972	5,654
Annual deferred allowances	\$38,777,532	\$37,104,572
Assets (net of Health Care Assets)		
Market related actuarial value	\$16,031,612,792	\$15,036,735,150
Market value	\$17,840,046,988	\$14,419,598,627
Unfunded Accrued Liability	\$5,498,144,212	\$5,997,074,169
Funded Ratio (AVA/AAL)		
All Basic Benefits	74.46%	71.49%
Pension Benefits	74.80%	71.90%
Medicare Part B	56.94%	50.66%
Post-retirement Death Benefits	67.71%	66.81%
Actuarially Determined Contribution Rate		
Normal	1.26%	0.06%
Accrued liability	11.24%	10.80%
Total	12.50%	10.86%
Funding Policy Contribution Rate	14.00%	14.00%
Accrued liability amortization period (years)	23	24

* 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 were furnished by the System's staff. The following tables summarize the membership of the system as of June 30, 2021, 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
146,646	\$3,622,097,199	\$24,700	47.7	8.1

The total number of active members includes 44,997 vested members and 101,649 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
6/30/2016	124,540	\$2,932,236,551	\$23,545	1.7%
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

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

** The annual compensation as of June 30, 2021 reflect 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	71,657	\$1,127,708,289	\$15,738	75.0
Disability	4,868	87,390,489	17,952	66.7
Survivors	4,196	39,835,984	9,494	72.6
Total in SERS	80,721	\$1,254,934,762	\$15,547	74.4

This valuation also includes 278,659 inactive members eligible for a contribution refund only (including 254,797 members reported separately who had completed one or more years of service before terminating). Their contributions totaled \$236,084,753 as of June 30, 2021. There were also 5,972 terminated vested members with annual deferred pension benefits of \$38,777,532. Included in the "Retiree" numbers in the above table are 12,203 reemployed retirees with account balances of \$122,724,317 (including employer contributions and interest), 799 reemployed retirees receiving only an annuity from their contributions and their employers' matching contributions, and 912 reemployed retirees receiving such annuities in addition to their regular pension benefits. The sum of the annuity payments attributable to these reemployed retirees is \$7,568,723.



SECTION III – ASSETS

1. As of June 30, 2021, the total market value of assets amounted to \$18,440,377,176. 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 27.83%. The return on the funds supporting Basic Benefits is 28.02%. The return on the Health Care Fund is 22.23%.

Asset Summary Based on Market Value			
(1)	Assets at June 30, 2020	\$	14,902,210,105
(2)	Contributions and Misc. Revenue		968,216,942
(3)	Investment Gain (Loss)		4,072,493,787
(4)	Benefit Payments		(1,502,543,658)
(5)	Assets at June 30, 2021 (1) + (2) + (3) + (4)	\$	18,440,377,176
(6)	Annualized Rate of Return*		27.83 %

2. The four-year smoothed market related actuarial value of assets used for the current valuation was \$16,631,942,980. Schedule B shows the development of the actuarial value of assets as of June 30, 2021. 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 10.80%. The return on the funds supporting Basic Benefits is 10.42%. The return on the Health Care Fund is 22.23%.

Asset Summary Based on Actuarial Value			
(1)	Assets at June 30, 2020	\$	15,519,346,628
(2)	Contributions and Misc. Revenue		968,216,942
(3)	Investment Gain (Loss)		1,646,923,068
(4)	Benefit Payments		(1,502,543,658)
(5)	Assets at June 30, 2021 Before Application of Corridor (1) + (2) + (3) + (4)	\$	16,631,942,980
(6)	Annualized Rate of Return*		10.80 %

*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, 2021.

1. The total retirement benefit valuation balance sheet shows that the System has total future retirement benefit liabilities of \$25,063,688,730, of which \$12,985,430,420 is for the future benefits payable for present retiree members and beneficiaries of deceased members; \$718,974,558 is for the future benefits payable for present inactive members; and \$11,359,283,752 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 \$16,031,612,792 as of June 30, 2021. The difference of \$9,032,075,938 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, \$3,207,536,291 is the present value of future contributions expected to be made by members, and the balance of \$5,824,539,647 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 0.95% of payroll for basic pension benefits, 0.02% of payroll for post-retirement death benefits, and 0.29% 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 \$326,395,435.
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 10.87% 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 0.03% 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 0.34% of payroll. These rates are sufficient to amortize the unfunded accrued liability of \$5,498,144,212 over 23 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 \$5,824,539,647.



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, 2021, is shown below in \$ millions.

Experience (Gain/Loss)

Total Basic Benefits June 30:		2021	2020	2019	2018	2017	2016
(1)	UAAL from last valuation	\$ 5,997.1	6,054.2	5,985.5	5,875.3	6,591.1	5,901.6
(2)	Normal cost from last valuation	347.6	344.1	330.6	342.4	312.5	319.3
(3)	Contributions	830.6	843.9	809.9	759.9	804.4	750.7
(4)	Interest accrual: [(1) + (2) - (3)*.5] x .075	444.8	448.3	443.3	437.8	487.6	453.0
(5)	Expected UAAL before changes: (1) + (2) - (3) + (4)	\$ 5,958.9	6,002.7	5,949.5	5,895.6	6,586.8	5,923.2
(6)	Change due to plan amendments	0.0	0.0	0.0	357.6	998.5	0.0
(7)	Change due to new actuarial assumption or methods	(126.5)	0.0	0.0	0.0	0.0	(668.2)
(8)	Expected UAAL after changes: (5) - (6) - (7)	\$ 6,085.4	6,002.7	5,949.5	5,538.0	5,588.3	6,591.4
(9)	Actual UAAL from this valuation	\$ 5,498.1	5,997.1	6,054.2	5,985.5	5,875.3	6,591.1
(10)	Total Gain/(Loss): (8) - (9)	\$ 587.3	5.6	(104.7)	(447.4)	(287.0)	0.3
(11)	Investment Gain/(Loss):	\$ 431.3	7.1	(44.1)	(161.1)	(12.2)	50.6
(12)	Non-Investment Gain/(Loss)	\$ 155.8	(1.5)	(60.6)	(286.3)	(274.8)	(50.3)

Pension June 30:		2021	2020	2019	2018	2017	2016
(1)	UAAL from last valuation	\$ 5,789.8	5,822.7	5,735.1	5,611.3	6,315.7	5,640.9
(2)	Normal cost from last valuation	338.8	335.4	322.1	334.1	305.6	313.3
(3)	Contributions	803.0	814.0	780.6	731.8	778.7	727.0
(4)	Interest accrual: [(1) + (2) - (3)*.5] x .075	429.6	431.4	425.0	418.5	467.4	433.3
(5)	Expected UAAL before changes: (1) + (2) - (3) + (4)	\$ 5,755.2	5,775.5	5,701.6	5,632.1	6,310.0	5,660.5
(6)	Change due to plan amendments	0.0	0.0	0.0	357.6	998.5	0.0
(7)	Change due to new actuarial assumption or methods	(120.9)	0.0	0.0	0.0	0.0	(643.5)
(8)	Expected UAAL after changes: (5) - (6) - (7)	\$ 5,876.1	5,775.5	5,701.6	5,274.5	5,311.5	6,304.0
(9)	Actual UAAL from this valuation	\$ 5,316.4	5,789.8	5,822.7	5,735.1	5,611.3	6,315.7
(10)	Total Gain/(Loss): (8) - (9)	\$ 559.7	(14.3)	(121.1)	(460.6)	(299.8)	(11.7)
(11)	Investment Gain/(Loss):	\$ 425.4	6.4	(44.1)	(159.0)	(12.3)	49.6
(12)	Non-Investment Gain/(Loss)	\$ 134.3	(20.7)	(77.0)	(301.6)	(287.5)	(61.3)



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

Medicare Part B June 30:		2021	2020	2019	2018	2017	2016
(1)	UAAL from last valuation	\$ 194.0	217.4	235.4	249.1	259.7	246.9
(2)	Normal cost from last valuation	8.3	8.2	8.0	7.8	6.4	5.5
(3)	Contributions	26.3	28.3	27.3	26.3	24.1	22.2
(4)	Interest accrual: [(1) + (2) - (3)*.5] x .0075	14.1	15.8	17.2	18.3	19.0	18.7
(5)	Expected UAAL before changes: (1) + (2) - (3) + (4)	\$ 190.1	213.1	233.3	248.9	261.0	248.9
(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	(4.5)	0.0	0.0	0.0	0.0	(22.4)
(8)	Expected UAAL after changes: (5) - (6) - (7)	\$ 194.6	213.1	233.3	248.9	261.0	271.3
(9)	Actual UAAL from this valuation	\$ 168.5	194.0	217.4	235.4	249.1	259.7
(10)	Total Gain/(Loss): (8) - (9)	\$ 26.1	19.1	15.9	13.5	11.9	11.6
(11)	Investment Gain/(Loss):	\$ 5.2	0.7	0.1	(1.9)	0.1	0.9
(12)	Non-Investment Gain/(Loss)	\$ 20.9	18.4	15.8	15.4	11.8	10.7

Post-Retirement Death Benefits June 30:		2021	2020	2019	2018	2017	2016
(1)	UAAL from last valuation	\$ 13.3	14.1	15.0	14.9	15.7	13.8
(2)	Normal cost from last valuation	0.5	0.5	0.5	0.5	0.5	0.5
(3)	Contributions	1.4	1.5	2.0	1.8	1.6	1.5
(4)	Interest accrual: [(1) + (2) - (3)*.5] x .0075	1.0	1.0	1.1	1.1	1.2	1.0
(5)	Expected UAAL before changes: (1) + (2) - (3) + (4)	\$ 13.4	14.1	14.6	14.7	15.8	13.8
(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	(1.1)	0.0	0.0	0.0	0.0	(2.3)
(8)	Expected UAAL after changes: (5) - (6) - (7)	\$ 14.5	14.1	14.6	14.7	15.8	16.1
(9)	Actual UAAL from this valuation	\$ 13.2	13.3	14.1	15.0	14.9	15.7
(10)	Total Gain/(Loss): (8) - (9)	\$ 1.3	0.8	0.5	(0.3)	0.9	0.4
(11)	Investment Gain/(Loss):	\$ 0.7	0.0	(0.1)	(0.2)	0.0	0.1
(12)	Non-Investment Gain/(Loss)	\$ 0.6	0.8	0.6	(0.1)	0.9	0.3



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.	\$ (99.9)	\$ 2.9	\$ 0.8	(96.2)
Disability Retirements. If disability claims are less than assumed, there is a gain. If more claims, a loss.	(5.0)	0.0	0.0	(5.0)
Pre-Retirement Death Benefits. If survivor claims are less than assumed, there is a gain. If more claims, there is a loss.	(4.5)	(0.2)	0.0	(4.7)
Withdrawal From Employment. If more liabilities are released by withdrawals than assumed, there is a gain. If smaller releases, a loss.	(108.7)	1.1	0.1	(107.5)
Pay Increases. If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.	136.7	0.0	0.0	136.7
New Members. Additional accrued liability attributable to members who entered the plan since the last valuation.	(16.0)	(0.6)	0.0	(16.6)
Investment Income. If there is a greater investment income than assumed, there is a gain. If less income, a loss.	425.4	5.2	0.7	431.3
Death After Retirement. If retired members live longer than assumed, there is a loss. If not as long, a gain.	45.3	15.0	(0.5)	59.8
Other. Miscellaneous gains and losses resulting from changes in valuation software, data adjustments, timing of financial transactions, etc.	186.4	2.7	0.2	189.3
Gain (or Loss) During Year From Financial Experience	\$ 559.7	\$ 26.1	\$ 1.3	587.1
Non-Recurring Items. Adjustments for plan amendments, assumption changes and method changes	(120.9)	(4.5)	(1.1)	(126.6)
Composite Gain (or Loss) During Year	\$ 438.8	\$ 21.6	\$ 0.2	460.5



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	7.42%			
(2) Disability benefits	0.91			
(3) Survivor benefits	0.36			
(4) Refunds	2.26			
(5) Total	10.95%	0.02%	0.29%	11.26%
B. Member Contributions	10.00%	0.00%	0.00%	10.00%
C. Employer Normal Cost: [A(5) - B]	0.95%	0.02%	0.29%	1.26%
D. Unfunded Actuarial Accrued Liability Contributions	10.87%	0.03%	0.34%	11.24%
E. Total Recommended Employer Contribution Rate:[C+D]	11.82%	0.05%	0.63%	12.50%

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 October 21, 2021, 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						
6/30/2016	\$ 13,015	\$ 19,331	\$ 6,316	67.3%	\$ 2,932	215.4%
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
Medicare Part B						
6/30/2016	\$ 142	\$ 402	\$ 260	35.4%	\$ 2,932	8.9%
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
Post-Retirement Death Benefits						
6/30/2016	\$ 22	\$ 38	\$ 16	57.9%	\$ 2,932	0.5%
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



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
6/30/2008	\$10,793	\$2,652	4.07
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

The assets at June 30, 2021 are 493% of payroll, so underperforming the investment return assumption by 1.00% (i.e., earn 6.00% for one year) is equivalent to 4.93% 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
6/30/2008	\$10,793	\$564	\$740	(\$176)	(1.63%)
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)



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
6/30/2008	\$7,161	\$14,062	0.51
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



Historical Member Statistics

Fiscal Year End	Active Count	Retiree Count	Active to Retiree Ratio
6/30/2008	124,370	64,818	1.92
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

*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, 2021, and, for comparison purposes, as of the immediately preceding valuation date of June 30, 2020. 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, 2021	June 30, 2020
ASSETS		
Current actuarial value of assets	\$ 16,031,612,792	\$ 15,036,735,150
Prospective contributions		
Member contributions	\$ 3,207,536,291	\$ 2,703,860,159
Employer normal contributions	326,395,435	(59,723,240)
Unfunded accrued liability contributions	5,498,144,212	5,997,074,169
Total prospective contributions	<u>\$ 9,032,075,938</u>	<u>\$ 8,641,211,088</u>
 Total assets	 <u>\$ 25,063,688,730</u>	 <u>\$ 23,677,946,238</u>
LIABILITIES		
Present value of benefits payable on account of present retired members and beneficiaries	\$ 12,985,430,420	\$ 12,617,926,715
Present value of benefits payable on account of active members	11,359,283,752	10,400,803,877
Present value of benefits payable on account of inactive and deferred vested members	<u>718,974,558</u>	<u>659,215,646</u>
 Total liabilities	 <u>\$ 25,063,688,730</u>	 <u>\$ 23,677,946,238</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							
6/30/2016	\$ 2,914	\$ 11,689	\$ 4,728	\$ 13,015	100.0%	86.4%	0.0%
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
Medicare Part B							
6/30/2016	\$ 0	\$ 251	\$ 151	\$ 142	100.0%	56.6%	0.0%
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
Post-Retirement Death Benefits							
6/30/2016	\$ 0	\$ 30	\$ 8	\$ 22	100.0%	73.3%	0.0%
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



SCHEDULE B
Development of Actuarial Value of Assets

Valuation date June 30:	2020	2021	2022	2023	2024
A. Actuarial Value Beginning of Year	\$ 14,936,900,093	\$ 15,519,346,628			
B. Market Value End of Year	14,902,210,105	18,440,377,176			
C. Market Value Beginning of Year	15,007,886,783	14,902,210,105			
D. Cash Flow					
D1. Contributions	\$ 892,087,903	\$ 884,166,838			
D2. Other Revenue	97,386,324	84,050,104			
D3. Benefit Payments	(1,485,382,246)	(1,497,119,145)			
D4. Net Transfers	<u>(3,411,620)</u>	<u>(5,424,513)</u>			
D5. Net	\$ (499,319,639)	\$ (534,326,716)			
E. Investment Income					
E1. Market Total: B.-C.-D5.	\$ 393,642,961	\$ 4,072,493,787			
E2. Assumed Rate (Net of Expenses)	7.50%	7.50%			
E3. Amount for Immediate Recognition	1,106,867,022	1,097,628,506			
E4. Amount for Phased-In Recognition	(713,224,061)	2,974,865,281			
F. Phased-In Recognition of Investment Income					
F1. Current Year: 0.25 * E4.	\$ (178,306,015)	\$ 743,716,320	\$ 0	\$ 0	\$ 0
F2. First Prior Year	(66,102,732)	(178,306,015)	743,716,320	0	0
F3. Second Prior Year	49,986,989	(66,102,732)	(178,306,015)	743,716,320	0
F4. Third Prior Year	169,320,910	49,986,989	(66,102,732)	(178,306,015)	743,716,320
F5. Total Recognized Investment Gain/(Loss)	\$ (25,100,848)	\$ 549,294,562	\$ 499,307,573	\$ 565,410,305	\$ 743,716,320
G. Preliminary Actuarial Value End of Year:					
A.+D5.+E3.+F5.	\$ 15,519,346,628	\$ 16,631,942,980			
H. Corridor					
H1. 80% of Market Value	\$ 11,921,768,084	\$ 14,752,301,741			
H2. 120% of Market Value	\$ 17,882,652,126	\$ 22,128,452,611			
I. Actuarial Value End of Year:					
G. Not Less than H1. or Not Greater than H2.	\$ 15,519,346,628	\$ 16,631,942,980			
J. Difference Between Market & Actuarial Values	\$ (617,136,523)	\$ 1,808,434,196	\$ 1,309,126,624	\$ 743,716,320	\$ 0
K. Health Care Valuation Assets	\$ 482,611,478	\$ 600,330,188			
L. Basic Benefits Valuation Assets (G. - K.)	\$ 15,036,735,150	\$ 16,031,612,792			

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	Subsequent Unreduced	Reduced	Reduced (60/25)	First Eligible	Subsequent Unreduced
			Unreduced				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:

Service	Annual Rates of		
	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 program.
Final Average Salary	Average annual salary over the member's three highest years of service.
Normal Retirement	
<p>Condition for Retirement</p> <p><i>Retire before August 1, 2017 or have 25 years of service or more on or before August 1, 2017</i></p> <p><i>Members attaining 25 years of service after August 1, 2017</i></p>	<p>Attainment of age 65 with at least 5 years of creditable service, or completion of 30 years of creditable service, regardless of age.</p> <p>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.</p>
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 retirement b. A pension equal to the annuity c. 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, <p>or:</p> <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	<p>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:</p> <p style="padding-left: 40px;">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.</p> <p style="padding-left: 40px;">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.</p> <p style="padding-left: 40px;">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.</p>
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	<p>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.</p> <p>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.</p> <p>On and after 4/1/2018: COLAs for future retirees will be delayed until the fourth anniversary of benefit commencement.</p>
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:	2016	2017	2018	2019	2020	2021
<u>Number of Retiree Members</u>						
Beginning of Year	74,372	76,280	79,157	81,332	81,024	80,851
Added	4,388	5,499	5,339	3,055	2,902	3,928
Removed	2,480	2,622	3,164	3,363	3,075	4,058
End of Year	76,280	79,157	81,332	81,024	80,851	80,721
<u>Annual Retirement Allowances</u>						
Beginning of Year	\$ 1,020,368,894	\$ 1,083,621,579	\$ 1,162,015,515	\$ 1,211,935,636	\$ 1,218,955,506	\$ 1,234,342,326
Added	66,860,652	70,973,748	74,311,354	56,557,169	52,895,232	70,415,860
Removed	3,607,967	(7,420,188)	24,391,233	49,537,299	37,508,412	49,823,424
End 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
% Increase in Allowances	6.20%	7.23%	4.30%	0.58%	1.26%	1.67%
Average Annual Allowance	\$ 14,206	\$ 14,680	\$ 14,901	\$ 15,044	\$ 15,267	\$ 15,547



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

Year Ending June 30:	2019	2020	2021
<u>Number of Retiree Members</u>			
Beginning of Year	43,645	43,534	42,464
Added	2,222	2,257	1,996
Removed	2,333	3,327	3,100
End of Year	43,534	42,464	41,360
<u>Annual Retirement Allowances</u>			
Beginning of Year	\$ 23,830,170	\$ 23,769,564	\$ 23,185,344
Added	1,213,212	1,232,322	1,089,816
Removed	1,273,818	1,816,542	1,692,600
End of Year	\$ 23,769,564	\$ 23,185,344	\$ 22,582,560
% Increase in Allowances	(0.25)%	(2.46)%	(2.60)%
Average Annual Allowance	\$ 546	\$ 546	\$ 546



**Annuity and Pension Reserve Fund
Retiree Information as of June 30, 2021
Tabulated by Type of Benefit**

Amount of Monthly Benefit		Total	Service	Disability	Survivor
\$ 1 - \$	250	9,701	8,987	30	684
251 -	500	11,053	9,704	285	1,064
501 -	750	10,776	9,403	559	814
751 -	1,000	9,671	8,252	818	601
1,001 -	1,500	14,347	12,540	1,261	546
1,501 -	2,000	8,855	7,829	796	230
Over	2,000	<u>16,318</u>	<u>14,942</u>	<u>1,119</u>	<u>257</u>
		80,721	71,657	4,868	4,196

Average Monthly Benefit

\$ 1,313

\$ 1,502

\$ 794

Average Age

74.6

66.2

76.8

The 71,657 service retirees shown in the table above are comprised of 66,265 service retirees and 5,392 beneficiaries of deceased retirees. Excluded from the 66,265 service retirees are 799 reemployed retirees who are receiving a pension-only benefit resulting from the annuitization of the contributions accumulated during active membership. Multiple benefit recipients account for the higher total headcount than shown elsewhere in the report.



**Annuity and Pension Reserve Fund
Retiree Information as of June 30, 2021
Tabulated by Attained Ages**

Attained Age	Retirement		Disability Retirement		Total	
	Number	Annual Benefits	Number	Annual Benefits	Number	Annual Benefits
Under 45	44	\$ 360,224	39	\$ 528,467	83	\$ 888,691
45-49	37	\$ 520,032	106	\$ 1,541,014	143	\$ 2,061,046
50-54	234	\$ 7,981,594	300	\$ 5,204,889	534	\$ 13,186,482
55-59	1,285	\$ 43,704,932	694	\$ 12,534,104	1,979	\$ 56,239,036
60-64	5,994	\$ 131,479,738	1343	\$ 25,211,804	7,337	\$ 156,691,542
65-69	15,403	\$ 251,298,398	759	\$ 16,848,693	16,162	\$ 268,147,091
70-74	16,234	\$ 260,969,283	646	\$ 12,808,932	16,880	\$ 273,778,215
75-79	12,059	\$ 177,784,857	449	\$ 6,874,234	12,508	\$ 184,659,092
80-84	9,608	\$ 131,622,553	301	\$ 3,787,052	9,909	\$ 135,409,605
85-89	6,445	\$ 77,216,503	163	\$ 1,592,746	6,608	\$ 78,809,249
90 & Over	4,314	\$ 41,425,449	68	\$ 458,553	4,382	\$ 41,884,002
Totals	71,657	\$ 1,124,363,563	4,868	\$ 87,390,489	76,525	\$ 1,211,754,052

The 71,657 service retirees shown in the table above are comprised of 70,771 unique service retirees, and 799 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, 2021
Tabulated by Attained Ages**

Attained Age	Life Annuities		Periods Certain		Total	
	Number	Annual Benefits	Number	Annual Benefits	Number	Annual Benefits
Under 45	44	\$ 360,224	0	\$ -	44	\$ 360,224
45-49	27	\$ 188,643	0	\$ -	27	\$ 188,643
50-54	52	\$ 531,870	0	\$ -	52	\$ 531,870
55-59	74	\$ 703,026	0	\$ -	74	\$ 703,026
60-64	209	\$ 2,656,248	2	\$ 23,368	211	\$ 2,679,616
65-69	380	\$ 5,280,485	1	\$ 18,261	381	\$ 5,298,746
70-74	680	\$ 8,271,224	16	\$ 163,489	696	\$ 8,434,713
75-79	925	\$ 9,710,576	7	\$ 97,851	932	\$ 9,808,427
80-84	1,080	\$ 10,453,360	2	\$ 6,716	1,082	\$ 10,460,076
85-89	1,048	\$ 9,290,562	0	\$ -	1,048	\$ 9,290,562
90 & Over	845	\$ 6,089,155	0	\$ -	845	\$ 6,089,155
Totals	5,364	\$ 53,535,373	28	\$ 309,685	5,392	\$ 53,845,058



**All Benefit Recipients
Male and Female Demographic Breakdown
June 30, 2021**

Attained Age	Number of		Total Number
	Males	Females	
Under 20	21	26	47
20-24	2	5	7
25-29	4	3	7
30-34	5	13	18
35-39	13	24	37
40-44	23	37	60
45-49	64	126	190
50-54	241	409	650
55-59	877	1,308	2,185
60-64	2,303	5,508	7,811
65-69	4,394	12,480	16,874
70-74	4,747	12,887	17,634
75-79	3,453	9,682	13,135
80-84	2,578	7,858	10,436
85-89	1,568	5,415	6,983
90-94	729	2,810	3,539
95-99	163	809	972
100	6	62	68
101	2	23	25
102	1	19	20
103	0	10	10
104	1	5	6
105 & Over	1	6	7
Total	21,196	59,525	80,721



Survivor Benefit Fund
Survivors of Deceased Active Members Information as of June 30, 2021
Tabulated by Attained Ages

Attained Age	Number	Annual Benefits
Under 45	93	\$ 1,030,594
45-49	47	\$ 682,463
50-54	116	\$ 1,541,279
55-59	206	\$ 2,531,275
60-64	474	\$ 4,825,381
65-69	712	\$ 7,195,662
70-74	754	\$ 7,640,404
75-79	627	\$ 5,610,174
80-84	527	\$ 4,511,217
85-89	375	\$ 2,678,532
90 & Over	265	\$ 1,589,003
Totals	4,196	\$ 39,835,984



**Total Active Members as of June 30, 2021
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	2,141							2,141
Avg Pay	\$10,407							\$10,407
20-24	8,571	94						8,665
Avg Pay	\$11,276	\$28,350						\$11,461
25-29	8,603	1,115	24					9,742
Avg Pay	\$15,058	\$31,892	\$42,948					\$17,053
30-34	7,535	2,147	364	26				10,072
Avg Pay	\$16,842	\$33,769	\$44,315	\$47,530				\$21,522
35-39	8,417	2,976	807	360	47			12,607
Avg Pay	\$16,708	\$32,682	\$43,507	\$50,641	\$54,638			\$23,305
40-44	9,125	3,897	1,240	745	408	27	1	15,443
Avg Pay	\$16,190	\$30,022	\$40,775	\$48,590	\$52,939	\$70,391	\$43,614	\$24,285
45-49	8,397	4,261	1,929	1,217	887	268	17	16,976
Avg Pay	\$15,101	\$29,479	\$35,439	\$43,173	\$51,897	\$56,374	\$52,008	\$25,644
50-54	7,343	4,275	2,786	2,260	1,873	653	193	19,383
Avg Pay	\$15,777	\$29,320	\$32,119	\$38,073	\$43,252	\$54,944	\$57,377	\$28,101
55-59	5,706	3,514	2,758	3,211	3,610	1,418	581	20,798
Avg Pay	\$15,768	\$28,778	\$32,180	\$34,633	\$38,829	\$45,009	\$53,338	\$30,101
60-64	4,578	2,669	2,030	2,599	3,734	2,100	991	18,701
Avg Pay	\$14,070	\$27,616	\$31,636	\$34,761	\$36,275	\$39,407	\$45,654	\$29,738
65-69	2,591	1,186	745	725	1,060	793	757	7,857
Avg Pay	\$10,726	\$23,409	\$29,840	\$33,859	\$37,541	\$38,460	\$41,181	\$25,939
70 & over	1,770	743	404	312	266	226	540	4,261
Avg Pay	\$8,304	\$18,081	\$23,218	\$27,960	\$32,019	\$37,148	\$36,335	\$19,425
Totals	74,777	26,877	13,087	11,455	11,885	5,485	3,080	146,646
Avg Pay	\$14,754	\$29,466	\$34,023	\$37,458	\$39,979	\$43,456	\$45,139	\$24,700

Averages:

Age: 47.7
 Service: 8.1
 Annual Pay: \$24,700



**Male Active Members as of June 30, 2021
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 Avg Pay	1,096 \$10,435							1,096 \$10,435
20-24 Avg Pay	3,791 \$11,421	54 \$31,906						3,845 \$11,138
25-29 Avg Pay	3,662 \$15,050	520 \$37,260	14 \$45,379					4,196 \$17,904
30-34 Avg Pay	2,804 \$16,588	782 \$39,928	197 \$50,358	21 \$48,955				3,804 \$23,314
35-39 Avg Pay	2,621 \$17,845	885 \$41,962	359 \$50,843	207 \$58,368	30 \$62,061			4,102 \$28,304
40-44 Avg Pay	2,955 \$16,367	906 \$40,600	404 \$53,492	287 \$62,613	192 \$64,221	15 \$75,983	1 \$43,726	4,760 \$29,043
45-49 Avg Pay	3,018 \$13,107	897 \$38,088	432 \$49,942	295 \$61,237	303 \$65,925	130 \$63,263	7 \$59,713	5,082 \$27,938
50-54 Avg Pay	2,845 \$15,020	999 \$37,557	485 \$44,975	388 \$57,504	383 \$62,966	240 \$69,621	90 \$61,775	5,430 \$31,447
55-59 Avg Pay	2,267 \$16,169	1,025 \$34,483	619 \$43,545	531 \$50,198	492 \$57,910	264 \$63,581	222 \$63,055	5,420 \$34,112
60-64 Avg Pay	1,978 \$14,948	972 \$32,584	584 \$38,730	512 \$47,954	500 \$52,080	275 \$56,969	269 \$59,522	5,090 \$32,638
65-69 Avg Pay	1,165 \$12,238	548 \$26,431	317 \$33,864	201 \$43,545	199 \$48,289	98 \$56,617	131 \$57,009	2,659 \$26,647
70 & over Avg Pay	879 \$9,355	397 \$20,813	214 \$25,509	133 \$31,030	62 \$42,131	42 \$43,174	57 \$47,949	1,784 \$18,627
Totals Avg Pay	29,081 \$14,528	7,985 \$36,040	3,625 \$44,020	2,575 \$52,638	2,161 \$57,861	1,064 \$61,924	777 \$59,501	47,268 \$26,287

Averages:

Age: 45.9

Service: 6.2

Annual Pay: \$26,287



**Female Active Members as of June 30, 2021
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	1,045							1,045
Avg Pay	\$10,392							\$10,392
20-24	4,780	40						4,820
Avg Pay	\$11,169	\$21,334						\$11,254
25-29	4,941	595	10					5,546
Avg Pay	\$15,072	\$27,247	\$39,653					\$16,423
30-34	4,731	1,365	167	5				6,268
Avg Pay	\$16,994	\$30,259	\$37,288	\$42,015				\$20,443
35-39	5,796	2,091	448	153	17			8,505
Avg Pay	\$16,193	\$28,762	\$37,683	\$40,336	\$41,763			\$20,900
40-44	6,170	2,991	836	458	216	12		10,683
Avg Pay	\$16,103	\$26,813	\$34,649	\$39,850	\$42,999	\$63,559		\$22,168
45-49	5,379	3,364	1,497	922	584	138	10	11,894
Avg Pay	\$16,217	\$27,173	\$31,249	\$37,394	\$44,646	\$49,970	\$46,658	\$24,662
50-54	4,498	3,276	2,301	1,872	1,490	413	103	13,953
Avg Pay	\$16,258	\$26,801	\$29,395	\$34,031	\$38,175	\$46,456	\$53,600	\$26,794
55-59	3,439	2,489	2,139	2,680	3,118	1,154	359	15,378
Avg Pay	\$15,511	\$26,430	\$28,884	\$31,533	\$35,794	\$40,743	\$47,366	\$28,680
60-64	2,600	1,697	1,446	2,087	3,234	1,825	722	13,611
Avg Pay	\$13,412	\$24,784	\$28,773	\$31,512	\$33,807	\$36,733	\$40,489	\$28,646
65-69	1,426	638	428	524	861	695	626	5,198
Avg Pay	\$9,505	\$20,843	\$26,888	\$30,145	\$35,039	\$35,872	\$37,848	\$25,577
70 & over	891	346	190	179	204	184	483	2,477
Avg Pay	\$7,281	\$14,987	\$20,683	\$25,703	\$28,940	\$35,749	\$34,933	\$20,007
Totals	45,696	18,892	9,462	8,880	9,724	4,421	2,303	99,378
Avg Pay	\$14,902	\$26,691	\$30,196	\$33,050	\$35,989	\$38,998	\$40,291	\$23,944

Averages:

Age: 48.6
 Service: 9.0
 Annual Pay: \$23,944



**Active Members as of June 30, 2021
Tabulated by Annual Pay**

Annual Pay	Number of Active Members			Portion of Total Number	
	Men	Women	Totals	Group	Cumulative
Less than \$1,000	1,955	3,290	5,245	3.6%	3.6%
\$1,000 - 1,999	2,421	3,102	5,523	3.8%	7.3%
2,000 - 2,999	3,148	3,192	6,340	4.3%	11.7%
3,000 - 3,999	3,146	2,850	5,996	4.1%	15.8%
4,000 - 4,999	2,437	2,359	4,796	3.3%	19.0%
5,000 - 5,999	1,794	2,110	3,904	2.7%	21.7%
6,000 - 6,999	1,387	2,016	3,403	2.3%	24.0%
7,000 - 7,999	1,062	2,055	3,117	2.1%	26.1%
8,000 - 8,999	895	1,923	2,818	1.9%	28.1%
9,000 - 9,999	782	1,937	2,719	1.9%	29.9%
10,000 - 11,999	1,378	4,215	5,593	3.8%	33.7%
12,000 - 13,999	1,324	4,379	5,703	3.9%	37.6%
14,000 - 15,999	1,260	4,586	5,846	4.0%	41.6%
16,000 - 17,999	1,305	5,294	6,599	4.5%	46.1%
18,000 - 19,999	1,258	5,704	6,962	4.7%	50.8%
20,000 - 24,999	3,069	14,633	17,702	12.1%	62.9%
25,000 - 29,999	2,416	10,220	12,636	8.6%	71.5%
30,000 - 35,999	2,618	7,800	10,418	7.1%	78.6%
36,000 - 39,999	1,881	3,959	5,840	4.0%	82.6%
40,000 - 49,999	4,556	6,801	11,357	7.7%	90.4%
50,000 - 59,999	3,079	3,418	6,497	4.4%	94.8%
60,000 and over	4,097	3,535	7,632	5.2%	100.0%
Totals	47,268	99,378	146,646		



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)

Year Ending June 30	Gain (Loss) by Risk Area									\$	% of AAL
	Economic		Non-Economic								
	Pay Increases	Investment	Age & Service Retirement	Disability	Death In Service	Withdrawal	New Members	Retiree Mortality	Other ⁺		
2012	178.7	(692.0)	(154.8)	(47.7)	(0.2)	46.5	(29.8)	51.9	(6.2)	(653.6)	(3.9)
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

⁺ 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, 2021, was \$16,031,612,792. The value for the previous year was \$15,036,735,150.

School Employees Retirement System of Ohio Development of Gain (Loss) for Basic Benefits From Investment Return For the Year Ended June 30, 2021 (\$ Millions)		<u>\$ Millions</u>
1.	Actuarial value of assets as of June 30, 2020	\$ 15,036.7
2.	Actuarial value of assets as of June 30, 2021	
	a. Actual	16,031.6
	b. If 7.50% assumed investment return were achieved for all phased-in years recognized in the asset method	15,600.3
3.	Gain (Loss): 2a minus 2b	<u>\$ 431.3</u>



**Pay Increases During the FY2021 Valuation Year
To Members Active at Beginning and End of Year**

Central Age Group Beginning of Year	Number	Pay Increases	
		Actual	Expected
Under 25	4,565	(16.77)%	11.42%
25	6,991	(5.74)	8.21
30	7,826	(0.50)	6.62
35	10,012	1.30	5.97
40	13,113	1.95	5.54
45	14,585	1.52	5.03
50	17,808	1.29	4.59
55	19,217	0.63	4.7
60	18,249	0.80	3.99
65 & Over	12,662	0.34	4.15
Total	125,028	0.54	4.97



**Members Who Became Age & Service Retirees During the FY2021 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	5	5
50	0	0	0	0	0	0	5	5
51	0	0	0	0	0	0	9	9
52	0	0	0	0	0	0	4	4
53	0	0	0	0	0	0	15	15
54	0	0	0	0	0	0	18	18
55	0	0	0	0	0	3	24	27
56	0	0	0	0	0	3	15	18
57	0	0	0	0	0	2	39	41
58	0	0	0	0	0	2	30	32
59	0	0	0	0	0	9	39	48
60	0	0	1	0	3	75	44	123
61	0	0	0	0	0	49	49	98
62	0	0	54	61	85	50	69	319
63	0	0	24	24	30	45	47	170
64	0	0	27	16	18	34	59	154
65	0	0	40	56	76	82	92	346
66	0	0	31	26	49	48	57	211
67	0	0	37	27	70	52	54	240
68	0	0	21	22	25	20	38	126
69	0	0	17	18	16	20	40	111
70 & Over	0	1	74	68	74	61	162	440
Totals	0	1	326	318	446	555	914	2,560

	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	\$ 302	\$ 492	\$ 781	\$ 1,042	\$ 1,557	\$ 2,698	\$ 1,642
Avg. FAS	\$ 0	\$ 22,761	\$ 28,820	\$ 31,438	\$ 32,478	\$ 37,162	\$ 47,100	\$ 38,115
Number of Retirees	0	1	326	318	446	555	914	2,560

Average Age: 65.3
Average Service: 25.3



**Members Who Died in the FY2021 Valuation Year
With a Death-in-Service Allowance Payable**

Central Age Group Beginning of Year	Number
Under 25	0
25	1
30	0
35	1
40	2
45	3
50	2
55	11
60	17
65	18
70 & Over	9
Total	64

Average Age: 59.4
Average Service: 17.3



**Members Who Died in the FY2021 Valuation Year
and Received a Refund of Contributions**

Central Age Group Beginning of Year	Number
Under 25	0
25	1
30	0
35	0
40	1
45	1
50	0
55	3
60	2
65	2
70 & Over	4
Total	14

Average Age: 58.0
Average Service: 4.8



**Members Who Became Disability Retirees
During the FY2021 Valuation Year**

Central Age Group Beginning of Year	Number
Under 25	0
25	0
30	1
35	2
40	4
45	6
50	27
55	55
60	88
65	23
70 & Over	3
Total	209

Average Age: 57.1
 Average Service: 18.1
 Average FAS: \$33,504



**Members Receiving a Refund of Contributions
or Becoming Inactive Without a Refund in
the FY2021 Valuation Year
(Non-vested Terminations)**

Central Age Group Beginning of Year	Number
Under 25	2,220
25	3,778
30	2,710
35	2,256
40	2,324
45	2,336
50	2,270
55	1,796
60	1,495
65	1,131
70 & Over	1,029
Total	23,345

Average Age: 40.6
Average Service: 1.2



**Members Who Became Inactive
in the FY2021 Valuation Year
with a Deferred Allowance
(Vested Terminations)**

Central Age Group Beginning of Year	Number
Under 25	0
25	0
30	2
35	26
40	49
45	74
50	157
55	212
60	273
65	77
70 & Over	36
Total	906

Average Age: 55.0
Average Service: 15.3



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, 2021**

Present Value of:	Pension Benefits	Medicare Part B	Post-Retirement Death Benefit	Total Basic Benefits
Future benefits to present retirees and survivors	\$12,736,738,325	\$217,208,538	\$31,483,557	\$12,985,430,420
Benefits and refunds to present inactive members	697,582,994	20,292,866	1,098,698	718,974,558
Allowances to present active members				
Service	7,130,252,984	137,713,793	7,616,764	7,275,583,541
Disability	250,271,688	3,898,347	339,590	254,509,625
Survivor benefits	168,812,510	3,004,139	0	171,816,649
Withdrawal	<u>113,749,800</u>	<u>9,270,922</u>	<u>421,489</u>	<u>123,442,211</u>
Total Active AAL	7,663,086,982	153,887,201	8,377,843	7,825,352,026
Total AAL	<u>\$21,097,408,301</u>	<u>\$391,388,605</u>	<u>\$40,960,098</u>	<u>\$21,529,757,004</u>



APPENDIX B

**BREAKDOWN OF TOTAL AND ACCRUED LIABILITIES
AS OF JUNE 30, 2021**

	Total Liability	Accrued Liability
Active Members		
Retirement	\$9,448,813,426	\$7,130,252,984
Death	276,098,374	168,812,510
Disability	545,832,995	250,271,688
Termination	842,049,750	113,749,800
Medicare Part B	233,424,737	153,887,201
Death after Retirement	<u>13,064,470</u>	<u>8,377,843</u>
Total	\$11,359,283,752	\$7,825,352,026
Retirees		
Retirement/Survivor/Disability	\$12,736,738,325	\$12,736,738,325
Medicare Part B	217,208,538	217,208,538
Death after Retirement	<u>31,483,557</u>	<u>31,483,557</u>
Total	\$12,985,430,420	\$12,985,430,420
Deferred Vested Members	360,165,488	360,165,488
Inactive Members	<u>358,809,070</u>	<u>358,809,070</u>
Total Actuarial Values	\$25,063,688,730	\$21,529,757,004
Actuarial Value of Assets		<u>16,031,612,792</u>
Unfunded Actuarial Accrued Liability		\$5,498,144,212



APPENDIX C

**COMPARATIVE SCHEDULE
AS OF JUNE 30, 2021**

Valuation Date June 30	Active Members				Retired Lives				Accrued Liability	Valuation Assets \$ Millions	UAAL
	Number	Payroll \$ Millions	Average Salary		Number		Annual Benefits				
			\$	% Increase	Retired	Active / Retired	\$ Millions	% of Payroll			
2012	121,811	2,788	22,889	0.6	69,038	1.8	838.1	30.1	16,755	10,397	6,358
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



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

Prepared as of June 30, 2021



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CONSULTING, LLC

The experience and dedication you deserve

October 29, 2021

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, 2021. 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 2.46% of active payroll payable for the fiscal year ending June 30, 2021 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. We will continue to monitor the situation and advise the Board in the future of any adjustments that we believe would be appropriate.

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October 29, 2021
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', written in a cursive style.

Alisa Bennett, FSA, FCA, EA, MAAA
President

A handwritten signature in blue ink, appearing to read 'John J. Garrett', written in a cursive style.

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, 2021

SECTION I – SUMMARY OF PRINCIPAL RESULTS

1. This report, prepared as of June 30, 2021, 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, 2021	June 30, 2020
Active members included in valuation		
Number	146,646	156,579
Annual Compensation*	\$3,622,097,199	\$3,477,578,726
Service Retirees		
Number	30,898	31,282
Disability Retirees		
Number	2,580	2,793
Spouses of Retirees		
Number	5,023	5,153
Spouses of Deceased Retirees		
Number	1,502	1,624
Survivor Benefit Recipients		
Number	618	682
Children		
Number	276	322
Deferred Vested		
Number	5,972	5,654
Assets		
Market Value	\$600,330,188	\$482,611,478
Unfunded Accrued Liability	\$689,066,742	\$1,313,892,066
Actuarial Accrued Liability	\$1,289,396,930	\$1,796,503,544
Funded Ratio (MVA/AAL)	46.56%	26.86%
Employer Contribution Rate		
Normal	1.22%	2.09%
Accrued Liability	<u>1.24%</u>	<u>1.58%</u>
Total	2.46%	3.67%
Employer Contribution Toward Health Care**	1.50%	1.50%
Accrued liability amortization period	30	30

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

** 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 October, 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 FY2022 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 the actuarial methods and assumptions were updated to reflect an experience study performed over the five-year period ending June 30, 2020. Changes were also made to the assumed initial per capital health care costs. See Schedule B for more details on assumptions and methods used.
5. The impact of the COVID-19 pandemic was considered in this valuation; however, no changes were incorporated at this time due to the level of uncertainty regarding the impact on both plan costs and contribution levels going forward. Given the uncertainty regarding COVID-19 (e.g., the impact of routine care being deferred, direct COVID-19 treatment and prevention costs, changes in contribution and budget projections), continued monitoring of the impact on the Plan's liability will be required.
6. The following changes were reflected in this valuation:

Medicare Eligible

Premiums

Premiums will remain the same in 2022 for enrollees in the Aetna Medicare Plan (PPO) and Aetna Traditional Choice Plan.

Benefits

There are no co-pay or cost-sharing changes.

Pharmacy Network

An Express Scripts Broad Performance Medicare Network will be effective January 1, 2022. Enrollees who fill prescriptions at a pharmacy not in the network will pay 100% of the cost.



Non-Medicare Eligible

Premiums

There will be a premium increase in 2022 for enrollees in the Aetna Choice POS II Plan.

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

Benefits

There are no co-pay or cost-sharing changes.

SERS Wraparound Plan

The Health Reimbursement Arrangement (HRA) limit remains at \$1,800 per family per calendar year. However, the benefit categories will no longer have per-service limits on out-of-pocket reimbursements.

Wraparound enrollees are no longer required to contact HealthSCOPE Benefits (HSB) if staying with the same Marketplace plan for 2022.

7. 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, 2021 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
146,646	\$3,622,097,199	\$24,700	47.7	8.1

The following table shows a nine-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
6/30/2013	121,642	2,746,827,535	22,581	(1.3%)
6/30/2014	121,251	2,759,281,606	22,757	0.8
6/30/2015	122,855	2,845,443,802	23,161	1.8
6/30/2016	124,540	2,932,236,551	23,545	1.7
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

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

**The annual compensation as of June 30, 2021 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	30,898	76.0
Disability Retirees	2,580	69.5
Spouses	7,143	78.1
Children	276	31.0
Total	40,897	75.6

This valuation also includes 5,972 inactive members eligible for health care.



SECTION III – ASSETS

1. As of June 30, 2021 the total market value of assets amounted to \$600,330,188.

Asset Summary Based on Market Value			
(1)	Assets at June 30, 2020	\$	482,611,478
(2)	Contributions and Misc. Revenue		137,583,437
(3)	Investment Gain (Loss)		108,268,254
(4)	Benefit Payments		<u>(128,132,981)</u>
(5)	Assets at June 30, 2021	\$	600,330,188
	(1) + (2) + (3) + (4)		
(6)	Annualized Rate of Return*		22.2 %

*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, 2021.

1. The total health care valuation balance sheet shows that the System has total future health care liabilities of \$1,729,413,679 of which \$533,055,355 is for the future benefits payable for present retiree members and beneficiaries of deceased members; \$11,250,342 is for the future benefits payable for current deferred vested members; and \$1,185,107,982 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 \$600,330,188 as of June 30, 2021. The difference of \$1,129,083,491 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 \$1,129,083,491 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 1.22% 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 \$440,016,749. When this amount is subtracted from \$1,129,083,491 which is the present value of the total future contributions to be made by the employer, there remains \$689,066,742 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 1.24% of payroll. This rate is sufficient to liquidate the unfunded accrued liability of \$689,066,742 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, 2021 is shown below.

Experience Gain/(Loss) (\$ Thousands)

(1)	UAAL* as of 6/30/20	\$ 1,313,892
(2)	Normal cost from last valuation	72,976
(3)	Expected employer contributions	132,931
(4)	Interest accrual: [(1) + (2)] x .0525 - (3) x .0525/2	69,321
(5)	Expected UAAL before changes: (1) + (2) - (3) + (4)	\$ 1,323,258
(6)	Change due to claims and retiree premiums	(7,904)
(7)	Change due to new assumptions**	560,929
(8)	Expected UAAL after changes: (5) - (6) - (7)	\$ 770,233
(9)	Actual UAAL* as of 6/30/21	689,067
(10)	Total gain/(loss): (8) - (9)	\$ 81,166
	(a) Contribution shortfall	(60,896)
	(b) Investment Gain/(Loss)	82,683
	(c) Experience Gain/(Loss) (10) - (10a) - (10b)	\$ 59,379
(11)	Accrued Liabilities as of 6/30/21	\$ 1,289,397
(12)	Experience Gain/(Loss) as percent of actuarial accrued liabilities at end of year (10c) / (11)	4.6%

* unfunded actuarial liability

** The gain from assumptions is due to the impact of the new experience study performed over the five-year period ending June 30, 2020.



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 6/30/21
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.	\$ (3.9)
Disability Retirements. If disability claims are less than assumed, there is a gain. If more claims, a loss.	1.2
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.	19.7
Claims Increases (Including Wrap Plan). If there are smaller claims increases than assumed creates a gain; larger, a loss.	(7.9)
New Members. Additional accrued liability attributable to members who entered the plan since the last valuation.	(12.8)
Investment Income. If there is a greater investment income than assumed, there is a gain. If less income, a loss.	82.7
Contribution Shortfall. If there are more contributions than the ARC, there is a gain. If less contributions, a loss.	(60.9)
Death After Retirement. If retiree members live longer than assumed, there is a loss. If not as long, a gain.	14.4
Other. Miscellaneous gains and losses resulting from changes in valuation software, data adjustments, timing of financial transactions, etc.	<u>42.3</u>
Gain (or Loss) During Year From Financial Experience	\$ 73.3
Non-Recurring Items. Adjustments for plan amendments, assumption changes and method changes	560.9
Composite Gain (or Loss) During Year	\$ <u>634.2</u>



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 FY2021.

Required Contribution Rates

Contribution for	Amount	% of Payroll
A. Normal Cost	\$ 45,679,862	1.22%
B. Member Contributions*	\$ 0	0.00%
C. Employer Normal Cost: [A - B]	\$ 45,679,862	1.22%
D. Unfunded Actuarial Accrued Liability**	\$ 44,923,722	1.24%
E. Total Recommended Employer Contribution Rate: [C + D]	\$ 90,603,584	2.46%
F. Employer Contribution Toward Health Care ⁺	\$ 55,056,901	1.50%

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

** Based on 30-year amortization of the UAAL from June 30, 2021.

+ Includes 1.50% payroll surcharge.

Twelve-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



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, 2021. Additional information will be provided in separate reports.

Valuation date	6/30/2021
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	
Pre-Medicare	6.750% - 4.400%
Medicare	5.125% - 4.400%
Year of Ultimate Trend	2024 - 2030



Ten-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



Ten-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



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, 2021 and, for comparison purposes, as of the immediately preceding valuation date of June 30, 2020.

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

	June 30, 2021	June 30, 2020
ASSETS		
Current market value of assets	\$ 600,330,188	\$ 482,611,478
Prospective contributions		
Employer normal contributions	440,016,749	724,103,270
Unfunded accrued liability contributions	689,066,742	1,313,892,066
Total prospective contributions	<u>\$ 1,129,083,491</u>	<u>\$ 2,037,995,336</u>
Total assets	<u>\$ 1,729,413,679</u>	<u>\$ 2,520,606,814</u>
LIABILITIES		
Present value of benefits payable on account of present retiree members and beneficiaries	\$ 533,055,355	\$ 613,571,119
Present value of benefits payable on account of active members	1,185,107,982	1,894,632,512
Present value of benefits payable on account of deferred vested members	<u>11,250,342</u>	<u>12,403,183</u>
Total liabilities	<u>\$ 1,729,413,679</u>	<u>\$ 2,520,606,814</u>



The following 10-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.

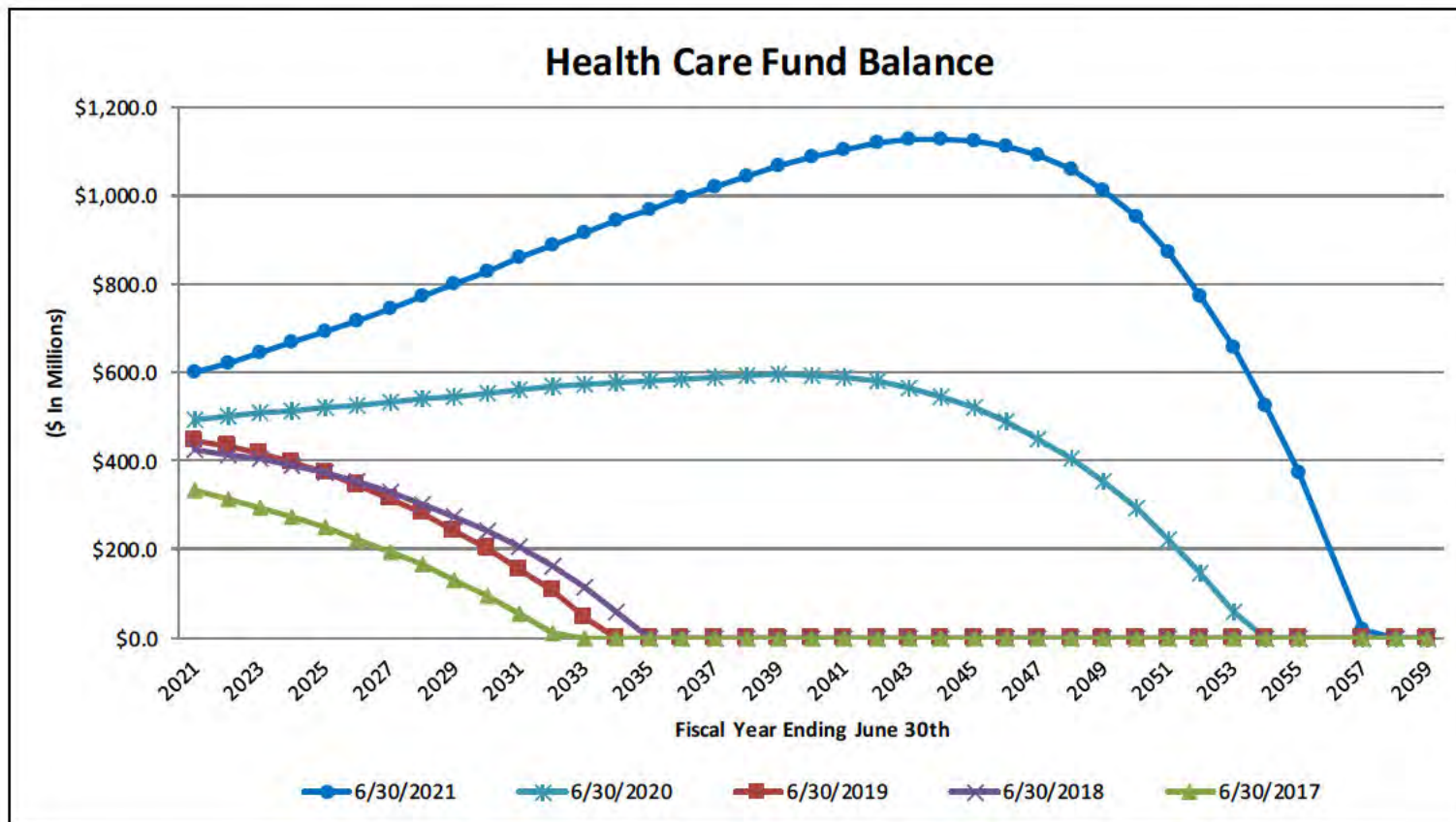
Solvency Test
(\$ Millions)

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	7.6



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	Non-Medicare	Medicare
2021	6.75%	5.125%
2022	6.50	5.00
2023	6.25	4.75
2024	6.00	4.40
2025	5.75	4.40
2026	5.50	4.40
2027	5.25	4.40
2028	5.00	4.40
2029	4.75	4.40
2030 and beyond	4.40	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 Plan	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 MedicareSM	Aetna Traditional Choice	AultCare PPO
Non-Medicare	\$1,489	N/A	\$1,040
Medicare A	\$152	\$652	N/A
Medicare B Only	\$361	N/A	N/A

Spouse Costs			
Medicare Status	Aetna Choice POS II and Aetna MedicareSM	Aetna Traditional Choice	AultCare PPO
Non-Medicare	\$1,192	N/A	\$831
Medicare A	\$152	\$652	N/A
Medicare B Only	\$361	N/A	N/A

Children Costs			
Medicare Status	Aetna Choice POS II and Aetna MedicareSM	Aetna Traditional Choice	AultCare PPO
Non-Medicare	\$373	N/A	\$184
Medicare A	\$152	\$652	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 Plan for pre-Medicare retirees. Current authority allows the Wraparound plan to enroll through 2021 with continuation under discussion. Going forward, administrative and/or legislative action to allow continuation of this plan will be monitored. The age adjusted and blended amounts are as follows:

Annual Pre-65 Blended Costs Age Adjusted to 65							
Pre-65 Cost Type	Future Service Retirees	Future Disabled Retirees	Future Spouses	Current Service Retires	Current Disabled Retirees	Current Retiree Spouses	Current Dependent Children
Medical	\$14,604	\$12,440	\$11,880	\$15,108	\$8,676	\$7,596	\$5,736
Prescription Drug	2,652	2,488	2,184	2,664	2,184	1,932	1,164

Annual 65 & Older Blended Costs Age Adjusted to 65						
65 & Older Cost Type	Future Service Retirees	Future Disabled Retirees	Future Spouses	Current Service Retires	Current Disabled Retirees	Current Retiree Spouses
Medical	\$180	\$180	\$156	\$144	\$468	\$84
Prescription Drug	1,560	1,560	1,536	1,548	1,572	1,524



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	Subsequent Unreduced	Reduced	Reduced (60/25)	First Eligible	Subsequent Unreduced
			Unreduced				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:

Service	Annual Rates of		
	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, 2021**

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 and those wishing to participate in the program are re-verified every year. 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 Plan. 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 Plan 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.

2022 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 2022 *Open Enrollment Guide* and the 2022 *Member Health Care Guide*.



2022 Contribution Rates

Years of Service	Aetna Choice POS II and Aetna Medicare SM	Aetna Traditional Choice	AultCare PPO
Service Retirement Date on or before July 1, 1989 Premiums			
5-9.999 years			
Without Medicare	\$780		\$555
With Medicare A & B	\$117	\$408	
With Medicare B Only	\$297		
10-24.999 years			
Without Medicare	\$296		\$217
With Medicare A & B	\$64	\$166	
With Medicare B Only	\$127		
25 years & over			
Without Medicare	\$296		\$217
With Medicare A & B	\$64	\$166	
With Medicare B Only	\$64		

Years of Service	Aetna Choice POS II and Aetna Medicare SM	Aetna Traditional Choice	AultCare PPO
Service Retirement Date August 1, 1989 through July 1, 2008 Premiums			
10-14.999 years			
Without Medicare	\$1,524		\$1,075
With Medicare A & B	\$198	\$781	
With Medicare B Only	\$558		
15-19.999 years			
Without Medicare	\$780		\$555
With Medicare A & B	\$117	\$408	
With Medicare B Only	\$297		
20-24.999 years			
Without Medicare	\$407		\$295
With Medicare A & B	\$76	\$222	
With Medicare B Only	\$166		
25 years & over			
Without Medicare	\$296		\$217
With Medicare A & B	\$64	\$166	
With Medicare B Only	\$64		



**2022 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		\$1,075
With Medicare A & B	\$198	\$781	
With Medicare B Only	\$558		
20-24.999 years			
Without Medicare	\$780		\$555
With Medicare A & B	\$117	\$408	
With Medicare B Only	\$297		
25-29.999 years			
Without Medicare	\$482		\$347
With Medicare A & B	\$84	\$259	
With Medicare B Only	\$84		
30-34.999 years*			
Without Medicare	\$333		\$243
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		\$555
With Medicare A & B	\$117	\$408	
With Medicare B Only	\$297		
10-24.999 years			
Without Medicare	\$526		\$378
With Medicare A & B	\$89	\$281	
With Medicare B Only	\$208		
25 years & over			
Without Medicare	\$296		\$217
With Medicare A & B	\$64	\$166	
With Medicare B Only	\$64		



**2022 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		\$866
With Medicare A & B	\$198	\$781	
With Medicare B Only	\$558		
25-29.999 years			
Without Medicare	\$1,108		\$783
With Medicare A & B	\$182	\$706	
With Medicare B Only	\$182		
30 years & over			
Without Medicare	\$989		\$700
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		\$163
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.

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 *2022 Open Enrollment Guide*.

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

2022 SERS Marketplace Wraparound Plan

The SERS Marketplace Wraparound Plan 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 Plan offers additional benefits to help pay for deductibles, co-pays, and other costs.

SERS Health Care and Government Relations staff are working with federal officials to reinstate the Wraparound program for 5-10 years.



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	<p>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)</p> <p><u>Insulin Retail:</u> 25% or \$25 max preferred brand, 25% or \$45 max non-preferred brand <u>Insulin Mail Order:</u> 25% or \$60 preferred brand, 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 (\$25 min, \$67 max per 30-day supply)</p>	<p>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</p>



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

SERS Marketplace Wraparound Plan

Benefit	Maximum Reimbursement
Deductible	Reimbursements are limited to \$1,800 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	
*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.	
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.	



Medicare Plan Benefits

Aetna MedicareSM Plan (PPO)

Annual Out-of-Pocket Maximum	\$3,000 per person
Deductible	None
Primary Care Office Visit	\$20 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	\$20 co-pay
Chiropractic	\$20 co-pay limited to Medicare coverage
Durable Medical Equipment	20% coinsurance
Prescription Drugs	<p>Express Scripts Medicare D PDP</p> <p><u>Retail 30-day max:</u> \$7.50 generic, 25% preferred brand (\$25 min,\$100 max)</p> <p><u>Mail order 90-day max:</u> \$15 generic, 25% preferred brand (\$45 min, \$200 max)</p> <p><u>Insulin Retail:</u> \$25 preferred brand, 25% or \$45 max non-preferred brand</p> <p><u>Insulin Mail Order:</u> 25% preferred brand (\$45 min, \$60 max), 25% or \$115 max non-preferred brand</p> <p><u>Specialty medications:</u> 25% of cost (\$25 min,\$100 max)</p> <p><u>Specialty Mail order 90-day max:</u> 25% of cost (\$25 min,\$67 max per 30-day supply)</p>



SCHEDULE D
DETAILED TABULATIONS OF THE DATA

All Retirees, Spouses and Dependents Receiving Health Care
Male and Female Demographic Breakdown
As of June 30, 2021
Tabulated by Attained Ages

Attained Age	Number of		Total Number
	Males	Females	
Under 20	26	37	63
20-24	46	44	90
25-29	26	24	50
30-34	0	4	4
35-39	0	2	2
40-44	8	7	15
45-49	14	8	22
50-54	68	83	151
55-59	331	467	798
60-64	1,075	1,889	2,964
65-69	2,254	4,843	7,097
70-74	2,457	5,768	8,225
75-79	1,955	5,154	7,109
80-84	1,797	4,708	6,505
85-89	1,164	3,304	4,468
90-94	521	1,889	2,410
95-99	116	675	791
100	8	52	60
101	2	33	35
102	0	12	12
103	1	13	14
104	1	4	5
105 & Over	1	6	7
Total	11,871	29,026	40,897



**Schedule of Retiree Members Added to and Removed from Rolls
Last Ten 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

* 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.



**Terminated Vested Members Eligible for Health Care
Male and Female Demographic Breakdown
As of June 30, 2021
Tabulated by Attained Ages**

Attained Age	Number of		Total Number
	Males	Females	
Under 35	9	10	19
35-39	53	53	106
40-44	121	196	317
45-49	156	406	562
50-54	241	813	1,054
55-59	316	1,416	1,732
60 & Over	379	1,803	2,182
Total	1,275	4,697	5,972



Total Active Members as of June 30, 2021
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	2,141							2,141
Avg Pay	\$10,407							\$10,407
20-24	8,571	94						8,665
Avg Pay	\$11,276	\$28,350						\$11,461
25-29	8,603	1,115	24					9,742
Avg Pay	\$15,058	\$31,892	\$42,948					\$17,053
30-34	7,535	2,147	364	26				10,072
Avg Pay	\$16,842	\$33,769	\$44,315	\$47,530				\$21,522
35-39	8,417	2,976	807	360	47			12,607
Avg Pay	\$16,708	\$32,682	\$43,507	\$50,641	\$54,638			\$23,305
40-44	9,125	3,897	1,240	745	408	27	1	15,443
Avg Pay	\$16,190	\$30,022	\$40,775	\$48,590	\$52,939	\$70,391	\$43,614	\$24,285
45-49	8,397	4,261	1,929	1,217	887	268	17	16,976
Avg Pay	\$15,101	\$29,479	\$35,439	\$43,173	\$51,897	\$56,374	\$52,008	\$25,644
50-54	7,343	4,275	2,786	2,260	1,873	653	193	19,383
Avg Pay	\$15,777	\$29,320	\$32,119	\$38,073	\$43,252	\$54,944	\$57,377	\$28,101
55-59	5,706	3,514	2,758	3,211	3,610	1,418	581	20,798
Avg Pay	\$15,768	\$28,778	\$32,180	\$34,633	\$38,829	\$45,009	\$53,338	\$30,101
60-64	4,578	2,669	2,030	2,599	3,734	2,100	991	18,701
Avg Pay	\$14,070	\$27,616	\$31,636	\$34,761	\$36,275	\$39,407	\$45,654	\$29,738
65-69	2,591	1,186	745	725	1,060	793	757	7,857
Avg Pay	\$10,726	\$23,409	\$29,840	\$33,859	\$37,541	\$38,460	\$41,181	\$25,939
70 & over	1,770	743	404	312	266	226	540	4,261
Avg Pay	\$8,304	\$18,081	\$23,218	\$27,960	\$32,019	\$37,148	\$36,335	\$19,425
Totals	74,777	26,877	13,087	11,455	11,885	5,485	3,080	146,646
Avg Pay	\$14,754	\$29,466	\$34,023	\$37,458	\$39,979	\$43,456	\$45,139	\$24,700

Averages:
Age: 47.7
Service: 8.1
Annual Pay: \$24,700



Male Active Members as of June 30, 2021
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	1,096							1,096
Avg Pay	\$10,435							\$10,435
20-24	3,791	54						3,845
Avg Pay	\$11,421	\$31,906						\$11,138
25-29	3,662	520	14					4,196
Avg Pay	\$15,050	\$37,260	\$45,379					\$17,904
30-34	2,804	782	197	21				3,804
Avg Pay	\$16,588	\$39,928	\$50,358	\$48,955				\$23,314
35-39	2,621	885	359	207	30			4,102
Avg Pay	\$17,845	\$41,962	\$50,843	\$58,368	\$62,061			\$28,304
40-44	2,955	906	404	287	192	15	1	4,760
Avg Pay	\$16,367	\$40,600	\$53,492	\$62,613	\$64,221	\$75,983	\$43,726	\$29,043
45-49	3,018	897	432	295	303	130	7	5,082
Avg Pay	\$13,107	\$38,088	\$49,942	\$61,237	\$65,925	\$63,263	\$59,713	\$27,938
50-54	2,845	999	485	388	383	240	90	5,430
Avg Pay	\$15,020	\$37,557	\$44,975	\$57,504	\$62,966	\$69,621	\$61,775	\$31,447
55-59	2,267	1,025	619	531	492	264	222	5,420
Avg Pay	\$16,169	\$34,483	\$43,545	\$50,198	\$57,910	\$63,581	\$63,055	\$34,112
60-64	1,978	972	584	512	500	275	269	5,090
Avg Pay	\$14,948	\$32,584	\$38,730	\$47,954	\$52,080	\$56,969	\$59,522	\$32,638
65-69	1,165	548	317	201	199	98	131	2,659
Avg Pay	\$12,238	\$26,431	\$33,864	\$43,545	\$48,289	\$56,617	\$57,009	\$26,647
70 & over	879	397	214	133	62	42	57	1,784
Avg Pay	\$9,355	\$20,813	\$25,509	\$31,030	\$42,131	\$43,174	\$47,949	\$18,627
Totals	29,081	7,985	3,625	2,575	2,161	1,064	777	47,268
Avg Pay	\$14,528	\$36,040	\$44,020	\$52,638	\$57,861	\$61,924	\$59,501	\$26,287

Averages:
Age: 45.9
Service: 6.2
Annual Pay: \$26,287



Female Active Members as of June 30, 2021
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	1,045							1,045
Avg Pay	\$10,392							\$10,392
20-24	4,780	40						4,820
Avg Pay	\$11,169	\$21,334						\$11,254
25-29	4,941	595	10					5,546
Avg Pay	\$15,072	\$27,247	\$39,653					\$16,423
30-34	4,731	1,365	167	5				6,268
Avg Pay	\$16,994	\$30,259	\$37,288	\$42,015				\$20,443
35-39	5,796	2,091	448	153	17			8,505
Avg Pay	\$16,193	\$28,762	\$37,683	\$40,336	\$41,763			\$20,900
40-44	6,170	2,991	836	458	216	12		10,683
Avg Pay	\$16,103	\$26,813	\$34,649	\$39,850	\$42,999	\$63,559		\$22,168
45-49	5,379	3,364	1,497	922	584	138	10	11,894
Avg Pay	\$16,217	\$27,173	\$31,249	\$37,394	\$44,646	\$49,970	\$46,658	\$24,662
50-54	4,498	3,276	2,301	1,872	1,490	413	103	13,953
Avg Pay	\$16,258	\$26,801	\$29,395	\$34,031	\$38,175	\$46,456	\$53,600	\$26,794
55-59	3,439	2,489	2,139	2,680	3,118	1,154	359	15,378
Avg Pay	\$15,511	\$26,430	\$28,884	\$31,533	\$35,794	\$40,743	\$47,366	\$28,680
60-64	2,600	1,697	1,446	2,087	3,234	1,825	722	13,611
Avg Pay	\$13,412	\$24,784	\$28,773	\$31,512	\$33,807	\$36,733	\$40,489	\$28,646
65-69	1,426	638	428	524	861	695	626	5,198
Avg Pay	\$9,505	\$20,843	\$26,888	\$30,145	\$35,039	\$35,872	\$37,848	\$25,577
70 & over	891	346	190	179	204	184	483	2,477
Avg Pay	\$7,281	\$14,987	\$20,683	\$25,703	\$28,940	\$35,749	\$34,933	\$20,007
Totals	45,696	18,892	9,462	8,880	9,724	4,421	2,303	99,378
Avg Pay	\$14,902	\$26,691	\$30,196	\$33,050	\$35,989	\$38,998	\$40,291	\$23,944

Averages:
Age: 48.6
Service: 9.0
Annual Pay: \$23,944



**Active Members as of June 30, 2021
Tabulated by Annual Pay**

Annual Pay	Number of Active Members			Portion of Total Number	
	Men	Women	Totals	Group	Cumulative
Less than \$1,000	1,955	3,290	5,245	3.6%	3.6%
\$1,000 - 1,999	2,421	3,102	5,523	3.8%	7.3%
2,000 - 2,999	3,148	3,192	6,340	4.3%	11.7%
3,000 - 3,999	3,146	2,850	5,996	4.1%	15.8%
4,000 - 4,999	2,437	2,359	4,796	3.3%	19.0%
5,000 - 5,999	1,794	2,110	3,904	2.7%	21.7%
6,000 - 6,999	1,387	2,016	3,403	2.3%	24.0%
7,000 - 7,999	1,062	2,055	3,117	2.1%	26.1%
8,000 - 8,999	895	1,923	2,818	1.9%	28.1%
9,000 - 9,999	782	1,937	2,719	1.9%	29.9%
10,000 - 11,999	1,378	4,215	5,593	3.8%	33.7%
12,000 - 13,999	1,324	4,379	5,703	3.9%	37.6%
14,000 - 15,999	1,260	4,586	5,846	4.0%	41.6%
16,000 - 17,999	1,305	5,294	6,599	4.5%	46.1%
18,000 - 19,999	1,258	5,704	6,962	4.7%	50.8%
20,000 - 24,999	3,069	14,633	17,702	12.1%	62.9%
25,000 - 29,999	2,416	10,220	12,636	8.6%	71.5%
30,000 - 35,999	2,618	7,800	10,418	7.1%	78.6%
36,000 and over	13,613	17,713	31,326	21.4%	100.0%
Totals	47,268	99,378	146,646		



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, 2021) at the November 2021 Board meeting, the Board accept the actuary's recommended allocation of the 14% employer contribution for fiscal year 2022 as follows: Pension Fund (11.82%), Death Benefit Fund (0.05%), Medicare B Fund (0.63%) and Health Care Fund (0.00%). The Board indicated that no allocation should be made to the Health Care Fund during the October 2021 Board meeting, preferring to enhance the funding levels for Basic Benefits. The remainder (1.50%) 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>
Barbra Phillips	_____	_____	_____
Jeffrey DeLeone	_____	_____	_____
Hugh Garside	_____	_____	_____
James Haller	_____	_____	_____
Matthew King	_____	_____	_____
Catherine Moss	_____	_____	_____
James Rossler	_____	_____	_____
Frank Weglarz	_____	_____	_____
Daniel Wilson	_____	_____	_____

ACTUARIAL VALUATION REPORT

HEALTH CARE SURCHARGE LEVEL FOR FY2023

_____ 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 2023 Health Care surcharge.

Upon roll call, the vote was as follows:

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



GLOBAL FIXED INCOME PORTFOLIO REVIEW

As of September 30, 2021

Presented by Investment Staff:

Jason Naber

Meeting Date: November 2021



Agenda

- Portfolio Summary
- Performance
- Market Conditions
- Outlook
- Appendix

As of September 30, 2021



FIXED INCOME

Portfolio Summary

\$2.64 Billion Market Value

- 14 Active Mandates across 3 Sectors
 - 11 ranked as B or higher (8 ranked as A)
 - 2 ranked as C
 - 1 unranked Dislocation Strategy w/ Short History
- Fixed Income Allocation is Underweight at 14.7% versus 19% Target Allocation

Fixed Income Performance

- Total Return for 1 Year ending September 2021 was 1.97%
- Excess Net Return was 2.87% for the 1 Year Ending September 2021
- Long-Term Net Excess Returns for 3, 5, & 10 Year are Positive

Portfolio Structure

- Focus is on Yield and Capital Preservation
- Portfolio continues to be Tilted Towards Higher Yielding Core Plus Assets
- High Yield represents 6.7% of the portfolio and EMD is 8.3%
- Portfolio Fee Average is 30 bps

Offer Diversification & Risk Reduction to Total Fund

Contribution to Total Fund Risk is 1.5% while Portfolio Weight is 14.7%

As of September 30, 2021



FIXED INCOME

Characteristics

Strategy	Average Quality Rating	Yield to Maturity	Effective Duration
Core	AA-	1.57%	6.39 yrs.
Core Plus	A	2.48%	5.78 yrs.
Tactical & Diversifying	BB+	3.79%	3.60 yrs.
Portfolio	A	1.85%	5.76 yrs.
Bloomberg US Aggregate Index	AA	1.51%	6.71 yrs.

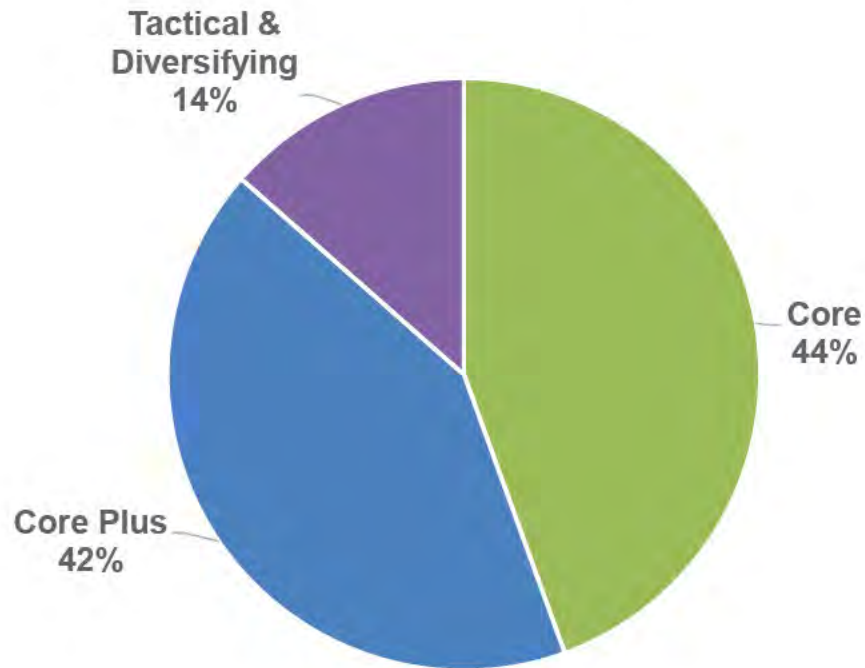
As of September 30, 2021



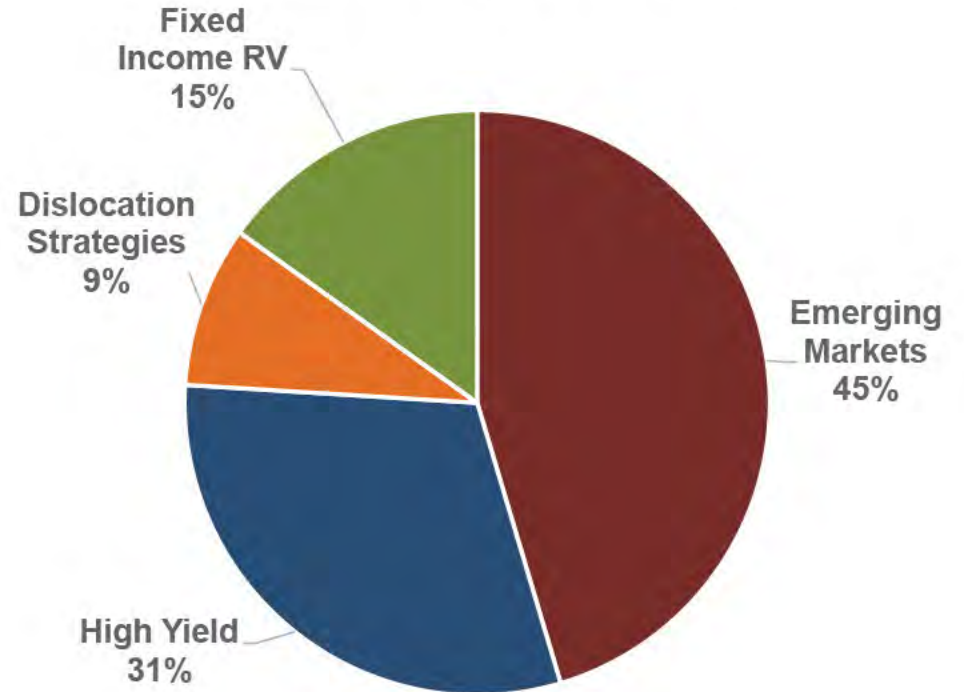
FIXED INCOME

Portfolio Structure

Portfolio Strategy



Tactical & Diversifying: Strategy Breakout

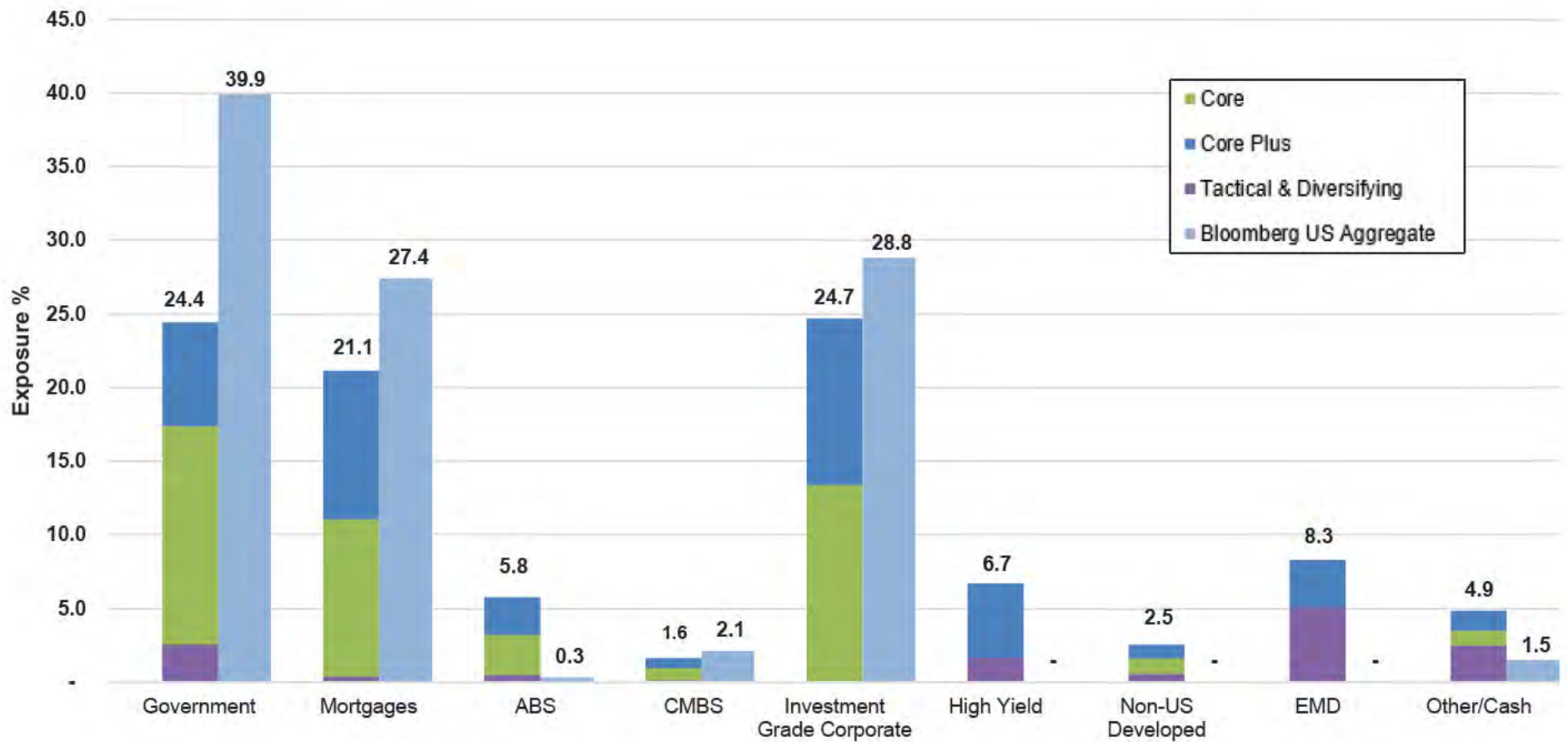


As of September 30, 2021



FIXED INCOME

Sector Exposures



As of September 30, 2021



FIXED INCOME

Net of Fee Performance

	One Year	Three Years	Five Years	Ten Years
Fixed Income	1.97%	6.69%	4.10%	4.26%
-Core (44%)	-0.29	5.80	3.29	3.69
-Core Plus (42%)	2.58	6.90	4.46	4.69
-Tactical & Diversifying (14%)	7.46	6.09	3.27	N/A
Fixed Income Benchmark*	-0.90%	5.36%	2.94%	3.01%
Excess Return	2.87%	1.34%	1.15%	1.24%

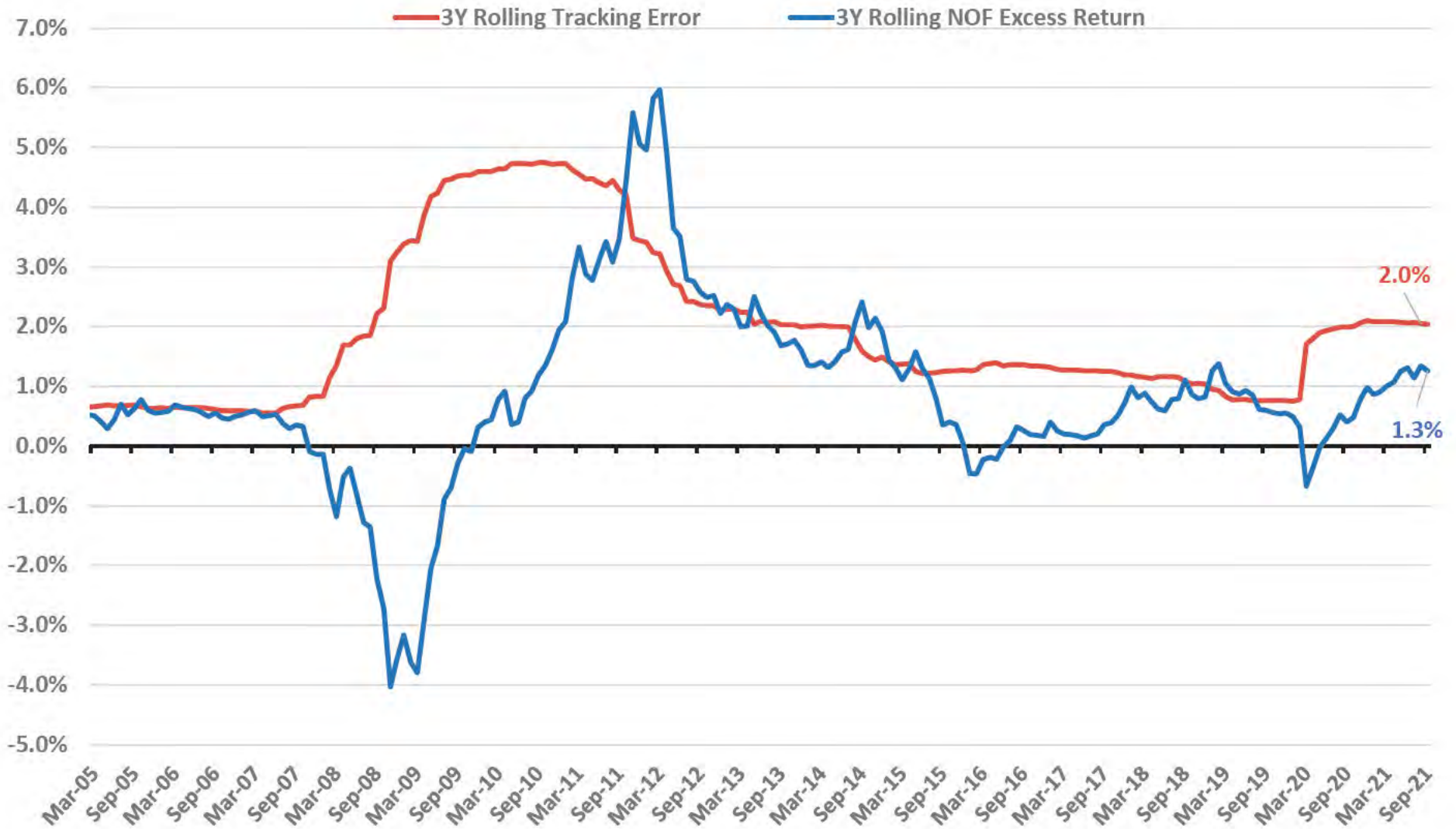
*Fixed Income Benchmark is the Bloomberg U.S. Aggregate Bond Index

As of September 30, 2021



FIXED INCOME

Three Year Risk and Return



As of September 30, 2021



FIXED INCOME

Portfolio Activity and Goals Review

Positive Portfolio Return & Outperformance Driven By:

- Higher Allocations to IG Corp., HY and EMD and Shorter Duration vs US Aggregate Index
- Opportunities to Invest \$83M in HY, \$25M in TALF/Securitized Assets and \$25M to Credit Assets to take Advantage of Market Dislocations Created by the Pandemic in 2020
- Contributions to Emerging Markets Debt and US TIPS/Agencies in Q1 2021 while a FI Arbitrage Contribution detracted

Tactically Managed Strategy Allocations

- \$20 Million Contributed to US Treasuries/TIPS/Agencies
- \$60 Million Contributed to Emerging Market Debt and Fixed Income Arbitrage Strategies
- \$75 Million Withdrawn from IG/HY Credit, MBS/ABS, Non-USD & EMD
- \$96 Million Withdrawn from High Yield & Dislocation Strategies

High Yield and Credit Dislocation Strategies Return of Capital

- \$26 Million from Credit-Focused Dislocation Strategy Generated a One Year Return of 10.9%
- \$70 Million Withdrawn from High Yield Strategy after Generating One Year Return of 13.4%

Portfolio Monitoring

- Capital Withdrawals Reduced Fixed Income Allocation by 0.6% during the Year
- Portfolio Remains Underweight 4.3% Relative to Target Allocation Based on Near-Term Risk of Rates Rising and Lower Returns
- Rising Inflation is a Concern

As of September 30, 2021



FIXED INCOME

Fixed Income Performance

YTD	One Year	Three Years	Five Years	Ten Years
High Yield 4.53%	High Yield 11.28%	U.S. TIPS 7.43%	High Yield 6.51%	High Yield 7.42%
U.S. TIPS 3.51%	U.S. TIPS 5.19%	Inv. Grade Corp. 7.43%	Inv. Grade Corp. 4.61%	Inv. Grade Corp. 4.87%
Asset-Backed 0.23%	EMD Blend 4.13%	High Yield 6.89%	U.S. TIPS 4.33%	EMD Blend 4.16%
CMBS -0.53%	Inv. Grade Corp. 1.74%	CMBS 5.79%	EMD Blend 3.51%	CMBS 4.06%
Agency MBS -0.67%	Asset-Backed 0.59%	EMD Blend 5.47%	CMBS 3.30%	U.S. TIPS 3.12%
U.S. Aggregate -1.55%	CMBS 0.52%	U.S. Aggregate 5.34%	U.S. Aggregate 2.94%	U.S. Aggregate 3.01%
EMD Blend -1.56%	Agency MBS -0.43%	U.S. Treasury 4.88%	Asset-Backed 2.36%	Agency MBS 2.41%
Inv. Grade Corp. -1.69%	U.S. Aggregate -0.90%	Agency MBS 3.84%	U.S. Treasury 2.23%	U.S. Treasury 2.20%
U.S. Treasury -2.50%	U.S. Treasury -3.30%	Asset-Backed 3.49%	Agency MBS 2.17%	Asset-Backed 2.12%

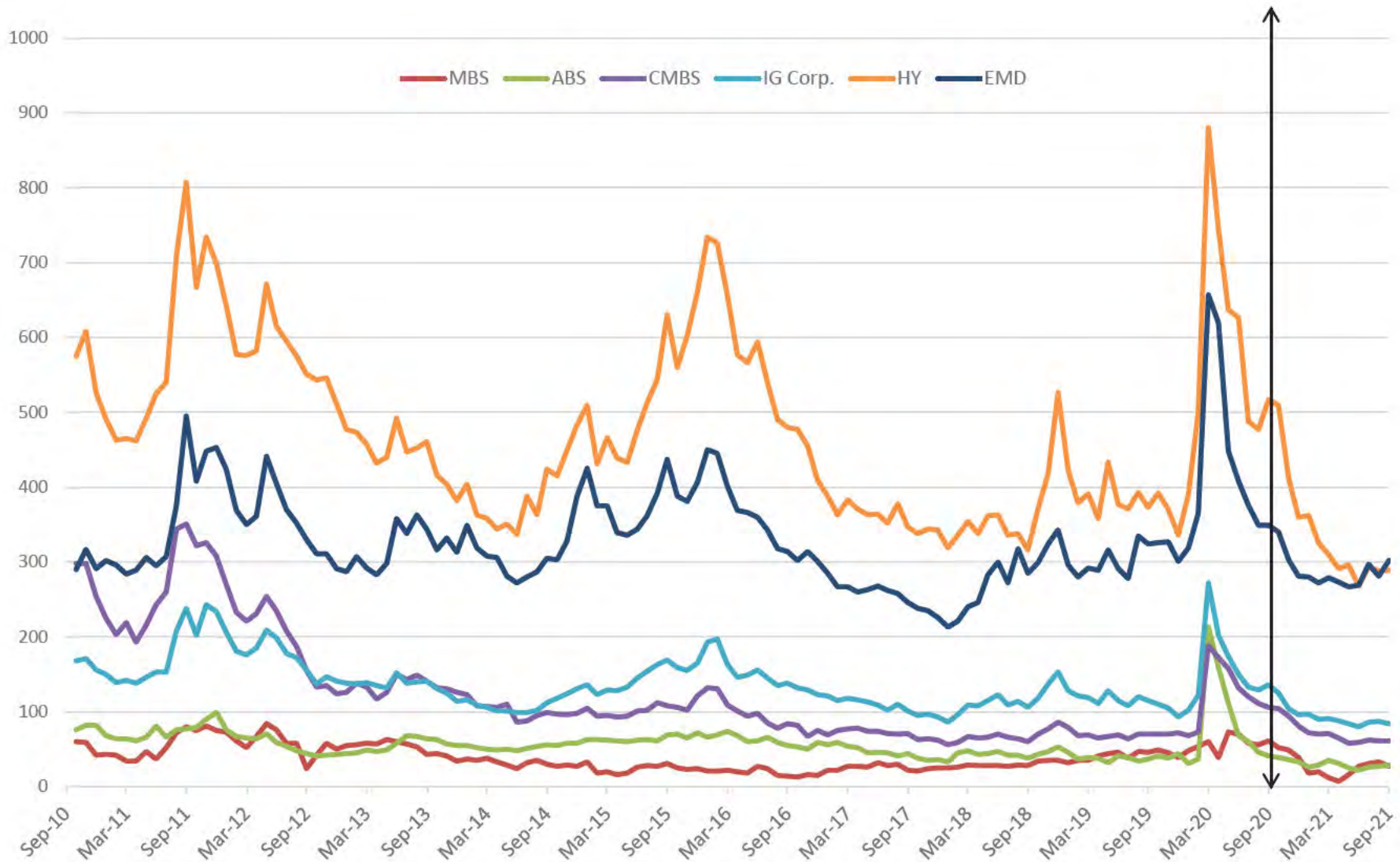
Source: Bloomberg

As of September 30, 2021



FIXED INCOME

Historical Sector Spreads



Source: Bloomberg

As of September 30, 2021



FIXED INCOME

Outlook

Current U.S. Economic Conditions

- Economic Growth of 2.0% Slowed in Q3 from 6.7% in Q2
- Falling Unemployment Rate, 4.8%, with Unfilled Jobs of 11 Million
- Rising Core Inflation, 4.4%
- Wage Growth, 5.1%

Forward Looking Market and Economic Conditions

- QE Taper Starts in November and End in Q2 '22 – Expect Higher Market Volatility
- Markets Expect 1-2 Interest Rate Hikes by the end of 2022
- Inflation-Supply Chain Disruptions, Energy Prices Rising
- Fixed Income Sectors are Fully Valued Relative to History

Future Portfolio Impact

- Interest Payments will Drive Returns Going Forward
- Rising Interest Rates will Negatively Impact Fixed Income Returns
- Long-Term Fixed Income Returns Expected to be 1.85%
- Portfolio Focused on Income & Risk Reduction



Acronym and Definition Appendix

- 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, 2021

Asset Class Performance

Asset Class Returns - Best to Worst						Annualized 5-Year as of 9/21
2016	2017	2018	2019	2020	2021 YTD	
High Yield 17.1%	Emrg Mrkts 37.7%	T-Bills 1.9%	U.S. Equity 31.0%	U.S. Equity 20.8%	Commodities 29.1%	U.S. Equity 17.0%
U.S. Equity 13.4%	Developed 25.6%	Core Bond 0.0%	REITs 25.8%	Emrg Mrkts 18.7%	REITs 24.8%	Emrg Mrkts 9.6%
Commodities 11.8%	U.S. Equity 21.0%	U.S. TIPS -1.3%	Developed 22.7%	U.S. TIPS 11.0%	U.S. Equity 15.6%	Developed 9.3%
Emrg Mrkts 11.6%	High Yield 7.5%	High Yield -2.1%	Emrg Mrkts 18.9%	Developed 8.3%	Developed 8.8%	REITs 7.0%
REITs 7.2%	REITs 4.2%	REITs -4.8%	High Yield 14.3%	Core Bond 7.5%	High Yield 4.5%	High Yield 6.5%
U.S. TIPS 4.7%	Core Bond 3.6%	U.S. Equity -5.3%	Core Bond 8.7%	High Yield 7.1%	U.S. TIPS 3.5%	Commodities 4.5%
Core Bond 2.6%	U.S. TIPS 3.0%	Commodities -11.2%	U.S. TIPS 8.4%	T-Bills 0.7%	T-Bills 0.0%	U.S. TIPS 4.3%
Developed 1.5%	Commodities 1.7%	Developed -13.4%	Commodities 7.7%	Commodities -3.1%	Emrg Mrkts -1.0%	Core Bond 2.9%
T-Bills 0.3%	T-Bills 0.8%	Emrg Mrkts -14.2%	T-Bills 2.3%	REITs -7.9%	Core Bond -1.6%	T-Bills 1.2%

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

Market Commentary

U.S. Equity

The U.S. stock market, represented by the FT Wilshire 5000 IndexSM, was up 0.1% for the third quarter. A slim majority of the eleven sectors were in positive territory, with Financials (+2.6%) and Utilities (+1.2%) representing the best performing sectors. The worst performing sector this quarter was Materials (-4.6%). From a size perspective, large-cap outperformed small-cap. In fact, large-cap growth was the only U.S. segment in positive territory this quarter.

Consumer sentiment dropped dramatically during the third quarter, with the University of Michigan's Consumer Sentiment Index falling to its lowest point in almost a decade. The drop occurred with the August results and followed a six-month period when headline inflation surged 7.8% (annualized), the largest six-month increase in 30 years. Additionally, July brought a surge in Coronavirus infections as the highly contagious delta variant infected even vaccinated individuals. Finally, the August survey period coincided with the Taliban seizing control of Kabul, the capital city of Afghanistan, in less than a week's time.

Non-U.S. Equity

Economic conditions in the U.K. appear to be rapidly deteriorating. The Office for National Statistics said that the economy grew by just 0.1% in July, hampered by supply-chain issues and Covid-19 infections. At the same time, inflation has spiked, with consumer prices in the U.K. rising 3.2% in August. Emerging Markets experienced a meaningful drop this quarter, down -8.0%. The main sources of weakness were South Korea (-13.2%) and China (-18.1%).

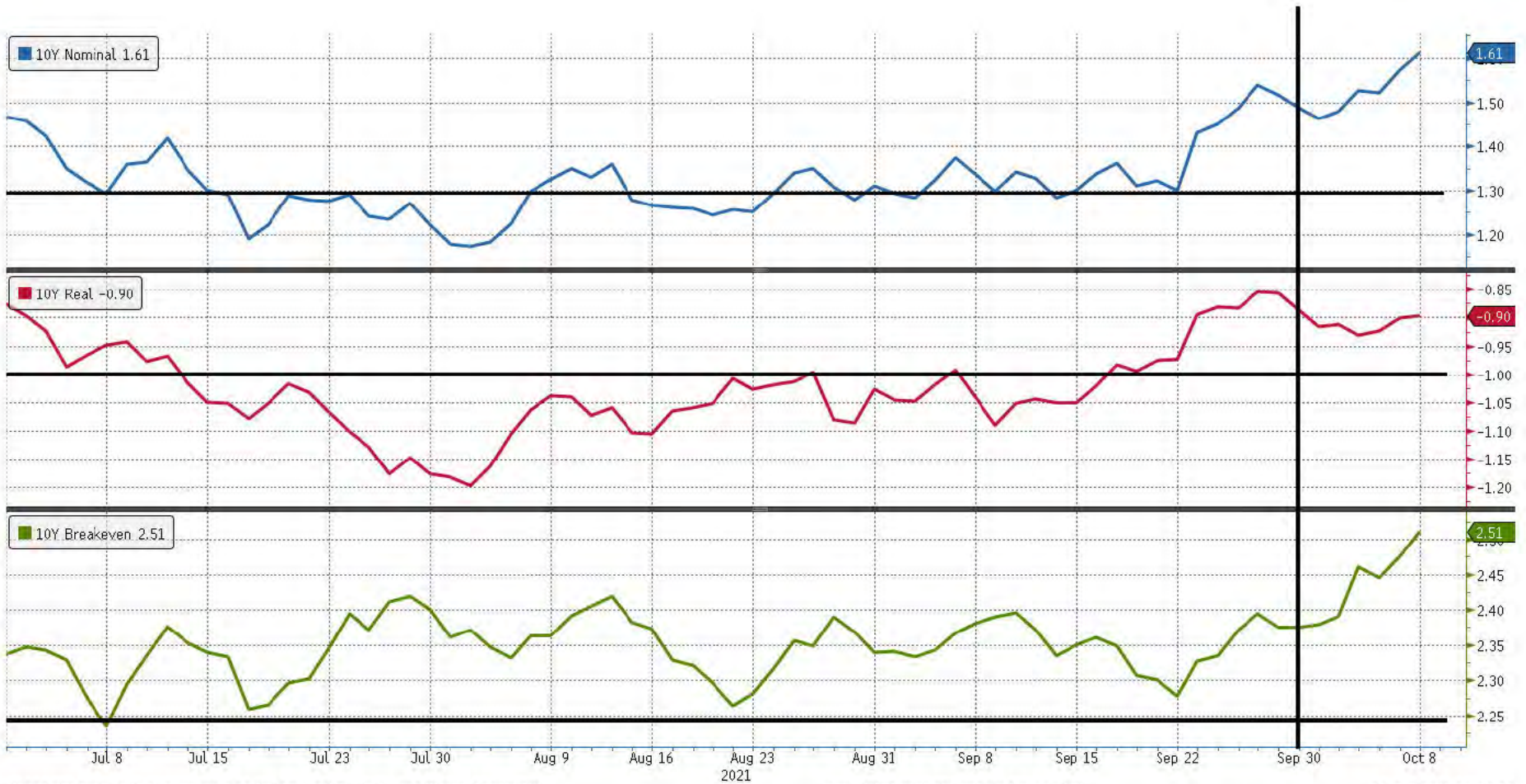
Fixed Income

The U.S. Treasury yield curve was up, generally, during the quarter, with yields in the 3- to 10-year maturity range rising the most. The 10-year Treasury yield ended the quarter at 1.49%, up two basis points from June. The FOMC met twice, as scheduled, with no change to their overnight rate. Through the Fed's "dot plot," they are messaging that the current intent is for a 25 basis point increase in the overnight rate before the end of 2022. Their median forecast for year-end 2023 is for a Fed funds rate of 1.0%.

September 2021 Asset Class Assumptions

	Equity						Fixed Income						Real Assets					
	U.S. Stock	Dev ex-U.S. Stock	Emg Mrkt Stock	Global ex-U.S. Stock	Global Stock	Private Equity	Cash	Core Bond	LT Core Bond	U.S. TIPS	High Yield	Non-U.S. Bond	U.S. Real Estate Secs	Global RE Secs	Private Real Estate	Cmdty	Real Assets	U.S. CPI
Compound Return (%)	5.00	6.00	6.00	6.25	5.65	8.40	1.55	1.85	2.35	1.55	3.60	0.75	4.75	4.90	6.35	4.05	5.85	2.50
Arithmetic Return (%)	6.35	7.50	9.00	7.90	7.00	11.75	1.55	1.95	2.75	1.75	4.10	0.85	6.10	6.05	7.25	5.10	6.35	2.50
Expected Risk (%)	17.00	18.00	26.00	19.15	17.15	28.00	0.75	4.30	8.85	6.00	10.00	4.30	17.00	15.85	14.00	15.00	10.15	1.75
Cash Yield (%)	1.30	2.50	2.00	2.35	1.75	0.00	1.55	3.00	3.40	2.30	7.50	1.80	2.85	2.85	2.30	1.55	1.95	0.00
Growth Expoure	8.00	8.00	8.00	8.00	8.00	13.50	0.00	-0.80	-2.10	-3.00	4.00	-1.00	6.00	6.00	3.50	0.00	1.80	0.00
Inflation Expoure	-3.00	0.00	5.00	1.55	-1.10	-3.80	0.00	-2.45	-6.55	2.50	-1.00	-3.00	1.00	1.95	1.00	12.00	4.90	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

Rate Splits: Yield / Inflation Environment



USGG10YR Index (US Generic Govt 10 Yr) 10yr Splits Daily 30JUN2021-11OCT2021

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Data Source: Bloomberg

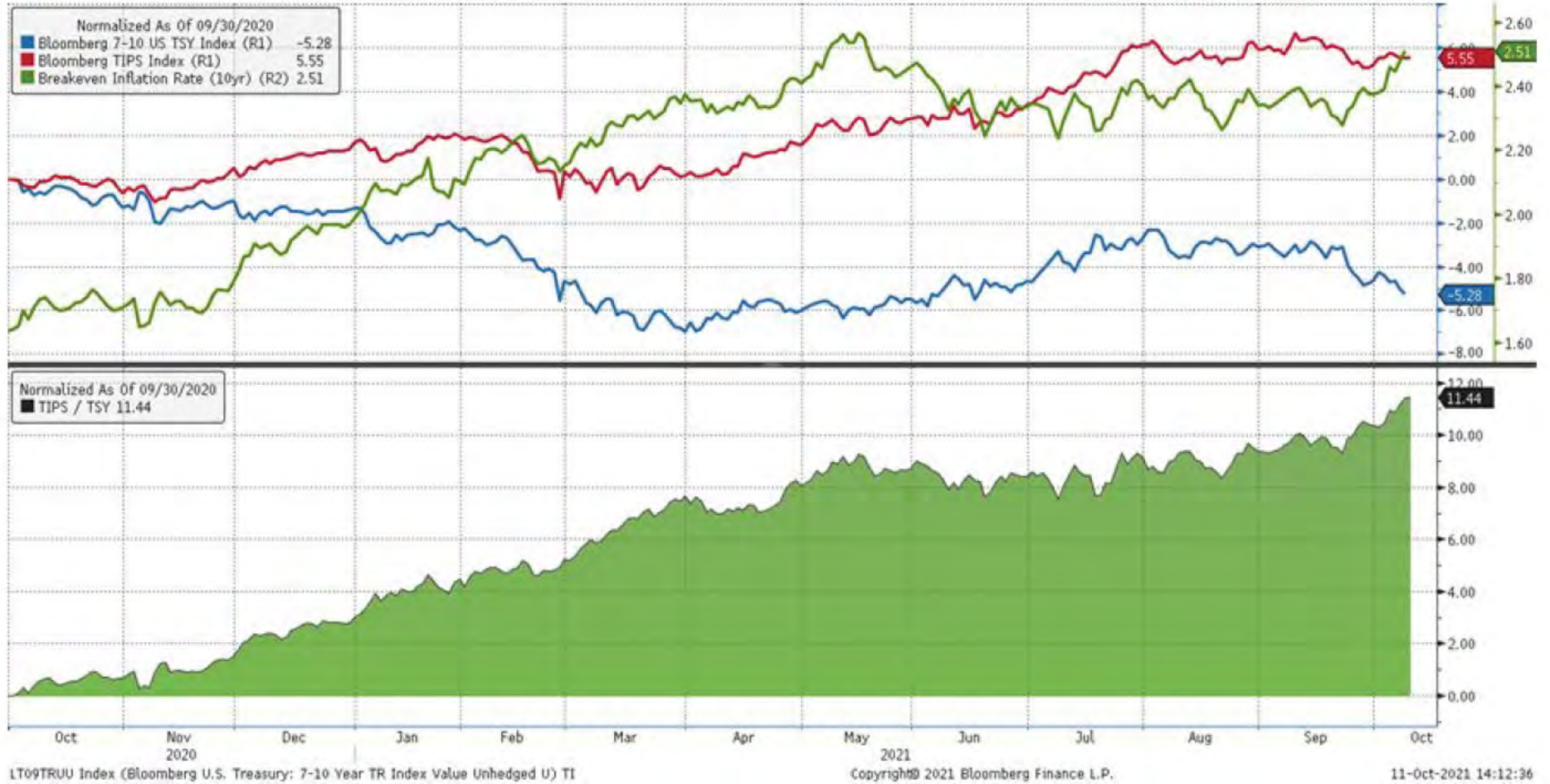
Rate Change Attribution

Quarterly Rate Changes



Data Source: Bloomberg

U.S. Treasury vs. TIPS Returns



Data Source: Bloomberg

Inflation Persists



Data Source: Bloomberg

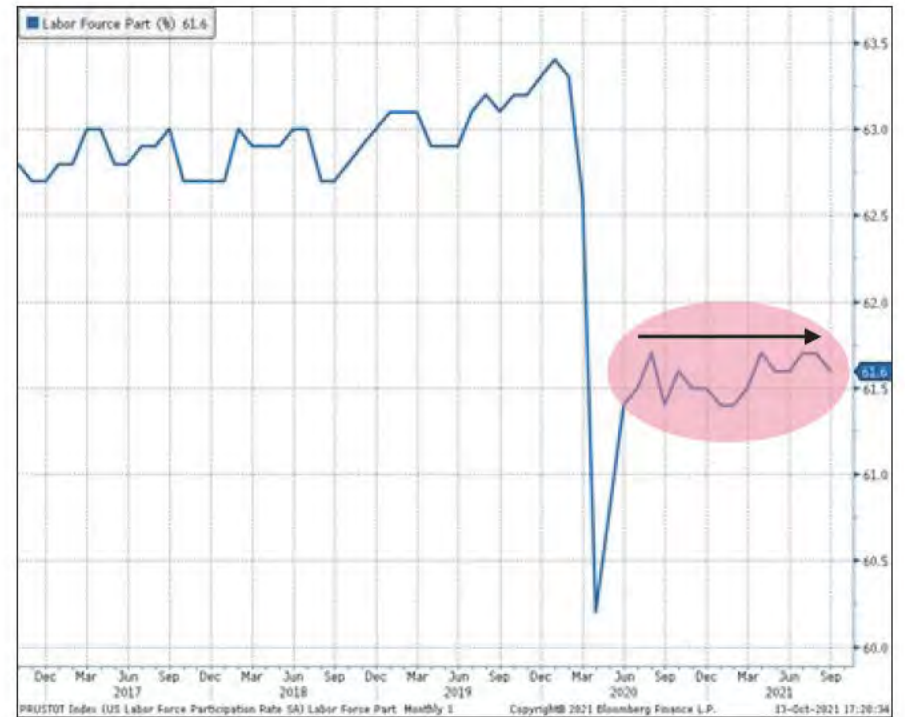
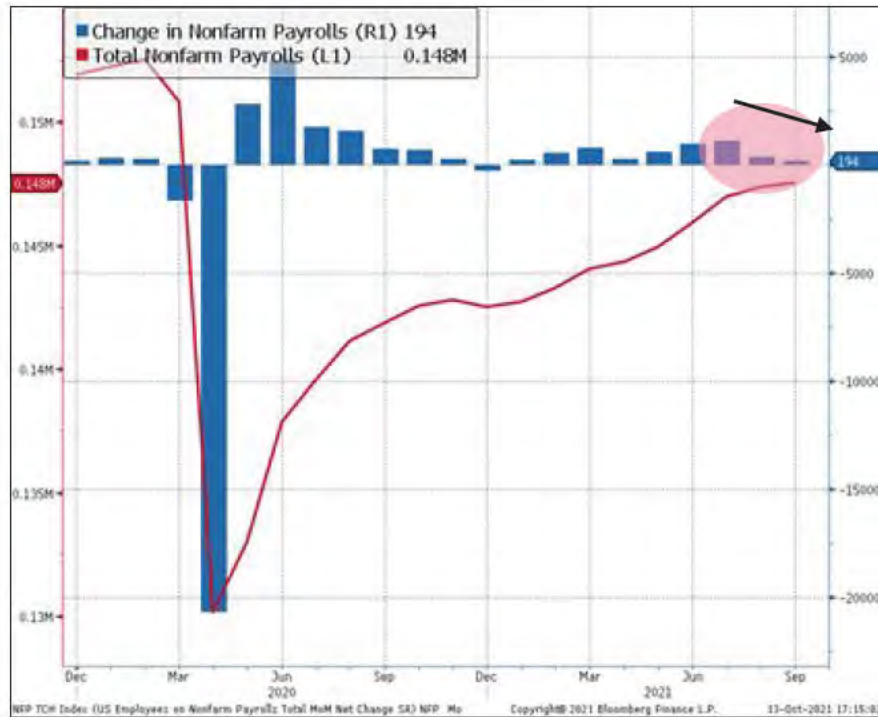
Wages Rising

Since 2Q: AHE rose 3.7% to 4.6%; Atlanta Fed wage Growth: 3.2% to 3.9%



Data Source: Bloomberg

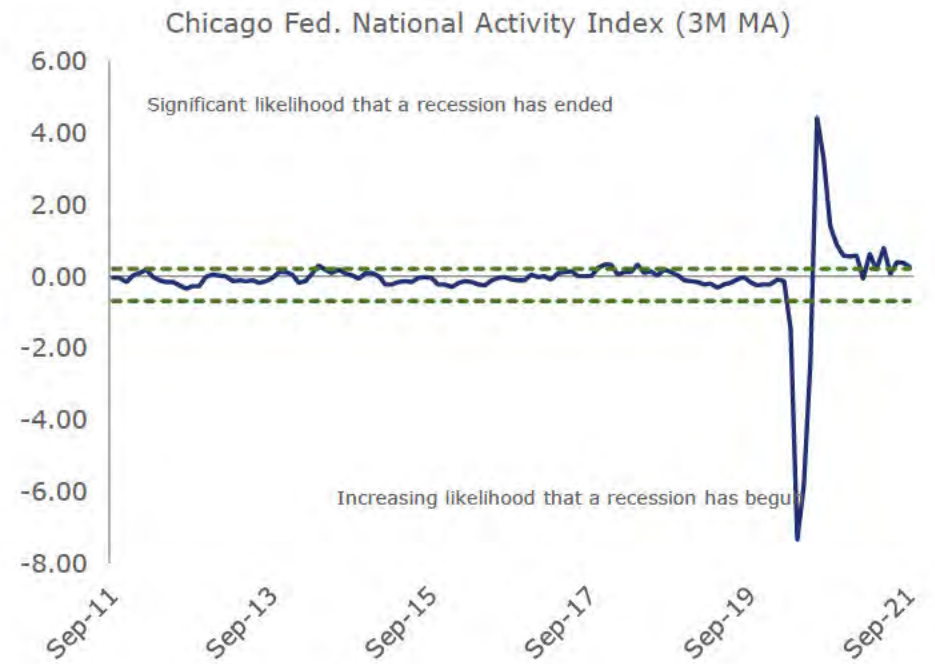
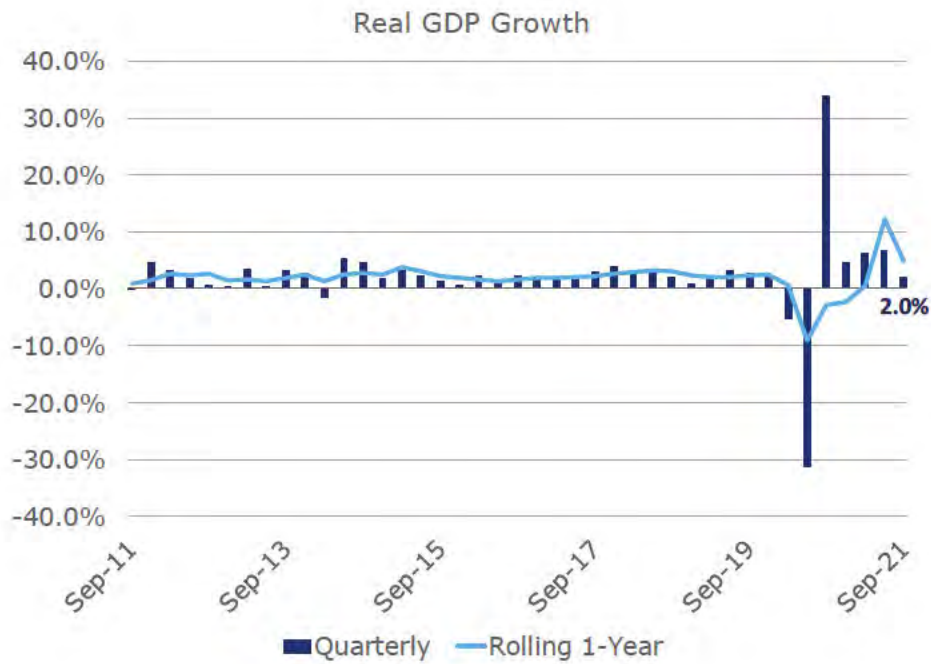
Employment Gains Slowing...



Data Source: Bloomberg

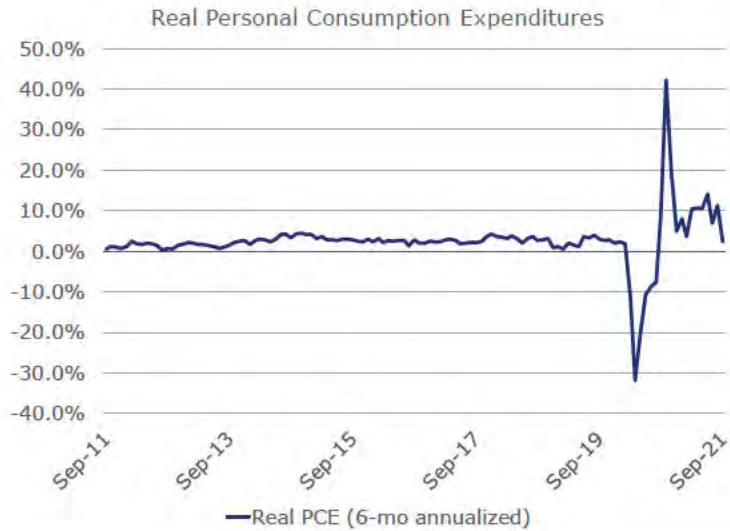
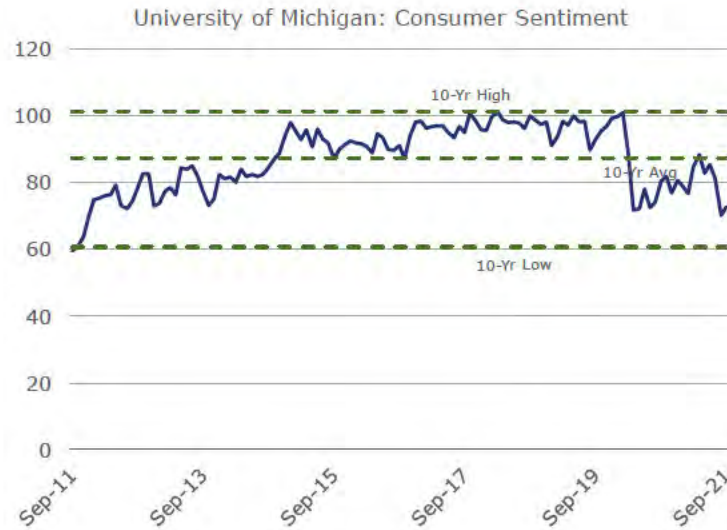
Economic/Market Activity

Economic Growth



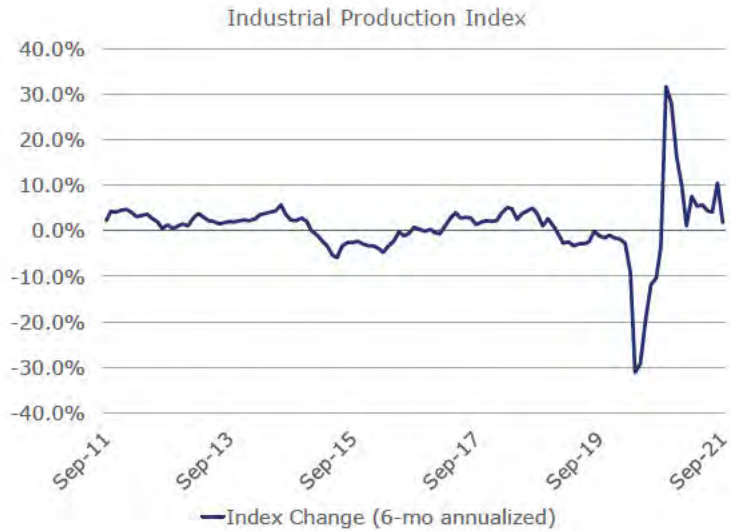
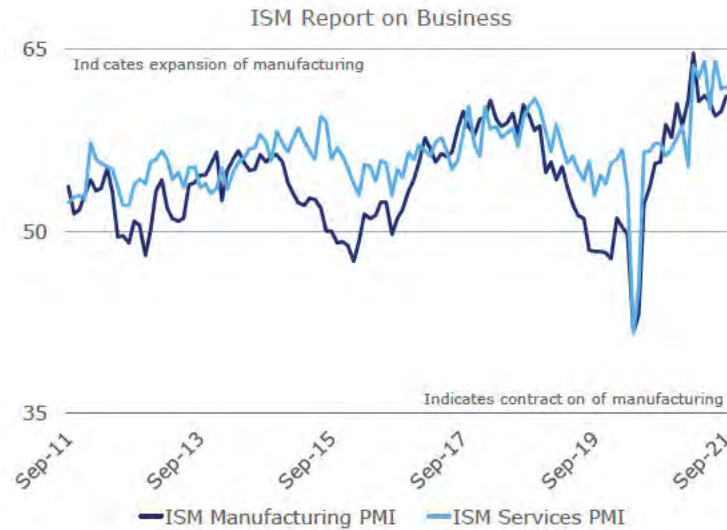
Data Sources: Bloomberg

Consumer Activity



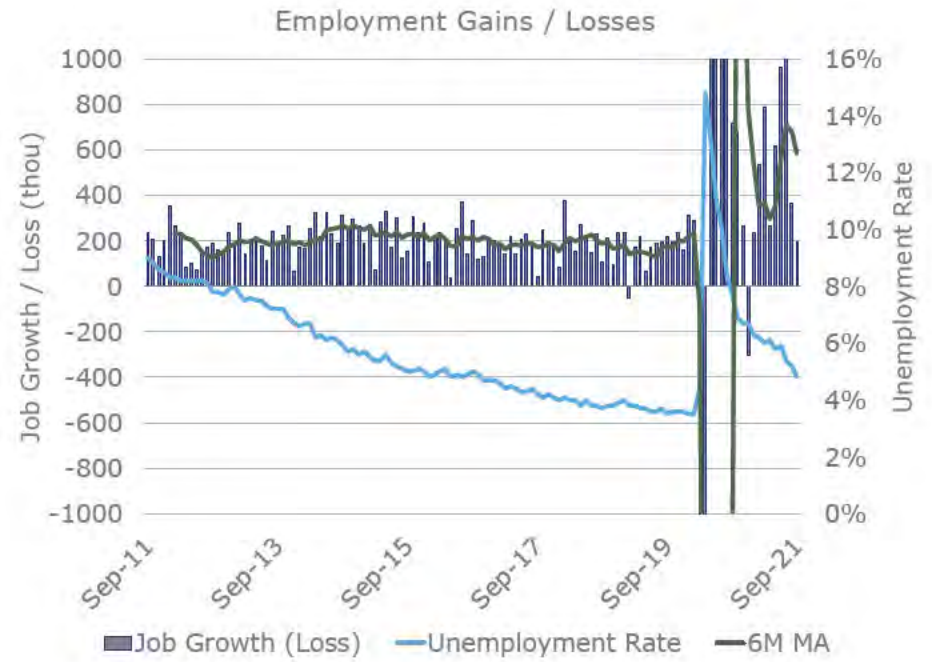
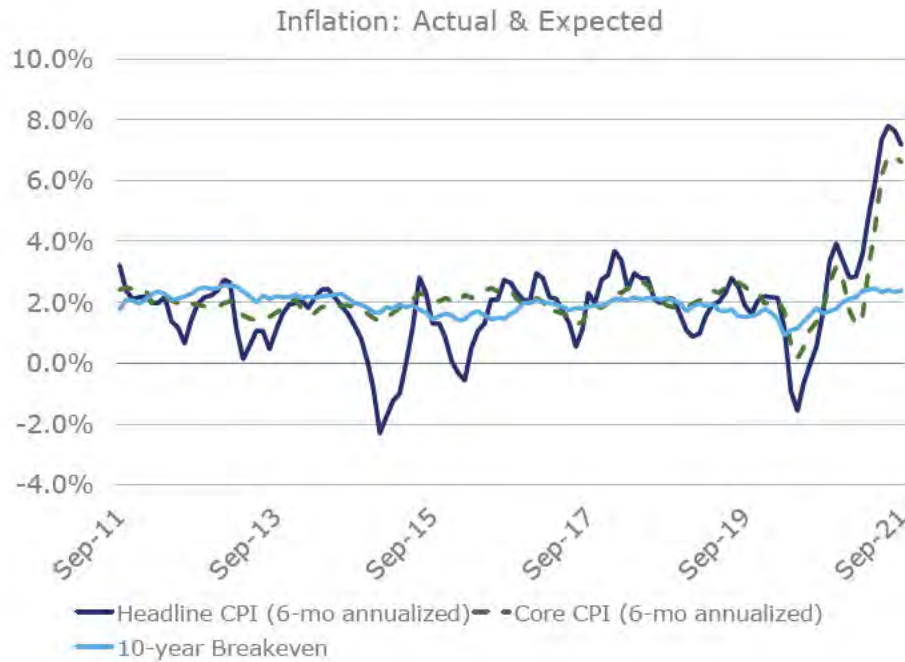
Data Sources: Bloomberg

Business Activity



Data Sources: Bloomberg

Inflation and Employment

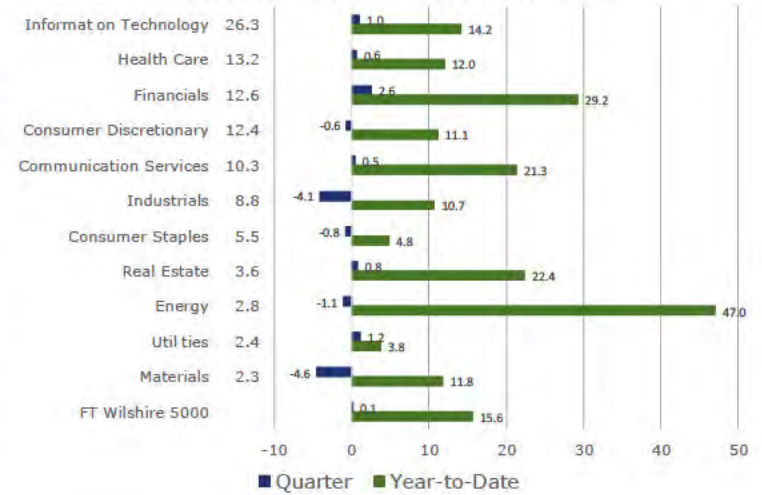


Data Sources: Bloomberg

U.S. Equity Market

As of 9/30/2021	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
FT Wilshire 5000	0.1	15.6	32.4	16.2	17.0	16.7
Wilshire U.S. Large Cap	0.4	15.6	30.9	16.7	17.4	16.8
Wilshire U.S. Small Cap	-3.0	15.4	51.1	11.2	13.4	15.1
Wilshire U.S. Large Growth	1.3	15.5	30.3	20.9	22.1	19.4
Wilshire U.S. Large Value	-0.6	14.7	30.3	12.0	12.4	14.1
Wilshire U.S. Small Growth	-3.8	8.2	40.4	13.0	16.1	15.7
Wilshire U.S. Small Value	-1.8	23.3	63.0	9.4	10.7	14.4
Wilshire REIT Index	1.6	24.8	38.0	10.4	7.0	11.3
MSCI USA Min. Vol. Index	0.3	9.6	17.2	11.1	12.4	14.2
FTSE RAFI U.S. 1000 Index	-0.8	20.8	41.9	12.9	13.8	15.2

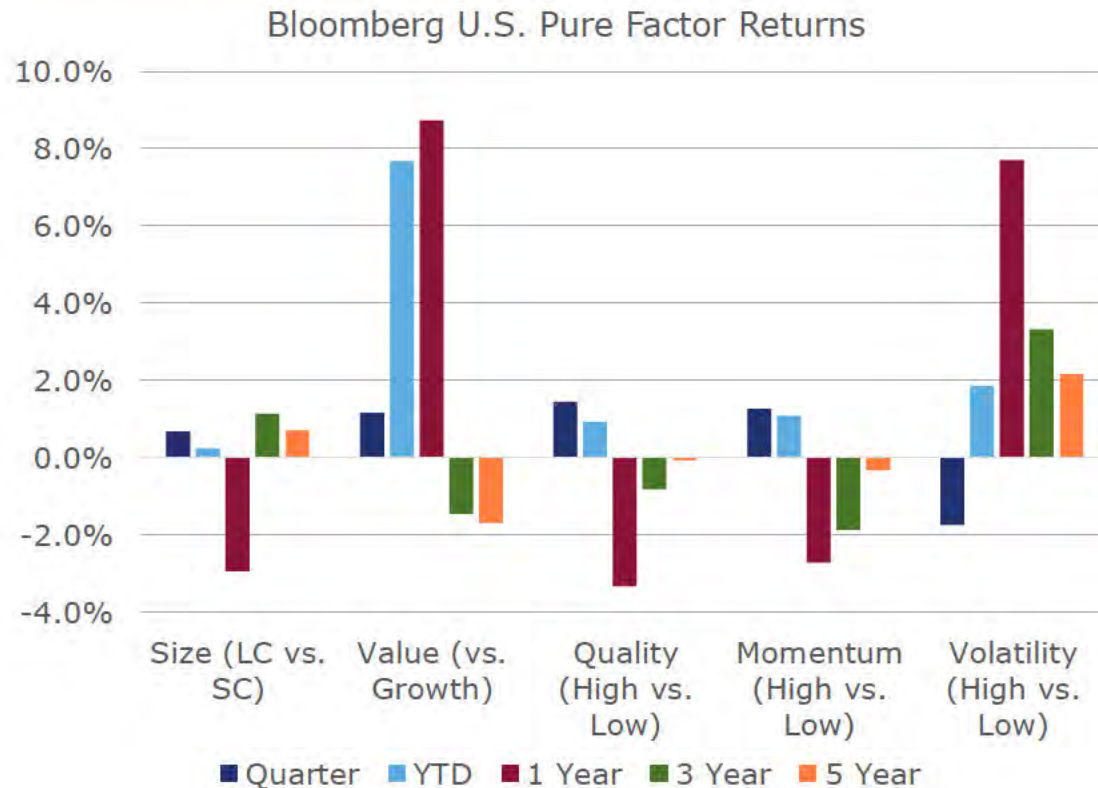
U.S. Sector Weight and Return (%)



Data Sources: Bloomberg, Wilshire Atlas

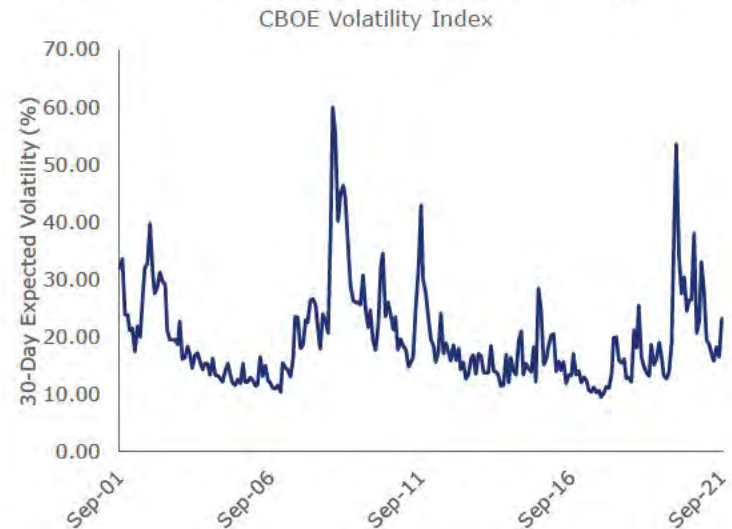
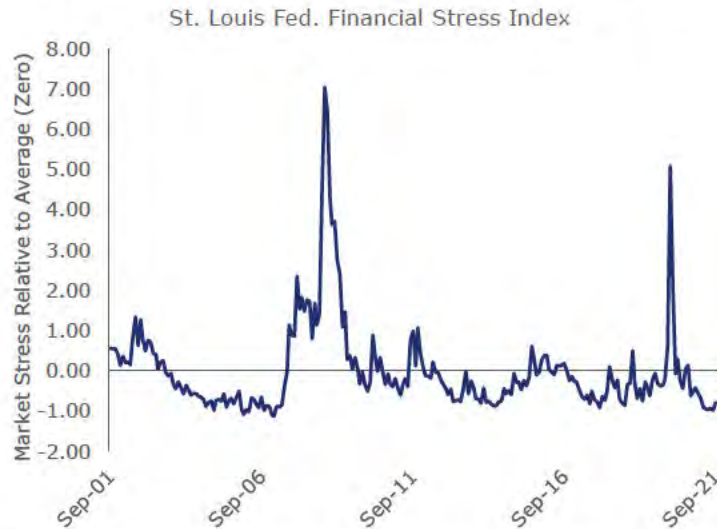
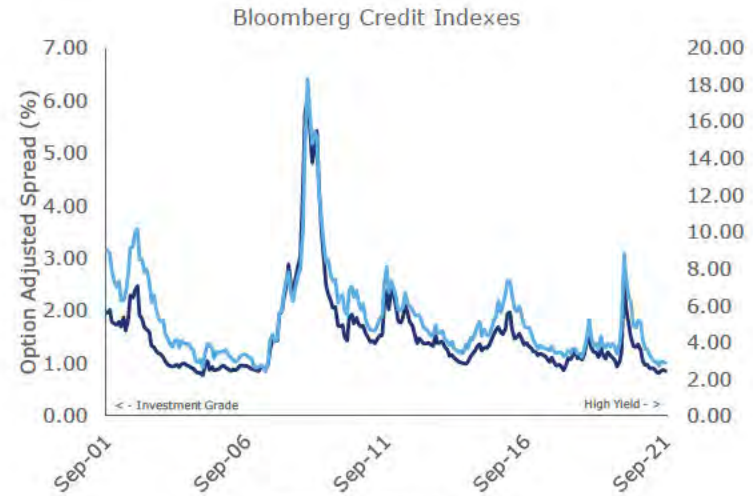
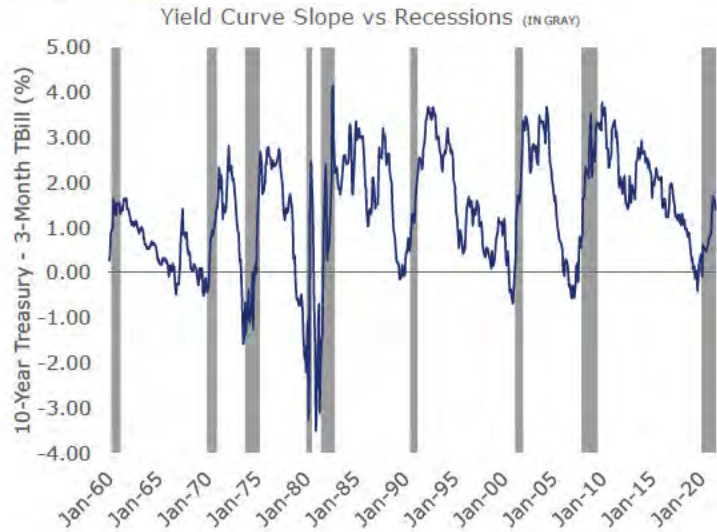
U.S. Factor Returns

- Factor returns represent the contribution from large cap, value, etc. stocks within Bloomberg’s Portfolio & Risk Analytics module
- Value stocks have rebounded during the past year



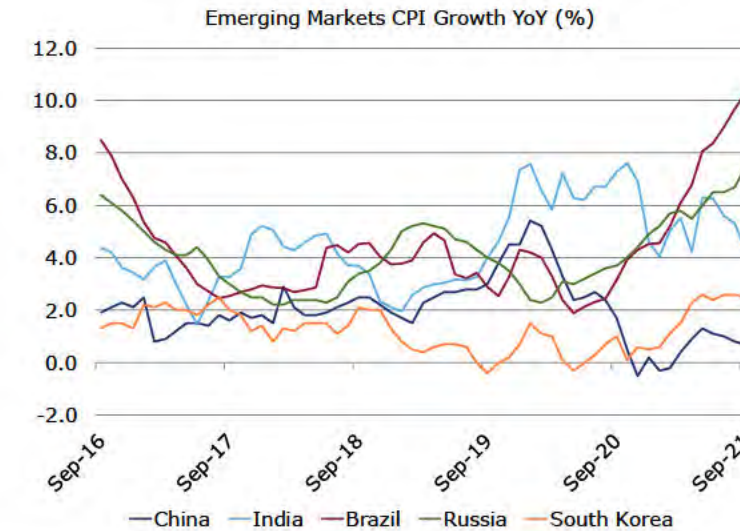
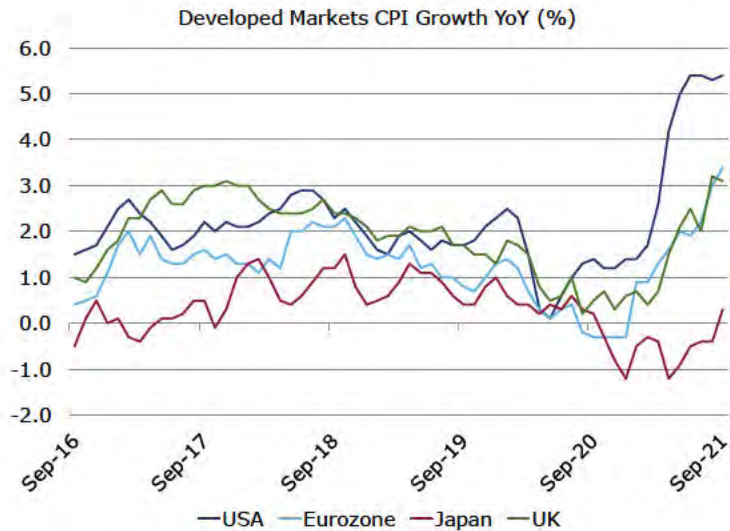
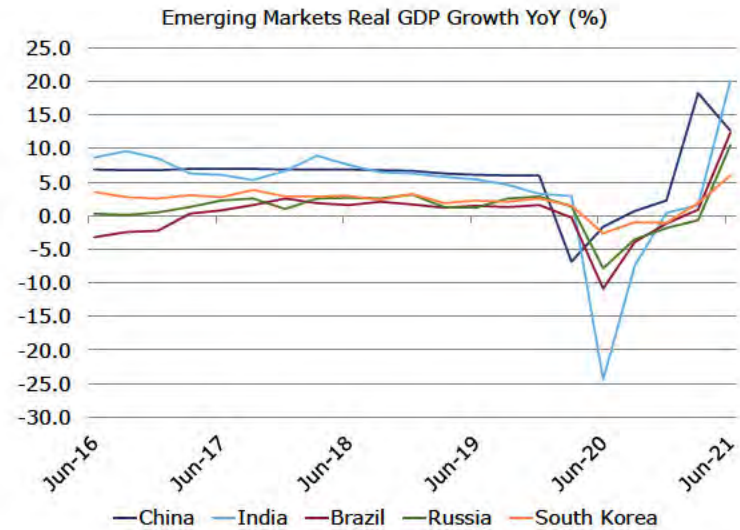
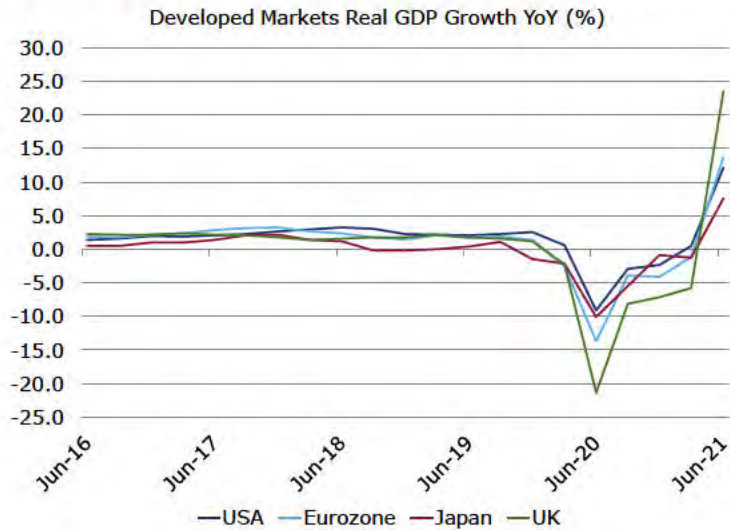
Data Sources: Bloomberg

Risk Monitor



Data Sources: Bloomberg

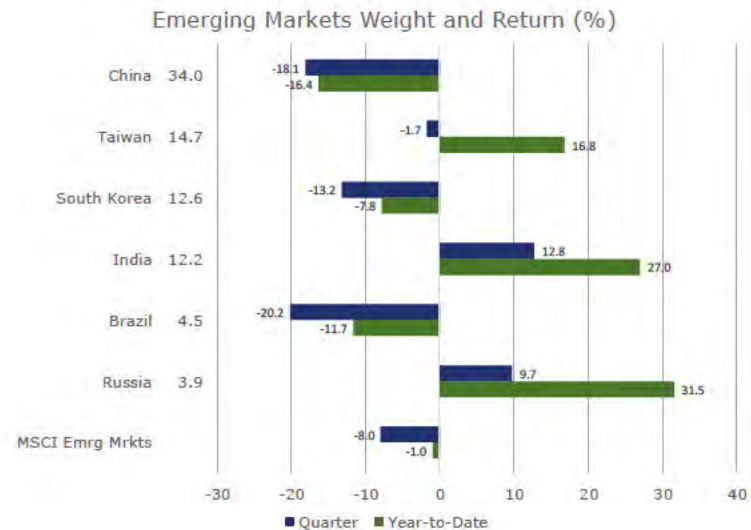
Non-U.S. Growth and Inflation



Data Sources: Bloomberg

Non-U.S. Equity Market

As of 9/30/2021	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
MSCI ACWI ex-US (\$G)	-2.9	6.3	24.4	8.5	9.4	8.0
MSCI EAFE (\$G)	-0.4	8.8	26.3	8.1	9.3	8.6
MSCI Emerging Markets (\$G)	-8.0	-1.0	18.6	9.0	9.6	6.5
MSCI Frontier Markets (\$G)	1.7	2.6	20.5	3.3	3.6	4.0
MSCI ACWI ex-US Growth (\$G)	-3.6	2.9	17.3	12.3	11.6	9.7
MSCI ACWI ex-US Value (\$G)	-1.9	10.3	33.0	4.9	7.3	6.5
MSCI ACWI ex-US Small (\$G)	0.1	12.6	33.5	10.8	10.7	9.8
MSCI ACWI Minimum Volatility	0.2	7.7	14.7	8.2	9.1	10.6
MSCI EAFE Minimum Volatility	0.3	4.9	13.4	4.7	6.1	7.9
FTSE RAFI Developed ex-US	-1.1	12.5	36.5	6.1	8.6	7.5
MSCI EAFE LC (G)	1.4	14.7	27.8	7.7	9.5	10.6
MSCI Emerging Markets LC (G)	-6.6	1.0	17.2	9.8	10.8	9.0

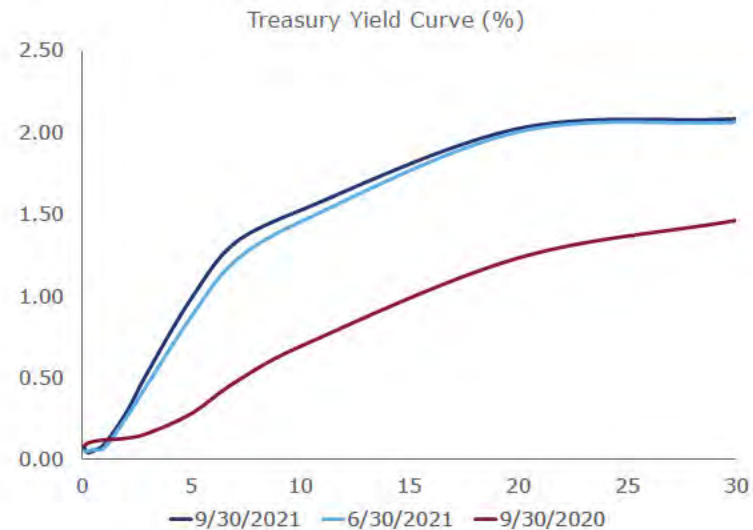
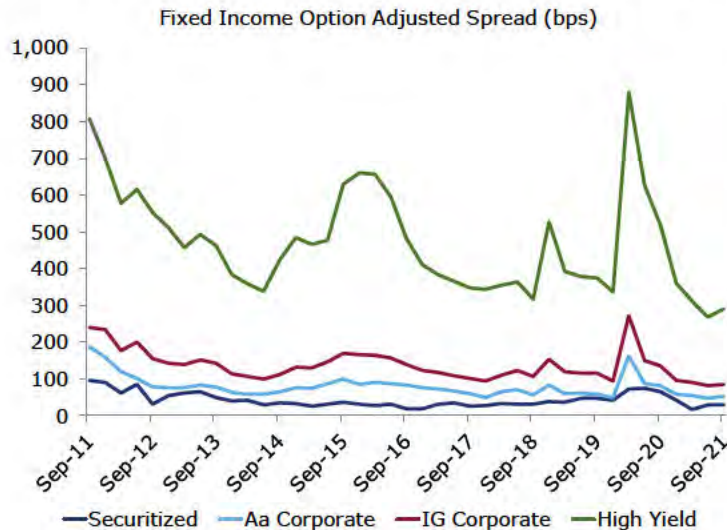


Data Sources: Bloomberg

U.S. Fixed Income

As of 9/30/2021	YTW	DUR.	QTR	YTD	1 YR	3 YR	5 YR	10 YR
Bloomberg Aggregate	1.6	6.7	0.1	-1.6	-0.9	5.4	2.9	3.0
Bloomberg Treasury	1.0	7.1	0.1	-2.5	-3.3	4.9	2.2	2.2
Bloomberg Gov't-Rel.	1.4	6.1	-0.1	-1.3	-0.4	4.9	2.9	2.9
Bloomberg Securitized	1.8	4.6	0.1	-0.7	-0.3	4.0	2.2	2.5
Bloomberg Corporate	2.1	8.7	0.0	-1.3	1.7	7.4	4.6	4.9
Bloomberg LT Gov't/Credit	2.7	16.6	0.1	-4.6	-3.0	10.1	5.2	5.8
Bloomberg LT Treasury	2.0	18.7	0.5	-7.5	-10.3	9.2	3.3	4.4
Bloomberg LT Gov't-Rel.	3.0	13.7	-0.5	-3.4	-0.7	7.9	4.7	5.5
Bloomberg LT Corporate	3.1	15.3	-0.1	-2.6	2.5	10.5	6.3	6.7
Bloomberg U.S. TIPS *	1.4	8.2	1.8	3.5	5.2	7.4	4.3	3.1
Bloomberg High Yield	4.0	4.0	0.9	4.5	11.3	6.9	6.5	7.4
Treasury Bills	0.0	0.3	0.0	0.0	0.1	1.2	1.2	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

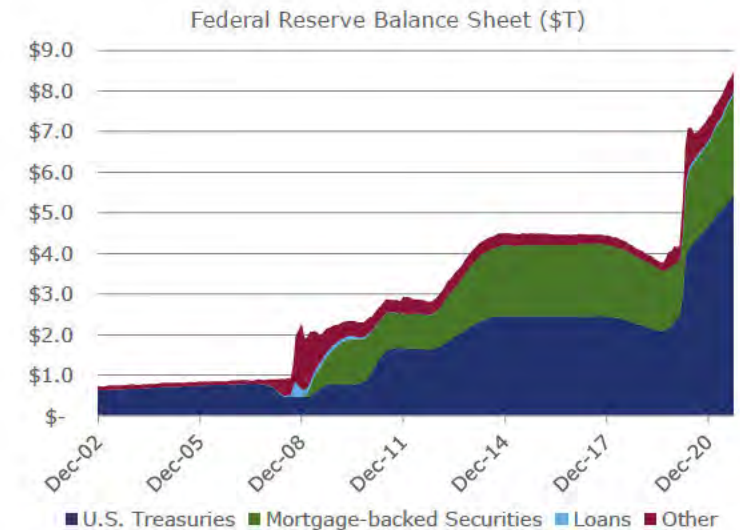
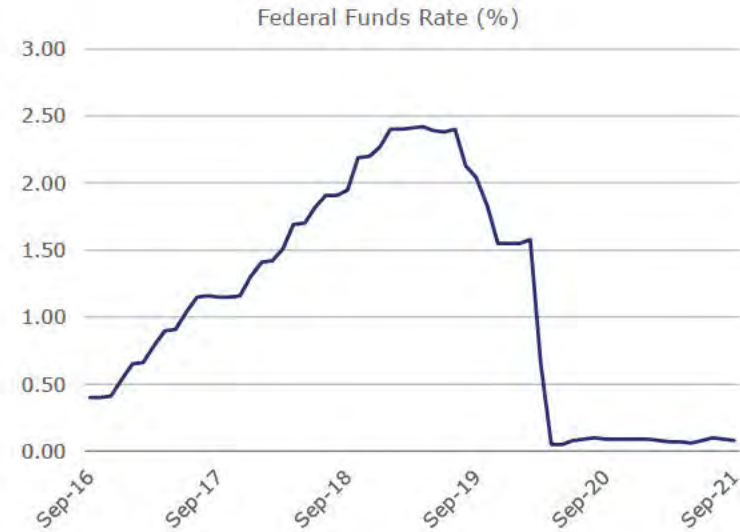


Data Sources: Bloomberg

Federal Reserve

- Current FOMC expectation is for one 25 basis point increase in the Fed-funds rate during 2022
- Federal Reserve has added more than \$4 trillion in assets to their balance sheet during the past 18 months
- 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		\$4,174

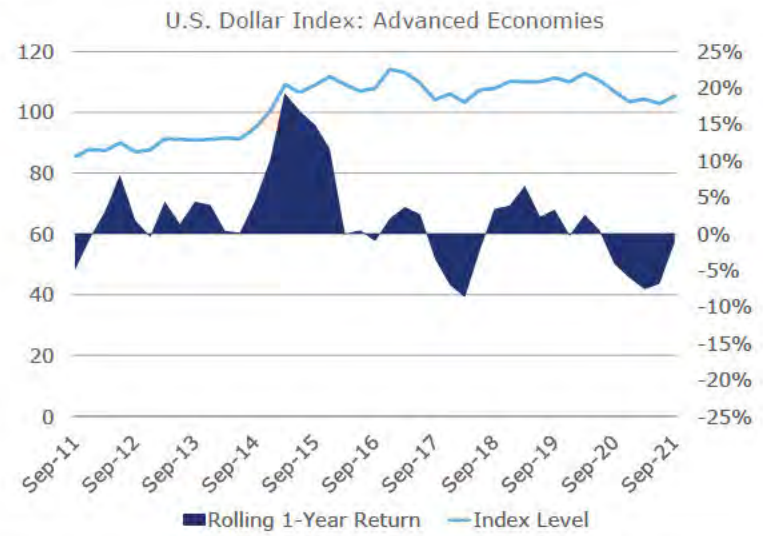
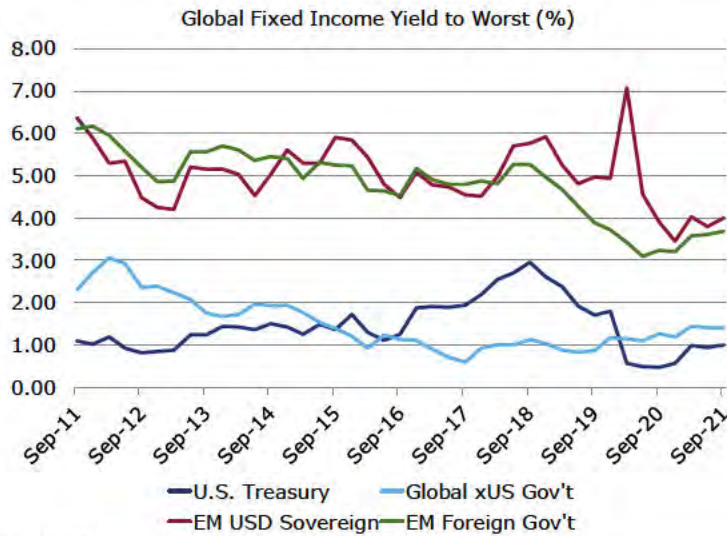


Data Sources: Bloomberg

Non-U.S. Fixed Income

As of 9/30/2021	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
Developed Markets						
Bloomberg Global Aggregate xUS	-1.6	-5.9	-1.2	3.2	1.1	0.9
Bloomberg Global Aggregate xUS *	0.1	-1.5	-0.5	3.9	2.7	3.9
Bloomberg Global Inflation Linked xUS	-0.1	-2.1	4.7	5.8	3.3	3.5
Bloomberg Global Inflation Linked xUS *	2.4	1.4	3.3	6.4	4.1	5.8
Emerging Markets (Hard Currency)						
Bloomberg EM USD Aggregate	-0.5	-1.1	3.3	5.9	4.1	5.7
Emerging Markets (Foreign Currency)						
Bloomberg EM Local Currency Gov't	-1.0	-2.0	4.9	5.0	2.9	2.6
Bloomberg EM Local Currency Gov't *	0.3	-1.0	-0.1	4.4	2.8	3.0
Euro vs. Dollar	-2.3	-5.2	-1.2	-0.1	0.6	-1.4
Yen vs. Dollar	-0.2	-7.2	-5.2	0.7	-1.9	-3.6
Pound vs. Dollar	-2.6	-1.4	4.3	1.1	0.8	-1.4

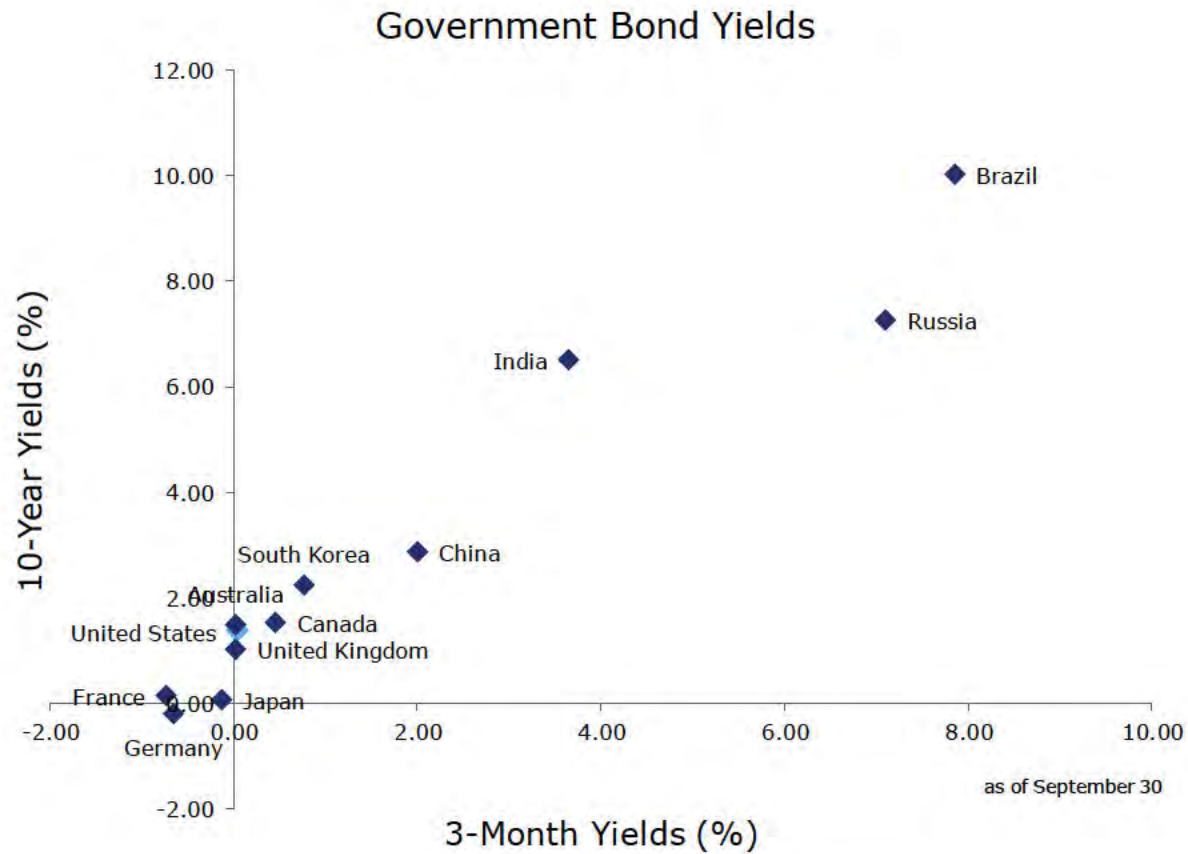
* Returns are reported in terms of local market investors, which removes currency effects.



Data Sources: Bloomberg

Global Interest Rates

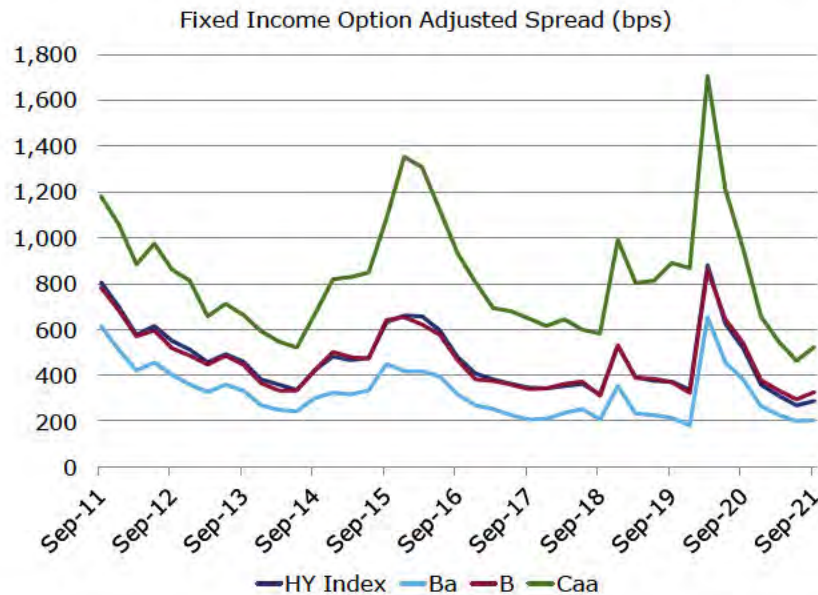
Negative rates found in Germany and France; low but positive rates, and at similar levels, in the U.S., Australia and in the U.K.



Data Sources: Bloomberg

High Yield Bond Market

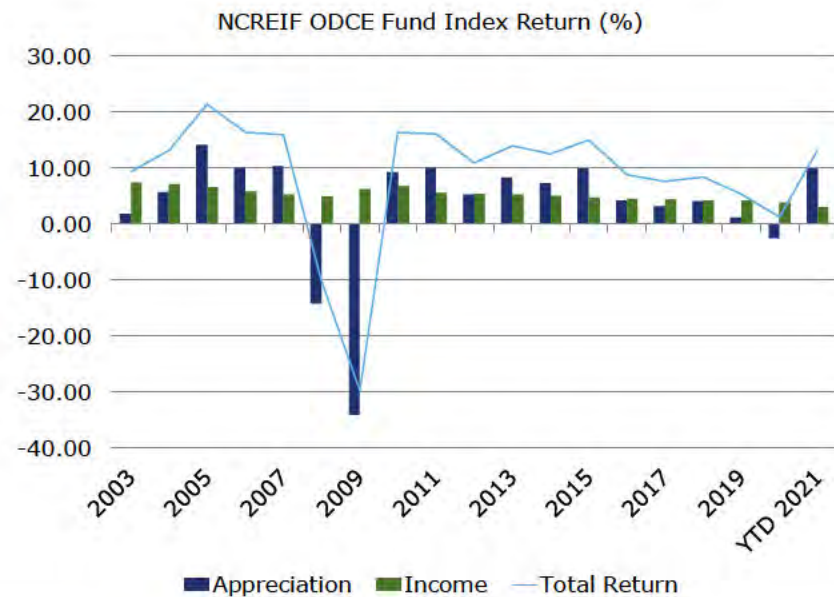
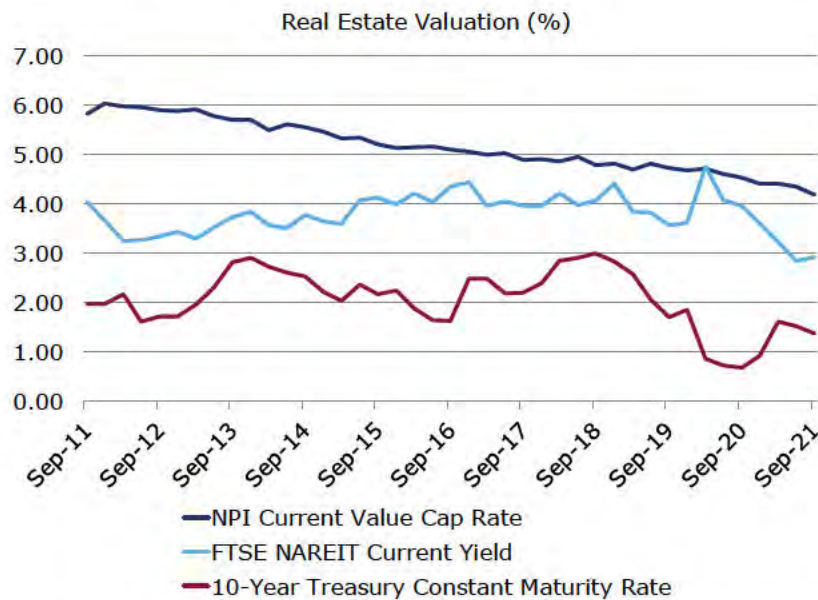
As of 9/30/2021		YTW	QTR	YTD	1 YR	3 YR	5 YR	10 YR
Bloomberg High Yield		4.0	0.9	4.5	11.3	6.9	6.5	7.4
S&P LSTA Leveraged Loan		3.7	1.0	3.2	6.7	3.9	4.3	4.7
High Yield Quality Distribution	Weight							
Ba U.S. High Yield	53.8%	3.2	1.1	3.8	9.7	8.7	6.8	7.5
B U.S. High Yield	34.1%	4.5	0.6	4.0	10.0	6.1	6.0	6.8
Caa U.S. High Yield	11.7%	6.3	0.8	8.0	18.7	3.1	6.1	7.9
Ca to D U.S. High Yield	0.4%	19.0	0.2	29.2	73.3	0.1	10.7	0.9
Non-Rated U.S. High Yield	0.0%	0.0	0.0	0.0	0.0	-0.8	2.2	3.4



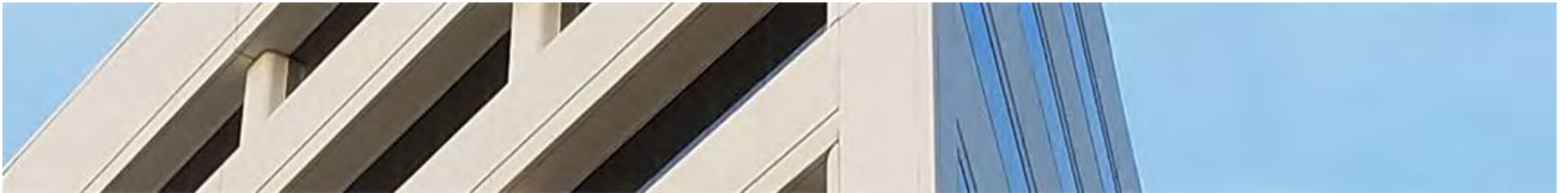
Data Sources: Bloomberg

Real Assets

As of 9/30/2021	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
Bloomberg U.S. TIPS	1.8	3.5	5.2	7.4	4.3	3.1
Bloomberg Commodity Index	6.6	29.1	42.3	6.9	4.5	-2.7
Bloomberg Gold Index	-1.0	-7.9	-8.2	12.1	4.7	-0.1
Wilshire Global RESI Index	0.4	18.5	34.4	8.2	6.2	9.9
NCREIF ODCE Fund Index	6.6	13.1	14.6	7.1	7.5	9.9
NCREIF Timberland Index	1.9	4.4	5.0	2.4	2.9	4.9
FTSE Global Core Infrastructure 50/50	-0.1	7.4	16.7	8.5	7.9	10.0
Alerian Midstream Energy	-1.3	38.9	66.9	3.9	2.4	n.a.
Bitcoin	25.6	49.8	305.7	87.8	135.0	147.0



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

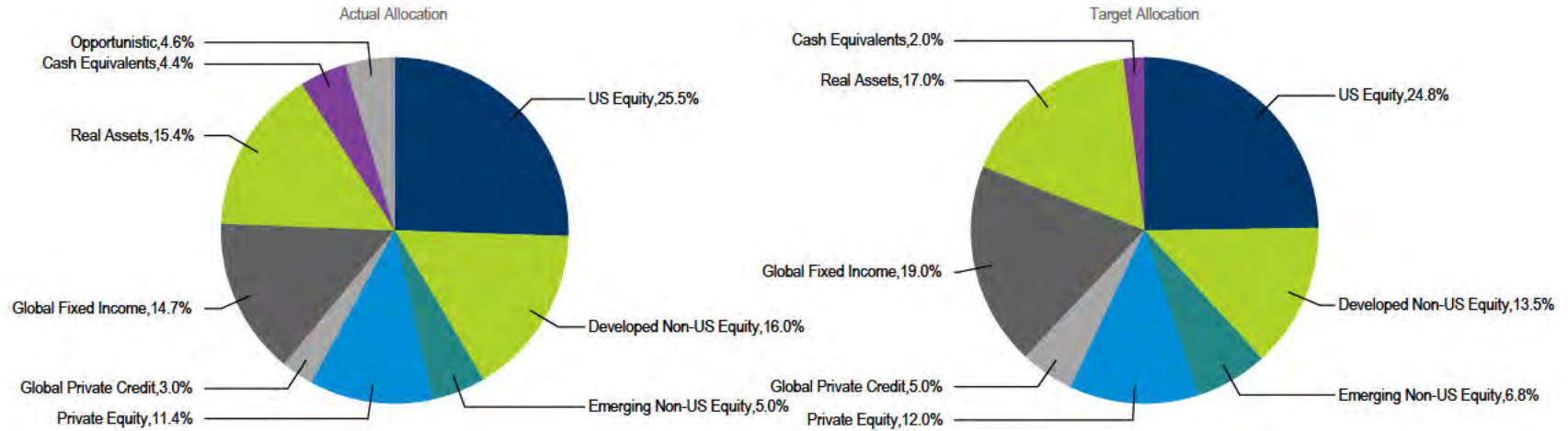


Total Fund

Asset Allocation Compliance

Total Fund

Periods Ended As of September 30, 2021

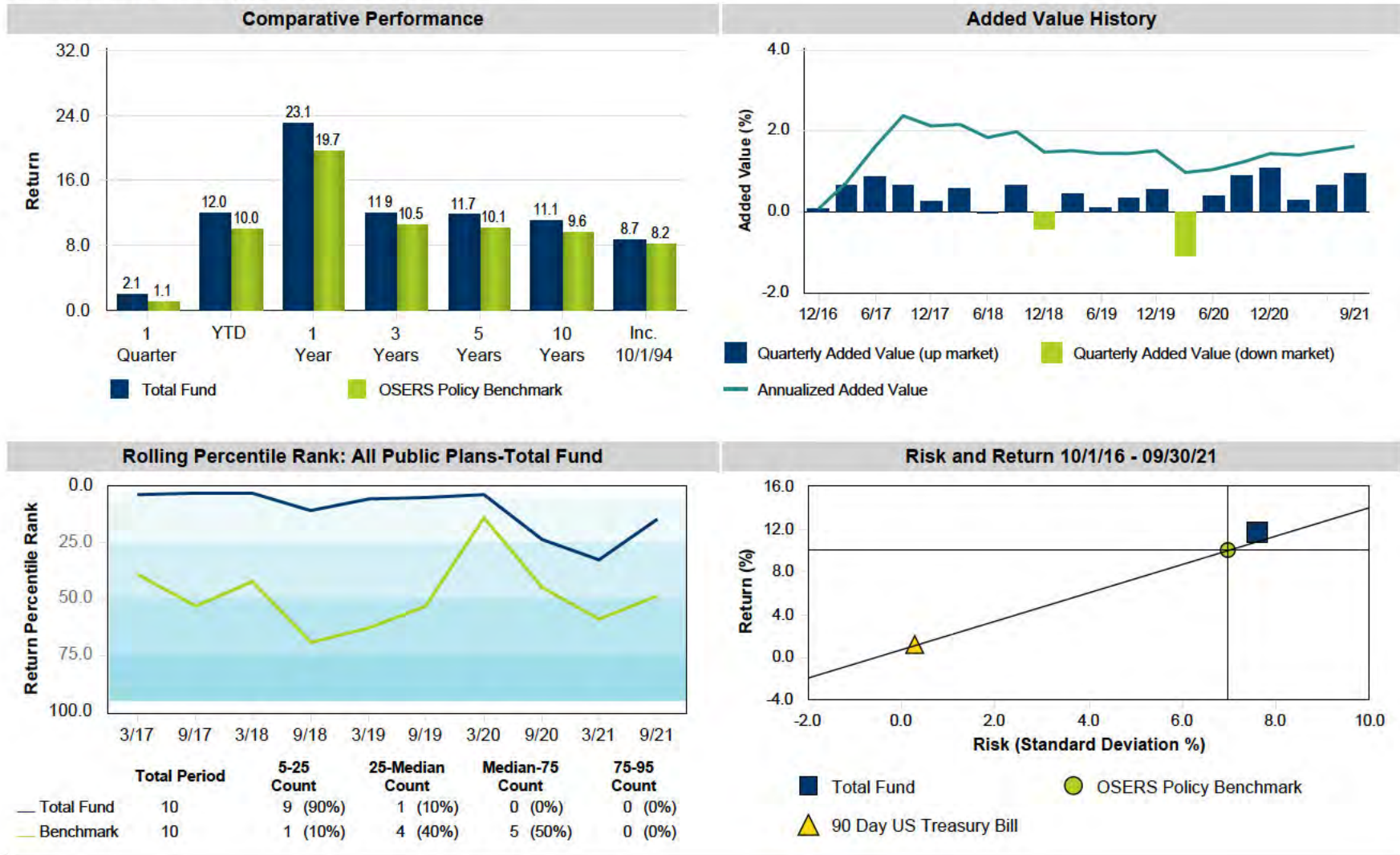


	Asset Allocation \$	Asset Allocation (%)	Target Allocation (%)	Differences (%)
Total Fund	17,959,433,380	100.0	100.0	0.0
■ US Equity	4,582,153,430	25.5	24.8	0.8
■ Developed Non-US Equity	2,869,374,179	16.0	13.5	2.5
■ Emerging Non-US Equity	905,155,971	5.0	6.8	-1.7
■ Private Equity	2,049,350,207	11.4	12.0	-0.6
■ Global Private Credit	536,853,989	3.0	5.0	-2.0
■ Global Fixed Income	2,635,577,704	14.7	19.0	-4.3
■ Real Assets	2,762,719,156	15.4	17.0	-1.6
■ Cash Equivalents	789,728,189	4.4	2.0	2.4
■ Opportunistic	828,520,555	4.6	0.0	4.6

Composite Performance Summary

Total Fund

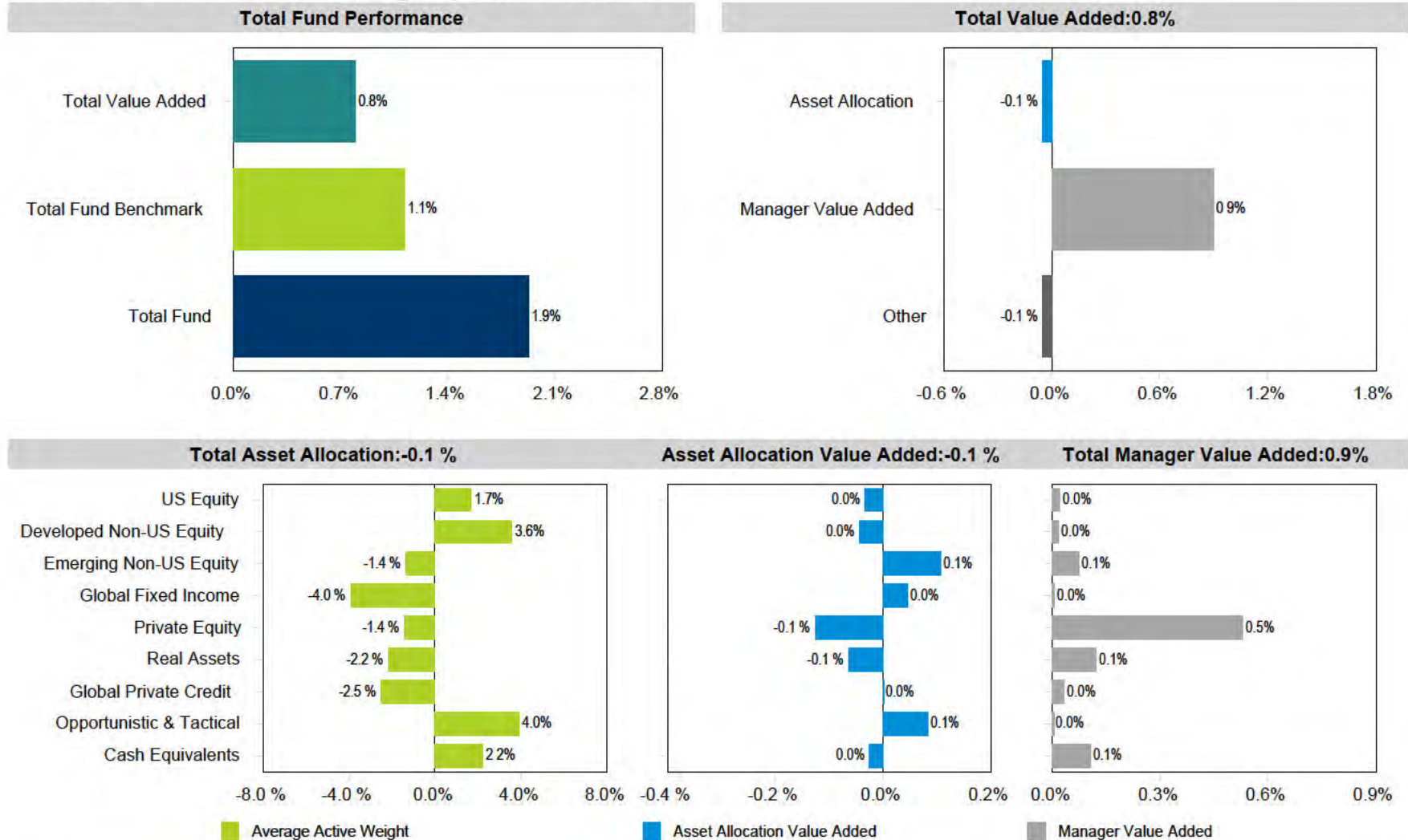
Periods Ended September 30, 2021



Total Fund Attribution

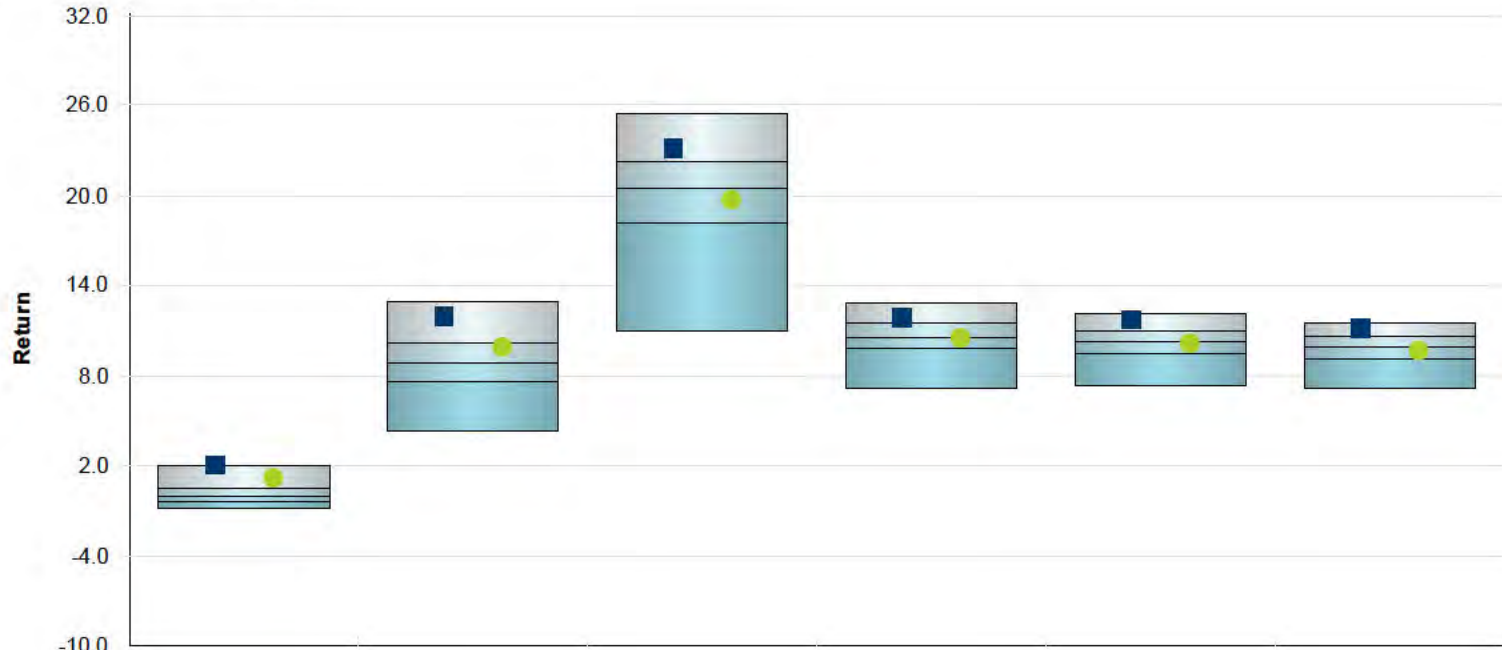
Total Fund

Periods Ended 1 Quarter Ending September 30, 2021



Plan Sponsor Peer Group Analysis

Total Fund vs All Public Plans-Total Fund
 Periods Ended September 30, 2021

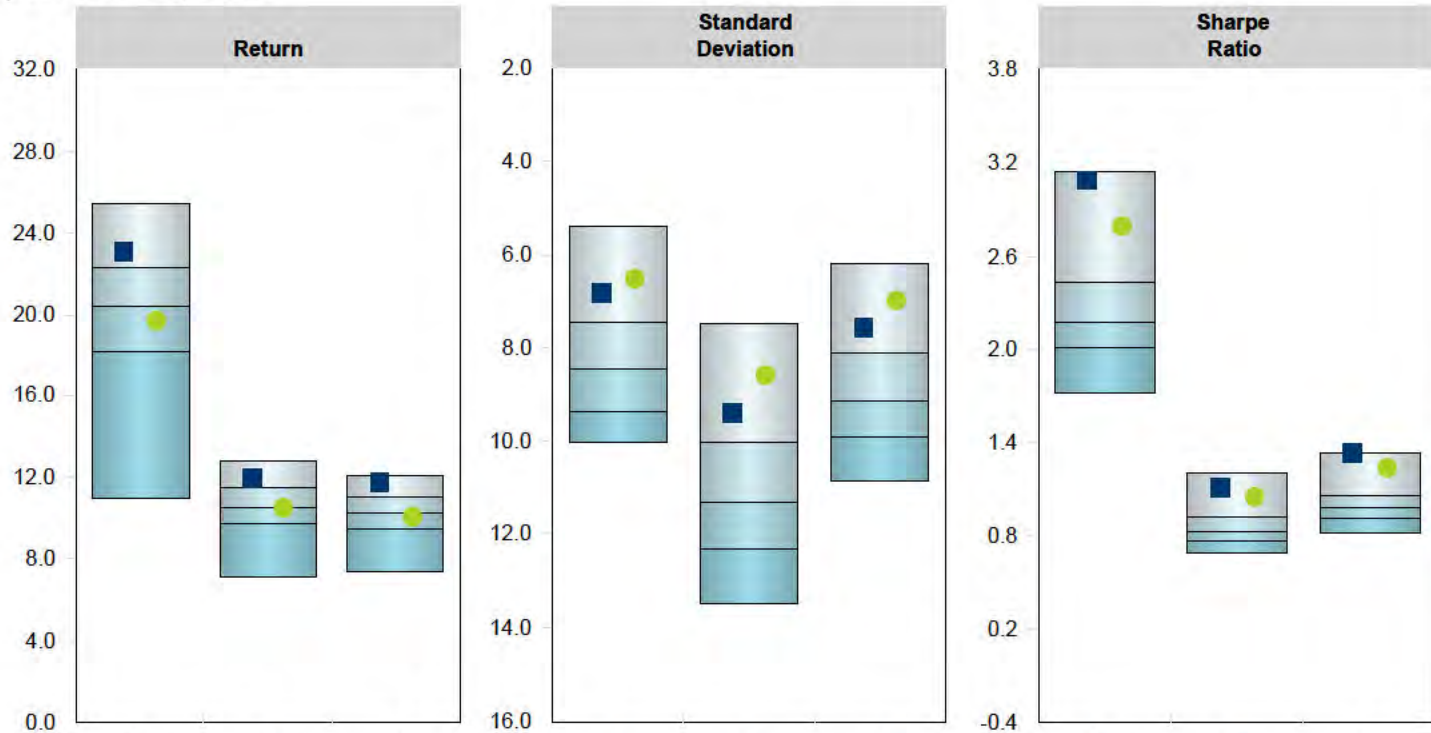


	QTD	YTD	1 Year	3 Years	5 Years	10 Years
■ Total Fund	2.05 (6)	11.98 (9)	23.11 (19)	11.91 (15)	11.73 (10)	11.14 (10)
● OSERS Policy Benchmark	1.13 (12)	9.97 (27)	19.69 (62)	10.52 (49)	10.11 (55)	9.62 (59)
5th Percentile	2.05	12.96	25.43	12.81	12.14	11.49
1st Quartile	0.39	10.12	22.25	11.47	11.05	10.61
Median	-0.06	8.84	20.45	10.49	10.24	9.92
3rd Quartile	-0.41	7.66	18.15	9.73	9.44	9.10
95th Percentile	-0.84	4.29	10.95	7.17	7.38	7.17
Population	440	440	440	428	410	362

Parentheses contain percentile rankings.
 Calculation based on monthly periodicity.
 Gross of Fees

Plan Sponsor Peer Group Analysis - Multi Statistics

Total Fund vs All Public Plans-Total Fund
 Periods Ended September 30, 2021



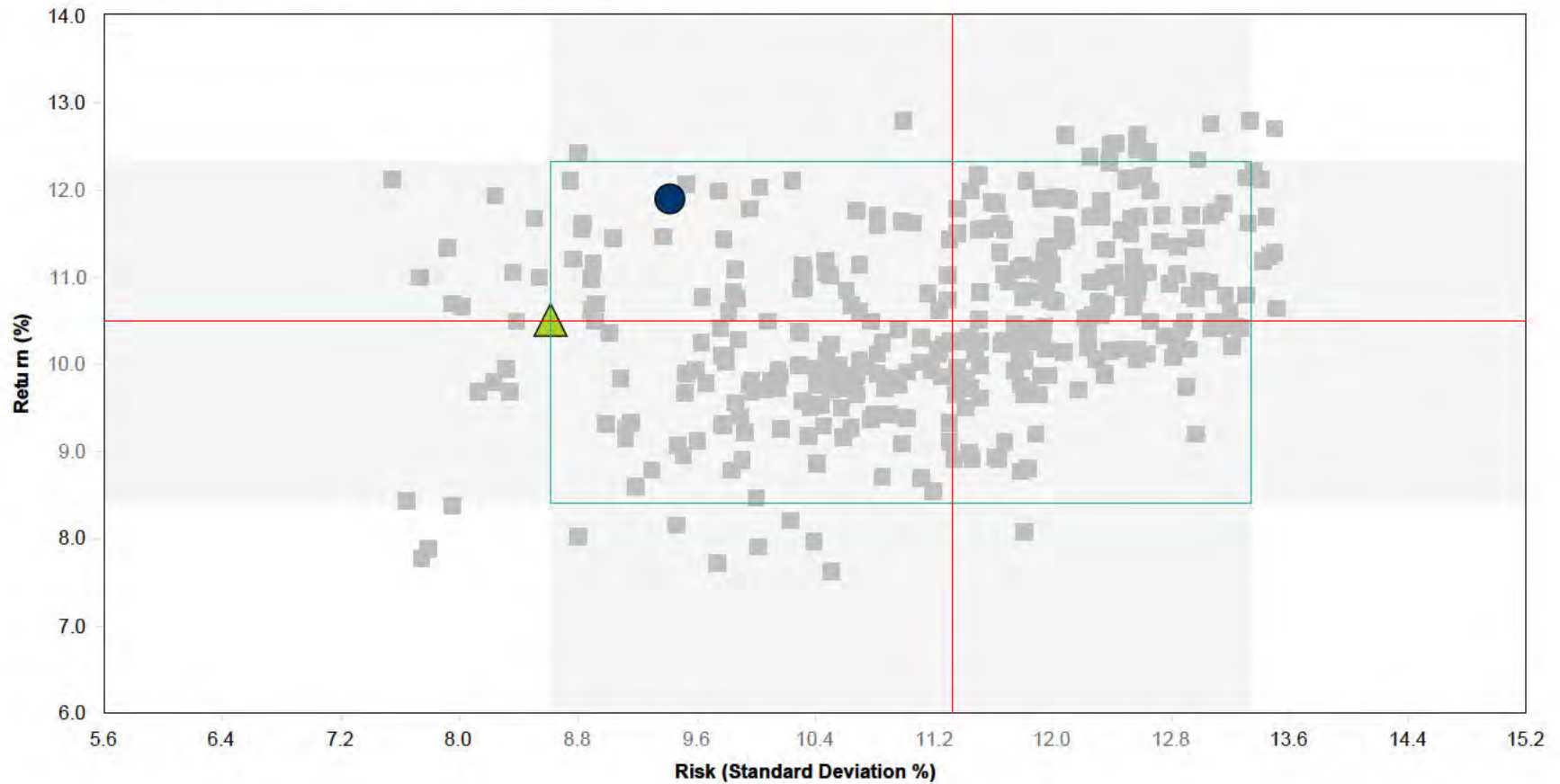
	1 Year	3 Years	5 Years	1 Year	3 Years	5 Years	1 Year	3 Years	5 Years
■ Total Fund	23.11 (19)	11.91 (15)	11.73 (10)	6.85 (16)	9.42 (16)	7.59 (14)	3.09 (7)	1.11 (10)	1.34 (4)
● OSERS Policy Benchmark	19.69 (62)	10.52 (49)	10.11 (55)	6.52 (11)	8.61 (10)	6.98 (9)	2.80 (10)	1.06 (12)	1.24 (8)
5th Percentile	25.43	12.81	12.14	5.39	7.50	6.23	3.14	1.20	1.33
1st Quartile	22.25	11.47	11.05	7.44	10.02	8.14	2.43	0.92	1.06
Median	20.45	10.49	10.24	8.48	11.33	9.15	2.18	0.83	0.97
3rd Quartile	18.15	9.73	9.44	9.37	12.35	9.90	2.01	0.77	0.92
95th Percentile	10.95	7.17	7.38	10.04	13.52	10.85	1.71	0.69	0.81

Parentheses contain percentile rankings.
 Calculation based on monthly periodicity.
 Gross of Fees

Plan Sponsor Scattergram

Total Fund vs All Public Plans-Total Fund

Periods Ended October 1, 2018 To September 30, 2021



	Return	Standard Deviation
● Total Fund	11.91	9.42
▲ OSERS Policy Benchmark	10.52	8.61
— Median	10.49	11.33

Calculation based on monthly periodicity.
Gross of Fees

Asset Allocation & Performance

Total Fund

Periods Ended September 30, 2021

	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	17,959,433	100.00	1.93	11.52	1.93	22.50	11.27	11.07	10.45	7.44	8.16	10/1/1994
OSERS Policy Benchmark			1.13	9.97	1.13	19.69	10.52	10.11	9.62	7.43	8.20	
Value Added			0.80	1.55	0.80	2.81	0.75	0.96	0.83	0.01	-0.04	
Global Equity	8,356,684	46.53	-0.99	11.25	-0.99	29.21	13.26	13.59	12.73		8.51	7/1/2002
Global Equity Benchmark			-1.46	10.78	-1.46	28.33	12.14	12.99	12.20		8.15	
Value Added			0.47	0.47	0.47	0.88	1.12	0.60	0.53		0.36	
US Equity	4,582,153	25.51	-0.03	13.81	-0.03	29.81	15.47	16.24	16.36	9.49	10.37	10/1/1994
Russell 3000 Index			-0.10	14.99	-0.10	31.88	16.00	16.85	16.60	9.85	10.74	
Value Added			0.07	-1.18	0.07	-2.07	-0.53	-0.61	-0.24	-0.36	-0.37	
Developed Non-US Equity	2,869,374	15.98	-0.56	10.85	-0.56	29.94	9.92	10.54	9.60		7.19	7/1/2002
MSCI World ex-US (Net)			-0.66	9.19	-0.66	26.50	7.87	8.88	7.88		6.66	
Value Added			0.10	1.66	0.10	3.44	2.05	1.66	1.72		0.53	
Emerging Non-US Equity	905,156	5.04	-6.87	1.49	-6.87	24.47	14.32	12.17	7.32	12.67	7.49	7/1/1997
MSCI Emerging Markets (Net)			-8.09	-1.25	-8.09	18.20	8.58	9.23	6.09	10.97	5.87	
Value Added			1.22	2.74	1.22	6.27	5.74	2.94	1.23	1.70	1.62	
Private Equity	2,049,350	11.41	13.87	37.39	13.87	55.77	21.97	21.66	18.48	9.81	13.49	10/1/1994
Global PE Benchmark			8.85	36.95	8.85	50.57	20.68	18.85	16.17	11.59	13.39	
Value Added			5.02	0.44	5.02	5.20	1.29	2.81	2.31	-1.78	0.10	
Global Private Credit	536,854	2.99	2.28	11.56	2.28	16.17					15.88	7/1/2020
Global Private Credit Benchmark			1.14	3.48	1.14	4.68					4.70	
Value Added			1.14	8.08	1.14	11.49					11.18	

Asset Allocation & Performance

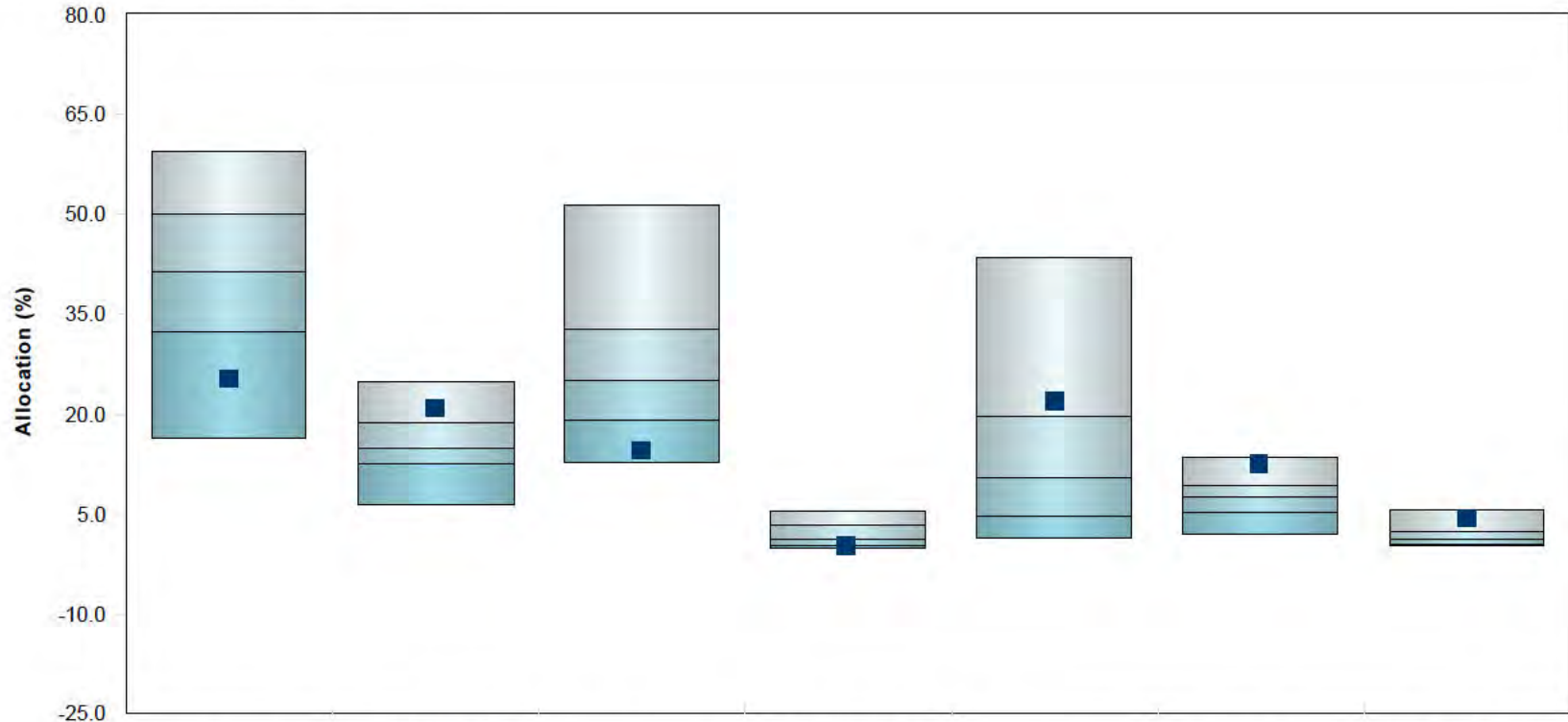
Total Fund

Periods Ended September 30, 2021

	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 Fixed Income Blmbg. U.S. Aggregate Value Added	2,635,578	14.68	0.07 0.05 0.02	-0.65 -1.56 0.91	0.07 0.05 0.02	1.97 -0.90 2.87	6.68 5.35 1.33	4.09 2.94 1.15	4.25 3.01 1.24	5.24 4.33 0.91	6.02 5.38 0.64	10/1/1994
Cash Equivalents 90 Day US Treasury Bill Value Added	789,728	4.40	2.49 0.02 2.47	4.74 0.04 4.70	2.49 0.02 2.47	-3.27 0.07 -3.34	2.31 1.18 1.13	1.97 1.15 0.82	1.27 0.61 0.66		1.81 1.25 0.56	7/1/2002
Real Assets Real Assets Benchmark Value Added	2,762,719	15.38	4.41 3.59 0.82	9.79 6.58 3.21	4.41 3.59 0.82	11.70 7.37 4.33	7.89 5.50 2.39	8.32 6.13 2.19	10.09 8.79 1.30	6.48 8.47 -1.99	7.52 9.22 -1.70	10/1/1994
Opportunistic Opportunistic Benchmark Value Added	828,521	4.61	2.97 0.55 2.42	17.70 -0.08 17.78	2.97 0.55 2.42	23.81 1.08 22.73	6.47 3.25 3.22	9.65 5.71 3.94			7.64 6.11 1.53	6/1/2013

Plan Sponsor TF Asset Allocation

Total Fund vs All Public Plans-Total Fund
 Periods Ended September 30, 2021



	US Equity	Global ex-US Equity	US Fixed	Global ex-US Fixed	Alternatives*	Real Estate	Cash & Equivalents
■ Total Fund	25.51	21.02	14.24	0.44	23.05	11.34	4.40
5th Percentile	59.65	24.75	51.28	5.39	43.52	13.64	5.70
1st Quartile	50.04	18.77	32.73	3.34	19.68	9.37	2.30
Median	41.47	14.89	25.02	1.26	10.43	7.62	1.13
3rd Quartile	32.46	12.46	19.18	0.27	4.69	5.30	0.59
95th Percentile	16.37	6.55	12.73	0.03	1.59	2.15	0.10

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*Alternatives includes Global Private Equity, Global Private Credit, Private Infrastructure and Opportunistic & Tactical Investments

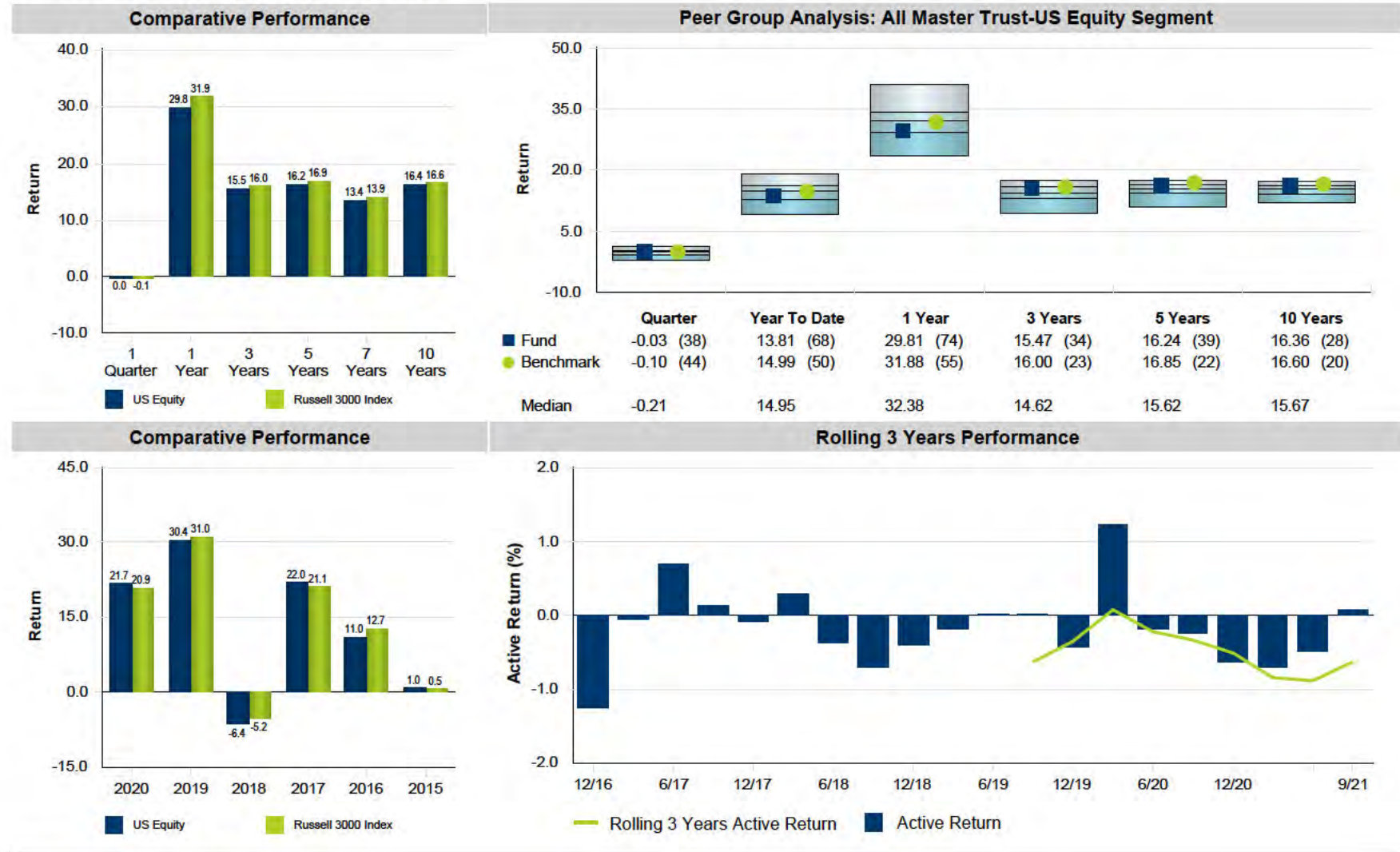


U.S. Equity

Performance Summary

US Equity

Periods Ended September 30, 2021

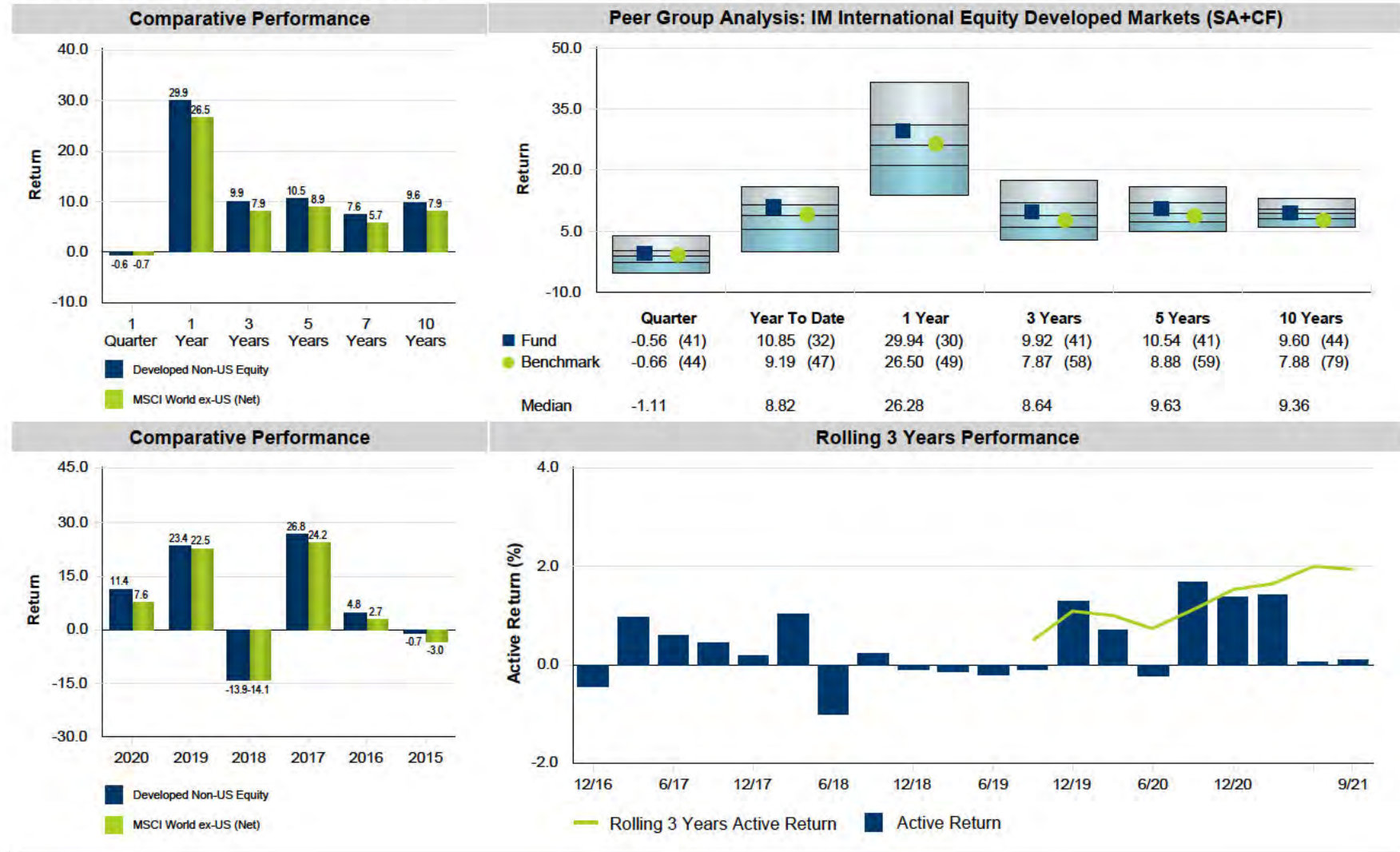




Developed Non-U.S. Equity

Performance Summary

Developed Non-US Equity
 Periods Ended September 30, 2021



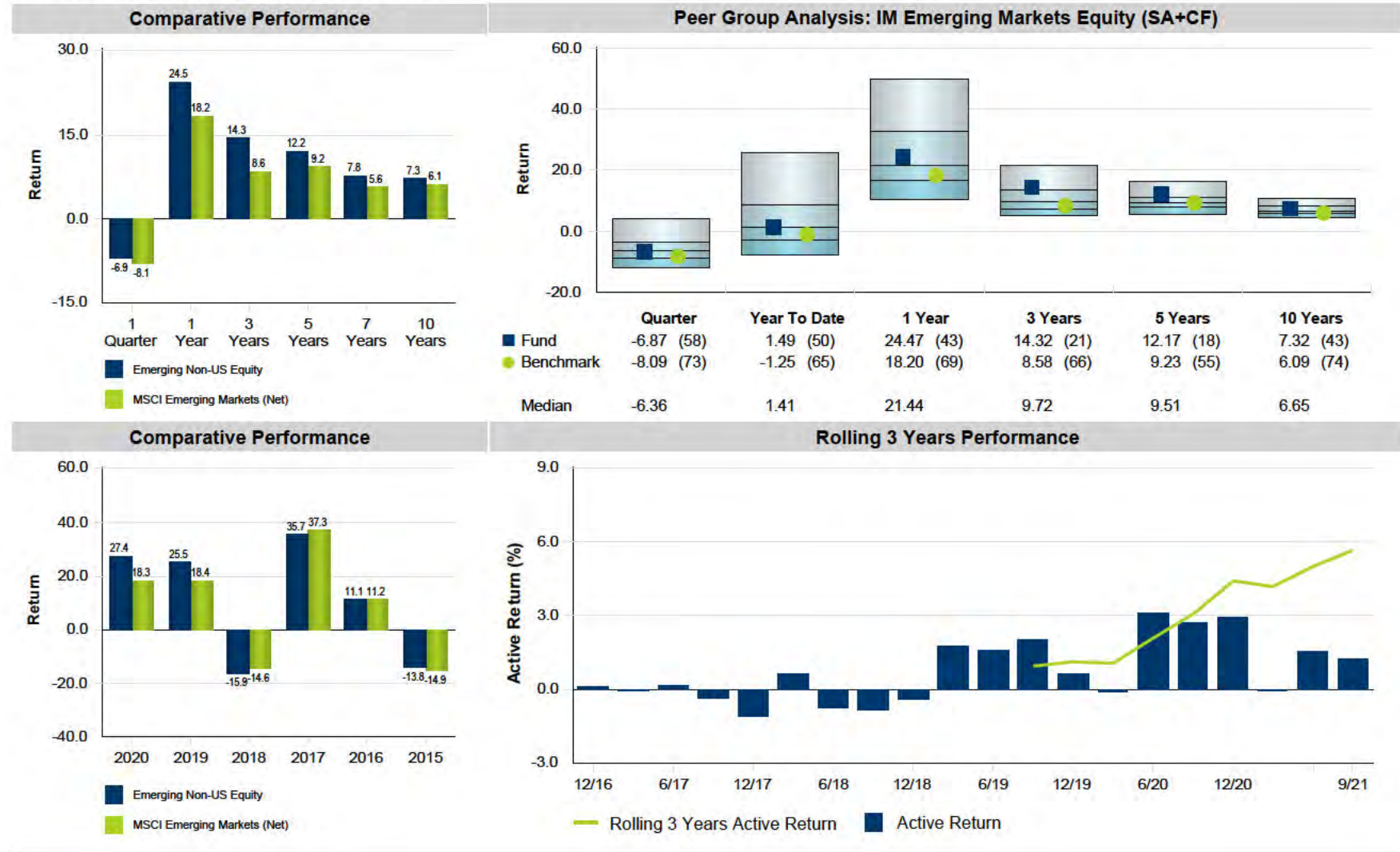


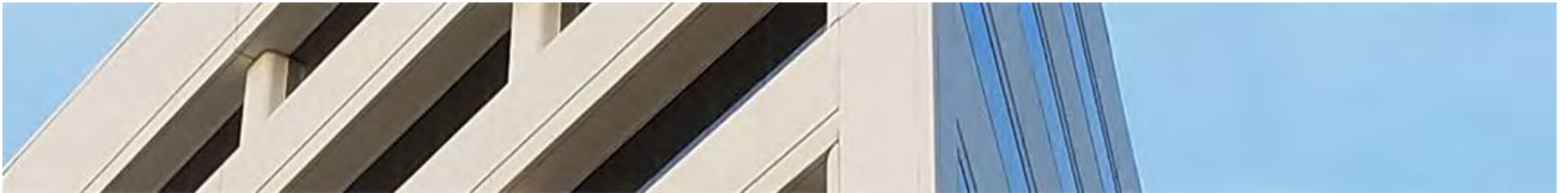
Emerging Markets Equity

Performance Summary

Emerging Non-US Equity

Periods Ended September 30, 2021



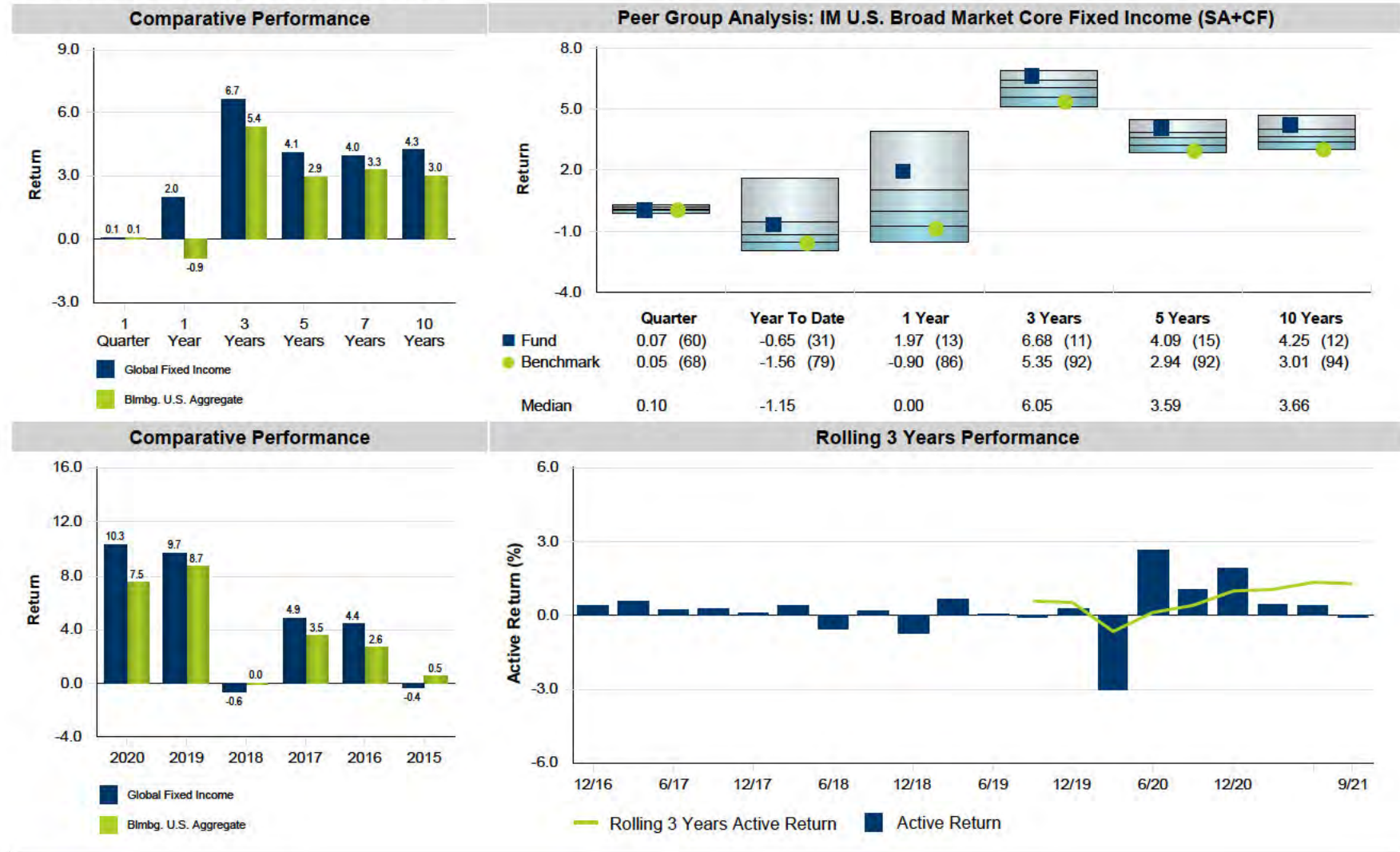


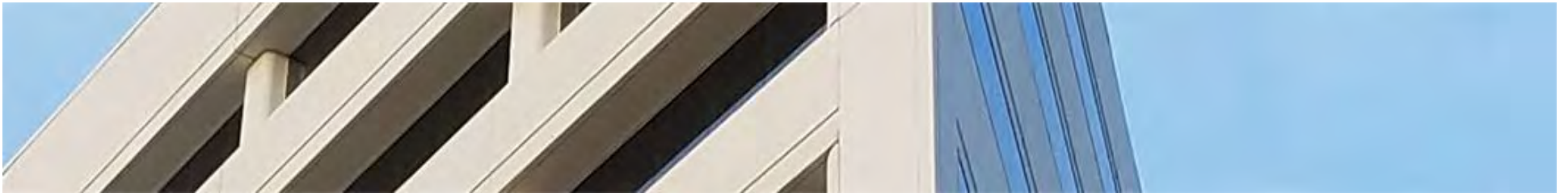
Global Fixed Income

Performance Summary

Global Fixed Income

Periods Ended September 30, 2021



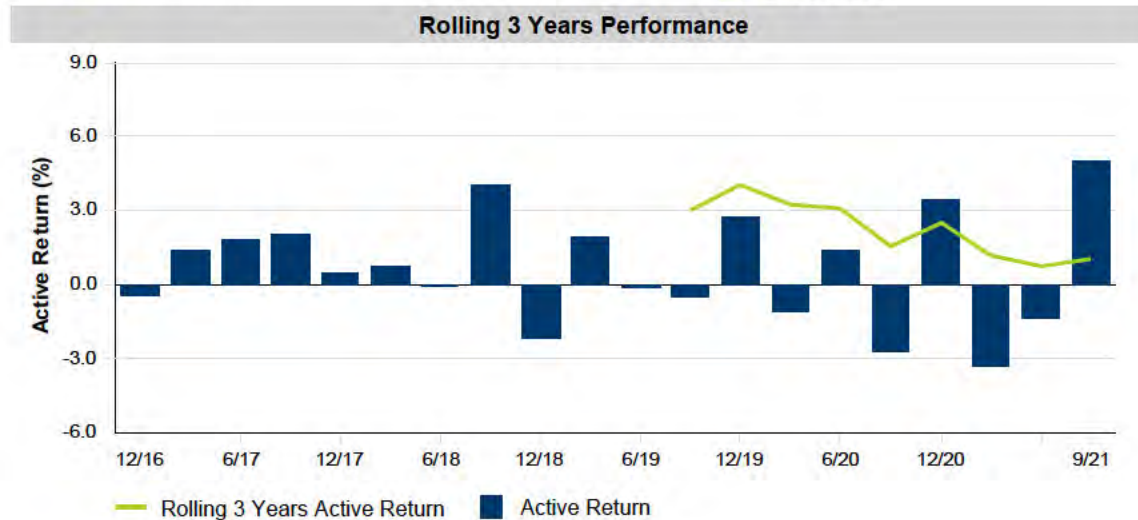
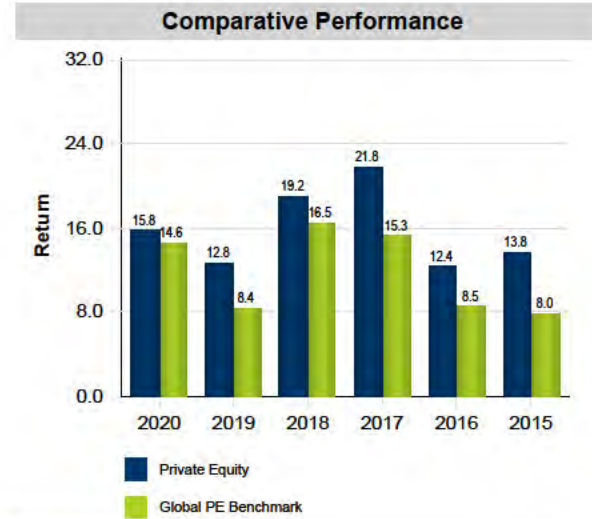
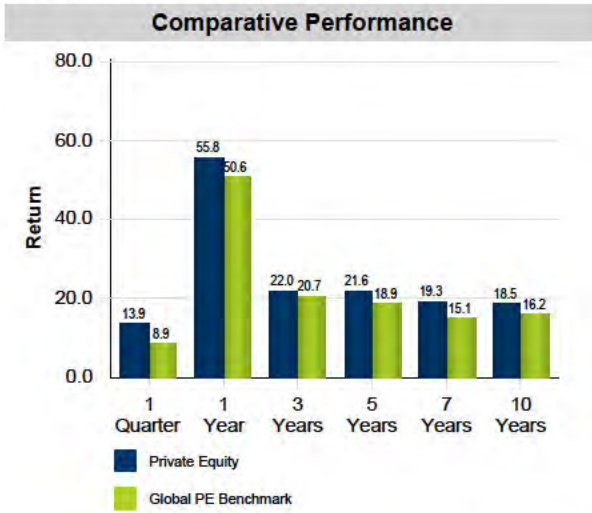


Global Private Equity

Performance Summary

Global Private Equity

Periods Ended September 30, 2021



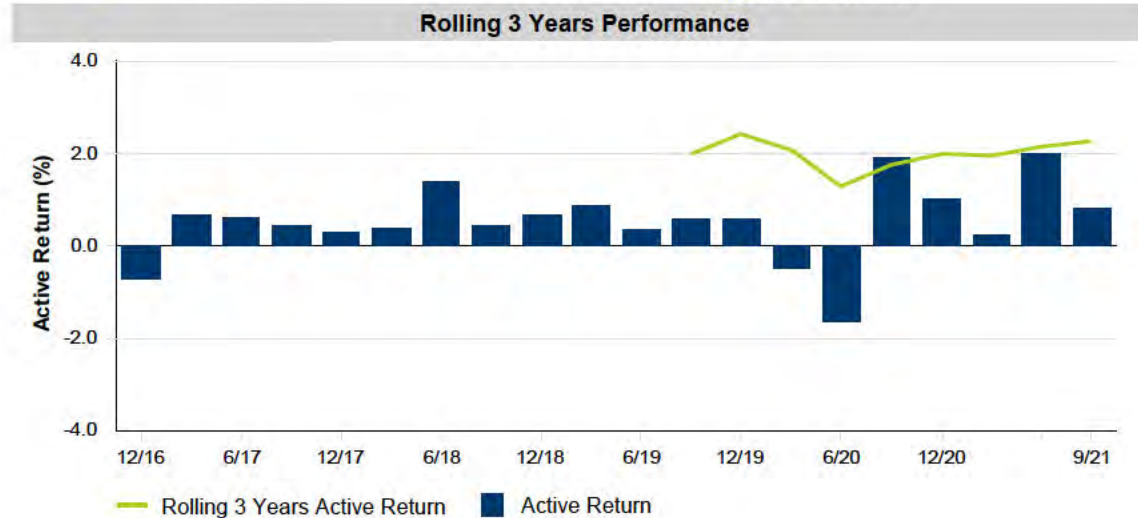
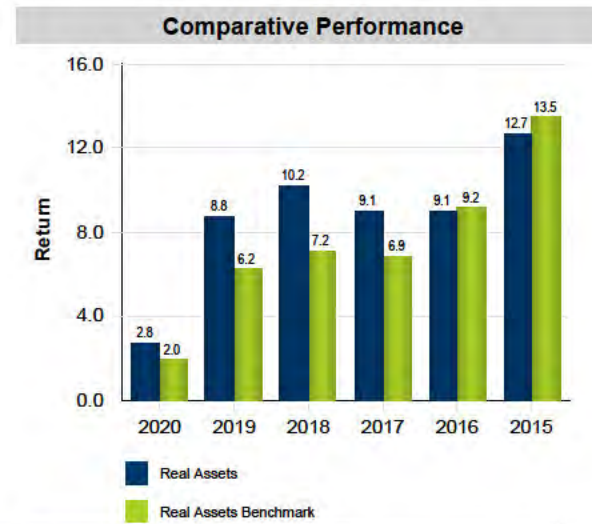
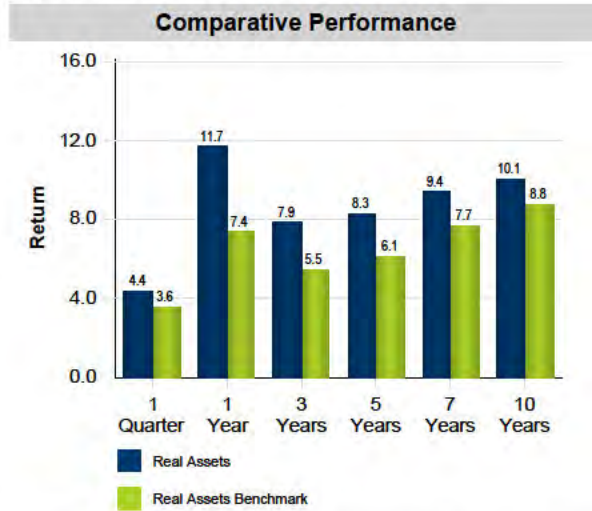


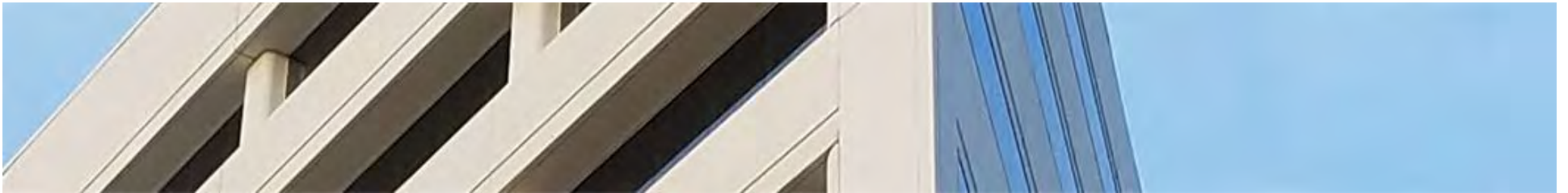
Global Real Assets

Performance Summary

Global Real Assets

Periods Ended September 30, 2021



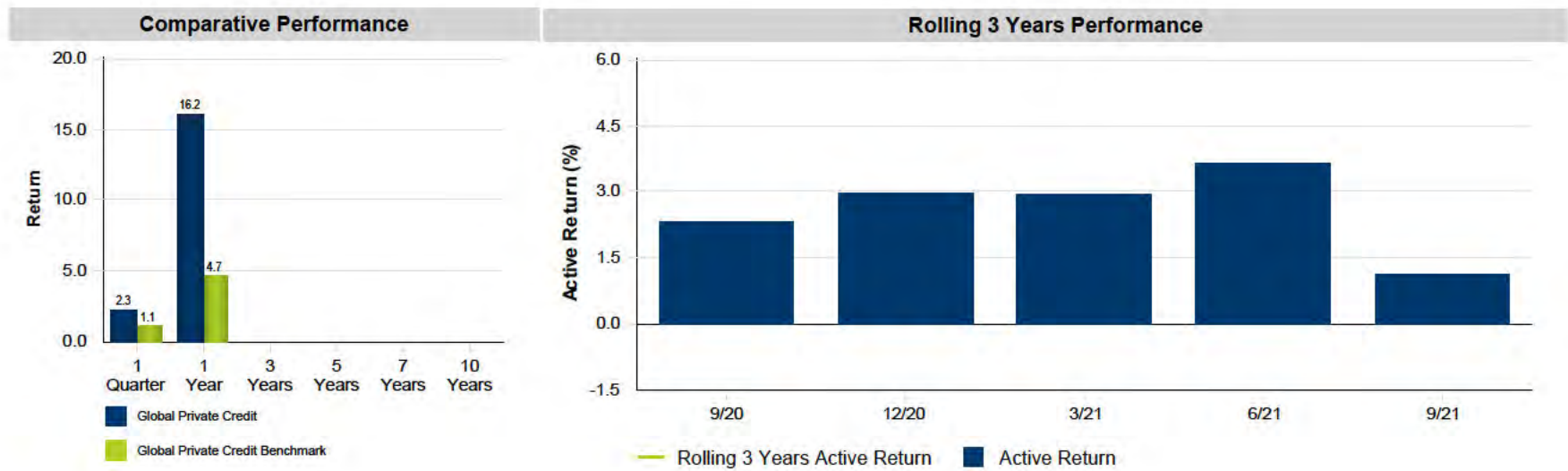


Global Private Credit

Performance Summary

Global Private Credit

Periods Ended September 30, 2021



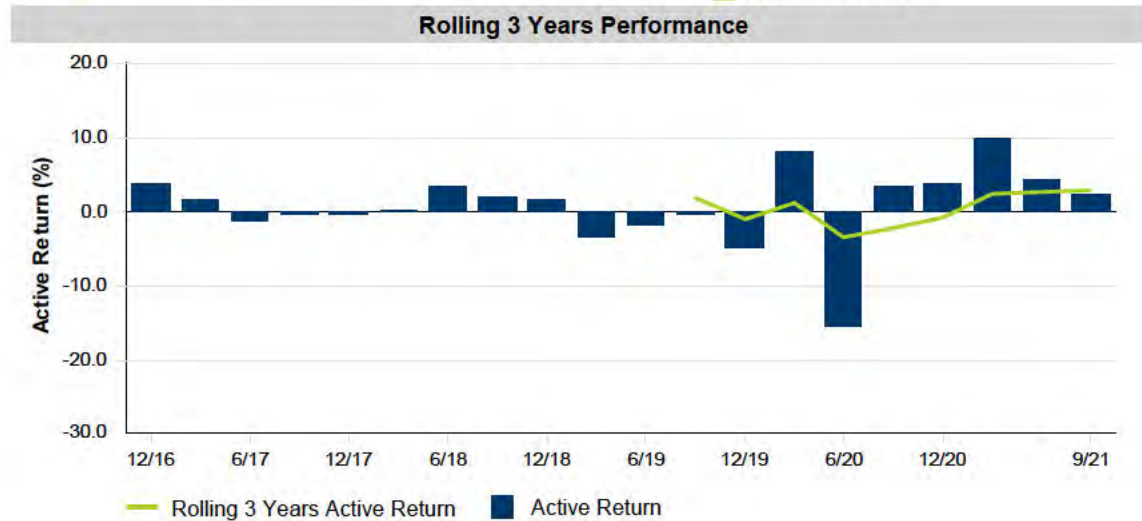
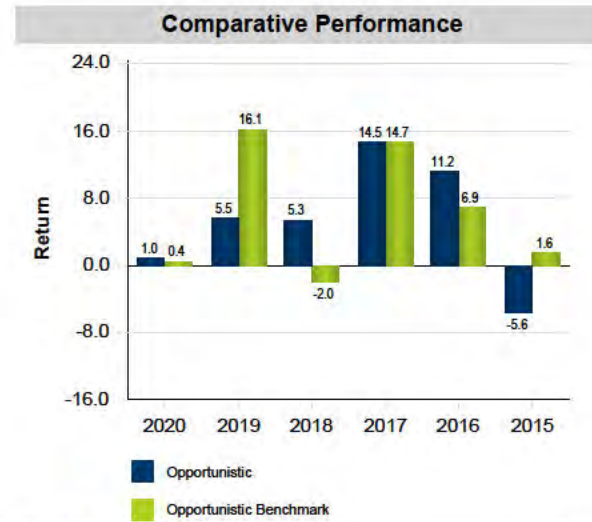
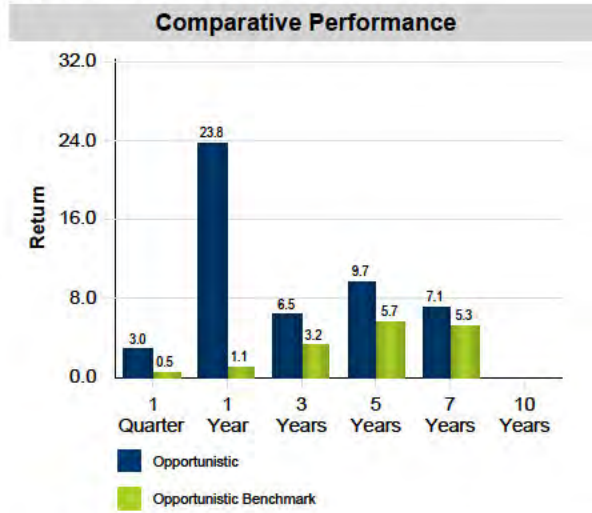


Opportunistic & Tactical

Performance Summary

Opportunistic & Tactical

Periods Ended September 30, 2021





Ohio SERS Investment Report

Quarterly Report to the Board

For the period ending: September 30, 2021

Prepared by Investment and IAD Staff

Farouki Majeed, Chief Investment Officer

Meeting Date: November 2021



Investment Agenda

- Annual Portfolio Review – Fixed Income
- Wilshire Quarterly Performance Report (September 30, 2021)
- Quarterly Investment Report (September 30, 2021)



Economic and Financial Market Outlook

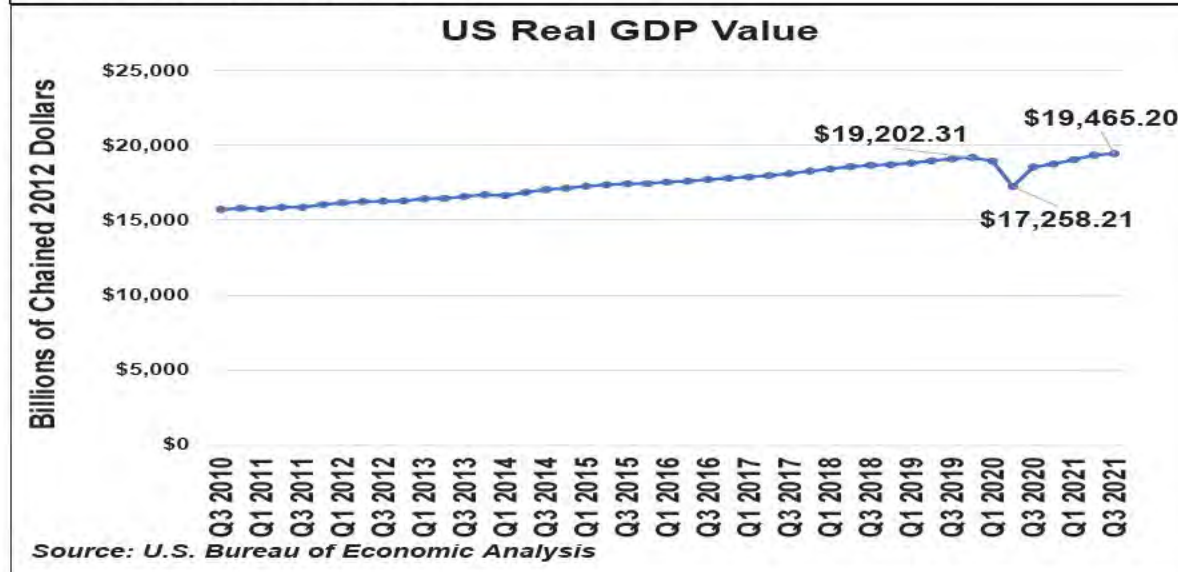
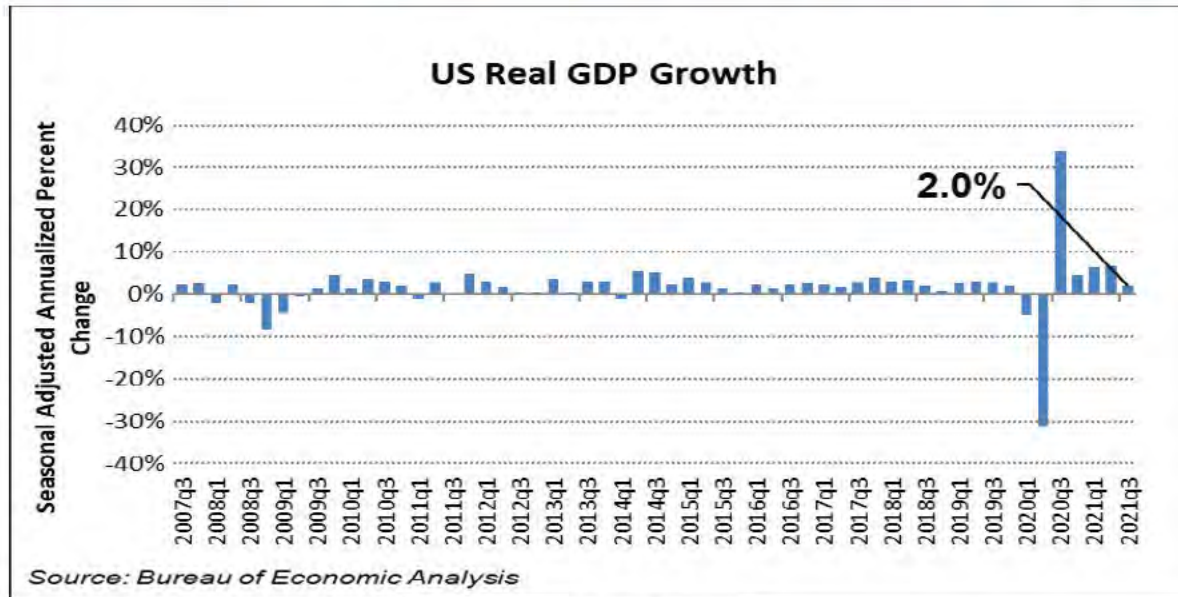
- US economy slowed significantly to 2% in Q3 due to supply chain disruptions and a Covid-19 resurgence; Blue Chip Consensus forecasted a stronger growth in Q4, at 5.3% as supply constraints and Covid cases are expected to ease. *(Source: Bureau of Economic Analysis and Blue Chip Economic Indicators)*
- US labor market added 194,000 jobs in September. The unemployment rate was down to 4.8%; however, the September labor force participation rate at 61.6% was 1.7% lower than the level prior to the coronavirus pandemic. *(Sources: Bureau of Labor Statistics and Department of Labor)*
- The US inflation remained relatively high. The September headline and core inflation rates were 5.4% and 4.0%, respectively. The energy index increased 24.8% while the food index was up 4.6% for the last 12 months. Supply constraints, labor shortage, commodity price increase combined with demand surge are major contributors to the inflation hike. Blue Chip Consensus projected headline inflation to stay above 5% in Q4 then decline to 4.9% and 3.4% in Q1 and Q2 next year. *(Source: Bureau of Labor Statistics and Blue Chip Economic Indicators)*
- The 10-year Treasury nominal yield increased to 1.5% in September. The 10-year real yield remained in a deep negative level of (3.9%).
- The house prices continued to rise with a gain of 0.9% for the month of August. The annual increase of the S&P Case-Shiller 20-City home price index was 19.7%, slightly lower than the peak level 20% last July.
- The Consumer Sentiment Index released by Thomson Reuters and University of Michigan improved slightly to 72.8, though staying significantly below the historical average. The US Economic Surprise index improved but remained at a sub-zero level of (33.2). The Leading Economic Index (LEI) issued by the Conference Board continued its upward trend, reaching 117.5 in September.
- The US manufacturing PMI strengthened further to 61.1 while the global reading stayed at a moderate level of 54.1. The global economic recovery continued, although challenged by worldwide supply disruptions, material and labor shortages. *(Source: Institute for Supply Management, Markit).*
- Equity markets were down in September. The US and Non-US developed markets returned (4.49%) and (2.87%), respectively; the emerging markets were down 3.97%. The market valuation declined from the recent high, although remaining rich by major indicators.
- The US fixed income market, Bloomberg Barclay's US Aggregate Bond Index, was down 0.87% for September.

Notes: Acronym – PMI – Purchasing-Managers' Index



ECONOMY

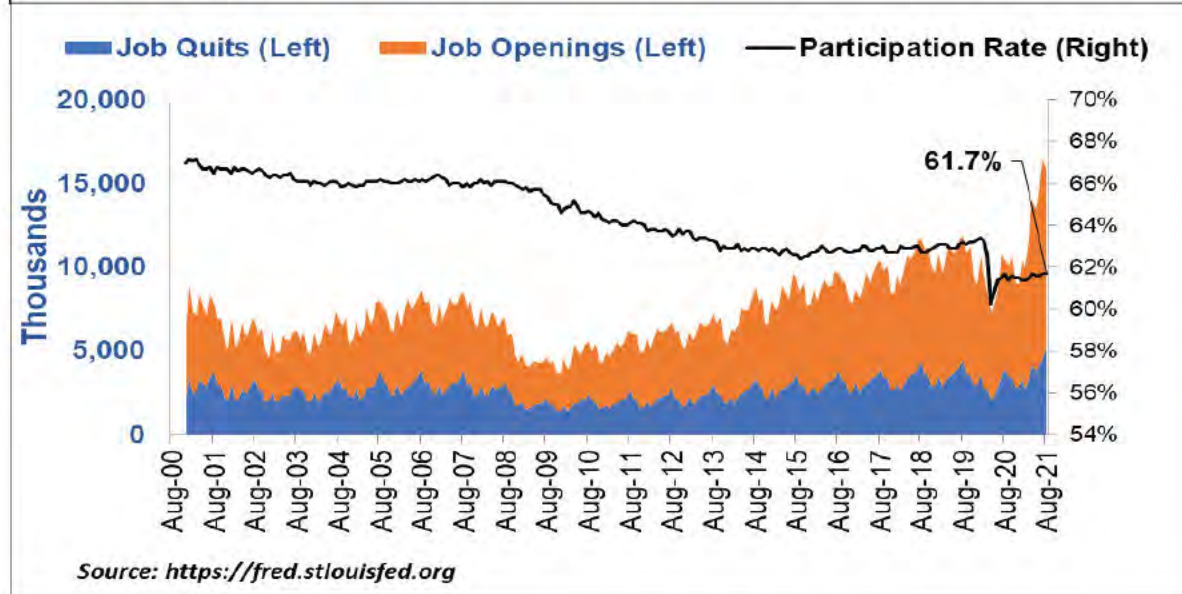
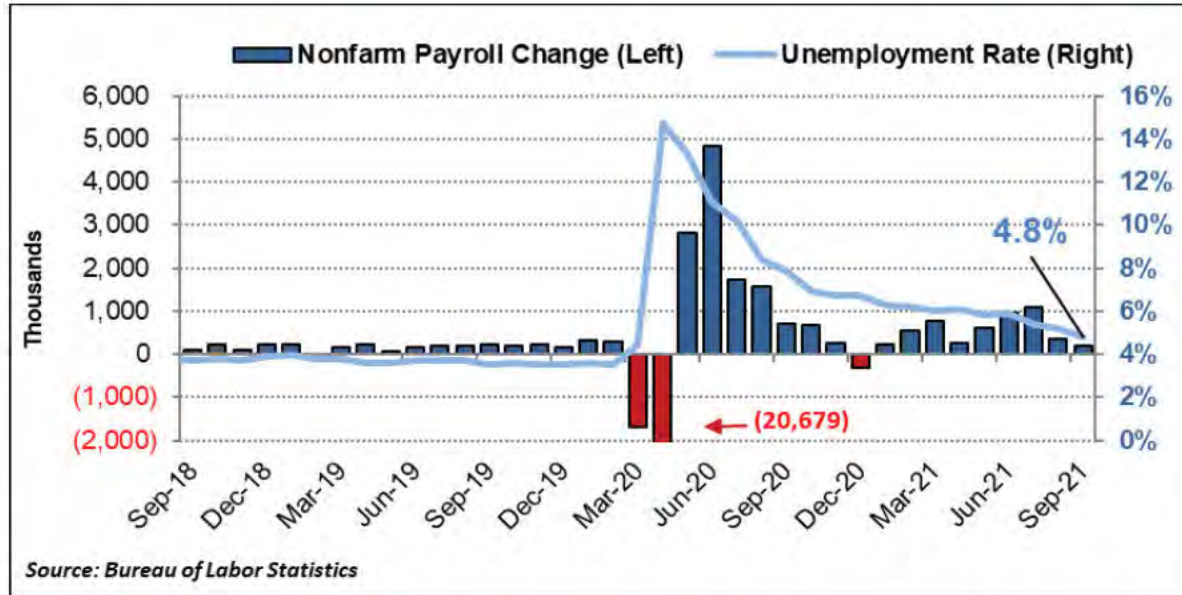
US Real Gross Domestic Product





ECONOMY

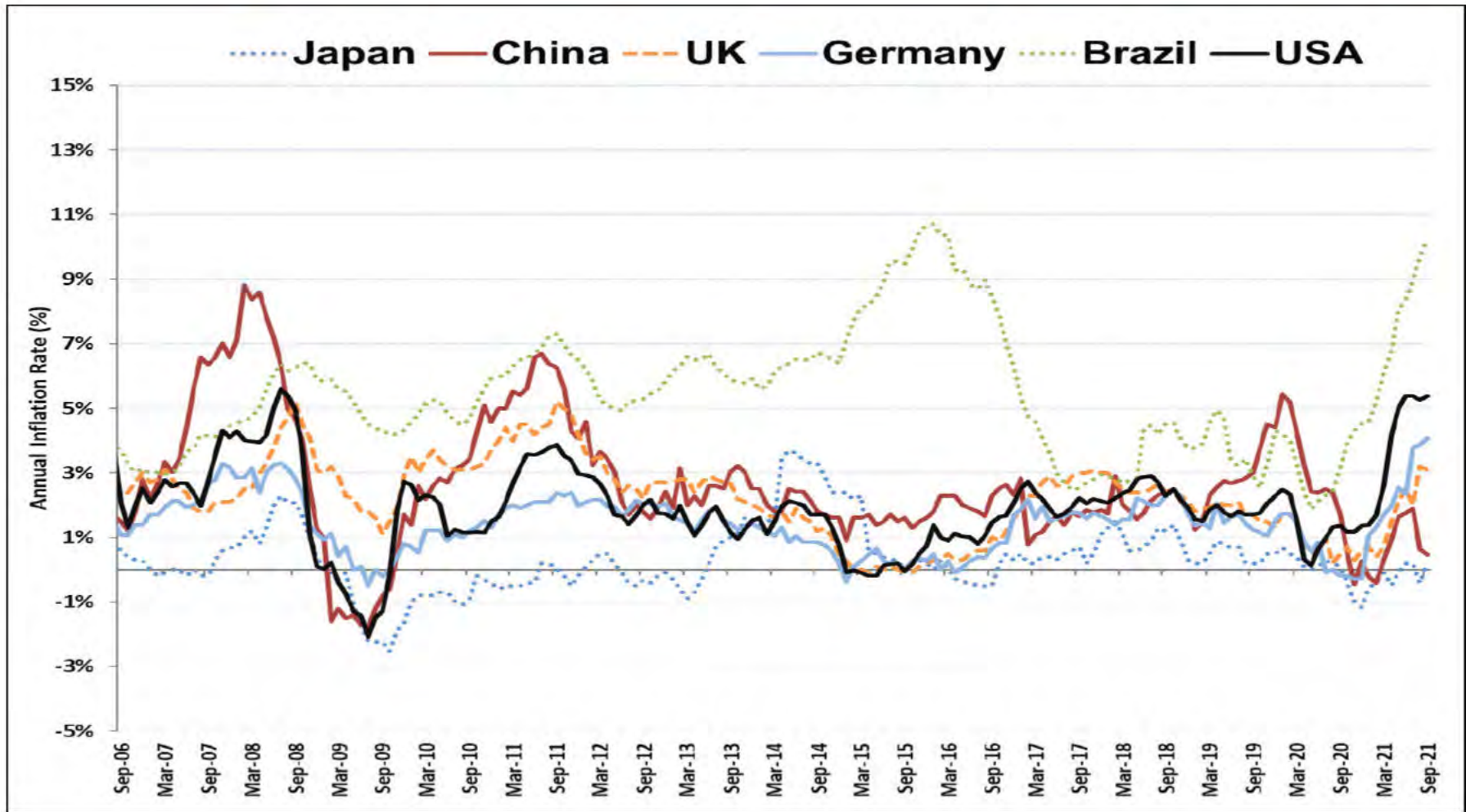
US Labor Market





ECONOMY

Headline Inflation



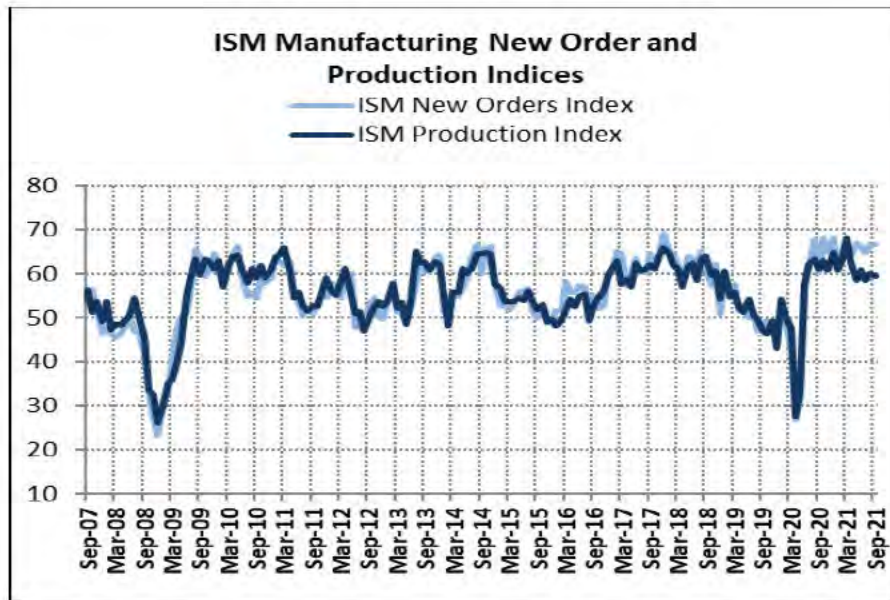
	Japan	China	UK	Germany	Brazil	USA
Sep-21	0.2	0.5	3.1	4.1	10.3	5.4

Sources: www.ons.gov.uk, www.oecd.org, www.inflation.eu, and www.tradingeconomics.com



ECONOMY

US & Global Manufacturing Activities

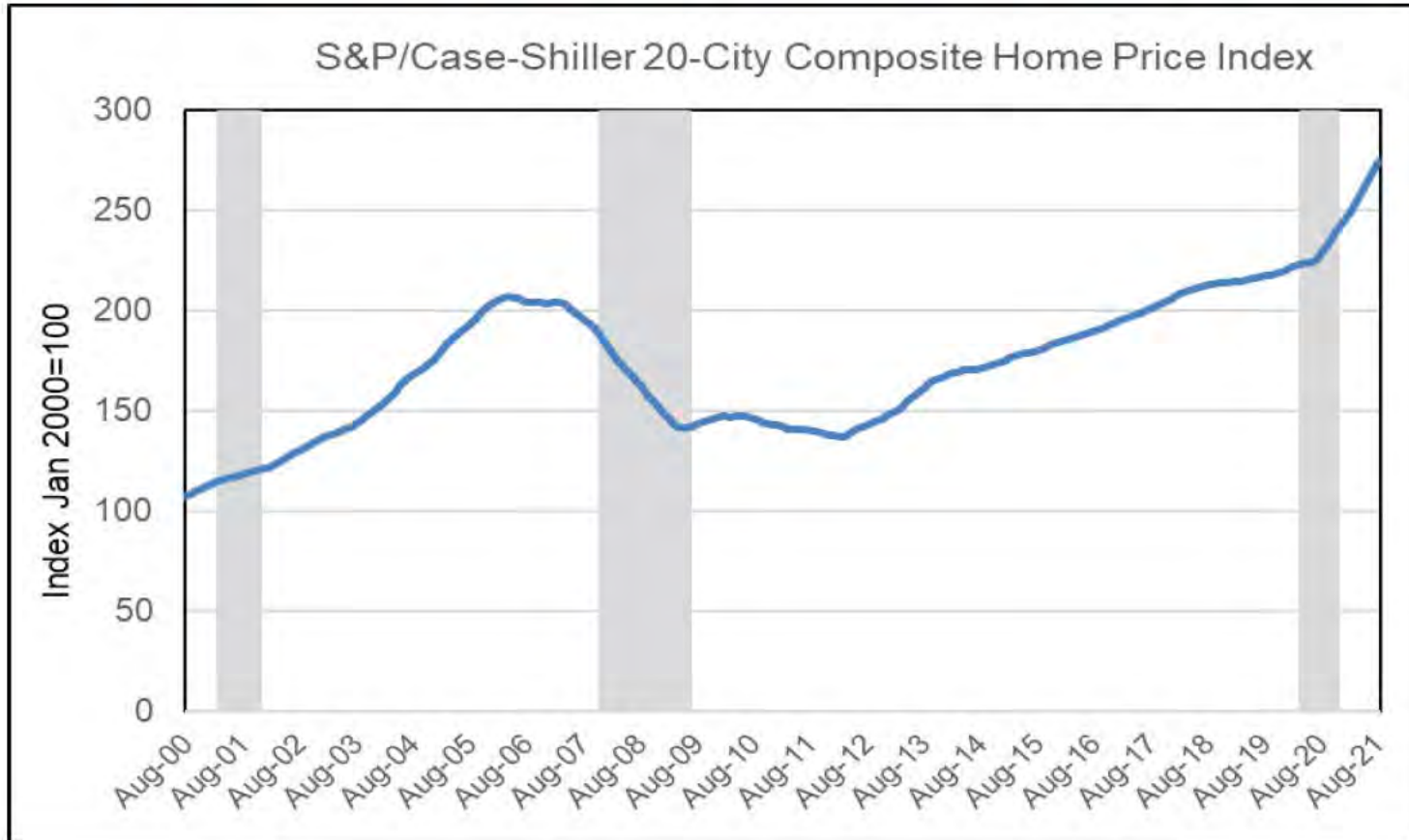


Source: Manufacturing ISM Report On Business & JPMorgan Global Manufacturing PMI™
 Notes: Acronym – ISM – Institute of Supply Management; PMI – Purchasing Managers Index



ECONOMY

US Housing Market



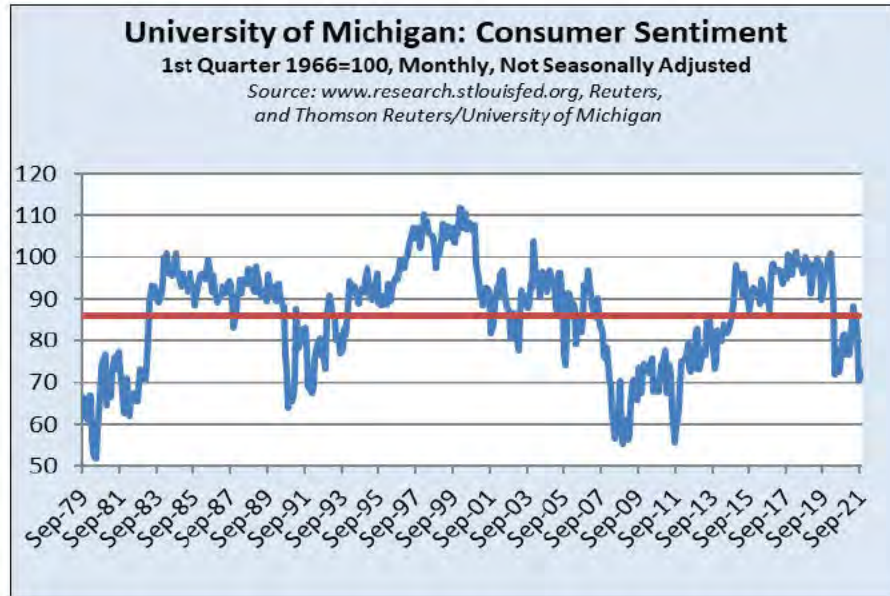
Date	S&P Case-Shiller 20-City Home Price Index January 2000 = 100, Seasonally Adjusted
Jul-17	200.05
Jul-18	212.02
Jul-19	216.09
Jul-20	225.63
Jul-21	270.87
Aug-21	274.05

Source: www.research.stlouisfed.org



ECONOMY

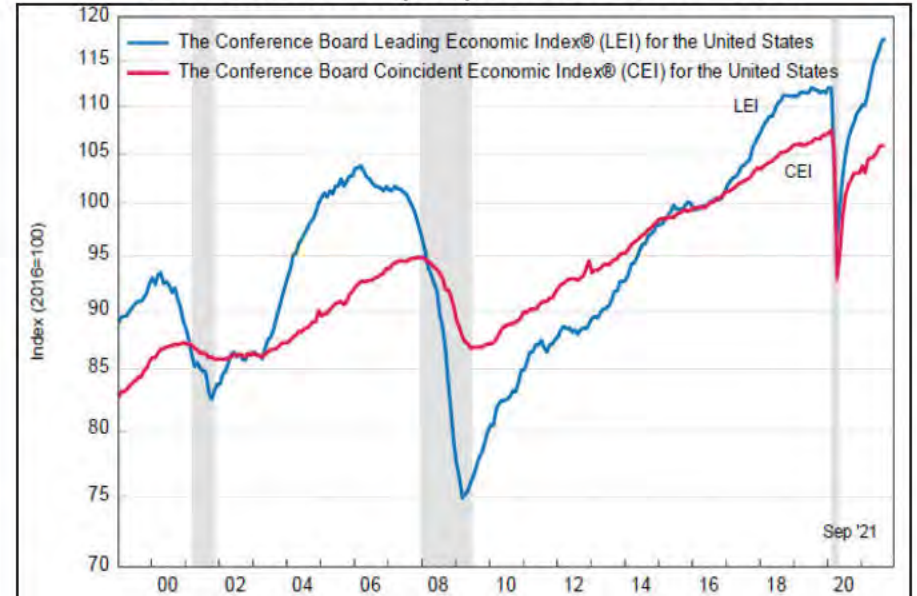
Consumer Sentiment



Index of Consumer Sentiment				
Aug-21	Sep-21	Sep-20	M-M Change	Y-Y Change
70.3	72.8	80.4	3.6%	-9.5%

Sources: Thomson Reuters / University of Michigan

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



Shaded areas represent US recessions

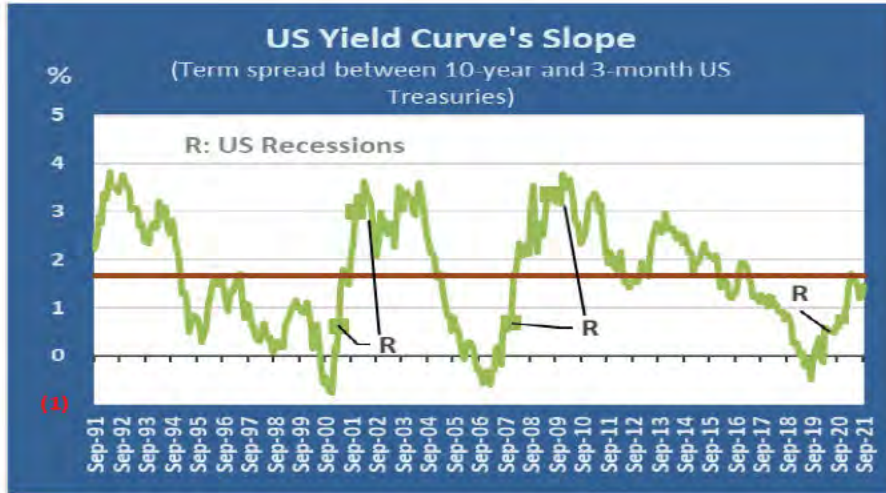
Index	Jul-21	Aug-21	Sep-21	Month -Month Percent Change	6-Month Percent Change (Mar-Sep)
LEI	116.4 r	117.3 r	117.5 p	0.2	5.4
CEI	105.7 r	105.8 r	105.8 p	0.0	1.3

p Preliminary; r Revised; Indexes equal 100 in 2016

Sources: The Conference Board and advisorperspectives.com



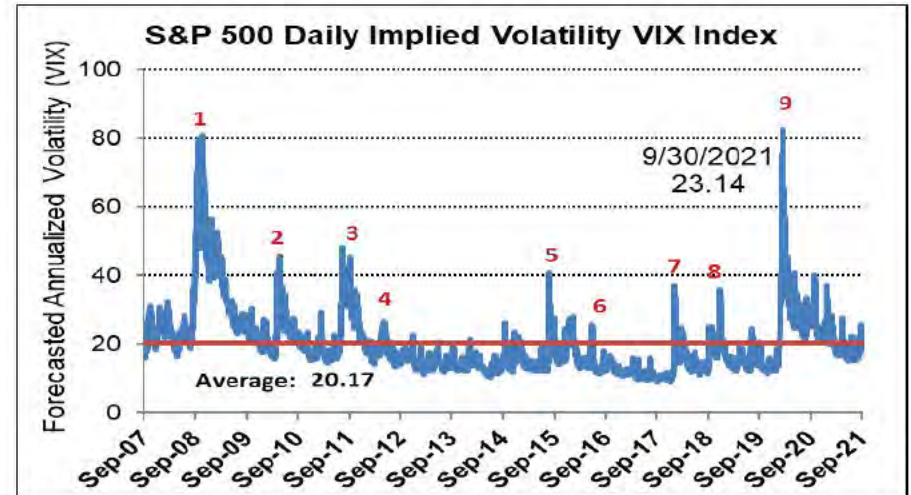
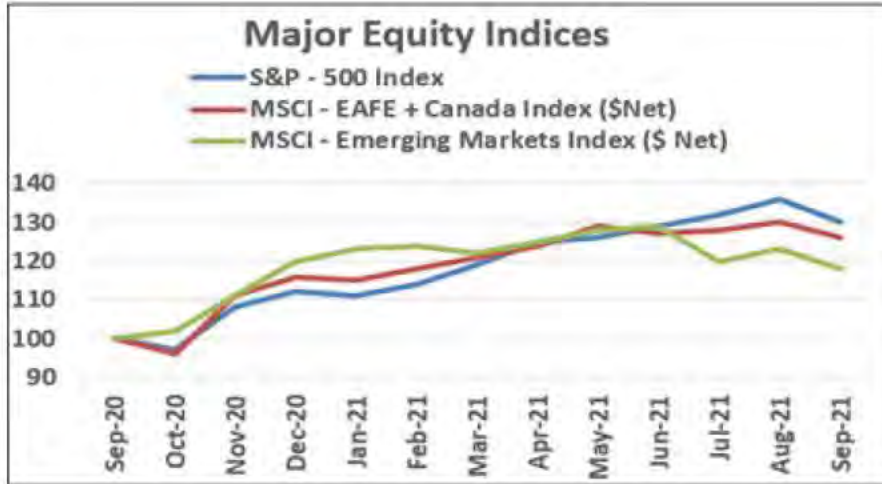
ECONOMY





MARKETS

Equity



	Return as of 9/30/2021	
	1 Year	FYTD
S&P 500	30.00	0.58
MSCI - EAFE + Canada Index (\$Net)	26.50	(0.66)
MSCI - Emerging Markets Index (\$Net)	18.20	(8.09)

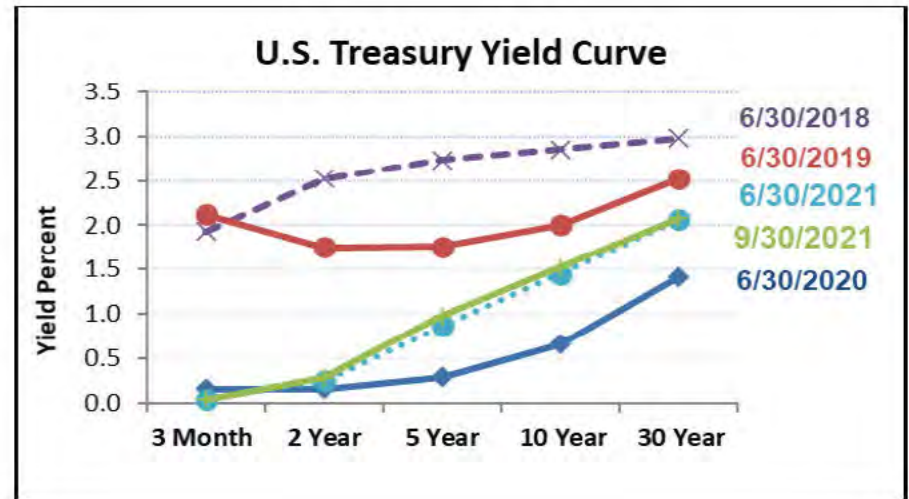
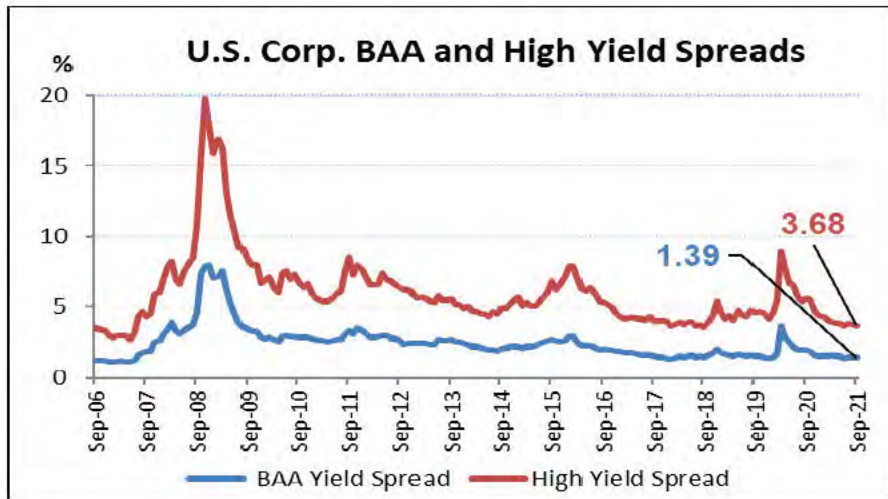
- 1 2008 (Nov.) Financial Crisis S&P 500: -48.8%
- 2 2010 (May) Flash crash; Europe/ Greece debt S&P 500: -16%
- 3 2011 (Aug.) US downgrade, Europe periphery S&P 500: -19.4%
- 4 2012 (June) Eurozone double dip S&P 500: -9.9%
- 5 2015 (Aug.) Global slowdown, China, Fed S&P 500: -12.4%
- 6 2016 (Feb.) 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%

Sources: www.research.stlouisfed.org, and Wilshire Compass



MARKETS

Fixed Income

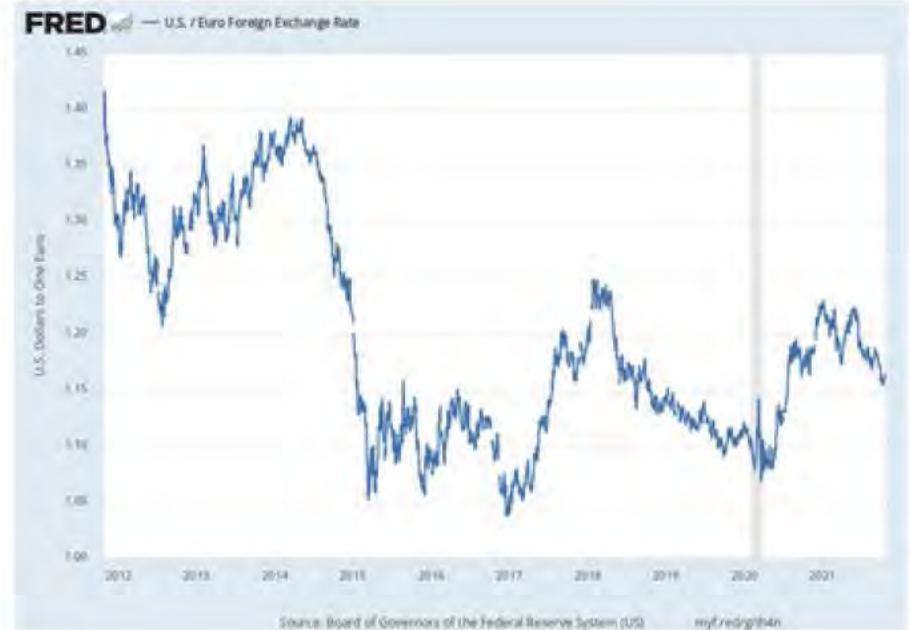
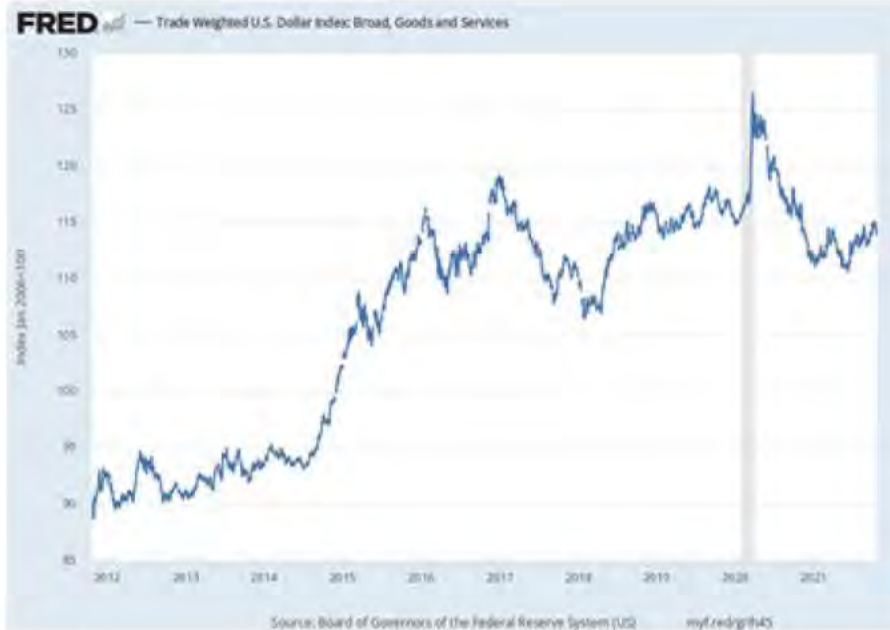


Sources: Wilshire Compass, ThomsonReuters, and Bloomberg



MARKETS

Foreign Exchange



Date	Trade Weighted Broad U.S. Dollar Index January 1997=100
June-17	111.97
June-18	113.27
June-19	114.56
June-20	120.86
June-21	112.85
September-21	114.99

Date	U.S. / Euro Foreign Exchange Rate U.S. Dollars to One Euro
June-17	1.14
June-18	1.17
June-19	1.14
June-20	1.12
June-21	1.18
September-21	1.16

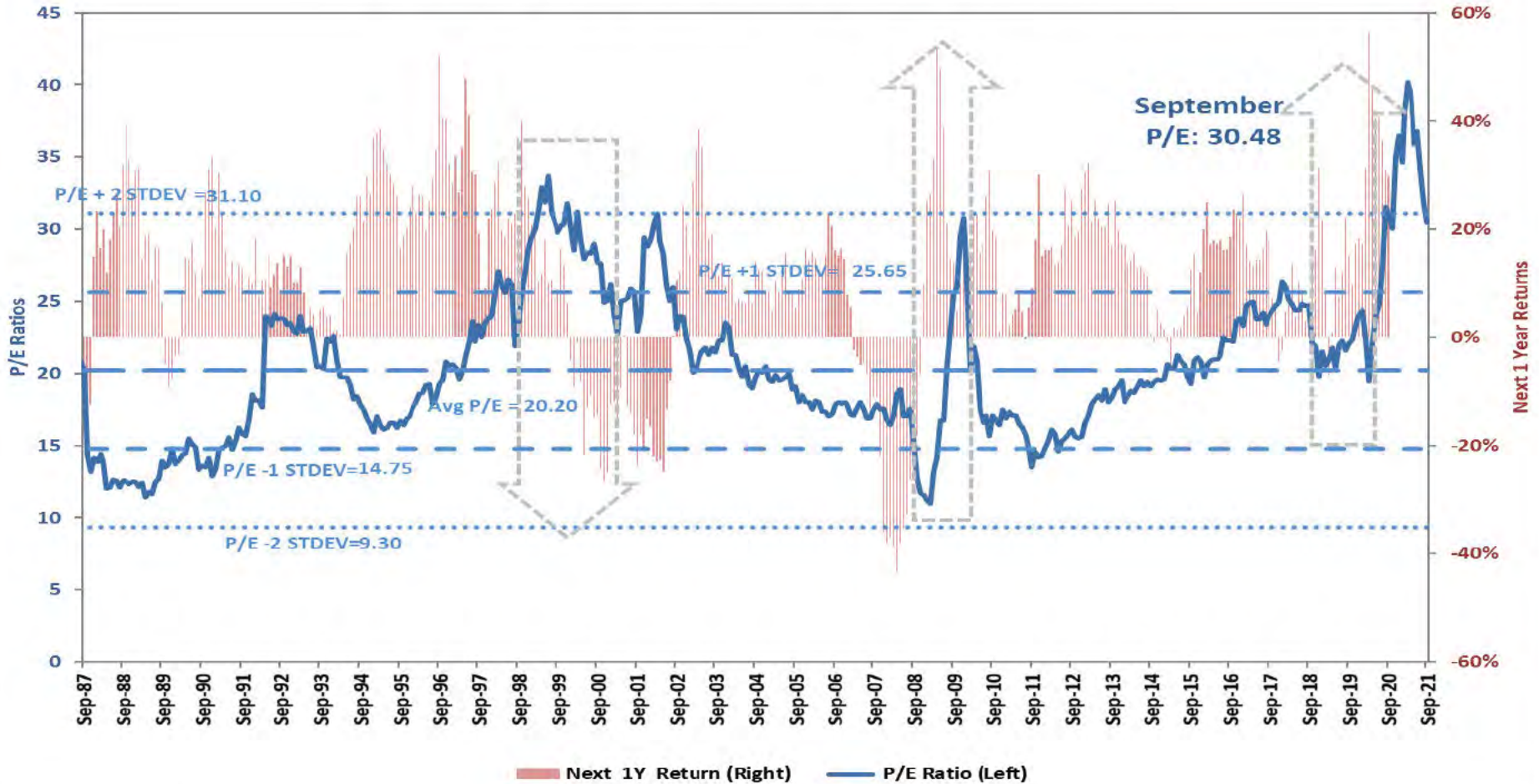
Source: www.research.stlouisfed.org



VALUATION

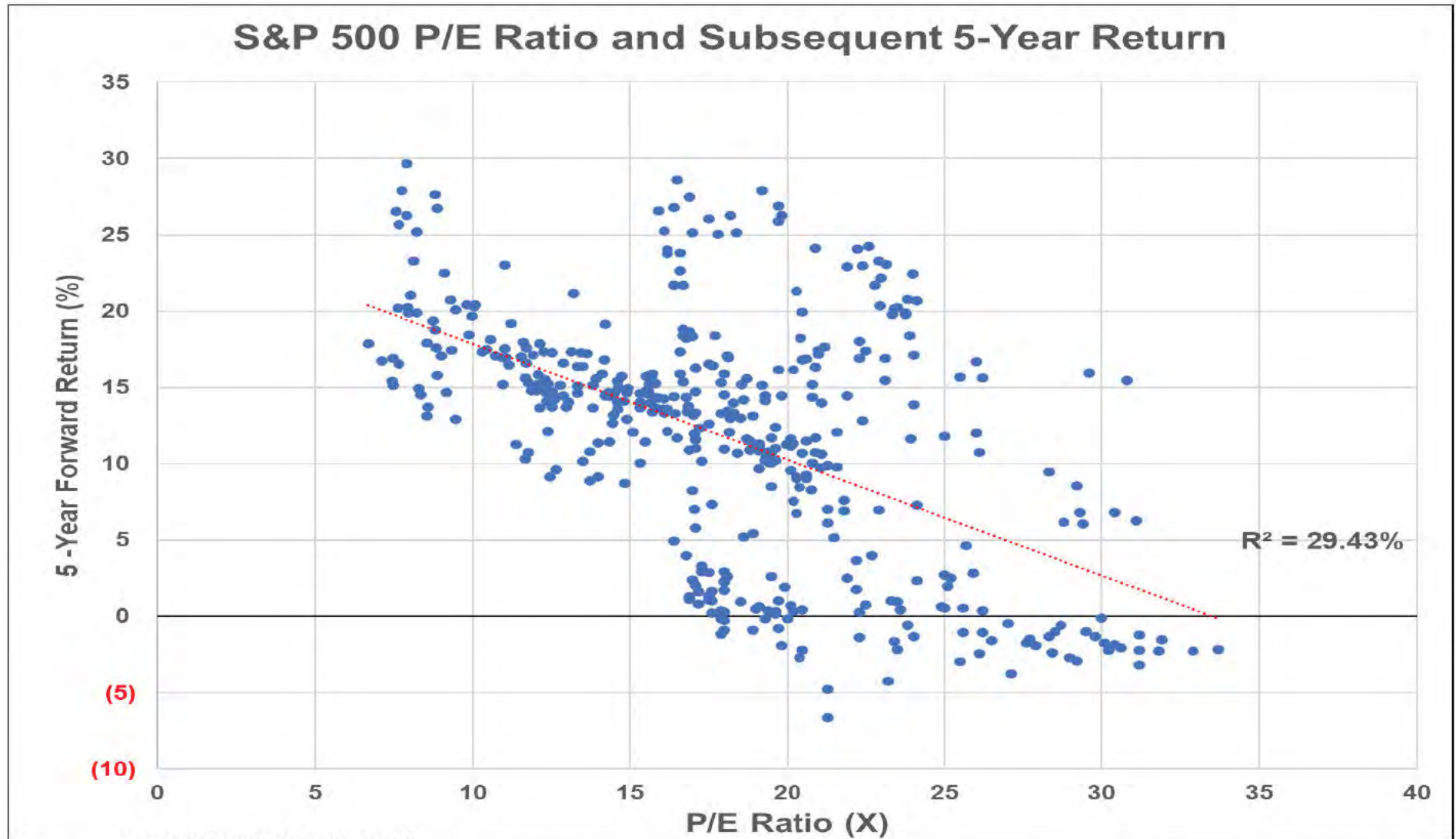
US Equity

S&P 500 P/E Ratios and Next 1 Year Returns





VALUATION **US Equity**



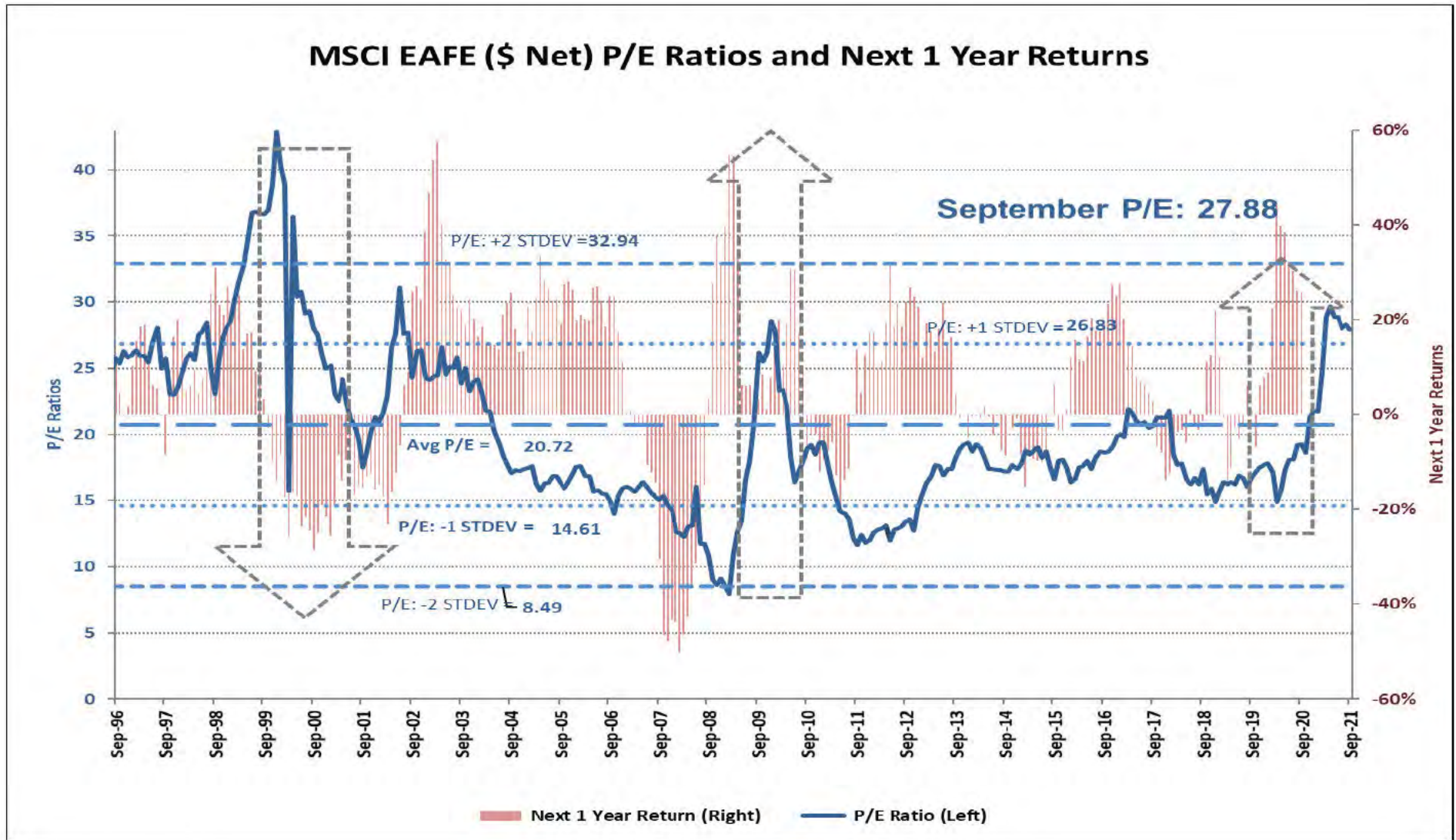
Source: Wilshire Compass



VALUATION

Non US Developed Market Equity

MSCI EAFE (\$ Net) P/E Ratios and Next 1 Year Returns



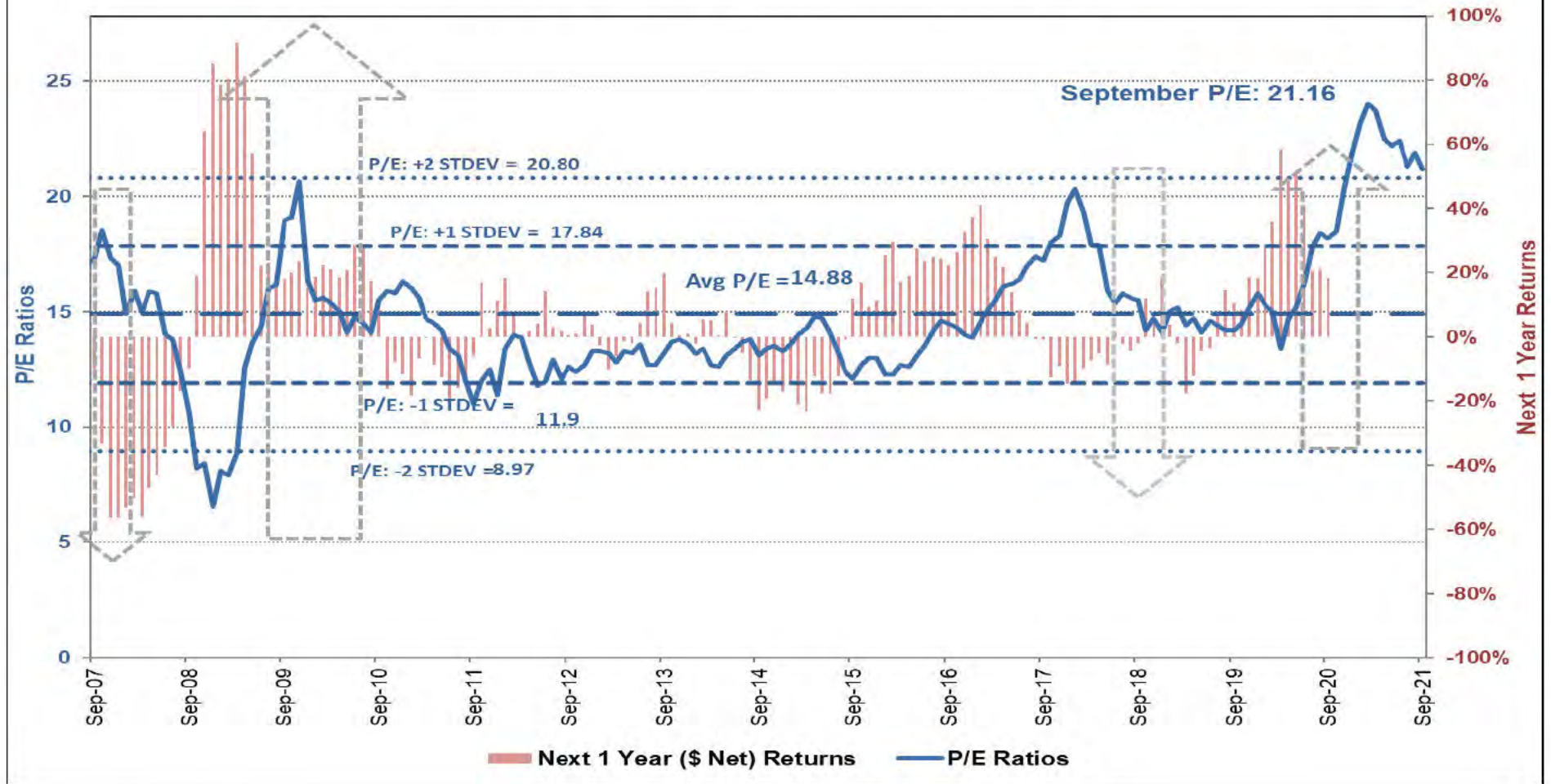
Source: Wilshire Compass



VALUATION

Emerging Market Equity

MSCI EM P/E Ratios and Next 1 Year (\$ Net) Returns



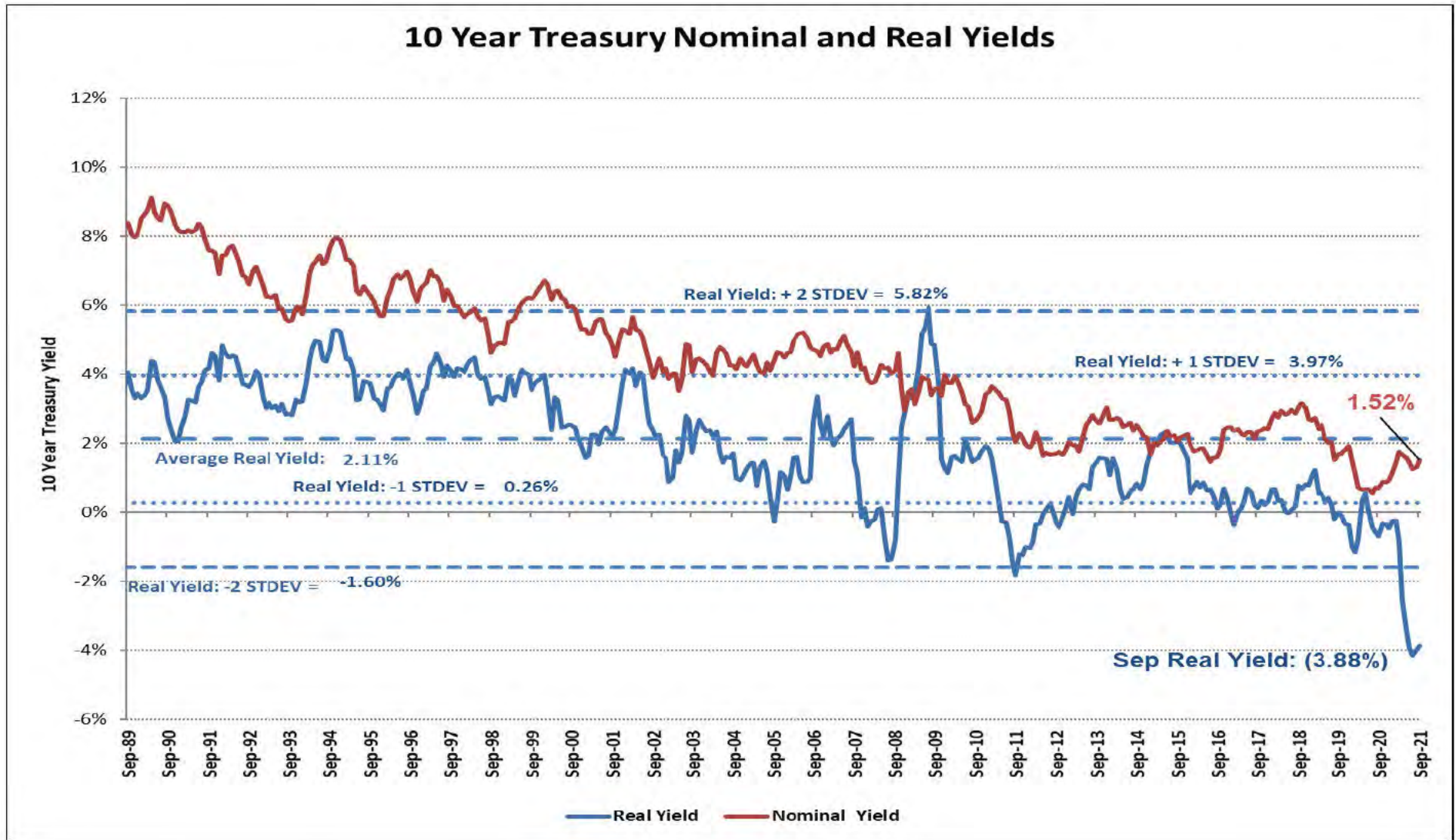
Source: Wilshire Compass



VALUATION

US Treasury Bonds

10 Year Treasury Nominal and Real Yields



Sources: Wilshire Compass and U.S. Bureau of Labor Statistics



SERS' Investment Portfolios Review

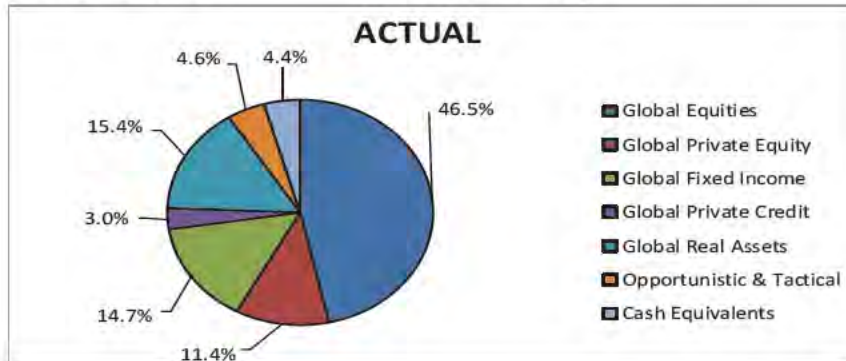


Total Fund Asset Allocation

Asset Class	Market Value \$	Actual	Target	Range
Global Equities	8,356,683,580	46.5%	45.0%	35% - 55%
US Equity	4,582,153,430	25.5%	24.8%	19.25% - 30.25%
Non-US Equity Developed Market	2,869,374,179	16.0%	13.5%	10.50% - 16.50%
Non-US Equity Emerging Market	905,155,971	5.0%	6.8%	5.25% - 8.25%
Global Private Equity	2,049,350,207	11.4%	12.0%	8% - 16%
Global Fixed Income	2,635,577,704	14.7%	19.0%	12% - 26%
Global Private Credit	536,853,989	3.0%	5.0%	1% - 7% *
Global Real Assets	2,762,719,156	15.4%	17.0%	14% - 20%
Opportunistic & Tactical	828,520,555	4.6%	0.0%	0% - 5%
Cash Equivalents	789,728,189	4.4%	2.0%	0% - 5%
Short-Term	747,152,948	4.2%	2.0%	
Russell EA Overlay	-1,529,539	0.0%	0.0%	
Aegis - Alpha Overlay	4,511,338	0.0%	0.0%	
Direct Rebalance Overlay	0	0.0%	0.0%	
Transition / Operational Account	6,754,600	0.0%	0.0%	
Currency Overlay	32,838,842	0.2%	0.0%	
Total Fund	17,959,433,380	100.0%	100.0%	

Source: BNY Mellon GRS

* FY22 Interim range





Total Fund Change in Net Assets

CHANGE IN NET ASSETS

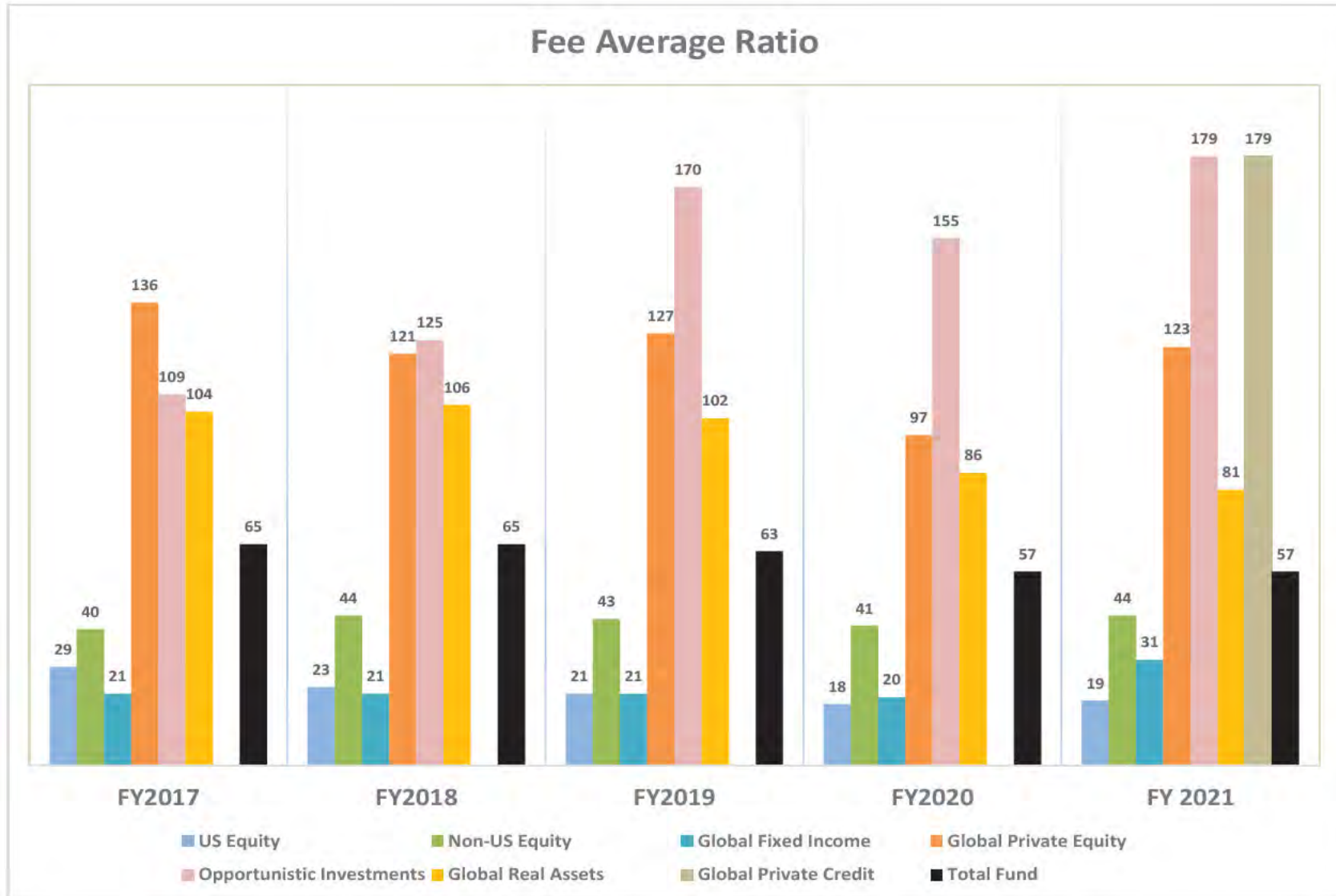
	<i>vs. One Year Ago, since 10/1/2020</i>	<i>vs. Three Years Ago, since 10/01/2018</i>
Beginning Market Value	15,190,072,387	14,556,221,782
Gain/Loss	3,445,128,145	5,285,059,494
Expenses	(75,767,153)	(200,597,897)
Net Transfer	(600,000,000)	(1,681,250,000)
End of Period Market Value	17,959,433,379	17,959,433,379

**Origins of the Net Transfer*

<i>Dividends/Interest</i>	<i>178,958,658</i>
<i>Net Distributions</i>	<i>421,041,342</i>
<i>Cash on Hand</i>	<i>Not Required</i>



Total Fund Fees

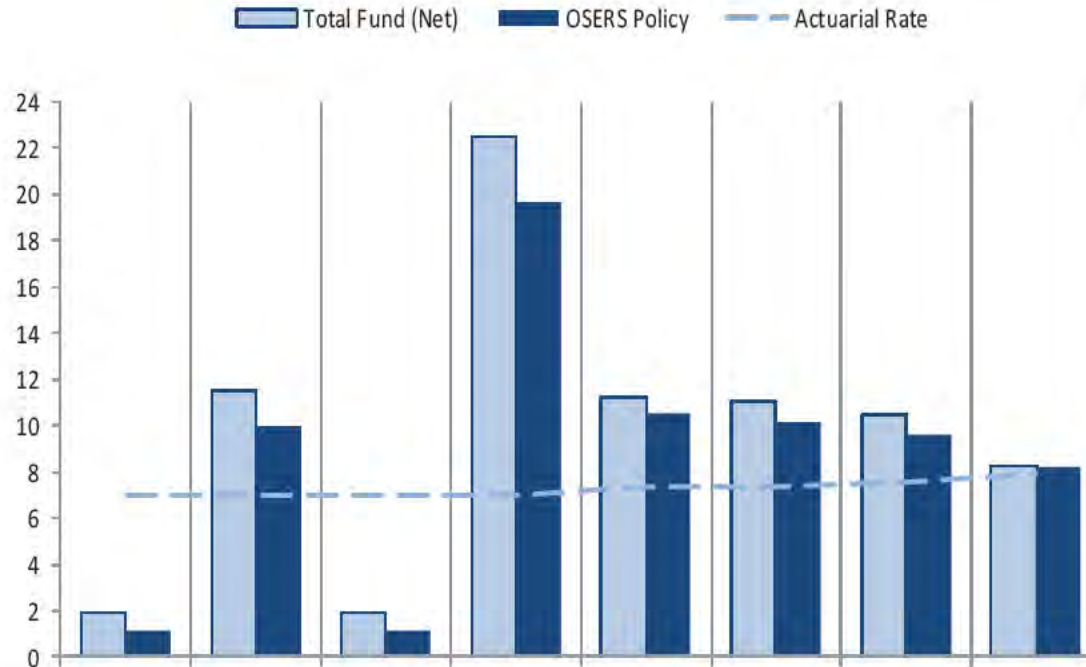




Total Fund Performance

Current Benchmark:

- 24.75% Russell 3000
- 13.50% MSCI World Ex US Index
(net dividends)
- 6.75% MSCI Emerging Markets Index
(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% LIBOR + 4.5%
- 2.00% Citigroup 30 Day US T-Bill



Actuarial Rate

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

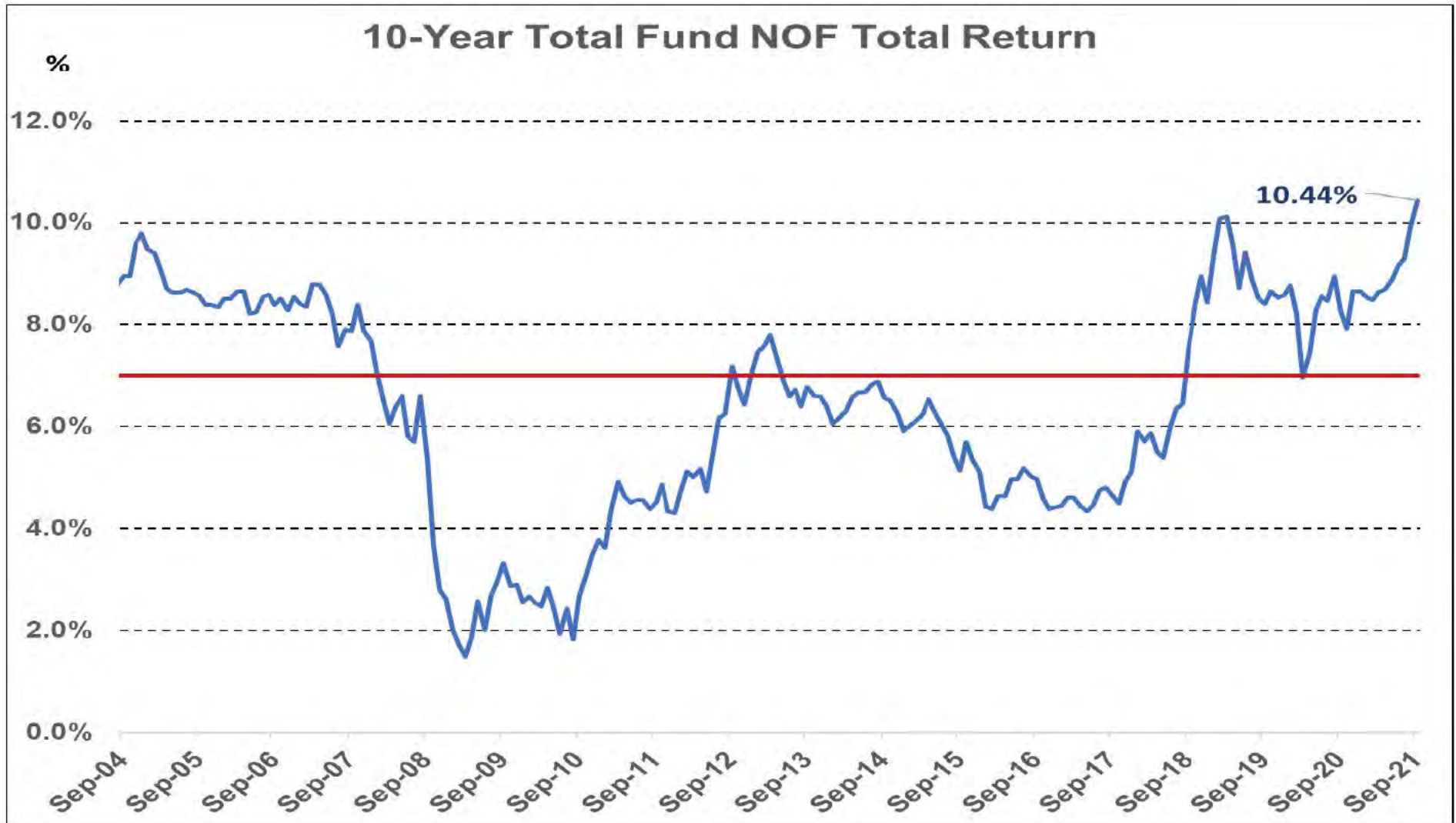
	Qtr	CYTD	FYTD	1 Year	3 Year	5 Year	10 Year	ITD*
Total Fund (Gross)	2.06	12.00	2.06	23.13	11.91	11.73	11.14	8.67
Total Fund (Net)	1.93	11.52	1.93	22.50	11.26	11.06	10.44	8.15
OSERS Policy	1.13	9.97	1.13	19.69	10.52	10.11	9.62	8.20
Value Added (Net of Fee)	0.81	1.55	0.81	2.80	0.74	0.95	0.82	(0.05)

Source: BNY Mellon GRS

*ITD is Inception date 10/1/1994 (27 years and 0 months)

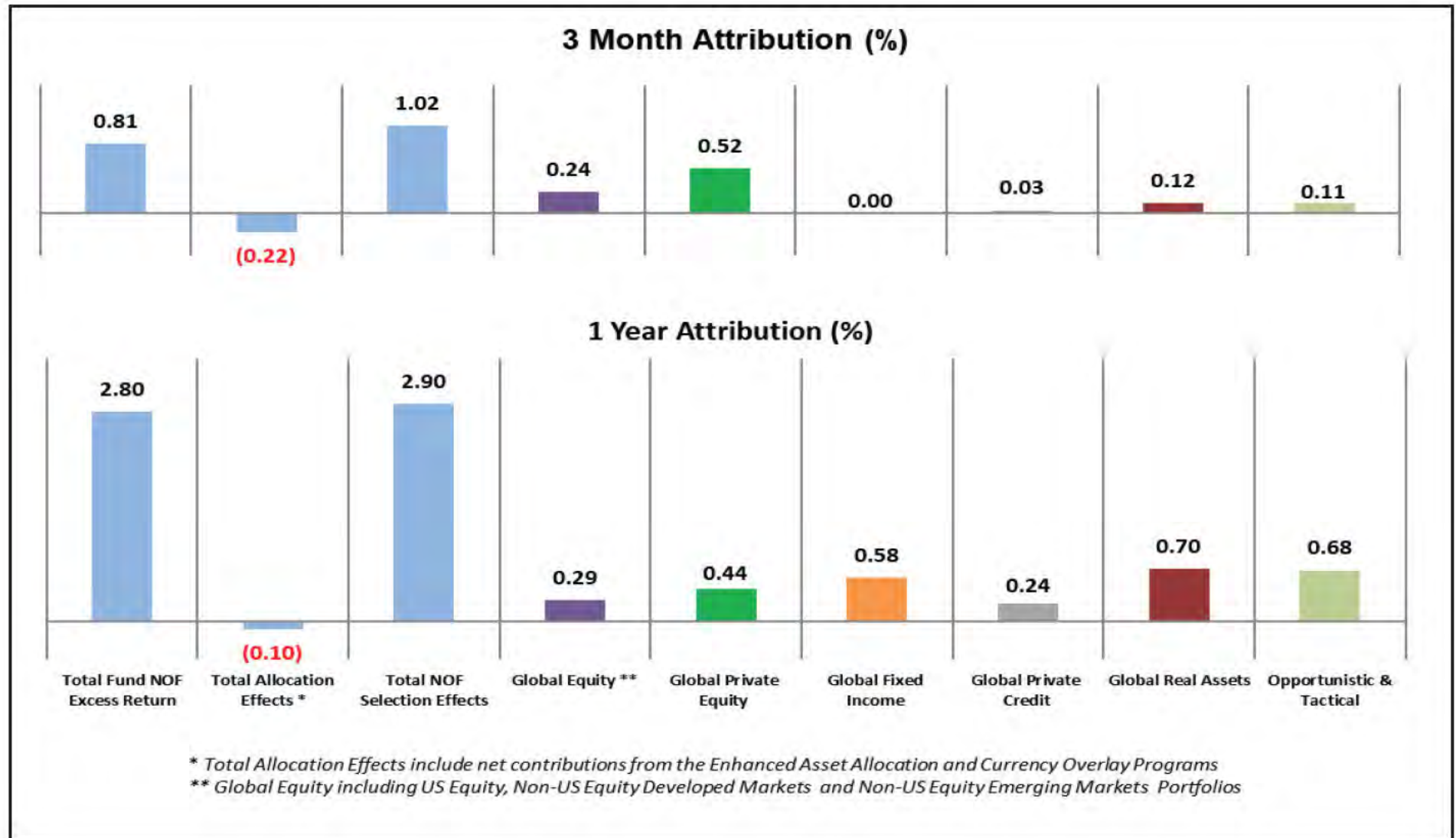


Total Fund Performance



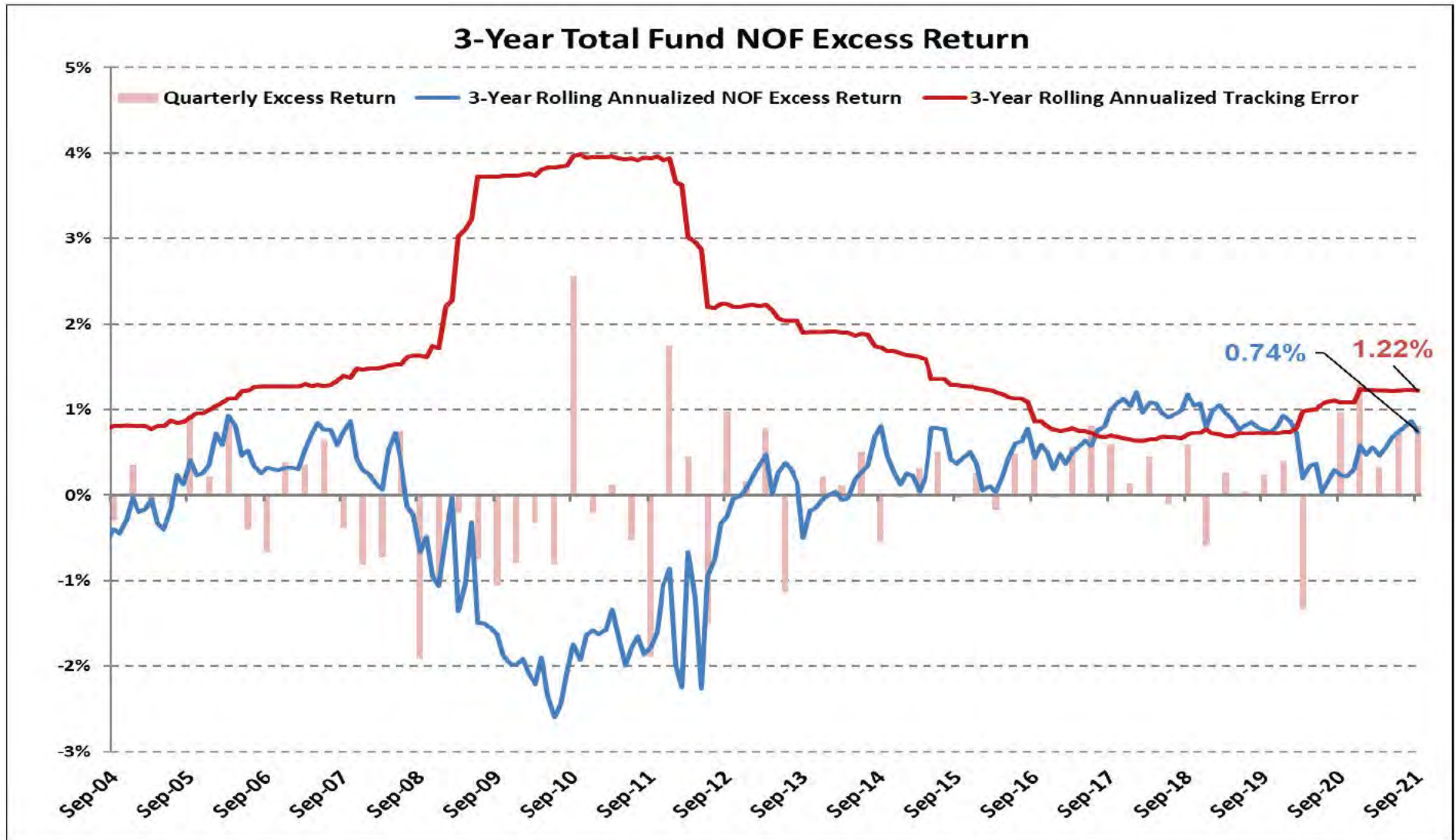


Total Fund Attribution



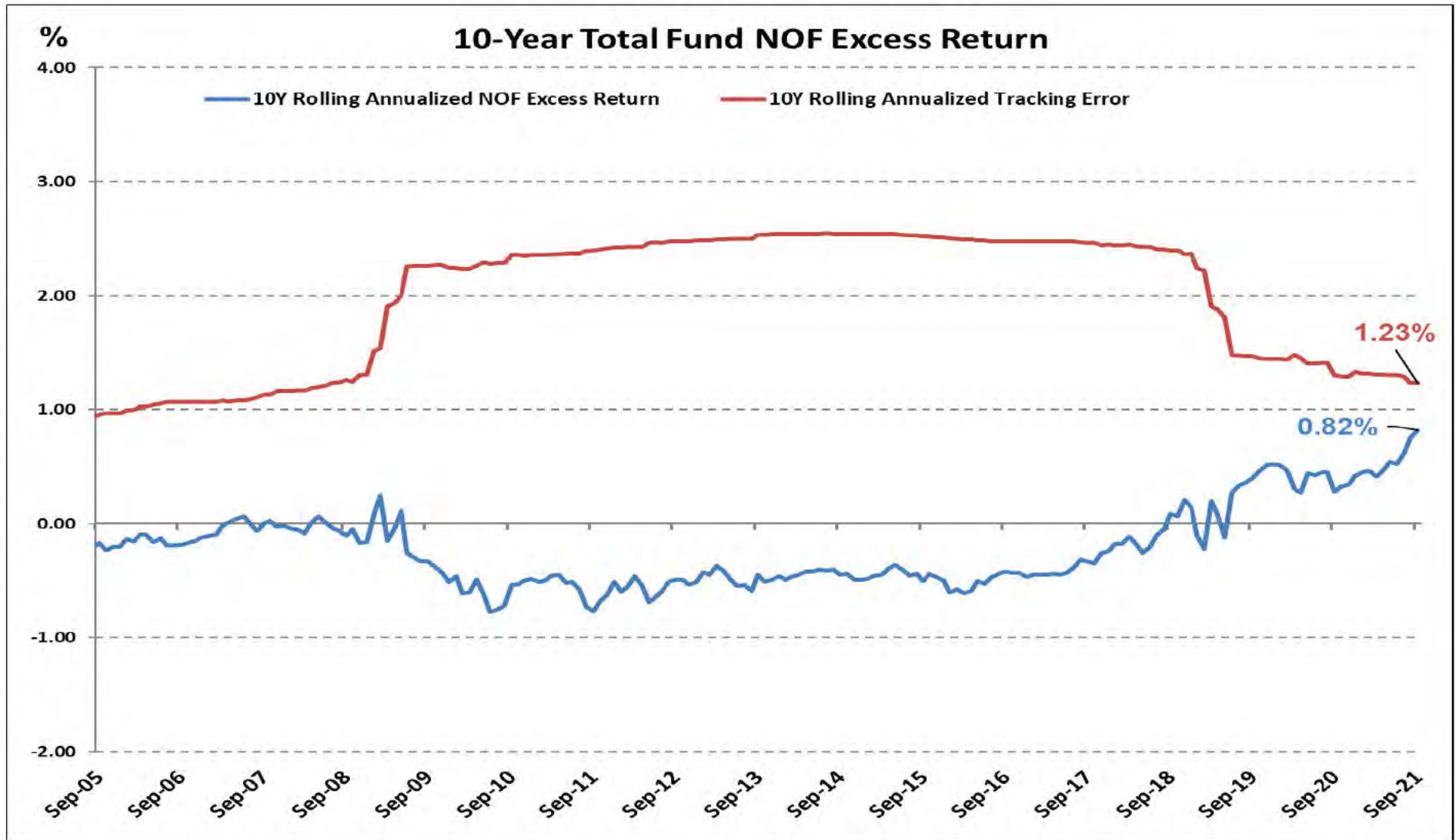


Total Fund Performance



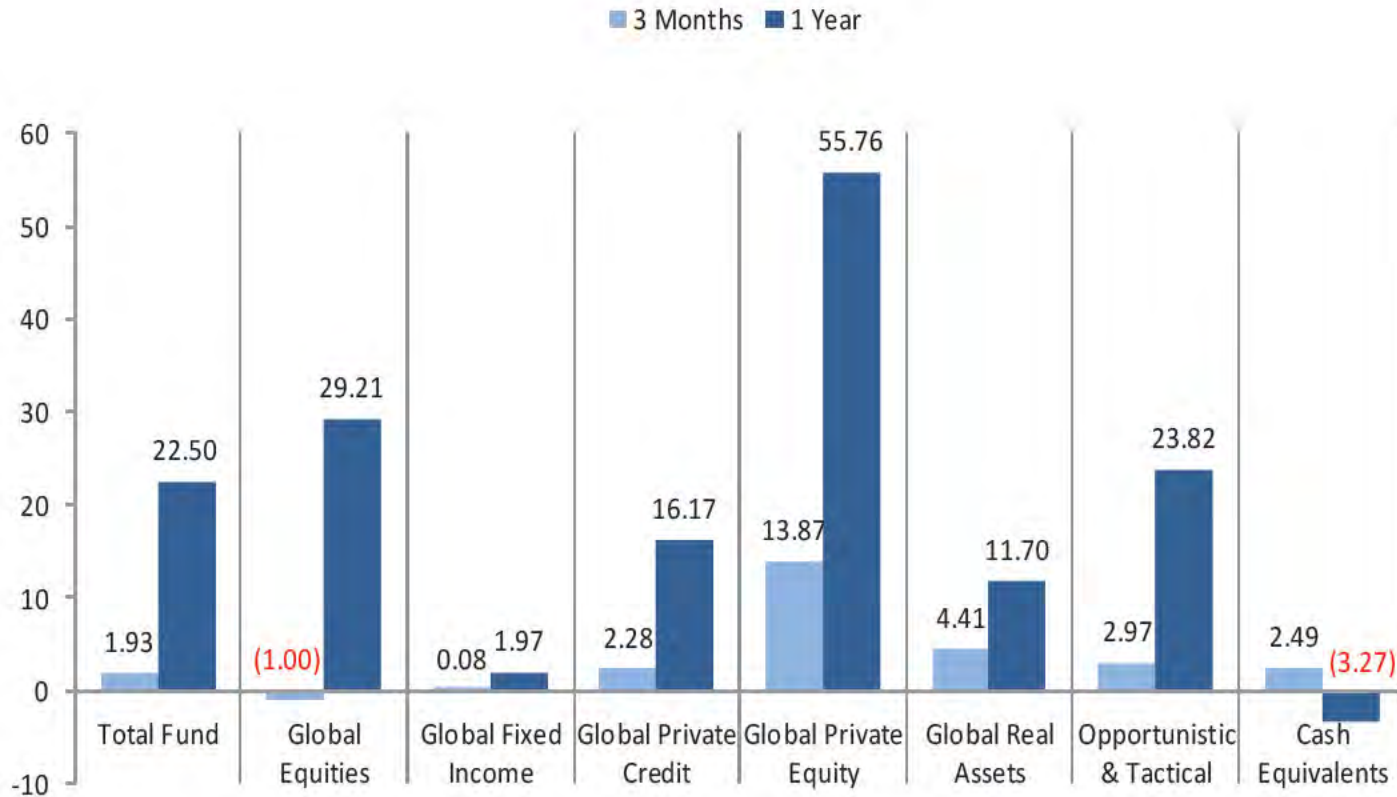


Total Fund Performance





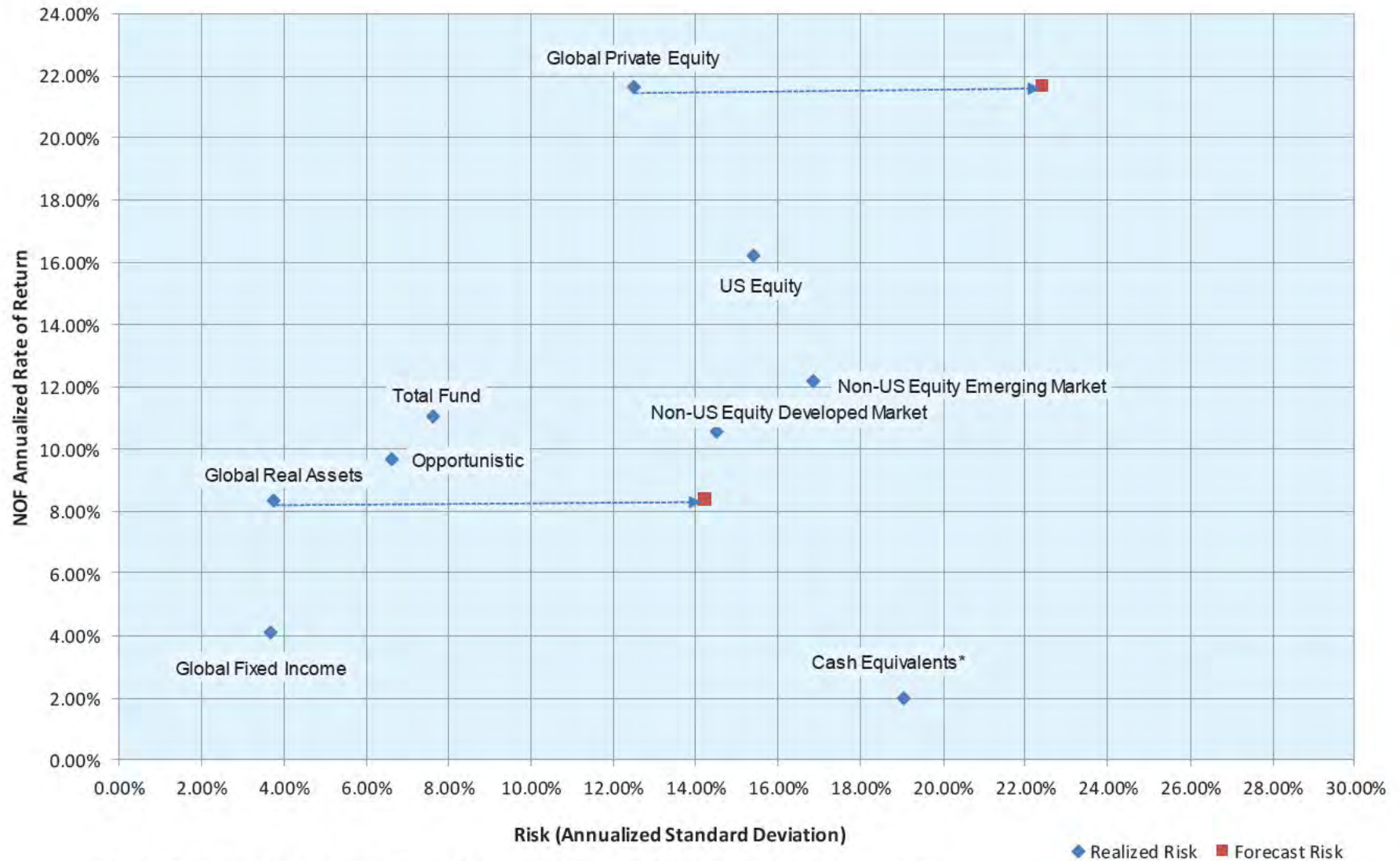
Total Fund and Asset Class Performance (Net)



Source: BNY Mellon GRS



5 Year Risk and Return



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



3 Year Risk and Return





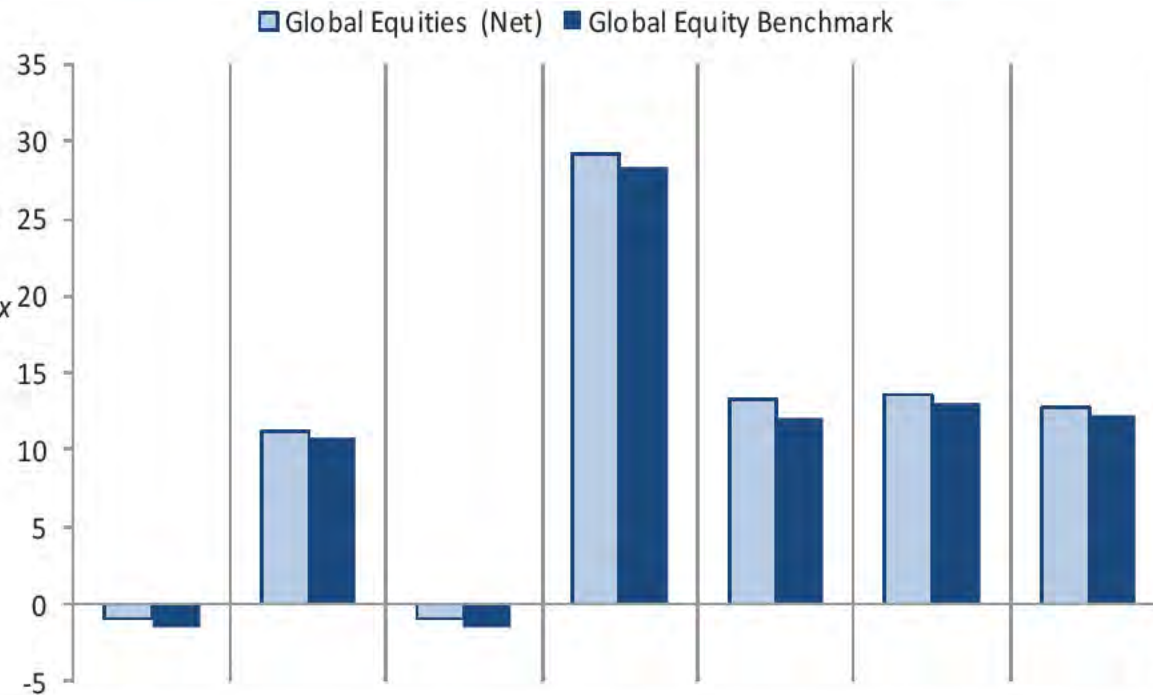
Global Equities Performance

Current Benchmark:

55% Russell 3000

30% MSCI World Ex United States
Index (Net dividends)

15% MSCI Emerging Markets Index
(Net dividends)



	Qtr	CYTD	FYTD	1 Year	3 Year	5 Year	10 Year
Global Equities (Gross)	(0.93)	11.49	(0.93)	29.57	13.60	13.95	13.10
Global Equities (Net)	(1.00)	11.26	(1.00)	29.21	13.27	13.60	12.73
Global Equity Benchmark	(1.46)	10.78	(1.46)	28.33	12.14	12.99	12.20
MSCI ACWI	(0.95)	11.49	(0.95)	27.98	13.14	13.77	12.50
Value Added (Net of Fee)	0.46	0.48	0.46	0.88	1.13	0.62	0.53

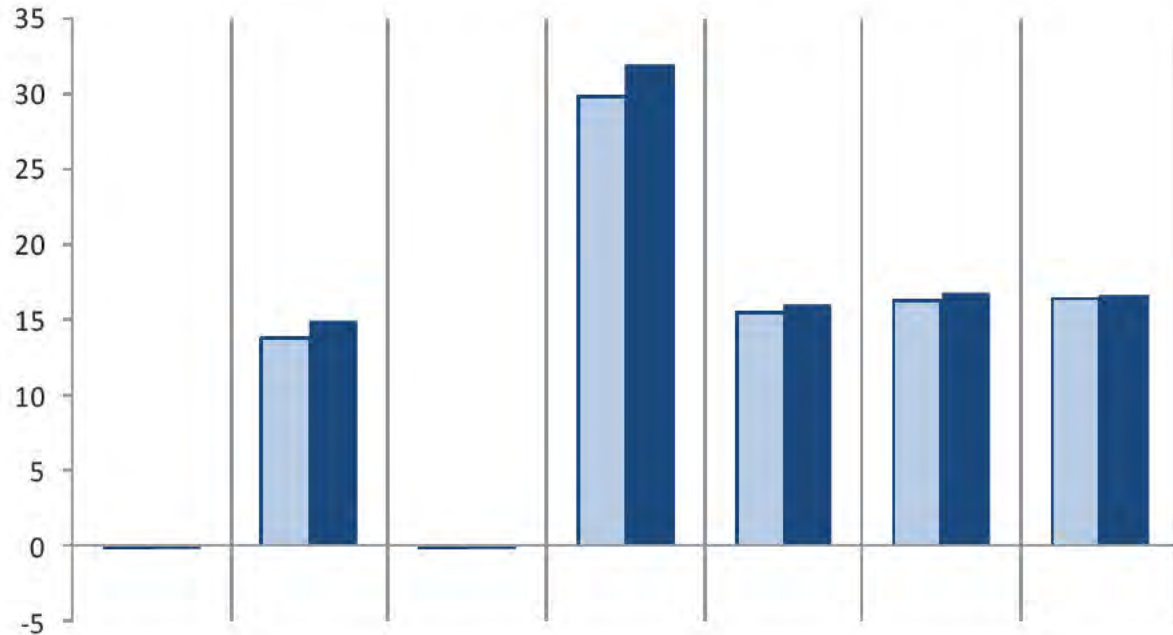
Source: BNY Mellon GRS



US Equity Performance

■ US Equity Portfolio (Net) ■ US Equity Policy Benchmark

Current Benchmark:
Russell 3000

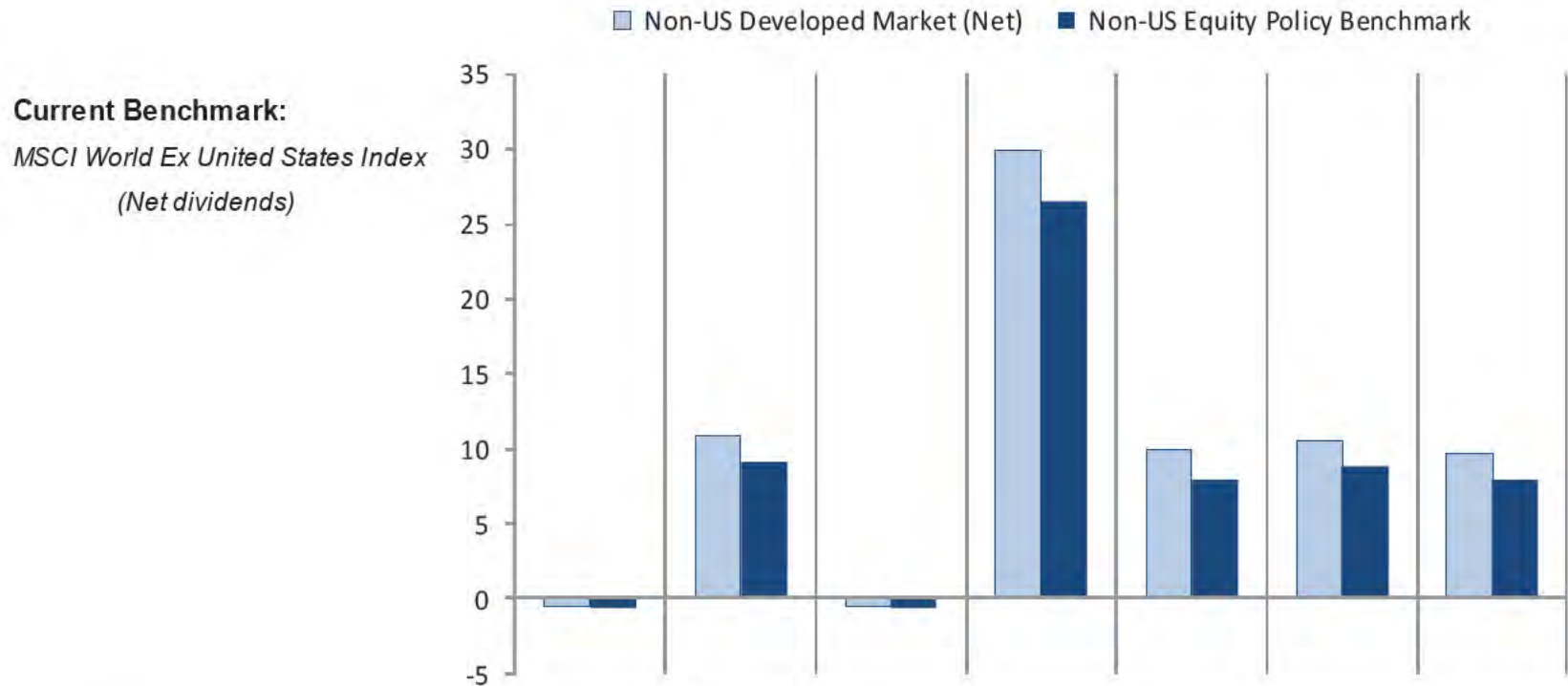


	Qtr	CYTD	FYTD	1 Year	3 Year	5 Year	10 Year
US Equity Portfolio (Gross)	0.01	13.96	0.01	30.04	15.68	16.49	16.66
US Equity Portfolio (Net)	(0.02)	13.83	(0.02)	29.83	15.47	16.24	16.36
US Equity Policy Benchmark	(0.10)	14.99	(0.10)	31.88	16.00	16.85	16.60
Value Added (Net of Fee)	0.08	(1.17)	0.08	(2.05)	(0.53)	(0.61)	(0.25)

Source: BNY Mellon GRS



Non-US Equity Developed Market Performance



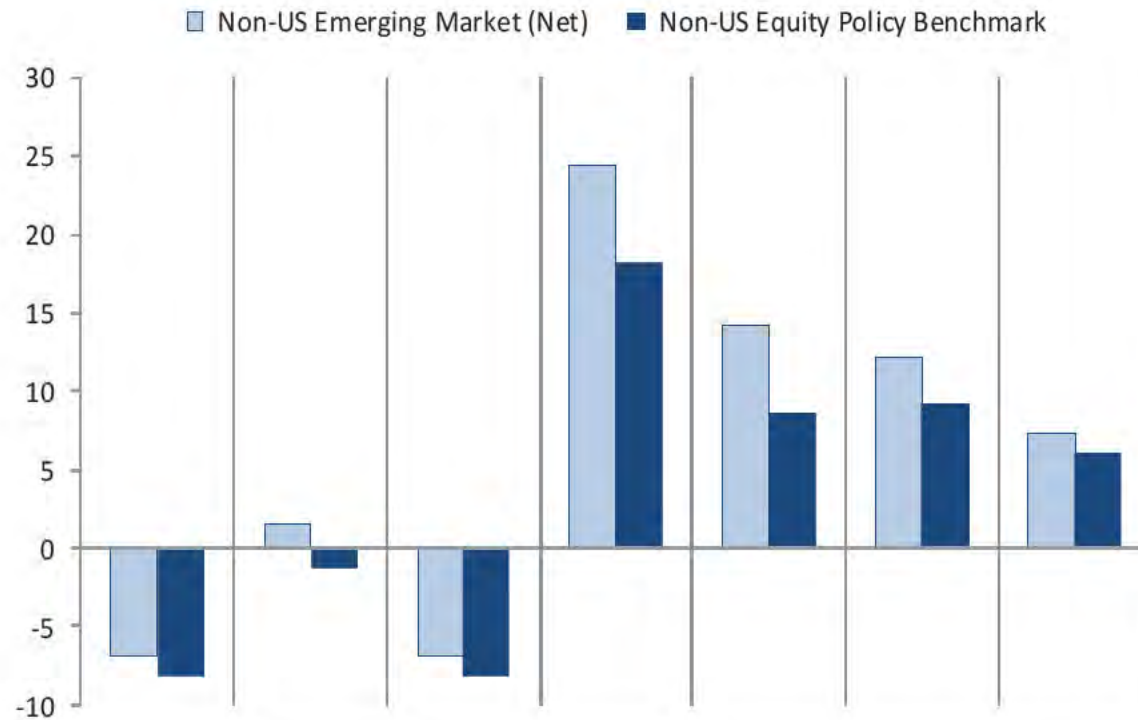
	Qtr	CYTD	FYTD	1 Year	3 Year	5 Year	10 Year
Non-US Developed Market (Gross)	(0.49)	11.10	(0.49)	30.32	10.25	10.87	9.94
Non-US Developed Market (Net)	(0.56)	10.84	(0.56)	29.93	9.92	10.54	9.60
Non-US Equity Policy Benchmark	(0.66)	9.19	(0.66)	26.50	7.87	8.88	7.88
Value Added (Net of Fee)	0.09	1.65	0.09	3.43	2.05	1.66	1.72

Source: BNY Mellon GRS



Non-US Equity Emerging Market Performance

Current Benchmark:
MSCI Emerging Markets Index
(Net dividends)



	Qtr	CYTD	FYTD	1 Year	3 Year	5 Year	10 Year
Non-US Emerging Market (Gross)	(6.67)	2.08	(6.67)	25.41	15.21	13.05	8.11
Non-US Emerging Market (Net)	(6.86)	1.49	(6.86)	24.47	14.32	12.17	7.32
Non-US Equity Policy Benchmark	(8.09)	(1.25)	(8.09)	18.20	8.58	9.23	6.09
Value Added (Net of Fee)	1.23	2.73	1.23	6.26	5.74	2.94	1.24

Source: BNY Mellon GRS



Global Private Equity Performance

Current Benchmark:
Burgiss All Private Equity Index



	Qtr	CYTD	FYTD	1 Year	3 Year	5 Year	10 Year
Private Equity (Gross)	14.13	39.01	14.13	57.86	23.71	23.32	20.14
Private Equity (Net)	13.87	37.39	13.87	55.76	21.96	21.66	18.48
Private Equity Policy Benchmark	8.85	36.95	8.85	50.57	20.68	18.85	16.17
Value Added (Net of Fee)	5.02	0.44	5.02	5.19	1.28	2.81	2.31

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)

	3 Year	5 Year	10 Year
US Equity	15.47	16.24	16.36
Non-US Equity Developed Market	9.92	10.54	9.60
Non-US Equity Emerging Market	14.32	12.17	7.32
Global Equity	13.27	13.60	12.73
Private Equity	21.96	21.66	18.48

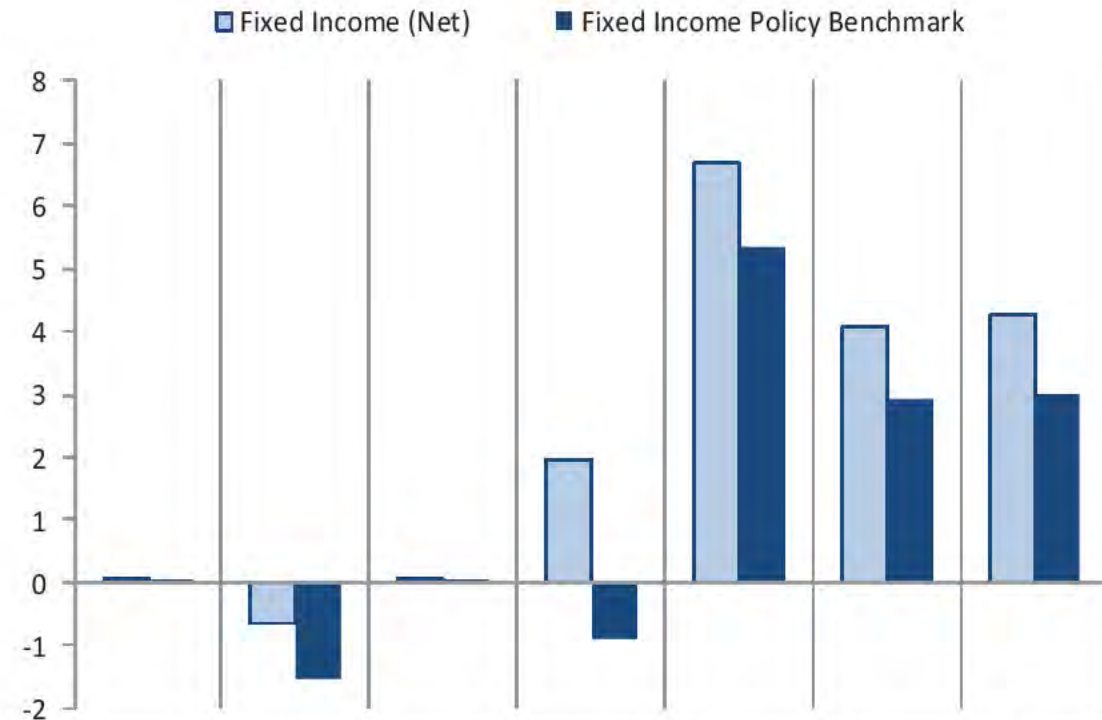
* Private Equity returns are lagged one quarter



Global Fixed Income Performance

Current Benchmark:

Bloomberg Aggregate Bond Index



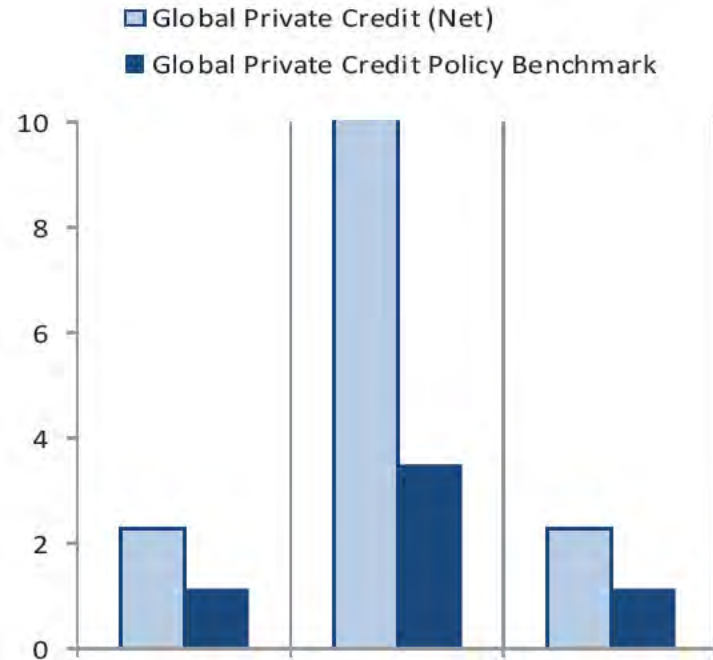
	Qtr	CYTD	FYTD	1 Year	3 Year	5 Year	10 Year
Fixed Income (Gross)	0.15	(0.42)	0.15	2.25	6.94	4.33	4.49
Fixed Income (Net)	0.08	(0.65)	0.08	1.97	6.69	4.10	4.26
Fixed Income Policy Benchmark	0.05	(1.55)	0.05	(0.90)	5.36	2.94	3.01
Value Added (Net of Fee)	0.02	0.91	0.02	2.87	1.34	1.15	1.24

Source: BNY Mellon GRS



Global Private Credit Performance

Current Benchmark:
3 Month LIBOR plus 4.5%



	Qtr	CYTD	FYTD	1 Year
Global Private Credit (Gross)	2.58	13.14	2.58	17.94
Global Private Credit (Net)	2.28	11.58	2.28	16.17
Global Private Credit Policy Benchmark	1.14	3.50	1.14	4.71
Value Added (Net of Fee)	1.13	8.07	1.13	11.47

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



Current Benchmark:

NCREIF Property Index (1q lag)

	Qtr	CYTD	FYTD	1 Year	3 Year	5 Year	10 Year
Real Assets Portfolio (Gross)	4.61	10.53	4.61	12.46	8.79	9.33	11.19
Real Assets Portfolio (Net)	4.41	9.79	4.41	11.70	7.89	8.33	10.10
Real Assets Policy Benchmark	3.59	6.58	3.59	7.37	5.50	6.13	8.79
Real Assets Value Added (NOF)	0.82	3.21	0.82	4.33	2.39	2.20	1.31
Real Assets Core (Net)	5.05	9.66	5.05	10.69	7.23	7.79	9.80
Real Assets Policy Benchmark	3.59	6.58	3.59	7.37	5.50	6.13	8.79
Real Assets Core Value Added (NOF)	1.46	3.08	1.46	3.32	1.73	1.66	1.01
Real Assets Non-Core (Net)	4.66	5.93	4.66	5.98	5.86	7.12	9.28
Real Assets Policy Benchmark	3.59	6.58	3.59	7.37	5.50	6.13	8.79
Real Assets Non-Core Value Added (NOF)	1.07	(0.65)	1.07	(1.39)	0.36	0.99	0.49
Real Assets Infrastructure (Net)	3.38	10.45	3.38	14.35	11.24	n/a	n/a
Real Assets Policy Benchmark	3.59	6.58	3.59	7.37	5.50	n/a	n/a
Real Assets Infrastructure Value Added (NOF)	(0.21)	3.87	(0.21)	6.98	5.74	n/a	n/a

Source: BNY Mellon GRS

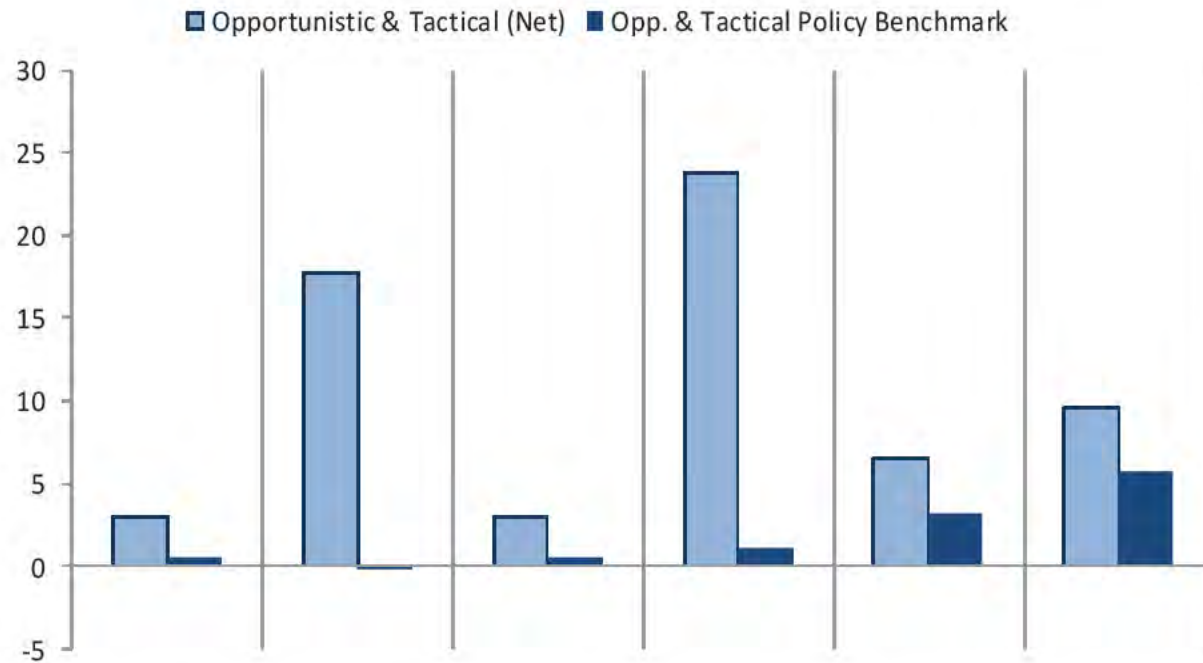
The difference between Gross and Net is management fee only. Performance based fees are captured in the Gross return.

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)	3.27	18.97	3.27	25.18	8.01	11.17
Opportunistic & Tactical (Net)	2.97	17.70	2.97	23.82	6.47	9.65
Opp. & Tactical Policy Benchmark	0.56	(0.05)	0.56	1.10	3.25	5.71
Value Added (Net of Fee)	2.42	17.76	2.42	22.72	3.21	3.94

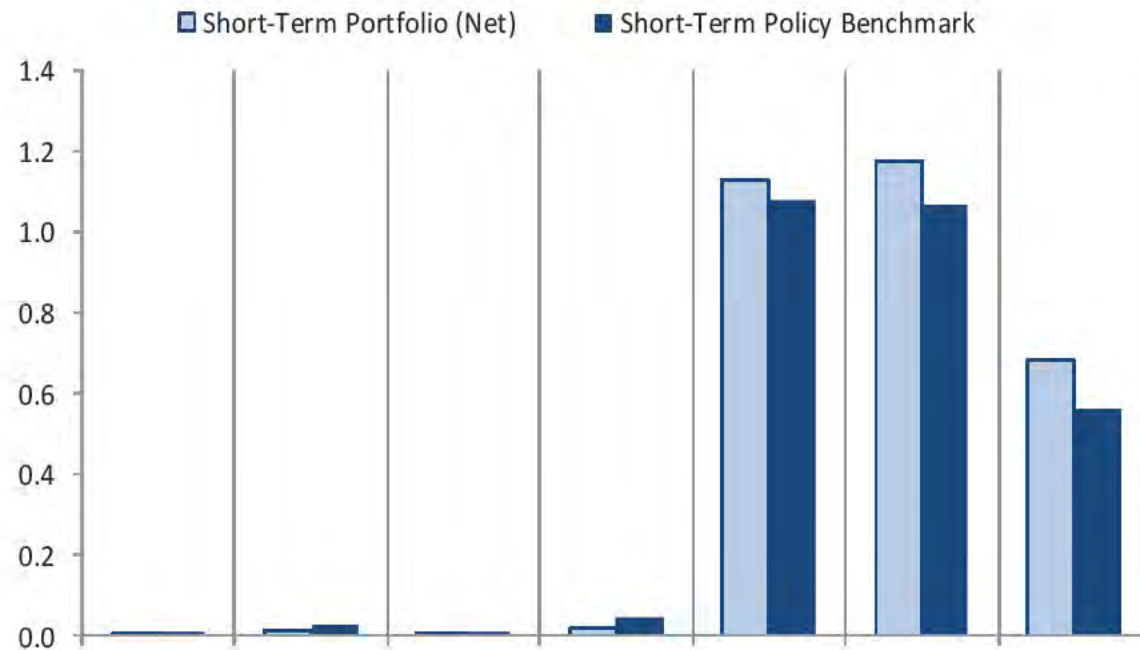
Source: BNY Mellon GRS



Short-Term Performance

Current Benchmark:

Citigroup 30 Day Treasury Bill Index



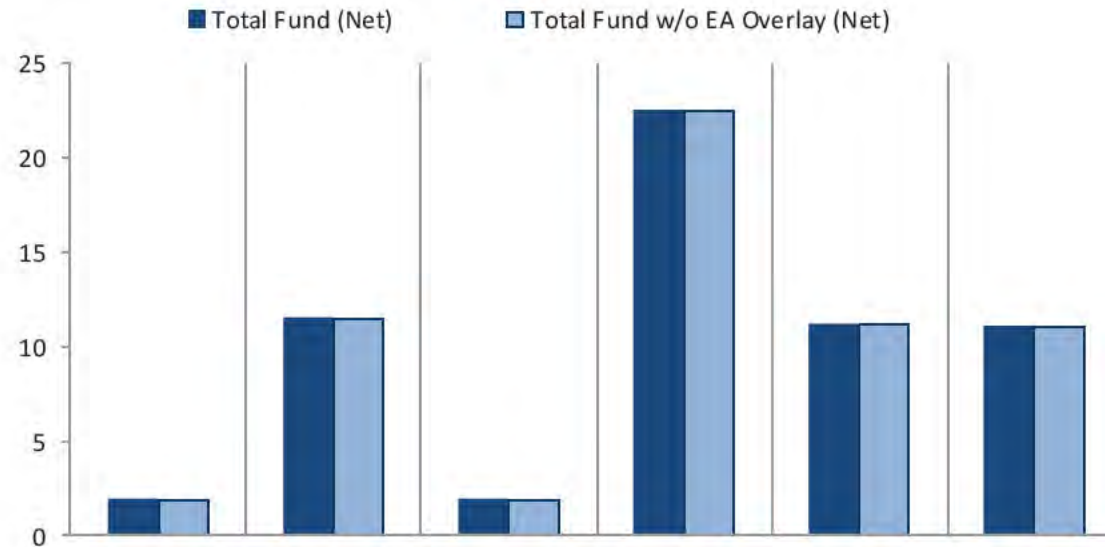
	Qtr	CYTD	FYTD	1 Year	3 Year	5 Year	10 Year
Short-Term Portfolio (Gross)	0.00	0.01	0.00	0.02	1.13	1.18	0.68
Short-Term Portfolio (Net)	0.00	0.01	0.00	0.02	1.13	1.18	0.68
Short-Term Policy Benchmark	0.01	0.03	0.01	0.05	1.08	1.07	0.56
Value Added (Net of Fee)	(0.01)	(0.01)	(0.01)	(0.03)	0.05	0.11	0.13

Source: BNY Mellon GRS

Ohio SERS Investment Report | Quarter Ending: 09/30/2021



Enhanced Asset Overlay Performance



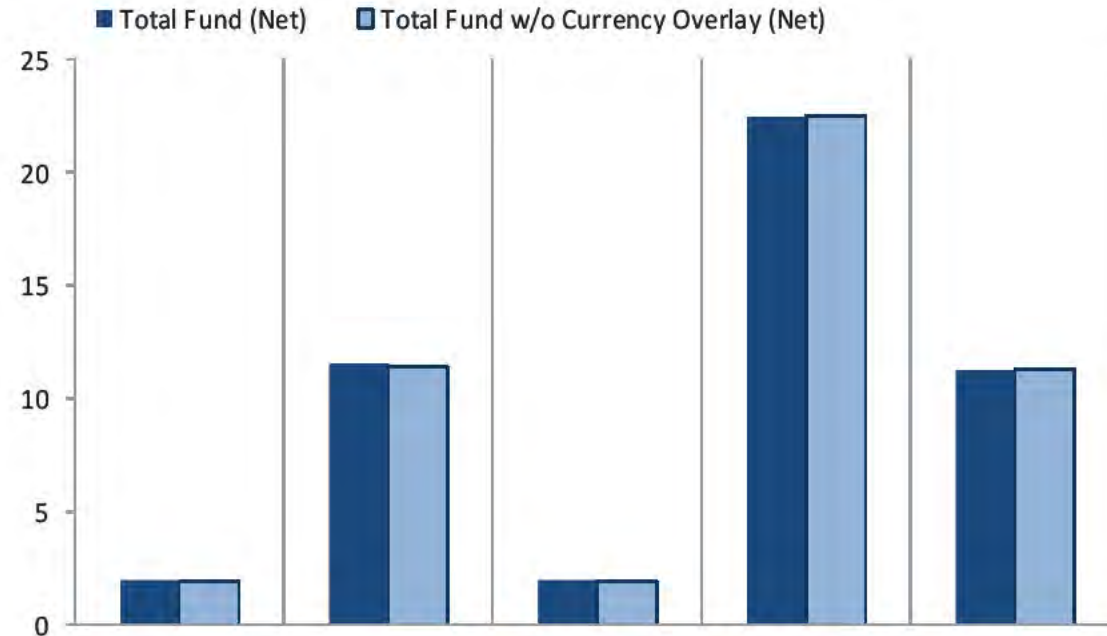
	Qtr	CYTD	FYTD	1 Year	3 Year	5 Year
Total Fund (Gross)	2.06	12.00	2.06	23.13	11.91	11.73
Total Fund w/o EA Overlay (Gross)	2.06	11.96	2.06	23.05	11.85	11.68
Total Fund (Net)	1.93	11.52	1.93	22.50	11.26	11.06
Total Fund w/o EA Overlay (Net)	1.94	11.48	1.94	22.45	11.21	11.01
EA Overlay Impact (Net of Fee)	(0.00)	0.04	(0.00)	0.05	0.05	0.05

Source: BNY Mellon GRS

Ohio SERS Investment Report | Quarter Ending: 09/30/2021



Currency Overlay Performance



	Qtr	CYTD	FYTD	1 Year	3 Year	5 Year
Total Fund (Gross)	2.06	12.00	2.06	23.13	11.91	11.73
Total Fund w/o Currency Overlay (Gross)	1.95	11.84	1.95	23.22	11.94	11.76
Total Fund (Net)	1.93	11.52	1.93	22.50	11.26	11.06
Total Fund w/o Currency Overlay (Net)	1.83	11.36	1.83	22.58	11.31	11.10
Currency Overlay Impact (Net of Fee)	0.11	0.16	0.11	(0.08)	(0.05)	(0.04)

Source: BNY Mellon GRS



Proposed Investment Agenda – Next Meeting

- Annual Portfolio Review – Global Equities
- Investment Report (October 31, 2021)

FEDERAL LEGISLATION BOARD REPORT
117th United States Congress
(Prepared by Chris Collins as of November 5, 2021)

H.R. 82

SPONSOR: Rep. Rodney Davis (R-IL)
LAST ACTIONS: House - 01/04/2021 Referred to the Subcommittee on Social Security.
CAPTION: Social Security Fairness Act of 2021

COMMENT: Repeals the GPO and WEP. 233 co-sponsors; six 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: 178 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: 35 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: 84 cosponsors; three Ohioans

H.R. 5376

SPONSOR: Rep. John Yarmuth (D-KY)

LAST ACTIONS: House - 09/27/2021 Placed on the Union Calendar, Calendar No. 94

CAPTION: Build Back Better Act

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.

School Employees Retirement System

Memo

To: Retirement Board
From: Chris Collins
cc: Richard Stensrud, Karen Roggenkamp
Date: November 5, 2021
Re: **Federal Legislative Report**

OVERVIEW

Reconciliation/Infrastructure: House Democrats' latest version of their nearly \$2 trillion budget reconciliation bill would add slimmed-down paid leave benefits and other programs dropped from the previous iteration, while trimming the duration of some clean energy incentives and cutting higher-income earners off from tax breaks for buying electric vehicles. The bill includes House-Senate compromise on prescription drug pricing that has implications for SERS' Employer Group Waiver Plan (EGWP) for Medicare Part D program.

Special Congressional Elections Results: Two open House seats in Ohio were up for special elections in November. In Northeast Ohio Democrat Shontel Brown will replace Marcia Fudge who resigned to join the Biden administration. In Central Ohio Republican Mike Carey replace Republican Steve Stivers who resigned in May to lead the Ohio Chamber of Commerce. The winners will fill the remainder of their current terms.

SERS ADVOCACY ON HRA WRAPAROUND PLAN AND EGWPs

SERS continues to work with other plan sponsors, industry organizations and providers to educate Congress and key committee staff on the impact prescription drug reform proposals included in the reconciliation package would affect the EGWP used by SERS for our Medicare eligible retirees by sharing a white paper developed by the coalition. Within the white paper is draft language to fix the issue by allowing for the Medicare Part D catastrophic phase to be reached through a total drug spend threshold amount rather than an individual out-of-pocket amount. This option would be indexed for growth in the same way as the current out-of-pocket threshold.

Also, SERS is still pursuing a change on the way the \$1,800 cap is applied for HRA Wraparound Plans. The offices of Reps. Marcy Kaptur (D-OH) and Tim Ryan (D-OH) have been helpful to address the issue with HHS/CMS. SERS will continue to pursue a legislative or regulatory change.

WINDFALL ELIMINATION PROVISION (WEP)

Rep. Kevin Brady (R-TX), ranking member on the Committee on Ways and Means has reintroduced his WEP reform legislation that is identical to the bill he introduced last session. It is similar to Chairman Neal's version, but there are differences in the duration of the period when a public employee could choose the current WEP formula over the revised proportional formula. The original co-sponsors of this bill include Ohio Republicans Reps. Anthony Gonzalez, Robert Latta, and Brad Wenstrup. Rep. Brady is in his final term in Congress and believes passing WEP reform to be a key component of his legacy.

H.R. 2337, Rep. Richard Neal, (D-MA), Chairman of the Committee on Ways and Means, proposal to revise the WEP formula for workers and retirees that are impacted, still has 178 cosponsors. The bill would 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 WEP. The cosponsors include Reps. Joyce Beatty, Marcy Kaptur and Tim Ryan, all Ohio Democrats.

The full repeal bill introduced by Senator Sherrod Brown (D-OH), S. 1302, now has 35 cosponsors, however, Senator Rob Portman (R-OH) is not a cosponsor. The bill would amend title II of the Social Security Act to repeal the government pension offset (GPO) and windfall elimination provisions (WEP).

H.R. 82, the "Social Security Fairness Act of 2021" now has 233 cosponsors, with fifteen members signing on to the bill in September. Six Ohio members are cosponsors, including Rep. Joyce Beatty (D-OH), Tim Ryan (D-OH), David Joyce (R-OH), Michael Turner (R-OH), Bob Gibbs (R-OH) and Troy Balderson (R-OH). The Senate version of the full repeal bill also addresses provisions that reduce Social Security benefits for individuals who receive other benefits and eliminates the GPO and the WEP for benefits after December 2021.

SOCIAL SECURITY ADMINISTRATION (SSA)

The Social Security Administration announced the COLA for 2022 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 5.9%, which is the highest increase in a number of years.

H.R. 5723, the "Social Security 2100 Act," was reintroduced by Rep. John Larson (D-CT) in October. The bill has 194 cosponsors, who are all Democrats. All the current members of Ohio's Democratic delegation are cosponsors, Reps. Joyce Beatty, Tim Ryan and Marcy Kaptur. The bill includes a variety of provisions to strengthen Social Security including a complete repeal of the Windfall Elimination Provision (WEP) and the Government Pension Offset (GPO). However similar bills in past Congresses have not advanced.

HEALTH CARE

The revised Build Back Better Act reconciliation package includes a number of health care provisions beyond prescription drug reform. According to the House Rules Committee summary of the proposal the legislation provides temporary enhanced Affordable Care Act (ACA) Marketplace cost-sharing reduction assistance to individuals with household incomes below 138 percent of the federal poverty level (FPL) for calendar years 2022 through 2025; makes available \$10 billion annually to states for calendar years 2023 through 2025, providing the option for states to establish a state reinsurance program or use the funds to provide financial assistance to reduce out-of-pocket costs; ensures coverage of at least one of each type and dosage form of insulin under private insurance and ensures coverage of these insulin products before the application of any deductible and limits other cost sharing to no more than \$35; makes investments in home and community-based services and long-term care quality and workforce; and provide coverage for hearing care under the Medicare program.

FINANCIAL SERVICES

H. Res. 249, introduced by Rep. Patrick McHenry (R-NC), to express the sense that "Congress should not impose a financial transaction tax on individuals or market intermediaries in connection with trades executed on the National Market System or alternative trading systems" has 23 cosponsors. It was referred to the House Committee on Ways and Means. Reps. Warren Davidson (R-OH) and Anthony Gonzalez (R-OH) are cosponsors.

H.R. 328, the "Wall Street Tax Act of 2021," with 28 cosponsors, including Rep. Tim Ryan (D-OH) has not advanced out of Committee. The legislation would create a financial transaction tax on the sale of stocks, bonds, and derivatives at 0.1 percent (10 basis points), which could raise approximately \$777 billion over ten (10) years. A Senate companion bill, S. 817, has been introduced, however, neither Senator Sherrod Brown (D-OH) or Rob Portman (R-OH) have co-sponsored the bill.

RETIREMENT SECURITY

Chairman Richard Neal (D-MA) and Ranking Member Kevin Brady (R-TX), serving on the House Committee on Ways and Means, have been working together on H.R. 2954, the "Securing a Strong Retirement Act of 2021," or SECURE Act 2.0. The legislation builds upon the retirement plan incentives passed in the SECURE Act of 2019. The bill has received bipartisan support and has 79 cosponsors. Rep. Brad Wenstrup (R-OH) is the only Ohio cosponsor. However, some of this bill's provisions that were added by Democrats to the Build Back Better reconciliation package such as requirements for companies to auto-enroll workers into retirement plans like IRAs or 401(k)s have been dropped from the package. Republicans complained that adding those provisions to such a partisan package undermines the work that has been done on SECURE 2.0.

CONGRESSIONAL REDISTRICTING

The state redistricting commission missed an October 31st deadline to approve new district lines for Ohio's U.S. representatives in Congress. The Ohio General Assembly must now act to pass a new map by the end of November. If it receives bipartisan agreement, the map will go into effect for 10 years. If that map isn't agreed to by both sides, the map can be passed through a simple majority, to last four years. Preliminary versions of the congressional map drafted by the Republican caucuses have been criticized for being driven by partisan considerations. Due to the results of the 2020 census Ohio is slated to lose one of its congressional districts shrinking the number of House members from 16 to 15.

STATE LEGISLATION BOARD REPORT
(Prepared by Chris Collins as of November 5, 2021)

133rd General Assembly

HB308 POST-TRAUMATIC STRESS FUND Tom Patton (R-Strongsville) To provide compensation and benefits to first responders with post-traumatic stress disorder and to study the financial and administrative requirements for that fund.

Current Status: 01/09/2021 SIGNED BY GOVERNOR; eff. 90 days

HB442 OCCUPATIONAL REGULATIONS Bill Roemer (R-Richfield) and Thomas West (D-Canton) Requires pupil services personnel to register with the Department of Education, rather than hold a separate license from the State Board of Education as under prior law. The change applies to school speech language pathologists, audiologists, school nurses, physical therapists, occupational therapists, and social workers, who are licensed by their respective professional boards.

Current Status: 01/07/2021 SIGNED BY GOVERNOR; eff. 90 days

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: 09/22/2021 Referred to Primary and Secondary Education Committee

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)

School Employees Retirement System of Ohio

Summary of administrative operation expenses during the period October 1, 2021- October 31, 2021.

Actuals
Oct-2021

Account	Amount
Salaries & Wages	1,053,439.56
Salaries & Wages- Cash in Vacation	2,294.40
Salaries & Wages- Overtime	2,924.46
Vacation Leave Expense	101,553.12
Sick Leave Expense	39,344.57
Employer Contributions- PERS	158,628.40
Unemployment Compensation	1,106.41
Group Life	8,296.80
Long Term Disability	2,363.99
Short Term Disability	2,513.77
Group Health Claims	281,255.78
Group Health- Admin Fees	7,448.76
Prescription Claims	95,672.14
Group Health- Stop Loss Admin	13,799.56
Vision Claims	2,333.70
Vision Admin Fees	169.29
Group Health- Employee Cost	(27,507.13)
Group Health- Wellness Incentive	3,590.00
Group Health- Tobacco Premiums	(880.00)
Medicare Premium- Employer	16,212.45
Workers Compensation	3,119.50
Deferred Compensation Match	4,785.00
Actuarial Services	24,206.00
Audit	85,000.00

Account	Amount
Custodial Fees	99,725.16
Custodial Banking	15,915.83
Master Recordkeeper Fees	86,000.00
Investment Advisory Fees	54,166.67
Performance/ Analytics Fee	77,012.95
Other Prof. Inv. Related Consulting	91.00
Medical Consultant	3,750.00
Special Counsel	18,815.54
Technical	125,713.39
Other Professional Services	29,485.77
Postage	3,101.92
Telecommunications Services	13,409.30
Printing Supplies	115.04
Hardware Maintenance	1,678.00
Software Maintenance	307,093.78
Software Subscriptions	13,632.18
Hardware < \$5,000	95.65
Equipment Repairs & Maintenance	4,660.46
Office Supplies & Expenses	624.08
Records Storage	1,753.45
Seminars & Conferences	11,469.00
Travel & Transportation	6,736.70
Subscriptions	387.02
Memberships	6,118.00
Management and Liability Insurance	359,262.00
Operations Maintenance	3,343.20
Interior Landscaping	1,356.37

Account	Amount
Staff Support	6,597.30
Recruiting Expense	665.64
Ohio Retirement Study Council	9,600.85
Reimbursement of Leased Svcs.	(25,416.67)
Total Administrative Expenses	3,118,721.89

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

The following are the administrative expenses of the School Employees Retirement System of Ohio during the period **October 1, 2021- October 31, 2021**

<u>Expense Account</u>	<u>Vendor</u>	<u>Amount</u>	
53100 - Salaries & Wages	ADP, LLC	1,053,439.56	
			Subtotal
		1,053,439.56	
53104 - Salaries & Wages - Cash in Vacation	ADP, LLC	2,294.40	
			Subtotal
		2,294.40	
53110 - Salaries & Wages - Overtime	ADP, LLC	2,924.46	
			Subtotal
		2,924.46	
53111 - Vacation Leave Expense	ADP, LLC	101,553.12	
			Subtotal
		101,553.12	
53112 - Sick Leave Expense	ADP, LLC	39,344.57	
			Subtotal
		39,344.57	
53200 - Employer Contributions - PERS	Ohio Public Emp. Retirement System	158,628.40	
			Subtotal
		158,628.40	
53140 - Unemployment Compensation	Ohio Dept. of Job & Family Services	1,106.41	
			Subtotal
		1,106.41	
53300 - Group Life	American United Life Insurance Company	8,296.80	
			Subtotal
		8,296.80	
53310 - Long Term Disability	American United Life Insurance Company	2,363.99	
			Subtotal
		2,363.99	
53315 - Short Term Disability	American United Life Insurance Company	2,513.77	
			Subtotal
		2,513.77	
53320 - Group Health Claims	Aetna Daily Wires - ESERS	280,458.03	
	SaveonSP, LLC	797.75	
			Subtotal
		281,255.78	
53321 - Group Health - Admin Fees	Aetna Admin - ESERS	7,448.76	
			Subtotal
		7,448.76	
53322 - Prescription Claims	Express Scripts - ESERS	95,672.14	
			Subtotal
		95,672.14	
53324 - Group Health - Stop Loss Admin	Aetna Admin - ESERS	13,799.56	
			Subtotal
		13,799.56	
53326 - Vision Claims	VSP - (OH)	2,333.70	
			Subtotal
		2,333.70	
53327 - Vision Admin Fees	VSP - (OH)	169.29	
			Subtotal
		169.29	
53330 - Group Health - Employee Cost	Employee Premiums	(27,507.13)	
			Subtotal
		(27,507.13)	
53331 - Group Health - Wellness Incentive	ADP, LLC	3,590.00	
			Subtotal
		3,590.00	
53332 - Group Health - Tobacco Premiums	ADP, LLC	(880.00)	
			Subtotal
		(880.00)	
53340 - Medicare Premium - Employer	ADP, LLC	16,212.46	
	ADP, LLC	(0.01)	
			Subtotal
		16,212.45	
53350 - Workers Compensation	Ohio Bureau Of Workers Compensation	3,119.50	
			Subtotal
		3,119.50	
53380 - Deferred Compensation Match	ADP, LLC	4,785.00	
			Subtotal
		4,785.00	

November 2021 SERS Board Book - Executive Director's Report

<u>Expense Account</u>	<u>Vendor</u>	<u>Amount</u>
54100 - Actuarial Services	Cavanaugh MacDonald Consulting, LLC	12,000.00
	Cavanaugh MacDonald Consulting, LLC	12,206.00
	Subtotal	24,206.00
54200 - Audit	RSM US LLP	85,000.00
	Subtotal	85,000.00
54310 - Custodial Fees	BYN Mellon Asset Servicing	99,725.16
	Subtotal	99,725.16
54320 - Custodial Banking	Huntington National Bank	15,915.83
	Subtotal	15,915.83
54410 - Master Recordkeeper Fees	BNY Mellon Asset Servicing	86,000.00
	Subtotal	86,000.00
54420 - Investment Advisory Fees	Wilshire	54,166.67
	Subtotal	54,166.67
54430 - Performance/Analytics Fee	BNY Mellon Asset Servicing	14,401.70
	Barra LLC	59,611.25
	Wilshire Associates Incorporated	3,000.00
	Subtotal	77,012.95
54450 - Other Prof. Inv. Related Consulting	Gmei Utility	91.00
	Subtotal	91.00
54520 - Medical Consultant	Borchers, M.D., Glen G.	3,750.00
	Subtotal	3,750.00
54610 - Special Counsel	Ice Miller LLP	12,660.54
	Calfee Halter & Griswald LLP	3,352.50
	Porter, Wright, Morris,	52.50
	Frost Brown Todd, LLC	2,750.00
	Subtotal	18,815.54
54620 - Technical	Sagitec Solutions, LLC	71,667.75
	Sigital, LLC	375.00
	Velosio	102.50
	IBM Corporation	29,500.00
	Buck Global, LLC	24,068.14
	Subtotal	125,713.39
54630 - Other Professional Services	Fifth Third Bank	(128.00)
	Wickert, Kimberly	1,755.00
	Vorys Advisors LLC	3,333.33
	Attorney General	9,045.44
	Performance Leadership Group, LLC	500.00
	CPS HR Consulting	8,980.00
	CBIZ Talent and Compensation Solutions	6,000.00
	Subtotal	29,485.77
55100 - Postage	Notifii LLC	237.00
	Pitney Bowes Inc.	1,091.18
	Postmaster	1,065.00
	Columbus Courier & Freight LLC	199.85
	Postmaster	265.00
	Unishippers Association	243.89
Subtotal	3,101.92	
55200 - Telecommunications Services	Verizon Wireless	1,530.35
	XO Communications	1,789.77
	Time Warner Cable	6,073.03
	AT&T	40.10
	LUMEN	3,976.05
Subtotal	13,409.30	
55410 - Printing Supplies	Millcraft Paper Co.	115.04
	Subtotal	115.04
56020 - Hardware Maintenance	Vertiv Corporation	1,678.00
	Subtotal	1,678.00
56030 - Software Maintenance	Sagitec Solutions, LLC	70,000.00
	Dell Marketing LP	237,093.78
	Subtotal	307,093.78

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<u>Expense Account</u>	<u>Vendor</u>	<u>Amount</u>
56035 - Software Subscriptions	Jet Brains	357.00
	ADP, LLC	2,870.40
	SurveyMonkey.com	91.78
	KLDiscovery	1,275.00
	Liquid Web Inc	264.50
	Zoho Corporation	7,797.04
	Zoom	513.66
	Wellable LLC	462.80
	Subtotal	13,632.18
56040 - Hardware < \$5,000	Lenovo	95.65
	Subtotal	95.65
56110 - Equipment Repairs & Maintenance	Ricoh USA, Inc	1,908.83
	Digital Print Solutions	746.42
	Canon Financial Services, Inc	1,647.27
	LD Products Inc.	63.96
	Woodhull	293.98
Subtotal	4,660.46	
56130 - Office Supplies & Expenses	Staples Business Advantage	584.69
	Amazon.com	39.39
	Subtotal	624.08
56160 - Records Storage	Vital Records Holdings, LLC	1,753.45
	Subtotal	1,753.45
56210 - Seminars & Conferences	Public Pension Financial Forum	7,250.00
	Global Arc	425.00
	Ohio State University	225.00
	International Foundation of Employee Benefit Plans	3,250.00
	Mightevent.com	150.00
	HR Certification Institute	169.00
Subtotal	11,469.00	
56310 - Travel & Transportation	Kroger	135.50
	Rossler, James	56.76
	Haller, James	407.03
	Phillips, Barbra	1,742.43
	Majeed, Farouki	1,085.06
	Moss, Catherine	1,830.80
	Wilson, Daniel L.	283.00
	King, Matt	659.21
	Weglarz, Frank	328.98
	Bibibop Asian Grill	207.93
Subtotal	6,736.70	
56410 - Subscriptions	Wall Street Journal	46.99
	Constant Contact	225.00
	Shutterstock, Inc.	29.00
	Kiplinger's Retirement Report	42.95
	Amazon.com	30.09
	Toledo Blade	12.99
Subtotal	387.02	
56420 - Memberships	AICPA	285.00
	Society for Human Resource Management	369.00
	Public Sector Healthcare Roundtable	2,800.00
	NCPERS	2,200.00
	Masri, Judi	239.00
	Association of Certified Fraud Examiners	225.00
Subtotal	6,118.00	
56510 - Management Liability Insurance	ARC Excess & Surplus, LLC.	359,262.00
	Subtotal	359,262.00
56610 - Operations Maintenance	Stanley Convergent Security Solutions, Inc.	216.00
	AT&T	247.96
	Amtrec, LLC	1,666.00
	Sou h Central Power Company	1,041.00
	Northeast Ohio Natural Gas Corp.	172.24
Subtotal	3,343.20	
56630 - Interior Landscaping	Ambius Inc. (05)	1,356.37
	Subtotal	1,356.37

November 2021 SERS Board Book - Executive Director's Report

<u>Expense Account</u>	<u>Vendor</u>	<u>Amount</u>
56620 - Staff Support	Franklin Services	547.88
	ADP LLC	3,440.00
	Certif-A-Gift Company	416.00
	Premier ProduceOne	385.40
	Amazon.com	75.00
	Pepe, Marieke Christi	76.22
	ThrivePass	564.00
	Matrix Integrated Psychological Services	590.70
	Culligan Bottled Water of Columbus	49.89
	Zoro Tools	82.56
	BalloonsFast.com	38.22
	Flanagan, Michael	50.65
	Office Max	230.78
	Fanatics	25.00
	Fleet Feet	25.00
	Subtotal	6,597.30
56621 - Recruing Expense	ADP Screening & Selection Services	236.60
	Indeed	429.04
	Subtotal	665.64
56820 - Ohio Retirement Study Council	Ohio Retirement Study Council	9,600.85
	Subtotal	9,600.85
56900 - Reimbursement of Leased Svcs	Reimbursement of Leased Services	(25,416.67)
	Subtotal	(25,416.67)
	Total SERS Administrative Expense	3,118,721.89

November 2021 SERS Board Book - Executive Director's Report

FY2022 Administrative Budget
Board Expense to Budget Reporting
Year-to-Date Through October 31, 2021

Major Category/Sub-Major Category	Line Item	Vendor	FY22 Budget Approved	Year to Date Expense	Budgeted Y/N?	Additional Information
PROFESSIONAL SERVICES			\$ 6,829,361.00	\$ 2,164,962.60		
ACTUARIAL ADVISORS			\$ 344,725.00	\$ 71,722.00		
	Actuarial	Cavanaugh Macdonald	344,725.00	71,722.00	Y	Actuarial Consultant
AUDITING			\$ 224,984.00	\$ 86,477.30		
	Auditing		174,984.00	86,477.30		External Auditor
BANKING FEES			\$ 1,303,620.00	\$ 452,930.92	Y	
	Custodial Banking		1,105,200.00	407,514.57		
		Huntington/Fifth Third	405,600.00	101,859.93	Y	Domestic Custodian
		BNYM	699,600.00	305,654.64	Y	International Custodian
	Administrative Banking	Huntington National Bank/ TOS	198,420.00	45,416.35	Y	Banking Services
INVESTMENT RELATED			\$ 2,554,217.00	\$ 881,739.01		
	Master Recordkeeper		1,010,400.00	345,990.07	Y	
	Investment Consulting & Advisory Services		700,000.00	216,666.68		
		Askia	250,000.00	66,666.68	Y	Investment Consulting
		Wilshire	450,000.00	150,000.00	Y	Investment Consulting
	Performance Analytics Services		704,800.00	269,079.10		
		Barra-One Risk Mgmt Sys	254,000.00	119,222.50	Y	Investment Risk Analytics
		BNY Mellon GRS	412,800.00	137,606.60	Y	Investment Performance Analytics
TECHNICAL			\$ 2,356,815.00	\$ 657,093.37		
	Special Counsel		235,000.00	81,943.95	Y	
	Technical		1,595,500.00	353,898.69		
		IBM	118,000.00	59,000.00	Y	Data Warehouse
		Sagitec	550,200.00	145,623.21	Y	SMART Development Resources
		Buck Global	300,000.00	45,000.00	Y	Medical and Prescription Consulting
	Other Professional Services		526,315.00	221,250.73		
OTHER OPERATING EXPENSE			\$ 3,087,979.75	\$ 1,592,853.67		
COMPUTER SUPPORT SERVICES			\$ 1,948,407.50	\$ 992,607.50		
	Software Maintenance		975,825.00	670,037.67		
		Hyland	111,500.00	110,529.96	Y	ImageNow
		Dell	271,000.00	332,083.39	Y	Microsoft Enterprise Agreement
		Sagitec	420,000.00	140,000.00	Y	SMART Silver Support
	Software Subscriptions		783,282.50	293,665.29	Y	
		OarNet	115,000.00	-		Vmware License
		Dynamo	60,000.00	130,250.00	Y	Dynamo Software, INC
		Carahsoft	94,000.00	109,716.00	Y	ServiceNow System

PROJECT ITEMS

Major Category/Sub-Major Category	Line Item	Project	FY2022 Budget	YTD Expense	Budgeted Y/N?	Additional Information
PROFESSIONAL SERVICES						
TECHNICAL						
	Technical	Improve SMART Self Service Capabilities	175,000.00	-	Y	Consulting Services

SERS

UNBUDGETED PROJECT ITEMS

Major Category/Sub-Major Category	Line Item	Project	FY2022 Budget	YTD Expense	Budgeted Y/N?	Expense Reallocation
	Technical	Resource need caused by vacancy- IT Consultant		\$ 41,975.00	N	Technical
	Technical	Employee Engagement Survey- HR Consultant CPS Consulting		\$ 14,200.00	N	Other Professional Services

OSERS BROAD STREET, LLC

UNBUDGETED PROJECT ITEMS

Major Category	Line Item	Project	FY2022 Budget	YTD Expense	Budgeted Y/N?
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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>
Jeffrey DeLeone	_____	_____	_____
Hugh Garside	_____	_____	_____
James Haller	_____	_____	_____
Matthew King	_____	_____	_____
Catherine Moss	_____	_____	_____
James Rossler	_____	_____	_____
Frank Weglarz	_____	_____	_____
Daniel Wilson	_____	_____	_____
Barbra Phillips	_____	_____	_____

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

SERS TECHNOLOGY COMMITTEE REPORT

CALENDAR DATES FOR SERS BOARD MEETINGS FOR 2021

AUDIT COMMITTEE MEETINGS

December 15, 2021 - 2:30 p.m. (Weds.)

COMPENSATION COMMITTEE MEETINGS

December 16, 2021 - 7:30 a.m. (Thurs.)

TECHNOLOGY COMMITTEE MEETINGS

December 16, 2021 – 1:00 p.m. (Thurs.)

BOARD MEETINGS

November 18 and 19, 2021 (Thurs. and Fri.)
December 16 and 17, 2021 (Thurs. and Fri.)

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

CALENDAR DATES FOR SERS BOARD MEETINGS FOR 2022

AUDIT COMMITTEE MEETINGS

March 16, 2022 - 2:30 p.m. (Weds.)
June 15, 2022 - 2:30 p.m. (Weds.)
September 14, 2022 - 2:30 p.m. (Weds.)
December 14, 2022 - 2:30 p.m. (Weds.)

COMPENSATION COMMITTEE MEETINGS

March 17, 2022 - 7:30 a.m. (Thurs.)
June 16, 2022 - 7:30 a.m. (Thurs.)
September 15, 2022 - 7:30 a.m. (Thurs.)
December 15, 2022 - 7:30 a.m. (Thurs.)

TECHNOLOGY COMMITTEE MEETINGS

March 17, 2022 – 1:00 p.m. (Thurs.)
June 16, 2022 – 1:00 p.m. (Thurs.)
September 15, 2022 – 1:00 p.m. (Thurs.)
December 15, 2022 – 1:00 p.m. (Thurs.)

BOARD MEETINGS

February 17-18, 2022 – 8:30 a.m. (Thurs. and Fri.)
March 17-18, 2022 – 8:30 a.m. (Thurs. and Fri.)
April 21-22, 2022 – 8:30 a.m. (Thurs. and Fri.)
May 19-20, 2022 – 8:30 a.m. (Thurs. and Fri.)
June 16-17, 2022 – 8:30 a.m. (Thurs. and Fri.)
July 21-22, 2022 – 8:30 a.m. (Thurs. and Fri.)
September 15-16, 2022 – 8:30 a.m. (Thurs. and Fri.)
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.)

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

CONTINUED OR NEW BUSINESS

Board Information Requested

BOARD INFORMATION REQUESTS AND FOLLOW-UP ITEMS

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

PENSION SUSTAINABILITY REPORT

ADJOURNMENT(R)

_____ moved that the Board adjourn to meet on Thursday, December 16, 2021 for their next regularly scheduled meeting.

The meeting adjourned at _____ p.m.

Barbra Phillips - Chairperson

Richard Stensrud, Secretary