



**Retirement Board Agenda
February 16, 2023**

Click the Zoom Link to Join the Meeting:

<https://ohsers.zoom.us/j/92095568617?pwd=T0tzWWZiOVdzcUFQV3BqVkdMcjdUZz09>

Meeting ID: 920 9556 8617

Password: 909421

To join by phone, dial: (929) 205-6099 and enter the Meeting ID: **920 9556 8617** and Password: **909421** when prompted.

PLEDGE OF ALLEGIANCE

1. Roll Call

CONSENT AGENDA

2. Minutes of the **December 15, 2022** Retirement Board meeting
3. Summary of Investment Transactions
 - **November 1, 2022 to November 30, 2022 and**
 - **December 1, 2022 to December 31, 2022**
4. Retirement Report
 - Superannuation & Survivor Benefits
 - Special Cases
5. Disability Report
 - Approval of Disability Benefits
 - Disapproval of Disability Benefits
 - Termination of Disability Benefits
 - Termination of Disability Benefits – Any Occupation
 - Approval of Appeal for Disability Benefits
 - Approval of Appeal of Termination – Any Occupation
 - Disapproval of Appeal of Termination – Any Occupation

INVESTMENT REPORT

6. Annual Portfolio Review – Real Assets
7. Wilshire Associates Quarterly Performance Report – As of December 31, 2022
8. Quarterly Investment Report
9. Asset Allocation Review presented by Wilshire Associates

EXECUTIVE DIRECTOR'S REPORT

10. Executive Director's Update
 - Quarterly Financials
11. Review of Administrative Expenses
12. SERS Definition of Compensation Discussion
13. Executive session pursuant to R.C. 121.22 (G)(5) to discuss a matter required to be kept confidential by law (R)
 - Personal Appearance **10:00am**

RECESS FOR MEMBERSHIP APPEALS - 10:30am

14. Membership Resolutions (R)

RETIREMENT REPORT

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

BOARD COMMUNICATION AND POLICY ISSUES

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

RECESS FOR LUNCH

EXECUTIVE DIRECTOR'S REPORT (cont.)

18. Reconvene for CBIZ – Compensation Update
19. Healthcare Sustainability Discussion

Adjournment (R)

FY2023 SERS Board Roll Call

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

CONSENT AGENDA

1. Minutes of the **December 15, 2022** Retirement Board meeting
2. Summary of Investment Transactions – **November 1, 2022 to November 30, 2022 and December 1, 2022 to December 31, 2022**
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
 - d. Termination of Disability Benefits – Any Occupation
 - e. Approval of Appeal for Disability Benefits
 - f. Approval of Appeal of Termination – Any Occupation
 - g. 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 **December 15, 2022**, Retirement Board meeting
- 6. Summary of Investment Transactions – **November 1, 2022 to November 30, 2022 and December 1, 2022 to December 31, 2022**
- 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. Termination of Disability Benefits – Any Occupation
 - e. Approval of Appeal for Disability Benefits
 - f. Approval of Appeal of Termination – Any Occupation
 - g. 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>
Frank Weglarz	_____	_____	_____
Hugh Garside	_____	_____	_____
James Haller	_____	_____	_____
Matthew King	_____	_____	_____
Catherine Moss	_____	_____	_____
Barbra Phillips	_____	_____	_____
James Rossler	_____	_____	_____
Daniel Wilson	_____	_____	_____
Jeffrey DeLeone	_____	_____	_____

SERS Retirement Board Meeting Minutes

December 15, 2022

The nine hundredth and fifty-fifth 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, December 15, 2022.

Pledge of Allegiance

The SERS Retirement Board meeting convened at 8:34 a.m. with the Pledge of Allegiance.

Roll Call

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

Consent Agenda

The consent agenda for December 15, 2022, included:

- Minutes of the November 17&18, 2022, Retirement Board meeting
- Summary of Investment Transactions for the period of **October 1, 2022, to October 31, 2022.**
- Retirement Report – Superannuations, Survivor Benefits, and Transfers
- Disability Report – Approval of Disability Benefits, Disapproval of Disability Benefits, Termination of Disability Benefits – An Occupation, Disapproval of Appeal of Termination – Any Occupation

Catherine Moss moved, and Barb Phillips seconded the motion to approve the Consent Agenda of the Retirement Board meeting held on Thursday, December 15, 2022. Upon roll call, the vote was as follows: Yea: Hugh Garside, James Haller, Matthew King, Catherine Moss, Barbra Phillips, Daniel Wilson, and Jeffrey DeLeone. Abstained: Frank Weglarz. Absent: James Rossler. The motion carried.

External Audit Report

SERS Executive Director, Richard Stensrud introduced Joe Leonard, Senior Assurance Manager, and Jamie Robinson, Assurance Manager, with SERS' independent external auditor, RSM US LLP, who presented the FY2022 Independent Auditor's Report.

Mr. Leonard began his report by noting that SERS had received a 'clean' audit, with no significant or unusual transactions identified. The audit involved extensive analysis and review over several months. Mr. Leonard noted that RSM issued an unmodified opinion, and explained this is the best result an organization can receive. RSM noted their report did not identify any internal control or compliance matters. Mr. Leonard noted that RSM is still working on GASB 68 and 75 reports which will be completed over the next few months. Mr. Leonard reported that RSM remains in agreement with the 7% assumed investment rate going forward. Mr. Leonard expressed his appreciation for the efforts of SERS' staff in supporting RSM's work on the audit.

Following a robust discussion with the Board, the auditors concluded their report.

Mr. Stensrud noted that this report ends a ten-year auditing relationship with RSM and thanked RSM for their role in helping SERS achieve its objectives of transparency and accountability. The Board thanked RSM, Mr. Stensrud, Chief Finance Office, Marni Hall, and SERS staff for their hard work.

SERS Retirement Board Meeting Minutes

December 15, 2022

Annual Comprehensive Financial Report (ACFR)

Marni Hall, SERS' Chief Financial Officer, provided an overview of the fiscal year 2022 Annual Comprehensive Financial Report, also known as the ACFR. Ms. Hall explained that SERS staff assembles the information contained in the Annual Comprehensive Financial Report (ACFR), which summarizes SERS' financial health, investment performance, and accomplishments of the last fiscal year (July 1-June 30).

Ms. Hall noted that SERS ACFR meets the standards of the Governmental Accounting, Auditing and Financial Reporting (GAAFR) and the Government Accounting Standards Board (GASB). Ms. Hall noted SERS' ACFRs are consistently awarded the Certificate of Achievement for Excellence in Financial Reporting by the Government Finance Officers Association and this report will be the thirty-eighth SERS ACFR to earn this award. Ms. Hall noted that SERS also received the Public Pension Standards Award for Funding and Administration from the Public Pension Coordinating Council for excellence in meeting the professional standards that guide plan funding and administration for state and local public retirement systems. In addition, Ms. Hall noted that SERS received a four-star rating under the Ohio Auditor of State's Star Rating System. The four-star rating means that SERS not only met every Sunshine Law requirement but attained the highest achievement in open and transparent government by implementing five or more best practices in processing public records requests.

Ms. Hall noted that the majority of the ACFR is made up of the financial section audited by RSM, and as heard during the External Audit Report today, it was a clean opinion.

Ms. Hall reported on the highlights of the financial section including the Pension Fiduciary Net Position, the Health Care Fiduciary Net Position, and the Total Fiduciary Net Position. Ms. Hall provided a detailed report on various footnotes within the ACFR that related to pension systems. Ms. Hall opened the floor to questions and following a robust discussion, Ms. Hall concluded her report.

Mr. Stensrud thanked and complimented the SERS staff who produced and designed the document, noting that it provides a tremendous amount of important information, presented in a clear and visually appealing manner.

Following the report, the Board thanked Ms. Hall for her presentation.

Investment Report

Annual Portfolio Review – Opportunistic

SERS Chief Investment Officer, Farouki Majeed, introduced Investment Officer of Global Private Equity, Phil Sisson, who provided an Opportunistic and Tactical Investment Portfolio review. Mr. Sisson began his presentation summarizing the portfolio which currently has a \$633 million market value. There are 12 managers and 21 fund investments. SERS unfunded commitments are \$405 million, and these have been committed to close end funds managers are actively seeking to deploy. Mr. Sisson reported on recent performance, despite the -1.1% one-year net, the return it is providing downside protection. Investments have added 7 new funds within the last year, positioning the portfolio for more volatility, and will continue to research new opportunities. Mr. Sisson reported that historically, investments made during downturns were some of the best performing investments, and currently valuations are reasonable providing good entry points for investors.

Mr. Sisson continued, reporting the role and objective of this portfolio. The Opportunistic portfolio was first implemented in 2013 to take advantage of market opportunities that did not fit within the existing strategic asset classes, primarily in the direct lending structured credit areas. This gave rise to the development of the Private Credit asset class. Due to redemptions from the liquid accounts the allocation has gone down from 4.7% to 3.7% in the last year.

SERS Retirement Board Meeting Minutes

December 15, 2022

Mr. Sisson continued his report explaining the main sub strategies within the portfolio. Currently, diversified and tactical make up 41%. Mr. Sisson explained tactical investments perform better in higher inflationary periods and move differently than stocks. Multi Asset Strategy (MAS) makes up 17%.

Mr. Sisson explained distressed debt makes up 26% of the portfolio. Managers take advantage of volatility and buy debt below what is considered fair market value; this area has done well for SERS; the 5-yr return is about 14% net of fess (NOF). Structured credit makes up 16% of the portfolio. The high level of income with structured credit is successful in inflationary periods, the yield on this portfolio is 4.2%.

Mr. Sisson presented the portfolio performance, explaining this portfolio has provided good downside protection. Distressed debt and MAS have continued to generate positive returns over the last year. Mr. Sisson ended his report updating that the nine-year return since inception is 6.7%.

Board member, Barb Phillips, remarked she was grateful the MAS is acting as it should. The Board thanked Mr. Sisson for his presentation.

SERS Monthly Investment Report

SERS Chief Investment Officer, Farouki Majeed, provided a monthly investment report. Mr. Majeed shared recent developments from the Federal Reserve meeting, headline inflation came down from prior months from 7.7% to 7.1%. The PMI indicates the economy is reaching a slowing stage, and a recession is possible in the next six months.

Mr. Majeed reported on total fund performance, October was a positive month and SERS investments is ahead of benchmark by nearly 1%. The preliminary report for November was also provided to the Board as a handout. Following a robust discussion, the board thanked Mr. Majeed for his presentation.

Mr. Majeed announced the appointment of Investment's Judi Masri as the Investments Assistant Director. Ms. Masri has been with the fund for nearly 20 years, handled fixed income, and is now heading global equities. The Board congratulated Ms. Masri and thanked all investment staff.

Executive Director's Report

Actuarial Audit Report

Richard Stensrud, SERS Executive Director, introduced Scott Porter and Nick Collier, actuaries from Milliman to provide the report on their actuarial audit of the work performed by SERS' current retained actuary, Cavanaugh Macdonald.

Mr. Stensrud noted that when the Board awarded Cavanaugh Macdonald a new five-year contract on July 1, 2022, they further directed that an actuarial audit be performed to ensure that the firm's performance complied with current actuarial standards and practices. Milliman was chosen to perform the actuarial audit. Before the report began, Mr. Stensrud reminded the Board that the Ohio Retirement Study Council (ORSC) normally provides an audit every ten years, and the next ORSC-commissioned audit will likely be conducted in 2023. Mr. Stensrud emphasized the impetus for securing the actuarial audit before that time was not due to any concerns or lack of confidence regarding the reasonableness and accuracy of the actuarial work performed by Cavanaugh Macdonald, but rather, was based on the Board's view that given Cavanaugh Macdonald's long tenure as retained actuary, having an independent review of that work was prudent and reflective of 'best practice' in the operation of a public retirement system.

Mr. Porter of Milliman, began his report by expressing gratitude to SERS staff and Cavanaugh Macdonald for responsiveness through the audit process. Mr. Porter explained the report summarizes findings and recommendations from an independent review of actuarial methods, procedures, actuarial assumptions, and membership data and the resulting actuarially computed normal costs and liabilities as shown in the June 30,

SERS Retirement Board Meeting Minutes

December 15, 2022

2021, reports on the Actuarial Valuation of Defined Benefit Allowances and Projections of Retiree Health Benefits for SERS. Mr. Porter further reported that the audit was favorable, and Cavanaugh Macdonald was found to be providing good services. Milliman found the actuarial procedures and practices to be of a high quality and in compliance with all major aspects of the applicable actuarial standards.

Mr. Porter introduced his colleague, Nick Collier, to review the Funding Policy.

Following a robust discussion, the Board thanked Milliman staff members for their report and their actuarial expertise.

The board took a break at 10:11 a.m.

The board reconvened 10:26 a.m.

Certification of Candidates – Employee Member Seat

Barbra Phillips moved, and Catherine Moss seconded that having met the eligibility requirements of Chapter 3309 of the Ohio Revised Code, and having received sufficient and proper petitions to meet the qualifications of Section 3309.07 of the Ohio Revised Code, the following candidates be placed upon the ballots for the election of an employee member to the School Employees Retirement Board for the term July 1, 2023, to June 30, 2027:

NAME	SCHOOL DISTRICT	COUNTY
Rebekah R. Roe	Columbus City Schools	Franklin
Aimee Russell	Ashland City Schools	Ashland

In accordance with Section 3309-1-04 of the Ohio Administrative Code, the Secretary of State's Office has reviewed the certification that Rebekah R. Roe and Aimee Russell are qualified to run for the employee member seat. Upon roll call the vote was as follows: Yea: Hugh Garside, James Haller, Matthew King, Catherine Moss, Barbra Phillips, Frank Weglarz, Daniel Wilson, and Jeffrey DeLeone. Absent: James Rossler. The motion carried.

2023 Qualified Excess Benefit Plan Budget (QEBA)

Frank Weglarz moved, and Hugh Garside seconded the motion to assign \$187,000 of employer contributions from the last employer of retirees covered by the SERS Qualified Excess Benefit Plan to the QEBA Fund for calendar 2023. The QEBA Fund is authorized to pay benefits of approximately \$ 182,000 to qualified retirees; with the balance allocated to QEBA Fund operating expenses. Upon roll call the vote was as follows: Yea: Hugh Garside, James Haller, Matthew King, Catherine Moss, Barbra Phillips, Frank Weglarz, and Jeffrey DeLeone. Abstained: Daniel Wilson. Absent: James Rossler. The motion carried.

Final Filing of No Change Administrative Rule

Mr. Stensrud introduced Joe Marotta, SERS General Legal Counsel, who discussed with the Retirement Board filing with JCARR the following rules as no change rules: 3309-1-03 Staff authority and appeals; 3309-1-09 Federal taxation; 3309-1-15 Applicable law in determining survivor benefits; 33309-1-17 Allowances and benefits payable; 3309-1-21 Estimated retirement allowances; 3309-1-23 Contributing status; compulsory and optional; 3309-1-31 Adjusting retirement eligibility requirements; 3309-1-36 Restoration of cancelled SERS service credit; 3309-1-38 Interest rate; 3309-1-39 Purchase of police and fire and highway patrol service; 3309-1-52 Travel and expense reimbursement; 3309-1-61 Reemployment covered by section 3309.345 of the Revised Code.

SERS Retirement Board Meeting Minutes

December 15, 2022

Barbra Phillips moved, and Catherine Moss seconded that rules 3309-1-03, 3309-1-09, 3309-1-15, 3309-1-17, 3309-1-21, 3309-1-23, 3309-1-31, 3309-1-36, 3309-1-38, 3309-1-39, 3309-1-52, and 3309-1-61 be filed with JCARR as no change rules as discussed. Upon roll call the vote was as follows: Yea: Hugh Garside, James Haller, Matthew King, Catherine Moss, Barbra Phillips, Frank Weglarz, and Jeffrey DeLeone. Abstained: Daniel Wilson. Absent: James Rossler. The motion carried.

Final Filing of Proposed Amended Administrative Rule

Susan Russell, SERS Associate General Counsel, provided clarification on proposed administrative rule changes to 3309-1-04, Election of Retirement Board Members, that has been reviewed by JCARR and is ready for final adoption by the board.

Barbra Phillips moved, and Catherine Moss seconded that proposed amended rule 3309-1-04 be filed with JCARR as discussed. Upon roll call the vote was as follows: Yea: Hugh Garside, James Haller, Matthew King, Catherine Moss, Barbra Phillips, Frank Weglarz, Daniel Wilson, and Jeffrey DeLeone. Absent: James Rossler. The motion carried.

Member Appeal

The board went into judicial session at 10:32am

Barbra Phillips moved, and Catherine Moss seconded to affirm the Final Staff Determination that denied the member's request to be granted a retirement allowance based on the incorrect final average salary used in estimates she received prior to retirement.

Upon roll call the vote was as follows: Yea: Hugh Garside, James Haller, Matthew King, Catherine Moss, Barbra Phillips, Frank Weglarz, Daniel Wilson, and Jeffrey DeLeone. Absent: James Rossler. The motion carried.

The board reconvened to public session at 11:14am

Executive Director's Report (cont.)

Federal Legislative Update

Mr. Stensrud introduced Jeannine Markoe Raymond from the National Association of State Retirement Administrators (NASRA), who updated SERS' Board on the major federal legislative efforts that impacted public pensions in 2022.

Ms. Raymond began by reporting on bills that could impact SERS and its members and retirees, including the year-end omnibus/SECURE 2.0 and WEP/GPO. If omnibus/SECURE 2.0 and WEP/GPO do not get support, they will have to start anew in 2023. Ms. Raymond continued her report, sharing that she believes investments will be a big area of focus with Congress, particularly investments overseas, ESG/proxy voting, Crypto, and rothification.

Following the report, Mr. Stensrud thanked Ms. Raymond for her insights and update, assuring her SERS will keep tabs. Ms. Raymond thanked SERS' legislative staff for doing good work.

SERS Retirement Board Meeting Minutes

December 15, 2022

Final Filing of Proposed Amended Administrative Rule (Cont.)

Susan Russell, Associate General Counsel, returned to provided clarification on proposed administrative rule changes to 3309-1-13, and 3309-1-64, that have been reviewed by JCARR and is ready for final adoption by the board.

Frank Weglarz moved, and Catherine Moss seconded that proposed amended rule 3309-1-13, Obtaining optional or compulsory service credit, be filed with JCARR as discussed. Upon roll call the vote was as follows: Yea: Hugh Garside, James Haller, Matthew King, Catherine Moss, Barbra Phillips, Frank Weglarz, Daniel Wilson, and Jeffrey DeLeone. Absent: James Rossler. The motion carried.

Ms. Russell continued, discussing filing with JCARR the following proposed amended administrative rule: 3309-1-64, Supplemental health care coverage.

Hugh Garside moved, and Jeffrey DeLeone seconded that proposed amended rule 3309-1-64 be filed with JCARR as discussed. Upon roll call the vote was as follows: Yea: Hugh Garside, James Haller, Matthew King, Catherine Moss, Barbra Phillips, Frank Weglarz, Daniel Wilson, and Jeffrey DeLeone. Absent: James Rossler. The motion carried.

Ohio Retirement Study Council (ORSC)

Mr. Stensrud reported the original December 8 meeting was canceled, and rescheduled for today, December 15. SERS Government Relations Officer, Chris Collins, is at the statehouse standing in to share the Iran/Sudan report as well as the disability report.

Annual Roundtable

Mr. Stensrud reported that on Friday, January 20, 2023, the annual stakeholder roundtable will be held onsite in SERS' O'Keefe Conference Room beginning at 10:00 am and running to noon. Virtual attendance will also be an option. Mr. Stensrud noted that the session would provide a 'state of the union' review of SERS' operations, discussion of major initiatives in the past year and a preview of what stakeholders should see in 2023. Mr. Stensrud noted that Board Members are welcome and encouraged to attend.

Ohio General Assembly

Mr. Stensrud reported that with the lame duck session coming to a close, the CBBC legislation will not be passed. Mr. Stensrud noted that good progress was made to get to this point, and that this would be beneficial when the CBBC proposal is refiled in early 2023.

Stakeholder, Member and Employer Engagement

Mr. Stensrud reported SERS continues to conduct outreach with members and employers. On the employer side, SERS is conducting employer visits, and eSERS demos, to help employers to interface affectively with SERS in conducting their responsibilities. Mr. Stensrud continued, reporting a meeting was held in December with the employer relations panel. This panel was created a few years ago and continues to be a valuable source of feedback and sounding board from employer side identifying points of friction from the employer perspective.

Mr. Stensrud noted that feedback received from customer service satisfaction surveys continues to show high scores for the efforts by staff. Mr. Stensrud noted that the staff courtesy score is always at the top of its scale, reflective of the commitment of the staff to people we serve, and how much we value work that they do on behalf of schools.

Mr. Stensrud reported that healthcare Open Enrollment is wrapping up. Mr. Stensrud reminded the Board and the audience that a Healthcare Sustainability session would be held following the regular Board Meeting.

SERS Retirement Board Meeting Minutes

December 15, 2022

Years of Service Update

Mr. Stensrud noted that continuity is an important component of SERS' success. Mr. Stensrud noted that the continuity seen at the Board level has been important to what SERS has been able to achieve. Mr. Stensrud further noted that continuity of the SERS staff is similarly important, and to that end, every year the organization recognizes staff who hit years of service milestones. Mr. Stensrud explained this year nine employees celebrated with twenty or more years of service. Mr. Stensrud thanked these employees for their continued service and commitment to SERS culture, recognizing them by name.

Celebrating 20 Years of Service	Celebrating 25 Years of Service	Celebrating 30 Years of Service
Marie Carroll	Shelly Hanson	Aaron Greenlea
Sharon Amos	Randy Bell	
Carlisa Holman	Maggie McMillen	
Sabrina Lyons		
Karen Ochoa		

The Board recognized these staff member's dedicated service with a round of applause.

Employee Charitable Initiatives

Mr. Stensrud reported that SERS staff continues its tradition of participating in the Salvation Army's annual Angel Tree program, whereby staff provide toys for children that distributed back to families in need through the Salvation Army.

Mr. Stensrud further noted that SERS' IT department held their annual bake sale to benefit Toys for Tots, raising more than \$800. Mr. Stensrud thanked everyone who baked, bought and made donations.

Compensation Committee Update

Daniel Wilson, SERS Compensation Committee Chair, provided an update on the Compensation Committee meeting that had been held earlier in the day. Mr. Wilson noted that the focus of the meeting had been the second quarter review of the Executive Director's goals and work performance. Mr. Wilson noted that the Compensation Committee will reconvene after lunch for a presentation from CBIZ Consulting regarding upcoming compensation decisions.

Executive Session

Catherine Moss moved, and Frank Weglarz seconded the motion that the board convene in executive session pursuant to R.C. 121.22 (G)(3) to discuss Imminent Court Action. Upon roll call, the vote was as follows: Yea: Hugh Garside, James Haller, Matthew King, Catherine Moss, Barbra Phillips, Frank Weglarz, Daniel Wilson, and Jeffrey DeLeone. Absent: James Rossler. The motion carried.

The board convened in executive session at 11:58 a.m.

The board reconvened in open session at 12:09 p.m.

SERS Retirement Board Meeting Minutes

December 15, 2022

Recess

Board Chair, Jeffrey DeLeone, moved to recess to meet in the afternoon of Thursday, December 15, for the SERS Healthcare Sustainability Discussion. The meeting recessed at 12:09 p.m.

The committee returned to open session at 2:51 p.m.

Retirement Report

There was no retirement report.

Executive Director's Report (cont.) – Healthcare Sustainability Discussion

SERS Executive Director, Richard Stensrud, opened the Healthcare Sustainability Discussion noting that no action was being sought today, and that the discussion was intended to be a continuation of last month's discussion exploring sustainability options and alternatives. Mr. Stensrud introduced SERS Healthcare Services Director, Chrisi Pepe, and Senior Manager – Plan Administration, Michael Steiner, who presented the information to the Board.

Ms. Pepe briefly revisited the financial condition of the Health Care Fund, noting that the Health Care Fund level has been increasing and currently has a 38-year projected solvency period. The Medicare plan's financial status is funded indefinitely at this time, Ms. Pepe noted, with the risks to the Medicare plan being primarily what might be changed at the federal level. In comparison, the non-Medicare plan enrollment continues to decline (3,398 enrollment as of July 2022) slowly, however, per member per year expenses continue to grow.

Ms. Pepe next reviewed how the Marketplace Wraparound HRA works. The Wraparound HRA works in conjunction with a Marketplace plan to provide retirees who are not Medicare-eligible up to \$1,950 in reimbursement per year for out-of-pocket Marketplace plan costs. While enhanced federal subsidies make the Marketplace/Wraparound HRA the best financial option for many, many participants continue to select SERS group plan due to SERS premium reduction for years of service and its resemblance to the employer plan model they had while working.

Mr. Steiner went through premium and out-of-pocket cost examples of the SERS group plan vs. bronze, silver, and gold plans available on the federal Marketplace combined with the Wraparound HRA which illustrated the lower cost available via the latter model.

Ms. Pepe walked through the sustainability considerations presented last month to the Board and talked more about each. The considerations include increasing SERS' non-Medicare member share of premium to encourage the Marketplace Wraparound HRA selection; making disability and service retirement premiums the same as another way to encourage making the more cost-effective choice; and requiring Marketplace/Wraparound HRA counseling for SERS group plan enrollment.

Ms. Pepe also discussed SERS' current communication efforts regarding the Marketplace/Wraparound HRA, noting that staff is looking at ways to optimize members' awareness. Since its inception, the federal Marketplace has matured and stabilized with some 17 million enrollees nationwide, said Ms. Pepe. She added in Ohio, every county now offers at least three Marketplace companies with multiple plan options.

Mr. Steiner outlined how individuals are currently guided through assessment of and enrollment in the Marketplace/Wraparound HRA by the vendor SERS uses for this purpose, HealthScope Benefits. Mr. Steiner also demonstrated how individuals can use the healthcare.gov website to shop for Marketplace plans.

SERS Retirement Board Meeting Minutes

December 15, 2022

Questions from the Board included who and how counseling is provided. Ms. Pepe noted that she would prepare an operational and cost comparison of expanded counseling support for February's Board meeting.

The Board and Mr. Stensrud commended Ms. Pepe and her team for their hard work and the information they provided.

Board Communication and Policy Issues

The board reviewed the meeting dates for 2023.

CALENDAR DATES FOR SERS BOARD AND COMMITTEE MEETINGS FOR 2023

AUDIT COMMITTEE MEETINGS

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

COMPENSATION COMMITTEE MEETINGS

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

TECHNOLOGY COMMITTEE MEETINGS

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

BOARD MEETINGS

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

SERS Retirement Board Meeting Minutes

December 15, 2022

Continued or New Business

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

Adjournment

Board Chair, Jeffrey DeLeone, wished all a happy holiday, and moved to adjourn to meet on Thursday, February 16, 2023, at 8:30 a.m. for the SERS regularly scheduled Retirement Board meeting.

The SERS board meeting adjourned at 4:10 p.m.

Jeffrey DeLeone, Board Chair

Richard Stensrud, Secretary

DRAFT

SCHOOL EMPLOYEES RETIREMENT BOARD OF OHIO

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

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

A. PURCHASES

Asset Class	Approximate Cost (in millions)
Global Equities	\$ 159.3
Fixed Income	414.6
Private Equity Capital Calls	11.9
Real Asset Capital Calls	10.0
Opportunistic & Tactical	24.2
Global Private Credit	50.5
Cash Equivalents	241.2

B. SALES

Asset Class	Approximate Net Proceeds (in millions)	Approximate Gain/(Loss) (in millions)
Global Equities	\$ 139.2	\$ 3.8
Fixed Income	385.0	(7.0)
Private Equity distributions	20.8	n/a
Real Asset distributions	9.6	n/a
Opportunistic & Tactical	25.2	(0.4)
Global Private Credit	n/a	n/a
Cash Equivalents	316.0	n/a

SCHOOL EMPLOYEES RETIREMENT BOARD OF OHIO

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

The following is a summary of the investment transactions made during the period of December 1, 2022 through December 31, 2022. A detailed list of these transactions can be found in the Board Agenda mailed prior to the Retirement Board Meeting.

A. PURCHASES

Asset Class	Approximate Cost (in millions)
Global Equities	\$ 138.9
Fixed Income	280.1
Private Equity Capital Calls	56.0
Real Asset Capital Calls	17.8
Opportunistic & Tactical	74.4
Global Private Credit	46.4
Cash Equivalents	375.0

B. SALES

Asset Class	Approximate Net Proceeds (in millions)	Approximate Gain/(Loss) (in millions)
Global Equities	\$ 102.6	\$ 3.1
Fixed Income	224.7	(0.9)
Private Equity distributions	33.9	n/a
Real Asset distributions	39.4	n/a
Opportunistic & Tactical	60.8	(1.1)
Global Private Credit	n/a	n/a
Cash Equivalents	527.4	n/a



Global Real Assets Portfolio Review

As of December 31, 2022

Presented by Investment Staff

Meeting Date: February 16, 2023

Paul Cheng and Michael Browning

Portfolio Summary

\$3.7 Billion in Market Value

- Real Estate: \$2.7 billion; Infrastructure: \$996.8 million
- Unfunded commitments: \$408 million
- New commitments: \$100 million in 2022
- Redemptions: \$175 million (private markets) and \$40 million in public REITs in 2022
- Manager rankings: 5 ranked “A”; 6 ranked “B”; 2 ranked “C”

Performance for 2022

- 16.91% net return outperformed benchmark (NPI) by 83 basis points
- Overweight in Industrial and Multifamily Real Estate; growing Infrastructure allocation; and rebounding assets values from pandemic lows boosted returns
- Strong income return and distributions: 5.4% 1Y gross income; \$295.8 million total distributions
- Management fee: 81 basis points

Portfolio Goals for 2023

- Focus on inflation protection and income producing strategies
- Explore separate Infrastructure allocation
- Explore higher return strategies for Infrastructure on a selective basis
- Explore ex-U.S. and niche Real Estate strategies and sector focused managers
- Grow co-investment program

Risk Contribution to Total Fund

- Contribution to Total Fund risk is 19.9% while portfolio weight is 21.8%

Role

- SERS invests in Real Assets to provide stable income from tangible assets, inflation protection over the long term, and low correlation to equities

Objective

- The performance objective is to provide returns in excess of the benchmark, NCREIF Property Index (NPI), net of fees

Allocation

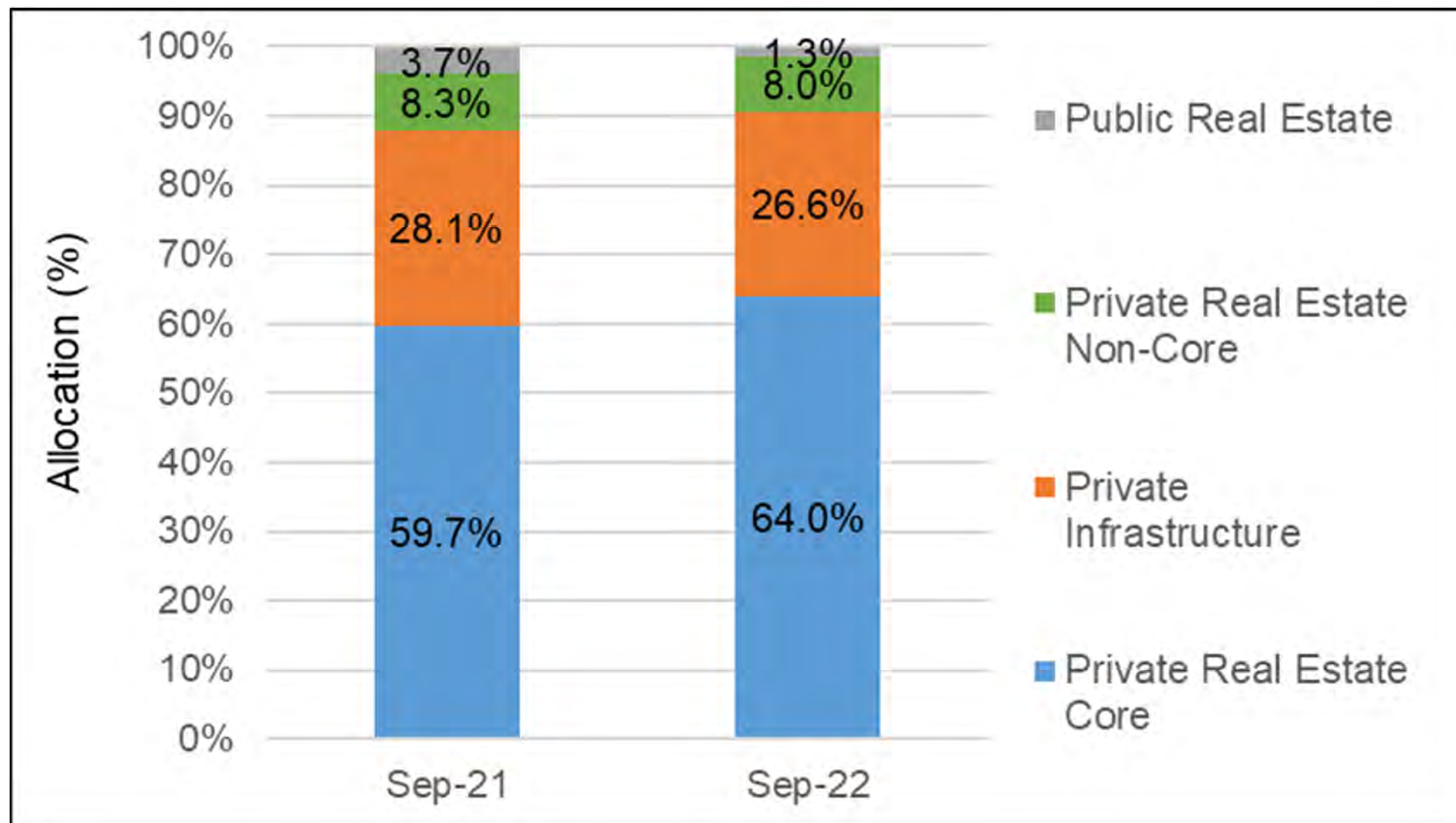
- Real Assets target allocation is 17% with a range of 14-22%

Risk Management

- Real Assets is structured and continually assessed to ensure that the majority of the portfolio is comprised primarily of operating assets, utilizing moderate leverage, demonstrating sufficient income growth, and maintained adequately to ensure asset quality

Portfolio Structure - Strategy

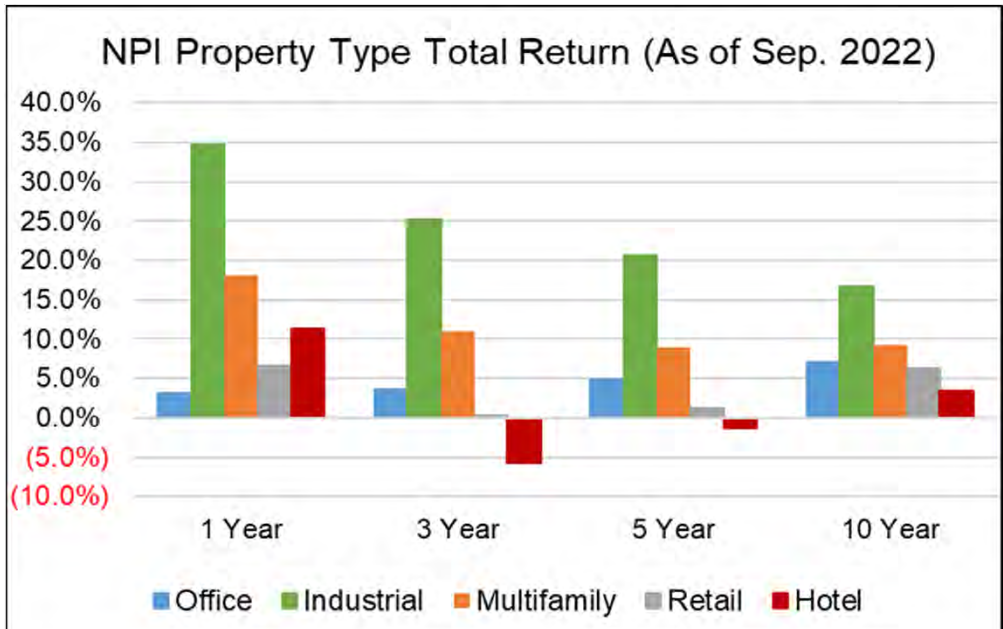
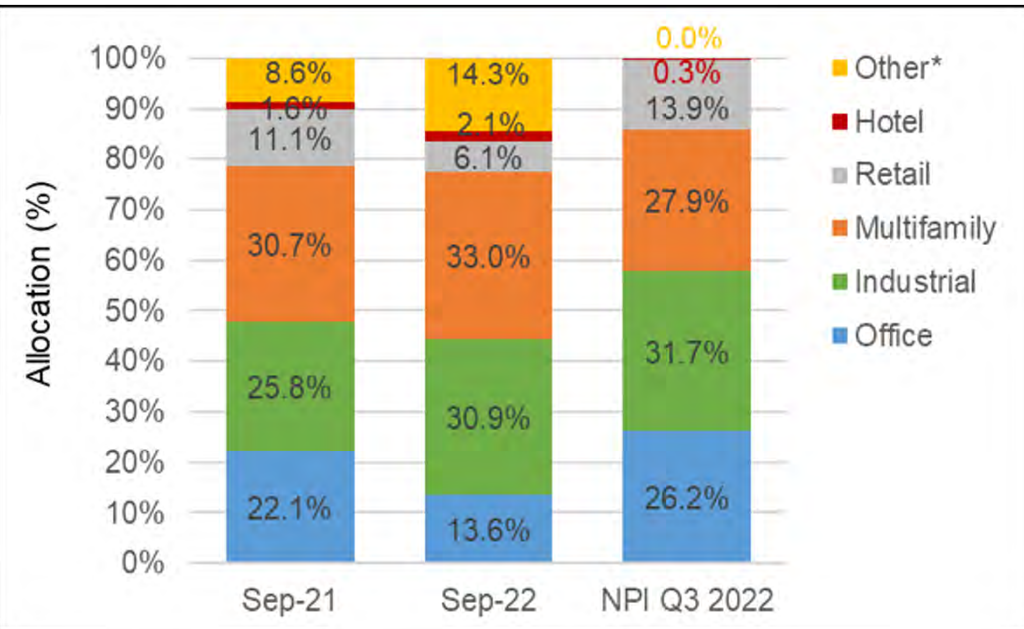
- Private Real Estate (Core & Non-Core) remains the largest exposure at 72%. Allocation increased slightly over the past year
- Infrastructure declined from 28% in 2021 to 27% in 2022 on a relative basis as Real Estate gains outpaced Infrastructure's increases
- Public Real Estate provides portfolio liquidity and remains below 2%



• Total may not equal 100% due to rounding and exclusion of legacy funds

Real Estate - Property Type

- Overweight Multifamily – high occupancy and consistent rent growth
- Equal weight Industrial – best performing property type over the last decade
- Underweight Office – COVID impact leading to uncertain future work model and high capital expenditures
- Underweight Retail – headwinds including e-commerce growth and shifting consumer preferences
- Exposure to other property types – Senior Housing, Self-Storage, Single Family Rental, and Life Science – provides diversification
- First co-investment made in Self-Storage via a core real estate partner

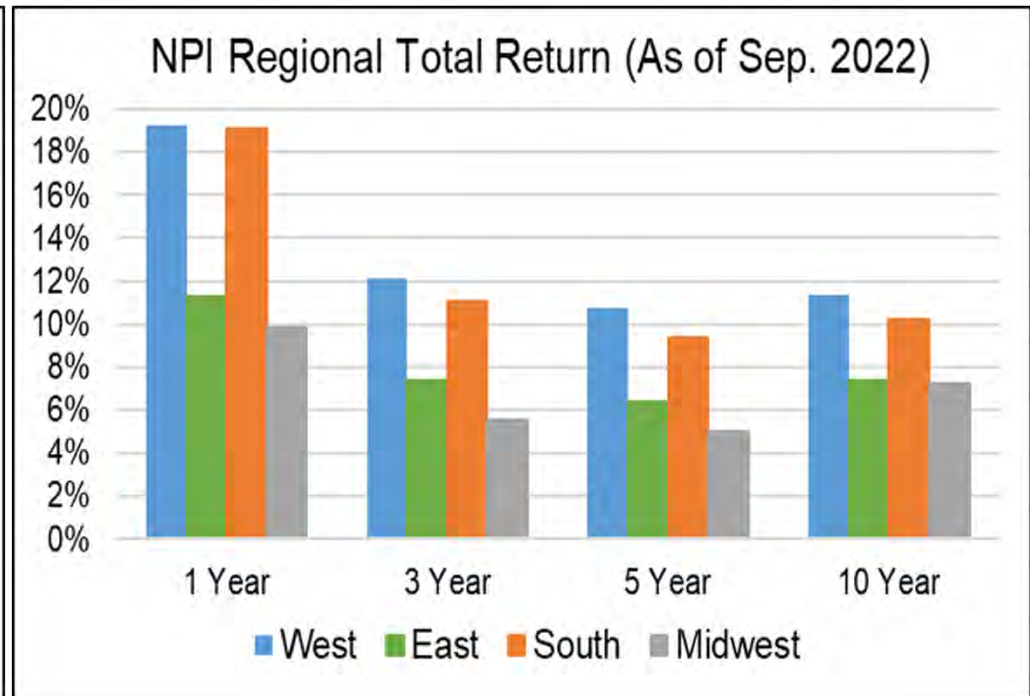
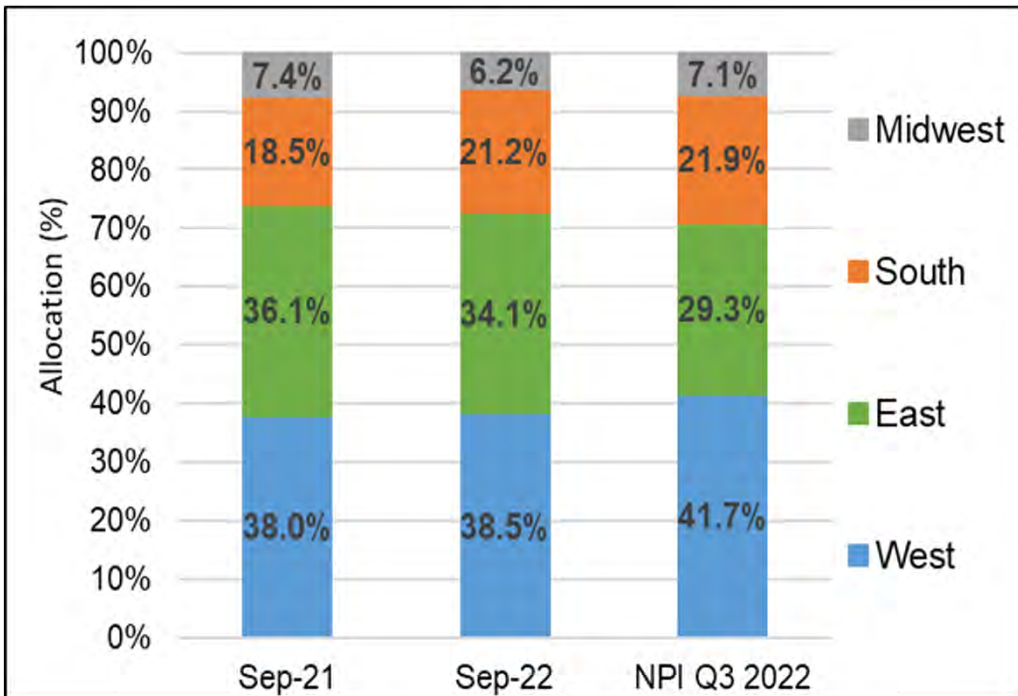


- Other includes Student Housing, Self-Storage, Senior Housing, Land, Healthcare, Life Science, Single Family Rental, and Manufactured Housing
- NPI returns are annualized total returns



Real Estate - Geography

- U.S. Real Estate exposures generally inline relative to the policy benchmark (NPI) except for current overweight to the East region
- SERS' managers are increasing exposure to cities with favorable demographic trends and strong economic growth
- South and West have been the best performing regions
- Ohio: \$5.1 million invested in Ohio Real Estate and Infrastructure, up from \$1.7M in 2021. Recent commitments will grow exposure to our home state



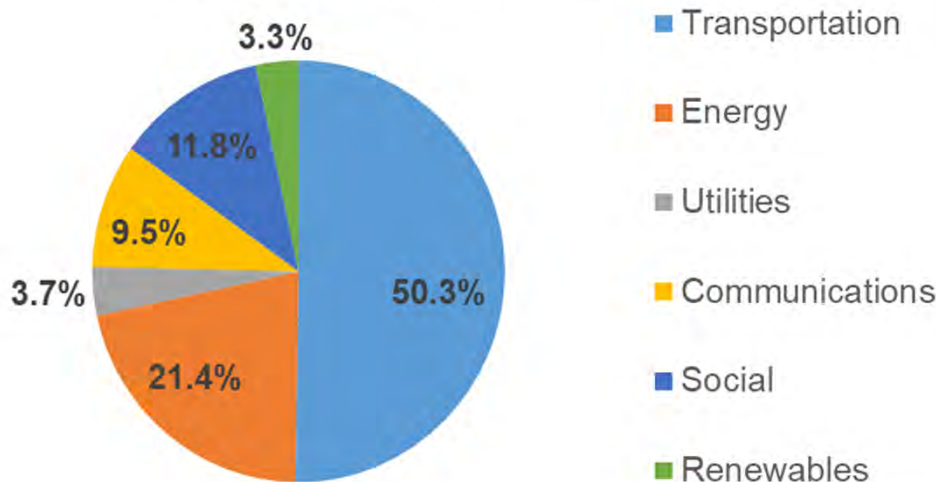
• NPI returns are annualized total returns



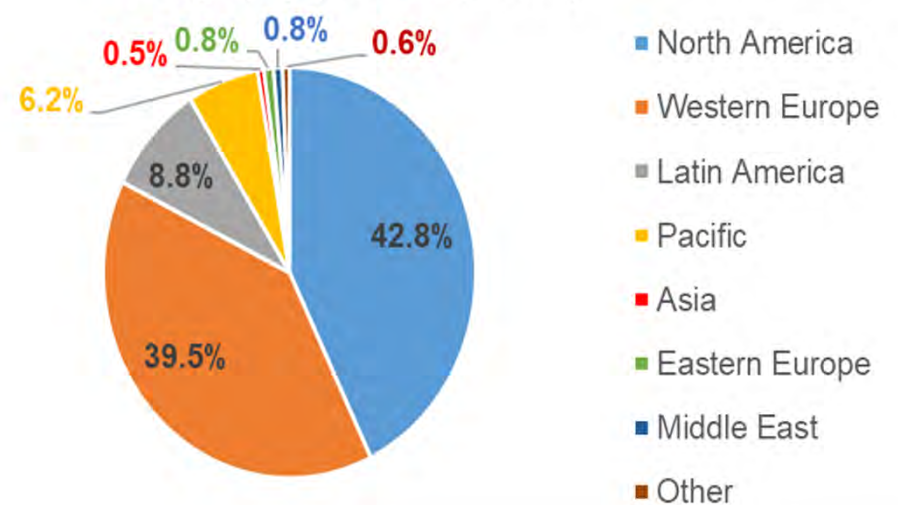
Infrastructure - Overview

- \$997 million invested with managers. SERS has \$224 million of unfunded infrastructure commitments
- Infrastructure is 26.6% of the total Real Assets portfolio
- The majority of the portfolio is in North America (43%) and Western Europe (40%)
- SERS has a 3% allocation to renewable assets and expected to increase
- Second co-investment made in a European cell tower platform in 2022

Sectors (As of Sep 2022)



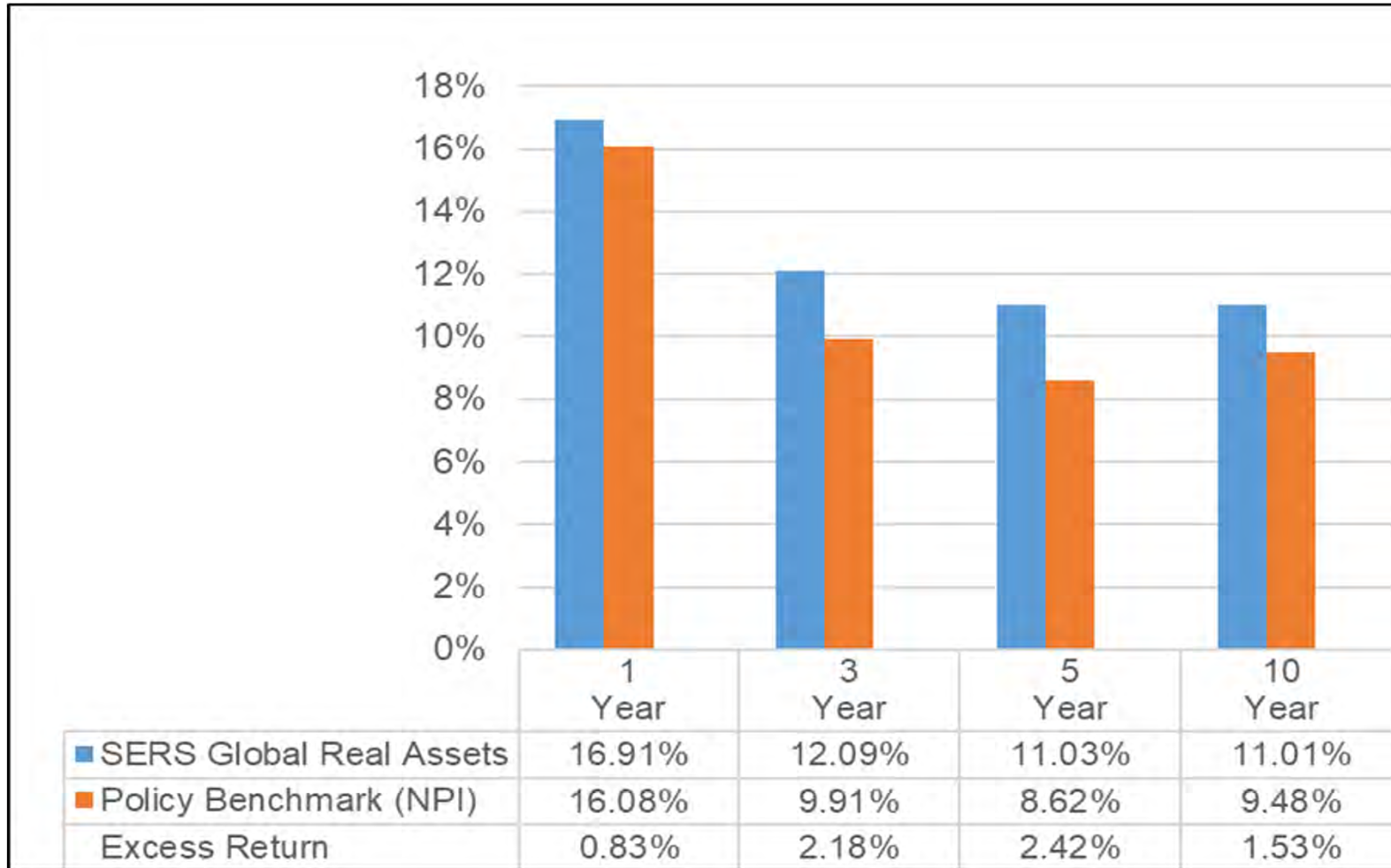
Geography (As of Sep 2022)





Performance (Net of Fees)

- All time period returns exceed the policy benchmark net of fees
- 1-year Returns are driven by strong real estate markets



Strategy Net of Fee Performance

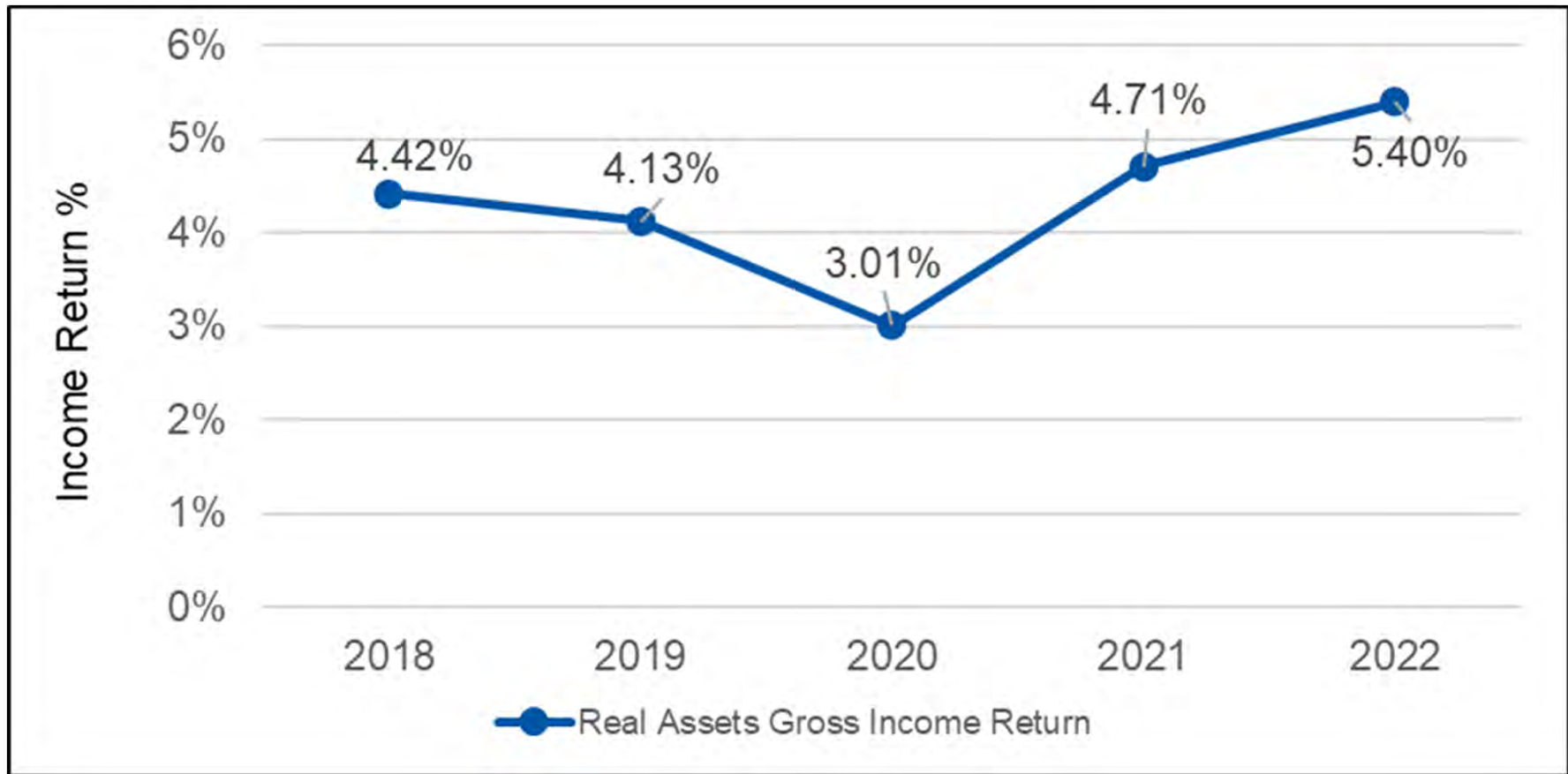
- Private Real Estate Core strategies exceed Private Real Estate Non-Core over all time periods
- Private Infrastructure exceeds policy benchmark net of fees in the 5-year period
- Public Real Assets (REITs) underperformed the policy benchmark and Private Real Estate (core and non-core)

	1 Year	3 Year	5 Year	10 Year
Private Real Estate Core (64.0%)	25.61%	15.13%	12.37%	11.52%
Private Real Estate Non-Core (8.0%)	6.06%	6.25%	7.61%	10.03%
Private Infrastructure (26.6%)	6.81%	8.85%	11.07%	N/A
Public Real Assets (1.3%)	(24.65%)	(0.14%)	4.17%	5.35%
Policy Benchmark (NPI)	16.08%	9.91%	8.62%	9.48%

- Real Asset Returns are 1Q in Arrears
- Total may not equal 100% due to rounding and exclusion of legacy funds

Gross Income Component Return

- Real Assets portfolio gross income return increased to 5.40% in 2022
- Staff targets a long-term income return of 4% by focusing on core investments with incoming producing assets

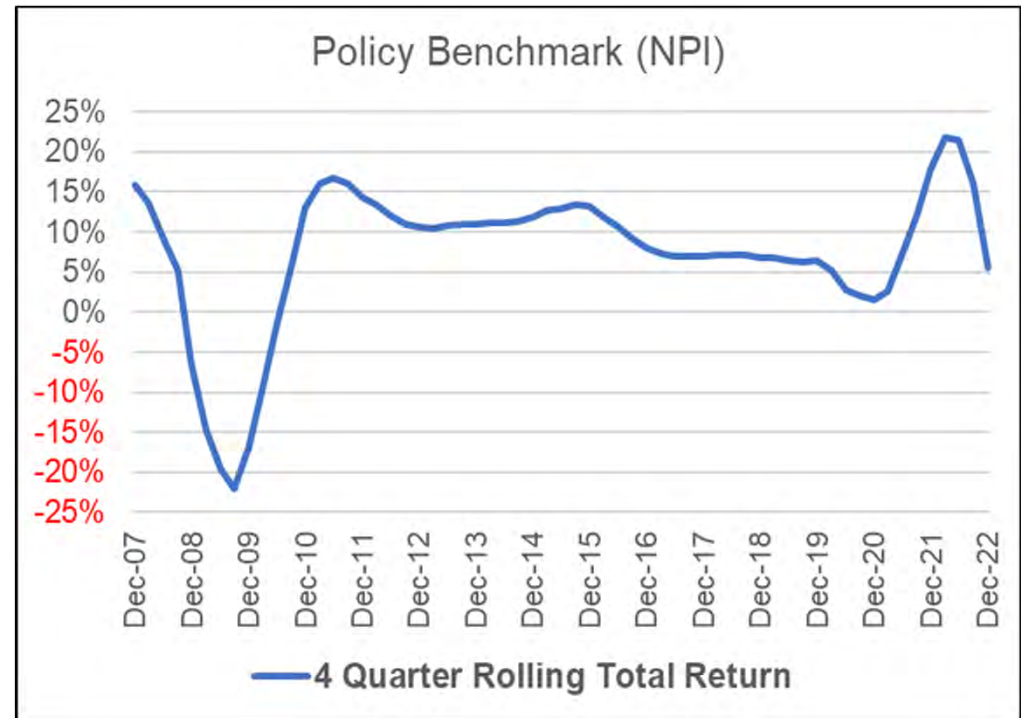
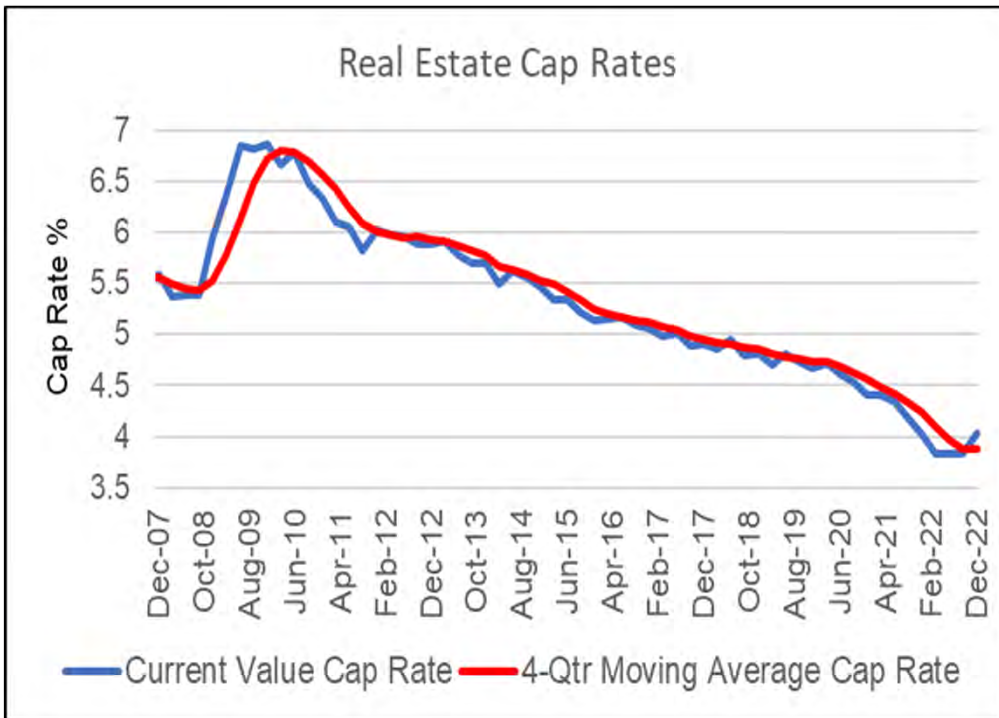


- Real estate returns are expected to moderate in coming years
- Industrial and Multifamily are projected to be the top performing property types due to strong fundamentals
- Office expected to struggle in 2023-26 as tenants assess spacing needs amid work from home trends and cost rationing
- Retail has stabilized due to COVID re-opening and supply constraints

Total Return	2023	2024	2023-2026
Total NPI	-0.7%	5.2%	5.3%
Office	-5.0%	1.7%	1.5%
Retail	1.3%	6.8%	4.9%
Industrial	0.7%	6.9%	7.5%
Multifamily	-0.3%	6.2%	5.9%

Historical Cap Rates and Returns

- Except for the GFC period, cap rates have been in a secular downward trend between 2009 and 2022. However, as interest rates increased during 2022, cap rates have also risen
- Higher cap and discount rates have resulted in downward adjustment in real estate values beginning in CYQ3-2022 and expected to continue through mid-2023
- Over long periods, the benchmark (NPI) has returned 8.5-9.5% on average p.a. over 10–20-year periods



Real Asset Allocation

- Maintain allocation within range of 14% to 22%
- Explore standalone allocation for Infrastructure and Real Estate

Infrastructure

- Grow co-investment program
- Evaluate higher return strategies with best-in-class managers / operators in sectors with favorable outlook
- Explore listed Infrastructure strategies

Real Estate

- Evaluate new strategies that can benefit from market dislocations
- Explore additional co-investment opportunities
- Explore expanding listed Real Estate strategies

Income and Inflation Protection

- Focus on income component of returns over the long run
- Focus on investments with inflation protection characteristics

Core – substantially leased, institutional quality properties located in major metropolitan markets. Core strategies are diversified by property type and location and generally use low to moderate amounts of leverage.

Non-Core (aka Opportunistic and Value-Added) – existing buildings in need of re-leasing or re-development, major re-development projects, or ground-up construction. Compared to core strategies, non-core strategies generally use higher amounts of leverage, involve greater risk due to the uncertainty of cash flows, and have higher return expectations.

Infrastructure – the essential facilities and services upon which the economic productivity of society depends. Infrastructure involves the movement of goods, people, water, and energy.

Farmland - private land used to grow permanent and annual crops throughout the United States. Core assets will be leased to farmers with scale and expertise on long-term contracts.

REITs – publicly-traded real estate companies. REIT securities provide immediate access to real estate assets but exhibit greater volatility than privately-held properties.

NCREIF – National Council of Real Estate Investment Fiduciaries.

NPI (NCREIF Property Index) – an aggregate of United States investment manager members property data. NPI provides benchmark returns for the Real Asset portfolio.

Cap Rate – Net Operating Income divided by Purchase Price or Current Market Value

Wilshire



Executive Summary of Investment Performance

As of December 31, 2022

Market Commentary

U.S. Equity

The U.S. stock market was up 7.1% for the fourth quarter but was down -19.0% for all of 2022. A majority of sectors were up for the quarter. The best performing were Energy (+19.9%), Industrials (+16.6%) and Materials (+14.6%). Consumer Discretionary was down -8.0%. From a size perspective, small-cap outperformed large-cap by 86 basis points. Growth stocks underperformed value for the quarter and also trailed meaningfully for the year.

The Federal Reserve's aggressive action to combat unacceptably high inflation is the story of 2022 with uncertainty around Fed policy poised to drive market volatility in 2023. The FOMC raised rates 4.25%, with increases becoming more dramatic in May. This marks the largest 12-month increase since 1981 (also a period of inflation near or above double-digits). Unsurprisingly, fixed income suffered but so did equities as investors repriced off a higher risk-free rate. The Fed is currently forecasting a rate 0.75% higher by the end of 2023. The open market does not agree – or perhaps doubts their credibility to continue tightening, with a modest change forecasted for the next year. How this disagreement plays out is likely to be a primary market driver this year.

Non-U.S. Equity

Europe faced similar headwinds as the United States in 2022 – surging inflation and aggressive central bank tightening – but also had to more directly contend with the ongoing war in Ukraine. The labor market remains tight in the eurozone and many businesses report that a labor shortage is limiting production. Despite China's zero-COVID policies, including lockdowns, infections continued to surge intermittently. Tension among the country's citizens continued to rise and led to protests not seen in decades. In early December, the central government took definitive steps to ease restrictions.

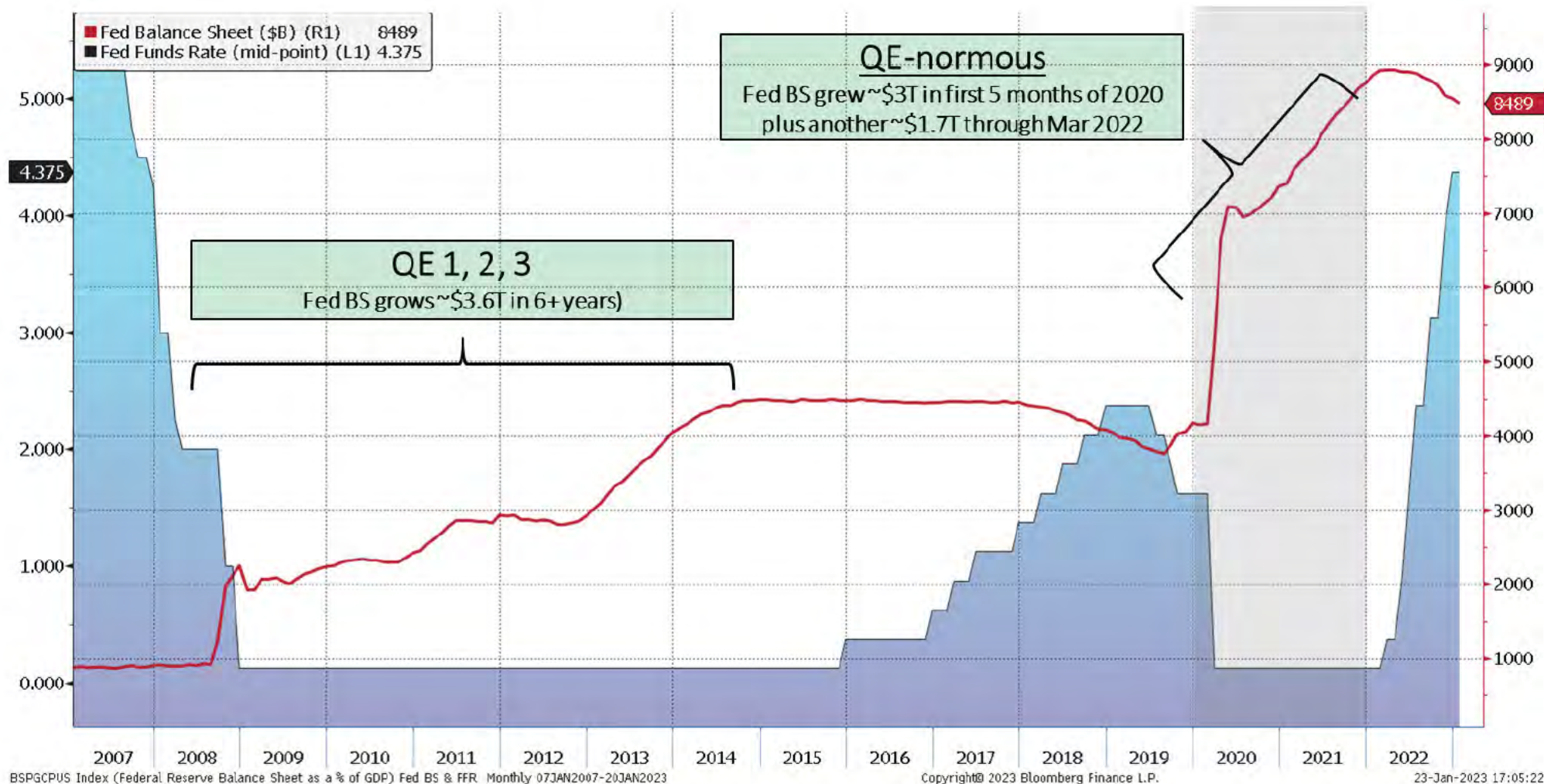
Fixed Income

The U.S. Treasury yield curve was up in the short-end (below 3-years) by 50-135 basis points but largely unchanged across the remainder of the curve. The 10-year Treasury yield ended the quarter at 3.88%, up just 5 basis points from September. The Fed increased the overnight rate by 0.75% in November and 0.50% in December, targeting a range of 4.25% to 4.50%. The Fed's "dot plot" is messaging that the current intent is for another 75 basis points in increases before the end of 2023.

December 2022 Asset Class Assumptions

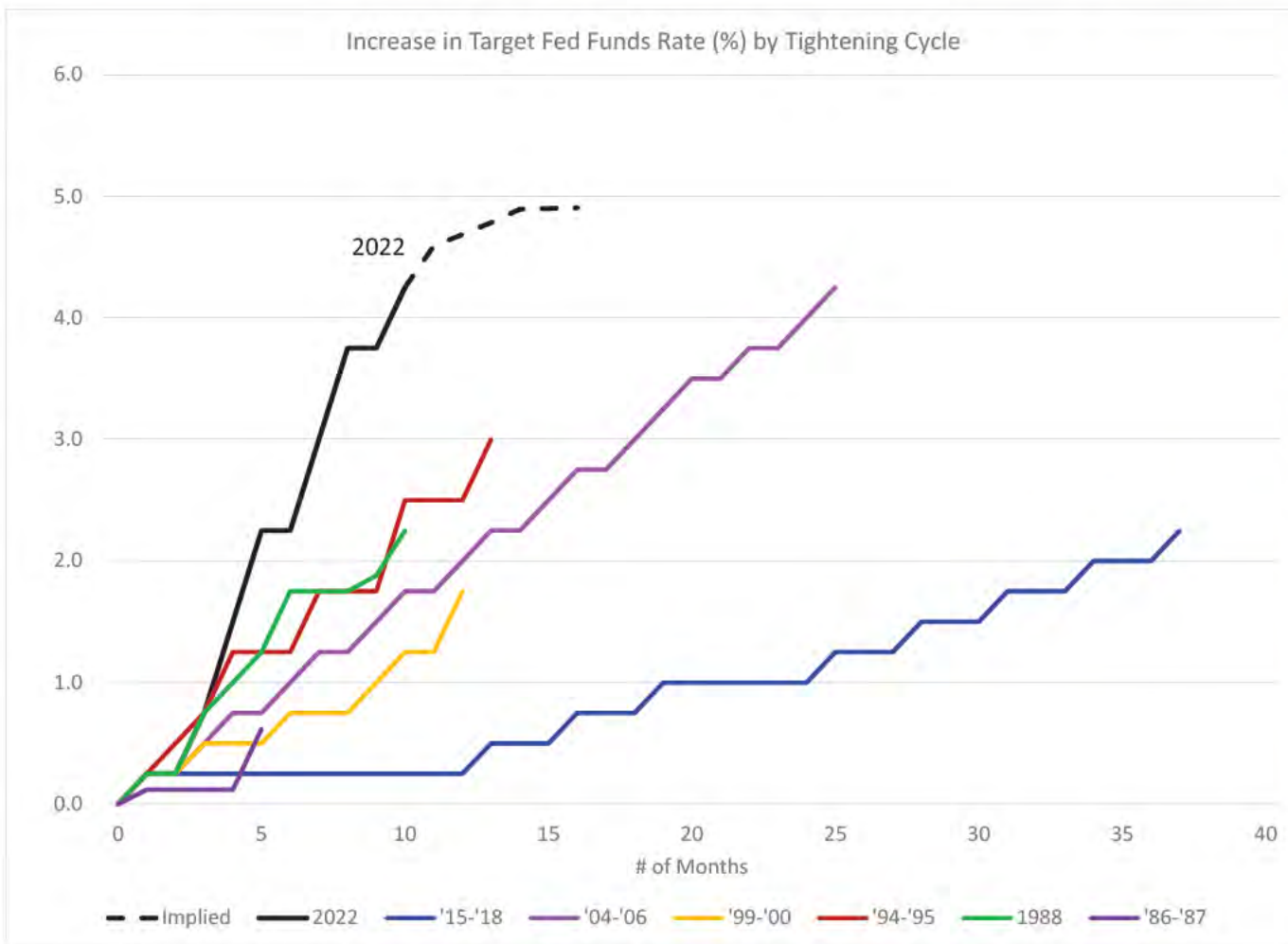
	Equity						Fixed Income						Real Assets						
	US Stock	Dev ex-US Stock	Emg Stock	Global ex-US Stock	Global Stock	Private Equity	Cash	Core Bond	LT Core Bond	TIPS	High Yield	Private Credit	Dev ex-US Bond (Hdg)	US RES	Global RES	Private RE	Cmdty	Real Assets	US CPI
Compound Return (%)	6.50	7.25	7.50	7.60	7.05	9.90	4.00	4.90	4.90	3.95	6.55	8.85	3.05	5.65	5.80	6.20	6.25	6.65	2.25
Expected Risk (%)	17.00	18.00	26.00	19.10	17.10	29.00	0.75	4.70	9.80	6.00	10.00	12.75	4.00	17.50	16.45	14.00	16.00	12.35	1.75
Cash Yield (%)	1.75	3.25	2.80	3.10	2.25	0.00	4.00	5.10	5.25	4.40	9.65	5.10	3.75	3.95	3.95	2.25	4.00	3.15	0.00
Growth Exposure	8.00	8.00	8.00	8.00	8.00	14.00	0.00	-0.95	-2.40	-3.00	4.00	5.10	-1.00	6.00	6.00	3.50	0.00	2.70	0.00
Inflation Exposure	-3.00	0.00	5.00	1.45	-1.30	-3.75	0.00	-2.50	-6.80	2.50	-1.00	-1.50	-3.00	1.00	1.80	1.00	12.00	5.25	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	0.84	0.95	0.89	1.00															
Global Stock	0.95	0.91	0.84	0.94	1.00														
Private Equity	0.72	0.63	0.61	0.67	0.73	1.00													
Cash Equivalents	-0.05	-0.09	-0.05	-0.08	-0.06	0.00	1.00												
Core Bond	0.28	0.13	0.00	0.08	0.20	0.30	0.18	1.00											
LT Core Bond	0.31	0.15	0.01	0.11	0.24	0.31	0.11	0.94	1.00										
TIPS	-0.05	0.00	0.15	0.06	-0.01	-0.03	0.20	0.60	0.48	1.00									
High Yield Bond	0.54	0.39	0.49	0.46	0.53	0.31	-0.10	0.24	0.32	0.05	1.00								
Private Credit	0.68	0.55	0.58	0.60	0.68	0.44	0.00	0.24	0.30	0.00	0.76	1.00							
Dev ex-US Bond (Hdg)	0.16	0.25	-0.01	0.16	0.17	0.26	0.10	0.68	0.66	0.39	0.26	0.22	1.00						
US RE Securities	0.58	0.47	0.44	0.49	0.57	0.49	-0.05	0.17	0.22	0.10	0.56	0.62	0.05	1.00					
Global RE Securities	0.64	0.57	0.54	0.60	0.65	0.55	-0.05	0.17	0.21	0.11	0.61	0.68	0.04	0.96	1.00				
Private Real Estate	0.55	0.45	0.45	0.49	0.54	0.50	-0.05	0.19	0.25	0.09	0.58	0.63	0.05	0.79	0.78	1.00			
Commodities	0.25	0.34	0.39	0.38	0.32	0.28	0.00	-0.03	-0.03	0.25	0.29	0.29	-0.10	0.25	0.28	0.25	1.00		
Real Assets	0.62	0.63	0.65	0.69	0.67	0.57	-0.03	0.22	0.24	0.30	0.64	0.69	0.04	0.78	0.84	0.76	0.64	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	0.00	-0.08	0.05	0.04	0.05	0.44	0.22	1.00

The Fed: Zero Rates & QE to \$8T and Beyond...



Data Source: Bloomberg

The Shift to Tightening: Most Aggressive in Modern Era: Will “Bring Some Pain”



Data Source: Bloomberg

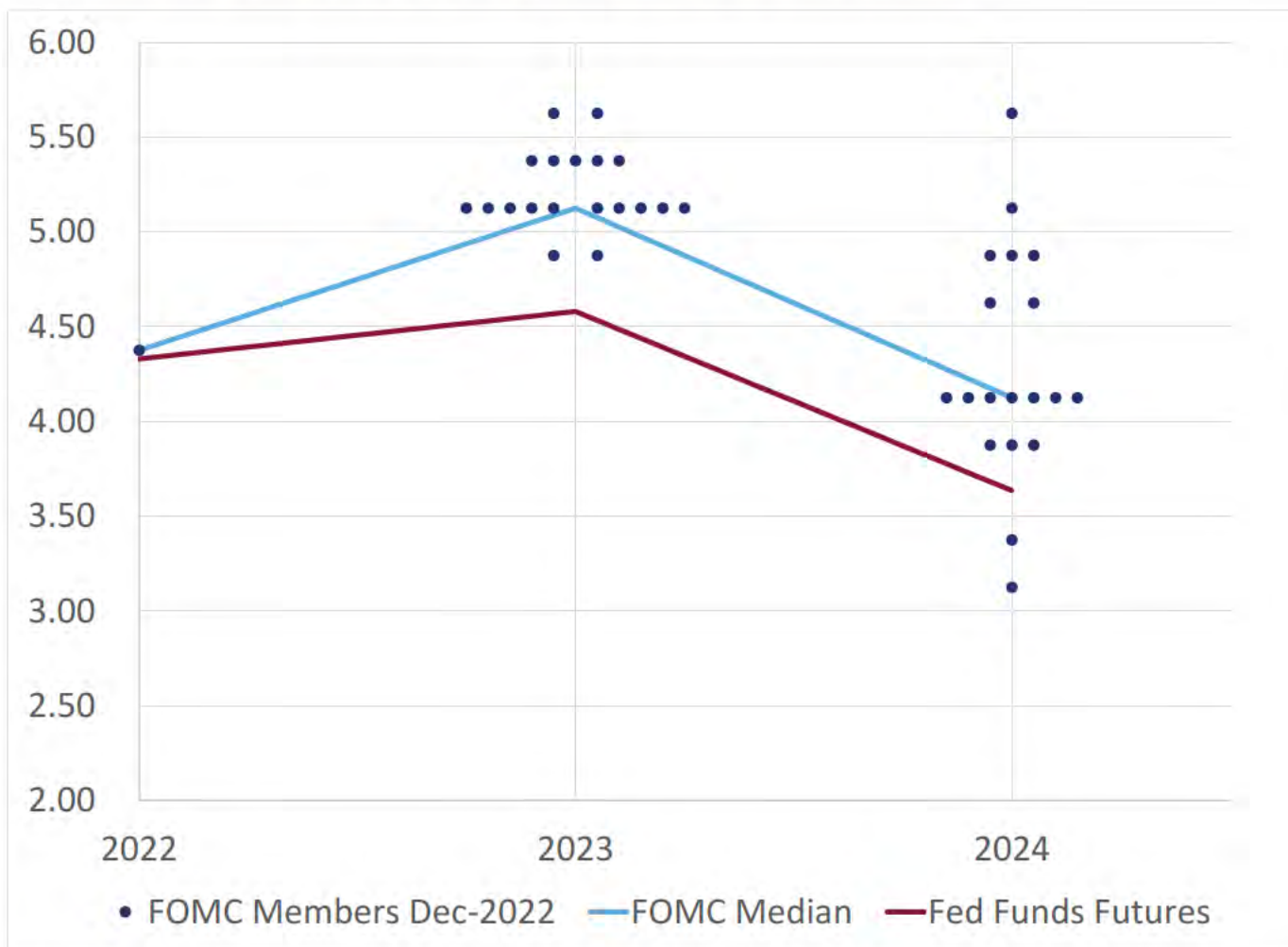
“While higher interest rates, slower growth, and softer labor market conditions will bring down inflation, they will also bring some pain to households and businesses. These are the unfortunate costs of reducing inflation. But a failure to restore price stability would mean far greater pain.”



Jerome Powell

August 2022, Jackson Hole

The Fed Outlook vs. Market Consensus



- The market's Dec 2023 implied Fed Funds Rate is below every FOMC member's forecast
- Why the divergence: A Fed credibility issue or just a difference in view?
- How might this play out?
 - What if the Fed's wrong?
 - What if the market is wrong?

Data Source: Bloomberg

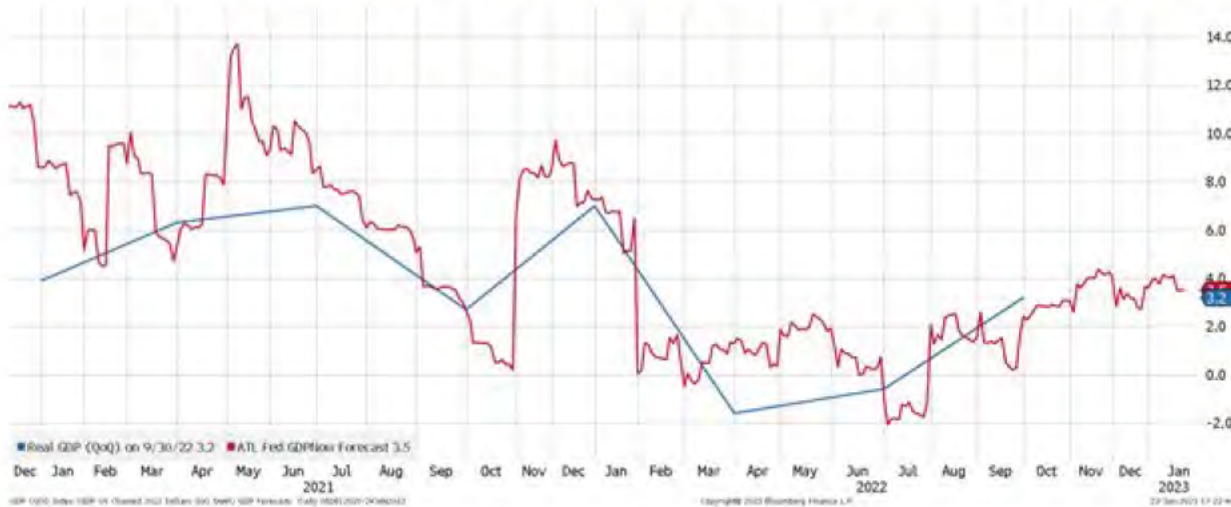
The Fed's Dashboard: Realized & Expected Inflation



Data Source: Bloomberg

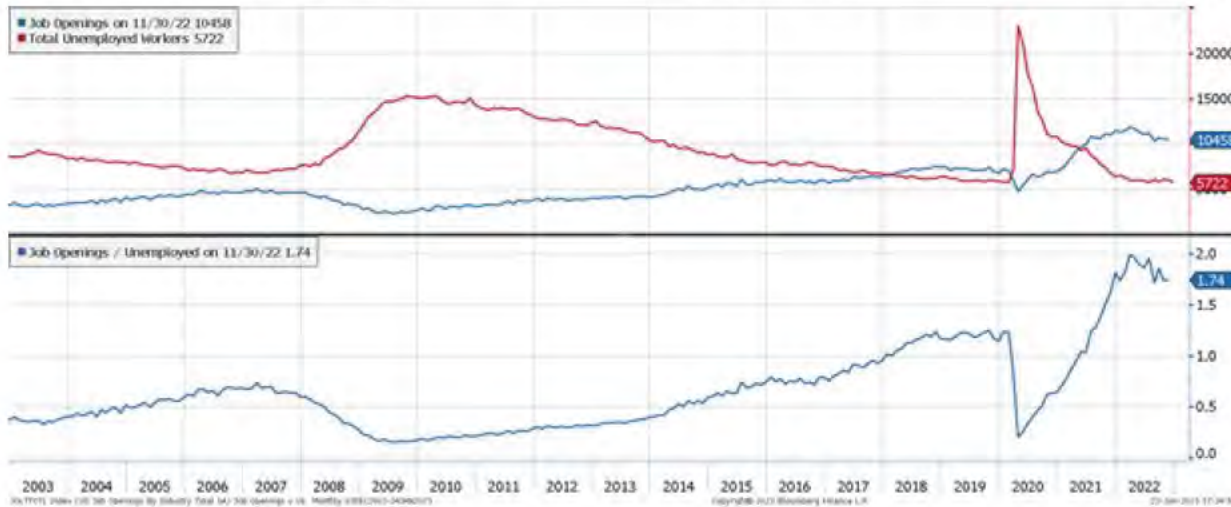

- Realized inflation has begun to ease off extreme levels
 - CPI 6.5% v. 9.1% in June 2022
 - Core CPI stabilizing ~5%
 - Wage inflation remains elevated (~6%)
- Inflation expectations remain well-anchored
 - Expectational anchoring at higher levels would make the Fed's job even more challenging
 - These expectations are likely at the heart of the divergence between market and Fed outlooks (i.e., the Fed would likely pause now if they believed these expectations would be realized)

The Fed's Dashboard: Economic Growth & Labor Market



The market seems a bit more confident in the prospects of a “soft landing” as inflation has subsided in recent months

- However, lots more liquidity to be drained
- Powell’s “Sully” Sullenberger moment...

“We’re going to be in the Hudson”

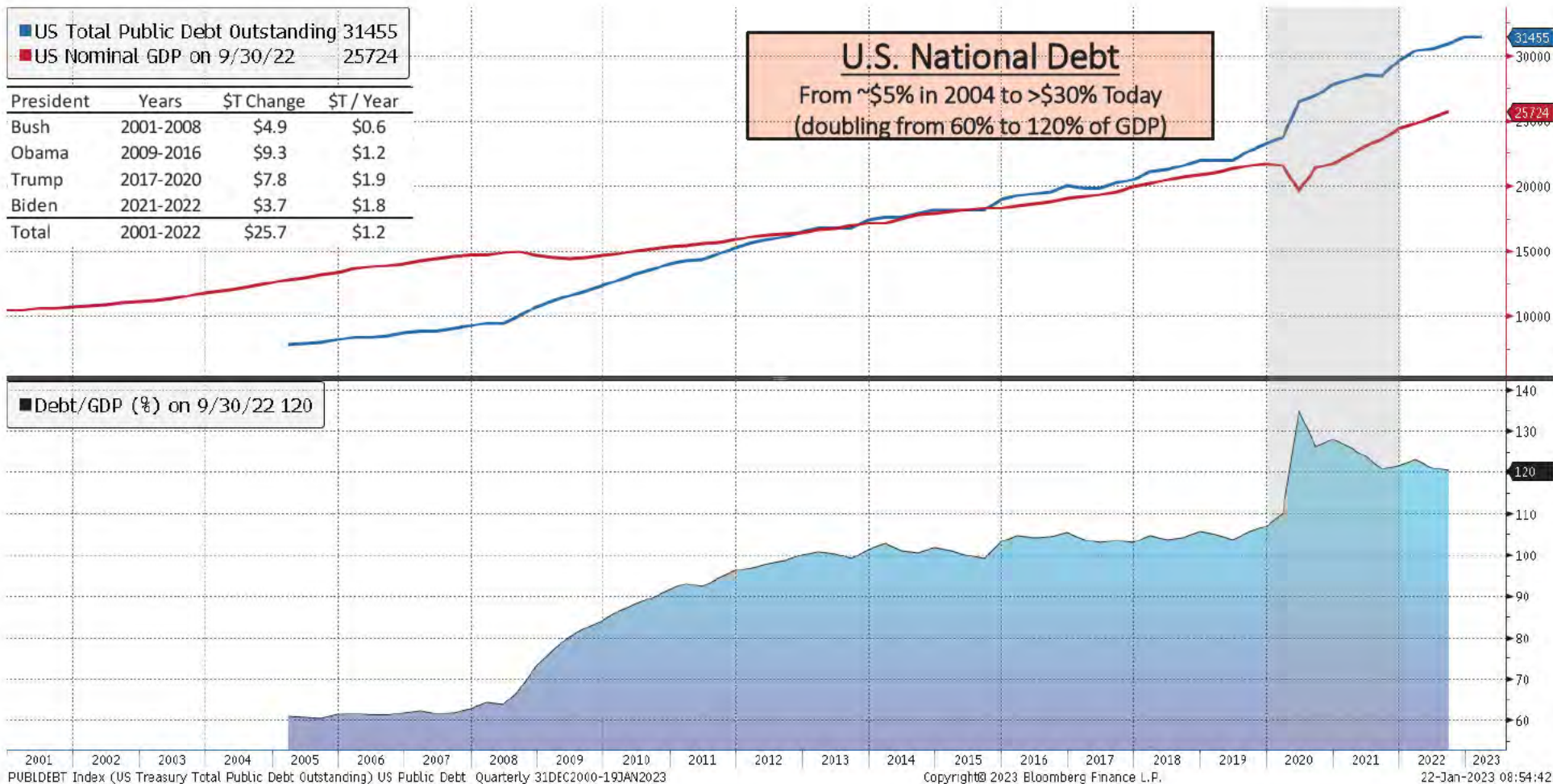
Chesley Burnett "Sully" Sullenberger III
Pilot of US Airways 1549, January 15, 2009

Labor markets remain tight

- Difficult to see inflation pressures return to Fed target without these tensions reversing
- Recent jobs reports remain strong (good news for economic resilience but challenges the market’s benign inflation expectations)

Data Source: Bloomberg

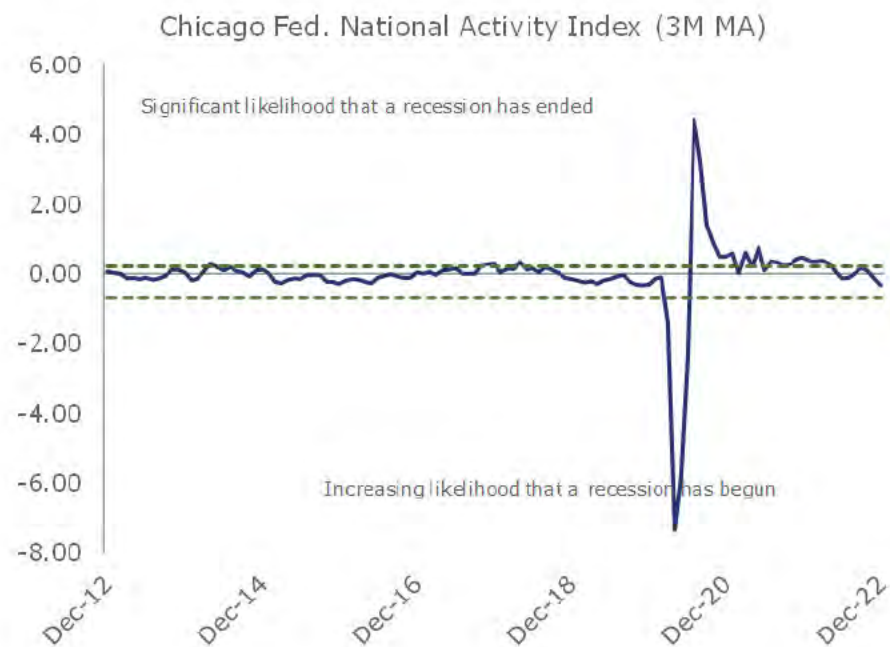
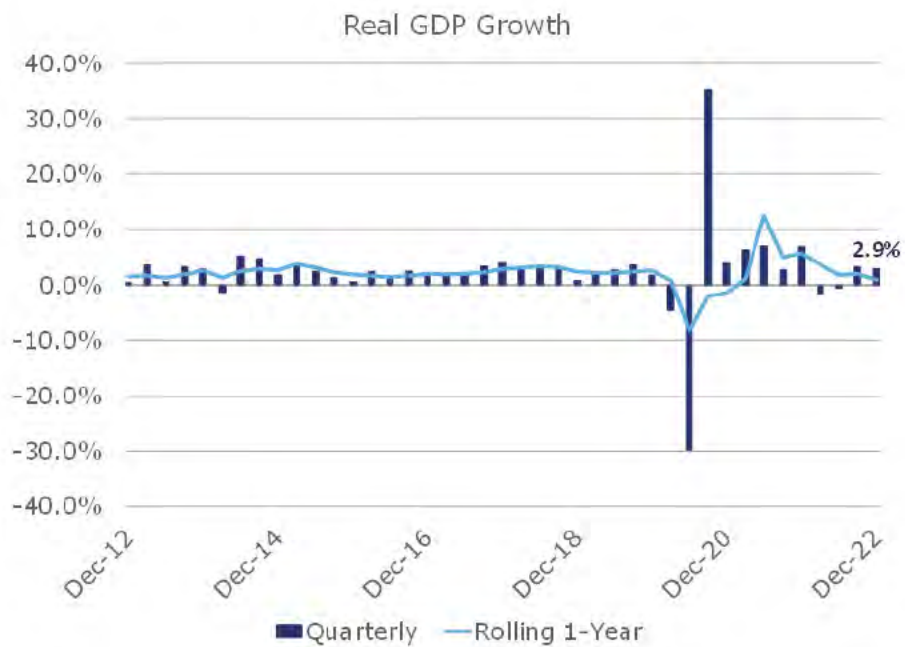
A Secular Explosion in National Debt: “We’re Not in Kansas Anymore”



Data Source: Bloomberg

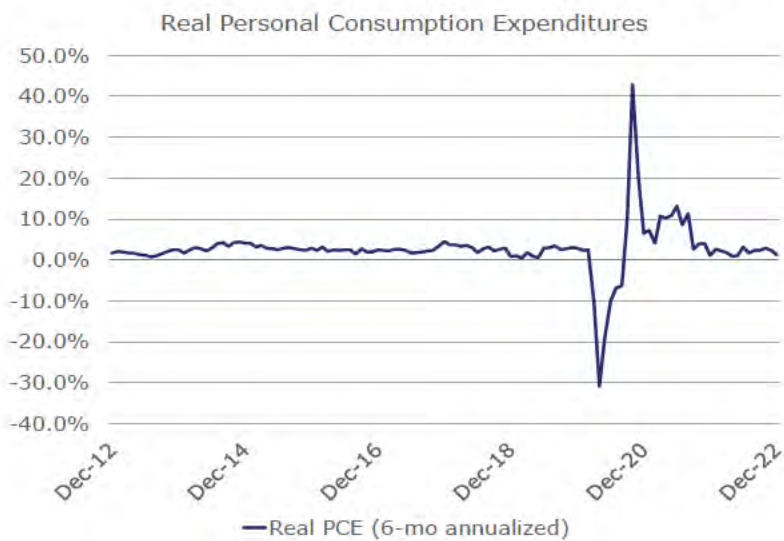
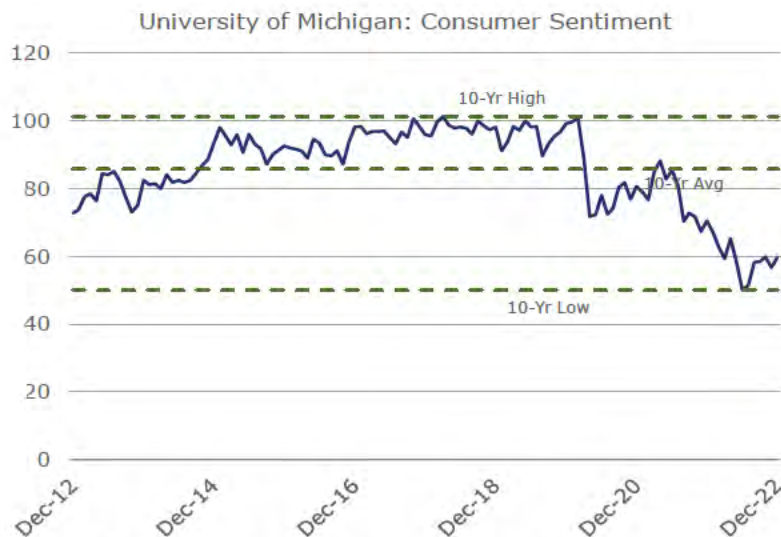
Economic/Market Activity

Economic Growth



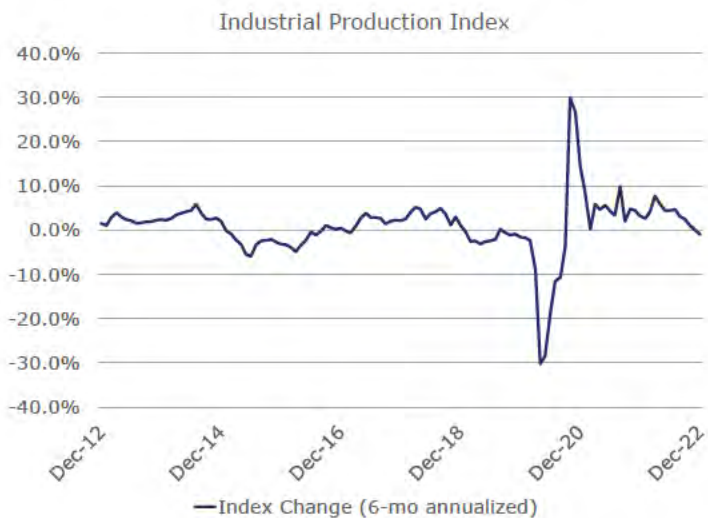
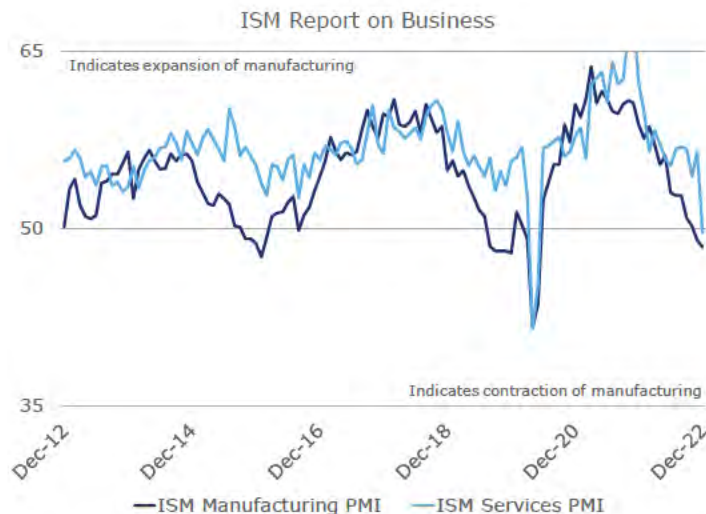
Data Source: Bloomberg

Consumer Activity



Data Source: Bloomberg

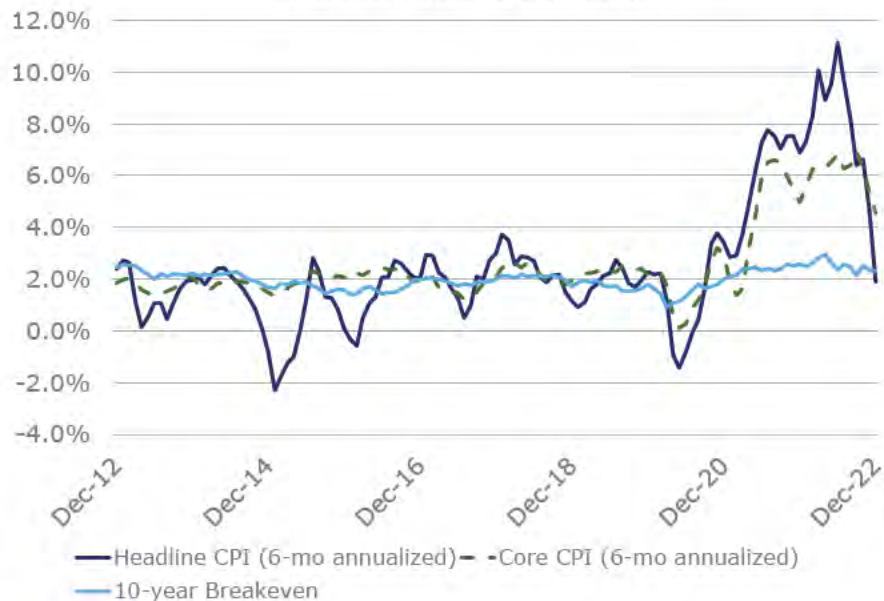
Business Activity



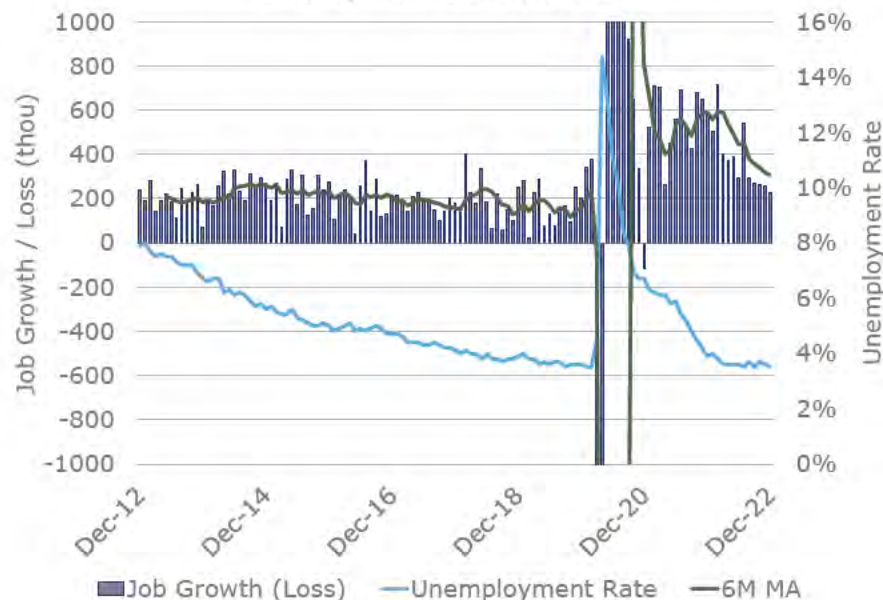
Data Source: Bloomberg

Inflation and Employment

Inflation: Actual & Expected



Employment Gains / Losses

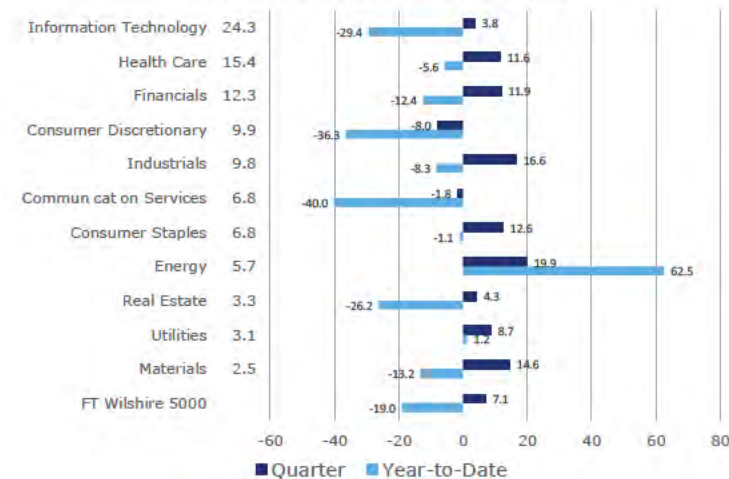


Data Source: Bloomberg

U.S. Equity Market

As of 12/30/2022	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
FT Wilshire 5000	7.1	-19.0	-19.0	7.4	9.0	12.3
Wilshire U.S. Large Cap	7.1	-19.0	-19.0	7.7	9.4	12.6
Wilshire U.S. Small Cap	7.9	-18.7	-18.7	4.4	5.1	9.7
Wilshire U.S. Large Growth	0.8	-29.5	-29.5	7.1	10.0	13.6
Wilshire U.S. Large Value	13.8	-5.5	-5.5	8.1	8.7	11.5
Wilshire U.S. Small Growth	7.1	-23.1	-23.1	3.2	5.1	9.9
Wilshire U.S. Small Value	8.7	-14.2	-14.2	5.6	5.0	9.3
Wilshire REIT Index	4.0	-26.8	-26.8	-0.5	3.4	6.3
MSCI USA Min. Vol. Index	9.8	-9.2	-9.2	5.1	8.6	11.9
FTSE RAFI U.S. 1000 Index	12.5	-7.4	-7.4	9.6	9.1	12.2

U.S. Sector Weight and Return (%)



Large Cap vs Small Cap



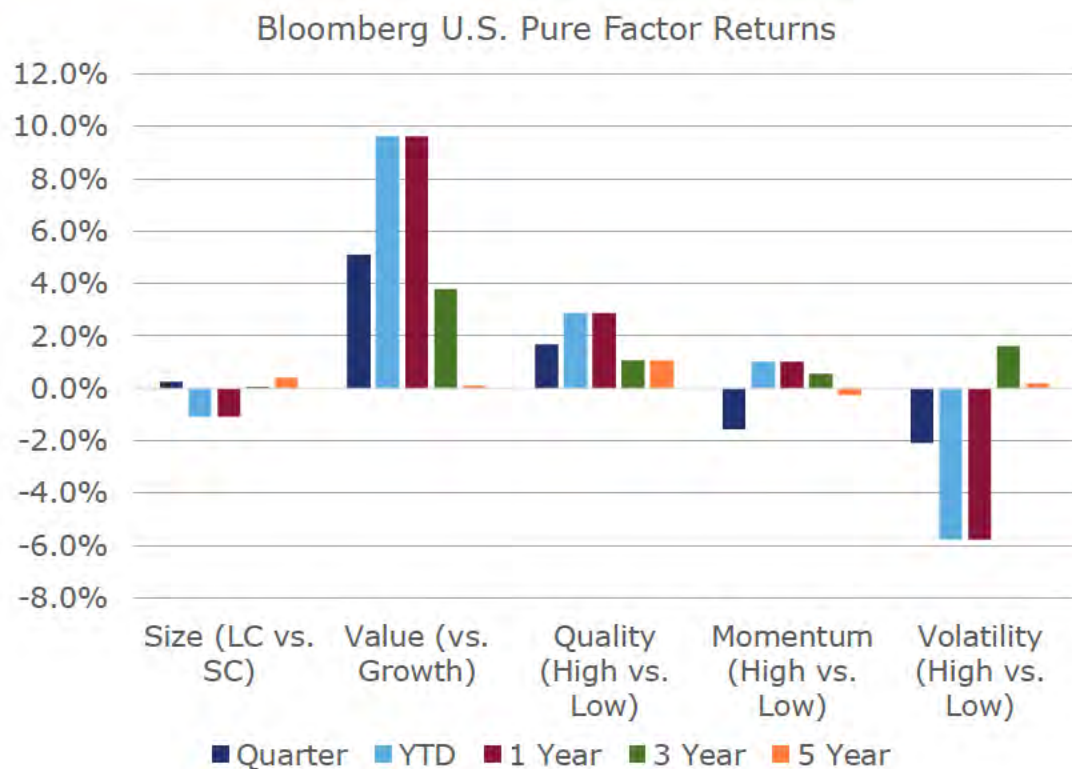
Large Growth vs Large Value



Data Sources: Bloomberg, Wilshire Atlas

U.S. Factor Returns

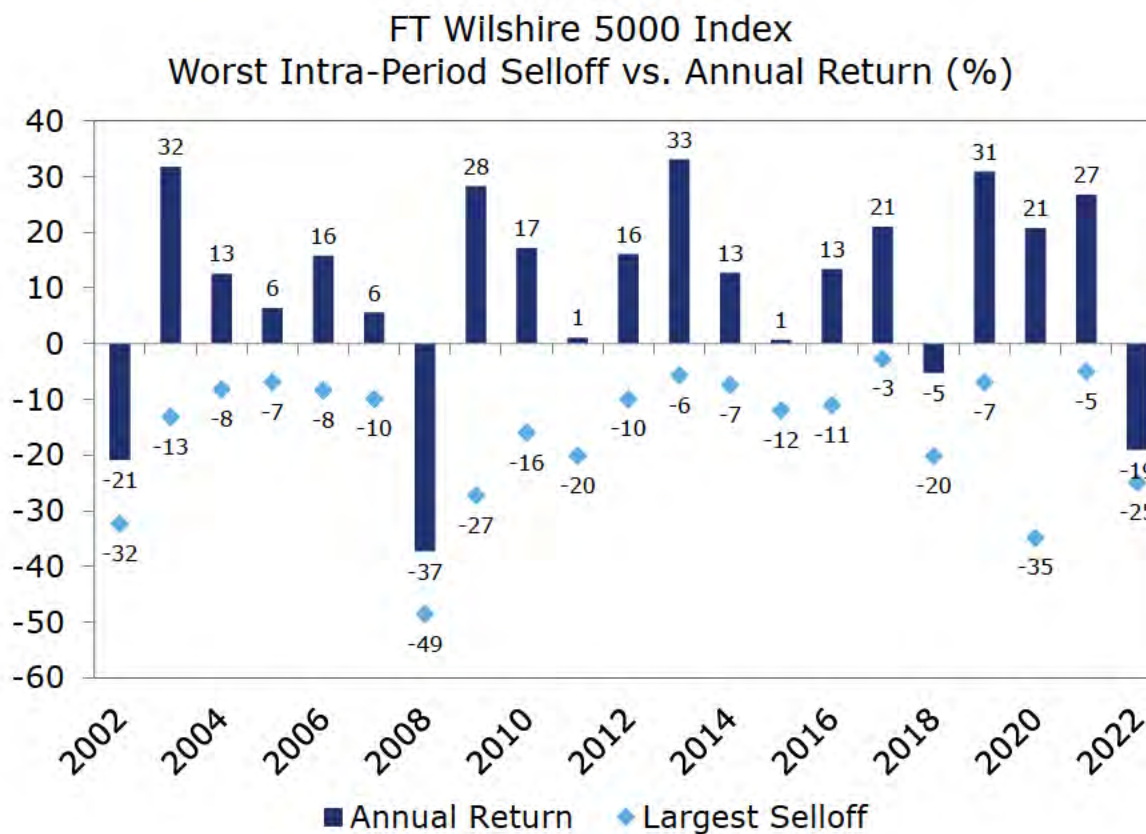
- Factor returns represent the contribution from large cap, value, etc. stocks within Bloomberg’s Portfolio & Risk Analytics module
- Value and low volatility have mostly outperformed this year



Data Sources: Bloomberg

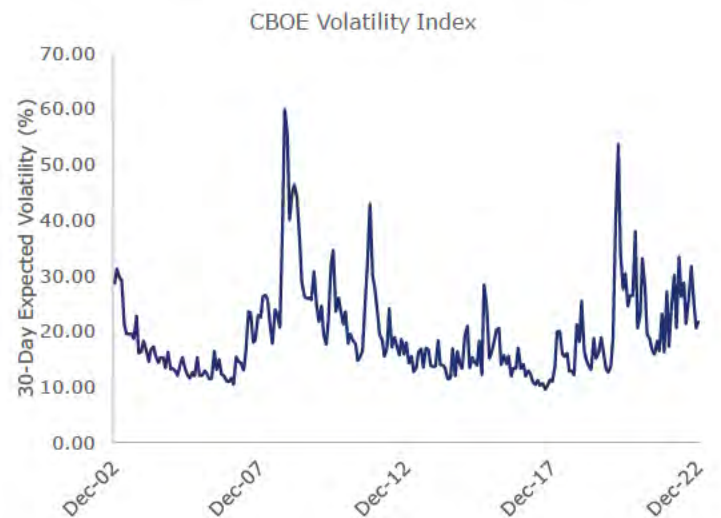
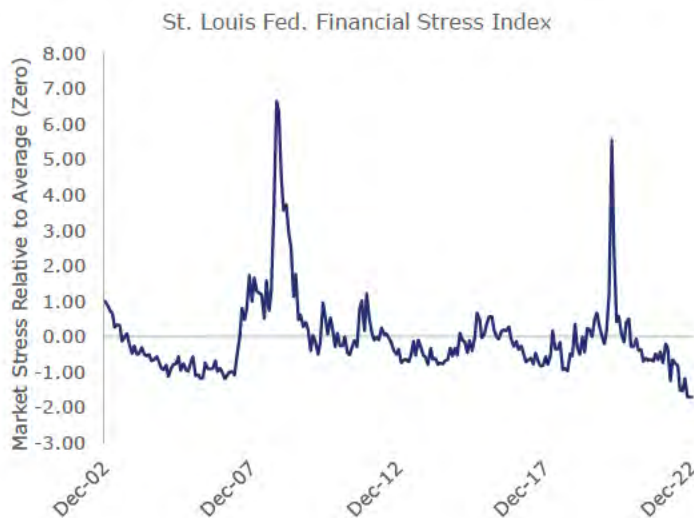
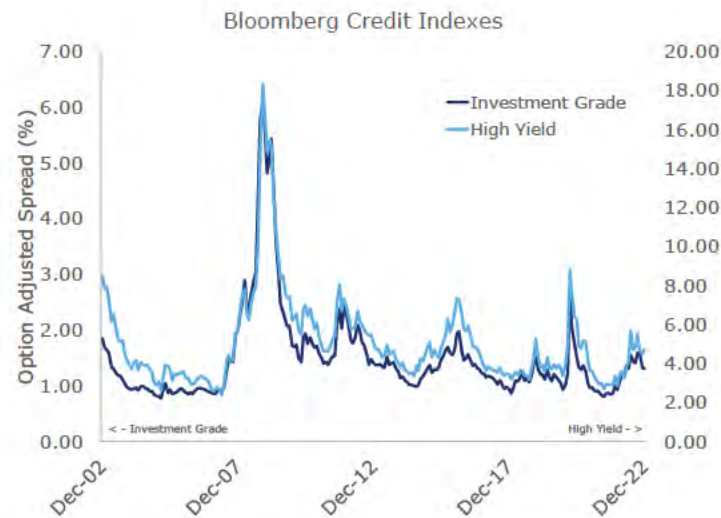
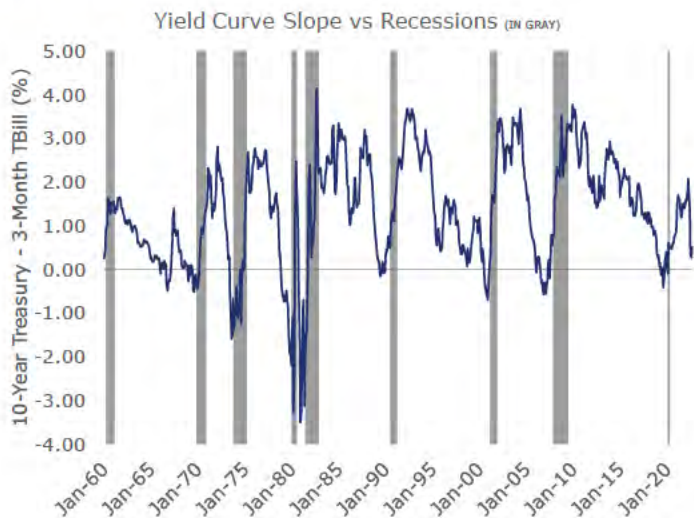
Annual Equity Market Selloffs

- U.S. equity suffered its worse year since the 2008 global financial crisis



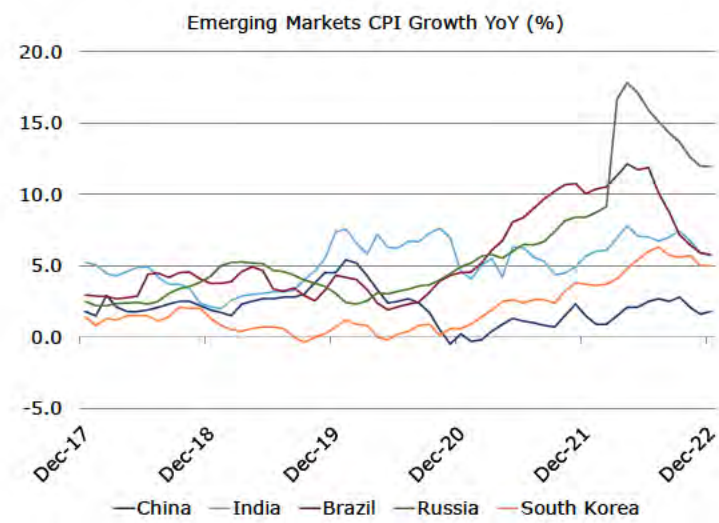
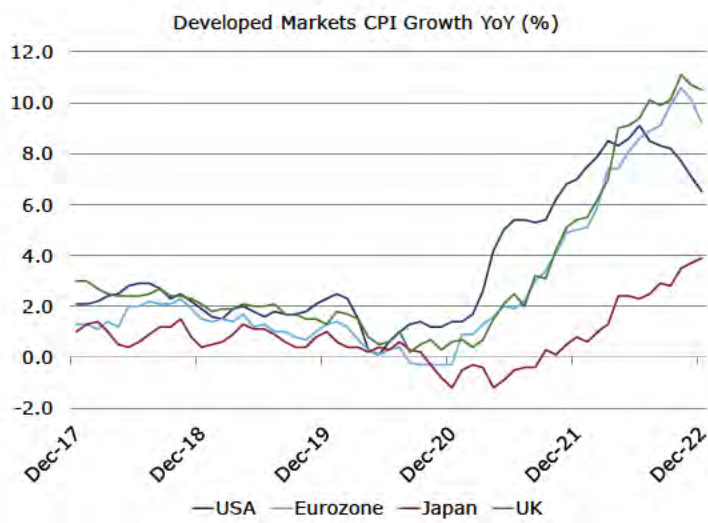
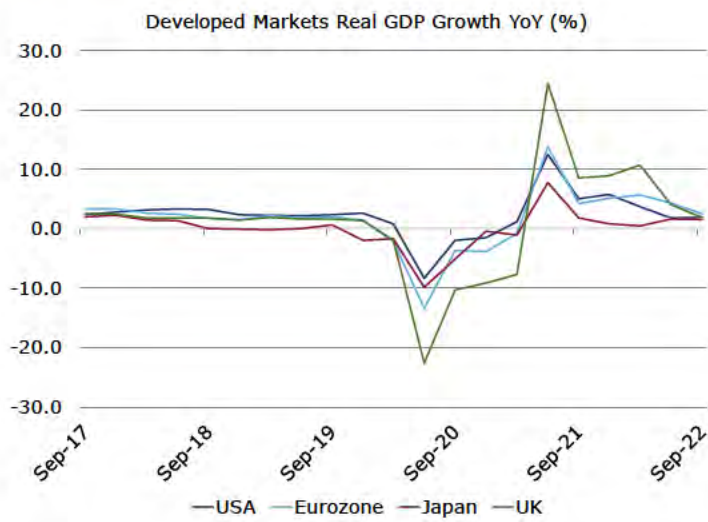
Data Sources: Wilshire Web, Bloomberg

Risk Monitor



Data Sources: Bloomberg

Non-U.S. Growth and Inflation

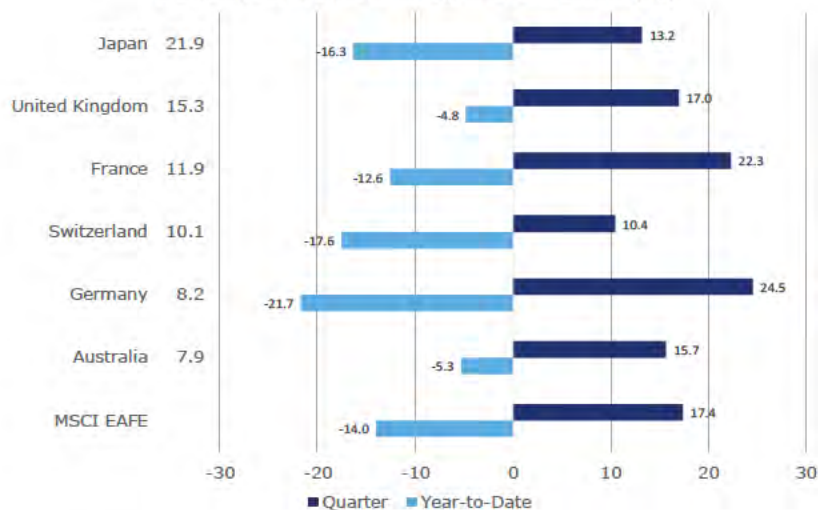


Data Sources: Bloomberg

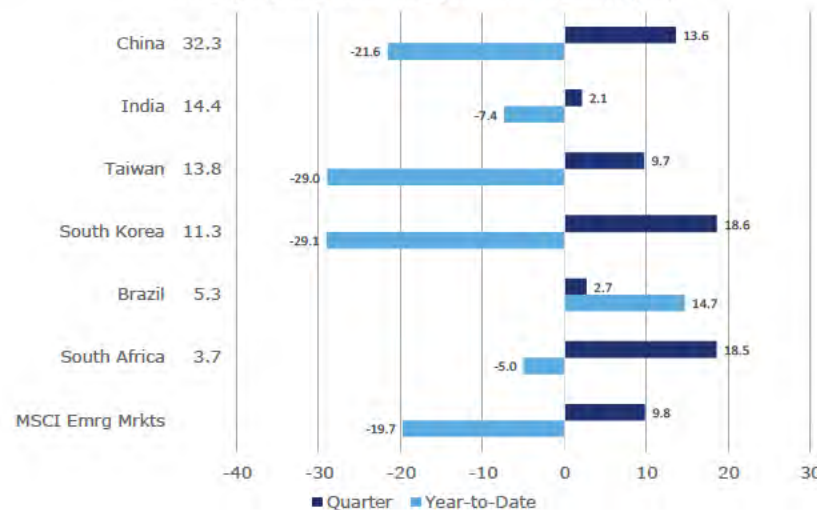
Non-U.S. Equity Market

As of 12/30/2022	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
MSCI ACWI ex-US (\$G)	14.4	-15.6	-15.6	0.5	1.4	4.3
MSCI EAFE (\$G)	17.4	-14.0	-14.0	1.3	2.0	5.2
MSCI Emerging Markets (\$G)	9.8	-19.7	-19.7	-2.3	-1.0	1.8
MSCI Frontier Markets (\$G)	9.2	-17.8	-17.8	-5.7	-3.8	0.2
MSCI ACWI ex-US Growth (\$G)	12.9	-22.8	-22.8	-0.1	1.8	5.0
MSCI ACWI ex-US Value (\$G)	15.7	-8.7	-8.7	0.8	0.6	3.6
MSCI ACWI ex-US Small (\$G)	13.4	-19.6	-19.6	1.5	1.1	5.6
MSCI ACWI Minimum Volatility	8.6	-9.8	-9.8	2.2	5.2	8.4
MSCI EAFE Minimum Volatility	12.5	-14.6	-14.6	-2.6	0.6	5.1
FTSE RAFI Developed ex-US	18.3	-9.0	-9.0	2.7	1.7	4.9
MSCI EAFE LC (G)	8.8	-6.5	-6.5	4.1	4.3	8.1
MSCI Emerging Markets LC (G)	6.7	-15.2	-15.2	0.5	1.7	5.0

Developed Markets Weight and Return (%)



Emerging Markets Weight and Return (%)

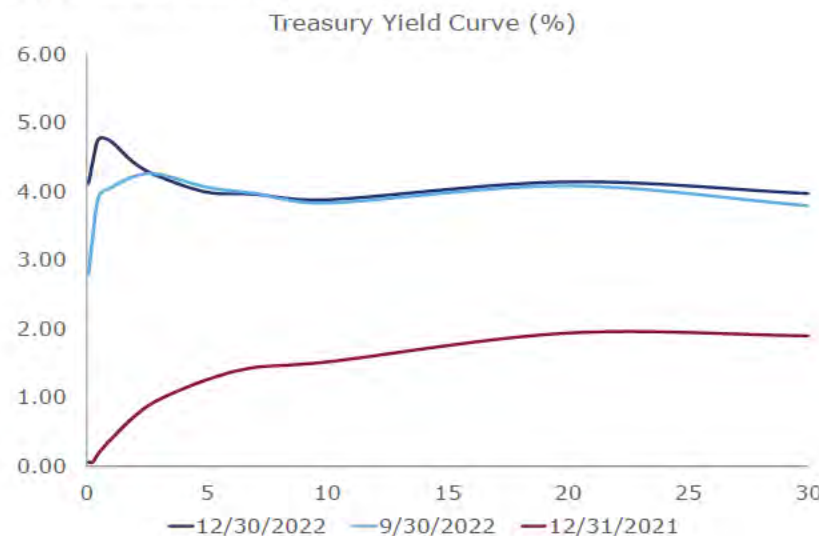
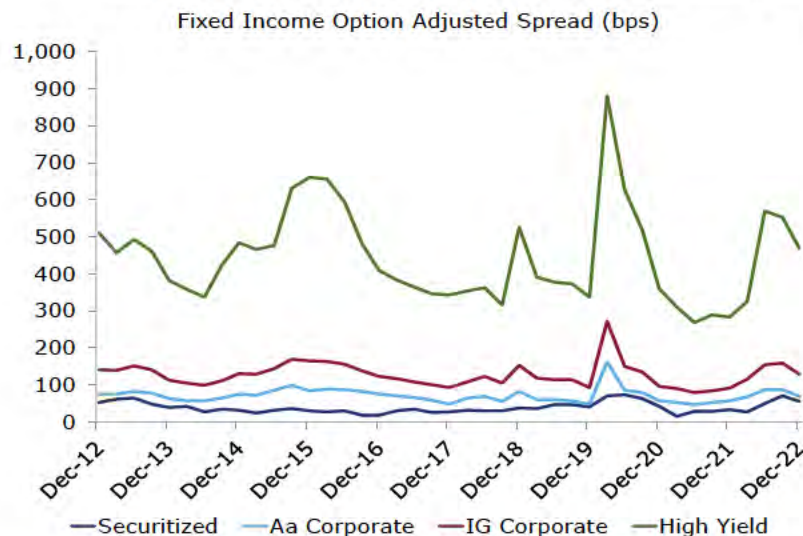


Data Sources: Bloomberg

U.S. Fixed Income

As of 12/30/2022	YTW	DUR.	QTR	YTD	1 YR	3 YR	5 YR	10 YR
Bloomberg Aggregate	4.7	6.2	1.9	-13.0	-13.0	-2.7	0.0	1.1
Bloomberg Treasury	4.2	6.1	0.7	-12.5	-12.5	-2.6	-0.1	0.6
Bloomberg Gov't-Rel.	4.8	5.2	1.9	-11.1	-11.1	-2.4	0.3	1.1
Bloomberg Securitized	4.8	5.7	2.0	-11.7	-11.7	-3.1	-0.4	0.8
Bloomberg Corporate	5.4	7.1	3.6	-15.8	-15.8	-2.9	0.5	2.0
Bloomberg LT Gov't/Credit	4.9	14.3	2.6	-27.1	-27.1	-6.2	-1.2	1.6
Bloomberg LT Treasury	4.1	16.2	-0.6	-29.3	-29.3	-7.4	-2.2	0.6
Bloomberg LT Gov't-Rel.	5.5	11.6	4.2	-22.7	-22.7	-5.9	-0.8	1.6
Bloomberg LT Corporate	5.6	13.0	5.4	-25.6	-25.6	-5.7	-0.8	2.2
Bloomberg U.S. TIPS *	3.8	7.6	2.0	-11.8	-11.8	1.2	2.1	1.1
Bloomberg High Yield	9.0	3.9	4.2	-11.2	-11.2	0.0	2.3	4.0
S&P/LSTA Leveraged Loan	9.1	0.3	2.7	-0.6	-0.6	2.5	3.3	3.7
Treasury Bills	4.4	0.3	0.9	1.3	1.3	0.7	1.2	0.8

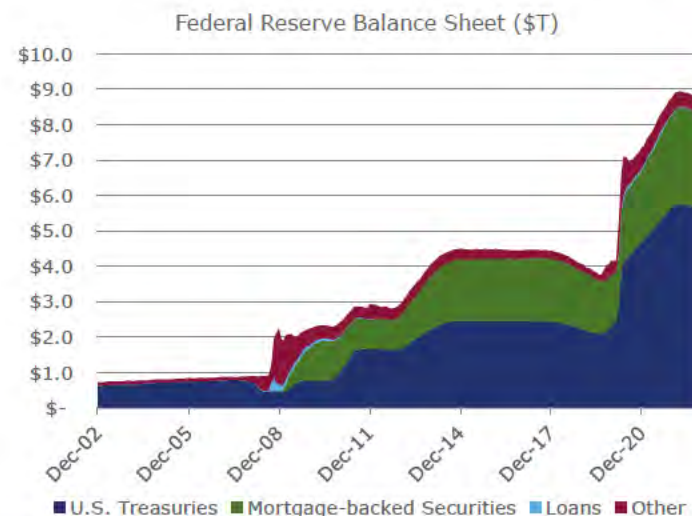
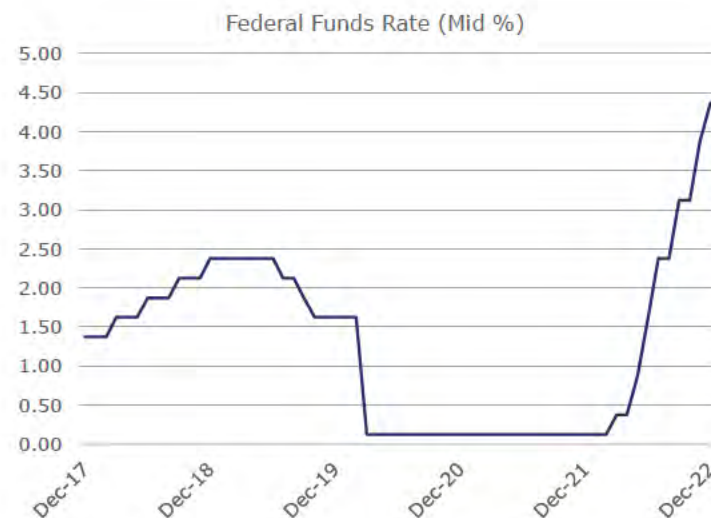
* Yield and Duration statistics are for a proxy index based on similar maturity, the Bloomberg Barclays U.S. Treasury 7-10 Year Index



Data Sources: Bloomberg

Federal Reserve

- After 300 basis point increase in the Fed-funds rate through September, the FOMC increased the rate an additional 125 basis points during Q4
- Federal Reserve has added more than \$4.5 trillion in assets to their balance sheet during the past two years
- QE4 was larger than the 3 phases of quantitative easing – combined – following the global financial crisis



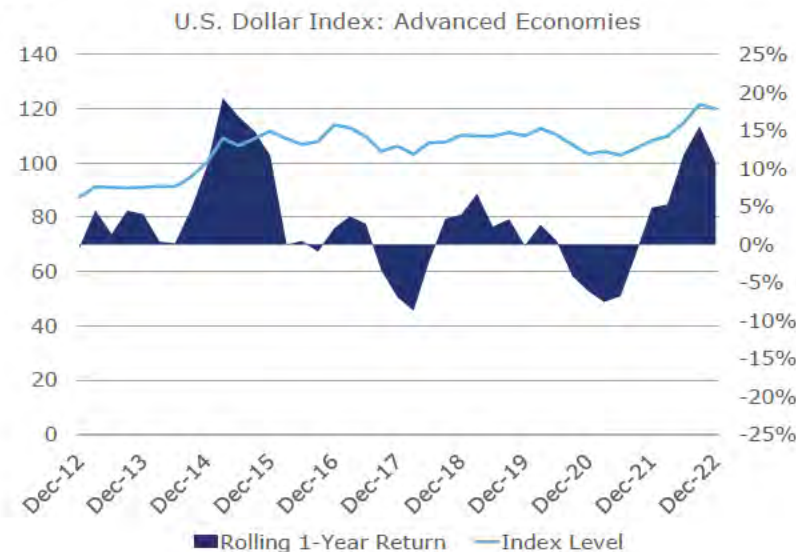
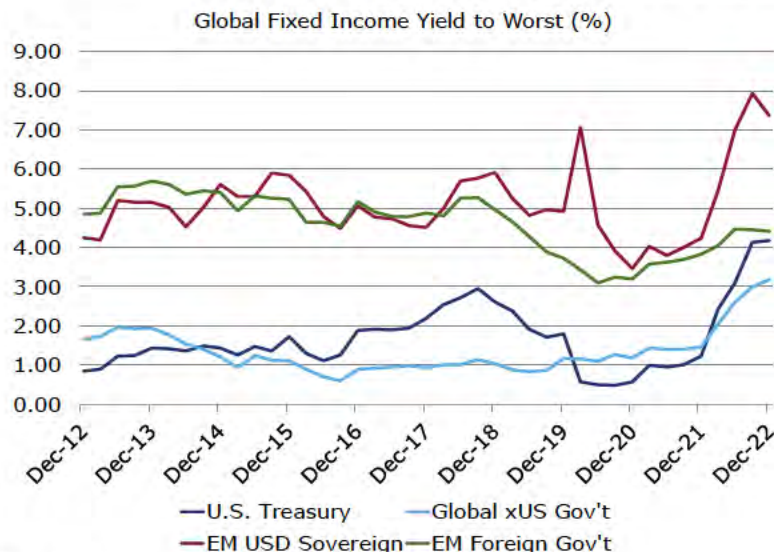
	Announced	Closed	Amount (bil)
QE1	11/25/2008	3/31/2010	\$1,403
QE2	11/3/2010	6/29/2012	\$568
QE3	9/13/2012	10/29/2014	\$1,674
QE4	3/23/2020	3/15/2022	\$4,779

Data Sources: Bloomberg

Non-U.S. Fixed Income

As of 12/30/2022	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
Developed Markets						
Bloomberg Global Aggregate xUS	6.8	-18.7	-18.7	-5.9	-3.1	-1.6
Bloomberg Global Aggregate xUS *	0.2	-9.8	-9.8	-2.6	0.5	2.1
Bloomberg Global Inflation Linked xUS	5.8	-29.6	-29.6	-7.0	-4.0	-0.9
Bloomberg Global Inflation Linked xUS *	-1.7	-21.1	-21.1	-3.5	-0.4	2.7
Emerging Markets (Hard Currency)						
Bloomberg EM USD Aggregate	6.6	-15.3	-15.3	-3.9	-0.4	1.7
Emerging Markets (Foreign Currency)						
Bloomberg EM Local Currency Gov't	5.9	-8.4	-8.4	-1.7	0.1	0.2
Bloomberg EM Local Currency Gov't *	1.9	-2.7	-2.7	-0.3	2.0	1.9
Euro vs. Dollar	9.2	-5.8	-5.8	-1.5	-2.3	-2.1
Yen vs. Dollar	10.4	-12.2	-12.2	-6.1	-3.0	-4.0
Pound vs. Dollar	8.2	-10.7	-10.7	-3.0	-2.2	-2.9

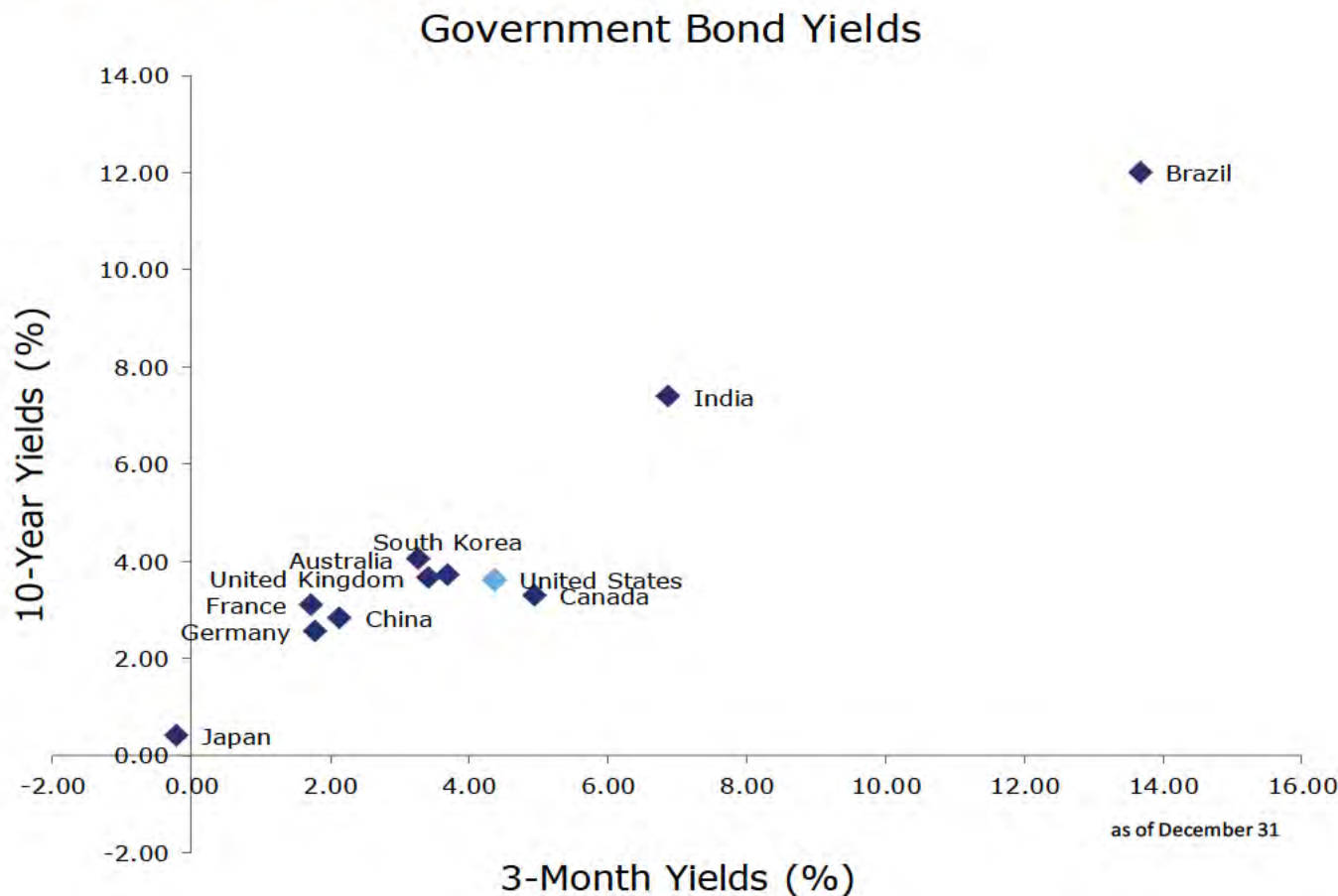
* Returns are reported in terms of local market investors, which removes currency effects.



Data Sources: Bloomberg

Global Interest Rates

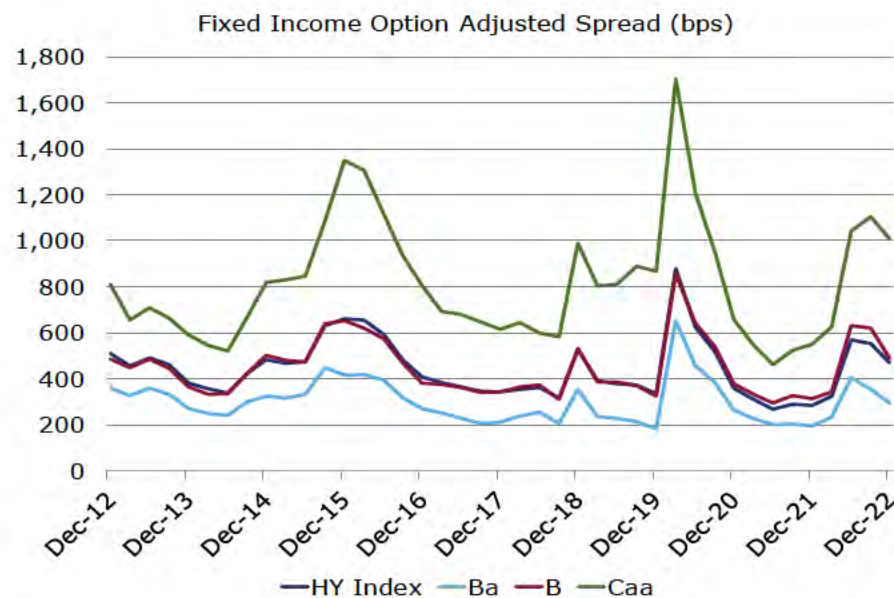
Short-term rates have turned positive in most larger countries; longer-term rates around 4% in the U.K., Australia, South Korea and the U.S.



Data Sources: Bloomberg

High Yield Bond Market

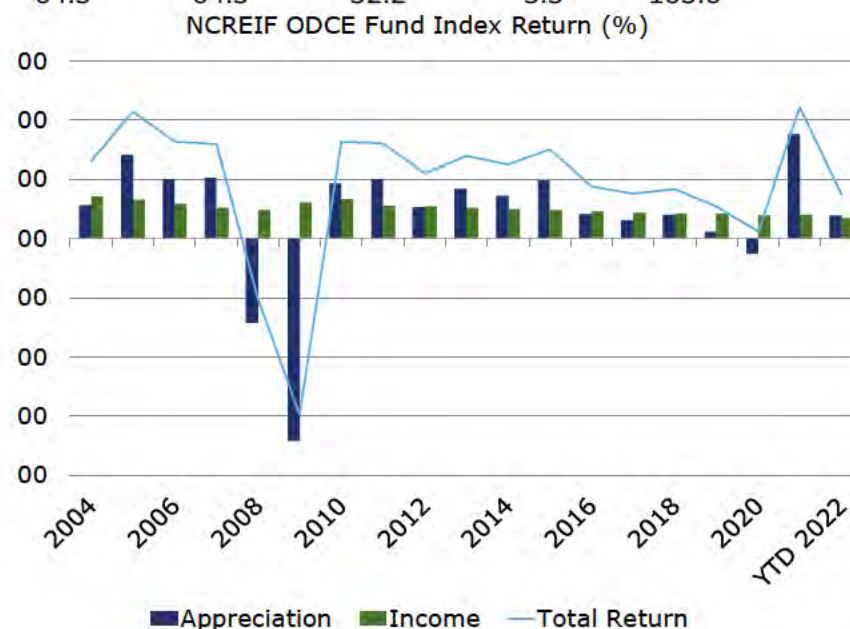
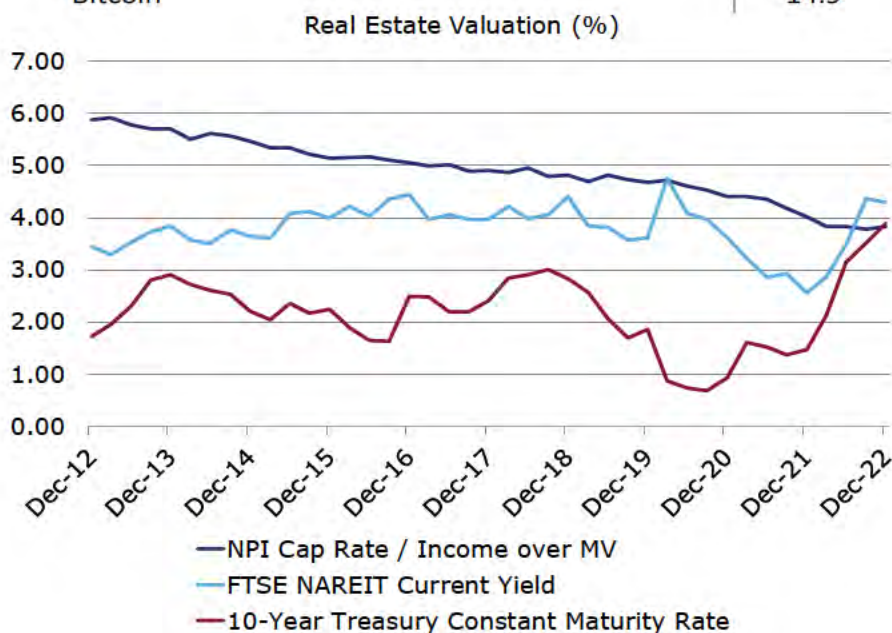
As of 12/31/2022		YTW	QTR	YTD	1 YR	3 YR	5 YR	10 YR
Bloomberg High Yield		9.0	4.2	-11.2	-11.2	0.0	2.3	4.0
S&P LSTA Leveraged Loan		9.1	3.8	-0.6	-0.6	1.9	3.1	3.2
High Yield Quality Distribution	Weight							
Ba U.S. High Yield	49.9%	7.2	4.3	-10.8	-10.8	0.9	3.0	4.4
B U.S. High Yield	38.6%	9.2	4.9	-10.3	-10.3	-0.5	2.2	3.6
Caa U.S. High Yield	10.7%	14.3	0.5	-16.3	-16.3	-2.4	-0.4	3.5
Ca to D U.S. High Yield	0.7%	36.3	13.8	-10.4	-10.4	1.1	0.4	-5.0



Data Sources: Bloomberg

Real Assets

As of 12/30/2022	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
Bloomberg U.S. TIPS	2.0	-11.8	-11.8	1.2	2.1	1.1
Bloomberg Commodity Index	2.2	16.1	16.1	12.7	6.4	-1.3
Bloomberg Gold Index	9.5	-0.7	-0.7	4.7	5.7	0.0
Wilshire Global RESI Index	6.4	-24.9	-24.9	-2.7	1.6	4.8
NCREIF ODCE Fund Index	-5.0	7.5	7.5	9.9	8.7	10.1
NCREIF Timberland Index	4.9	12.9	12.9	7.5	5.4	5.8
FTSE Global Core Infrastructure 50/50	9.2	-4.1	-4.1	2.3	5.5	7.9
Alerian Midstream Energy	8.4	21.5	21.5	8.8	6.8	n.a.
Bitcoin	-14.9	-64.3	-64.3	32.2	3.3	103.6



Data Sources: Bloomberg

Asset Class Performance

Asset Class Returns - Best to Worst

2017	2018	2019	2020	2021	2022 YTD	Annualized 5-Year as of 12/22
Emrg Mrkts 37.7%	T-Bills 1.9%	U.S. Equity 31.0%	U.S. Equity 20.8%	REITs 46.2%	Commodities 16.1%	U.S. Equity 9.0%
Developed 25.6%	Core Bond 0.0%	REITs 25.8%	Emrg Mrkts 18.7%	Commodities 27.1%	T-Bills 1.3%	Commodities 6.4%
U.S. Equity 21.0%	U.S. TIPS -1.3%	Developed 22.7%	U.S. TIPS 11.0%	U.S. Equity 26.7%	High Yield -11.2%	REITs 3.4%
High Yield 7.5%	High Yield -2.1%	Emrg Mrkts 18.9%	Developed 8.3%	Developed 11.8%	U.S. TIPS -11.8%	High Yield 2.3%
REITs 4.2%	REITs -4.8%	High Yield 14.3%	Core Bond 7.5%	U.S. TIPS 6.0%	Core Bond -13.0%	U.S. TIPS 2.1%
Core Bond 3.6%	U.S. Equity -5.3%	Core Bond 8.7%	High Yield 7.1%	High Yield 5.3%	Developed -14.0%	Developed 2.0%
U.S. TIPS 3.0%	Commodities -11.2%	U.S. TIPS 8.4%	T-Bills 0.7%	T-Bills 0.0%	U.S. Equity -19.0%	T-Bills 1.2%
Commodities 1.7%	Developed -13.4%	Commodities 7.7%	Commodities -3.1%	Core Bond -1.5%	Emrg Mrkts -19.7%	Core Bond 0.0%
T-Bills 0.8%	Emrg Mrkts -14.2%	T-Bills 2.3%	REITs -7.9%	Emrg Mrkts -2.2%	REITs -26.8%	Emrg Mrkts -1.0%

Data Sources: Bloomberg

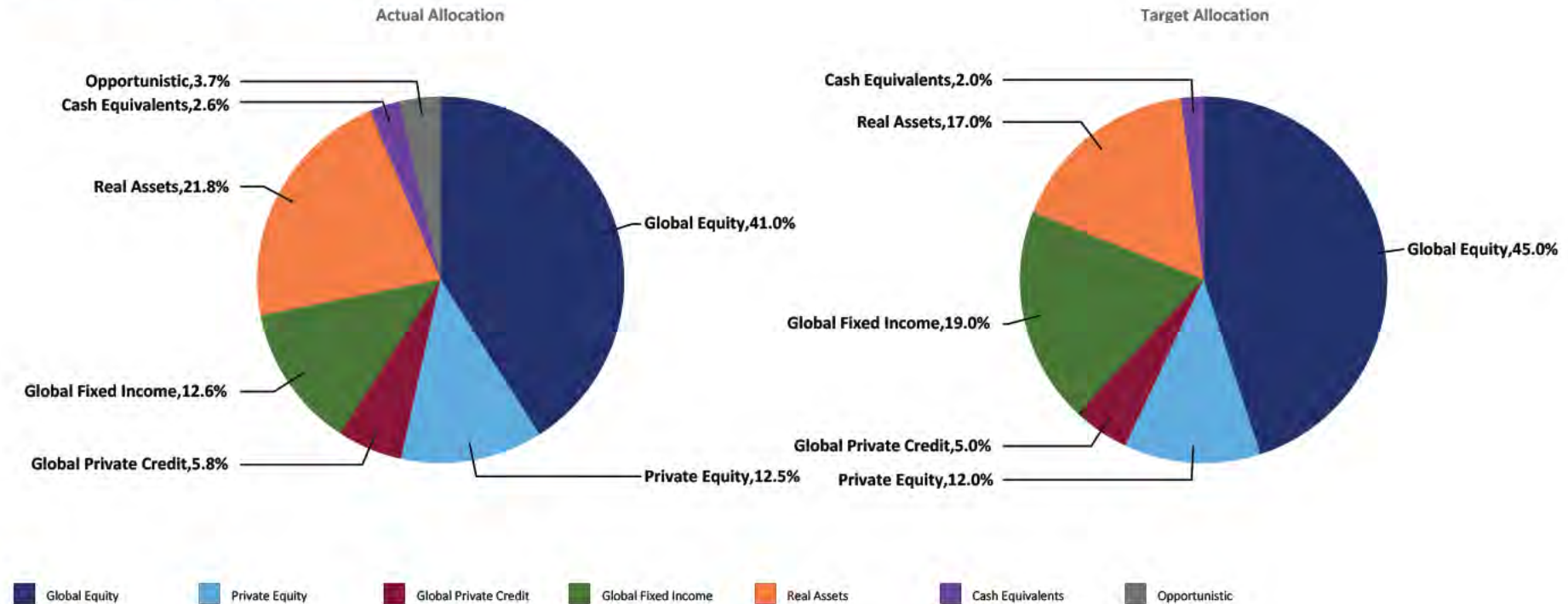
Note: Developed asset class is developed equity markets ex-U.S., ex-Canada

Total Fund

Asset Allocation Compliance

Total Fund

Periods Ended As of December 31, 2022



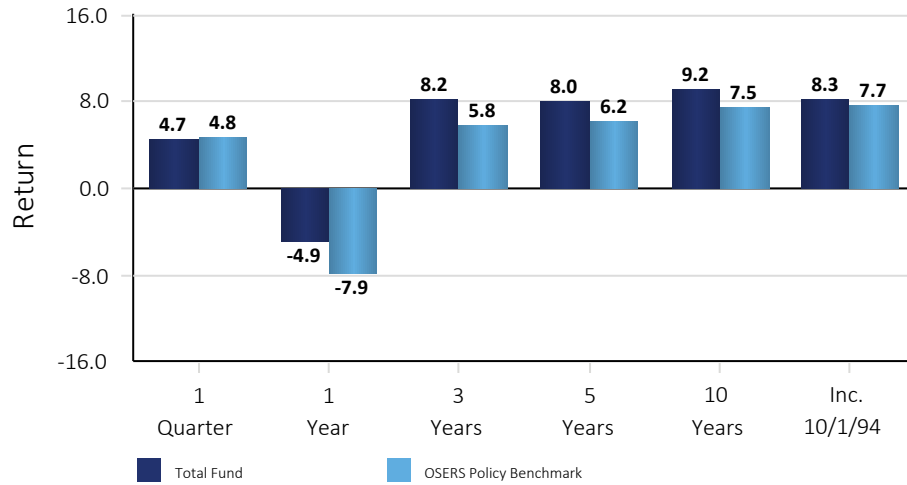
	Asset Allocation \$	Asset Allocation (%)	Target Allocation (%)	Differences (%)
Total Fund	<u>17,142,380,400</u>	<u>100.0</u>	<u>100.0</u>	<u>0.0</u>
Global Equity	7,023,040,657	41.0	45.0	-4.0
Private Equity	2,138,981,918	12.5	12.0	0.5
Global Private Credit	989,481,094	5.8	5.0	0.8
Global Fixed Income	2,168,463,572	12.6	19.0	-6.4
Real Assets	3,740,969,609	21.8	17.0	4.8
Cash Equivalents	453,827,685	2.6	2.0	0.6
Opportunistic	627,615,866	3.7	0.0	3.7

Composite Performance Summary

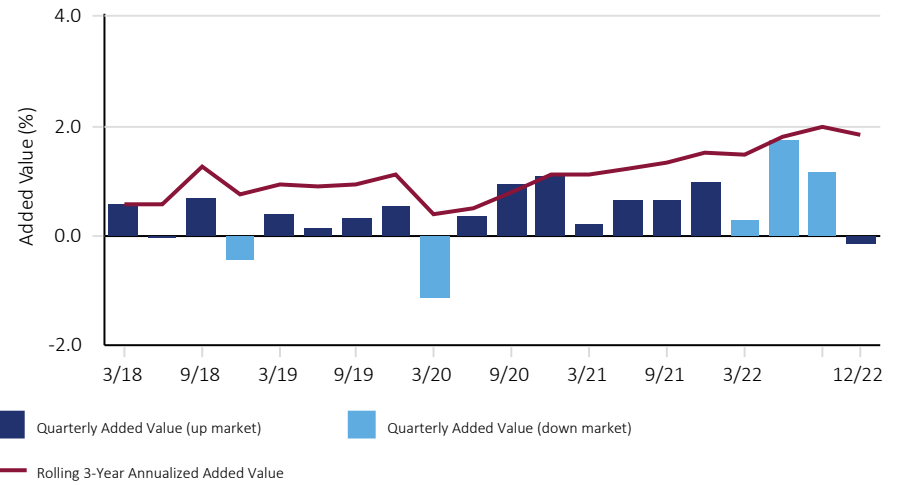
Total Fund

Periods Ended December 31, 2022

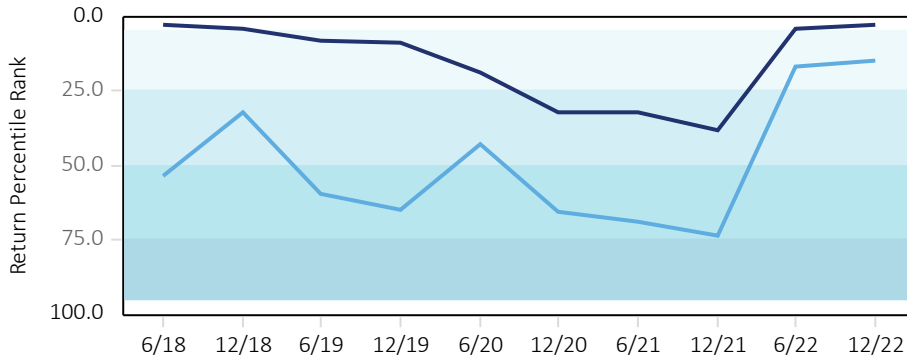
Comparative Performance



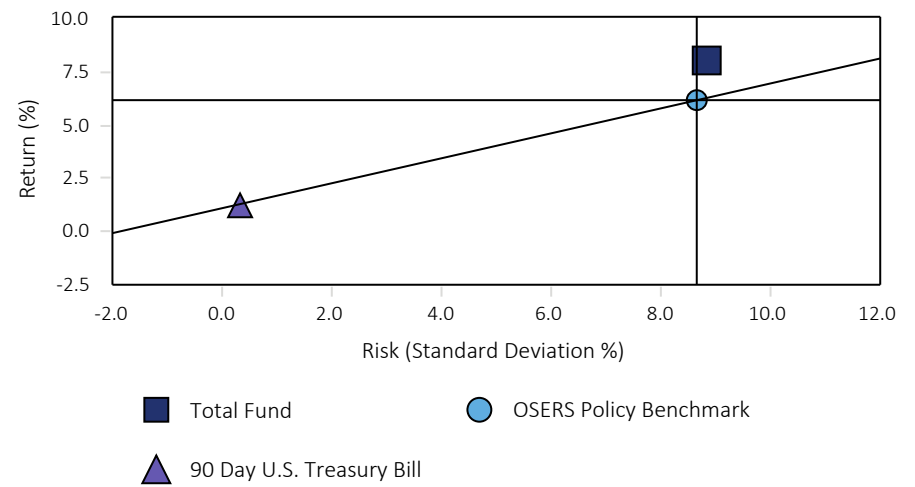
Added Value History



Rolling 3-Year Percentile Rank: All Public Plans-Total Fund



Risk and Return 01/1/18 - 12/31/22



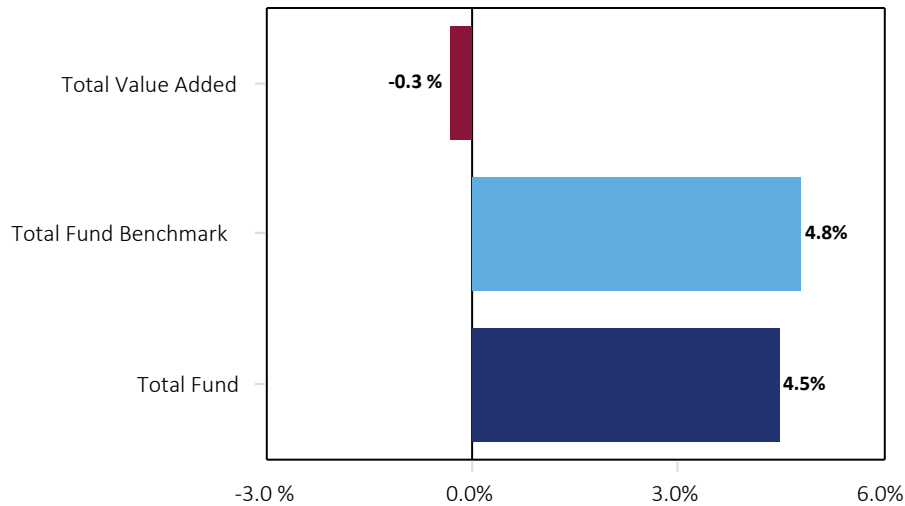
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
— Total Fund	10	7 (70%)	3 (30%)	0 (0%)	0 (0%)
— Benchmark	10	2 (20%)	2 (20%)	6 (60%)	0 (0%)

Total Fund Attribution

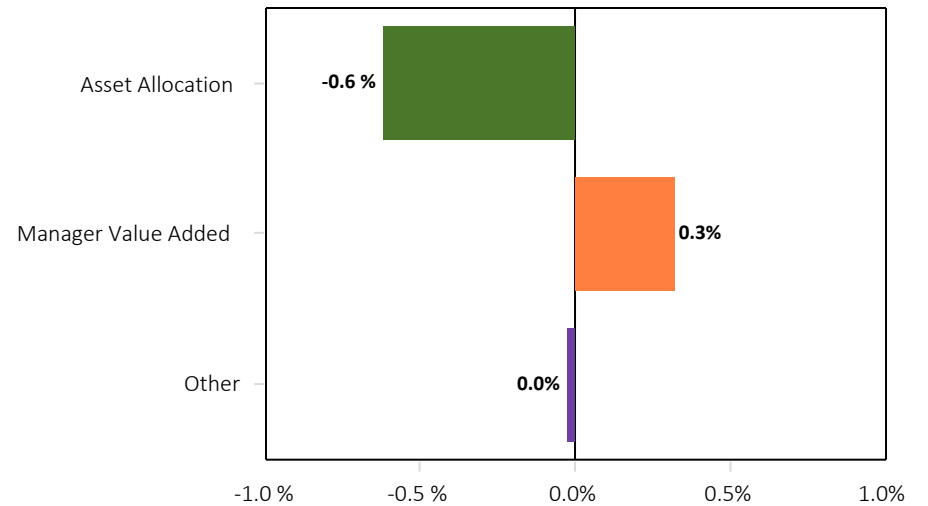
Total Fund

Periods Ended 1 Quarter Ending December 31, 2022

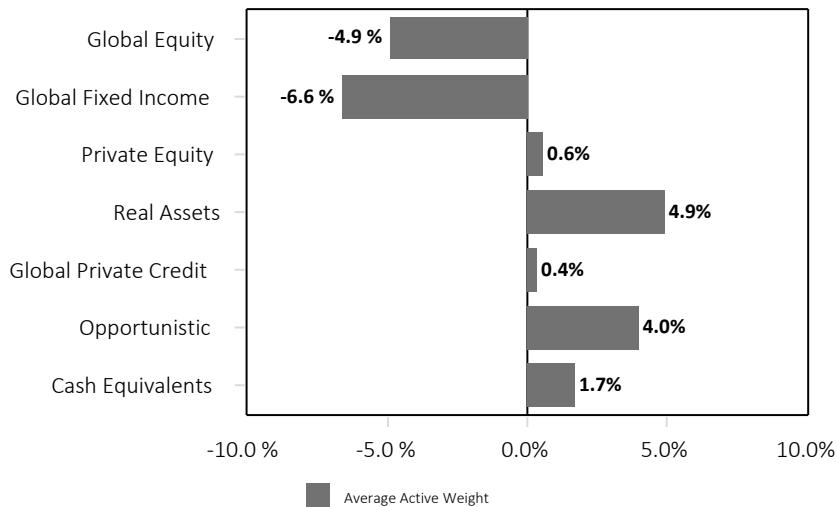
Total Fund Performance



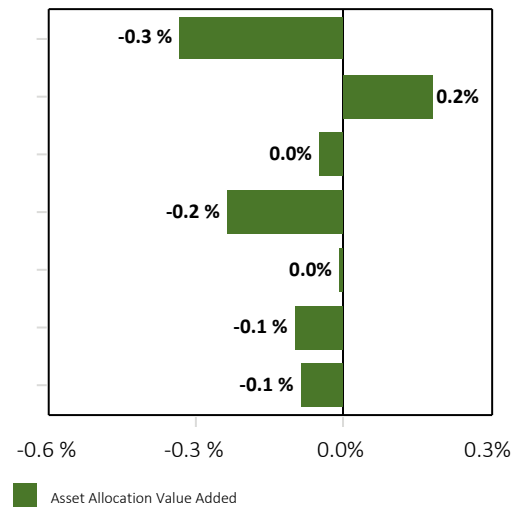
Total Value Added:-0.3 %



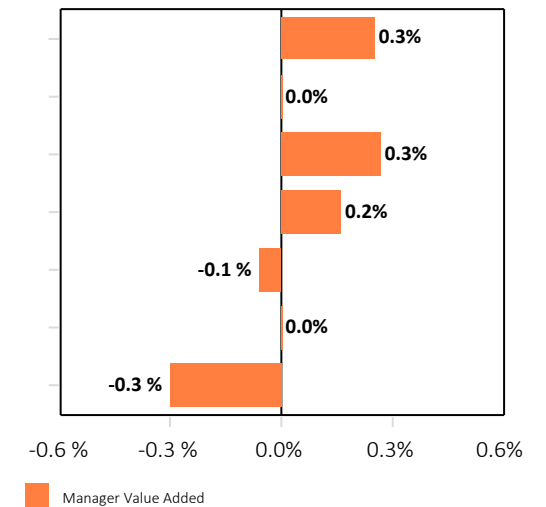
Total Asset Allocation:-0.6 %



Asset Allocation Value Added:-0.6 %



Total Manager Value Added:0.3%

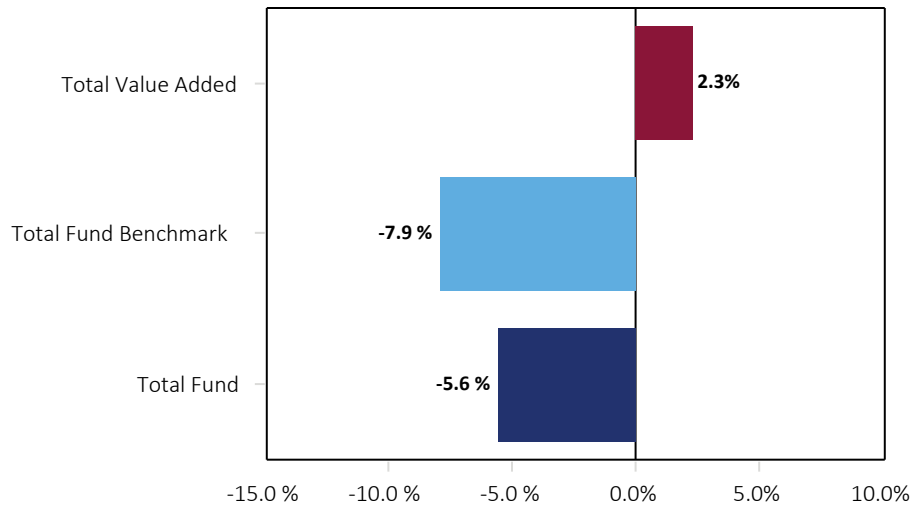


Total Fund Attribution

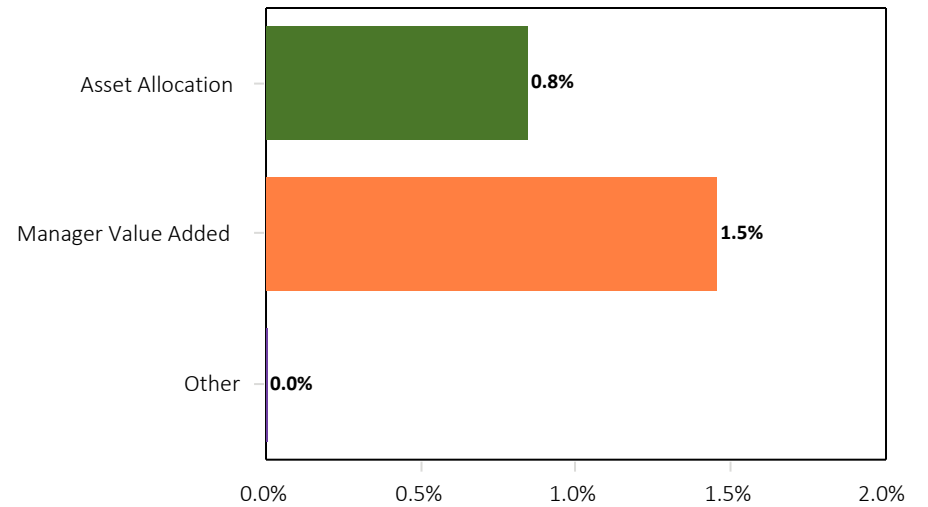
Total Fund

Periods Ended 1 Year Ending December 31, 2022

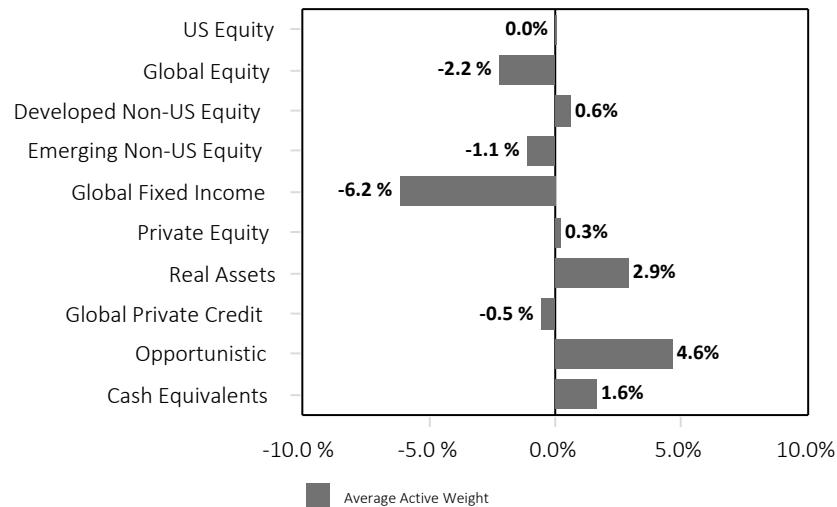
Total Fund Performance



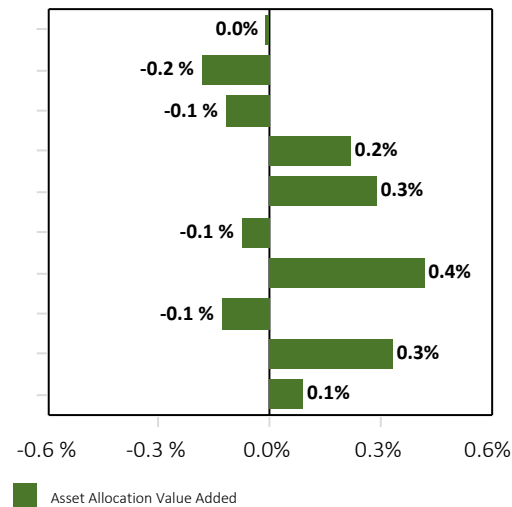
Total Value Added: 2.3%



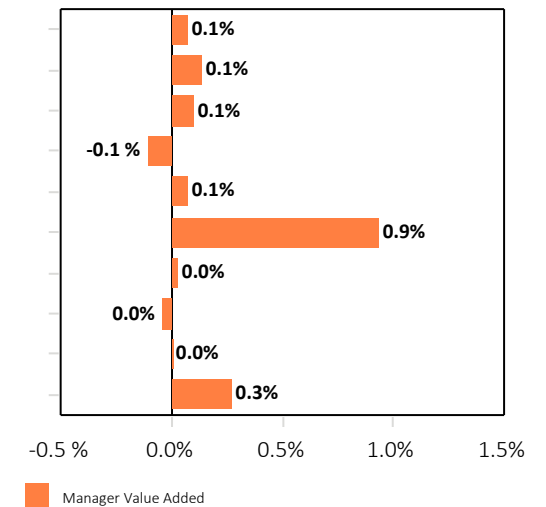
Total Asset Allocation: 0.8%



Asset Allocation Value Added: 0.8%



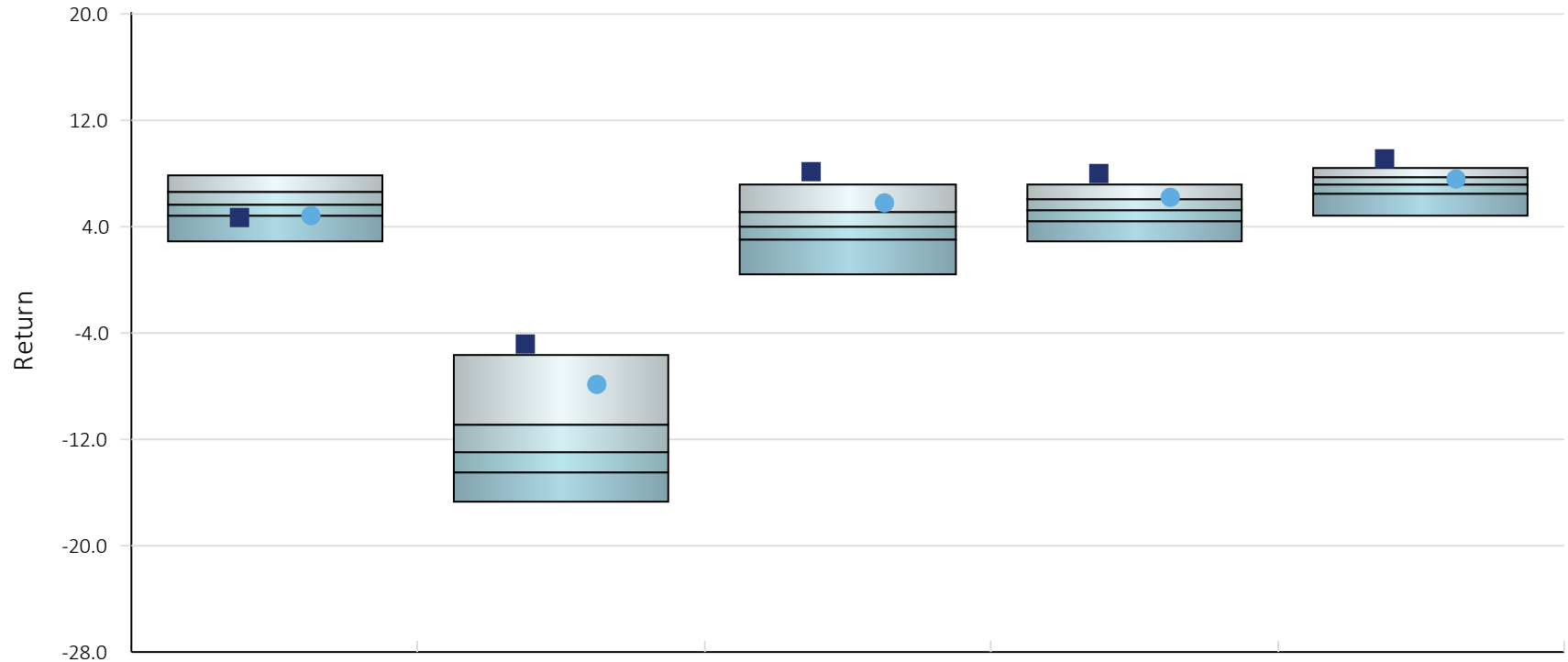
Total Manager Value Added: 1.5%



Plan Sponsor Peer Group Analysis

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

Periods Ended December 31, 2022



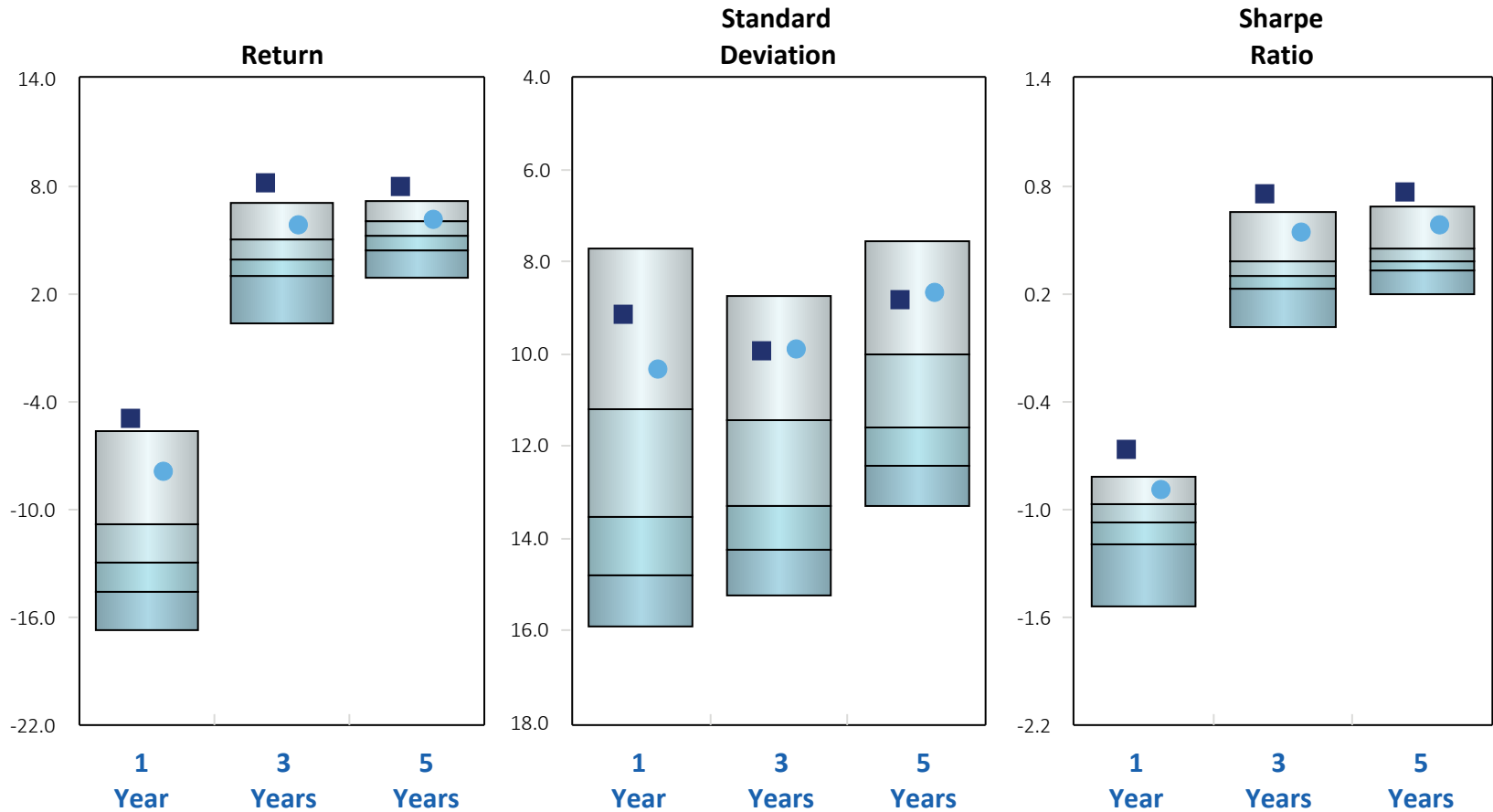
	QTD	1 Year	3 Years	5 Years	10 Years
■ Total Fund	4.65 (78)	-4.89 (5)	8.19 (3)	8.03 (2)	9.15 (2)
● OSERS Policy Benchmark	4.80 (75)	-7.91 (11)	5.84 (15)	6.17 (20)	7.54 (30)
5th Percentile	7.87	-5.67	7.11	7.17	8.45
1st Quartile	6.63	-10.85	5.08	6.03	7.70
Median	5.67	-12.91	3.97	5.22	7.20
3rd Quartile	4.79	-14.53	3.04	4.47	6.47
95th Percentile	2.96	-16.67	0.38	2.89	4.87
Population	300	293	285	271	228

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

Plan Sponsor Peer Group Analysis - Multi Statistics

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

Periods Ended December 31, 2022



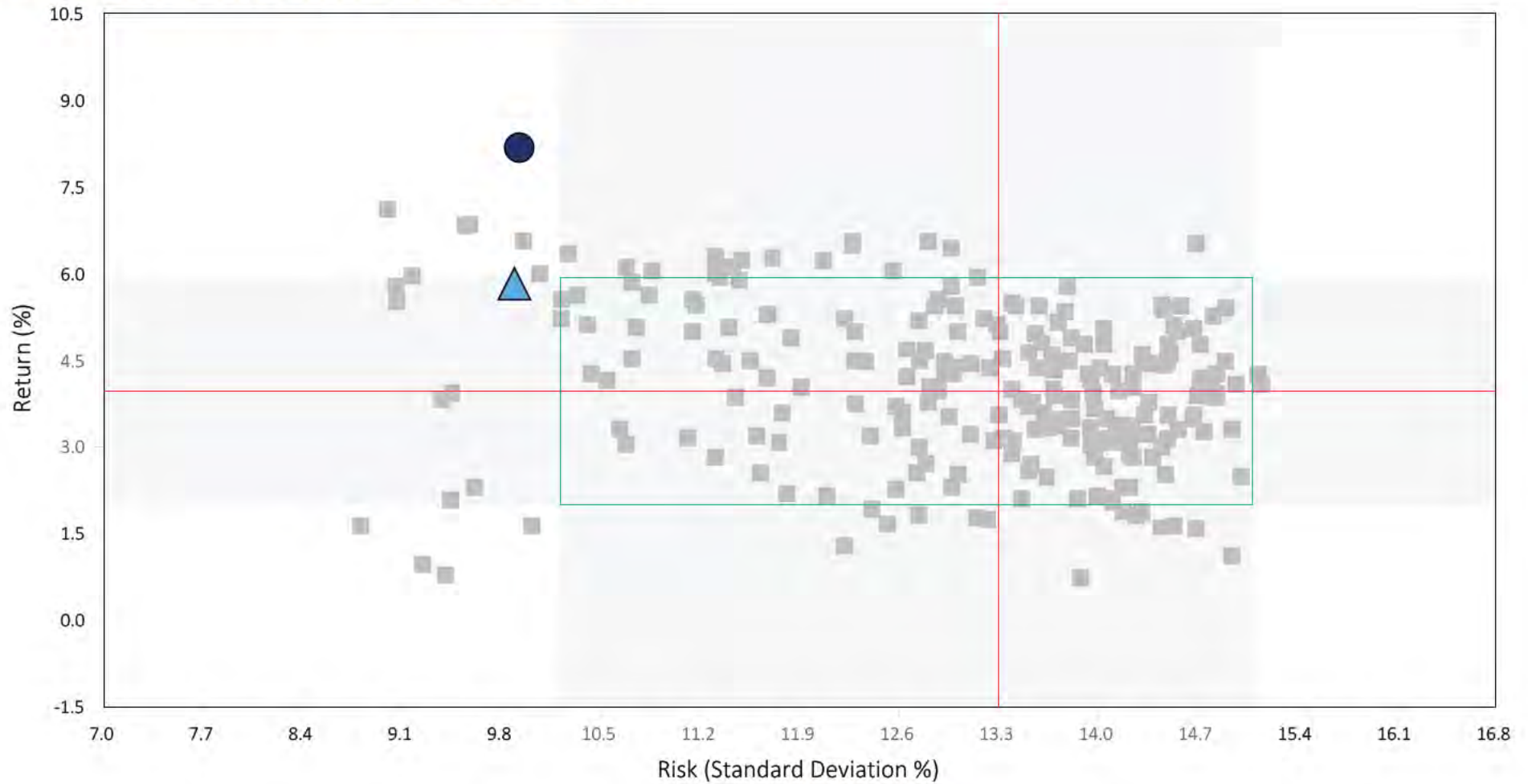
	1 Year	3 Years	5 Years	1 Year	3 Years	5 Years	1 Year	3 Years	5 Years
■ Total Fund	-4.89 (5)	8.19 (3)	8.03 (2)	9.13 (9)	9.93 (11)	8.83 (11)	-0.66 (3)	0.76 (3)	0.77 (3)
● OSERS Policy Benchmark	-7.91 (11)	5.84 (15)	6.17 (20)	10.33 (18)	9.89 (10)	8.66 (9)	-0.89 (10)	0.55 (9)	0.59 (9)
5th Percentile	-5.67	7.11	7.17	7.70	8.76	7.58	-0.82	0.66	0.69
1st Quartile	-10.85	5.08	6.03	11.19	11.42	10.00	-0.97	0.38	0.45
Median	-12.91	3.97	5.22	13.53	13.30	11.59	-1.07	0.30	0.38
3rd Quartile	-14.53	3.04	4.47	14.79	14.23	12.44	-1.19	0.23	0.33
95th Percentile	-16.67	0.38	2.89	15.90	15.24	13.30	-1.54	0.02	0.20

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

Plan Sponsor Scattergram

Total Fund vs All Public Plans-Total Fund

Periods Ended January 1, 2020 To December 31, 2022



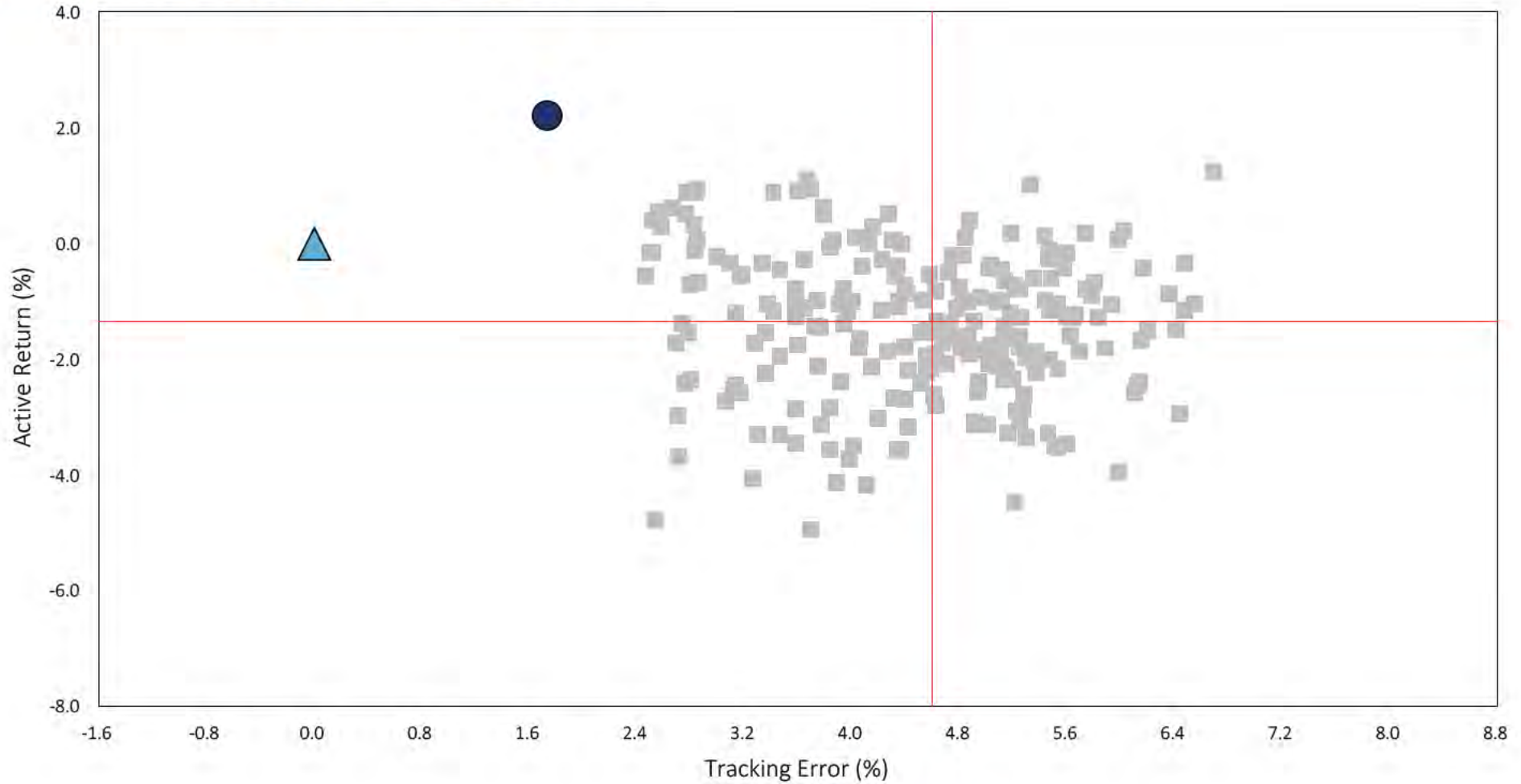
	Return	Standard Deviation
● Total Fund	8.19	9.93
▲ OSERS Policy Benchmark	5.84	9.89
— Median	3.97	13.30

Calculation based on monthly periodicity.
Ohio SERS performance is Gross of Fees

Plan Sponsor Scattergram

Total Fund vs All Public Plans-Total Fund

Periods Ended January 1, 2020 To December 31, 2022



	Active Return	Tracking Error
● Total Fund	2.21	1.73
▲ OSERS Policy Benchmark	0.00	0.00
— Median	-1.34	4.60

Calculation based on monthly periodicity.
Ohio SERS performance is Gross of Fees

Asset Allocation & Performance

Total Fund

Periods Ended December 31, 2022

	Allocation		Performance (%) net of fees								
	Market Value \$000	%	1 Quarter	FYTD	1 Year	3 Years	5 Years	10 Years	20 Years	Since Inception	Inception Date
Total Fund	17,142,380	100.00	4.48	1.57	-5.60	7.52	7.36	8.47	7.72	7.75	10/1/1994
OSERS Policy Benchmark			4.80	0.89	-7.91	5.84	6.17	7.54	7.52	7.69	
Value Added			-0.32	0.68	2.31	1.68	1.19	0.93	0.20	0.06	
Global Equity	7,023,041	40.97	10.44	2.70	-17.70	4.73	5.51	8.55	8.18	7.26	7/1/2002
Global Equity Benchmark			9.76	2.28	-18.02	3.61	4.85	8.05	7.75	6.89	
Value Added			0.68	0.42	0.32	1.12	0.66	0.50	0.43	0.37	
Global Private Equity	2,138,982	12.48	0.52	-1.75	7.57	22.62	19.72	18.60	12.34	13.45	10/1/1994
Global PE Benchmark			-1.56	-5.71	-0.81	19.26	16.52	15.28	13.14	13.09	
Value Added			2.08	3.96	8.38	3.36	3.20	3.32	-0.80	0.36	
Global Private Credit	989,481	5.77	0.81	1.14	5.53					11.06	7/1/2020
Global Private Credit Benchmark			1.96	3.56	6.05					5.23	
Value Added			-1.15	-2.42	-0.52					5.83	
Global Fixed Income	2,168,464	12.65	1.88	-2.10	-12.44	-1.42	0.88	1.81	3.98	5.24	10/1/1994
Blmbg. U.S. Aggregate Index			1.87	-2.97	-13.01	-2.71	0.02	1.06	3.10	4.62	
Value Added			0.01	0.87	0.57	1.29	0.86	0.75	0.88	0.62	
Cash Equivalents	453,828	2.65	-6.74	0.47	11.03	4.83	4.09	2.44	2.30	2.28	7/1/2002
FTSE 1 Month T-Bill			0.88	1.36	1.48	0.66	1.20	0.70	1.15	1.16	
Value Added			-7.62	-0.89	9.55	4.17	2.89	1.74	1.15	1.12	

Asset Allocation & Performance

Total Fund

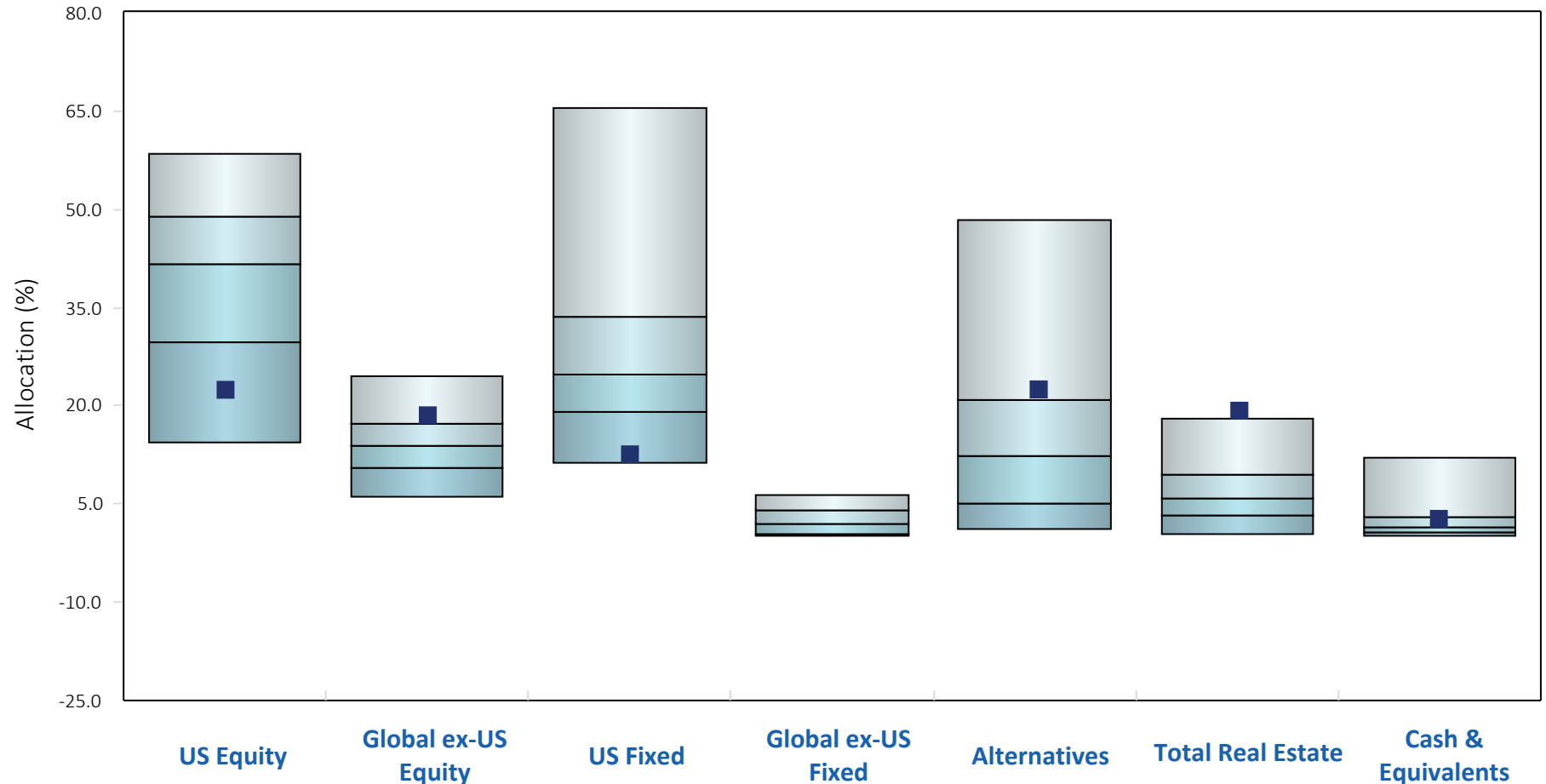
Periods Ended December 31, 2022

	Allocation		Performance (%) net of fees								
	Market Value \$000	%	1 Quarter	FYTD	1 Year	3 Years	5 Years	10 Years	20 Years	Since Inception	Inception Date
Global Real Assets	3,740,970	21.82	1.29	4.74	16.91	12.10	11.05	11.00	7.77	8.02	10/1/1994
Real Assets Benchmark			0.57	3.82	16.08	9.91	8.62	9.48	9.30	9.57	
Value Added			0.72	0.92	0.83	2.19	2.43	1.52	-1.53	-1.55	
Opportunistic & Tactical	627,616	3.66	2.57	-1.07	-1.12	6.80	6.24			6.89	6/1/2013
Opportunistic Benchmark			2.38	-2.00	-11.27	-3.64	0.36			4.06	
Value Added			0.19	0.93	10.15	10.44	5.88			2.83	

Plan Sponsor TF Asset Allocation

Total Fund vs All Public Plans-Total Fund

Periods Ended December 31, 2022



	US Equity	Global ex-US Equity	US Fixed	Global ex-US Fixed	Alternatives	Total Real Estate	Cash & Equivalents
■ Total Fund	22.33	18.64	12.65		21.91	21.80	2.65
5th Percentile	58.42	24.44	65.48	6.37	48.25	17.95	12.15
1st Quartile	48.85	17.19	33.52	3.92	20.96	9.58	2.95
Median	41.64	13.98	24.72	1.94	12.46	5.79	1.49
3rd Quartile	29.76	10.47	19.07	0.34	4.96	3.37	0.66
95th Percentile	14.50	6.11	11.29	0.02	1.06	0.49	0.05

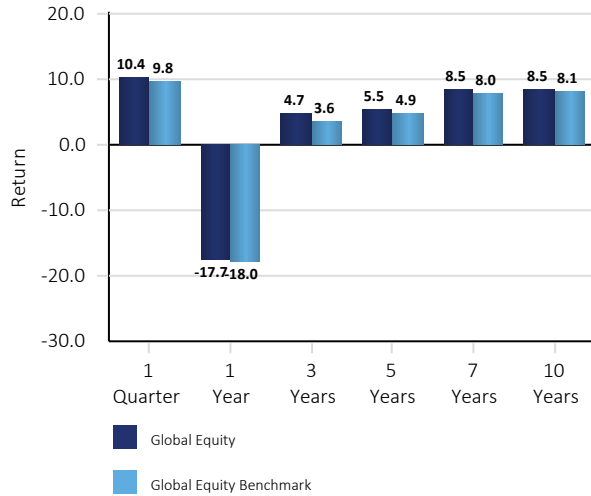
Global Equity

Performance Summary

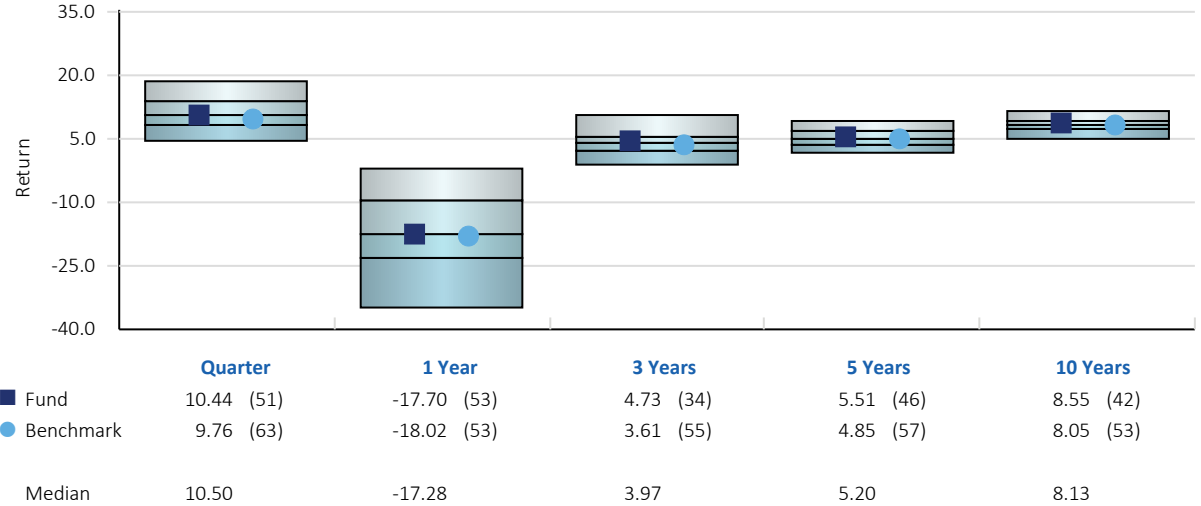
Global Equity

Periods Ended December 31, 2022

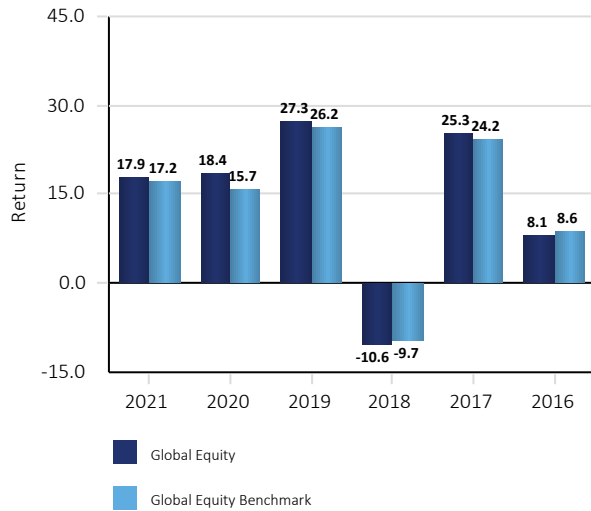
Comparative Performance



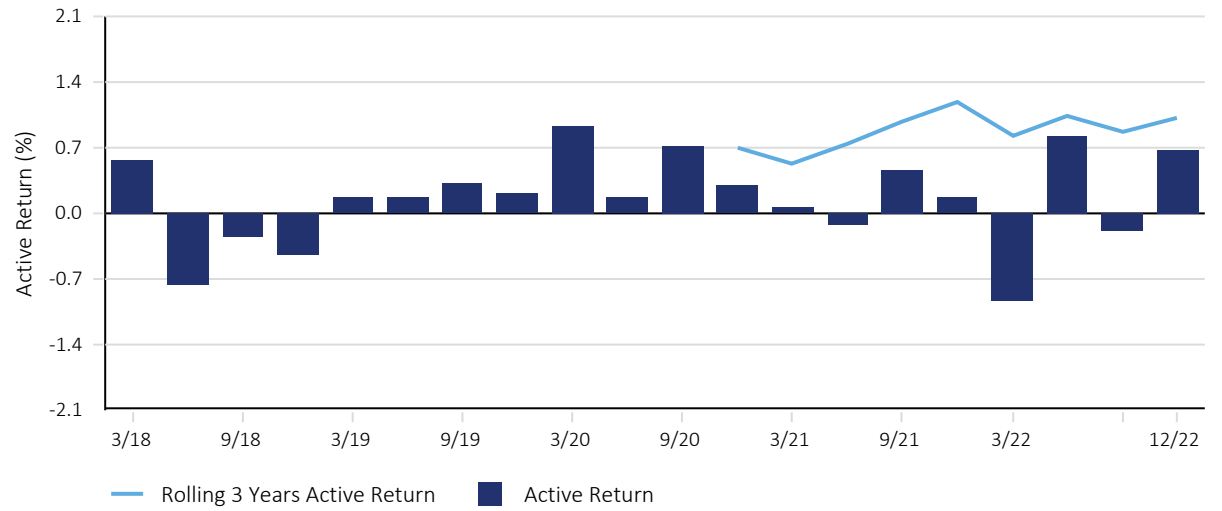
Peer Group Analysis: IM Global Equity (SA+CF)(NOF)



Comparative Performance



Quarterly Active Return



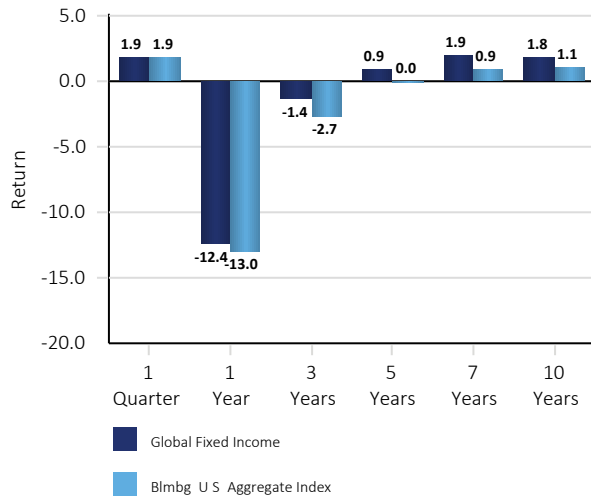
Global Fixed Income

Performance Summary

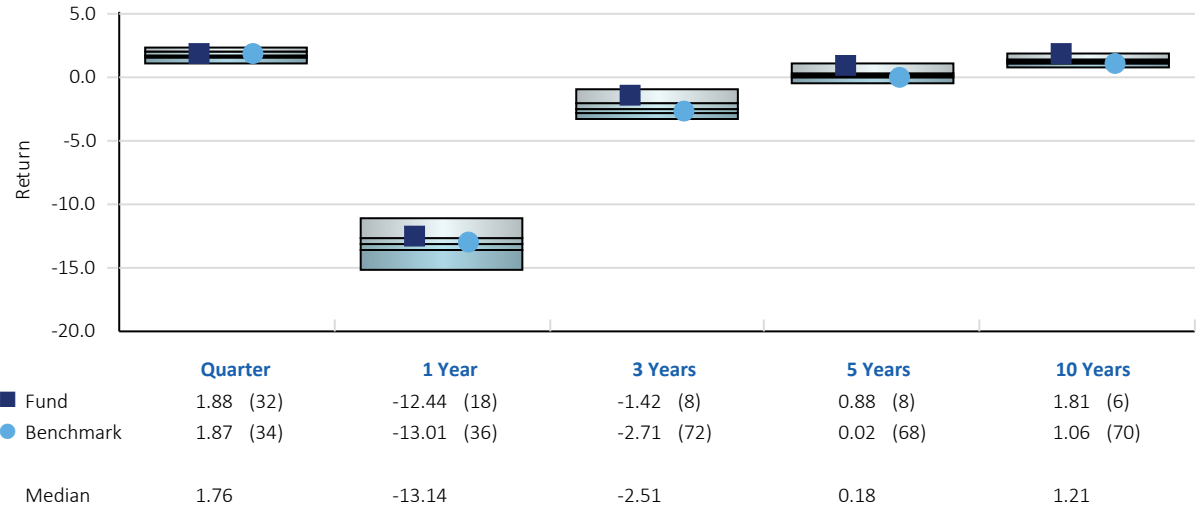
Global Fixed Income

Periods Ended December 31, 2022

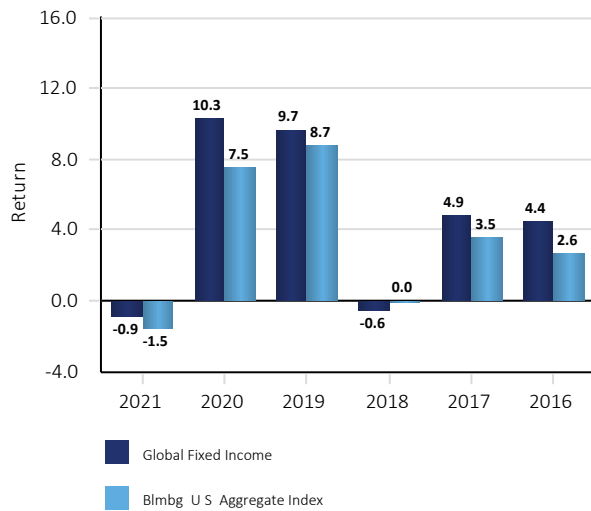
Comparative Performance



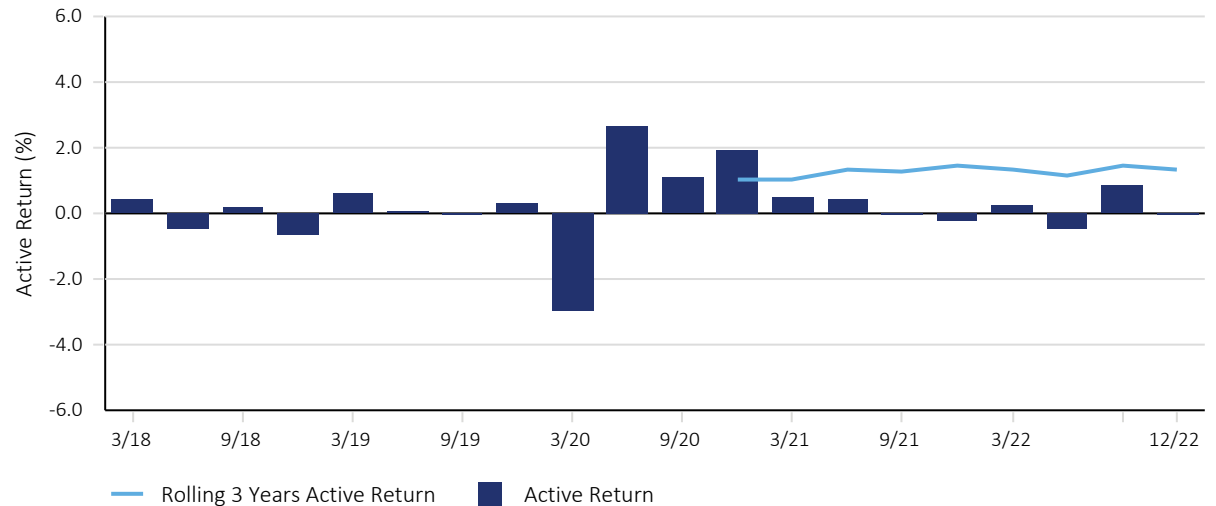
Peer Group Analysis: IM U.S. Broad Market Core Fixed Income (SA+CF) (NOF)



Comparative Performance



Quarterly Active Return



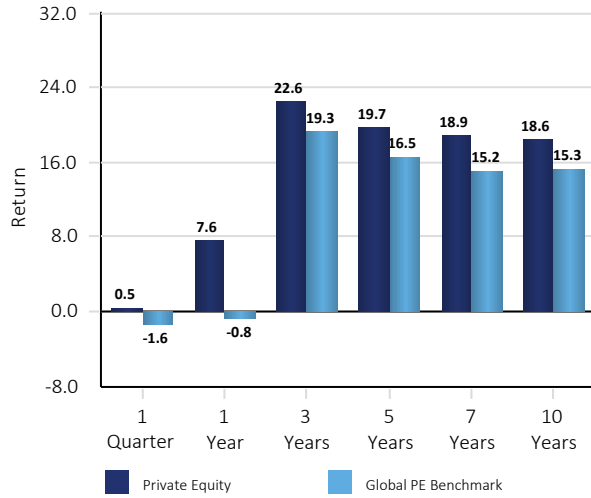
Global Private Equity

Performance Summary

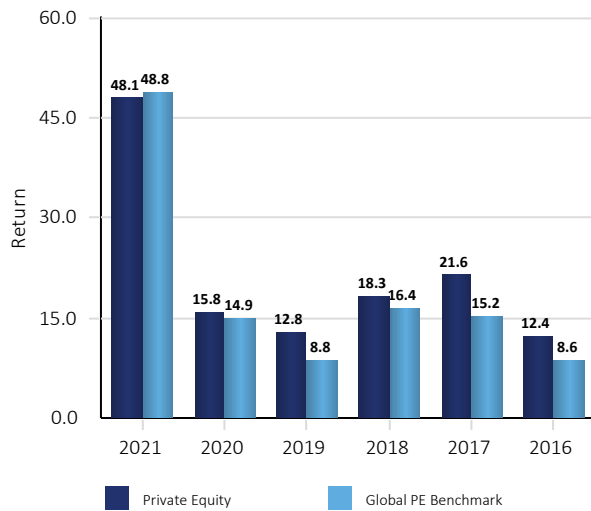
Global Private Equity

Periods Ended December 31, 2022

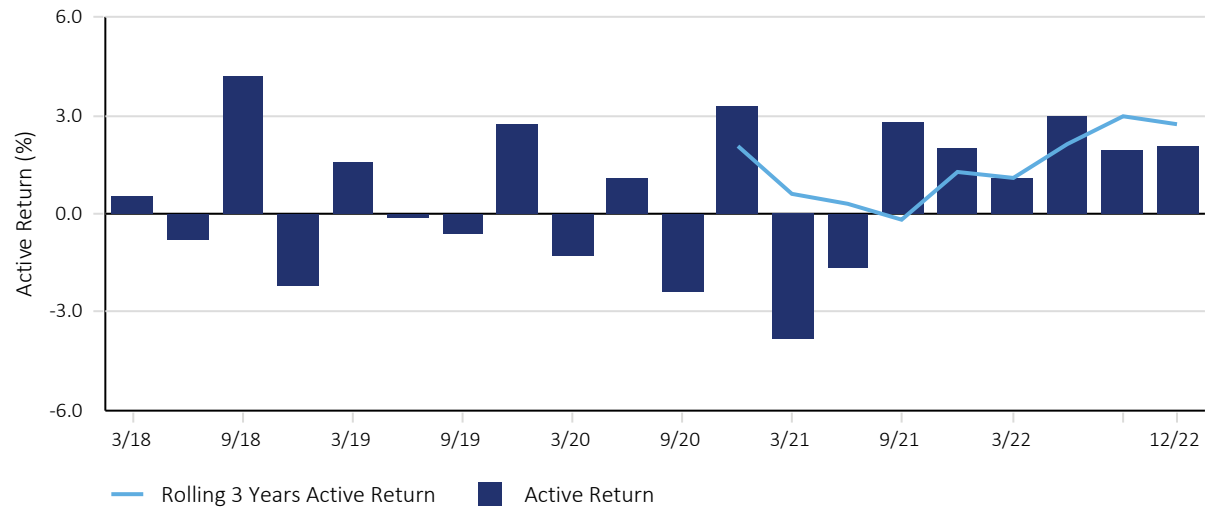
Comparative Performance



Comparative Performance



Quarterly Active Return



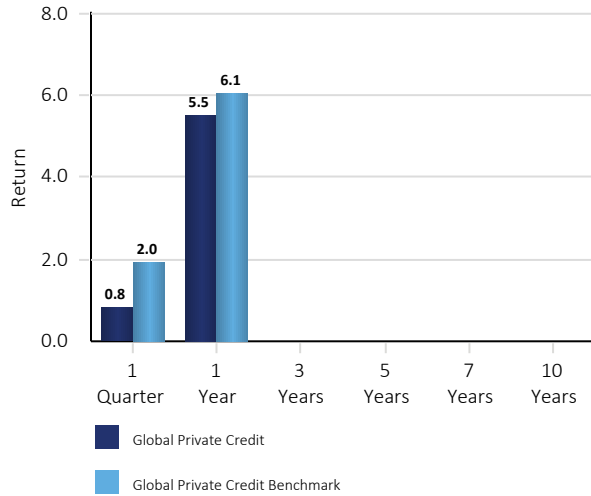
Global Private Credit

Performance Summary

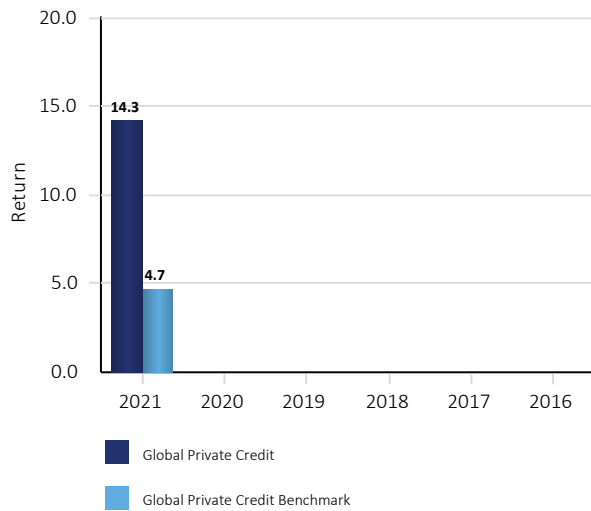
Global Private Credit

Periods Ended December 31, 2022

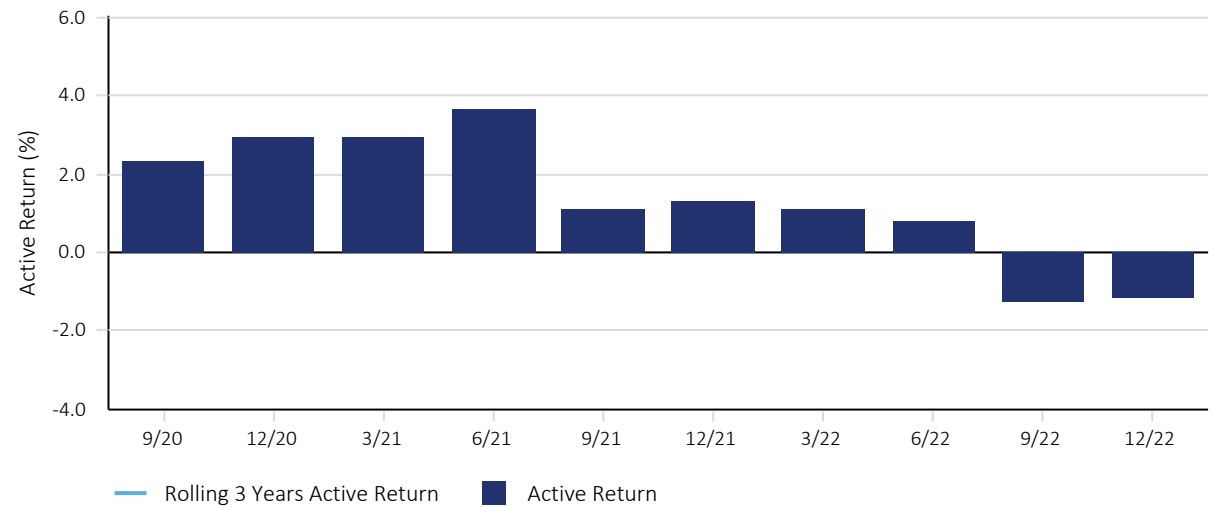
Comparative Performance



Comparative Performance



Quarterly Active Return



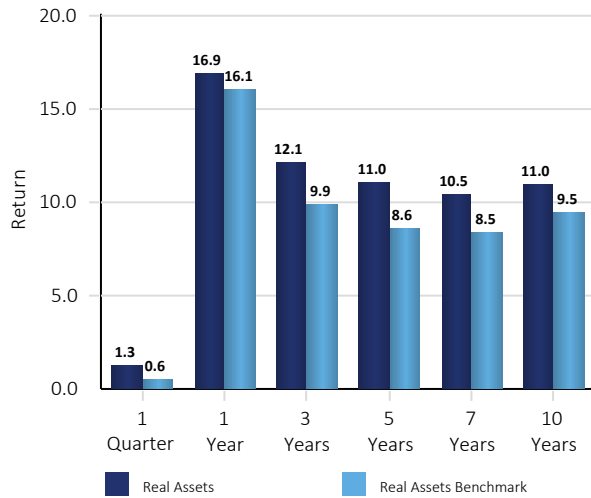
Global Real Assets

Performance Summary

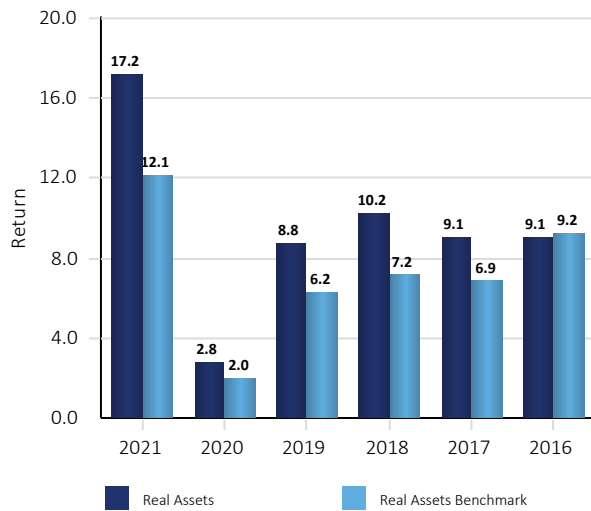
Global Real Assets

Periods Ended December 31, 2022

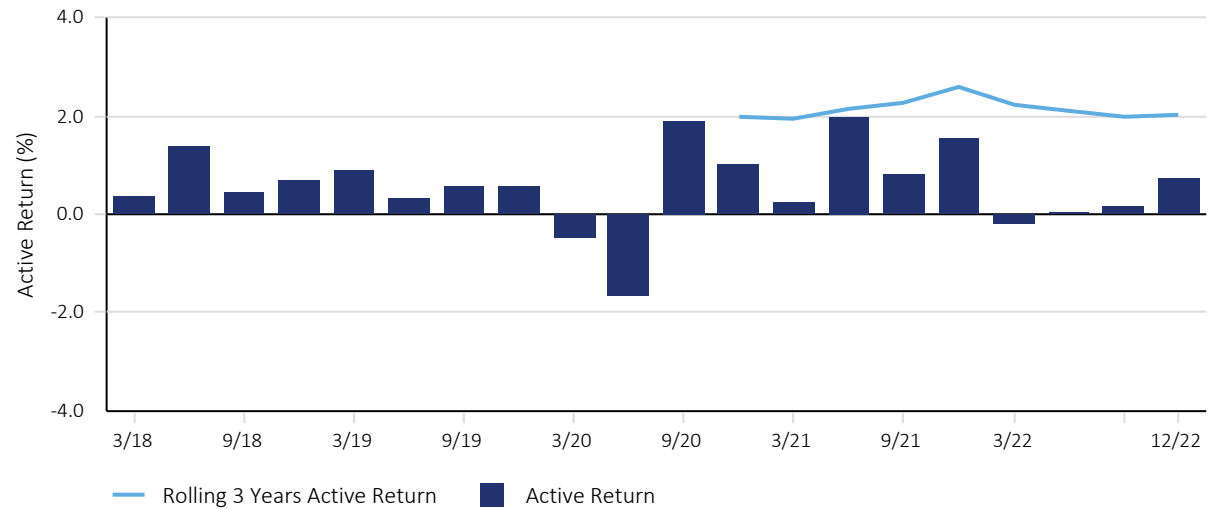
Comparative Performance



Comparative Performance



Quarterly Active Return



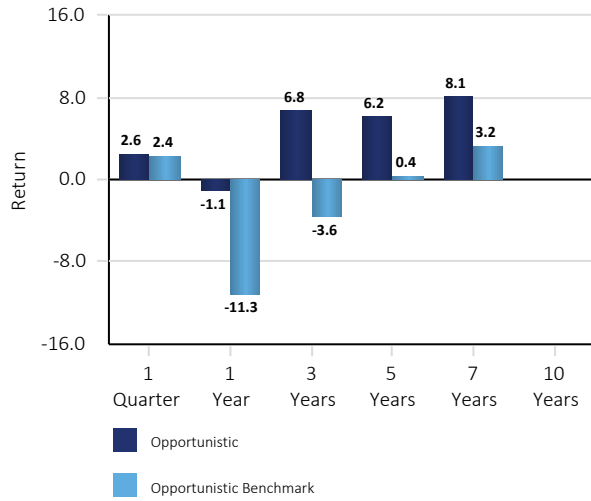
Opportunistic & Tactical

Performance Summary

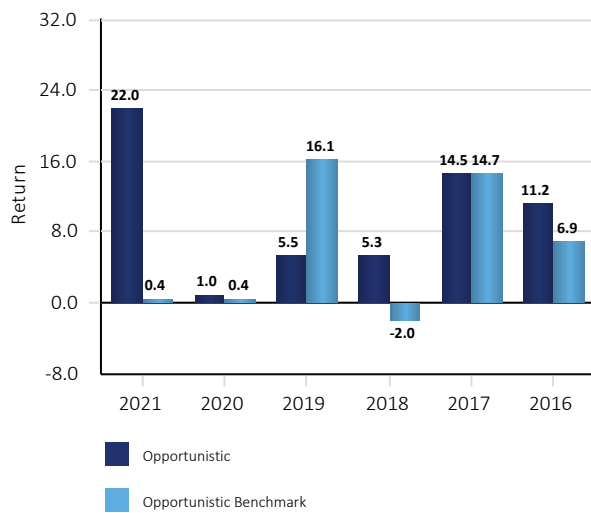
Opportunistic & Tactical

Periods Ended December 31, 2022

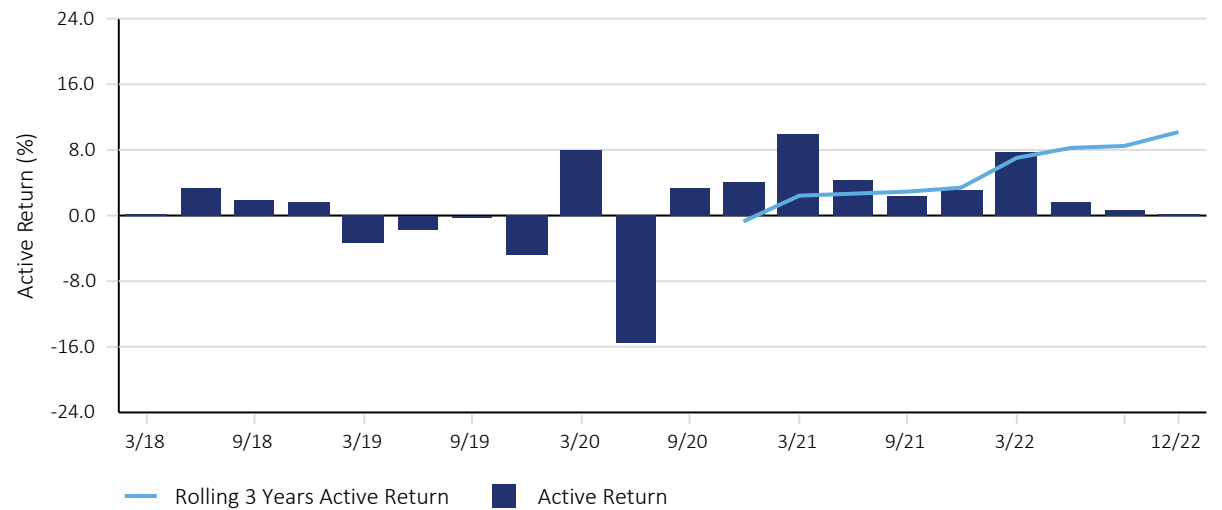
Comparative Performance



Comparative Performance



Quarterly Active Return





Ohio SERS Investment Report

Quarterly Report to the Board

For the period ending: December 31, 2022

Prepared by Investment and IAD Staff

Farouki Majeed, Chief Investment Officer

Meeting Date: February 2023



Investment Agenda

- Annual Portfolio Review – Real Assets
- Wilshire Quarterly Investment Report (December 31, 2022)
- Quarterly Investment Report (December 31, 2022)



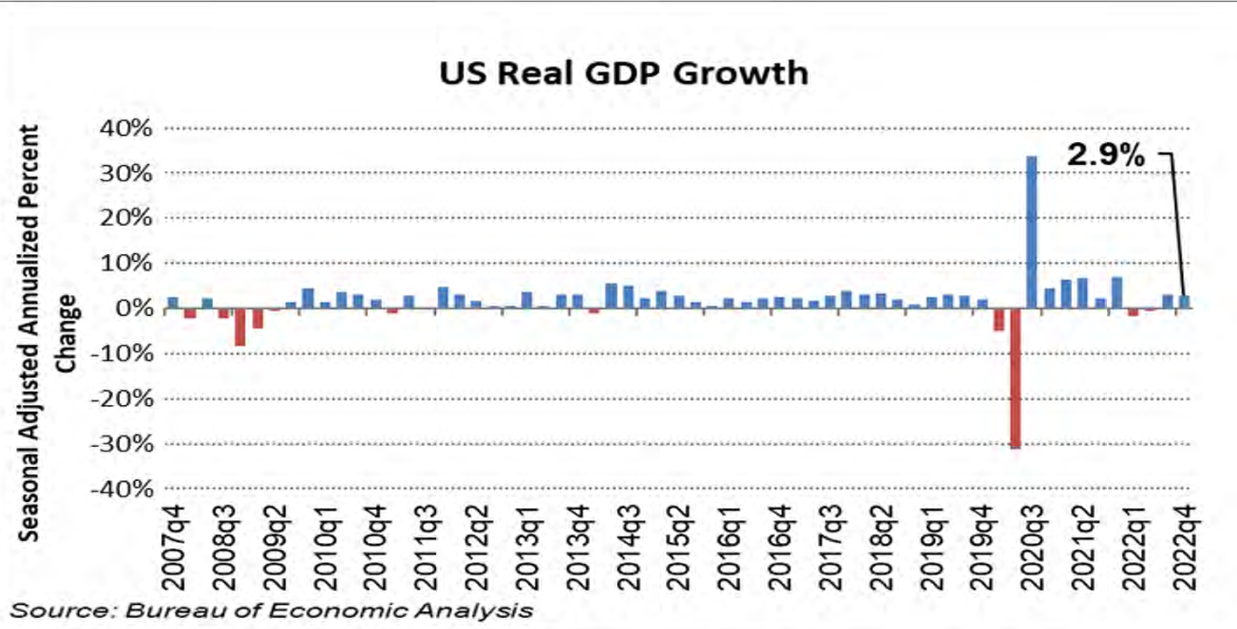
Economic and Financial Market Outlook

- US growth slowed but remained resilient amid the Fed's aggressive tightening. The growth rate was 2.9% for Q4, 2.1% for 2022. The main drivers of Q4 GDP were increase in private inventory investment, consumer and government spendings. (Source: *Bureau of Economic Analysis*)
- US labor market was strong in December with 223,000 jobs added and unemployment rate at 3.5%. The labor force participation rate was 62.3%, remaining below the pre-pandemic level 63.3%, indicating labor market remains tight. (Sources: *Bureau of Labor Statistics and Department of Labor*)
- US inflation trended down from its peak as the headline was 6.5% and the core was 5.7% in December. The energy index declined 4.5% in December and increased 7.3% for 2022. The food index increased 10.4% for 2022. January Blue Chip Consensus projected the headline rate trending down to 3.8% by the end of 2023. (Source: *Bureau of Labor Statistics and Blue Chip Economic Indicators*)
- The 10-year Treasury nominal yield was 3.52% the end of January, down from 3.88% in December. The current 10-year real yield, estimated by the gap between the 10-year Treasury nominal yield and the current headline inflation was negative 2.62% in January. On February 1st, the Fed conducted the first interest rate hike of 0.25% in 2023, after seven hikes in 2022, to curb inflation. The Fed Fund rate currently is in the range of 4.5-4.75%, the highest level over the last 15 years.
- The S&P Case-Shiller 20-City home price index was down 0.8% for the month and up 8.6% for the last 12 months as of November, indicating house prices are cooling down.
- Consumer Sentiment Index released by Thomson Reuters and University of Michigan marginally improved to 59.7 in December, remaining below the historical average. January US Economic Surprise index declined to negative 6.1. The December Leading Economic Index (LEI) issued by the Conference Board was 110.5, down 1.0% from November and 4.5% from June 2022.
- Both US and Global Manufacturing PMI readings were below 50, indicating slight contraction. High interest rate and high inflation continue to be the largest challenges to the US and global economy. (Source: *Institute for Supply Management, S&P Glo.8bal*).
- Equity markets were up in January. US market (Russell 3000) and Non-US Developed markets (MSCI World ex-USA) were up 6.89% and 8.20%, respectively. Emerging markets gained 7.90%. 2022 was a down year for equities. The loss was led by Emerging markets (20.09%), followed by US market (15.94%), and Non-US Developed markets (14.29%).
- The US fixed income market, Bloomberg Barclay's US Aggregate Bond Index, was up 3.08% in January. 2022 was also a down year for the Bond index (13.01%).



ECONOMY

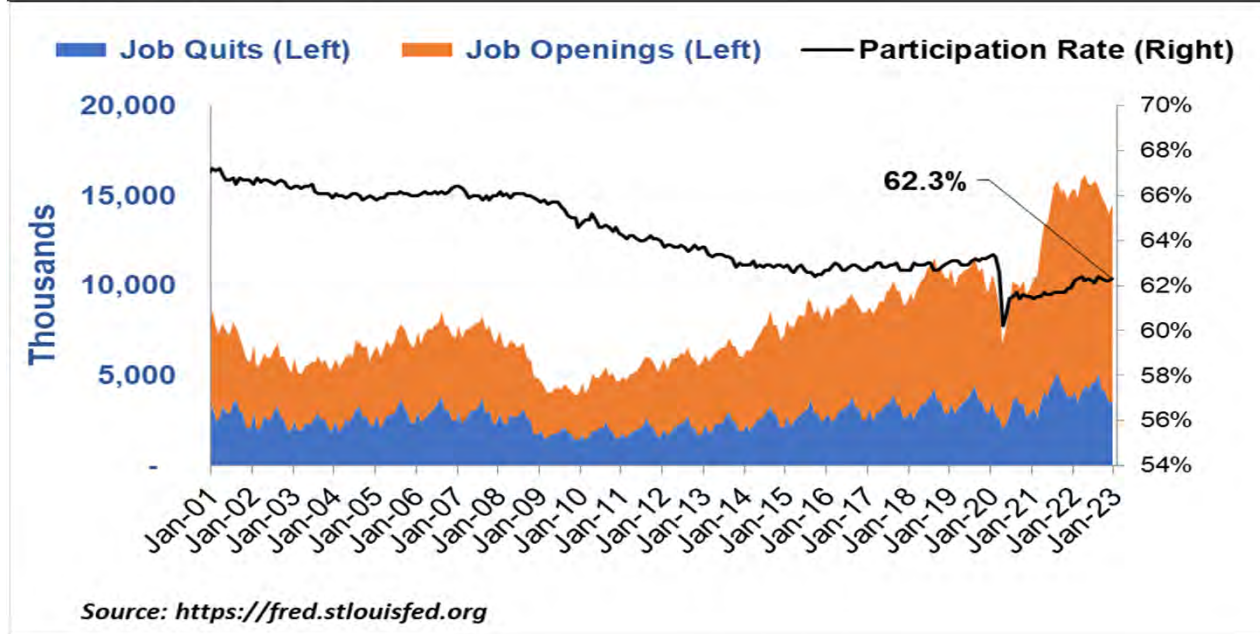
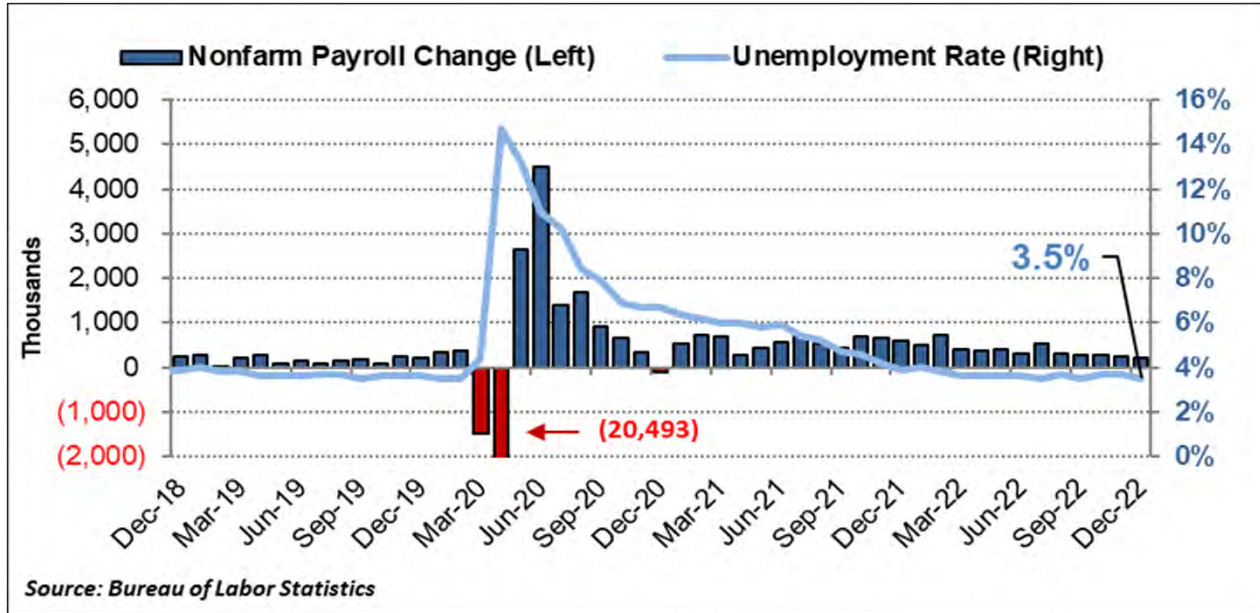
US Real Gross Domestic Product





ECONOMY

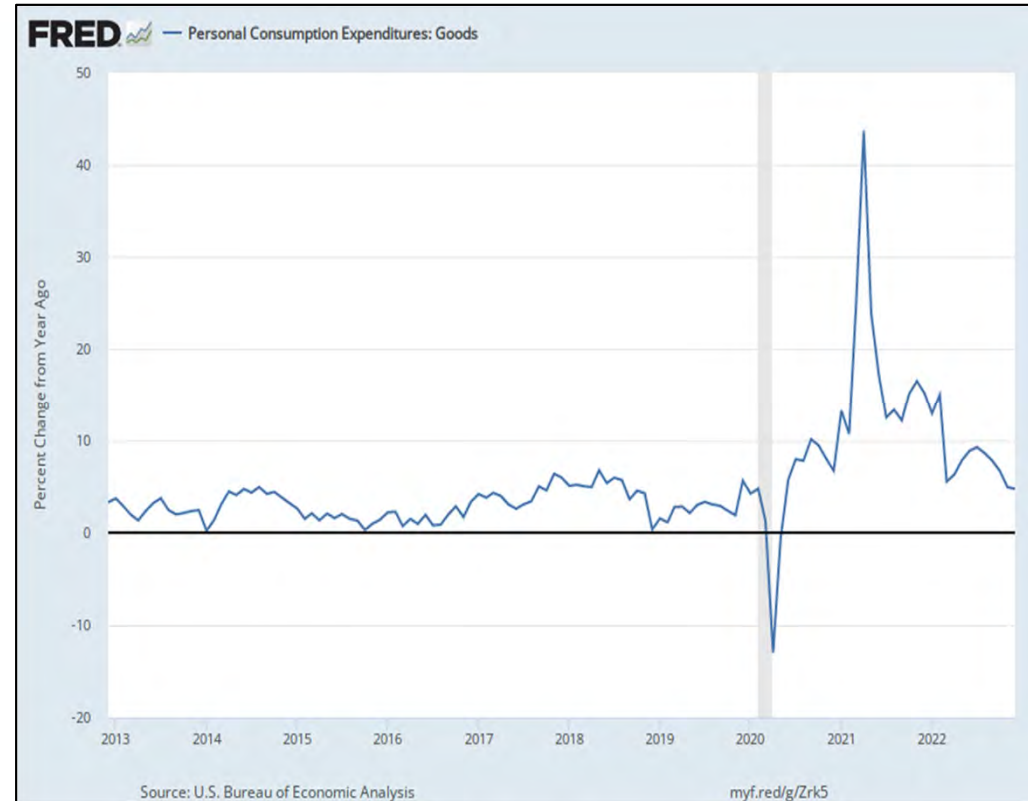
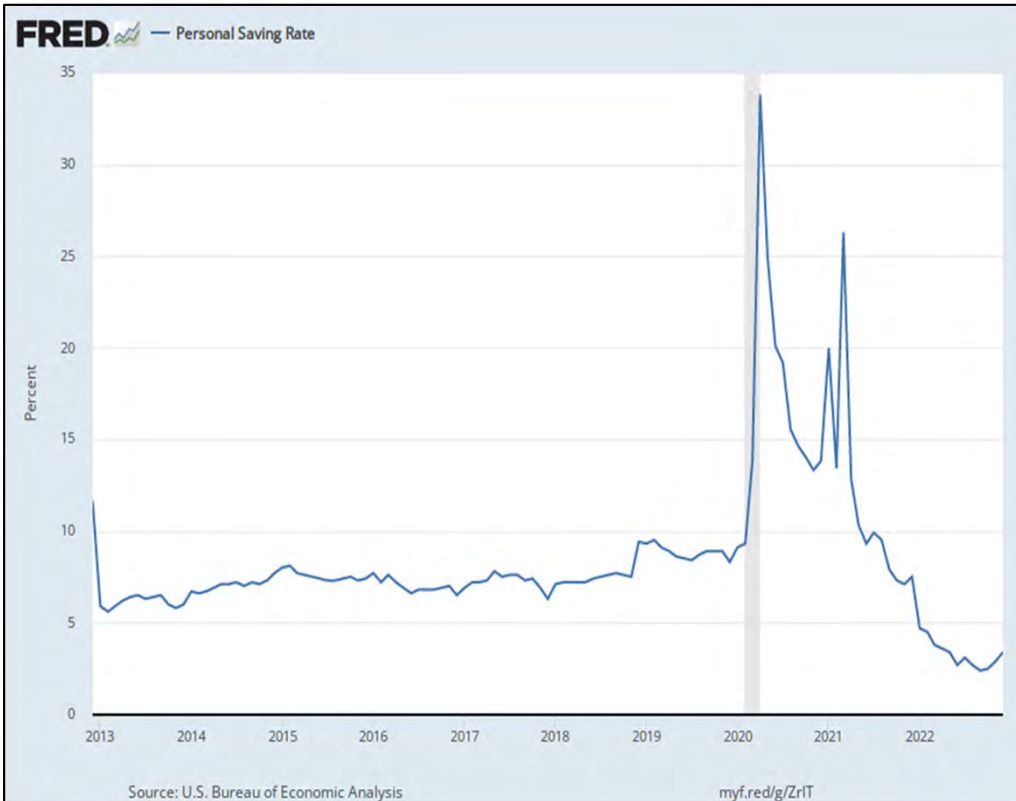
US Labor Market





ECONOMY

Personal Savings Rate & Personal Expenditures: Goods



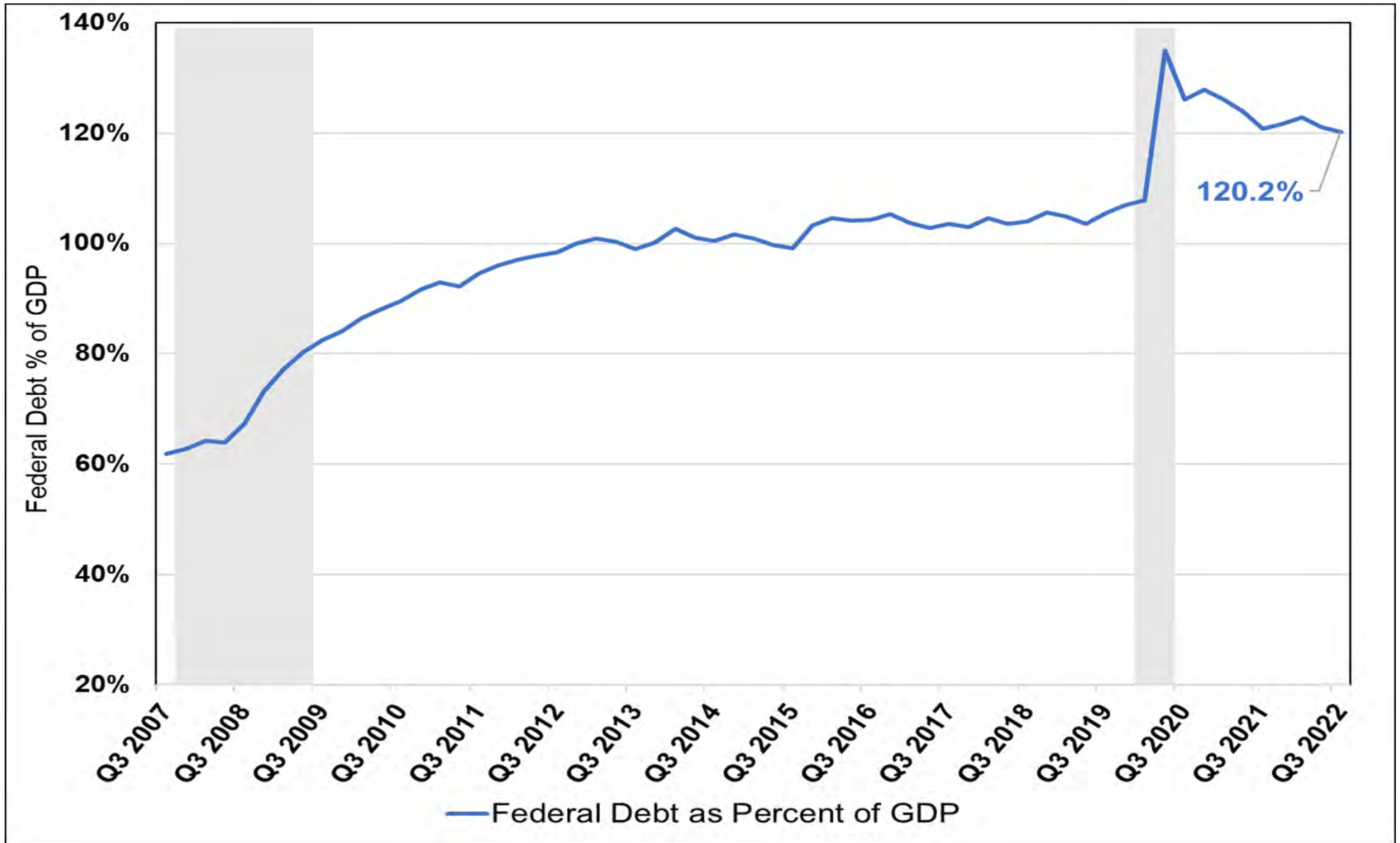
Date	Annual Personal Savings Rate
Jun-19	8.5%
Jun-20	20.1%
Jun-21	9.3%
Jun-22	2.7%
Dec-22	3.4%

Date	Personal Consumption Expenditures: Goods Change from Prior Year
Jun-19	3.0%
Jun-20	5.7%
Jun-21	17.1%
Jun-22	8.9%
Dec-22	4.7%



ECONOMY

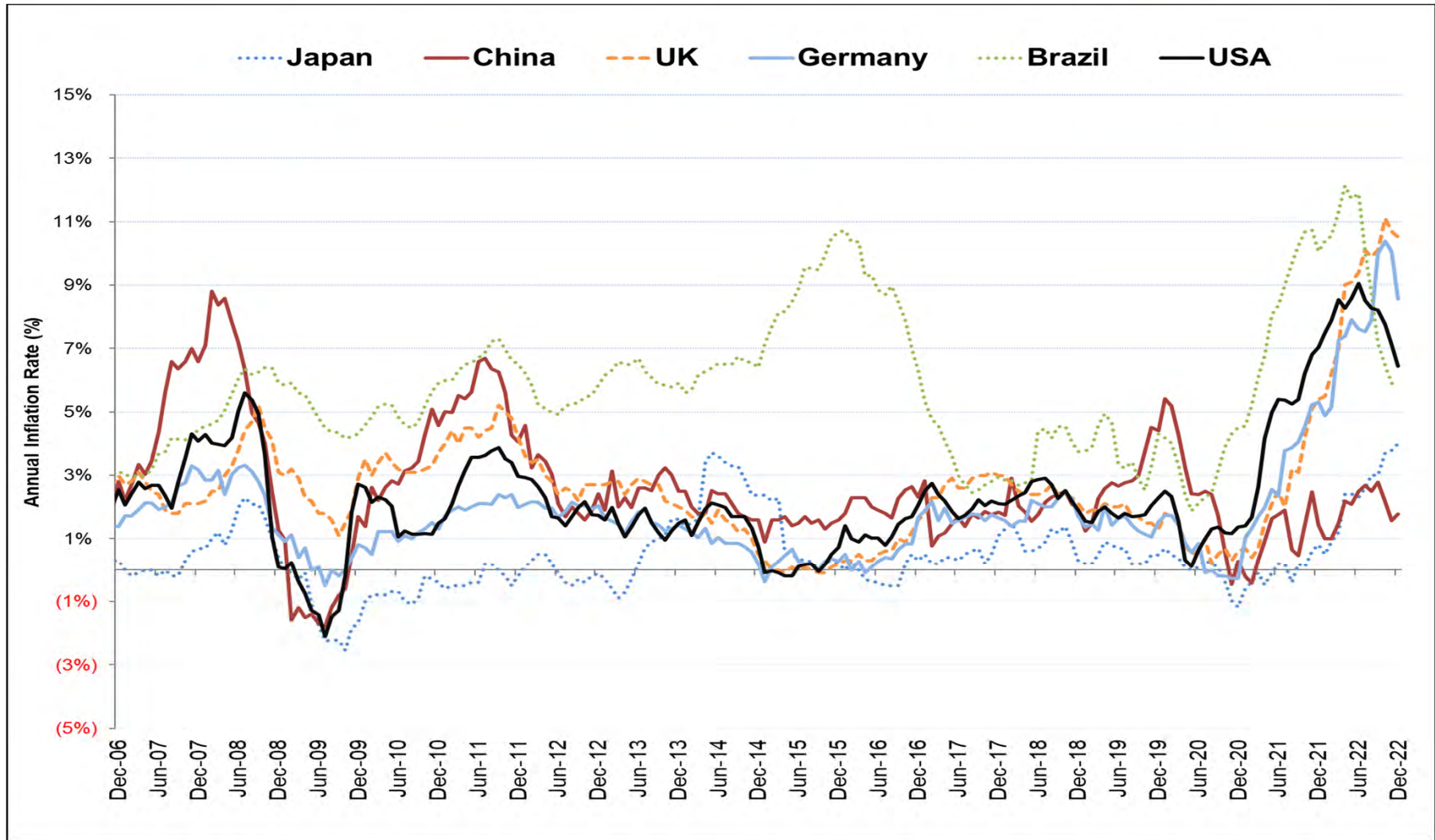
Federal Debt as Percent of GDP





ECONOMY

Headline Inflation

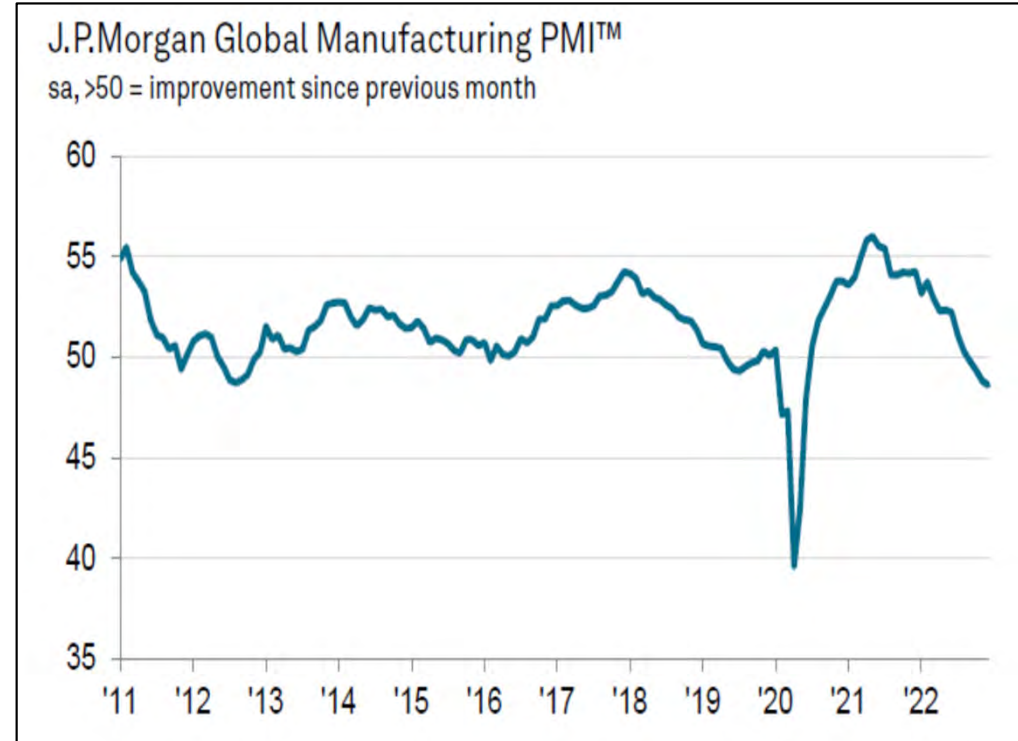
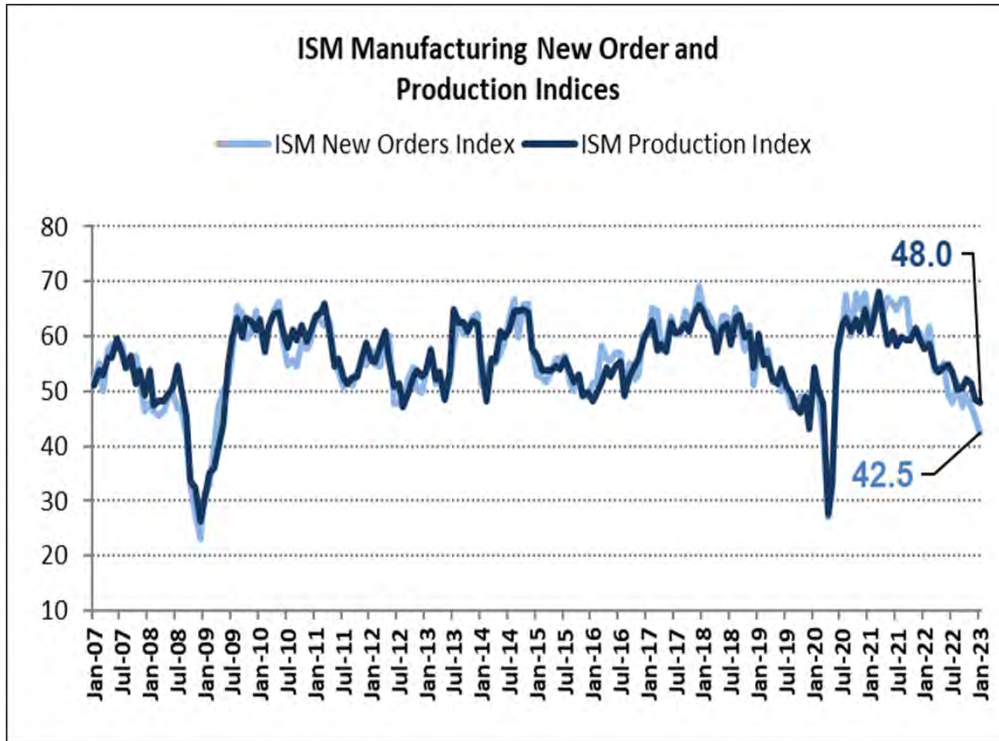


	Japan	China	UK	Germany	Brazil	USA
Dec-22	4.0	1.8	10.5	8.6	5.8	6.5



ECONOMY

US & Global Manufacturing Activities

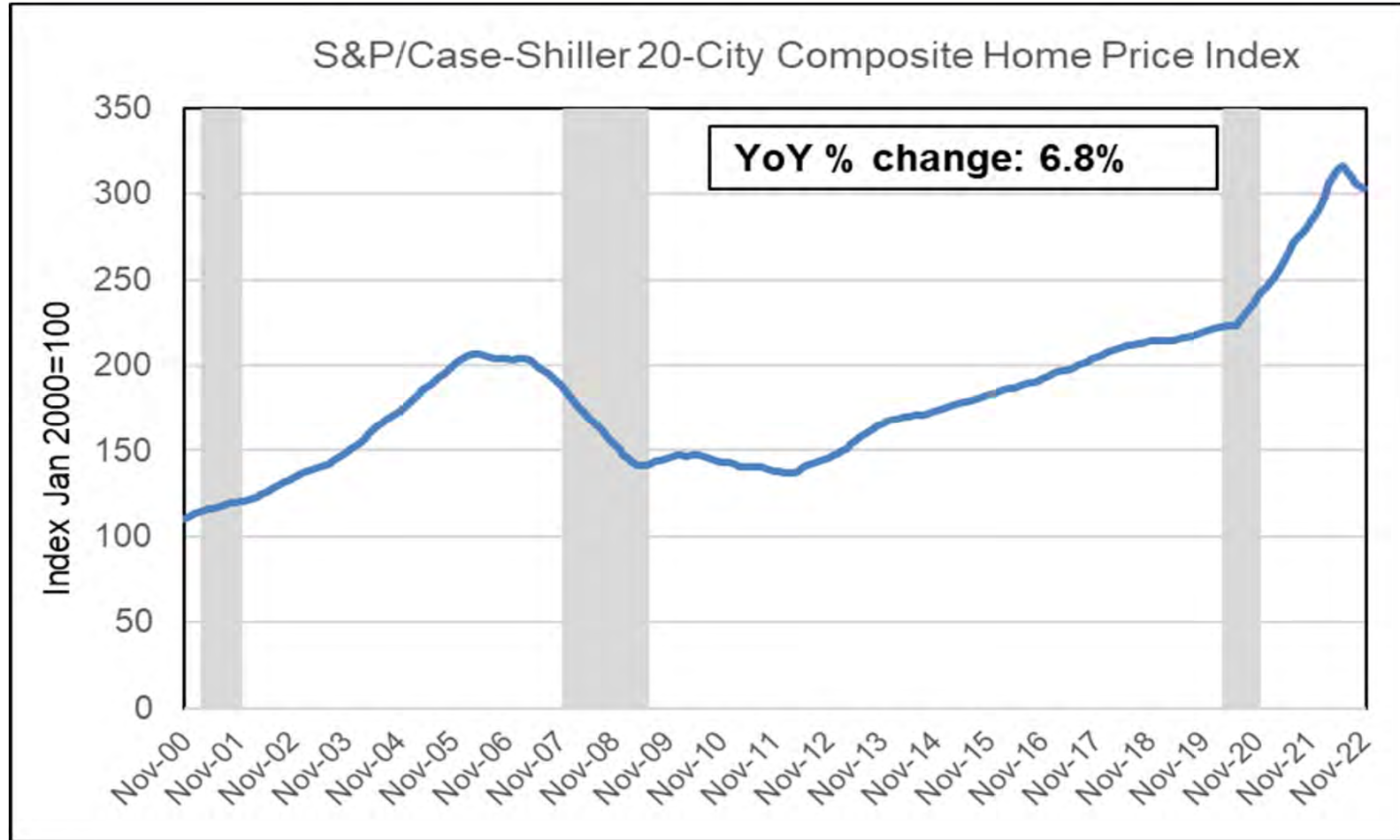


Source: Manufacturing ISM Report On Business & JPMorgan Global Manufacturing PMI™
 Notes: Acronym – ISM – Institute of Supply Management; PMI – Purchasing Managers Index



ECONOMY

US Housing Market



Date	S&P Case-Shiller 20-City Home Price Index January 2000 = 100, Seasonally Adjusted
Jul-19	216.09
Jul-20	225.51
Jul-21	270.69
Jul-22	313.98
Nov-22	302.85



ECONOMY

Consumer Sentiment

University of Michigan: Consumer Sentiment

1st Quarter 1966=100, Monthly, Not Seasonally Adjusted

Source: www.research.stlouisfed.org, Reuters, and Thomson Reuters/University of Michigan



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



Shaded areas represent US recessions

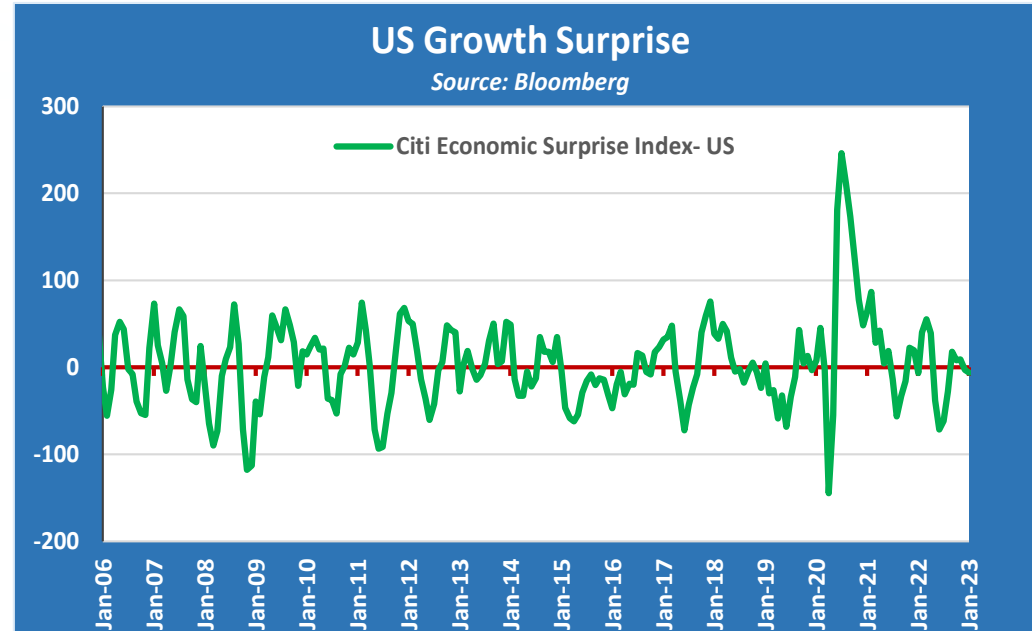
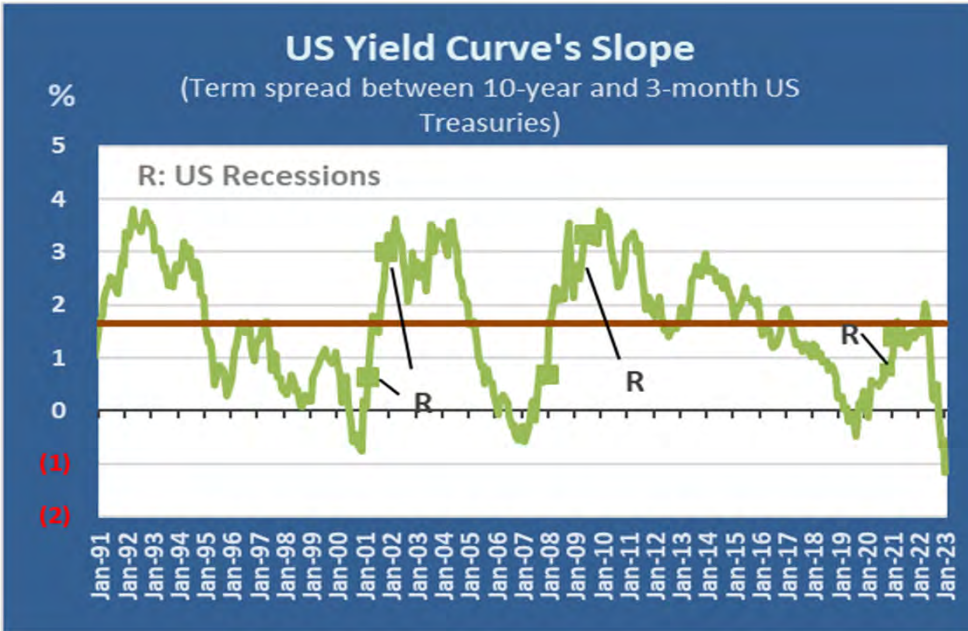
Index of Consumer Sentiment				
Dec-22	Jan-23	Jan-22	M-M Change	Y-Y Change
59.7	64.9	67.2	8.7%	-3.4%

Index	Nov-22	Dec-22	Month -Month Percent Change	6-Month Percent Change (June-Dec)
LEI	111.6 r	110.5 p	-1.0	-4.2

p Preliminary; r Revised; Indexes equal 100 in 2016



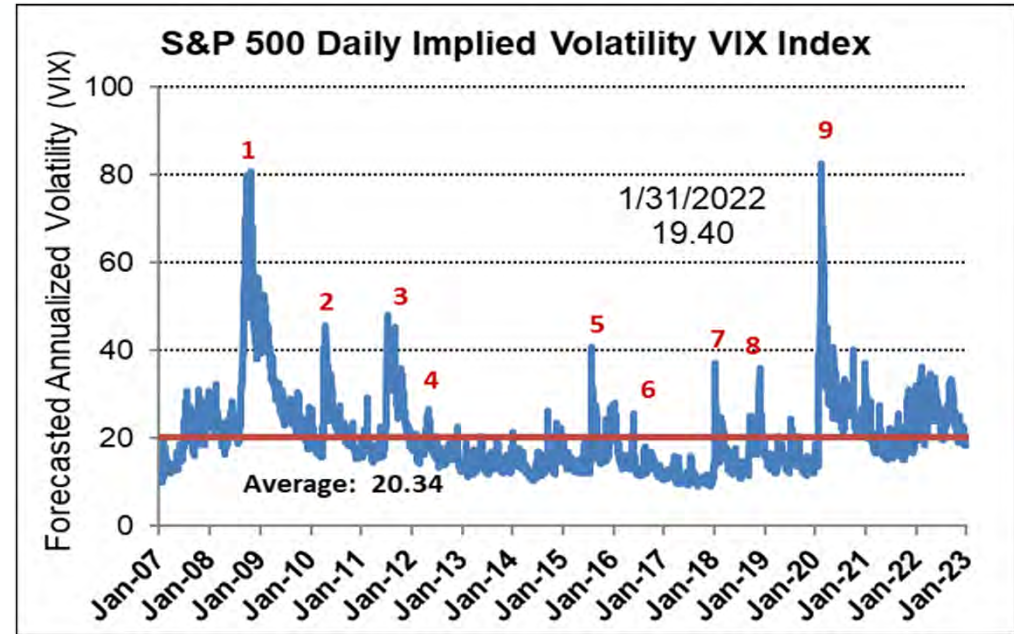
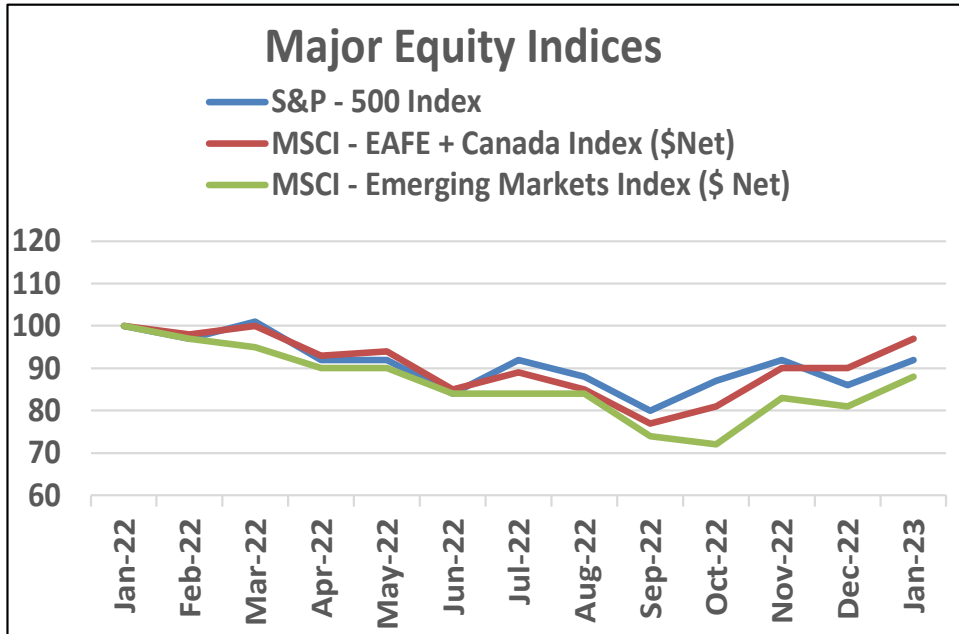
ECONOMY





MARKETS

Equity



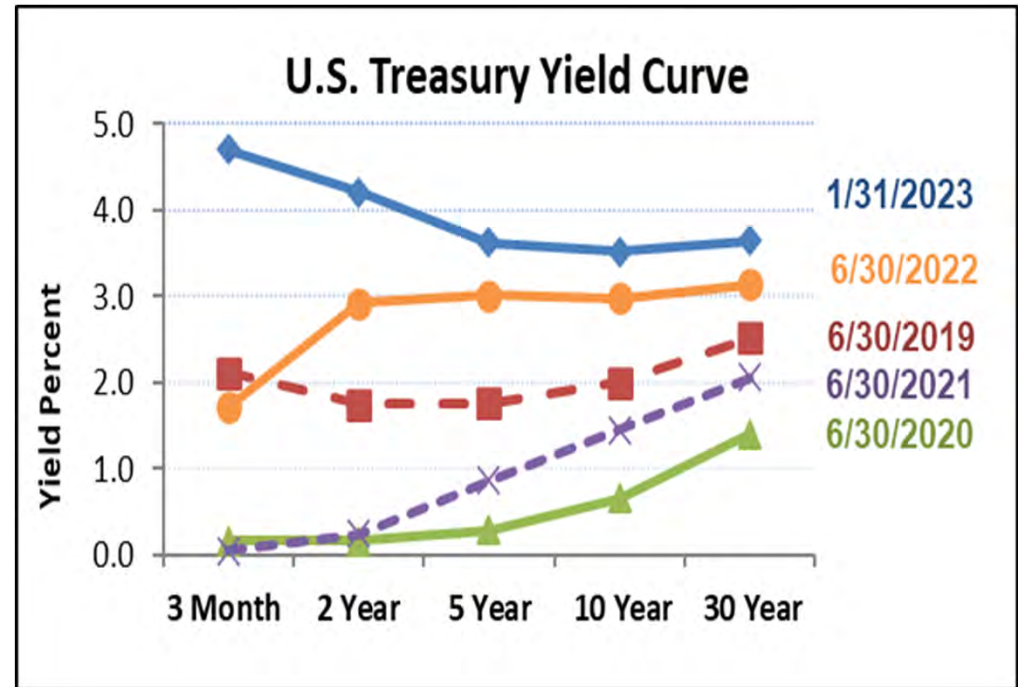
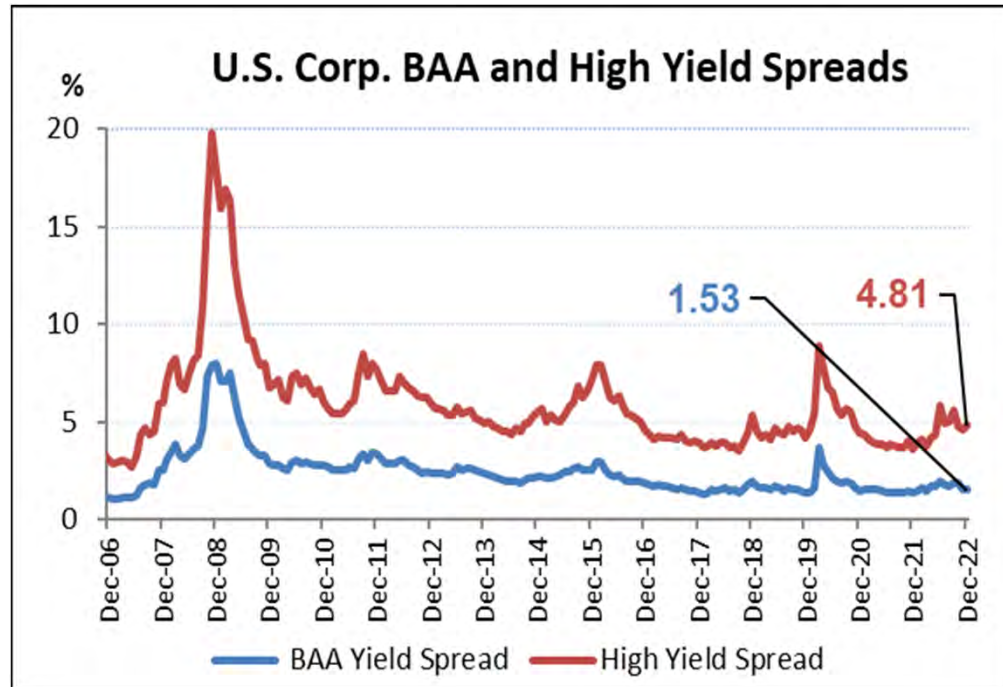
	Return as of 1/31/2023	
	1 Year	FYTD
S&P 500	(8.22)	8.74
MSCI - EAFE + Canada Index (\$Net)	(2.99)	14.15
MSCI - Emerging Markets Index (\$Net)	(12.12)	4.67

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



MARKETS

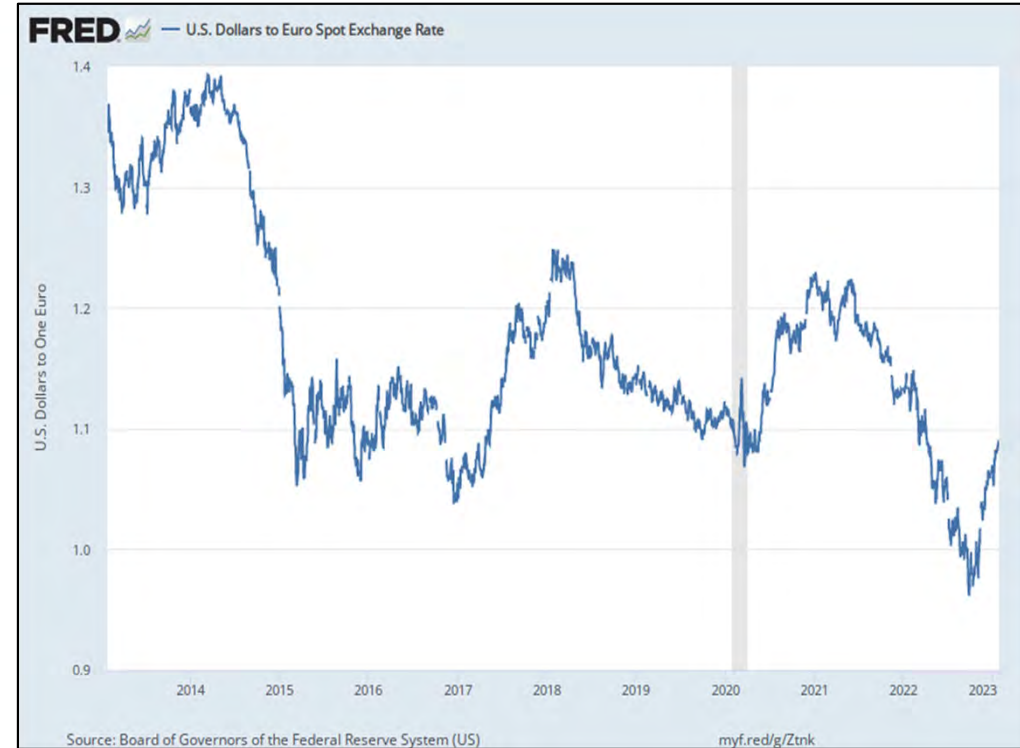
Fixed Income





MARKETS

Foreign Exchange



Date	Nominal Broad U.S. Dollar Index January 2006=100
June-19	114.56
June-20	120.86
June-21	112.85
June-22	121.05
January 27, 2023	119.07

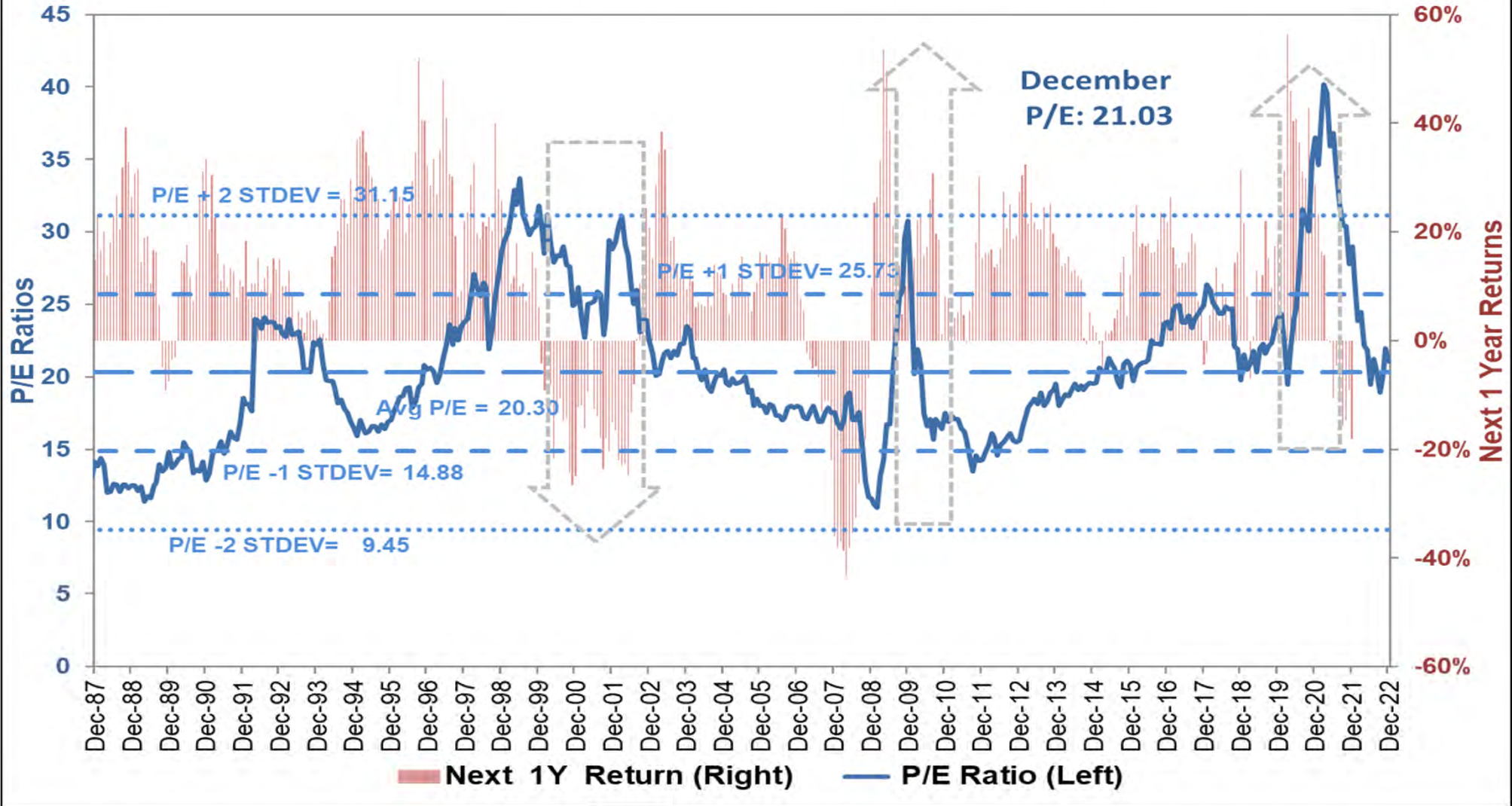
Date	U.S. / Euro Foreign Exchange Rate U.S. Dollars to One Euro
June-19	1.14
June-20	1.12
June-21	1.18
June-22	1.05
January 27, 2023	1.07



VALUATION

US Equity

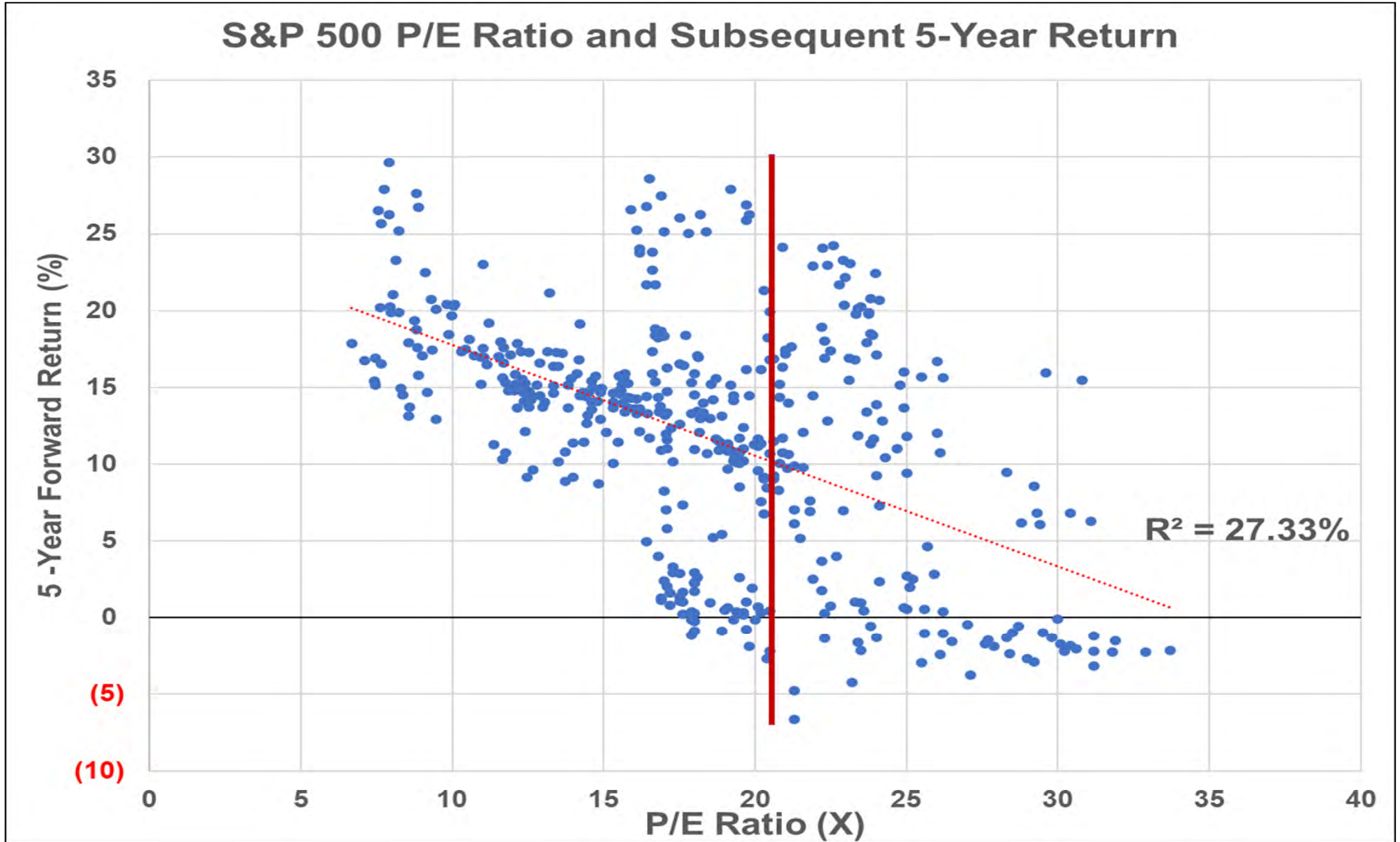
S&P 500 P/E Ratios and Next 1 Year Returns





VALUATION

US Equity



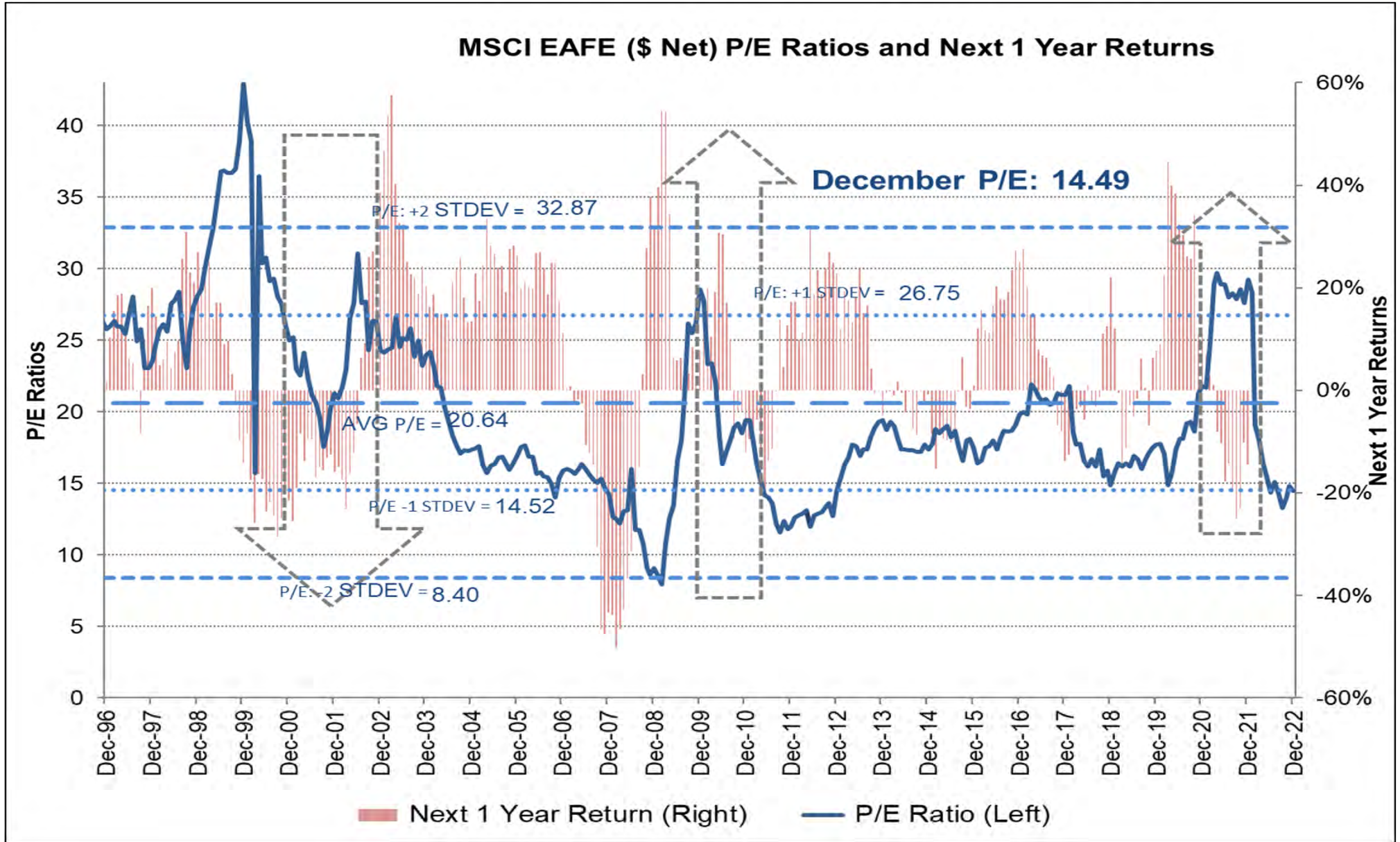
$R^2 = 27.33\%$

(5)
(10)



VALUATION

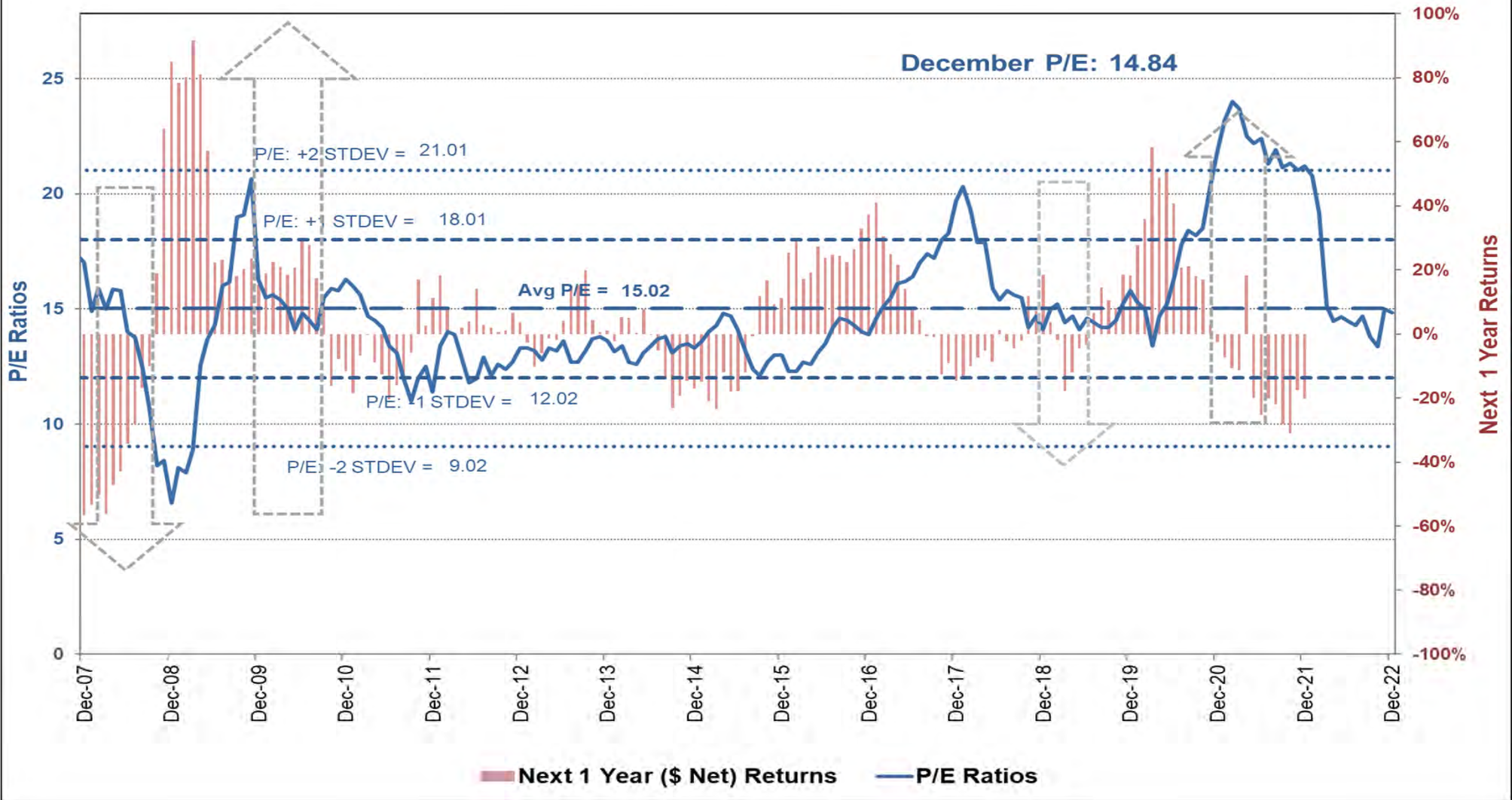
Non US Developed Market Equity





VALUATION Emerging Market Equity

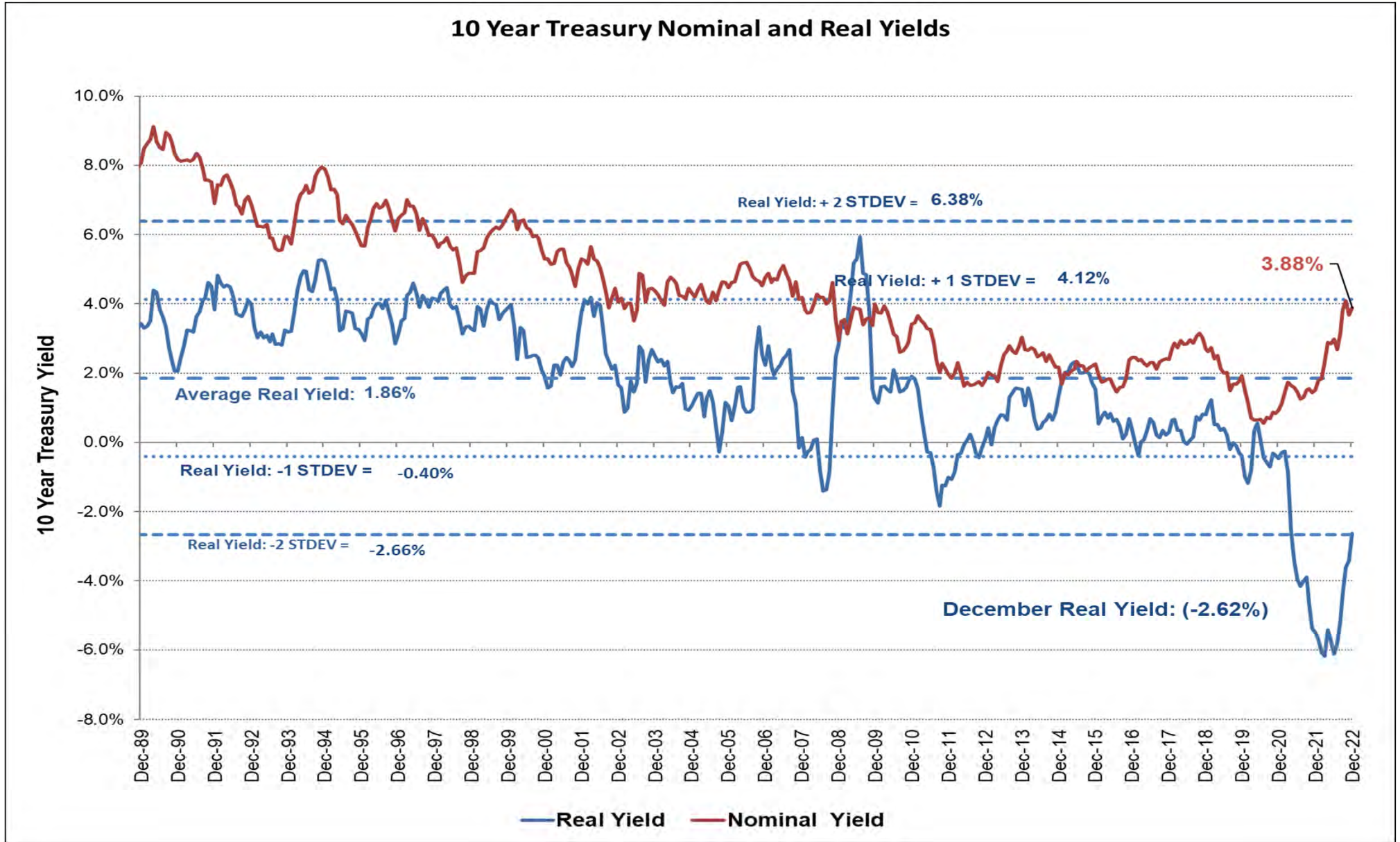
MSCI EM P/E Ratios and Next 1 Year (\$ Net) Returns





VALUATION

US Treasury Bonds





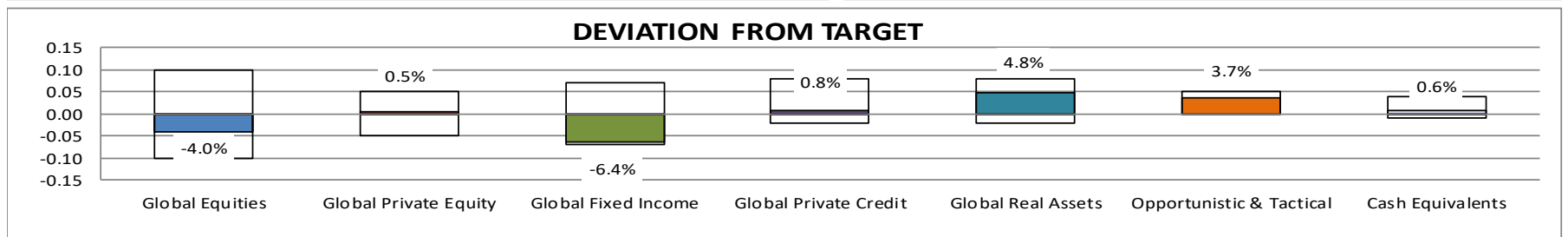
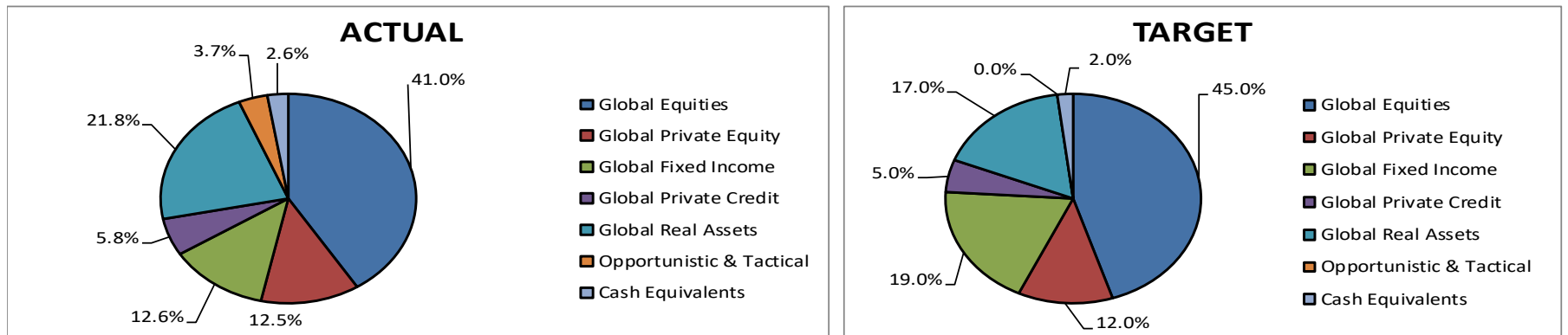
SERS' Investment Portfolios Review



Total Fund Asset Allocation

Asset Class	Market Value \$	Actual	Target	Range
Global Equities	7,023,040,658	41.0%	45.0%	35% - 55%
Global Private Equity	2,138,981,918	12.5%	12.0%	8% - 16%
Global Fixed Income	2,168,463,572	12.6%	19.0%	12% - 26%
Global Private Credit	989,481,094	5.8%	5.0%	3% - 7%
Global Real Assets	3,740,969,609	21.8%	17.0%	14% - 22%
Opportunistic & Tactical	627,615,866	3.7%	0.0%	0% - 7%
Cash Equivalents	453,827,685	2.6%	2.0%	0% - 5%
Short-Term	434,467,476	2.5%	2.0%	
Russell EA Overlay	0	0.0%	0.0%	
Aegis - Alpha Overlay	6,208,538	0.0%	0.0%	
Direct Rebalance Overlay	0	0.0%	0.0%	
Transition / Operational Account	1,958,598	0.0%	0.0%	
Currency Overlay	11,193,073	0.1%	0.0%	
Total Fund	17,142,380,401	100.0%	100.0%	

Source: BNY Mellon GRS





Total Fund Change in Net Assets

CHANGE IN NET ASSETS

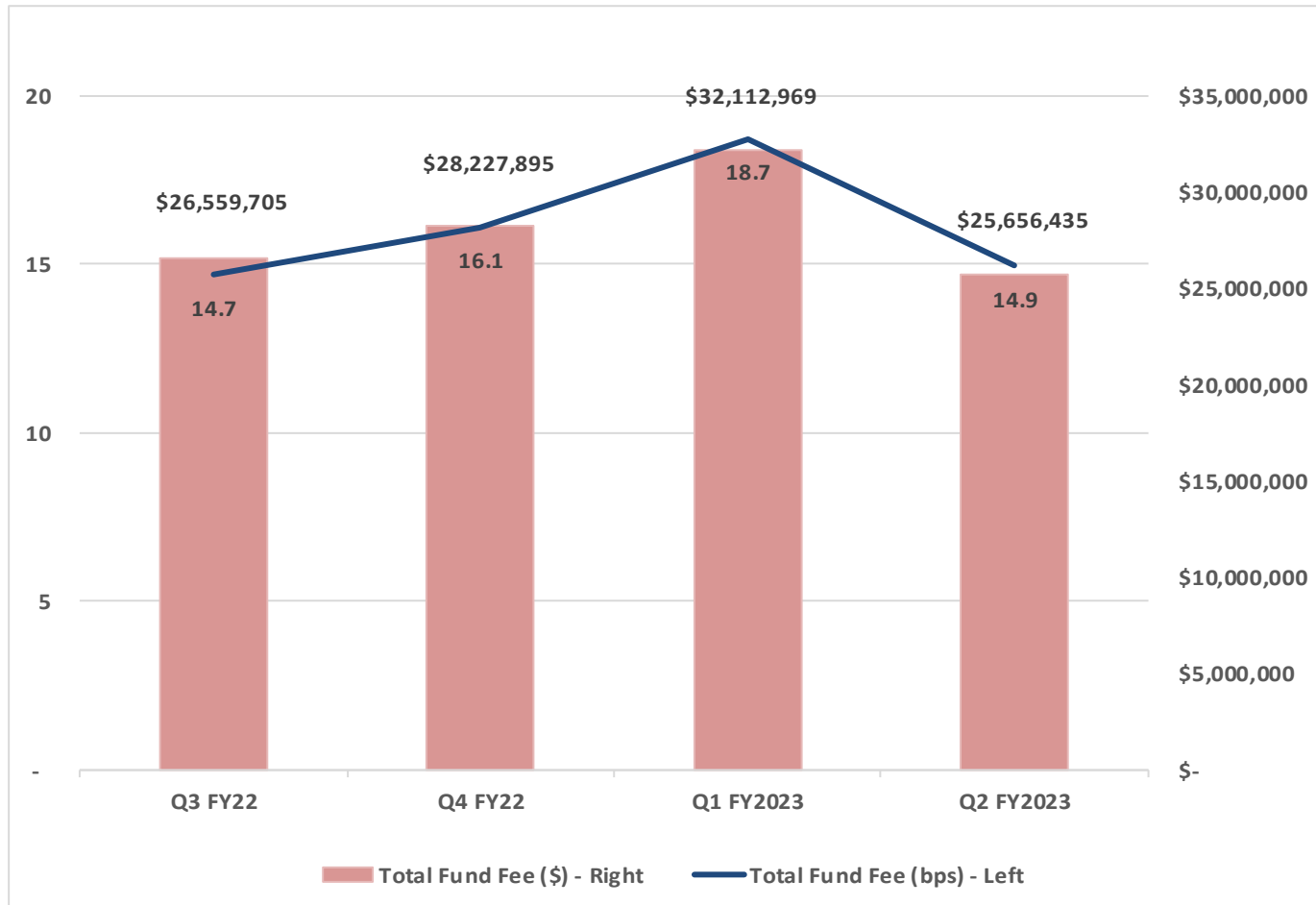
	<i>vs. One Year Ago, since 01/01/2022</i>	<i>vs. Three Years Ago, since 01/01/2020</i>
Beginning Market Value	18,710,598,571	15,238,050,241
Gain/Loss	(949,155,790)	3,817,944,154
Expenses	(94,062,381)	(254,057,650)
Net Transfer	(525,000,000)	(1,659,556,345)
End of Period Market Value	17,142,380,400	17,142,380,400

**Sources of Net Transfer*

<i>Dividends/Interest</i>	<i>201,781,993</i>
<i>Net Distributions</i>	<i>323,218,007</i>
<i>Cash on Hand</i>	<i>Not Required</i>



Total Fund Fees by Quarter

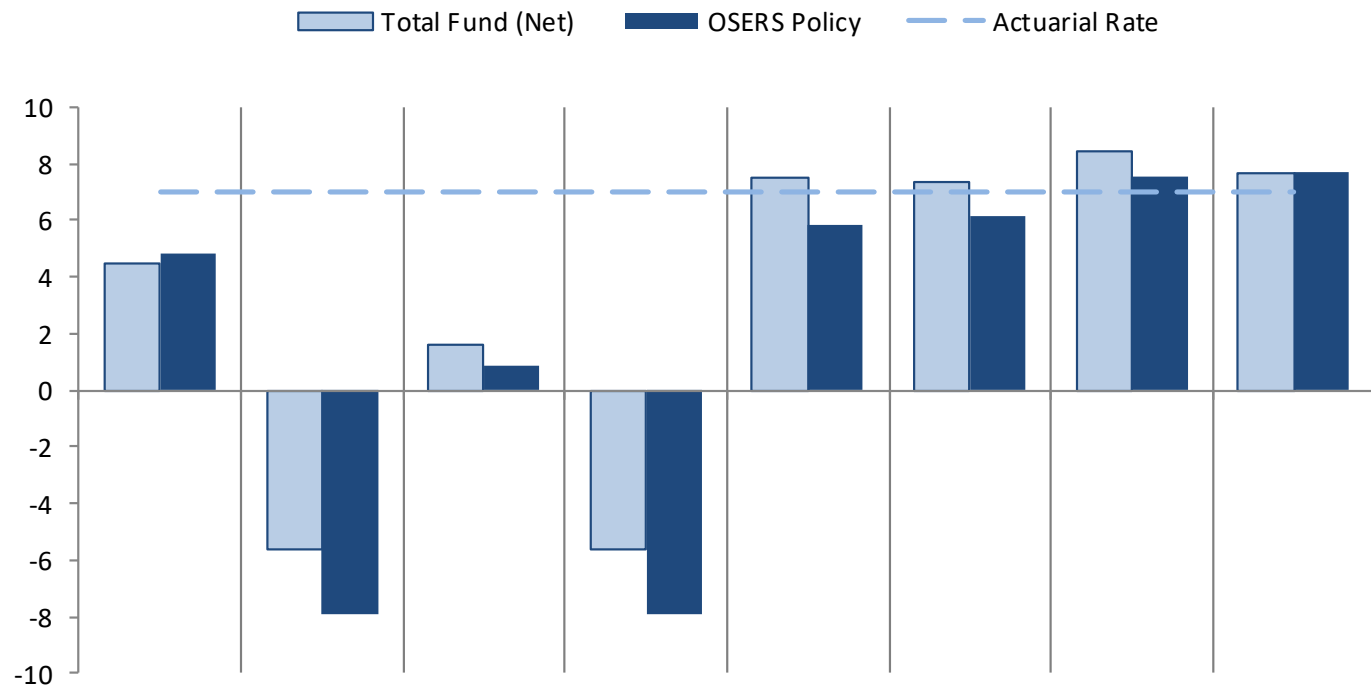




Total Fund Performance

Current Benchmark:

- 45% MSCI ACWI (Net Dividends)
- 12.00% Burgiss All Private Equity benchmark (1q lag) (BAPE)
- 19.00% Bloomberg Aggregate Bond
- 17.00% NCREIF Property (1q lag)
- 5.00% 90 Day T-Bill + 4.5%
- 2.00% Citigroup 30 Day US T-Bill



Actuarial Rate

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

	Qtr	CYTD	FYTD	1 Year	3 Year	5 Year	10 Year	ITD*
Total Fund (Gross)	4.65	(4.89)	1.96	(4.89)	8.20	8.04	9.15	8.28
Total Fund (Net)	4.48	(5.60)	1.57	(5.60)	7.52	7.35	8.46	7.75
OSERS Policy	4.80	(7.91)	0.89	(7.91)	5.84	6.17	7.54	7.69
Value Added (Net of Fee)	(0.32)	2.31	0.68	2.31	1.68	1.18	0.92	0.06

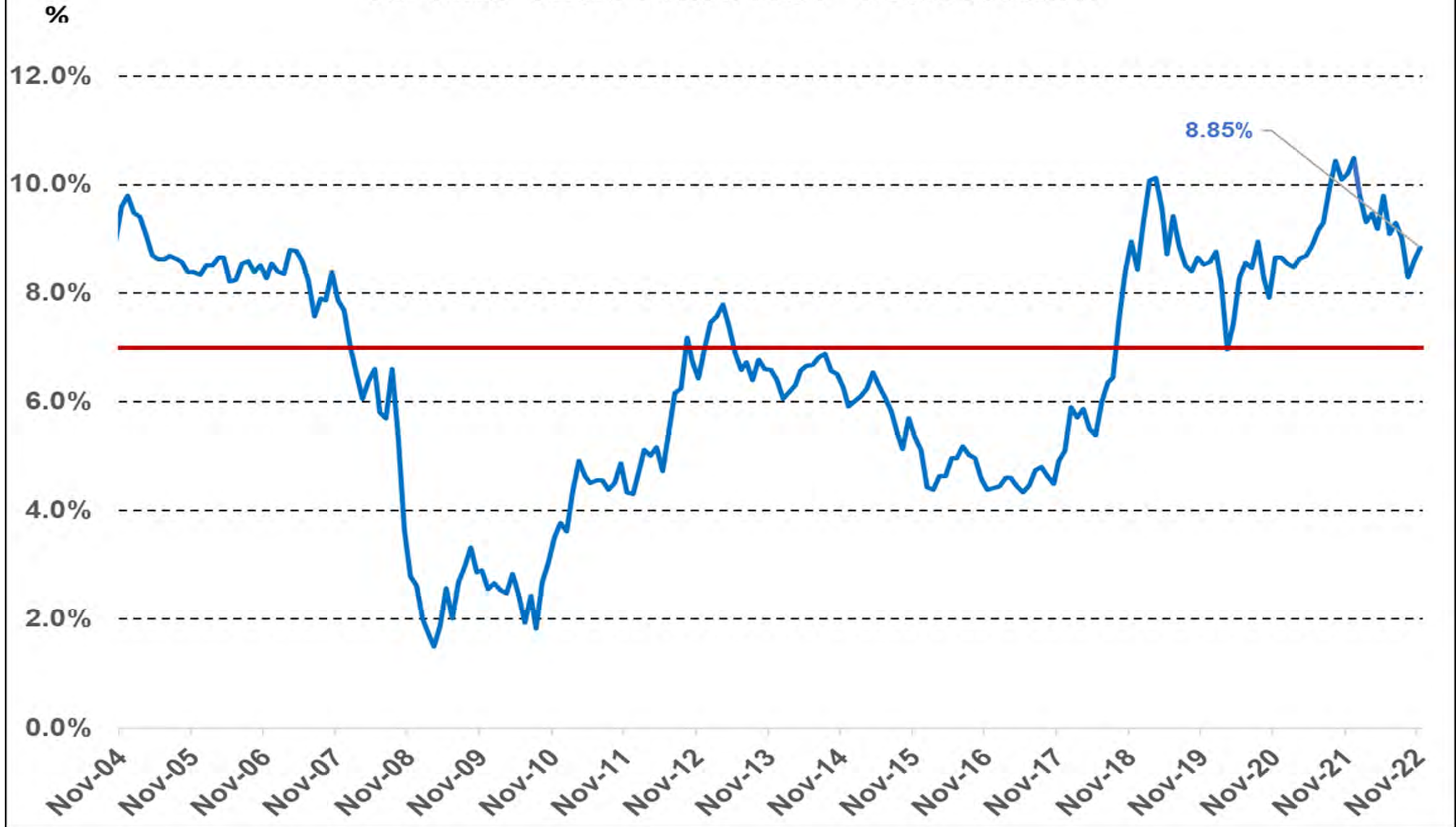
Source: BNY Mellon GRS

*ITD is Inception date 10/1/1994 (28 years and 3 months)



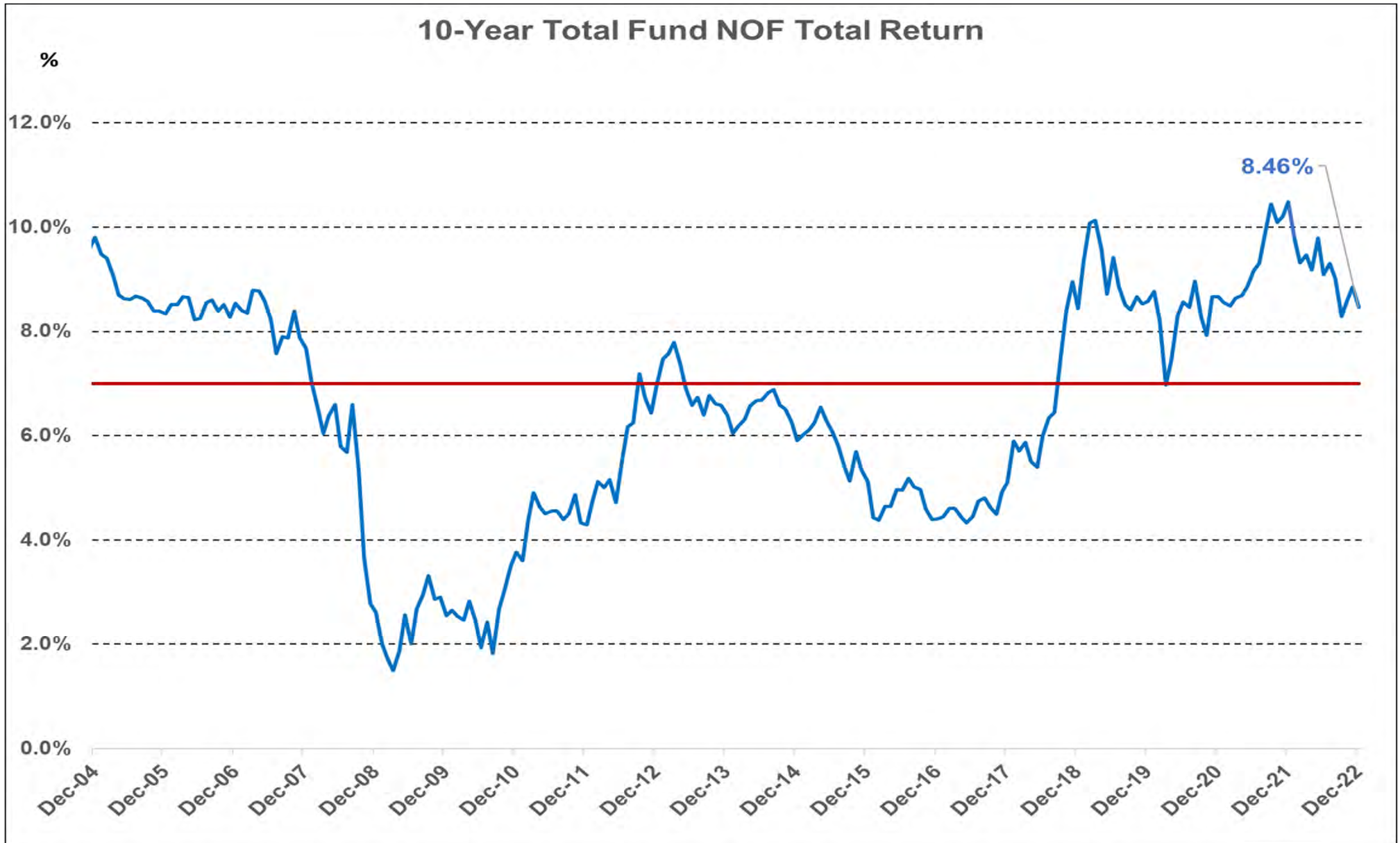
Total Fund Performance

10-Year Total Fund NOF Total Return



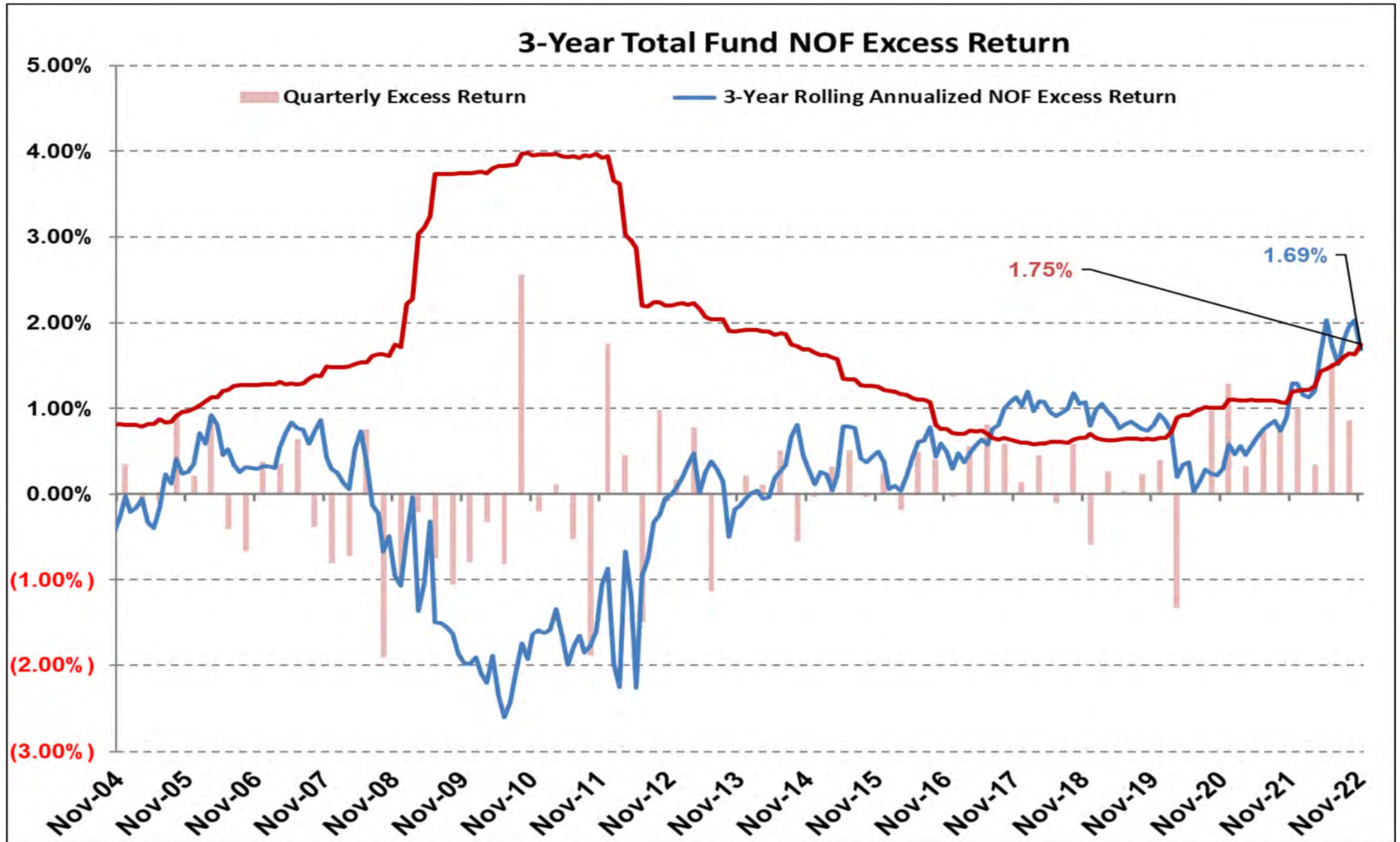


Total Fund Performance



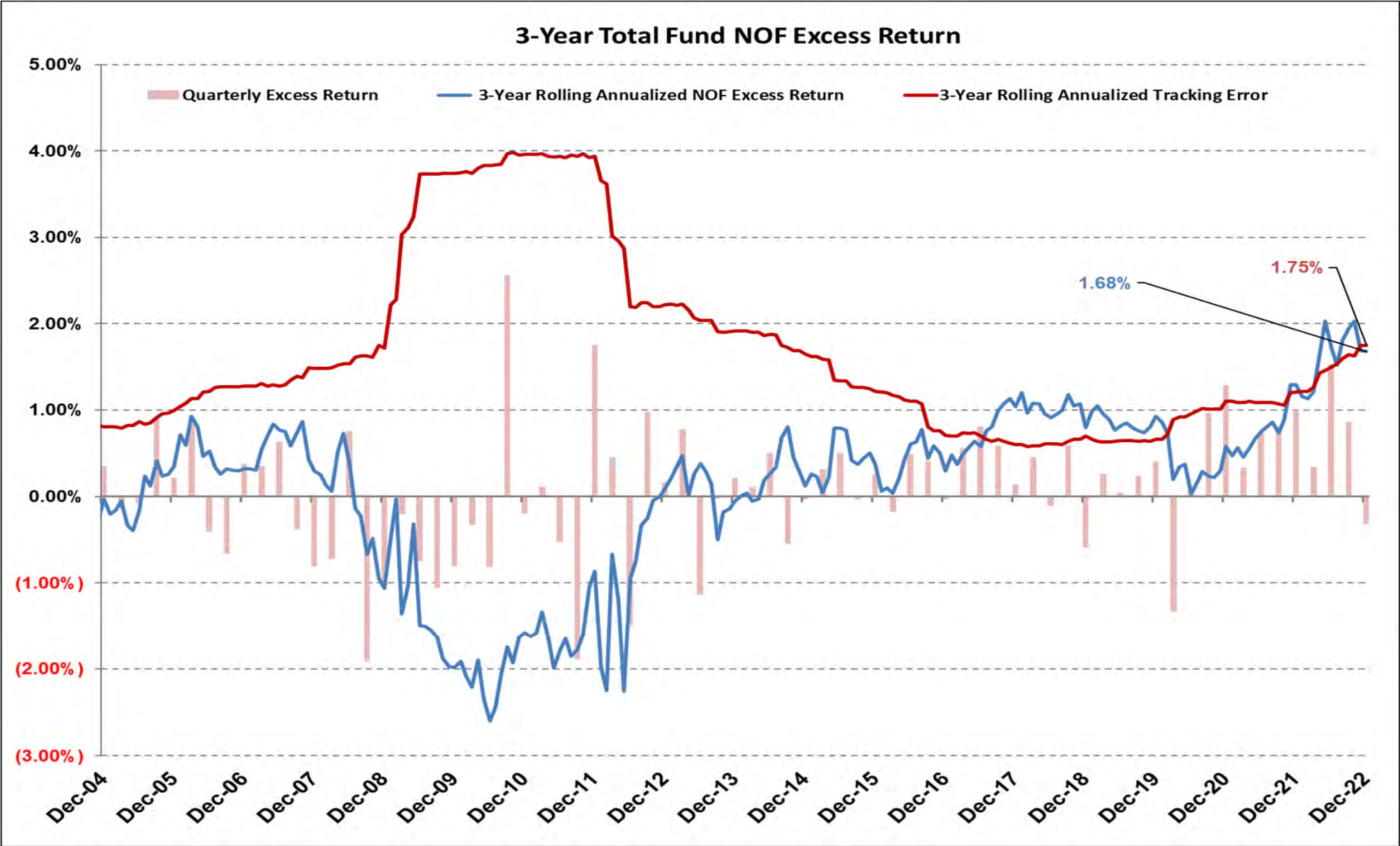


Total Fund Performance



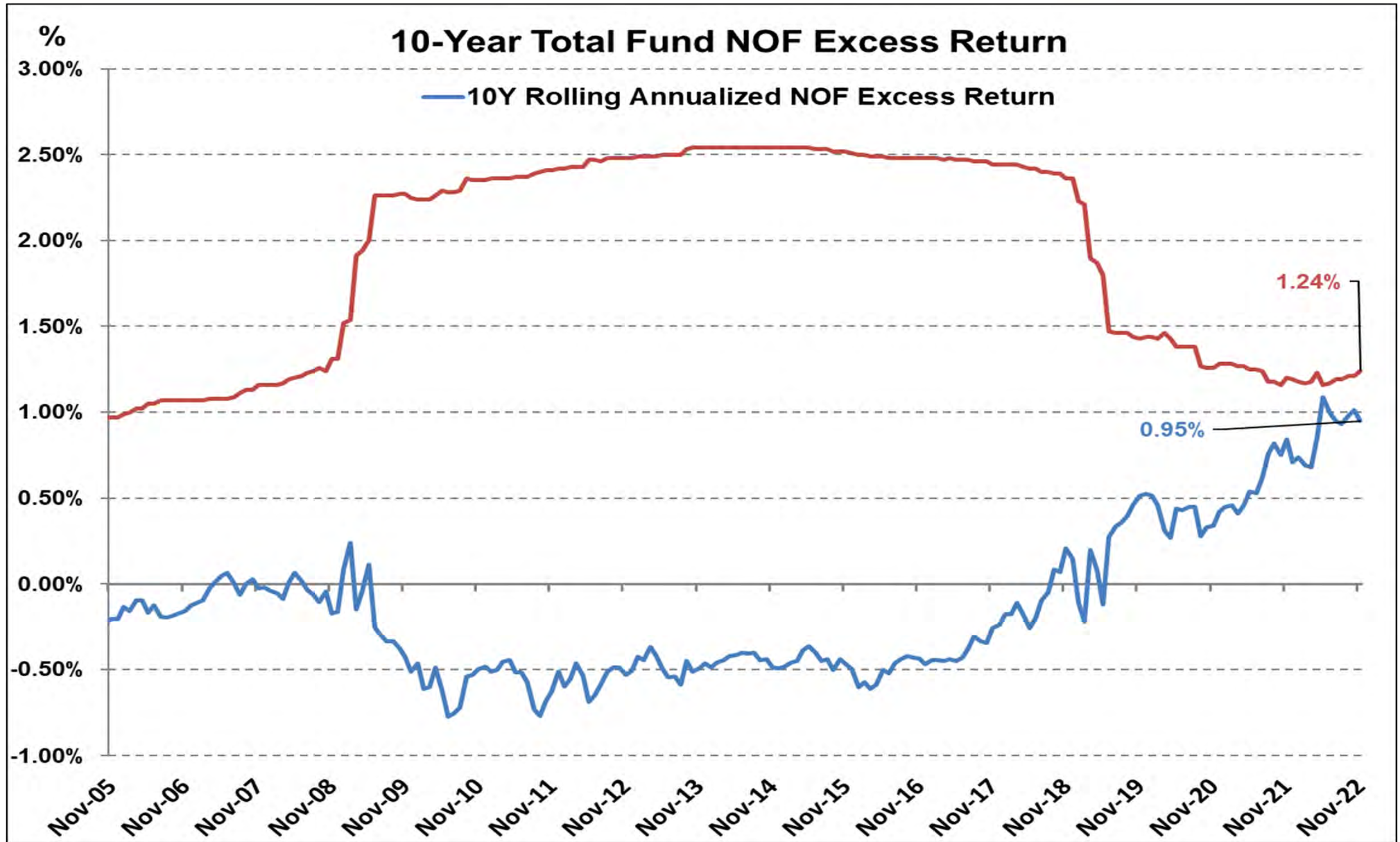


Total Fund Performance



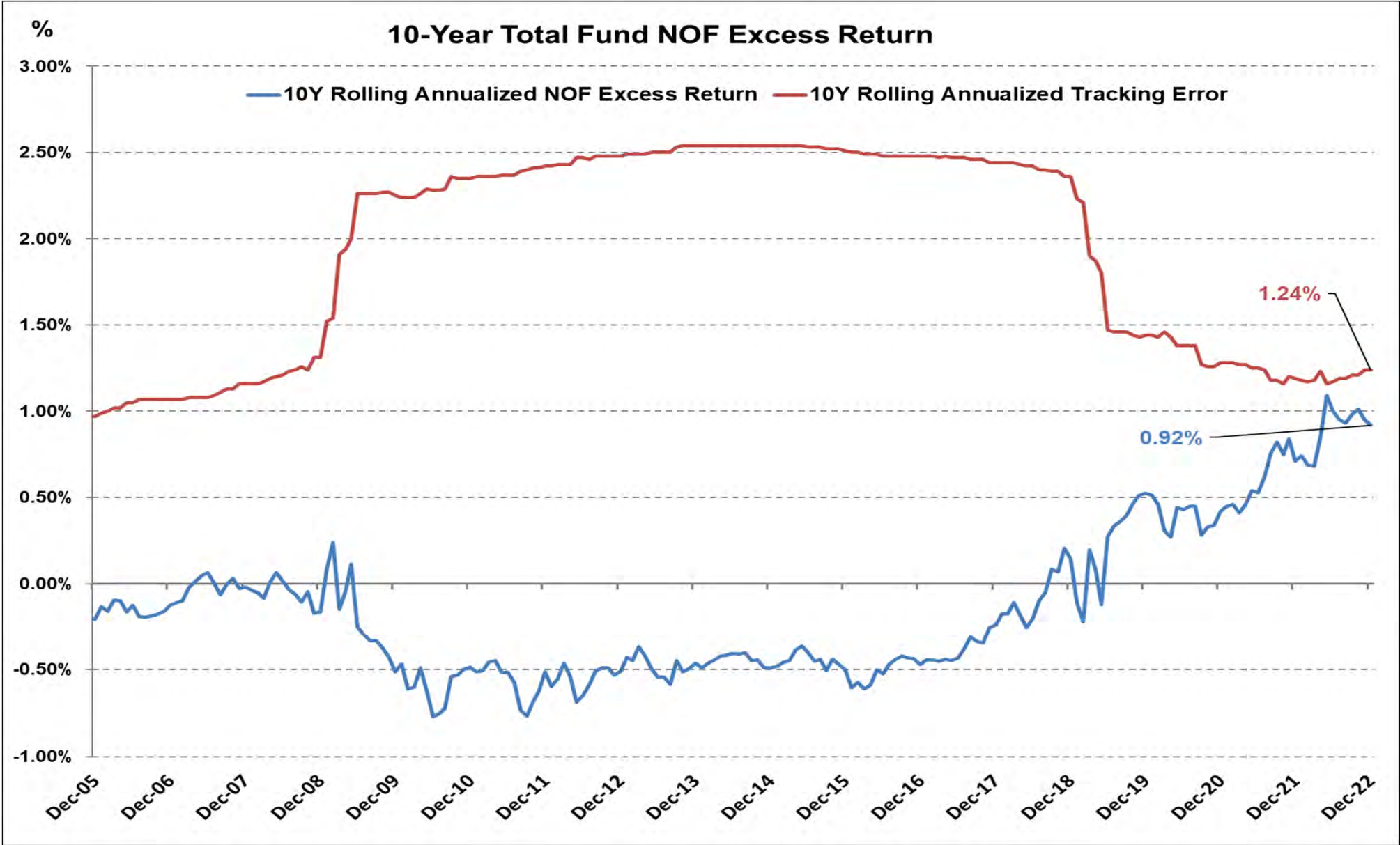


Total Fund Performance



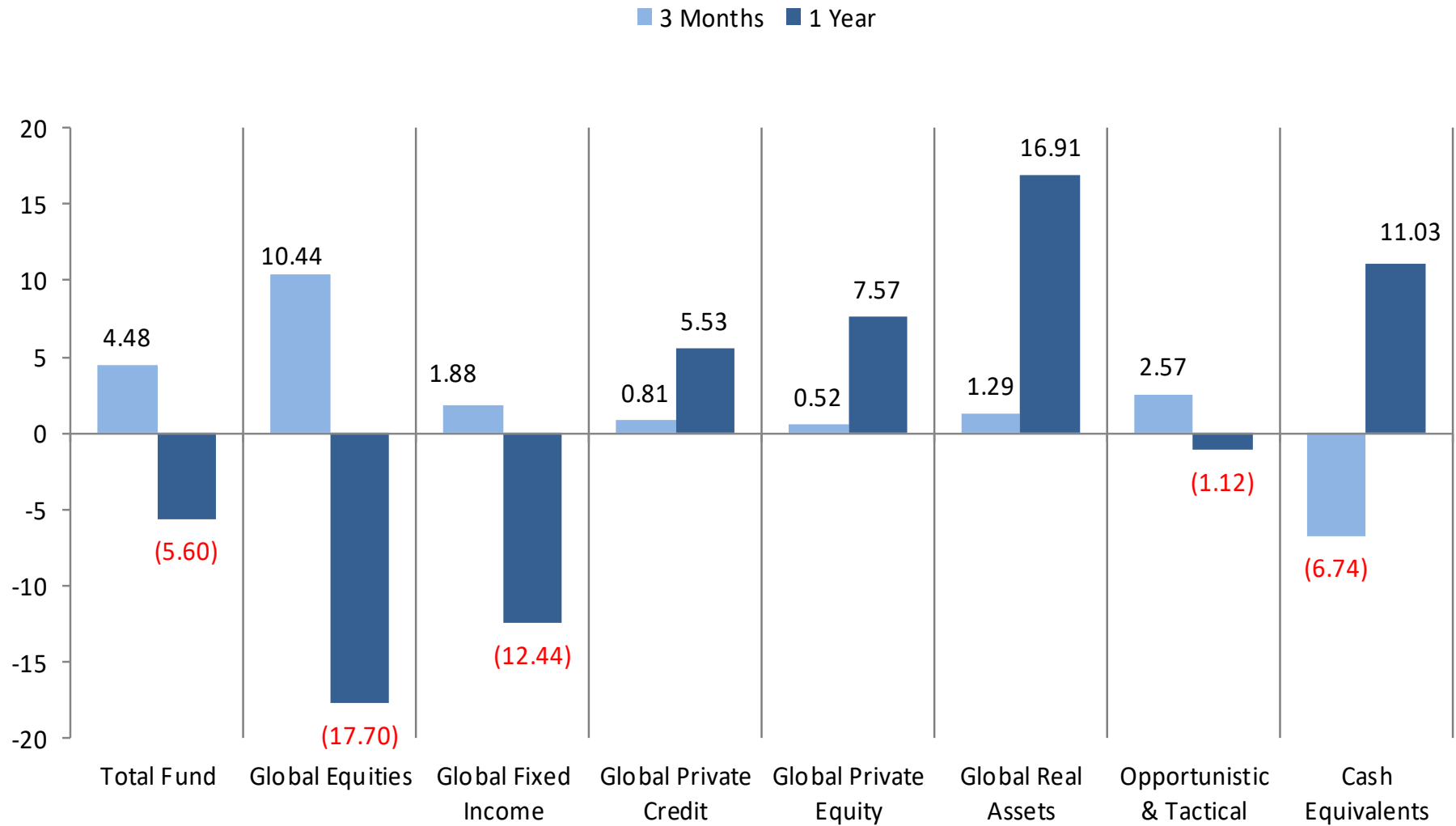


Total Fund Performance





Total Fund and Asset Class Performance (Net)

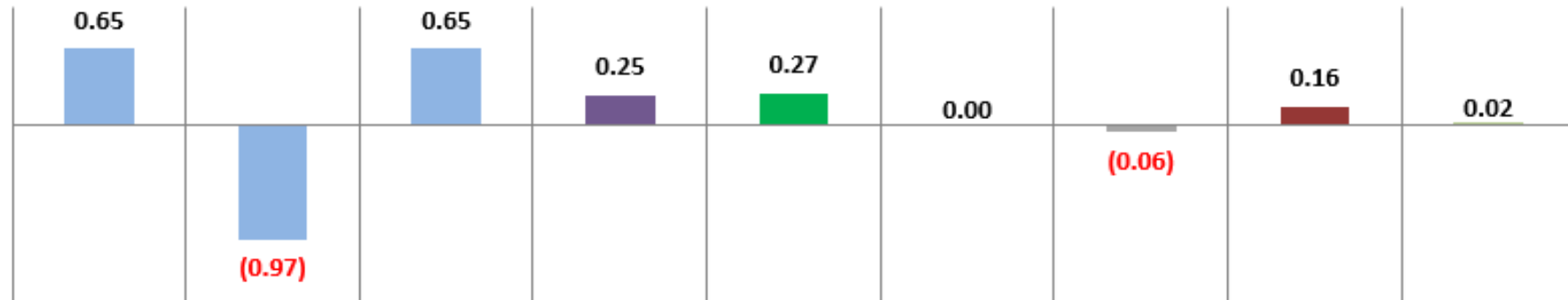


Source: BNY Mellon GRS



Total Fund Attribution

3 Month Attribution (%)



FYTD Attribution (%)

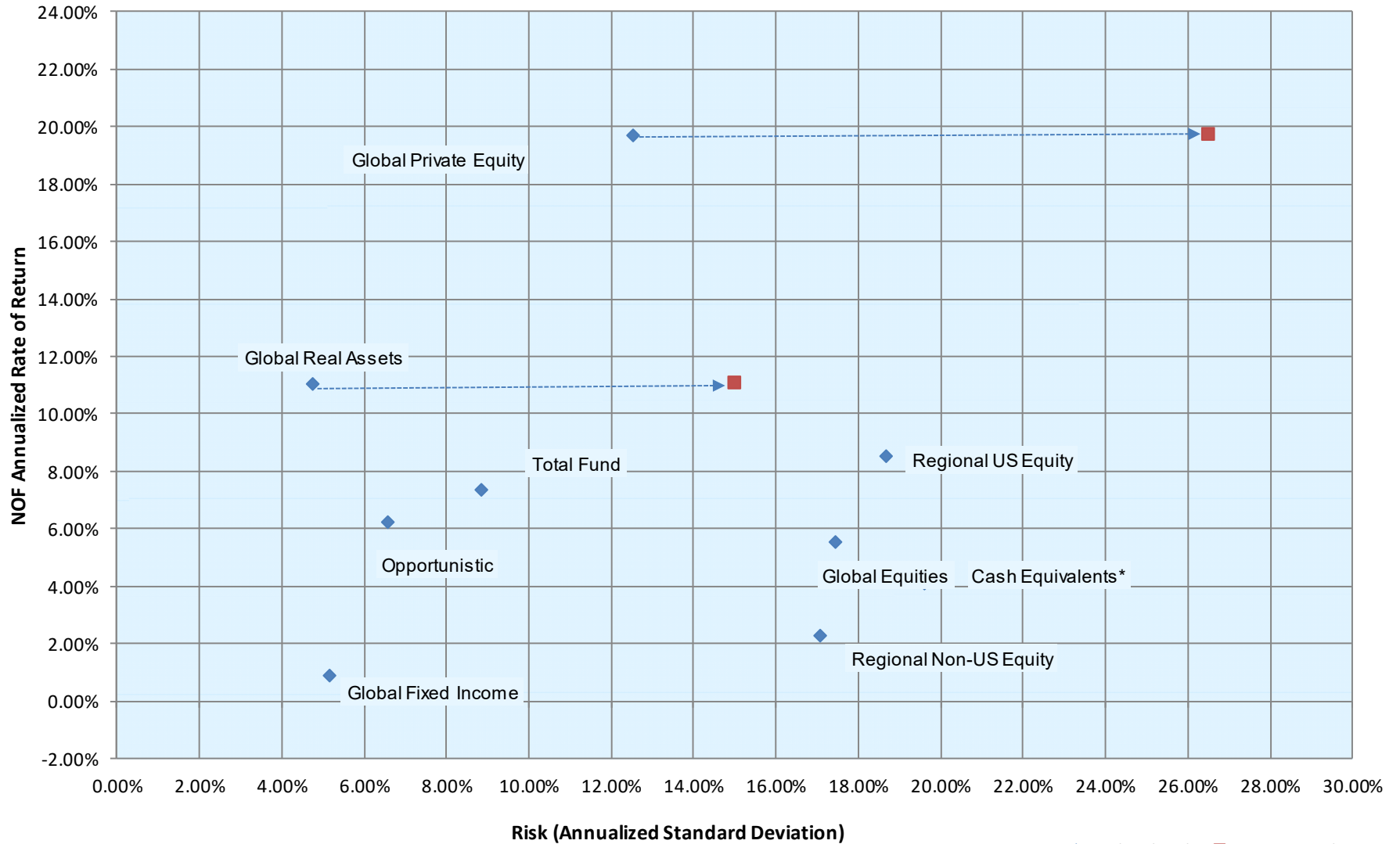


* Total Allocation Effects include net contributions from the Enhanced Asset Allocation and Currency Overlay Programs

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



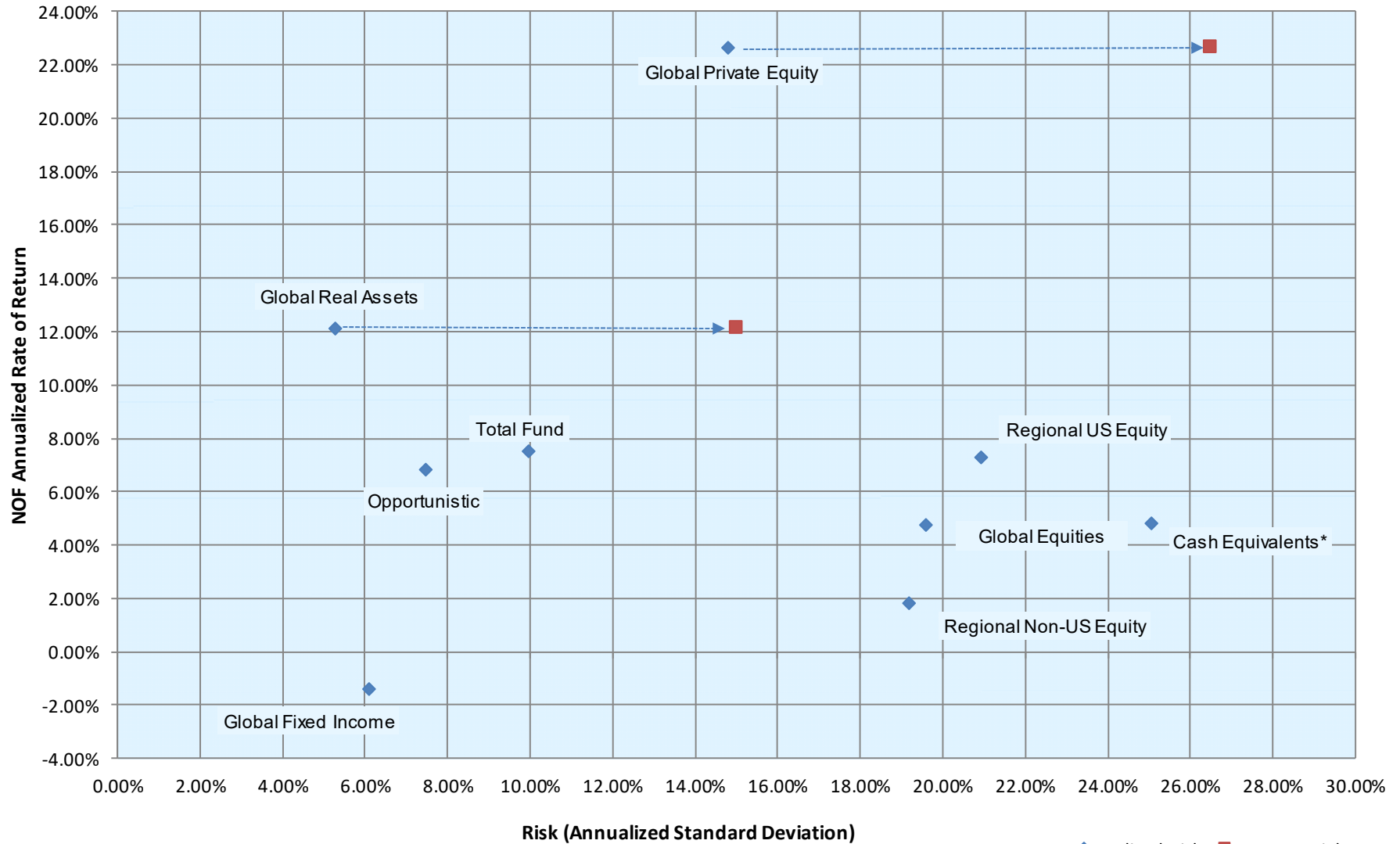
5 Year Risk and Return



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



3 Year Risk and Return



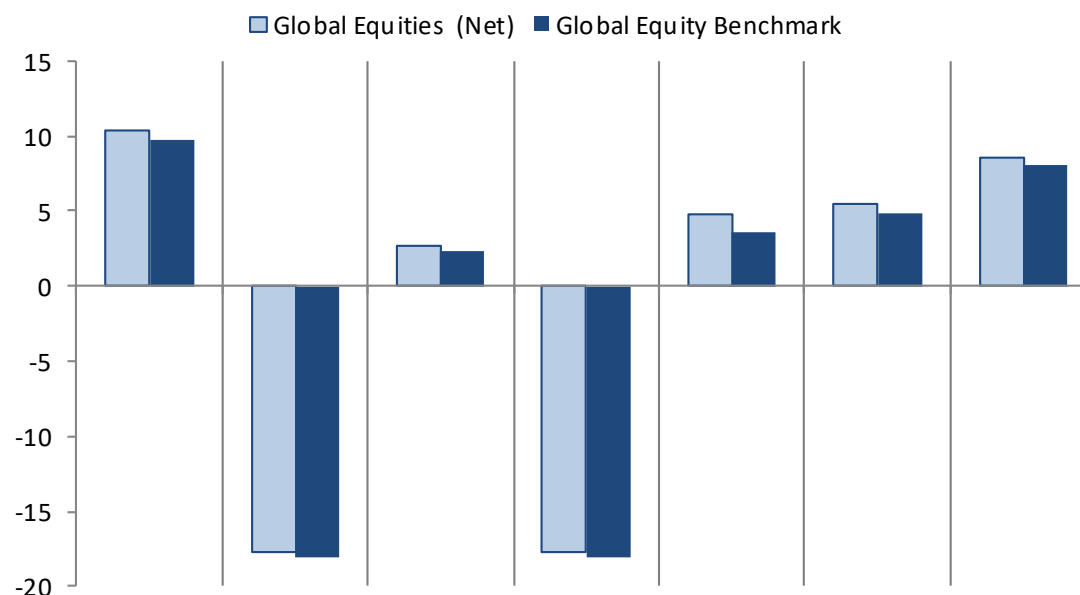
*Cash Equivalents include Short-Term, Enhanced Allocation Overlay and Currency Overlay



Global Equities Performance

Current Benchmark:

MSCI ACWI (Net Dividends)



	Qtr	CYTD	FYTD	1 Year	3 Year	5 Year	10 Year
Global Equities (Gross)	10.51	(17.44)	2.81	(17.44)	5.04	5.83	8.90
Global Equities (Net)	10.44	(17.70)	2.70	(17.70)	4.73	5.51	8.55
Global Equity Benchmark	9.76	(18.02)	2.28	(18.02)	3.61	4.85	8.05
Value Added (Net of Fee)	0.68	0.32	0.42	0.32	1.13	0.66	0.50
Regional US Equity	7.68	(18.63)	2.74	(18.63)	7.27	8.55	11.91
Russell 3000 Index	7.18	(19.21)	2.40	(19.21)	7.07	8.79	12.13
Value Added (Net of Fee)	0.50	0.57	0.35	0.57	0.21	(0.24)	(0.22)
Regional Non-US Equity	14.34	(16.67)	2.41	(16.67)	1.81	2.27	5.12
Custom Non-US Equity BM	14.28	(15.94)	2.96	(15.94)	(0.01)	0.83	3.94
Value Added (Net of Fee)	0.06	(0.74)	(0.55)	(0.74)	1.82	1.44	1.18

Source: BNY Mellon GRS

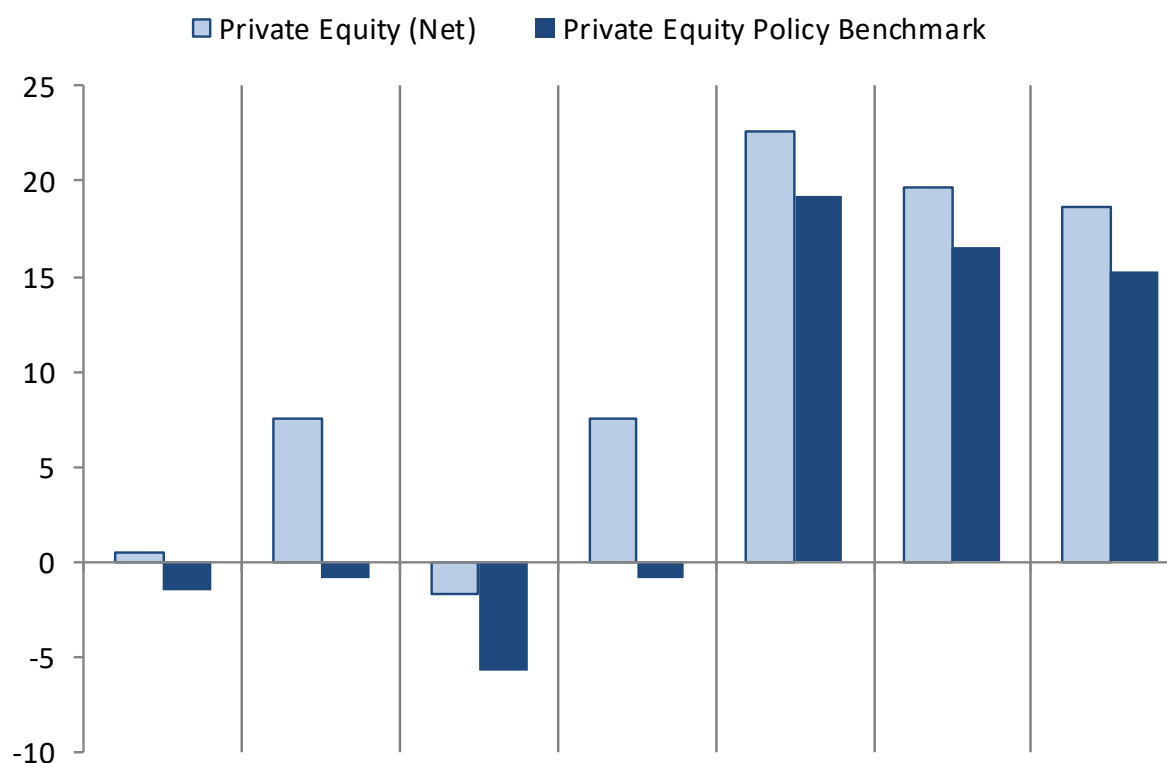


Global Private Equity Performance

Results as of: 12/31/2022

Current Benchmark:

Burgiss All Private Equity Index



	Qtr	CYTD	FYTD	1 Year	3 Year	5 Year	10 Year
Private Equity (Gross)	0.97	9.26	(0.84)	9.26	24.47	21.48	20.31
Private Equity (Net)	0.52	7.57	(1.75)	7.57	22.62	19.72	18.60
Private Equity Policy Benchmark	(1.56)	(0.81)	(5.71)	(0.81)	19.26	16.52	15.28
Value Added (Net of Fee)	2.08	8.38	3.97	8.38	3.37	3.20	3.32

Source: BNY Mellon GRS

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

Global Private Equity performance is reported one quarter in arrears.



Public vs Private Equity Performance (Net)

Public vs Private Equity - Performance (Net)

	3 Year	5 Year	10 Year
Regional US Equity	7.27	8.55	11.91
Global Equity	4.73	5.51	8.55
Private Equity	22.62	19.72	18.60

* Private Equity returns are lagged one quarter

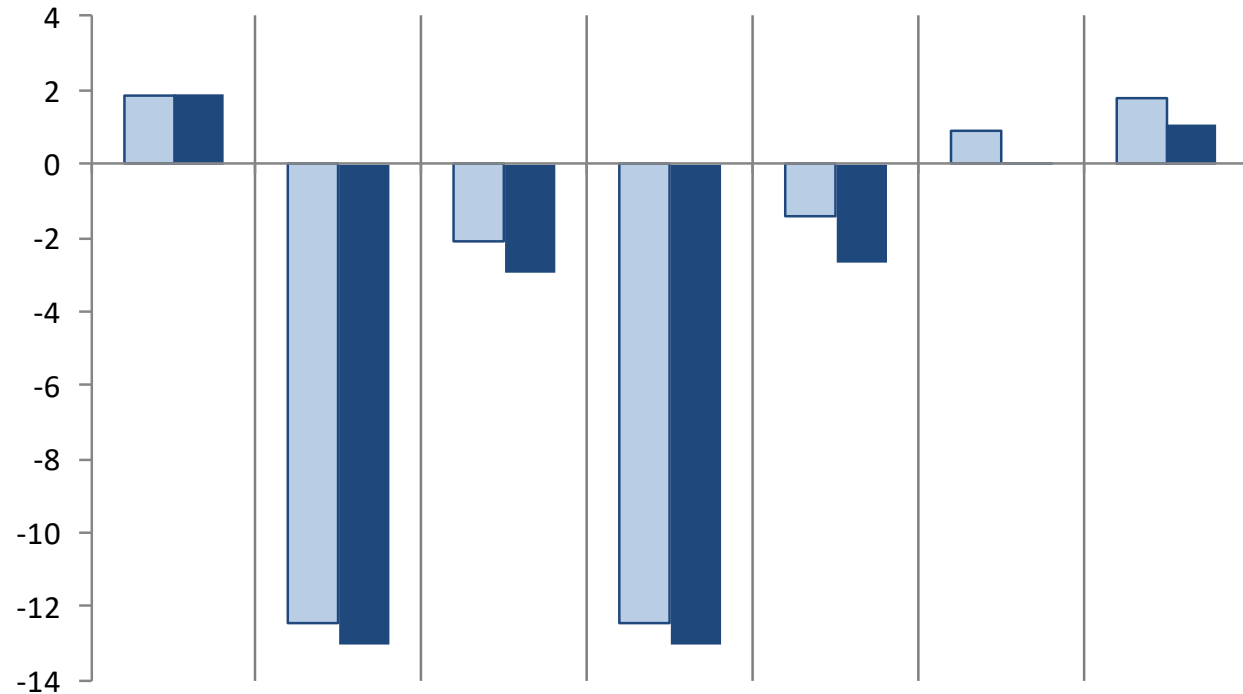


Global Fixed Income Performance

Fixed Income (Net) Fixed Income Policy Benchmark

Current Benchmark:

Bloomberg Aggregate Bond Index



	Qtr	CYTD	FYTD	1 Year	3 Year	5 Year	10 Year
Fixed Income (Gross)	1.95	(12.21)	(1.98)	(12.21)	(1.16)	1.12	2.05
Fixed Income (Net)	1.88	(12.44)	(2.10)	(12.44)	(1.42)	0.88	1.81
Fixed Income Policy Benchmark	1.87	(13.01)	(2.97)	(13.01)	(2.71)	0.02	1.06
Value Added (Net of Fee)	0.01	0.57	0.87	0.57	1.29	0.86	0.76

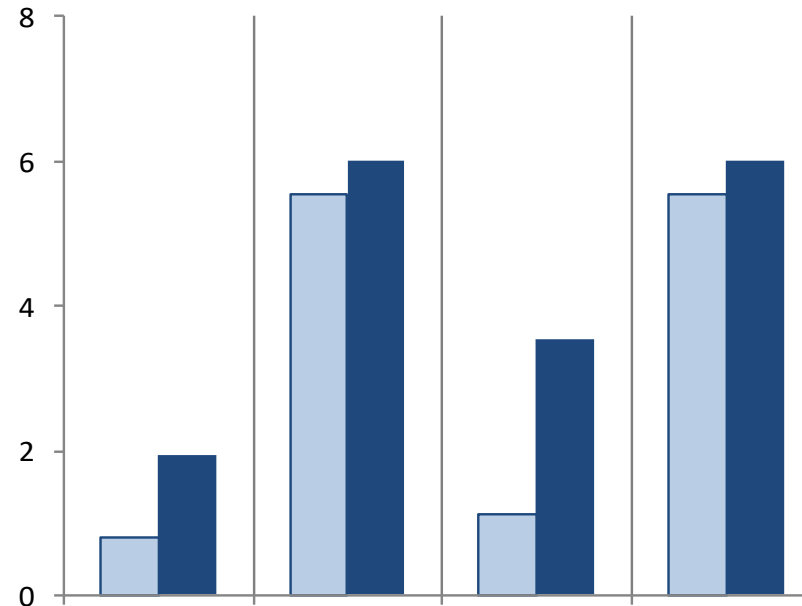
Source: BNY Mellon GRS



Global Private Credit Performance

Current Benchmark:
90 Day T-Bill + 4.5%

■ Global Private Credit (Net)
■ Global Private Credit Policy Benchmark



	Qtr	CYTD	FYTD	1 Year
Global Private Credit (Gross)	1.17	6.80	1.85	6.80
Global Private Credit (Net)	0.81	5.53	1.14	5.53
Global Private Credit Policy Benchmark	1.95	6.00	3.52	6.00
Value Added (Net of Fee)	(1.14)	(0.47)	(2.39)	(0.47)

Source: BNY Mellon GRS

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

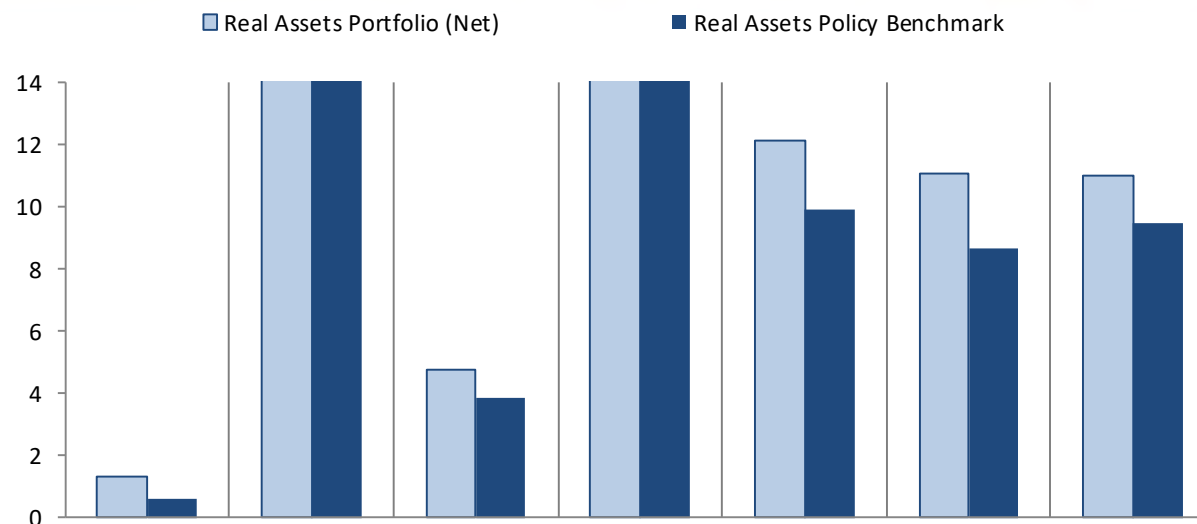


Global Real Assets Performance

Results as of: 12/31/2022

Current Benchmark:

NCREIF Property Index (1q lag)



	Qtr	CYTD	FYTD	1 Year	3 Year	5 Year	10 Year
Real Assets Portfolio (Gross)	1.52	17.90	5.19	17.90	13.00	12.04	12.07
Real Assets Portfolio (Net)	1.29	16.91	4.74	16.91	12.09	11.03	11.01
Real Assets Policy Benchmark	0.57	16.08	3.82	16.08	9.91	8.62	9.48
Real Assets Value Added (NOF)	0.72	0.83	0.91	0.83	2.18	2.42	1.53
Real Assets Core (Net)	1.24	26.54	7.22	26.54	15.90	13.18	12.43
Real Assets Policy Benchmark	0.57	16.08	3.82	16.08	9.91	8.62	9.48
Real Assets Core Value Added (NOF)	0.67	10.46	3.40	10.46	5.99	4.56	2.95
Real Assets Non-Core (Net)	(1.97)	6.06	(2.62)	6.06	6.25	7.61	10.03
Real Assets Policy Benchmark	0.57	16.08	3.82	16.08	9.91	8.62	9.48
Real Assets Non-Core Value Added (NOF)	(2.54)	(10.02)	(6.44)	(10.02)	(3.66)	(1.01)	0.55
Real Assets Infrastructure (Net)	2.29	6.81	2.85	6.81	8.85	11.07	10.03
Real Assets Policy Benchmark	0.57	16.08	3.82	16.08	9.91	8.62	n/a
Real Assets Infrastructure Value Added (NOF)	1.72	(9.27)	(0.97)	(9.27)	(1.06)	2.45	n/a

Source: BNY Mellon GRS

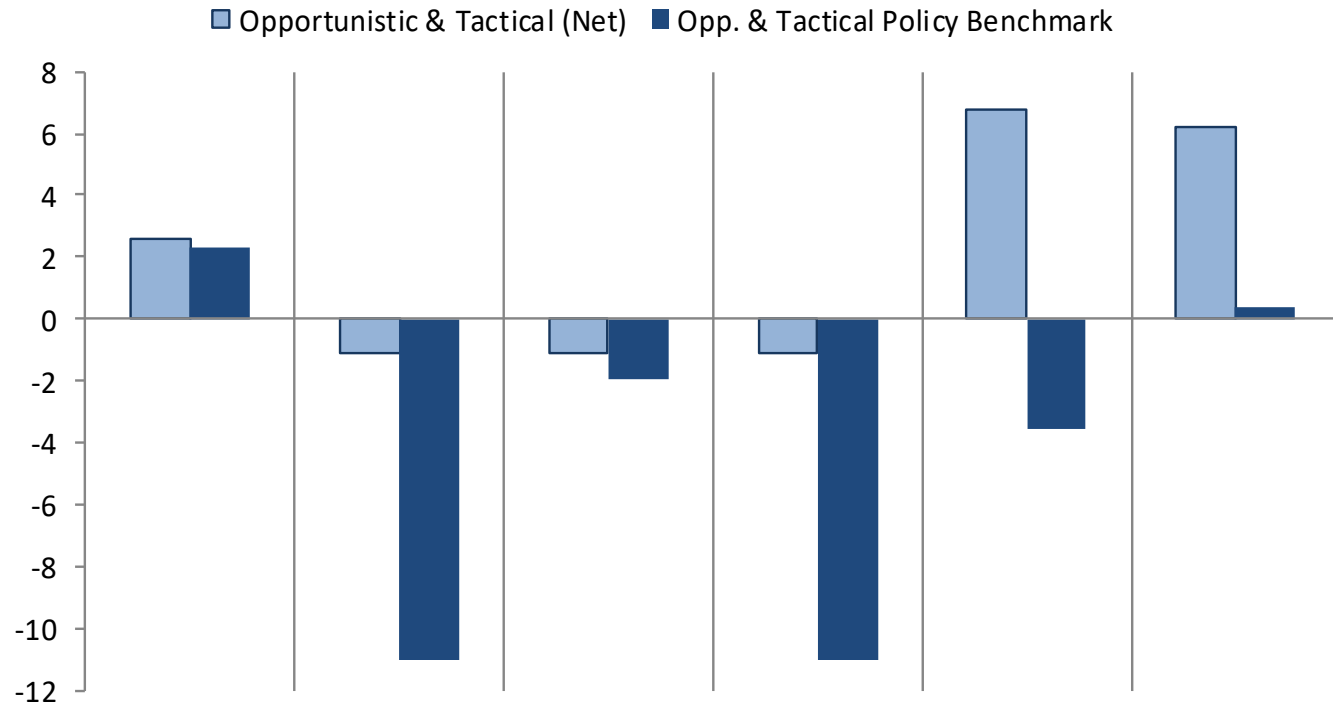
The difference between Gross and Net is management fee only. Performance based fees are captured in the Gross return.

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)	2.80	(0.07)	(0.54)	(0.07)	8.14	7.70
Opportunistic & Tactical (Net)	2.57	(1.12)	(1.07)	(1.12)	6.80	6.24
Opp. & Tactical Policy Benchmark	2.34	(11.01)	(1.92)	(11.01)	(3.54)	0.42
	0.23	9.89	0.85	9.89	10.34	5.82

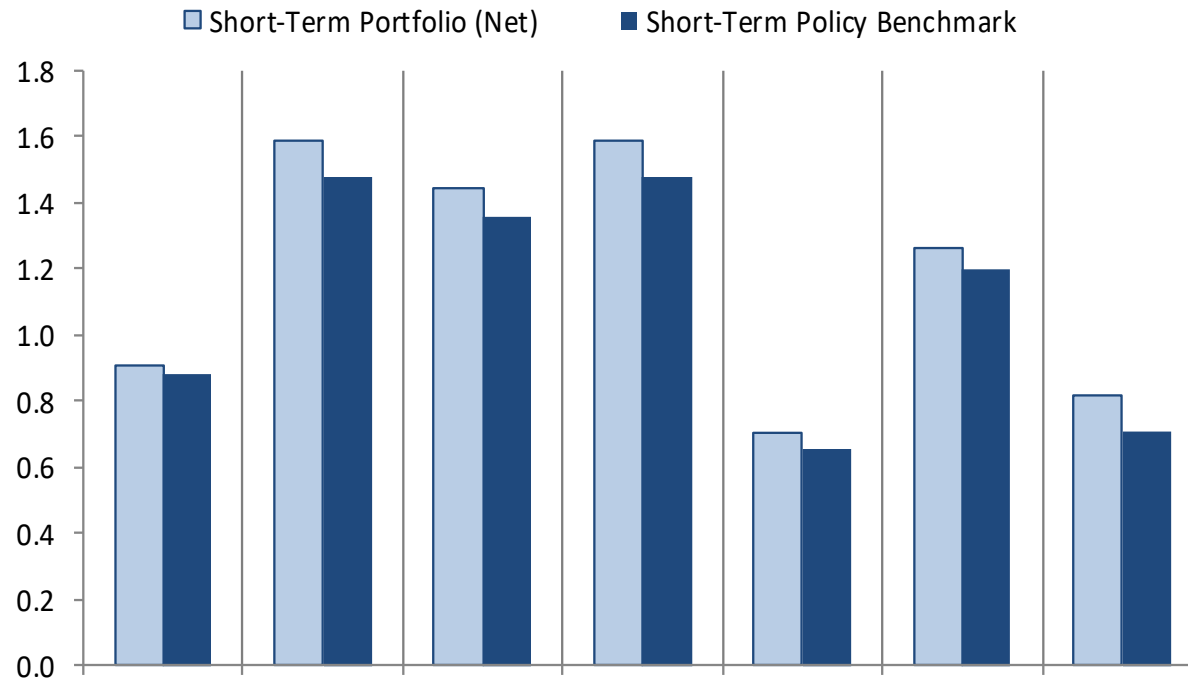
Source: BNY Mellon GRS



Short-Term Performance

Current Benchmark:

Citigroup 30 Day Treasury Bill Index

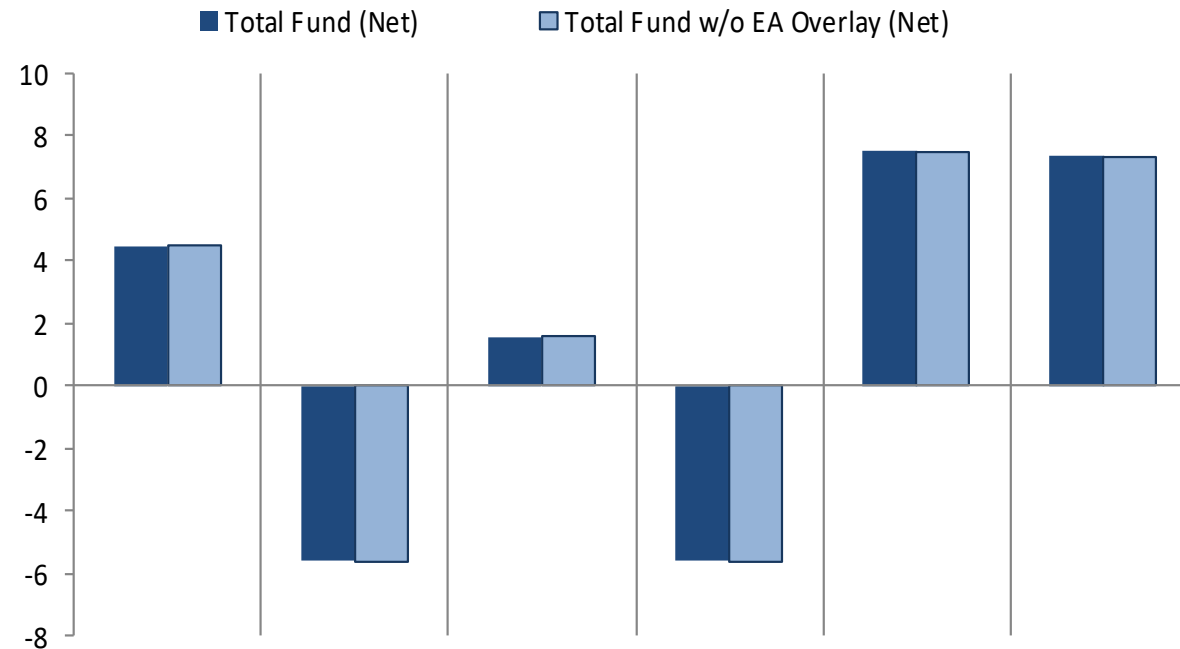


	Qtr	CYTD	FYTD	1 Year	3 Year	5 Year	10 Year
Short-Term Portfolio (Gross)	0.91	1.59	1.44	1.59	0.70	1.27	0.82
Short-Term Portfolio (Net)	0.91	1.59	1.44	1.59	0.70	1.27	0.82
Short-Term Policy Benchmark	0.88	1.48	1.36	1.48	0.66	1.20	0.71
Value Added (Net of Fee)	0.03	0.11	0.08	0.11	0.05	0.07	0.12

Source: BNY Mellon GRS



Enhanced Asset Overlay Performance

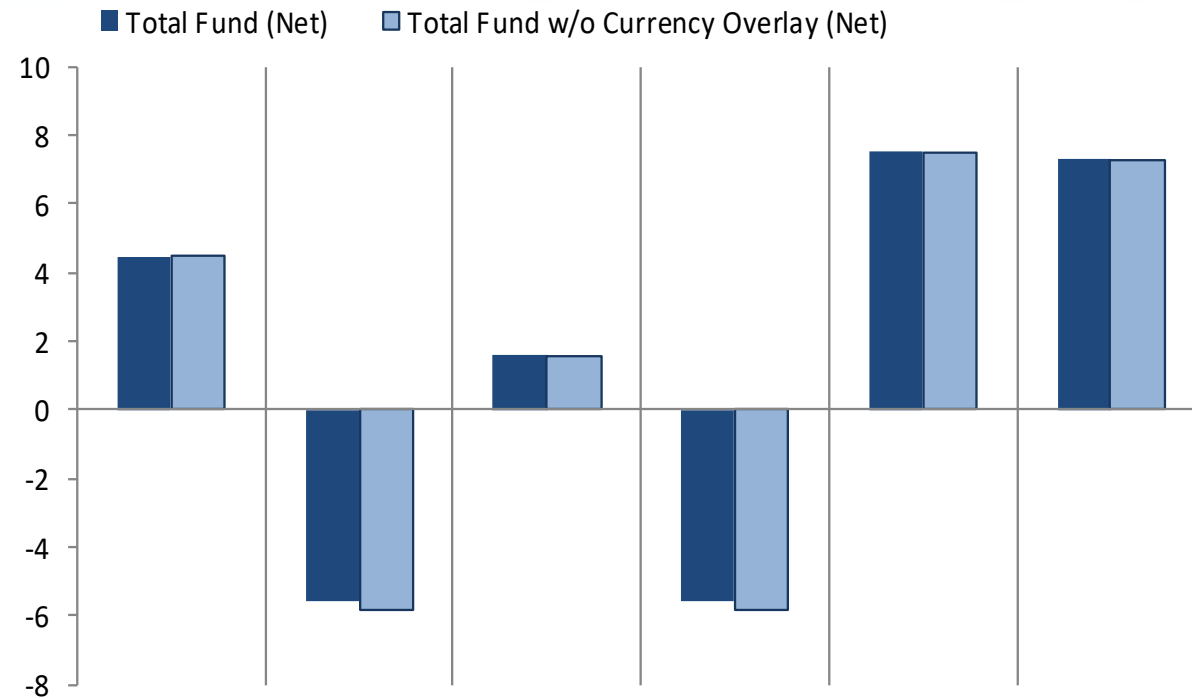


	Qtr	CYTD	FYTD	1 Year	3 Year	5 Year
Total Fund (Gross)	4.65	(4.89)	1.96	(4.89)	8.20	8.04
Total Fund w/o EA Overlay (Gross)	4.69	(4.96)	1.99	(4.96)	8.12	7.96
Total Fund (Net)	4.48	(5.60)	1.57	(5.60)	7.52	7.35
Total Fund w/o EA Overlay (Net)	4.52	(5.65)	1.59	(5.65)	7.45	7.29
EA Overlay Impact (Net of Fee)	(0.04)	0.06	(0.02)	0.06	0.07	0.05

Source: BNY Mellon GRS



Currency Overlay Performance



	Qtr	CYTD	FYTD	1 Year	3 Year	5 Year
Total Fund (Gross)	4.65	(4.89)	1.96	(4.89)	8.20	8.04
Total Fund w/o Currency Overlay (Gross)	4.69	(5.24)	1.92	(5.24)	8.11	7.96
Total Fund (Net)	4.48	(5.60)	1.57	(5.60)	7.52	7.35
Total Fund w/o Currency Overlay (Net)	4.52	(5.87)	1.59	(5.87)	7.46	7.31
Currency Overlay Impact (Net of Fee)	(0.04)	0.27	(0.02)	0.27	0.05	0.04

Source: BNY Mellon GRS



Proposed Investment Agenda – Next Meeting

Annual Portfolio Review – Global Equities
Monthly Investment Report (January 31, 2023)

Wilshire

Prepared for



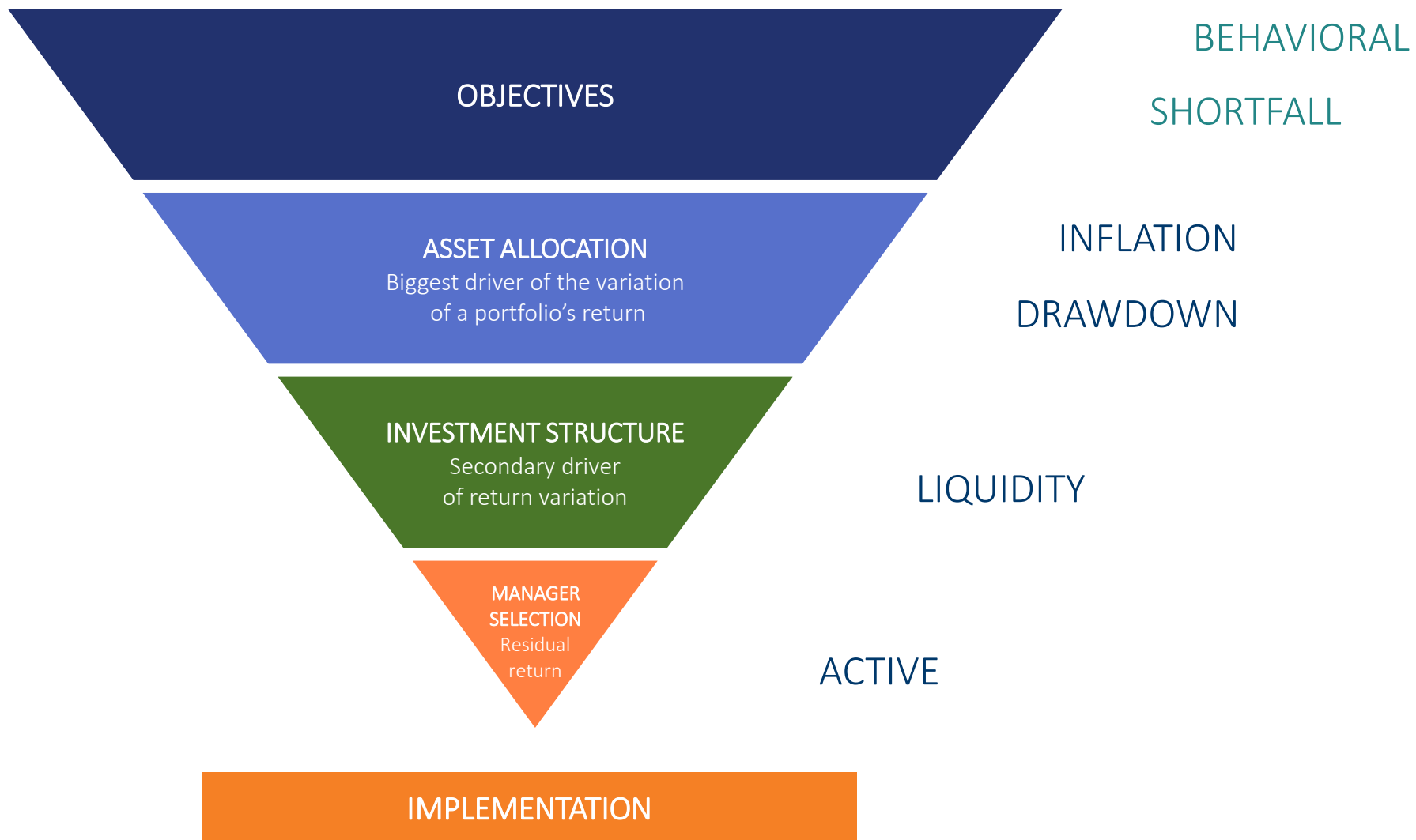
Asset Allocation Review:
December 2022 Capital Market Assumptions

1Q2023

Background and Overview

- Wilshire, SERS Investment Staff and the Board last reviewed asset allocation in-depth in 2019-2020. Key themes for the analysis identified by the Board included
 - Policy decision should remain very long-term focused
 - Implementation considerations are key for any Policy changes
 - Desire to not stray far from the Current Policy
 - Board recognized that the Current Policy was efficient and modest changes to the Policy were not statistically beneficial
- The 2022-2023 asset allocation review is expected to occur over several meetings
 - December 2022 and January 2023 – OH SERS team and Wilshire map the project and complete foundational work
 - February 2023 – Review asset class expected return and risk assumptions with the Board
 - March 2023 – Review asset-only optimization
 - Asset-only optimization serves as a useful tool in comparing risk/return trade-off among various alternative policy portfolios
 - April 2023 – Introduce SERS' liability information to the modeling process and finalize a recommendation to Board

Focus on Decisions that Matter



Capital Market Return Assumptions

Introduction

- Forecasting asset class return, risk and correlation assumptions is the first step in the asset allocation process
- Wilshire Consulting has been formulating long-term asset class return, risk and correlation assumptions since the early 1980s
- Standard approach to forecasting returns
 - Estimates are long-term; 10-year return assumption
 - Combines historical data with forward-looking analysis
 - Assumptions are updated quarterly
- Risk & Correlation
 - Relies heavily (but not exclusively) on historical return data
 - Analyze various rolling standard deviations; 5-year risk, 10-year risk, etc.
 - For some asset classes, particularly private equity, need to rely on proxies and other cross-correlation assumptions

December 2022 Assumptions

- Wilshire’s asset class return, risk and correlation assumptions are developed using 10-year forward looking expected rates of return and historical risk and correlation, adjusted to incorporate recent trends.
- Return expectations for public market asset classes represent a passive investment in the asset class (beta). They do not reflect value added from active management (alpha).

	Global Equities	Global Private Equity	Global Private Credit	Global Low Vol	Global Fixed Income	Cash Equivalents	Global Real Assets	Real Estate	Private Real Assets
10-Yr Expected Return (%)	7.05	9.90	8.85	7.10	5.20	4.00	6.30	6.00	6.10
Expected Risk (%)	17.10	29.00	12.75	13.80	4.60	0.75	12.05	13.55	13.80
<i>Correlations</i>									
Global Equities	1.00								
Global Private Equity	0.73	1.00							
Global Private Credit	0.68	0.44	1.00						
Global Low Vol	0.97	0.75	0.67	1.00					
Global Fixed Income	0.35	0.37	0.44	0.34	1.00				
Cash Equivalents	-0.06	0.00	0.00	-0.04	0.13	1.00			
Global Real Assets	0.60	0.53	0.67	0.70	0.35	-0.06	1.00		
Real Estate	0.54	0.50	0.63	0.65	0.34	-0.05	0.98	1.00	
Private Real Assets	0.69	0.55	0.62	0.69	0.27	-0.06	0.63	0.49	1.00

Asset classes illustrated on this page are a selected group relevant to Ohio SERS’ asset allocation modeling. Detailed assumptions matrix can be found in the Appendix.

Explanatory Footnotes:

Global Fixed Income is reflective of the Bloomberg US Universal Index. Approximate composition as of 12-30-2022: 85% Agg, 10% HY, 5% EMD.

Global Real Assets = Global Real Assets is a custom basket for SERS that includes 20% Timber/Infrastructure, and 80% Real Estate.

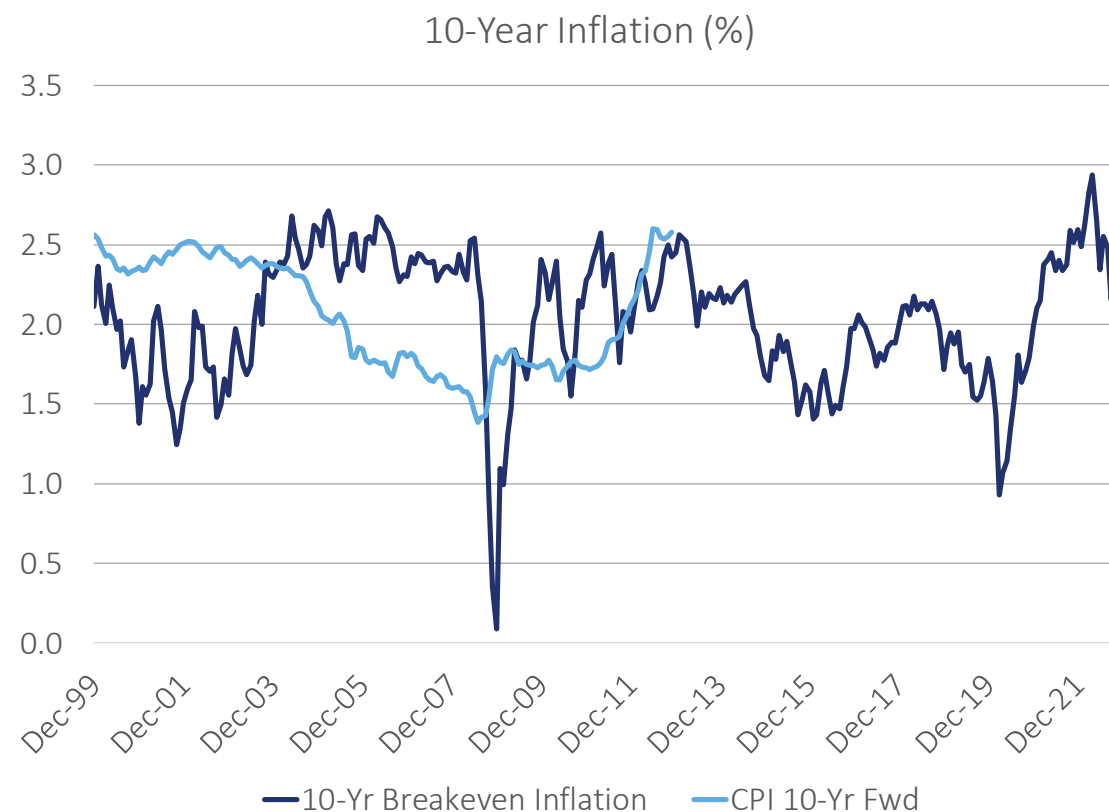
Real Estate assumption is a mix of 75% Core Real Estate, 25% Value-Add and Opportunistic Real Estate

Private Real Assets is 75% Infrastructure, 25% Timber (inclusive of Agriculture).

Inflation Assumption

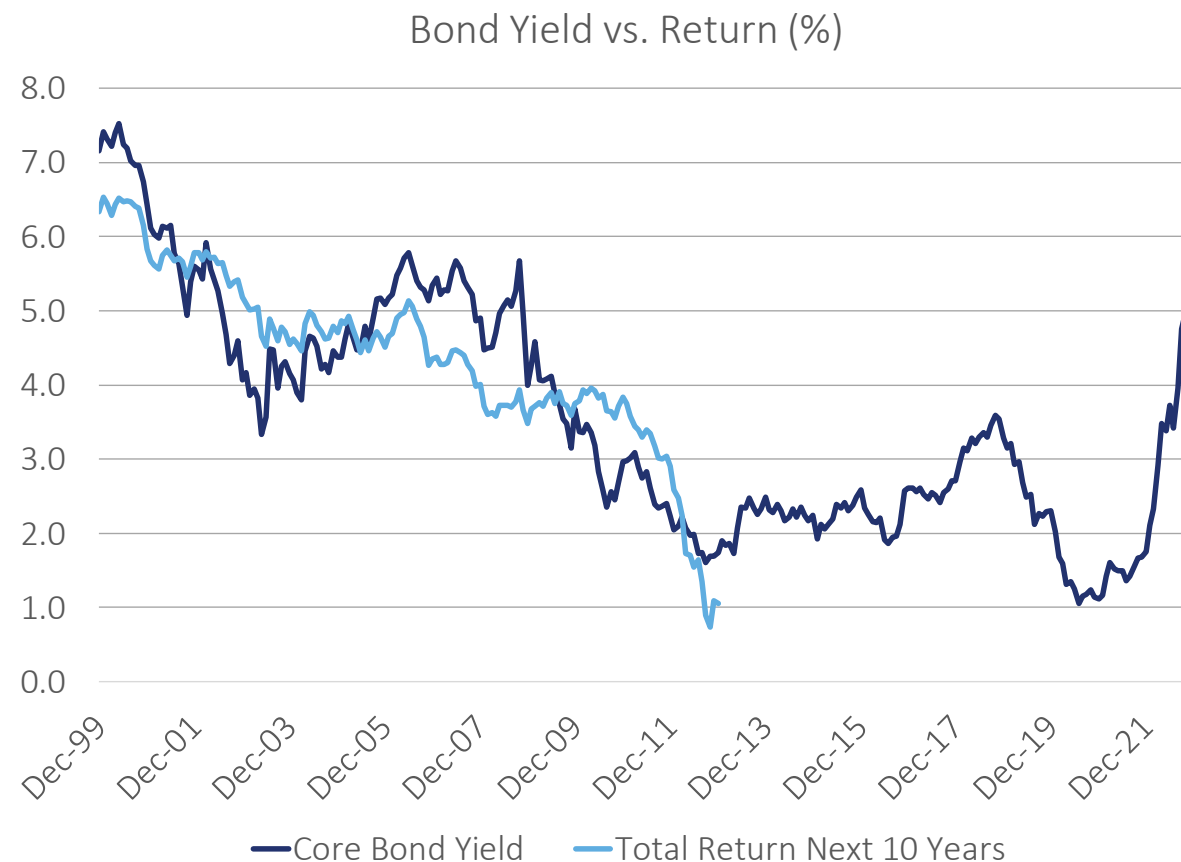
- **Market-based inflation forecast**
 - TIPS are the starting point in forecasting inflation
 - Subtract TIPS yield from nominal Treasury yield with same maturity
 - Difference is “breakeven inflation rate”
- **Increased volatility in breakeven will sometimes cause Wilshire to temporarily move away from accepting a single point-in-time inflation forecast**
 - December 2008 – breakeven inflation went to zero during the depths of the global financial crisis
 - March 2020 – breakeven inflation fell below 1% while the coronavirus pandemic caused global shutdowns
- **Current assumption of 2.25% is 5 basis points below breakeven**

Data Source: Bloomberg



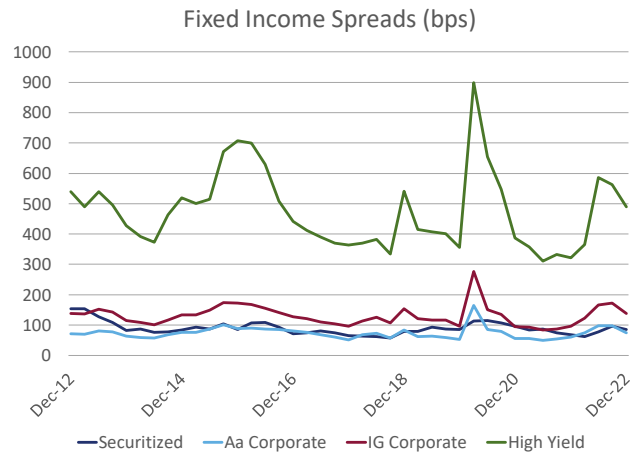
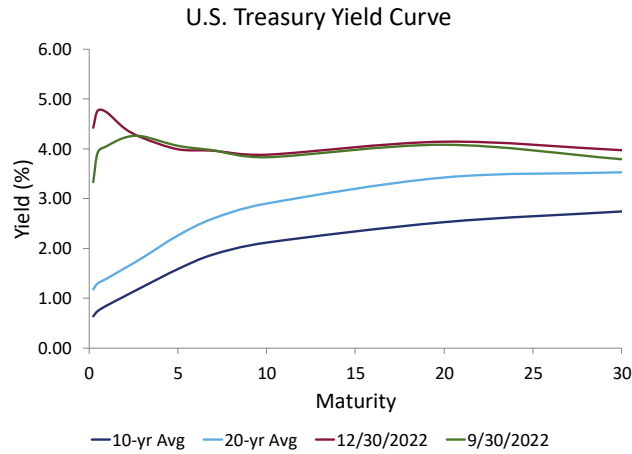
Fixed Income Model Framework

- Forecasting fixed income involves two major components
 - Current Treasury yields and current credit spread levels
 - Expectations for changes in both of those inputs during the next 10 years
- Wilshire’s fixed income return assumptions build off key inputs
 - Inflation assumption
 - Current observed yields/spreads, historical relevant relationships and forward yield curve
 - Forecasts for the pace and timing of yield and spread changes
- Current observed maturity and credit risk premiums are normalized to forecasted levels during our forecast period to calculate fixed income return assumptions



Data Source: Bloomberg

Fixed Income Update



Data Source: Bloomberg

Inflation & Fixed Income		Sep 2022	Change	Dec 2022
Inflation	10-Year Treasury Yield	3.83	0.05	3.88
	10-Year Real Yield	1.68	(0.10)	1.58
	Breakeven Inflation	2.15	0.15	2.30
	Inflation Forecast	2.25	0.00	2.25
Cash	91-Day T-Bill Yield	3.33	1.09	4.42
	T-Bill Yield in 10 Yrs	3.65	0.20	3.85
	Cash Forecast	3.65	0.35	4.00
Treasury	U.S. Treasury Idx Yield	4.13	0.05	4.18
	Treasury Idx Yield in 10 Yrs	4.30	0.15	4.45
	Treasury Idx Forecast	4.20	0.10	4.30
	U.S. LT Treasury Idx Yield	4.00	0.08	4.08
	LT Treasury Idx Yield in 10 Yrs	3.88	0.27	4.15
	LT Treasury Idx Forecast	4.05	0.00	4.05
Spread	U.S. Corporate Idx OAS	1.72	(0.34)	1.38
	Corporate Idx OAS in 10 Yrs	1.55	(0.01)	1.54
	Corporate Idx Forecast	5.65	(0.20)	5.45
	U.S. Core Bond Forecast	4.90	0.00	4.90
	U.S. LT Core Bond Forecast	5.10	(0.20)	4.90
	U.S. High Yield Idx OAS	5.62	(0.73)	4.89
High Yield Idx OAS in 10 Yrs	5.46	(0.06)	5.40	
High Yield Bond Forecast	6.85	(0.30)	6.55	

High Yield Bonds & Emerging Market Debt

- Wilshire utilizes a high yield bond model to forecast returns, which accounts for credit yield spreads, defaults, recoveries & appreciation/depreciation of principal
- High Yield inputs/assumptions
 - Initial yield spread of 4.89%, widening to historical average of 5.40%
 - Initial default rate of 4.75% for each of the next two years; equal to 4.25% during the remaining forecast period
 - A 45% recovery rate
- Emerging Market Debt inputs/assumptions
 - Current yield spread of 3.39%, which is also the historical average
 - Spreads are measured versus a U.S. Treasury curve
 - Historical default rates are typically lower than High Yield bonds but with a similar recovery rate; current default rate assumption is 2.00% per year

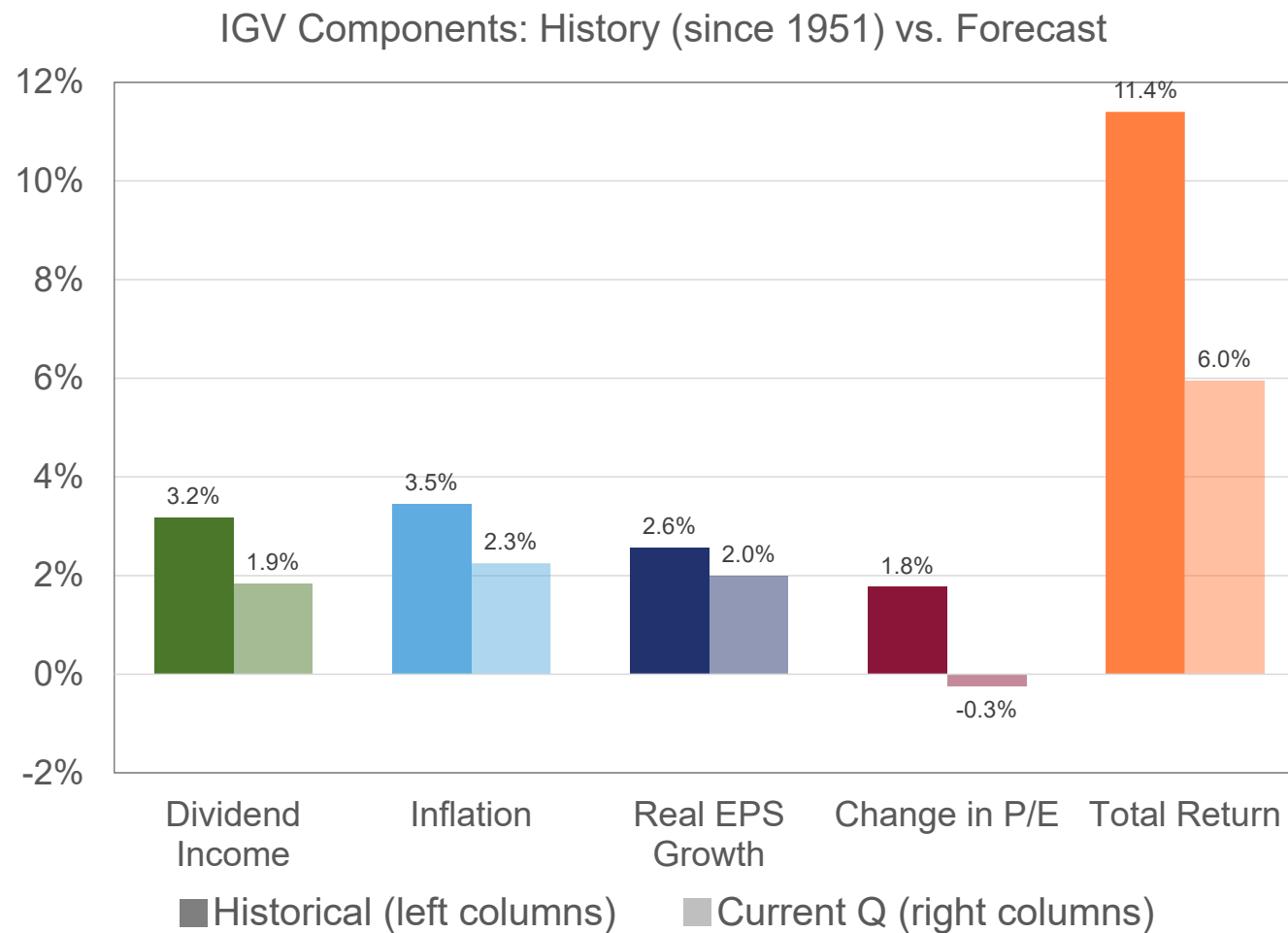
U.S. Stocks

Utilize 3 return forecasting models that we evaluate and blend on a qualitative basis

- **IGV: Income, Growth, Valuation component model**
 - Formally introduced during the global financial crisis (2009)
 - Stands as an important signal that does not rely on sometimes volatile earnings estimates
- **DDM: Dividend Discount Model**
 - Legacy/Single model used until 2009
 - Less sensitivity to market moves/valuations
 - Elegant and well-understood framework, but highly dependent on key inputs
- **CAPE: Cyclically-Adjusted Price/Earnings (a.k.a. Shiller P/E)**
 - Introduced more recently (2019); uses approach formulated by Professor Robert Shiller
 - Can serve as a “tie-breaker” for USE forecast and premium/discount signal for Non-USE forecasts

IGV Model

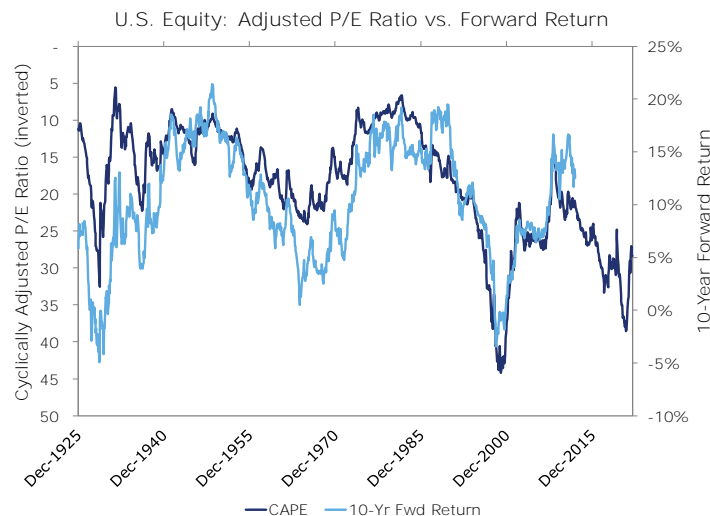
- Simple (few heroic assumptions) and intuitive
- Clearly separates the drivers of return, focusing questions on return levels
 - If the assumption is “wrong,” where is it off, which return driver
 - And then by how much is it off



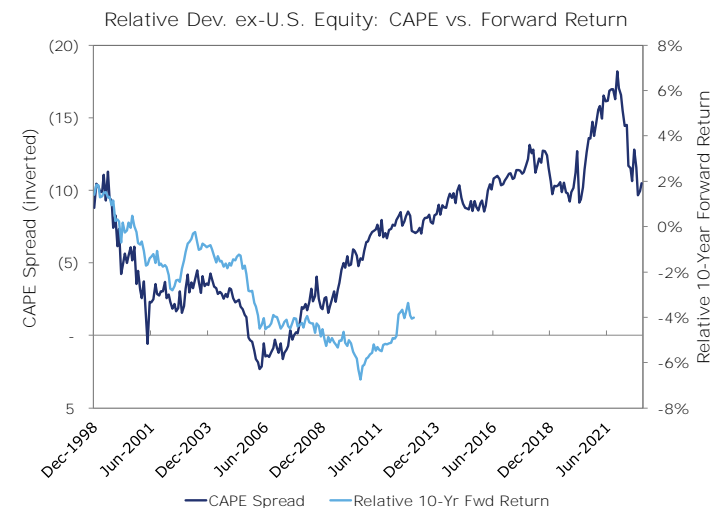
Data Source: Bloomberg

Equity Markets Update

Equity: Public & Private		Sep 2022	Change	Dec 2022
Equity	DDM	7.25	(0.40)	6.85
	IGV	6.50	(0.55)	5.95
	CAPE	6.70	0.25	6.95
	U.S. Equity Forecast	6.75	(0.25)	6.50
Dev-ex-US Equity Forecast		7.50	(0.25)	7.25
EM Equity Forecast		7.75	(0.25)	7.50
Private	Cost of Debt (Public)	5.65	0.00	5.65
	Cost of Debt (Private)	7.60	0.35	7.95
Private Market Basket Forecast		10.25	(0.35)	9.90



Data Source: Bloomberg



Private Equity

- Employ more than one forecasting approach to buyouts given the difficulty in accurately observing performance within private equity
 - Complex signal that identifies all the components driving private equity, such as beta and financial leverage
 - Direct signal that builds off the public market assumption, while adjusting for any relative pricing differences between public and private markets
- Final assumption is compared to a public markets-plus corridor as a reasonableness check – currently equal to the U.S. equity assumption + 2% (low end) and then + 6%
- Forecast both buyouts (U.S. & Non-U.S.) and venture capital and then combine them to arrive at a “typical,” diversified private equity portfolio assumption

<u>Market Segment</u>	<u>Assumption</u>
U.S. Equity	6.50%
USE + 2%	8.50%
U.S. Buyouts	8.50%
USE + 6%	12.50%
Non-U.S. Buyouts	9.20%
Global Venture Capital	9.70%
Private Equity	9.90%

Private Credit

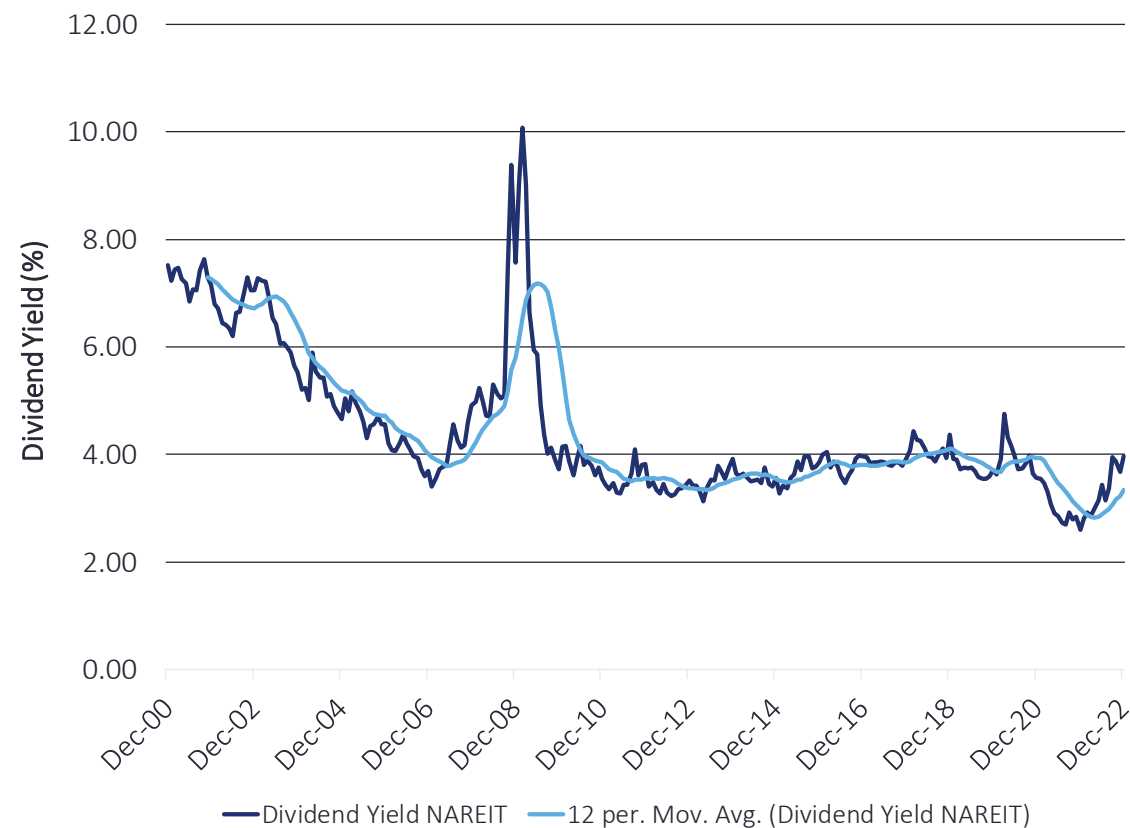
- Direct Lending is a similar asset class to Bank Loans, model accordingly starting with the public security
 - Apply leverage of 50% to Bank Loans assumption
 - Include return premium of 1%, as these borrows have fewer options and so lenders can demand higher coupon rates
- Mezzanine (or Opportunistic) Debt is like a convertible bond sensitive to equity and fixed income betas; proxy assumption based on 25%/75% weighting of U.S. buyouts and direct lending
- Distressed Debt represents issues that are in default; proxy assumption based on 50%/50% weighting of U.S. buyouts and high yield bonds



Market Segment	Basket Weight	Assumption
Direct Lending	50%	8.50%
Mezz./Opportunistic	30%	8.50%
Distressed Debt	20%	8.25%
Private Credit		8.85%

Real Estate

- REIT assumption based on dividend yield + dividend growth
 - Yields have recently recovered from a substantial drop, equaling 3.97% in September
 - Expected growth equals 75% of Wilshire’s 2.25% inflation forecast (1.70%)
- Private real estate takes a similar approach except to include the private market capitalization rate, rather than a market yield



Data Source: Bloomberg

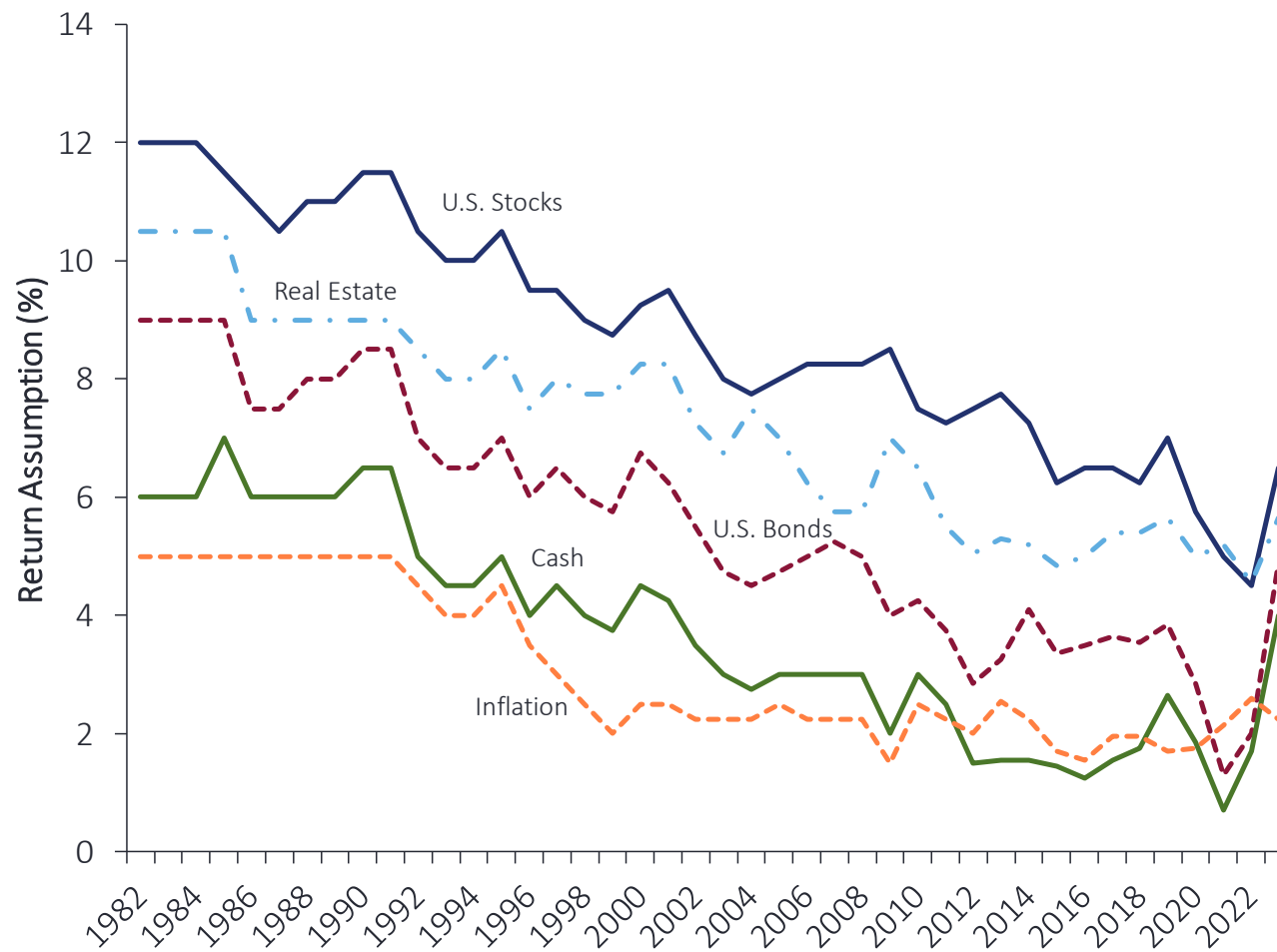
Additional Real Assets

- **Infrastructure – public and private**
 - Forecast for Global Listed Infrastructure begins with the current yield on the market and assumes an expected dividend growth rate equal to 75% of long-run inflation
 - Private Infrastructure mirrors our private real estate model with two modifications
 - Yields reflective of the infrastructure market
 - Leverage typical of private infrastructure funds
- **Forecasting a return for a basket of commodity futures focuses on three components of total return**
 - Changes in spot prices – represented by our inflation assumption
 - Collateral yield – equal to our forecast on cash
 - Contract roll yield – Currently zero as its history contains mixed results, both positive and negative



Data Source: Bloomberg

Wilshire Forecasts through Time



Concluding Observations

- The initial step in the asset allocation process is to approve the critical inputs including asset class returns, risk and correlations
- Wilshire employs a robust methodology that incorporates multiple models for forecasting returns, risk and correlations
 - Wilshire’s forecasts have generally shown accuracy over the “long-term” – defined as a span of the next ten years
 - However, the models are adaptable: volatile or transformative market environments can result in forecasting adjustments over shorter time horizons
- Versus the last asset allocation study in 2019
 - A higher inflation regime and more restrictive monetary policy has lifted return expectations for most fixed income oriented assets as the expected real return (return in excess of inflation) on cash is now positive
 - More moderate equity valuations have improved expected returns for most risk assets
- Wilshire believes that the 2022 estimates are well-reasoned and serve as a prudent foundation for the asset allocation study

Appendix

4Q2022 Correlation Matrix

	EQUITY						FIXED INCOME / CREDIT						REAL ASSETS								
	Dev			Global			LT						Dev ex-			Real Estate			Cmdty	Real Assets	US CPI
	US Stock	ex-US Stock	Emg Stock	ex-US Stock	Global Stock	Private Equity	Cash	Core Bond	Core Bond	TIPS	High Yield	Private Credit	US Bond (Hdg)	US RES	Global RES	Private RE					
Compound Retrun (%)	6.50	7.25	7.50	7.60	7.05	9.90	4.00	4.90	4.90	3.95	6.55	8.85	3.05	5.65	5.80	6.20	6.25	6.65	2.25		
Arithmetic Return (%)	7.80	8.70	10.45	9.25	8.35	13.45	4.00	5.00	5.35	4.10	7.00	9.60	3.15	7.05	7.05	7.10	7.40	7.35	2.25		
Risk (%)	17.00	18.00	26.00	19.10	17.10	29.00	0.75	4.70	9.80	6.00	10.00	12.75	4.00	17.50	16.45	14.00	16.00	12.35	1.75		
Cash Yield (%)	1.75	3.25	2.80	3.10	2.25	0.00	4.00	5.10	5.25	4.40	9.65	5.10	3.75	3.95	3.95	2.25	4.00	3.15	0.00		
Growth Factor Exposure	8.00	8.00	8.00	8.00	8.00	14.00	0.00	-0.95	-2.40	-3.00	4.00	5.10	-1.00	6.00	6.00	3.50	0.00	2.70	0.00		
Inflation Factor Exposure	-3.00	0.00	5.00	1.45	-1.30	-3.75	0.00	-2.50	-6.80	2.50	-1.00	-1.50	-3.00	1.00	1.80	1.00	12.00	5.25	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	0.84	0.95	0.89	1.00																	
Global Stock	0.95	0.91	0.84	0.94	1.00																
Private Equity	0.72	0.63	0.61	0.67	0.73	1.00															
Cash Equivalents	-0.05	-0.09	-0.05	-0.08	-0.06	0.00	1.00														
Core Bond	0.28	0.13	0.00	0.08	0.20	0.30	0.18	1.00													
LT Core Bond	0.31	0.15	0.01	0.11	0.24	0.31	0.11	0.94	1.00												
TIPS	-0.05	0.00	0.15	0.06	-0.01	-0.03	0.20	0.60	0.48	1.00											
High Yield Bond	0.54	0.39	0.49	0.46	0.53	0.31	-0.10	0.24	0.32	0.05	1.00										
Private Credit	0.68	0.55	0.58	0.60	0.68	0.44	0.00	0.24	0.30	0.00	0.76	1.00									
Dev ex-US Bond (Hdg)	0.16	0.25	-0.01	0.16	0.17	0.26	0.10	0.68	0.66	0.39	0.26	0.22	1.00								
US RE Securities	0.58	0.47	0.44	0.49	0.57	0.49	-0.05	0.17	0.22	0.10	0.56	0.62	0.05	1.00							
Global RE Securities	0.64	0.57	0.54	0.60	0.65	0.55	-0.05	0.17	0.21	0.11	0.61	0.68	0.04	0.96	1.00						
Private Real Estate	0.55	0.45	0.45	0.49	0.54	0.50	-0.05	0.19	0.25	0.09	0.58	0.63	0.05	0.79	0.78	1.00					
Commodities	0.25	0.34	0.39	0.38	0.32	0.28	0.00	-0.03	-0.03	0.25	0.29	0.29	-0.10	0.25	0.28	0.25	1.00				
Real Assets	0.62	0.63	0.65	0.69	0.67	0.57	-0.03	0.22	0.24	0.30	0.64	0.69	0.04	0.78	0.84	0.76	0.64	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	0.00	-0.08	0.05	0.04	0.05	0.44	0.22	1.00		

Important Information

Wilshire is a global financial services firm providing diverse services to various types of investors and intermediaries. Wilshire's products, services, investment approach and advice may differ between clients and all of Wilshire's products and services may not be available to all clients. For more information regarding Wilshire's services, please see Wilshire's ADV Part 2 available at www.wilshire.com/ADV.

Wilshire believes that the information obtained from third party sources contained herein is reliable, but has not undertaken to verify such information. Wilshire gives no representations or warranties as to the accuracy of such information, and accepts no responsibility or liability (including for indirect, consequential or incidental damages) for any error, omission or inaccuracy in such information and for results obtained from its use.

This material may include estimates, projections, assumptions and other "forward-looking statements." Forward-looking statements represent Wilshire's current beliefs and opinions in respect of potential future events. These statements are not guarantees of future performance and undue reliance should not be placed on them. Such forward-looking statements necessarily involve known and unknown risks and uncertainties, which may cause actual events, performance and financial results to differ materially from any projections. Forward-looking statements speak only as of the date on which they are made and are subject to change without notice. Wilshire undertakes no obligation to update or revise any forward-looking statements.

Wilshire Advisors, LLC (Wilshire) is an investment advisor registered with the SEC. Wilshire® is a registered service mark.

Copyright © 2023 Wilshire. All rights reserved.

Memo

To: Retirement Board
From: Chris Collins
cc: Richard Stensrud, Karen Roggenkamp
Date: February 3, 2023
Re: **Federal Legislative Report**

OVERVIEW

Finishing business before adjournment

Before the end of the 117th Congress, lawmakers worked to pass a bipartisan \$1.7 trillion spending bill that funds the government through September 30, 2023. This bill passed in the Senate on December 22nd, the House the next day, and was signed into law by President Biden on December 29th.

The package included bipartisan retirement savings legislation: the SECURE 2.0 Act of 2022. SECURE 2.0 retirement savings law makes numerous changes to existing retirement account rules. That includes (but is not limited to), 401(k), 403(b), IRA, and Roth accounts, and some related tax breaks.

Under the prior law, individuals must take required minimum distributions (RMDs) from retirement plans beginning at age 72. SECURE 2.0 increases the required minimum distribution age to 73 beginning January 1, 2023. In ten years, the RMD age will move to 75. Supporters of the legislation say that the changes in the SECURE 2.0 Act are designed to encourage more workers to save for retirement. Although others have expressed concern that some provisions in SECURE 2.0 primarily benefit high-income earners.

Another notable provision of the spending bill is a measure designed to protect elections. Included was the bi-partisan Electoral Count Reform Act confirming that the vice president has only a ceremonial role in counting the electoral college votes. This part of the law also increases the threshold to challenge results to prevent one member of Congress from impeding the transition between presidential administrations.

118^h Congress organizes slowly

Representative Kevin McCarthy (R-CA) won election early Saturday, January 7th as House speaker in a historic five-day, 15-ballot floor fight, after giving major concessions to right-wing holdouts and weathering a dramatic late-night setback that underscored the limits of his power over the new Republican majority. McCarthy prevailed by cutting deals that won over a sizable contingent of ultraconservative lawmakers and then wearing down the remaining holdouts in a tense session that dragged on past midnight, ultimately winning with a bare majority, after a series of arm-twisting and rancor on the House floor.

The speakership struggle suggests that basic tasks such as passing government funding bills or financing the federal debt will prompt epic struggles over the next two years.

House Republicans, as expected, have come out firing at all things Biden. They contend that the first family is guilty of “influence peddling,” shady, even potentially criminal, business dealings and a “cover-up” regarding classified documents. Led by House Oversight and Accountability Chairman James R. Comer (R-KY) who is ramping up efforts to investigate the first family, even attempting to link the Bidens to the Chinese government.

Meanwhile, the Senate is taking its time getting to work for 2023. The chamber is still waiting for leaders to strike a deal on an organizing resolution, which will establish committee ratios and rules for the new Congress.

However, the Senate Judiciary Committee has been active with its holdover membership from the last Congress, since committees like the Senate itself are continuing bodies. Senators on the panel held a hearing last week on antitrust issues in the ticketing business, as well as another on a number of President Joe Biden’s judicial nominations.

Once that committee has full membership, and Sen. Lindsey Graham (R-SC), formally becomes the ranking member, it could move quickly to prepare holdover nominees for floor consideration now that Schumer leads a majority in the chamber, rather than a group that relies on Vice President Kamala Harris to break any 50-50 ties.

Debt ceiling

The nation’s debt ceiling has been reached, which essentially means the Federal government can no longer borrow money that may be needed for it to operate. Using so-called “extraordinary measures,” the Treasury Department can probably pay the government’s obligations through early June, but when all cash is exhausted, it could trigger a default that could thrust the economy into a recession.

One of the immediate effects of such a default would be felt by the financial markets, both nationally as well as globally. Accordingly, in a recent letter to Speaker Kevin McCarthy (R-CA), the treasurers and comptrollers from Maryland, Oregon, Nevada, Massachusetts, Vermont, New York City, Illinois, Rhode Island, Delaware, Maine, Colorado, Washington and Connecticut warned if the U.S. government is forced to default on its debt, this would have “severe consequences” for the states and municipalities they serve, as well as on the U.S. economy and “the day-to-day lives of the American people.”

The letter also warned that if the debt ceiling was breached, the value of portfolios invested across asset classes would decrease significantly. “This would include damage to Americans’ pension funds, 401(k)s and other retirement and educational savings vehicles,” they said in the letter. Indeed, as they point out, in 2011, “brinkmanship over the debt limit led to a 17 percent decline in the S&P 500 index.” The letter goes on to argue that “there is no reason to expect that your current brinkmanship would lead to a different result for businesses and thus for Americans’ portfolios that are invested in those businesses.”

President Biden and Speaker McCarthy met face-to-face at the White House on February 1st, coming together for a discussion as debt ceiling talks heat up on Capitol Hill. Afterwards Speaker McCarthy said they had a “good conversation” but made “no agreements, no promises” in regard to the debt limit.

Democrats have been strongly opposed to linking an increase in the debt ceiling to anything, let alone drastic changes/cuts to Social Security and Medicare. For example, the White House

stresses President Biden will not make concessions during any debt ceiling negotiations, and that Congress must deal with the debt limit without conditions.

House Republicans are mulling an attempt to buy time for further negotiations on federal spending and deficits by passing one or more short-term suspensions of the statutory debt ceiling this summer, including potentially lining up the deadline with the end of the fiscal year September 30th.

No decisions on a cutoff date have been made, and it's not yet clear when exactly the Treasury Department will run out of cash to meet all U.S. financial obligations. But most analysts agree Congress will need to act at some point between early June and September, and lawmakers likely won't want to leave the matter unaddressed before the August recess.

RETIREMENT SECURITY

Late last year, the Republican Study Committee, a group of more than 160 conservative House members, called for significant revisions to Social Security and Medicare.

For Medicare, their proposal would gradually have raised Medicare eligibility to age 67 by linking it to that for Social Security benefits; permit more private-sector health plans, and phase-in an increase in means testing.

For Social Security, the proposal would gradually have increased the age of eligibility to age 70 by 2040 and changed the way benefits are calculated which could reduce their rate of growth so that by 2060, total benefits would be about 25 percent less compared with the current program, adjusted for inflation and the number of recipients, with the bottom fifth of earners getting about 12 percent less than under the current Social Security benefit structure, and the top fifth receiving approximately 44 percent less.

Democrats would generally prefer to increase benefits and raise the cap on payroll taxes that are used to fund Social Security. In 2023, wages up to \$160,200 are subject to a 6.2 percent tax for employees and employers. For example, Senators Bernie Sanders (I-VT) and Elizabeth Warren (D-MA) have proposed reapplying payroll taxes for those earning over \$250,000, and a separate bill to reform the program drafted by Congressman John Larson (D-CT) called "Social Security 2100" would reapply payroll taxes starting at \$400,000.

The Republican Study Committee 2022 proposal also raised the possibility that lawmakers could change the approach to payroll taxes, permitting them to support private-sector retirement options, similar to Social Security privatization proposed by former President George W. Bush after the 2004 election.

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

On January 9th, Reps. Garrett Graves (R-LA) and Abigail Spanberger (D-VA) reintroduced the Social Security Fairness Act of 2023 (H.R. 82). This bill would repeal the Government Pension Offset (GPO) and the Windfall Elimination Provision (WEP), which are parts of Social Security law that unfairly reduce or sometimes eliminate Social Security benefits for millions of public employees.

The bill, which received a supermajority of cosponsors in the 117th Congress, already has 123 cosponsors. Despite consistent bipartisan support, the legislation has proved difficult to pass due to the price tag.

The Republican Steering Committee has chosen Representative Jason Smith (R- MO) to chair the House Ways and Means Committee. Ways and Means has been the committee of jurisdiction for legislation related to the WEP and GPO. Rep Smith is replacing former Rep Kevin Brady (R-TX), a

major champion of WEP reform, who retired from Congress at the end of the last term. In his statement released following his selection, Rep Smith outlined his policy agenda for the committee, which included utilizing the tax code to increase jobs, grow wages, and build financial and health care security for families, reasserting Congress's oversight responsibility by investigating politically motivated leaks of taxpayer information by the Internal Revenue Service and rolling back efforts by the Biden Administration to use the agency to target the middle class, and unleashing American energy production that rebuilds America's energy independence while lowering costs for consumers.

HEALTH CARE

Prescription drug pricing

The pharmaceutical industry and Pharmacy Benefit Managers (PBMs) continue to disagree about the reasons for high prescription drug costs. Pharmaceutical Research and Manufacturers of America (PhRMA) released a report that found health insurers and PBMs are negotiating rebates and discounts that do not translate into lowering drug prices for patients. According to the pharmaceutical industry, Democrats and Republicans should work together on PBM reforms in the upcoming Congress. Last month, Pharmaceutical Care Management Association (PCMA), the national association representing America's PBMs, released its policy recommendations on how to lower drug costs. Its proposal calls on Congress to cut drug costs by allowing for more negotiation by PBMs and faster biosimilar adoption.

COVID public health emergency to end in May

The Biden administration's plan to end the public health emergency tied to the COVID-19 pandemic will spur a whirlwind of changes related to telehealth, Medicaid, pharmaceuticals and other priorities. While many Republicans have said the May 11th end date announced Monday is not soon enough. Democrats have said the time is needed to weigh which flexibilities and funding may need to continue. For the millions of people enrolled in Medicare cost-sharing requirements for COVID-19 treatments will resume when the public health emergency ends. Enrollees will also likely have to pay full cost for at-home tests. Ending the public health emergency also likely means price increases among COVID-19 vaccines and treatments. Both Moderna and Pfizer plan to increase prices from the government rate of around \$25 to \$30 per dose to as much as \$130.

Health record security

Recently, Senator Mark Warner (D-VA), Senate Cybersecurity Caucus co-founder, shared he is aiming to introduce health care cybersecurity legislation during the first quarter of 2023 which may set minimum standards for health care organizations to protect patient data. He noted the need for strong leadership by the Department of Health and Human Services (HHS) and potential for enforcement through Medicare or Medicaid payments. Warner is exploring partnerships with other Committee leaders, including Senate HELP and Homeland Security and Governmental Affairs, to advance the effort. Late last year, Warner produced a congressional report that found poor cybersecurity in the health care sector threatens patients' lives. The report comes at a time of widespread data breaches affecting health care organizations, which affected nearly 50 million people in 2021.

Marketplace enrollment update

CMS reports that about 15.9 million people have signed up for 2023 individual market health insurance coverage through the Marketplaces since the start of the 2023 Marketplace Open Enrollment Period (OEP) on November 1. This snapshot shows activity through January 7, 2023, for the 33 Marketplaces using HealthCare.gov and through December 31, 2022, for the 18 State-based Marketplaces (SMBs) in 17 states and the District of Columbia that are using their own enrollment platforms. The total plan selections include 3.1 million people who are new to the Marketplace and 12.8 million people who had active coverage in 2022, which represents a 13% increase from this time last year.

FEDERAL LEGISLATION BOARD REPORT
118th United States Congress
(Prepared by Chris Collins as of February 3, 2023)

H.R.82

SPONSOR: Rep. Graves, Garret (R-LA)

LAST ACTIONS: House - 01/09/2023 Referred to the House Committee on Ways and Means

CAPTION: Social Security Fairness Act of 2023

COMMENT: Repeals the GPO and WEP. 123 co-sponsors; three Ohioans

STATE LEGISLATION BOARD REPORT
(Prepared by Chris Collins as of February 3, 2023)

135th General Assembly

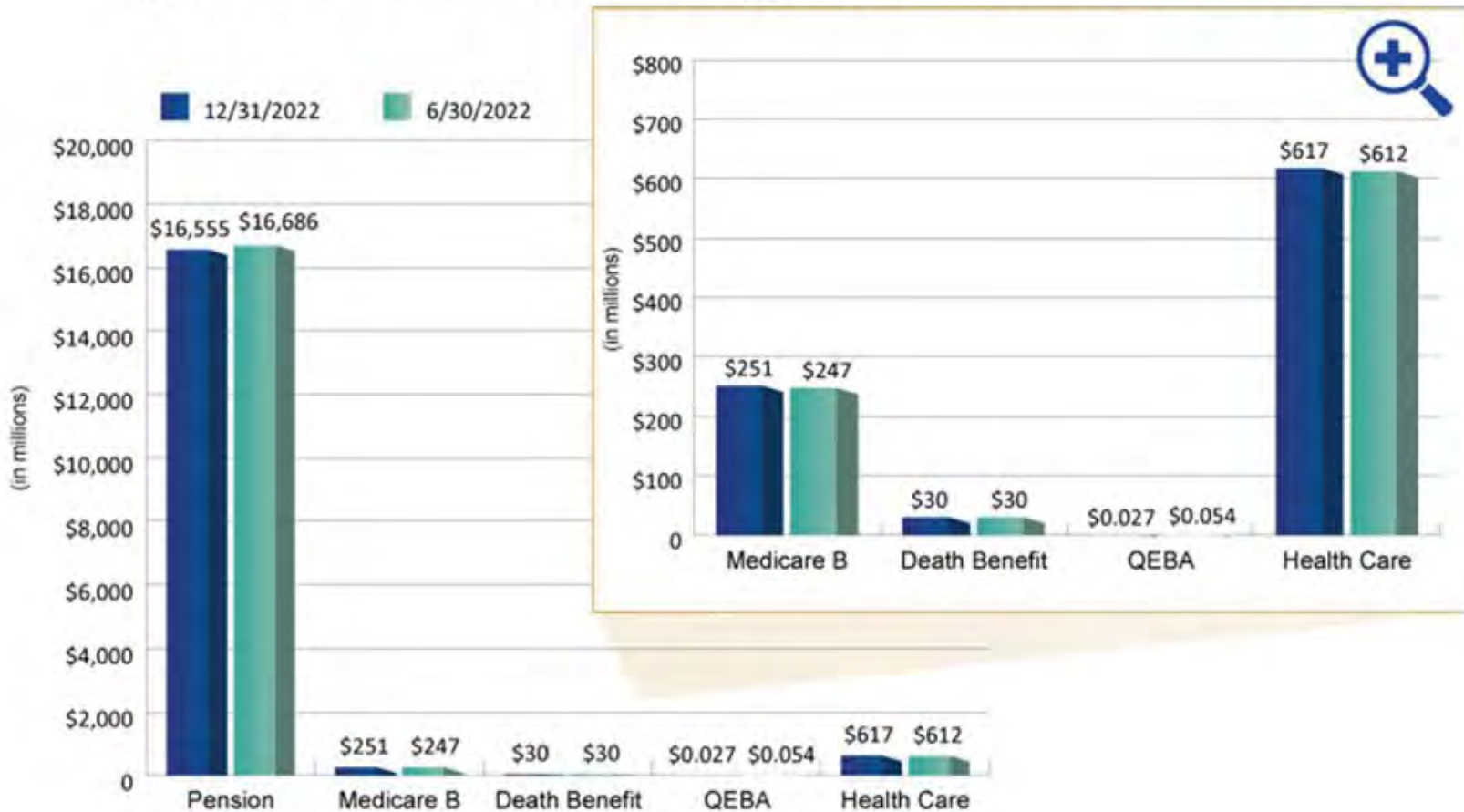
SB6 ESG POLICIES-STATE ENTITIES (Schuring, K) - Regarding environmental, social, and corporate governance policies with respect to the state retirement systems, Bureau of Workers' Compensation, and state institutions of higher education.

Current Status: 01/17/2023 Referred to Finance Committee

Finance Headline News



- Net Position for all funds totaled \$17.45 billion at 12/31/2022. (as compared to \$19.01 billion at 12/31/2021)
- Through the first six months of FY23, Net Position has decreased by \$121.6 million due to negative cash flows and market volatility.



Finance Headline News (Cont.)



- Budget Administration
 - FY24 budget preparation is underway
 - 2nd Quarter FY23 reviews have been completed noting the following:
 - SERS administrative expenses are expected to finish FY23 under budget
 - Personnel benefits for medical and Rx are under budget after a high claimant rolled off the self-insured program
 - Some variances are due to the timing of when professional services were delivered as to compared to when the activities were budgeted
 - Departments will continue to track their budgets through the rest of FY23 as planned

Finance Headline News (Cont.)



- The following detailed reports are attached for further analysis:
 - Administrative expense reports
 - System Year-to-Date Budget Analysis as of 12/31/22
 - Administrative expense summary for December 2022 and January 2023
 - Administrative expense detail for December 2022 and January 2023
 - Parameters report for December 2022 and January 2023
 - Financial highlights
 - As of November 2022
 - As of December 2022

**School Employees Retirement System of Ohio
System Year-to-Date Budget Analysis
Year to Date through December 31st**

		FY23					
		FY22 Actual	Actual	Budget	Actual to Budget %	Budget to Actual Under/(Over)	Notes
PERSONNEL SERVICES		13,091,096	12,803,189	13,442,354	95.2%	639,165	
	Salaries & Wages	9,388,247	10,061,600	9,999,449	100.6%	(62,151)	
	PERS Retirement Contributions	1,235,760	1,308,955	1,316,857	99.4%	7,902	
	Benefits	2,467,089	1,432,634	2,126,048	67.4%	693,414	Note 1
PROFESSIONAL SERVICES		3,161,662	2,899,701	3,523,757	82.3%	624,056	
	Actuarial Advisors	154,236	142,509	294,254	48.4%	151,745	Note 2
	Audit Services	112,761	126,763	185,000	68.5%	58,237	
	Banking Fees	667,610	601,756	634,236	94.9%	32,480	
	Investment Related	1,261,818	1,319,367	1,362,737	96.8%	43,370	
	Medical	22,500	22,500	22,500	100.0%	-	
	Technical	942,737	686,806	1,025,030	67.0%	338,224	Note 3
COMMUNICATIONS EXPENSE		437,921	555,469	605,311	91.8%	49,842	
	Postage	269,684	344,926	375,811	91.8%	30,885	
	Telecommunications Services	127,912	145,510	157,340	92.5%	11,830	
	Member/Employer Education	174	5,624	7,860	71.5%	2,236	
	Printing & Publication	40,151	59,409	64,300	92.4%	4,891	
OTHER OPERATING EXPENSE		1,957,282	2,116,225	2,295,114	92.2%	178,889	
	Computer Support Services	1,171,444	1,161,699	1,202,757	96.6%	41,058	
	Office Equipment & Supplies	88,644	96,548	100,302	96.3%	3,754	
	Training	37,789	59,569	113,493	52.5%	53,924	
	Transportation & Travel	36,442	77,881	105,402	73.9%	27,521	
	Memberships Subscriptions	70,771	71,334	115,568	61.7%	44,234	
	Property & Mgmt. Liability Insurance	443,027	519,591	518,000	100.3%	(1,591)	
	Maintenance	31,121	33,841	42,895	78.9%	9,054	
	Staff Support	56,112	67,837	67,369	100.7%	(468)	
	School District Reimbursement	2,730	3,732	6,270	59.5%	2,538	
	Mandatory Costs- ORSC	19,202	24,193	23,058	104.9%	(1,135)	
TOTAL DEPARTMENT EXPENSES		18,647,961	18,374,584	19,866,536	92.5%	1,491,952	
ADMINISTRATIVE CAPITAL		25,948	-	-	0.0%	-	
	Computer Hardware > \$5,000	25,948	-	-	0.0%	-	
TOTAL SERS ADMINISTRATIVE EXPENSES		18,673,909	18,374,584	19,866,536	92.5%	1,491,952	
NET BUILDING OCCUPANCY EXPENSE		290,798	335,919	1,031,709	32.6%	695,790	Note 4
TOTAL ADMINISTRATIVE EXPENSES		18,964,707	18,710,503	20,898,245	89.5%	2,187,742	

Note 1: Benefits - FY 23 budget was based on actuarial recommendations after FY22 included high claimants along with rising inflation. One high claimant is no longer covered under the program, resulting in lower claims through 12/31/2022.

Note 2: Actuarial - FY23 budget includes an actuarial modeler tool, which has not been purchased. In addition the actuarial audit was invoiced in January 2023 while budgeted for earlier.

Note 3: Technical - FY23 actuals are trending lower than budgeted due to contract modifications as well as timing of invoices for services rendered.

Note 4: Net Building Occupancy - FY23 budget includes tenant improvements and new tenant renovations, which have not occurred.

School Employees Retirement System of Ohio

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

Actuals
Dec-2022

Account	Amount
Salaries & Wages	1,642,475.34
Salaries & Wages- Length of Service	159,903.47
Salaries & Wages- Overtime	10,100.70
Vacation Leave Expense	168,427.38
Sick Leave Expense	53,326.69
Employer Contributions- PERS	274,025.37
Group Life	9,420.36
Long Term Disability	3,318.28
Short Term Disability	3,812.58
Group Health Claims	124,418.14
Group Health- Admin Fees	7,516.08
Prescription Claims	4,706.27
Group Health- Stop Loss Admin	15,827.76
Group Health- Stop Loss Claims	(11,884.03)
Vision Claims	1,817.07
Vision Admin Fees	122.40
Group Health- Employee Cost	(47,011.30)
Group Health- Wellness Incentive	3,750.00
Group Health- Tobacco Premiums	(1,120.00)
Medicare Premium- Employer	28,725.55
Deferred Compensation Match	7,080.00
Actuarial Services	(3,448.00)
Audit	(11,107.50)

Account	Amount
Custodial Fees	82,588.17
Custodial Banking	30,777.86
Master Recordkeeper Fees	49,884.94
Investment Advisory Fees	43,869.86
Performance/ Analytics Fee	99,512.91
Class Action Fees	2,814.41
Medical Consultant	3,750.00
Special Counsel	(19,906.00)
Technical	110,673.75
Other Professional Services	1,377.67
Postage	123,831.64
Telecommunications Services	11,186.52
Member/Employer Education	150.77
Printing Paper	4,655.00
Communications & Publications	23,317.28
Software Maintenance	70,000.00
Software Subscriptions	31,993.77
Hardware < \$5,000	1,449.94
Equipment Repairs & Maintenance	4,234.55
Office Supplies & Expenses	735.14
Records Storage	485.00
Seminars & Conferences	(4,320.33)
In House Training	1,918.86
Tuition	2,457.00
Travel & Transportation	9,210.64
Subscriptions	283.96

Account	Amount
Memberships	2,703.00
Operations Maintenance	2,000.40
Interior Landscaping	1,356.37
Vehicle Expense	112.00
Staff Support	8,347.61
Recruiting Expense	1,139.72
Board Member- School Board Reimb.	1,017.72
Reimbursement of Leased Svcs.	(25,416.67)
Total Administrative Expenses	3,122,396.07

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

<u>Expense Account</u>	<u>Vendor</u>	<u>Amount</u>
53100 - Salaries & Wages	ADP, LLC	1,642,475.34
		Subtotal 1,642,475.34
53106 - Salaries & Wages - Length of Service	ADP, LLC	159,903.47
		Subtotal 159,903.47
53110 - Salaries & Wages - Overtime	ADP, LLC	10,100.70
		Subtotal 10,100.70
53111 - Vacation Leave Expense	ADP, LLC	168,427.38
		Subtotal 168,427.38
53112 - Sick Leave Expense	ADP, LLC	53,326.69
		Subtotal 53,326.69
53200 - Employer Contributions - PERS	ADP, LLC	274,025.37
		Subtotal 274,025.37
53300 - Group Life	American United Life Insurance Company	9,420.36
		Subtotal 9,420.36
53310 - Long Term Disability	American United Life Insurance Company	3,318.28
		Subtotal 3,318.28
53315 - Short Term Disability	American United Life Insurance Company	3,812.58
		Subtotal 3,812.58
53320 - Group Health Claims	Aetna Daily Wires - ESERS Aetna Daily Wires - ESERS	11,884.03 112,534.11
		Subtotal 124,418.14
53321 - Group Health - Admin Fees	Aetna Admin - ESERS	7,516.08
		Subtotal 7,516.08
53322 - Prescription Claims	Express Scripts Rebate Express Scripts - ESERS SaveonSP, LLC	(73,487.18) 76,278.19 1,915.26
		Subtotal 4,706.27
53324 - Group Health - Stop Loss Admin	Aetna Admin - ESERS	15,827.76
		Subtotal 15,827.76
53325 - Group Health - Stop Loss Claims	Aetna Admin - ESERS stop loss credit	(11,884.03)
		Subtotal (11,884.03)
53326 - Vision Claims	VSP - (OH)	1,817.07
		Subtotal 1,817.07
53327 - Vision Admin Fees	VSP - (OH)	122.40
		Subtotal 122.40
53330 - Group Health - Employee Cost	Employee Premiums	(47,011.30)
		Subtotal (47,011.30)
53331 - Group Health - Wellness Incentive	ADP, LLC	3,750.00
		Subtotal 3,750.00
53332 - Group Health - Tobacco Premiums	ADP, LLC	(1,120.00)
		Subtotal (1,120.00)
53340 - Medicare Premium - Employer	ADP, LLC	28,725.55
		Subtotal 28,725.55
53380 - Deferred Compensation Match	ADP, LLC	7,080.00
		Subtotal 7,080.00
54100 - Actuarial Services	Cavanaugh MacDonald Consulting, LLC- Accrual reversal Cavanaugh MacDonald Consulting, LLC	(18,000.00) 14,552.00
		Subtotal (3,448.00)
54200 - Audit	RSM - Accrual reversal Treasurer of State of Ohio	(12,000.00) 892.50
		Subtotal (11,107.50)
54310 - Custodial Fees	BNY Mellon Asset Servicing	82,588.17
		Subtotal 82,588.17
54320 - Custodial Banking	Bank Fee write off Treasurer of State - Warrants	(0.05) 238.42

	Huntington National Bank		30,539.49
		Subtotal	30,777.86
54410 - Master Recordkeeper Fees	BNY Mellon Asset Servicing		49,884.94
		Subtotal	49,884.94
54420 - Investment Advisory Fees	Wilshire/Aksia		43,869.86
		Subtotal	43,869.86
54430 - Performance/Analytics Fee	BNY Mellon Asset Servicing		35,651.66
	Barra LLC		59,611.25
	Frank Russell Company		250.00
	MSCI ESG Research LLC		1,000.00
	Wilshire Advisors, LLC		3,000.00
		Subtotal	99,512.91
54445 - Class Action Fees	BNY Mellon Asset Servicing		2,814.41
		Subtotal	2,814.41
54520 - Medical Consultant	Borchers, M.D., Glen G.		3,750.00
		Subtotal	3,750.00
54610 - Special Counsel	Accrual reversals		(66,953.50)
	Ice Miller LLP		4,440.00
	Seyfarth Shaw LLP		38,850.00
	Calfee Halter & Griswold LLP		3,757.50
		Subtotal	(19,906.00)
54620 - Technical	Accrual reversals		(19,777.75)
	Sagitec Solutions, LLC		88,242.00
	LexisNexis Risk Data Management, Inc		1,573.80
	Velosio		2,140.00
	ForeFront Web		116.00
	Vaco, LLC		8,780.20
	Merative US L.P.		29,500.00
	MosterInsights		99.50
		Subtotal	110,673.75
54630 - Other Professional Services	Accrual reversals		(3,062.31)
	Wickert, Kimberly		432.00
	Vorys Advisors LLC		3,333.33
	Contoural, Inc.		554.00
	JAM Software		120.65
		Subtotal	1,377.67
55100 - Postage	Pitney Bowes Inc.		3,613.33
	United States Postal Service		100,000.00
	Postmaster		20,000.00
	Unishippers Association		179.76
	FedEx		38.55
		Subtotal	123,831.64
55200 - Telecommunications Services	Verizon Wireless		417.02
	XO Communications		1,792.34
	Nextel Communications		55.76
	AT&T		40.10
	LUMEN		2,928.76
	Spectrum		2,005.38
	Spectrum AWS		2,571.16
	Everstream		1,376.00
		Subtotal	11,186.52
55300 - Member/Employer Education	Vaughan, Cameron		126.17
	Richards, Michelle		24.60
		Subtotal	150.77
55400 - Printing Paper	Sterling Paper Company		4,655.00
		Subtotal	4,655.00
55420 - Communications & Publications	Tension Envelope Corporation		11,020.43
	Proforma Graphic Services		5,032.41
	Bindery and Specialties, Inc.		7,264.44
		Subtotal	23,317.28
56030 - Software Maintenance	Sagitec Solutions, LLC		70,000.00
		Subtotal	70,000.00
56035 - Software Subscriptions	Shi International Corp.		12,235.00
	Network Solutions		73.17
	Jet Brains		357.00
	ADP, LLC		4,782.28
	Liquid Web Inc		321.59
	Zoom		556.81
	Wellable LLC		465.40
	Expedient		12,957.00
	Amazon Web Services		245.52
		Subtotal	31,993.77
56040 - Hardware < \$5,000	Amazon.com		527.04
	CDW-Government, Inc.		244.48
	B & H Photo Video		678.42
		Subtotal	1,449.94
56110 - Equipment Repairs & Maintenance	Ricoh USA, Inc		840.53

	Canon Financial Services, Inc	2,191.27
	US Bank Equipment Finance	1,202.75
	Subtotal	4,234.55
56130 - Office Supplies & Expenses	Employers Resource Association	70.07
	Staples Business Advantage	665.07
	Subtotal	735.14
56160 - Records Storage	Vital Records Holdings, LLC	485.00
	Subtotal	485.00
56210 - Seminars & Conferences	Fifth Third Bank- conference credit	(4,950.00)
	Event Brite	109.34
	Masri, Judi	194.00
	Professional Education Services, LP	326.33
	Subtotal	(4,320.33)
56220 - In House Training	OPERS	1,918.86
	Subtotal	1,918.86
53370 - Tuition	Metsker, McKenna	2,457.00
	Subtotal	2,457.00
56310 - Travel & Transportation	Hotel deposit refund	(578.24)
	Holman, Carlisa	30.00
	Kroger	12.77
	Rossler, James	1,157.54
	Haller, James	181.50
	Phillips, Barbra	292.47
	Giant Eagle	38.77
	Sisson, Phil	223.40
	Bell, Joe	756.24
	Le, Hai Yen	1,242.68
	Masri, Judi	1,242.68
	Moss, Catherine	343.66
	Wilson, Daniel L.	430.26
	King, Matt	292.22
	Patel, Jay	516.00
	Steiner, Mike	646.51
	Weglarz, Frank	526.09
	Collins, Chris	531.49
	HoneyBaked Ham	225.17
	Lavash Cafe	415.00
	Davis, Jeff	475.23
	Scurlock, William	209.20
	Subtotal	9,210.64
56410 - Subscriptions	Wall Street Journal	116.97
	Constant Contact	125.00
	Shutterstock, Inc.	29.00
	Toledo Blade	12.99
	Subtotal	283.96
56420 - Memberships	Ohio G.F.O.A.	70.00
	Government Finance Officers Association	1,205.00
	Society for Human Resource Management	229.00
	Public Relations Society of America	267.00
	Masri, Judi	183.50
	Robinson, Maria	183.50
	Pension Real Estate Association	330.00
	Information Systems Audit and Control Association	235.00
	Subtotal	2,703.00
56610 - Operations Maintenance	Amtrec, LLC	1,666.00
	South Central Power Company	162.00
	Northeast Ohio Natural Gas Corp.	172.40
	Subtotal	2,000.40
56630 - Interior Landscaping	Ambius Inc. (05)	1,356.37
	Subtotal	1,356.37
56640 - Vehicle Expense	BP Oil Company	112.00
	Subtotal	112.00
56620 - Staff Support	Franklin Services	668.26
	ADP, LLC	5,158.00
	Premier ProduceOne	86.00
	Amazon.com	889.79
	PayFlex Systems USA, Inc.	329.00
	Unisan, LLC	840.28
	Culligan Bottled Water of Columbus	74.93
	BalloonsFast.com	18.75
	Aetna Behavioral Health, LLC	282.60
	Subtotal	8,347.61
56621 - Recruiting Expense	ADP Screening & Selection Services	194.13
	Indeed	945.59
	Subtotal	1,139.72
56710 - Board Member - School Board Reimb.	Ashland City School District	1,017.72
	Subtotal	1,017.72
56900 - Reimbursement of Leased Svcs	Reimbursement of Leased Services	(25,416.67)
	Subtotal	(25,416.67)

Total SERS Administrative Expense

3,122,396.07

School Employees Retirement System of Ohio

Summary of administrative operation expenses during the period **January 1, 2023-January 31, 2023.**

Actuals
Jan-2023

Account	Amount
Salaries & Wages	1,147,715.57
Salaries & Wages- Cash in sick	(0.01)
Salaries & Wages- Cash in Vacation	0.03
Salaries & Wages- Overtime	3,013.18
Vacation Leave Expense	107,158.10
Sick Leave Expense	87,998.95
Employer Contributions- PERS	195,384.89
Group Life	9,379.79
Long Term Disability	3,268.26
Short Term Disability	2,533.10
Group Health Claims	205,791.64
Group Health- Admin Fees	14,674.40
Prescription Claims	95,892.26
Group Health- Stop Loss Admin	34,618.80
Vision Claims	3,372.85
Vision Admin Fees	120.96
Group Health- Employee Cost	(32,482.46)
Group Health- Wellness Incentive	3,665.00
Group Health- Tobacco Premiums	(720.00)
Medicare Premium- Employer	21,947.37
Workers Compensation	3,352.75
Deferred Compensation Match	4,725.00
Actuarial Services	95,250.00

Audit	53,333.50
Custodial Fees	43,921.09
Custodial Banking	16,994.86
Master Recordkeeper Fees	80,000.00
Investment Advisory Fees	43,715.75
Performance/ Analytics Fee	40,651.66
Medical Consultant	3,750.00
Special Counsel	2,992.50
Technical	28,985.47
Other Professional Services	19,110.00
Postage	10,276.47
Telecommunications Services	11,035.44
Member/Employer Education	174.05
Printing Paper	9,918.39
Communications & Publications	19,832.31
Hardware Maintenance	5,372.78
Software Subscriptions	129,907.53
Equipment Repairs & Maintenance	15,295.09
Office Supplies & Expenses	706.04
Furniture & Equipment < \$5,000	1,134.00
Records Storage	485.00
Seminars & Conferences	5,520.00
Tuition	1,290.12
Travel & Transportation	3,988.75
Subscriptions	18,274.50
Memberships	35,656.00
Operations Maintenance	1,777.00
Interior Landscaping	1,366.37

Vehicle Expense	25.00
Staff Support	6,040.63
Recruiting Expense	795.68
Board Member- School Board Reimb.	678.48
Ohio Retirement Study Council	12,096.53
Reimbursement of Leased Svcs.	(25,416.67)
Total Administrative Expenses	2,606,344.75

School Employees Retirement System of Ohio
REVIEW OF ADMINISTRATIVE EXPENSES
Jan-23

Expense Account	Vendor	Amount
53100 - Salaries & Wages	ADP, LLC	1,147,715.57
		Subtotal 1,147,715.57
53102 - Salaries & Wages - Cash in Sick	ADP, LLC	(0.01)
		Subtotal (0.01)
53104 - Salaries & Wages - Cash in Vacation	ADP, LLC	0.03
		Subtotal 0.03
53110 - Salaries & Wages - Overtime	ADP, LLC	3,013.18
		Subtotal 3,013.18
53111 - Vacation Leave Expense	ADP, LLC	107,158.10
		Subtotal 107,158.10
53112 - Sick Leave Expense	ADP, LLC	87,998.95
		Subtotal 87,998.95
53200 - Employer Contributions - PERS	ADP, LLC	195,384.89
		Subtotal 195,384.89
53300 - Group Life	American United Life Insurance Company	9,379.79
		Subtotal 9,379.79
53310 - Long Term Disability	American United Life Insurance Company	3,268.26
		Subtotal 3,268.26
53315 - Short Term Disability	American United Life Insurance Company	2,533.10
		Subtotal 2,533.10
53320 - Group Health Claims	Aetna Daily Wires - ESERS	205,791.64
		Subtotal 205,791.64
53321 - Group Health - Admin Fees	Aetna Admin - ESERS	14,674.40
		Subtotal 14,674.40
53322 - Prescription Claims	Express Scripts - ESERS SaveonSP, LLC	91,076.24 4,816.02
		Subtotal 95,892.26
53324 - Group Health - Stop Loss Admin	Aetna Admin - ESERS	34,618.80
		Subtotal 34,618.80
53326 - Vision Claims	VSP - (OH)	3,372.85
		Subtotal 3,372.85
53327 - Vision Admin Fees	VSP - (OH)	120.96
		Subtotal 120.96
53330 - Group Health - Employee Cost	Employee Premiums	(32,482.46)
		Subtotal (32,482.46)
53331 - Group Health - Wellness Incentive	ADP, LLC	3,665.00
		Subtotal 3,665.00
53332 - Group Health - Tobacco Premiums	ADP, LLC	(720.00)
		Subtotal (720.00)
53340 - Medicare Premium - Employer	ADP, LLC ADP, LLC	21,947.38 (0.01)
		Subtotal 21,947.37
53350 - Workers Compensation	Ohio Bureau Of Workers Compensation	3,352.75
		Subtotal 3,352.75
53380 - Deferred Compensation Match	ADP, LLC	4,725.00
		Subtotal 4,725.00
54100 - Actuarial Services	Cavanaugh MacDonald Consulting, LLC Milliman Consultants	12,000.00 83,250.00
		Subtotal 95,250.00
54200 - Audit	RSM US LLP Treasurer of State of Ohio	51,744.00 1,589.50
		Subtotal 53,333.50
54310 - Custodial Fees	BNY Mellon Asset Servicing	43,921.09
		Subtotal 43,921.09

54320 - Custodial Banking	Huntington National Bank Associated Insurance Agencies Inc	16,343.86 651.00	
			Subtotal 16,994.86
54410 - Master Recordkeeper Fees	BNY Mellon Asset Servicing	80,000.00	
			Subtotal 80,000.00
54420 - Investment Advisory Fees	Wilshire/Aksia	43,715.75	
			Subtotal 43,715.75
54430 - Performance/Analytics Fee	BNY Mellon Asset Servicing Wilshire Advisors, LLC	37,651.66 3,000.00	
			Subtotal 40,651.66
54520 - Medical Consultant	Borchers, M.D., Glen G.	3,750.00	
			Subtotal 3,750.00
54610 - Special Counsel	Ice Miller LLP Porter, Wright, Morris,	2,880.00 112.50	
			Subtotal 2,992.50
54620 - Technical	LexisNexis Risk Data Management, Inc The Soft Edge, Inc Sigital, LLC ComResource ForeFront Web Alight Solutions LLC Vaco, LLC	2,308.02 3,400.00 2,590.00 16,473.75 181.50 400.00 3,632.20	
			Subtotal 28,985.47
54630 - Other Professional Services	Wickert, Kimberly Vorys Advisors LLC Attorney General	378.00 3,333.33 15,398.67	
			Subtotal 19,110.00
55100 - Postage	Notifii LLC Pitney Bowes Inc. Columbus Courier & Freight LLC Unishippers Association FedEx	237.00 9,611.81 122.55 229.51 75.60	
			Subtotal 10,276.47
55200 - Telecommunications Services	Verizon Wireless XO Communications Nextel Communications AT&T LUMEN Spectrum Spectrum AWS Everstream	420.92 1,815.37 55.51 40.10 3,201.66 2,005.47 2,120.41 1,376.00	
			Subtotal 11,035.44
55300 - Member/Employer Education	Vaughan, Cameron Richards, Michelle	114.71 59.34	
			Subtotal 174.05
55400 - Printing Paper	Millcraft Paper Co. Sterling Paper Company	1,460.19 8,458.20	
			Subtotal 9,918.39
55420 - Communications & Publications	Tension Envelope Corporation Amazon.com Baise Quality Printing	6,150.45 107.96 13,573.90	
			Subtotal 19,832.31
56020 - Hardware Maintenance	Vertiv Corporation	5,372.78	
			Subtotal 5,372.78
56035 - Software Subscriptions	FastSpring ADP, LLC Liquid Web Inc CDW-Government, Inc. PDFForge.org DigiCert, Inc Splunk Zoom Wellable LLC Diligent Amazon Web Services	403.11 3,814.35 321.59 67,960.00 1,100.00 1,964.00 31,917.42 556.81 468.00 21,156.73 245.52	
			Subtotal 129,907.53
56110 - Equipment Repairs & Maintenance	Ricoh USA, Inc Digital Print Solutions Amazon.com Canon Financial Services, Inc US Bank Equipment Finance BPS Technologies	2,209.39 3,015.77 57.99 2,191.27 1,777.55 6,043.12	
			Subtotal 15,295.09
56130 - Office Supplies & Expenses	Staples Business Advantage Amazon.com	603.54 102.50	
			Subtotal 706.04

56150 - Furniture & Equipment < \$5,000	Vital Records Holdings, LLC		1,134.00
		Subtotal	1,134.00
56160 - Records Storage	Vital Records Holdings, LLC		485.00
		Subtotal	485.00
56210 - Seminars & Conferences	Ohio State University		225.00
	Learning Tree International		4,095.00
	Hyland Software, Inc.		800.00
	Cisco Webex, LLC		400.00
		Subtotal	5,520.00
53370 - Tuition	Maynard, Chris		1,290.12
		Subtotal	1,290.12
56310 - Travel & Transportation	Kroger		21.76
	Haller, James		74.04
	Phillips, Barbra		154.46
	Giant Eagle		32.17
	Majeed, Farouki		461.58
	Masri, Judi		433.41
	Moss, Catherine		12.46
	Wilson, Daniel L.		317.20
	King, Matt		40.00
	Weglarz, Frank		355.11
	Scurlock, William		1,261.56
	Berwick Party House Inc		825.00
		Subtotal	3,988.75
56410 - Subscriptions	Wall Street Journal		116.97
	Constant Contact		195.00
	Shutterstock, Inc.		29.00
	Wolters Kluwer Law & Business		2,808.54
	BCA Research Inc.		14,913.00
	Bloomberg Business Week		199.00
	Toledo Blade		12.99
		Subtotal	18,274.50
56420 - Memberships	Association of Public Pension Fund Auditors		500.00
	NCREIF		2,500.00
	Institute of Internal Auditors		175.00
	Columbus Area Chapter of APA		50.00
	National Institute on Retirement Security		3,600.00
	ISC2		125.00
	NCTR		5,200.00
	NASRA		4,750.00
	National Association of Public Pension Attorneys		1,750.00
	American Payroll Association		100.00
	Council of Institutional Investors		15,007.50
	Accountancy Board of Ohio		183.50
	Public Retirement Information Systems Management		500.00
	Risk & Insurance Management Society, Inc.		420.00
	CCIM Institute		795.00
		Subtotal	35,656.00
56610 - Operations Maintenance	Amtrec, LLC		1,666.00
	South Central Power Company		111.00
		Subtotal	1,777.00
56630 - Interior Landscaping	Ambius Inc. (05)		1,366.37
		Subtotal	1,366.37
56640 - Vehicle Expense	Katz Tires		25.00
		Subtotal	25.00
56620 - Staff Support	Franklin Services		706.98
	ADP, LLC		3,451.00
	Premier ProduceOne		277.05
	Amazon.com		550.00
	PayFlex Systems USA, Inc.		353.50
	Menards		25.00
	Aetna Behavioral Health, LLC		282.60
	ezCater		394.50
		Subtotal	6,040.63
56621 - Recruiting Expense	ADP Screening & Selection Services		266.08
	Indeed		529.60
		Subtotal	795.68
56710 - Board Member - School Board Reimb.	Ashland City School District		678.48
		Subtotal	678.48
56820 - Ohio Retirement Study Council	Ohio Retirement Study Council		12,096.53
		Subtotal	12,096.53
56900 - Reimbursement of Leased Svcs	Reimbursement of Leased Services		(25,416.67)
		Subtotal	(25,416.67)
	Total SERS Administrative Expense		2,606,344.75

SCHOOL EMPLOYEES RETIREMENT SYSTEM OF OHIO

FINANCIAL HIGHLIGHTS

As of November 30, 2022 and 2021

(unaudited)

SERS (All Funds)	11/30/22 YTD	11/30/21 YTD	Comparative Difference	% Difference
<u>ADDITIONS</u>				
Employer Contributions	\$244,156,897	\$228,636,178	\$15,520,719	7%
Member Contributions	159,245,065	149,261,869	9,983,196	7
Health Care Premiums & Medicare Subsidies	64,014,172	52,648,747	11,365,425	22
Total Investment Income, Net	403,220,100	339,631,256	63,588,844	19
TOTAL ADDITIONS	870,636,234	770,178,050	100,458,184	13
<u>DEDUCTIONS</u>				
Retirement, Disability, Survivor & Death Benefits	567,609,606	552,641,298	14,968,308	3
Health Care Expenses	87,293,694	78,976,339	8,317,355	11
Refunds & Transfers	38,227,561	34,903,768	3,323,793	10
Administrative Expenses (excluding Investments)	12,818,051	12,124,698	693,353	6
TOTAL DEDUCTIONS	705,948,912	678,646,103	27,302,809	4
Changes in Net Position	164,687,322	91,531,947	73,155,375	80
Net Position - Beginning	17,574,319,449	18,440,611,356	(866,291,907)	(5)
SERS Net Position - Ending	\$17,739,006,771	\$18,532,143,303	(\$793,136,532)	(4%)

HEALTH CARE FUND

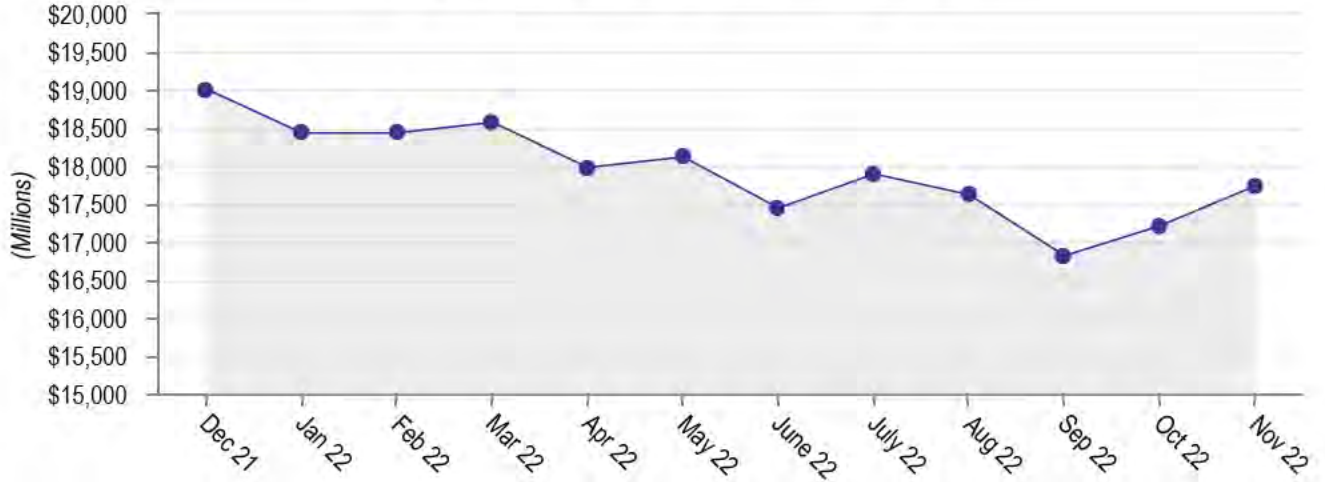
HEALTH CARE ADDITIONS

Employer Contributions	\$21,998,296	\$20,500,000	\$1,498,296	7%
Health Care Premiums	25,267,534	26,439,350	(1,171,816)	(4)
Medicare Subsidies & Other Receipts	38,746,638	26,209,397	12,537,241	48
Total Investment Income, Net	11,105,796	9,358,784	1,747,012	19
TOTAL HEALTH CARE ADDITIONS	97,118,264	82,507,531	14,610,733	18
TOTAL HEALTH CARE DEDUCTIONS	88,355,432	80,266,371	8,089,061	10
Changes in Net Position	8,762,832	2,241,160	6,521,672	291
Net Position - Beginning	611,574,409	600,330,188	11,244,221	2
SERS Net Position - Ending	\$620,337,241	\$602,571,348	\$17,765,893	3%

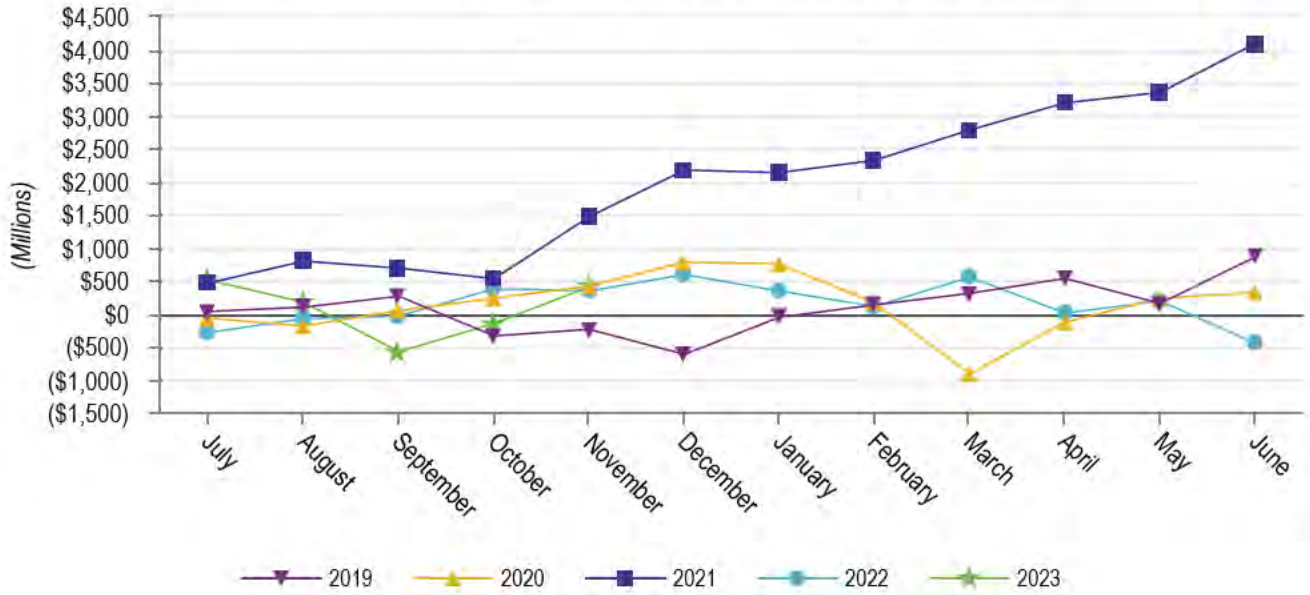
ADMINISTRATIVE EXPENSES

	11/30/22 YTD	Fiscal Year Annual Budget	% of Annual Budget
Personnel	\$10,344,430	\$24,392,195	42%
Professional Services	2,508,913	6,502,883	39
Communications	392,328	1,011,873	39
Other Operating Expenses	1,854,017	3,607,379	51
TOTAL ADMINISTRATIVE EXPENSES	\$15,099,688	\$35,514,330	43%

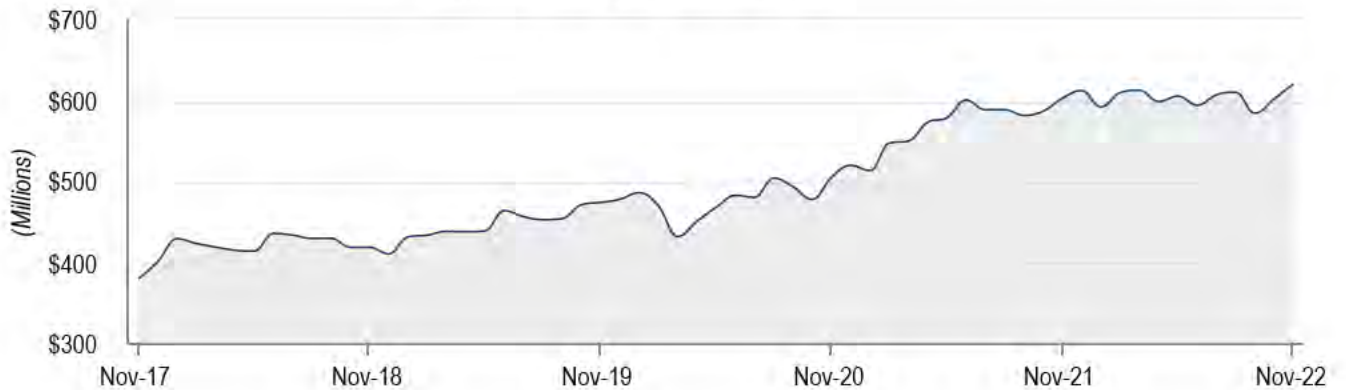
Total SERS Fund Balance for Previous 12 Months



Investment Income (includes realized and unrealized gains & losses)



Health Care Fund Balance Trend



SCHOOL EMPLOYEES RETIREMENT SYSTEM OF OHIO

FINANCIAL HIGHLIGHTS

As of December 31, 2022 and 2021

(unaudited)

SERS (All Funds)	12/31/22 YTD	12/31/21 YTD	Comparative Difference	% Difference
<u>ADDITIONS</u>				
Employer Contributions	\$298,207,035	\$281,240,532	\$16,966,503	6%
Member Contributions	194,625,818	183,914,500	10,711,318	6
Health Care Premiums & Medicare Subsidies	79,183,940	57,562,236	21,621,704	38
Total Investment Income, Net	153,793,809	857,705,858	(703,912,049)	(82)
TOTAL ADDITIONS	725,810,602	1,380,423,126	(654,612,524)	(47)
<u>DEDUCTIONS</u>				
Retirement, Disability, Survivor & Death Benefits	681,379,235	660,841,395	20,537,840	3
Health Care Expenses	103,347,663	92,464,893	10,882,770	12
Refunds & Transfers	47,132,705	41,123,397	6,009,308	15
Administrative Expenses (excluding Investments)	15,533,002	15,078,457	454,545	3
TOTAL DEDUCTIONS	847,392,605	809,508,142	37,884,463	5
Changes in Net Position	(121,582,003)	570,914,984	(692,496,987)	(121)
Net Position - Beginning	17,574,319,449	18,440,611,356	(866,291,907)	(5)
SERS Net Position - Ending	\$17,452,737,446	\$19,011,526,340	(\$1,558,788,894)	(8%)

HEALTH CARE FUND

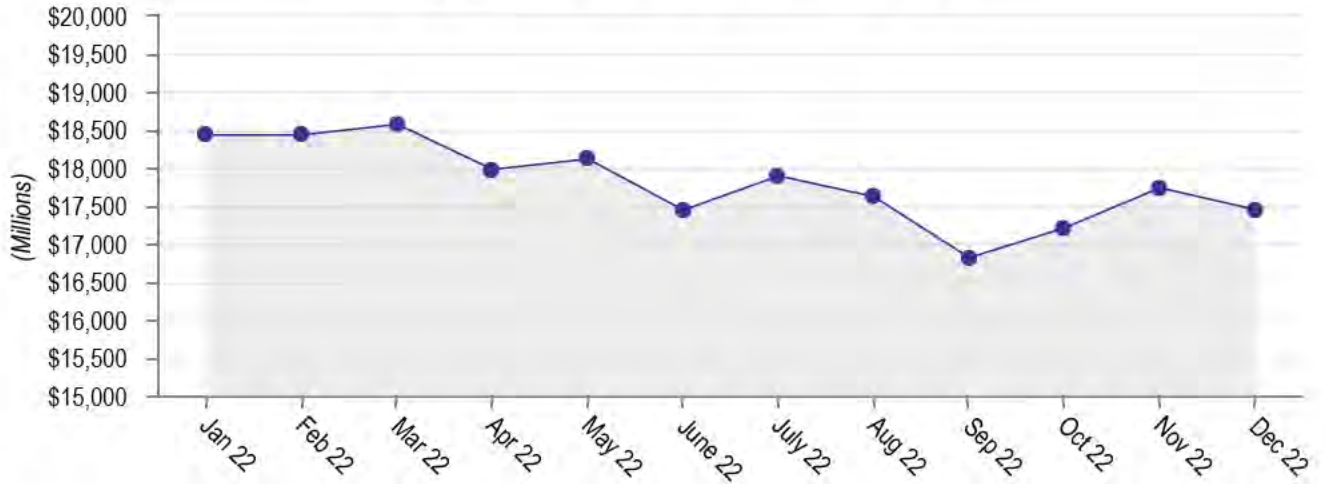
HEALTH CARE ADDITIONS

Employer Contributions	\$26,408,248	\$24,600,000	\$1,808,248	7%
Health Care Premiums	30,696,579	31,599,770	(903,191)	(3)
Medicare Subsidies & Other Receipts	48,487,361	25,962,466	22,524,895	87
Total Investment Income, Net	4,181,917	23,649,302	(19,467,385)	(82)
TOTAL HEALTH CARE ADDITIONS	109,774,105	105,811,538	3,962,567	4
TOTAL HEALTH CARE DEDUCTIONS	104,650,398	94,044,390	10,606,008	11
Changes in Net Position	5,123,707	11,767,148	(6,643,441)	(56)
Net Position - Beginning	611,574,409	600,330,188	11,244,221	2
SERS Net Position - Ending	\$616,698,116	\$612,097,336	\$4,600,780	1%

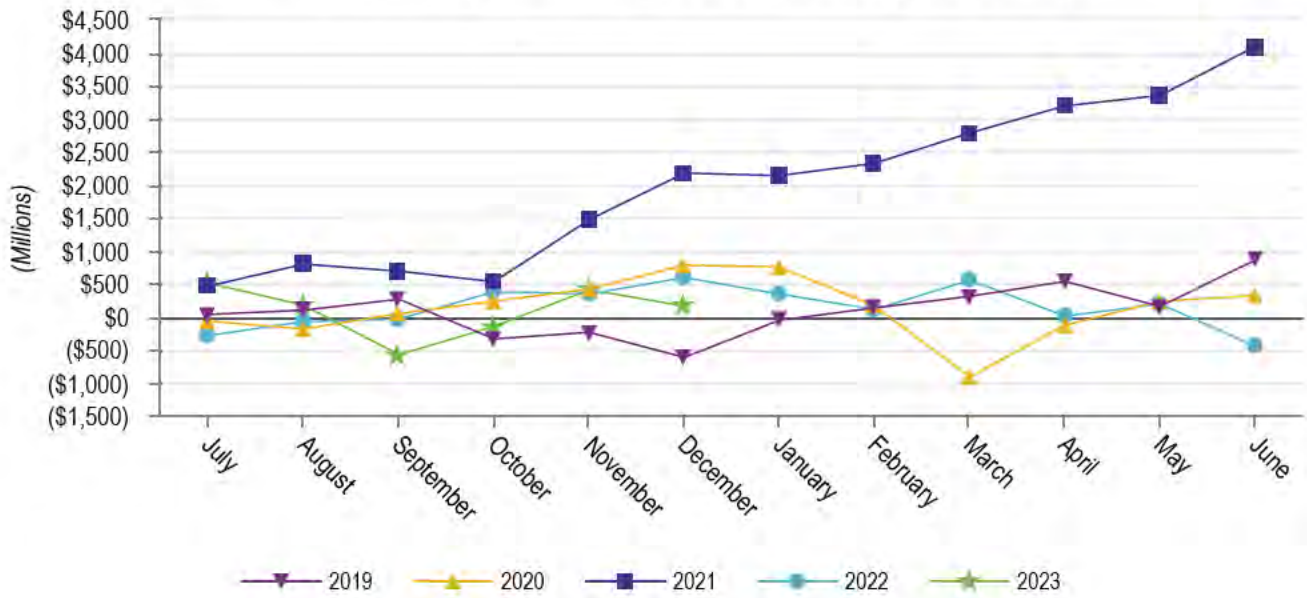
ADMINISTRATIVE EXPENSES

	12/31/22 YTD	Fiscal Year Annual Budget	% of Annual Budget
Personnel	\$12,803,189	\$24,392,195	52%
Professional Services	2,899,701	6,502,883	45
Communications	555,469	1,011,873	55
Other Operating Expenses	1,963,725	3,607,379	54
TOTAL ADMINISTRATIVE EXPENSES	\$18,222,084	\$35,514,330	51%

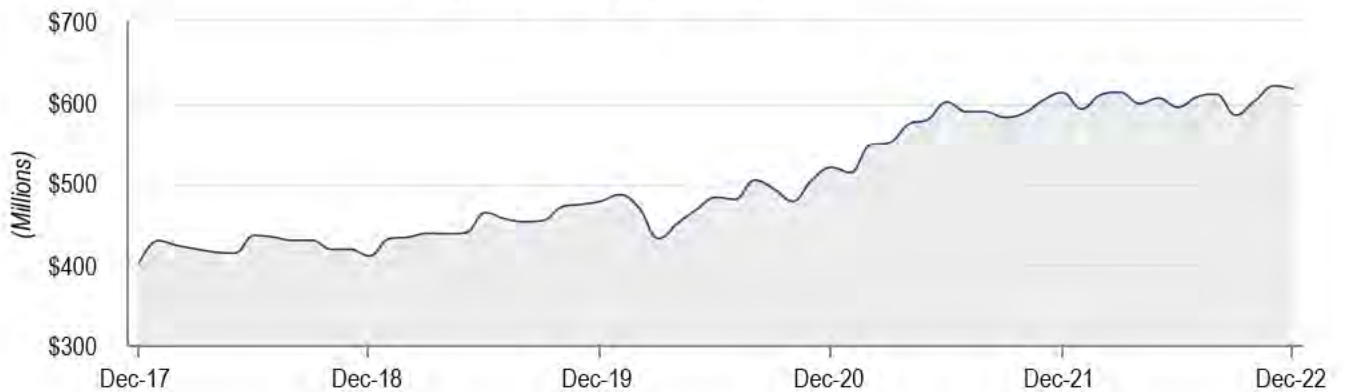
Total SERS Fund Balance for Previous 12 Months



Investment Income (includes realized and unrealized gains & losses)



Health Care Fund Balance Trend



Memo

To: SERS Retirement Board

From: SERS Legal

Date: February 3, 2023

Re: Definition of Compensation

In anticipation of SERS' Contribution Based Benefit Cap (CBBC) legislation being enacted this year, a consideration of the definition of compensation is in order.

At the February Board meeting SERS Legal will review the current definition of compensation as well as its purpose and history.

Attached to this memo are the statutory definition of compensation and the administrative rule supplemental definition of compensation.

Sec. 3309.01 Definitions.

As used in this chapter:

(V)(1) Except as otherwise provided in this division, "compensation" means all salary, wages, and other earnings paid to a contributor by reason of employment. The salary, wages, and other earnings shall be determined prior to determination of the amount required to be contributed to the employees' savings fund under section 3309.47 of the Revised Code and without regard to whether any of the salary, wages, or other earnings are treated as deferred income for federal income tax purposes.

(2) Compensation does not include any of the following:

(a) Payments for accrued but unused sick leave or personal leave, including payments made under a plan established pursuant to section 124.39 of the Revised Code or any other plan established by the employer;

(b) Payments made for accrued but unused vacation leave, including payments made pursuant to section 124.13 of the Revised Code or a plan established by the employer;

(c) Payments made for vacation pay covering concurrent periods for which other salary or compensation is also paid or during which benefits are paid under this chapter;

(d) Amounts paid by the employer to provide life insurance, sickness, accident, endowment, health, medical, hospital, dental, or surgical coverage, or other insurance for the contributor or the contributor's family, or amounts paid by the employer to the contributor in lieu of providing the insurance;

(e) Incidental benefits, including lodging, food, laundry, parking, or services furnished by the employer, use of the employer's property or equipment, and reimbursement for job-related expenses authorized by the employer, including moving and travel expenses and expenses related to professional development;

(f) Payments made to or on behalf of a contributor that are in excess of the annual compensation that may be taken into account by the retirement system under division (a)(17) of section 401 of the "Internal Revenue Code of 1986," 100 Stat. 2085, 26 U.S.C.A. 401(a)(17), as amended. For a contributor who first establishes membership before July 1, 1996, the annual compensation that may be taken into account by the retirement system shall be determined under division (d)(3) of section 13212 of the "Omnibus Budget Reconciliation Act of 1993," Pub. L. No. 103-66, 107 Stat. 472;

(g) Payments made under division (B), (C), or (E) of section 5923.05 of the Revised Code, Section 4 of Substitute Senate Bill No. 3 of the 119th general assembly, Section

3 of Amended Substitute Senate Bill No. 164 of the 124th general assembly, or Amended Substitute House Bill No. 405 of the 124th general assembly;

(h) Anything of value received by the contributor that is based on or attributable to retirement or an agreement to retire, except that payments made on or before January 1, 1989, that are based on or attributable to an agreement to retire shall be included in compensation if both of the following apply:

(i) The payments are made in accordance with contract provisions that were in effect prior to January 1, 1986.

(ii) The employer pays the retirement system an amount specified by the retirement board equal to the additional liability from the payments.

(3) The retirement board shall determine by rule whether any form of earnings not enumerated in this division is to be included in compensation, and its decision shall be final.

3309-1-02 Definition of compensation.

- (A) This rule amplifies and is in addition to the provisions of division (V) of section 3309.01 of the Revised Code.
- (B) Except as otherwise provided by division (V) of section 3309.01 of the Revised Code, the following payments made by an employer are not "compensation."
 - (1) Payments made by the employer for accrued but unused compensatory time for overtime worked;
 - (2) One-time and/or lump-sum payments made by the employer to an employee where such payments are not based upon the employee's standard rate of pay or identified in paragraph (C) of this rule;
 - (3) Retroactive payments or pay increases made or granted by the employer in whole or in part in consideration of retirement or an agreement to retire; and
 - (4) Any terminal payments or other additional remuneration paid by the employer in consideration of retirement or an agreement to retire.
- (C) The following payments made by an employer shall be "compensation":
 - (1) Payments on behalf of the contributor to an eligible retirement plan as defined in section 402(c)(8) of the Internal Revenue Code of 1986, 26 U.S.C. 402(c)(8).
 - (2) Back wages awarded pursuant to a final order or final settlement award that reinstates the contributor to the contributor's former position, or comparable position, without interruption or loss of time.
 - (3) Effective January 1, 2009, differential wage payments as defined in section 3401(h)(2) of the Internal Revenue Code, 26 U.S.C. 3401(h)(2).
 - (4) Payments based on an employee's length of service.
 - (5) A one-time or lump sum payment by the employer that is paid in lieu of a salary or wage increase, to all persons in a class of employees, in the same dollar amount or same percentage of salary or wages, and in accordance with a written contractual agreement.
 - (6) A one-time or lump sum payment made by the employer for additional services rendered.
- (D)

- (1) Prior to remitting contributions on salary, wages or other earnings where there is a question on whether such payments or earnings are "compensation," the employer shall request in writing a determination by the retirement board.
- (2) The retirement board shall give the employer written notice of its determination.
- (3) If the employer fails to request a prior determination and the retirement board determines that the salary, wages or other earnings are not "compensation," then any contributions received on such salary, wages and other earnings shall be deemed unauthorized and shall be refunded.
- (4) If the employer fails to request a prior determination and the retirement board determines that the salary, wages, or other earnings are "compensation," then the retirement board may certify for collection pursuant to sections 3309.47 and 3309.51 of the Revised Code the amount of contributions not remitted.



SERS Definition of Compensation Discussion

February 16, 2023

Retirement Board Meeting

Why Now?



- Review alignment between definition of compensation and trends in school compensation practices
-
- Review definition of compensation in light of the proposed Contribution Based Benefit Cap legislation

Compensation: Why does it matter?



- Contributions are main source of funds that SERS invests
- Final Average Salary (FAS): The sum of the three highest years of compensation divided by three
- Compensation is used to calculate pensions
 - $(\text{Years of service credit}) \times 2.2\% \text{ of FAS} = \text{pension}$

Compensation and Spiking



- Spiking defined:
An increase in defined benefit pension benefits as a result of a FAS that is substantially larger than what would be expected from normal salary increases.
- Spiking is not necessarily the result of an intentional plan to game the system to obtain an enhanced pension.

Anti-Spiking Tools Include:

- Number of years used to calculate FAS
(SERS uses 3 years)
- Limit types of remuneration included in compensation
(SERS' definition of compensation limits types of earnings other than salary and wages)
- Limit percent of compensation growth in FAS years
(SERS does not do this)
- Contribution Based Benefit Cap
(SERS is seeking legislation for this)

Contribution Based Benefit Cap



CBBC will set a limit as to how much greater a member's formula benefit can be from an annuity based on the member's contributions.

How CBBC Will Operate:

- A member's capped benefit will be calculated by multiplying an annuity based on the member's contributions by the formula factor approved by the Retirement Board.
- A member's pension will be the lower of the formula benefit or the capped benefit.

Compensation - Definition



R.C. 3309.01(V) Sets forth Statutory definition of compensation

- 1) Except as otherwise provided in this division, “compensation” means all salary, wages, and other earnings paid to a contributor by reason of employment. ***
- 2) Compensation does not include any of the following: ***
- 3) The retirement board shall determine by rule whether any form of earnings not enumerated in this division is to be included in compensation, ***”

Compensation- Definition



Admin Rule 3309-1-02 (C) lists the six types of earnings - other than salary and wages and payments based on the employee's standard rate of pay - that are compensation:

- 1) Payments on behalf of contributor to an eligible retirement plan
- 2) Back wages awarded pursuant to a final court order or final settlement award
- 3) Differential wage payments
- 4) Payments based on an employee's length of service
- 5) A one-time or lump sum payment by the employer that is paid in lieu of a salary or wage increase, to all persons in a class of employees, in the same dollar amount or same percentage of salary or wages, and in accordance with a written contract
- 6) A one-time or lump sum payment made by the employer for additional services rendered.

EXECUTIVE SESSION

_____ moved and _____ 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.

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

Upon roll call, the vote was as follows:

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

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

Only If Needed

EXECUTIVE SESSION

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

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

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

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

CALENDAR DATES FOR SERS BOARD MEETINGS FOR 2023 **

AUDIT COMMITTEE MEETINGS

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

COMPENSATION COMMITTEE MEETINGS

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

TECHNOLOGY COMMITTEE MEETINGS

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

BOARD MEETINGS

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

****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.

Memo

To: Retirement Board
From: Richard Stensrud
CC: Karen Roggenkamp, Michelle Miller
Date: February 13, 2023
Re: Compensation Update

At the February meeting the Board will be asked to consider and provide guidance on two compensation-related matters. As described below, both matters are addressed annually in the normal course of business and are important for maintaining the compensation structure and objectives established in the compensation study last year. Pursuant to the compensation study engagement with CBIZ, they will be presenting recommendations on the matters for the Board's consideration.

As you will recall, pursuant to the Compensation Policy, each year the salary structure (i.e., all of the salary ranges for all employees) is reviewed and adjusted as necessary based on the changes to the labor market salary data for the markets against which SERS' positions are benchmarked (public sector or private sector depending on the position). This is important because it is the mechanism by which SERS' salary ranges are kept aligned with the salaries for comparable positions, and in so doing, it helps assure that the salary ranges allow SERS to attract and retain the quality of employees that will enable SERS to continue to be successful at our mission. The annual salary range adjustment is the same for and applied to all positions. Any change to the salary range for individual positions is typically done as part of a compensation study.

Please note that changes to salary ranges does not mean that all employees receive a salary increase in the amount of the change. In most cases, it is simply the salary range that is changed, not the salary. In some cases, however, an employee's salary may fall below the new salary range minimum, and in such a case the salary is raised to the new salary range minimum. Typically, this is a small salary adjustment.

As noted above, the recommended salary structure adjustment will be presented by Joe Rice of CBIZ. You will recall that in December he provided the Board with information about what this information looked like as of the end of calendar year 2022. At this meeting he will present the official recommendation which will incorporate market information up to the present.

The second compensation matter that will be addressed is the merit increase for FY 23-24. The Board annually makes a decision regarding the merit at this time since the proposed merit compensation must be built into the budget for FY 23-24. Development of the budget is underway, and pursuant to policy and practice, a preliminary budget is presented to the ORSC in April, the draft budget is presented for Board discussion in May, and the proposed final budget is presented for Board approval in June.

As a reminder, merit increases are determined based on an employee's performance relative to established performance goals. Strong performance results in a higher merit increase than performance that is not as strong. The merit level approved by the Board is used to establish an overall merit budget and the actual merit increase will be within a range based on the approved level and overall merit budget.

Annual merit increases are the primary source of salary growth for most SERS employees. Salary growth can also come via a promotion, be based on expanded job duties, or for an equity adjustment to keep the employee appropriately placed in her/his salary range. As noted above, in some cases it can come because the employee is below the minimum of her/his salary range. SERS employees do not receive automatic step increases or cost of living adjustments.

Maintaining an appropriate level of individual salary growth is essential to enabling SERS to be able to attract and retain high quality employees. It is also important that salary levels continue to remain aligned with the salary ranges to avoid having to make substantial salary increases in subsequent compensation studies.

To that end, Joe Rice of CBIZ will be recommending an overall level of salary growth (i.e., merit plus the other situations described above) for the Board to consider for the FY 23-24 budget. He will also discuss alternatives the Board may want to consider and factors the Board should keep in mind in considering the alternatives.

CBIZ Compensation Consulting

School Employees Retirement System of Ohio | February 16, 2023

Annual Compensation Guidance



Your Team.

Local. Trusted. Nationwide.

Agenda

Compensation Study Recap

Labor market trends

- National
- Ohio and Columbus

Custom 2023 guidance

- Structure adjustment
- Salary increase budget

Compensation History

New compensation plan approved in February 2022

- Modified previous structure
 - Increased minimum pay for the starting 7 grades (and brought down the maximums)
- Annual 3.2% merit increase budget
- Adjustments to grade minimums
- Pay compression (in range adjustments)
- Overall: 4.8% pay adjustments
- Implemented July 2022

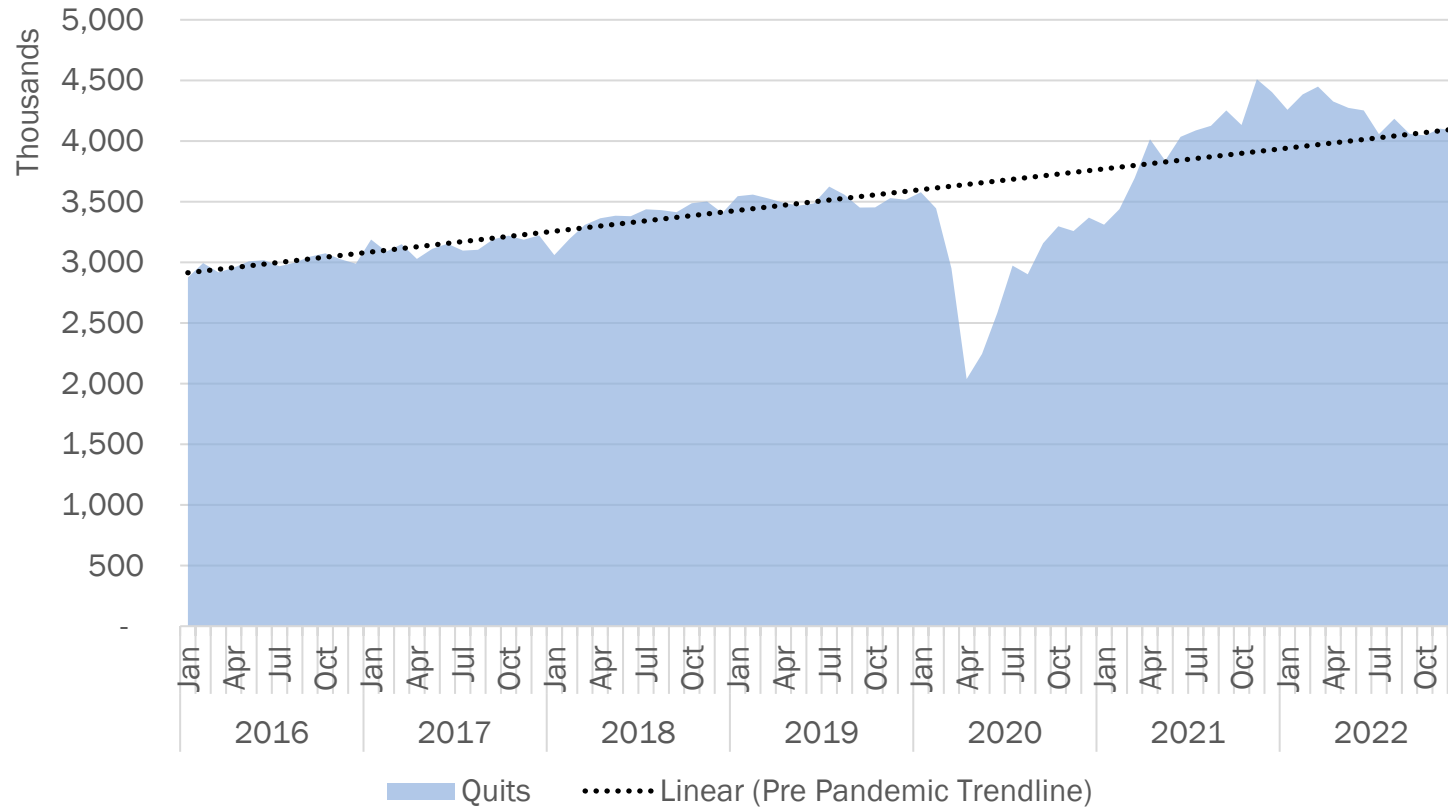
Commitment to keep compensation competitive

- Adjust salary structure annually
- Budget for market-competitive salary increases

Labor Market Trends



Quits



“Quits” measures the number of voluntary employee exits

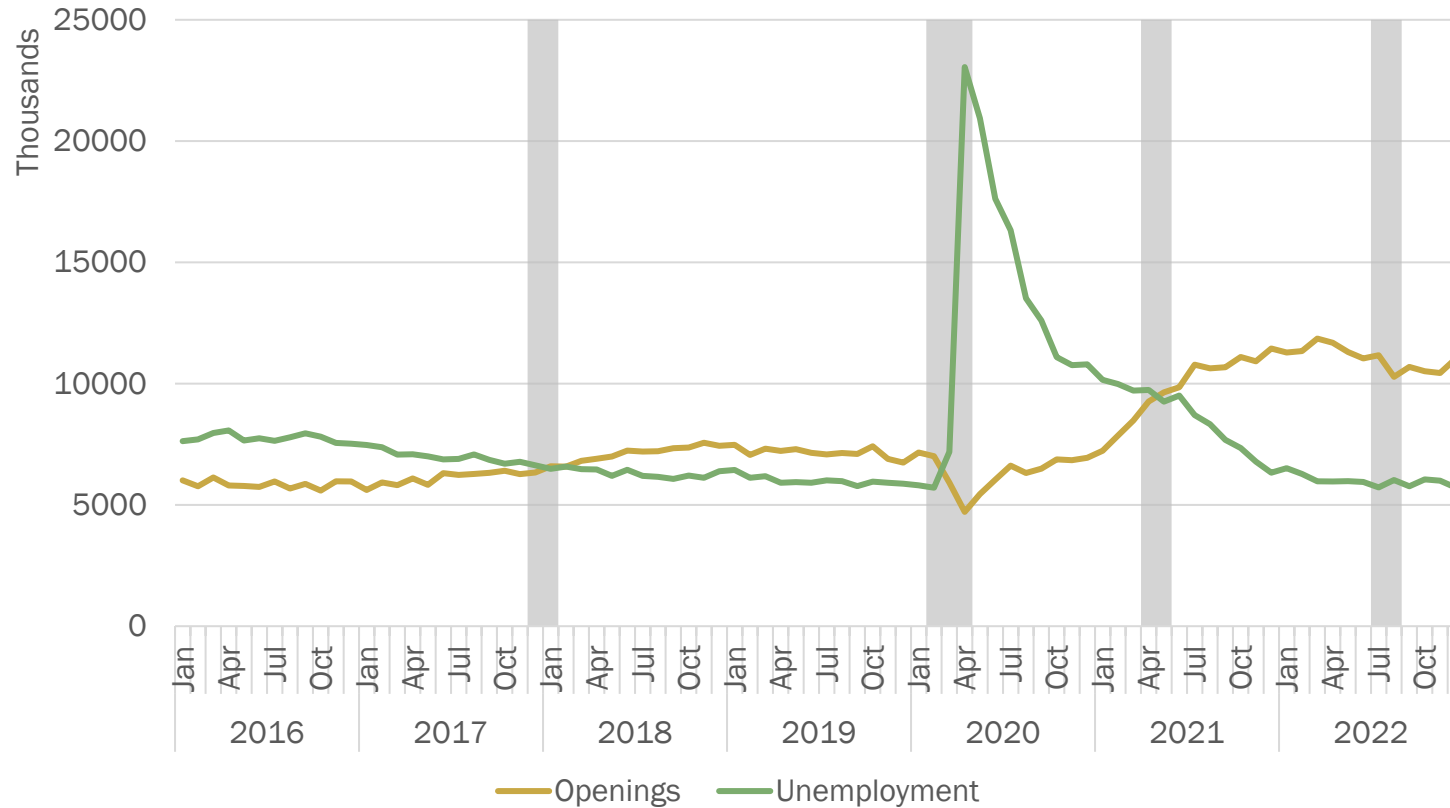
Quits dropped during the pandemic

Quits has returned to the pre pandemic trend!

Is the “Great Resignation” officially over?

U.S. Bureau of Labor Statistics. Job Openings and Labor Turnover.

Job Openings vs Unemployment Level



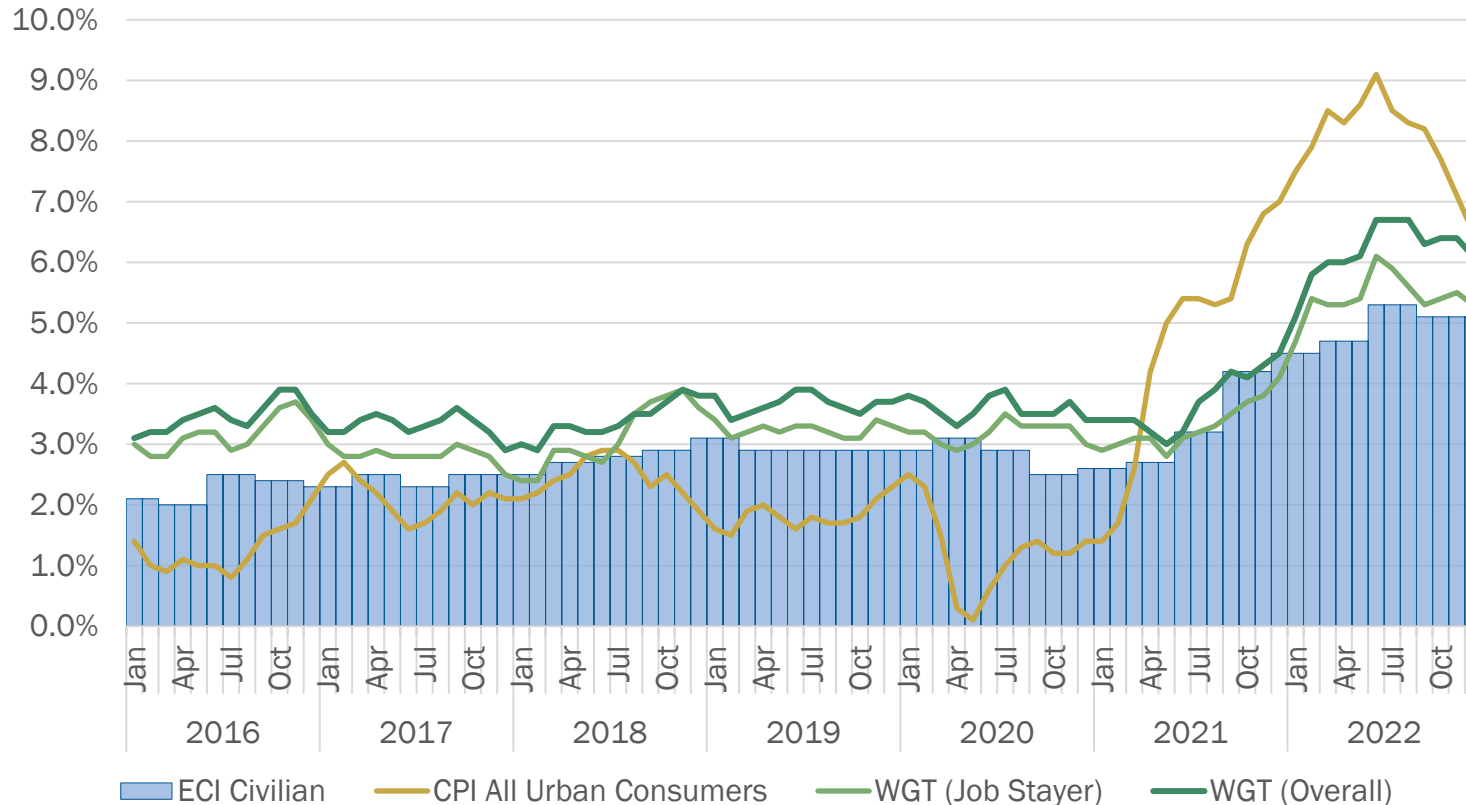
Comparing job openings to the unemployment level established the supply and demand for labor

There are currently 1.9 jobs available for each unemployed person

U.S. Bureau of Labor Statistics. Job Openings and Labor Turnover.

U.S. Bureau of Labor Statistics. Labor Force Statistics from the Current Population Survey.

Wages and Inflation



U.S. Bureau of Labor Statistics. Employment Cost Index.

U.S. Bureau of Labor Statistics. Consumer Price Index.

Wage growth shows signs of slowing, but its still quite high.

Employment Cost Index (ECI)

- Measure of the 12-month increase in wages.
- The civilian data includes public and private workers.

Consumer Price Index (CPI)

- Inflation. All Urban Consumers.

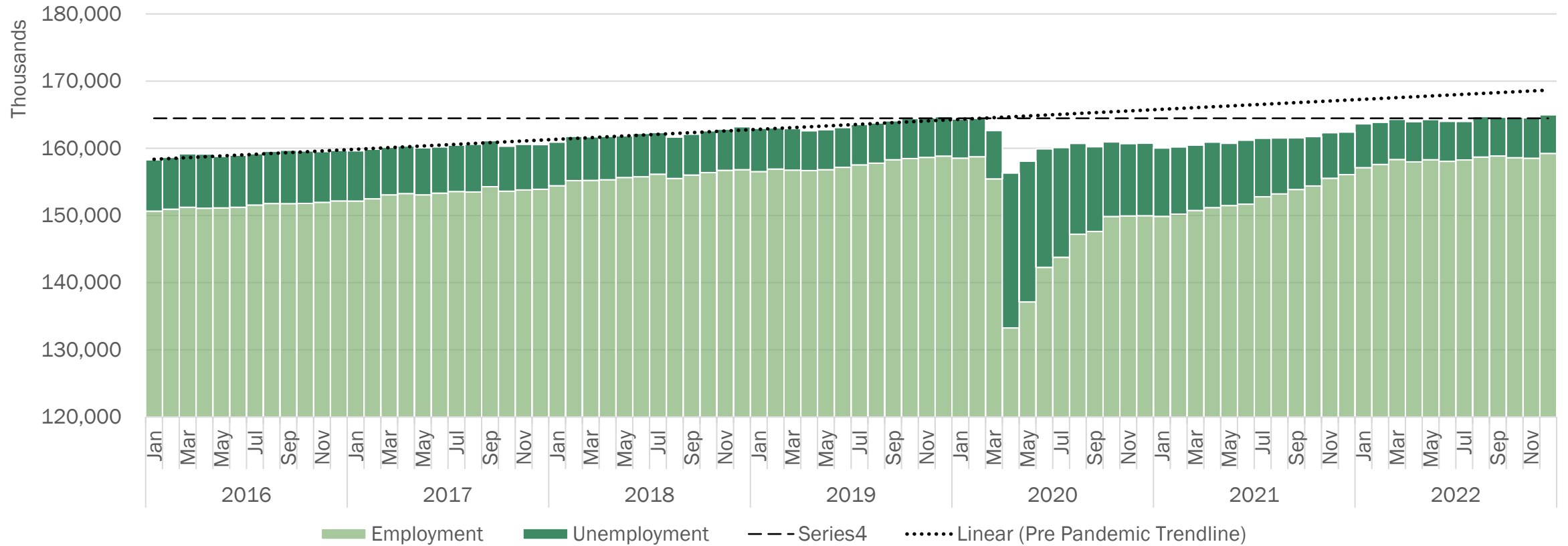
The Wage Growth Tracker

- Follows a group of individuals over time.
- The data here reflects workers who are in the same job over the prior year as well as the full data set.

CBIZ recommends that salary increases track wage metrics, not CPI/inflation

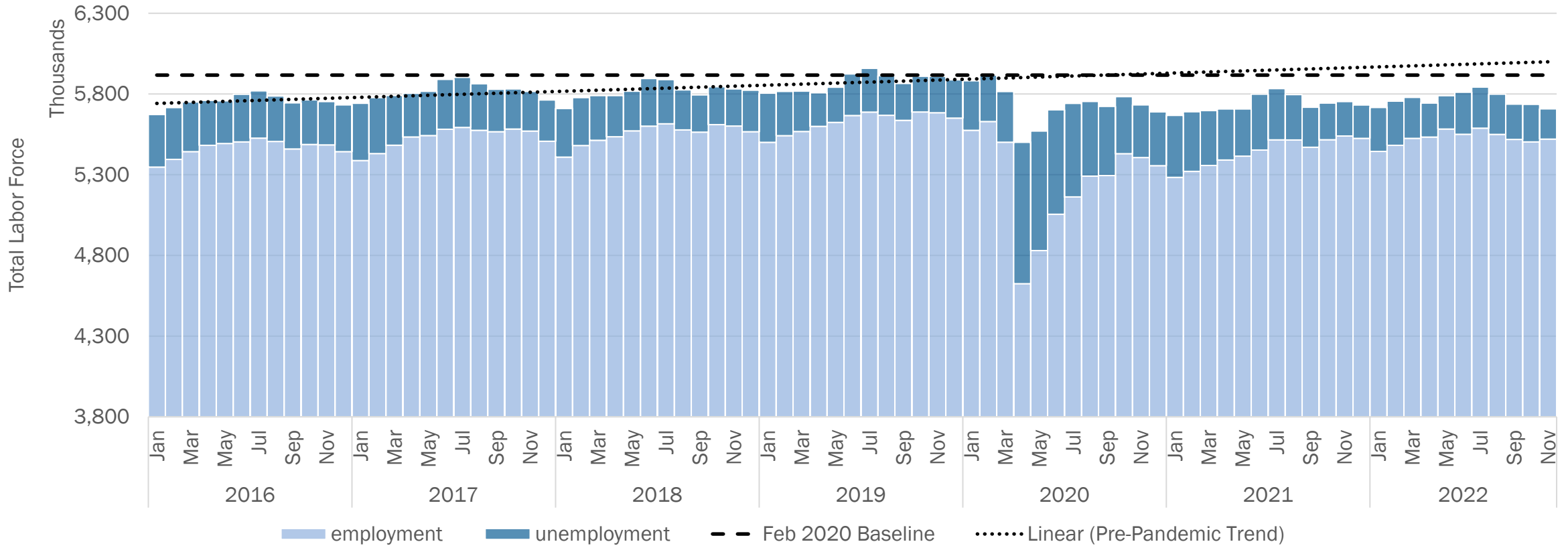
Typically wages grow faster than inflation

US Labor Force



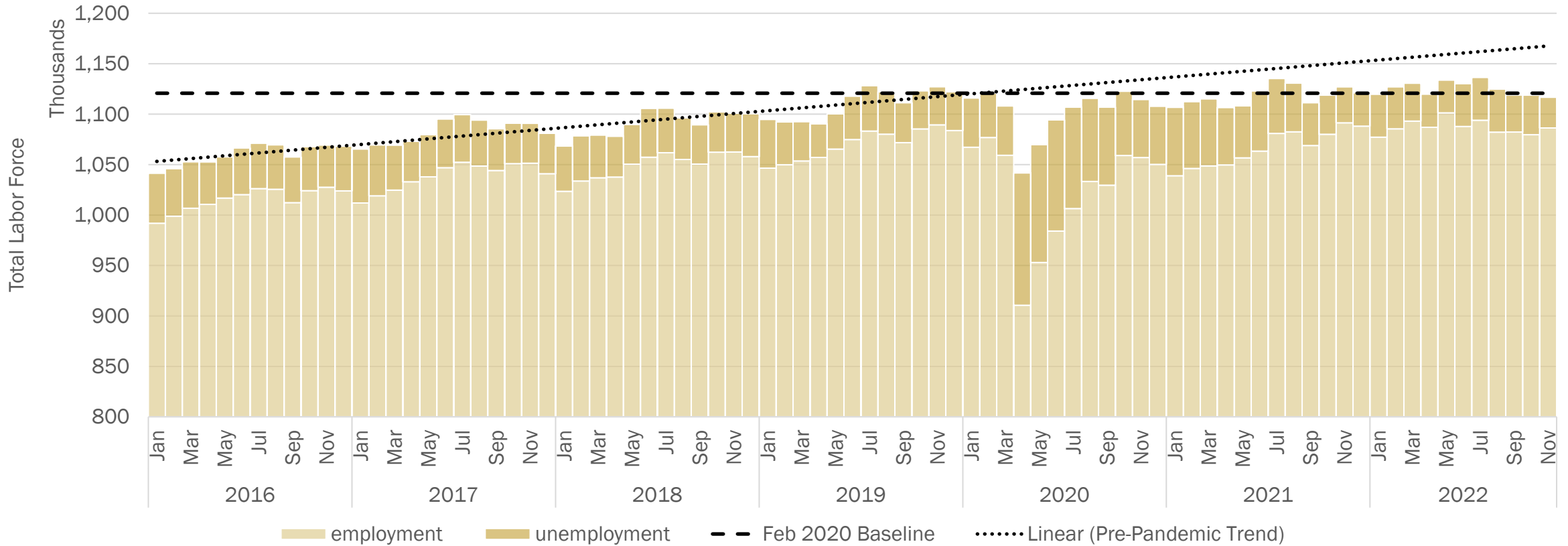
U.S. Bureau of Labor Statistics. Labor Force Statistics from the Current Population Survey.

Ohio Labor Force



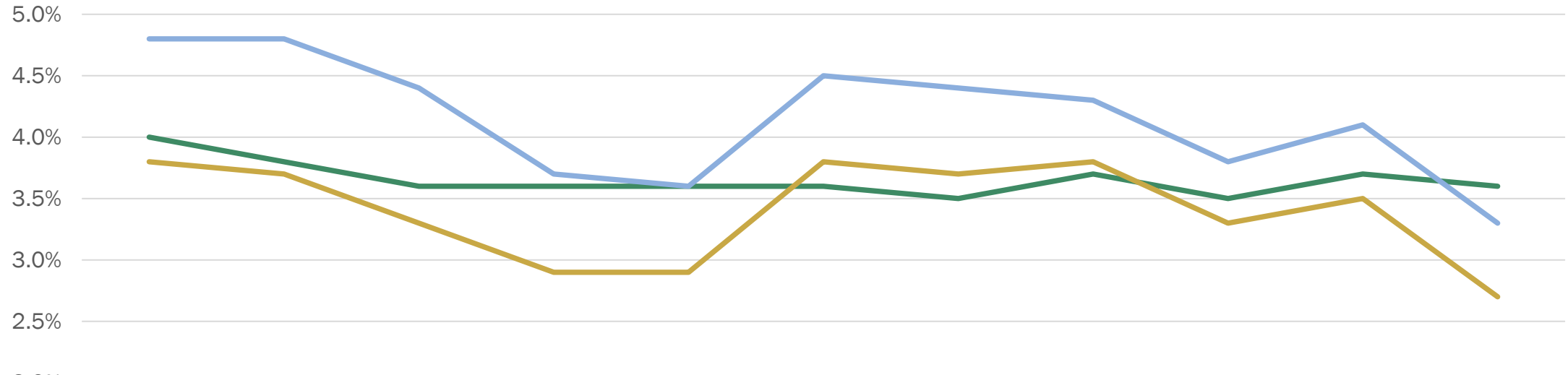
U.S. Bureau of Labor Statistics. Labor Force Statistics from the Current Population Survey.

Columbus Labor Force



U.S. Bureau of Labor Statistics. Labor Force Statistics from the Current Population Survey.

Unemployment Rate Comparison



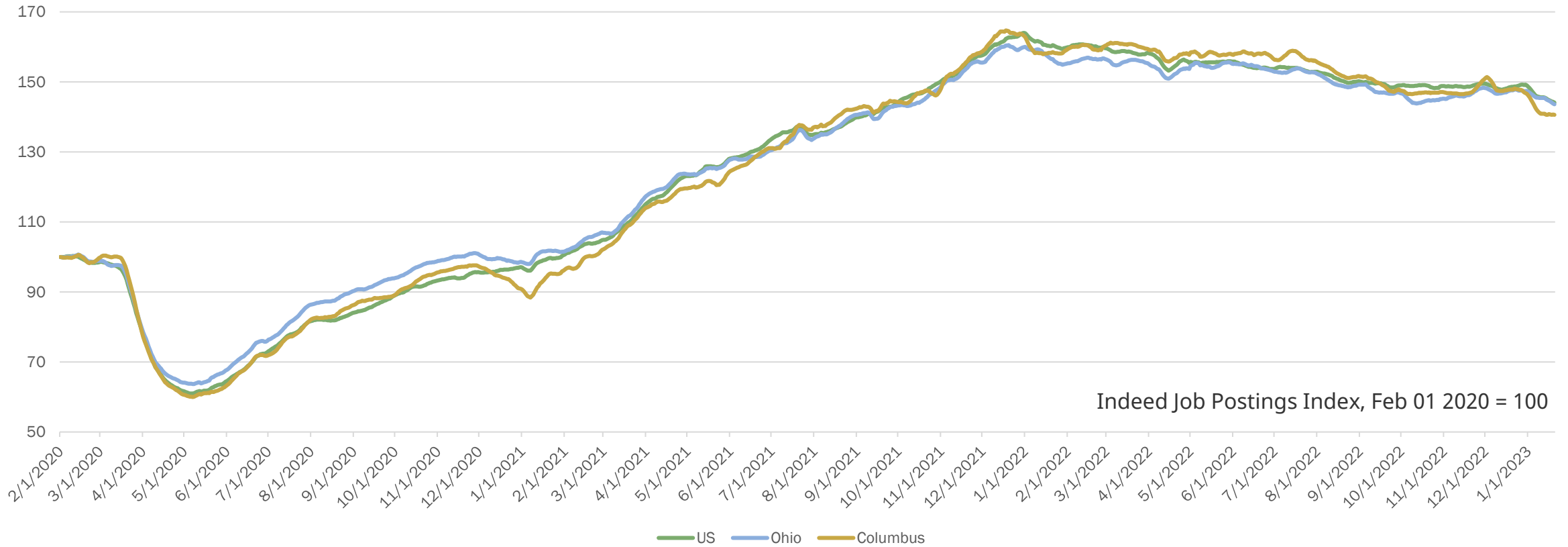
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2022											
United States	4.0%	3.8%	3.6%	3.6%	3.6%	3.6%	3.5%	3.7%	3.5%	3.7%	3.6%
Ohio	4.8%	4.8%	4.4%	3.7%	3.6%	4.5%	4.4%	4.3%	3.8%	4.1%	3.3%
Columbus	3.8%	3.7%	3.3%	2.9%	2.9%	3.8%	3.7%	3.8%	3.3%	3.5%	2.7%

United States Ohio Columbus

U.S. Bureau of Labor Statistics. Employment Situation Summary

U.S. Bureau of Labor Statistics. State Employment and Unemployment Summary

Job Postings on Indeed



Regionomics 2023 Q1 Columbus Forecast

Regionomics® focuses on economic development strategy and local economies

Columbus Economic Forecast is released annually in early January

- Headline: Darkening Skies
- Ongoing monetary tightening by the Federal Reserve will probably – but not inevitably – lead to a recession in 2023.
- The uncertainty surrounding the depth of this recession, its timing, and the possibility that a "soft landing" will keep growth positive but slow makes this forecast especially uncertain.

Columbus Metropolitan Club

Blue Chip Economic Forecast; January 1, 2023

- Featuring Bill LaFayette, Ph.D., Owner, Regionomics LLC
- Kathy Bostjancic, Chief Economist, Nationwide Mutual
- Mark Williams, Business Reporter, The Columbus Dispatch



[Blue Chip Economic Forecast - CMC \(columbusmetroclub.org\)](https://www.columbusmetroclub.org)

Highlights

- Bright mid- to long-term future
 - Microchip fabrication plants and suppliers
 - Honda/LG battery plant
 - Construction for the above
- National short-term headwinds
 - “Most talked about recession in history”
- “Wages drive cost of living; cost of living doesn’t drive wages”

One Columbus

One of the youngest and most-educated populations in the country

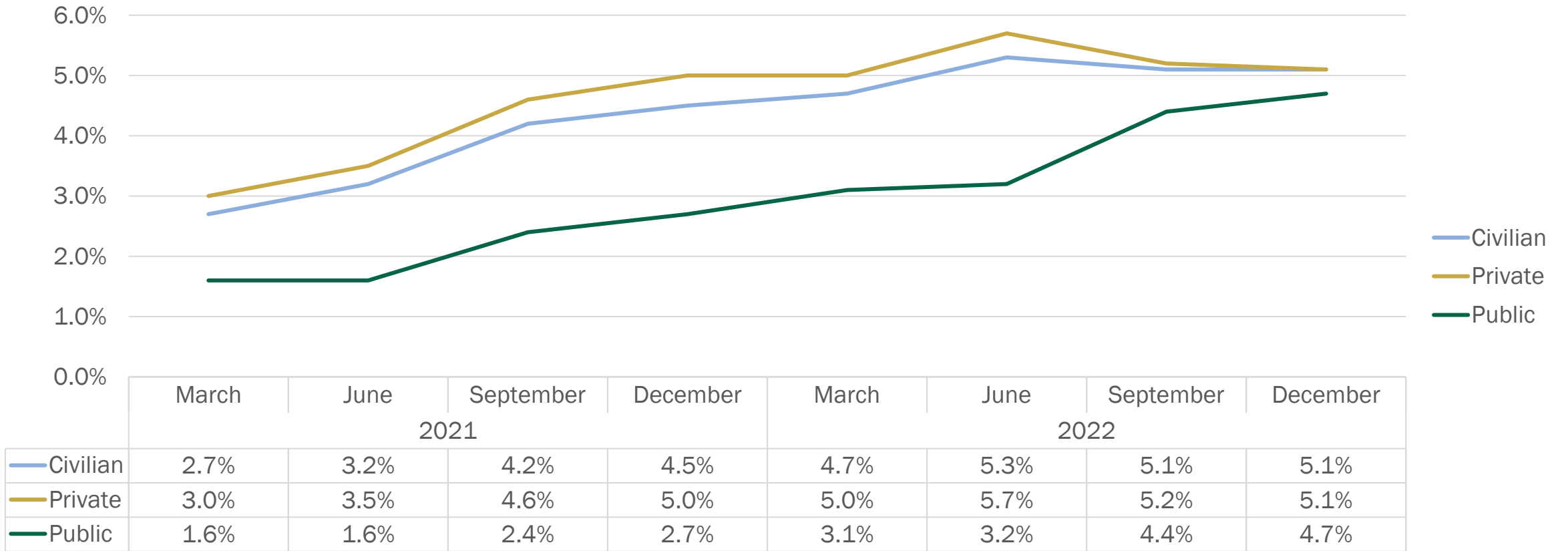
- Median age is 35.9 and 36% of residents 25+ holds a bachelor's degree or higher.
- The Region offers a steady pipeline of young talent with one of the highest populations of millennials in the nation.

The Columbus metro ranks first among large Midwest metro areas for

- Population growth
- Job growth

Among the fastest growing metros in the country

Employment Cost Index



U.S. Bureau of Labor Statistics. Employment Cost Index.

Return to Office Trends

Hybrid

- Enforce current hybrid policies
- Push to 4 days a week

Employers increasingly want employees to work some number of days in the office

- Remote work job postings on LinkedIn peaked in March 2022
 - 20% in March 2022
 - 14% in November 2022
- Resume Builder Research, January 2023
 - 90% of companies will require employees to return to office in 2023
 - 21% of companies will fire workers who do not return to the office

Employees seem pretty satisfied with hybrid/remote

Impact on compensation still difficult to measure

Highest Demand Jobs (LinkedIn)

1. Registered Nurse
2. Salesperson
- 3. Software Engineer**
4. Driver
5. Retail Salesperson
- 6. Project Manager**
- 7. DevOps Engineer**
8. Warehouse Associate
9. Cashier
- 10. Customer Service Representative**

[The Most In-Demand Jobs Right Now \(linkedin.com\)](https://www.linkedin.com)

Fastest-growing demand:
Front Desk Representative

+2.7x more job posts in Q4
'22 vs. Q3 '22

Layoffs

- 3M
- Alphabet (Google)
- Amazon
- Disney
- BlackRock
- BNY Mellon
- Capital One
- Cisco
- Dow
- Goldman Sachs
- Hasbro
- HP
- IBM
- Intel
- Meta (Facebook)
- Microsoft
- Salesforce
- SAP
- Spotify
- Vox
- Wayfair
- WeWork

2023 Guidance



Summary

Columbus largely matches national labor market trends

Mid- to long-term Columbus growth poised to outpace national trends

Layoffs and looming recession getting hard to ignore

Wage growth is cooling but still quite high

CBIZ 2023 Guidance

5.1%
Structure
Update

- Tied to ECI
- Broad Measure of Wage movement

6.3% - 8.0%
Salary
Increase
Budget

- Avoid/alleviate pay compression
- Employees need to move through the market range
- All increases: merit and promotions

Increase Budget vs. Merit

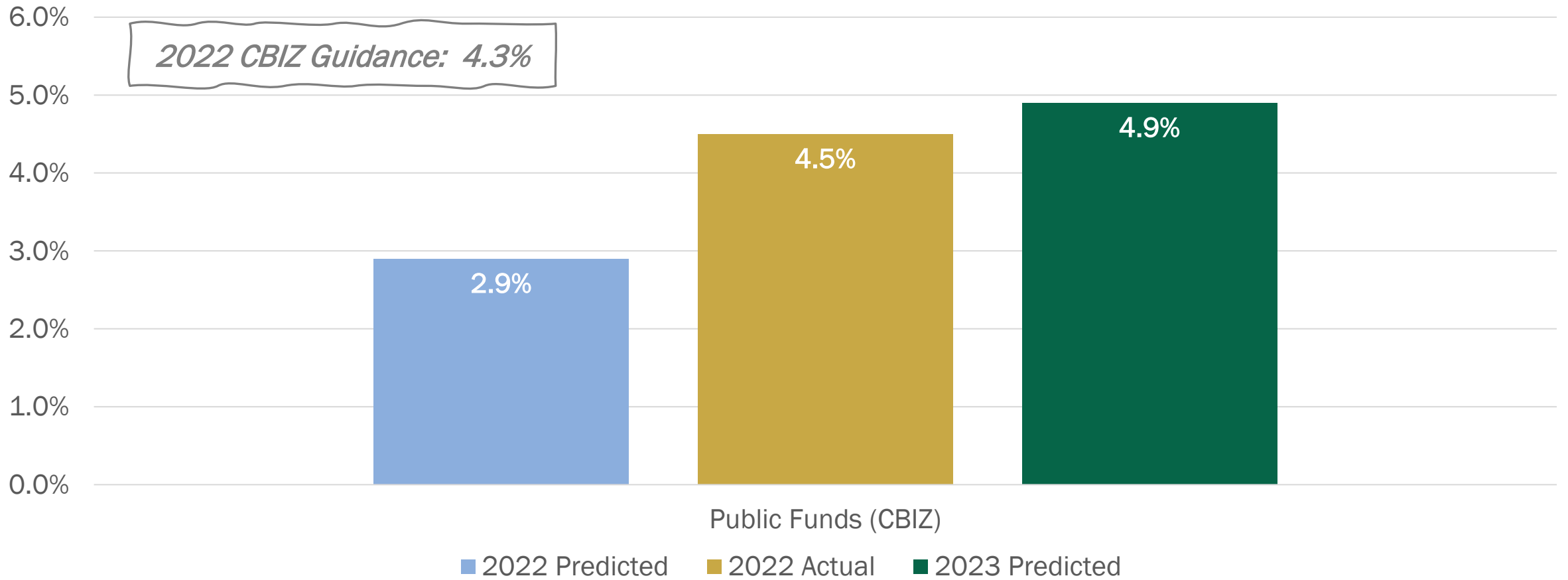
Salary increase budget

- Total amount of money that is budget to cover the cost of increasing employee salaries.

Merit

- System of rewarding employees based on their individual performance
- Individual increase may be more or less than the salary increase budget %

Pension Specific Data



Historical SERS Actions

Year	Structure Adjustment	Merit Budget	Year over Year Comp Growth	Market Increase
2022*	3.2%	3.2%	5.2%	4.3%
2021	1.9%	2.0%	1.4%	3.0%
2020	0.0%	0.0%	0.1%	2.9%
2019	1.6%	2.3%	1.5%	3.2%
2018	2.1%	3.0%	2.7%	3.1%

*Also increases to range minimums and compression adjustments as part of the compensation study

Additional Considerations

Conservative approach

- Wait and see... extent and impact of a recession (if any)
- Acknowledge behind trends for 2023

Course correct for future years

- May need to be above trend in future years to regain ground
- May need to pump the brakes if above market

CBIZ 2023 Guidance

5.1%
Structure
Update

- Tied to ECI
- Broad Measure of Wage movement

6.3% - 8.0%
Salary
Increase
Budget

- Avoid/alleviate pay compression
- Employees need to move through the market range
- All increases: merit and promotions

Your Team.

QUESTIONS?

WE'RE HERE TO HELP.

Joe Rice

Director, Compensation Consulting

314.590.4070

jrice@cbiz.com



ADJOURNMENT(R)

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

The meeting adjourned at _____ a.m./p.m.

Jeffrey DeLeone - Chair

Richard Stensrud, Secretary