



Report From the Investment Department

June 15, 2023

- **Matters requiring board action:**
 - Semiannual Broker Evaluation and associated policies for the first half fiscal 2024
 - Amended Stock Proxy Voting Policy
 - Fiscal 2024 Investment Plan
 - Callan’s review of the Fiscal 2024 Investment Plan
 - Cliffwater’s Review of the Fiscal 2024 Investment Plan
- **Educational or scheduled updates and reviews requiring no action today:**
 - Summary of Investment Activity Report, May 2023
 - Callan Quarterly Performance Review as of March 31, 2023
 - Review of May 2023 investment transactions
- **Summary of requests**

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- **Summary of requests**

- **Presented at May meeting by staff**
 - No proposed changes
- **Callan letter**
- **Proposed motion**

Semiannual Broker Evaluation and Associated Policies



Callan

Callan LLC
120 North LaSalle Street
Suite 2400
Chicago, IL 60602

Main 312.346.3536
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www.callan.com

May 4, 2023

Ms. Carol Correthers, Chair
State Teachers Retirement Board of Ohio
275 East Broad Street
Columbus, OH 43215-3771

Re: Broker Evaluation – First Half Fiscal 2024

The purpose of this letter is to share Callan's comments regarding the semi-annual broker evaluation for the first half of fiscal 2024 conducted by STRS Ohio Staff.

Although we do not comment on the capabilities and performance of individual brokerage firms, Callan is comfortable with the factors taken into consideration by Staff when evaluating brokers to be used to execute trades on behalf of STRS Ohio.

The STRS Ohio Semiannual Broker Evaluation for First Half Fiscal 2024 is comprehensive in scope, and appropriately documents the governance employed by STRS Ohio Staff in the areas of execution, selection, research, soft dollar policy, and broker usage. The Broker Evaluation is well articulated for the purpose intended, and consistent with other Public Funds classified as institutional in size, and who manage monies internally.

Callan recommends the STRS Ohio Board approve the Semiannual Broker Evaluation and associated policies prepared by Staff.

Regards,

Brady O'Connell, CFA, CAIA
Senior Vice President



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275 East Broad Street
Columbus, OH 43215-3771
614-227-4090
www.strsoh.org

PROPOSED MOTION

Semiannual Broker Evaluation and Associated Policies

June 15, 2023

_____ moved, seconded by _____ that the Board approve the Semiannual Broker Evaluation and Associated Policies for the First Half of Fiscal 2024, as presented on June 15, 2023.

- **Matters requiring board action:**
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- **Presented and reviewed from February through May 2023**
 - Seven additions/updates to the policy
- **Questions**
- **Proposed motion**

Adoption of the Amended Stock Proxy Voting Policy



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PROPOSED MOTION

Adoption of the Amended Stock Proxy Voting Policy

June 15, 2023

_____ moved, seconded by _____ that the Stock Proxy Voting Policy be amended, as presented on June 15, 2023.

- **Matters requiring board action:**
 - Semiannual Broker Evaluation and associated policies for the first half fiscal 2024
 - Amended Stock Proxy Voting Policy
 - **Fiscal 2024 Investment Plan**
 - Callan’s review of the Fiscal 2024 Investment Plan
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Fiscal 2024 Investment Plan



June 15, 2023

- **Overview**
- **Economics**
- **Fixed Income**
- **Domestic Equities**
- **International**
- **Real Estate**
- **Alternative Investments**
- **Risk Management**
- **Summary**



Overview

Matt Worley

- **Economic outlook**
 - Forecasting U.S. economic growth of 1.3%
 - 50% probability of baseline growth forecast (0.5%-3.0%) range
 - Risk to the baseline forecast is tilted to downside
 - Inflation expected to average above 2% federal reserve target
 - Monetary policy remains restrictive

- **Total fund**

- Global economy forecast slowing to near trend, albeit below long-term trend in fiscal 2024
- Asset valuations are reflecting restrictive monetary policy and a range of economic forecasts
- Forecast return at-to-below board's policy return in fiscal 2024
 - Recognize a wide range of outcomes possible

- **Liquidity reserves**

- Short-term rates are above 5.00%
- Return forecasted to be above 1.00% policy return

- **Fixed income**

- Forecasting interest rates near fair value
 - Expect returns to be above the policy return of 1.75%
- Asset class transaction activity in fiscal 2024
 - Received allocations of over \$2.0 billion driven by rebalancing activity
- Fixed income begins underweight and this will likely continue through fiscal 2024

- **Global equities (domestic and international)**
 - Projecting flat earnings growth, albeit economic growth dependent
 - Valuations reflect restrictive monetary policy and slowing economic growth
 - Domestic equities below the policy return of 6.60% in fiscal 2024
 - International equities slightly below the policy return of 6.80% in fiscal 2024

- **Real estate**

- Fundamentals are challenged in this economic environment
- Projecting returns below policy return of 5.75%
- Begin the year near the target allocation of 10%

- **Alternative investments**

- Forecasting total asset class returns to be at-to-slightly below the policy return of 7.38%
- Begin with a modest overweight to the policy target weight
 - Private equity begins above target weight, opportunistic/diversified near
- Staff will maintain a normalized commitment pace for private equity and maintain normalized pace for opportunistic/diversified; emphasis on direct and co-investments

Anticipated Market Returns



	Board Policy Expected Average Annual Benchmark Returns	Benchmark Annualized Return Expectation for Fiscal 2024
Liquidity Reserves	1.00%	Above Normal
Fixed Income	1.75%	Above Normal
Domestic Equities	6.60%	Below Normal
International	6.80%	Slightly Below Normal
Real Estate	5.75%	Below Normal
Alternative Investments	7.38%	At-to-Slightly Below Normal
Total Fund	6.03%	At-to-Below Normal

- **Additional AIP themes for fiscal 2024**
 - No changes to ERM matrix, recognizes risk of recession and inflation
 - Fiduciary audit recommendation, review, summarize, and propose actions in fiscal 2024
 - Continue to pursue direct and co-investments, on-board new service providers in alternative investments
 - Progress on domestic equity strategic initiative has occurred and staff will monitor structure/performance to sustain positive results
 - Ongoing research and implementation of potential strategies are included within this plan to address the strategic initiative to increase returns, diversification or flexibility to manage the assets

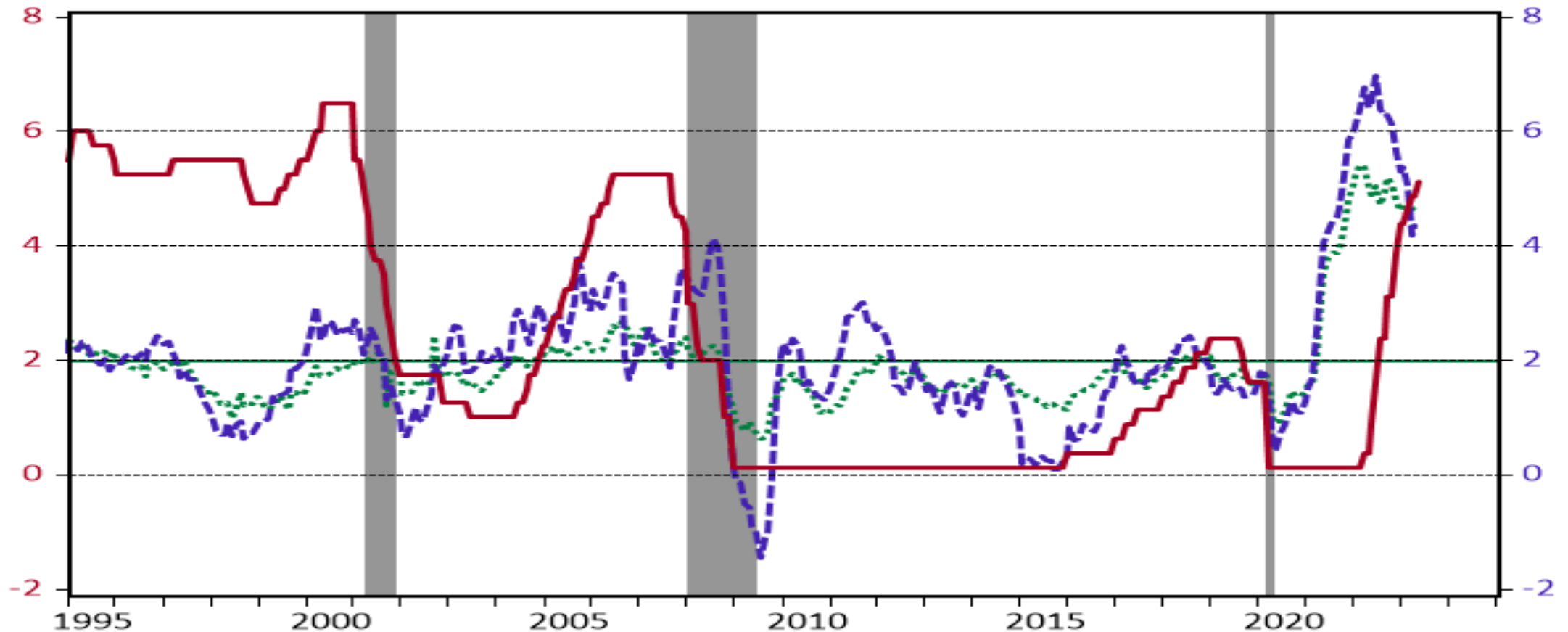


Economics

Suchit Arora

The Fed Has Raised Interest Rates; Inflation Is Moderating Toward 2%

Federal Open Market Committee: Fed Funds Target Rate (EOP, %)
Personal Consumption Expenditure Inflation (% Chg. Year-to-Year)
Core Personal Consumption Expenditure Inflation (% Chg. Year-to-Year)

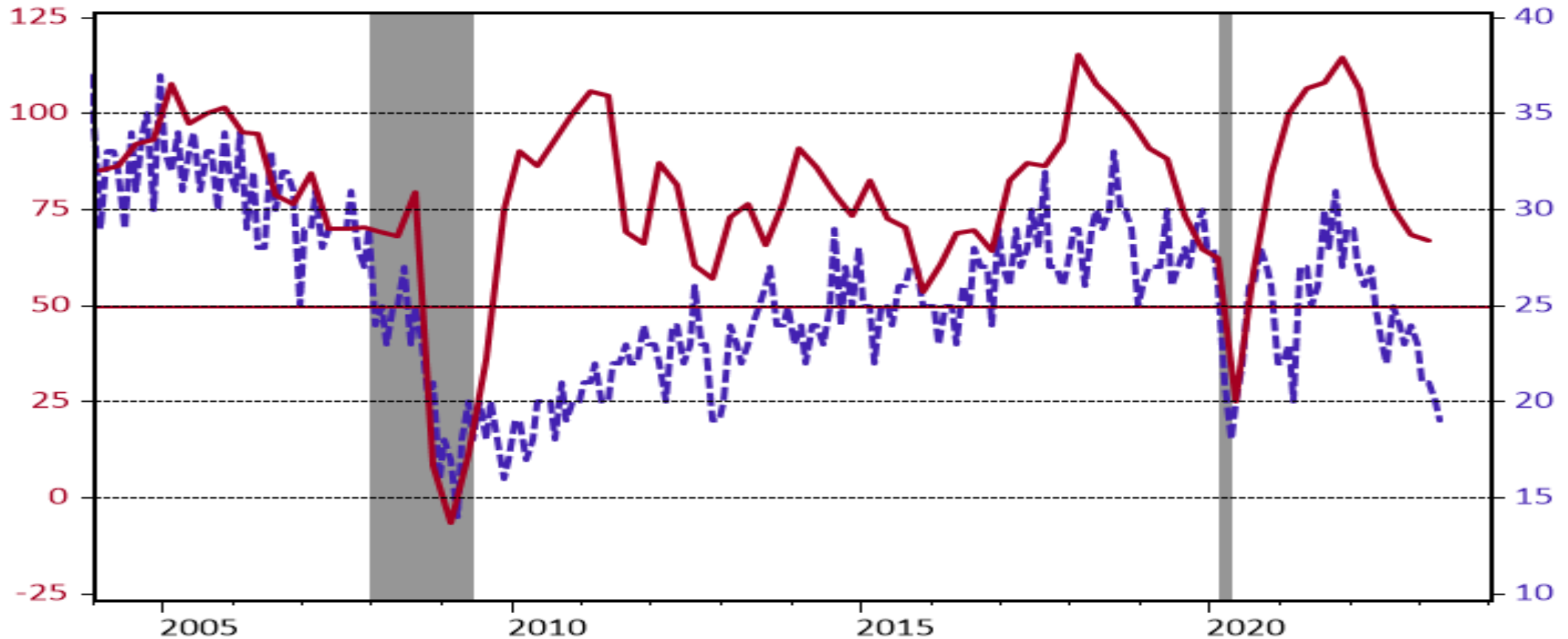


Sources: Federal Reserve Board, Bureau of Economic Analysis

Businesses Are Slowing Capital Expenditures

← Business Roundtable CEO Expected Capital Spending (50+=Expansion)

Small Businesses Planning Capital Expenditures Over Next 3 to 6 Months (%) -->

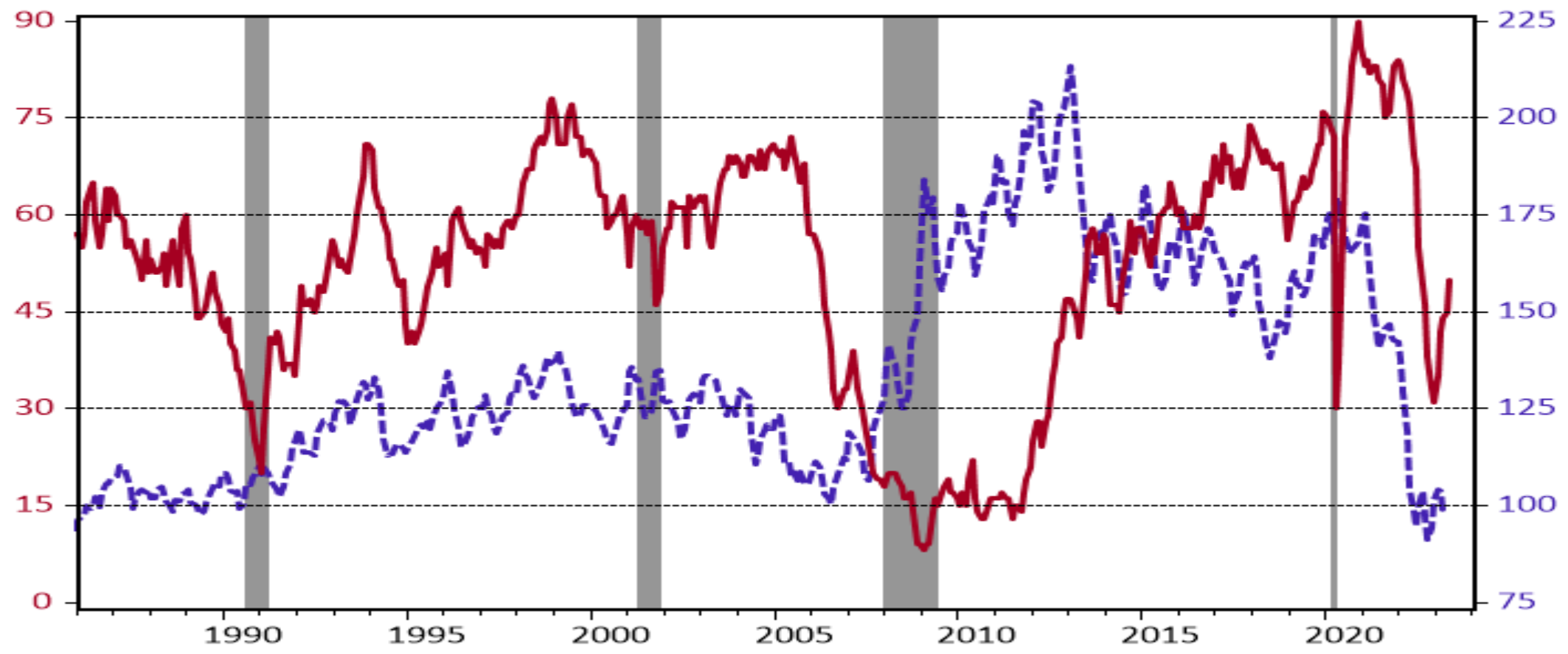


Sources: Business Roundtable, National Federation of Independent Business

Affordability To Keep Housing Sector In Check

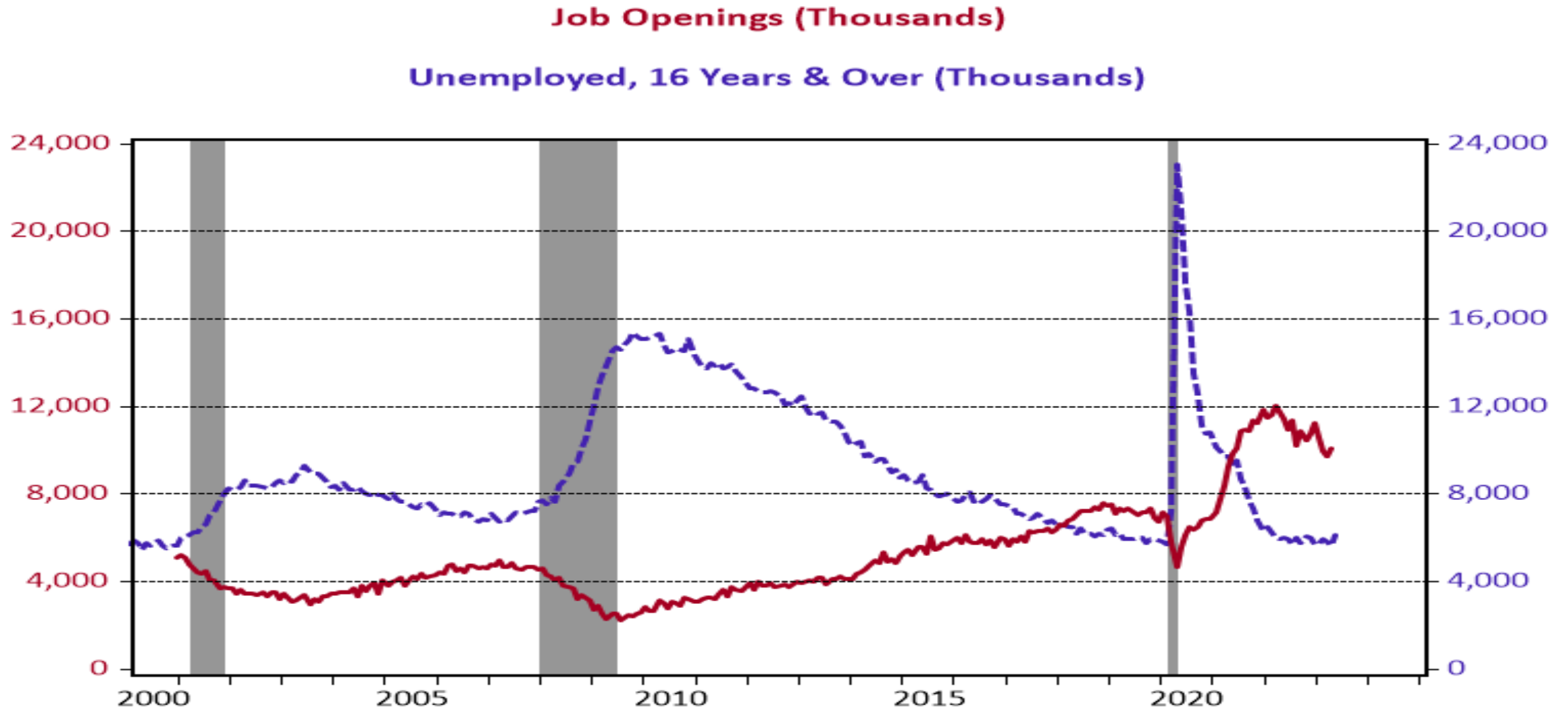
← Home Builders Housing Market Index

Housing Affordability Index (100+=More Affordable) -->



Sources: NAHB/WF, NAR

The Labor Market Is Tight As Job Openings Exceed Available Workers

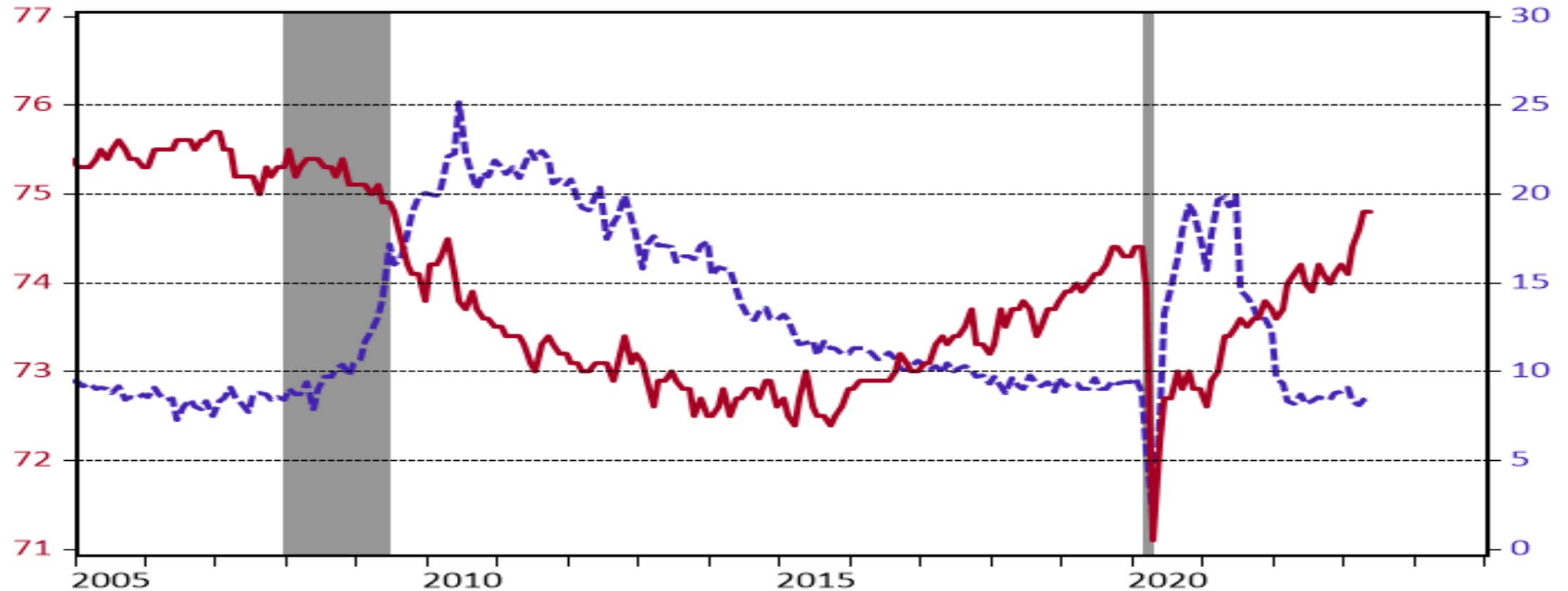


Source: Bureau of Labor Statistics

The Participation Rate Is Rising As Jobs Are Easier To Find

← Civilian Participation Rate: 16-64 Years (%)

Median Duration of Unemployment (Weeks) - - ->

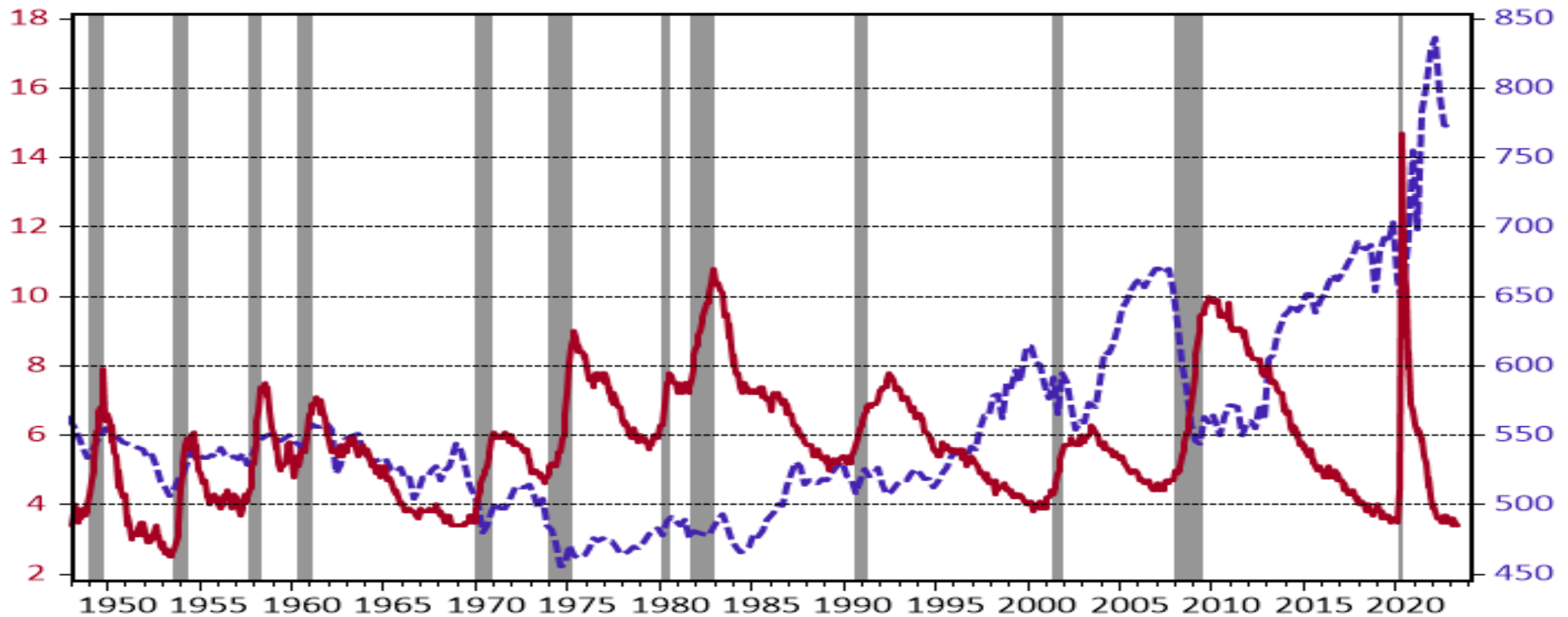


Sources: BLS/H, BLS

Strong Household Balance Sheet, Low Unemployment To Support Consumer Spending

← Civilian Unemployment Rate: 16 yr + (%)

Household Net Worth as Percent of Disposable Personal Income (%) -->

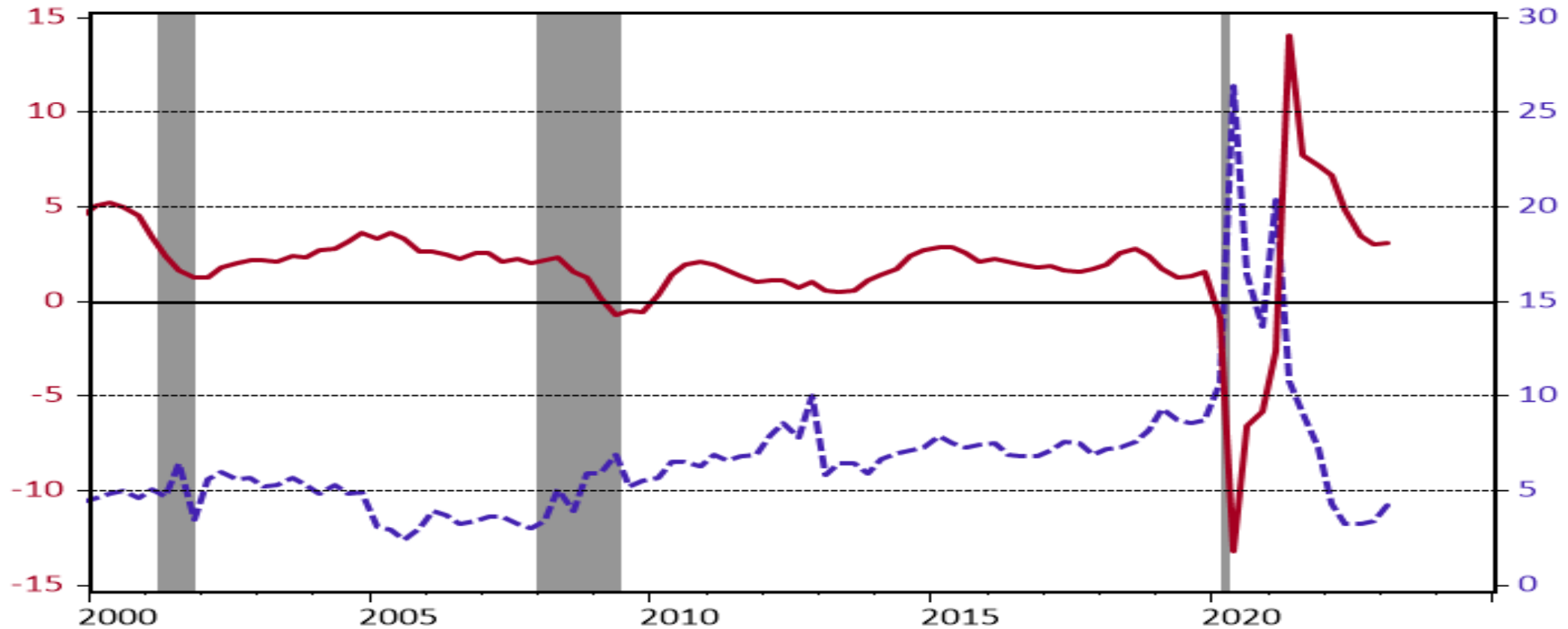


Sources: Bureau of Labor Statistics, Federal Reserve Board

With Savings Depleted, Consumer Spending To Moderate

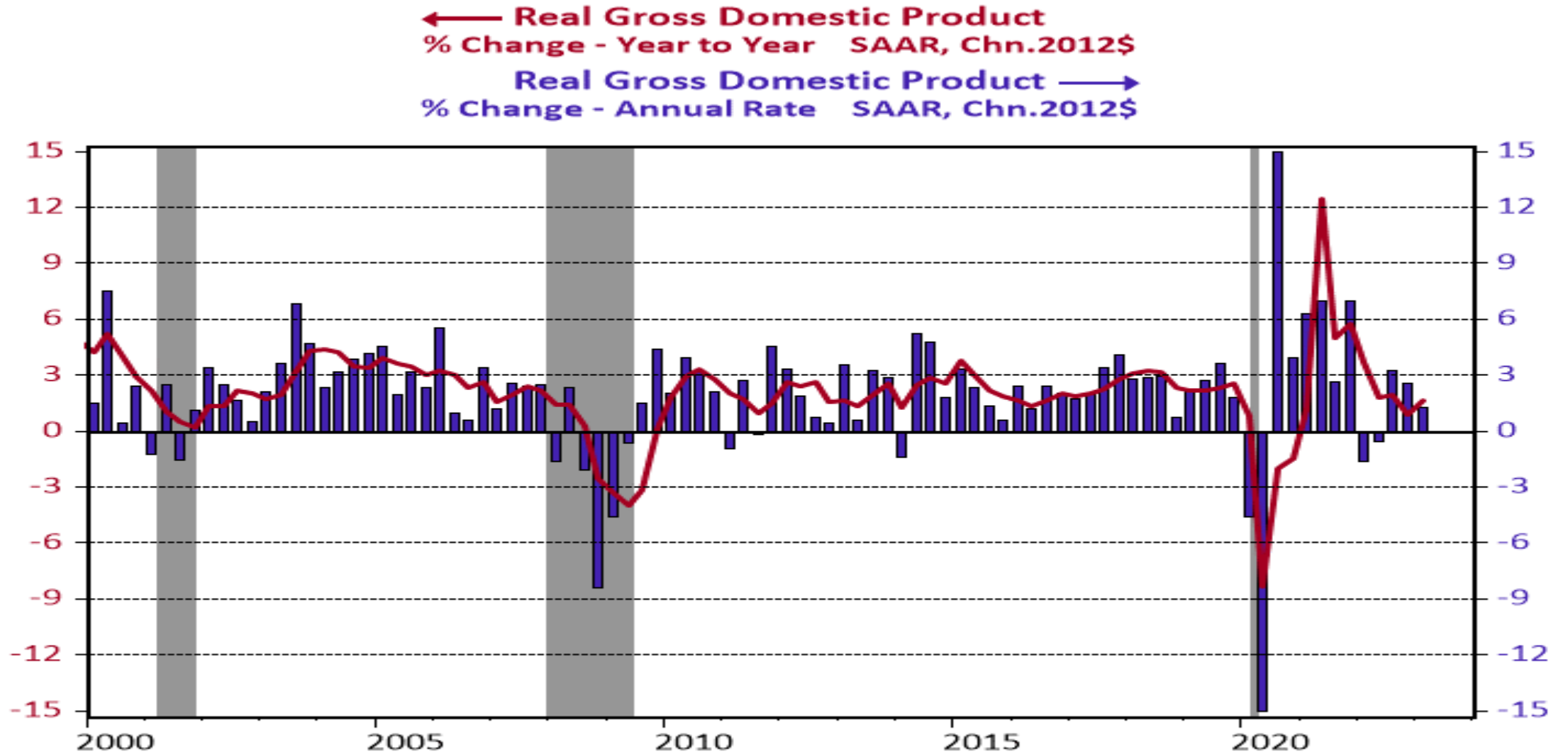
← Real Personal Consumption Expenditures On Services (% Chg. Year-to-Year)

Personal Saving Rate (%) -->



Source: Bureau of Economic Analysis

Amid Recession Risks, Growth To Slow Below Long-Term Trend



Source: Bureau of Economic Analysis



Fixed Income

Ryan Collins

Fiscal 2023 review

- **The Federal Reserve aggressively raised short-term interest rates**
 - Inflation remained above target
- **Long-term interest rates are higher**
 - Yield curve inverted
- **Fixed income – total fund liquidity provider**
 - Received over \$2 billion in net allocations
 - Increased liquidity position
 - Rebalance asset allocation and pay benefits

Fiscal 2024 outlook

- **Total return above 1.75% policy return**
- **Federal funds range: (3.00%-6.25%)**
 - The Federal Funds Rate is nearing the peak of this tightening cycle
 - Monetary policy will remain restrictive
 - Reduction in the Federal Reserve's balance sheet
- **10-year Treasury range: (2.00%-5.00%)**
 - Real economic growth and inflation expectations

Fiscal 2024 strategy

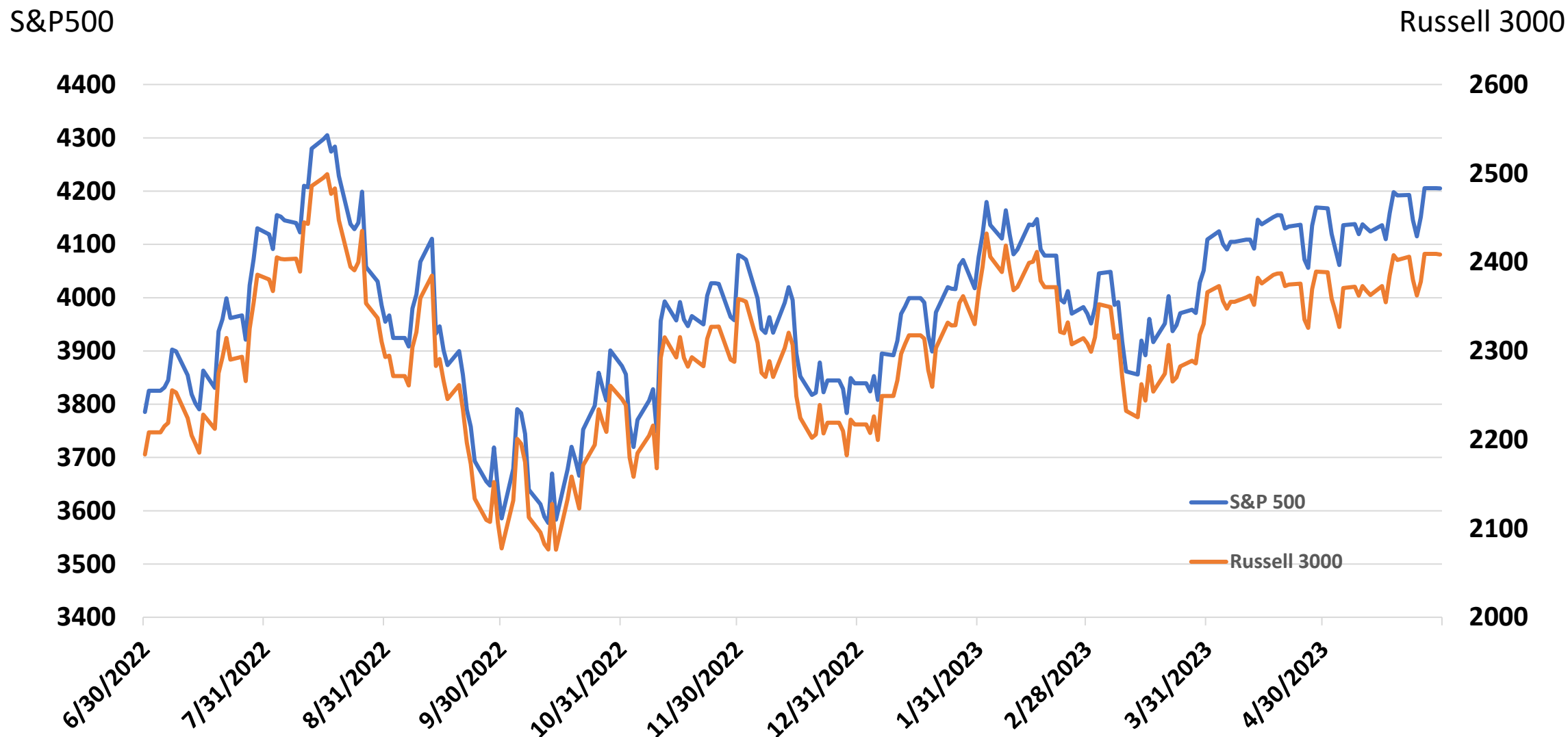
- **Portfolio duration is slightly longer than the benchmark**
 - Interest rate valuations are fair
- **Underweight in treasuries**
- **Overweight to investment grade credit, high yield credit, and emerging markets**
- **Overweight to agency mortgages, asset-backed securities, and commercial mortgage-backed securities**
- **Strategic initiatives**
- **Liquid treasury portfolio**



Domestic Equities

Steve Eastwood

S&P 500 and Russell 3000 Indexes Fiscal 2023 Year-to-Date

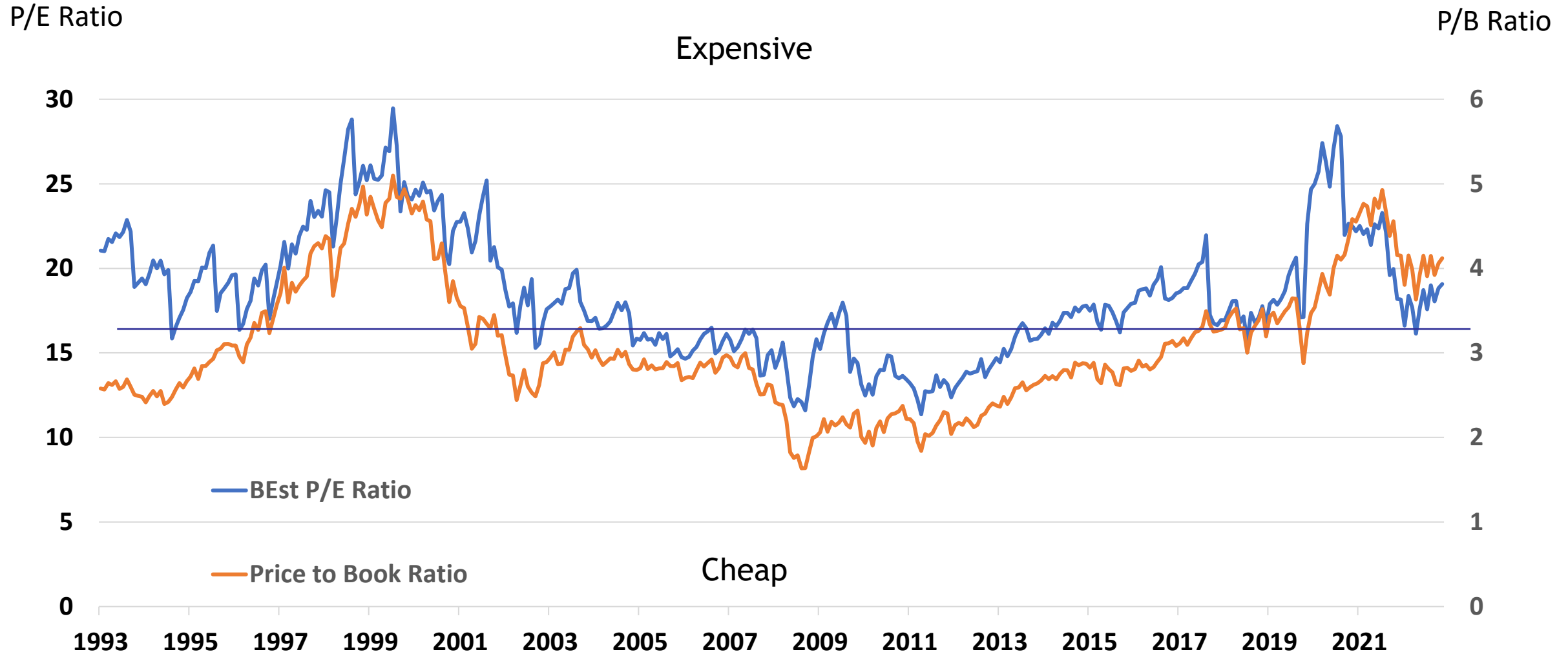


Source: Bloomberg

Fiscal 2023 Review

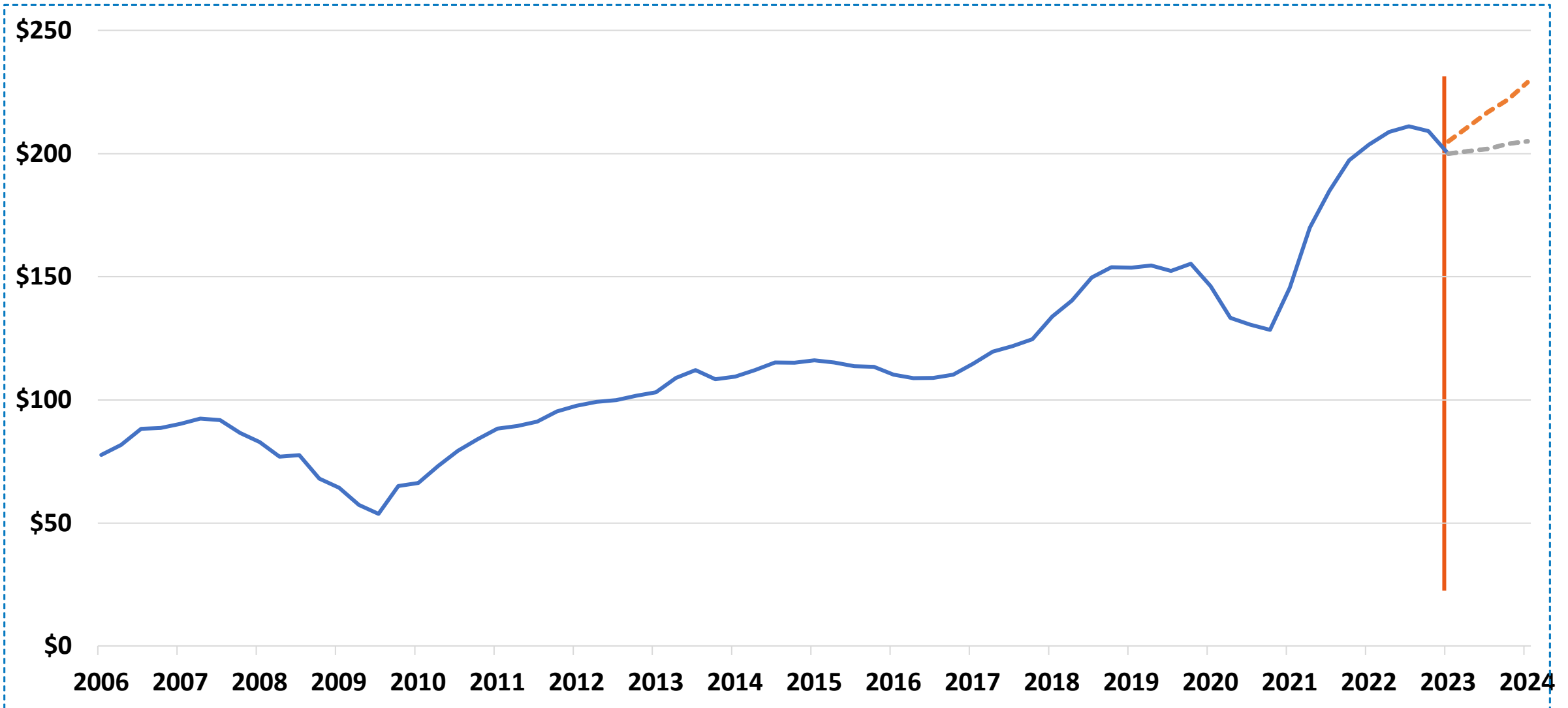
- **Markets range bound for much of the year**
 - High of 4305 in August, Low 3577 in October, FYTD +14.6%
- **Earnings down 2.5%**
- **P/E multiples rose in the second half of the year to elevated levels**
- **Volatility relatively low throughout the year**
- **Post regional banks crisis market breadth has deteriorated significantly**

S&P 500 Index Valuation



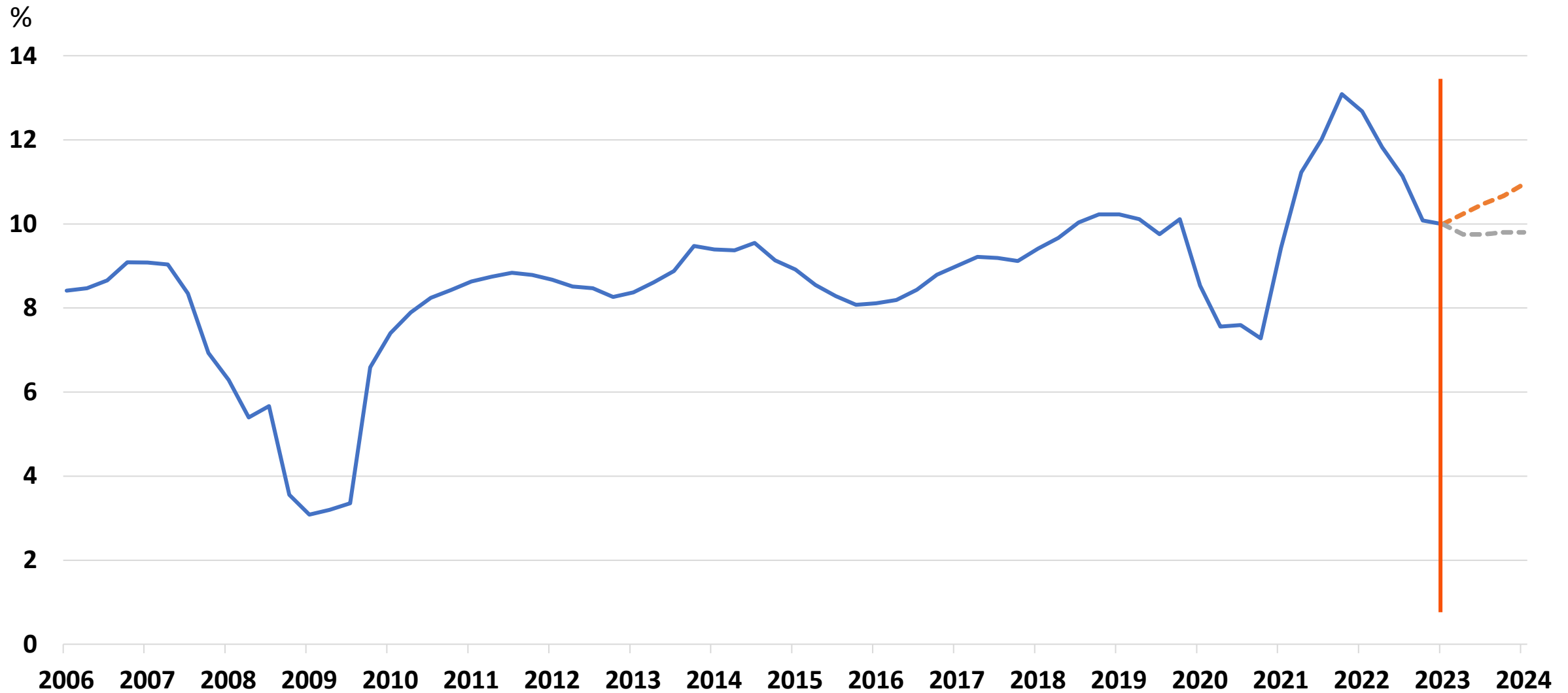
Source: Bloomberg

S&P Operating Earnings Per Share



Source: Bloomberg

S&P 500 Operating Earnings Margin



Source: Bloomberg

Fiscal 2024 Outlook

- **Target 3200-4800 on the S&P 500**
 - \$205 earnings per share
 - 16-23x P/E multiple
- **Uncertainty high, wide range of outcomes**
 - Downside risk due to global economic uncertainty/rate increases
 - Upside could come from more benign inflation environment
- **Expect volatility to rise**

Fiscal 2024 Strategy

- **Currently 26.0% of assets equal to the 26.0% policy weight**
- **Expect to be neutral for the year**
 - Value and growth balanced but may tilt value
 - Small cap over large cap

2024 Initiatives

- Continue to monitor performance of portfolios both internal and external
- Evaluate potential equity replacement strategies to replace some passive assets



International Equities

Mark Regenbogen

Fiscal 2023 Review

- **Mixed benchmark returns through May**
 - Developed markets (50% hedged) +14.0%
 - Emerging markets -2.0%
 - International Blended benchmark +10.8%
- **The U.S. dollar trend was volatile but moderate strengthening versus developed currencies overall**
 - Unhedged Developed Markets Index +12.1%
- **International weight is near the 22% neutral target**

Fiscal 2024 Key Factors – Developed Markets

- Monetary policy tightening may extend longer than in the United States
- Japan's political stability may continue after possible early elections
- Japan's monetary policy adjustments are uncertain
- United Kingdom's equity market impacted by declining earnings
- Europe continues effort to reduce impact from any energy shortages
- Overall, companies could encounter profit margin pressure
- Valuation attractiveness is mixed

Fiscal 2024 Strategy – Developed Markets

- **Returns for fiscal 2024 expected to be slightly below normal**
- **U.S. dollar weakness would incrementally boost returns**
- **Traditional stock selection will remain important**

Fiscal 2024 Key Factors – Emerging Markets

- China's economic rebound continues after removal of zero-COVID policy, but to be robust will require better business/consumer confidence
- China's recovery is driven by consumer spending on domestic services, which is less beneficial to other emerging countries than past cycles
- Important elections to be held in several countries, including Taiwan
- Heightened global geopolitical risk from Russia's invasion of Ukraine
- Earnings recovery could occur by second half of fiscal 2024
- Valuations are near fair value overall on an absolute basis
- Valuation discounts relative to the developed world remain wide

Fiscal 2024 Strategy – Emerging Markets

- **Slightly above normal returns for fiscal 2024 are expected**
- **Stock selection combined with country selection will remain our focus**
- **Election results in several countries will set investment attractiveness**
- **Staff review of possible strategic initiative for a standalone China A-share portfolio concluded with a decision not to proceed**

Fiscal 2024 Strategy

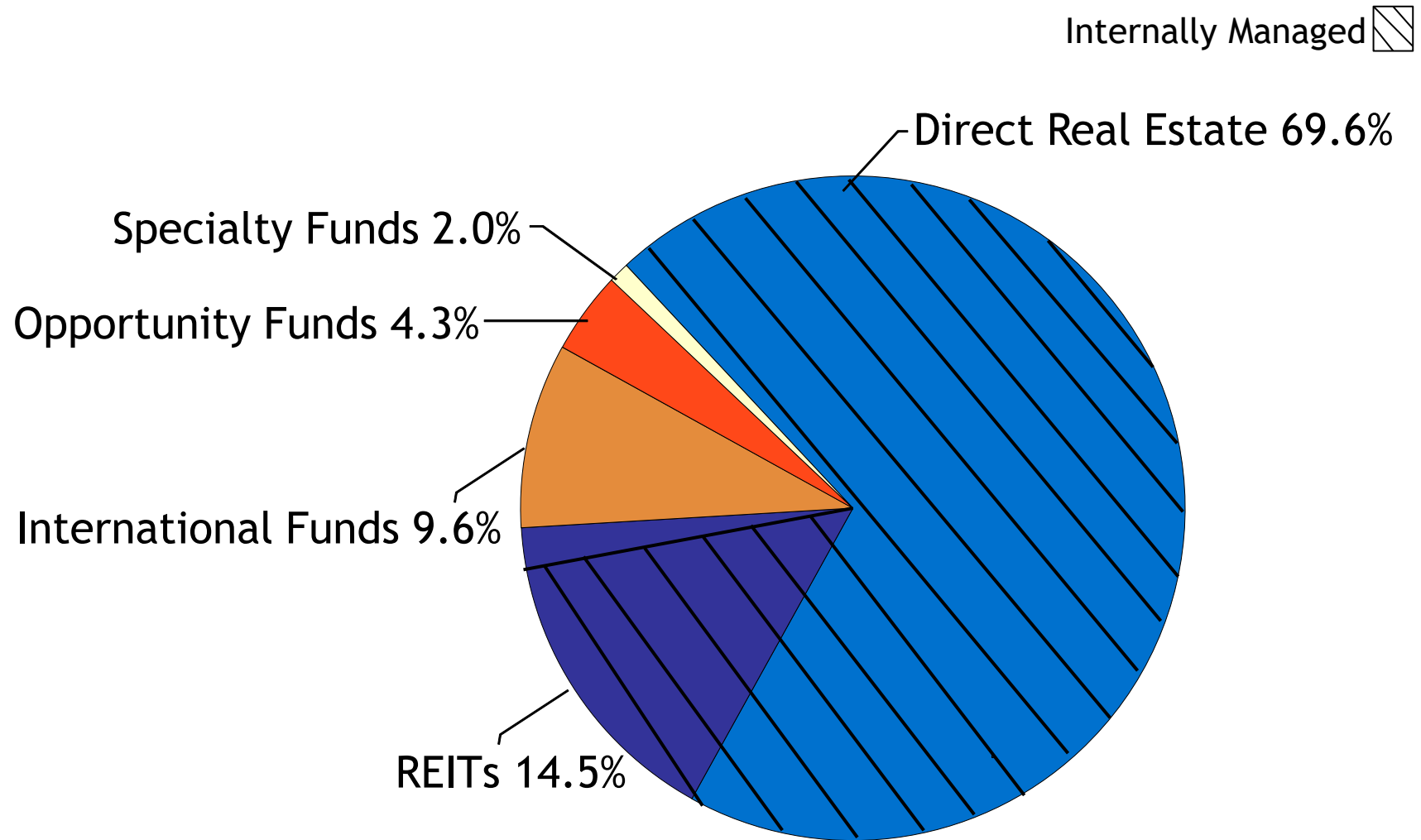
- Slightly below normal returns expected for fiscal 2024
- The asset class weight will be positioned close to the neutral target weight of 22% at the start of the fiscal year
- Developed/Emerging weightings will be managed near the 80%/20% Developed/Emerging target weights
- Staff will manage a balance between value and growth until market opportunities allow a higher-conviction tilt toward one style
- Capacity is available to make additional allocations to the new large-cap growth and analyst portfolios that were initiated in fiscal 2023



Real Estate

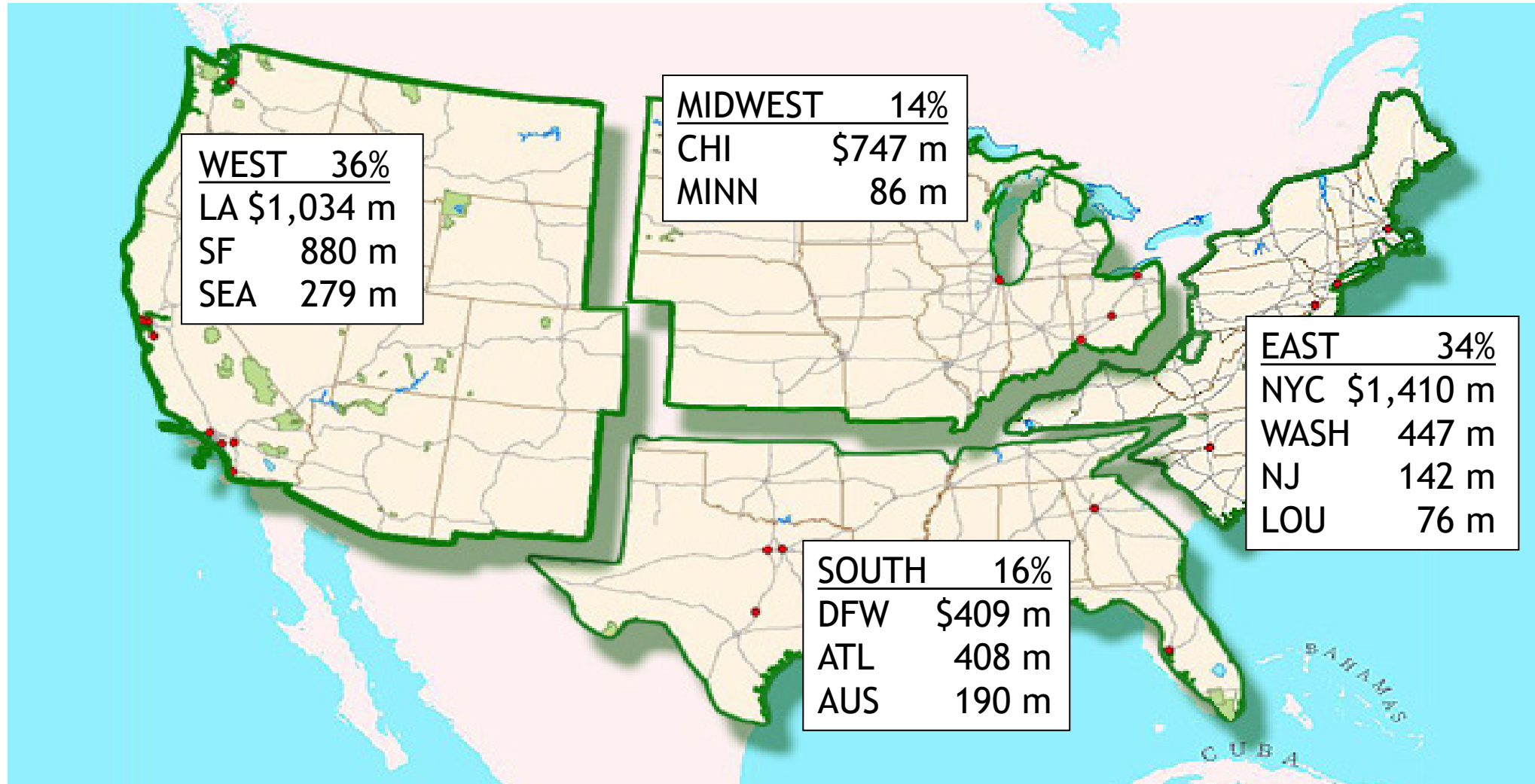
Jacob Clark

Real Estate – Portfolio Composition

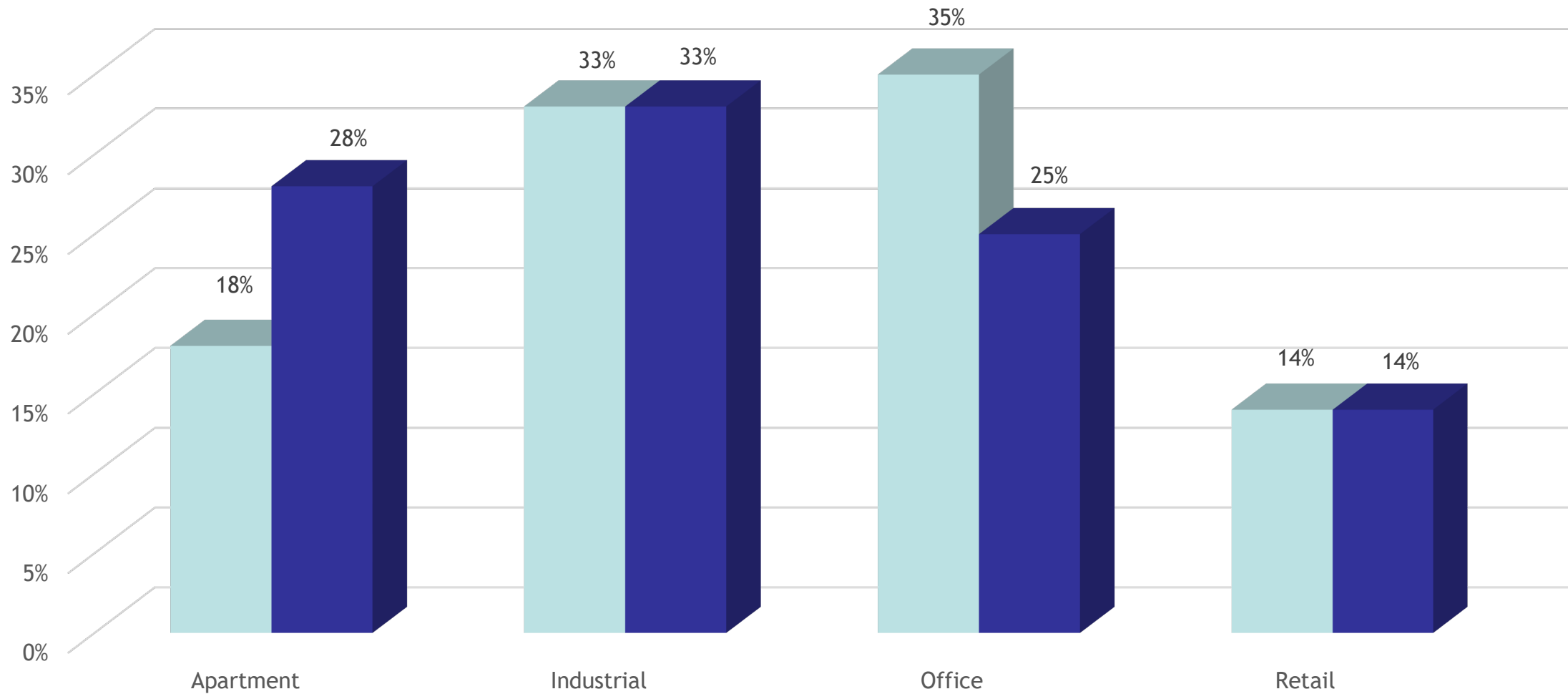


Market Values as of 05/31/23

Direct Real Estate – Geographic



Direct Real Estate – Property Type



Weighting as of 05/31/23 for STRS Ohio
Weighting as of 03/31/23 for NPI



Acquisitions – \$574 million

- Internal – Direct Real Estate Purchases \$132 million
- External – Real Estate Funds \$222 million
- REITs \$220 million

Dispositions – \$280 million

- Internal – Direct Real Estate \$184 million
- External – Real Estate Funds \$ 96 million

Net Investment Activity – \$294 million

Asset class will be below 5.75% long-term expected policy return

Maintain allocation near neutral allocation (10%)

Direct Real Estate

- Apartment fundamentals slowing
- Retail stabilized with increased brick and mortar sales
- Industrial rent growth continues
- Office expected to solidify late fiscal year 2024

Public Investment (REITs)

- Discount to direct real estate
- Potential for solid returns

International Real Estate

- Slower pace of investment
- Continued investment in Japan
- Slow growth in Europe

Key Initiatives

- Reduce office overweight and prune mature assets
- Increase apartment weighting
- Opportunistically adjust regional portfolio allocations
- Increase REIT allocation
- Maintain international and private fund pacing



Alternative Investments

Aaron DiCenzo

Fiscal 2023 Review

- **Asset allocation**
 - Above neutral target weight of 19%
- **Private equity**
 - Moderate decrease of overweight due to distribution activity in excess of contribution activity, valuation headwinds and net increase of total fund
- **Opportunistic/Diversified**
 - Approaching neutral weight due to contribution activity in excess of distribution activity and positive net performance
- **Commitment pace**
 - \$2.1 billion in combined private equity and opportunistic commitments

Fiscal 2024 Outlook

- **Total return at-to-slightly below STRS Ohio policy return of 7.38%**
- **Private equity**
 - At-to-below the long-term objective of 8.00%
- **Opportunistic/Diversified**
 - At the long-term objective of 5.73%
- **Fundamentals**
 - High-rate environment with slower economic growth

Fiscal 2024 Strategy

- **Asset allocation**

- Expected commitments – \$1.6 billion to \$2.9 billion
- Pacing consistent with long-term asset allocation target

- **Private equity**

- Expected commitments – \$1.0 billion to \$1.6 billion

- **Opportunistic/Diversified**

- Total expected commitments – \$600 million to \$1.3 billion
 - Opportunistic funds – \$300 million to \$600 million
 - Directly-invested assets – \$300 million to \$700 million:
 - Direct & co-investments – \$300 million to \$700 million
 - Liquid alternatives – \$0 to \$250 million



Risk Management

Michele G. Mazzoleni, PhD

- 1. Capital Market Risk**
- 2. Active Management Risk (Tracking Risk)**
- 3. Total Fund Liquidity Risk**
- 4. Enterprise Risk Management (ERM)**

First Measure: Capital Market Risk (Confidence Interval)

Expected Return

+6.03%

Standard Deviation

+12.90%

95% Confidence

Total fund return

-19% to +31%

68% Confidence

Total fund return

-7% to +19%

1. Capital Market Risk
- 2. Active Management Risk**

Second Measure: Active Management Risk

- Total fund Active Management Risk
- If total fund benchmark earns 6.03%
 - STRS Ohio return expected to be between (2 x 0.83% = 1.66%)

83 Basis Points

4.4% and 7.7%

1. Capital Market Risk
2. Active Management Risk (Tracking Risk)
3. **Total Fund Liquidity Risk**

Third Measure: Liquidity Risk

- **Cash flows were an important consideration in asset-liability study**
 - Approximately \$4 billion per year (benefits over contributions)
 - Extended equity market corrections can present challenges to fully rebalance asset mix after paying benefits
- **The liquid treasury portfolio is currently targeted at 5% of total fund**
 - Staff can use this portfolio to rebalance and during bouts of volatility
- **Liquidity reserves portfolio is currently targeted at 1% of total fund**
 - Higher interest rates have reduced the opportunity costs associated with cash

1. Capital Market Risk
2. Active Management Risk (Tracking Risk)
3. Total Fund Liquidity Risk
4. **Enterprise Risk Management (ERM)**

Fourth Measure: Enterprise Risk Management Impact and Probability Analysis

		PROBABILITY		
		HIGH	MEDIUM	LOW
FINANCIAL IMPACT	HIGH	<ul style="list-style-type: none"> • Not earning the actuarial assumed rate of return over the 10-year period 	<ul style="list-style-type: none"> • Long-term sovereign deficit and debt issues 	<ul style="list-style-type: none"> • Diversification fails • Significant negative return in any one year • Extended period of elevated inflation
	MEDIUM		<ul style="list-style-type: none"> • Recession • Global financial stress related to low economic growth 	<ul style="list-style-type: none"> • Deflation
	LOW	<ul style="list-style-type: none"> • Not earning the actuarial assumed rate of return in a fiscal year 	<ul style="list-style-type: none"> • Corporate fraud (securities litigation) • Buy Ohio 	<ul style="list-style-type: none"> • Poor investment • Divestment • Investment operations failures



Summary

Matt Worley

- **Investment staff is forecasting below trend economic growth**
- **Valuations reflect restrictive monetary policy and the range of economic forecasts**
- **Staff is projecting a positive total fund return at-to-below the board's policy return of 6.03%**
- **Staff will continue to address the board's strategic initiatives**



Communication Services

Meghan Fleming Visual Presentation



Board Consultants



Executive Director: Mr. Neville

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Callan

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June 15, 2023

Ms. Carol Correthers, Chair
State Teachers Retirement Board of Ohio
275 East Broad Street
Columbus, OH 43215-3771

Re: STRS Ohio Fiscal 2024 Investment Plan

The purpose of this letter is to share Callan's endorsement of the Fiscal 2024 Investment Plan prepared by STRS Staff. As we have in years past, in addition to reviewing the written Investment Plan, Callan held a conference call with Investment staff to review the proposed plan during its development. The Investment Plan serves an important role as a bridge between the long-term asset allocation strategy set by the Board through the Statement of Investment Objectives and Policy (SIOP) and the day-to-day management of investments performed by STRS Staff. The Investment Plan is designed to be consistent with the STRS Ohio SIOP as well as the recently adopted Statement of Investment Beliefs (SIB), but also articulates the shorter-term strategies anticipated for the coming fiscal year that are meant to help STRS Ohio contribute to its long-term objectives.

Callan considers the proposed Investment Plan for Fiscal 2024 to be in-line with the asset allocation targets, rebalancing ranges, and risk budgets approved by the Retirement Board in the STRS Ohio SIOP. The Investment Plan presents a unique window into some of the Investment staff's strategies and tactics that inform the day-to-day oversight and decision-making for the investment portfolio. The Investment Plan begins with a focus on asset allocation, risk budgeting, and the current economic environment. It then delves into asset class strategies and how these may be informed by the macroeconomic environment. The asset class sections review expectations for performance, current and expected portfolio positioning, as well as updates on certain strategic initiatives discussed with the Retirement Board in the past.

Callan recommends the STRS Board approve the Investment Plan prepared by Staff for Fiscal 2024.

Regards,



Brady O'Connell, CFA
Senior Vice President

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To: Retirement Board, State Teachers Retirement System of Ohio
From: Stephen Nesbitt, Cliffwater LLC
Date: June 8, 2023
Regarding: **STRS Fiscal 2024 Investment Plan**
CC: Matt Worley, Chief Investment Officer
Aaron DiCenzo, Director of Alternative Investments

Cliffwater agrees with the investment actions and direction contained in the Fiscal 2024 Investment Plan regarding alternative investments and recommends approval.

Cliffwater general observations on the Fiscal 2024 Investment Plan follow:

1. STRS Ohio prepares a comprehensive and thoughtful annual plan that integrates strategic thinking with a tactical action plan that meets or exceeds industry “best practices” for investment planning.
2. STRS Ohio employs a sophisticated capital market and active risk management protocol that clearly outlines return and risk expectations and should also be considered industry best practice.
3. The 10-year return forecasts expressed in the Investment Plan are consistent with Cliffwater’s own forecasts and historical outcomes.

Cliffwater observations on the Fiscal 2024 Alternatives Plan are:

1. **Private Equity.** We agree with STRS’ planned \$1.0 billion to \$1.6 billion, providing Staff flexibility to take advantage of the best opportunities and to navigate overall allocation to target levels.
2. **Opportunistic/Diversified.** We agree with:
 - a. The planned \$600 million to \$1.3 billion level in overall new commitments to O/D is consistent with that asset class reaching its neutral allocation.
 - b. Increased allocations to direct and co-investments; banking, insurance, and asset management; infrastructure; and specialty finance.
 - c. Decreased allocations to hedge funds; energy and natural resources, and public-private investment funds.

In summary, Cliffwater fully endorses STRS Ohio Fiscal 2024 Investment Plan.



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PROPOSED MOTION

Adoption of Fiscal 2024 Investment Plan

June 15, 2023

_____ moved, seconded by _____ that the Board adopt the Fiscal 2024 Investment Plan.

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- The preliminary total fund return for May was **-0.59%***
- The preliminary fiscal year 2023 total fund return is estimated:
 - Gross return +4.67%*
 - Net return +4.56%*
- International equity returns **-2.3%**, real estate **-1.8%**, fixed income **-1.0%**
 - Alternative investments, liquidity reserves & domestic equity positive returns
- **\$600 million** allocated to international equities and fixed income
 - Reduced domestic equities and liquidity reserves
- Total investment assets ended May at **\$87.8 billion**, higher by **\$200 million** in fiscal 2023

** Gross returns, except for alternative investments & real estate where the return is net of all external investment management fees and costs, including carried interest and other fund expenses.*

- Issuance of RFP **May 2023**
- RFP response deadline **June 2023**
- Evaluation of qualifying proposals **August 2023**
- Finalist firms present to committee **September 2023**
- Reference calls **October 2023**
- Selection of successful firm(s) **November 2023**
- Contract(s) negotiated/executed **December 2023**
- Commencement date of contract(s) **Jan. 1, 2024**

- **Matters requiring board action:**
 - Semiannual Broker Evaluation and associated policies for the first half fiscal 2024
 - Amended Stock Proxy Voting Policy
 - Fiscal 2024 Investment Plan
 - Callan’s review of the Fiscal 2024 Investment Plan
 - Cliffwater’s Review of the Fiscal 2024 Investment Plan
- **Educational or scheduled updates and reviews requiring no action today:**
 - Summary of Investment Activity Report, May 2023
 - Callan Quarterly Performance Review as of March 31, 2023
 - Review of May 2023 investment transactions
- **Summary of requests**



Callan LLC

Performance Review

STRS Ohio Board Meeting

June 2023

Michael Joecken
Senior Vice President

Brady O'Connell, CFA, CAIA
Senior Vice President

Trustee Summary Report Period Ending March 31, 2023

STRS Ohio Total Fund Report Fiscal YTD 1, 3, 5, 10 & 20 Years Ending March, 2023

Periods Ending March, 2023
Annualized Rates of Return

Experienced Returns
Have returns affected funded ratio?
1. Total fund return *
2. Actuarial discount rate ***
3. Relative Performance (1-2)
Has plan been rewarded for capital market risk?
4. Total fund benchmark return
5. Minimum risk/high cost policy of 91-Day T-Bills
6. Impact of asset mix policy (4-5)
Has plan been rewarded for active management risk?
7. Active management effect (1-4) *
8. Net active management return estimated **

Fiscal YTD	1 Year	3 Years	5 Years	10 Years	20 Years
4.39%	-3.53%	12.48%	7.92%	8.50%	8.86%
5.25%	7.00%	7.15%	7.27%	7.48%	7.73%
-0.86%	-10.53%	5.33%	0.65%	1.02%	1.13%
4.44%	-4.30%	11.32%	7.27%	8.03%	8.43%
2.40%	2.50%	0.89%	1.41%	0.87%	1.26%
2.04%	-6.80%	10.43%	5.86%	7.16%	7.18%
-0.05%	0.77%	1.16%	0.65%	0.47%	0.43%
-0.14%	0.65%	1.04%	0.52%	0.34%	0.31%

* Gross Returns are net of transaction costs and gross of management fees, except for alternative investments & real estate where the return is also net of all external investment management fees and costs, including carried interest and other fund expenses. Certain Callan returns may differ from STRS due to rounding.

** Net returns are net of all internal and external investment management fees and costs, including carried interest and other fund expenses.

*** The actuarial rate of return assumption was decreased from 7.45% to 7.00%, effective as of 6/30/2021.

The STRS real estate return includes the use of leverage.

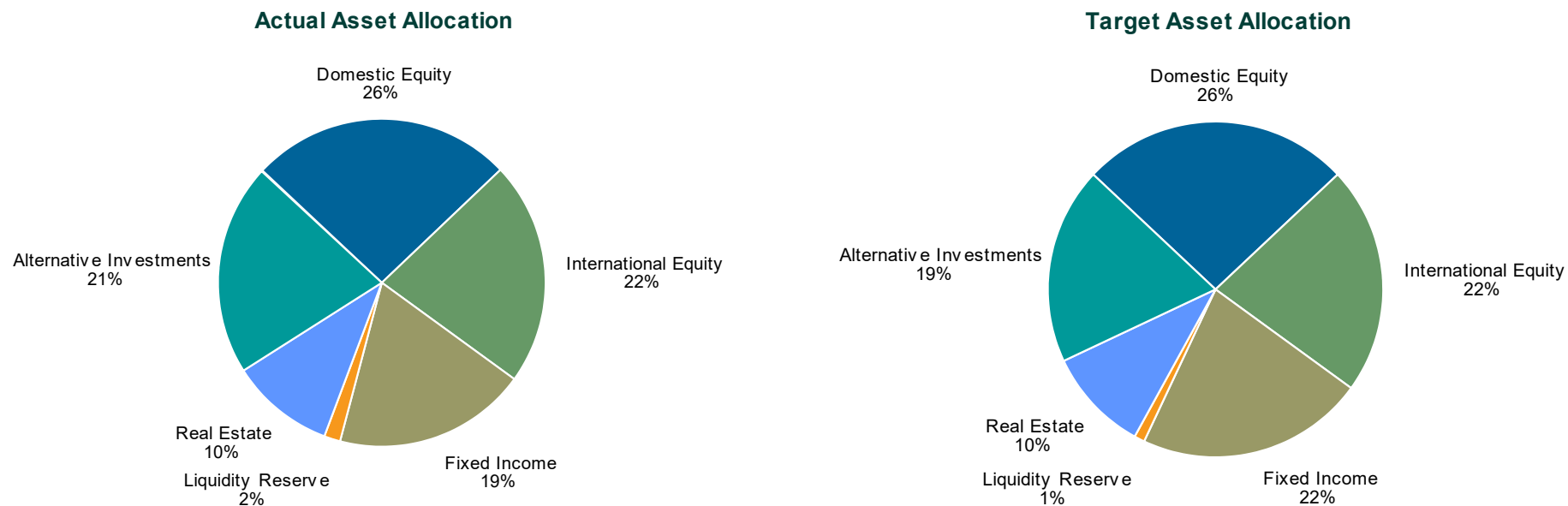
The STRS Ohio total fund policy return (blended benchmark) is 26% Russell 3000, 22% International Blended Benchmark, 22% Fixed Income Blended Benchmark, 10% Real Estate Blended Benchmark, 19% Alternative Investments Blended Benchmark (prior to July 1, 2021, the Alternative Investment benchmark was the Alternative Investment Actual Return), and 1% 90-day Treasury Bill as of July 1, 2022.



STRS Ohio Investment Performance

STRS Asset Allocation v. Policy Target

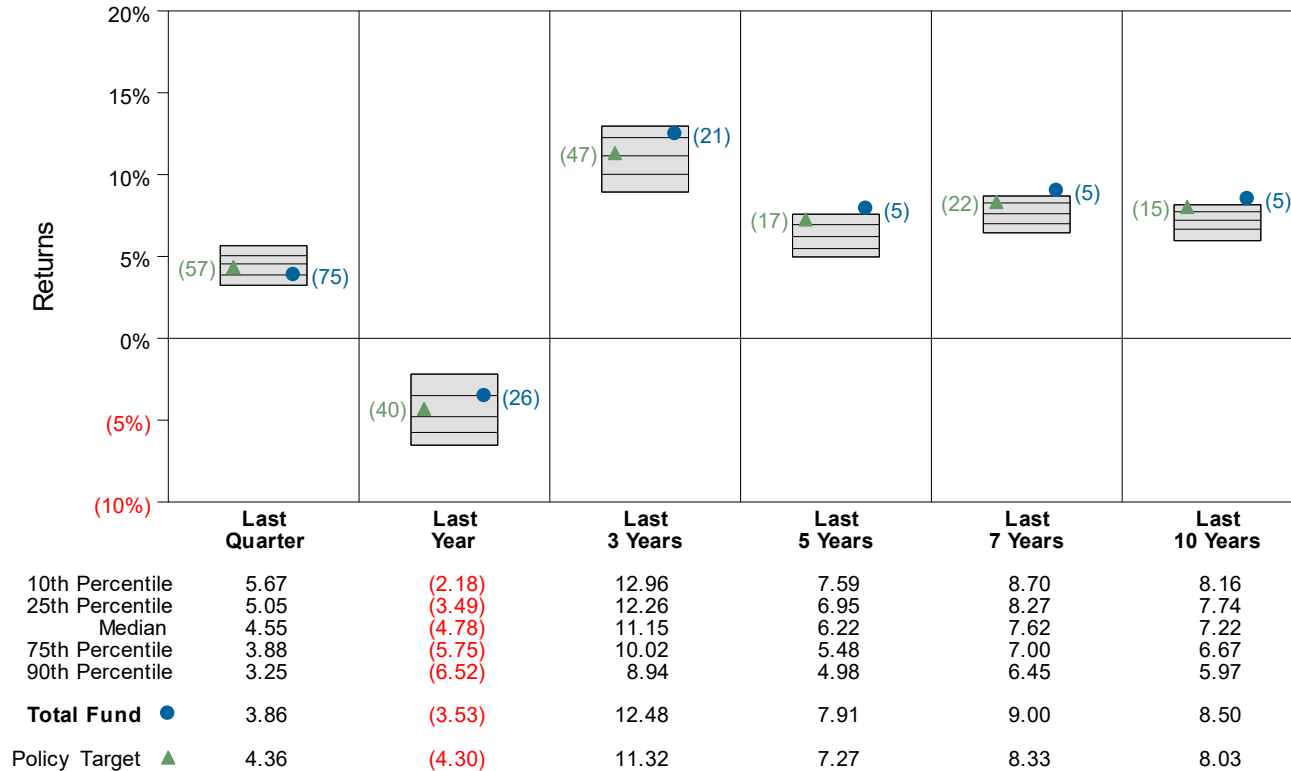
As of March 31, 2023



Asset Class	\$Millions Actual	Weight Actual	Target	Percent Difference	\$Millions Difference
Domestic Equity	22,866	25.9%	26.0%	(0.1%)	(75)
International Equity	19,502	22.1%	22.0%	0.1%	91
Fixed Income	16,893	19.1%	22.0%	(2.9%)	(2,519)
Liquidity Reserve	1,428	1.6%	1.0%	0.6%	546
Real Estate	9,081	10.3%	10.0%	0.3%	258
Alternative Investments	18,464	20.9%	19.0%	1.9%	1,699
Total	88,234	100.0%	100.0%		

STRS Ohio v. Callan Public Fund Sponsor Database

Callan Public Fund Sponsor Database

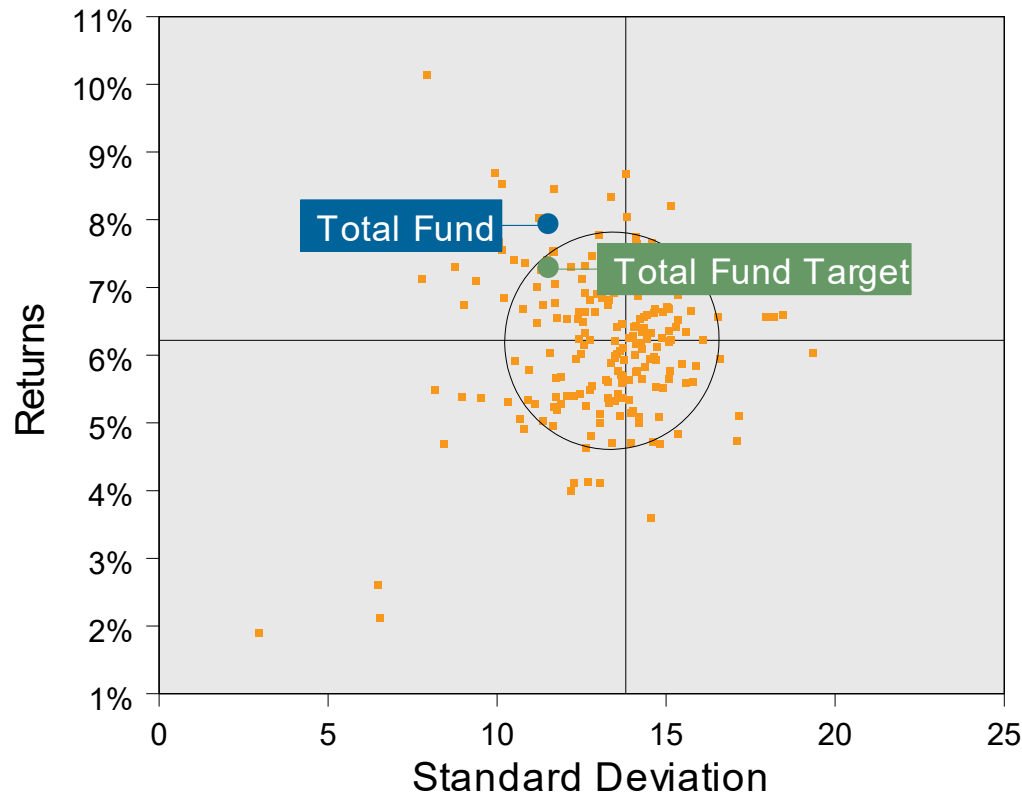


- For one-year ended 3/31/2023, STRS Ohio outperformed the benchmark by 77 basis points and ranked at the 26th percentile of the Callan Public Fund Sponsor Database.
- For the past five-years ended 3/31/2023, STRS Ohio had a 64 basis point advantage over the benchmark and ranked at the 5th percentile of the Callan Public Fund Sponsor Database.
- For 10-years ended 3/31/2023, STRS Ohio bested the benchmark by 47 basis points and ranked at the 5th percentile of the Callan Public Fund Sponsor Database.

Gross returns are illustrated, except for alternative investments & real estate where the return is net of all external investment management fees and costs, including carried interest and other fund expenses. Certain Callan returns may differ from STRS Ohio due to rounding.

STRS Ohio v. Callan Public Fund Sponsor Database

Callan Public Fund Sponsor Database (Gross)
Annualized Five Year Risk vs Return



- For the five-years ending March 31, 2023, STRS Ohio posted an annualized return of 7.91% relative to the 7.27% return of the total fund target.
- STRS Ohio achieved a return that ranked at the 5th percentile during the last five years, while exhibiting less risk than the median of the Callan Public Fund Sponsor Database, (“risk” as measured by Standard Deviation and Median represented by the vertical crosshair).
- The ellipse represents the 10th to the 90th percentile of Callan’s Public Fund Sponsor Database.

STRS Ohio Attribution – 1 Year

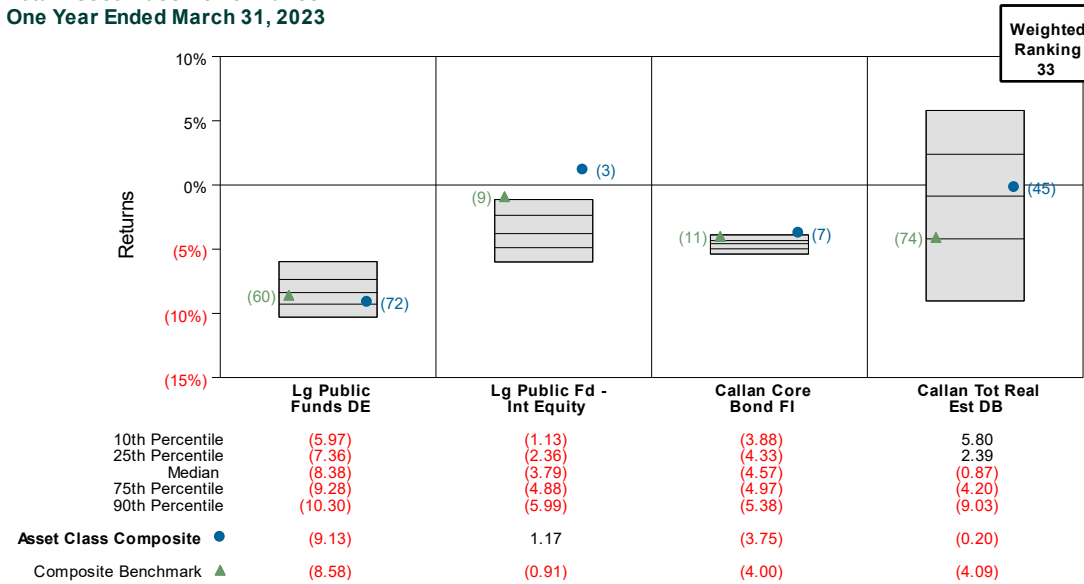
One Year Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equity	26%	27%	(9.13%)	(8.58%)	(0.15%)	(0.01%)	(0.16%)
International Equity	22%	22%	1.17%	(0.91%)	0.43%	0.00%	0.43%
Fixed Income	18%	21%	(3.75%)	(4.00%)	0.04%	0.04%	0.08%
Real Estate	10%	10%	(0.20%)	(4.09%)	0.41%	(0.09%)	0.32%
Alternative Investments	21%	18%	(2.85%)	(3.07%)	0.06%	0.10%	0.16%
Global Equities	0%	0%	(66.85%)	(66.85%)	0.00%	(0.04%)	(0.04%)
Liquidity Reserve	1%	1%	2.73%	2.50%	0.00%	0.04%	0.05%
Total Fund Allocation	1%	0%	(12.77%)	(12.77%)	0.00%	(0.06%)	(0.06%)

Total (3.53%) = (4.30%) + 0.79% + (0.02%) **0.77%**

- The Total Fund one-year return beat its benchmark by 77 basis points.
- Relative outperformance from International Equity, Fixed Income, Real Estate, and Alternative Investments drove above-benchmark performance during the past year. Domestic Equity underperformed.
- Asset allocation differences from target had a small net negative impact on performance.

Total Asset Class Performance
One Year Ended March 31, 2023



- Domestic Equity trailed its composite benchmark and ranked at the 72nd percentile of the peer group.
- International Equity led its benchmark and ranked at the 3rd percentile of peers.
- Fixed Income led its composite benchmark and ranked at the 7th percentile of its peers.
- Real Estate beat its performance benchmark and ranked at the 45th percentile of the peer group.

*Total Fund Allocation portfolio inception: January 2014.

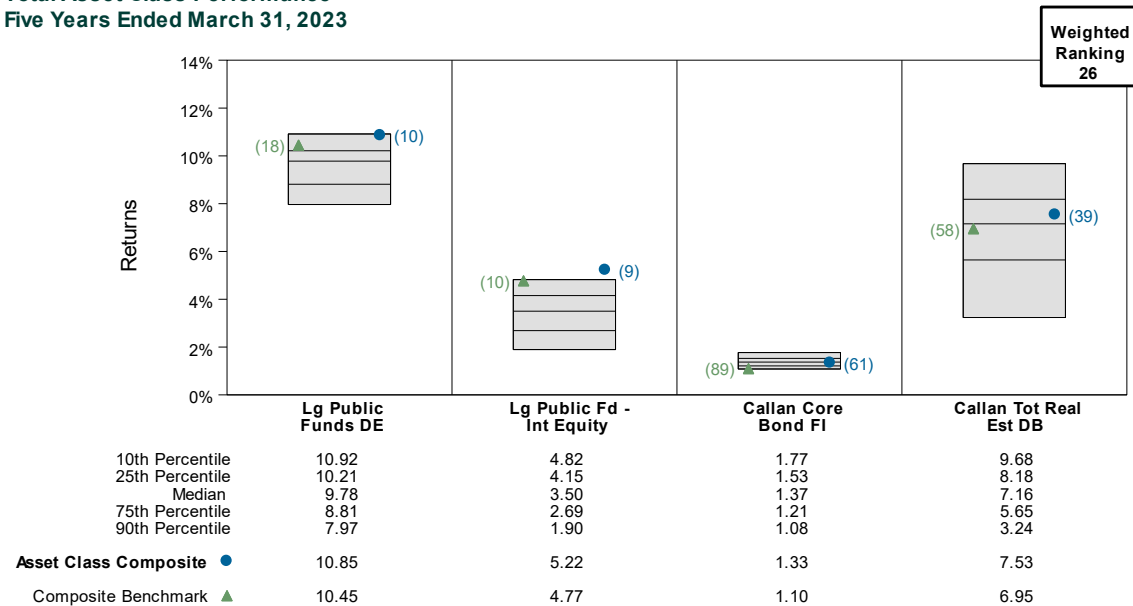
STRS Ohio Attribution – 5 Years

Five Year Annualized Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equity	27%	28%	10.85%	10.45%	0.11%	(0.06%)	0.05%
International Equity	22%	23%	5.22%	4.77%	0.10%	0.02%	0.12%
Fixed Income	19%	21%	1.33%	1.10%	0.04%	0.10%	0.14%
Real Estate	10%	10%	7.53%	6.95%	0.07%	(0.03%)	0.04%
Alternative Investments	18%	17%	12.89%	12.13%	0.14%	0.09%	0.23%
Global Equities	1%	0%	(14.33%)	(14.33%)	0.00%	0.00%	0.00%
Liquidity Reserve	2%	1%	1.45%	1.41%	0.00%	(0.00%)	(0.00%)
Total Fund Allocation	1%	0%	5.91%	5.91%	0.00%	0.05%	0.05%

Total 7.91% = 7.27% + 0.47% + 0.18% **0.64%**

Total Asset Class Performance Five Years Ended March 31, 2023



- The Total Fund five-year return had a 64 basis points advantage over the benchmark.
- Positive relative performance was driven by active management across all asset classes. An underweight to Fixed Income and overweight to Alternative Investments contributed positively.
- At the Total Fund level, both active management and asset allocation decisions added value.

- Domestic Equity outperformed its benchmark and finished at the 10th percentile of peers.
- International Equity exceeded its benchmark and finished at the 9th percentile of peers.
- Fixed Income outperformed its benchmark and finished at the 61st percentile of peers.
- Real Estate beat its benchmark and finished at the 39th percentile of peers.

*Total Fund Allocation portfolio inception: January 2014.

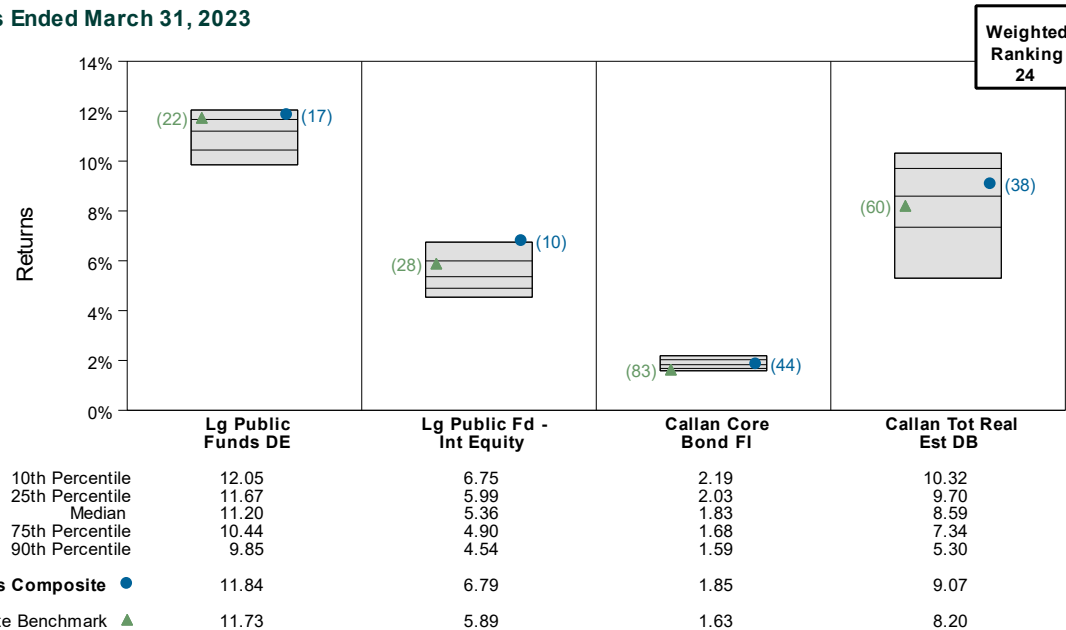
STRS Ohio Attribution – 10 Years

Ten Year Annualized Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equity	29%	30%	11.84%	11.73%	0.03%	(0.05%)	(0.02%)
International Equity	23%	24%	6.79%	5.89%	0.22%	0.02%	0.24%
Fixed Income	18%	20%	1.85%	1.63%	0.03%	0.08%	0.11%
Real Estate	10%	10%	9.07%	8.20%	0.09%	(0.02%)	0.08%
Alternative Investments	16%	15%	11.80%	11.42%	0.07%	0.03%	0.10%
Global Equities	1%	0%	(2.98%)	(2.98%)	0.00%	0.01%	0.01%
Liquidity Reserve	2%	1%	0.90%	0.87%	0.00%	(0.08%)	(0.08%)
Total Fund Allocation	0%	0%	-	-	0.00%	0.04%	0.04%

Total 8.50% = 8.03% + 0.44% + 0.03% 0.47%

Total Asset Class Performance Ten Years Ended March 31, 2023



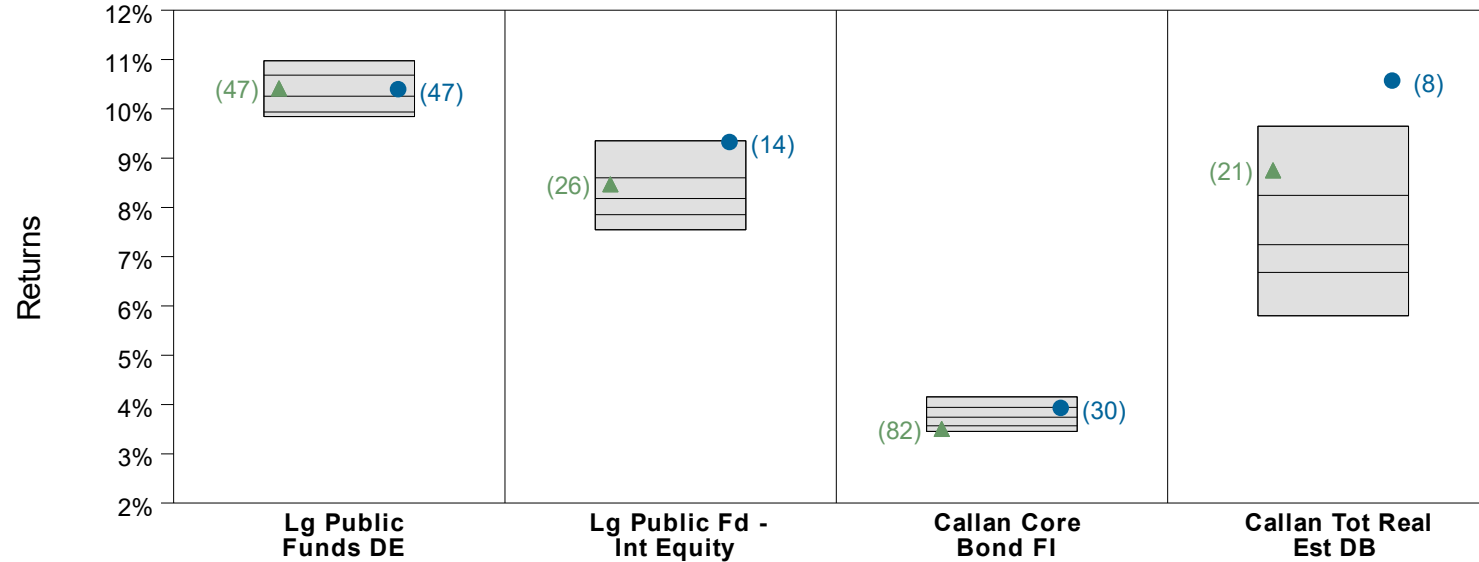
- The Total Fund 10-year return led the benchmark by 47 basis points with outperformance from favorable manager and security selection decisions.
- All major asset classes outperformed their respective benchmarks.
- Asset allocation decisions combined for a marginal positive impact during the period.

- Domestic Equity outperformed its benchmark and ranked at the 17th percentile of peers.
- International Equity outperformed its benchmark and ranked in at the 10th percentile of peers.
- Fixed Income outperformed its benchmark and ranked at the 44th percentile of peers.
- Real Estate led its benchmark and ranked at the 38th percentile of peers.

*Total Fund Allocation portfolio inception: January 2014.

STRS Ohio Asset Class Returns

Total Asset Class Performance Twenty Years Ended March 31, 2023



	Lg Public Funds DE	Lg Public Fd - Int Equity	Callan Core Bond FI	Callan Tot Real Est DB
10th Percentile	10.98	9.35	4.16	9.65
25th Percentile	10.68	8.60	3.94	8.24
Median	10.25	8.18	3.74	7.24
75th Percentile	9.94	7.85	3.57	6.68
90th Percentile	9.84	7.54	3.45	5.80

Asset Class Composite ●	10.37	9.30	3.90	10.55
Composite Benchmark ▲	10.42	8.47	3.50	8.75

- Total Fund 20-year gross return: 8.86%

Gross returns are illustrated, except for alternative investments & real estate where the return is net of all external investment management fees and costs, including carried interest and other fund expenses. Certain Callan returns may differ from STRS Ohio due to rounding.



Additional Trustee Summary Reports

Gross and Net Total Fund Returns Period Ending March 31, 2023

Gross and Net Total Fund Return

Periods Ending March, 2023
Annualized Rates of Return

Gross and net total fund return

	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	20 Year
1. Total fund return *	4.39%	-3.53%	12.48%	7.92%	8.50%	8.86%
2. External alternative & real estate mgmt. fees reflected in line 1 **	0.16%	0.21%	0.22%	0.23%	0.21%	0.17%
3. Gross total fund return (1 + 2)	4.55%	-3.32%	12.70%	8.15%	8.71%	9.03%
4. Total investment management costs	0.25%	0.33%	0.34%	0.36%	0.34%	0.29%
5. Net total fund return (3-4) ***	4.30%	-3.65%	12.36%	7.79%	8.37%	8.74%

* Gross Returns are net of transaction costs and gross of management fees, except for alternative investments & real estate where the return is also net of all external investment management fees and costs, including carried interest and other fund expenses.

** Includes management fees net of fee waivers/rebates and does not include carried interest or other fund expenses.

*** Net returns are net of all internal and external investment management fees and costs, including carried interest and other fund expenses.

Total Investment Management Costs

Total Investment Management Costs

	2021 Investment Management Costs *			Dec. 2021 Assets (Billions)
	Fees to Assets Managed (bps)	Fees to Total Fund (bps)	Fees (\$000's)	
Total Investment Management Costs *				
Externally Managed:				
Alternative Investments	113	19	\$ 178,038	\$ 17.7
Real Estate	193	2	\$ 21,263	\$ 1.2
All Other External Managers **	39	6	\$ 55,442	\$ 15.1
Internal Managers	10	6	\$ 56,148	\$ 65.3
Total Investment Management Costs *	33	33	\$ 310,891	\$ 99.3

* Annual fees are based upon the CEM investment report for calendar year 2021.

Investment Management costs include internal investment department salaries, incentive compensation, benefits, external manager fees, the allocation of ITS costs, overhead expenses, oversight, custodial & other costs. Investment management costs exclude carried interest and other fund expenses.

** Includes fixed income, domestic equity and international equity external manager fees.



Investment Manager Performance

Asset Class Performance vs. Benchmarks

	Last Quarter	Last Year	Last 3 Years	Last 5 Years
Total Domestic Equity	6.58%	(9.13%)	18.92%	10.85%
Domestic Equity Benchmark	7.18%	(8.58%)	18.48%	10.45%
Total International Equity	7.53%	1.17%	15.39%	5.22%
Int'l Blended Benchmark	7.19%	(0.91%)	13.74%	4.77%
Total Fixed Income	2.80%	(3.75%)	(1.35%)	1.33%
Fixed Income Blended Benchmark	2.81%	(4.00%)	(2.02%)	1.10%
Total Real Estate	(1.74%)	(0.20%)	8.23%	7.53%
Real Estate Blended Benchmark	(1.14%)	(4.09%)	8.15%	6.95%
Total Alternative Investments	0.66%	(2.85%)	16.38%	12.89%
Alternative Investment Blended Bmk	2.01%	(3.07%)	-	-
Liquidity Reserve	1.17%	2.73%	0.97%	1.45%
Liquid Reserve Index	1.07%	2.50%	0.89%	1.41%
Total Fund	3.86%	(3.53%)	12.48%	7.91%
Total Fund Benchmark	4.36%	(4.30%)	11.32%	7.27%

Asset Class Performance vs. Benchmarks

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Last 30 Years
Total Domestic Equity	11.84%	9.91%	10.37%	7.21%	9.16%
Domestic Equity Benchmark	11.73%	9.90%	10.42%	7.53%	9.86%
Total International Equity	6.79%	4.96%	9.30%	6.24%	-
Int'l Blended Benchmark	5.89%	4.13%	8.47%	5.07%	-
Total Fixed Income	1.85%	3.47%	3.90%	4.71%	5.32%
Fixed Income Blended Benchmark	1.63%	3.02%	3.50%	4.26%	4.71%
Total Real Estate	9.07%	6.70%	10.55%	10.31%	10.24%
Real Estate Blended Benchmark	8.20%	6.70%	8.75%	8.75%	8.74%
Total Alternative Investments	11.80%	9.37%	11.79%	8.71%	9.40%
Liquidity Reserve	0.90%	0.80%	1.42%	2.02%	2.48%
Liquid Reserve Index	0.87%	0.67%	1.26%	1.79%	2.28%
Total Fund	8.50%	7.13%	8.86%	6.93%	7.92%
Total Fund Benchmark	8.03%	6.92%	8.43%	6.67%	7.77%

Investment Manager Returns and Peer Group Rankings

	Last Quarter		Last Year		Last 3 Years		Last 5 Years		Last 10 Years	
Total Domestic Equity	6.58%	52	(9.13%)	72	18.92%	40	10.85%	10	11.84%	17
Domestic Equity Benchmark	7.18%	23	(8.58%)	60	18.48%	61	10.45%	18	11.73%	22
Lg Public Funds DE	6.75%		(8.38%)		18.70%		9.78%		11.20%	
Total 1000 Equity	6.97%	48	(8.73%)	61	18.77%	41	11.25%	35	12.06%	51
Russell 1000 Index	7.46%	44	(8.39%)	58	18.55%	46	10.87%	40	12.01%	52
Callan Large Cap	6.76%		(7.89%)		18.36%		10.30%		12.15%	
Total Internal 1000 Equity	6.97%	48	(8.78%)	61	18.78%	41	11.34%	33	12.08%	51
Callan Large Cap	6.76%		(7.89%)		18.36%		10.30%		12.15%	
STRS Analyst Select Fund	5.16%	68	(7.99%)	53	19.03%	36	10.71%	47	11.20%	76
Russell 1000 Index	7.46%	23	(8.39%)	71	18.55%	47	10.87%	46	12.01%	56
Callan Large Cap Core	6.73%		(7.85%)		18.47%		10.62%		12.14%	
Concentrated Select Fund	0.57%	80	(10.39%)	66	20.55%	24	8.72%	70	-	
Russell 1000 Index	7.46%	44	(8.39%)	58	18.55%	46	10.87%	40	12.01%	52
Callan Large Cap	6.76%		(7.89%)		18.36%		10.30%		12.15%	
STRS Large Cap Passive Quantitative	8.67%	37	(8.27%)	56	18.37%	49	11.93%	23	12.77%	40
Russell Top 200	8.67%	37	(8.27%)	56	18.36%	50	11.92%	23	12.77%	40
Callan Large Cap	6.76%		(7.89%)		18.36%		10.30%		12.15%	
Integrated Factor Index	1.27%	75	(5.95%)	38	19.59%	32	-	-	-	
Russell 1000 Index	7.46%	44	(8.39%)	58	18.55%	46	10.87%	40	12.01%	52
Callan Large Cap	6.76%		(7.89%)		18.36%		10.30%		12.15%	
STRS Large Cap Value	2.58%	20	(1.71%)	10	19.05%	69	9.08%	32	10.24%	36
Large Cap Value Custom Index	1.01%	37	(5.91%)	74	17.93%	84	7.50%	70	9.20%	87
Callan Large Cap Value	0.42%		(4.52%)		20.57%		8.28%		9.94%	
STRS Large Cap Growth	14.53%	26	(14.09%)	71	16.32%	44	13.24%	17	13.85%	45
Russell 1000 Growth Index	14.37%	28	(10.90%)	40	18.58%	20	13.66%	14	14.59%	21
Callan Large Cap Growth	13.09%		(11.85%)		15.62%		11.62%		13.67%	
STRS Mid Cap Value	2.04%	41	(8.79%)	91	22.52%	60	7.14%	72	8.65%	81
Russell Mid Cap Value Idx	1.32%	58	(9.22%)	92	20.69%	85	6.54%	81	8.80%	79
Callan Mid Cap Value	1.82%		(6.39%)		23.41%		7.89%		9.52%	
STRS Mid Cap Growth	10.19%	25	(10.10%)	48	12.22%	73	9.18%	54	10.65%	59
Russell Mid Cap Growth Idx	9.14%	35	(8.52%)	36	15.20%	48	9.07%	55	11.17%	44
Callan Mid Cap Growth	8.36%		(10.68%)		14.92%		9.32%		10.91%	
Total 2000 Equity	3.09%	57	(12.33%)	90	20.97%	63	7.15%	46	10.03%	46
Russell 2000 Index	2.74%	66	(11.61%)	86	17.51%	94	4.71%	89	8.04%	91
Callan Small Cap Core	3.42%		(7.68%)		21.88%		6.82%		9.89%	
Total Internal 2000 Equity	1.70%	82	(11.15%)	86	18.60%	88	4.67%	89	8.55%	84
Small Cap Select	2.40%	74	(9.04%)	66	20.15%	72	4.17%	93	-	
STRS Quantitative 2000	1.23%	87	(12.42%)	91	17.73%	93	4.72%	89	8.85%	78
Russell 2000 Index	2.74%	66	(11.61%)	86	17.51%	94	4.71%	89	8.04%	91
Callan Small Cap Core	3.42%		(7.68%)		21.88%		6.82%		9.89%	

Investment Manager Returns and Peer Group Rankings

	Last Quarter		Last Year		Last 3 Years		Last 5 Years		Last 10 Years	
Total External 2000 Equity	3.91%	46	(13.15%)	84	22.27%	42	8.59%	32	10.89%	30
Callan Small Cap	3.73%		(8.50%)		21.62%		7.16%		10.08%	
Small Cap Core	5.41%	26	(10.56%)	80	30.83%	2	9.01%	16	11.31%	11
Fuller & Thaler Core	6.72%	10	(3.50%)	20	31.52%	2	11.94%	2	13.58%	3
Fuller & Thaler Micro-Cap	1.70%	82	(26.45%)	100	29.33%	6	2.22%	100	7.07%	96
Russell 2000 Index	2.74%	66	(11.61%)	86	17.51%	94	4.71%	89	8.04%	91
Callan Small Cap Core	3.42%		(7.68%)		21.88%		6.82%		9.89%	
Small Cap Value	3.13%	15	(9.50%)	71	22.73%	73	6.95%	37	9.39%	42
Chartwell	0.95%	57	(4.93%)	40	19.43%	90	4.45%	86	7.99%	81
Neuberger Berman	5.22%	4	(13.33%)	88	25.70%	44	9.25%	9	10.87%	9
Russell 2000 Value Index	(0.66%)	84	(12.96%)	87	21.01%	80	4.55%	84	7.22%	97
Callan Small Cap Value	1.18%		(6.40%)		25.13%		6.17%		8.98%	
Small Cap Growth	3.47%	94	(22.58%)	99	11.37%	92	8.66%	53	11.85%	33
Weatherbie Capital 2000 Growth	3.47%	94	(22.58%)	99	11.37%	92	8.66%	53	13.00%	11
Russell 2000 Growth Index	6.07%	67	(10.60%)	48	13.36%	84	4.26%	94	8.49%	96
Callan Small Cap Growth	7.16%		(10.81%)		16.93%		8.98%		11.27%	
Total International Equity	7.53%	44	1.17%	3	15.39%	11	5.22%	9	6.79%	10
Int'l Blended Benchmark	7.19%	60	(0.91%)	9	13.74%	40	4.77%	10	5.89%	28
Lg Public Fd - Int Equity	7.45%		(3.79%)		13.29%		3.50%		5.36%	
Total EAFE	8.09%	67	3.25%	7	16.45%	14	6.37%	8	7.68%	9
MSCI World ex US 50% Hedged	7.98%	69	1.50%	18	15.07%	25	6.10%	10	6.74%	21
Callan NonUS Eq	8.76%		(1.87%)		13.77%		3.99%		5.95%	
Total Internal EAFE	7.55%	75	1.16%	21	15.22%	24	5.06%	20	6.38%	33
STRS Structured EAFE	7.86%	71	1.92%	15	15.44%	22	6.40%	8	7.05%	15
STRS EAFE Quantitative	7.05%	84	(0.04%)	31	14.90%	28	3.74%	54	5.92%	51
MSCI World ex US 50% Hedged	7.98%	69	1.50%	18	15.07%	25	6.10%	10	6.74%	21
Callan NonUS Eq	8.76%		(1.87%)		13.77%		3.99%		5.95%	
Total External EAFE	8.47%	59	4.86%	4	17.45%	10	7.52%	4	8.97%	1
Arrowstreet Capital	6.70%	89	4.03%	5	20.67%	4	8.80%	1	10.41%	1
AllianceBernstein EAFE Value	9.29%	38	6.09%	3	17.92%	9	3.95%	50	7.06%	15
MFS	9.33%	38	4.80%	4	13.84%	48	9.00%	1	-	
MSCI World ex US 50% Hedged	7.98%	69	1.50%	18	15.07%	25	6.10%	10	6.74%	21
Callan NonUS Eq	8.76%		(1.87%)		13.77%		3.99%		5.95%	

Investment Manager Returns and Peer Group Rankings

	Last Quarter		Last Year		Last 3 Years		Last 5 Years		Last 10 Years	
Total Emerging	5.80%	32	(7.37%)	40	10.05%	49	(0.04%)	59	2.74%	71
MSCI Emerging Mkts Idx	3.96%	68	(10.70%)	74	7.83%	69	(0.91%)	74	2.03%	86
Emerging Mkts Equity DB	4.78%		(8.50%)		9.89%		0.55%		3.55%	
Total Internal Emerging	5.99%	29	(7.26%)	39	11.15%	40	0.79%	46	3.23%	60
STRS Active Emerging Combined	6.54%	23	(5.24%)	25	12.48%	31	1.70%	34	3.65%	49
STRS Emerging Market Quantitative	4.72%	51	(11.85%)	81	8.13%	64	(1.24%)	80	-	
MSCI Emerging Mkts Idx	3.96%	68	(10.70%)	74	7.83%	69	(0.91%)	74	2.03%	86
Emerging Mkts Equity DB	4.78%		(8.50%)		9.89%		0.55%		3.55%	
Total External Emerging	5.18%	41	(7.70%)	43	6.43%	81	(2.67%)	95	1.26%	97
Genesis	5.18%	41	(7.70%)	43	6.50%	81	(0.42%)	65	2.42%	78
MSCI Emerging Mkts Idx	3.96%	68	(10.70%)	74	7.83%	69	(0.91%)	74	2.03%	86
Emerging Mkts Equity DB	4.78%		(8.50%)		9.89%		0.55%		3.55%	
Total Global Ex-US	7.60%	74	1.38%	19	15.76%	17	5.68%	13	-	-
Int'l Blended Benchmark	7.19%	82	(0.91%)	40	13.74%	50	4.77%	29	5.89%	53
MSCI ACWI ex US	6.87%	87	(5.07%)	84	11.80%	80	2.47%	83	4.17%	92
Callan NonUS Eq	8.76%		(1.87%)		13.77%		3.99%		5.95%	
Total Internal Global Ex-US	8.26%	63	4.06%	5	17.49%	10	6.57%	7	-	-
International Value	8.30%	62	4.16%	5	17.53%	10	6.60%	7	-	-
International Analyst	7.04%	84	-	-	-	-	-	-	-	-
Int'l Blended Benchmark	7.19%	82	(0.91%)	40	13.74%	50	4.77%	29	5.89%	53
MSCI ACWI ex US	6.87%	87	(5.07%)	84	11.80%	80	2.47%	83	4.17%	92
Callan NonUS Eq	8.76%		(1.87%)		13.77%		3.99%		5.95%	
Total External Global Ex-US	6.94%	86	(1.90%)	51	13.70%	51	4.63%	31	-	-
Int'l Blended Benchmark	7.19%	82	(0.91%)	40	13.74%	50	4.77%	29	5.89%	53
Callan NonUS Eq	8.76%		(1.87%)		13.77%		3.99%		5.95%	
Global ex-U.S. Standard	7.21%		(1.05%)		14.17%		4.89%		-	-
Lazard	9.55%		1.95%		13.94%		4.71%		-	-
Wellington International Opportunities	5.35%		(3.34%)		14.66%		5.18%		-	-
Int'l Blended Benchmark	7.19%		(0.91%)		13.74%		4.77%		5.89%	
MSCI ACWI ex US	6.87%		(5.07%)		11.80%		2.47%		4.17%	
Global ex-U.S. Small Cap	6.08%		(5.36%)		-		-		-	-
Acadian	5.21%		(4.58%)		-		-		-	-
American Century	7.28%		(7.32%)		-		-		-	-
Wellington Small Cap	6.29%		(2.40%)		-		-		-	-
MSCI ACWI exUS SmCap (Dev.Mkts50%Hedg)	4.85%		(6.91%)		-		-		-	-
Total Fixed Income	2.80%		(3.75%)		(1.35%)		1.33%		1.85%	
Fixed Income Blended Benchmark	2.81%		(4.00%)		(2.02%)		1.10%		1.63%	
Core Fixed Income	2.91%	83	(4.33%)	24	(1.23%)	21	1.31%	65	1.85%	44
Blimb US Universal	2.93%	81	(4.61%)	53	(2.02%)	76	1.05%	92	1.62%	86
Callan Core Bond FI	3.16%		(4.57%)		(1.72%)		1.37%		1.83%	
Liquid Treasury Portfolio	2.28%		(1.45%)		(2.28%)		1.12%		-	-
Blimb US Intmdt Treasury Idx	2.27%		(1.54%)		(2.33%)		1.06%		0.90%	
High-Yield	3.59%	48	(2.61%)	45	6.49%	37	3.65%	45	4.47%	41
BNY Mellon	3.73%	37	(3.32%)	60	6.31%	49	-	-	-	-
JP Morgan	2.72%	95	(0.05%)	2	6.61%	32	-	-	-	-
PGIM	3.17%	77	(3.68%)	70	7.40%	18	-	-	-	-
PIMCO	4.38%	7	(3.25%)	60	5.94%	60	3.62%	45	4.70%	28
Blimb High Yield Idx	3.57%	51	(3.34%)	61	5.91%	60	3.21%	69	4.10%	63
Callan High Yield Fix Inc	3.58%		(2.85%)		6.29%		3.54%		4.34%	
Emerging Debt	2.08%	34	(4.23%)	6	1.98%	38	0.19%	24	2.55%	21
Fidelity Instl. Asset Management	2.05%	35	(4.25%)	6	2.48%	25	0.24%	23	2.93%	10
MFS	2.24%	28	(3.35%)	1	1.61%	46	-	-	-	-
Payden & Rygel	1.68%	65	(6.31%)	34	1.72%	41	-	-	-	-
Emerging Debt Index	2.15%	33	(4.64%)	9	0.06%	95	0.31%	21	2.07%	45
Callan Emerging Debt USD	1.83%		(7.01%)		1.50%		(0.31%)		1.95%	
Liquidity Reserve	1.17%	43	2.73%	48	0.97%	78	1.45%	77	0.90%	91
Liquid Reserve Index	1.07%	88	2.50%	57	0.89%	80	1.41%	89	0.87%	93
Callan Cash Database	1.16%		2.70%		1.12%		1.58%		1.14%	

Investment Manager Returns and Peer Group Rankings

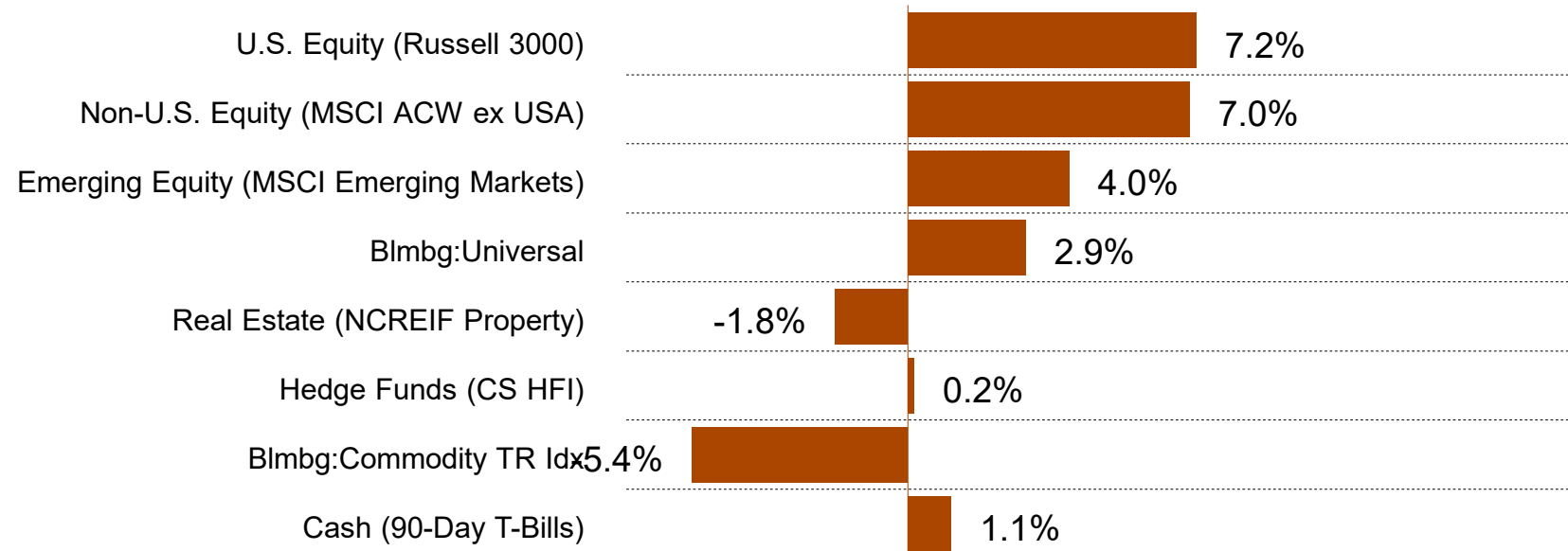
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Total Real Estate	(1.74%)	(0.20%)	8.23%	7.53%	9.07%
Real Estate Blended Benchmark	(1.14%)	(4.09%)	8.15%	6.95%	8.20%
Private Real Estate	(2.73%)	2.71%	7.17%	7.32%	9.33%
Direct Real Estate	(3.39%)	1.66%	7.13%	7.14%	9.05%
East Region	(2.96%)	0.75%	3.17%	2.68%	4.25%
Midwest Region	(6.54%)	(6.76%)	2.02%	2.90%	6.42%
South Region	(0.51%)	8.84%	13.23%	12.33%	13.33%
West Region	(3.83%)	3.05%	11.10%	11.77%	13.69%
NCREIF Total Index	(1.81%)	(1.63%)	7.15%	6.71%	8.34%
Commingled Funds Real Estate	0.52%	7.95%	7.11%	8.33%	10.78%
Opportunity Fund	(2.41%)	7.50%	11.82%	10.63%	12.04%
International	1.01%	7.47%	4.50%	7.14%	10.56%
Specialty Real Estate Funds	4.78%	11.41%	11.37%	-	-
NCREIF Total Index	(1.81%)	(1.63%)	7.15%	6.71%	8.34%
Public Real Estate	3.12%	(18.72%)	12.31%	6.15%	6.12%
REITs	2.66%	(19.21%)	12.09%	6.02%	6.06%
REITs - Active	3.66%	-	-	-	-
FTSE NAREIT Equity REITs	2.68%	(19.22%)	12.08%	6.02%	5.97%
Total Alternative Investments	0.66%	(2.85%)	16.38%	12.89%	11.80%
Alt. Investment Blended Bmk	2.01%	(3.07%)	-	-	-
Private Equity	(0.79%)	(9.21%)	19.95%	18.55%	16.78%
Domestic Private Equity	1.05%	(7.39%)	20.26%	19.26%	17.78%
Domestic Venture Capital	(5.31%)	(12.01%)	21.91%	19.87%	15.55%
Global Private Equity	2.44%	(9.15%)	15.96%	15.55%	14.87%
Private Equity Benchmark	0.51%	(9.47%)	-	-	-
Opportunistic/Diversified	2.37%	5.68%	11.78%	6.98%	6.62%
Opportunistic	2.30%	6.62%	11.93%	8.35%	8.27%
Diversified	3.49%	(0.75%)	8.02%	2.92%	3.57%
Opportunistic/Div. Blended Bmk	3.36%	2.65%	-	-	-
Total Fund	3.86%	(3.53%)	12.48%	7.91%	8.50%
Total Fund Target	4.36%	(4.30%)	11.32%	7.27%	8.03%



Market Summary

Quarterly Market Performance Ending March 31, 2023

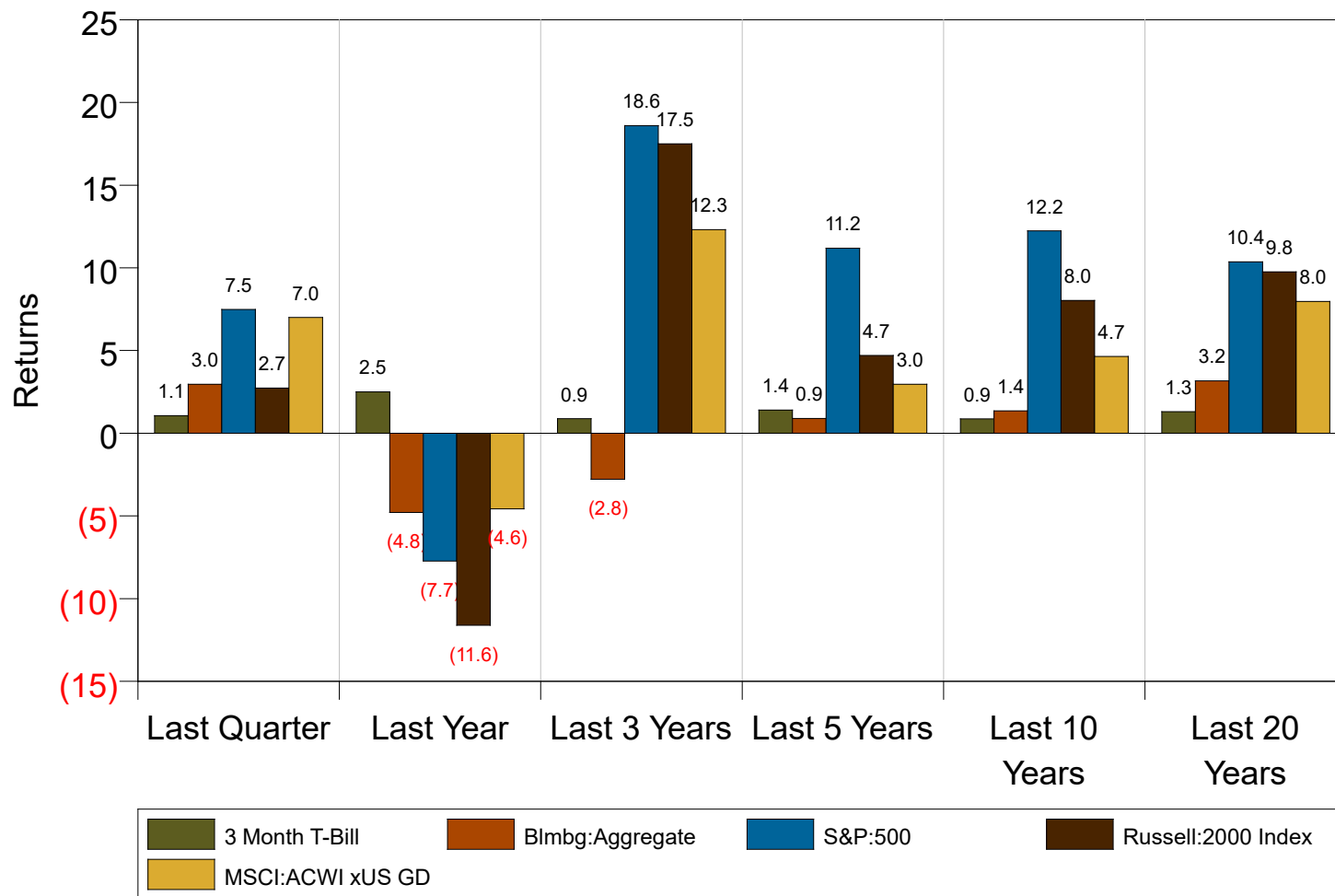
Broad Market Quarterly Returns



*Sources: Barclays, Citigroup, Credit Suisse Hedge Index, Merrill Lynch, MSCI, NCREIF, Russell Investment Group, Standard & Poor's

Performance Across Asset Classes

Time Periods Ended March 31, 2023



- **Matters requiring board action:**
 - Semiannual Broker Evaluation and associated policies for the first half fiscal 2024
 - Amended Stock Proxy Voting Policy
 - Fiscal 2024 Investment Plan
 - Callan’s review of the Fiscal 2024 Investment Plan
 - Cliffwater’s Review of the Fiscal 2024 Investment Plan
- **Educational or scheduled updates and reviews requiring no action today:**
 - Summary of Investment Activity Report, May 2023
 - Callan Quarterly Performance Review as of March 31, 2023
 - [Review of May 2023 investment transactions](#)
- **Summary of requests**

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