

# Report to the Investment Committee

June 20, 2024

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- Meketa comments: Asset-liability study timeline
- Fiscal 2025 Investment Plan
  - Meketa's review of the Fiscal 2025 Investment Plan
  - Callan's review of the Fiscal 2025 Investment Plan
- Performance-based incentive discussion
- Summary of investment activity report, May 2024
- Meketa quarterly performance review as of March 31, 2024
- Callan quarterly performance review as of March 31, 2024
- Review of the Semiannual Broker Evaluation and Associated Policies for first half of fiscal 2025
- Review of May 2024 investment transactions
- Summary of requests

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# State Teachers Retirement System of Ohio

June 20, 2024

Asset-Liability Study Timeline Review



**Major Milestones** 

### **Major Timeline Milestones**

| Date                    | Activity  |
|-------------------------|---|
| June - August 2024      | Introduction (June), completion (July), and results (August) of <u>Asset-Liability Risk and Implementation Survey</u> . This survey forms the foundation of Trustee viewpoints on major considerations for the asset-liability study. <u>Discussion/approval of Reference Portfolio Benchmark (August).</u>   |
| September 2024          | <u>Discussion of key parameters/objectives that will be incorporated into the A/L study</u> . These include potential asset classes and corresponding risk/return assumptions as well as the overall metrics/objectives that will be reviewed and/or optimized. Purely focused on <u>policy target</u> considerations and not implementation approaches (i.e., active vs. passive). |
| December 2024           | Presentation of <u>preliminary results</u> . This will be focused on the current policy portfolio and corresponding asset-liability metrics. Additional discussion regarding Reference Benchmark.   |
| February and March 2025 | Discussion of potential alternative asset class mixes and corresponding metrics (February). <u>Final adoption of new policy targets and updated Reference Benchmark(March).</u>   |
| Q2 2025                 | Transition plans (to get to new targets) and <u>discussion of implementation approaches and asset class</u> <u>benchmarks</u> .   |



### **STRS Ohio**

**Full Timeline** 

### Asset-Liability Study Timeline | May - August 2024

### **July 2024**

Meketa available for individual discussions with trustees.

Completion of asset-liability study survey.

### May 2024

Asset-liability study planning and timeline.

COMPLETED.









#### June 2024

Asset-liability study survey questions, introduction, and discussion.



**TODAY** 

### August 2024

Meketa presents survey results and discussion.

Potential adoption of "Reference Benchmark" for early application. This will be updated upon completion of asset-liability study.



**Full Timeline** 

### Asset-Liability Study Timeline | September 2024 – February 2025

#### September 2024

Meketa initiates
asset-liability study by
proposing the scope of work
to be completed, capital
market risk and return
expectations, and potential
asset class considerations.

Asset class reviews.

#### December 2024

Meketa presents preliminary asset-liability study results and reference portfolio.









#### October 2024

Asset class reviews (continued).

#### February 2025

Meketa presents alternative asset mixes for board discussion.



### **STRS Ohio**

**Full Timeline** 

### Asset-Liability Study Timeline | March – June 2025

### May 2025

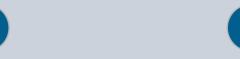
Board adopts SIOP, focusing on new policy target mix.

Additional discussion of implementation approaches and benchmarks.

#### March 2025

Asset-liability study completed.

Board adopts new asset mix.







### **April 2025**

Initial review of SIOP with asset-liability study incorporated.

Discussion of implementation approaches and benchmarks.

#### June 2025

AIP presented incorporating implementation of new asset-liability study.



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PERFORMANCE DATA CONTAINED HEREIN REPRESENT PAST PERFORMANCE. PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

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# Fiscal 2025 Investment Plan

June 20, 2024



## Fiscal 2025 Investment Plan



- 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 2.80%
- 60% probability of baseline growth forecast (1.50%-3.50%) range
- Above-trend economic growth
- Inflation expected to approach 2.00% federal reserve policy goal
- Monetary policy balancing dual objectives of employment and lower inflation



### Total fund

- Global economy forecast to improve toward long-term trend
- Asset valuations reflect monetary policy balancing dual objectives
- Forecast return at board's policy return in fiscal 2025

### Liquidity reserves

- Short-term rates are above 5.00%
- Return forecasted to be above 2.40% policy return



### Fixed income

- Forecasting interest rates near fair value
  - Expect returns to be above the policy return of 4.50%
- Asset class transaction activity in fiscal 2024
  - Received allocations of over \$2.0 billion driven by rebalancing activity
- Begin the year near the target allocation of 22%



- Global equities (domestic and international)
  - Projecting earnings growth, albeit economic growth dependent
  - Valuations reflect monetary policy and economic growth
  - Domestic equities at the policy return of 6.90% in fiscal 2025
  - International equities at the policy return of 7.70% in fiscal 2025



### Real estate

- Fundamentals are challenged in this environment
- Projecting returns at-to-below policy return of 5.10%
- Begin the year below the target allocation of 10%

### Alternative investments

- Forecasting total asset class returns to be at-to-slightly below the policy return of 9.10%
- 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<br>Expected Average<br>Annual Benchmark Returns | Benchmark Annualized<br>Return Expectation<br>for Fiscal 2025 |
|-------------------------|--|---|
| Liquidity Reserves      | 2.40%  | Above Normal  |
| Fixed Income            | 4.50%  | Above Normal  |
| Domestic Equities       | 6.90%  | At Normal   |
| International           | 7.70%  | At Normal   |
| Real Estate             | 5.10%  | At-to-Below Normal  |
| Alternative Investments | 9.10%  | At-to-Slightly Below Normal                                   |
| Total Fund              | 7.04%  | At Normal   |



### Additional AIP themes for fiscal 2025

- One change to ERM matrix to recognize low risk of recession
- Asset-liability study
- Fiduciary audit recommendation, review, summarize, and propose actions in fiscal 2025
- Continue to further expand internal capabilities in alternative investments in fiscal 2025
- 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 return, diversification or flexibility to manage the assets



# **Economics**

**Suchit Arora** 

# Fiscal Year 2025: Above-Trend Growth With Moderating Inflation



### Midyear FY2024: Above-Trend Growth

| Real GDP    | Probability |
|-------------|-------------|
| > 3.0%      | 30%         |
| 0.5% - 3.0% | 55%         |
| < 0.5%      | 15%         |



Recession Probability: 10%

Inflation: Approaching the 2.0% target

Fed: Heading toward a neutral stance

### **Fiscal Year 2025: Above-Trend Growth**

| Real GDP    | Probability |
|-------------|-------------|
| > 3.5%      | 15%         |
| 1.5% – 3.5% | 60%         |
| < 1.5%      | 25%         |

Recession Probability: 10%

Inflation: Near the 2.0% target

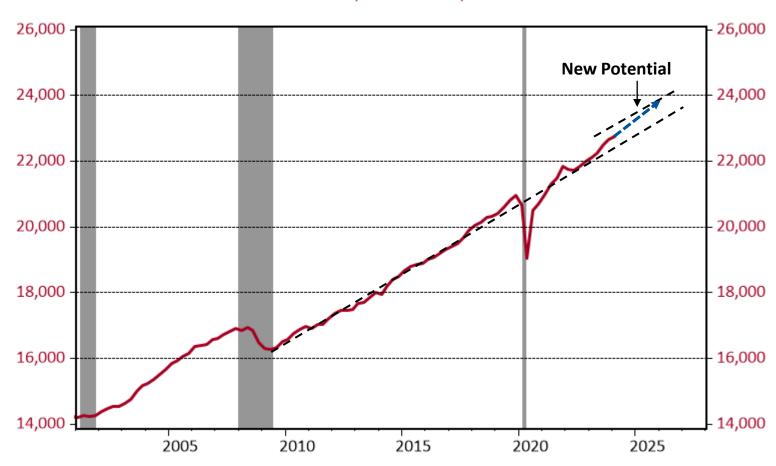
Fed: Heading toward a neutral stance

# Real Gross Domestic Product Advancing Toward Higher Potential





SAAR, Bil.Chn.2017\$



Source: Bureau of Economic Analysis

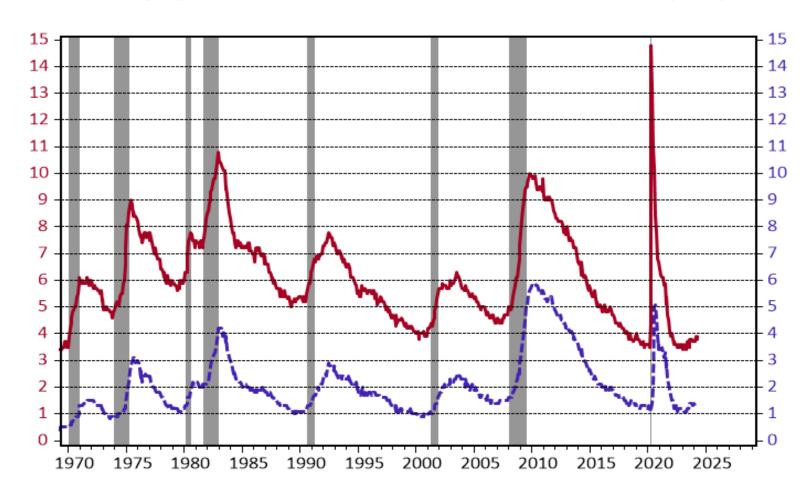
## **Strong Employment To Support Consumer Spending**



24

Civilian Unemployment Rate: 16 yr + (SA,%)

Unemployed for 15 Weeks and Over, % of Civilian Labor Force (SA,%)



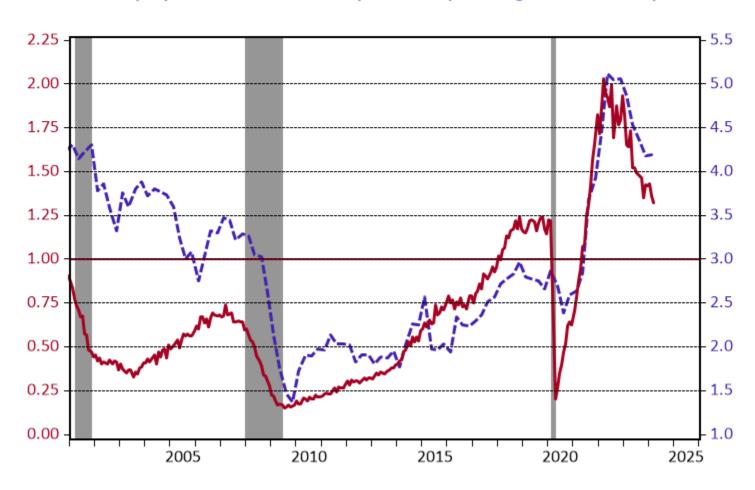
Sources: BLS, BLS/H

## Reduced Labor Market Tightness To Decrease Wage Pressures



### Ratio of Job-Openings to Unemployed Workers

### Employment Cost Index: Compensation (% Change - Year to Year) --→



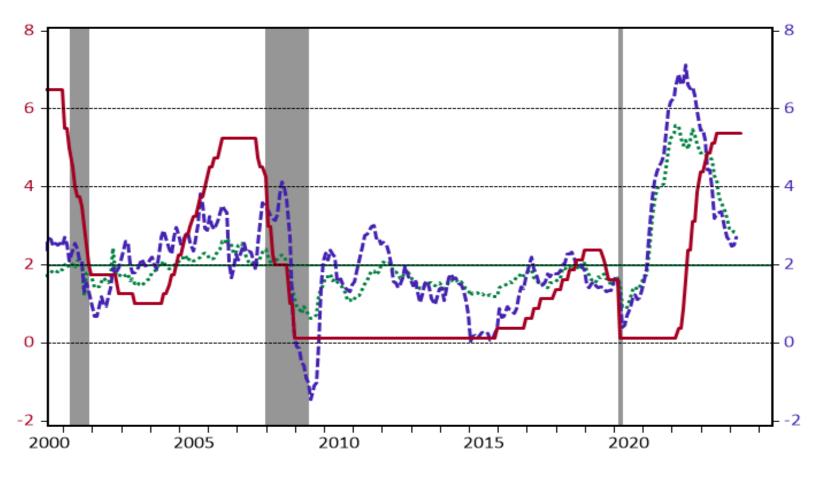
Source: Bureau of Labor Statistics

# Inflation Is Approaching The 2.00% Policy Target



### 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

### Outlook: Above-Trend Growth With Moderate Inflation



### Real GDP growth

- Fiscal 2025: 2.80% annual rate, 10% probability of recession

### Inflation

Near the 2.00% policy target

### Monetary policy

- The Federal Reserve to balance inflation and employment



**Ryan Collins** 



### Fiscal 2024 review

- The Federal Reserve maintained a restrictive monetary policy
  - Inflation slowed but remains above target
- Long-term interest rates are higher
  - Economic growth has been strong
- Fixed income rebalancing activity
  - Received over \$2.0 billion in net allocations
  - Maintained liquidity position
  - Rebalance asset allocation and pay benefits



### Fiscal 2025 outlook

- Total return forecasted to be above 4.50% policy return
- Federal funds range: (3.50%-6.50%)
  - Monetary policy will remain restrictive
  - Balance employment and inflation objectives
  - Reduction in the Federal Reserve's balance sheet
- 10-year Treasury range: (3.00%-6.00%)
  - Real economic growth and inflation expectations



### Fiscal 2025 strategy

- Portfolio duration is near the benchmark
  - Interest rate valuations are fair
- Underweight in U.S. 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

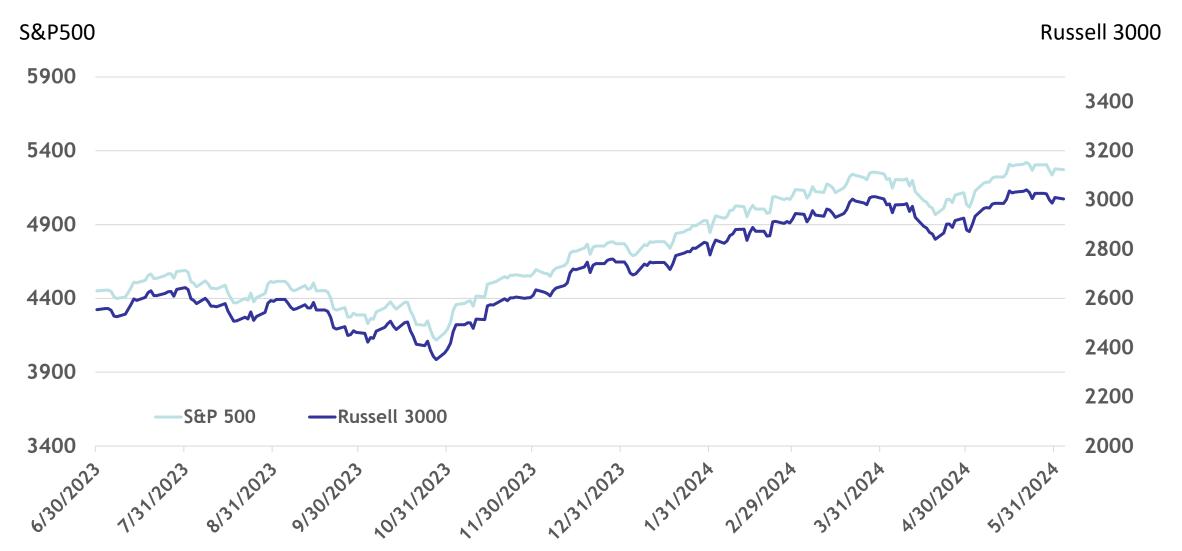


# **Domestic Equities**

**Steve Eastwood** 

# S&P 500 and Russell 3000 Indexes Fiscal 2024-to-Date





Source: Bloomberg

# **Domestic Equities**



### Fiscal 2024 review

- Markets rallied 30% after the October low
  - S&P 500: High of 5346 in June, Low 4103 in October, FYTD +21.7%
- Earnings rebounded +5.8%
- P/E multiples rose to elevated levels
- Volatility relatively low throughout the year
- Market breadth is narrow and markets are concentrated

# **S&P 500 Index Valuation**

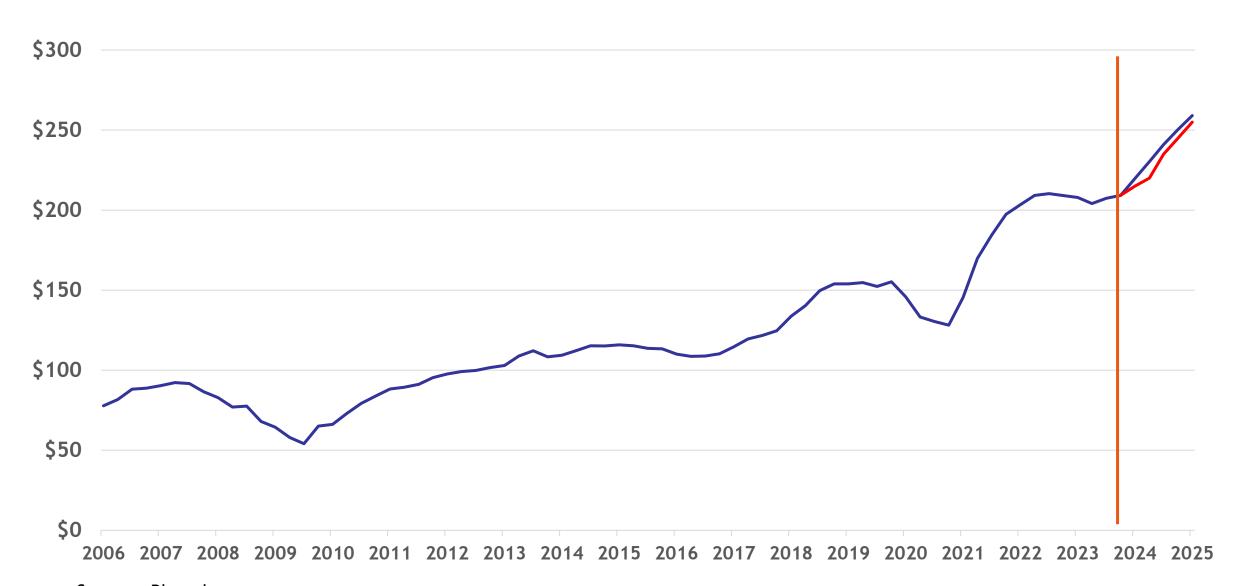




Source: Bloomberg

# S&P 500 Operating Earnings Per Share

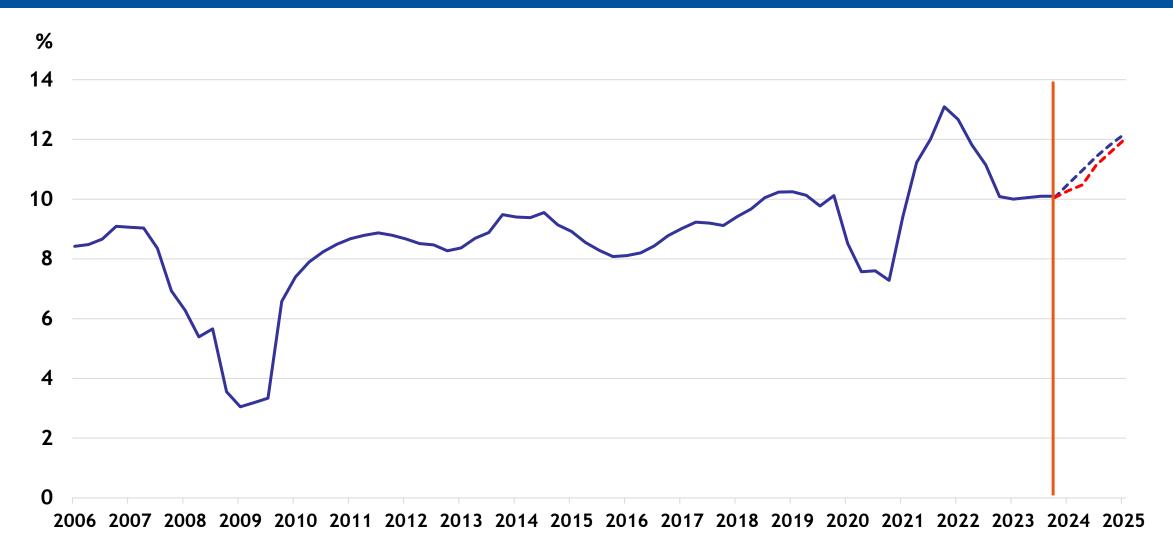




Source: Bloomberg

# S&P 500 Operating Earnings Margin





Source: Bloomberg

# **Domestic Equities**



#### Fiscal 2025 outlook

- Target 4500-5600 on the S&P 500
  - \$255 earnings per share
  - 17-22x 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

### **Domestic Equities**



### Fiscal 2025 strategy

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

### **Domestic Equities**



### 2025 initiatives

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



Mark Regenbogen



#### Fiscal 2024 review

Benchmark returns above policy standard through May

Developed markets (50% hedged) +15.8%

- Emerging markets +8.3%

International blended benchmark +14.4%

 The U.S. dollar gained with moderate strengthening versus developed currencies overall

Unhedged Developed Markets Index +13.1%

International weight is near the 22% neutral target



### Fiscal 2025 key factors — developed markets

- Policy interest rate cuts are likely to begin sooner than in U.S.
- Bank of Japan is an exception, with further interest rate hikes anticipated
- Key question: will the Japanese yen reverse trend and strengthen?
- Japan's incumbent Prime Minister Kishida suffers low approval ratings
- United Kingdom will likely have a change in the ruling party next month
- Earnings per share growth in Europe could rebound as economies improve
- Declining interest rates could allow continued valuation multiple expansion



### Fiscal 2025 strategy — developed markets

- Returns for fiscal 2025 expected to be normal
- U.S. dollar weakness would incrementally boost returns
- Traditional stock selection will remain important



### Fiscal 2025 key factors — emerging markets

- China's economic growth supported by exports and targeted government spending to advance technological development and independence
- Consumer confidence in China remains subdued due to employment concerns and weak property market
- Trade tensions likely to persist and may intensify
- Earnings growth could be boosted by India's robust domestic economy and by demand for AI server components supplied by firms in Taiwan and South Korea
- Valuations are near fair value overall on an absolute basis
- Valuation discounts relative to the developed world remain wide



### Fiscal 2025 strategy — emerging markets

- Slightly above normal returns for fiscal 2025 are forecasted
- The potential higher return is not enough to warrant an overweight
- Stock selection combined with country selection will remain our focus



### Fiscal 2025 strategy

- Normal returns expected for fiscal 2025
- 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



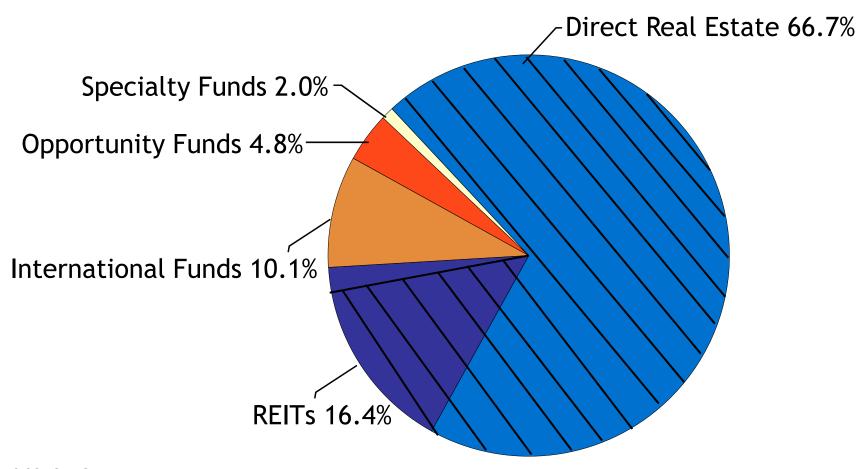
# **Real Estate**

**Jacob Clark** 

# Real Estate — Portfolio Composition



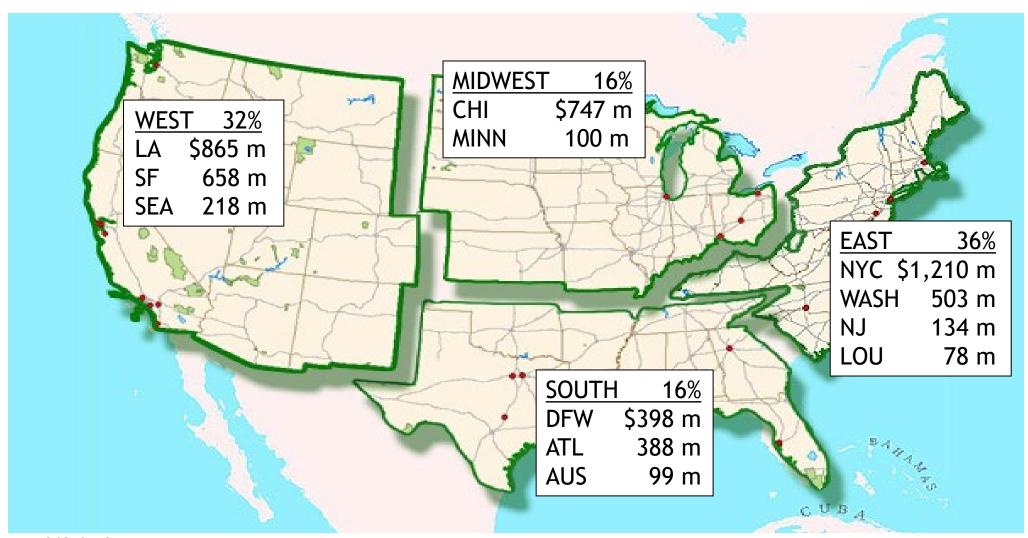




Market Values as of 03/31/24

# Direct Real Estate — Geographic

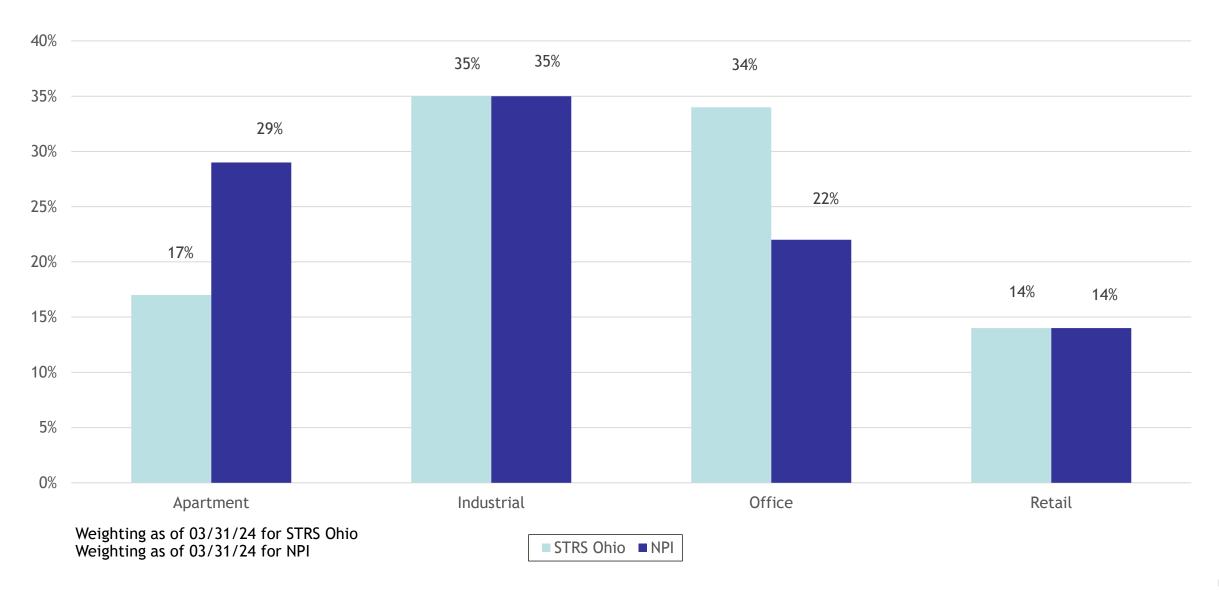




Market Values as of 03/31/24

# Direct Real Estate — Property Type





# Real Estate — Fiscal 2024 Investment Activity



### Purchases — \$376 million

- Internal — direct real estate purchases \$168 million

- External — real estate funds \$208 million

### Sales — \$381 million

- Internal — direct real estate \$216 million

External — real estate funds
 \$156 million

- REITs \$ 9 million

### Real Estate — Fiscal 2025 Outlook



Asset class will be at-to-below 5.10% long-term expected policy return Expect to remain underweight the target allocation (<10%)

### Real Estate — Fiscal 2025 Outlook



### Direct real estate

- Apartment supply is moderating
- Retail fundamentals remain tight
- Industrial is normalizing
- Office still solidifying

### Real Estate — Fiscal 2025 Outlook



### Public investment (REITs)

- Discount to direct real estate
- Return expectations exceed private real estate

#### International real estate

- Investment activity increasing
- Sector focused investment

# Real Estate — Fiscal 2025 Strategy



### **Key initiatives**

- Continue direct investment focus on apartments and industrial
- Continue regional portfolio allocation adjustments
- Maintain overweight REIT allocation
- Maintain international and private fund pacing



**Aaron DiCenzo** 



#### Fiscal 2024 review

- Asset allocation
  - Above neutral target weight of 19%
- Private equity
  - Moderate decrease of overweight due to distribution activity in excess of contribution activity and net increase of total fund, partially offset by positive net performance
- Opportunistic/Diversified
  - Reached neutral weight due to positive net performance partially offset by distribution activity in excess of contribution activity
- Commitment pace
  - \$2.2 billion in total fiscal 2024 alternative investments commitments



#### Fiscal 2025 outlook

- Total return at-to-slightly below STRS Ohio policy return of 9.10%
- Private equity
  - At-to-slightly below the long-term objective of 9.90%
- Opportunistic/Diversified
  - At the long-term objective of 7.90%
- Fundamentals
  - Modestly decreasing rate environment with stable economic growth



### Fiscal 2025 strategy

- Asset allocation
  - Expected commitments \$1.7 billion to \$3.1 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 \$700 million to \$1.5 billion
    - Opportunistic funds \$300 million to \$750 million
    - Directly-invested assets \$300 million to \$700 million:
      - Direct & co-investments \$275 million to \$675 million
      - Liquid alternatives \$25 to \$250 million



# Risk Management

Michele G. Mazzoleni, PhD

# Risk Management



- 1. Capital market risk
- 2. Active management risk (tracking risk)
- 3. Total fund liquidity risk
- 4. Enterprise risk management (ERM)

### Risk Measures



First Measure: | Capital Market Risk (Confidence Interval)

Expected return

+7.04%

Standard deviation

+11.76%

95% Confidence

Total fund return

-16.00% to +30.00%

68% Confidence

Total fund return

-5.00% to +19.00%

# Risk Management



- 1. Capital market risk
- 2. Active management risk

### Risk Measures



# Second Measure: Active Management Risk

- Total fund active management risk
- If total fund benchmark earns 7.04%
  - STRS Ohio return expected to be between (2 x 0.57% = 1.14%)

57 basis points

5.90% and 8.20%

# Risk Management



- 1. Capital market risk
- 2. Active management risk (tracking risk)
- 3. Total fund liquidity risk

### Risk Measures



# 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

# Risk Management



- 1. Capital market risk
- 2. Active management risk (tracking risk)
- 3. Total fund liquidity risk
- 4. Enterprise risk management (ERM)

### Risk Measures



### Fourth Measure: | Enterprise Risk Management Impact and Probability Analysis

#### **PROBABILITY**

|                                | HIGH   | MEDIUM  | LOW   |
|--------------------------------|--|---|---|
| APACT<br>HIGH                  | <ul> <li>Not earning the<br/>actuarial assumed<br/>rate of return over<br/>the 10-year period</li> </ul> | <ul> <li>Long-term sovereign<br/>deficit and debt issues</li> </ul>                                   | <ul> <li>Diversification fails</li> <li>Significant negative<br/>return in any one year</li> <li>Extended period of<br/>elevated inflation</li> </ul> |
| FINANCIAL IMPAC<br>W MEDIUM HI |  | <ul> <li>Global financial<br/>stress related to low<br/>economic growth</li> <li>Recession</li> </ul> | • Deflation<br>• Recession  |
| FIN,<br>LOW                    | <ul> <li>Not earning the<br/>actuarial assumed<br/>rate of return in a<br/>fiscal year</li> </ul>        | <ul><li>Corporate fraud<br/>(securities litigation)</li><li>Buy Ohio</li></ul>                        | <ul><li>Poor investment</li><li>Divestment</li><li>Investment operations<br/>failures</li></ul>   |



# Summary

**Matt Worley** 

# Summary



- Investment staff is forecasting above-trend economic growth
- Valuations reflect monetary policy balancing dual objectives of employment and lower inflation
- Staff is projecting a positive total fund return at the board's policy return of 7.04%
- Staff will continue to address the board's strategic initiatives

# **Special Thanks**





# Communications and Public Affairs

## **Special Thanks**







## **Special Thanks**



## **Board Consultants**





Acting Executive Director: Ms. Lynn Hoover





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#### **MEMORANDUM**

TO: Dr. Rudy Fichtenbaum, Chair

State Teachers Retirement Board of Ohio

275 East Broad Street Columbus, OH 43215

FROM: Meketa Investment Group ("Meketa")

**DATE:** June 5, 2024

RE: STRS Ohio Fiscal 2025 Investment Plan

The purpose of this letter is to share Meketa's comments regarding the Fiscal 2025 Investment Plan prepared by STRS Ohio Staff.

The Fiscal 2025 Investment Plan is a comprehensive document that provides extensive details on recent portfolio activity, economic and market analysis, and corresponding outlooks and plans for major asset classes and the STRS Ohio portfolio as a whole. In addition to reviewing the document independently, Meketa also participated in an in-depth discussion with STRS Ohio Staff regarding the specifics of the document and corresponding plans.

From Meketa's point of view, the purpose of this document is to provide the STRS Ohio Board with insight into the depth of analysis that STRS Ohio Staff conducts on an ongoing basis with respect to managing and positioning the portfolio for continued success. Most importantly, the document outlines how the portfolio is expected to be positioned with respect to the overall objectives and policies that are adopted by the STRS Ohio Board. In Meketa's opinion, the proposed plan is aligned with STRS Ohio's policies and consistent with the long-term objectives of the system, as currently stated.

Meketa believes that the proposed Investment Plan for Fiscal 2025 is in-line with the asset allocation targets, respective rebalancing ranges, and risk budgets approved by the Retirement Board in the STRS Ohio SIOP. As a guide for Trustees, Meketa believes that pages 1-8 provide the most salient points for Trustees to examine. Specifically, the staff's expectations for investment returns, risk, deviations from asset allocation targets, and corresponding active risk contributions represent the key takeaways for the Trustees. As a potential improvement to the process in the future, Meketa believes that it would be useful for Staff to also provide an annual review (i.e., retrospective analysis) of the AIP that examines how market dynamics and portfolio behavior aligned, or did not align, with the expectations/plan that was presented in the prior year.

The Investment Plan offers distinctive insight into the strategies and tactics employed by STRS Ohio Staff, which guide the daily 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. Subsequent to Page 8, the Investment Plan examines specific 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. It is important for Trustees to recognize that not all data points/analysis/viewpoints are directly actionable, nor will they be fully reflected in the STRS Ohio portfolio. Rather, the Investment Plan represents a mosaic of insight that is expected to form the foundation for investment discussions and decisions that STRS Staff will utilize when managing the portfolio as fiduciaries for STRS in the upcoming fiscal year.

Meketa recommends that the STRS Ohio Board approve the Investment Plan prepared by Staff for Fiscal 2025.

Regards,

Colin Bebee, CFA Managing Principal

Wille

LaRoy Brantley Managing Principal

C. Lakey Sh

BOSTON CHICAGO LONDON MIAMI NEW YORK PORTLAND SAN DIEGO

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- Summary of investment activity report, May 2024
- Meketa quarterly performance review as of March 31, 2024
- Callan quarterly performance review as of March 31, 2024
- Review of the Semiannual Broker Evaluation and Associated Policies for first half of fiscal 2025
- Review of May 2024 investment transactions
- Summary of requests

#### Callan



www.callan.com

#### Memorandum

To: Retirement Board, State Teachers Retirement System of Ohio

From: Pete Keliuotis, Callan LLC

Date: June 7, 2024

Subject: STRS Ohio Fiscal 2025 Annual Investment Plan

CC: Matt Worley, Chief Investment Officer

Aaron DiCenzo, Director of Alternative Investments

Callan's general observations on the Fiscal 2025 Annual Investment Plan (AIP) are as follows:

- STRS Ohio prepares a comprehensive and thoughful annual plan that integrates strategic thinking with an
  actionable tactical plan that meets or exceeds industry best practices for investment planning. In this process,
  STRS integrates diverse capital market and macroeconomic perspectives from across the team.
- STRS Ohio employs a sophisticated approach to developing capital market assumptions, using input from external consultants, to develop asset class return and risk expectations. STRS also utilizes an active risk management protocol to help guide implementation.
- 3. The 10-year return forecasts expressed in the AIP are generally consistent with Callan's forecasts. STRS Ohio anticipates a more favorable economic environment over the next year, with above-trend growth, moderating inflation, and a lower probability of recession. While STRS believes capital markets have largely priced in this scenario, profitable buying opportunities may arise due to heightened market volatility and geopolitical risk.
- STRS Ohio will have an opportunity to review investment benchmarks and implementation as part of a broad asset/liability study to be conducted in FY 2025.

Callan's observations on the Fiscal 2025 Annual Plan for Alternatives are as follows:

Private Equity. Callan agrees with STRS' planned \$1 billion to \$1.6 billion in commitments for FY2025, with
an overweight to domestic buyout strategies. Callan agrees the coming year is likely to see an increased
opportunity set in private equity amidst a moderating interest rate environment, which has had a cooling effect
on deal activity; this must be balanced against STRS's current slight overweight to private equity relative to
target.

Callan also supports the continued execution of strategic partnerships to help generate direct and coinvestment deal flow. Callan believes this is a sensible way to reduce private equity portfolio costs while maximizing the benefits of STRS's relationships with high-conviction managers.

- 2. Opportunistic/Diversified. We agree with:
  - The planned \$700 million to \$1.5 billion in planned commitments, targeting direct lending, specialty finance, and direct and co-investments.
  - A lower pace of commitments to less liquid opportunistic funds to provide allocation flexibility, as STRS has reached the long-term neutral allocation to O/D,
  - c. Increases in the market value maximums of the
    - i. Direct & co-investment theme to \$2.75 billion from \$2.25 billion,
    - ii. Banking, insurance, and asset management theme to \$2.25 billion from \$2.0 billion,
    - iii. Direct lending theme to \$2.75 billion from \$2.50 billion, and
    - iv. Specialty finance theme from \$4.75 billion to \$5.0 billion.



Callan believes this plan will maintain diversification in the O/D portfolio, emphasize attractive near-term opportunities on a risk-adjusted return basis, help STRS achieve its return target for this asset class, and will help maintain allocation flexibility. Callan believes the most significant risk factors are a broad reduction in interest rates through Fed easing, which may offset some of the rate hedging benefits of floating-rate direct lending investments though it could boost valuations for more rate-sensitive segments of the portfolio; and a widening of credit spreads should economic growth surprise on the downside relative to STRS's projections, which could negatively impact credit security valuations in the near term.

In summary, Callan fully endorses STRS Ohio Fiscal 2025 Investment Plan.





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## Report to the Investment Committee June 20, 2024



- Meketa comments: Asset-liability study timeline
- Fiscal 2025 Investment Plan
  - Meketa's review of the Fiscal 2025 Investment Plan
  - Callan's review of the Fiscal 2025 Investment Plan
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# Performance-Based Incentive (PBI) Program

June 20, 2024

## Introduction



- Proposed changes are for the fiscal year 2025 STRS Ohio PBI program
  - Fiscal year 2025: July 1, 2024-June 30, 2025
- During fiscal year 2025, Meketa will lead the Retirement Board through an asset-liability study
  - Reference benchmarks will be explored as part of that process
- The STRS Ohio PBI program is reviewed annually and changes for fiscal year
   2026 will be reviewed spring 2025
- Over the last 10 years, the PBI program has been voted in April (five times), May (three times), June (one time) and August (one time)
  - It is important for eligible associates to understand performance goals and expectations *before* the fiscal year begins

## Why Pay Incentive Compensation?

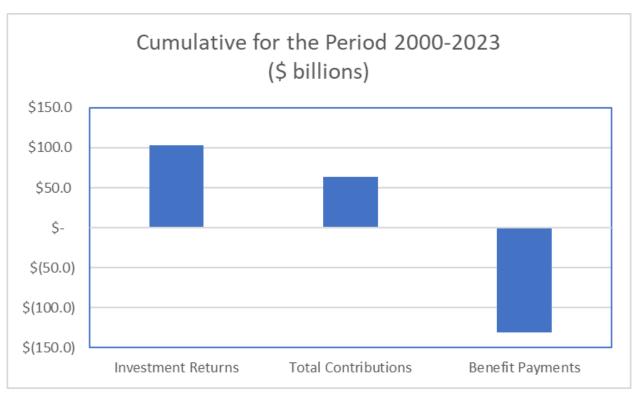


- STRS Ohio's PBI program allows it to maintain a successful asset management program
- More generally, performance-based incentive programs:
  - Are designed to attract and retain high quality investment talent to drive performance for members
  - Align the economic and financial interests of stakeholders and investment professionals
    - Incentive payments increase with good performance and value added to the fund
  - Are the variable component of total compensation (base pay + pay for performance)

## Why Pay Incentive Compensation?



- STRS Ohio is a mature plan that pays out more annually in benefits than it receives in contributions
  - Investment performance is a key source of funding for benefits
- Internal asset management capabilities are a strategic advantage
  - Provide low-cost access to both active and passive strategies



## Performance-Based Incentives: Investment Industry Standard, Including at Public (Ohio) Pension Funds



|   | STRS Ohio   | <u>OPERS</u>                                   | <u>SERS</u>   |
|---|---|--|---|
| Participation<br>Levels   | Assistant Portfolio Managers to CIO   | Entry Level Analysts to CIO                    | Entry Level Analysts to CIO   |
| Employees in the Program  | 69  | 58   | 11  |
| AUM \$ billions (a/o 12/31/23)  | \$91.6  | \$111.7  | \$18.2  |
| % Internally Managed  | 65%   | 54%  | 3%  |
| % Actively Managed  | 90%   | 74%  | 83%   |
| Maximum Incentive Range (varies by position based on roles & responsibilities; the lower bound of the range is higher at STRS Ohio since the program is limited to more senior positions) | 50%-95%   | 25%-100%                                       | 10%-90%   |
| Goals   | 100% Quantitative   | 80% Quantitative /<br>20% Qualitative<br>(Max) | 100% Quantitative   |
| Time Periods Measured for Incentives  | 1-year (10-15%) & 5-year (85-90%)   | 1-year (25%) &<br>3-year (75%)                 | 1-year (25%) & 3-year (75%)   |
| Total Fund Incentive Weights  | 20%-60%   | NA   | 25%-100%  |
| Negative Return Impact on Incentive Payouts   | Reduction of 4 x Negative Return up to 50%;<br>1-year deferral at max   | NA   | Reduction of 10% - 50%  |
| Actuarial Impact  | Reduction of 10% if less than de minimis under SBP for the fiscal year during which Incentive Compensation is scheduled for payment | NA   | Reduction of 10% if the 5-year annualized return of the total fund (net of fees) is less than the actuarial assumed rate of return (currently 7.0%) |

## Examples of Public Pension Funds with Performance Based Incentive Programs



|   | cet Value of Assets<br>villions) |
|---|----------------------------------|
| CalPERS   | \$<br>483.7                      |
| CalSTRS   | \$<br>327.0                      |
| Florida State Board of Administration                   | \$<br>190.4                      |
| Wisconsin (SWIB)  | \$<br>155.1                      |
| Ohio PERS   | \$<br>111.7                      |
| Virginia Retirement System                              | \$<br>105.0                      |
| Mass PRIM   | \$<br>101.0                      |
| Oregon State Treasury (which manages on behalf of PERS) | \$<br>97.7                       |
| STRS Ohio   | \$<br>91.6                       |
| Maryland Retirement System                              | \$<br>66.4                       |
| Texas ERS   | \$<br>37.8                       |
| Orange County ERS                                       | \$<br>22.3                       |
| Ohio SERS   | \$<br>18.2                       |
| Wyoming Retirement System                               | \$<br>10.8                       |
| Missouri ERS (MOSERS)*                                  | \$<br>9.1                        |

<sup>\*</sup>Actual market value shown; Portfolio is 140% leveraged

## STRS Ohio Investment Program



| Fiscal Year End | Market Value of Assets (\$ billions) | f Total<br>Investment<br>Staff | Associates<br>Eligible for<br>PBI Program | Total Investment<br>Staff Salary | PBI earned        | 5-year Net Relative<br>Performance versus<br>Benchmark | Add | year Value<br>ded Through<br>Active<br>anagement<br>millions) | 5-year Total Fund<br>Percentile Rank |
|-----------------|--------------------------------------|--------------------------------|---|----------------------------------|-------------------|--|-----|---|--------------------------------------|
| 2024*           | \$ 94.5                              | 108                            | 69  | \$22,496,701                     | \$<br>8,500,000** | 0.51%***   | ,   | ~\$2,000.0  | NA                                   |
| 2023            | \$ 90.3                              | . 108                          | 91  | \$19,602,572                     | \$<br>8,579,085   | 0.54%  | \$  | 2,286.8   | Top 8%                               |
| 2022            | \$ 87.6                              | 110                            | 92  | \$18,936,720                     | \$<br>9,655,708   | 0.65%  | \$  | 2,743.9   | Top 5%                               |
| 2021            | \$ 94.8                              | 111                            | 90  | \$18,518,137                     | \$<br>6,689,501   | 0.36%  | \$  | 1,268.3   | Top 10%                              |
| 2020            | \$ 77.2                              | . 115                          | 93  | \$18,611,999                     | \$<br>7,259,183   | 0.17%  | \$  | 556.4   | Top 17%                              |

<sup>\*</sup>FY24 is an estimate only

 STRS Ohio's net total fund performance is in the top 10% of Meketa's plan sponsor peer group analysis over the long term (as of 3/31/24):

- Outsourcing investment management would cost more money
  - From CEM: if STRS Ohio outsourced management of the assets it currently manages internally, system investment expenses would increase by more than \$130 million annually

<sup>\*\*</sup>Budgeted

<sup>\*\*\*</sup>As of 3/31/2024

## **Aon McLagan Compensation Data**



|                           |           | Total Comp |                                   |    | STRS vs Public Funds              |    |                    | ic Funds |                    |                                  |                                  |
|---------------------------|-----------|------------|-----------------------------------|----|-----------------------------------|----|--------------------|----------|--------------------|----------------------------------|----------------------------------|
| STRS Ohio:                |           |            | iblic Funds<br>60th<br>Percentile |    | iblic Funds<br>80th<br>Percentile |    | 60th<br>Percentile | ı        | 80th<br>Percentile | Percent Under<br>60th Percentile | Percent Under<br>80th Percentile |
| 2023 Actual Total Comp    | \$ 25,048 | \$         | 32,924                            | \$ | 40,998                            | \$ | (7,876)            | \$       | (15,950)           | 31%                              | 64%                              |
| 2024 Estimated Total Comp |           |            |                                   |    |                                   |    |                    |          |                    |                                  |                                  |
| \$7.5 million PBI         | \$ 27,337 | \$         | 32,924                            | \$ | 40,998                            | \$ | (5,587)            | \$       | (13,661)           | 20%                              | 50%                              |
| \$8.5 million PBI         | \$ 28,337 | \$         | 32,924                            | \$ | 40,998                            | \$ | (4,587)            | \$       | (12,661)           | 16%                              | 45%                              |

Source: Aon McLagan

STRS Ohio Total Comp = Salary + Incentives

Public Fund Total Comp = Salary + Incentives\*

Analysis limited to 86 positions (removes investment staff who have left since the 2023 compensation study; does not include associates hired since the time of the study)

All comparisons are 1 for 1 / position to position

<sup>\*</sup> Incentives may include current fiscal year cash incentives, long-term incentives and/or deferred compensation

## STRS Ohio's Leading Public Fund Comparator Group



|  | 12/31/21<br>AUM (\$Bs) |
|--|------------------------|
| CA Public Employees' Retirement Sys      | \$440.0                |
| CA State Teachers' Retirement Sys        | 327.6                  |
| New York State & Local Retirement Sys    | 279.7                  |
| Florida State Board of Administration    | 206.4                  |
| State of Wisconsin Investment Board      | 165.6                  |
| Teacher Retirement System of Texas       | 160.0                  |
| Washington State Investment Board        | 146.5                  |
| North Carolina Retirement System         | 115.0                  |
| Virginia Retirement Sys                  | 107.2                  |
| Ohio Public Employees Retirement Sys     | 92.1                   |
| PA Public School Employees' Ret Sys      | 75.1                   |
| CO Public Employees' Retirement Assoc.   | 66.1                   |
| High Quartile                            | 224.8                  |
| Median                                   | 153.2                  |
| Low Quartile                             | 103.4                  |
| State Teachers Retirement System of Ohio | \$96.7                 |

Source: Aon McLagan

## Review of the Performance-Based Incentive Program for Fiscal Year 2025



### In May/June 2023:

 McLagan found the STRS Ohio incentive plan is aligned with competitive market practice

### In August 2023:

- The board approved substantial PBI program changes including:
  - More than 30 positions removed from the PBI program
  - Maximum incentive percentages were reduced
  - A 10% reduction to PBI payments in any year where the board's actuary determines there is not sufficient funding to change member benefits
- Minimal changes proposed for fiscal 2025

## Changes to the 2024 PBI Program (Board Approved August 2023)



### **Target Changed**

- Targets a total compensation (base salary and Incentive Compensation) between the 60<sup>th</sup> percentile and 80<sup>th</sup> percentile of a peer group of large/leading public funds; may, on a case-by-case basis, vary from the target range based on factors including maintaining market competitiveness and internal equity
- Previously utilized the benchmark of the median compensation of a blended peer group weighted 50% to large/leading public funds and 50% to national private sector firms

### Simplified

- 20% minimum of PBI based on net total fund returns (increased from 10%)
- Increased emphasis on longer-term (5-year) performance relative to 1-year performance
- Relative performance for each asset class is net of external management fees and costs

### **Structure Changed**

- Decreased the number of investment professionals in the program
- Reduced the maximum incentive for everyone remaining in program

## Further Linked to System Financial Health

- Added: If the board's actuary determines the System does not have at least a de minimis amount available under its Sustainable Benefit Plan for the fiscal year during which PBI is scheduled for payment, the PBI will be reduced by 10%
- The reduction for total fund negative absolute return remains

#### Incentive Compensation

The Maximum Eligible Incentive Compensation for Eligible Associates is outlined in Attachment A.

Incentive Compensation will be calculated on the Eligible Associate's annual base salary in effect on the final full pay period of the fiscal year.

Annual compensation (base salary plus Incentive Compensation earned) of an investment associate in any calendar year cannot exceed two times the maximum amount of pay grade 317.

#### Performance Measures

The following performance measures will be applied to every Eligible Associate's Incentive Plan:

- Only quantitative goals will be utilized. Subjective goals will not be used.
- If the STRS Ohio Total Fund does not earn a positive Absolute (actual) Return in the fiscal year, the Incentive Compensation for each Eligible Associate will be reduced by a factor of 4x the Total Fund Absolute Return, up to a maximum reduction of 50%. In the event a reduction of the earned incentive reaches the maximum of 50% (i.e., Total Fund Absolute Return at or below -12.5%), all incentives will be deferred for a one-year period.

See attachment D for an example of a negative Absolute Return reduction.

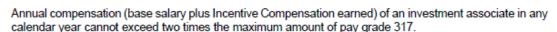
- Linking Incentive Compensation to the financial health of the System directly aligns the Program with member outcomes. Therefore:
  - If the Board's actuary determines the System does not have at least a de minimis amount available under its Sustainable Benefit Enhancement Plan (SBEP) for the fiscal year during which Incentive Compensation is scheduled for payment, the Incentive Compensation for each Eligible Associate will be reduced by 10%.
- A minimum of 20% of every Eligible Associate's Incentive Plan will be based on the Total Fund Net Relative Return allocated 50% to the 1-year period and 50% to the 5-year period. The Net Relative Return that must be met for full incentive achievement will be based on the Board's current Net Relative Return Objective as defined in the annual Statement of Investment Objectives and Policy.
- No associate will earn their Maximum Eligible Incentive Compensation unless the Total Fund Net Relative Return meets or exceeds the current Net Relative Return Objective as defined in the annual Statement of Investment Objectives and Policy. The total fund costs (difference between gross and net of fee performance goals) are reported annually by CEM Benchmarking Inc. on a calendar year basis and are reflected on the Board's Trustee Summary performance report prepared by the Investment Consultant.
- Total Fund investment performance will be based on Net Relative Returns net of all investment
  management costs (internal and external) including carried interest and other fund expenses.
  Each asset class will be based on Relative Returns net of all external management fees and costs
  including (as applicable) carried interest and other fund expenses as per industry convention but
  no costs deducted for internal management. Consistent with industry standards, private market
  performance is lagged one quarter due to the timing and availability of financial information.



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#### Performance Measures

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- Only quantitative goals will be utilized. Subjective goals will not be used.
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If the Board's actuary determines the System does not have at least a de minimis amount available under its Sustainable Benefit Enhancement Plan (SBEP) for the fiscal year during which Incentive Compensation is scheduled for payment, the Incentive Compensation for each Eligible Associate will be reduced by 10%.

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  including (as applicable) carried interest and other fund expenses as per industry convention but
  no costs deducted for internal management. Consistent with industry standards, private market
  performance is lagged one quarter due to the timing and availability of financial information.





The chart below is used as a general guideline for allocating the incentive goals to individual positions. This attachment is referenced on page 5 of the PBI Program document.

The allocation percentages listed below for the one year Asset Class and Total Fund performance represent minimum allocation levels. However, each Associate is generally expected to have on a combined basis, an effective weight on one year performance of at least 2532%. The Portfolio/Industry group may include goals related to Individual Portfolios, industry sectors, analyst groups or other appropriate subsets within the relevant Asset Class. Private direct real estate is included in the Portfolio/Industry category for real estate positions. The "Asset Class" category for Fixed Income will include only the Core portfolio. Refer to Attachment D for an example of an incentive calculation and how these allocation percentages are used.

|                                    | Incentive Allocation Percentages |                           |  |                |               |                            |  |  |  |
|------------------------------------|----------------------------------|---------------------------|--|----------------|---------------|----------------------------|--|--|--|
|                                    | Assistant<br>Director            |                           | Strategy<br>Committee<br>Member <sup>4</sup> |                | Eli           | her PBI<br>gible<br>itions |  |  |  |
| Portfolio/Industry, if applicable3 | 50%                              |                           | 60%  |                | 7 <u>6</u> 0% |                            |  |  |  |
| 1 Year Relative Performance        |                                  | 50%                       |  | 5%             |               | 40%                        |  |  |  |
| 5 Year Relative Performance        |                                  | 45 <u>50</u> %            |  | 55%            |               | 60%                        |  |  |  |
| Asset Class                        | 20%                              |                           | 20%  |                | 20%           |                            |  |  |  |
| 1 Year Relative Performance        |                                  | 20%                       |  | 2%             |               | 20%                        |  |  |  |
| 5 Year Relative Performance4       |                                  | <del>18</del> <u>20</u> % |  | <del>18%</del> |               | <del>18</del> <u>20</u> %  |  |  |  |
| Total Fund                         | 30%                              |                           | 20%  |                | <b>12</b> 0%  |                            |  |  |  |
| 1 Year Relative Performance        |                                  | 15%                       |  | 10%            |               | 5 <u>10</u> %              |  |  |  |
| 5 Year Relative Performance        |                                  | 15%                       |  | 10%            |               | 5 <u>10</u> %              |  |  |  |
| Total Incentive Allocation         | 100%                             |                           |  |                | 100%          |                            |  |  |  |

#### Notes:

Currently, the Strategy Committee includes the following positions: Director, Domestic Equities; Director, Fixed Income; Director, Alternative Investments; Director, International Equities; Director, Investment Operations; Director, Real Estate. There are other positions held on the Strategy Committee that are not listed here because they are included in this footnote below. The Deputy Executive Director, Investments has a 60% allocation to Total Fund and a 40% allocation to the individual asset classes. The Sr. Economist, Director, Asset Allocation and Strategy, Investments and Chief of Staff, Investments have a 50% allocation to Total Fund and a 50% allocation to the individual asset classes.

Presented 8/17/2023

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|  | Incentive Allocation Percentages |            |      |                       |  |  |
|--|----------------------------------|------------|------|-----------------------|--|--|
|  | Assistar                         | t Director |      | PBI Eligible<br>tions |  |  |
| Portfolio/Industry, if applicable <sup>3</sup> | 50%                              |            | 60%  |                       |  |  |
| 1 Year Relative Performance                    |                                  | 0%         |      | 0%                    |  |  |
| 5 Year Relative Performance                    |                                  | 50%        |      | 60%                   |  |  |
| Asset Class                                    | 20%                              |            | 20%  |                       |  |  |
| 1 Year Relative Performance                    |                                  | 0%         |      | 0%                    |  |  |
| 5 Year Relative Performance⁴                   |                                  | 20%        |      | 20%                   |  |  |
| Total Fund                                     | 30%                              |            | 20%  |                       |  |  |
| 1 Year Relative Performance                    |                                  | 15%        |      | 10%                   |  |  |
| 5 Year Relative Performance                    |                                  | 15%        |      | 10%                   |  |  |
| Total Incentive Allocation                     | 100%                             |            | 100% |                       |  |  |

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### Proposed



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Incontive Allocation Descentages

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Incentive Allocation Percentages

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Presented 8/17/2023

Proposed

## Conclusion



- Proposed changes are for the fiscal year 2025 STRS Ohio PBI program
  - Fiscal year 2025: July 1 2024-June 30, 2025
- During fiscal year 2025, Meketa will lead the Retirement Board through an asset-liability study
  - Reference benchmarks will be explored as part of that process
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   2026 will be reviewed spring 2025
- Over the last 10 years, the PBI program has been voted in April (five times), May (three times), June (one time) and August (one time)
  - It is important for eligible associates to understand performance goals and expectations *before* the fiscal year begins





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## Report to the Investment Committee June 20, 2024



- Meketa comments: Asset-liability study timeline
- Fiscal 2025 Investment Plan
  - Meketa's review of the Fiscal 2025 Investment Plan
  - Callan's review of the Fiscal 2025 Investment Plan
- Performance-based incentive discussion
- Summary of investment activity report, May 2024
- Meketa quarterly performance review as of March 31, 2024
- Callan quarterly performance review as of March 31, 2024
- Review of the Semiannual Broker Evaluation and Associated Policies for first half of fiscal 2025
- Review of May 2024 investment transactions
- Summary of requests

## May Returns and Activity



- The preliminary total fund net return for May was +2.4%
- The preliminary total fund net return for fiscal year is +9.3%
  - Domestic equity +4.8%, international equity +3.0%, fixed income +1.6%
- Rebalancing activity
  - \$750 million was removed from domestic and international equities
  - \$575 million was allocated to fixed income
- Total investment assets ended May at \$94.5 billion, higher by \$4.4 billion in fiscal 2024

## Report to the Investment Committee June 20, 2024



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State Teachers Retirement System of Ohio

As of March 31, 2024

Performance Report



### **State Teachers Retirement System of Ohio**

Agenda

### Agenda

- 1. Trustee Summary Report
- 2. Economic & Market Update
- 3. STRS Ohio Investment Performance
- 4. Additional Trustee Summary Reports
- 5. Investment Manager Performance

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**Trustee Summary Report** 



#### State Teachers Retirement System of Ohio

Trustee Summary Report | As of March 31, 2024

#### STRS Ohio Total Fund Report Fiscal YTD, 1, 3, 5, 10, & 20 Years

#### Periods Ending March, 2024 Annualized Rates of Return

|  | ## ###################################  |
|--|---|
| Have returns affected funde  | d 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   |   |
| Total fund benchmark return     Minimum risk/high cost policy of                                       |   |
| 4. Total fund benchmark return   |   |
| Total fund benchmark return     Minimum risk/high cost policy of                                       | 91-Day T-Bills                          |
| 4. Total fund benchmark return 5. Minimum risk/high cost policy of 6. Impact of asset mix policy (4-5) | 91-Day T-Bills  active management risk? |

| Fiscal YTD    | 1 Year      | 3 Years | 5 Years  | 10 Years           | 20 Years             |
|---------------|-------------|---------|----------|--------------------|----------------------|
|               |             |         |          |                    |                      |
|               |             |         |          |                    |                      |
|               |             |         |          |                    |                      |
| 8.95%         | 12.38%      | 6.53%   | 9.25%    | 8.38%              | 8.00%                |
| 5.25%         | 7.00%       | 7.00%   | 7.18%    | 7.41%              | 7.68%                |
| 3.70%         | 5.38%       | -0.47%  | 2.06%    | 0.98%              | 0.32%                |
|               |             |         |          |                    |                      |
|               |             |         |          |                    |                      |
|               |             |         |          |                    |                      |
| 9.14%         | 12.47%      | 5.75%   | 8.61%    | 7.89%              | 7.65%                |
| 4.03%         | 5.24%       | 2.58%   | 2.02%    | 1.38%              | 1.47%                |
| 5.11%         | 7.23%       | 3.17%   | 6.59%    | 6.51%              | 6.19%                |
|               |             |         |          |                    |                      |
|               |             |         |          |                    |                      |
| NEU NASSERANI | 22712424000 |         | 02002000 | 10,000,000,000,000 | 15 200 (220 Hz 1920) |
| -0.19%        | -0.09%      | 0.78%   | 0.63%    | 0.49%              | 0.35%                |
| -0.29%        | -0.22%      | 0.66%   | 0.51%    | 0.36%              | 0.23%                |

<sup>\*</sup>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 Meketa 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.

<sup>\*\*\*</sup>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.

### **Economic and Market Update**

Data as of March 31, 2024



**Economic and Market Update** 

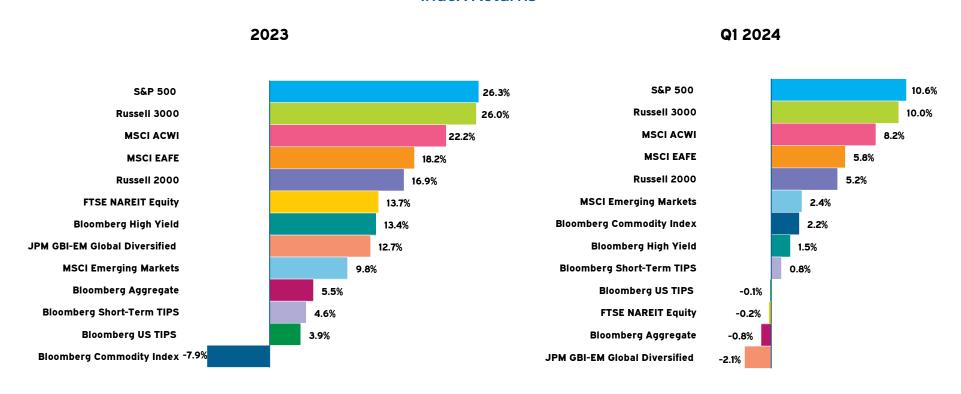
#### Commentary

- → Resilient economic data drove global equities higher and pushed out the timing of the expected first Fed rate cut, weighing on bonds.
  - Major central banks have largely paused interest rate hikes with expectations that many will still cut rates, but the uneven pace of falling inflation and economic growth could desynchronize the pace of rate cuts.
  - In general, inflation pressures have eased in most countries from their pandemic peaks, but some uncertainty remains and levels are still above most central bank targets. Headline inflation in the US rose in March (3.2% to 3.5%) by more than expected, while core inflation was unchanged (3.8%) when it was predicted to decline to 3.7%. Notably, prices in China were up only slightly in March, as the impacts of the recent holiday faded.
  - US equity markets (Russell 3000 index) rose 10.0% in the first quarter after a very strong 2023 (+26.0%). The technology sector continued to perform well, with energy gaining on geopolitical tensions.
  - Non-US developed equity markets increased 5.8% in the quarter, helped by Japanese equities which hit multi-decade highs. A strengthening US dollar drove the weaker relative results for US investors with returns in local currency terms 4.2% higher (10.0% versus 5.8%).
  - Emerging market equities (+2.4%) had the weakest equity returns, depressed by China (-2.2%). While policy efforts to support mainland stock prices helped to stabilize Chinese equities, recent efforts by the US to discourage investments in China weighed on results. The stronger dollar also hurt performance in emerging markets for US investors with returns in local currency terms 2.1% higher.
  - Rising interest rates weighed on bonds with the broad US bond market declining 0.8% for the quarter.
- → Looking to the rest of this year, the paths of inflation and monetary policy, China's economic disorder and slowing economic growth, the many looming elections, and the wars in Ukraine and Israel will be key.



#### **Economic and Market Update**

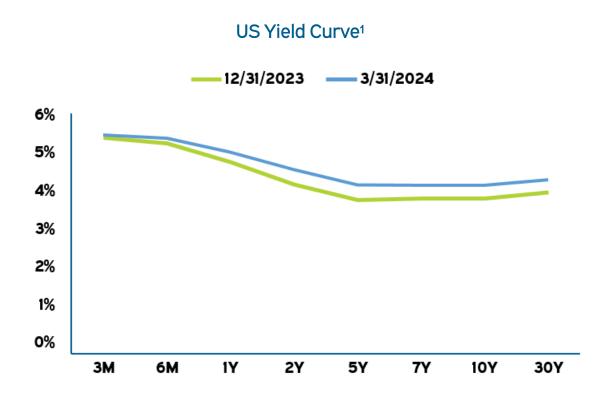
#### Index Returns1



- → In the first quarter, global equity markets continued their strong performance from 2023 with the US leading the way.
- → Resilient economic data weighed on bond markets domestically and dashed hopes of a near-term cut in interest rates.



#### **Economic and Market Update**



- → Overall interest rates moved higher over the quarter due to the strong economic data and the related shifts in monetary policy expectations.
- → The more policy sensitive two-year Treasury yield rose from 4.3% to 4.6% in the first quarter while the ten-year Treasury yield increased from 3.9% to 4.2%.
- → The yield curve remained inverted at quarter-end despite a recent flattening trend. The yield spread between the two-year and ten-year Treasury was 0.4% at the end of the quarter.

<sup>&</sup>lt;sup>1</sup> Source: Bloomberg. Data is as of March 31, 2024.

**Economic and Market Update** 

## Global Inflation (CPI Trailing Twelve Months)1

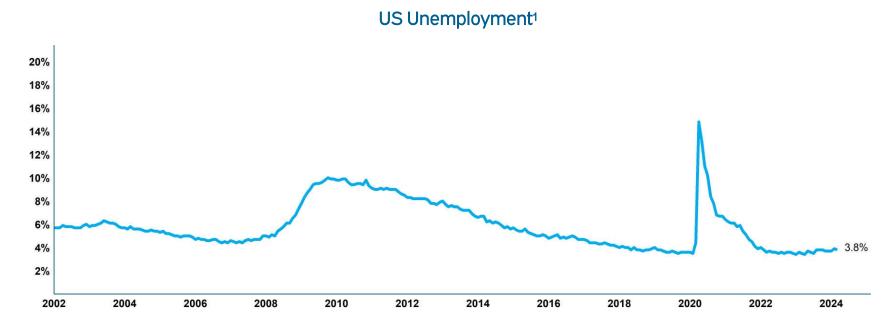


- → Outside the US, inflation is also easing across major economies from the recent peaks.
- → In the eurozone, prices experienced a dramatic decline last year but remain above the central bank's 2% target. In March, inflation fell further (2.6% to 2.4%), a level below the 3.5% year-over-year reading in the US.
- → Inflation in Japan has slowly declined from the early 2023 peak of 4.3%, but it remains near levels not seen in a decade. In the most recent reading, inflation rose from 2.4% to 2.8% largely due to the falling impact of government energy subsidies introduced at the same time last year.
- → The impacts from spending during the Lunar New Year holiday in China waned in March with inflation falling to just about 0%.

<sup>&</sup>lt;sup>1</sup> Source: Bloomberg, Data is March 31, 2024, except Japan which is as of February 28, 2024.



#### **Economic and Market Update**



- → Overall, the US labor market remains healthy, with the unemployment rate low, wage growth now positive in real terms, and initial claims for unemployment staying subdued.
- → Each of the payroll readings over the quarter exceeded expectations. In March, the number of jobs added in the US was 303,000 compared to a 214,000 forecast. The healthcare (72,000), government (71,000), and construction (39,000) sectors added the most jobs.
- → The unemployment rate fell from 3.9% to 3.8%, while wage growth dropped slightly from 4.3% to 4.1% compared to a year prior, a level well off the 6.0% peak but above inflation levels.
- → Quit rates have declined, and layoffs are stable, with 1.4 job openings per unemployed worker.

<sup>&</sup>lt;sup>1</sup> Source: FRED. Data is as March 31, 2024.

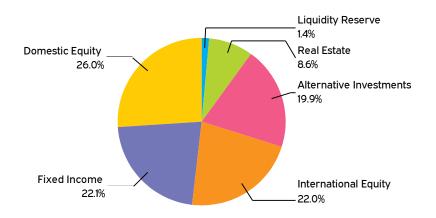
**STRS Ohio Investment Performance** 



Total Fund | As of March 31, 2024

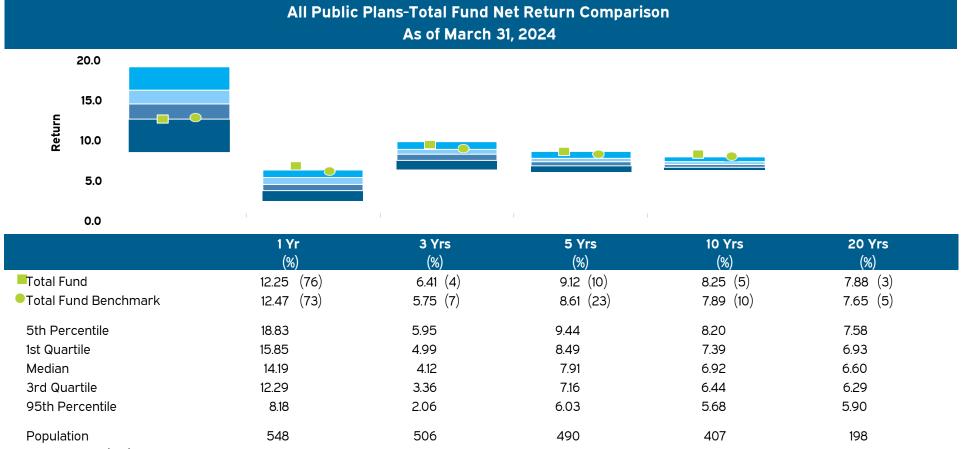
|                         | Asset Allocation vs. Target  As of March 31, 2024 |                           |               |                   |  |  |  |  |  |  |  |
|-------------------------|---|---------------------------|---------------|-------------------|--|--|--|--|--|--|--|
| Asset Class             | Current<br>Balance (SM)                           | Current<br>Allocation (%) | Policy<br>(%) | Difference<br>(%) |  |  |  |  |  |  |  |
| Domestic Equity         | \$24,653  | 26.0                      | 26.0          | 0.0               |  |  |  |  |  |  |  |
| International Equity    | \$20,797  | 22.0                      | 22.0          | 0.0               |  |  |  |  |  |  |  |
| Fixed Income            | \$20,956  | 22.1                      | 22.0          | 0.1               |  |  |  |  |  |  |  |
| Liquidity Reserve       | \$1,370   | 1.4                       | 1.0           | 0.4               |  |  |  |  |  |  |  |
| Real Estate             | \$8,096   | 8.6                       | 10.0          | -1.4              |  |  |  |  |  |  |  |
| Alternative Investments | \$18,802  | 19.9                      | 19.0          | 0.9               |  |  |  |  |  |  |  |
| Total                   | S94,674   | 100.0                     | 100.0         | 0.0               |  |  |  |  |  |  |  |

## **Actual Asset Allocation**





#### Plan Sponsor Peer Group Analysis | As of March 31, 2024



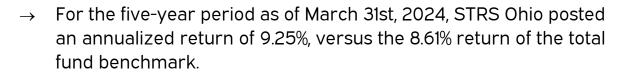
- → For the one-year period as of 3/31/2024, STRS Ohio underperformed the benchmark by 22 basis points and ranked in the 76th percentile of the eVestment All Public DB Plans universe.
- → For the five-year period as of 3/31/2024, STRS Ohio outpaced the benchmark by 51 basis points and ranked in the 10th percentile of the eVestment All Public DB Plans universe.
- → For the ten-year period as of 3/31/2024, STRS Ohio outpaced the benchmark by 36 basis points and ranked in the 5th percentile of the eVestment All Public DB Plans universe.

Certain Meketa returns may differ from STRS due to rounding.

Parentheses contain percentile rankings. Calculation based on monthly periodicity. Universe is All Public Plans-Total Fund.

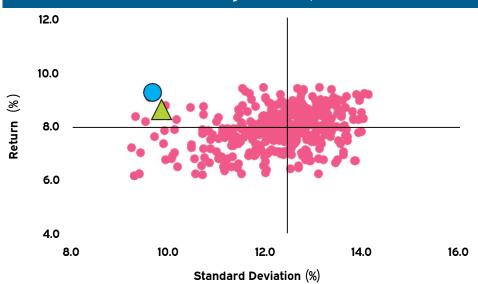


#### Total Plan Attribution | 5 Years Ending March 31, 2024



STRS Ohio's trailing five-year return ranked at the 7th percentile, while exhibiting less risk than the median of the eVestment All Public DB Plans ("risk" as measured by Standard Deviation).

## **Annualized Return vs. Annualized Standard Deviation** 5 Years Ending March 31, 2024



InvMetrics Public DB > S1B Gross

Total Fund Benchmark

All Public DB Plans Median

|                      | Return    | Standard<br>Deviation |
|----------------------|-----------|-----------------------|
| Total Fund           | 9.25 (7)  | 9.65 (12)             |
| Total Fund Benchmark | 8.61 (24) | 9.83 (13)             |

7.93

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 Meketa returns may differ from STRS due to rounding

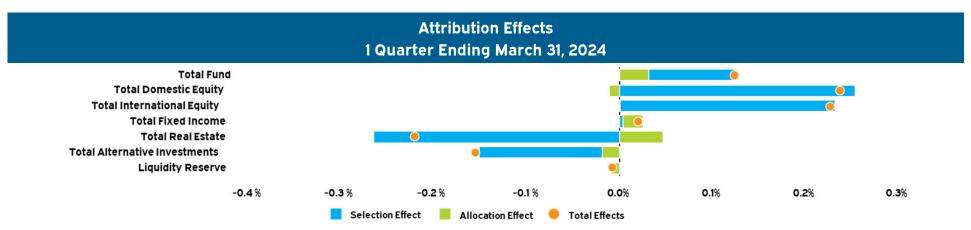
12.01

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#### Total Plan Attribution | 1 Quarter Ending March 31, 2024

| Attribution Summary<br>1 Quarter Ending March 31, 2024 |                      |                     |                           |                          |                      |                         |                          |                      |  |  |  |
|--|----------------------|---------------------|---------------------------|--------------------------|----------------------|-------------------------|--------------------------|----------------------|--|--|--|
|  | Actual<br>Weight (%) | Index<br>Weight (%) | Wtd. Actual<br>Return (%) | Wtd. Index<br>Return (%) | Excess<br>Return (%) | Selection<br>Effect (%) | Allocation<br>Effect (%) | Total<br>Effects (%) |  |  |  |
| Total Domestic Equity                                  | 25.87                | 26.00               | 11.02                     | 10.02                    | 1.00                 | 0.25                    | -0.01                    | 0.24                 |  |  |  |
| Total International Equity                             | 22.13                | 22.00               | 7.80                      | 6.76                     | 1.04                 | 0.23                    | 0.00                     | 0.23                 |  |  |  |
| Total Fixed Income                                     | 21.31                | 22.00               | -0.44                     | -0.43                    | -0.01                | 0.00                    | 0.02                     | 0.02                 |  |  |  |
| Total Real Estate                                      | 8.97                 | 10.00               | -3.76                     | -0.87                    | -2.89                | -0.26                   | 0.05                     | -0.22                |  |  |  |
| Total Alternative Investments                          | 20.30                | 19.00               | 2.23                      | 2.90                     | -0.67                | -0.13                   | -0.02                    | -0.15                |  |  |  |
| Liquidity Reserve                                      | 1.41                 | 1.00                | 1.37                      | 1.29                     | 0.08                 | 0.00                    | -0.01                    | -0.01                |  |  |  |
| Total Fund   | 100.00               | 100.00              | 4.56                      | 4.43                     | 0.12                 | 0.09                    | 0.03                     | 0.12                 |  |  |  |



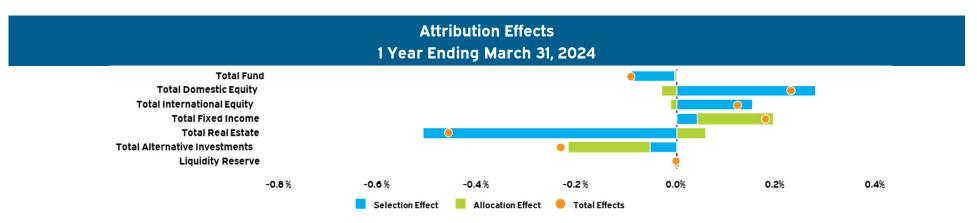
- → Over the recent quarter, the Total Fund outpaced its benchmark by 12 basis points.
- → While Domestic Equity and International Equity contributed to excess returns, Real Estate, and Alternative Investments detracted from performance at the margin.
- → Asset Allocation differences from target and manager selection both contributed to performance over this short period.

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 Meketa returns may differ from STRS due to rounding



#### Total Plan Attribution | 1 Year Ending March 31, 2024

| Attribution Summary<br>1 Year Ending March 31, 2024 |                      |                     |                           |                          |                      |                         |                          |                      |  |  |  |
|---|----------------------|---------------------|---------------------------|--------------------------|----------------------|-------------------------|--------------------------|----------------------|--|--|--|
|   | Actual<br>Weight (%) | Index<br>Weight (%) | Wtd. Actual<br>Return (%) | Wtd. Index<br>Return (%) | Excess<br>Return (%) | Selection<br>Effect (%) | Allocation<br>Effect (%) | Total<br>Effects (%) |  |  |  |
| Total Domestic Equity                               | 25.88                | 26.00               | 30.47                     | 29.29                    | 1.18                 | 0.28                    | -0.03                    | 0.23                 |  |  |  |
| Total International Equity                          | 21.96                | 22.00               | 17.12                     | 16.46                    | 0.67                 | 0.15                    | -0.01                    | 0.12                 |  |  |  |
| Total Fixed Income                                  | 19.98                | 22.00               | 2.60                      | 2.47                     | 0.13                 | 0.04                    | 0.15                     | 0.18                 |  |  |  |
| Total Real Estate                                   | 9.68                 | 10.00               | -9.22                     | -4.46                    | -4.76                | -0.51                   | 0.06                     | -0.46                |  |  |  |
| Total Alternative Investments                       | 21.02                | 19.00               | 7.09                      | 7.46                     | -0.37                | -0.05                   | -0.16                    | -0.23                |  |  |  |
| Liquidity Reserve                                   | 1.47                 | 1.00                | 5.51                      | 5.24                     | 0.27                 | 0.01                    | -0.01                    | 0.00                 |  |  |  |
| Total Fund  | 100.00               | 100.00              | 12.38                     | 12.47                    | -0.09                | -0.09                   | -0.01                    | -0.09                |  |  |  |



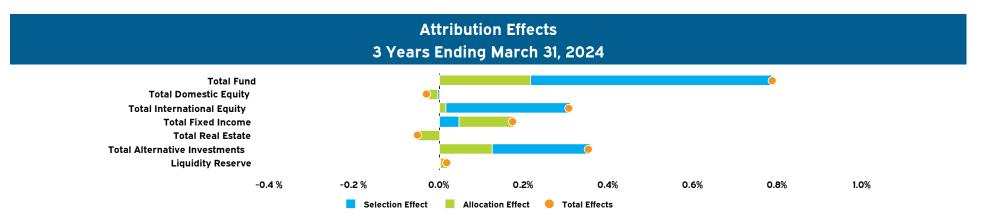
- → Over the trailing one-year period, the Fund lagged its benchmark by 9 basis points.
- → While Domestic Equity, Fixed Income and International Equity contributed to excess returns, Alternative Investments and Real Estate detracted from performance.
- → Manager Selection detracted while Asset Allocation contributed to performance over this relatively short period.

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 Meketa returns may differ from STRS due to rounding.



Total Plan Attribution | 3 Years Ending March 31, 2024

| Attribution Summary  3 Years Ending March 31, 2024  |        |        |       |       |       |      |       |       |  |  |  |
|---|--------|--------|-------|-------|-------|------|-------|-------|--|--|--|
| Actual Index Wtd. Actual Wtd. Index Excess Selection Allocation T<br>Weight (%) Weight (%) Return (%) Return (%) Return (%) Effect (%) Effect (%) |        |        |       |       |       |      |       |       |  |  |  |
| Total Domestic Equity   | 26.85  | 26.92  | 9.76  | 9.78  | -0.02 | 0.00 | -0.02 | -0.03 |  |  |  |
| Total International Equity  | 22.09  | 22.42  | 6.97  | 5.63  | 1.35  | 0.30 | 0.02  | 0.31  |  |  |  |
| Total Fixed Income  | 19.14  | 21.50  | -1.76 | -1.99 | 0.22  | 0.05 | 0.13  | 0.17  |  |  |  |
| Total Real Estate   | 9.64   | 10.00  | 3.68  | 4.00  | -0.32 | 0.00 | -0.05 | -0.05 |  |  |  |
| Total Alternative Investments   | 20.82  | 18.17  | 11.63 | 10.52 | 1.11  | 0.23 | 0.13  | 0.35  |  |  |  |
| Liquidity Reserve   | 1.46   | 1.00   | 2.74  | 2.58  | 0.16  | 0.00 | 0.02  | 0.02  |  |  |  |
| Total Fund  | 100.00 | 100.00 | 6.53  | 5.75  | 0.79  | 0.57 | 0.22  | 0.79  |  |  |  |



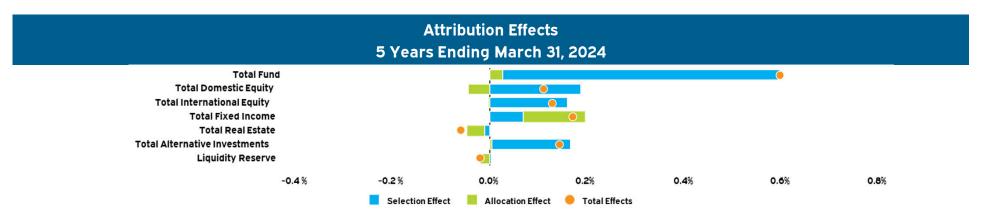
- → Over the trailing three-year period, the Total Fund outpaced its benchmark by 79 basis points.
- → While Alternative Investments, International Equity, and Fixed Income contributed to excess returns, Real Estate and Domestic Equity detracted from performance at the margin.
- → Asset Allocation differences from target and manager selection both contributed to performance over this short period.

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 Meketa returns may differ from STRS due to rounding.



#### Total Plan Attribution | 5 Years Ending March 31, 2024

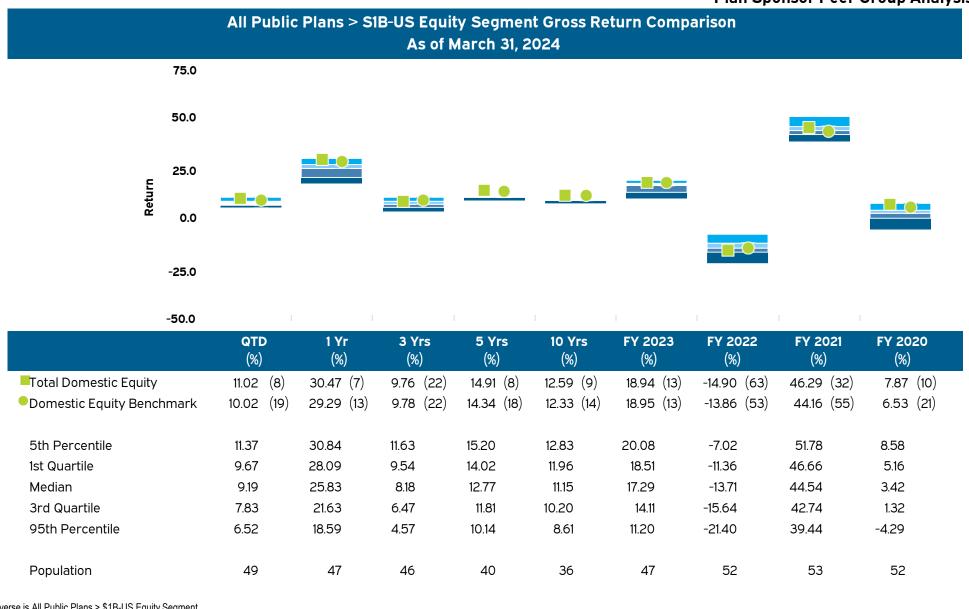
| Attribution Summary 5 Years Ending March 31, 2024 |                      |                     |                           |                          |                      |                         |                          |                      |  |  |  |
|---|----------------------|---------------------|---------------------------|--------------------------|----------------------|-------------------------|--------------------------|----------------------|--|--|--|
|   | Actual<br>Weight (%) | Index<br>Weight (%) | Wtd. Actual<br>Return (%) | Wtd. Index<br>Return (%) | Excess<br>Return (%) | Selection<br>Effect (%) | Allocation<br>Effect (%) | Total<br>Effects (%) |  |  |  |
| Total Domestic Equity                             | 27.29                | 27.28               | 14.91                     | 14.34                    | 0.57                 | 0.19                    | -0.05                    | O.11                 |  |  |  |
| Total International Equity                        | 22.22                | 22.63               | 8.75                      | 8.14                     | 0.61                 | 0.16                    | 0.00                     | 0.13                 |  |  |  |
| Total Fixed Income                                | 19.54                | 21.33               | 0.97                      | 0.71                     | 0.26                 | 0.07                    | 0.13                     | 0.17                 |  |  |  |
| Total Real Estate                                 | 9.66                 | 10.00               | 3.70                      | 4.16                     | -0.47                | -0.01                   | -0.04                    | -0.06                |  |  |  |
| Total Alternative Investments                     | 19.64                | 17.75               | 12.69                     | 12.02                    | 0.67                 | 0.16                    | 0.01                     | 0.14                 |  |  |  |
| Liquidity Reserve                                 | 1.64                 | 1.00                | 2.08                      | 2.02                     | 0.06                 | 0.00                    | -0.02                    | -0.02                |  |  |  |
| Total Fund  | 100.00               | 100.00              | 9.25                      | 8.65                     | 0.60                 | 0.57                    | 0.03                     | 0.60                 |  |  |  |



- → Over the trailing five-year period, the Fund outpaced its benchmark by 60 basis points.
- → While Fixed Income, Alternative Investments and International Equity contributed to excess returns, Real Estate detracted from performance at the margin.
- → Asset Allocation differences from target and manager selection both contributed to performance over this period.

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 Meketa returns may differ from STRS due to rounding.

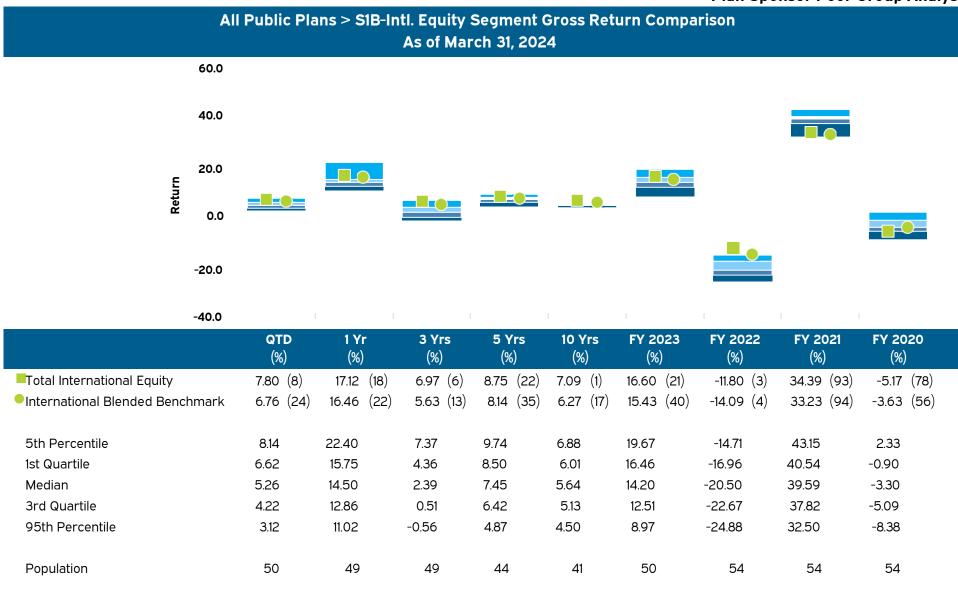
Plan Sponsor Peer Group Analysis | As of March 31, 2024



Parentheses contain percentile rankings.

Calculation based on monthly periodicity. Universe is All Public Plans > \$1B-US Equity Segment.

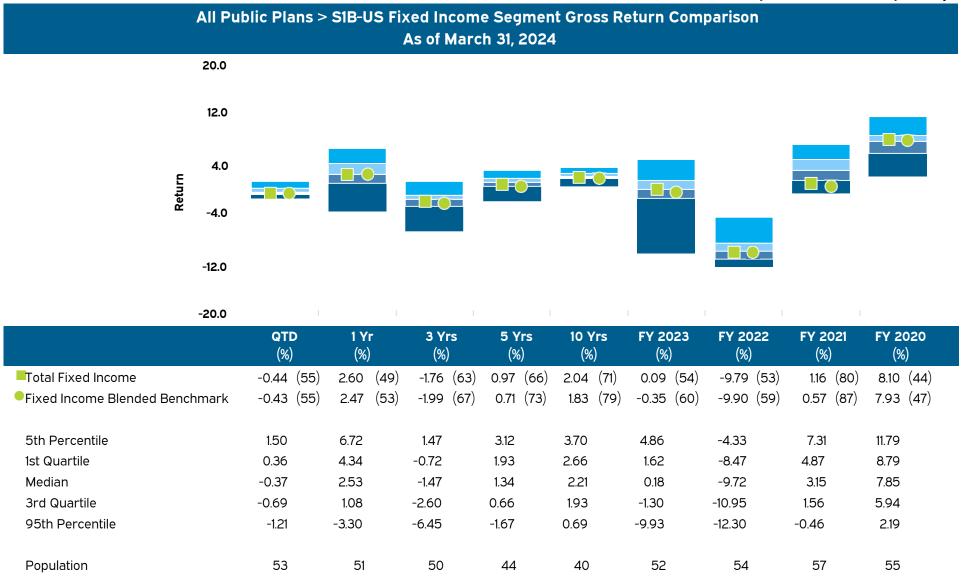
Plan Sponsor Peer Group Analysis | As of March 31, 2024



Parentheses contain percentile rankings.

Calculation based on monthly periodicity. Universe is All Public Plans > \$1B-Intl. Equity Segment.

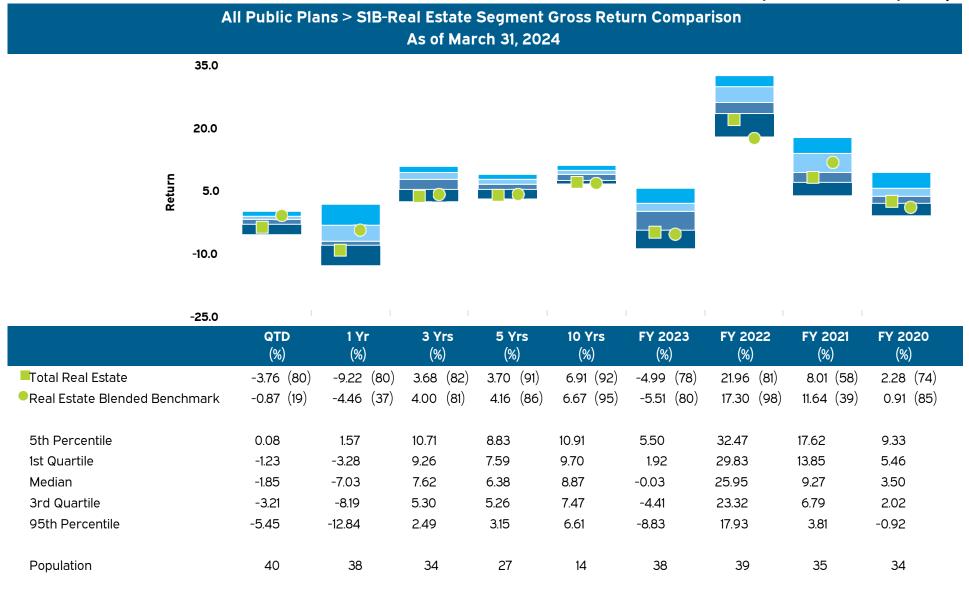
Plan Sponsor Peer Group Analysis | As of March 31, 2024



Parentheses contain percentile rankings.

Calculation based on monthly periodicity. Universe is All Public Plans > \$1B-US Fixed Income Segment.

#### Plan Sponsor Peer Group Analysis | As of March 31, 2024



Parentheses contain percentile rankings.

Calculation based on monthly periodicity. Universe is All Public Plans > \$1B-Real Estate Segment.

**Additional Trustee Summary Reports** 



Gross and Net Total Fund Returns | As of March 31, 2024

#### **Gross and Net Total Fund Returns**

## Periods Ending March, 2024 Annualized Rates of Return

#### Gross and net total fund return

- 1. Total fund return \*
- 2. External alternative & real estate mgmt. fees reflected in line 1 \*\*
- 3. Gross total fund return (1 + 2)
- 4. Total investment management costs
- 5. Net total fund return (3-4) \*\*\*

| Fiscal YTD | 1 Year | 3 Year | 5 Year | 10 Year | 20 Year |
|------------|--------|--------|--------|---------|---------|
|            |        |        |        |         |         |
| 8.95%      | 12.38% | 6.53%  | 9.25%  | 8.38%   | 8.00%   |
| 0.17%      | 0.22%  | 0.22%  | 0.23%  | 0.22%   | 0.18%   |
| 9.12%      | 12.60% | 6.75%  | 9.47%  | 8.60%   | 8.18%   |
| 0.26%      | 0.35%  | 0.34%  | 0.35%  | 0.35%   | 0.30%   |
| 8.85%      | 12.25% | 6.41%  | 9.12%  | 8.25%   | 7.88%   |

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<sup>\*</sup>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 fees and costs, including carried interest and other fund expenses. Certain Meketa returns may differ from STRS due to rounding.

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

<sup>\*\*\*</sup>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 | As of March 31, 2024

#### **Total Investment Management Costs**

Total Investment Management Costs \*

Externally Managed:

Alternative Investments

Real Estate

All Other External Managers \*\*

Internal Managers

Total Investment Management Costs \*

2022 Investment Management Costs \*

| Fees to<br>Assets<br>Managed<br>(bps) | Fees to Total<br>Fund (bps) | es (\$000's)  | As | c. 2022<br>ssets<br>Ilions) |
|---------------------------------------|-----------------------------|---------------|----|-----------------------------|
| 104                                   | 20                          | \$<br>187,035 | \$ | 18.4                        |
| 153                                   | 2                           | \$<br>19,363  | \$ | 1.3                         |
| 39                                    | 6                           | \$<br>52,583  | \$ | 12.1                        |
| 13                                    | 7                           | \$<br>63,833  | \$ | 54.1                        |
| 35                                    | 35                          | \$<br>322,814 | \$ | 85.9                        |

<sup>\*</sup>Annual fees are based upon the preliminary CEM investment report for calendar year 2022. 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.

<sup>\*\*</sup> Includes fixed income, domestic equity, and international equity external manager fees.



Asset Allocation & Performance | As of March 31, 2024

|   | Trailing Asso           | et Class Per      | formance   | е           |             |              |              |               |
|---|-------------------------|-------------------|------------|-------------|-------------|--------------|--------------|---------------|
|   | Market<br>Yrs Value (S) | % of<br>Portfolio | QTD<br>(%) | FYTD<br>(%) | 1 Yr<br>(%) | 3 Yrs<br>(%) | 5 Yrs<br>(%) | 10 Yrs<br>(%) |
| Total Fund                                | 94,674,136,624          | 100.00            | 4.56       | 8.95        | 12.38       | 6.53         | 9.25         | 8.38          |
| Total Fund Benchmark                      |                         |                   | 4.43       | 9.14        | 12.47       | 5.75         | 8.61         | 7.89          |
| Total Domestic Equity                     | 24,653,321,148          | 26.04             | 11.02      | 20.48       | 30.47       | 9.76         | 14.91        | 12.59         |
| Domestic Equity Benchmark                 |                         |                   | 10.02      | 19.29       | 29.29       | 9.78         | 14.34        | 12.33         |
| Total International Equity                | 20,797,030,433          | 21.97             | 7.80       | 13.11       | 17.12       | 6.97         | 8.75         | 7.09          |
| International Blended Benchmark           |                         |                   | 6.76       | 12.76       | 16.46       | 5.63         | 8.14         | 6.27          |
| Total Fixed Income                        | 20,956,358,038          | 22.14             | -0.44      | 3.32        | 2.60        | -1.76        | 0.97         | 2.04          |
| Fixed Income Blended Benchmark            |                         |                   | -0.43      | 3.23        | 2.47        | -1.99        | 0.71         | 1.83          |
| Total Real Estate                         | 8,095,888,598           | 8.55              | -3.76      | -8.33       | -9.22       | 3.68         | 3.70         | 6.91          |
| Real Estate Blended Benchmark             |                         |                   | -0.87      | -3.21       | -4.46       | 4.00         | 4.16         | 6.67          |
| Total Alternative Investments             | 18,801,918,806          | 19.86             | 2.23       | 4.87        | 7.09        | 11.63        | 12.69        | 10.68         |
| Alternative Investments Blended Benchmark |                         |                   | 2.90       | 5.06        | 7.46        |              |              |               |
| Liquidity Reserve                         | 1,369,619,602           | 1.45              | 1.37       | 4.22        | 5.51        | 2.74         | 2.08         | 1.43          |
| Liquidity Reserve Index                   |                         |                   | 1.29       | 4.02        | 5.24        | 2.58         | 2.02         | 1.38          |

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 Meketa returns may differ from STRS due to rounding. Fiscal year begins July 1.

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**Investment Manager Performance** 



|                                     | Trailing Investment M | lanager Pe | rforman | ce    |       |             |       |        |
|-------------------------------------|-----------------------|------------|---------|-------|-------|-------------|-------|--------|
|                                     | Market                | % of       | QTD     | FYTD  | 1 Yr  | 3 Yrs       | 5 Yrs | 10 Yrs |
|                                     | Yrs Value (S)         | Portfolio  | (%)     | (%)   | (%)   | (%)         | (%)   | (%)    |
| otal Fund                           | 94,674,136,624        | 100.00     | 4.56    | 8.95  | 12.38 | 6.53        | 9.25  | 8.38   |
| Total Fund Benchmark                |                       |            | 4.43    | 9.14  | 12.47 | <i>5.75</i> | 8.61  | 7.89   |
| Total Domestic Equity               | 24,653,321,148        | 26.04      | 11.02   | 20.48 | 30.47 | 9.76        | 14.91 | 12.59  |
| Domestic Equity Benchmark           |                       |            | 10.02   | 19.29 | 29.29 | 9.78        | 14.34 | 12.33  |
| eV All US Equity Median             |                       |            | 8.97    | 17.75 | 24.21 | 8.45        | 12.77 | 10.77  |
| Total 1000 Equity                   | 22,152,453,810        | 23.40      | 11.50   | 21.09 | 31.58 | 10.70       | 15.45 | 12.92  |
| Russell 1000 Index                  |                       |            | 10.30   | 19.61 | 29.87 | 10.45       | 14.76 | 12.68  |
| eV US Large Cap Equity Median       |                       |            | 10.26   | 19.67 | 27.47 | 10.39       | 14.05 | 12.07  |
| Total Internal 1000 Equity          | 22,152,453,810        | 23.40      | 11.50   | 21.09 | 31.58 | 10.77       | 15.50 | 12.95  |
| eV US Large Cap Equity Median       |                       |            | 10.26   | 19.67 | 27.47 | 10.39       | 14.05 | 12.07  |
| STRS Analyst Select Fund            | 3,279,335,178         | 3.46       | 10.89   | 20.49 | 30.25 | 11.13       | 15.34 | 11.82  |
| Russell 1000 Index                  |                       |            | 10.30   | 19.61 | 29.87 | 10.45       | 14.76 | 12.68  |
| eV US Large Cap Core Equity Median  |                       |            | 10.44   | 19.55 | 28.64 | 10.90       | 14.49 | 12.50  |
| STRS Concentrated Select Fund       | 945,222,075           | 1.00       | 10.33   | 18.16 | 24.12 | 7.71        | 11.35 |        |
| Russell 1000 Index                  |                       |            | 10.30   | 19.61 | 29.87 | 10.45       | 14.76 |        |
| eV US Large Cap Equity Median       |                       |            | 10.26   | 19.67 | 27.47 | 10.39       | 14.05 |        |
| STRS Large Cap Passive Quantitative | 9,021,617,542         | 9.53       | 10.84   | 20.57 | 32.49 | 12.02       | 16.08 | 13.7   |
| Russell Top 200 Index               |                       |            | 10.84   | 20.52 | 32.44 | 12.00       | 16.07 | 13.70  |
| eV US Large Cap Equity Median       |                       |            | 10.26   | 19.67 | 27.47 | 10.39       | 14.05 | 12.07  |
| STRS Integrated Factor Index        | 1,024,824,246         | 1.08       | 10.18   | 18.00 | 22.26 | 8.67        | 12.12 |        |
| Russell 1000 Index                  |                       |            | 10.30   | 19.61 | 29.87 | 10.45       | 14.76 |        |
| eV US Large Cap Equity Median       |                       |            | 10.26   | 19.67 | 27.47 | 10.39       | 14.05 |        |



## Asset Allocation & Performance | As of March 31, 2024

|                                      | Market<br>Value (S) | % of<br>Portfolio | QTD<br>(%)  | FYTD<br>(%) | 1 Yr<br>(%) | 3 Yrs<br>(%) | 5 Yrs<br>(%) | 10 Yrs<br>(%) |
|--------------------------------------|---------------------|-------------------|-------------|-------------|-------------|--------------|--------------|---------------|
| STRS Large Cap Value                 | 1,604,220,192       | 1.69              | 10.43       | 17.39       | 22.17       | 9.06         | 11.71        | 10.13         |
| Large Cap Value Custom Index         |                     |                   | 8.99        | 15.56       | 20.27       | 8.11         | 10.31        | 9.01          |
| eV US Large Cap Value Equity Median  |                     |                   | 9.21        | 17.65       | 22.49       | 9.96         | 12.19        | 10.20         |
| STRS Large Cap Growth                | 3,104,633,615       | 3.28              | 16.21       | 31.42       | 51.16       | 13.29        | 19.34        | 16.61         |
| Large Cap Growth Blended Index       |                     |                   | 11.41       | 23.21       | 39.00       | 12.50        | 18.52        | 15.98         |
| eV US Large Cap Growth Equity Median |                     |                   | 12.47       | 24.01       | 38.06       | 10.41        | 16.44        | 14.78         |
| STRS Mid Cap Value                   | 2,254,720,455       | 2.38              | 10.49       | 15.00       | 20.12       | 7.90         | 11.59        | 8.35          |
| Russell Midcap Value Index           |                     |                   | <i>8.23</i> | 15.92       | 20.40       | 6.80         | 9.94         | 8.57          |
| eV US Mid Cap Value Equity Median    |                     |                   | 8.59        | 17.44       | 22.66       | 9.29         | 11.68        | 9.57          |
| STRS Mid Cap Growth                  | 917,880,508         | 0.97              | 12.04       | 24.63       | 33.08       | 5.50         | 12.62        | 11.88         |
| Russell Midcap Growth Index          |                     |                   | 9.50        | 18.87       | 26.28       | 4.62         | 11.82        | 11.35         |
| eV US Mid Cap Growth Equity Median   |                     |                   | 9.68        | 17.47       | 25.03       | 3.38         | 12.49        | 11.72         |
| Total 2000 Equity                    | 2,384,594,732       | 2.52              | 6.70        | 14.99       | 20.61       | 2.06         | 9.98         | 9.38          |
| Russell 2000 Index                   |                     |                   | <i>5.18</i> | 13.79       | 19.71       | -0.10        | 8.10         | 7.58          |
| eV US Small Cap Core Equity Median   |                     |                   | 6.21        | 14.49       | 20.04       | 4.93         | 11.06        | 9.49          |
| Total Internal 2000 Equity           | 895,199,013         | 0.95              | 7.31        | 16.68       | 22.83       | 2.73         | 8.90         | 8.23          |
| Russell 2000 Index                   |                     |                   | <i>5.18</i> | 13.79       | 19.71       | -0.10        | 8.10         | 7.58          |
| eV US Small Cap Core Equity Median   |                     |                   | 6.21        | 14.49       | 20.04       | 4.93         | 11.06        | 9.49          |
| STRS Small Cap Select                | 423,163,226         | 0.45              | 10.77       | 18.42       | 25.68       | 5.27         | 10.18        |               |
| Russell 2000 Index                   |                     |                   | <i>5.18</i> | 13.79       | 19.71       | -0.10        | 8.10         |               |
| eV US Small Cap Core Equity Median   |                     |                   | 6.21        | 14.49       | 20.04       | 4.93         | 11.06        |               |

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## Asset Allocation & Performance | As of March 31, 2024

|                                     | Market<br>Value (S) | % of<br>Portfolio | QTD<br>(%)  | FYTD<br>(%) | 1 Yr<br>(%) | 3 Yrs<br>(%) | 5 Yrs<br>(%) | 10 Yrs<br>(%) |
|-------------------------------------|---------------------|-------------------|-------------|-------------|-------------|--------------|--------------|---------------|
| STRS Quantitative 2000              | 472,035,787         | 0.50              | 4.60        | 15.15       | 20.53       | 1.04         | 8.05         | 8.33          |
| Russell 2000 Index                  |                     |                   | <i>5.18</i> | 13.79       | 19.71       | -0.10        | 8.10         | 7.58          |
| eV US Small Cap Core Equity Median  |                     |                   | 6.21        | 14.49       | 20.04       | 4.93         | 11.06        | 9.49          |
| Total External 2000 Equity          | 1,489,395,719       | 1.57              | 6.36        | 14.04       | 19.38       | 1.63         | 10.56        | 10.05         |
| Russell 2000 Index                  |                     |                   | <i>5.18</i> | 13.79       | 19.71       | -0.10        | 8.10         | 7.58          |
| eV US Small Cap Equity Median       |                     |                   | 6.09        | 14.40       | 20.03       | 4.47         | 10.82        | 9.42          |
| Small Cap Core                      | 476,894,041         | 0.50              | 10.03       | 22.07       | 28.13       | 6.85         | 13.89        | 11.15         |
| Russell 2000 Index                  |                     |                   | <i>5.18</i> | 13.79       | 19.71       | -0.10        | 8.10         | 7.58          |
| eV US Small Cap Core Equity Median  |                     |                   | 6.21        | 14.49       | 20.04       | 4.93         | 11.06        | 9.49          |
| Fuller & Thaler Core                | 354,530,915         | 0.37              | 13.66       | 28.56       | 33.60       | 11.56        | 17.30        | 14.02         |
| Russell 2000 Index                  |                     |                   | <i>5.18</i> | 13.79       | 19.71       | -0.10        | 8.10         | 7.58          |
| eV US Small Cap Core Equity Median  |                     |                   | 6.21        | 14.49       | 20.04       | 4.93         | 11.06        | 9.49          |
| Fuller & Thaler Micro-Cap           | 122,363,125         | 0.13              | -0.04       | 4.65        | 13.07       | -4.92        | 5.37         | 4.34          |
| Russell 2000 Index                  |                     |                   | <i>5.18</i> | 13.79       | 19.71       | -0.10        | 8.10         | 7.58          |
| eV US Small Cap Core Equity Median  |                     |                   | 6.21        | 14.49       | 20.04       | 4.93         | 11.06        | 9.49          |
| Small Cap Value                     | 658,650,265         | 0.70              | 4.84        | 12.14       | 16.23       | 3.50         | 9.31         | 8.44          |
| Russell 2000 Value Index            |                     |                   | 2.90        | 15.09       | 18.75       | 2.22         | 8.17         | 6.87          |
| eV US Small Cap Value Equity Median |                     |                   | 5.16        | 16.07       | 20.82       | 6.34         | 11.10        | 8.66          |
| Chartwell                           | 291,411,834         | 0.31              | 4.58        | 14.01       | 18.19       | 5.33         | 8.17         | 7.38          |
| Russell 2000 Value Index            |                     |                   | 2.90        | 15.09       | 18.75       | 2.22         | 8.17         | 6.87          |
| eV US Small Cap Value Equity Median |                     |                   | <i>5.16</i> | 16.07       | 20.82       | 6.34         | 11.10        | 8.66          |

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Asset Allocation & Performance | As of March 31, 2024

|   | Market<br>Value (S) | % of<br>Portfolio | QTD<br>(%)  | FYTD<br>(%) | 1 Yr<br>(%)  | 3 Yrs<br>(%) | 5 Yrs<br>(%) | 10 Yrs<br>(%) |
|---|---------------------|-------------------|-------------|-------------|--------------|--------------|--------------|---------------|
| Neuberger Berman                        | 367,238,431         | 0.39              | 5.06        | 10.48       | 14.48        | 1.88         | 10.28        | 9.41          |
| Russell 2000 Value Index                |                     |                   | 2.90        | 15.09       | 18.75        | 2.22         | 8.17         | 6.87          |
| eV US Small Cap Value Equity Median     |                     |                   | 5.16        | 16.07       | 20.82        | 6.34         | 11.10        | 8.66          |
| Small Cap Growth                        | 353,851,414         | 0.37              | 4.31        | 7.09        | 13.91        | -7.61        | 6.84         | 10.28         |
| Russell 2000 Growth Index               |                     |                   | 7.58        | 12.42       | 20.35        | -2.68        | 7.38         | 7.89          |
| eV US Small Cap Growth Equity Median    |                     |                   | 7.32        | 12.04       | 17.98        | -0.37        | 10.19        | 10.37         |
| Weatherbie Capital 2000 Growth          | 353,851,414         | 0.37              | 4.31        | 7.09        | 13.91        | -7.61        | 6.84         | 11.42         |
| Russell 2000 Growth Index               |                     |                   | 7.58        | 12.42       | 20.35        | -2.68        | 7.38         | 7.89          |
| eV US Small Cap Growth Equity Median    |                     |                   | 7.32        | 12.04       | 17.98        | -0.37        | 10.19        | 10.37         |
| Total International Equity              | 20,797,030,433      | 21.97             | 7.80        | 13.11       | 17.12        | 6.97         | 8.75         | 7.09          |
| International Blended Benchmark         |                     |                   | 6.76        | 12.76       | 16.46        | <i>5.63</i>  | 8.14         | 6.27          |
| eV ACWI ex-US All Cap Equity Median     |                     |                   | 4.99        | 9.77        | 12.75        | 2.31         | 6.83         | 5.08          |
| Total EAFE                              | 10,826,894,644      | 11.44             | 9.40        | 15.43       | 20.65        | 9.85         | 10.28        | 7.92          |
| MSCI World ex USA 50% Hedged            |                     |                   | 7.84        | 14.12       | 18.53        | 8.34         | 9.53         | 6.98          |
| eV Non-US Diversified All Cap Eq Median |                     |                   | <i>5.21</i> | 11.02       | 14.39        | 3.45         | 7.63         | 5.78          |
| Total Internal EAFE                     | 4,521,825,759       | 4.78              | 8.92        | 15.64       | 21.02        | 9.17         | 9.19         | 6.82          |
| MSCI World ex USA 50% Hedged            |                     |                   | 7.84        | 14.12       | 18.53        | 8.34         | 9.53         | 6.98          |
| eV Non-US Diversified All Cap Eq Median |                     |                   | <i>5.21</i> | 11.02       | 14.39        | 3.45         | 7.63         | 5.78          |
| STRS Structured EAFE                    | 2,192,374,620       | 2.32              | 7.76        | 14.22       | 18.76        | 8.60         | 9.80         | 7.32          |
| MSCI World ex USA 50% Hedged            |                     |                   | 7.84        | 14.12       | <i>18.53</i> | 8.34         | 9.53         | 6.98          |
| eV Non-US Diversified All Cap Eq Median |                     |                   | <i>5.21</i> | 11.02       | 14.39        | <i>3.45</i>  | 7.63         | <i>5.78</i>   |

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Asset Allocation & Performance | As of March 31, 2024

|   |                     |                   |             |             | AS          | SEL AIIOCC   | ונוטוו פג דינ | i ivi illali  |
|---|---------------------|-------------------|-------------|-------------|-------------|--------------|---------------|---------------|
|   | Market<br>Value (S) | % of<br>Portfolio | QTD<br>(%)  | FYTD<br>(%) | 1 Yr<br>(%) | 3 Yrs<br>(%) | 5 Yrs<br>(%)  | 10 Yrs<br>(%) |
| STRS EAFE Quantitative                  | 2,329,451,139       | 2.46              | 9.97        | 16.93       | 23.13       | 9.53         | 8.53          | 6.33          |
| MSCI World ex USA 50% Hedged            |                     |                   | 7.84        | 14.12       | 18.53       | 8.34         | 9.53          | 6.98          |
| eV Non-US Diversified All Cap Eq Median |                     |                   | <i>5.21</i> | 11.02       | 14.39       | 3.45         | 7.63          | 5.78          |
| Total External EAFE                     | 6,305,068,885       | 6.66              | 9.75        | 15.29       | 20.41       | 10.39        | 11.24         | 8.94          |
| MSCI World ex USA 50% Hedged            |                     |                   | 7.84        | 14.12       | 18.53       | 8.34         | 9.53          | 6.98          |
| eV Non-US Diversified All Cap Eq Median |                     |                   | <i>5.21</i> | 11.02       | 14.39       | 3.45         | 7.63          | <i>5.78</i>   |
| Arrowstreet Capital                     | 2,202,629,549       | 2.33              | 12.32       | 21.37       | 28.38       | 12.58        | 13.87         | 10.51         |
| MSCI ACWI ex USA IMI 50% Hedged         |                     |                   | 7.46        | 13.84       | 17.93       | 7.53         | 9.27          | 6.79          |
| eV Non-US Diversified All Cap Eq Median |                     |                   | <i>5.21</i> | 11.02       | 14.39       | 3.45         | 7.63          | <i>5.78</i>   |
| AllianceBernstein EAFE Value            | 1,556,171,156       | 1.64              | 10.43       | 15.94       | 19.95       | 11.18        | 9.39          | 6.89          |
| MSCI World ex USA 50% Hedged            |                     |                   | 7.84        | 14.12       | 18.53       | 8.34         | 9.53          | 6.98          |
| eV Non-US Diversified All Cap Eq Median |                     |                   | <i>5.21</i> | 11.02       | 14.39       | 3.45         | 7.63          | 5.78          |
| MFS                                     | 2,546,268,181       | 2.69              | 7.35        | 10.60       | 15.04       | 8.32         | 10.12         | 9.27          |
| MSCI World ex USA 50% Hedged            |                     |                   | 7.84        | 14.12       | 18.53       | 8.34         | 9.53          | 6.98          |
| eV Non-US Diversified All Cap Eq Median |                     |                   | <i>5.21</i> | 11.02       | 14.39       | 3.45         | 7.63          | 5.78          |
| Fotal Emerging                          | 2,773,049,113       | 2.93              | 4.35        | 10.18       | 12.04       | -1.85        | 3.43          | 4.05          |
| MSCI Emerging Markets (Net)             |                     |                   | 2.37        | 7.19        | <i>8.15</i> | <i>-5.05</i> | 2.22          | 2.95          |
| eV Emg Mkts All Cap Equity Median       |                     |                   | 3.21        | 7.49        | 9.76        | -3.82        | 3.99          | 4.52          |
| Total Internal Emerging                 | 2,436,160,381       | 2.57              | 4.91        | 10.81       | 12.99       | -0.46        | 4.33          | 4.74          |
| MSCI Emerging Markets (Net)             |                     |                   | <i>2.37</i> | 7.19        | <i>8.15</i> | <i>-5.05</i> | 2.22          | 2.95          |
| eV Emg Mkts All Cap Equity Median       |                     |                   | 3.21        | 7.49        | 9.76        | -3.82        | 3.99          | 4.52          |
| STRS Active Emerging Combined           | 1,692,358,404       | 1.79              | 4.92        | 10.87       | 12.85       | 0.37         | 5.09          | 5.08          |
| MSCI Emerging Markets (Net)             |                     |                   | <i>2.37</i> | 7.19        | <i>8.15</i> | <i>-5.05</i> | 2.22          | 2.95          |

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|   |                     |                   |             |             |             |              |              | ,            |
|---|---------------------|-------------------|-------------|-------------|-------------|--------------|--------------|--------------|
|   | Market<br>Value (S) | % of<br>Portfolio | QTD<br>(%)  | FYTD<br>(%) | 1 Yr<br>(%) | 3 Yrs<br>(%) | 5 Yrs<br>(%) | 10 Yr<br>(%) |
| STRS Emerging Market Quantitative       | 743,801,977         | 0.79              | 4.87        | 10.67       | 13.23       | -2.41        | 2.60         | 3.68         |
| MSCI Emerging Markets (Net)             |                     |                   | 2.37        | 7.19        | 8.15        | -5.05        | 2.22         | 2.9.         |
| Total External Emerging                 | 336,888,732         | 0.36              | 0.74        | 5.84        | 6.70        | -7.05        | -0.01        | 1.8          |
| MSCI Emerging Markets (Net)             |                     |                   | 2.37        | 7.19        | <i>8.15</i> | <i>-5.05</i> | 2.22         | 2.9          |
| eV Emg Mkts All Cap Equity Median       |                     |                   | 3.21        | 7.49        | 9.76        | -3.82        | 3.99         | 4.5          |
| Genesis                                 | 336,888,732         | 0.36              | 0.74        | 5.84        | 6.70        | -7.05        | 1.55         | 2.9          |
| MSCI Emerging Markets (Net)             |                     |                   | 2.37        | 7.19        | <i>8.15</i> | <i>-5.05</i> | 2.22         | 2.9          |
| eV Emg Mkts All Cap Equity Median       |                     |                   | 3.03        | 6.95        | 8.96        | -5.09        | 3.23         | 3.6          |
| Total Global Ex-US                      | 7,181,562,292       | 7.59              | 6.78        | 10.90       | 14.11       | 6.32         | 8.59         | 6.9          |
| International Blended Benchmark         |                     |                   | 6.76        | 12.76       | 16.46       | <i>5.63</i>  | 8.14         | 6.2          |
| MSCI AC World ex USA (Net)              |                     |                   | 4.69        | 10.56       | 13.26       | 1.94         | 5.97         | 4.2          |
| eV Non-US Diversified All Cap Eq Median |                     |                   | <i>5.21</i> | 11.02       | 14.39       | 3.45         | 7.63         | 5.7          |
| Total Internal Global Ex-US             | 3,632,449,144       | 3.84              | 5.99        | 11.05       | 14.24       | 8.07         | 9.38         | 7.           |
| International Blended Benchmark         |                     |                   | 6.76        | 12.76       | 16.46       | <i>5.63</i>  | 8.14         | 6.2          |
| MSCI AC World ex USA (Net)              |                     |                   | 4.69        | 10.56       | 13.26       | 1.94         | <i>5.97</i>  | 4.           |
| eV Non-US Diversified All Cap Eq Median |                     |                   | <i>5.21</i> | 11.02       | 14.39       | 3.45         | 7.63         | <i>5</i> .   |
| STRS International Value                | 3,502,419,933       | 3.70              | 6.01        | 11.02       | 14.21       | 8.10         | 9.40         | 7.3          |
| International Blended Benchmark         |                     |                   | 6.76        | 12.76       | 16.46       | <i>5.63</i>  | 8.14         | 6.           |
| MSCI AC World ex USA (Net)              |                     |                   | 4.69        | 10.56       | 13.26       | 1.94         | 5.97         | 4.2          |
| eV Non-US Diversified All Cap Eq Median |                     |                   | 5.21        | 11.02       | 14.39       | 3.45         | 7.63         | <i>5</i> .   |
| STRS International Analyst              | 130,029,211         | 0.14              | 5.53        | 11.71       | 14.91       |              |              |              |
| International Blended Benchmark         |                     |                   | 6.76        | 12.76       | 16.46       |              |              |              |
| MSCI AC World ex USA (Net)              |                     |                   | 4.69        | 10.56       | 13.26       |              |              |              |
| eV Non-US Diversified All Cap Eq Median |                     |                   | <i>5.21</i> | 11.02       | 14.39       |              |              |              |



|  |                     |                   |            |             |             | Set Alloce   |              |               |
|--|---------------------|-------------------|------------|-------------|-------------|--------------|--------------|---------------|
|  | Market<br>Value (S) | % of<br>Portfolio | QTD<br>(%) | FYTD<br>(%) | 1 Yr<br>(%) | 3 Yrs<br>(%) | 5 Yrs<br>(%) | 10 Yrs<br>(%) |
| otal External Global Ex-US             | 3,549,113,148       | 3.75              | 7.59       | 10.76       | 14.00       | 4.12         | 7.86         |               |
| nternational Blended Benchmark         |                     |                   | 6.76       | 12.76       | 16.46       | 5.63         | 8.14         |               |
| MSCI AC World ex USA (Net)             |                     |                   | 4.69       | 10.56       | 13.26       | 1.94         | 5.97         |               |
| Global Ex-US Standard                  | 3,078,068,454       | 3.25              | 7.55       | 10.12       | 13.36       | 4.36         | 8.01         |               |
| International Blended Benchmark        |                     |                   | 6.76       | 12.76       | 16.46       | <i>5.63</i>  | 8.14         |               |
| MSCI AC World ex USA (Net)             |                     |                   | 4.69       | 10.56       | 13.26       | 1.94         | 5.97         |               |
| Lazard                                 | 799,441,204         | 0.84              | 6.52       | 9.28        | 13.24       | 5.12         | 7.54         |               |
| International Blended Benchmark        |                     |                   | 6.76       | 12.76       | 16.46       | 5.63         | 8.14         |               |
| MSCI AC World ex USA (Net)             |                     |                   | 4.69       | 10.56       | 13.26       | 1.94         | 5.97         |               |
| Wellington International Opportunities | 1,158,902,462       | 1.22              | 6.91       | 11.28       | 14.24       | 4.08         | 8.73         | -             |
| International Blended Benchmark        |                     |                   | 6.76       | 12.76       | 16.46       | <i>5.63</i>  | 8.14         | -             |
| MSCI AC World ex USA (Net)             |                     |                   | 4.69       | 10.56       | 13.26       | 1.94         | <i>5.97</i>  | -             |
| William Blair                          | 1,119,724,788       | 1.18              | 9.18       | 9.45        | 12.41       |              |              | -             |
| International Blended Benchmark        |                     |                   | 6.76       | 12.76       | 16.46       |              |              | -             |
| MSCI AC World ex USA (Net)             |                     |                   | 4.69       | 10.56       | 13.26       |              |              | -             |
| Global Ex-US Small Cap                 | 471,044,693         | 0.50              | 7.85       | 15.03       | 18.27       | 4.01         |              | -             |
| MSCI ACWI ex USA Small Cap 50% Hedged  |                     |                   | 3.88       | 12.38       | 15.82       | 3.23         |              | -             |
| Acadian                                | 267,804,225         | 0.28              | 7.74       | 18.49       | 21.85       |              |              | -             |
| MSCI ACWI ex USA Small Cap 50% Hedged  |                     |                   | 3.88       | 12.38       | 15.82       |              |              | -             |
| American Century                       | 139,738,290         | 0.15              | 8.16       | 9.96        | 12.92       | -0.95        |              | -             |
| MSCI ACWI ex USA Small Cap 50% Hedged  |                     |                   | 3.88       | 12.38       | 15.82       | 3.23         |              | -             |
| Wellington Small Cap                   | 63,502,178          | 0.07              | 7.28       | 16.27       | 19.84       |              |              | -             |
| MSCI ACWI ex USA Small Cap 50% Hedged  |                     |                   | 3.88       | 12.38       | 15.82       |              |              | -             |



|                                    | Market<br>Value (S) | % of<br>Portfolio | QTD<br>(%) | FYTD<br>(%) | 1 Yr<br>(%) | 3 Yrs<br>(%) | 5 Yrs<br>(%) | 10 Yrs<br>(%) |
|------------------------------------|---------------------|-------------------|------------|-------------|-------------|--------------|--------------|---------------|
| Total Fixed Income                 | 20,956,358,038      | 22.14             | -0.44      | 3.32        | 2.60        | -1.76        | 0.97         | 2.04          |
| Fixed Income Blended Benchmark     |                     |                   | -0.43      | 3.23        | 2.47        | -1.99        | 0.71         | 1.83          |
| Liquid Treasury Portfolio          | 4,775,692,930       | 5.04              | -0.34      | 2.81        | 1.64        | -1.34        | 0.69         |               |
| Blmbg. U.S. Treasury: Intermediate |                     |                   | -0.36      | 2.78        | 1.60        | -1.40        | 0.63         |               |
| Core Fixed Income                  | 16,180,665,108      | 17.09             | -0.48      | 3.37        | 2.81        | -1.85        | 0.98         | 2.07          |
| Blmbg. U.S. Universal Index        |                     |                   | -0.47      | <i>3.28</i> | 2.67        | -2.11        | 0.69         | 1.83          |
| Global Bond Median                 |                     |                   | -1.36      | 3.85        | 2.46        | <i>-3.56</i> | -0.34        | 0.85          |
| STRS Fixed Income                  | 14,245,981,023      | 15.05             | -0.80      | 2.60        | 1.76        | -2.26        | 0.60         | 1.70          |
| High-Yield                         | 797,921,704         | 0.84              | 1.51       | 9.14        | 10.89       | 2.63         | 4.58         | 4.74          |
| Blmbg. U.S. High Yield Index       |                     |                   | 1.47       | 9.24        | 11.15       | 2.20         | 4.21         | 4.44          |
| High Yield Bond Median             |                     |                   | 1.83       | 9.32        | 11.23       | 2.78         | 4.55         | 4.59          |
| BNY Mellon                         | 132,655,363         | 0.14              | 1.37       | 9.20        | 10.93       | 2.26         |              |               |
| Blmbg. U.S. High Yield Index       |                     |                   | 1.47       | 9.24        | 11.15       | 2.20         |              |               |
| High Yield Bond Median             |                     |                   | 1.83       | 9.32        | 11.23       | 2.78         |              |               |
| JP Morgan                          | 188,762,263         | 0.20              | 1.10       | 8.72        | 10.23       | 3.65         |              |               |
| Blmbg. U.S. High Yield Index       |                     |                   | 1.47       | 9.24        | 11.15       | 2.20         |              |               |
| High Yield Bond Median             |                     |                   | 1.83       | 9.32        | 11.23       | 2.78         |              |               |
| PGIM                               | 181,528,446         | 0.19              | 1.68       | 9.57        | 11.50       | 2.61         |              |               |
| Blmbg. U.S. High Yield Index       |                     |                   | 1.47       | 9.24        | 11.15       | 2.20         |              |               |
| High Yield Bond Median             |                     |                   | 1.83       | 9.32        | 11.23       | 2.78         |              |               |
| PIMCO                              | 294,975,632         | 0.31              | 1.70       | 9.12        | 10.94       | 2.25         | 4.48         | 4.93          |
| Blmbg. U.S. High Yield Index       |                     |                   | 1.47       | 9.24        | 11.15       | 2.20         | 4.21         | 4.44          |
| High Yield Bond Median             |                     |                   | 1.83       | 9.32        | 11.23       | <i>2.78</i>  | 4.55         | 4.59          |



|   | Market<br>Value (S) | % of<br>Portfolio | <b>QTD</b><br>(%) | FYTD<br>(%) | 1 Yr<br>(%) | 3 Yrs<br>(%) | <b>5 Yrs</b><br>(%) | 10 Yrs<br>(%) |
|---|---------------------|-------------------|-------------------|-------------|-------------|--------------|---------------------|---------------|
| Emerging Debt                           | 1,136,762,381       | 1.20              | 2.17              | 9.05        | 10.47       | 0.04         | 1.80                | 3.64          |
| Emerging Debt Index                     |                     |                   | 1.53              | 7.23        | 8.43        | -1.48        | 1.07                | 2.90          |
| Emerging Markets Bond Median            |                     |                   | 2.34              | 9.65        | 12.11       | 0.16         | 2.31                | 3.31          |
| Fidelity Institutional Asset Management | 431,316,171         | 0.46              | 2.20              | 9.80        | 11.22       | 0.63         | 1.93                | 3.92          |
| Emerging Debt Index                     |                     |                   | 1.53              | 7.23        | 8.43        | -1.48        | 1.07                | 2.90          |
| Emerging Markets Bond Median            |                     |                   | 2.34              | 9.65        | 12.11       | 0.16         | 2.31                | 3.31          |
| MFS                                     | 484,380,977         | 0.51              | 2.03              | 8.36        | 9.65        | -0.14        |                     |               |
| Emerging Debt Index                     |                     |                   | 1.53              | 7.23        | 8.43        | -1.48        |                     |               |
| Emerging Markets Bond Median            |                     |                   | 2.34              | 9.65        | 12.11       | 0.16         |                     |               |
| Payden & Rygel                          | 221,065,233         | 0.23              | 2.47              | 9.24        | 11.10       | -0.68        |                     |               |
| Emerging Debt Index                     |                     |                   | 1.53              | 7.23        | 8.43        | -1.48        |                     |               |
| Emerging Markets Bond Median            |                     |                   | 2.34              | 9.65        | 12.11       | 0.16         |                     |               |
| iquidity Reserve                        | 1,369,619,602       | 1.45              | 1.37              | 4.22        | 5.51        | 2.74         | 2.08                | 1.43          |
| Liquidity Reserve Index                 |                     |                   | 1.29              | 4.02        | 5.24        | 2.58         | 2.02                | 1.38          |
| Money Market-Tax-Free Median            |                     |                   | 0.84              | 2.66        | 3.50        | 1.83         | 1.46                | 1.07          |



|  |                     |                   |            |             | A33         | Ct Alloco    | ILIUII OK FE | , i i Oi i i i a |
|--|---------------------|-------------------|------------|-------------|-------------|--------------|--------------|------------------|
|  | Market<br>Value (S) | % of<br>Portfolio | QTD<br>(%) | FYTD<br>(%) | 1 Yr<br>(%) | 3 Yrs<br>(%) | 5 Yrs<br>(%) | 10 Yrs<br>(%)    |
| Total Real Estate                        | 8,095,888,598       | 8.55              | -3.76      | -8.33       | -9.22       | 3.68         | 3.70         | 6.91             |
| Real Estate Blended Benchmark            |                     |                   | -0.87      | -3.21       | -4.46       | 4.00         | 4.16         | 6.67             |
| Private Real Estate                      | 6,771,013,602       | 7.15              | -4.34      | -10.90      | -12.37      | 3.24         | 3.18         | 6.68             |
| Direct Real Estate                       | 5,401,958,664       | 5.71              | -5.25      | -12.68      | -14.63      | 2.11         | 2.60         | 6.23             |
| NCREIF Property Index                    |                     |                   | -0.98      | -5.29       | -7.16       | 3.63         | <i>3.76</i>  | 6.4              |
| East Region (Private RE)                 | 1,929,245,417       | 2.04              | -3.71      | -8.73       | -9.57       | 1.44         | 0.27         | 2.36             |
| NCREIF Property Index                    |                     |                   | -0.98      | -5.29       | -7.16       | 3.63         | 3.76         | 6.4              |
| Midwest Region (Private RE)              | 846,335,271         | 0.89              | -6.11      | -12.69      | -14.76      | -3.56        | -0.64        | 4.19             |
| NCREIF Property Index                    |                     |                   | -0.98      | -5.29       | -7.16       | 3.63         | 3.76         | 6.4              |
| South Region (Private RE)                | 885,400,000         | 0.94              | -1.95      | -1.33       | -1.04       | 10.21        | 10.11        | 12.1             |
| NCREIF Property Index                    |                     |                   | -0.98      | -5.29       | -7.16       | 3.63         | 3.76         | 6.4              |
| West Region (Private RE)                 | 1,740,977,976       | 1.84              | -8.06      | -21.24      | -24.79      | 1.58         | 3.23         | 8.8              |
| NCREIF Property Index                    |                     |                   | -0.98      | -5.29       | -7.16       | 3.63         | 3.76         | 6.4              |
| Commingled Funds Real Estate             | 1,369,054,938       | 1.45              | -0.54      | -3.05       | -2.05       | 8.33         | 5.61         | 8.8              |
| NCREIF Property Index                    |                     |                   | -0.98      | -5.29       | -7.16       | 3.63         | 3.76         | 6.4              |
| Opportunity Fund (Private RE)            | 390,194,903         | 0.41              | -3.71      | -8.13       | -9.63       | 8.54         | 6.61         | 9.2              |
| NCREIF Property Index                    |                     |                   | -0.98      | -5.29       | -7.16       | 3.63         | 3.76         | 6.4              |
| International (Private RE)               | 814,722,883         | 0.86              | 1.40       | -0.37       | 2.10        | 8.47         | 5.00         | 9.0              |
| NCREIF Property Index                    |                     |                   | -0.98      | -5.29       | -7.16       | 3.63         | 3.76         | 6.4              |
| Specialty Real Estate Funds (Private RE) | 164,137,152         | 0.17              | -1.99      | -3.45       | -3.60       | 7.93         | 6.83         | -                |
| NCREIF Property Index                    |                     |                   | -0.98      | -5.29       | -7.16       | 3.63         | <i>3.76</i>  | -                |



Asset Allocation & Performance | As of March 31, 2024

|   |                      |                   |            |             | A5:         | et Alloca    | ilion & Pe   | i ioi iiiai   |
|---|----------------------|-------------------|------------|-------------|-------------|--------------|--------------|---------------|
|   | Market<br>Value (\$) | % of<br>Portfolio | QTD<br>(%) | FYTD<br>(%) | 1 Yr<br>(%) | 3 Yrs<br>(%) | 5 Yrs<br>(%) | 10 Yrs<br>(%) |
| Public Real Estate                        | 1,324,874,996        | 1.40              | -0.66      | 7.20        | 10.39       | 4.31         | 4.24         | 6.69          |
| FTSE NAREIT Equity REIT Index             |                      |                   | -0.20      | 7.72        | 10.54       | 4.14         | 4.15         | 6.61          |
| REITs - Active (Public RE)                | 936,525,989          | 0.99              | -0.66      | 7.41        | 10.71       |              |              |               |
| FTSE NAREIT Equity REIT Index             |                      |                   | -0.20      | 7.72        | 10.54       |              |              |               |
| External REIT                             | 388,349,007          | 0.41              | -0.67      | 6.66        | 9.87        |              |              | -             |
| FTSE NAREIT Equity REIT Index             |                      |                   | -0.20      | 7.72        | 10.54       |              |              |               |
| CenterSquare Investment Management        | 157,014,168          | 0.17              | -0.18      | 7.78        | 11.28       |              |              |               |
| FTSE NAREIT Equity REIT Index             |                      |                   | -0.20      | 7.72        | 10.54       |              |              |               |
| Heitman                                   | 126,434,352          | 0.13              | -0.80      | 5.17        | 8.94        |              |              |               |
| FTSE NAREIT Equity REIT Index             |                      |                   | -0.20      | 7.72        | 10.54       |              |              |               |
| Principal Asset Management                | 104,900,486          | 0.11              | -1.25      | 6.82        | 9.02        |              |              |               |
| FTSE NAREIT Equity REIT Index             |                      |                   | -0.20      | 7.72        | 10.54       |              |              |               |
| Total Alternative Investments             | 18,801,918,806       | 19.86             | 2.23       | 4.87        | 7.09        | 11.63        | 12.69        | 10.68         |
| Alternative Investments Blended Benchmark |                      |                   | 2.90       | 5.06        | 7.46        |              |              |               |
| Private Equity                            | 9,562,195,111        | 10.10             | 1.99       | 2.40        | 3.60        | 10.74        | 16.39        | 14.74         |
| Private Equity Benchmark                  |                      |                   | 2.64       | 3.66        | 5.87        |              |              |               |
| Domestic Private Equity                   | 5,240,580,908        | 5.54              | 2.96       | 5.36        | 8.90        | 12.85        | 18.53        | 16.04         |
| Private Equity Benchmark                  |                      |                   | 2.64       | 3.66        | 5.87        |              |              |               |
| Domestic Venture Capital                  | 2,746,723,190        | 2.90              | -0.28      | -3.09       | -6.69       | 8.63         | 14.63        | 13.03         |
| Private Equity Benchmark                  |                      |                   | 2.64       | 3.66        | 5.87        |              |              |               |
| Global Private Equity                     | 1,574,820,331        | 1.66              | 2.87       | 2.11        | 5.68        | 9.28         | 13.81        | 14.17         |
| Private Equity Benchmark                  |                      |                   | 2.64       | 3.66        | <i>5.87</i> |              |              |               |

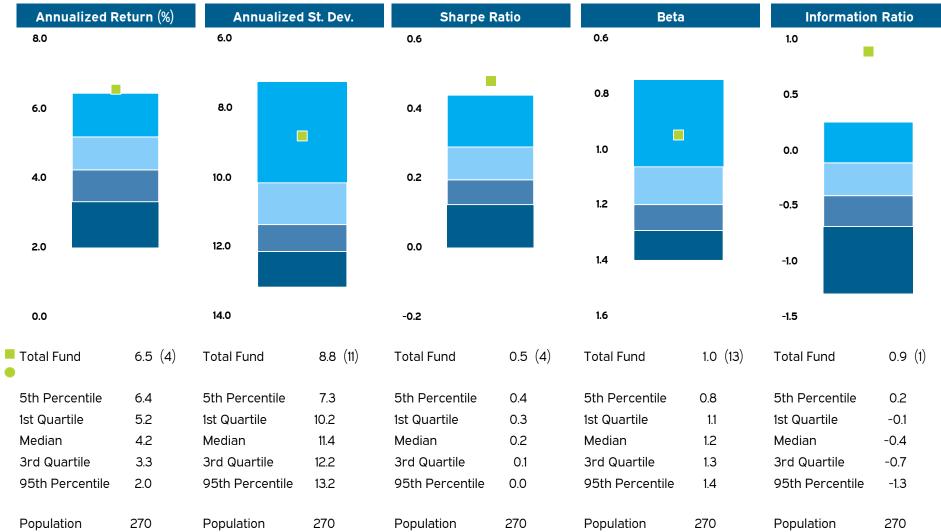
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|   | Market<br>Value (S) | % of<br>Portfolio | <b>QTD</b><br>(%) | FYTD<br>(%) | 1 Yr<br>(%) | 3 Yrs<br>(%) | 5 Yrs<br>(%) | 10 Yrs<br>(%) |
|---|---------------------|-------------------|-------------------|-------------|-------------|--------------|--------------|---------------|
| Opportunistic/Diversified                   | 9,239,723,695       | 9.76              | 2.48              | 7.57        | 11.00       | 12.07        | 8.59         | 6.54          |
| Opportunistic/Diversified Blended Benchmark |                     |                   | 3.14              | 6.32        | 8.90        |              |              |               |
| Opportunistic                               | 8,624,120,078       | 9.11              | 2.31              | 7.34        | 10.75       | 13.38        | 9.49         | 7.91          |
| Opportunistic/Diversified Blended Benchmark |                     |                   | 3.14              | 6.32        | 8.90        |              |              |               |
| Diversified                                 | 615,603,617         | 0.65              | 4.95              | 10.93       | 14.74       | 7.26         | 5.55         | 4.10          |
| Opportunistic/Diversified Blended Benchmark |                     |                   | 3.14              | 6.32        | 8.90        |              |              |               |



#### Universe Statistics | 3 Years Ending March 31, 2024



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 Meketa returns may differ from STRS due to rounding.

Universe is All Public DB Plans.

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MPT Stats By Group | As of March 31, 2024

|                          |            | Risk Return Statistics |              |                      |  |  |  |
|--------------------------|------------|------------------------|--------------|----------------------|--|--|--|
|                          |            | 3 Yrs<br>(%)           | 5 Yrs<br>(%) |                      |  |  |  |
|                          | Total Fund | Total Fund Benchmark   | Total Fund   | Total Fund Benchmark |  |  |  |
| RETURN SUMMARY STATISTIC | cs         |                        |              |                      |  |  |  |
| Maximum Return           | 4.9        | 5.1                    | 7.9          | 7.7                  |  |  |  |
| Minimum Return           | -5.3       | -5.5                   | -7.7         | -7.8                 |  |  |  |
| Return                   | 6.5        | 5.7                    | 9.2          | 8.6                  |  |  |  |
| Excess Return            | 4.2        | 3.5                    | 7.3          | 6.8                  |  |  |  |
| Excess Performance       | 0.8        | 0.0                    | 0.6          | 0.0                  |  |  |  |
| RISK SUMMARY STATISTICS  |            |                        |              |                      |  |  |  |
| Beta                     | 1.0        | 1.0                    | 1.0          | 1.0                  |  |  |  |
| Up Capture               | 99.1       | 100.0                  | 100.8        | 100.0                |  |  |  |
| Down Capture             | 92.3       | 100.0                  | 95.9         | 100.0                |  |  |  |
| RISK/RETURN SUMMARY STA  | TISTICS    |                        |              |                      |  |  |  |
| Standard Deviation       | 8.8        | 9.3                    | 9.7          | 9.8                  |  |  |  |
| Sortino Ratio            | 0.7        | 0.5                    | 1.2          | 1.0                  |  |  |  |
| Alpha                    | 1.0        | 0.0                    | 0.8          | 0.0                  |  |  |  |
| Sharpe Ratio             | 0.5        | 0.4                    | 0.8          | 0.7                  |  |  |  |
| Excess Risk              | 8.8        | 9.2                    | 9.7          | 9.9                  |  |  |  |
| Tracking Error           | 0.8        | 0.0                    | 0.7          | 0.0                  |  |  |  |
| nformation Ratio         | 0.9        | -                      | 0.8          | -                    |  |  |  |
| CORRELATION STATISTICS   |            |                        |              |                      |  |  |  |
| R-Squared                | 1.0        | 1.0                    | 1.0          | 1.0                  |  |  |  |
| Actual Correlation       | 1.0        | 1.0                    | 1.0          | 1.0                  |  |  |  |

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 Meketa returns may differ from STRS due to rounding.

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MEKETA INVESTMENT GROUP
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# Report to the Investment Committee June 20, 2024



- Meketa comments: Asset-liability study timeline
- Fiscal 2025 Investment Plan
  - Meketa's review of the Fiscal 2025 Investment Plan
  - Callan's review of the Fiscal 2025 Investment Plan
- Performance-based incentive discussion
- Summary of investment activity report, May 2024
- Meketa quarterly performance review as of March 31, 2024
- Callan quarterly performance review as of March 31, 2024
- Review of the Semiannual Broker Evaluation and Associated Policies for first half of fiscal 2025
- Review of May 2024 investment transactions
- Summary of requests

# Callan





June 20, 2024

# State Teachers Retirement System of Ohio

Quarterly Alternative Investment Portfolio Performance Summary

Pete Keliuotis, CFA

Executive Vice President

David Smith, CFA, CTP

Senior Vice President

**Daniel Brown** 

Assistant Vice President

Tony Lissuzzo, CFA

Senior Vice President

Catherine Beard, CFA

Senior Vice President

## **Executive Summary**

The STRS Ohio Alternatives Portfolio has improved the risk-adjusted returns of the total fund through added diversification benefits and strong performance.

#### Overview

- The Alternative Investments (or "Alternatives") program has 20+ year history
- The program is diversified by strategy type and is designed to provide both return enhancement and risk mitigation. The components of the Alternative Program include:
  - Private Equity:
    - Investments in private, non-liquid companies that provide high return potential relative to public market asset classes
  - Opportunistic / Diversified (or "O/D"):
    - Opportunistic: Investments are expected to provide both return enhancement and downside protection in equity bear markets
    - Diversified: uncorrelated, liquid strategies, expected to provide diversification benefits for the total fund

#### Performance Comments

- The Total Alternative Investments Program has positively contributed to total fund performance over the trailing 20-year period
- The Private Equity and Opportunistic Portfolios have performed well relative to private market counterparts, ranking solidly in the second quartile of relevant peer groups
- The Alternatives Program has primarily been self-funded over the last ten years

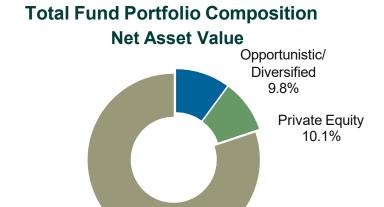


**Total Alternative Investments** 

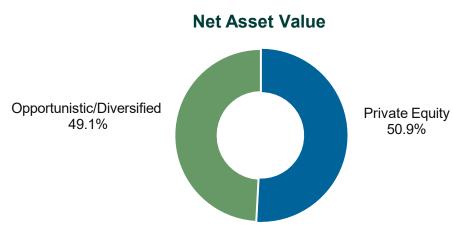
### **STRS Ohio Alternative Investments**

Private Equity and O/D segments differ in terms of risk/return expectation, providing diversification benefits to the STRS Ohio Total Fund

The following tables illustrate total current and potential exposure by Private Equity and Opportunistic/Diversified, as of March 31, 2024 in USD millions.







Traditional (Stocks, Bonds, Real Estate) 80.1%

| Portfolio Exposure by Strategy Type | Net Asset<br>Value <sup>1</sup> | %      | Unfunded<br>Commitment <sup>1</sup> | %      | Potential<br>Exposure | %      | 5 Year<br>TWR <sup>2</sup> | 10 Year<br>TWR <sup>2</sup> |
|-------------------------------------|---------------------------------|--------|-------------------------------------|--------|-----------------------|--------|----------------------------|-----------------------------|
| Private Equity                      | \$9,562                         | 50.9%  | \$2,997                             | 43.0%  | \$12,559              | 48.7%  | 16.39%                     | 14.74%                      |
| Opportunistic/Diversified           | \$9,240                         | 49.1%  | \$3,974                             | 57.0%  | \$13,214              | 51.3%  | 8.59%                      | 6.54%                       |
| Total Alternatives Program          | 18,802                          | 100.0% | \$6,971                             | 100.0% | \$25,773              | 100.0% | 12.69%                     | 10.68%                      |

In \$ millions

<sup>2</sup> STRS Ohio Alternative Investments returns are presented net of all external investment management fees and costs, including carried interest and other fund expenses

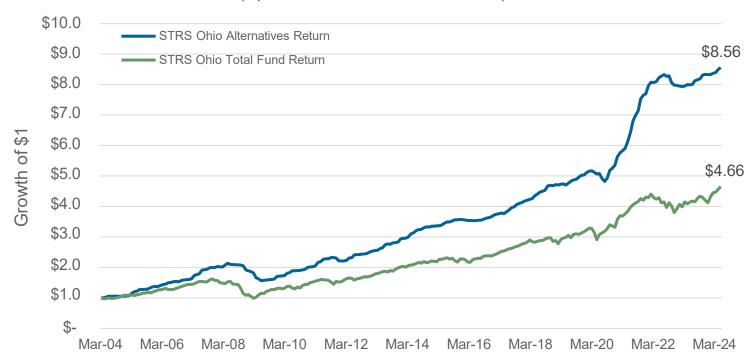


<sup>&</sup>lt;sup>1</sup> Source is Hamilton Lane.

## STRS Ohio 20-Year Performance: Alternatives and STRS Ohio Total Fund

STRS Ohio Alternatives have enhanced Total Fund return and reduced Total Fund risk over the last 20 years

Contribution of Alternative Investments to STRS 20-Year Total Fund Performance (April 01, 2004 to March 31, 2024)



|                   | STRS Ohio<br>Total Fund<br>Return <sup>1</sup> | STRS Ohio<br>Alternatives<br>Return <sup>2</sup> |
|-------------------|--|--|
| Annualized Return | 8.00%  | 11.33%   |
| Annualized Risk   | 10.25%   | 8.18%  |
| Sharpe Ratio      | 0.63   | 1.20   |

<sup>2</sup> STRS Ohio Alternative Investments returns are presented net of all external investment management fees and costs, including carried interest and other fund expenses.



<sup>&</sup>lt;sup>1</sup> The Total Fund return shown includes 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.

## STRS Ohio 10-Year Performance: Alternatives and STRS Ohio Total Fund

As of March 31, 2024

STRS Ohio 10-Year Alternative Investment Performance – Time-Weighted Returns

(April 01, 2014 – March 31, 2024)

STRS Ohio Alternatives Performance Annualized Returns ending March 31, 2024<sup>1</sup>



- STRS Ohio Alternatives return exceeds STRS Ohio Total Fund return in all time periods except the last quarter and last one year.
- STRS Ohio Alternatives return trails the STRS Ohio Alternative Investment Blended Benchmark over the last quarter and last one year; however, exceeds the benchmark over the last two and three-quarter year period since it has been adopted.

<sup>1</sup> STRS Ohio Alternatives Investments returns are presented net of all external investment management fees and costs, including carried interest and other fund expenses



### STRS Ohio Portfolio Risk Dashboard

|  |          | STRS Ohio<br>Private Equity | STRS Ohio<br>Opportunistic/Diversified | STRS Ohio<br>Total Alternative Investments |
|--|----------|-----------------------------|--|--|
| Organizational Risk<br>(Based on Stoplight Report)   | »        | 4.0                         | 4.0                                    | 4.0  |
| Portfolio Performance<br>(Performance vs. Benchmark) | »        | 4.0                         | 3.0                                    | 3.5  |
| Manager Selection<br>(Based on Stoplight Report)     | »        | 4.0                         | 5.0                                    | 4.5  |
| Diversification (Returns by Vintage NAV)             | »        | 4.0                         | 4.0                                    | 4.0  |
| Liquidity (Days<br>Liquidity by Strategy)            | <b>»</b> | 5.0                         | 3.1 (Opp) / 4.2 (Div)                  | 4.1  |

- Risk Dashboard objective is to monitor, assess, track and efficiently communicate risk using multiple parameters.
- Parameters must be quantitatively measured and tracked over time to help identify trends.
- Liquidity risk scoring for PE based on DPI performance. Opportunistic based on weighted average of redemption period and DPI performance. Diversified based on weighted average of redemption period.

#### Risk Dashboard Ratings Legend

- 5 All performance metrics above median; all stoplights in green.
- 4 One to two performance metrics third quartile; one to two stoplights in yellow.
- At least one performance metric fourth quartile or one spotlight in red; the remainder above median or green stoplights.
- 2 Most performance metrics below median; all stoplights yellow and red.
- 1 All performance metrics below median; all stoplights in the red.

<sup>1</sup> STRS Ohio Alternatives Investments returns are presented net of all external investment management fees and costs, including carried interest and other fund expenses.

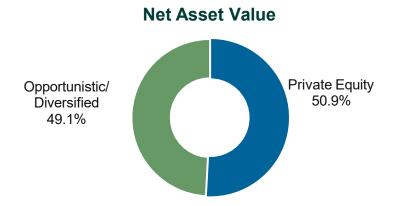


**Private Equity** 

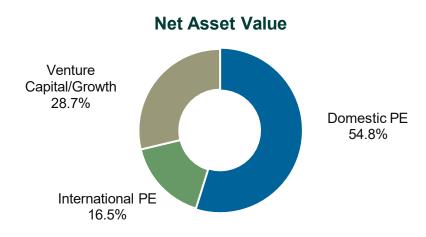
# **STRS Ohio Private Equity Investments**

The following tables illustrate total current and potential exposure by Private Equity and Opportunistic/Diversified, as of March 31, 2024 in USD millions.

### **Alternatives Portfolio Composition**



### **Private Equity Portfolio Composition**



| Portfolio Exposure by<br>Strategy Type | Net Asset<br>Value <sup>1</sup> | %      | Unfunded<br>Commitment <sup>1</sup> | %      | Potential<br>Exposure | %      | 5 Year<br>TWR <sup>2</sup> | 10 Year<br>TWR <sup>2</sup> |
|--|---------------------------------|--------|-------------------------------------|--------|-----------------------|--------|----------------------------|-----------------------------|
| Domestic Private Equity                | \$5,241                         | 54.8%  | \$2,306                             | 77.0%  | \$7,547               | 60.1%  | 18.53%                     | 16.04%                      |
| International Private Equity           | \$1,575                         | 16.5%  | \$439                               | 14.6%  | \$2,014               | 16.0%  | 13.81%                     | 14.17%                      |
| Venture Capital/Growth                 | \$2,747                         | 28.7%  | \$252                               | 8.4%   | \$2,998               | 23.9%  | 14.63%                     | 13.03%                      |
| Stock Distribution                     | \$0                             | 0.0%   | -                                   | -      | \$0                   | 0.0%   | -                          | -                           |
| Total Private Equity Program           | \$9,562                         | 100.0% | \$2,997                             | 100.0% | \$12,559              | 100.0% | 16.39%                     | 14.74%                      |

In \$ millions

<sup>&</sup>lt;sup>2</sup> STRS Ohio Private Equity returns are presented net of all external investment management fees and costs, including carried interest and other fund expenses.



<sup>&</sup>lt;sup>1</sup> Source is Hamilton Lane.

# **STRS Ohio Private Equity Performance**

As of March 31, 2024

10-Year Private Equity Performance: Time-Weighted Returns (April 01, 2014 to March 31, 2024)

STRS Ohio Private Equity Performance Annualized Returns ending March 31, 2024<sup>1</sup>



• STRS Ohio Private Equity returns trail the Private Equity Benchmark for the last two and three-quarter years<sup>2,</sup>, last one year, and last quarter.

<sup>&</sup>lt;sup>2</sup> Reflects time period the new Private Equity benchmark has been in place.

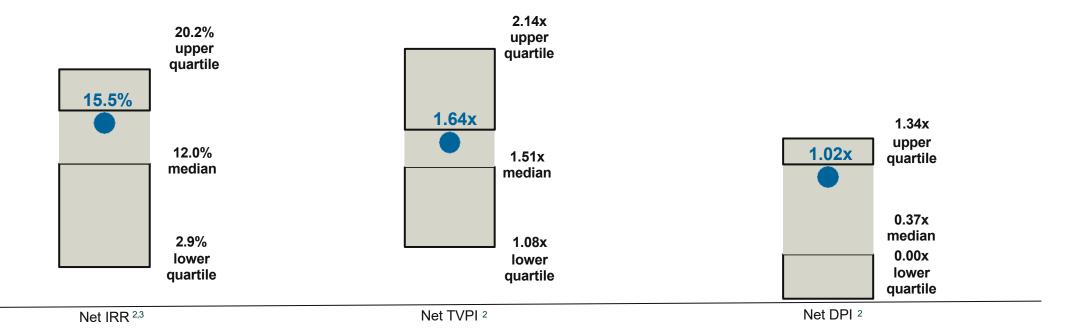


<sup>1</sup> STRS Ohio Private Equity returns are presented net of all external investment management fees and costs, including carried interest and other fund expenses.

# **STRS Ohio Private Equity 10-Year Relative Performance**

10-year performance of the STRS Ohio PE Program ranks solidly in the second quartile in terms of net IRR, net TVPI, and net DPI

10-Year Private Equity Relative Performance <sup>1</sup> (April 01, 2014 to March 31, 2024)



<sup>&</sup>lt;sup>3</sup> IRRs are calculated by HL using the XIRR method and have not been calculated by the GPs.



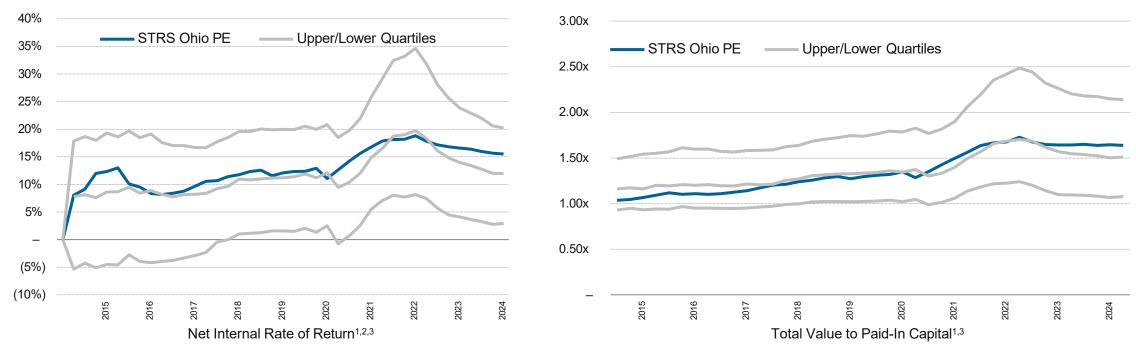
<sup>&</sup>lt;sup>1</sup> Quartile Rankings against the Global Private Equity LSEG/Cambridge database

<sup>&</sup>lt;sup>2</sup> STRS Ohio Private Equity returns are presented net of all external investment management fees and costs, including carried interest and other fund expenses.

# **STRS Ohio Private Equity Investments 10-Year Performance Trends**

Progression of the STRS Ohio Private Equity Program over the past 10 years has been positive, with the program consistently ranking in the second quartile across net IRR and net TVPI performance metrics

The following charts reflect the progression over time of various performance metrics of the fund relative to the respective top, median and lower quartiles of the LSEG/Cambridge private equity peer group.



Source: Hamilton Lane, LSEG/Cambridge.

<sup>&</sup>lt;sup>3</sup> Quartile Rankings against the Private Equity peer group includes Global Buyout, Growth Equity, and Venture Capital funds from the LSEG/Cambridge database.



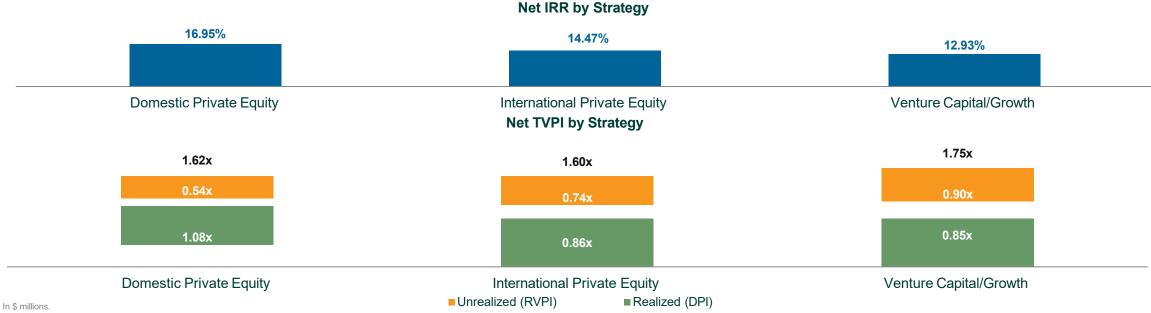
<sup>1</sup> STRS Ohio Private Equity returns are presented net of all external investment management fees and costs, including carried interest and other fund expenses.

<sup>&</sup>lt;sup>2</sup> IRRs are calculated by HL using the XIRR method and have not been calculated by the GPs.

# STRS Ohio Private Equity 10-Year Performance by Portfolio

The following table reflects private equity performance by strategy type over a rolling 10-year period. Net IRR and TVPI quartile rankings are relative to a peer group from the LSEG/Cambridge database. 10 Voor Not

| Portfolio Exposure by Strategy Type | Commitment <sup>1</sup> | Funded<br>Amount <sup>1</sup> | Unfunded<br>Commitment <sup>1</sup> | Distributions <sup>1</sup> | Asset<br>Value <sup>1</sup> | 10 Year<br>TWR <sup>2</sup> | Net<br>IRR <sup>2,3</sup> | TVPI <sup>2</sup> | DPI <sup>2</sup> | TVPI/IRR<br>Quartile <sup>4</sup> | Performance<br>Status |
|-------------------------------------|-------------------------|-------------------------------|-------------------------------------|----------------------------|-----------------------------|-----------------------------|---------------------------|-------------------|------------------|-----------------------------------|-----------------------|
| Domestic Private Equity             | \$12,144                | \$6,404                       | \$2,306                             | \$10,312                   | \$5,241                     | 16.04%                      | 16.95%                    | 1.62x             | 1.08x            | 3 <sup>rd</sup> /2 <sup>nd</sup>  | •                     |
| International Private Equity        | \$2,581                 | \$1,927                       | \$439                               | \$1,847                    | \$1,575                     | 14.17%                      | 14.47%                    | 1.60x             | 0.86x            | 3 <sup>rd</sup> /2 <sup>nd</sup>  | •                     |
| Venture Capital/Growth              | \$3,803                 | \$1,992                       | \$252                               | \$2,581                    | \$2,747                     | 13.03%                      | 12.93%                    | 1.75x             | 0.85x            | 2 <sup>nd</sup> /2 <sup>nd</sup>  | •                     |
| Stock Distribution                  | \$0                     | -                             | -                                   | -                          | \$0                         | -                           | -                         | -                 | -                | -                                 | -                     |
| Total Private Equity                | \$18,528                | \$10,323                      | \$2,997                             | \$14,739                   | \$9,562                     | 14.74%                      | 15.53%                    | 1.64x             | 1.02x            | 2nd/2nd                           | •                     |



<sup>&</sup>lt;sup>4</sup> Quartile Rankings against the Global Private Equity LSEG/Cambridge database.



<sup>&</sup>lt;sup>1</sup> Source is Hamilton Lane.

<sup>&</sup>lt;sup>2</sup> STRS Ohio Private Equity returns are presented net of all external investment management fees and costs, including carried interest and other fund expenses.

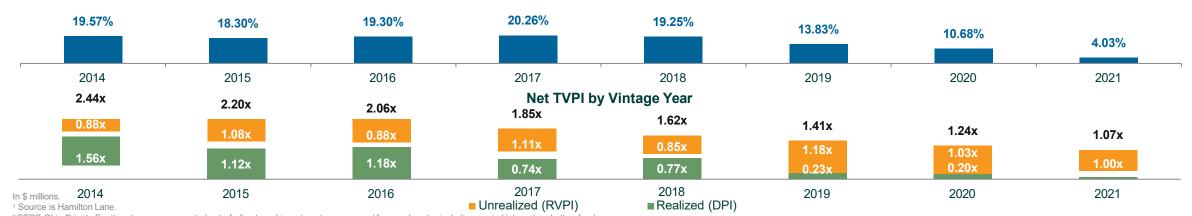
<sup>3</sup> IRRs are calculated by HL using the XIRR method and have not been calculated by the GPs.

# STRS Ohio Private Equity Portfolio Summary Performance by Vintage Year

The following table reflects private equity vintage year performance over a 10-year period. Quartile ranks for vintage years less than five years old are labelled as not meaningful. Net IRR and TVPI quartile rankings are relative to a peer group from the LSEG/Cambridge database.

| Portfolio Exposure by<br>Vintage Year | Commitment <sup>1</sup> | Funded<br>Amount <sup>1</sup> | Unfunded<br>Commitment <sup>1</sup> | Distributions <sup>1</sup> | Net Asset<br>Value <sup>1</sup> | DPI <sup>2</sup> | TVPI <sup>2</sup> | TVPI<br>Quartile <sup>2,3</sup> | Net<br>IRR <sup>2,4</sup> | IRR<br>Quartile <sup>3</sup> | Performance<br>Status |
|---------------------------------------|-------------------------|-------------------------------|-------------------------------------|----------------------------|---------------------------------|------------------|-------------------|---------------------------------|---------------------------|------------------------------|-----------------------|
| 2014                                  | \$652                   | \$833                         | \$76                                | \$1,310                    | \$460                           | 1.56x            | 2.11x             | 2 <sup>nd</sup>                 | 19.57%                    | 2 <sup>nd</sup>              | •                     |
| 2015                                  | \$855                   | \$783                         | \$64                                | \$874                      | \$849                           | 1.12x            | 2.20x             | 2 <sup>nd</sup>                 | 18.30%                    | 2 <sup>nd</sup>              | •                     |
| 2016                                  | \$1,010                 | \$1,052                       | \$91                                | \$1,241                    | \$930                           | 1.18x            | 2.06x             | 2 <sup>nd</sup>                 | 19.30%                    | 2 <sup>nd</sup>              | •                     |
| 2017                                  | \$1,111                 | \$1,504                       | \$269                               | \$1,115                    | \$1,670                         | 0.74x            | 1.85x             | 3 <sup>rd</sup>                 | 20.26%                    | 2 <sup>nd</sup>              | •                     |
| 2018                                  | \$2,062                 | \$2,031                       | \$170                               | \$1,568                    | \$1,727                         | 0.77x            | 1.62x             | 3 <sup>rd</sup>                 | 19.25%                    | 2 <sup>nd</sup>              | •                     |
| 2019                                  | \$1,760                 | \$1,414                       | \$236                               | \$322                      | \$1,679                         | 0.23x            | 1.41x             | 3 <sup>rd</sup>                 | 13.83%                    | 3 <sup>rd</sup>              | •                     |
| 2020                                  | \$685                   | \$296                         | \$64                                | \$61                       | \$308                           | 0.20x            | 1.24x             | 2 <sup>nd</sup>                 | 10.68%                    | 2 <sup>nd</sup>              | •                     |
| 2021                                  | \$630                   | \$610                         | \$241                               | \$48                       | \$609                           | 0.08x            | 1.07x             | 2 <sup>nd</sup>                 | 4.03%                     | 2 <sup>nd</sup>              | •                     |
| 2022                                  | \$944                   | \$154                         | \$734                               | \$1                        | \$159                           | 0.00x            | 1.03x             | NM                              | NM                        | NM                           | -                     |
| 2023                                  | \$531                   | \$16                          | \$572                               | \$0                        | \$17                            | 0.00x            | 1.01x             | NM                              | NM                        | NM                           | -                     |





<sup>&</sup>lt;sup>2</sup> STRS Ohio Private Equity returns are presented net of all external investment management fees and costs, including carried interest and other fund expenses.

<sup>&</sup>lt;sup>4</sup> Quartile Rankings against the Global Private Equity LSEG/Cambridge database.



<sup>&</sup>lt;sup>3</sup> IRRs are calculated by HL using the XIRR method and have not been calculated by the GPs.

# STRS Ohio Private Equity 10-Year Performance by General Partner

The following table reflects aggregate 10-year performance of the top ten STRS Ohio GP relationships by NAV. Net IRR and TVPI quartile rankings are relative to a peer group from the LSEG/Cambridge database. Organization status is reflective of Callan's opinion of stability and health of each investment manager.

| Portfolio Exposure by<br>General Partner | Organization<br>Status | Performance<br>Status | Commitments <sup>1</sup> | Funded<br>Amount <sup>1</sup> | Uncalled <sup>1</sup> | Distributed <sup>1</sup> | NAV <sup>1</sup> | Net<br>IRR <sup>2,3</sup> | Net<br>TVPI <sup>2</sup> | IRR/TVPI<br>Quartiles⁴            |
|--|------------------------|-----------------------|--------------------------|-------------------------------|-----------------------|--------------------------|------------------|---------------------------|--------------------------|-----------------------------------|
| Thoma Bravo                              | •                      | •                     | \$1,085                  | \$1,239                       | \$244                 | \$1,476                  | \$1,048          | 24.38%                    | 2.00x                    | 1 <sup>st</sup> / 2 <sup>nd</sup> |
| Bain Capital/Ventures                    | •                      | •                     | \$1,366                  | \$594                         | \$39                  | \$1,334                  | \$586            | 15.01%                    | 1.68x                    | 2 <sup>nd</sup> / 3 <sup>rd</sup> |
| Tiger Iron Capital *                     | •                      | •                     | \$450                    | \$357                         | \$95                  | \$11                     | \$524            | 11.39%                    | 1.50x                    | 3 <sup>rd</sup> / 3 <sup>rd</sup> |
| GCM Grosvenor                            | •                      | •                     | \$875                    | \$652                         | \$132                 | \$1,436                  | \$482            | 42.79%                    | 2.09x                    | 1 <sup>st</sup> / 2 <sup>nd</sup> |
| TA Associates                            | •                      | •                     | \$502                    | \$406                         | \$101                 | \$346                    | \$456            | 28.72%                    | 1.89x                    | 1 <sup>st</sup> / 1 <sup>st</sup> |
| Francisco Partners                       | •                      | •                     | \$690                    | \$339                         | \$199                 | \$690                    | \$432            | 23.91%                    | 2.42x                    | 2 <sup>nd</sup> / 1 <sup>st</sup> |
| Silver Lake Partners                     | •                      | •                     | \$468                    | \$388                         | \$40                  | \$417                    | \$407            | 18.07%                    | 1.80x                    | 2 <sup>nd</sup> / 2 <sup>nd</sup> |
| General Catalyst                         | •                      | •                     | \$272                    | \$230                         | \$16                  | \$144                    | \$406            | 19.12%                    | 2.12x                    | 1 <sup>st</sup> / 1 <sup>st</sup> |
| Commonfund                               | •                      | •                     | \$245                    | \$176                         | \$7                   | \$375                    | \$403            | 20.63%                    | 3.05x                    | 2 <sup>nd</sup> / 2 <sup>nd</sup> |
| Hermes GPE *                             | •                      | •                     | \$450                    | \$495                         | \$44                  | \$440                    | \$332            | 14.67%                    | 1.56x                    | 3 <sup>rd</sup> / 3 <sup>rd</sup> |

#### Stoplight Review Legend

- Above median performance or less than three years old; no organizational concerns
- Two performance metrics third quartile; organizational issues to monitor
- At least one performance metric in the fourth quartile; significant organizational issues
- No observations or updates to report

#### In \$ millions.

Refer to the Peer Group Definitions slide in the Appendix for individual benchmarks used.

- \* Less than 10 years of history. Net IRR and TVPI represent since inception returns from STRS Ohio first commitment to the GP.
- <sup>1</sup> Source is Hamilton Lane.
- <sup>2</sup> STRS Ohio Private Equity returns are presented net of all external investment management fees and costs, including carried interest and other fund expenses.
- <sup>3</sup> IRRs are calculated by HL using the XIRR method and have not been calculated by the GPs.
- <sup>4</sup> Quartile Rankings against the Global Private Equity LSEG/Cambridge database.



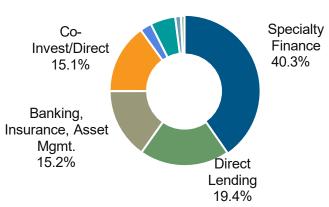
**Opportunistic/Diversified** 

# **STRS Ohio Opportunistic/Diversified Investments**

The following tables illustrate total current and potential exposure by Private Equity and Opportunistic/Diversified, as of March 31, 2024, in USD millions.







|                 |                                     | Net                         |        |                                     |        | 19.470                |        |                            |                             |
|-----------------|-------------------------------------|-----------------------------|--------|-------------------------------------|--------|-----------------------|--------|----------------------------|-----------------------------|
|                 | Portfolio Exposure by Strategy Type | Asset<br>Value <sup>1</sup> | %      | Unfunded<br>Commitment <sup>1</sup> | %      | Potential<br>Exposure | %      | 5 Year<br>TWR <sup>2</sup> | 10 Year<br>TWR <sup>2</sup> |
|                 | Specialty Finance                   | \$3,726                     | 40.3%  | \$1,869                             | 47.0%  | \$5,595               | 42.6%  | 8.50%                      | 9.55%                       |
|                 | Direct Lending                      | \$1,793                     | 19.4%  | \$939                               | 23.6%  | \$2,732               | 20.8%  | -                          | -                           |
| Opportunistic   | Banking, Insurance, & Asset Mgmt.   | \$1,405                     | 15.2%  | \$464                               | 11.7%  | \$1,869               | 14.2%  | 16.07%                     | 15.11%                      |
|                 | Co-Invest/Direct                    | \$1,397                     | 15.1%  | \$584                               | 14.7%  | \$1,891               | 14.4%  | 14.88%                     | -                           |
|                 | Natural Resources                   | \$232                       | 2.5%   | \$51                                | 1.3%   | \$283                 | 2.2%   | 1.23%                      | (2.57%)                     |
|                 | Infrastructure                      | \$72                        | 0.8%   | \$66                                | 1.7%   | \$138                 | 1.1%   | 4.41%                      | 4.70%                       |
|                 | Public-Private Investment Funds     | -                           | -      | -                                   | -      | -                     | -      | -                          | -                           |
| Diversified     | Liquid Alternatives                 | \$503                       | 5.4%   | -                                   | -      | \$503                 | 3.8%   | 6.95%                      |                             |
| Diversified     | Hedge Funds                         | \$112                       | 1.2%   | -                                   | -      | \$112                 | 0.9%   | 1.39%                      | 1.89%                       |
| In \$ millions. | Total Opportunistic/Diversified     | \$9,240                     | 100.0% | \$3,973                             | 100.0% | \$13,123              | 100.0% | 8.59%                      | 6.54%                       |

<sup>&</sup>lt;sup>1</sup> Source is Hamilton Lane.

<sup>&</sup>lt;sup>2</sup> STRS Ohio Private Equity returns are presented net of all external investment management fees and costs, including carried interest and other fund expenses



# STRS Ohio 10-Year Opportunistic/Diversified Performance

10-Year O/D Performance: Time-Weighted Returns (April 1, 2014 to March 31, 2024)

STRS Ohio O/D Performance Annualized Returns ending March 31, 2024



STRS Ohio O/D returns exceed the O/D Benchmark over the last two and three-quarter years <sup>2</sup> and last one year, however, trails the benchmark over the last quarter.

<sup>&</sup>lt;sup>2</sup> Reflects time period the new Opportunistic/Diversified benchmark has been in place.

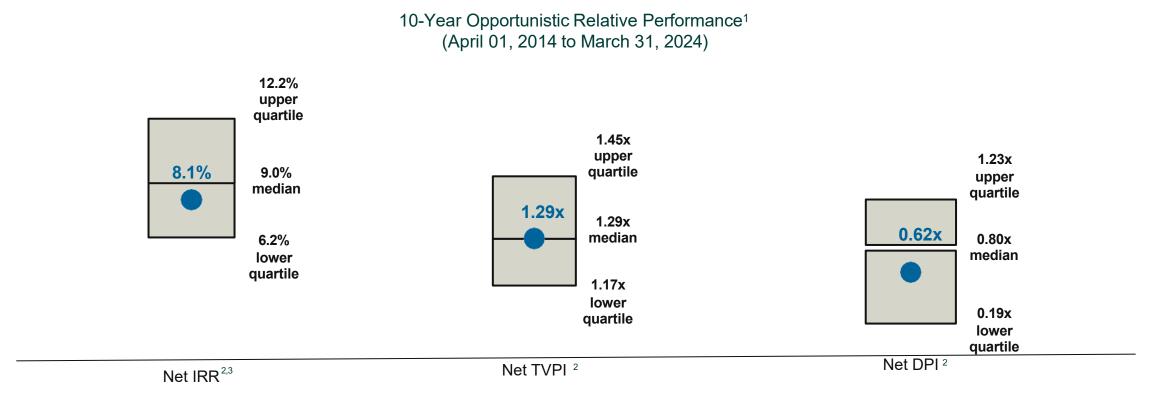


<sup>1</sup> STRS Ohio Opportunistic/Diversified returns are presented net of all external investment management fees and costs, including carried interest and other fund expenses.

**Opportunistic** 

# STRS Ohio Opportunistic 10-Year Relative Performance

The STRS Ohio Opportunistic Portfolio ranks near the median across all performance metrics



- The Opportunistic portfolio has generated 3<sup>rd</sup> quartile performance in terms of net IRR and DPI. The portfolio ranks at the median in terms of net TVPI.
- The lower net DPI is due to the increasing allocation to the Opportunistic/Diversified strategy during the 10-year period.

Source: Hamilton Lane, LSEG/Cambridge.

<sup>&</sup>lt;sup>3</sup> IRRs are calculated by HL using the XIRR method and have not been calculated by the GPs.

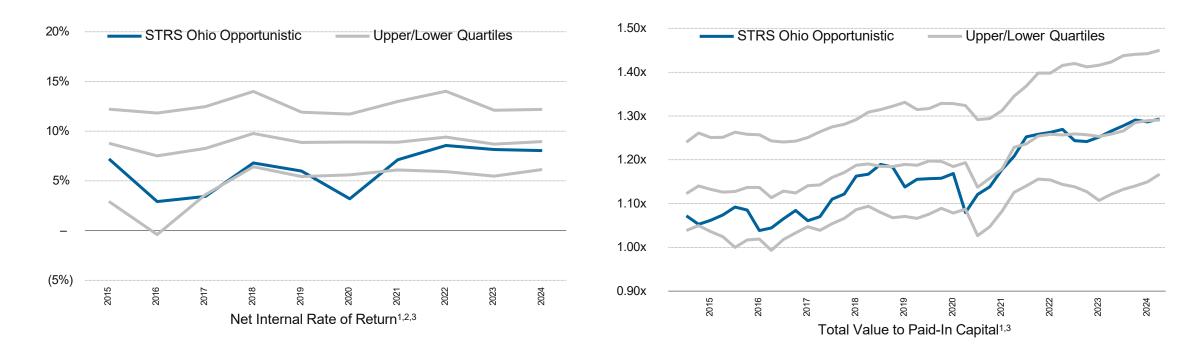


<sup>&</sup>lt;sup>1</sup> Quartile Rankings against the Global Private Credit LSEG/Cambridge database.

<sup>&</sup>lt;sup>2</sup> STRS Ohio Opportunistic returns are presented net of all external investment management fees and costs, including carried interest and other fund expenses.

# **STRS Ohio Opportunistic Investments 10-Year Performance Trends**

The following charts reflect the progression over time of various performance metrics of the fund relative to the respective top, median and lower quartiles of the LSEG/Cambridge private credit peer group.



Source: Hamilton Lane, LSEG/Cambridge.

<sup>&</sup>lt;sup>3</sup> Quartile Rankings against the Private Credit peer group includes Senior Debt, Credit Opportunities, and Subordinated Debt funds from the LSEG/Cambridge database



<sup>1</sup> STRS Ohio Opportunistic returns are presented net of all external investment management fees and costs, including carried interest and other fund expenses.

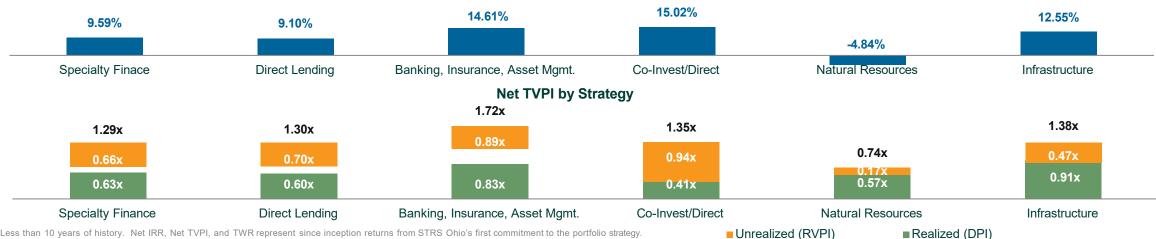
<sup>&</sup>lt;sup>2</sup> IRRs are calculated by HL using the XIRR method and have not been calculated by the GPs.

# STRS Ohio Opportunistic 10-Year Performance by Portfolio

The following table reflects Opportunistic performance by strategy type since inception. Net IRR and TVPI quartile rankings are relative to a peer group from the LSEG/Cambridge database. 10 Voar Not

| Portfolio Exposure by Strategy Type | Commitments <sup>1</sup> | Funded<br>Amount <sup>1</sup> | Unfunded<br>Commitment <sup>1</sup> | Distributions <sup>1</sup> | Asset<br>Value <sup>1</sup> | 10 Year<br>TWR <sup>2</sup> | Net<br>IRR <sup>2,3</sup> | TVPI <sup>2</sup> | DPI <sup>2</sup> | TVPI/IRR<br>Quartile <sup>4</sup> | Performance<br>Status |
|-------------------------------------|--------------------------|-------------------------------|-------------------------------------|----------------------------|-----------------------------|-----------------------------|---------------------------|-------------------|------------------|-----------------------------------|-----------------------|
| Specialty Finance                   | \$6,332                  | \$4,915                       | \$1,869                             | \$3,560                    | \$3,726                     | 9.55%                       | 9.59%                     | 1.29x             | 0.63x            | 2 <sup>nd</sup> /2 <sup>nd</sup>  | •                     |
| Direct Lending *                    | \$3,002                  | \$2,520                       | \$939                               | \$1,560                    | \$1,793                     | -                           | 9.10%                     | 1.30x             | 0.60x            | 2 <sup>nd</sup> /2 <sup>nd</sup>  | •                     |
| Banking and Insurance               | \$1,424                  | \$1,272                       | \$464                               | \$1,297                    | \$1,405                     | 15.11%                      | 14.61%                    | 1.72x             | 0.83x            | 1st/1st                           | •                     |
| Co-Invest/Direct *                  | \$1,742                  | \$1,480                       | \$584                               | \$608                      | \$1,397                     | -                           | 15.02%                    | 1.35x             | 0.41x            | 1st/1st                           | •                     |
| Natural Resources                   | \$1,039                  | \$625                         | \$51                                | \$797                      | \$232                       | (2.57%)                     | (4.84%)                   | 0.74x             | 0.57x            | 4th/4th                           | •                     |
| Infrastructure                      | \$325                    | \$91                          | \$66                                | \$140                      | \$72                        | 4.70%                       | 12.55%                    | 1.38x             | 0.91x            | 2 <sup>nd</sup> /2 <sup>nd</sup>  | •                     |
| Public-Private Funds                | \$188                    | \$9                           | -                                   | \$64                       | -                           | -                           | 15.81%                    | 1.36x             | 1.36x            | -                                 | -                     |
| <b>Total Opportunistic</b>          | \$14,053                 | \$10,912                      | \$3,974                             | \$8,026                    | \$8,624                     | 7.91%                       | 8.07%                     | 1.29x             | 0.62x            | 2 <sup>nd</sup> /3 <sup>rd</sup>  | •                     |





<sup>\*</sup> Less than 10 years of history. Net IRR, Net TVPI, and TWR represent since inception returns from STRS Ohio's first commitment to the portfolio strategy.

<sup>&</sup>lt;sup>4</sup> Quartile Rankings against the Private Credit peer group includes Senior Debt, Credit Opportunities, and Subordinated Debt funds from the LSEG/Cambridge database.



<sup>&</sup>lt;sup>1</sup> Source is Hamilton Lane.

<sup>&</sup>lt;sup>2</sup> STRS Ohio Opportunistic returns are presented net of all external investment management fees and costs, including carried interest and other fund expenses.

<sup>&</sup>lt;sup>3</sup> IRRs are calculated by HL using the XIRR method and have not been calculated by the GPs.

# STRS Ohio Opportunistic Performance by Vintage Year

The following table reflects Opportunistic vintage year performance over a rolling 10-year period. Only mature vintages, defined as four years and up, are shown. Net IRR and TVPI quartile rankings are relative to a peer group from the LSEG/Cambridge database.

| Portfolio Exposure by<br>/intage Year | Commitment <sup>1</sup> | Funded<br>Amount <sup>1</sup> | Unfunded<br>Commitment <sup>1</sup> | Distributions <sup>1</sup>    | Net Asset<br>Value <sup>1</sup> | DPI <sup>2</sup> | TVPI <sup>2</sup> | TVPI<br>Quartile <sup>3</sup> | Net<br>IRR <sup>2,4</sup> | IRR<br>Quartile <sup>3</sup> | Stopligh<br>Status |
|---------------------------------------|-------------------------|-------------------------------|-------------------------------------|-------------------------------|---------------------------------|------------------|-------------------|-------------------------------|---------------------------|------------------------------|--------------------|
| 2014                                  | \$1,055                 | \$1,267                       | \$136                               | \$1,300                       | \$680                           | 0.89x            | 1.51x             | <b>1</b> st                   | 9.49%                     | 1 <sup>st</sup>              | •                  |
| 2015                                  | \$1,141                 | \$1,628                       | \$318                               | \$1,194                       | \$1,135                         | 0.68x            | 1.42x             | 2 <sup>nd</sup>               | 9.27%                     | 2 <sup>nd</sup>              | •                  |
| 016                                   | \$201                   | \$234                         | \$47                                | \$139                         | \$177                           | 0.59x            | 1.36x             | 3 <sup>rd</sup>               | 9.22%                     | 2 <sup>nd</sup>              | •                  |
| 017                                   | \$745                   | \$473                         | \$43                                | \$311                         | \$397                           | 0.60x            | 1.47x             | 2 <sup>nd</sup>               | 10.15%                    | 2 <sup>nd</sup>              | •                  |
| 018                                   | \$1,468                 | \$1,419                       | \$404                               | \$855                         | \$1,230                         | 0.50x            | 1.46x             | <b>1</b> st                   | 13.72%                    | 1 <sup>st</sup>              | •                  |
| 019                                   | \$1,911                 | \$1,721                       | \$597                               | \$951                         | \$1,300                         | 0.49x            | 1.35x             | 2 <sup>nd</sup>               | 12.92%                    | 2 <sup>nd</sup>              | •                  |
| 020                                   | \$1,184                 | \$974                         | \$342                               | \$422                         | \$792                           | 0.36x            | 1.23x             | NM                            | 11.61%                    | NM                           | -                  |
| 021                                   | \$2,445                 | \$1,698                       | \$915                               | \$284                         | \$1,642                         | 0.15x            | 1.12x             | NM                            | 8.24%                     | NM                           | -                  |
| 022                                   | \$1,546                 | \$820                         | \$529                               | \$111                         | \$805                           | 0.09x            | 1.09x             | NM                            | 7.89%                     | NM                           | -                  |
| 023                                   | \$422                   | \$228                         | \$487                               | \$110                         | \$183                           | 0.54x            | 1.30x             | NM                            | NM                        | NM                           | -                  |
|                                       |                         |                               |                                     | Net IRR by Vin                | tage Year                       |                  |                   |                               |                           |                              |                    |
| 9.49%                                 | 9.27%                   | 9.22%                         | 10.15%                              | 13.72%                        | 12.92%                          | 11.61%           | 8.                | 24%                           | 7.89%                     |                              |                    |
|                                       |                         |                               |                                     |                               |                                 |                  |                   |                               |                           |                              |                    |
| 2014                                  | 2015                    | 2016                          | 2017                                | 2018                          | 2019                            | 2020             | 2                 | 021                           | 2022                      | 2                            | 023                |
| 1.51x                                 |                         |                               | 4.47.                               | Net TVPI by Vi                |                                 |                  |                   |                               |                           |                              |                    |
|                                       | 1.42x                   | 1.36x                         | 1.47x                               | 1.46x                         | 1.35x                           | 1.23x            | 1.                | .12x                          | 1.09x                     |                              | 1.30x              |
| 0.62x                                 | 0.74x                   | 0.77x                         | 0.87x                               | 0.96x                         | 0.86x                           | 0.07.            |                   |                               |                           |                              | 0.76x              |
| 0.89x                                 | 0.68x                   | 0.59x                         | 0.00                                |                               |                                 | 0.87x            | 0.                | .97x                          | 1.00x                     |                              | 0.54x              |
|                                       | U.66X                   |                               | 0.60x                               | 0.50x                         | 0.49x                           | 0.36x            | 0                 | .15x                          | 0.09x                     |                              | 0.54X              |
| 2014                                  | 2015                    | 2016                          | 2017                                | 2018                          | 2019                            | 2020             | 2                 | 021                           | 2022                      |                              | 2023               |
|                                       |                         |                               | nent fees and costs, including      | carried interest and other fu |                                 | Unrealized       | (RVPI)            | ■Re                           | alized (DPI)              |                              |                    |

<sup>&</sup>lt;sup>3</sup> Quartile Rankings against the Private Credit peer group includes Senior Debt, Credit Opportunities, and Subordinated Debt funds from the LSEG/Cambridge database.

<sup>&</sup>lt;sup>4</sup> IRRs are calculated by HL using the XIRR method and have not been calculated by the GPs.



# STRS Ohio Opportunistic 10-Year Performance by General Partner

The following table reflects aggregate 10-year performance of the top 10 STRS Ohio Opportunistic GP relationships by NAV. Net IRR and TVPI quartile rankings are relative to a peer group from the LSEG/Cambridge database. Organization status is reflective of Callan's opinion of stability and health of each investment manager.

| Portfolio Exposure by<br>General Partner | Organization<br>Status | Performance<br>Status | Commitments <sup>1</sup> | Funded<br>Amount <sup>1</sup> | Uncalled <sup>1</sup> | Distributed <sup>1</sup> | NAV <sup>1</sup> | Net<br>IRR <sup>2,3</sup> | Net<br>TVPI <sup>2</sup> | IRR/TVPI<br>Quartiles⁴           |
|--|------------------------|-----------------------|--------------------------|-------------------------------|-----------------------|--------------------------|------------------|---------------------------|--------------------------|----------------------------------|
| Sixth Street Partners                    | •                      | •                     | \$1,792                  | \$1,457                       | \$577                 | \$1,246                  | \$947            | 10.39%                    | 1.37x                    | 2 <sup>nd</sup> /2 <sup>nd</sup> |
| Blue Owl Capital *                       | •                      | •                     | \$913                    | \$689                         | \$321                 | \$448                    | \$781            | 16.10%                    | 1.78x                    | 1 <sup>st</sup> /1 <sup>st</sup> |
| Ares Management Corporation              | •                      | •                     | \$1,311                  | \$813                         | \$275                 | \$803                    | \$669            | 11.96%                    | 1.40x                    | 2 <sup>nd</sup> /1 <sup>st</sup> |
| Reverence Capital Partners *             | •                      | •                     | \$599                    | \$551                         | \$183                 | \$479                    | \$635            | 23.62%                    | 2.02x                    | 1 <sup>st</sup> /1 <sup>st</sup> |
| Oaktree Capital Management               | •                      | •                     | \$543                    | \$451                         | \$125                 | \$294                    | \$373            | 8.68%                     | 1.37x                    | 2 <sup>nd</sup> /2 <sup>nd</sup> |
| TPG Angelo Gordon                        | •                      | •                     | \$381                    | \$397                         | \$26                  | \$162                    | \$308            | 9.18%                     | 1.18x                    | 3 <sup>rd</sup> /2 <sup>nd</sup> |
| Fortress Investment Group LLC *          | •                      | •                     | \$514                    | \$451                         | \$211                 | \$271                    | \$286            | 12.15%                    | 1.24x                    | 2 <sup>nd</sup> /2 <sup>nd</sup> |
| Stone Point Capital *                    | •                      | •                     | \$305                    | \$228                         | \$80                  | \$28                     | \$261            | 12.09%                    | 1.27x                    | 2 <sup>nd</sup> /2 <sup>nd</sup> |
| Cerberus Capital *                       | •                      | •                     | \$350                    | \$226                         | \$151                 | \$58                     | \$243            | 12.00%                    | 1.33x                    | 2 <sup>nd</sup> /2 <sup>nd</sup> |
| Golub Capital *                          | •                      | •                     | \$346                    | \$391                         | \$1                   | \$366                    | \$237            | 8.20%                     | 1.54x                    | 3 <sup>rd</sup> /1 <sup>st</sup> |

#### Stoplight Review Legend

- Above median performance or less than three years old; no organizational concerns
- Two performance metrics third quartile; organizational issues to monitor
- At least one performance metric in the fourth quartile; significant organizational issues
- No observations or updates to report

<sup>&</sup>lt;sup>4</sup> Quartile Rankings against the Private Credit peer group includes Senior Debt, Credit Opportunities, and Subordinated Debt funds from the LSEG/Cambridge database.



<sup>\*</sup>Less than 10 years of history. Net IRR and TVPI represent since inception returns from STRS Ohio's first commitment to the GP.

<sup>&</sup>lt;sup>1</sup> Source is Hamilton Lane.

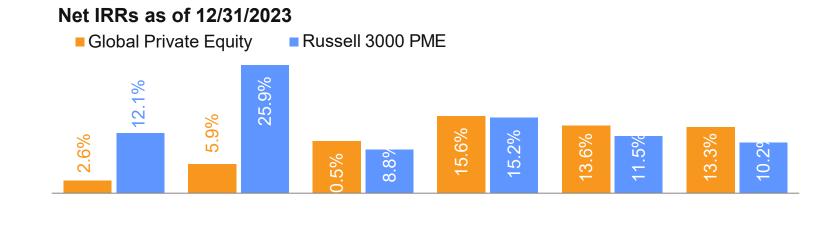
<sup>&</sup>lt;sup>2</sup> STRS Ohio Opportunistic returns are presented net of all external investment management fees and costs, including carried interest and other fund expenses.

<sup>&</sup>lt;sup>3</sup> IRRs are calculated by HL using the XIRR method and have not been calculated by the GPs.

**Private Equity Market Overview** 

### **Performance**

- Public equity's strong recovery in 2023 (led by the "Magnificent Seven" technology stocks) has left private equity in its wake.
- Private equity doesn't recover as quickly as the public markets, because the smoothing effect dampens private equity returns in both up and down markets.
- Private equity only saw about a fifth of the gains of the public markets over the last year, on a PME basis.
- While buyouts saw solid performance for the year, venture capital continued to struggle given the valuation adjustments from the highs of 2021.



5 Years

3 Years

10 Years

20 Years

#### Net IRRs by Strategy as of 12/31/2023

Last Quarter

|   | Strategy                    | Last Quarter | 1 Year | 3 Years | 5 Years | 10 Years | 20 years |
|---|-----------------------------|--------------|--------|---------|---------|----------|----------|
|   | Venture Capital             | 0.3%         | -3.7%  | 6.0%    | 17.1%   | 15.7%    | 12.5%    |
|   | Growth Equity               | 2.2%         | 4.2%   | 6.5%    | 15.4%   | 13.6%    | 13.6%    |
|   | Buyouts                     | 3.6%         | 10.0%  | 13.3%   | 16.2%   | 14.0%    | 14.2%    |
|   | Mezzanine                   | 3.3%         | 12.3%  | 12.4%   | 11.7%   | 11.1%    | 11.1%    |
|   | Credit Opportunities        | 2.6%         | 7.9%   | 10.0%   | 8.3%    | 7.4%     | 9.2%     |
|   | Control-Oriented Distressed | 1.8%         | 5.3%   | 16.2%   | 14.6%   | 11.1%    | 11.4%    |
| Source: Refinitiv/Cambridge. PME: Public Market Equivalent. | Total Private Equity        | 2.6%         | 5.9%   | 10.5%   | 15.6%   | 13.6%    | 13.3%    |

1 Year

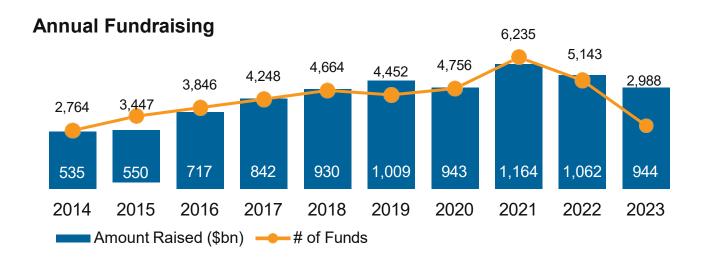


#### **Fundraising**

- In 2023 the number of funds raised sharply declined by ~50% from the highs of 2021–22. The 2023 vintage experienced the full impact of the denominator effect, which when combined with slower deal activity and exits, left minimal capital for new commitments.
- As investors' mindsets shifted from growth to value, fundraising concentrated on large and medium buyouts, at the expense of growth equity and venture capital.
- Going into 2024 there is less uncertainty surrounding the private markets: valuations have adjusted, public markets have rebounded, and denominator effects have waned. Assuming deal activity picks up, fundraising should follow suit.

### **Deal Activity**

- 3Q23 appeared to be the trough in PE deal-making, dropping by one-third from its 2021 peak.
- There are small, but promising, signs of recovery with a few noteworthy exits and IPOs (i.e., SRS Distribution and Reddit). A broader snapback in exits, however, is needed to spark the next wave of deal activity.



## **Annual Deal Activity**





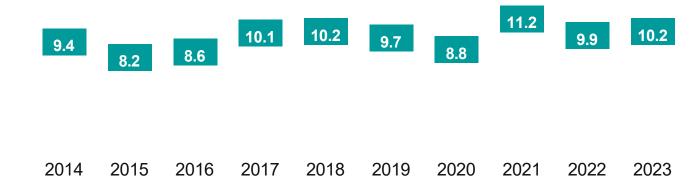


### **Buyout**

- Buyout activity in 2023 declined by about one-third compared to the highs of 2021-2022, reflecting high interest rates, a wide bid-ask spread, and lingering effects from the slowdown in the public markets.
- 3Q23 appeared to be the trough in buyout dealmaking, with early 2024 seeing improved liquidity conditions and higher public markets comps.
- Average deal size has declined larger buyouts have been more difficult to finance, leading to greater activity for small/mid buyouts and add-on acquisitions.
- Buyout valuations are sensitive to changes in interest rates as the cost of borrowing rises, it is harder to justify high valuations. Buyout valuations have finally normalized after their peak in 2021.



### **Buyout Valuations (EV/EBITDA Multiples)**

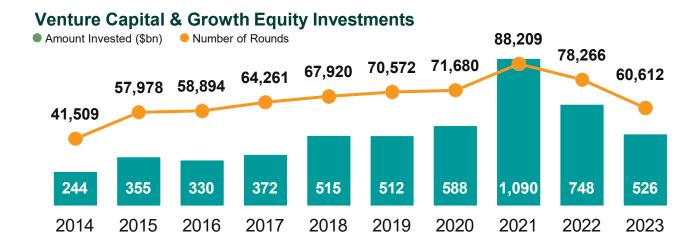




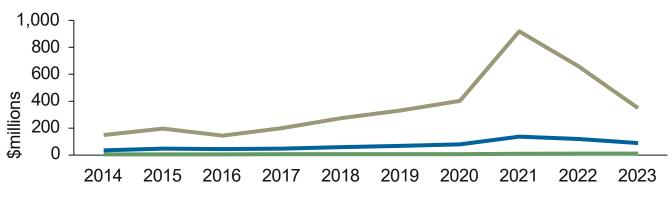


#### **Venture Capital & Growth Equity**

- 2023 saw a substantial decline of ~50% in venture capital and growth equity activity, following the crazed highs of 2021
- There is a bifurcation by stage an AI "supercycle" is accelerating early-stage deal activity and buoying valuations, while late-stage companies struggle with slower growth, falling valuations and lack of exit prospects
- Significant amount of capital is tied up in venturebacked companies waiting to go public, which is slowing down new investment activity (i.e., SpaceX, Databricks, Chime, Scale AI, etc.)
- 2023-2024 have witnessed a few high-profile IPOs (i.e. Instacart, Klaviyo, and Reddit), but there has not been an IPO above \$10 billion since 2021.
- A few successful IPOs are needed to kickstart the venture capital industry, but it is unclear when the IPO window will re-open



### **Venture Capital & Growth Equity Median Valuations**



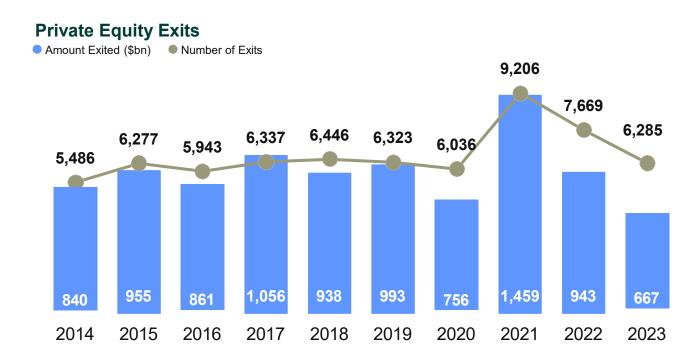
● Early-Stage (Seed & Series A) ● Mid-Stage (Series B & C) ● Late-Stage (Series D+)





#### **Exits**

- Exits in 2023 have declined dramatically by over 50% compared to their all-time record in 2021
- Only 8% of total private equity AUM generated liquidity in 2023 (the lowest level ever) - lower even than the depths of the Global Financial Crisis
- While there is a long line of venture-backed companies waiting to go public, the IPO window is still closed, and election years have historically seen lower levels of IPO and exit activity.
- There are small, but promising, signs of recovery with a few noteworthy exits and IPOs (i.e. SRS Distribution and Reddit).
   A broader snapback in exits, however, is needed to spark the next wave of deal activity.



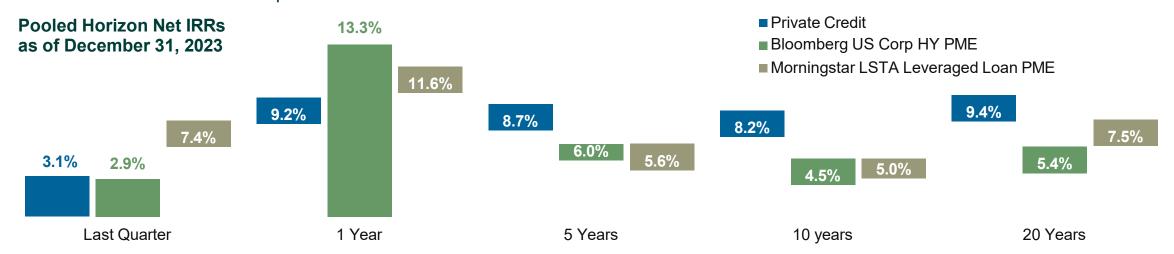




**Private Credit Market Overview** 

### **Private Credit Market Overview**

Performance over time and compared to relevant indices



#### Pooled Horizon Net IRRs by Strategy as of December 31, 2023

| Strategy             | Last Quarter | 1 Year | 5 Years | 10 Years | 20 Years |
|----------------------|--------------|--------|---------|----------|----------|
| Senior Debt          | 4.2          | 9.9    | 7.0     | 7.1      | 7.3      |
| Subordinated Credit  | 3.3          | 12.3   | 11.7    | 11.1     | 11.1     |
| Credit Opportunities | 2.6          | 7.9    | 8.3     | 7.5      | 9.2      |
| Total Private Credit | 3.1          | 9.2    | 8.7     | 8.2      | 9.4      |

• Private credit performance varies across sub-asset class and underlying return drivers. Over the past 10 years the asset class has generated a net IRR of 8.2%, outperforming leveraged loans as of Dec. 31, 2023. Higher-risk strategies have performed better than lower-risk strategies.

Source: LSEG/Cambridge; index definitions provided in the Appendix.

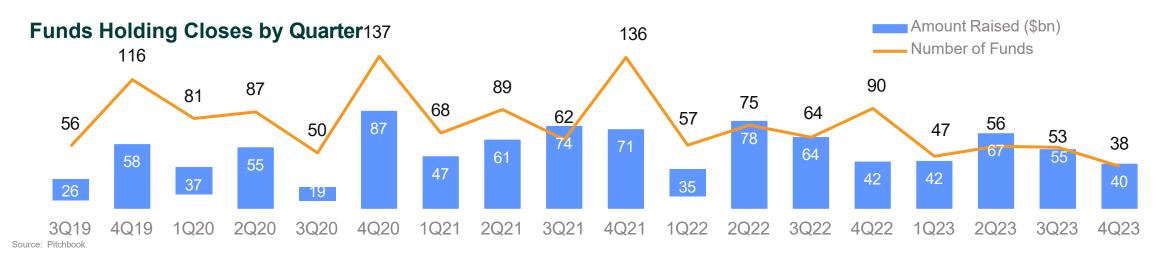


## **Private Credit Fundraising Landscape**

### Activity fell at end of 2023

- ▶ Private credit stayed in high demand among Callan clients, and a number of large DB plans are looking to increase their allocations from 2%–3% to 5%–10%.
- While we always work to build out diversified client portfolios, we think there is particularly interesting relative value in middle market direct lending with an emphasis on unique capital solutions. We also view asset-based lending as an attractive opportunity set.
- ▶ We are seeing an uptick in stress for some individual names in direct lending portfolios due to a combination of input cost inflation and increased interest expense.

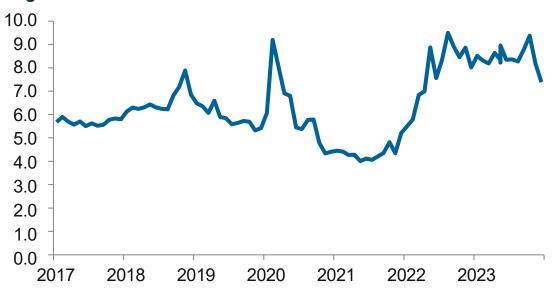
| Largest Funds Holding Closes in 2023     |                        |                       |  |  |  |
|--|------------------------|-----------------------|--|--|--|
| Name HPS Strategic Investment Partners V | Amount<br>(\$millions) | Strategy<br>Mezzanine |  |  |  |
| GS Mezzanine Partners VIII               | · · ·                  | Mezzanine             |  |  |  |
| HPS Core Senior Lending Fund II          | \$10,000               | Direct Lending        |  |  |  |
| Crescent Credit Solutions VIII           | \$8,000                | Mezzanine             |  |  |  |



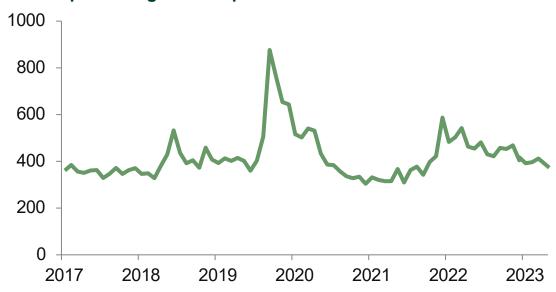


## **4Q 2023 Yield Spreads**

### High Yield Effective Yields Ended 12/31/23



### **US Corporate High Yield Spreads Ended 12/31/23**

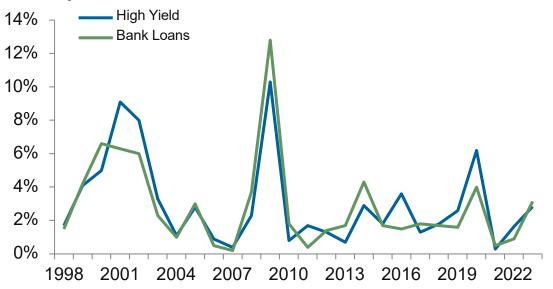


- ▶ U.S. sub-investment grade corporate yields rose dramatically at the beginning of 2022 with yields peaking in September. This was a combination of higher interest rates due to tighter Fed policy and a widening of high yield spreads. Effective yields came down sharply in the fourth quarter of 2023.
- ▶ Spreads contracted during the first half of 2023 due to stronger credit conditions as the U.S. economic outlook improved. While initially stabilizing in the third quarter of 2023, spreads contracted to close out the year.

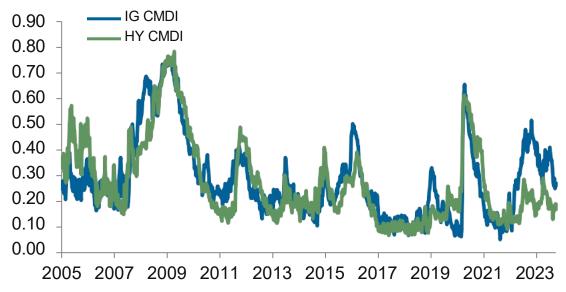
Sources: Bank of America, Federal Reserve Bank of St. Louis. Bloomberg Barclays.

## **4Q 2023 Distressed and Opportunistic Debt**

### **US Corporate Default Rates Ended 12/31/23**



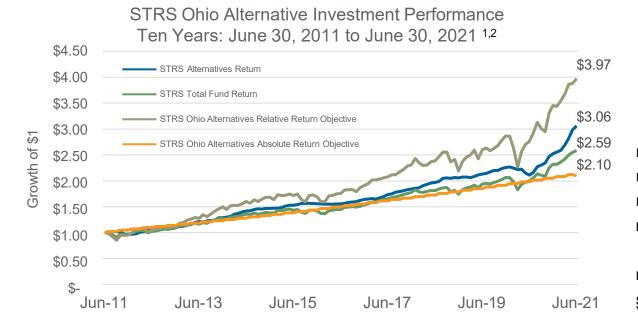
### Corporate Bond Market Distress Index (CMDI) Ended 12/31/23



- ▶ Default rates for U.S. corporate bonds and loans ticked up in 2023 but remain slightly below the historical average of 3%–4%.
- ▶ The Corporate Bond Market Distress Index (CMDI) rose rapidly during 2022, especially for investment grade bonds, but has fallen since then. In 2023, both the IG distress and HY bond indicator noticed a sharp rise midyear but has since fallen.

**Appendix** 

#### STRS Ohio Alternatives Performance (Private Equity + O/D)



STRS Ohio Alternative Investments Performance Comparison Annualized Periods ending June 2021

|                          | STRS Ohio<br>Alternatives | STRS Ohio<br>Total Fund | STRS Ohio<br>Alternatives<br>Relative<br>Return<br>Objective <sup>2</sup> | STRS Ohio<br>Alternatives<br>Absolute<br>Return<br>Objective <sup>2,3</sup> |
|--------------------------|---------------------------|-------------------------|---|---|
| Last 10 years            | 11.84%                    | 9.97%                   | 14.79%  | 7.81%   |
| Last 5 years             | 14.52%                    | 12.34%                  | 17.77%  | 7.27%   |
| Last 3 years             | 15.83%                    | 12.62%                  | 18.55%  | 7.09%   |
| Fiscal Year 2021         | 44.99%                    | 29.28%                  | 43.91%  | 7.09%   |
| Risk (10-Yr)             | 4.91%                     | 7.80%                   | 14.15%  |   |
| Sharpe Ratio (10-<br>Yr) | 2.30                      | 1.21                    | 1.00  |   |

- STRS Ohio Alternatives returns exceed STRS Ohio Total Fund returns in all time periods.
- STRS Ohio Alternatives returns have meaningfully exceeded long-term Absolute Return Objectives over all time periods
- STRS Ohio Alternatives returns meaningfully exceeded the Relative Return Objective in FY2021
- STRS Ohio Alternatives returns have lagged the Relative Return Objective in longer term historical periods due to lower-risk / lower yielding Opportunistic/Diversified (or "O/D") returns (as described on a later slide), but STRS Ohio Alternatives have provided a better long-term risk-adjusted return than the Relative Return Objective as illustrated above by the significantly lower volatility and significantly higher Sharpe Ratio over the 10-year period.

<sup>&</sup>lt;sup>3</sup> Higher returns over longer periods reflect Objectives from earlier STRS Ohio Asset Allocation Studies.



<sup>&</sup>lt;sup>1</sup> STRS Ohio Alternatives returns are always presented net of all management fees, fund expenses and carried interest.

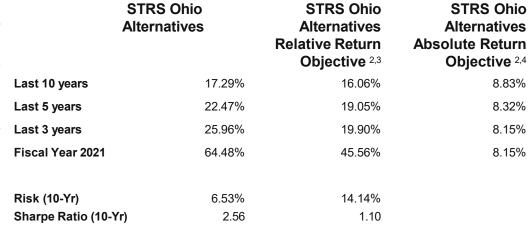
<sup>&</sup>lt;sup>2</sup> STRS Ohio measured Alternatives performance relative to the Alternatives Relative Return Objective and the Alternatives Absolute Return Objective through 6/30/2021.

#### **STRS Ohio Private Equity Performance**





STRS Ohio Private Equity Performance Annualized Periods ending June 2021 1,2



- STRS Ohio Private Equity returns exceed Absolute Return Objectives for all time periods
- STRS Ohio Private Equity returns outperformed the Relative Return Objective in all time periods

Jun-17

STRS Ohio Private Equity returns have also generated significantly better risk-adjusted returns than the Relative Return Objective as illustrated above by the significantly lower volatility and significantly higher Sharpe Ratio over the 10-year period

Jun-21

Jun-15

Jun-19



\$2.00

Jun-11

Jun-13

<sup>&</sup>lt;sup>1</sup> STRS Ohio PE returns are always presented net of all management fees, fund expenses and carried interest.

<sup>&</sup>lt;sup>2</sup> STRS Ohio measured Private Equity performance relative to the Private Equity Relative Return Objective and the Private Equity Absolute Return Objective through 06/30/2021.

<sup>&</sup>lt;sup>3</sup> STRS Ohio Private Equity Relative Return Objective equals the Russell 3000 Equity Index plus 1% per year.

<sup>&</sup>lt;sup>4</sup> STRS Ohio Private Equity Absolute Return Objective is based upon a 10.70% Objective starting fiscal 2007, a 9.00% Objective starting fiscal 2013 and an 8.15% Objective starting fiscal 2018.

#### STRS Ohio Opportunistic/Diversified (O/D) Performance



- STRS Ohio Opportunistic/Diversified returns have trailed Relative Return Objectives over all periods shown but have exceeded the Absolute Return Objective in two of the four time periods shown. STRS Ohio Private Equity returns outperformed the Relative Return Objective in all time periods
- The Relative Return Objective underperformance is due primarily to (1) very strong public US stock returns over the last 10 years, (2) an investment emphasis on credit assets within Opportunistic and (3) an emphasis on lower risk Diversified strategies within O/D that have caused lower returns, which collectively made the Relative Return Objective difficult to outperform.

<sup>&</sup>lt;sup>4</sup> STRS Ohio O/D Absolute Return Objective is based upon a 7.50% Objective starting in fiscal 2009, a 7.00% Objective beginning fiscal 2013 and an 6.35% Objective beginning fiscal 2018.



<sup>&</sup>lt;sup>1</sup> STRS Ohio O/D returns are always presented net of all management fees, fund expenses and carried interest.

<sup>&</sup>lt;sup>2</sup> STRS Ohio measured O/D performance relative to the O/D Relative Return Objective and the O/D Absolute Return Objective through 06/30/2021.

<sup>&</sup>lt;sup>3</sup> STRS Ohio O/D Relative Return Objective equals the Russell 3000 Equity Index minus 1% per year.

### **Alternatives Program Benchmark Definitions**

#### **Total Fund Benchmarks – Time-Weighted**

| •   |  |
|---|--|
| Alternative Investments Blended Benchmark                 | Effective July 1, 2022, the Alternative Investment Blended Benchmark consist of the Private Equity Benchmark multiplied by 47.4% plus the Opportunistic/diversified Blended Benchmark multiplied by 52.6%. From July 1, 2021 to June 30, 2022 the Alternative Investment Blended Benchmark consisted of the Private Equity Benchmark multiplied by 41.2% plus the Opportunistic/diversified Blended Benchmark multiplied by 58.8%.   |
| Alternative Investments Blended Relative Return Objective | Through June 20, 2021, the Alternative Investments Blended Relative Return Objective is calculated monthly using a blend of the Private Equity and Opportunistic/Diversified Relative Return Objectives based on the policy weights in effect during the respective periods.   |
| Alternative Investments Absolute Return Objective         | Through June 30, 2021, the absolute return objective for Total Alternative Investments is 7.09% (Blended), Private Equity is 8.15%, and Opportunistic/Diversified is 6.35%, all of which are based on the 2017 Asset Liability Study.  |
| Private Equity Benchmark                                  | The Private Equity Benchmark is the Cambridge Associates Private Equity and Venture Capital Index one quarter lagged to be consistent with external fund reporting effective July 1, 2021.   |
| Private Equity Absolute Return Objective                  | Through June 30, 2021, the absolute return objective for Private Equity is 8.15%, based on the 2017 Asset Liability Study.   |
| Private Equity Relative Return Objective                  | Through June 30, 2021, the Private Equity Relative Return Objective is calculated monthly and is the Russell 3000 Index plus 1%.   |
| Opportunistic/Diversified Blended Benchmark               | The Opportunistic/Diversified blended benchmark consists of the actual Opportunistic Investments Portfolio weight multiplied by the Cambridge Associates Private Credit Index one quarter lagged to be consistent with external fund reporting plus the actual weight of the Diversified Investments Portfolio multiplied by the HFRI Fund of Funds Composite Index, which is a monthly index where subsequent revisions will be reflected in the following period effective July 1, 2021. |
| Opportunistic/Diversified Absolute Return Objective       | Through June 30, 2021, the absolute return objective for Opportunistic/Diversified is 6.35%, based on the 2017 Asset Liability Study.  |
| Opportunistic/Diversified Relative Return Objective       | Through June 30, 2021, the Opportunistic Relative Return Objective is calculated monthly and is the Russell 3000 Index minus 1%.   |
| Alternative Investments Peer Groups                       |  |
| Private Equity  | LSEG/Cambridge database, includes vintage years 2007-2023, Global Buyout, Growth Equity, and Venture Capital strategy types  |
| Opportunistic   | LSEG/Cambridge database, includes vintage years 2009-2023, Global Credit Opportunities, Senior Debt, and Subordinated Debt   |
|   |  |



### **Private Equity Peer Group Definitions**

| Cal | na | ral | Pa | rtn    | or |
|-----|----|-----|----|--------|----|
| Ge  | пе | a   | Га | I LI I | eı |

| Thoma Bravo        | 2012-2016, 2018, 2020-2022 US Buyout                          |
|--------------------|---|
| Bain Capital       | 2007-2009, 2014-2015, 2017-2019 US Venture Capital and Buyout |
| Tiger Iron         | 2018-2019 US Venture Capital                                  |
| Grosvenor          | 2007-2008, 2010, 2014-2015 US Buyout                          |
| Silver Lake        | 2007, 2013, 2017-2020 US Buyout                               |
| TA Associates      | 2010, 2016, 2019, 2020, 2021 Global Buyout and Growth Equity  |
| Commonfund         | 2010, 2012, 2013, 2015 Global Venture Capital                 |
| Francisco Partners | 2011, 2015-2016, 2018, 2020, 2022 US Buyout                   |
| General Catalyst   | 2011, 2013, 2016, 2018, 2020-2021 US Venture Capital          |
| Hermes GPE         | 2014, 2016-2018 Global Growth Equity                          |

#### Strategy

| Domestic Private Equity      | 2007-2023 US Buyout                                     |
|------------------------------|---|
| Venture Capital/Growth       | 2007-2023 US Venture Capital                            |
| International Private Equity | 2007-2023 Non-US Buyout                                 |
| Total Private Equity         | 2007-2023 Global Buyout, Growth Equity, Venture Capital |
|                              |   |

| Vintage Year | Global Buyout, Venture Capital, Growth Equity |  |
|--------------|---|--|



### **Opportunistic/Diversified Peer Group Definitions**

| General Partner               |   |
|-------------------------------|---|
| Sixth Street Partners         | 2011, 2012, 2014, 2015,2018-2022 Credit Opportunities                                       |
| Blue Owl Capital              | 2014-2015, 2017-2018, 2020, 2022, 2023 Credit Opportunities, Senior Debt, Subordinated Debt |
| Ares Management Corporation   | 2012, 2017-2023 Credit Opportunities, Senior Debt   |
| Reverence Capital Partners    | 2014, 2019, 2020, 2021, 2023 Credit Opportunities, Senior Debt, Subordinated Debt           |
| Oaktree Capital Management    | 2011, 2013, 2015-2018 Credit Opportunities  |
| Angelo Gordon                 | 2019-2022 Credit Opportunities, Senior Debt, Subordinated Debt                              |
| Golub Capital                 | 2014,2018-2020 Senior Debt, Subordinated Debt   |
| Fortress Investment Group LLC | 2014,2018-2020,2023 Credit Opportunities  |
| Stone Point Capital           | 2020-2023 Subordinated Debt, Senior Debt, Buyout  |
| Cerberus Capital              | 2018, 2019, 2022 Credit Opportunities   |
|                               |   |
| Strategy                      |   |
| Specialty Finance             | 2011-2023 Credit Opportunities  |
| Direct Lending                | 2011, 2014-2023 Senior Debt   |
| Banking and Insurance         | 2014, 2015, 2017-2023 Credit Opportunities, Senior Debt, Subordinated Debt                  |
| Co-Investment/Direct          | 2018-2023 Subordinated Debt, Credit Opportunities, Senior Debt                              |
| Energy and Natural Resources  | 2010, 2012, 2013-2015, 2017-2020 Private Energy   |
| Infrastructure                | 2009, 2013, 2020-2022 Infrastructure  |
| Total Opportunistic           | 2009 - 2023 Credit Opportunities, Senior Debt, Subordinated Debt                            |
|                               |   |
|                               |   |
| Vintage Year                  | Credit Opportunities, Senior Debt, Subordinated Debt  |



## Report to the Investment Committee June 20, 2024



- Meketa comments: Asset-liability study timeline
- Fiscal 2025 Investment Plan
  - Meketa's review of the Fiscal 2025 Investment Plan
  - Callan's review of the Fiscal 2025 Investment Plan
- Performance-based incentive discussion
- Summary of investment activity report, May 2024
- Meketa quarterly performance review as of March 31, 2024
- Callan quarterly performance review as of March 31, 2024
- Review of the Semiannual Broker Evaluation and Associated Policies for first half of fiscal 2025
- Review of May 2024 investment transactions
- Summary of requests

# Semiannual Broker Evaluation and Associated Policies for First Half of Fiscal 2025



- Presented at May meeting by staff
  - No proposed changes



2175 NW Raleigh Street Suite 300A Portland, OR 97210 503.226.1050 Meketa.com



#### MEMORANDUM

TO: Mr. Dale Price, Chair

State Teachers Retirement Board of Ohio

275 East Broad Street Columbus, OH 43215

FROM: Meketa Investment Group ("Meketa")

DATE: May 7, 2024

RE: Semiannual Broker Evaluation – First Half Fiscal 2025

The purpose of this letter is to share Meketa's comments regarding the semiannual broker evaluation for the first half of fiscal 2025 conducted by STRS Ohio Staff.

As an investment consulting firm, Meketa does not directly trade securities in the manner that STRS Ohio Staff does for internally managed programs; however, our firm does employ former portfolio managers/traders with direct experience interacting with individual brokerage firms. Furthermore, brokerage execution is a common area of examination when our firm is conducting due diligence on asset managers that, in turn, directly trade securities on behalf of our clients. For the purposes of this memorandum, we applied a similar review for STRS Ohio's Broker Evaluation that we would use when examining similar policies, expectations, and outcomes for an asset manager that directly interacts with individual brokerage firms.

The STRS Ohio Semiannual Broker Evaluation for First Half Fiscal 2025 is thorough, outlining the governance practices applied by STRS Ohio Staff across execution, selection, research, soft dollar policy, and broker usage. This evaluation effectively serves its intended purpose and aligns with the practices of similarly sized institutional public funds that manage internal funds as well as those of the broader asset manager community.

Meketa recommends the STRS Ohio Board approve the Semiannual Broker Evaluation as presented.

Regards,

Colin Bebee, CFA Managing Principal

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LaRoy Brantley Managing Principal

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# Semiannual Broker Evaluation and Associated Policies for First Half of Fiscal 2025



- Presented at May meeting by staff
  - No proposed changes
- Committee discussion

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