



## PERS Board of Trustees Meeting Materials

**The meetings for Tuesday, April 23, 2024, are listed below.**

*Use the PDF bookmark tool to navigate to materials for each of the listed meetings.*

[Defined Contribution Committee](#)

[Investment Committee](#)

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**Board Members:**

Ms. Kim Hanna, *Board Chair*  
Mr. Kelly Breland, *Board Vice Chair*  
Mr. Bill Benson  
Mr. George Dale  
Mr. Chris Graham

Mr. Chris Howard  
Dr. Randy McCoy  
Treasurer David McRae  
Dr. Brian Rutledge  
Dr. Jay Smith



# Defined Contribution Committee Meeting Agenda

Tuesday, April 23, 2024

10:00 A.M.

**I. Market Update and Performance Review-Callan**  
*(Information Only)*

- a. MDC
- b. ORP

**II. ORP Plan Document**  
*(Intended Outcome – Final Adoption)*

**III. Miscellaneous Updates**  
*(Information Only)*

**IV. Other**

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**Defined Contribution  
Committee Members:**

Dr. Brian Rutledge, *Committee Chair*  
Mr. George Dale  
State Treasurer David McRae

Ms. Kim Hanna, *Board Chair*

# **Public Employees' Retirement System**

## **Board of Trustees**

**April 24, 2024**

### **Proposed Amendments to Optional Retirement Plan Plan Document**

Staff requests the Board's final approval of the proposed amendments to the following section:

Amend Section 4.1 *Plan Contributions* to update the employer contribution rate from 17.40% to 19.40% as approved by the Board. In accordance with Miss. Code Ann. § 25-11-411, ORP employers shall contribute the same amount the employer would be required to contribute to PERS if the participant were a member.

The effective date of the proposed amendments will be July 1, 2024.

**ARTICLE IV  
PLAN CONTRIBUTIONS**

**4.1 Plan Contributions**

The Institution will make Institution Plan Contributions monthly during years of participation in accordance with the schedule set forth below except as the same may hereafter be changed by statute, regulation, or termination of the Plan. Pursuant to Miss. Code Ann. § 25-11-415, (1972, as amended) the Board of Trustees is authorized to deduct a fee of up to two percent (2.00%) of the employers' contribution to defray the cost of administering the plan. Effective July 1, 2009, the Board has set the fee at one percent (1.00%) of the employers' total contribution which shall be transferred each month to PERS when contributions are due.

The Participant's contribution of 9.00% of compensation, which is picked-up by the Institution, shall be credited to the Participant's account. The Institution shall contribute ~~14.90%~~ 16.90% of the Participant's compensation, reduced by the administrative fee noted in this section, to be credited to the Participant's account. In addition, the Institution shall contribute 2.50% of the Participant's compensation, reduced by the administrative fee noted in this section, to PERS for application to the accrued liability contribution fund.

**Employer and Employee Plan Contributions as a  
Percentage of Compensation**

<u>By the</u>	<u>By the</u>	
<u>Participant</u>	<u>Institution</u>	<u>Total</u>
9.00%	<del>17.40%</del> <u>19.40%</u>	<del>26.40%</del> <u>28.40%</u>

**Allocation of ~~17.40%~~ 19.40% Employer Contribution**

<u>Administrative Fee</u>	<u>% to PERS UAAL</u>	<u>% to Participant's Account</u>
<del>0.174%</del> <u>0.194%</u> of <b>Compensation</b> (1.00% of <del>17.40%</del> <u>19.40%</u> of compensation)	<b>2.475% of Compensation</b> (2.50% less pro-rata share of administrative fee)	<del>14.751%</del> <u>16.731%</u> of <b>Compensation</b> ( <del>14.90%</del> <u>16.9%</u> less pro-rata share of administrative fee)

**Plan Contributions as**

**Credited to Participant's Account**

<u>By the</u>	<u>By the</u>	
<u>Participant</u>	<u>Institution</u>	<u>Total</u>
9.00%	<del>14.751%</del> <u>16.731%</u>	<del>23.751%</del> <u>25.731%</u>

In no event will compensation taken into account under the Plan exceed the limit of Code Section 401(a)(17) as such amount may be adjusted by the Secretary of Treasury from time to time.



# Investment Committee Meeting Agenda

Tuesday, April 23, 2024

10:30 A.M.

(or immediately following the Defined Contribution Committee)

- I. **Market Update and Performance Review-Callan**  
*(Information Only)*
  
- II. **Small Cap International Manager Search Selection**  
*(Intended Outcome-Approval of Staff Recommendations)*
  
- III. **New Private Equity Series-GCM**  
*(Intended Outcome-Approval of Staff Recommendations)*
  
- IV. **New Real Estate Series- Heitman VP Fund VI**  
*(Intended Outcome- Approval of Staff Recommendations)*
  
- V. **Global Investment Manager Presentations**  
*(Information Only)*
  - a. **Epoch**
  - b. **Harding Loevner**
  - c. **Acadian**
  - d. **LSV Global Value**
  
- VI. **Miscellaneous Updates**  
*(Information Only)*

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**Investment**

**Committee Members:**

Mr. Kelly Breland, *Committee Chair*  
Dr. Randy McCoy  
Mr. Chris Howard  
State Treasurer David McRae

Ms. Kim Hanna, *Board Chair*

April 23, 2024



## **Public Employees' Retirement System of Mississippi**

Executive Summary (*Preliminary*)  
1Q24 Performance Review

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**John Jackson, CFA**  
Senior Vice President

**Alexander Ford**  
Senior Vice President

Important Disclosures regarding the use of this document are included at the end of this document. These disclosures are an integral part of this document and should be considered by the user.

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# Mississippi PERS Executive Summary – 1Q 2024

## Table of contents

### ► **First Quarter 2024 Performance Review**

- PERS Highlights and Capital Markets Overview
- PERS Portfolio Review – as of March 31, 2024

### ► **Appendix**

- Net of Fee Performance
- Benchmark Definitions
- Callan Updates

Callan

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**First Quarter 2024 Performance Review**



# PERS of Mississippi Performance Highlights

As of March 31, 2024

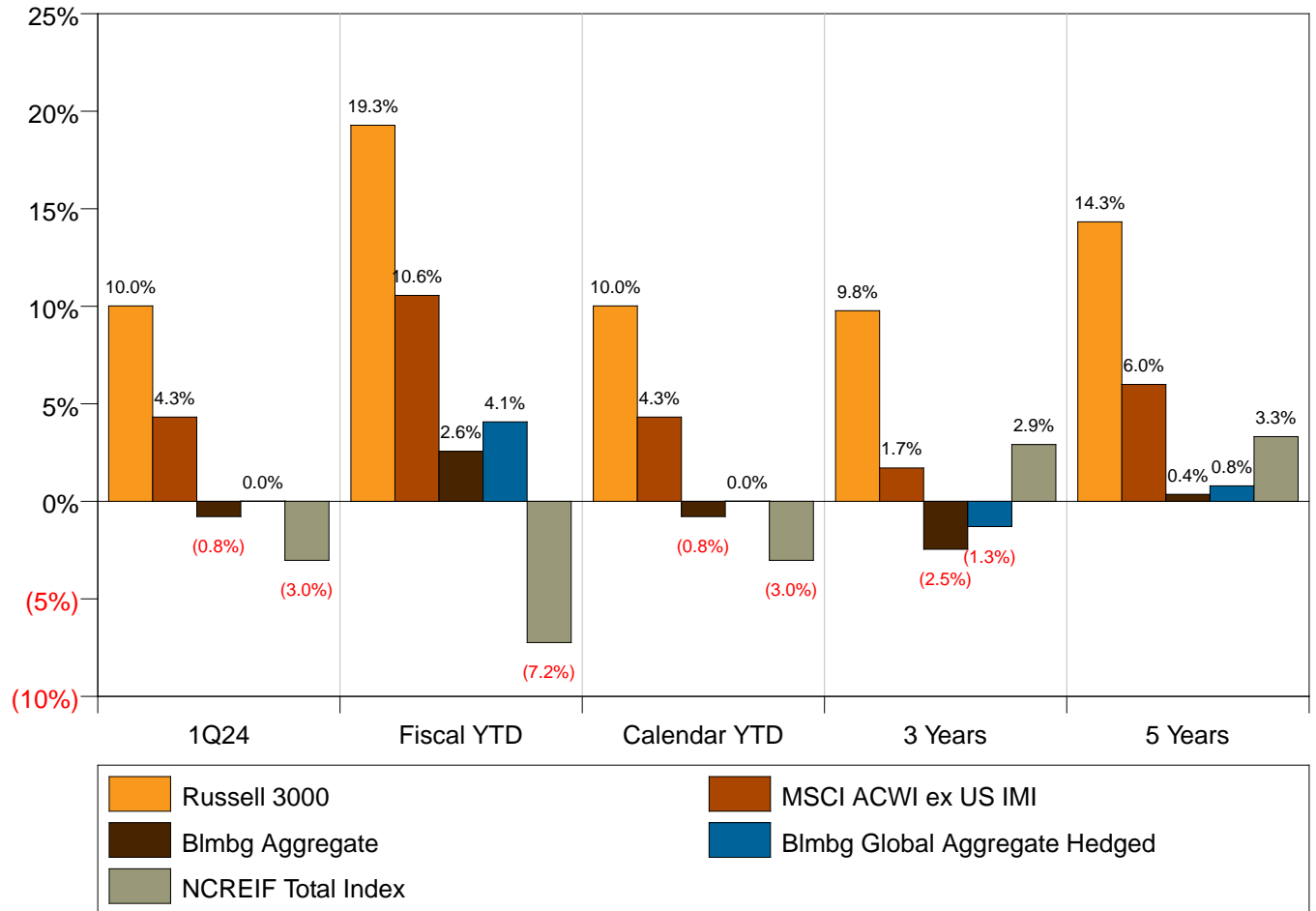
- ▶ **PERS Total Fund assets stood at \$33.6 billion at the end of March, an increase of approximately \$1.3 billion from the end of 4Q.**
  - A positive investment return increased the market value of assets by approximately \$1.5 billion, while net outflows reduced assets by \$142.3 million.
- ▶ **Overall, the asset allocation was in line with its current target allocation at the end of March.**
  - Overweight allocations to Private Equity (+3.7%), Global Equity (+0.5%), and Cash (+0.1%) were offset by underweight allocations to International Equity (-1.6%), Real Estate (-1.3%), Domestic Equity (-1.2%), and Fixed Income (-0.3%).
- ▶ **The PERS Total Fund returned 4.6% (gross of fees) during 1Q versus 5.1% for the Policy Benchmark.**
- ▶ **Fiscal year-to-date, the PERS Total Fund returned 9.5% (gross of fees ) versus the 10.8% return for the Policy Benchmark.**
- ▶ **Over the last year, the PERS Total Fund returned 13.0% (gross of fees) versus the 15.0% return for the Policy Benchmark.**
- ▶ **Investments in the underlying asset classes performed as follows:**
  - The domestic equity composite returned 9.9% during the quarter (-0.2% vs. benchmark) and 19.2% fiscal YTD (-0.1% vs. benchmark).
  - The international equity composite returned 5.0% during the quarter (+0.6% vs. benchmark) and 11.6% fiscal YTD (+1.1% vs. benchmark).
  - The global equity composite returned 9.0% during the quarter (+1.3% vs. benchmark) and 18.0% fiscal YTD (+2.3% vs. benchmark).
  - The fixed income composite returned 0.2% during the quarter (+0.9% vs. benchmark) and 4.5% fiscal YTD (+2.0% vs. benchmark).
  - The real estate composite returned -2.8% during the quarter (+0.3% vs. benchmark) and -8.1% fiscal YTD (-0.8% vs. benchmark).
  - The private equity composite returned 1.5% during the quarter and 3.5% fiscal YTD.
- ▶ **The PERS Total Fund has outperformed its benchmark over the trailing three-, five-, and ten-year periods. Over the trailing time periods, the PERS Total Fund returned 4.8%, 8.9%, and 8.1%, respectively.**

Note: The numbers in parenthesis above indicate benchmark relative performance for each asset class over the specified time period. Net of fees returns are included in the appendix.

# Asset Class Performance

- ▶ U.S. equities were up 10.0% in 1Q (Russell 3000 Index). Despite strong earnings from a few individual companies, multiple expansion continued to drive markets in the United States.
- ▶ Equities outside of the U.S. were driven higher by strong earnings results and optimism following improved inflation data (MSCI ACWI ex U.S. IMI +4.3%). Emerging markets lagged developed markets, as weakness in China, Brazil, and Chile dragged on returns.
- ▶ Bond yields rose modestly in 1Q as expectations dwindled for aggressive rate cuts amid stubbornly high inflation. The Bloomberg U.S. Aggregate Bond Index declined 0.8% in 1Q and trailed the Hedged Global Aggregate Index (+0.0%).

Returns for Periods Ended March 31, 2024



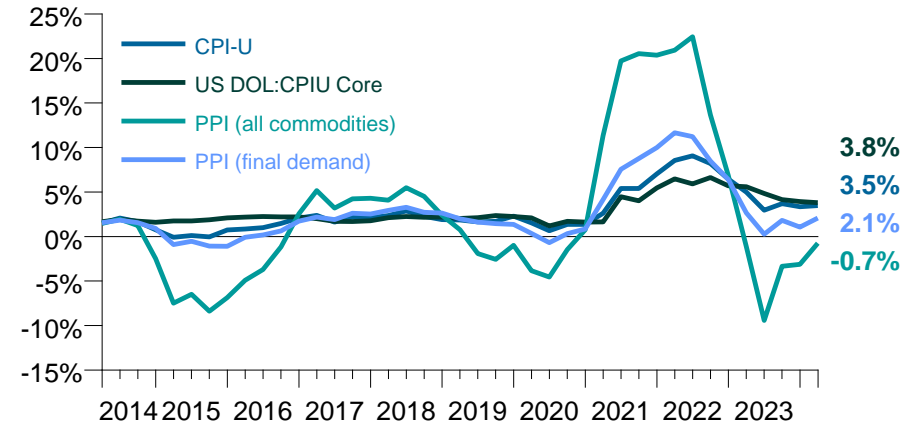
(as of 4/22/2024)	QTD
Russell 3000	
MSCI ACWI ex-U.S. IMI	
Bloomberg U.S. Aggregate	
Bloomberg Global Aggregate (Hedged)	

# U.S. Economy—Summary

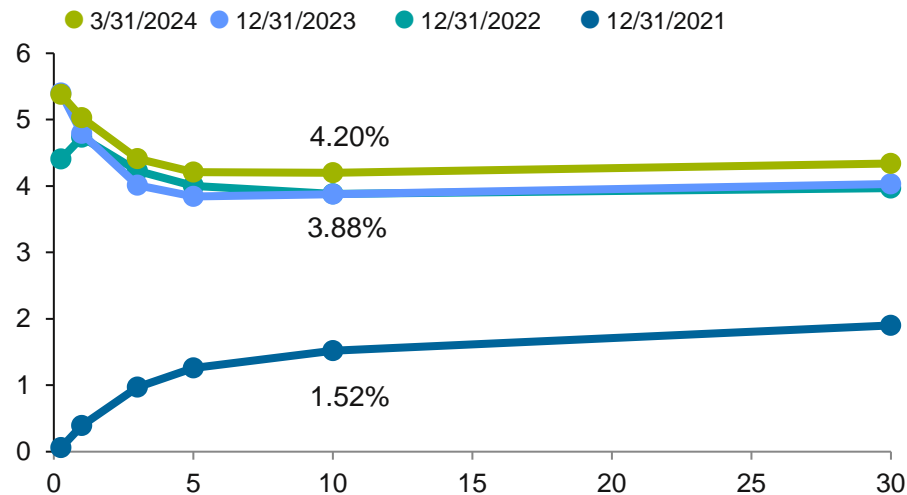
For periods ended March 31, 2024

- The U.S. economy grew at a healthy 3.4% annual rate in 4Q23, slightly up from the initial estimate of 3.2%. Consumer spending, especially in health care, was a key driver in the 4Q23 gain. The Atlanta Fed’s GDPNow forecast for 1Q24 growth was 2.3% as of quarter-end.
- CPI-U surprised to the upside in March, rising 3.5% YoY, while core CPI (ex food and energy) rose for the third consecutive month, with a 0.4% MoM and 3.8% YoY increase.
- The Fed held short-term rates steady at the January and March 2024 FOMC meetings. The current target range remains 5.25-5.50%.
- The U.S. labor market added 303,000 jobs in March, representing an acceleration in the pace of hiring.

## Inflation Year-Over-Year

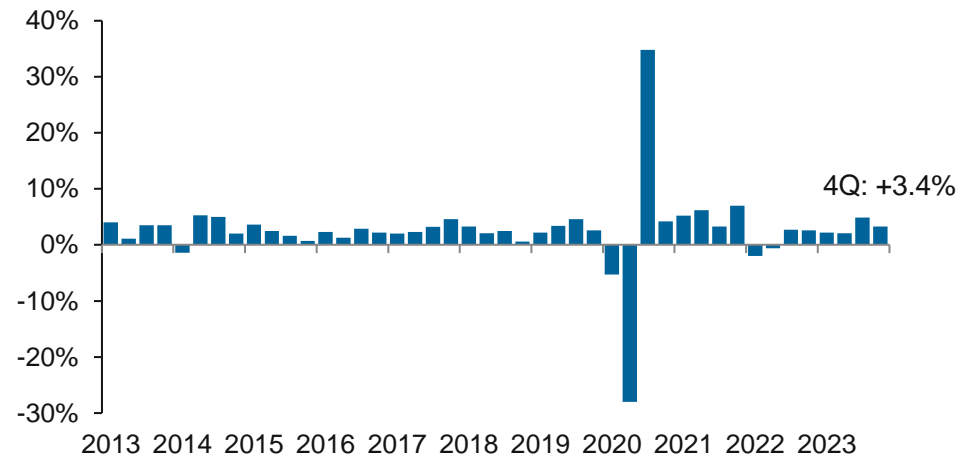


## U.S. Treasury Yield Curves



Sources: Bloomberg, Bureau of Labor Statistics, Callan

## Quarterly Real GDP Growth



# Equity Momentum Continues

Stocks rise with economic tailwinds, bonds see modest retreat

## S&P 500 soared 10.6% in 1Q24

- U.S. stocks rallied sharply in 1Q with the S&P 500 Index closing the quarter at a record high for the 22<sup>nd</sup> time during the quarter.

## Fixed income pulled back in 1Q after gains in 2023

- Bond yields rose modestly in 1Q as expectations dwindled for aggressive rate cuts amid stubbornly high inflation. The Bloomberg US Aggregate Bond Index fell 0.8% for the quarter.
- On a year-over-year (YoY) basis, CPI-U rose by a stronger-than-expected 3.5% in March, an uptick from the 3.2% YoY rise in February.

## Recession risks continue to recede

- The U.S. economy grew at a healthy 3.4% annual rate in 4Q23, slightly up from the initial estimate of 3.2%. First quarter GDP forecasts are mixed, with 2% being an average.
- The median projection from the Fed for full 2024 GDP growth is 2.1%, a notable increase from the 1.4% December forecast.
- The labor market remained tight. Unemployment was 3.9% and wage growth was 4.5%.

Returns for Periods ended 3/31/24

	Quarter	1 Year	2 Years	5 Years	10 Years	25 Years
<b>U.S. Equity</b>						
Russell 3000	10.02	29.29	8.72	14.34	12.33	8.01
S&P 500	10.56	29.88	9.47	15.05	12.96	7.78
Russell 2000	5.18	19.71	2.87	8.10	7.58	8.37
<b>Global ex-U.S. Equity</b>						
MSCI World ex USA	5.59	15.29	5.89	7.48	4.81	4.78
MSCI Emerging Markets	2.37	8.15	-1.73	2.22	2.95	--
MSCI ACWI ex USA Small Cap	2.11	12.80	0.55	6.24	4.74	7.20
<b>Fixed Income</b>						
Bloomberg Aggregate	-0.78	1.70	-1.60	0.36	1.54	3.84
90-day T-Bill	1.29	5.24	3.86	2.02	1.38	1.91
Bloomberg Long Gov/Credit	-2.41	-1.15	-7.48	-0.62	2.32	5.25
Bloomberg Global Agg ex-US	-3.21	-0.71	-5.85	-2.49	-1.38	2.34
<b>Real Estate</b>						
NCREIF:Total Index	-3.02	-9.07	-5.42	3.33	6.19	7.79
FTSE Nareit Equity	-0.20	10.54	-5.50	4.15	6.61	9.48
<b>Alternatives</b>						
HFRI Fund Weighted	4.52	11.68	4.59	6.92	4.93	6.35
Cambridge Private Equity*	-0.42	4.17	0.19	14.59	14.27	13.87
Bloomberg Commodity	2.19	-0.56	-6.72	6.38	-1.56	2.70
Gold Spot Price	8.04	12.70	7.03	11.51	5.72	8.64
<b>CPI for All Urban Consumers (U)</b>	1.82	3.48	4.23	4.20	2.83	2.58

\*Cambridge PE data as of 9/30/23

Sources: Bloomberg, Callan, Cambridge, FTSE Russell, HFRI, MSCI, NCREIF, S&P Dow Jones Indices

# Callan Periodic Table of Investment Returns

As of March 31, 2024

Calendar Year Returns			Quarterly Returns				Monthly Returns			FYTD	
2020	2021	2022	2023	2Q23	3Q23	4Q23	1Q24	Jan	Feb	Mar	FYTD
Small Cap Equity 19.96%	Large Cap Equity 28.71%	NCREIF ODCE Eq Wt Net 7.56%	Large Cap Equity 26.29%	Large Cap Equity 8.74%	High Yield 0.46%	Real Estate 15.29%	Large Cap Equity 10.56%	Large Cap Equity 1.68%	Small Cap Equity 5.65%	Small Cap Equity 3.58%	Large Cap Equity 19.44%
Large Cap Equity 18.40%	Real Estate 26.09%	Interm. Fixed Income -8.23%	Dev Non-U.S. Equity 18.24%	Small Cap Equity 5.21%	Interm. Fixed Income -0.83%	Small Cap Equity 14.03%	Dev Non-U.S. Equity 5.78%	Dev Non-U.S. Equity 0.58%	Large Cap Equity 5.34%	Real Estate 3.45%	Small Cap Equity 13.79%
EM Equity 18.31%	NCREIF ODCE Eq Wt Net 21.88%	High Yield -11.19%	Small Cap Equity 16.93%	Dev Non-U.S. Equity 2.95%	NCREIF ODCE Eq Wt Net -2.12%	Large Cap Equity 11.69%	Small Cap Equity 5.18%	Interm. Fixed Income 0.21%	EM Equity 4.76%	Dev Non-U.S. Equity 3.29%	Dev Non-U.S. Equity 12.01%
Dev Non-U.S. Equity 7.82%	Small Cap Equity 14.82%	U.S. Fixed Income -13.01%	High Yield 13.44%	High Yield 1.75%	EM Equity -2.93%	Dev Non-U.S. Equity 10.42%	EM Equity 2.37%	High Yield 0.00%	Dev Non-U.S. Equity 1.83%	Large Cap Equity 3.22%	High Yield 9.24%
U.S. Fixed Income 7.51%	Dev Non-U.S. Equity 11.26%	Dev Non-U.S. Equity -14.45%	EM Equity 9.83%	EM Equity 0.90%	U.S. Fixed Income -3.23%	EM Equity 7.86%	High Yield 1.47%	U.S. Fixed Income -0.27%	High Yield 0.29%	EM Equity 2.48%	EM Equity 7.19%
High Yield 7.11%	High Yield 5.28%	Large Cap Equity -18.11%	Real Estate 9.67%	Real Estate 0.27%	Large Cap Equity -3.27%	High Yield 7.16%	Interm. Fixed Income -0.15%	NCREIF ODCE Eq Wt Net -0.80%	Real Estate -0.60%	High Yield 1.18%	Real Estate 7.13%
Interm. Fixed Income 6.43%	Interm. Fixed Income -1.44%	EM Equity -20.09%	U.S. Fixed Income 5.53%	Interm. Fixed Income -0.81%	Dev Non-U.S. Equity -4.11%	U.S. Fixed Income 6.82%	U.S. Fixed Income -0.78%	Small Cap Equity -3.89%	NCREIF ODCE Eq Wt Net -0.80%	U.S. Fixed Income 0.92%	Interm. Fixed Income 3.53%
NCREIF ODCE Eq Wt Net 0.75%	U.S. Fixed Income -1.54%	Small Cap Equity -20.44%	Interm. Fixed Income 5.24%	U.S. Fixed Income -0.84%	Small Cap Equity -5.13%	Interm. Fixed Income 4.56%	Real Estate -1.30%	Real Estate -4.02%	Interm. Fixed Income -0.99%	Interm. Fixed Income 0.64%	U.S. Fixed Income 2.56%
Real Estate -9.04%	EM Equity -2.54%	Real Estate -25.10%	NCREIF ODCE Eq Wt Net -13.33%	NCREIF ODCE Eq Wt Net -3.05%	Real Estate -5.86%	NCREIF ODCE Eq Wt Net -5.37%	NCREIF ODCE Eq Wt Net -2.39%	EM Equity -4.64%	U.S. Fixed Income -1.41%	NCREIF ODCE Eq Wt Net -0.80%	NCREIF ODCE Eq Wt Net -9.58%

Sources: ● S&P 500 ● Russell 2000 ● MSCI EAFE ● MSCI Emerging Markets ● Bloomberg U.S. Aggregate ● Bloomberg Corp High Yield  
● Bloomberg Multiverse ● NCREIF ODCE Equal Weight Net ● FTSE EPRA/NAREIT Developed

# U.S. Equity Market: Key Metrics

## S&P 500 valuation measures

S&P 500 Index: Forward P/E Ratio

Valuation Measure	Latest	30-year Average*	Std Dev Over-/Under-valued
Forward P/E	20.96x	16.62x	1.34
Shiller's P/E	34.75x	27.65x	1.16
Dividend yield	1.43%	2.00%	1.65
Price to book	4.23x	3.12x	1.40
Price to cash flow	15.92x	11.17x	2.10
EY minus Baa yield	-0.97%	0.04%	0.55



**Forward P/E (20.96) is more than one standard deviation above its long-term average (16.62).**

Source: FactSet, FRB, Refinitiv Datastream, Robert Shiller, S&P Dow Jones Indices, Thomson Reuters, J.P. Morgan Asset Management.

Price-to-earnings is price divided by consensus analyst estimates of earnings per share for the next 12 months as provided by IBES since December 1998 and by FactSet since January 2022. Current next 12-months consensus earnings estimates are \$245. Average P/E and standard deviations are calculated using 30 years of history. Shiller's P/E uses trailing 10-years of inflation-adjusted earnings as reported by companies. Dividend yield is calculated as the next 12-months consensus dividend divided by most recent price. Price-to-book ratio is the price divided by book value per share. Price-to-cash flow is price divided by NTM cash flow. EY minus Baa yield is the forward earnings yield (consensus analyst estimates of EPS over the next 12 months divided by price) minus the Moody's Baa seasoned corporate bond yield. Std. dev. over-/under-valued is calculated using the average and standard deviation over 30 years for each measure.

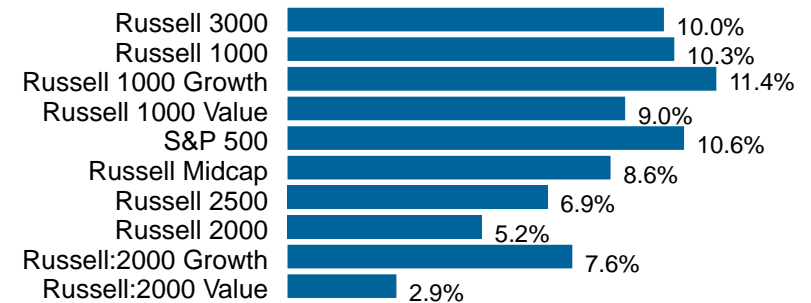
\*Averages and standard deviations for dividend yield and P/CF are since November 1995 due to data availability. Guide to the Markets – U.S. Data are as of March 31, 2024.

# U.S. Equity Performance: 1Q24

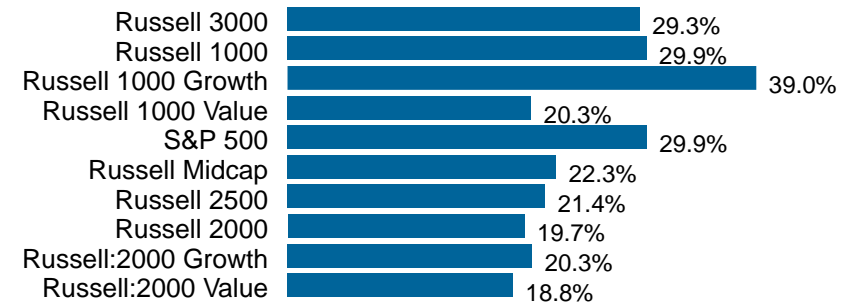
## U.S. equity markets rallied sharply in 1Q

- Amid a backdrop of low volatility mixed with investor enthusiasm and better-than-expected economic news, the S&P 500 Index (+10.6%) closed the quarter at a new high—its 22<sup>nd</sup> record high over the course of the quarter.
- Index concentration continued during the quarter, as the equal-weighted version of the S&P 500 Index gained a more modest 7.9% as the largest stocks continued to outperform. Of the “Magnificent 7,” only Apple (-10.8%) and Tesla (-29.2%) suffered losses. The Mag 7 were up 13% for the quarter, with the S&P 500 Index ex Mag 7 up 6%.
- Large cap (R1000: +10.3%) outperformed small (Russell 2000: +5.2%) for the first quarter, as elevated interest rate expectations weighed on investor sentiment for smaller companies.
- Growth (R1000 Growth: +11.4%) outperformed Value (R1000 Value: +9.0%) in large cap, and the dispersion between the two styles was even more pronounced in small cap stocks.

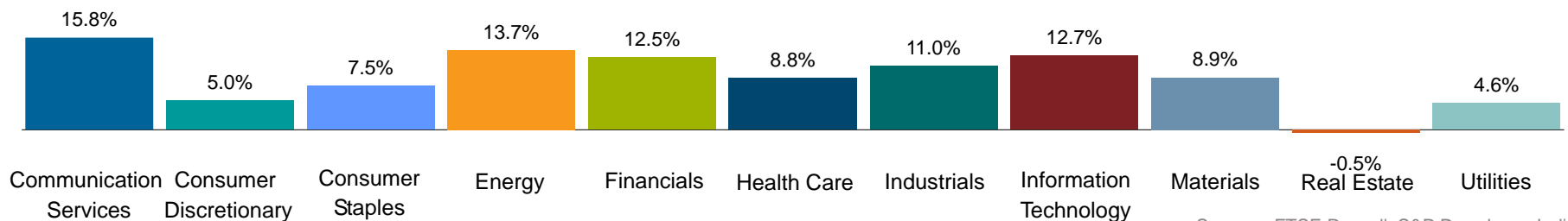
### U.S. Equity: Quarter Ended 3/31/24



### U.S. Equity: One Year Ended 3/31/24



### Industry Sector Quarterly Performance (S&P 500) as of 3/31/24



Sources: FTSE Russell, S&P Dow Jones Indices

# Global/Global ex-U.S. Equity Performance: 1Q24

## Market momentum amid favorable macroeconomic data

### Broad market

- Broadening economic growth coupled with significantly lower natural gas prices and the ECB moving to ease rates drove global equities higher, but developed markets still trailed U.S. stocks.
- Most countries delivered gains, but from a regional perspective, Pacific ex-Japan was hurt by weak performance from Hong Kong (-11.7%).
- Japan saw double-digit gains and has been the largest catalyst for the rally in developed markets. Japan remains the largest country weight in the MSCI EAFE index at more than 23%. In March, Japan abandoned its negative interest rate policy as growth and inflation picked up, the potential start of a new economic regime.

### Emerging markets

- Emerging Markets (MSCI EM: +2.4%) were up modestly, trailing developed markets. Latin America (-4.0%) was dragged down by poor results from Brazil (-7.4%) and Chile (-4.5%). China (-2.2%) also weighed on emerging market performance.
  - In China, factory output and retail sales beat expectations, but the property sector remains under pressure. The value of homes sold by the top 100 developers plunged nearly 50% in 1Q (YoY).

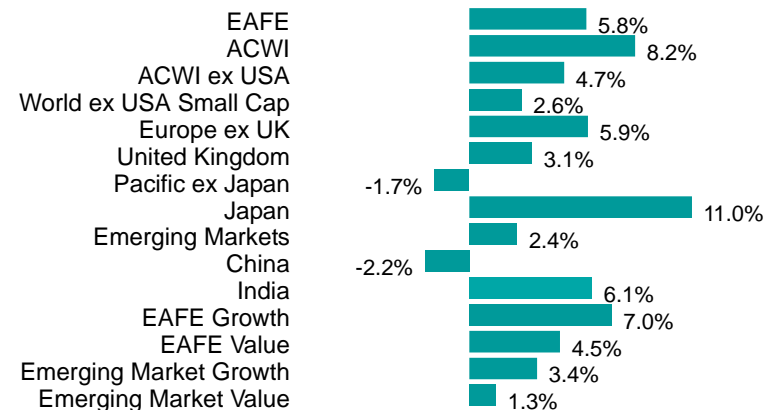
### Growth vs. value

- Growth outperformed value within developed markets for the quarter (EAFE Growth +7.0% vs EAFE Value +4.5%).

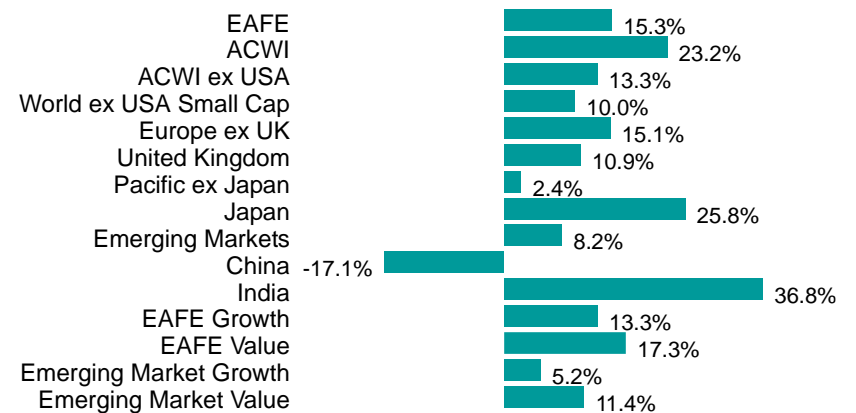
### U.S. dollar vs. other currencies

- The U.S dollar strengthened against most currencies, most notably the Japanese yen (-7%).

Global Equity Returns: Quarter Ended 3/31/24



Global Equity Returns: One Year Ended 3/31/24



Source: MSCI



# U.S. Fixed Income Performance: 1Q24

Bond yields rose modestly in 1Q as aggressive rate cut expectations dwindled

## Strong returns at end of year

- Persistent inflation data, robust economic activity, and a slight retreat from the Fed's dovish December tone contributed to negative returns (Bloomberg Agg -0.8%).
- The U.S. Treasury 10-year yield rose from 3.88% as of year-end 2023 to 4.20% at the end of 1Q 2024.
- Investment grade corporate bonds outperformed U.S. Treasuries on a duration-adjusted basis, fueled by strong demand that easily absorbed record supply in 1Q and the second largest quarterly issuance ever.
- High yield corporates outperformed the investment grade market despite an uptick in the default rate to 5.7%, according to data from Barclays Research. Leveraged loans performed even better.

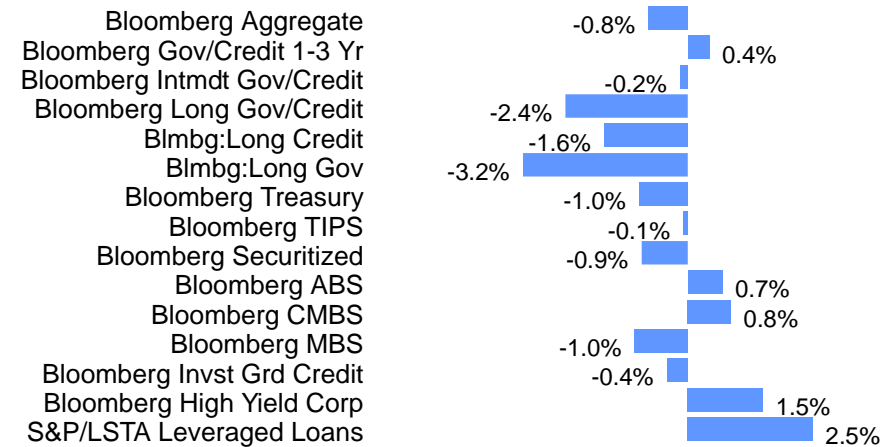
## U.S. Treasury yield curve remained inverted

- 106 bps as of 6/30/23; 44 bps as of 9/30/23; 35 bps as of 12/31/23; 42 bps as of 3/31/24.

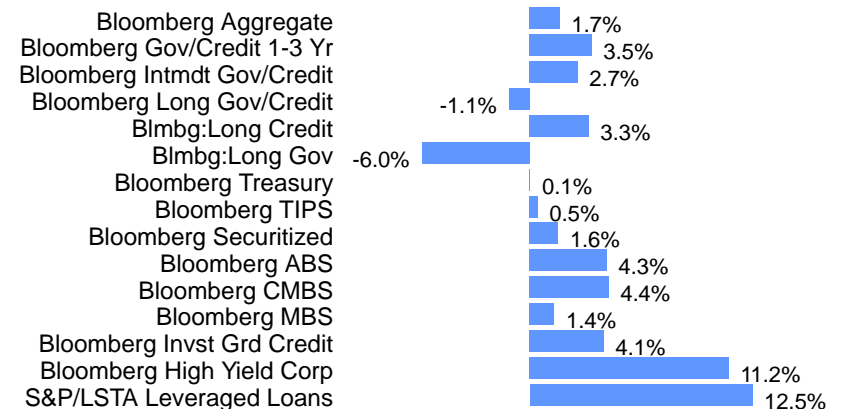
## Fed kept Fed Funds rate steady in March meeting

- The Fed's latest dot plot revealed expectations for year-end Fed Funds remained unchanged at 4.6%, implying roughly three cuts in 2024.
- Market expectations are similar at roughly three cuts, down sharply from the six expected at the end of 2023.
- Fed indicated that they are in no hurry to cut rates and are willing to wait to see more evidence that inflation is waning.
  - Core Inflation rose 3.7% YoY in February.

## U.S. Fixed Income Returns: Quarter Ended 3/31/24



## U.S. Fixed Income Returns: One Year Ended 3/31/24



Sources: Bloomberg, Callan, S&P Dow Jones Indices

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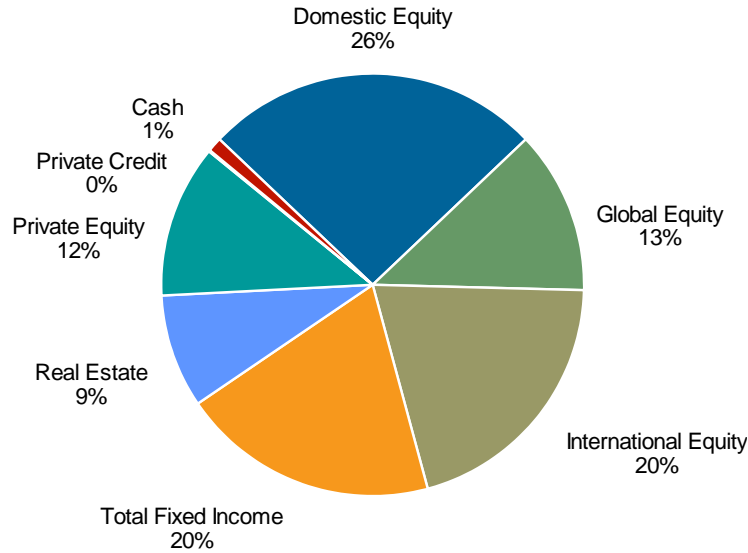
## **PERS Portfolio Review**

1Q 2024

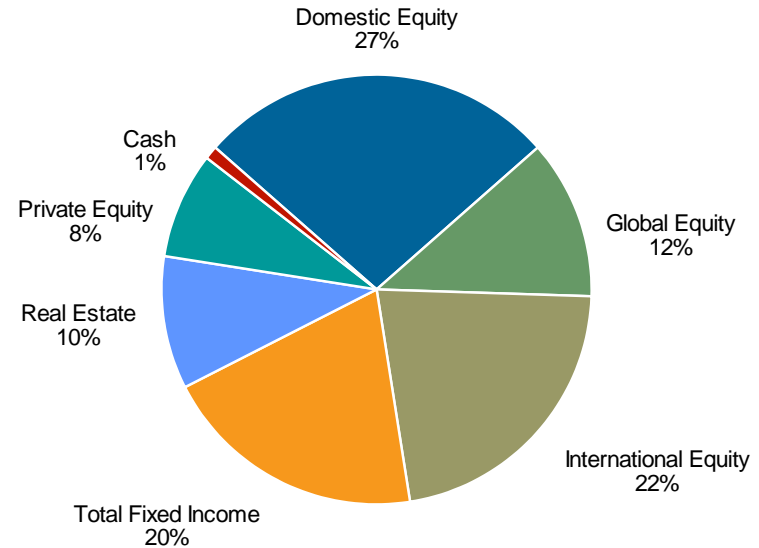
# PERS Asset Allocation Versus Policy Target

As of March 31, 2024

**Actual Asset Allocation**



**Target Asset Allocation**



Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
Domestic Equity	8,669,156	25.8%	27.0%	(1.2%)	(405,612)
Global Equity	4,208,442	12.5%	12.0%	0.5%	175,212
International Equity	6,857,972	20.4%	22.0%	(1.6%)	(536,283)
Total Fixed Income	6,607,066	19.7%	20.0%	(0.3%)	(114,985)
Real Estate	2,922,396	8.7%	10.0%	(1.3%)	(438,629)
Private Equity	3,928,580	11.7%	8.0%	3.7%	1,239,760
Private Credit	32,716	0.1%	0.0%	0.1%	32,716
Cash	383,924	1.1%	1.0%	0.1%	47,821
<b>Total</b>	<b>33,610,252</b>	<b>100.0%</b>	<b>100.0%</b>		

► Overall, the PERS asset allocation was in line with its strategic target allocation.

– An overweight allocation to Private Equity (+3.7%) was offset by underweight allocations to the other public market asset classes.

Note: The Target Asset Allocation represents the legacy policy target weights. A new long-term strategic asset allocation was approved in 2022; however, the legacy allocation target and Total Fund Benchmark will be maintained until the new complementary strategies have been implemented and funded.

# PERS Asset Class Cash Flows

As of March 31, 2024

	March 31, 2024		Net New Inv.	Inv. Return	December 31, 2023	
	Market Value	Weight			Market Value	Weight
Domestic Equity	\$8,669,156,092	25.79%	\$(554,081,239)	\$798,735,687	\$8,424,501,644	26.09%
Global Equity	\$4,208,442,374	12.52%	\$(113,956,377)	\$350,982,761	\$3,971,415,991	12.30%
International Equity	\$6,857,972,263	20.40%	\$(165,219,811)	\$324,322,527	\$6,698,869,547	20.75%
Total Fixed Income	\$6,607,065,657	19.66%	\$621,860,834	\$14,838,445	\$5,970,366,379	18.49%
Real Estate	\$2,922,395,950	8.69%	\$(10,447,145)	\$(83,075,054)	\$3,015,918,149	9.34%
Private Equity	\$3,928,580,049	11.69%	\$(29,558,843)	\$57,163,696	\$3,900,975,196	12.08%
Private Credit	\$32,715,615	0.10%	\$32,900,000	\$(184,385)	-	-
Cash	\$383,923,616	1.14%	\$76,153,249	\$5,726,955	\$302,043,413	0.94%
Total Fund	\$33,610,251,617	100.00%	\$(142,349,332)	\$1,468,510,632	\$32,284,090,318	100.00%

► PERS Total Fund assets stood at \$33.6 billion at the end of March, an increase of approximately \$1.3 billion from the end of 4Q.

- A positive investment return increased the market value of assets by approximately \$1.5 billion.
- Net outflows reduced assets by approximately \$142.3 million.

# PERS Asst Class Performance – Gross of Fees

As of March 31, 2024

	Market Value \$(000)	Ending Weight	Last Quarter	Fiscal YTD	Last Year	Last 3 Years	Last 5 Years
<b>Domestic Equity</b>	<b>\$8,669,156</b>	<b>25.79%</b>	<b>9.86%</b>	<b>19.23%</b>	<b>28.87%</b>	<b>9.61%</b>	<b>14.35%</b>
Domestic Equity Benchmark	-	-	10.02%	19.29%	29.29%	9.78%	14.34%
<b>Global Equity</b>	<b>\$4,208,442</b>	<b>12.52%</b>	<b>8.98%</b>	<b>17.99%</b>	<b>24.77%</b>	<b>6.76%</b>	<b>10.62%</b>
Global Equity Benchmark	-	-	7.72%	15.65%	22.45%	6.31%	10.57%
<b>International Equity</b>	<b>\$6,857,972</b>	<b>20.40%</b>	<b>4.98%</b>	<b>11.63%</b>	<b>14.40%</b>	<b>1.74%</b>	<b>7.09%</b>
International Equity Benchmark	-	-	4.33%	10.56%	13.20%	1.72%	6.00%
<b>Total Fixed Income</b>	<b>\$6,607,066</b>	<b>19.66%</b>	<b>0.15%</b>	<b>4.52%</b>	<b>4.42%</b>	<b>(1.42%)</b>	<b>1.34%</b>
Total Fixed Income Benchmark	-	-	(0.78%)	2.56%	1.70%	(2.46%)	0.36%
<b>Real Estate</b>	<b>\$2,922,396</b>	<b>8.69%</b>	<b>(2.76%)</b>	<b>(8.06%)</b>	<b>(9.54%)</b>	<b>2.37%</b>	<b>3.38%</b>
Real Estate Benchmark	-	-	(3.02%)	(7.24%)	(9.07%)	2.92%	3.33%
<b>Private Equity</b>	<b>\$3,928,580</b>	<b>11.69%</b>	<b>1.47%</b>	<b>3.48%</b>	<b>5.16%</b>	<b>12.59%</b>	<b>16.87%</b>
Private Equity Benchmark	-	-	12.31%	19.86%	29.64%	9.15%	15.03%
<b>Private Credit</b>	<b>\$32,716</b>	<b>0.10%</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
Private Credit Benchmark	-	-	5.42%	-	-	-	-
<b>Cash Composite</b>	<b>\$383,924</b>	<b>1.14%</b>	<b>1.36%</b>	<b>4.41%</b>	<b>5.73%</b>	<b>2.93%</b>	<b>2.14%</b>
Cash Benchmark	-	-	1.36%	4.15%	5.40%	2.65%	2.00%
<b>Total Fund</b>	<b>\$33,610,252</b>	<b>100.00%</b>	<b>4.57%</b>	<b>9.51%</b>	<b>13.03%</b>	<b>4.82%</b>	<b>8.92%</b>
Total Fund Benchmark	-	-	5.07%	10.78%	14.97%	4.62%	8.39%

Total Fund Benchmark: 27% Russell 3000, 22% MSCI ACWI ex-U.S. IMI, 20% Bloomberg U.S. Aggregate, 12% MSCI ACWI IMI, 10% NCREIF Total, 8% S&P 500 +3% (1 Qtr Lag), 1% FTSE 1-Mo. T-Bill

The Domestic Equity Benchmark is represented by the Russell 3000 Index.

The Global Equity Benchmark is currently represented by the MSCI ACWI IMI Index.

The International Equity Benchmark is represented by the MSCI ACWI ex-U.S. IMI Index.

The table above shows periodic rates of return. The returns are net of fees.

The Total Fixed Income Benchmark is represented by the Bloomberg U.S. Aggregate Index. The Real Estate Benchmark is currently represented by the NCREIF Total Index.

The Private Equity Benchmark is currently represented by the S&P 500, Plus 3% (1 Qtr Lag).

The Private Credit Benchmark is represented by 50% Morningstar LSTA 100 Index / 50% Bloomberg U.S. High Yield Index, Plus 1%

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**Appendix: Net of Fee Performance**

# PERS Asst Class Performance – Net of Fees

As of March 31, 2024

	Market Value \$(000)	Ending Weight	Last Quarter	Fiscal YTD	Last Year	Last 3 Years	Last 5 Years
<b>Domestic Equity</b>	<b>\$8,669,156</b>	<b>25.79%</b>	<b>9.80%</b>	<b>19.06%</b>	<b>28.62%</b>	<b>9.42%</b>	<b>14.13%</b>
Domestic Equity Benchmark	-	-	10.02%	19.29%	29.29%	9.78%	14.34%
<b>Global Equity</b>	<b>\$4,208,442</b>	<b>12.52%</b>	<b>8.88%</b>	<b>17.65%</b>	<b>24.28%</b>	<b>6.38%</b>	<b>10.22%</b>
Global Equity Benchmark	-	-	7.72%	15.65%	22.45%	6.31%	10.57%
<b>International Equity</b>	<b>\$6,857,972</b>	<b>20.40%</b>	<b>4.90%</b>	<b>11.37%</b>	<b>14.04%</b>	<b>1.41%</b>	<b>6.76%</b>
International Equity Benchmark	-	-	4.33%	10.56%	13.20%	1.72%	6.00%
<b>Total Fixed Income</b>	<b>\$6,607,066</b>	<b>19.66%</b>	<b>0.10%</b>	<b>4.37%</b>	<b>4.21%</b>	<b>(1.62%)</b>	<b>1.15%</b>
Total Fixed Income Benchmark	-	-	(0.78%)	2.56%	1.70%	(2.46%)	0.36%
<b>Real Estate</b>	<b>\$2,922,396</b>	<b>8.69%</b>	<b>(2.97%)</b>	<b>(8.64%)</b>	<b>(10.28%)</b>	<b>1.55%</b>	<b>2.54%</b>
Real Estate Benchmark	-	-	(3.02%)	(7.24%)	(9.07%)	2.92%	3.33%
<b>Private Equity</b>	<b>\$3,928,580</b>	<b>11.69%</b>	<b>1.38%</b>	<b>3.19%</b>	<b>4.77%</b>	<b>12.17%</b>	<b>16.36%</b>
Private Equity Benchmark	-	-	12.31%	19.86%	29.64%	9.15%	15.03%
<b>Private Credit</b>	<b>\$32,716</b>	<b>0.10%</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
Private Credit Benchmark	-	-	5.42%	-	-	-	-
<b>Cash Composite</b>	<b>\$383,924</b>	<b>1.14%</b>	<b>1.36%</b>	<b>4.41%</b>	<b>5.73%</b>	<b>2.93%</b>	<b>2.14%</b>
Cash Benchmark	-	-	1.36%	4.15%	5.40%	2.65%	2.00%
<b>Total Fund</b>	<b>\$33,610,252</b>	<b>100.00%</b>	<b>4.49%</b>	<b>9.25%</b>	<b>12.67%</b>	<b>4.48%</b>	<b>8.56%</b>
Total Fund Benchmark	-	-	5.07%	10.78%	14.97%	4.62%	8.39%

Total Fund Benchmark: 27% Russell 3000, 22% MSCI ACWI ex-U.S. IMI, 20% Bloomberg U.S. Aggregate, 12% MSCI ACWI IMI, 10% NCREIF Total, 8% S&P 500 +3% (1 Qtr Lag), 1% FTSE 1-Mo. T-Bill

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The Private Equity Benchmark is currently represented by the S&P 500, Plus 3% (1 Qtr Lag).

The Private Credit Benchmark is represented by 50% Morningstar LSTA 100 Index /

50% Bloomberg U.S. High Yield Index, Plus 1%

# Periodic Rates of Return – Net of Fees

As of March 31, 2024

	Market Value \$(Dollars)	Ending Weight	Last Quarter	Fiscal YTD	Last Year	Last 3 Years	Last 5 Years
<b>Domestic Equity</b>	<b>\$8,669,156,092</b>	<b>25.79%</b>	<b>9.80%</b>	<b>19.06%</b>	<b>28.62%</b>	<b>9.42%</b>	<b>14.13%</b>
Russell 3000 Index	-	-	10.02%	19.29%	29.29%	9.78%	14.34%
<b>Large Cap Equity</b>	<b>\$6,514,557,993</b>	<b>19.38%</b>	<b>10.80%</b>	<b>20.37%</b>	<b>31.53%</b>	<b>11.38%</b>	<b>14.94%</b>
Russell 1000 Index	-	-	10.30%	19.61%	29.87%	10.45%	14.76%
<b>Managed Large Cap Equity</b>	<b>\$918,830,031</b>	<b>2.73%</b>	<b>12.70%</b>	<b>26.55%</b>	<b>43.04%</b>	<b>10.70%</b>	<b>14.61%</b>
Eagle Capital	918,830,031	2.73%	12.70%	26.55%	43.04%	10.70%	14.97%
S&P 500 Index	-	-	10.56%	19.44%	29.88%	11.49%	15.05%
<b>Northern Trust S&amp;P 500</b>	<b>\$5,595,727,962</b>	<b>16.65%</b>	<b>10.52%</b>	<b>19.41%</b>	<b>29.80%</b>	<b>11.50%</b>	<b>15.04%</b>
S&P 500 Index	-	-	10.56%	19.44%	29.88%	11.49%	15.05%
<b>Mid Cap Equity</b>	<b>\$1,115,004,663</b>	<b>3.32%</b>	<b>9.63%</b>	<b>16.37%</b>	<b>20.04%</b>	<b>4.97%</b>	<b>11.70%</b>
Russell MidCap Index	-	-	8.60%	16.79%	22.35%	6.07%	11.10%
Artisan Partners	532,998,588	1.59%	10.52%	17.31%	22.53%	(0.09%)	11.97%
Russell MidCap Growth Idx	-	-	9.50%	18.87%	26.28%	4.62%	11.82%
Victory Mid Cap Value	577,532,878	1.72%	9.19%	15.94%	18.48%	-	-
Russell MidCap Value Idx	-	-	8.23%	15.92%	20.40%	6.80%	9.94%
<b>Small Cap Equity</b>	<b>\$1,039,593,436</b>	<b>3.09%</b>	<b>3.70%</b>	<b>12.96%</b>	<b>18.56%</b>	<b>3.33%</b>	<b>10.70%</b>
Russell 2000 Index	-	-	5.18%	13.79%	19.71%	(0.10%)	8.10%
Dimensional Fund Advisors	345,033,585	1.03%	3.11%	18.84%	24.19%	10.26%	13.69%
Russell 2000 Value Index	-	-	2.90%	15.09%	18.75%	2.22%	8.17%
Wellington Small Cap	347,585,240	1.03%	4.32%	12.70%	17.38%	3.63%	9.50%
Russell 2000 Index	-	-	5.18%	13.79%	19.71%	(0.10%)	8.10%
Riverbridge Partners	346,974,611	1.03%	3.93%	7.44%	14.23%	(4.29%)	8.18%
Russell 2000 Growth Index	-	-	7.58%	12.42%	20.35%	(2.68%)	7.38%

Total Fund Benchmark: 27% Russell 3000, 22% MSCI ACWI ex-U.S. IMI, 20% Bloomberg U.S. Aggregate, 12% MSCI ACWI IMI, 10% NCREIF Total, 8% S&P 500 +3% (1 Qtr Lag), 1% FTSE 1-Mo. T-Bill

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The Private Credit Benchmark is represented by 50% Morningstar LSTA 100 Index /

50% Bloomberg U.S. High Yield Index, Plus 1%



## Periodic Rates of Return – Net of Fees (Continued)

As of March 31, 2024

	Market Value \$(Dollars)	Ending Weight	Last Quarter	Fiscal YTD	Last Year	Last 3 Years	Last 5 Years
<b>Global Equity</b>	<b>\$4,208,442,374</b>	<b>12.52%</b>	<b>8.88%</b>	<b>17.65%</b>	<b>24.28%</b>	<b>6.38%</b>	<b>10.22%</b>
Global Equity Benchmark (2)	-	-	7.72%	15.65%	22.45%	6.31%	10.57%
Acadian Global Equity	1,075,481,682	3.20%	12.95%	23.38%	30.98%	10.49%	13.44%
Epoch Investments	1,041,417,078	3.10%	6.81%	14.97%	19.80%	5.13%	8.71%
Harding-Loevner	1,044,631,149	3.11%	6.83%	14.38%	23.53%	1.91%	10.02%
LSV Global Value	1,042,600,118	3.10%	8.87%	17.72%	22.72%	-	-
MSCI ACWI Index	-	-	8.20%	16.05%	23.22%	6.96%	10.92%
<b>International Equity</b>	<b>\$6,857,972,263</b>	<b>20.40%</b>	<b>4.90%</b>	<b>11.37%</b>	<b>14.04%</b>	<b>1.41%</b>	<b>6.76%</b>
International Equity Bnmk (3)	-	-	4.33%	10.56%	13.20%	1.72%	6.00%
International Eq Custom Bnmk (4)	-	-	4.27%	10.37%	12.79%	1.26%	5.77%
<b>All Country ex US</b>	<b>\$4,784,537,762</b>	<b>14.24%</b>	<b>6.00%</b>	<b>11.88%</b>	<b>15.11%</b>	<b>2.16%</b>	<b>8.94%</b>
Arrowstreet Capital	840,361,118	2.50%	10.25%	20.62%	26.02%	8.82%	12.85%
Baillie Gifford	745,391,555	2.22%	3.36%	3.57%	3.87%	(6.69%)	5.05%
Marathon Asset Mgmt	856,889,537	2.55%	5.16%	10.17%	13.33%	2.69%	7.15%
MSCI ACWI xUS IMI	-	-	4.33%	10.56%	13.20%	1.72%	6.00%
NT MSCI World ex US	2,341,895,552	6.97%	5.67%	12.10%	15.69%	-	-
MSCI World xUS	-	-	5.59%	11.90%	15.29%	4.93%	7.48%
<b>Small Cap</b>	<b>\$677,802,246</b>	<b>2.02%</b>	<b>2.05%</b>	<b>7.31%</b>	<b>7.10%</b>	<b>(3.07%)</b>	<b>3.13%</b>
Mondrian	322,791,134	0.96%	(1.27%)	2.66%	1.13%	(6.05%)	1.47%
Principal Sm Cap Intl	354,869,300	1.06%	5.27%	11.69%	12.77%	(0.26%)	4.74%
MSCI World Small Cap x US	-	-	2.58%	9.51%	10.04%	(0.93%)	5.39%
<b>Emerging Markets</b>	<b>\$1,377,768,464</b>	<b>4.10%</b>	<b>2.61%</b>	<b>11.73%</b>	<b>14.06%</b>	<b>(1.94%)</b>	<b>4.08%</b>
Lazard Emerging Markets	698,602,637	2.08%	2.57%	11.83%	17.56%	3.42%	5.12%
Fisher Investments	679,165,827	2.02%	2.65%	11.44%	10.16%	(7.08%)	2.77%
MSCI Emerging Mkts Idx	-	-	2.37%	7.19%	8.15%	(5.05%)	2.22%
<b>EAFE Composite (Terminated)</b>	<b>\$17,863,791</b>	<b>0.05%</b>	<b>(2.49%)</b>	<b>0.11%</b>	<b>1.06%</b>	<b>(0.83%)</b>	<b>3.95%</b>
<b>Total Equity</b>	<b>\$19,735,570,730</b>	<b>58.72%</b>	<b>7.88%</b>	<b>16.03%</b>	<b>22.42%</b>	<b>5.95%</b>	<b>10.73%</b>
MSCI ACWI IMI Index	-	-	7.72%	15.65%	22.45%	6.31%	10.57%
Total Equity Custom Bnmk (5)	-	-	7.49%	15.38%	21.98%	6.21%	10.59%

Total Fund Benchmark: 27% Russell 3000, 22% MSCI ACWI ex-U.S. IMI, 20% Bloomberg U.S. Aggregate, 12% MSCI ACWI IMI, 10% NCREIF Total, 8% S&P 500 +3% (1 Qtr Lag), 1% FTSE 1-Mo. T-Bill

The Domestic Equity Benchmark is represented by the Russell 3000 Index.

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The Total Fixed Income Benchmark is represented by the Bloomberg U.S. Aggregate Index.

The Real Estate Benchmark is currently represented by the NCREIF Total Index.

The Private Equity Benchmark is currently represented by the S&P 500, Plus 3% (1 Qtr Lag).

The Private Credit Benchmark is represented by 50% Morningstar LSTA 100 Index /

50% Bloomberg U.S. High Yield Index, Plus 1%

## Periodic Rates of Return – Net of Fees (Continued)

As of March 31, 2024

	Market Value \$(Dollars)	Ending Weight	Last Quarter	Fiscal YTD	Last Year	Last 3 Years	Last 5 Years
<b>Domestic Fixed-Income</b>	<b>\$4,371,461,331</b>	<b>13.01%</b>	<b>(0.28%)</b>	<b>3.32%</b>	<b>2.94%</b>	<b>(1.89%)</b>	<b>1.12%</b>
Bimbg Aggregate Index	-	-	(0.78%)	2.56%	1.70%	(2.46%)	0.36%
<b>Short Duration</b>	<b>\$762,887,941</b>	<b>2.27%</b>	<b>0.73%</b>	-	-	-	-
SIT Short Duration FI	762,887,941	2.27%	0.73%	-	-	-	-
Bimbg Gov/Cred 1-3 Yr	-	-	0.42%	3.88%	3.49%	0.25%	1.36%
<b>Core Fixed Income</b>	<b>\$1,323,165,989</b>	<b>3.94%</b>	<b>(0.46%)</b>	<b>3.06%</b>	<b>2.42%</b>	<b>(2.25%)</b>	<b>0.54%</b>
Bimbg Aggregate Index	-	-	(0.78%)	2.56%	1.70%	(2.46%)	0.36%
PIMCO	663,479,876	1.97%	(0.35%)	3.15%	2.71%	(2.18%)	0.63%
Manulife Asset Management	659,692,110	1.96%	(0.56%)	2.86%	2.08%	(2.43%)	0.53%
Bimbg Aggregate Index	-	-	(0.78%)	2.56%	1.70%	(2.46%)	0.36%
<b>Core Plus</b>	<b>\$2,285,407,401</b>	<b>6.80%</b>	<b>(0.09%)</b>	<b>3.70%</b>	<b>3.52%</b>	<b>(1.54%)</b>	<b>1.64%</b>
Loomis Sayles	1,131,065,571	3.37%	(0.30%)	2.64%	2.39%	(1.72%)	1.62%
Prudential Core Plus	1,154,341,830	3.43%	0.11%	4.76%	4.64%	(1.36%)	1.65%
Bimbg Aggregate Index	-	-	(0.78%)	2.56%	1.70%	(2.46%)	0.36%
<b>Emerging Markets Debt</b>	<b>\$708,134,327</b>	<b>2.11%</b>	<b>2.06%</b>	<b>9.45%</b>	<b>11.94%</b>	<b>(1.10%)</b>	<b>1.31%</b>
Wellington EMD	708,134,327	2.11%	2.06%	9.45%	11.94%	(1.10%)	1.31%
EMBI Global Dvsfd Index	-	-	2.04%	8.90%	11.28%	(1.39%)	0.71%
<b>Global Fixed Income</b>	<b>\$1,527,469,999</b>	<b>4.54%</b>	<b>0.19%</b>	<b>4.85%</b>	<b>4.19%</b>	<b>(1.24%)</b>	<b>1.00%</b>
PIMCO Global	760,445,423	2.26%	0.23%	4.76%	4.11%	(1.18%)	1.22%
AllianceBernstein Global	767,024,577	2.28%	0.15%	4.95%	4.27%	(1.30%)	0.75%
Bimbg Global Agg (Hedged)	-	-	0.01%	4.07%	4.14%	(1.29%)	0.80%
<b>Total Fixed Income</b>	<b>\$6,607,065,657</b>	<b>19.66%</b>	<b>0.10%</b>	<b>4.37%</b>	<b>4.21%</b>	<b>(1.62%)</b>	<b>1.15%</b>
Bimbg Aggregate Index	-	-	(0.78%)	2.56%	1.70%	(2.46%)	0.36%
Total Fixed Inc Custom Bnmk (6)	-	-	(0.30%)	3.57%	3.24%	(2.04%)	0.55%

Total Fund Benchmark: 27% Russell 3000, 22% MSCI ACWI ex-U.S. IMI, 20% Bloomberg U.S. Aggregate, 12% MSCI ACWI IMI, 10% NCREIF Total, 8% S&P 500 +3% (1 Qtr Lag), 1% FTSE 1-Mo. T-Bill

The Domestic Equity Benchmark is represented by the Russell 3000 Index.

The Global Equity Benchmark is currently represented by the MSCI ACWI IMI Index.

The International Equity Benchmark is represented by the MSCI ACWI ex-U.S. IMI Index.

The table above shows periodic rates of return. The returns are net of fees.

The Total Fixed Income Benchmark is represented by the Bloomberg U.S. Aggregate Index. The Real Estate Benchmark is currently represented by the NCREIF Total Index.

The Private Equity Benchmark is currently represented by the S&P 500, Plus 3% (1 Qtr Lag).

The Private Credit Benchmark is represented by 50% Morningstar LSTA 100 Index / 50% Bloomberg U.S. High Yield Index, Plus 1%

## Periodic Rates of Return – Net of Fees (Continued)

As of March 31, 2024

	Market Value \$(Dollars)	Ending Weight	Last Quarter	Fiscal YTD	Last Year	Last 3 Years	Last 5 Years
<b>REIT Composite</b>	<b>\$313,789,689</b>	<b>0.93%</b>	<b>(0.39%)</b>	<b>7.27%</b>	<b>10.13%</b>	<b>2.45%</b>	<b>3.92%</b>
REIT Comp Custom Bnmk (7)	-	-	(0.71%)	7.66%	9.53%	1.75%	1.88%
Centersquare	208,062,914	0.62%	(0.45%)	7.28%	10.65%	4.52%	5.18%
FTSE NAREIT Equity Index	-	-	(0.20%)	7.72%	10.54%	4.14%	4.15%
Cohen & Steers	105,726,774	0.31%	(0.13%)	7.44%	9.68%	0.34%	2.59%
EPRA/NAREIT Dev REIT Idx	-	-	(1.05%)	7.98%	8.57%	(0.20%)	0.74%
<b>Core Real Estate</b>	<b>\$1,632,239,214</b>	<b>4.86%</b>	<b>(2.81%)</b>	<b>(9.63%)</b>	<b>(11.60%)</b>	<b>1.45%</b>	<b>1.60%</b>
Principal Capital (Net)	862,998,076	2.57%	(1.93%)	(7.82%)	(9.52%)	2.99%	3.34%
UBS Trumbull Property (Net)	372,679,229	1.11%	(1.79%)	(7.08%)	(10.25%)	0.21%	(1.23%)
JPMCB Strategic Property (Net)	396,561,909	1.18%	(5.55%)	(15.38%)	(16.86%)	(0.46%)	0.80%
NFI-ODCE Equal Weight Net	-	-	(2.39%)	(9.58%)	(12.34%)	2.80%	2.98%
NFI-ODCE Value Weight Net	-	-	(2.58%)	(9.40%)	(12.01%)	2.47%	2.56%
<b>Core Plus Real Estate</b>	<b>\$227,615,477</b>	<b>0.68%</b>	<b>(2.77%)</b>	<b>(14.05%)</b>	<b>(18.10%)</b>	<b>(1.35%)</b>	<b>0.46%</b>
UBS Trumbull Property G&I (Net)	227,615,477	0.68%	(2.77%)	(14.05%)	(18.10%)	(1.35%)	0.46%

Total Fund Benchmark: 27% Russell 3000, 22% MSCI ACWI ex-U.S. IMI, 20% Bloomberg U.S. Aggregate, 12% MSCI ACWI IMI, 10% NCREIF Total, 8% S&P 500 +3% (1 Qtr Lag), 1% FTSE 1-Mo. T-Bill

The Domestic Equity Benchmark is represented by the Russell 3000 Index.

The Global Equity Benchmark is currently represented by the MSCI ACWI IMI Index.

The International Equity Benchmark is represented by the MSCI ACWI ex-U.S. IMI Index.

The table above shows periodic rates of return. The returns are net of fees.

The Total Fixed Income Benchmark is represented by the Bloomberg U.S. Aggregate Index. The Real Estate Benchmark is currently represented by the NCREIF Total Index.

The Private Equity Benchmark is currently represented by the S&P 500, Plus 3% (1 Qtr Lag).

The Private Credit Benchmark is represented by 50% Morningstar LSTA 100 Index / 50% Bloomberg U.S. High Yield Index, Plus 1%

## Periodic Rates of Return – Net of Fees (Continued)

As of March 31, 2024

	Market Value \$(Dollars)	Ending Weight	Last Quarter	Fiscal YTD	Last Year	Last 3 Years	Last 5 Years
<b>Non-Core Real Estate</b>	<b>\$706,391,018</b>	<b>2.10%</b>	<b>(4.52%)</b>	<b>(9.46%)</b>	<b>(10.43%)</b>	<b>5.07%</b>	<b>7.04%</b>
AEW Partners VI	752,322	0.00%	1.38%	2.87%	3.72%	1.63%	30.50%
AEW Partners VII	3,696,758	0.01%	(0.28%)	(7.31%)	(13.41%)	(3.79%)	(4.45%)
AEW Partners VIII	15,499,295	0.05%	6.74%	9.37%	10.60%	22.28%	20.06%
AEW Partners IX	63,158,462	0.19%	3.98%	7.00%	8.44%	4.67%	-
Heitman VP III	394,389	0.00%	(9.15%)	(0.61%)	0.70%	3.11%	7.48%
Heitman VP IV	34,495,068	0.10%	(0.11%)	1.03%	1.39%	12.89%	12.70%
Heitman VP V	51,429,535	0.15%	(2.19%)	(3.31%)	(2.61%)	-	-
AG Core Plus III	1,141,756	0.00%	5.56%	22.95%	21.91%	(6.71%)	(8.38%)
AG Core Plus IV	18,352,911	0.05%	(2.03%)	(16.24%)	(18.51%)	(9.17%)	(2.81%)
AG Realty Fund X	51,512,414	0.15%	(1.48%)	(5.91%)	(7.36%)	13.49%	-
AG Realty Value Fd XI	15,719,925	0.05%	(4.35%)	0.13%	(2.57%)	-	-
Invesco US Income Fund	165,953,238	0.49%	(1.99%)	(8.39%)	(8.48%)	-	-
Invesco VA Fund IV	1,879,287	0.01%	(12.93%)	(34.11%)	(52.54%)	(36.22%)	(21.11%)
Invesco VA Fund V	58,723,347	0.17%	(24.02%)	(28.71%)	(28.72%)	(1.64%)	1.08%
Invesco Real Estate US Fund VI	35,749,126	0.11%	(13.77%)	(14.35%)	(17.45%)	-	-
TA Associates Realty Fund XI	9,142,780	0.03%	0.46%	(28.66%)	(36.82%)	(6.04%)	0.86%
TA Associates Realty Fund XII	94,389,001	0.28%	(1.79%)	(6.60%)	(6.53%)	16.28%	-
TA Associates Realty Fund XIII	14,282,698	0.04%	(7.82%)	-	-	-	-
Westbrook RE Fund X	15,127,584	0.05%	(17.31%)	(25.90%)	(28.97%)	(8.01%)	(1.78%)
Westbrook RE Fund XI	54,204,216	0.16%	(1.56%)	0.02%	1.75%	11.69%	-
NCREIF Total Index	-	-	(3.02%)	(7.24%)	(9.07%)	2.92%	3.33%
<b>Timber Composite</b>	<b>\$42,360,553</b>	<b>0.13%</b>	<b>(4.09%)</b>	<b>(2.66%)</b>	<b>(3.03%)</b>	<b>4.23%</b>	<b>6.62%</b>
Hancock Timber Portfolio	42,360,553	0.13%	(4.09%)	(2.66%)	(3.03%)	4.23%	6.62%
NCREIF Timberland Index	-	-	4.34%	10.35%	12.24%	11.79%	7.50%
<b>Total Real Estate</b>	<b>\$2,922,395,950</b>	<b>8.69%</b>	<b>(2.97%)</b>	<b>(8.64%)</b>	<b>(10.28%)</b>	<b>1.55%</b>	<b>2.54%</b>
Real Estate Benchmark (8)	-	-	(3.02%)	(7.24%)	(9.07%)	2.92%	3.33%

Total Fund Benchmark: 27% Russell 3000, 22% MSCI ACWI ex-U.S. IMI, 20% Bloomberg U.S. Aggregate, 12% MSCI ACWI IMI, 10% NCREIF Total, 8% S&P 500 +3% (1 Qtr Lag), 1% FTSE 1-Mo. T-Bill

The Domestic Equity Benchmark is represented by the Russell 3000 Index.

The Global Equity Benchmark is currently represented by the MSCI ACWI IMI Index.

The International Equity Benchmark is represented by the MSCI ACWI ex-U.S. IMI Index.

The table above shows periodic rates of return. The returns are net of fees.

The Total Fixed Income Benchmark is represented by the Bloomberg U.S. Aggregate Index.

The Real Estate Benchmark is currently represented by the NCREIF Total Index.

The Private Equity Benchmark is currently represented by the S&P 500, Plus 3% (1 Qtr Lag).

The Private Credit Benchmark is represented by 50% Morningstar LSTA 100 Index /

50% Bloomberg U.S. High Yield Index, Plus 1%

## Periodic Rates of Return – Net of Fees (Continued)

As of March 31, 2024

	Market Value \$(Dollars)	Ending Weight	Last Quarter	Fiscal YTD	Last Year	Last 3 Years	Last 5 Years
<b>Private Equity</b>	<b>\$3,928,580,049</b>	<b>11.69%</b>	<b>1.38%</b>	<b>3.19%</b>	<b>4.77%</b>	<b>12.17%</b>	<b>16.36%</b>
Pathway PEF XXIII Series 2008	238,266,665	0.71%	(0.08%)	2.09%	2.49%	4.52%	11.53%
Pathway PEF XXIII Series 2013	726,999,291	2.16%	1.62%	2.57%	4.47%	8.25%	16.52%
Pathway PEF XXIII Series 2016	1,316,780,093	3.92%	0.79%	4.72%	5.61%	15.06%	19.51%
Pathway PEF XXIII Series 2021	297,574,479	0.89%	1.99%	7.24%	9.48%	-	-
Grosvenor Diversified Partners	156,020,885	0.46%	(4.37%)	(17.97%)	(18.28%)	(0.38%)	5.19%
Grosvenor Div Partners 2014 Ser	716,505,826	2.13%	2.92%	3.21%	6.00%	18.19%	17.98%
Grosvenor Div Partners 2018 Ser	476,432,810	1.42%	2.80%	7.64%	10.29%	15.33%	12.62%
Private Equity Benchmark (9)	-	-	12.31%	19.86%	29.64%	9.15%	15.03%
<b>Private Credit</b>	<b>\$32,715,615</b>	<b>0.10%</b>	-	-	-	-	-
Private Credit Benchmark (10)	-	-	5.42%	-	-	-	-
<b>Cash</b>	<b>\$383,923,616</b>	<b>1.14%</b>	<b>1.36%</b>	<b>4.41%</b>	<b>5.73%</b>	<b>2.93%</b>	<b>2.14%</b>
1mo T-Bill	-	-	1.36%	4.15%	5.40%	2.65%	2.00%
<b>Total Fund</b>	<b>\$33,610,251,617</b>	<b>100.00%</b>	<b>4.49%</b>	<b>9.25%</b>	<b>12.67%</b>	<b>4.48%</b>	<b>8.56%</b>
Policy Benchmark*	-	-	5.07%	10.78%	14.97%	4.62%	8.39%

**Total Fund Benchmark:** 27% Russell 3000, 22% MSCI ACWI ex-U.S. IMI, 20% Bloomberg U.S. Aggregate, 12% MSCI ACWI IMI, 10% NCREIF Total, 8% S&P 500 +3% (1 Qtr Lag), 1% FTSE 1-Mo. T-Bill

The Domestic Equity Benchmark is represented by the Russell 3000 Index.

The Global Equity Benchmark is currently represented by the MSCI ACWI IMI Index.

The International Equity Benchmark is represented by the MSCI ACWI ex-U.S. IMI Index.

The table above shows periodic rates of return. The returns are **net of fees**.

The Total Fixed Income Benchmark is represented by the Bloomberg U.S. Aggregate Index.

The Real Estate Benchmark is currently represented by the NCREIF Total Index.

The Private Equity Benchmark is currently represented by the S&P 500, Plus 3% (1 Qtr Lag).

The Private Credit Benchmark is represented by 50% Morningstar LSTA 100 Index /

50% Bloomberg U.S. High Yield Index, Plus 1%

Callan

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## **Appendix: Benchmark Definitions**

## Benchmark Definitions

**Total Fund Benchmark (Target):** Blend of asset class benchmarks at policy weights. The 1Q 2024 Target represents the legacy policy target weights. A new long-term strategic asset allocation was approved in 2022; however, the legacy allocation targets and Total Fund Benchmark will be maintained until the new complementary strategies have been implemented.

<u>Asset Class</u>	<u>Benchmark</u>	<u>1Q 2024 Target</u>	<u>Long-Term Target</u>
U.S. Equity	Russell 3000 Index	27.0%	25.0%
International Equity	MSCI ACWI ex U.S. IMI Index	22.0	20.0
Global Equity	MSCI ACWI IMI Index	12.0	12.0
Private Equity	S&P 500 Index +3% (1 Quarter Lag)	8.0	10.0
Fixed Income	Bloomberg U.S. Aggregate Bond Index	20.0	18.0
Private Credit	Private Credit Benchmark (TBD)	0.0	2.0
Real Estate	NCREIF Total Index	10.0	10.0
Infrastructure	Infrastructure Benchmark (TBD)	0.0	2.0
Cash	FTSE 1 Month T-Bill	1.0	1.0
	<b>Total PERS Target Benchmark</b>	<b>100%</b>	<b>100%</b>

### Asset Class Benchmarks:

- 1) **U.S. Equity Benchmark:** 65% S&P 500 Index and 35% Russell 2500 Index through 9/30/2015; then Russell 3000 thereafter.
- 2) **International Equity Benchmark:** MSCI ACWI ex-U.S. through 6/30/2013; then MSCI ACWI ex-U.S. IMI thereafter.
- 3) **International Equity Custom Benchmark:** MSCI ACWI ex-U.S. through 6/30/13; MSCI ACWI ex-U.S. IMI Index through 9/30/2015; then 35% MSCI EAFE Hedged; 35% MSCI ACWI ex-U.S. IMI; 20% MSCI Emerging Markets; 5% MSCI ACWI ex-U.S. Small Cap; and 5% MSCI World ex-U.S. Small Cap thereafter.
- 4) **Global Equity Benchmark:** MSCI World Index through 6/30/2012; MSCI ACWI through 9/30/2015; then MSCI ACWI IMI thereafter.
- 5) **Total Equity Benchmark:** 49% Russell 3000 Index, 36% MSCI ACWI ex-U.S. IMI Index, and 15% MSCI AC World Index through 9/30/2015; then 44% Russell 3000 Index, 36% MSCI ACWI ex U.S. IMI Index, and 20% MSCI ACWI IMI thereafter
- 6) **Private Equity Benchmark:** S&P 500 Index + 5% per annum through 3/31/13; S&P 500 Index + 3% per annum through 6/30/22; then S&P 500 Index + 3% per annum (1 Quarter Lag) with 3Q22 equal to actual Private Equity composite return thereafter.
- 7) **Total Fixed Income Benchmark:** 55% Barclays Aggregate Index, 25% Barclays Global Aggregate Index Hedged, 10% Barclays US TIPS Index, and 10% EMBI Global Diversified through 9/30/2015; then 65% Barclays Aggregate Index, 25% Barclays Global Aggregate Index Hedged, and 10% EMBI Global Diversified thereafter.
- 8) **Private Credit Benchmark:** 50% Morningstar LSTA 100 / 50% Bloomberg High Yield, plus 1% per annum.
- 9) **REIT Composite Benchmark:** 50% US Select REIT Index and 50% EPRA/NAREIT Developed REIT Index.
- 10) **Total Real Estate Benchmark:** NFI-ODCE Equal Weight Net to 5/31/99; No Benchmark to 9/30/03; 50% NFI-ODCE Equal Weight Net and 50% US Select REIT Index to 6/30/06; 80% NFI-ODCE Equal Weight Net and 20% US Select REIT Index to 6/30/10; 20% NAREIT RE 50 Index, 15% NCREIF Property Index, 10% NCREIF Timberland Index, 55% NFI-ODCE Equal Weight Net to 6/30/12; 15% NAREIT RE 50 Index, 15% NCREIF Property Index, 10% NCREIF Timberland Index, and 60% NFI-ODCE Equal Weight Net to 6/30/13; then NCREIF Property Index thereafter.

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## Important Disclosures

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## Important Disclosures (continued)

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Past performance is no guarantee of future results.

**To:** Investment Committee  
**Date:** April 23, 2024  
**Re:** International Small Cap Search

The Investments Department is always looking for ways to improve investment performance at the most competitive fees. I am pleased to announce that this has been accomplished during our process of searching for a replacement for Mondrian Investment Partners (Mondrian) in the International Small Cap Equity sleeve of the portfolio. Northern Trust Asset Management's (NTAM) quantitative strategies have demonstrated an ability to effectively attain relative excess returns through the application of their multi-factor quantitative models at an extremely attractive price. Through NTAM's focus on efficiency in managing its costs and with an existing relationship discount they have offered their strategy for 11 basis points (based on a portfolio value of \$300 million). To give some context, if this strategy were to be implemented, it would save nearly \$2 million, a year, in management fees.

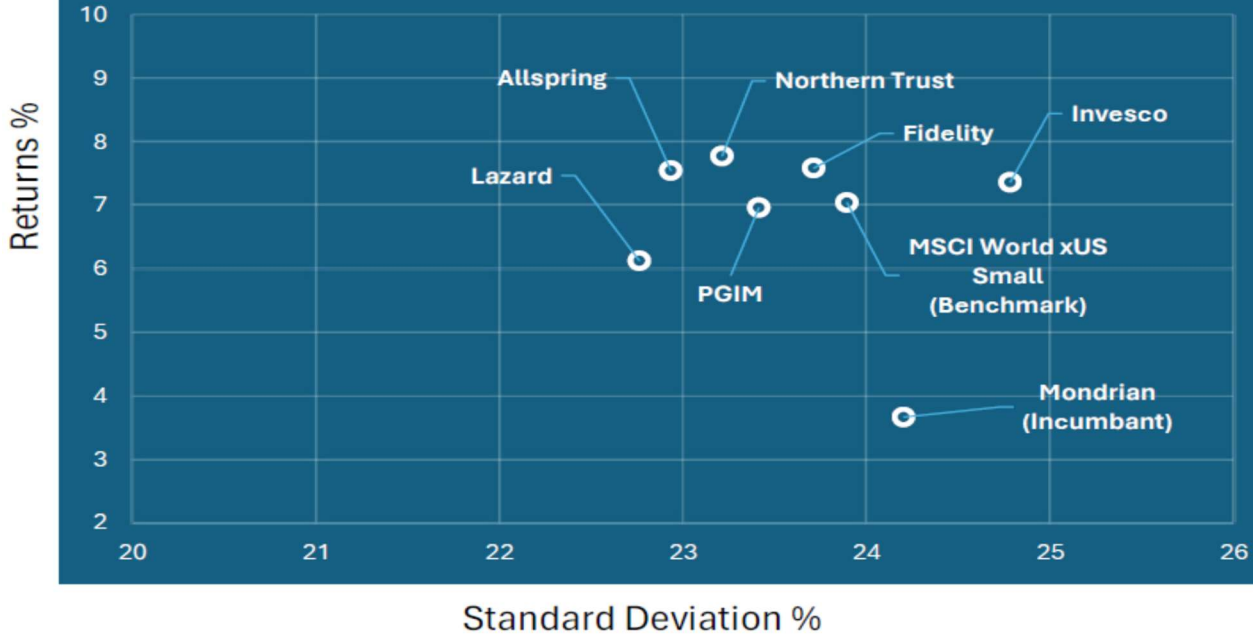
Ultimately, as fiduciaries we must balance our need for portfolios that produce attractive risk-adjusted excess returns and low management fees; Northern Trust's quantitative strategies have given PERS an incredibly appealing solution that is highly efficient, at 11 basis points, without sacrificing quality.

It is my recommendation as Chief Investment Officer that the contract for International Small Cap Equities to replace Mondrian be awarded to Northern Trust.

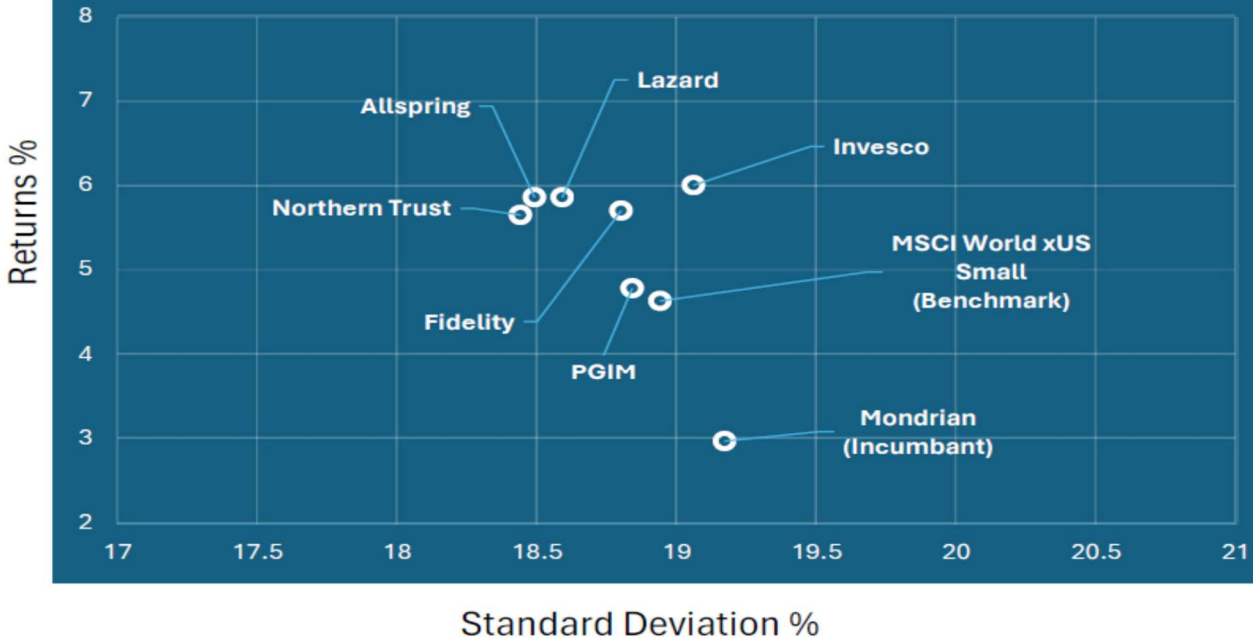
I have included on the following pages:

- Charts depicting the 5- and 10- year risk/reward charts for all the firms interviewed, the incumbent, and the benchmark net of fees.
- A list of advantages that quantitative investing can provide.

### RISK/REWARD FOR FIVE YEARS ENDED DEC. 31, 2023 NET OF FEES



### RISK/REWARD FOR TEN YEARS ENDED DEC. 31, 2023 NET OF FEES



Quantitative investing is an investment strategy that relies on mathematical and statistical models to make investment decisions. It differs from other forms of active investing, such as fundamental analysis, which requires evaluating a company's financials, management, industry, and market conditions. Quantitative investing can provide several advantages (in certain markets) compared to traditional fundamental analysis.

- **Objective/Unbiased Approach:** Quantitative investing is data-driven, treating investing as a science, reducing the impact of emotional biases that can influence decision-making in traditional fundamental analysis.
- **Systematic and Repeatable:** Quantitative models are systematic and rules-based, allowing for consistent application across different securities and markets. This reduces the reliance on individual judgment and increases replicability. This is even more advantageous where traditional manager "Skill" is difficult to find.
- **Back-Testing:** Quantitative strategies can be tested on historical data to evaluate their past performance. This enables refinement and optimization before actual capital is utilized.
- **Scalability/Portability:** Quantitative strategies can be applied to a large number of securities simultaneously, making them suitable for managing portfolios with diverse holdings, across different asset classes and markets. This is especially valuable in markets like Small Cap International; a market that contains almost 2,400 companies representing approximately 14% of the market capitalization in each country represented in the index.
- **Velocity:** Advancements in technology enable quantitative models to process large amounts of data rapidly. This allows for the identification and exploitation of short-term market inefficiencies or arbitrage opportunities.
- **Risk Management:** Quantitative models often integrate risk management tools to limit exposure to specific risks or perfunctorily rebalance portfolios based on changing market environments.
- **Reduction of Behavioral Biases:** Quantitative models are designed to minimize behavioral biases, such as overconfidence and anchoring, which can often affect traditional investment strategies.
- **Multifactor Models:** Quantitative strategies can incorporate multiple factors and variables, such as value, momentum, quality, and size, to enhance performance.
- **Statistical Analysis:** Quantitative models employ rigorous statistical techniques to assess the significance of relationships between variables, leading to more data-driven decision-making.
- **Reliability:** Quantitative models apply the same criteria and rules consistently over time, resulting in more stable investment decisions.
- **Broad Coverage:** Quantitative models can scan and analyze a wide range of information sources, including financial statements, news, social media sentiment, and macroeconomic data, to inform investment decisions.
- **Automation:** Numerous properties of quantitative investing can be systematized, reducing the need for constant individual oversight, thus lowering operational costs.

April 23, 2024



## **Public Employees' Retirement System of Mississippi**

Investment Manager Search  
International Small Cap Developed

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# Non-U.S. Equity Developed Small Core Manager Evaluation

## Manager candidates

	Investment Manager	Strategy
<i>The following investment manager organizations have submitted information to Callan regarding their investment management capabilities. The information has been summarized in this report for the consideration of Mississippi Public Employees' Retirement System.</i>	Allspring Global Investments, LLC	Special International Small Company Equity
	Fidelity Institutional Asset Management	FIAM Select International Small Cap
	Invesco	Invesco International Small Cap Dynamic Multifactor Equity
	Lazard Asset Management	EAFE Small Cap Equity Advantage
	Northern Trust Asset Management	NT Quality Small Cap Core International Strategy
	PGIM Quantitative Solutions LLC	PGIM Quantitative Solutions International Small Cap Equity

# Non-U.S. Equity Developed Small Core Manager Evaluation

## Candidate firm summary

	Allspring Global Investments, LLC	Fidelity Institutional Asset Management	Invesco	Lazard Asset Management	Northern Trust Asset Management	PGIM Quantitative Solutions LLC
Headquarters	Charlotte, NC	Smithfield, RI	Atlanta, GA	New York, NY	Chicago, IL	Newark, NJ
Ownership / Parent	Other / N/A	Other / Fidelity Investments	Publicly Owned / Invesco Ltd.	Publicly Owned / Lazard Freres & Co. LLC (LF&Co.)	Publicly Owned / The Northern Trust Corporation	Subsidiary / PGIM, Inc.
Total Firm Assets (\$mm)	432,939	386,331	1,585,344	206,957	1,180,585	94,803
Have any open regulatory exams/investigations been escalated to enforcement?	No	No	No	No	No	No
Date of Last SEC Exam	03/20/2018	09/01/2018	07/25/2022	11/01/2019	03/31/2018	03/01/2017
GIPS Compliant	Yes	Yes	Yes	Yes	Yes	Yes
E&O Insurance	Yes	Yes	Yes	Yes	Yes	Yes
Disaster Recovery Plan in Place	Yes	Yes	Yes	Yes	Yes	Yes

# Non-U.S. Equity Developed Small Core Manager Evaluation

## Candidate product summary

	Allspring Global Investments, LLC	Fidelity Institutional Asset Management	Invesco	Lazard Asset Management	Northern Trust Asset Management	PGIM Quantitative Solutions LLC
Product Name	Special International Small Company Equity	FIAM Select International Small Cap	Invesco International Small Cap Dynamic Multifactor Equity	EAFE Small Cap Equity Advantage	NT Quality Small Cap Core International Strategy	PGIM Quantitative Solutions International Small Cap Equity
Product Benchmark	MSCI:World xUS Small	S&P:Dev xUS Small GD	MSCI:World xUS Small	MSCI:EAFE Small	MSCI:World xUS Small	MSCI:EAFE Small
Proposed Vehicle	Sep Acc	Sep Acc	Sep Acc	Sep Acc	Sep Acc	Sep Acc
Product / Vehicle Inception	2012 / 2012	1995 / 1995	2003 / 2003	2008 / 2008	2014 / 2014	2011 / 2011
Total Product Assets (\$mm)	781	2,904	-	339	-	19
Total Vehicle Assets (\$mm)	553	1,231	-	167	-	19
Number of Holdings	70	197	1,210	431	1,458	295
Annual Turnover	16%	24%	394%	84%	15%	116%
Emerging Market Exposure*	0% (97th)	6% (52nd)	12% (29th)	0% (76th)	0% (80th)	0% (97th)
Combined Z-Score*	0.03 (57th)	0.05 (56th)	-0.62 (88th)	-0.25 (74th)	-0.01 (64th)	-0.05 (65th)
Weighted Median Market Cap*	2.60 (42nd)	2.03 (60th)	0.94 (99th)	1.45 (92nd)	2.45 (53rd)	2.30 (57th)

Note: MSCI World ex-USA Small Cap Index contains 2,384 securities (as of February 29, 2024).

\*Results reflect ranking vs. Callan International Small Cap in parenthesis



# Manager Summary Matrix

## Allspring Global Investments

	Organization/Team	Strategy/Portfolio	Summary Opinion
<b>Allspring Global Investments, LLC</b>  Special International Small Company Equity	<ul style="list-style-type: none"> <li>- In November 2021, Allspring, previously Wells Fargo Asset Management, a subsidiary of Wells Fargo Bank, was acquired by private equity firms GTCR LLC and Reverence Capital Partners, L.P. Employees own approximately 20% of the firm's equity.</li> <li>- Joe Sullivan, the former head of Legg Mason, was named the chief executive and chair of Allspring. Sullivan replaced Nico Marais, WFAM's CEO since June 2019, remains as a senior adviser.</li> <li>- Strategy co-managed by Jim Tringas and Bryant VanCronkhite.</li> <li>- Tringas and VanCronkhite are supported by two co-portfolio managers and 10 analysts.</li> </ul>	<ul style="list-style-type: none"> <li>- Employs a bottom-up, fundamental process to construct the strategy.</li> <li>- Seeks to take advantage of market inefficiencies regarding underappreciated companies with a durable asset base, flexible balance sheet, and strong free cash flow.</li> <li>- Portfolio holds 50-80 names with expected annual turnover of 10%-50%.</li> <li>- Core quality strategy.</li> </ul>	<ul style="list-style-type: none"> <li>- The stability that the firm and its teams have demonstrated throughout this ownership transition has resulted in fewer uncertainties under the new parent organization.</li> <li>- Deep and seasoned team with CPA pedigree.</li> <li>- Differentiated balance sheet optimization approach to value companies and identify asymmetric opportunities.</li> <li>- Strategy veers toward quality and exhibits beta of 0.8-0.9.</li> <li>- Client concentration is notable.</li> <li>- Viable for a standalone or multi-manager structure given the core/quality portfolio characteristics and risk/return profile.</li> </ul>

# Manager Summary Matrix

## Fidelity Institutional Asset Management (FIAM)

	Organization/Team	Strategy/Portfolio	Summary Opinion
<b>Fidelity Institutional Asset Management</b>  FIAM Select International Small Cap	<ul style="list-style-type: none"> <li>- Wholly-owned subsidiary of FMR LLC, also known as Fidelity Investments, launched in 2005.</li> <li>- Fidelity Investments was founded by Edward Johnson II in 1946.</li> <li>- Privately held, headquartered in Boston, and controlled by the Johnson family with 49% ownership, and the remaining 51% is owned by employees.</li> <li>- Shah Badkoubei replaced Robert Feldman as lead portfolio manager in 2018 due to health reasons.</li> <li>- Subu Balakrishnan was appointed as assistant portfolio manager in January 2023.</li> <li>- Badkoubei and Balakrishnan are supported by eight dedicated analysts.</li> <li>- Team leverages the broader Fidelity research platform consisting of over 150 analysts.</li> </ul>	<ul style="list-style-type: none"> <li>- Combines qualitative stock selection (based on analyst ratings) with quantitative risk management (optimization model).</li> <li>- Seeks to identify high quality companies (e.g., strong management, positive earnings surprises) exhibiting growth (e.g., improving sales growth, profitability) and attractive valuations.</li> <li>- Portfolio constrained to +/-3% country and sector, and +/-2% security, versus the index.</li> <li>- Strategy consists of 190-210 names with expected annual turnover of 20%-50%.</li> <li>- Diversified, core portfolio with a modest growth tilt.</li> </ul>	<ul style="list-style-type: none"> <li>- Stable organization enabled by the ownership structure.</li> <li>- Strategy is well-resourced.</li> <li>- Performance driven by stock selection given the portfolio and risk management.</li> <li>- Viable for a standalone and multi-manager structure given the diversified, core/growth portfolio characteristics and risk/return profile.</li> </ul>

# Manager Summary Matrix

## Invesco

	Organization/Team	Strategy/Portfolio	Summary Opinion
Invesco  Invesco International Small Cap Dynamic Multifactor Equity	<ul style="list-style-type: none"> <li>- Wholly owned subsidiary of Invesco Ltd. (NYSE IVZ); employees and employee trust own approximately 10%.</li> <li>- In June 2023, Andrew Schlossberg succeeded Marty Flanagan as President and CEO of Invesco. He also became a member of the Invesco Ltd. Board of Directors on June 30, 2023. Flanagan will serve as Chairman Emeritus until December 31, 2024.</li> <li>- The Invesco Solutions team is led by Alessio de Longis, Head of Investments, and Mo Haghbin, Head of Solutions.</li> </ul>	<ul style="list-style-type: none"> <li>- Designed to provide exposure to the FTSE Dynamic Multifactor Index, which was co-developed by Longis and Haghbin using FTSE Russell's factor definitions and index methodology.</li> <li>- The FTSE Dynamic Multifactor Index aims to identify macro regimes and tactically allocated to risk premia based on the macro regime analysis.</li> <li>- Macro regimes are assessed using leading economic indicators and country-level total return indexes across equity, credit and fixed income markets for both developed and emerging markets.</li> <li>- The factors that are allocated to within various macro regimes include size, value, momentum, low volatility, and quality.</li> <li>- The index provides a diversified portfolio of approximately 200-1200 holdings with annual turnover of 200% - 300%.</li> <li>- Intended to be a core strategy.</li> </ul>	<ul style="list-style-type: none"> <li>- There are no immediate concerns regarding the retirement of CEO Marty Flanagan and the subsequent succession of Andrew Schlossberg as CEO. This transition is not expected to materially impact the firms' underlying investment strategies.</li> <li>- Rules-based investment process allows for transparency.</li> <li>- Efficacy of the macro regime model within the non-U.S. small cap universe is a point of uncertainty.</li> <li>- Unproven strategy that is not live. No live performance track record with only simulated results available to demonstrate the strategy's hypothetical performance profile is a consideration.</li> </ul>

# Manager Summary Matrix

## Lazard Asset Management

	Organization/Team	Strategy/Portfolio	Summary Opinion
<b>Lazard Asset Management</b>  EAFE Small Cap Equity Advantage	<ul style="list-style-type: none"> <li>- Lazard Asset Management ("LAM") was established in 1970 in New York City; firm roots date back to founding of Lazard Freres &amp; Co, a banking and financial services firm.</li> <li>- In 2005, LAM company went public on the New York Stock Exchange under the ticker symbol "LAZ".</li> <li>- Led by Paul Moghtader, the Advantage quant team joined Lazard in 2007-2008 from SSGA.</li> <li>- Team consists of nine portfolio managers, two client portfolio managers, and two analysts.</li> </ul>	<ul style="list-style-type: none"> <li>- Employs a bottom-up multi-factor model to construct the strategy.</li> <li>- Quant model consists of ~30% value, ~30% growth, ~30% market sentiment, and ~10% quality factors.</li> <li>- Quant research uniquely leverages 76 central fundamental analysts.</li> <li>- Portfolio typically holds 250-450 names with annual turnover of 100%-150%.</li> <li>- Diversified, risk-controlled core strategy with a slight value tilt.</li> </ul>	<ul style="list-style-type: none"> <li>- Stable organization.</li> <li>- Lazard Ltd. implemented a workforce reduction of 10% in 2023.</li> <li>- CFO Evan Russo replaced Ashish Bhutani as CEO of Lazard Asset Management, effective June 2022.</li> <li>- Stable and deep investment team.</li> <li>- Recent elevated analyst turnover results in a notable opinion, based more on caution of any further changes rather than any current impact to the strategy.</li> <li>- Tested process with a track record of model innovation.</li> <li>- Utilization of fundamental team to enhance alpha signals is unique relative to peers .</li> <li>- History of struggling during market inflection points relative to peers; potentially due to holistic portfolio construction.</li> <li>- Viable for a standalone or a multi-manager structure given the diversified core/value portfolio characteristics and risk/return profile.</li> </ul>

# Manager Summary Matrix

## Northern Trust Asset Management

	Organization/Team	Strategy/Portfolio	Summary Opinion
<b>Northern Trust Asset Management</b>  NT Quality Small Cap Core International Strategy	<ul style="list-style-type: none"> <li>- Founded in 1889 and based in Chicago, organized as international bank holding company and is publicly traded (ticker: NTRS).</li> <li>- Head of Small Cap Portfolio Management Robert Bergson leads research and implementation of the small cap equity strategies and is supported by a team of 11 quantitative analysts.</li> </ul>	<ul style="list-style-type: none"> <li>- Employs a quantitative approach to construct a portfolio with focused exposure to the quality factor.</li> <li>- Multi-factor models divide the universe into value and growth segments by P/B and then rank each universe by quality using value-specific (e.g., quality of earnings, sources of financing, efficiency of company assets, etc.) and growth-specific (e.g., stability of earnings, ROA, sales growth rates, capex, etc.) quality metrics and eliminate lower quality stocks accounting for ~10% of the universe. A momentum filter is also used to remove low momentum stocks.</li> <li>- Portfolio constraints include region +/- 200 bps, sector +/- 100 bps, security +/- 50 bps relative to the benchmark.</li> <li>- Portfolio holdings expected to be in the 1500-2500 stock range with expected annual turnover of 15% - 20%.</li> <li>- Quality-tilted strategy with an overweight to microcaps.</li> </ul>	<ul style="list-style-type: none"> <li>- Stable organization.</li> <li>- Experienced team.</li> <li>- Limited live track record from 2014-2020. The live track record has been combined with simulated returns to demonstrate a hypothetical continuous performance track record.</li> <li>- Certain aspects of the International Small Cap Core strategy differ from the established U.S. small cap strategies due to differences between the universes and data reliability.</li> <li>- Fees are attractive relative to active strategies while slightly more expensive than passive multi-factor solutions.</li> <li>- Tends to underperform when lower quality stocks are leading the market.</li> <li>- Live track record excess return and tracking error was more muted than simulated time periods.</li> <li>- Lack of continuous live track record is a consideration.</li> </ul>

# Manager Summary Matrix

## PGIM Quantitative Solutions

	Organization/Team	Strategy/Portfolio	Summary Opinion
<p><b>PGIM Quantitative Solutions LLC</b></p> <p>PGIM Quantitative Solutions International Small Cap Equity</p>	<ul style="list-style-type: none"> <li>- Founded in 1975, PGIM Quantitative Solutions LLC (PGIM QS) is a limited liability company positioned as a business unit under the publicly traded company Prudential Financial (PGIM). PGIM QS operates as the PGIM quantitative subsidiary, offering a diverse set of quantitative strategies and vehicles.</li> <li>- Head of Quantitative Equity Stacie Mintz leads the team of ~15 quantitative PM/analysts.</li> </ul>	<ul style="list-style-type: none"> <li>- Employs a quantitative approach using both bottom-up and top-down models to construct a multi-factor strategy based on fundamental insights that systematically adapts to changing growth rates and market conditions.</li> <li>- Bottom-up stock selection generates 80% of expected alpha while top-down models account for 20%.</li> <li>- The team utilizes over 30 signals grouped into value, growth, and quality factors that are weighted for each stock based on the company's growth rates.</li> <li>- The top-down component evaluates industry and country metrics to tilt the portfolio towards attractive areas.</li> <li>- Portfolio typically holds 200-300 stocks with annual turnover of 80% - 120%.</li> <li>- Diversified, core strategy.</li> </ul>	<ul style="list-style-type: none"> <li>- Stable organization.</li> <li>- Team is stable and experienced.</li> <li>- Tested process with a live track record that provides consistent exposure to value, growth and quality factors.</li> <li>- Robust models, but may not be at the cutting edge of quantitative investing.</li> <li>- Strategy may struggle when any one factor is significantly out of favor.</li> <li>- Strategy assets have seen a significant decline since 2017 and have remained quite low since 2021.</li> <li>- Viable as a standalone or within a multi-manager structure given the diversified, core portfolio characteristics.</li> </ul>

# Non-U.S. Equity Developed Small Core Manager Evaluation

## Proposed vehicle information and fees

	Minimum Account Size (\$mm)	Proposed Fee (%)*	Comments
<b>Allspring</b> <i>Separate Account</i>	15	0.55	<ul style="list-style-type: none"> <li>Flat fee schedule of 0.55%</li> </ul>
<b>Fidelity</b> <i>Separate Account</i>	50	0.66	<ul style="list-style-type: none"> <li>Fee schedule: 0.70% on first \$100mm, 0.65% on next \$150mm, 0.60% on remaining balance</li> </ul>
<b>Invesco</b> <i>Separate Account</i>	250	0.28	<ul style="list-style-type: none"> <li>Fee schedule: 0.28% on first \$250mm, 0.25% on next \$750mm, and 0.22% on remaining balance</li> </ul>
<b>Lazard</b> <i>Separate Account</i>	25	0.35	<ul style="list-style-type: none"> <li>Fee schedule: 0.43% on first \$100mm, 0.33% on next \$100mm, and 0.29% on remaining balance</li> <li>Includes a 5% reduction in management fees for MSPERS existing investment in Lazard Emerging Market Equity</li> </ul>
<b>Northern Trust</b> <i>Separate Account</i>	25	0.11	<ul style="list-style-type: none"> <li>Fee schedule: 0.15% on first \$50mm, 0.13% on next \$50mm, and 0.10% on remaining balance</li> <li>Minimum fee of \$100,000</li> </ul>
<b>PGIM</b> <i>Separate Account</i>	50	0.19	<ul style="list-style-type: none"> <li>Flat fee schedule of 0.19%</li> </ul>

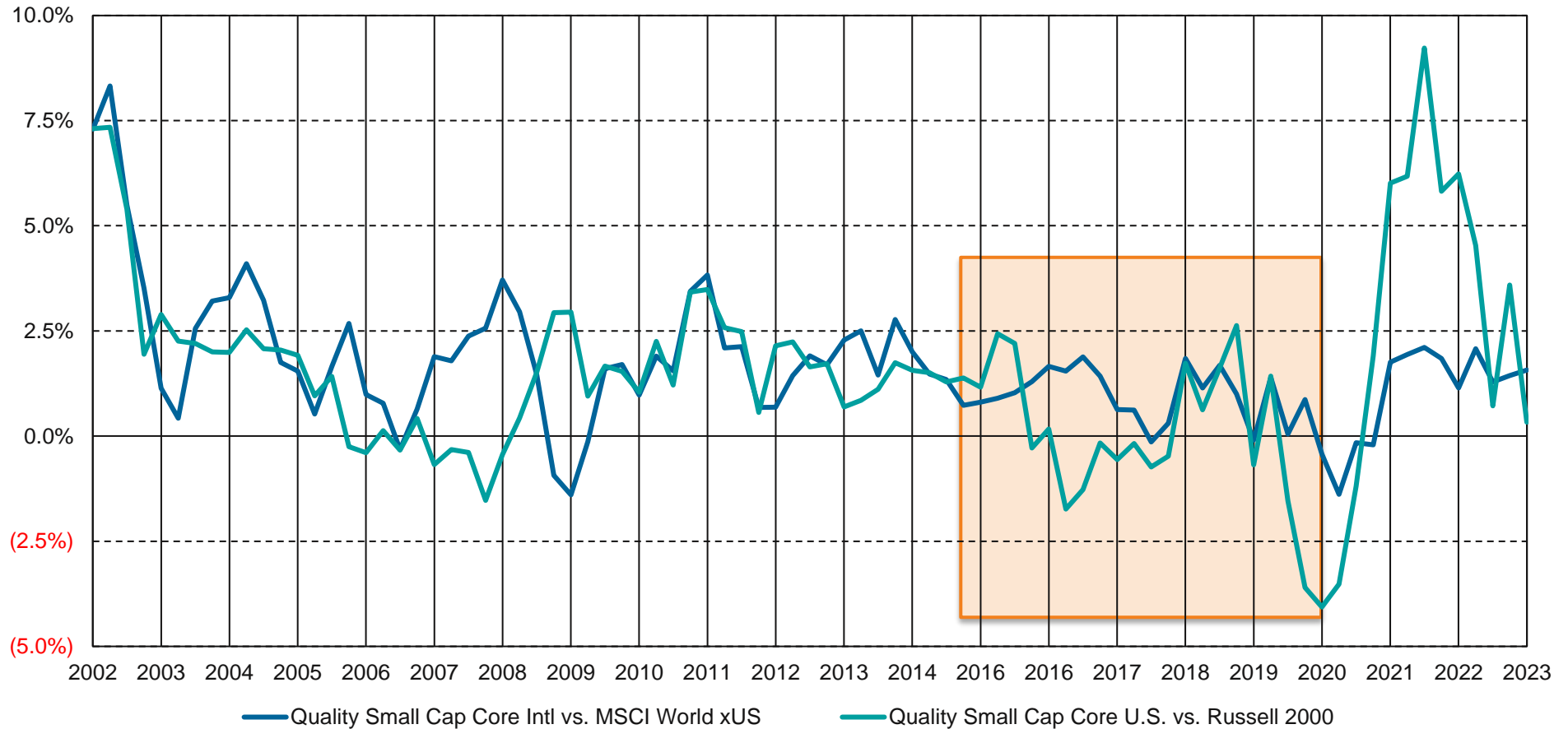
Note: proposed fees reflect "best and final offers" from the investment manager candidates.

\*Proposed fee is based on a \$300 million mandate size.

# Northern Trust Quality Small Cap Core

Excess return – U.S. small cap and international developed small cap strategies

Rolling 4 Quarter Relative Returns  
Since December 31, 2002



Actual "live" performance for Northern Trust international small cap strategy

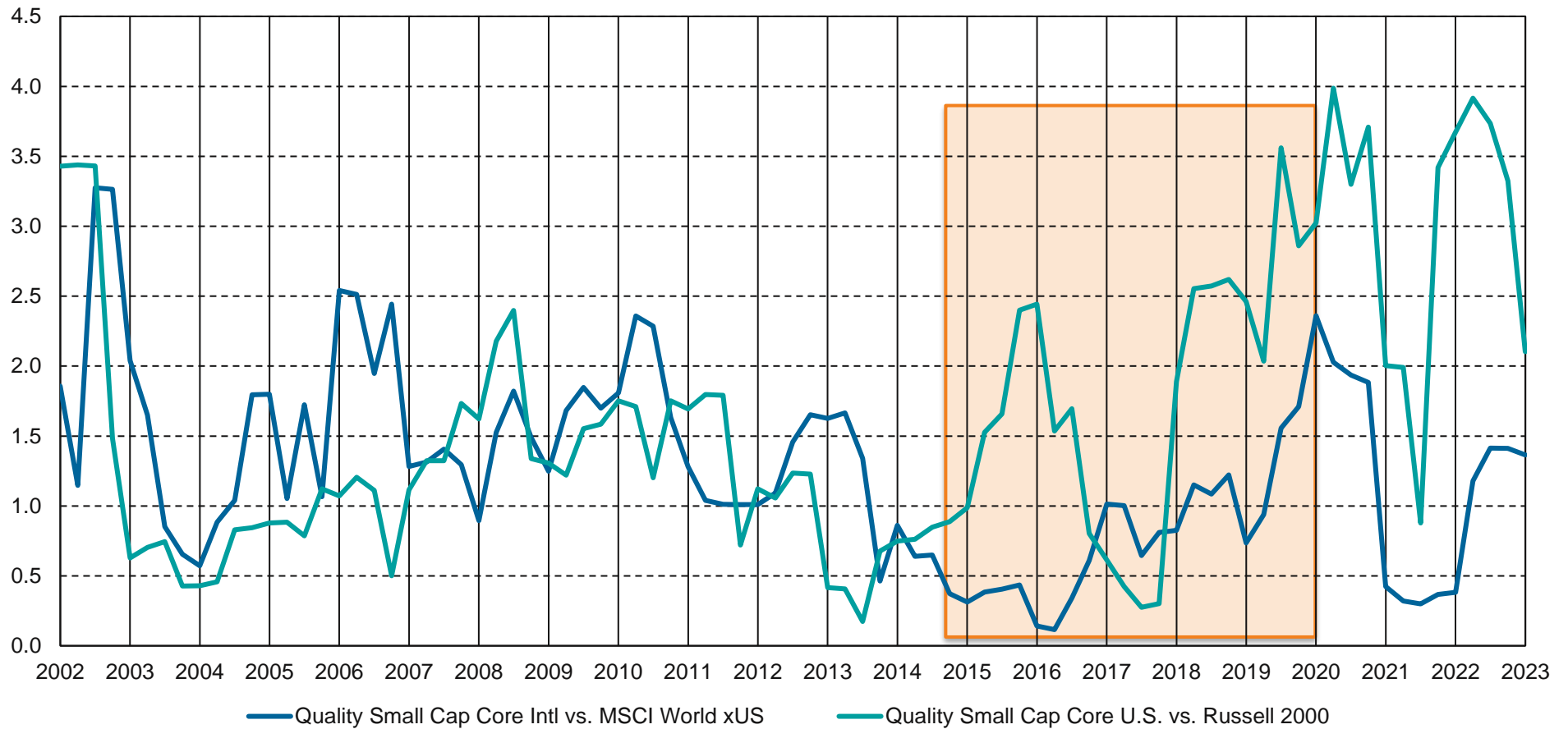
Note: Northern Trust Quality Small Cap Core International strategy performance reflects simulated returns from 1/1/2002 to 10/31/2014, live returns from 11/1/2014 to 12/31/2020, and simulated returns from 1/1/2021-12/31/2023.



# Northern Trust Quality Small Cap Core

Tracking error – U.S. small cap and international developed small cap strategies

Rolling 4 Quarter Tracking Error  
Since December 31, 2002



Actual "live" performance for Northern Trust international small cap strategy

Note: Northern Trust Quality Small Cap Core International strategy performance reflects simulated returns from 1/1/2002 to 10/31/2014, live returns from 11/1/2014 to 12/31/2020, and simulated returns from 1/1/2021-12/31/2023.

# Non-U.S. Equity Developed Small Core Manager Evaluation

## Returns and peer group rankings

### Returns for Periods Ended December 31, 2023

#### Group: Callan Intl Small Cap (Percentile Rankings in Parentheses)

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
Allspring	11.12 (34)	13.37 (87)	2.16 (32)	8.05 (40)	8.10 (24)	6.41 (28)
Fidelity	11.90 (12)	16.68 (27)	1.76 (33)	9.78 (18)	8.25 (21)	6.36 (27)
Invesco**	11.94 (12)	18.66 (18)	3.17 (27)	8.52 (38)	7.64 (35)	6.30 (31)
Lazard	10.94 (46)	15.52 (45)	4.61 (21)	7.79 (49)	6.48 (64)	6.21 (33)
Northern Trust***	10.73 (55)	14.39 (58)	1.29 (38)	7.89 (42)	7.03 (39)	5.76 (42)
PGIM	11.00 (39)	13.12 (68)	2.47 (31)	7.16 (57)	5.69 (77)	4.97 (73)
Mondrian (Incumbent)	10.74 (55)	7.10 (94)	(4.03) (78)	4.34 (97)	5.13 (85)	3.59 (97)
Principal (Incumbent)	9.84 (76)	14.51 (55)	0.07 (48)	6.24 (79)	5.93 (70)	5.25 (61)
Callan Intl Small Cap*	10.88	15.06	(0.01)	7.77	6.84	5.56
MSCI:World xUS Small	10.60 (57)	12.62 (70)	(0.20) (57)	7.05 (59)	6.06 (66)	4.63 (86)

Note: Manager candidate performance is shown gross-of-fees unless otherwise noted.

\*Results reflect peer group median performance.

\*\* Invesco's historical performance reflects simulated returns.

\*\*\* Northern Trust Quality Small Cap Core International strategy performance reflects simulated returns from 1/1/2014 to 10/31/2014, live returns from 11/1/2014 to 12/31/2020, and simulated returns from 1/1/2021-12/31/2023.

# Non-U.S. Equity Developed Small Core Manager Evaluation

Calendar year – returns and peer group rankings

## Returns for Periods Ended December 31, 2023

Group: Callan Intl Small Cap (Percentile Rankings in Parentheses)

	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Allspring	13.37 (67)	(20.67) (50)	18.54 (11)	11.99 (46)	23.36 (64)	(11.31) (3)	32.07 (81)	8.38 (8)	6.50 (76)	(6.54) (77)
Fidelity	16.68 (27)	(19.82) (42)	12.64 (54)	20.66 (20)	25.37 (45)	(17.00) (17)	31.66 (83)	0.58 (43)	10.50 (47)	(4.30) (82)
Invesco	18.66 (18)	(21.67) (56)	18.16 (11)	9.68 (61)	24.97 (51)	(15.50) (10)	31.64 (85)	3.38 (25)	7.02 (72)	(0.60) (12)
Lazard	15.52 (45)	(16.71) (26)	18.99 (10)	2.64 (85)	23.85 (62)	(21.10) (60)	35.17 (52)	(1.35) (65)	18.13 (5)	0.98 (6)
Northern Trust	14.39 (58)	(19.68) (39)	13.09 (48)	12.30 (46)	25.29 (46)	(16.56) (15)	31.86 (82)	6.04 (18)	6.31 (77)	(3.45) (54)
PGIM	13.12 (68)	(18.54) (36)	16.77 (13)	6.32 (80)	23.52 (63)	(22.79) (83)	35.05 (55)	(0.81) (59)	11.09 (40)	0.02 (8)
Mondrian (Incumbent)	7.10 (94)	(21.52) (53)	5.17 (90)	11.08 (51)	25.94 (36)	(13.90) (5)	33.31 (70)	0.98 (37)	3.58 (89)	(4.19) (80)
Principal (Incumbent)	14.51 (55)	(20.63) (47)	10.24 (72)	5.37 (83)	28.19 (24)	(19.66) (50)	37.68 (38)	2.46 (28)	9.91 (55)	(1.02) (18)
Callan Intl Small Cap*	15.06	(20.63)	12.78	11.29	24.99	(19.66)	35.26	(0.03)	10.09	(3.26)
MSCI:World xUS Small	12.62 (70)	(20.59) (46)	11.14 (66)	12.78 (45)	25.41 (45)	(18.07) (32)	31.04 (86)	4.32 (23)	5.46 (81)	(5.35) (68)

Note: Manager candidate performance is shown gross-of-fees unless otherwise noted.

\*Results reflect peer group median performance.

Invesco's historical performance reflects simulated returns.

Northern Trust Quality Small Cap Core International strategy performance reflects simulated returns from 1/1/2014 to 10/31/2014, live returns from 11/1/2014 to 12/31/2020, and simulated returns from 1/1/2021-12/31/2023.

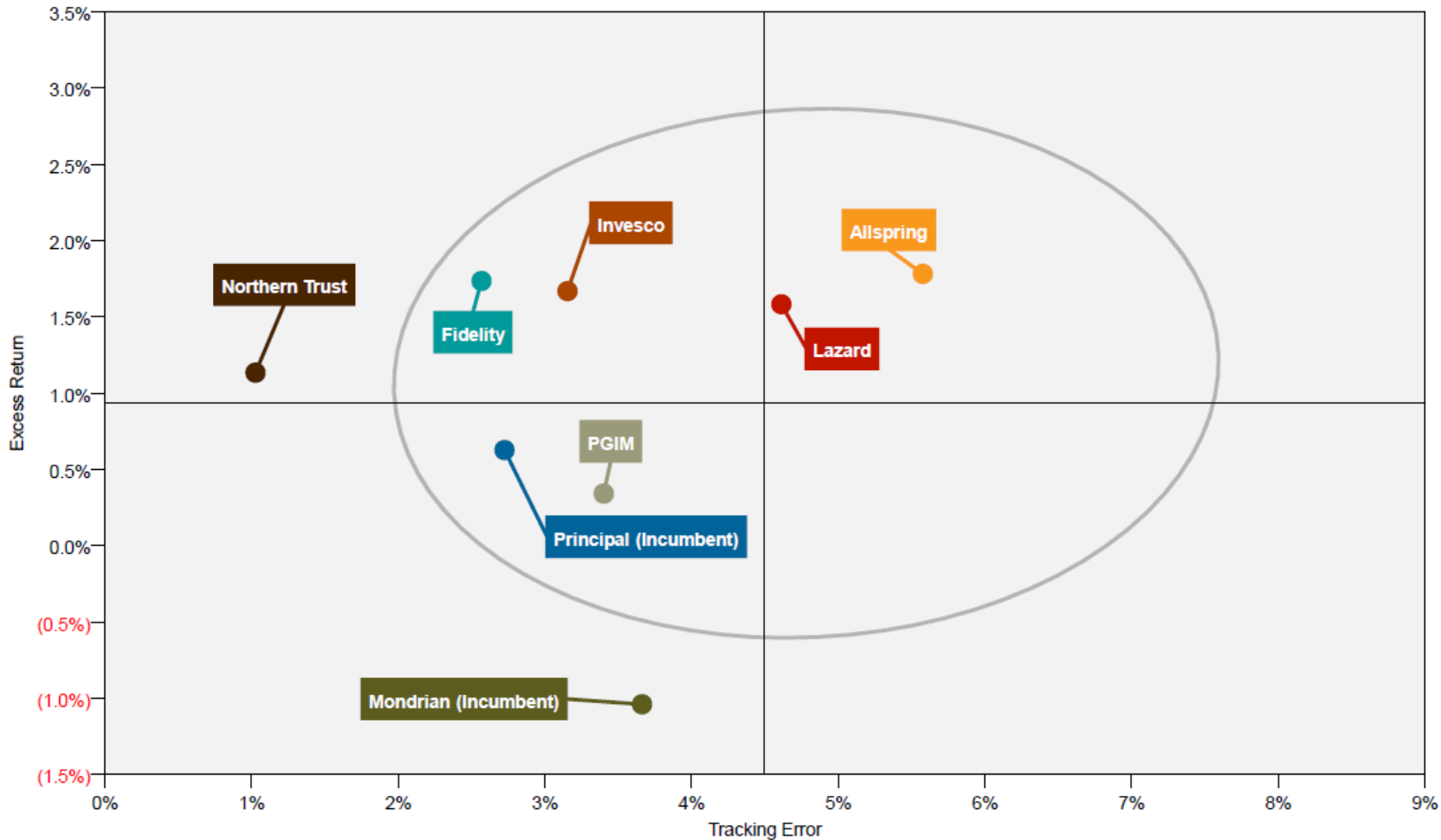
# Non-U.S. Equity Developed Small Core Manager Evaluation

## Excess return versus tracking error

Excess Return vs Tracking Error for Ten Years Ended December 31, 2023

Benchmark: MSCI World xUS Small (Net)

Group: Callan Intl Small Cap (Ellipse with Median at Central Axis)



Note: Manager candidate performance is shown gross-of-fees unless otherwise noted.

Invesco's historical performance reflects simulated returns.

Northern Trust Quality Small Cap Core International strategy performance reflects simulated returns from 1/1/2014 to 10/31/2014, live returns from 11/1/2014 to 12/31/2020, and simulated returns from 1/1/2021-12/31/2023.

# Non-U.S. Equity Developed Small Core Manager Evaluation

## 10-Year risk statistics

**Return-Based Risk Statistics Relative to MSCI:World xUS Small for Ten Years Ended December 31, 2023**  
**Group: Callan Intl Small Cap (Percentile Rankings in Parentheses)**

	Standard Deviation	Downside Risk	Sharpe Ratio	Information Ratio	Alpha	Beta	Correlation
Allspring	18.49 (95)	3.66 (26)	0.28 (17)	0.35 (40)	1.95 (22)	0.93 (98)	0.96 (83)
Fidelity	18.80 (82)	1.31 (91)	0.27 (18)	0.66 (12)	1.70 (30)	0.98 (73)	0.99 (6)
Invesco	19.06 (69)	1.78 (88)	0.26 (31)	0.53 (20)	1.69 (31)	0.99 (65)	0.99 (21)
Lazard	18.59 (91)	3.37 (33)	0.27 (30)	0.38 (39)	1.73 (27)	0.95 (91)	0.97 (55)
Northern Trust	18.44 (95)	0.62 (98)	0.24 (36)	1.27 (1)	1.14 (42)	0.97 (78)	1.00 (2)
PGIM	18.84 (75)	2.41 (68)	0.20 (62)	0.12 (62)	0.43 (72)	0.98 (74)	0.98 (23)
Mondrian (Incumbent)	19.17 (67)	2.77 (58)	0.12 (97)	(0.25) (97)	(0.94) (97)	0.99 (64)	0.98 (30)
Principal (Incumbent)	19.01 (70)	1.80 (88)	0.21 (55)	0.25 (48)	0.69 (61)	0.99 (61)	0.99 (9)
Callan Intl Small Cap*	19.52	2.91	0.22	0.25	0.97	1.00	0.97
MSCI:World xUS Small	18.94 (71)	0.00 (99)	0.18 (72)	0.00 (89)	0.00 (89)	1.00 (53)	1.00 (2)

Note: Manager candidate performance is shown gross-of-fees unless otherwise noted.

\*Results reflect peer group median performance.

Invesco's historical performance reflects simulated returns.

Northern Trust Quality Small Cap Core International strategy performance reflects simulated returns from 1/1/2014 to 10/31/2014, live returns from 11/1/2014 to 12/31/2020, and simulated returns from 1/1/2021-12/31/2023.

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## Appendix

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## Investment Terms

- **Alpha:** A measure of risk-adjusted return. It measures the excess return relative to the return expected from the portfolios beta to a given benchmark and attempts to capture the return coming from asset specific (or residual) risks like stock selection and sector selection.
- **Beta:** Measures the sensitivity of portfolio returns to movements in the market index. A portfolio's beta measures the expected change in return per 1% change in the market return. If a beta of a portfolio is 1.5, a 1% increase in the return on the market will result, on average, in a 1.5% increase in the return on the portfolio.
- **Capitalization:** The capitalization for an individual stock is its stock price multiplied by the number of shares outstanding. The capitalization of an index reflects the capitalizations of the stocks contained in the index. While large cap stocks always represent the largest stocks in a universe there is no broadly accepted definition of how small the smallest large cap stock should be. Similarly, there is no broadly accepted definition of how large the largest small cap stock should be. Consequently, there is often capitalization overlap between indices.
- **Developed Markets:** Countries which have mature economies and long-established asset markets
- **Down Market Capture:** For a given evaluation horizon (10 years for example), isolates the periods where the benchmark had negative performance. Down market capture measures the ratio of the portfolio's cumulative returns in these periods to the benchmark's cumulative returns in the same periods.
- **Emerging Markets:** Countries which have economies which are developing rapidly and have relatively new asset markets
- **Economic Exposure:** An estimate of the regional allocation of a company based on the geographic distribution of its revenues rather than the country of domicile. Company-level economic exposures are aggregated to calculate a portfolio's overall economic exposure.

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## Investment Terms (Continued)

- **Excess Return:** A manager's return in excess of the return of the manager's benchmark
- **Excess Return Ratio:** A measure of risk-adjusted return. This ratio captures the amount of active management performance (excess return) per unit of active management risk (tracking error).
- **Excess Return Correlation:** The correlation of one portfolio's excess return to another portfolio's excess return. Excess return is the portfolio's return minus its benchmark's return.
- **Information Ratio:** The information ratio measures and compares the active return of an investment (e.g., a security or portfolio) compared to a benchmark index relative to the volatility of the active return (also known as active risk or benchmark tracking risk).
- **Manager Return Composite:** Manager composites are the returns for the aggregate of each manager's client portfolios.
- **Maximum Drawdown:** The worst peak-to-trough decline in a portfolio's value over the specified evaluation period.
- **Sharpe Ratio:** A measure of risk-adjusted return. This ratio captures the amount of excess return over the risk-free rate (usually 3-month T-Bills) per unit of absolute risk (standard deviation).
- **Standard Deviation:** Standard deviation reflects the average deviation of the observations from their sample mean. In the case of portfolio performance, the standard deviation describes the average deviation of the portfolio returns from the mean portfolio return over a certain period of time. Standard deviation measures how wide this range of returns typically is. The wider the typical range of returns, the higher the standard deviation of returns, and the higher the portfolio risk. If returns are normally distributed (i.e., has a bell-shaped curve distribution), then approximately 2/3 of the returns would occur within plus or minus one standard deviation from the sample mean.
- **Styles:** The three most common styles are growth, value and core. Growth stocks have relatively high growth in profits, sales and return on equity with relatively high prices to reflect these characteristics. Value stocks generally have low prices reflecting relatively low earnings growth but high dividend yields. Core stocks have characteristics which lie in between those of growth and value.



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## Investment Terms (Continued)

- **Tracking Error:** Tracking error is the volatility (as measured by standard deviation) of a portfolio's returns relative to its benchmark.
- **Up Market Capture:** For a given evaluation horizon (10 years for example), isolates the periods where the benchmark had positive performance. Up market capture measures the ratio of the portfolio's cumulative returns in these periods to the benchmark's cumulative returns in the same periods.

# Important Disclosures

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Past performance is no guarantee of future results.

# Quality Small Cap Core Strategy World ex-US

AS OF DECEMBER 31, 2023



Prepared for: **Public Employees' Retirement System of Mississippi**

April 23rd, 2024

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**NORTHERN TRUST**

# Meet the Team



**ASHLEY  
ALSON**

Director, Public  
Funds / Taft-Hartley



**MICHAEL  
HUNSTAD, Ph.D.**

Deputy CIO &  
CIO, Global  
Equities



**ROBERT BERGSON,  
CFA**

Senior Portfolio  
Manager



**JIM JOHNSON,  
CFA**

Senior Client  
Portfolio Manager

# QUANTITATIVE EQUITIES AT NORTHERN TRUST

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NORTHERN TRUST

ASSET MANAGEMENT

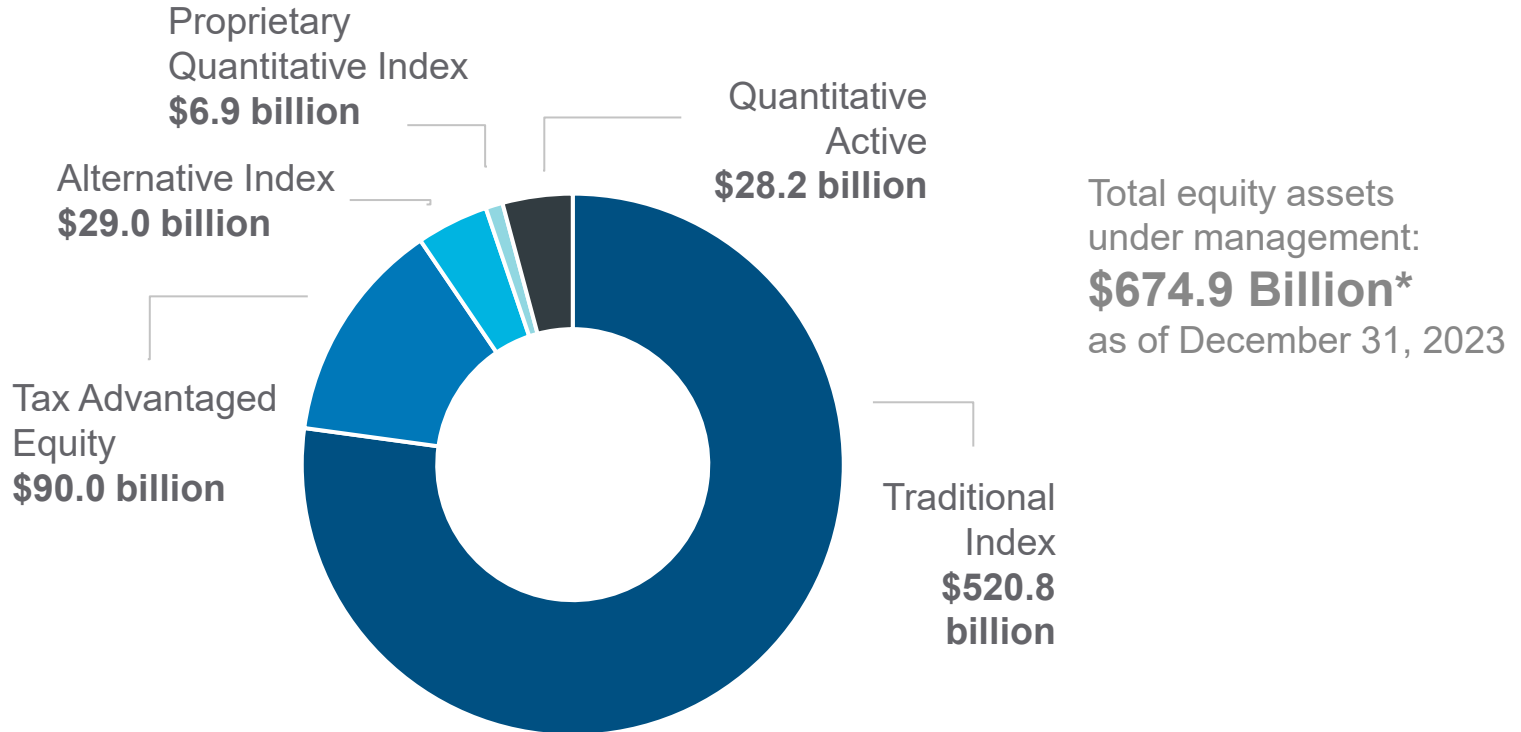
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3

# Northern Trust Asset Management: Equity

Global investment expertise across equity strategies



Equity strategies are available in multiple vehicles (SMAs, CITs, UCITS, ETFs, mutual funds) and implementations (active and passive). The assets above include all vehicles and implementations of each strategy.

As of December 31, 2023 (updated quarterly). Source: NTAM Finance.

\*Equity AUM does not include \$32.0B of Multi-Manager Solutions Assets.

<sup>1</sup>Other category includes: custom factor combinations as well as real estate equity. <sup>2</sup>Multi-factor strategies target four or more factors.

Northern Trust Asset Management is composed of Northern Trust Investments, Inc., Northern Trust Global Investments Limited, Northern Trust Fund Managers (Ireland) Limited, Northern Trust Global Investments Japan, K.K., NT Global Advisors, Inc., 50 South Capital Advisors, LLC, Northern Trust Asset Management Australia Pty Ltd, and investment personnel of The Northern Trust Company of Hong Kong Limited and The Northern Trust Company to offer investment products and services to personal and institutional markets.

For purpose of compliance with the Global Investment Performance Standards (GIPS®) the firm is defined as Northern Trust Asset Management Services, a subset of Northern Trust Asset Management, and includes those investment products managed by NTI, NTGIL, NTGIJ and TNTC that are distributed through global channels.

As of 12/31/2023 Northern Trust Asset Management had assets under management totaling \$1.18 trillion of which \$1.11 trillion is part of the GIPS firm.

# Investment Philosophy

*Thoughtful and efficient factor exposures can generate consistent risk-adjusted performance*

Traditional Manager 'Skill'  
Is Difficult to Find

Systematic Factors  
Exhibit Persistent  
Excess Returns

Capture  
Excess Factor Returns  
Efficiently

Multi-Dimensional Factor  
Definitions are Essential

Build Multi-Factor Portfolios  
To Avoid Dilution

Strategies Designed  
for High  
Information Ratios

Please note that this information reflects current processes and that all steps of the analysis may not be taken for each investment.

# Quantitative Strategies

**Michael Hunstad, Ph.D.**  
Deputy Chief Investment Officer &  
Global Equity CIO

## QUANTITATIVE STRATEGIES

AUM: \$35.1 Billion

**Mark Sodergren, CFA**  
Head of Quantitative Strategies

**Guido Baltussen, Prof., Ph.D.**  
Head of Quantitative Strategies, International

### PORTFOLIO MANAGEMENT

**Robert Bergson, CFA**  
Head of Small Cap Portfolio Management

**Sri Kancharla, CFA**  
Head of Large Cap Portfolio Management

**Matt Lambert**  
Head of Portfolio Management, APAC

**Michelle Kelley, CFA, CFP**  
Senior Portfolio Manager

**Reed LeMar, CFA**  
Senior Portfolio Manager

**Jeff Sampson, CFA**  
Senior Portfolio Manager

**Peter Zymali, CFP**  
Senior Portfolio Manager

**Jiemin Xu, CFA, FRM**  
Portfolio Manager

**Greg Ziton, CFA**  
Portfolio Manager

### QUANTITATIVE RESEARCH

**Rob Lehnherr, CFA**  
Head of Quantitative Equity Research

**Manan Mehta**  
Head of Quantitative Fixed Income Research

**Abhishek Dhall, CFA, FRM**  
Quantitative Research

**Mahesh Bodagama**  
Quantitative Research

**Kushal Chourasia**  
Quantitative Research

**Francisco E P De Azeredo, Ph.D.**  
Quantitative FI Research

**Daniel Fang, CFA, CAIA**  
Quantitative Research

**Sumedh M**  
Quantitative Research

**Jyoti Prakash, CFA**  
Quantitative Research

**Paul Stevenson, CFA**  
Quantitative FI Research

**Milan Vidojevic, Ph.D.**  
Quantitative Research

**Di Wang, Ph.D.**  
Quantitative Research

### CLIENT PORTFOLIO MANAGEMENT ('CPM')

**Jordan Dekhayser, CFA**  
Head of Client Portfolio Management

**Abhishek Gupta**  
Senior Quantitative CPM

**Christopher Huemmer, CFA**  
Senior Equity/ETF CPM

**Jim Johnson, CFA**  
Senior Quantitative CPM

**Pattawan Phanussopakul**  
Senior Quantitative CPM

**Diana Olteanu-Veerman, CFA**  
Senior Quantitative CPM

**Thomas Wackerlin, CFA**  
Senior Quantitative CPM

**Matt Connelly**  
Quantitative CPM

**Isabel Machlin**  
Quantitative CPM

**Nigel Cheung, CFA**  
Quantitative CPM

### QUANTITATIVE ANALYTICS

**Tim Detroy**  
Head of Quantitative Analytics

**Danny Breyfogle**  
Quantitative Analyst

**Vincent Itoku**  
Quantitative Analyst

**Akshay Bhat**  
Quantitative Analyst

**Tejas Sharad Chaudhari**  
Quantitative Analyst

## QUALITY SMALL CAP CORE

AUM: \$1.9 Billion

### PORTFOLIO MANAGEMENT

**Industry (Yrs)**   **Firm (Yrs)**

**Robert H. Bergson, CFA**  
Head of Small Cap Portfolio Management

28      26

**Reed LeMar, CFA**  
Senior Portfolio Manager

19      16

**Greg Ziton, CFA**  
Portfolio Manager

7      7

**Jiemin Xu, CFA, FRM**  
Portfolio Manager

9      7

### EQUITY SPECIALISTS

**Christopher Fronk, CFA, CPA**  
Senior Equity Specialist

**Emily Lawrence**  
Senior Specialist – Sustainable Investing

**Austin Guy, CFA**  
Equity Specialist

All data as of December 31, 2023. Source: NTAM

There is no guarantee that team structures and employees will remain the same. They are subject to changes without notice.



# Quality Small Cap Core

*The strategy seeks to efficiently capture the small cap premium and deliver excess returns by investing in a diverse portfolio of quality small cap companies.*

## INVESTMENT HIGHLIGHTS

- Focus on adherence to style objectives and outperformance since inception
- Stable, long-tenured team with consistent portfolio management leadership in place since inception in 1999
- Favorable risk-adjusted profile with top quartile information ratio within U.S. peer group since inception

## INVESTMENT APPROACH

- Efficiently capture small cap premium across small and micro-cap companies
- Apply multi-factor models to identify quality - avoid value traps and unsustainable growth
- Focus on efficiency by managing costs and trading when necessary

## INVESTMENT GUIDELINES

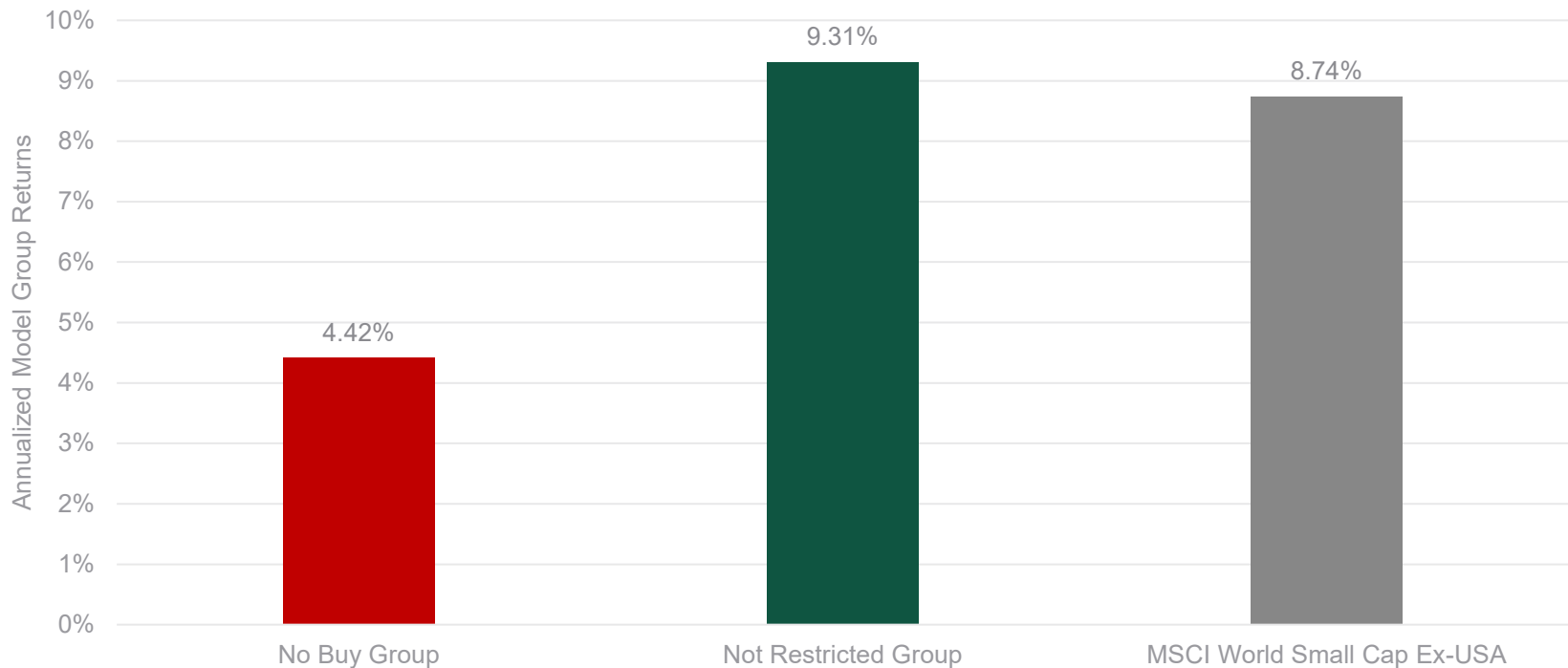
- Target tracking error<sup>1</sup>: 100-300 bps
- Sector weights +/- 100 bps | Security weights +/- 50 bps | Region weights +/- 200 bps
- Estimated annual turnover<sup>2</sup> 15 – 20%

<sup>1</sup>There is no guarantee that tracking error targets can be achieved. Tracking error represents the standard deviation of the differences between the investment performance of the strategy or fund and that of the Index. <sup>2</sup>Future forecasts are based upon proprietary research and should not be construed as a promise of actual results that the strategy may achieve. Actual results could differ materially from the forecast.

# Factors in Developed Markets ex-US Small Cap

Northern Trust's factor models have been effective sources of alpha Globally

## Small Cap Developed Markets ex-US Returns by Factor Grouping in Index Live and Backtested 12/31/2001 - 12/31/2023



Source: NTGI Quant Research, Returns from Wilshire. From 12/31/2001– 12/31/2023. Please see slide 17 for which periods are simulated.

Information is provided to illustrate typical sectors in which the portfolio may invest and to reflect representative portfolio characteristics. It should not be considered investment advice or a recommendation to buy or sell any security. It should not be assumed that any investments were profitable or will prove to be profitable, and past performance does not guarantee future results. Information is subject to change without notice.

# Multi-factor Framework: Quality And Size

*Fundamental evaluation of small-cap stocks using a quantitative stock selection model*

- Apply to liquid segments of small capitalization universe
- Separate models applied to 'value' and 'growth' companies
- Employ a specialized model for the banking industry: Capital Adequacy, Efficiency, and Solvency
- Rank stocks independently by Momentum

VALUE (LOW Price/Book) Avoid Value Traps in Low Price/Book Stocks			GROWTH (HIGH Price/Book) Avoid Unsustainable Growth in High Price/Book Stocks		
EARNINGS	SOURCES OF FINANCING	EFFICIENCY	RETURN ON ASSETS	GROWTH	INVESTMENT
Differentiate repeatable from temporary earnings	Consider the impact of corporate finance activities	Evaluate company use of assets	Evaluate stability of earnings	Compare sales growth rates	Identify investment in future growth (CAPEX)



**Exclude Stocks with Low Scores for 'No Buy List'**

**Sell Stocks from 'No-Buy List' with lowest quintile rank of Momentum**

# Investment Process

*A disciplined multi-factor approach seeking to yield consistent performance and stable risk profile*

---

## Create a diverse universe of small cap stocks

- ~ 2,500 stocks
- Small cap companies
- Avoid investment in penny stocks
- Excludes preferreds, convertibles, ADRs

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## Portfolio Construction

- Score by quality metrics
- Rank by quality score
- Eliminate lower quality stocks
- Sell low quality rated stocks with low momentum

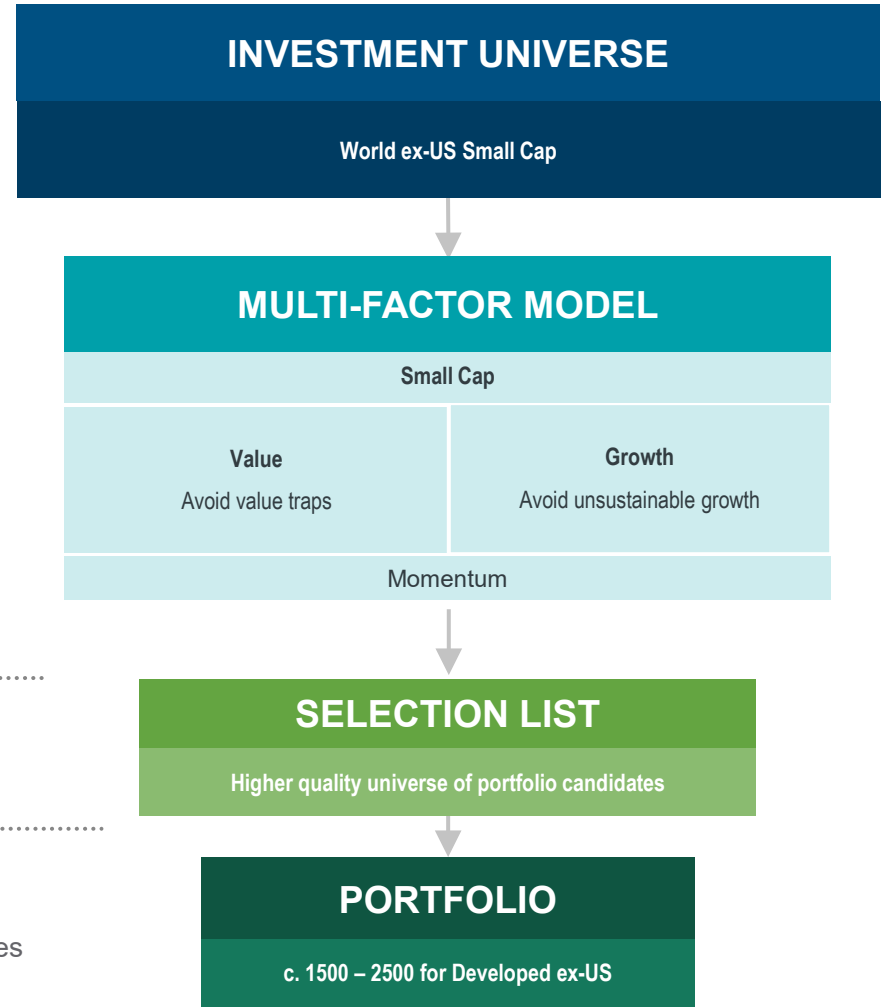
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## Final stock rankings

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## Optimize portfolio and review

- Constructed to balance return and risk
- Targeted sector and capitalization exposures
- Positioned for consistency
- Manage transaction costs, turnover and trading strategies



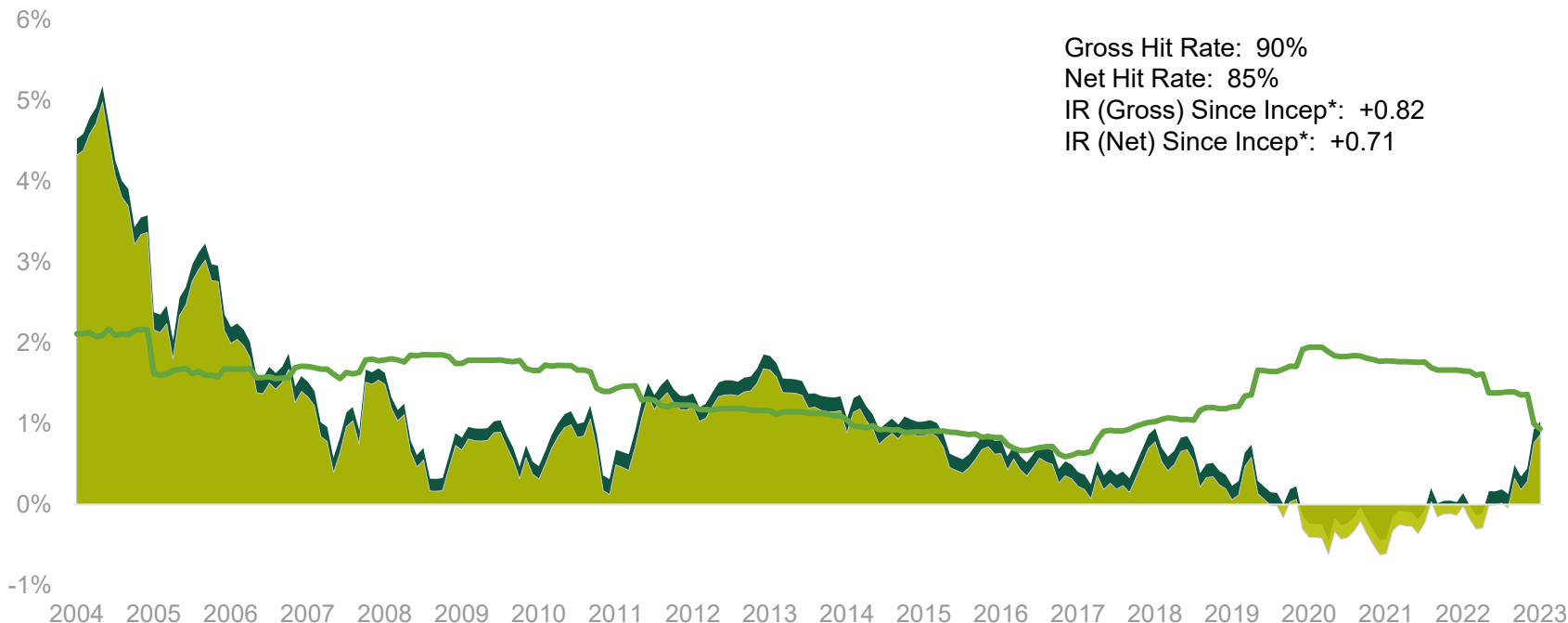
Please note that this information reflects current processes and that all steps of the analysis may not be taken for each investment.

# Quality Small Cap Core World Ex-US V. MSCI Small Cap Ex-US\*\*

Consistent hypothetical outperformance on a rolling 3-year basis with minimal tracking error

## Rolling 3-Year Excess Returns (Annualized)

■ Gross Excess   
 ■ Net Excess   
 — Rolling Tracking Error



\*Since Inception: 12/31/2001

IR stands for information ratio which is the difference between the return of the portfolio and the benchmark divided by tracking error. Tracking error measures the standard deviation of the difference of returns between the portfolio and the benchmark.

\*\* Benchmark constructed bottom-up on a monthly basis using pricing and history from Wilshire.

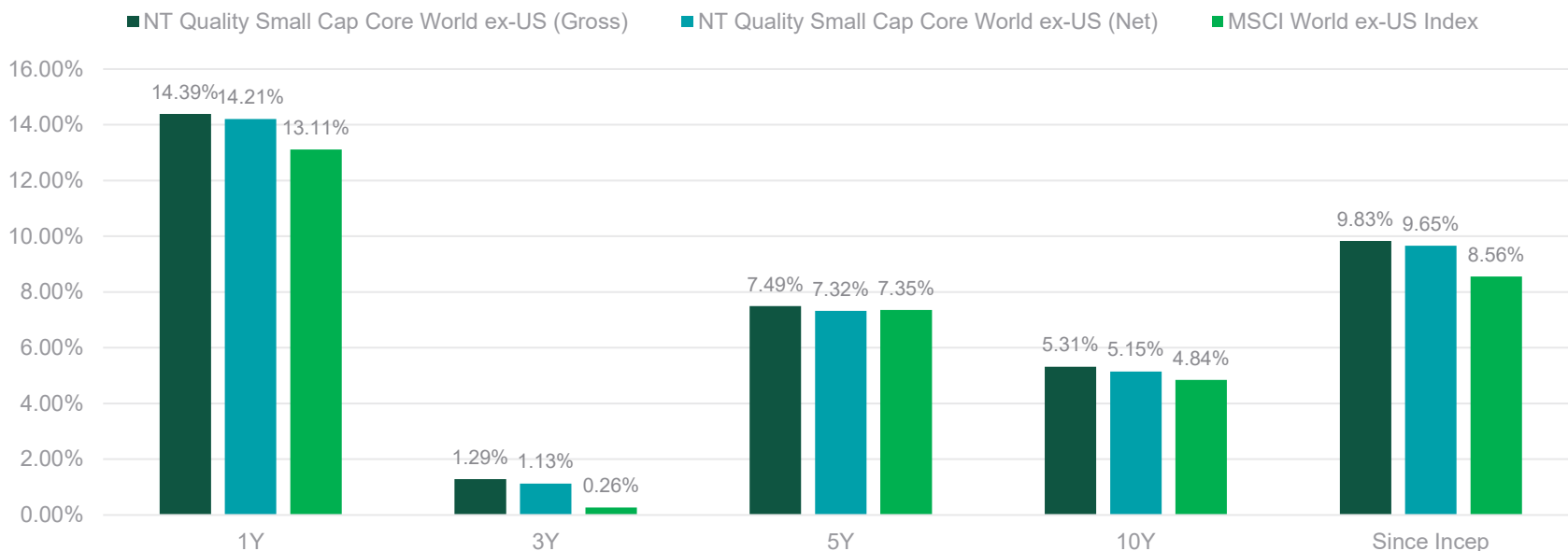
Returns for periods greater than one year are annualized. Gross performance returns shown do not reflect the deduction of investment management/advisory fees, assume the reinvestment of dividends and capital gains, and are net of transaction costs and other expenses. Performance results will be reduced by the fees incurred in the management of the account. Net performance returns are reduced by investment management fees and other expenses relating to the management of the account. Net-of-fee returns are calculated based upon an annual fee of 16 bps applied monthly. Index performance returns do not reflect any management fees, transaction costs or expenses. It is not possible to invest directly in any index. Past performance is not indicative of future results. Investment management/advisory fees are described in Northern Trust Investments, Inc. Form ADV Part 2A.

Quality Small Cap Core [QSCC] International reflects back-tested returns for the Quality Small Cap Core strategy in the MSCI World ex-U.S. Small Cap investment universe. Back-tested performance results do not reflect actual trading and have certain inherent limitations. The back-tested data contained herein does not represent the results of an actual investment portfolio but reflects the hypothetical historical strategy performance of [QSCC]. Specifically, these results were constructed using back-tested results from 12/31/2001 – 10/31/2014 and from 12/31/2020 – 12/31/2023. From 10/31/2014 – 12/31/2020, live results from the existing QSCC Int'l composite were used. This date period represents the full history of that strategy. **Past Performance is not indicative of future results. For Illustrative Purposes Only.** Please see important information on Hypothetical Returns at the end of this presentation.

# Hypothetical Investment Performance V. MSCI Small Cap Ex-US\*\*

As of December 31, 2023

## Annualized Performance



Excess Return	1Y	3Y	5Y	10Y	Since Inception*
Gross of Fees	1.28%	1.03%	0.14%	0.47%	1.27%
Net of Fees	1.10%	0.86%	-0.03%	0.31%	1.10%

\*Since Inception: 12/31/2001

\*\* Benchmark constructed bottom-up on a monthly basis using pricing and history from Wilshire.

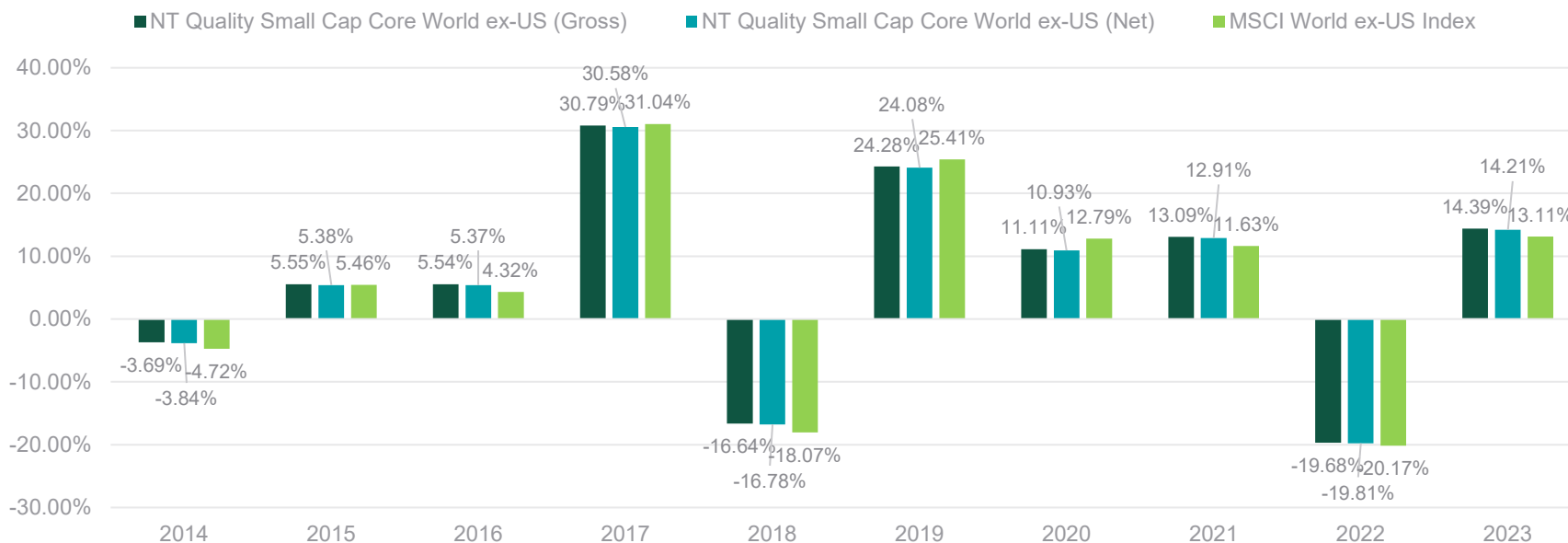
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# Hypothetical Investment Performance V. MSCI Small Cap Ex-US\*\*

As of December 31, 2023

## Calendar Year Performance



Excess Return	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Gross of Fees	2.11%	1.03%	0.09%	1.22%	-0.25%	1.43%	-1.13%	-1.68%	1.47%	0.50%	1.28%
Net of Fees	1.91%	0.88%	-0.08%	1.06%	-0.45%	1.29%	-1.33%	-1.86%	1.29%	0.37%	1.10%

\*Since Inception: 12/31/2001

\*\* Benchmark constructed bottom-up on a monthly basis using pricing and history from Wilshire.

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# APPENDIX

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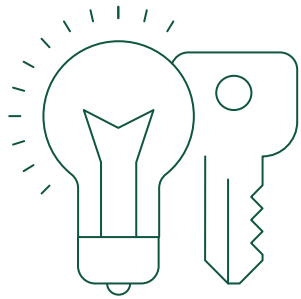
**NORTHERN TRUST**

ASSET MANAGEMENT



# Quality Small Cap Core World ex-US

*Approach especially well suited for small caps in Developed Markets ex-US*



01

Factors such as Quality and Momentum exhibit strong efficacy in Developed Small Cap, consistent with factor performance in US Small Cap

02

Controlling risk and turnover is essential to success

03

Deeply experienced portfolio management and trading teams that understand the nuances of the markets they operate in from both an investment and execution perspective

# Portfolio Characteristics – Quality Small Cap Core Ex-US

As of December 31, 2023

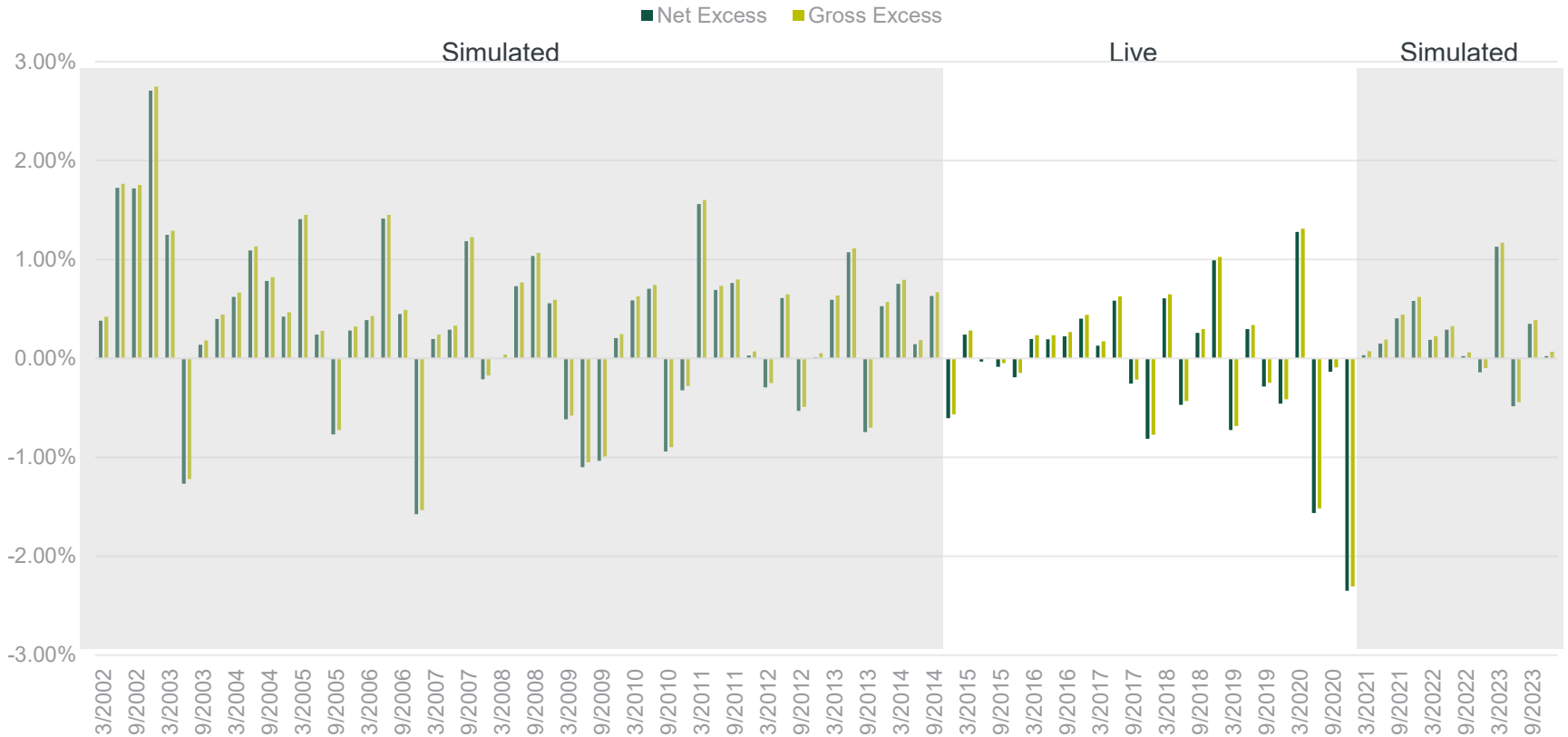
PORTFOLIO CHARACTERISTICS	Portfolio Benchmark		SECTOR ALLOCATION (%)			TOP HOLDINGS (%)	
	Portfolio	Benchmark		Portfolio	Benchmark		
Number of Holdings	1,454	2,386	Industrials	24.4	22.4	BELIMO Holding AG	1.7
Weighted Average Market Cap (MM)	3,291.5	2,822.4	Consumer Discretionary	11.8	12.0	Georg Fischer AG	1.5
Return on Equity (ROE)	13.1	10.7	Financials	11.7	11.2	ALK-abello A/S Class B	1.0
Price-to-Earnings(P/E) – FY1 Est	13.3	13.3	Materials	10.7	10.9	Fortnox AB	0.6
Price-to-Book (P/B)	1.4	1.3	Information Technology	9.5	9.6	Sohgo Security Services Co., Ltd.	0.4
Net Margin	11.2	10.0	Real Estate	9.1	10.5	Melrose Industries PLC	0.4
Dividend Yield	3.0	2.9	Consumer Staples	6.2	6.1	Centrica plc	0.3
Ex-ante Tracking Error (Barra)	1.8	--	Health Care	6.0	5.9	BE Semiconductor Industries N.V.	0.3
			Energy	4.2	4.8	Beijer Ref AB Class B	0.3
			Communication Services	3.5	3.7	Intermediate Capital Group plc	0.3
			Utilities	2.9	2.8		

MARKET CAPITALIZATION (%)			Trailing P/E (%)			REGION (%)		
	Portfolio	Benchmark		Portfolio	Benchmark		Portfolio	Benchmark
Largest Market Cap Quintile	53.8	46.1	Highest P/E Quintile	22.0	21.4	North America	9.9	9.2
2 <sup>nd</sup> Quintile	21.7	24.7	2nd Quintile	23.2	23.4	Europe & Middle East	50.6	47.9
3 <sup>rd</sup> Quintile	11.9	14.7	3rd Quintile	21.4	20.1	Asia Pacific	39.5	42.9
4 <sup>th</sup> Quintile	6.5	8.9	4th Quintile	18.8	18.1			
Smallest Market Cap Quintile	6.1	5.6	Lowest P/E Quintile	14.5	17.0			

These are hypothetical characteristics. Benchmark is the MSCI Small Cap Ex-US Index. All ratios are calculated using the weighted average or weighted harmonic average using adjustments to account for negative items. Information is provided to illustrate typical sectors and securities in which the portfolio may invest and to reflect representative portfolio characteristics. It should not be considered investment advice or a recommendation to buy or sell any security. There is no guarantee that securities remain in the portfolio or that securities sold have not been repurchased. It should not be assumed that any investments were profitable or will prove to be profitable, and past performance does not guarantee future results.

# Quality Small Cap Core World Ex-US V. MSCI Small Cap Ex-US\*\*

Live + Simulated Performance: 12/31/2001 – 12/31/2023 Quarterly Excess Returns



\*Since Inception: 12/31/2001

\*\* Benchmark constructed bottom-up on a monthly basis using pricing and history from Wilshire.

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# Biographies

**Ashley Alson** is a Director for the Institutional Client Group at Northern Trust Asset Management. In her role, Ashley will deliver investment solutions, including equity, fixed income, and alternative asset classes, to public funds, sovereign wealth funds, and international organizations. She has 20 years of financial industry experience, a majority of it developing business and managing client relationships with institutional investment programs.

Ashley joined from Janus Capital Group, where she was a Client Executive, responsible for new business development with mid-sized public, corporate, endowment and foundation plans. Previously, she was a Senior Relationship Manager for Morgan Stanley Investment Management, focusing on large corporate liquidity sales. Ashley also held several roles at JPMorgan for eight years, most recently as a Client Advisor in Institutional Asset Management. Ashley graduated from Purdue University with a BS in Accounting. Ashley holds Series 3, 7, 30 and 63 licenses.

**Michael Hunstad, PhD** is deputy chief investment officer and chief investment officer of global equities for Northern Trust Asset Management. Michael is a member of the Asset Management Executive Group and has oversight of all equity portfolio management, research and trading activities including quantitative, index and tax-advantaged strategies. Additionally, he assists with the development of investment vision, strategy portfolio construction and risk management framework for the firm's broad investment platform.

Previously, Michael was Head of Quantitative Strategies where he was responsible for leading Northern Trust Asset Management's factor based research, portfolio management and product development programs. Before joining Northern Trust, he was head of research at Breakwater Capital, an algorithmic trading firm and hedge fund. Prior to that role, he was head of quantitative asset allocation at Allstate Investments, LLC and a quantitative analyst with a long-short equity hedge fund. Michael has also served as an adjunct professor at the Illinois Institute of Technology. Michael holds a Ph.D. in mathematics, an MBA in finance, an M.A. in econometrics and a bachelor's degree in economics.

# Biographies

**Robert Bergson** is head of small cap quantitative active portfolio management. He is responsible for research and implementation of several small cap equity strategies representing more than \$3.5 billion in small cap assets. Prior to joining Northern Trust in 1997, Robert served as director of investment research for Real Estate Research Corporation, a real estate consulting and research firm. Robert earned a bachelor's degree from Carnegie Mellon University and a master's degree in real estate development from the Massachusetts Institute of Technology. He is a CFA® charterholder and a member of the CFA Institute, the CFA Society Chicago and the Chicago Quantitative Alliance.

**Jim Johnson** is a Senior Client Portfolio Manager and Senior Vice President with the Quantitative Strategies Group at Northern Trust Asset Management. The group collaborates with institutional and private wealth investors to understand their unique circumstances and to deliver value added insights and solutions that provide the optimal path to achieving their investment objectives. The team provides research and investment thought leadership to investors globally and is responsible for developing comprehensive quantitative factor-based investment solutions.

Prior to joining Northern Trust in July 2020, he spent 8 years at TIAA/Nuveen where he managed over \$12 billion in active quantitative stock selection strategies that he designed from scratch. Prior to TIAA, Jim spent 7 years as a portfolio manager at State Street Global Advisors, where he was part of a 75+ person global quantitative team. Before SSgA, he ran a small quantitative team at American Express Financial Advisors, now Ameriprise.

Jim has a BS in Music Engineering from the University of Miami (FL), and an MBA with a Finance Concentration from the University of Minnesota Carlson School of Business. Jim is a CFA charter holder, a member of the CFA Institute, and the CFA Society of Chicago. He is also a member of the Chicago Quantitative Alliance.

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# DISCLOSURES

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# Grosvenor Capital Management

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## Private Equity Fund Recommendation April 23, 2024

Jason Clark

Lead Portfolio Manager – Alternatives



Date: April 23, 2024

To: PERS Investment Committee

Re: GCM 2024 Series – Private Equity Commitment

In 2006 the PERS Board of Trustees first adopted an asset allocation target of 5% to Private Equity. In 2008, the private equity investment program was launched with the hiring of Pathway Capital Management and Credit Suisse Custom Funds Group (now Grosvenor Capital Management) to each manage portfolios of private equity partnerships on behalf of PERS. Each firm received an initial commitment of \$750 million to be used for making investments in private equity limited partnership interests, with a fund-of-one structure.

In 2013, an asset allocation study was conducted which resulted in the target allocation for Private Equity being increased to 8%. By this time, the two fund-of-one managers had fully committed the \$750 million allocation awarded in 2008, yet PERS investments in private equity had not reached the original 5% target for the asset class. Since the private equity investments “committed capital” is not actually invested until the underlying general partner requests the funds, the amount of capital invested can often be a much lower amount than that of the capital contractually committed. This along with the increase in the target allocation resulted in the PERS Board approving a second commitment of \$700 million to each fund manager.

In mid-2013, the Credit Suisse Custom Funds Group team announced it was being purchased by Grosvenor Capital Management (GCM). Because this transaction did not close until January 2014, GCM did not begin making capital commitments for the \$700 million until the first quarter of 2014.

As each of the dedicated managers neared the end of committing the capital in their second series, PERS’ total allocation to private equity was at approximately 6% and still primarily in the investment and growth phases of each commitment series’ lifecycle. PERS Investment Staff worked with Callan Consulting to develop a new pacing study for projected capital deployment and distribution activity for all four existing investment series to determine the appropriate commitments needed for future series. Upon completion of this review, it was determined that in the best interest of reaching the plan’s target allocation, a third series for both GCM and Pathway should be committed.

The remaining investments within the GCM 2009 Series are now mature and in the harvest phase of their lifecycle, when profits are realized, and investment gains are distributed. The GCM 2014 Series is towards the end of the appreciation stage as all committed capital has been deployed and distributions are in the process of being realized. The 2018 Series has just finished committing capital as of August 2023 and is still closing on investments that make up the series. With the first two series investments having finished their investment phase and in the process of building equity and/or harvesting profits in the form of distributions, the 2018 Series is following closely behind and should finish with similar results in the upper quartiles relative to peer vintage year investments.

As of January 2021, Pathway completed committing allotted capital for their 2016 series and a new fourth commitment was proposed and approved. If approved, this proposed new 2024 Series to GCM would be the fourth series commitment in the relationship. In late 2023 and early 2024, PERS Investment Staff working with Callan Consulting conducted another commitment pacing review, where it was agreed that a new commitment be proposed to GCM for a 2024 Private Equity series at a continued commitment level of \$120 million annually (\$360 million over 3-year commitment period), which was the same pace of the GCM 2018 Series. The primary difference proposed in the new 2024 Series will be the addition of a 10% allotment for co-investment opportunities.

In June of 2022, after an Asset Liability Study the PERS Investment Committee added Private Credit and Infrastructure into the portfolio, as well as increased the allocation to Private Equity from 8% to 10%. Currently, the Private Equity program is overallocated at approximately 12%, due primarily to recent public market volatility and manager outperformance. Although above target, the maturity of the program has allowed for a portfolio that is cashflow positive and is now distributing more capital than is being called on an annual basis. As the portfolio continues to mature and realize gains from the past series of investments, these net distributions are expected to increase in the coming years allowing for more than enough to fund capital call demands, which will achieve the goal of bringing the portfolio allocation back down below the target of 10% within the next two years, without missing a vintage year of investments.

It is important to understand that this proposal for a new series does not constitute a new contract or partnership between PERS of MS and GCM Grosvenor Capital Management. This proposal for a new series is only an amendment to the existing Limited Partnership Agreement, which began with the initial series of investments in 2009. Below are a few items of note and interest concerning the proposed 2024 Series as well as the on-going relationship between Grosvenor Capital Management and PERS of Mississippi.

- With PERS being slightly over allocated to the targeted 10%, PERS thought it best to shorten the commitment phase of the series from 5 years to 3 years. This was done so that the team could be more flexible in making changes to commitment levels and deal flow based on market conditions and future liquidity needs.
- In previous investment series commitments to GCM, PERS as a returning investor has realized a favorable reduction in fees, with the same being realized for this new 2024 Series compared to the 2018 Series. After much discussion and negotiation with PERS Staff, due to the ongoing relationship with both the Private Equity and Private Credit asset classes, GCM agreed to give a 5-bps reduction on the annual base manager fees for primary investments. This will result in an average savings of approximately \$107,000 annually, and just over \$1.6 million over the 15-year life of the 2024 Series.
- Proposed in this GCM 2024 Series, the total commitment amount will be broken down into two Private Equity investment types. Primary investments, which have in the past made up 100 percent of the GCM relationship, will now represent 90 percent of the partnership, with the opportunity of a 10 percent allocation to GCM's direct co-investment fund (GCF III). Co-investments are not new to PERS' Private Equity portfolio, as Pathway Capital Management currently provides a small exposure to these opportunities as well.

- While it can be noted that both PERS Private Equity relationships have performed above initial expectations, a point of interest is that both programs have outperformed the S&P 500 over the life of the relationships beginning in 2008 and 2009 respectively. As of September 30, 2023, the PERS of Mississippi program series of investments beginning in 2009, has outperformed the S&P 500 by \$246 million from a total value perspective. It is also of note that the PERS Private Equity program is now cash flow positive, meaning the partnership with GCM and Pathway have now distributed more capital back to PERS than has been deployed, while currently maintaining a net asset value of investments of just under \$4 billion.

Included in this proposal is a report requested by PERS staff from GCM explaining the benefits of a Private Equity portfolio compared to that of a public equity S&P 500 Index, along with a performance comparison of the PERS relationship since initial adoption. Also included for consideration with this proposal to invest is the Callan Consulting Due Diligence report requested by PERS investment staff. In the Callan report are details related to Grosvenor Capital Management as an organization, detailed performance of prior series investments, as well as their feedback as it relates to this recommended commitment to the 2024 Series. The findings from that analysis have been provided for the Investment Committee's review as confirmation that this fund is suitable for PERS' continued partnership participation. Based on the information provided, as well as the tenure, stability, and their success in managing unique investment opportunities within Private Equity, PERS staff recommends a continued partnership with a fourth commitment of \$360 million to a GCM 2024 Series.

## Private Equity Strategies

Primary funds are the most common means of accessing Private Equity investments within a portfolio. Primary funds are comingled opportunities offered at the time of fundraising with an expected lifecycle of approximately 15 years. There are three types of Private Equity primary funds utilized within the PERS of Mississippi portfolio. Listing them according to lowest risk/return to highest, they include:

- **Buyouts** – This occurs when a buyer acquires more than 50% of a company, leading to a change of control. In private equity, investors seek out underperforming or undervalued companies that they can take private and make more attractive, before selling or going public years later. The target gross IRR for this type of investment is 18%, with a target gross multiple of 2.0x.
- **Special Situations** – These are investments in companies that may have an element of distress, dislocation, dysfunctional or industry specific and that are perceived to be undervalued. Sought after are those private companies where the general partner can gain control of, or significant influence over, companies exhibiting such characteristics and then actively manage those businesses to deliver value as a private equity-like structure. The target gross IRR for this type of investment is 15% - 20%, with a target gross multiple of 1.6x – 1.8x.
- **Venture / Growth Capital** – This is financing that investors provide to startup companies and small businesses with little to no initial revenue that are believed to have long-term growth potential. Typically, large ownership chunks of a company are created and sold to a few investors through independent limited partnerships that are established by venture capital firms. The target gross IRR for this type of investment is 25% - 30%, with a target gross multiple of > 3.0x.

Co-investments are opportunities for investors to invest outside of the traditional fund structure and instead alongside the asset management company with a more targeted approach. Co-investments are beneficial within a portfolio as they provide greater diversification and opportunities with a more selective and targeted approach to specific market sectors and geographies. Within co-investment opportunities, the pool of investors is smaller than traditional primary opportunities, with shorter timeframes, and increased downside protection with a mitigated J-Curve, which allows for opportunities with increased returns. Another significant benefit to co-investments is the favorable economics and the reduction of fees due to the less complex structure.

### GCM 2024 Series target allocation ranges:

- **Primary Funds:** **90%**
  - Buyouts: 58% - 78%
  - Special Situations: 13% - 28%
  - Venture Capital: 10% - 23%
- **Co-investments:** **10%**

# GCM GROSVENOR DIVERSIFIED PARTNERS, L.P.

## PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF MISSISSIPPI PUBLIC MARKET EQUIVALENT ANALYSIS

MARCH 2024

**CONFIDENTIAL – NOT FOR REDISTRIBUTION**

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# THE PRIVATE EQUITY OPPORTUNITY – KEY STATS

Private markets are significantly larger than public markets:  
**95% vs 5%**<sup>1</sup>

Since 2006, global private equity assets under management have increased  
**~7x**<sup>3</sup>

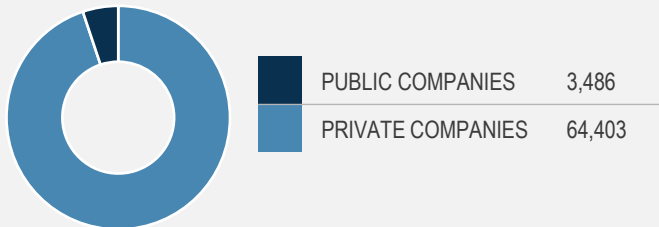
Over **60%** of investors allocate to private equity.<sup>4</sup>

Nearly **15%** average target allocation to private equity.<sup>4</sup>

## Universe of Private Companies is Large<sup>2</sup>

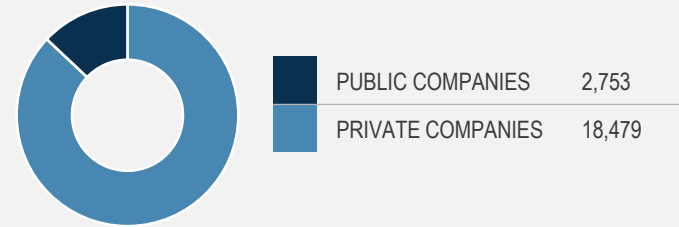
### UNITED STATES ≥ \$25 MILLION LTM REVENUE

#### Number of Private Companies vs. Public Companies



### UNITED STATES ≥ \$100 MILLION LTM REVENUE

#### Number of Private Companies vs. Public Companies



<sup>1</sup> Data source: S&P Capital IQ. Includes companies with revenues ≥ \$25 million in the United States. Data as of March 20, 2024.

<sup>2</sup> Data source: S&P Capital IQ. Includes companies with revenues ≥ \$25 million & ≥ \$100 million in the United States. Data as of March 20, 2024.

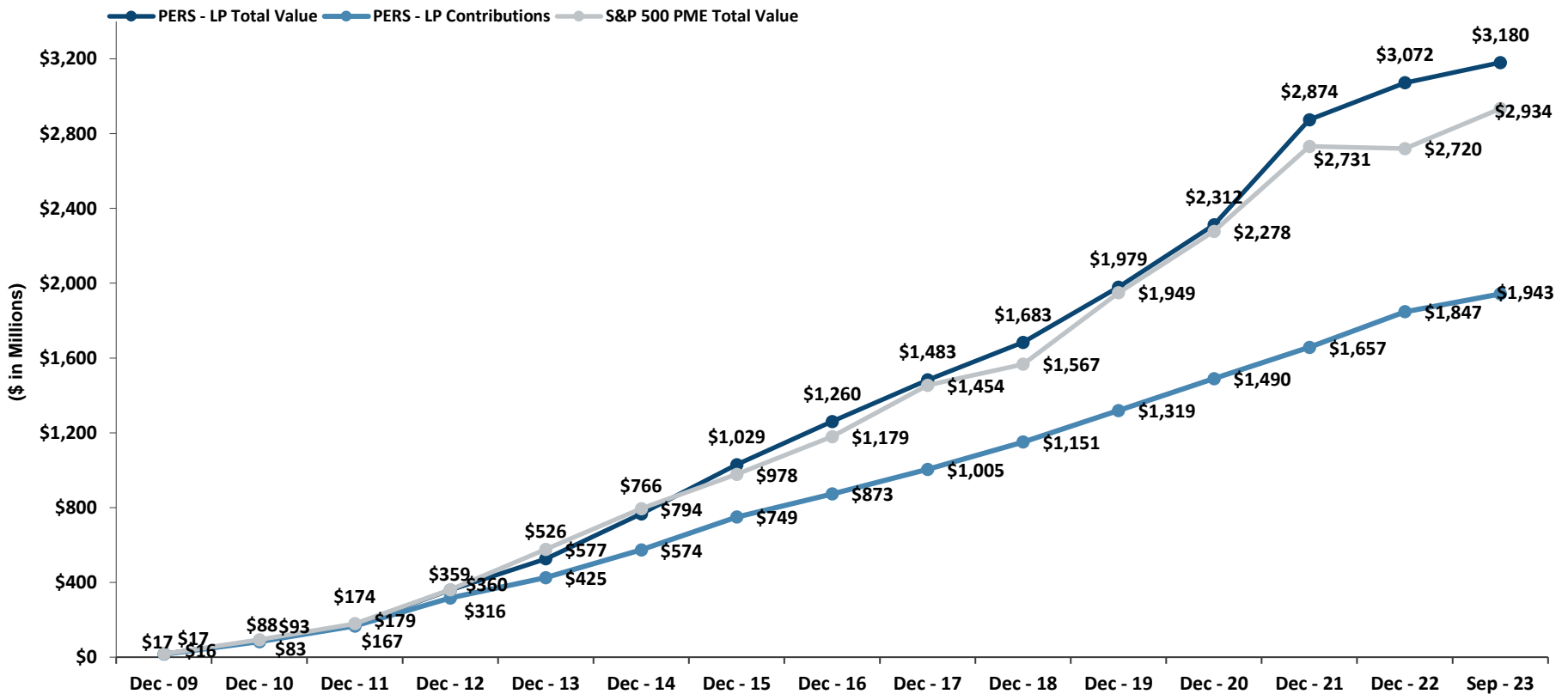
<sup>3</sup> Sources: The above graph was prepared as of 30 June 2023 by GCM utilising certain information obtained from the database of Preqin Ltd. Assets under management represents the sum of available Dry Powder and unrealised value. Preqin Ltd. has not provided consent for the use of its data.

<sup>4</sup> Source: Preqin, Ltd. H2 2023 Investor Outlook. Preqin Ltd has not provided consent for use of this data.

**For illustrative purposes only.** Unless apparent from context, all statements herein represent GCM Grosvenor's opinion.

# PROGRAM (PERS - LP LEVEL) ANNUAL TOTAL VALUE VS. S&P 500 PME TOTAL VALUE

As of September, 30, 2023, the Program (PERS - LP Level) has outperformed the S&P 500 PME by \$246 million from a total value perspective.



1. Total Value is equal to LP distributions plus LP NAV as of the respective dates.

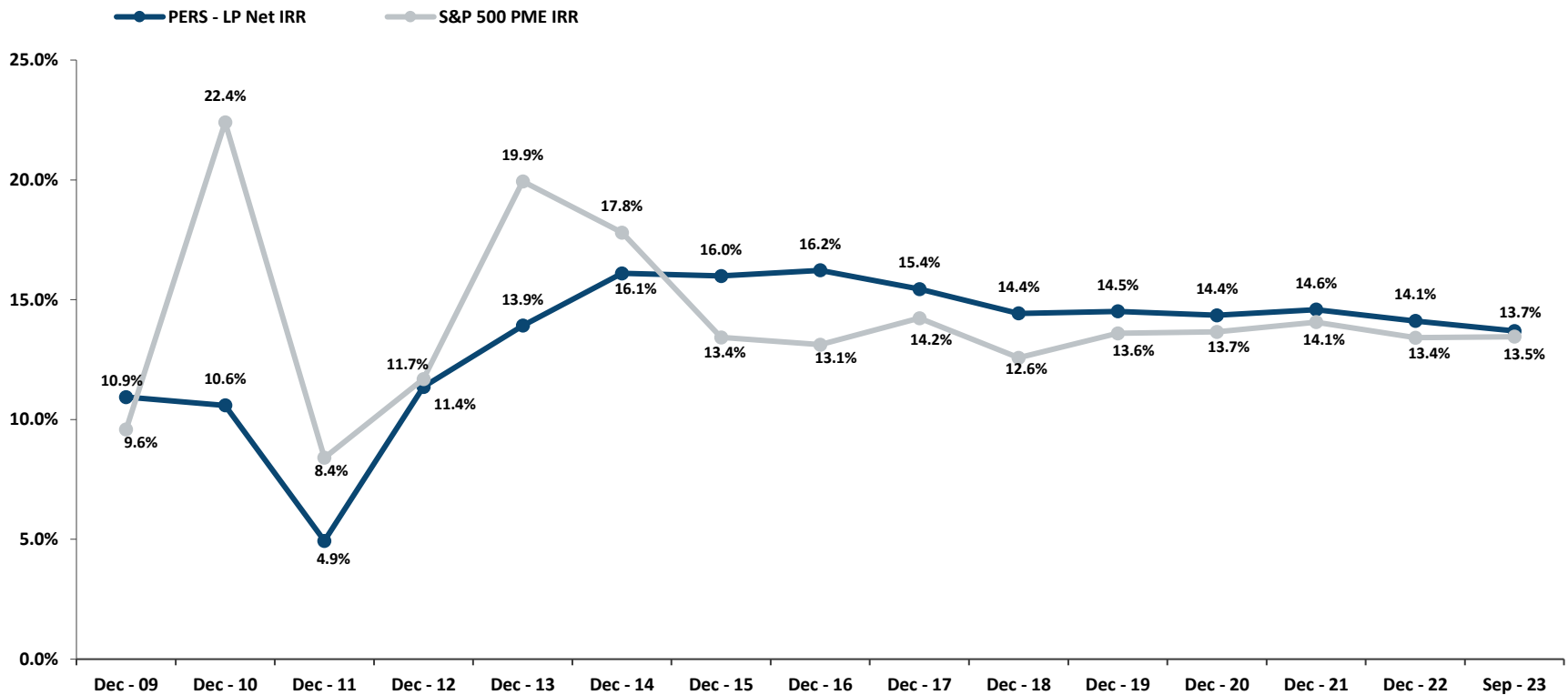
Valuations and cash flows are as of the respective dates, with December Program-related amounts corresponding to LP's share of amounts reported in the Program's respective audited financials. The September 30, 2023 Program (LP Level)-related amounts include a pro forma carried interest adjustment to account for the update of June 30, 2023 to September 30, 2023 valuations (i.e., will not foot to standard Program (LP Level) quarterly reporting, which reflects valuations on a quarter-lag to reporting date with cash flows through quarter-end).

Past performance is not necessarily indicative of future results. No assurance can be given that any investment will achieve its objectives or avoid losses. Please see the slides following this presentation entitled "Summary of Endnotes."



# PROGRAM PERS - LP NET IRR ANNUAL BENCHMARKING COMPARISON

The Program has outperformed the S&P 500 PME over the past nine years, with PERS - LP Net IRR outperformance of 159 bps as of September 30, 2023.

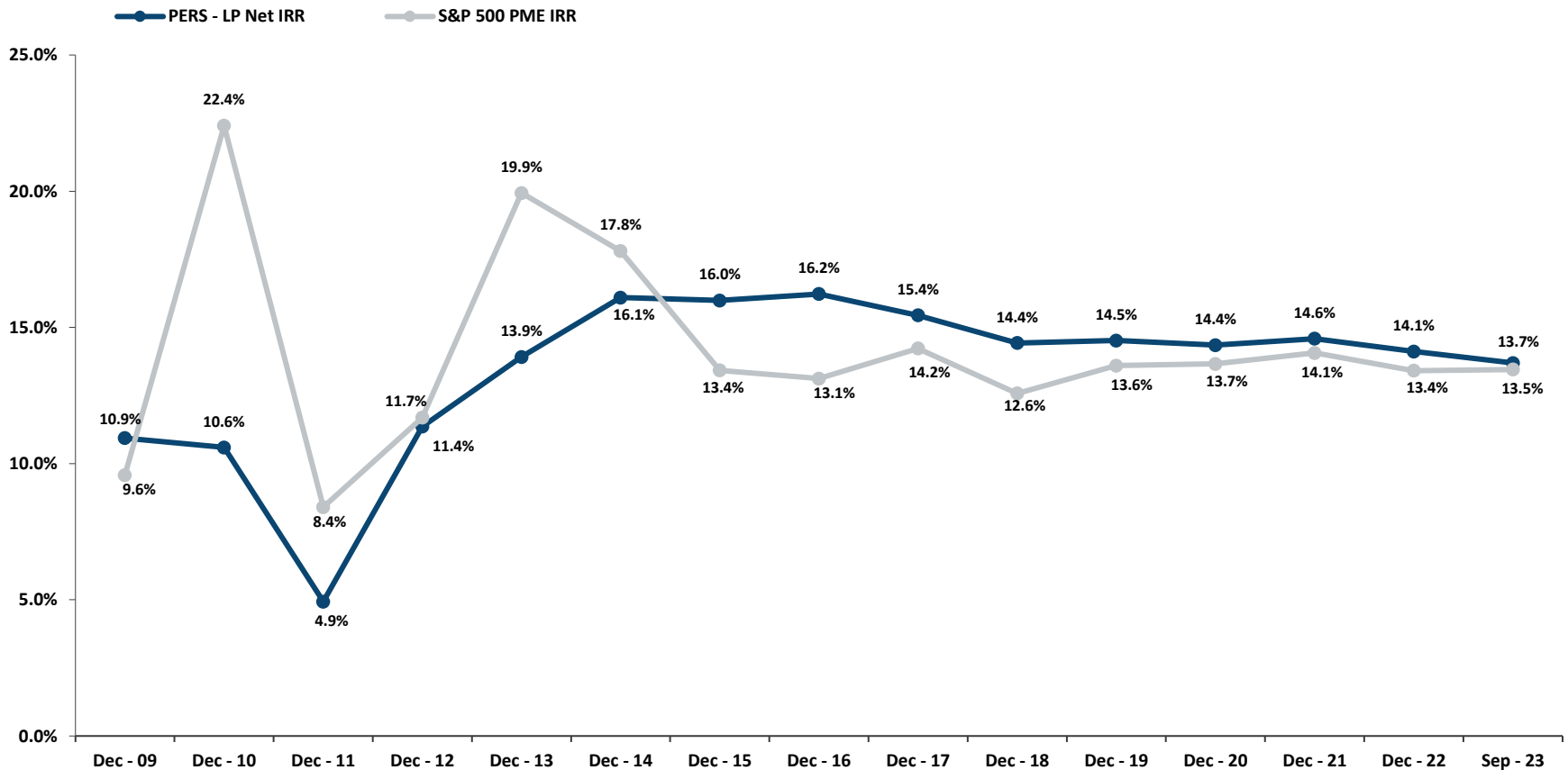


Valuations and cash flows are as of the respective dates, with December Program-related amounts corresponding to LP's share of amounts reported in the Program's respective audited financials. The September 30, 2023 Program (LP Level)-related amounts include a pro forma carried interest adjustment to account for the update of June 30, 2023 to September 30, 2023 valuations (i.e., will not foot to standard Program (LP Level) quarterly reporting, which reflects valuations on a quarter-lag to reporting date with cash flows through quarter-end).

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# 2009-1 SERIES PERS - LP NET IRR ANNUAL BENCHMARKING COMPARISON

The 2009-1 Series has outperformed the S&P 500 PME over the past nine years, with PERS - LP Net IRR outperformance of 23 bps as of September 30, 2023.

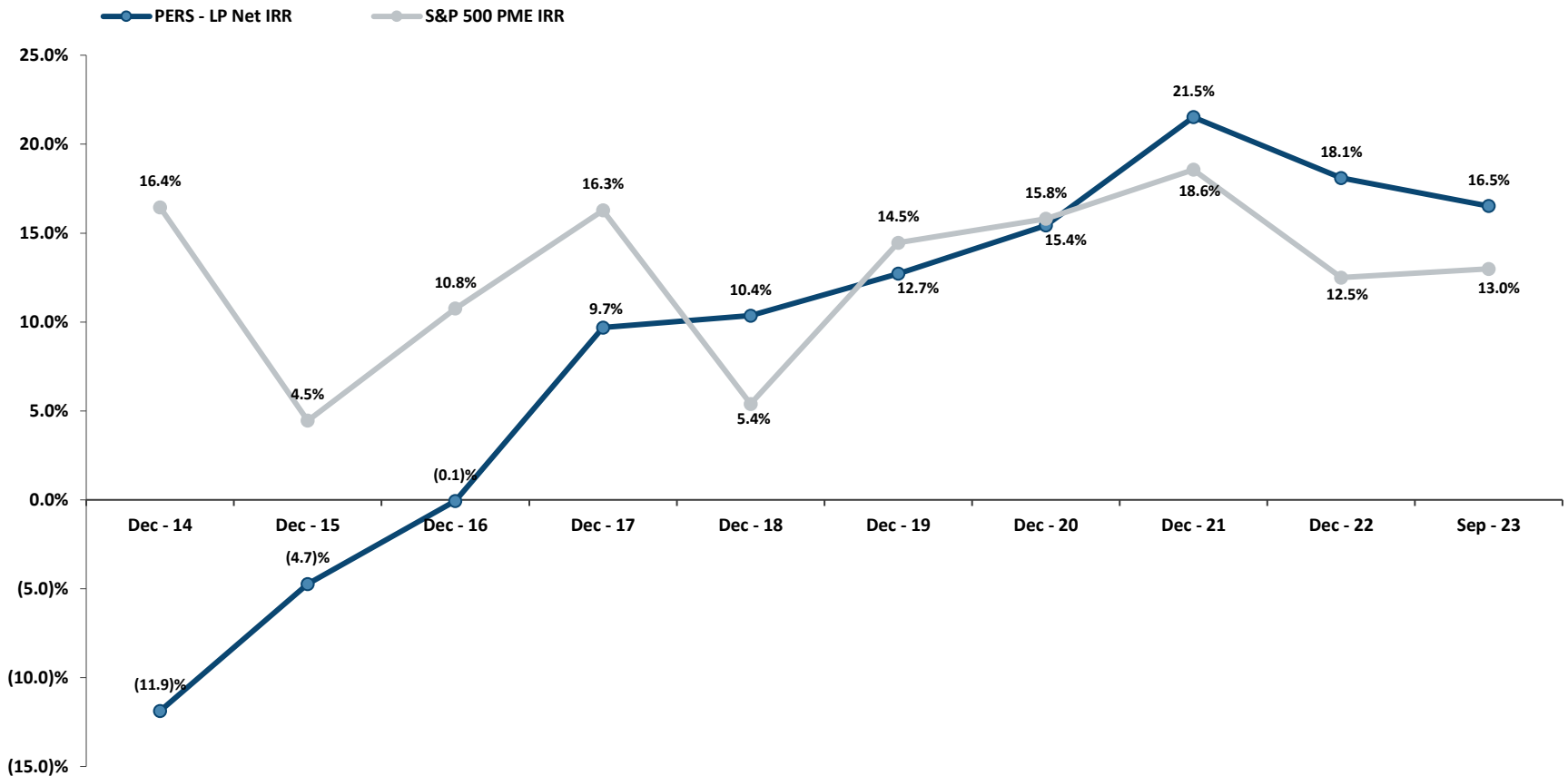


Valuations and cash flows are as of the respective dates, with December Program-related amounts corresponding to LP's share of amounts reported in the Program's respective audited financials. The September 30, 2023 Program (LP Level)-related amounts include a pro forma carried interest adjustment to account for the update of June 30, 2023 to September 30, 2023 valuations (i.e., will not foot to standard Program (LP Level) quarterly reporting, which reflects valuations on a quarter-lag to reporting date with cash flows through quarter-end).

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# 2014-1 SERIES PERS - LP NET IRR ANNUAL BENCHMARKING COMPARISON

The 2014-1 Series has outperformed the S&P 500 PME over the past three years, with PERS - LP Net IRR outperformance of 353 bps as of September 30, 2023.

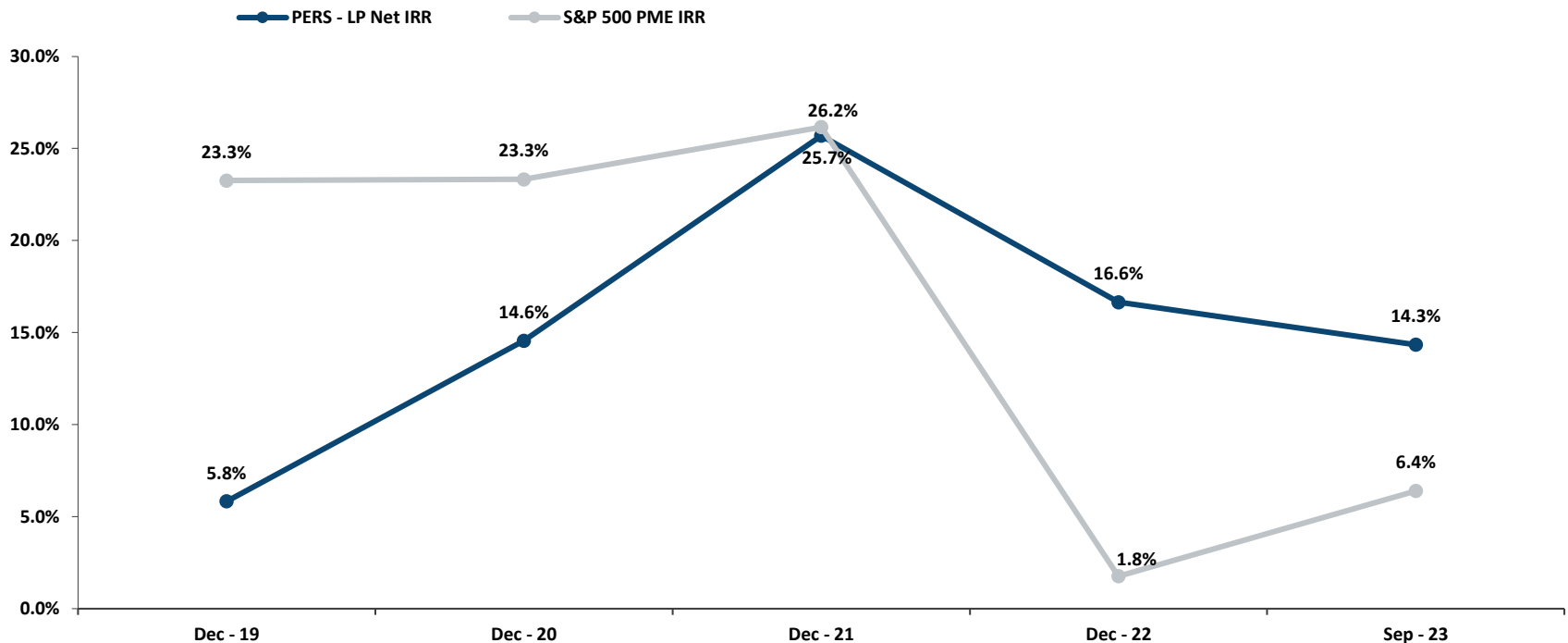


Valuations and cash flows are as of the respective dates, with December Program-related amounts corresponding to LP's share of amounts reported in the Program's respective audited financials. The September 30, 2023 Program (LP Level)-related amounts include a pro forma carried interest adjustment to account for the update of June 30, 2023 to September 30, 2023 valuations (i.e., will not foot to standard Program (LP Level) quarterly reporting, which reflects valuations on a quarter-lag to reporting date with cash flows through quarter-end).

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# 2018-1 SERIES PERS - LP NET IRR ANNUAL BENCHMARKING COMPARISON

The 2018-1 Series has outperformed the S&P 500 PME over the past two years, with PERS - LP Net IRR outperformance of 794 bps as of September 30, 2023.



Valuations and cash flows are as of the respective dates, with December Program-related amounts corresponding to LP's share of amounts reported in the Program's respective audited financials. The September 30, 2023 Program (LP Level)-related amounts include a pro forma carried interest adjustment to account for the update of June 30, 2023 to September 30, 2023 valuations (i.e., will not foot to standard Program (LP Level) quarterly reporting, which reflects valuations on a quarter-lag to reporting date with cash flows through quarter-end).

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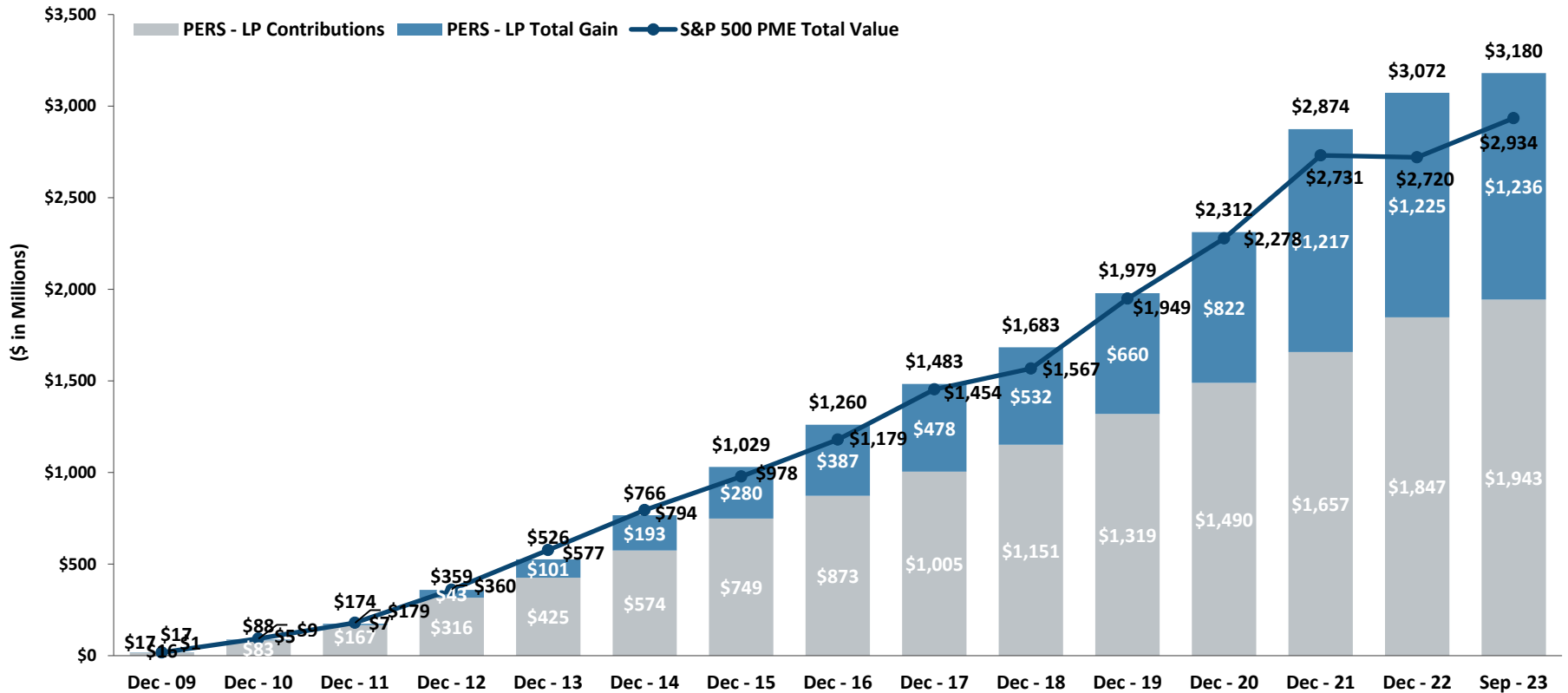
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Appendix 1

# PME TOTAL VALUE COMPARISON - ALTERNATE SLIDE

# PROGRAM (PERS - LP LEVEL) ANNUAL TOTAL VALUE VS. S&P 500 PME TOTAL VALUE

As of September, 30, 2023, the Program (PERS - LP Level) has outperformed the S&P 500 PME by \$246 million from a total value perspective.



1. LP Total Value is equal to LP distributions plus LP NAV and LP Total Gain is equal to LP Total Value minus LP Contributions as of the respective dates. Valuations and cash flows are as of the respective dates, with December Program-related amounts corresponding to LP's share of amounts reported in the Program's respective audited financials. The September 30, 2023 Program (LP Level)-related amounts include a pro forma carried interest adjustment to account for the update of June 30, 2023 to September 30, 2023 valuations (i.e., will not foot to standard Program (LP Level) quarterly reporting, which reflects valuations on a quarter-lag to reporting date with cash flows through quarter-end)."

Past performance is not necessarily indicative of future results. No assurance can be given that any investment will achieve its objectives or avoid losses. Please see the slides following this presentation entitled "Summary of Endnotes."

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Appendix 2

# NOTES AND DISCLOSURES

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# SUMMARY OF ENDNOTES

## Notes and Disclosures (1 of 2)

### Universal

- If applicable, Investment Returns (Gross Returns) are presented net of fees and expenses charged at the investment level but do not reflect the fees, expenses, and carried interest charged by the relevant GCM Grosvenor Fund/Program to its investors/participants (i.e., gross/net performance). Unless otherwise indicated, Investment Returns do not take into account the application of leverage. Additional information is available upon request.
- If applicable, Investor Net (Limited Partner “LP” net) Returns are presented net of all fees, expenses, and carried interest (i.e., net/net performance).
- If applicable, pie charts reflecting remaining value are based on the Fund/Program’s percentage of ownership in the investments. Remaining value is by the stated valuation date and is reflected gross of both investment and Fund/Program-related management fees, expenses and carried interest, if applicable.
- If applicable, performance of predecessor investments and/or funds reflected herein may not represent GCM Grosvenor’s returns for such investments/funds. Information regarding predecessor investments and/or funds sourced from reports and/or other materials provided by managers/sponsors.
- If applicable, investments may be held indirectly through special purpose vehicles.
- If applicable, for secondary investments, commitments to the investments represent the purchase price paid plus unfunded commitment at the time of purchase.
- Amounts for any foreign-denominated investments, if applicable, have been converted to the Fund/Program’s currency as of period-end.
- If applicable, GCM Grosvenor’s investment characteristics and related definitions are sourced from IHS Markit via iLevel or by The Burgiss Group. Data from iLevel is sourced by GCM Grosvenor or IHS Markit. Additional information is available upon request.

### Fund/Program Summary

- Capital Called from Investor(s) – Includes amounts called for investments, Fund/Program expenses and management fees, if applicable.
- Commitment(s) – The dollar amount the fund has committed to a specific holding or GCM Grosvenor portfolio, if applicable.
- Distributions to Investor(s) – Represents total proceeds returned to investor(s) (including callable and non-callable returns of capital) and withholding taxes paid to taxing authorities on behalf of investor(s), if applicable.
- Distributions/Realized Proceeds – If applicable, represents callable and non-callable proceeds received from the investments. For co-investments, amounts may be inclusive of escrow proceeds receivable, if applicable.
- Fund Size – As of the previous quarter-end or earlier and reflect the aggregate fund size which may include additional investment vehicles to which the Fund/Program may not have commitments, if applicable.
- Funded Amount/Invested Capital/Contributions – Represents amounts funded to the investments plus capitalized expenses paid. A portion of the funded amount may not reduce the Fund/Program’s remaining commitments to the investments, if applicable.



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# SUMMARY OF ENDNOTES

## Notes and Disclosures (2 of 2)

- Investment IRR/Gross IRR – If applicable, Investment IRR is calculated using all investment-related cash flows through and the reported value of investments as of the stated valuation date. Because GCM Grosvenor management fees, allocable expenses and carried interest, as applicable, are recorded at the Fund/Program level and not at the investment level, such fees and expenses are excluded from the calculation of individual investment returns. The Investment IRR for all performance information with less than 365 days of cash flows has not been annualized. The Investment IRR for all performance information with more than 365 days of cash flows has been annualized. N/A is reflected for Investment IRR if there is no cash flow activity as of the date referenced or earlier. N/M is reflected for Investment IRR if GCM Grosvenor believes the cash flow activity is not meaningful as of the date referenced.
- Investment Multiple/Gross Multiple/Gross MOIC/TVPI – Represents the Total Value divided by the Funded Amount, if applicable.
- Investor Net IRR/LP Net IRR – If applicable, the Investor Net IRR returns are based on the actual cash flows to the investor. The Investor Net IRR includes management fees, allocable expenses and carried interest, if applicable, at the Fund/Program level.
- Investor Net Multiple/LP Net Multiple/LP Net TVPI – If applicable, Investor Net Multiple is calculated as total proceeds distributed to the Investor plus the Investor's ending value divided by the Investor's total contributions. The Investor Net Multiple includes management fees, allocable expenses and carried interest at the Fund/Program level.
- Other Fund Net Assets/(Liabilities) – If applicable, represents all other assets and/or liabilities other than investments, consisting of cash balance, accrued management fees, accrued Fund/Program expenses and/or any other receivable and payables, where applicable, as of the period end.
- Reported Value/Adjusted Value/Net Asset Value "NAV" – Represents the fair value reported by the funds as of the stated valuation date, adjusted for cash flows through period end, where applicable, pursuant to GCM Grosvenor's valuation policy. If applicable, for co-investments, the fair value is determined by the General Partner/Investment Manager as of the stated valuation date pursuant to GCM Grosvenor's valuation policy, if applicable.
- Total Value – Represents the Reported Value plus Distributions, if applicable.
- Valuation Date – If applicable, represents the valuation date of the respective investments reflected herein. If applicable, charts that are inclusive of both co-investments and underlying holdings of fund investments may reflect a co-investment valuation date as of the fund investment valuation date (i.e., on a quarter lag).
- Vintage Year – If applicable, represents the year the specific holding acquired its first asset. For all secondaries and co-investments, the vintage year represents the year GCM Grosvenor committed to the Deal. For GCM Grosvenor portfolios the vintage year represents the year the portfolio made its first commitment or purchased its first asset.

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# TARGET RETURNS, FORWARD LOOKING ESTIMATES, AND RISK PARAMETERS

## Notes and Disclosures

**Target Returns, Forward Looking Estimates, and Risk Parameters:** Target returns, forward looking estimates, and risk parameters are shown to illustrate the current risk/return profile of how the fund or investment is/will be managed. **Target returns, forward looking estimates, and risk parameters do not forecast, predict, or project any fund, investment, or investor return.** It does not reflect the actual or expected returns of any investor, investment, GCM fund, or strategy pursued by any GCM fund, and does not guarantee future results.

Target returns, forward looking estimates, and risk parameters:

- are based solely upon how the fund or investment is expected to be managed including, but not limited to, GCM Grosvenor's current view of the potential returns and risk parameters of the investment, investments in the GCM fund, or strategy pursued by a GCM fund;
- do not forecast, predict, or project the returns or risk parameters for any investor, investment, GCM fund, or any strategy pursued by any GCM fund; and
- are subject to numerous assumptions including, but not limited to, observed and historical market returns relevant to certain investments, asset classes, projected cash flows, projected future valuations of target assets and businesses, other relevant market dynamics (including interest rate and currency markets), anticipated contingencies, and regulatory issues.

Changes in the assumptions will have a material impact on the target returns, forward looking estimates, and risk parameters presented. Target returns and forward looking estimates are generally shown before fees, transactions costs and taxes and do not account for the effects of inflation. Management fees, transaction costs, and potential expenses may not be considered and would reduce returns and affect parameters. **Target Returns And Risk Parameters May Not Materialize.**

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# PUBLIC MARKETS EQUIVALENT

## Notes and Disclosures

Public Market Equivalent ("PME") returns have been calculated using the Long Nickels PME methodology. The total return prices of the index have been applied; all prices include the impact of dividends and interest and are gross of any tax withholding. The public market cash flows are generated by simulating buy and sell decisions in the public index using actual investment transactions made by GCM Grosvenor-managed programs. Investments made by a GCM Grosvenor-managed program translates into buying shares in the public index on the same date and at the closing index price on such date. Distributions represent the selling of shares in the public index at the closing index price and on such date. The residual value of the equity in the public markets is calculated by multiplying the remaining shares still invested in the public index on the terminal value date or on the liquidation date of the GCM Grosvenor-managed program by the index price on such date. The number of remaining public shares depends on the GCM Grosvenor-managed program's investment cash flows as well as the index performance and in some situations the share balance can become negative. This is a result of a well-known shortcoming associated with the Long Nickels PME methodology which is that it incorrectly uses the private equity fund's distributions. By using these distributions, the calculation: (1) overstates the amount sold by the hypothetical public market portfolio and (2) incorporates the private equity fund's gains, which are included in the distributions, into the public market's performance calculation. (see for example: <http://blog.bison.co/2014/09/22/problem-with-long-nickels-pme/>)

Negative share balance outcomes are a known shortcoming of the Long Nickels PME methodology and depending on their severity can lead to questionable results. In these cases, it is a reasonable conclusion that the high level of distributions are a strong indication that the GCM Grosvenor-managed program has outperformed the index. The returns in the table shown includes instances where the ending index share balance became negative; however, the Long Nickels methodology produced a calculable result so the results are included here. Returns marked as "N/M" (Not Meaningful), represent instances where the ending index share balance became highly negative; in these cases, the Long Nickels PME methodology did not produce a calculable result due to the resulting highly negative net asset value and, therefore, the results are listed as not meaningful.

To address this Long Nickels methodology shortcoming and to provide an alternative point of reference, GCM Grosvenor has also calculated the above PMEs using a GCM Grosvenor proprietary methodology which can be provided separately upon request.

<b>Index Full Name</b>	<b>S&amp;P 500 Index</b>
Data Provider	Bloomberg
Provider Code	SPXT Index
Price Type	Total Return Gross
Price Time	Last Price

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# GCM GROSVENOR

## Notes and Disclosures (1 of 2)

This presentation is being provided by Grosvenor Capital Management, L.P. and/or GCM Customized Fund Investment Group, L.P. (together with their affiliates, "GCM Grosvenor"). GCM Grosvenor (NASDAQ: GCMG) is a global alternative asset management solutions provider across private equity, infrastructure, real estate, credit, and absolute return investment strategies.

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# GCM GROSVENOR

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April 23, 2024



## **Mississippi Public Employees Retirement System**

GCM Grosvenor Diversified Partners, L.P. – 2024 Series

The investment manager organizations contained herein have submitted information to Callan regarding their investment management capabilities, for which information Callan has not necessarily verified the accuracy or completeness of or updated. The information provided to Callan has been summarized in this report for your consideration. Unless otherwise noted, performance figures reflect a commingled fund or a composite of discretionary accounts. All written comments in this report are based on Callan's standard evaluation procedures which are designed to provide objective comments based upon facts provided to Callan. The appropriateness of the candidate investment vehicle(s) discussed herein is based on Callan's understanding of the client's portfolio as of the date hereof. Certain operational topics may be addressed in this investment evaluation for information purposes. Unless Callan has been specifically engaged to do so, Callan has not conducted due diligence of the operations of the candidate or investment vehicle(s), as may be typically performed in an operational due diligence evaluation assignment. The investment evaluation and any related due diligence questionnaire completed by the candidate may contain highly confidential information that is covered by a non-disclosure or other related agreement with the candidate which must be respected by the client and its representatives. The client agrees to adhere to the conditions of any applicable confidentiality or non-disclosure agreement. Important Disclosures regarding the use of this document are included at the end of this document. These disclosures are an integral part of this document and should be considered by the user.

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## GGM Grosvenor Diversified Partners, L.P. – 2024 Series

### Strategy

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Asset Class	Private Equity
Strategy Type	Primaries (90%), Co-investments (10%)
Currency (Fund)	USD
Control Rights	Various
Industry/Sector	All Sectors
Geography	North America: 70-80%, Europe: 10-20%, Asia/Pacific: 0-10%

### Terms

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Investment Period (Yrs.)	3
MPERS Commitment (\$M)	\$360
GP Commitment	1%

### Manager

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Headquarters	Chicago
Leadership	Michael Sacks (CEO), Jonathan Levin (President), Paul Meister (Vice Chairman)
Supervising Regulatory Body	SEC



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## Executive Summary

### Background

Mississippi Public Employees' Retirement System (MPERS) initiated its private equity program in 2008 by hiring two private equity fund-of-funds managers to implement discretionary fund-of-one (FOO) vehicles. The FOOs are a form of separate account, using a limited partnership structure in which MPERS is the sole limited partner and the manager is the general partner. Each manager has formed a master limited partnership into which ongoing commitments can be added, which are referred to as Series.

The two firms hired by MPERS were Credit Suisse Customized Fund Investment Group (CFIG), and Pathway Capital Management (Pathway or PCM). CFIG has since changed ownership and is now GCM Grosvenor Capital Management Private Markets (Grosvenor or GCM). Since its inception, MPERS has invested in three Series with each manager. Total commitments to date have been \$5.17 billion, with Grosvenor allotted \$2.05 billion, and Pathway \$3.12 billion.

Grosvenor's most recent Series ("2018 Series") is approaching full deployment, and MPERS is evaluating a reinvestment with Grosvenor in a new 2024 Series commitment. MPERS has requested that Callan provide a review of Grosvenor.

### Evaluation Process

Callan has been actively monitoring Grosvenor for many years. Callan has several clients in common with Grosvenor and is in regular communication with the firm, including formal update meetings, and ongoing search processes.

The 2024 Series expects to make 10% allocation to the co-investment commingled fund, GCM Grosvenor Co-investment Opportunities Fund III, L.P. ("GCF III").

Specific to the proposed Grosvenor's 2024 Series re-up, Callan collected current information on Grosvenor's organization, the proposed investment strategy, and historical performance including MPERS-specific information as well as commingled co-investment funds that the 2024 Series will allocate to. The main section of this report reviews the firm, strategy, and historical performance information. Callan benchmarks Grosvenor's historical returns compared to the Burgiss All Private Equity, All Regions peer group.

### Reinvestment Summary

Grosvenor is a large, stable, and growing organization with a global footprint that has provided MPERS with competitive returns. Grosvenor's largest client base is pension plans. The Firm's private equity investment team has been stable. MPERS Staff and Callan concur that a reinvestment with Grosvenor is appropriate.

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## Summary of Key Findings

### Merits

- **GCM Grosvenor's Scaled Platform and Experience:** Grosvenor is a large and experienced private equity investor with \$29 billion in AUM across primary, secondary, co-investment, and direct investment strategies and products. The firm's private equity team has 54 professionals, including 31 senior professionals, across six offices globally. The private strategy group has a track record of 24 years being founded in 1999.
- **Consistent Performance of Prior MPERS' FOO Vehicles:** The three prior fund of one vehicles managed by Grosvenor on behalf of MPERS' have generally performed well. Most prior vehicles rank in the second quartile in terms of net IRR and net TVPI.
- **Core, Diversified Private Equity Exposure:** GCM Grosvenor's best idea primary portfolio has been constructed with diversified private equity funds centered around middle market buyout funds augmented with upper middle market buyout and smaller and regional focused lower middle market buyout funds in the U.S. The portfolio is further diversified with Western European buyouts as well as special situations funds.

### Selected Considerations

- **Special Situations Investments' Higher Loss Ratio:** GCM Grosvenor has made 20 primary fund investments to special situations funds so far in MPERS' FOO Series, and five of them are marked below cost with an average gross TVPI of 0.69x. The loss ratio for the special situations funds is 25% in terms of the number of funds, and 8% in terms of funded commitments. With this higher loss ratio, the gross TVPI of the Special Situations strategy is low at 1.25x.

#### Mitigants

- Buyout fund investments have demonstrated a higher return in aggregate, with a gross TVPI of 1.81x, offsetting the losses from Special Situations funds. Venture/Growth investments have also generated gross TVPI of 1.91x in aggregate, also helping to offset poor Special Situations performance.
  - The primary exposure is expected to be with middle market buyout strategies in North America, and special situations funds only represent a small subset of the portfolio.
- **Grosvenor Co-Investment Fund I's Underperformance:** Grosvenor's first co-investment commingled fund, GCF I, was a 2015 vintage fund that produced poor overall performance, ranking in the fourth quartile in terms of net IRR and net TVPI. GCF I experienced a high number of losses with seven investments marked below cost, resulting in a loss ratio of 27%.

#### Mitigants

- GCF I was a smaller fund, which forced an overly concentrated portfolio of co-investments. With the larger fund size of GCF II and III, the Firm is able to build a more diversified portfolio.
- Many of the losses in GCF I stemmed from idiosyncratic company risks that emerged as a result of the COVID-19 pandemic and were largely unavoidable according to GCM.
- Performance of GCF II, a 2018 fund, has been strong and ranks in the first quartile in terms of net IRR and net TVPI. GCF II currently has no investments marked below cost.

## Performance

### MPERS Fund of One Series

	GCM 2009 Series	GCM 2014 Series	GCM 2018 Series
Vintage Year	2008-2014	2012-2019	2018-2022
Commitment Amount	750	700	600
# Investments	39	37	31

### LP Capital

Invested Capital	840	702	388
% Paid-In	112%	102%	65%
Realized	1,273	551	67
Unrealized Value	174	724	418
Total Value	1,447	1,276	485

### Net Performance

<b>Net TVPI</b>	<b>1.72x</b>	<b>1.78x</b>	<b>1.25x</b>
Quartile Ranking	3 <sup>rd</sup>	2 <sup>nd</sup>	2 <sup>nd</sup>
<b>Net IRR</b>	<b>13.88%</b>	<b>16.86%</b>	<b>13.29%</b>
Quartile Ranking	2 <sup>nd</sup>	3 <sup>rd</sup>	2 <sup>nd</sup>
<b>Net DPI</b>	<b>1.52x</b>	<b>0.77x</b>	<b>0.17x</b>
Quartile Ranking	2 <sup>nd</sup>	2 <sup>nd</sup>	1 <sup>st</sup>

### Losses

#	4	1	3
Loss Ratio	2.8%	1.2%	0.4%

\$ Millions

As of 09/30/2023.

Quartile ranking against the All Private Equity, All Regions Burgiss Database.

For the loss analysis of the 2018 Series, it excludes funds with 2022 vintages.

### Performance Commentary

#### 2009 Series

The series invested \$852 million across 39 primary fund investments over five years, with vintage years of the invested funds ranging from 2008 through 2014. The invested capital surpasses the commitment amount as a result of distributions that were recalled, and the percentage paid-in stands at 112% as of December 31, 2023, using the underlying funds' valuation as of September 30, 2023. There is always one quarter lag between the valuation of the Series and valuation of the underlying funds. The net TVPI is 1.72x and ranks in the third quartile, but the net IRR of 13.88% and net DPI of 1.52x

rank second quartile against the Burgiss private equity database. Three funds are liquidated as of September 30, 2023. Two of the buyout funds as well as two of venture/growth funds are marked above 3x TVPI while four of the special situations funds are marked below cost.

#### **2014 Series**

The series invested \$730 million across 37 primary fund investments over seven years, with vintage years of the invested funds ranging from 2012 through 2019. The invested capital surpasses the commitment amount as a result of distributions that were recalled, and the percentage paid-in is at 103% as of December 31, 2023, using the underlying funds' valuation as of September 30, 2023. The net TVPI of 1.78x and net DPI of 0.77x rank in the second quartile against the Burgiss private equity database, with the net IRR of 16.86% falling just below median. No funds are liquidated as of September 30, 2023. One buyout fund is marked above a 3x TVPI while one special situations fund is marked below cost.

#### **2018 Series**

The series invested \$422 million across 31 primary fund investments over five years, with vintage years of the invested funds ranging from 2018 through 2022. The paid-in is at 70% as of December 31, 2023, using the underlying funds' valuation as of September 30, 2023. The net TVPI of 1.25x and the net IRR of 13.29% rank second quartile, and the net DPI of 0.17x ranks first quartile against the Burgiss private equity database. Excluding the funds with 2022 vintage, one buyout fund is marked below cost and no fund is marked above 3x.

**Historically, MPERS is not an investor in the Co-investment Comingled Fund Series.**

*Co-investment Commingled Fund Series*

	<b>GCF I</b>	<b>GCF II</b>
Vintage Year	2015	2018
Commitment Amount	235	534
# Investments	16	23
Invested Capital	230	499
% Paid-In	98%	93%
Realized	157	328
Unrealized Value	157	751
Total Value	314	1,079

**Net Performance**

<b>Net TVPI</b>	<b>1.25x</b>	<b>1.98x</b>
Quartile Ranking	4 <sup>th</sup>	1 <sup>st</sup>
<b>Net IRR</b>	<b>5.4%</b>	<b>30.50%</b>
Quartile Ranking	4 <sup>th</sup>	1 <sup>st</sup>
<b>Gross DPI</b>	<b>0.68x</b>	<b>0.66x</b>
Quartile Ranking	4 <sup>th</sup>	1 <sup>st</sup>

**Losses**

#	7	0
Loss Ratio	27%	0%

*\$ Millions*

*As of 9/30/2023*

*Quartile ranking against the Buyout, All Regions Burgiss database.*

*Performance Commentary*

**GCF I**

It is a 2015 vintage, \$534 million fund. There are 16 deals in the Fund, and the investments were made from 2015 to 2018. The ticket size ranged from \$6 million to \$22 million, with the average ticket size being \$15 million. Six deals are realized, and 10 deals are remaining as of September 30, 2023. There are three realized loss deals and four deals marked below cost. One deal is marked above 3x but has not meaningfully offset the losses from the struggling seven deals. Losses come from three healthcare, two technology, one consumer, and one industrial business; many of which were affected by the COVID-19 pandemic.

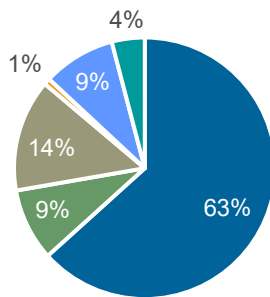
**GCF II**

It is a 2018 vintage, \$972 million fund. There are 23 deals in the Fund, and the investments were made from 2018 to 2021. The ticket size ranged from \$11 million to \$36 million, the average ticket size being \$23 million. Three deals have been realized, and 20 deals are remaining as of September 30, 2023. There are no deals marked below cost, and there are four deals marked above 3x. The industry sectors of the four high-performing deals are healthcare, technology, industrials, and materials.

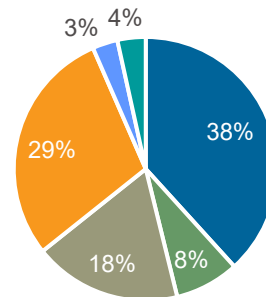
## Organization and Team

GCM Grosvenor was founded in 1971 as a hedge fund fund-of-funds firm and currently has total assets under management (AUM) of approximately \$77 billion of which \$54 billion are in private markets and \$22 billion are in absolute return strategies. Private markets strategies include private equity, infrastructure, real estate, private credit, and sustainability/impact. Grosvenor has approximately 538 employees with 177 investment professionals across both absolute return and private markets strategies.

Firmwide AUM by investor type  
(as of 12/31/2023)



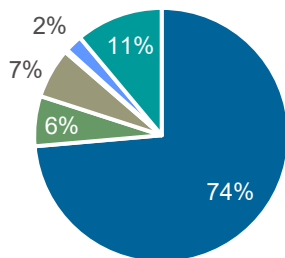
Firmwide AUM by strategy  
(as of 12/31/2023)



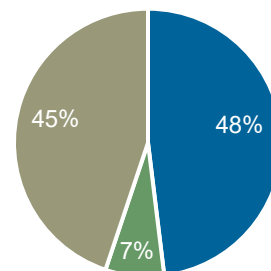
- Pension
- Sovereign Entity
- Other
- Financial Institution
- Endowment / Foundation
- HNW/Family Office
- Private Equity
- Infrastructure
- Longer-Duration Credit
- Real Estate
- Absolute Return Strategies
- Private Markets Opportunistic

GCM Grosvenor Private Markets (GPM) is the private markets division of alternative investments manager GCM Grosvenor. GPM was founded in 1999 by Credit Suisse and called the Customized Fund Investment Group (CFIG) focusing on private equity manager-of-managers separate accounts. GCM Grosvenor acquired CFIG in 2014, rebranded the team as GCM Grosvenor Private Markets, and expanded the GPM's original private equity product lines to include other private investment strategies, including real estate, infrastructure, and private credit. The additional asset classes are separately staffed, and the dedicated private equity team continues to focus exclusively on its original private equity strategy.

Private Markets AUM by investor type  
(as of 12/31/2023)



Private Markets AUM by strategy  
(as of 12/31/2023)



- Pensions
- Financial institutions
- HNW
- SWF
- Endowment/Foundation
- Other
- Primary
- Secondary
- Co-Investments/Direct

GPM's private equity platform has approximately \$29 billion in AUM across primary, secondary, co-investment, and direct investment strategies and products. The firm's private equity team has 56 professionals of which 31 are senior professionals. GPM has senior private equity investment professionals in 6 offices globally. GPM manages private equity separate accounts, primary fund-of-funds, secondary funds, co-investment funds, and diverse manager funds. Within private equity, the team has gradually established separately staffed verticals for primary, secondary, and co-investments. However, senior professionals retain some cross-strategy involvements given that secondary and co-investment transactions have their basis in primary partnership relationships.

#### *Ownership*

The firm became publicly traded (NASDAQ: GCMG) in 2020 by merging with a Cantor Fitzgerald-sponsored SPAC. Senior GCM management continues to own the majority of GCM Grosvenor's equity with the remainder held by the public.

#### *Investment Team*

The private equity investment team consists of 54 investment professionals. The team has 31 senior professionals (Managing Director, Executive Director, and Principal) supported by 25 Analysts and Associates. Private equity team members are located in New York, Chicago, Charlotte (NC), Austin (TX), London, and Hong Kong.

20 of these investment professionals are dedicated to co-investments.

#### **Key Professionals**

<b>Professional</b>	<b>Title</b>	<b>Years w/ Firm</b>	<b># Investments</b>
Michael Sacks	Chairman and CEO	33	36
Paul Meister	Vice Chairman	33	33
Jonathan Levin*	President	13	21
Pamela Bentley	Chief Financial Officer	3	31
Sandra Hurse	Chief Human Resources Officer	6	26
Eric Levin	Chief Technology Officer	4	25
Burke Montgomery	General Counsel	20	23
Frederick Pollock*	Chief Investment Officer	9	20
Stacie Selinger	Head of Investor Relations	9	18
Lee Brashear*	Managing Director (Co-investment)	17	20
Elizabeth Browne	Managing Director	1	16
Luis Cabrera	Managing Director (Secondary)	8	19
Stephen Cammock	Managing Director	14	14
Brad Hanan	Managing Director (Secondary)	7	20
Aris Hatch	Managing Director	7	25
Jessica Holsey	Managing Director	10	11



Marc Iyer	Managing Director	14	24
Derek Jones*	Vice Chairman	17	37
Corey LoPrete	Managing Director	16	23
Jason Metakis*	Managing Director (Co-investment)	14	24
Kevin Nickelberry	Managing Director (Co-investment)	4	29
Thomas Rest, CFA	Managing Director	15	35
Mayur Shah	Managing Director (Co-investment)	16	20
Brian Sullivan*	Managing Director (Secondary)	9	27
Bernard Yancovich*	Managing Director	24	29

Source: Grosvenor and Callan analysis

\* Denotes Private Equity Investment Committee member

### Investment Team Turnover

Senior private equity investment team, by Year	# of Joiners	# of Leavers
2019	0	3
2020	1	2
2021	1	0
2022	1	2
2023	0	4
<b>Total</b>	<b>3</b>	<b>11</b>

Source: GCM Grosvenor and Callan analysis

There have been 11 senior departures since 2019, which Callan views as a higher-than-expected, but acceptable, level for a team of 31 senior professionals and allows for the advancement of successful junior and mid-level team members. Junior professional turnover is expected as the Analyst program is not intended to provide permanent positions, so there is an inherent departure rate. The senior departures include four managing directors, one Director/Partner, and six principals; seven of the senior departures were below the Managing Director level.

A recent notable departure was Amy Wierenga, who was GCM's Chief Risk Officer and was a member of the Firm's private equity investment committee. GCM noted she left the Firm to pursue another opportunity at a bank, and that her role was more applicable to public investments and the hedge fund business. Following her departure, GCM segmented the ICs between the private equity and real assets strategies, which previously had the same investment committee.

There was also one senior professional departure on the co-investment team, Andrew Sherriff, who was an Executive Director and left to relocate his family, ultimately joining a family office platform.

### Compensation

GCM seeks to maintain compensation programs that are industry-competitive and designed to foster organizational stability and retention. Private equity compensation generally includes a salary, discretionary bonus, and participation in carried

interest. Annual raises and bonuses are related to an employee's individual performance, the performance of their department, and GCM's firm-wide performance.

Carried interest is related to the specific product or funds to which the investment professionals are assigned, as well as participation in a broader pool that is contributed to by GCM's investment activities broadly. The broader carry pool is intended to promote firm-wide collaboration and cohesion. Carried interest vests over four years with a 20% hold-back structure intended to foster retention. Carry interest is awarded based on performance, seniority, tenure, and broader contribution to GCM's business.

In addition to the above compensation methods, senior professionals may also participate in deferred compensation programs as well as the firm's profits.

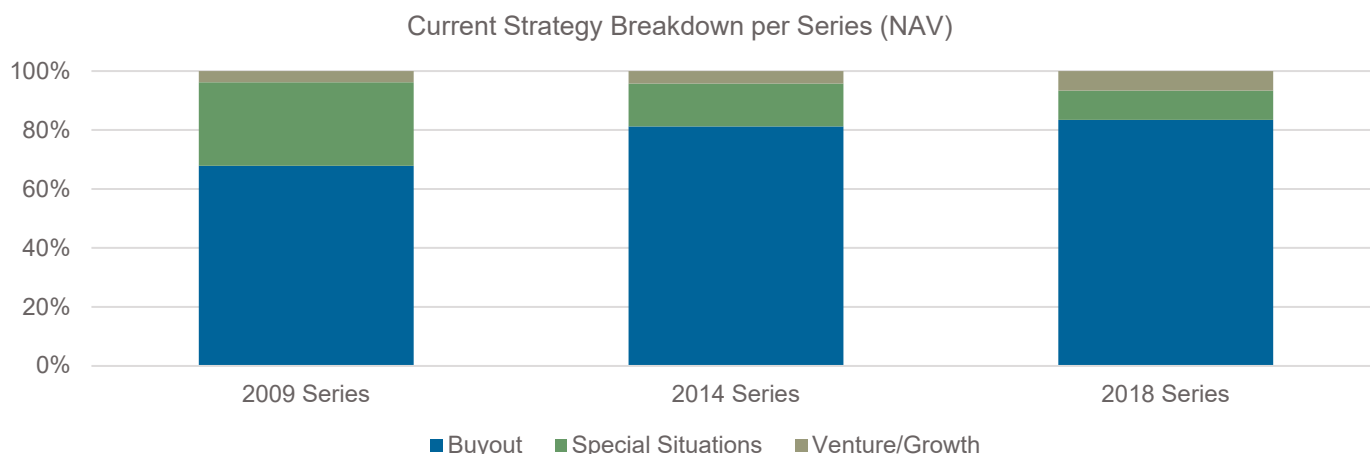
## Investment Strategy

The model portfolio offered by Grosvenor represents the same portfolio strategy that was implemented in the GCM Grosvenor Series 2009, 2014, and 2018 fund-of-one (FOO) vehicles. MPERS possesses the ability to make strategy weighting adjustments to the recommended FOO portfolio; however, Callan recommends that MPERS select Grosvenor's model portfolio since it represents Grosvenor's best ideas/firm strengths.

Prior FOO vehicles had investment periods ranging from five to seven years, however, the 2024 Series is expected to have a three-year investment period, so that MPERS can adjust commitment amounts to the FOO more nimbly. Furthermore, in addition to primary fund investments, the 2024 Series will commit 10% of capital to co-investment commingled fund.

The FOO is expected to be focused on buyout partnerships, with opportunistic allocations to venture/growth, and special situations funds. The current strategy breakdown of NAV per Series is shown below. 2009 Series had a higher allocation to special situations, however, the weight towards special situations will be reduced in the 2024 Series as MPERS launched its' private credit program in 2023. While Grosvenor will continue to allocate to special situations strategies, the Series will not allocate to funds where most investments are credit instruments.

### NAV (%) by Strategy, as of 9/30/2023



### Commitment (%) and TVPI by Sub-Strategy, as of 9/30/2023

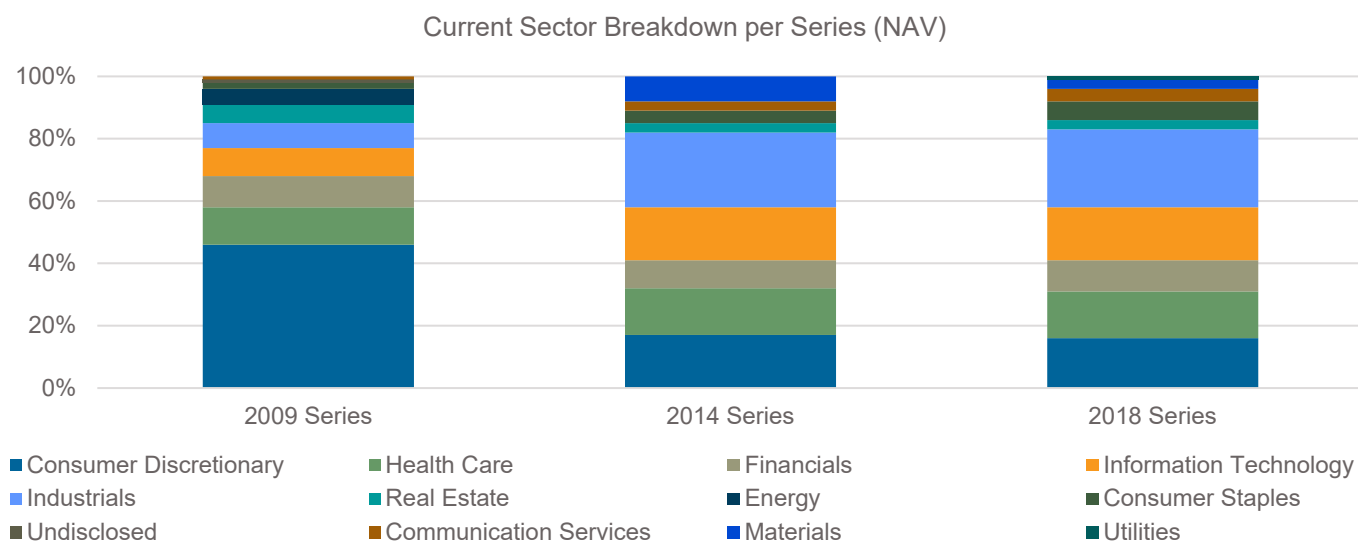
	2009 Series		2014 Series		2018 Series	
	% Invested	Gross TVPI	% Invested	Gross TVPI	% Invested	Gross TVPI
Buyout	68%	1.98x	81%	1.92x	83%	1.30x
Venture/Growth	4%	2.77x	4%	1.81x	7%	1.14x
Special Situations	28%	1.18x	15%	1.37x	10%	1.28x

Source: GCM Grosvenor and Callan analysis.

### Sector Allocation

Grosvenor will invest across various industry sectors via investing in generalist as well as sector specialist funds. The current sector breakdown of NAV per Series is shown below. The 2009 Series currently has an overweight to the consumer discretionary sector, but that is due to many portfolio companies having been exited as only 11% of total value is currently unrealized. Post-COVID-19, a disproportional number of consumer discretionary companies remain in the portfolio. The 2014 and 2018 Series portfolios are well diversified with the largest sector allocation being industrials at 24% for the 2014 Series and 25% for the 2018 Series. There is 5% energy sector exposure in the 2009 Series, but there is none in the 2014 and 2018 Series.

### NAV (%) by Sector, as of 9/30/2023



### Attribution by Fund Sector, as of 9/30/2023

	2009 Series		2014 Series		2018 Series	
	% Invested	Gross TVPI	% Invested	Gross TVPI	% Invested	Gross TVPI
Generalist	25%	1.95x	45%	1.75x	47%	1.41x
Consumer	10%	2.43x	6%	1.93x	5%	0.94x
Financial	4%	2.03x	4%	2.38x	-	-
Healthcare	4%	1.85x	3%	0.58x	3%	1.23x
Industrial	10%	1.75x	8%	1.81x	-	-
Technology	5%	2.28x	7%	1.83x	7%	1.05x
Technology/Healthcare	3%	2.38x	7%	3.03x	7%	1.23x
TMT	3%	2.16x	-	-	-	-
Energy	6%	1.05x	-	-	-	-
Real Estate	-	-	-	-	4%	1.49x

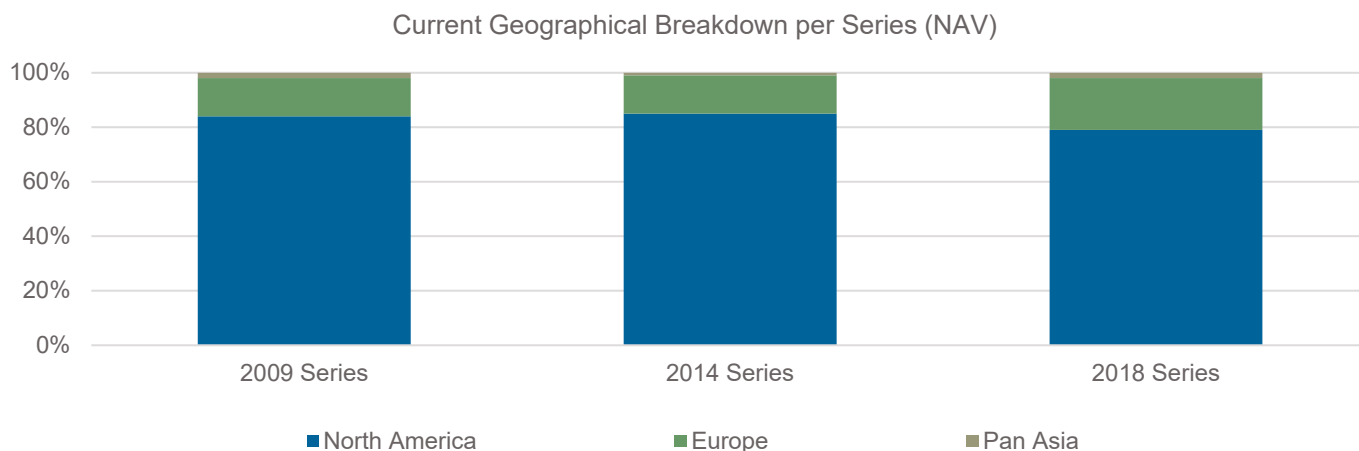
European Buyout	5%	2.11x	8%	1.82x	16%	1.16x
Special Situations	17%	1.19x	13%	1.55x	12%	1.21x
Credit	8%	1.30x	-	-	-	-

Source: GCM Grosvenor and Callan analysis.

### Country/Regional Allocation

The majority of capital will be allocated to U.S. middle-market buyout managers, particularly those that are sector specialists or regionally focused. Grosvenor defines the middle market as companies whose enterprise value is less than \$1.5 billion. International exposure is primarily in Western Europe, and in Europe, Grosvenor prefers regionally focused managers or country-specific managers that invest across multiple industry sectors. It is expected that international exposure will constitute 20% of the portfolio. GCM does not intend to allocate any portion of the FOO to emerging countries. The current geographical breakdown of NAV per Series is shown below. The highest international exposure is at 21% of NAV for the 2018 Series portfolio. Pan-Asian exposure is 1-2% across the portfolio and very limited. Grosvenor does not intend to allocate to China-based funds for the foreseeable future.

### NAV (%) by Geography, as of 9/30/2023



### Co-Investment Strategy

GCF III will seek to invest in 20-30 deals. Most of the deals are expected to be \$500 million and above in enterprise value. Grosvenor's co-investment strategy runs through primary relationships the firm has built. Most opportunities are sourced from the Firm's existing primary GP relationships, and although some co-investment opportunities may come from non-primary funds, they would require a blessing from the primary team. One of the examples noted by GCM was a co-investment alongside Butterfly Equity. GCF III invested in Butterfly Equity's consumer staple company, Milk Specialties Global. Grosvenor has not made a primary commitment in a Butterfly Equity funds, as part of their mandate is focused on restaurants, to which Grosvenor is trying to avoid having establishing exposure. The co-investment team has seen an average of 300 deals a year for the last five years and closes around five deals a year, which is 1.7% of the total deal flow. The team favors non-cyclical businesses, and the ticket size typically ranges from \$10-30 million. The ticket size is determined by the portfolio balance, and not based on conviction. Similar to the primary portfolio, GCF III intends to diversify sector exposure.

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## Operational Due Diligence

### Accounting/Finance

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Chief Financial Officer

Pamela Bentley

Overview of the accounting and finance team

The Finance Department is comprised of more than 150 professionals as of January 1, 2023. The Department contains the following teams:

**Fund Accounting and Analysis:** The Fund Accounting and Analysis Team is responsible for providing full-service administration capabilities and customized solutions across all investment verticals. They are responsible for comprehensive account and performance reporting for GCM Grosvenor funds, including oversight of the third-party administrator, and analysis of underlying investments as an extension of the operational due diligence program.

**Operational Due Diligence:** The Operational Due Diligence Team is responsible for evaluating the operational and internal control structure of the managers of prospective investments prior to investment. The team also monitors approved investments and their managers from an operational perspective after an investment has been made.

**Treasury:** The Treasury Team is responsible for executing and verifying cash movements, performing cash flow monitoring, managing short-term cash holdings, managing brokerage banking relationships, performing counterparty risk management and oversight of treasury activities of the third-party administrator.

**Investment Implementation:** The Investment Implementation Team is responsible for facilitating launches, restructures, and transition services for investment products, executing investment decisions through robust compliance-driven processes and analyzing liquidity of underlying investments to support portfolio management decision-making process.

**Valuation:** The Valuation Team is responsible for independent review and oversight of the periodic valuation process for all portfolio investments across GCM Grosvenor, to ensure consistency in valuation methodology and presentation. They also liaise with the Valuation Committee to determine the fair value of investments.

**Investor Operations:** The Investor Operations Team is responsible for oversight and coordination of client onboarding and investor record maintenance. They also prepare and issue client reporting and administer client facing technology to support efficient and timely report delivery.

**Corporate Accounting:** The Corporate Accounting Team is responsible for SEC reporting, firm-wide financial reporting and accounting, billing and collection, accounts payable, carried interest administration and treasury functions.

**Tax:** The Tax Team is responsible for oversight and coordination of tax compliance, tax provisions and tax controversy for all entities managed across each investment vertical. They also consult across multiple disciplines including investment structuring, operational due diligence support, FACTA/CRS compliance, client correspondence and support and tax planning.

**Financial Planning & Analysis:** The FP&A team is responsible for all aspects of budgeting and forecasting for the firm as well as supporting strategic decisions.

Fund Administrator	SEI Global Services, Inc.
Custodian/Bank	Bank of New York Mellon
Fund Auditor	PricewaterhouseCoopers, LLC

### **Capital Calls from Investors**

Capital calls from investors generally result from new underlying investment opportunities, follow-on investment opportunities, and/or expenses or management fees to be paid. When investor capital is required, GCM Grosvenor's Treasury Team prepares an analysis to determine the amount to be called from investors. Using pre-approved allocation schedule, capital call letters are prepared and reviewed by GCM Grosvenor's Treasury Team and issued to the investor through the Client Web Portal. On the capital call due date, GCM Grosvenor's Accounting Team records and posts the transaction in the general ledger and tracks cash receipts from investors.

### Overview of cash movements

#### **Transfers of Cash**

In all cases multiple individuals are required to process payments. Payments are subject to final approval by at least one GCM Grosvenor authorized signatory. Payments are only made to previously authenticated wire instructions.

For all new payment instructions or changes to existing payment instructions, a callback to the payee is performed to verbally authenticate the payment instructions. Where possible, callback contact information is obtained from a publicly listed source such as the company's website or internet search. In the rare case where a vendor does not have a public website a relationship management or known contact with whom GCM Grosvenor has previously worked with may be used as the primary contact. When using a primary contact,

GCM Grosvenor's Treasury Team requests to speak to a different individual to confirm the instructions.

Non-investor payment instructions are authenticated by members of GCM Grosvenor's Treasury Team. After authentication, wire instructions are entered into their treasury management system along with supporting documentation including call back details (who made the call back, what number they called, who they spoke with, and when). The treasury management system will not allow use of new or updated wire instructions until they have been reviewed and approved in the system by a GCM Grosvenor authorized signatory.

#### **Distributions to Investors**

On a periodic basis (generally quarterly), GCM Grosvenor's Fund Accounting and Analysis Team performs an analysis of distributable proceeds to determine whether a distribution should be made to investors, considering cash on hand, remaining client commitments and upcoming funding needs. If it is determined that a distribution is appropriate, a distribution allocation schedule is prepared.

Where applicable, a carried interest calculation is performed to determine whether the General Partner would be entitled to a carry distribution. Carried interest amounts are calculated in accordance with each LPA or other governing legal documents. GCM Grosvenor's Fund Accounting and Analysis reviews and approves the distribution allocation schedule and carried interest calculation to determine if allocations are in accordance with the legal documents and to check for accuracy and completeness (including consideration of carried interest, fund reserves, specific investor situations such as defaulters, delinquent investors, etc.). A senior member of the GCM Grosvenor Accounting and Analysis team's approval is required prior to realizing carried interest.

#### **Valuation Policy/Process**

Does the Firm have a Valuation Policy?	Yes
Overview of the valuation process	GCM Grosvenor has a written valuation policy that requires all investments to be valued in accordance with fair value standards (i.e., US GAAP or IFRS). A dedicated Valuation Team administers the valuation process. Fund NAVs are calculated quarterly by GCM Grosvenor or an independent third-party administrator, depending on the structure and/or the requirements of a Fund. Kroll is engaged to review internally generated co-investment valuations. These third-



party valuation firms provide positive assurance opinions on a quarterly, rotational basis.

Valuation Committee

Yes

**Committee Members:**

Pamela Bentley, Chief Financial Officer, Valuation Committee  
Chairperson

John Davis, Managing Director

Paul Guercio, Managing Director

Jonathan Hirsch, Managing Director

Stacie Selinger, Managing Director

Mark Stachnik, Executive Director

Timothy Wyne, Executive Director

Jason Metakis, Managing Director

Brad Meyers, Managing Director

Frequency of valuations

Quarterly

Are valuations audited annually?

Yes

Is a third-party valuation firm ever used?

Yes

Are valuations in accordance with U.S. GAAP and ASC 820?

Yes

**Allocation of Investment Opportunities**

Does the Firm have an Allocation Policy?

Yes

Overview of investment allocation across funds/products

While some investment opportunities presented to GCM Grosvenor are either not subject to capacity constraints or are only appropriate for a particular account, The Firm will, from time to time, be presented with investment opportunities appropriate for multiple accounts. GCM Grosvenor's Global Investment Allocation Policy (the "Allocation Policy") seeks to allocate investments among eligible GCM Grosvenor accounts on a basis that the Firm believes to be fair and equitable.

The Allocation Policy recognizes that: (i) while many GCM Grosvenor accounts have broad investment mandates, they nonetheless each have discrete investment guidelines, objectives and constraints that must be considered; and (ii) certain GCM Grosvenor accounts may have investment mandates that require participation in multiple allocation procedures across the firm's global investment platform.

GCM Grosvenor does not allocate investment capacity for investment opportunities either (a) in priority on the basis of whether a GCM

Grosvenor account is organized for multiple investors or a single investor, or (b) on the basis of GCM Grosvenor's anticipated economics.

If the Firm has a debt product, can it invest alongside the equity product(s)? No

### LP Reporting

Quarterly/annual reporting package

- Capital account statements
- Quarterly unaudited fund financial statements
- Annual audited fund financial statements
- Quarterly LP letters/updates
- Other

Are the ILPA reporting templates utilized? Yes

### Legal/Compliance

Is the Firm a Registered Investment Advisor or an Exempt Reporting Advisor? Registered Investment Advisor

Chief Compliance Officer Lillian Farahnakian

External compliance consultant

GCM Grosvenor utilizes a third-party consulting firm ACA to assist with the review of routine, repetitive, low-risk compliance tasks such as requests for gifts and entertainment, charitable contributions, and political contributions. Further, the third-party compliance consultant also assists with chaperoning expert calls, performing mock exams, and providing industry insights.

Compliance Manual

No

*Comments:* In lieu of a Compliance Manual, the Firm maintains a full suite of compliance policies that addresses applicable regulatory requirements. The Legal and Compliance Team performs a comprehensive annual review of all compliance policies and procedures. This review typically results in modifications to existing policies. Policies and procedures may be revised more frequently in response to internal or external factors, such as changes in the business or changes in laws and regulations.

Code of Ethics

Yes

As a global asset management firm, GCM Grosvenor manages its business and supports its clients by acting ethically and with integrity. GCM Grosvenor believes it is the right thing to do and is fundamental

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to its continuing success. The Code of Ethics (“Code”) outlines the Firm’s duties of care and loyalty; the standards of conduct required of all Covered Persons; and the requirements applicable to outside business activities, conflicts of interest, and personal trading. Personal trading requirements include pre-clearance of accounts and transactions and periodic reporting.

The Code is part of GCM Grosvenor’s compliance policies and procedures, which are reasonably designed to address the requirements of the Federal Securities and Commodities Laws and potential conflicts of interest applicable to GCM Grosvenor and the personal activities of Covered Persons.

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Legal Counsel

Burke Montgomery, GCM Grosvenor General Counsel and Gibson, Dunn & Crutcher LLP

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Is the Firm or any key professional subject to any current material litigation proceedings?

No

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## Additional Performance Metrics

### PME Analysis, as of 09/30/2023

Fund	VY	Net IRR	Net TVPI	MSCI ACWI Index			S&P 500 Index		
				LN PME IRR	LN PME TVPI	KS PME	LN PME IRR	LN PME TVPI	KS PME
2009 Series	2009	13.88%	1.72x	8.64%	NM	1.22x	13.44%	1.42x	1.03x
2014 Series	2014	16.86%	1.78x	9.24%	1.34x	1.36x	12.90%	1.53x	1.19x
2018 Series	2018	13.29%	1.25x	2.90%	1.05x	1.19x	6.47%	1.12x	1.12x

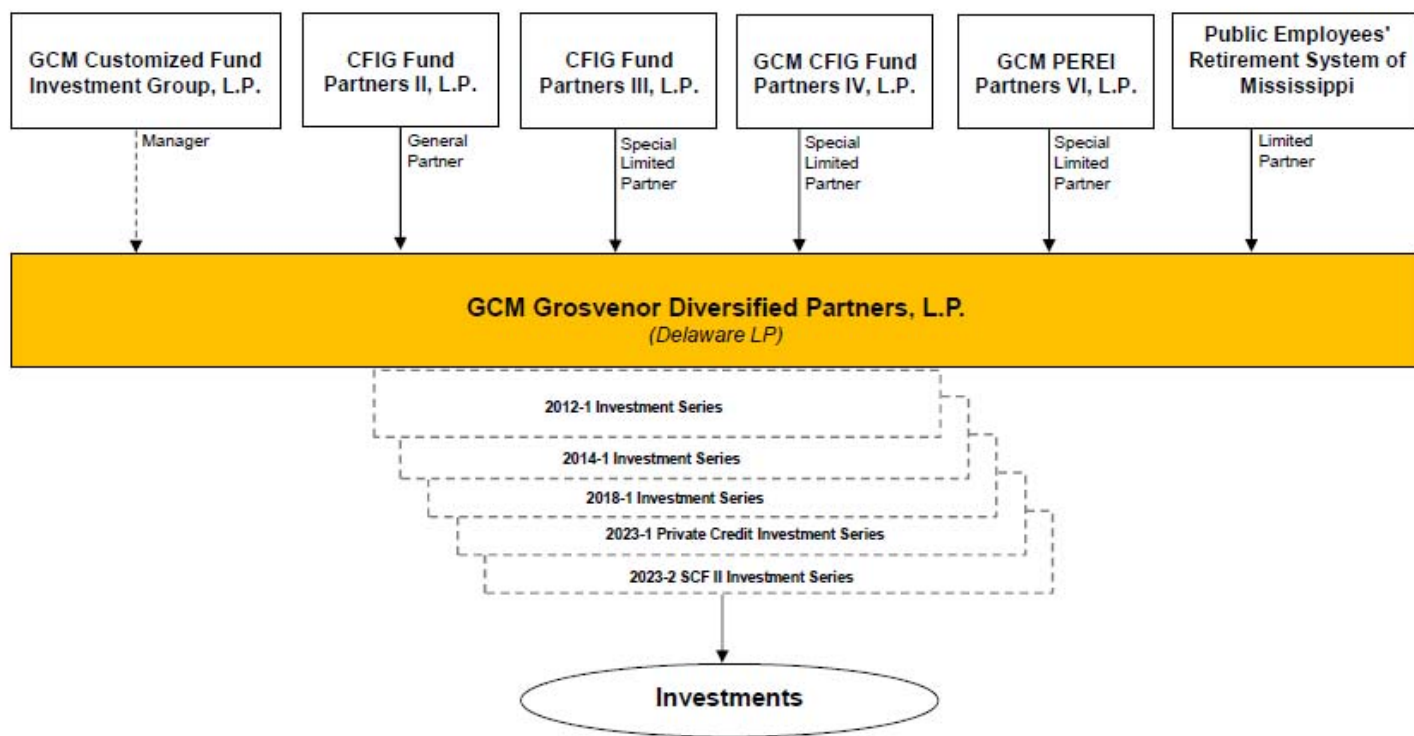
LN: Long Nickels PME methodology

KS: Kaplan-Scholar PME methodology; KS PME > 1x signals outperformance

All Series outperformed MSCI ACWI Index and S&P 500 Index on PME basis.

## Fund Structure

### Legal Structure of GCM Grosvenor Diversified Partners, L.P.



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## Investment Team Biographies

### Senior Investment Professional Biographies

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**Michael Sacks**  
*Chairman and CEO*

Mr. Sacks is GCM Grosvenor's Board Chairman and Chief Executive Officer. Mr. Sacks joined GCM Grosvenor in 1990 and was named CEO in 1994. Under his leadership, GCM Grosvenor grew from its position as an early participant in a cottage industry to its current position as one of the largest open architecture alternative asset management platforms. Mr. Sacks is engaged civically, serving on a number of nonprofit boards. Mr. Sacks graduated from Tulane University with his Bachelor of Science in Economics and holds a general course certificate from the London School of Economics. In addition, he holds a Master of Business Administration from the Kellogg Graduate School of Management at Northwestern University and a Juris Doctor from Northwestern University's Pritzker School of Law.

**Paul Meister**  
*Vice Chairman*

Mr. Meister is the firm's Vice Chairman and serves as Chair of the firm's Operations Committee. Prior to joining GCM Grosvenor, Mr. Meister was an Associate with the Chicago law firm of Barack, Ferrazzano, Kirschbaum & Perlman, except for a 12-month period from 1989 to 1990, when he managed the real estate operations for a retail company. He received his Bachelor of Science in Accountancy with high honors from the University of Illinois at Urbana-Champaign and his Juris Doctor cum laude from Northwestern University School of Law, where he was a member of the Northwestern University Law Review and was Order of the Coif. Mr. Meister is a Certified Public Accountant and a member of the Illinois Bar. Mr. Meister has served as a member and Chair of the Law Board of Northwestern University School of Law and has been a member and Chair of its Executive Committee. Mr. Meister is also an Adjunct Professor at Northwestern University School of Law and has taught a course covering, among other things, hedge fund strategies and regulation. He previously served on the Board of the Managed Funds Association as an Appointed Director.

**Derek Jones**  
*Vice Chairman*

Mr. Jones is a member of the Private Equity, Real Estate and Infrastructure Investment Committee and serves on the Global Investment Council and the Diversity, Equity and Inclusion Committee. He co-heads the firm's private equity co-investment practice and diverse manager practice. His responsibilities include deal sourcing and investment underwriting activities. Prior to joining GCM Grosvenor, Mr. Jones was a Managing Partner at Oncore Capital, as well as a General Partner at Provender Capital. He started his private equity career at Prudential Insurance Company as part of Prudential Equity Investors, which subsequently became Cornerstone Equity Investors, where he was a partner. Mr. Jones received his Bachelor of Arts in Economics from American University and his Master of Business Administration in Finance from New York University. Mr. Jones serves on the Board of, and was former Treasurer to, the National Association of Investment Companies. Mr. Jones also serves on the advisory board of the American University Kogod School of Business. He is a recipient of the Pacesetter Award from the National Association of Investment Companies in 2012 and the UNCF Keeper of the Flame Award in 2016. He was also recognized as one of the 75 Most Powerful Blacks on Wall Street by Black Enterprise Magazine in 2011. In addition, he recently joined the board of the Apollo theater.

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<b>Jonathan Levin</b> <i>President</i>	<p>Mr. Levin is the firm's President and is responsible for day-to-day management of the business. Mr. Levin is Chair of the Global Investment Council and a member of the Private Equity, Real Estate and Infrastructure Investment Committee, the Labor Impact Fund Investment Committee, and the Strategic Investments Investment Committee. Prior to joining GCM Grosvenor, Mr. Levin was the Treasurer and Head of Investor Relations at Kohlberg Kravis Roberts &amp; Co., where he was responsible for managing KKR's balance sheet investments, engaging with public investors and industry analysts, and leading strategic projects. Prior to his role as Treasurer and Head of Investor Relations, Mr. Levin worked in KKR's private equity business and focused on investments in the financial services industry. Mr. Levin began his career as an Analyst in the private equity group of Bear Stearns. He holds an A.B. in Economics from Harvard College and is a member of the board of directors of the Ann &amp; Robert H. Lurie Children's Hospital of Chicago and the Museum of Contemporary Art Chicago.</p>
<b>Frederick Pollock</b> <i>Chief Investment Officer</i>	<p>Mr. Pollock is the firm's Chief Investment Officer and is responsible for managing all investment-related activities for the firm. He is also Head of the Strategic Investments Group and serves on all of the firm's Investment Committees, the Global Investment Council, the Diversity, Equity and Inclusion Committee and the ESG Committee. Prior to joining GCM Grosvenor, Mr. Pollock had various roles at Morgan Stanley, most recently within its merchant banking division, specializing in infrastructure investing, with responsibility for deal sourcing, due diligence, and management as a Board Member of various portfolio companies. He helped form the infrastructure investment group at Morgan Stanley and structured and raised capital for its initial funds. Prior to joining Morgan Stanley, he worked at Deutsche Bank, where he made investments for the firm and on behalf of clients. He received his Bachelor of Science summa cum laude in Economics from the University of Nevada and his Juris Doctor magna cum laude from Harvard Law School.</p>
<b>Lee Brashear</b> <i>Managing Director</i>	<p>Mr. Brashear is co-head of the private equity co-investment practice and is responsible for managing all aspects of the vertical. He is also responsible for origination, underwriting and monitoring private equity co-investments and mezzanine investments. Along with this he manages relationships with sponsors and clients for the focus area. He serves as a Director/Board Observer of portfolio companies and an Advisory Board member of buyout and growth equity funds. Prior to joining GCM Grosvenor, Mr. Brashear was a Senior Analyst in the Private Fund Advisory Group at Lazard Freres, where he was involved in fundraising activities for private equity funds. Mr. Brashear received his Bachelor of Science in Business Administration from the Kenan-Flagler Business School at the University of North Carolina at Chapel Hill.</p>
<b>Jason Metakis</b> <i>Managing Director</i>	<p>Mr. Metakis is a member of the Private Equity, Real Estate and Infrastructure Investment Committee and the Strategic Investments Investment Committee. He also serves on the Global Investment Council. Mr. Metakis co-heads the firm's private equity co-investment practice and is responsible for deal sourcing and investment underwriting activities. Prior to joining GCM Grosvenor, Mr. Metakis was a Principal with DLJ Merchant Banking Partners. Prior to that, he was an investment banker at Donaldson, Lufkin &amp; Jenrette. Mr. Metakis received his Bachelor of Arts with honors in Economics from Harvard College and his Master of Business Administration from Harvard Business School.</p>
<b>Brian Sullivan</b> <i>Managing Director</i>	<p>Mr. Sullivan is a member of the Private Equity, Real Estate and Infrastructure Investment Committee and serves on the Global Investment Council. He is also a member of the Strategic</p>

Investments Investment Committee. Mr. Sullivan leads the secondaries investment team and is focused on sourcing and executing secondary investment opportunities, portfolio management and leadership of the secondary team. Prior to joining GCM Grosvenor, Mr. Sullivan was a Partner at Paul Capital, where he focused on secondary investments and was a member of the firm's investment committee. Prior to that, Mr. Sullivan spent two years as a business strategy consultant with the Boston Consulting Group and five years as an Officer in the U.S. Navy as a member of the (surface fleet) nuclear propulsion program. Mr. Sullivan received his Bachelor of Science in Mechanical Engineering from the United States Naval Academy and his Master of Business Administration from the Wharton School at the University of Pennsylvania. Mr. Sullivan holds the Chartered Financial Analyst® designation.

**Bernard Yancovich**  
*Managing Director*

Mr. Yancovich is a member of the Private Equity, Real Estate and Infrastructure Investment Committee and serves on the Global Investment Council and the ESG Committee. Mr. Yancovich is a leader of the firm's private equity practice and is involved in deal sourcing and investment underwriting activities. Prior to joining GCM Grosvenor, Mr. Yancovich was an Investment Banking Associate at Donaldson, Lufkin & Jenrette, where he worked on a variety of M&A advisory, equity and debt financing and restructuring assignments in industries such as media, telecom, technology, healthcare and industrials. Prior to joining Donaldson, Lufkin & Jenrette, Mr. Yancovich performed transaction advisory services for KPMG in France. He received his Bachelor of Commerce with honors from McGill University and his Master of Business Administration from the University of Western Ontario's Richard Ivey School of Business. He is qualified as a Chartered Accountant.

Source: GCM Grosvenor.

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## Important Information and Disclosures

Information contained in this document may include confidential, trade secret and/or proprietary information of Callan and the client. It is incumbent upon the user to maintain such information in strict confidence. Neither this document nor any specific information contained herein is to be used other than by the intended recipient for its intended purpose.

The content of this document is particular to the client and should not be relied upon by any other individual or entity. There can be no assurance that the performance of any account or investment will be comparable to the performance information presented in this document.

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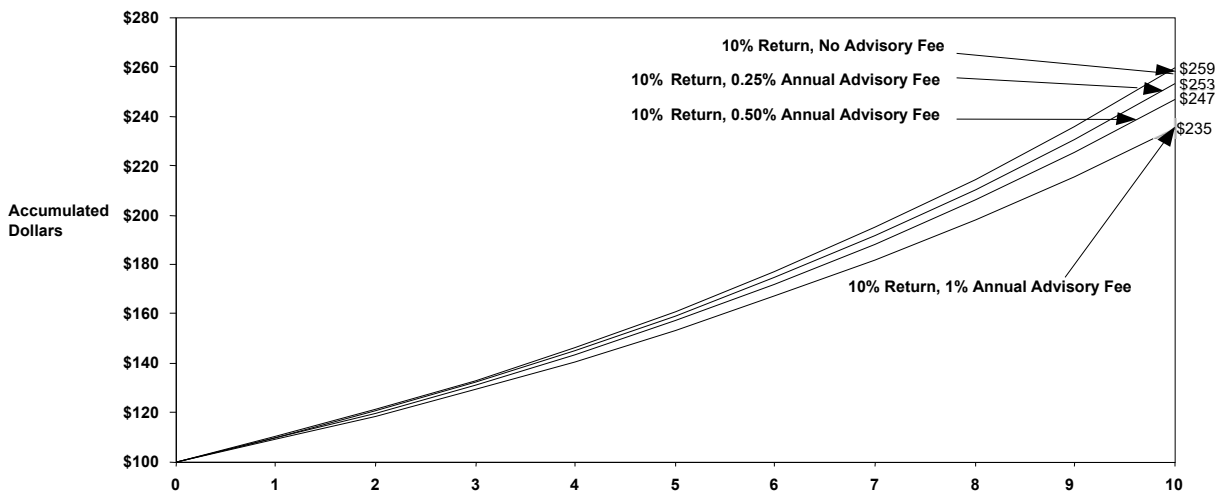
## Disclosure Statement

The preceding report has been prepared for the exclusive use of MPERS. Unless otherwise noted, performance returns contained in this report do not reflect the deduction of investment advisory fees. The returns in this report will be reduced by the advisory fees and any other expenses incurred in the management of an investment account. The investment advisory fees applicable to the advisors listed in this report are described in Part II of each advisor’s form ADV.

The following graphical and tabular example illustrates the cumulative effect of investment advisory fees on a \$100 investment growing at 10% over ten years. Fees are assumed to be paid monthly.

In addition to asset-based investment advisory fees, some strategies may include performance-based fees (“carry”) that may further lower the returns realized by investors. These performance-based fees can be substantial, are most prevalent in “Alternative” strategies like hedge funds and many types of private markets but can occur elsewhere. The effects of performance-based fees are dependent on investment outcomes and are not included in the example below.

### The Cumulative Effect of Advisory Fees



Accumulated Dollars at End of Years

	1	2	3	4	5	6	7	8	9	10
No Fee	110.0	121.0	133.1	146.4	161.1	177.2	194.9	214.4	235.8	259.4
25 Basis Points	109.7	120.4	132.1	145.0	159.1	174.5	191.5	210.1	230.6	253.0
50 Basis Points	109.5	119.8	131.1	143.5	157.1	172.0	188.2	206.0	225.5	246.8
100 Basis Points	108.9	118.6	129.2	140.7	153.3	166.9	181.8	198.0	215.6	234.9

10% Annual Return Compounded Monthly, Annual Fees Paid Monthly.

## Disclosure

As indicated below, one or more of the candidates listed in this report may, itself, be a client of Callan as of the date of the most recent quarter end. These clients pay Callan for educational, software, database and/or reporting products and services. Given the complex corporate and organizational ownership structures of investment management firms and/or trust/custody or securities lending firms, the parent and affiliate firm relationships are not listed here.

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GCM Grosvenor		X

\*Based upon Callan manager clients as of the most recent quarter end.

# Heitman Value Partners Fund VI

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## Fund Recommendation

April 23, 2024

Jason Clark

Lead Portfolio Manager – Alternatives



Date: April 23, 2024

To: PERS Investment Committee

Re: Value-Add Real Estate Commitment

In 2011 the PERS Board adopted a real estate portfolio structure calling for a 15% allocation to Value-add (non-Core) real estate funds within the real estate asset class. As of 9/30/2023, the market value of PERS' Value-add real estate investments was \$497,494,105, which equals approximately 15% of the total real estate asset class. The Value-add real estate segment of the PERS portfolio currently consists of commitments to nineteen funds with six different general partner fund managers. Value-add real estate investments target a 11-15% annual return from properties with in-place cash flows but seek to increase that cash flow over time by making improvements to or repositioning the property not operating at its full potential. Value-add investments will typically generate higher returns to investors than Core investments through appreciated asset value.

Of the twenty Value-add Real Estate funds PERS is currently funding, seven are in the closing phase or will close within the next 12 months, six are in the process of selling assets in the liquidation phase of their lifecycle, while the other seven funds remain in the investment or value-add phase. As these funds near the end of their lifecycle, the value-add thesis is realized, the fund enters the liquidation phase, assets are sold, and monies are distributed to investors over a period. Unlike the public markets, this process of cash recycling over time reduces PERS's overall exposure to real estate. This requires what might appear to be an over commitment to Value-add real estate; however, pacing projections indicate that to achieve and maintain the 15% target exposure, PERS should continue to commit to an average of approximately \$75 – \$100 million in commitments annually for 2023 and 2024. Heitman Fund VI will be the only current Value-add fund seeking investment in 2024.

Historically, PERS has chosen to continue investing through its established Value-add fund relationships. This decision is always predicated on pacing needs, favorable analysis of the firm's prior funds, continuity of the fund's investment team, acceptable deal terms, and relation to NCREIF benchmark. A current general partner, Heitman Realty, is actively seeking partnership commitments to its Value Fund VI investment opportunity.

Like most of the PERS Value-add real estate investments, Heitman funds have a proven track record which have traditionally met or exceeded target returns in addition to performing well relative to their peers and the NCREIF benchmark. Heitman Value Partners Funds provide a complimentary strategy to the rest of the PERS portfolio by investing across both traditional and differentiated property types unique to the PERS real assets portfolio. Appreciation through income is a key factor in Heitman's Delinked Sector strategy seeking opportunities with defensive characteristics, which are less reliant on economic growth.

Included for consideration is Callan's evaluation of Heitman as an organization, performance of prior funds, as well as their feedback as it relates to this recommended Fund VI commitment. The findings from that analysis have been provided for the Investment Committee's review as confirmation that this fund is indeed suitable for PERS' continued partnership participation. Based on tenure, stability, and their success in managing unique international Value-added real estate funds, staff recommends a \$75 million commitment be made to the Heitman Partners Real Estate Fund VI.

## **Value-Add Real Estate Fund Commitment – April 2024**

### **Heitman Value Partners Fund VI**

#### **How much to commit? \$75 Million**

As of the 2017 Pacing Study conducted by Callan, it was suggested that future commitments made to closed-end Value-added real estate funds be increased from \$50 million to \$75 million. This was suggested to ensure that real estate as an asset class achieves the target asset allocation of 10% of the overall PERS Defined Benefit portfolio. The 2019 Pacing Study reaffirmed the 2017 decision with the suggestion that PERS make commitments to non-core real estate funds on the average of \$150 million annually.

With the volatility in the public markets and reduction in asset value in specific sectors of the real estate market causing a denominator effect in private market allocations beginning in 2022, PERS Staff and Callan worked together to revisit the pacing schedule for 2023 and beyond. The result was an agreement to reduce the annual commitments of new investments from \$150 million, down to between \$75 - \$100 million annually for 2023 and 2024. With a majority of the PERS Value-add real estate portfolio funds either in, or about to begin the harvest and distribution phase of their life cycle, Heitman Value Partners Fund VI will be the only current asset manager fund raising capital for a new fund in 2024. With a single \$75 million commitment in 2024, PERS will continue to gain exposure to vintage year diversification while keeping the allocation at the target of 15% of the real estate portfolio.

#### **Commitment dates – Initial Closing period is set to end on May 20, 2024:**

The initial closing period for Fund VI has begun as of February 20 and will end on May 20. This is common to have a rolling closing period to accommodate each Limited Partner's due diligence and the differing Board approval processes. The final close of Fund VI will likely be later in 2024, or early 2025, once the fund has reached the fundraising target necessary to carry out the fund's stated investment strategy. In creating a sense of urgency, Heitman has put forth participant incentives for both new and returning Limited Partners participating in the initial closing.

#### **Participant Incentives:**

By participating in the initial closing period ending on May 20, with a commitment of \$75 million, PERS of MS would qualify for a fee reduction incentive, bringing the annual management fee down on invested capital. The early close incentive is:

- Participating in the initial closing by May 20, qualifies PERS for a 10 bps discount.
- Being a returning legacy investor, qualifies PERS for a 35 bps discount.
- Investing at a commitment size of \$75 million, qualifies PERS for a 25 bps discount.

These incentives account for a total discount on fees of 47%, bringing the annual management fee on invested capital down to only 80 bps, which is on the low end of comparable investment managers.

**Commitment Process:**

Before being presented to the Board of Trustees and the Executive Director for approval, the fund's documents will have been reviewed and recommended by PERS Investment Staff, by PERS' investment consultant Callan, and outside legal counsel at Chapman and Cutler. Before seeking a signature from the Executive Director, all terms will have been negotiated and documents finalized by outside legal counsel at Chapman & Cutler, LLP, as well at PERS' internal legal counsel. If approved by the Board, the Executive Director will be presented with the final documents to sign. Once the documents have been executed, they will then be submitted to the fund manager's counsel, as a commitment to invest.

It is important to understand that the fund will not request capital from PERS until all other participating limited partners have committed and Heitman holds a final closing within the next 12 - 18 months. After the final close, capital will then be called as needed from all limited partners on a pro rata basis depending on the limited partner's commitment level. This called capital will then be used to secure investment assets within the partnership. The total life cycle of a Value-add real estate fund is typically between 10-12 year from the beginning of the fundraising period until all assets have been sold and the fund closes.

## **PERS of MS Real Estate Value-Added Portfolio Terms**

**Value-added (Non-Core) Real Estate** – These investments are considered closed-end funds since there is a set start and end date, outside investors cannot typically buy into the fund, and they cannot be liquidated on demand. Liquidity is only realized through distributions upon the sale of a property held within the fund. These funds typically target properties that have in-place cash flows but seek to increase that cash flow over time by making improvements to or repositioning the property not operating at its full potential. Successful Value-add projects will typically target a 11-15% return, which is significantly higher than core investments due to anticipated appreciation in value, but also has the potential for greater losses than core fund investments.

**IRR (Internal Rate of Return)** – Used regularly in Real Estate and Private Equity as a quantitative measure return on investment. A property's IRR is an estimate of the value it generates during the time frame in which you own it. Effectively, the IRR is the percentage of interest earned on each dollar invested in a property over the entire holding period beginning at inception.

**Pacing Schedule** – A suggested amount of capital that a portfolio should invest on an annual basis to ensure a consistent growth rate that allows continued alignment with a strategic allocation target of that asset class.

### **Life Cycle of a Value-added fund:**

- **Initial Closing** – Starting at the initial closing date, Limited Partners such as PERS of MS can begin making commitments to invest in the proposed fund. There can be incentives for limited partners who participate in committing capital on this date or allowed window. Committed capital levels give the Funds Manger a good idea of interest in the fund and the strategy being used.
- **Commitment Period** – Also known as the fund-raising period, is the time allotted to bring other Limited Partners into the fund. This period usually lasts between 12 – 18 months depending on the interest of the fund and how quickly it reaches its target fund size.
- **Final Closing** – The commitment period ends at the date of the final close. No new investors can commit new capital to the fund after this date. A limited partner's capital cannot be called until after the final closing.
- **Investment Period** – This is the period during the life of the fund where investor capital is used to make purchases that will fulfill the strategy of the fund. This period begins with the initial call of capital from the investors and ends on a set date approximately 3 years after the final closing. Extensions to the investment period may be enacted to allow for more opportunities for acquisitions consistent with the fund's strategy during market dislocation.
- **Liquidation Period** – After the investment period is complete, the fund seeks opportunities to achieve the stated strategy and realize profits from income generation and the selling of properties held before the fund's lifecycle is complete, approximately 8-10 years after the final closing. If market conditions necessitate, the fund manager may also utilize extensions at this time to allow for a change in the market cycle before selling remaining properties.

## Public Employees' Retirement System of Mississippi

### Current Heitman Relationship

Fund Name	<u>HVP III</u>	Fund Name	<u>HVP IV</u>	Fund Name	<u>HVP V</u>
Committed Equity	\$50M in 2013	Committed Equity	\$50M in 2017	Committed Equity	\$75M in 2020
IRR Net of AMF & GP Fees	15.39%	IRR Net of AMF & GP Fees	14.18%	IRR Net of AMF & GP Fees	(0.89%)
Multiple Net of AMF & GP Fees	1.42x	Multiple Net of AMF & GP Fees	1.39x	Multiple Net of AMF & GP Fees)	0.99x

### Heitman Value Partners Series

Heitman began investing on behalf of the Heitman Value Partners Series in 2003 and has invested capital on behalf of five funds in the series. Heitman began investing for Heitman Value Partners (“HVP”) in 2003 with \$400 million in capital commitments. Upon completion of its investment period, HVP was diversified across 105 assets totaling almost \$2 billion in real estate. Heitman began investing for Heitman Value Partners II, L.P. (“HVP II”), in 2007 with \$800 million in capital commitments. Upon completion of its investment period, HVP II was diversified across 202 assets totaling \$2.1 billion in real estate. In 2013, Heitman began investing for Heitman Value Partners III, L.P. (“HVP III”) with \$421 million in capital commitments. Upon completion of its investment period, HVP III was diversified across 128 assets totaling \$1.7 billion in real estate. Heitman began investing for Heitman Value Partners IV, L.P. (“HVP IV”) in January 2018 with \$873 million in capital commitments. Upon completion of its investment period, HVP IV was diversified across 1,319 assets totaling almost \$2.8 billion in real estate. These investments encompass a broad range of property types, transaction structures, and deal sizes. Heitman Value Partners V (“HVP V”) was launched in 2020 and had its final close on June 9, 2021, with \$1.375 billion of total capital commitments. Its investment period runs through June 9, 2024.

#### Heitman Value Partners

HVP invested the majority of its capital throughout 2005 and 2006. Investments made early in the fund’s life began winding down prior to the onset of the GFC and produced strong returns. HVP’s remaining investments were still in the value-creation process when the GFC began. Heitman refocused the fund’s business plan on capital preservation and positioning the assets for disposition when the market recovered. HVP’s cash flow was sufficient to see it through this tumultuous time and did not require any recapitalization or additional capital from its investors. In 2010, the fund tested the market with a large apartment asset in the Southeast and ultimately sold the asset at an attractive premium over the fund’s carry value. Heitman began actively selling HVP’s assets in 2011 and throughout 2012. Though the weakened economic conditions of 2008, 2009, and 2010 had a profound impact on the fund’s performance, the fund’s investment performance was attractive for the vintage year.

#### Heitman Value Partners II, L.P.

HVP II accepted capital commitments and invested at what the firm now knows was the top of the market. Heitman began investing for HVP II in 2007, but as the market weakened in late 2007 and early 2008, the firm first slowed and then eventually stopped investing capital. As a result of Heitman’s view of the risk in the market, HVP II pulled back and did not deploy any new capital for 18 months. The discipline Heitman exercised put HVP II in the advantageous position of having only deployed 39% of its capital and leaving the fund both resources to defend the investments that it had previously made and significant capital to make investments as the market recovered. The post-GFC investments produced a daily compounded leveraged IRR (net of fees and other sponsor compensation) of 17%. The blended daily compounded leveraged IRR for the entire portfolio, pre- and post-GFC, is 8.6% (net of fees and other sponsor compensation), which Heitman believes to be an overall attractive return for the vintage year.



### Heitman Value Partners III, L.P.

Heitman began investing for HVP III in the fourth quarter of 2013 and invested \$396 million across 15 separate investment programs. HVP III sold its last investment in December 2021, and the fund realized a final net IRR of 15.28%, almost 130 basis points above the high end of the fund's original return target.[1] In Heitman's view, this high level of performance can be attributed to a combination of factors including portfolio construction, asset-level business plan execution, and timely dispositions from the portfolio. Capital market conditions over this period were largely supportive of asset pricing and our partner market and asset selections were very good. The fund's investment performance was partly driven by the heavier sector weights in the better performing property sectors, like apartments (38%) and alternative or specialty properties (self-storage, 35%). Medical office (18%) was also an important element of our portfolio construction. The fund had minimal exposure (8%) both in terms of equity weight and duration to commercial office and 0% to retail, both underperforming property sectors. In an ageing economic and property market cycle, we also shortened investment duration on certain strategies.

### Heitman Value Partners IV ("HVP IV")

Heitman began investing for HVP IV in the fourth quarter of 2017 and completed IV portfolio construction in early 2022. In total, we have invested approximately \$821 million of HVP IV equity across 25 investments. Our current projections expect HVP IV to produce a leveraged IRR (net of fees and other sponsor compensation) of 14-16%.[2] As of April 1, 2024, HVP IV has fully realized 12 investments (\$305 million or 37% of original equity invested), which in the aggregate have produced a leveraged IRR (net of fees and other sponsor compensation) of 17.6%. This high level of performance can be attributed to successful execution of our business plans, including portfolio construction, asset-level execution, and several timely asset dispositions. As of April 1, 2024, HVP IV's distributions to paid in capital ratio is 0.75x. Many of our investment sales have occurred ahead of our original plans to opportunistically take advantage of competitive market conditions for certain property types. With a capital market environment that remains challenging due to current yield requirements, our disposition volume has slowed. Patience and prudent decision making remain important ingredients as we monitor capital market conditions and look to optimize the timing of our dispositions. We continue to believe that HVP IV's portfolio positioning, and sector weightings will prove to be favorable in terms of intermediate-term performance.

### Heitman Value Partners V ("HVP V")

Heitman began investing for HVP V in early 2021 and has invested approximately \$1.06 million (83% of its investable capital base) to 18 separate investment programs. These investments represent a diverse mix of property types, including alternatives (self-storage, student housing, senior housing, and single-family rental), apartments, medical office, grocery-anchored retail, and industrial properties. The strategies across these ventures are diverse as well and range from aggregation, development, physical upgrades to reposition assets for income growth, operational improvements through lease-up and platform operating leverage and taking advantage of capital market mispricing of risk, in the case of our retail exposure. As of April 1, 2024, we have no exposure to the commercial office sector, which we expect will serve us well. The commitment period for HVP V expires in June 2024. As of December 31, 2023, HVP V has a projected net IRR of 9-11% (net of fees).[3]

### Heitman Value Partners VI ("HVP VI")

Heitman Value Partners VI, L.P. ("HVP VI" or the "Fund"), is a closed-end, commingled fund, and the sixth offering in the firm's North American value-added series. HVP VI will execute value-creation strategies focused on the physical, operational, or financial transformation of assets through tactical programs. The objective of the Fund is to provide investors with attractive risk-adjusted returns of 12-14%, net of all fees and other sponsor compensation.<sup>[4]</sup> HVP VI will invest across multiple property types to construct a diversified portfolio that includes meaningful exposure to specialty property types. The strategy seeks to capitalize on Heitman's extensive research, real estate, and capital markets expertise to identify emerging investment opportunities and trends before they are fully appreciated by the broader market and to execute investment strategies that capitalize on those opportunities.

[1] Returns are presented net of all fund-level costs and expenses, including sponsor compensation. Returns are realized returns based on actual cash flow. The fund used a subscription-backed credit facility to pay certain organization expenses and make certain investments prior to calling capital. The use of this facility had a positive impact on investor returns of approximately 1.62%.

[2] The projected returns are based on (a) actual operating and disposition results through December 31, 2023, and (b) projected operating and disposition results through the anticipated disposition date of all investments made or to which the fund had committed as of December 31, 2023. The calculation of the projected returns is dependent on assumptions applied to certain material factors, including, but not limited to: (i) annual unlevered appreciation of -17.16% to 10.65% (which varies by value add strategy and asset class) generated over an expected hold period for each asset, which ranges from 36 months to 88 months; (ii) terminal cap rates in the range of 4.48% - 9.05% for operating investments; (iii) a development profit equal to 20% - 64% on newly constructed assets; (iv) a combination of portfolio and asset level leverage equal to 56% - 78% of HVP IV's gross cost as of December 31, 2023; (v) leverage spreads in a range of 140 - 285 basis points resulting in all-in interest rates of 2.24% - 8.20% as of December 31, 2023; (vi) fund-level management fees based on the current blended rate; and (vii) sponsor incentive compensation (calculated based on projected returns, fees, costs and disposition date for

each asset) resulting in 82 basis points of drag on the net IRR. There can be no assurance that the assumptions discussed herein and used to calculate HVP IV's projected returns will be correct or achievable, and other factors not described above may materially impact the returns of HVP IV, or that HVP IV will achieve its investment objectives and projected returns based on such assumptions. Actual HVP IV returns will vary and may vary significantly from the projected returns set forth above. Net returns are presented net of all costs and expenses and net of all fees and other sponsor compensation. Asset management fees vary by investor. (Projected returns for individual investors are higher for investors paying fees calculated with a rate lower than the blended fee rate and lower for investors paying fees calculated with a rate higher than the blended rate.) HVP IV used a subscription-backed facility to pay certain organizational expenses and make certain investments prior to calling capital. The use of this facility is projected to have a positive impact on investor returns of approximately 97 basis points.

[3] The projected returns are based on (a) actual operating results through December 31, 2023, and (b) projected operating and disposition results through the anticipated disposition date of all investments made or to which the fund had committed as of December 31, 2023. The calculation of the projected returns is dependent on assumptions applied to certain material factors, including, but not limited to: (i) annual unlevered appreciation of 1.37% to 10.13% (which varies by value add strategy and asset class) generated over an expected hold period for each asset, which ranges from 40 months to 70 months; (ii) terminal cap rates in the range of 4.50% - 7.00% for operating investments; (iii) a combination of portfolio and asset level leverage equal to 54% - 61% of the fund's gross cost as of December 31, 2023; (iv) leverage spreads in a range of 130 - 445 basis points resulting in all-in interest rates of 2.15% - 8.75% as of December 31, 2023; (v) fund-level management fees based on the current blended rate; and (vi) sponsor incentive compensation (calculated based on projected returns, fees, costs and disposition date for each asset) resulting in 16 basis points of drag on the net IRR. There can be no assurance the assumptions discussed herein and used to calculate the fund's projected returns will be correct or achievable, that other factors not described above may materially impact the returns of HVP V, or that the fund will achieve its investment objectives and projected returns based on such assumptions. Actual HVP V returns will vary and may vary significantly from the projected returns set forth above. Net returns are presented net of all costs and expenses and net of all fees and other sponsor compensation. Asset management fees vary by investor. (Projected returns for individual investors are higher for investors paying fees calculated with a rate lower than the blended fee rate and lower for investors paying fees calculated with a rate higher than the blended rate.) HVP V used a subscription-backed credit facility to pay certain organizational expenses and make certain investments prior to calling capital. The use of this facility is projected to have a positive impact on investor returns of approximately 16 basis points.

[4] The Fund is targeting an aggregate, leveraged, daily compounded, 12-14% annual rate of return on capital invested in the Fund, net of all management compensation and other costs, fees and expenses (including Fund-level expenses) but gross of partner taxes. Management fees for the Fund are expected to vary by investor. Target returns are calculated based on the highest fee payable by investors in HVP VI. If calculated based on fees paid by lower fee paying investors, the target returns would be slightly higher. The Fund's target returns should be regarded as mere objectives intended to illustrate the Fund's overall investment approach, style and philosophy and are not projections or assurances that the Fund will be able to originate investment opportunities, net of fees, expenses and incentive compensation, sufficient to provide the targeted returns to investors. The target returns are derived from assumptions regarding a combination of operating income and appreciation with respect to similar projects in which the Fund would seek to invest, are shown on an annualized basis, and represent what would be a full market cycle. The calculation of these target returns is dependent on assumptions applied to certain material factors, including, but not limited to: (i) stabilized cap rates in a range of 5.50%-8.00%; (ii) annual unlevered appreciation of 4.0%-8.0% generated over a range of holding periods between 36 months and 60 months; (iii) annual capital expenditures equal to 0.3%- 1.0% of gross market value; (iv) a development profit of 19%-30% or greater on newly constructed assets; (v) a combination of portfolio and asset level leverage equal to 55%-60% of the Fund's gross market value; (vi) leverage spreads in a range of 175-400 basis points resulting in all-in interest rates of 5.5%-7.75%; (vii) management fees in a range of 70-150 basis points; and (viii) incentive compensation equal to a range of drag on the IRR of 70-110 basis points. There can be no assurance the assumptions discussed herein and used to calculate the Fund's targeted returns will be correct or achievable, that other factors not described above may materially impact the returns of the Fund, or that the Fund will achieve its investment objectives and targeted returns based on such assumptions. Actual Fund returns will vary and may vary significantly from the targeted returns set forth above.

April 4, 2024



## **Mississippi Public Employees' Retirement System**

Heitman Value Partners VI, L.P.

Important Disclosures regarding the use of this document are included at the end of this document. These disclosures are an integral part of this document and should be considered by the user.

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## Executive Summary and Recommendation

Heitman Capital Management LLC (the “Firm”, the “Sponsor”, the “Team”, or “Heitman”) is currently sponsoring Heitman Value Partners VI, L.P. (the “Fund”, “HVP VI”, or “Fund VI”). Fund VI is a continuation of the Value Partners fund series and Callan considers Fund VI to be a re-up with the Sponsor. This report provides a review and recommendation regarding a potential investment by Mississippi Public Employees’ Retirement System (“MSPERS”) in Fund VI. MSPERS made a \$75 million investment in Heitman Value Partners V, L.P. (“Fund V”), a \$50 million investment in Heitman Value Partners IV, L.P. (“Fund IV”), a \$50 million investment in Heitman Value Partners III, L.P. (“Fund III”), and a \$50 million investment in Heitman Value Partners II, L.P. (“Fund II”) which are the prior funds in the series. It is standard practice within closed-end fund investing to commit to follow on funds within a series to maintain vintage year diversification, barring significant changes to or challenges within the management organization, fund strategy, or performance.

Callan reviewed the Fund’s documents, including the Limited Partnership Agreement, Private Partnership Memorandum, and Due Diligence Questionnaire, as well as the marketing presentations and research used by the Sponsor to evaluate the investing environment. Callan held a video call with following members of the Heitman team on February 14 and 15, 2024: Tom McCarthy, Senior Managing Director and co-Portfolio Manager, Michael Trench, Executive Vice President and co-Portfolio Manager, Lewis Ingall, Senior Managing Director, and Shauna Dills, Senior Vice President. Ms. Dills served as the primary point of contact for follow up information.

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## Investment Strategy<sup>1</sup>

Heitman Value Partners VI is the sixth in a series of value added diversified closed end commingled funds managed by Heitman. HVP VI will broadly continue with the same strategy and investment structures pursued by the prior funds within the Heitman Value Partners series and will continue to target a 12% to 14% net IRR and a 14% to 16% gross IRR. It is anticipated that 25% of the return will be derived from current income, and 75% from appreciation. Heitman is targeting \$1.75 billion in commitments. The Fund will pursue a value added strategy that focuses on physical, operational or financial transformation of assets. The team will invest in a portfolio of property-level partnerships with public and private REITs and real estate operating companies. A full array of property types will be targeted. Leverage is limited to 60% of gross property value at the Fund level.

The Fund is expected to consist of ten to thirty investment programs, which are estimated to consist of three to six assets per investment program, with the exception of self-storage, single-family rentals, and medical office buildings. For those property types, the Fund will likely aggregate portfolios with joint venture partners and these portfolios will have a higher number of smaller assets. The gross value for each asset is expected to range from \$25-\$100 million (excluding smaller assets like self-storage, single-family rental and medical office buildings, which are typically aggregated as part of a larger portfolio). No more than 15% of the aggregate Commitments may be invested in a single investment. The Fund’s typical investment size will range from \$75 million to \$150 million of equity. The average holding period is expected to range from three to seven years.

The Fund strategy will focus on three primary themes, including (1) Delinked Sectors, (2) Growth Sectors, and (3) Contrarian Markets and Sectors. The Delinked Sector strategy will target sectors that are less dependent on economic growth and that have defensive characteristics. Income is emphasized as a key return driver. The Team believes that these sectors have initial yields that exceed those of primary property types and have drivers that are different from traditional property types. This strategy will seek to aggregate sector-specific portfolios and acquire certain underperforming assets in need of repositioning or renovation. Specifically, within the Delinked Sectors strategy the Fund will target:

- Self-Storage development;

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<sup>1</sup> The information presented in this document reflects quoted and paraphrased excerpts of material provided to, and reviewed by, Callan, by the Sponsor.

- Senior housing acquisition and development;
- Student housing rehabilitation; and
- Specialty portfolio aggregation such as medical office and self-storage

The Growth Sectors strategy will seek to capitalize on shifting demographic growth trends to invest in areas where demand exceeds supply and has a greater probability of net operating income growth. The Growth Sectors strategy will focus on:

- Single family rental portfolio aggregation and development;
- Apartment renovation
- Industrial development; and,
- Office repurposing.

The Contrarian Markets and Sectors strategy will target out-of-favor markets and sectors that are seeing lesser capital flows and better relative pricing. Heitman believes opportunities exist resulting from negative investor sentiment and changing market conditions, and that these opportunities have mispriced risk and return characteristics. Additionally, certain sectors and markets have recapitalization opportunities driven by borrower distress, loan maturities or other financial pressure. Contrarian strategy will target:

- Acquisition of performing assets from distressed sellers;
- Situational opportunities resulting from weak financial conditions and financial stress; and
- Structured investments.

The Fund will exclusively invest in North America, focusing specifically on assets in the US. The Fund may invest up to a maximum of 10% of the aggregate commitments in Canada and Mexico. The prior funds within the series do not have any international exposure. The Fund will be diversified across property sectors, and the team expects that specialty property sectors, specifically self-storage, medical office, student housing, senior housing, single-family rentals, and life science facilities, will make up a significant weighting in the Fund. The following table highlights the sector and region exposure of the prior funds within the series as of September 30, 2023:

	HVP I	HVP II	HVP III	HVP IV	HVP V*
<b>Sector</b>					
Office	6%	17%	8%	7%	0%
Residential	38%	34%	38%	26%	27%
Industrial	9%	9%	1%	6%	8%
Retail	18%	0%	0%	4%	8%
Specialty (Medical Office, Senior Housing, Student Housing, Self-storage, Condominium, and Hotel)	29%	40%	53%	56%	57%
<b>Region</b>					
East	29%	26%	32%	22%	19%
Midwest	9%	11%	8%	17%	18%
West	38%	38%	29%	18%	14%
South	24%	25%	31%	43%	33%
Unidentified	0%	0%	0%	0%	16%

\*Based on \$1.3 billion in committed capital

It is anticipated that the majority of Fund's investments will be structured as joint ventures with a series of operating partners. Heitman has an existing network of relationships with both public and private operating companies, many of which were partners in the prior Heitman Value Partners funds. Heitman seeks operating partners that are large and established and that have experience with institutional

investment partners. Heitman will require co-investment by the operating company entity alongside the Fund to provide alignment of interest. It is expected that operating partner co-investment will range between 5% and 50% of total equity. Typical co-investment is 15%, however there is no stated target for co-investment levels. The Fund will typically control at least a 50% economic interest in each partnership. The Fund will have the right to approve all major decisions with respect to a partnership or its properties. Operating partners typically manage all day-to-day operations of an investment subject to jointly approved annual operating and capital budgets. Provisions in the joint venture agreements usually provide for shared decision making regarding annual business plans, major capital decisions and exit strategies. The Fund will generally seek to retain the right to approve or reject all investment proposals after the venture is formed.

Investments may be structured as equity, preferred equity or debt. Fund VI is limited to no more than 33% of commitments in debt investments. Additionally, Heitman has a dedicated debt vehicle that originates loans that the HVP team will not compete with. Most likely, the majority debt investments would take the form of preferred equity investments or assuming the loan with the goal of acquiring the asset.

The Fund may invest in new development. Heitman plans to mitigate development risk by forming joint ventures where the operating partner has secured building permits and financing. Typically, Heitman requires that a developer be responsible for recourse on construction loans as well as cost overruns. Development in HVP I totaled 10% of invested equity in HVP I, 20% of invested equity in HVP II, 19% of invested equity in HVP III, and currently totals 17% of invested equity in HVP IV, and currently totals 21% in HVP V. The Fund documents currently allow for 30% of Fund commitments to be targeted to development. Additionally, investment in unentitled land or unencumbered land is prohibited.

### Leverage Strategy

Leverage will be employed as a part of the strategy. The current Fund documents include a 60% leverage limitation at the Fund level and an 80% limit at the investment level. The team intends to utilize investment level financing without recourse to the Fund. Cross-collateralization will not be pursued, unless the investments are part of a single partnership. Generally, Heitman will only use floating rate leverage in construction loans on new development, converting to fixed upon stabilization. The Fund may use interest rate caps or swaps to hedge loans. Additionally, Heitman will utilize a credit facility in order fund investments or pay expenses in advance of capital contributions. Any borrowing from the credit facility must be repaid within nine months of being drawn, however will likely be paid down earlier.

### Allocation Policy

Heitman maintains a separate investor rotation list for core and value-added investments that the firm pursues on behalf of its clients, as the acquisitions team sources all core and value-added investments for the firm. All potential investments are initially evaluated by senior management for the appropriateness for each client, taking into consideration such factors as risk profile, investment structure, geographic location, execution timing constraints, portfolio objectives and property type. In the circumstance where a potential investment is deemed suitable for more than one client, the investment is allocated to the client holding the highest priority on the applicable rotation list. Every active client of the firm is chronologically ordered on the list based on length of elapsed time since the last investment for such client was made, with highest priority granted to the client with the longest period of elapsed time. Should an investment be allocated to a client but fail to close, the client will retain its position on the list. If a client that is non-discretionary is offered an investment and declines to pursue it, the client retains its position on the list, but after three such events, the client is placed at the end of the rotation.

The table below highlights the value-add mandates managed by Heitman other than the Heitman Value Partners fund. The HVP funds have an exclusivity clause that states it has the first look at all value-add joint venture opportunities requiring an equity investment of \$100 million or less. This exclusivity ensures that the Funds do not have to compete with Heitman's separate account clients for deal flow.

Vehicle	Strategy	Remaining Net Allocation (\$MM)
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Separate Account 1	Core and Value Added - Apartment, Industrial, Office, Retail, Self-Storage	\$62
Separate Account 2	Core and Value Added - All Property Types	TBD
Separate Account 3	Core and Value Added - Apartment, Industrial, Office, Medical Office, Retail, Self-Storage	TBD
Separate Account 4	Core and Value Added - All Property Types	TBD

## Valuation Policy

Fund properties are initially carried at their purchase price. Valuations of investments typically occur internally on a quarterly basis and externally once every three years. Heitman uses the discounted cash flow and comparable sales methodology to value properties. The team evaluates the capitalization structure of the investment in discussion with the Firm's debt group. Heitman marks debt to market in compliance with the provisions outlined by the National Council of Real Estate Investment Fiduciaries ("NCREIF"). Heitman has established a Valuation Committee, consisting of executive management and property-type specialists from the research and acquisitions teams. These professionals must review and approve proposed asset values. As part of the portfolio management process, each property is also reviewed quarterly for significant events affecting value.

## Sponsorship<sup>2</sup>

Founded in 1966, Heitman LLC is a global real estate investment management firm. Heitman invests in commercial real estate directly or in publicly traded real estate securities. In 2014, Old Mutual plc, the ultimate parent OMAM Inc., initiated an internal restructuring in which it established three new entities that were inserted into the Old Mutual group's corporate structure, including OM Group (UK) Limited ("OM Group (UK)"), a holding company that was established to hold Old Mutual plc's interest in its US asset management line of business, and OM Asset Management plc ("OM Asset Management"), a public company (and subsidiary of OM Group (UK)) whose shares are traded on the New York Stock Exchange. OM Group (UK) sold approximately 20% of its interest in OM Asset Management plc per an IPO effective October 2014. Additional shares in OM Asset Management were sold by OM Group (UK) per a secondary offering in June 2015, and in another offering in December 2016. In March of 2017, Old Mutual announced that it had reached agreement with a third party, HNA Group Co., in which HNA would acquire a significant portion of its remaining share interest in OMAM. As a result of the share sales and the HNA transaction, Old Mutual's holdings in OMAM were ultimately reduced to approximately 5% by year-end 2017, triggering a change in control and presenting the ability for the employee-owners to buy the remaining stake in Heitman, a transaction which closed on January 1, 2018. The only changes to ownership since 2018 have been the number of employee-owners. The employee ownership pool at Heitman is now at 47 individuals. A table highlighting the current owners is located in the Appendix. The addition of new employee owners is evaluated annually by senior officers who are also current owners at Heitman. If an equity owner of the Firm leaves the partnership, whether by death, disability, retirement, or voluntary or involuntary termination, their ownership is reallocated to the current equity owners.

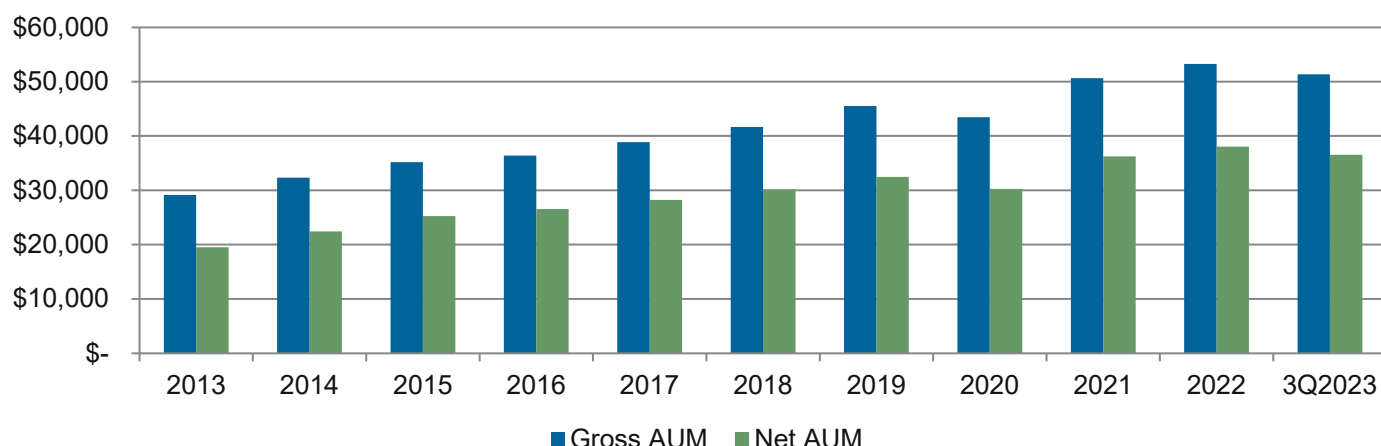
Heitman is headquartered in Chicago and has offices in Los Angeles, New York, London, Luxembourg, Frankfurt, Hong Kong, Tokyo, Melbourne and Seoul. Heitman closed two offices in the last five years, Munich, Germany in 2019, and Warsaw, Poland in 2019. The office in Germany were closed due to the departure of the single employee that office, and the firm no longer focuses on Poland as part of its European strategy. Heitman is comprised of 381 professionals globally.

As of September 30, 2023, Heitman had approximately \$51.3 billion of gross assets under management around the world, with the majority of the assets under management in North America. The table below highlights the firm-wide assets under management over recent years.

<sup>2</sup> The information presented in this document reflects quoted and paraphrased excerpts of material provided to, and reviewed by, Callan, by the Sponsor.



## Heitman –Assets Under Management (\$ millions)



The Fund will be led by Thomas McCarthy and Michael Trench, who will serve co-Portfolio Managers. For Fund VI, Mike Trench has been named co-portfolio manager as part of the succession planning process for Tom McCarthy's role. Previously, Mr. McCarthy served as the Head of Heitman's North American Private Equity Real Estate group, but transitioned that role to Brian Pieracci in March of 2023. Both Mr. McCarthy and Mr. Trench are dedicated to the Fund. Additionally, Colleen Ryan, Assistant Portfolio Manager, is also fully dedicated to the Fund. Mr. McCarthy, Mr. Trench, and Ms. Ryan are all equity owners of the Firm. While the overall North American Private Equity team members are actively involved in the Fund investment process and activities, they are not dedicated to the Fund and are also active on behalf of all of Heitman's North American commingled funds and separate accounts. Certain members of the team have asset management duties for other funds in the HVP series as well as some separate account responsibilities.

The Fund will be overseen by the Heitman North America Private Equity Investment Committee. The Investment Committee will vote on all major Fund decisions and be involved in the ongoing Fund activities and strategy. More detail on the Investment Committee process is included in the Investment Process & Portfolio Management section. The Investment Committee is detailed below. All of the Investment Committee members are also owners of the firm. Full biographies for the Investment Committee and broader team, and an organizational chart, are included in the Appendix. It is important to note that, effective January 1, 2024, Investment Committee member Mary Ludgin transitioned her remaining leadership responsibilities for Global Investment Research to Emi Adachi and Jeff Bingham, who each assumed the role and responsibilities of Managing Director, Co-Head of Global Investment Research. Ms. Ludgin is now Senior Advisor, Investment Research will continue her work with the Portfolio Sustainability Strategies team and serve on various private market Investment Committees, including for HVP VI, and the Global Management Committee.

### Heitman North America Private Equity Investment Committee

Name	Title and Role	Years with Firm	Years Investment Management Experience
Maury Tognarelli	Chief Executive Officer	40	40
Thomas McCarthy	Senior Managing Director, Private Equity – North America, co-Portfolio Manager	40	41
Lewis Ingall	Senior Managing Director, Client Service & Marketing	36	39
Pete Fawcett	Managing Director, Portfolio & Asset Management	37	42

Name	Title and Role	Years with Firm	Years Investment Management Experience
Mary Ludgin	Senior Advisor (Investment Research) and Global Investment Committee Member	34	39

Note: Mr. McCarthy's role on the Investment Committee is as a non-voting member as it pertains to HVP. Portfolio Managers for all Heitman funds do not vote in their respective Investment Committees.

Heitman's Investment Committee approves all major investment decisions including acquisitions and dispositions. The Investment Committee meets weekly or on an as-needed basis. Issues for Investment Committee review are summarized in writing and submitted by an Investment Team that consists of the Account Representative (Senior Portfolio Manager) plus individuals from such disciplines as Acquisitions, Portfolio & Asset Management, Due Diligence & Closing, and Research. The Investment Team must unanimously approve the recommendation provided in the written materials before it is submitted to the Investment Committee for consideration. The Investment Team includes Thomas McCarthy, as Portfolio Manager, and the relevant acquisitions, asset management and research professionals. A typical Investment Committee meeting involves three phases, which may take more than one meeting. In the first phase the Investment Team summarizes all the relevant features of the investment. During the second phase, Investment Committee members ask questions of the Investment Team and this phase continues until all members are satisfied that they understand the investment fully. The third phase is the formal vote to approve or disapprove the investment; a majority of favorable votes is needed for the investment to proceed. Disposition recommendations resulting from the hold/sell analysis process are reviewed and approved by Investment Committee as well. Usually, the Investment Committee identifies a minimum disposition price, above which the Portfolio & Asset Management team has the discretion to execute a sale. If offers fall below the pre-approved disposition price, the portfolio manager must obtain additional approval from the Investment Committee.

The following table highlights, in addition to the asset management and finance team specifically assigned to the Fund, the Heitman North American private equity team members that are expected to be involved in the Fund's investment activities. Acquisitions, Closing and Due Diligence, and Research professionals that are shared resources are only shown at the Senior Vice President level and higher. Note that an additional resource, Maura Keary, Associate in finance and operations, is in the process of transitioning to the team.

#### Heitman North American Investment Team (HVP Dedicated Team in Bold)

Name	Title and Role	Years with Firm	Years Investment Management Experience
<b>Tom McCarthy</b>	<b>Senior Managing Director, Private Real Estate Equity, co-PM</b>	<b>40</b>	<b>41</b>
<b>Mike Trench</b>	<b>Executive Vice President, Portfolio &amp; Asset Management, co-PM</b>	<b>19</b>	<b>19</b>
<b>Colleen Ryan</b>	<b>Senior Vice President, Portfolio &amp; Asset Management, Assistant PM</b>	<b>28</b>	<b>28</b>
Chris Fruy	Senior Vice President, Portfolio & Asset Management (asset management)	11	22
Jim Meyer	Senior Vice President, Portfolio & Asset Management (asset management)	35	35
Ryan Matyas	Vice President, Portfolio & Asset Management (asset management)	12	12
Jenny Schuck	Vice President, Portfolio & Asset Management (asset management)	3	11
<b>Corey Scuglik</b>	<b>Vice President, Portfolio &amp; Asset Management (asset management)</b>	<b>13</b>	<b>13</b>
<b>Andy Borseth</b>	<b>Assistant Vice President, Finance Manager (financial operations and analysis)</b>	<b>4</b>	<b>10</b>
<b>Viviana De La Paz</b>	<b>Assistant Vice President, Finance Manager (financial operations and analysis)</b>	<b>4</b>	<b>12</b>
<b>Charlie Miller</b>	<b>Assistant Vice President, Finance Manager (financial operations and analysis)</b>	<b>4</b>	<b>7</b>

Name	Title and Role	Years with Firm	Years Investment Management Experience
Alexandra Lis	Senior Associate, Acquisitions	3	3
Rick Yorke	Assistant Finance Manager (financial operations and analysis)	5	10
Griffin Gibbons	Senior Associate (financial operations and analysis)	3	3
Larson Robinson	Senior Associate (financial operations and analysis)	6	7
Darsh Tripathi	Associate (financial operations and analysis)	2	3
Maury Tognarelli	Chief Executive Officer	40	40
Mary Ludgin	Senior Advisor (Investment Research) and Global Investment Committee Member	34	39
Lewis Ingall	Senior Managing Director, Client Service & Marketing	36	39
Pete Fawcett	Managing Director, Portfolio & Asset Management	37	42

The Acquisition, Due Diligence & Closing, and Research teams will be involved in executing the Fund strategy. Heitman's North American Acquisition team will focus on sourcing, underwriting and acquiring direct real estate assets on behalf of the Fund. The Acquisitions team is led by Brian Pieracci. Additionally, Heitman has an in-house capital markets expert, David Maki, who leads the Real Estate Debt group and is involved in implementing interest rate hedging strategies and advising on the placement of property- and portfolio-level financing. The Due Diligence & Closing team takes over from the Acquisitions team once an investment has been approved by the Investment Committee. Heitman's Due Diligence & Closing team is led by Tom Kelly. This team is responsible for final negotiation of all acquisition documents, physical and environmental reviews, and verification of all financial, legal and operational aspects of the property.

Over the last five years, Heitman has had more turnover than it typically experiences at the senior level. Generally, this has been due to multiple retirements including Tom Krumwiede, Jerry Claeys, Steve Warsaw, and Howard Edelman. In addition, Helen Garrahy, a residential asset manager who mainly worked on Heitman's core fund, left for a family office launching a residential real estate business. Gretchen DiDomenico in the Closing & Due Diligence group relocated and, while there was an attempt at remote work, ultimately she found another opportunity. Erin Spears, who had joined Heitman from a development partner, left to become the President of the same developer. Dan Dooley left to become the CIO of one of Heitman's housing joint venture partners. There have been three senior hires across each of the major groups, Angela Fabus in Closing & Due Diligence, Joseph Nicchetta in Portfolio & Asset Management, and Jeff Bingham in Research. The Firm has nine planned hires, mostly concentrated in the client service and marketing and accounting/financial reporting roles. The investment team for the Fund is well resourced at this time. See below for a list additions and departures at the Senior Vice President level and above across the Executive, Acquisitions, Due Diligence & Closing, and Research teams.

#### Additions (last 5 years)

Name	Title and Role	Years with Firm	Years Investment Management Experience
Angela Fabus	Senior Vice President, Closing & Due Diligence	2022	21
Joseph Nicchetta	Senior Vice President, Portfolio & Asset Management	2019	44
Jeff Bingham	Managing Director, Co-Head of Global Investment Research	2019	16

#### Departures (last 5 years)

Name	Title and Role	Year Hired	Year Departed	Reason For Departure
Tom Krumwiede	Senior Vice President, Portfolio & Asset Management	2006	2023	Retired

Name	Title and Role	Year Hired	Year Departed	Reason For Departure
Helen Garrahy	Senior Vice President, Portfolio & Asset Management	2010	2023	Other Opportunity
Gretchen Di Domenico	Senior Vice President, Closing & Due Diligence	2014	2022	Other Opportunity
Erin Spears	Executive Vice President, Acquisitions	2018	2021	Other Opportunity
Daniel Dooley	Senior Vice President, Acquisitions	2010	2020	Other Opportunity
Steven Warsaw	Senior Vice President, Portfolio & Asset Management	2009	2020	Retired
Jerry Claeys	Non-Executive Chairman	1977	2019	Retired
Howard Edelman	Executive Vice President, Closing & Due Diligence	1979	2019	Retired

The sponsor co-investment is targeted to be 2% of the total fund raise, not to exceed \$35 million, which is consistent with the prior Fund. For Fund VI, the GP co-invest will be funded in part by a sponsor capital vehicle which Florida State Board of Administration (“SBA”) invests in. The vehicle is a follow on vehicle which was created to invest across Heitman Fund GP co-investments starting with HVP V. The vehicle is 100% passive and there are no GP rights in the entity for Florida SBA. Florida SBA is also a limited partner in HVP VI and will recuse themselves from all Advisory Committee matters that pertain to General Partner/Limited Partner issues. Florida SBA will vote according to their LP interest only. Similar to the relationship Heitman had with OMAM, Florida SBA will provide 90% of the GP capital for HVP VI. In addition to the senior Heitman team, the opportunity to participate in the GP co-investment was provided to any accredited investors within the firm. Heitman expects that there may be up to 100 individuals participating in the co-invest. The table below highlights the personal co-investments from key Heitman professionals within the prior HVP funds.

Name	HVP I Co-Investment	HVP II Co-Investment	HVP III Co-Investment	HVP IV Co-Investment	HVP V Co-Investment
Maury Tognarelli	\$135,559	\$125,000	\$215,671	\$160,000	\$227,400
John Clement	\$135,559	\$125,000	\$215,671	\$150,000	\$101,200
Thomas McCarthy	\$135,559	\$125,000	\$215,671	\$160,000	\$120,200
Lewis Ingall	\$135,559	\$125,000	\$215,671	\$150,000	\$138,400
Mary Ludgin	\$135,559	\$125,000	\$215,671	\$150,000	\$87,400
<b>Total</b>	<b>\$675,000</b>	<b>\$625,000</b>	<b>\$1,078,355</b>	<b>\$770,000</b>	<b>\$674,600</b>

Similar to the arrangement with OMAM, Florida SBA will receive 25% of the carried interest with the remaining 75% allocated to Heitman employees who invest in the Fund on a pro rata basis and additional units are allocated to employees working on execution of the Fund strategy, including portfolio management, client service, acquisitions, accounting, and research. Historically the majority of units have been unallocated and held for additional distribution.

All carried interest that corresponds to employee co-investment is vested immediately, while all other carried interest allocations vest evenly over five years. If an employee is terminated with cause, he/she will forgo all units not associated with their co-investment. If a Key Person departs prior to the commitment period, all carried interest allocations will be forgone. For any employee that received carried interest but does not participate in the co-investment, all carried interest units vest evenly over five years.

## Historical Performance

Since the inception of the Heitman Value Partners Funds, the Team has sponsored and managed five real estate funds. The following tables provide a summary of the prior commingled funds as of September 30, 2023.

## Prior Fund Performance as of September 30, 2023 (\$ millions)

Fund/Vehicle	Fund I	Fund II	Fund III	Fund IV	Fund V
<b>Vintage Year</b>	2004	2007	2014	2018	2020
<b>Return Objective (net)</b>	14-16%	12-14%	12-14%	12-14%	12-14%
<b>Commitments (mm)</b>	\$400	\$800	\$421	\$873	\$1,375
<b># Investments</b>	105	202	128	1,316	1,475
<b># Realized</b>	105	202	128	34	0
<b>Current Leverage</b>	N/A	N/A	N/A	51%	56%
<b>Peak Leverage</b>	97%	75%	65%	58%	58%
<b>Called Capital (mm)</b>	\$397	\$772	\$396	\$810	\$726
<b>Projected Calls (mm)*</b>	N/A	N/A	\$0	\$10	\$85
<b>Distributions (mm)</b>	\$508	\$1,133	\$555	\$565	\$0
<b>Portfolio NAV (mm)</b>	N/A	N/A	N/A	\$604	\$740
<b>Realized IRR (gross)</b>	6.1%	9.6%	17.9%	20.0%	NP
<b>Realized Multiple (gross)</b>	1.3x	1.5x	1.5x	1.6x	NP
<b>Fund Level Since Inception IRR (gross/net)</b>	6.1% / 4.9%	9.6% / 8.6%	17.9% / 15.3%	2.7% / 1.6%	NP
<b>Fund Level Since Inception Multiple (gross/net)</b>	1.3x / 1.3x	1.5x / 1.5x	1.5x / 1.4x	1.5x / 1.4x	NP
<b>Projected IRR (gross/net)</b>	N/A	N/A	N/A	14.0%-16.0% / 12.0%-14.0%	11.0%-13.0% / 9.0%-11.0%
<b>Projected Equity Multiple (gross/net)</b>	N/A	N/A	N/A	1.6x / 1.5x	1.6x / 1.5x

\*Based on investments closed as of 9/30/23

Fund I, a 2004 vintage year commingled fund, and Fund II, a 2007 vintage year fund, are both completely realized. Fund III, a 2014 vintage year fund, is 90% realized based on the number of investments. Heitman projects that the final Fund III asset will be sold by the end of 2021. Fund IV is a 2018 vintage year fund with more than 50% of capital left to be called. Fund I was comprised of thirteen operating partner relationships across various geographies and property types including specialty. All but four investments in the Fund generated positive performance. Fairfield, Desert Shadows, Colonie Center, and Ramco-Gershenson did not return capital, generating a -100%, -47.6%, -32.0%, and -4.9% IRR, respectively. Fairfield was an apartment renovation and repositioning strategy with joint venture partner Fairfield Partners that acquired two apartment assets in Scottsdale, Arizona in 2006. The Desert Shadows Investment was a single condominium conversion strategy, also in Scottsdale, Arizona in 2006. The Phoenix market was one of the most severely impacted housing markets in the country during the Global Financial Crisis (“GFC”), and both the unit upgrades taking place at Fairfield and conversions at Desert Shadows were just underway at the onset of the GFC. Colonie Center was a lifestyle center joint venture with small public company. While the investment did have success in attracting some new tenants, the joint venture partner had a limited record in mall turnarounds and also experienced significant departures. Due to the onset GFC, further lease up was stalled and the team tried to execute a workout with the lender. Ramco-Gershenson was a joint venture with a Detroit-based community center owner operator/developer. While one of the two properties in the joint venture was successful, the other property has a significant repositioning plan and while it had been re-tenanted, the sales process was unsuccessful in the first three tries between 2011 and 2013. Due to a loan due on the property, it was conveyed to the lender via deed in lieu of foreclosure six months after the final sales effort.

HVP Fund II is comprised of 21 joint venture relationships and six direct investments. Six investments have produced negative returns including Aqualea Resorts & Residences, which returned -100%. Aqualea was a joint venture with NJR Development Company to develop a resort and high-rise hotel condominium. HVP's investment was structured as a \$38 million mezzanine loan. While the construction for the investment was completed on time and on budget, the hotel condominium sales stalled and ultimately Heitman concluded that the hotel condominium strategy was not viable in the market environment. The Fund switched strategies and decided to operate as a pure hotel investment; however, the projected cash flows from a pure hotel investment didn't support the senior loan balance. In December 2012, a settlement agreement was entered into which dismissed the lawsuit filed by the borrower; the agreement also mutually released HVP II, the borrower, from all claims related to the project, including a release of the mezzanine mortgage and related collateral. Heitman established a loan loss reserve for the remaining balance of the mezzanine loan at the end of 2010.

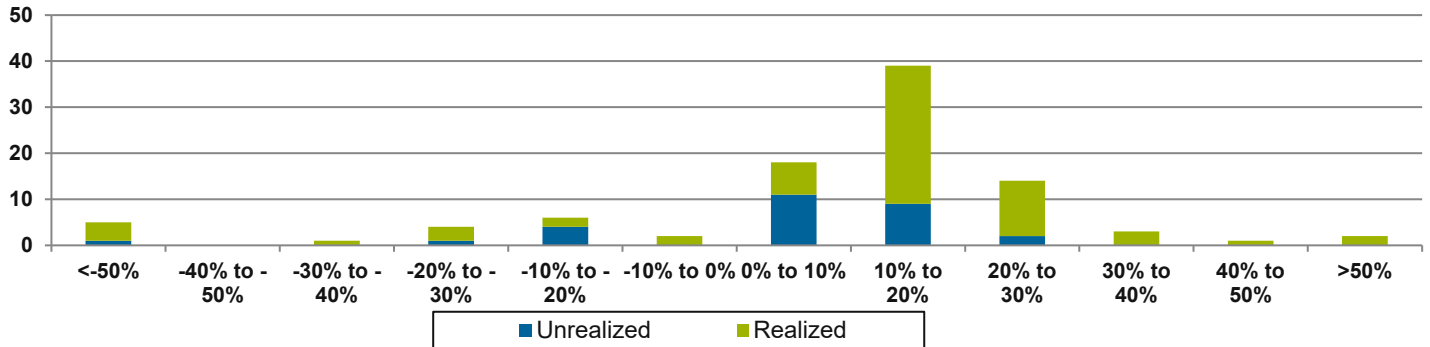
Fund III is comprised of 14 joint venture relationships and one direct investment. The last investment was sold in December 2021. All investments have delivered positive returns. All individual investments delivered returns of 12% gross or above. The Fund exceeded return targets, delivering a 15% net return.

Fund IV, a 2018 vintage year fund, is comprised of 21 joint ventures and five direct investments. A number of the joint ventures were with repeat operating partners such as Pollack Shores for apartments, CubeSmart for self-storage, and Montecito Medical for medical office. Twelve of the 26 investments have been realized. Currently Fund level returns since inception are 15.1% net, and projections are in line with Fund targets at a 12% to 14% net IRR. Generally, assets have been performing well. However, there are a handful that have experienced lower than underwritten returns due to some effects of Covid and the current high interest rate environment. MedProperties JV is a hospital joint venture with a portfolio aggregation strategy. Net returns are currently projected to be just below a 9% IRR due to the interest rate impact on the net lease structure of hospitals. If interest rates decrease, there would likely be additional upside. Quadrant Investment Properties JV and R2 JV are both office ventures in Dallas and Chicago, respectively, purchased before Covid. The ongoing issues with return to work have affected both investments, which are projected to deliver low single digit returns. The two investments are the only traditional office in Fund IV and represent approximately 6% to 7% of total equity.

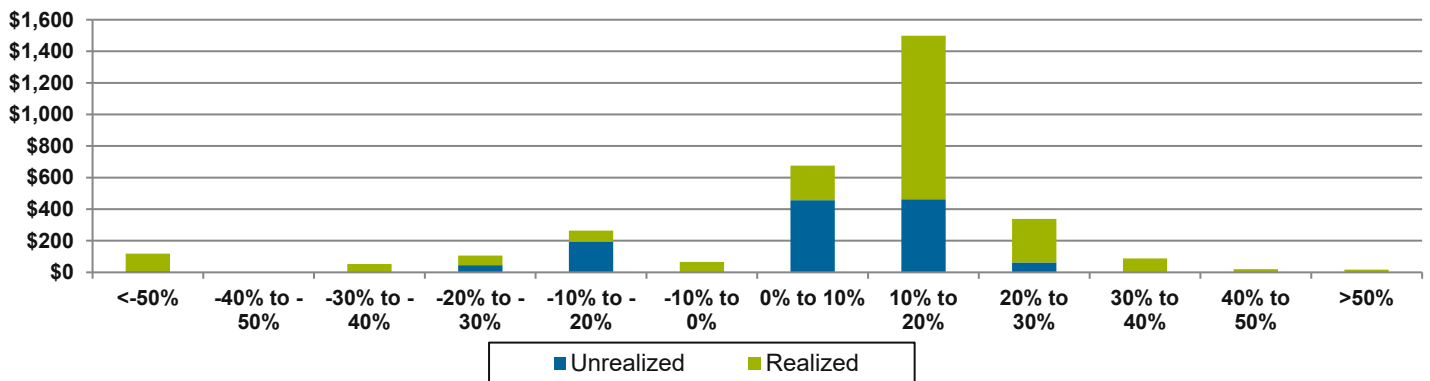
Fund V, a 2020 vintage year fund, is currently in its investment period and is comprised of 15 joint ventures. While all investments are projected to deliver positive returns, due to the change in interest rate environment during the Fund's investment period, there are a handful of investments that are projected to deliver returns below 10%. Across the portfolio, the team has adjusted exit cap rate projections by 25 to 50 basis points to reflect the change in rates. Rent growth assumptions have changed since acquisition, specifically for Grand Peaks and Redwood Center, two apartment repositioning investments. Sylvan Road, a single family rental venture has also been affected by interest rates as the portfolio buyer pool is not as robust as it was at acquisition. Heitman may get a lift in returns from retail sales of the asset, but those assumptions are not currently included in the projections. Another venture with a similarly small buyer pool is the CubeSmart self-storage joint venture. In addition to having a smaller portfolio buyer pool than underwritten, rent growth has slowed for self-storage. The portfolio is expected to deliver returns at the low end of the target range.

### **Distribution of Returns**

The following graphs highlight the IRR distribution for realized and unrealized investments from all investments in the Heitman Value Partners Fund series. The first graph is categorized by number of investments and is based on since inception net returns. The majority of assets have delivered positive returns, 12 of 62 realized investments and 6 of 28 unrealized have delivered a zero or negative return as of September 30, 2023.



The following IRR distribution graph is categorized by the amount of equity invested and is based on since inception net returns. From a total invested dollar standpoint, a vast majority of the equity invested has returned to date a positive net IRR. Less than 20% of equity in realized investments has delivered a zero or negative return. Similarly, for unrealized investments, 20% of equity has delivered a zero or negative net return as of September 30, 2023.



## Summary of Key Terms

The following is a summary of principal terms of HVP VI compared to HVP V. Terms have largely remained unchanged from the prior fund. The fund size has grown, but in line with expectations for a fifth fund. There have been some adjustments to fund size and key person. However, these adjustments are consistent with the fund series' growth and succession planning.

### Terms Comparison to Prior Fund

	Fund VI Terms	Comparison to Fund V Terms
<b>Target Returns</b>	12-14% Net IRR	No Change
<b>Target Fund Size</b>	\$1.75 billion; \$2 billion hard cap	\$1 billion; \$1.25 billion hard cap
<b>Sponsor Commitment</b>	2% of equity commitments not to exceed \$35 million	2% of equity commitments not to exceed \$20 million
<b>Management Fee</b>	For a commitment of at least \$75 million: 90 basis points per annum of the aggregate capital contributions of such Limited Partner	No Change to term

Fund VI Terms		Comparison to Fund V Terms
	10 bps reduction in management fee for those that close before May 20, 2024. MSPERS' total expected management fee would be 0.80%.	
<b>Waterfall</b>	At the Fund level: 100% of Capital Contributions 9% preferred return Thereafter 80/20 LP/GP	No change
<b>Investment Period</b>	3 years from Expiration Date. The Expiration Date includes any extensions to the fundraising period approved by the Advisory Committee or majority of Limited Partners.	3 years from final close
<b>Fund Term</b>	7 years from expiration of investment period; may be extended to 9 years with Advisory Committee approval	No change
<b>Investment Restrictions</b>	<p>Property Type</p> <ul style="list-style-type: none"> <li>No more than 40% of the aggregate Commitments may be invested in any one property type.</li> <li>No restrictions on specialty property types outside of student housing, senior housing, and self-storage.</li> <li>No more than 7.5% of the aggregate Commitments may be invested in hotels.</li> </ul> <p>Market</p> <ul style="list-style-type: none"> <li>The Fund generally will not invest outside the United States (including its territories); provided that the Fund may invest up to 10% of the aggregate Commitments in Canada and Mexico.</li> </ul> <p>Investment Size</p> <ul style="list-style-type: none"> <li>No more than 15% of aggregate commitments in any single property</li> </ul> <p>Development</p> <ul style="list-style-type: none"> <li>The GP will not cause the Fund to invest more than 30% of the Commitments in Development Properties, unless exceeding such limit is deemed appropriate by the GP as a result of unforeseen cost overruns. ("Development Properties" means properties in which the Fund commits to invest, directly or indirectly, and which are to be developed from the ground up.)</li> <li>The Fund may not invest in unentitled land or encumbered land unless the unentitled or encumbered land represents a non-strategic component of a Real Estate Asset that would otherwise be an Authorized Investment and represents 15% or less of the total cost of the Portfolio Investment.</li> </ul> <p>Debt</p> <ul style="list-style-type: none"> <li>No more than 33% of the aggregate Commitments may be invested in debt investments.</li> </ul> <p>Investment type</p>	<p>Property Type</p> <ul style="list-style-type: none"> <li>No more than 50% of the aggregate Commitments may be invested in the specialty property sector and no more than 40% of the aggregate Commitments may be invested in any one property type, excluding specialty (the four property types are residential, industrial, office, retail).</li> </ul> <ul style="list-style-type: none"> <li>No change</li> <li>No change</li> </ul> <p>Market</p> <ul style="list-style-type: none"> <li>No change</li> </ul> <p>Investment Size</p> <ul style="list-style-type: none"> <li>No change</li> </ul> <p>Development</p> <ul style="list-style-type: none"> <li>No change</li> <li>No change</li> </ul> <p>Debt</p> <ul style="list-style-type: none"> <li>No change</li> </ul> <p>Investment type</p> <ul style="list-style-type: none"> <li>No change</li> </ul>



	Fund VI Terms	Comparison to Fund V Terms
	<ul style="list-style-type: none"> <li>The Fund may not invest in securities that the GP determines in good faith are uncovered options or uncovered derivative securities.</li> </ul>	
<b>Leverage Limitations</b>	Fund level: 60% of gross fair property value Investment level: 80% of gross fair property value.	No change
<b>Subscription Line</b>	The Fund (through one or more subsidiaries) expects to enter into a credit facility in order to fund Investments or pay expenses through borrowing in lieu of, or in advance of or contemporaneously with, capital contributions. Any borrowing made under a credit facility that is secured by Commitments must be repaid within nine months of such borrowing.	No change
<b>Key Persons</b>	Thomas D. McCarthy, Michael Trench, Lewis S. Ingall, Mary K. Ludgin, and Maury R. Tognarelli	Michael Trench was added to Key Persons and John Clement was removed.
<b>Key Person Event</b>	If at any time during the Commitment Period (1) both Thomas D. McCarthy and Michael Trench or (2) any two or more of the "Key Persons" listed below (other than Thomas D. McCarthy and Michael Trench) (i) cease(s) to be employed by affiliates of the General Partner for any reason, (ii) suffer(s) a disability for a duration of at least 90 days, (iii) sell(s) or transfer(s) all or substantially all of his or her direct or indirect interest in the General Partner, or (iv) cease(s) to participate in the management of the Fund (in the case of clause (1), a "Portfolio Manager Event", and in the case of clause (2), a "Key Person Event"), the General Partner will have the right for a period of ninety (90) days to cure such Portfolio Manager Event or Key Person Event by replacing the applicable individual(s) with replacements approved by Investor Advisory Committee or by a majority in interest of the Partners (excluding the General Partner and its affiliates). If a Portfolio Manager Event or Key Person Event is not cured within the applicable ninety (90)-day period, the Limited Partners will not have any further obligation to make capital contributions to fund the purchase of Investments other than Follow-On Contributions (as defined in the Partnership Agreement) and capital contributions to complete any Investment with respect to which a binding letter of intent or agreement has been executed or with respect to which a non-refundable deposit or other binding commitment was made prior to the effective date of such suspension of the Limited Partners' funding obligations (the "Suspension Mode") unless and until the Portfolio Manager Event or Key Person Event is cured. If the Fund enters Suspension Mode and the applicable Portfolio Manager Event or Key Person Event has not been cured within nine (9) months of the date on which the Fund entered Suspension Mode, the Commitment Period will terminate unless extended with the approval of the Investor Advisory Committee or by a majority in interest of the Partners (excluding the General Partner and its affiliates). A Suspension Mode may be terminated at any time by two-thirds in interest of the Partners.	Previously, clause (1) was only Thomas McCarthy and clause (2) noted other than only Thomas McCarthy
<b>Sponsor Removal</b>	Majority in interest vote with cause; 2/3 vote without cause.	No change

Fund VI Terms		Comparison to Fund V Terms
Organizational Expense	\$1.75 million	Fund V expenses were \$1.0 million

## Affiliate and Legal Activity

### Affiliate Activity

Heitman uses its capital markets group for debt sourcing. It does not use affiliates for property management as its joint venture partners generally provide those capabilities. Fees typically range from 25 to 50 basis points of total financing. Heitman has charged the following fees to each Fund across the Fund series for debt brokerage services:

Fund	Fees Paid
HVP III	\$888,674
HVP IV	\$2,517,403
HVP V	\$2,500,716
<b>Total</b>	<b>\$5,906,793</b>

### Legal Activity

Heitman Capital Management, LLC registered as an SEC Investment Adviser in September 1980. In the Fourth Quarter of 2023, the SEC began a routine examination of Heitman Capital Management, LLC, the entity under which our private equity and debt groups operate. The examination is currently ongoing.

## Fundraising Status

Heitman held a first close on February 20, 2024 with \$500 million in investor commitments. Investors will have until May 20, 2024 to participate in the first close incentive. Heitman anticipates up to an additional \$300 million closing prior to May 20<sup>th</sup>.

## Recommendation

Callan recommends a commitment of \$75 million to Heitman Value Partners VI, L.P. as an appropriate investment for Mississippi Public Employees' Retirement System. Our recommendation is based on the specific strength and risk considerations summarized in the below and detailed in the memorandum.

Strengths	Detail
<b>Employee-Owned Firm</b>	Heitman is 100% employee-owned with a growing list of employees that participate in ownership. The number of employee-owners increased from 37 during the HVP V fundraise to 47 during the HVP VI fundraise.
<b>Strong Succession Planning for Tom McCarthy</b>	There is a clear path to succession for the portfolio manager role as longtime team member Mike Trench has assumed co-portfolio manager duties. He and Mr. McCarthy have worked together over multiple funds. Additionally, another longtime team member, Colleen Ryan, was formally named assistant portfolio manager, strengthening the leadership on the PM team. Both Mr. Trench and Mr. McCarthy are named Key Persons for the Fund. Mr. McCarthy has indicated he would continue to be fully engaged with Fund activities through the Investment Period of the Fund.
<b>Proven Investment Strategy and Process</b>	The Fund employs a demonstrated investment strategy that is consistent with its predecessor funds. The team has a demonstrated process to execute programmatic joint ventures with experienced partners in property types that include medical office and self-storage in addition to traditional industrial and multi-family investments.
<b>Favorable Fee Structure</b>	MSPERS will be eligible for an existing investor discount plus an additional 10 basis point discount on management fees for investors that participate in the first close, equating to a 0.80% management fee, which is

<b>Strengths</b>	<b>Detail</b>
	favorable compared to peers. The distribution waterfall is favorable compared to peers as the hurdle is 9% and there is no GP catch up.
<b>No Unfavorable Changes to Terms</b>	The Fund terms are consistent with those of prior funds, in line with market standards, and do not include any changes that are unfavorable to Limited Partners. The Fund terms changed very minimally since the prior Fund.
<b>Firm Allocates Carried Interest to Employees Based on Merit</b>	While there is a component of the carried interest allocation that awards points pro rata with co-investment, most of the carried interest allocated to the team is awarded based on merit, including a holdback of points to award later in Fund life. Additionally, there is no formal limit to title that is eligible to earn carried interest, and Heitman has historically awarded both an associate and assistant vice president points.
<b>Firm Continues to Expand GP co-investment</b>	Heitman expects a potential pool of employees as large as 100 to participate in the GP Co-invest. This is an increase from HVP VI.
<b>Strong Valuation Practices for Closed End Fund</b>	Heitman values each property internally on a quarterly basis and externally once every three years. A number of peers no longer offer external valuations.
<b>Seat on Limited Partner Advisory Committee</b>	Although MSPERS' commitment is lower than the amount necessary to receive an LPAC seat, Heitman has offered a voting seat to MSPERS.

<b>Risks</b>	<b>Detail</b>
<b>No Limitation on Specialty Sector Investing</b>	The Fund is no longer limited on how much it can invest in specialty property sectors. HVP V was limited to no more than 50% of commitments. However, the Fund series has always had a significant exposure to specialty property types. Specifically, this shouldn't be a significant change as medical office has historically formally been included under office, which is not a specialty property sector, in the Fund documents.
<b>Fund V Performance is Projected to Deliver Returns at the Low End or Below Target</b>	Fund V began investing in 2020 and has experienced a significant change in interest rate environment during its investment period. This has led to a portfolio-wide adjustment to exit cap rates, affecting returns. However, no investments are projected to deliver negative returns, and there is upside available as interest rates shift over the life of the Fund.
<b>Third Party Participation in GP Co-Investment</b>	Florida State Board of Administration will participate in the GP co-investment through a sponsor capital vehicle. The breakout of carried interest and co-investment between Heitman professionals and Florida SBA is the same as it was when OMAM participated in the co-investment and carried interest.
<b>Potential Conflict of Interest with Florida SBA</b>	As a participant in the GP Co-investment and a Limited Partner and Advisory Committee member for HVP VI, there may be a conflict of interest with any GP/LP issues that arise. In these cases, Florida will recuse themselves from any voting.



# Organization Chart

## Heitman North American Value Series Supported by Extensive Firm Resources

HEITMAN

### NORTH AMERICAN RESEARCH TEAM

- |  |  |
|--|--|
| <b>Emi Adachi</b><br>MANAGING DIRECTOR,<br>CO-HEAD | <b>Jeff Bingham</b><br>MANAGING DIRECTOR,<br>CO-HEAD |
| <b>Olin Needle</b><br>EXECUTIVE VICE PRESIDENT     | <b>Michael Carney</b><br>VICE PRESIDENT              |
| <b>Erik Hansen</b><br>VICE PRESIDENT               | <b>Daniel Vickerman</b><br>VICE PRESIDENT            |
| <b>Jacob Anderson</b><br>ASST. VICE PRESIDENT      | <b>Dan Sindelar</b><br>ASST. VICE PRESIDENT          |
| <b>Sam Carlson</b><br>SR. ASSOCIATE                | <b>Annie Trucco</b><br>SR. ASSOCIATE                 |
| <b>Shaunearlos Miller</b><br>ASSOCIATE             |  |

### PROPERTY TYPE SPECIALISTS

- |  |  |
|--|--|
| <b>INDUSTRIAL/OFFICE</b><br><b>Tony Ferrante</b><br>EXECUTIVE VICE PRESIDENT | <b>APARTMENT</b><br><b>Melanie Varrato</b><br>SR. VICE PRESIDENT     |
| <b>SELF-STORAGE</b><br><b>Pascal Souvenir</b><br>SR. VICE PRESIDENT          | <b>RETAIL</b><br><b>Bob Koys</b><br>SR. VICE PRESIDENT               |
| <b>MEDICAL OFFICE</b><br><b>Jim Meyer</b><br>SR. VICE PRESIDENT              | <b>STUDENT HOUSING</b><br><b>Theresa Ranck</b><br>SR. VICE PRESIDENT |

### COMPLIANCE

- Lauren Walsh**  
SENIOR VICE PRESIDENT

### HVP VI TEAM

 40   41 <b>Tom McCarthy</b> CO-PORTFOLIO MANAGER	 19   19 <b>Mike Trench</b> CO-PORTFOLIO MANAGER	 28   28 <b>Colleen Ryan</b> ASSISTANT PORTFOLIO MANAGER
 11   22 <b>Chris Fruy</b> ASSET MANAGER	 35   35 <b>Jim Meyer</b> ASSET MANAGER	 12   12 <b>Ryan Matyas</b> ASSET MANAGER
 3   11 <b>Jenny Schuck</b> ASSET MANAGER	 13   13 <b>Corey Scuglik</b> ASSET MANAGER	 4   10 <b>Andy Borseth</b> FINANCE MANAGER
 4   12 <b>Viviana De La Paz</b> FINANCE MANAGER	 4   7 <b>Charlie Miller</b> FINANCE MANAGER	 5   10 <b>Rick Yorke</b> ASST. FINANCE MANAGER
 3   3 <b>Griffin Gibbons</b> SENIOR ASSOCIATE	 6   7 <b>Larson Robinson</b> SENIOR ASSOCIATE	 2   3 <b>Darsh Tripathi</b> ASSOCIATE

### INVESTMENT COMMITTEE

- Maury Tognarelli**  
CEO & CIO (CHAIR)
- Mary Ludgin**  
SENIOR ADVISOR
- Lewis Ingall**  
CLIENT SERVICE & MARKETING
- Pete Fawcett**  
PORTFOLIO & ASSET MANAGEMENT

### SUPPORTED BY THE HEITMAN PLATFORM

- ACQUISITIONS (24)**
- CLOSING & DUE DILIGENCE (11)**
- FINANCIAL OPERATIONS & ANALYSIS (54)**
- PORTFOLIO & ASSET MANAGEMENT (44)**
- CAPITAL MARKETS (4)**
- CLIENT SERVICE & MARKETING (29)**

years at Heitman | years experience

As of January 1, 2024  
For illustrative purposes. Not a hierarchical representation.

Confidential

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## Biographies

Name/Title	Biography
<b>Maury R. Tognarelli, Chief Executive Officer</b>	<p>Maury is the Chief Executive Officer of Heitman. He is a member of the firm's Board of Managers and Global Management Committee, and also chairs the Private Equity and Debt Investment Committees. His responsibilities include day-to-day management of the firm's operations and its investment activity. Maury started his career at Heitman as an Investment Analyst in the firm's North American Private Equity group.</p> <p>Maury received a BS in real estate finance from Indiana University's Kelley School of Business. He is a member of the Pension Real Estate Association and serves on the Board of Trustees for the Latin School of Chicago.</p>
<b>Pete Fawcett, Managing Director – North American Portfolio &amp; Asset Management</b>	<p>Pete is a Managing Director in Heitman's Portfolio &amp; Asset Management group. He is an equity owner of the firm and a member of the firm's Board of Managers, North American Private Equity and Debt Investment Committees, and North American Private Equity Valuation Committee. Since joining Heitman in 1987, Pete has held a variety of roles during his tenure at the firm, including acquisitions, client service &amp; marketing, and portfolio &amp; asset management responsibilities. Prior to joining Heitman, Pete was a lending officer in the Real Estate Department at Continental Bank (subsequently acquired by Bank of America).</p> <p>Pete received a BA from Vanderbilt University and an MBA from Northwestern University.</p>
<b>Lewis Ingall, Senior Managing Director – Client Service and Marketing</b>	<p>Lewis is Senior Managing Director of Heitman's Client Service &amp; Marketing Group and an equity owner of the firm. He is a member of the firm's Board of Managers, Global Management Committee, and Private Equity and Debt Investment Committees. In addition, he was a Co-Portfolio Manager of the first fund in the Heitman Value Series. He started his career at Lehman Brothers, Inc. as a member of the corporate finance department, concentrating on mergers and acquisitions and real estate capital markets. In 1988, he joined the acquisitions group of JMB Realty as an associate. After the 1994 merger of JMB and Heitman, Lewis became a senior member of the firm's combined investment group working on the origination, underwriting and execution of transactions. During his acquisitions tenure, Lewis was involved in the investment of over \$3.5 billion and supervised the firm's team of analysts. In 2001, Lewis was named to lead a newly formed client service and marketing group for all of Heitman's activities.</p> <p>Lewis received a BA in economics, history and government from Wesleyan University and an MBA from the Graduate School of Business at Stanford University. He serves on the Board of Directors for AFIRE and the Board of Directors of The Erikson Institute, a university conferring advanced degrees in the field of early childhood development. Among other professional affiliations, Lewis is a member of the Pension Real Estate Association, Urban Land Institute, and the International Council of Shopping Centers. Lewis is a Series 7, 24, 66, and 79 Registered Representative.</p>
<b>Mary Ludgin, Senior Advisor</b>	<p>Mary Ludgin is a Senior Advisor to Heitman and an equity owner of the firm. She is a member of the firm's Global Investment and Global Management Committees. She is responsible for overseeing the firm's work in the realm of sustainability and serves as editor of the series on climate risk that Heitman authored in collaboration with the Urban Land Institute (ULI). The fourth report in that series was released in 2023; it focused on climate-risk disclosures. Prior to transitioning into her role as an advisor, Mary was Senior Managing Director and Heitman's Head of Global Investment Research, a position she held for over 25 years.</p> <p>Mary served as a Global Trustee of ULI and as chair of ULI's Chicago District Council. She previously served as Chair of the Pension Real Estate Association, Chair of the Board of ULI's Randall Lewis Center for Sustainability in Real Estate, President of the National Council of Real Estate Investment Fiduciaries, and President of the Real Estate Research Institute. Mary is the recipient of several industry awards, including the 2019 PREA James A. Graaskamp award, which recognizes researchers whose work contributes to the common body of knowledge regarding real estate investment, and the 2023 Goldie Initiative Shero Award for her career achievements in commercial real estate and commitment to helping other women succeed in the industry.</p> <p>Mary holds an AB from Vassar College and an MA and Ph.D. from Northwestern University.</p>
<b>Thomas Mccarthy, Senior Managing Director – North American Private</b>	<p>Tom is a Senior Managing Director in Heitman's North American Private Real Estate Equity group and an equity owner of the firm. He is a member of the firm's Board of Managers, Private Equity Valuation Committee, and North American Private Equity Investment Committee. Tom serves as the Co-Portfolio Manager for the funds in the Heitman Value Series. Tom began his career with Ernst &amp; Whinney (now EY) before joining the</p>

portfolio management group of JMB Institutional Realty in 1984. After the 1994 merger of JMB and Heitman, he became a senior member of the portfolio management group.

Tom received a BB from Western Illinois University and is a CPA. He is a Series 7, 24, 63, 79, and 99 Registered Representative. He is also an active member of the Advisory Council at Northwestern Medicine's Malnati Brain Tumor Institute.

**Mike Trench,  
Executive Vice  
President – North  
American Portfolio  
& Asset  
Management**

Mike is an Executive Vice President in Heitman's Portfolio & Asset Management group, Co-Portfolio Manager for the Heitman Value Series, and an equity owner of the firm. His responsibilities include oversight of fund strategy, business plan execution, strategic acquisition, and disposition activity, as well as investor and joint venture partner relations. Previously, he was part of Heitman's North American Acquisitions and Asset Management groups, where he was responsible for the identification, origination, and ultimate business plan execution of various value-add investment programs across North America. Mike has been involved in real estate transactions across the country with respect to a variety of property types (retail, residential, self-storage, office, industrial) and investment structures (investment joint ventures, mezzanine financing, and 100% free and clear acquisitions).

Mike received a BS in Finance with a specialization in Real Estate and Urban Economics from the University of Illinois at Urbana-Champaign.

**Colleen M. Ryan,  
Senior Vice  
President – North  
American Portfolio  
& Asset  
Management**

Colleen is a Senior Vice President in Heitman's North American Portfolio & Asset Management group and an Assistant Portfolio Manager for the Heitman Value Series. She is also an equity owner of the firm. Colleen is involved with all aspects of fund administration and oversees a team of asset managers and finance professionals. Her responsibilities also include asset management for a portfolio of investments where she develops and monitors strategic business plans, coordinates and oversees property acquisitions and dispositions, and directs all aspects of property level leasing and operations. Colleen began her career in Heitman's Investor Accounting department, where she was responsible for all reporting and analysis for a large separate account.

Colleen received a BBA in Accounting from Loyola University Chicago and is a CPA.

**Christopher Fruy,  
Senior Vice  
President – North  
American Portfolio  
& Asset  
Management**

Chris is a Senior Vice President and Asset Manager in Heitman's North American Portfolio & Asset Management group, and an equity owner of the firm. His responsibilities include asset management, and creating and monitoring annual budgets and strategic business plans for assets within Heitman's commingled funds. In his previous role in Heitman's Research group, Chris was responsible for the analysis of the North American apartment, office and senior housing sectors, assisting with new acquisitions and investment strategy, targeting markets for acquisition, conducting market and property-level research for potential investments, and providing input for asset valuations. Additionally, he led research on macroeconomic and capital markets trends to shape major investment and portfolio strategies. Chris also has extensive market research and investment strategy experience in the industrial, office and retail sectors. Before joining Heitman, he served as a senior manager of research for American Realty Advisors and was a manager of market research and analysis with Equity Office Properties. Chris is currently an active member of NCREIF, serving as a co-chair of NCREIF's Research Committee.

Chris received a BS in Accountancy from the University of Illinois and is a CPA.

**Jim Meyer, Senior  
Vice President –  
North American  
Portfolio & Asset  
Management**

Jim is a Senior Vice President and Asset Manager in Heitman's North American Portfolio & Asset Management group. He manages both separate account and commingled fund portfolios and has experience in all property types, but currently specializes in medical office investments. Jim is responsible for developing and monitoring strategic business plans, as well as coordinating and overseeing property acquisitions, dispositions and refinancings. He also directs all aspects of property-level leasing and operations. Prior to joining the firm, he was with the accounting and consulting firm of Ernst & Whinney (now EY).

Jim received a BS from Marquette University and is a CPA.

**Ryan Matyas, Vice  
President – North  
American Portfolio  
& Asset  
Management**

Ryan is a Vice President and Asset Manager in Heitman's North American Portfolio & Asset Management group. His role consists of managing the leasing and operations of industrial and office assets owned by separate account clients and commingled funds. Ryan oversees the quarterly valuation process of Heitman's US industrial portfolio consisting of nearly 50 million square feet. His responsibilities include analyzing trends in the industrial and office sector assets as well as creating cash flow projection scenarios and valuation implications for new leasing. Ryan began his career at Heitman in the Investor Accounting group.

Ryan received a BBA and MS in Accountancy from Western Michigan University's Haworth College of Business. He belongs to the National Association of Industrial and Office Parks (NAIOP) and is an active member of NAIOP's National Market perspective forum.

**Jenny Schuck, Vice President, Finance Manager**

Jennifer is a Vice President in Heitman's Portfolio & Asset Management group for the Heitman Value Series. Her responsibilities include overseeing the execution of business plans established for all acquisitions, monitoring property performance, and collaborating with operating & capital partners throughout the investment period. Prior to joining Heitman, Jennifer worked in capital markets & asset management roles in the real estate industry. Most recently, she served as a Portfolio Manager at FPA Multifamily LLC, where she was responsible for managing a portfolio of value-add, multifamily assets located in the Midwest region of the United States. Jennifer received a BS in Finance from Miami University.

**Corey Scuglik, Vice President, Finance Manager**

Corey is a Vice President and Asset Manager in Heitman's North American Portfolio & Asset Management group. He is responsible for asset management and portfolio analysis for the Heitman Value Series. Corey develops and monitors strategic business plans, coordinates and oversees property acquisitions and dispositions and directs all aspects of property level leasing and operations. He focuses on apartment, student housing, and self-storage properties, while also assisting with Fund level analysis. Corey began his professional career with Heitman's Investor Accounting and Financial Operations & Analysis departments, where he was responsible for all reporting and analysis for the HART fund and the Heitman Value Series. Corey received a BA and MS in Accounting from Michigan State University's Eli Broad College of Business.

**Andy Borseth, Assistant Vice President – Financial Operations & Analysis**

Andy is an Assistant Vice President, Finance Manager in the Financial Operations & Analysis group for the Heitman Value Series. His responsibilities include both quarterly and annual financial reporting, annual audits, and quarterly property valuations. Prior to joining Heitman, Andy worked for Altus Group, primarily focused in the valuation space for all core property types. Andy received a BA from the University of St. Thomas in Minnesota and a MS from the University of Denver.

**Viviana De La Paz, Assistant Vice President – Financial Operations & Analysis**

Viviana is an Assistant Vice President, Finance Manager in Heitman's Financial Operations & Analysis group. Her responsibilities include quarterly financial reporting, property and debt valuations, and oversight of annual audits for funds in the Heitman Value Series. She also works on due diligence reviews of real estate acquisitions, dispositions and other projects that assist the Due Diligence team. Previously, Viviana worked at Walton Street Capital, LLC as an Assistant Controller in their Financial Reporting group. Viviana received a BS in Accounting and Business Management from DePaul University and is a CPA.

**Charlie Miller, Assistant Vice President – Financial Operations & Analysis**

Charlie is an Assistant Vice President and Finance Manager in Heitman's Financial Operations & Analysis group for the Heitman Value Series. His responsibilities include financial analysis and reporting for Heitman Value Series investments, preparing internal valuations, reviewing external valuations, preparing various analyses used to support the Client Service & Marketing groups, GIPS compliance, and assisting in the annual budget processes. Prior to joining Heitman, Charlie worked as a Senior Associate on the EVS team at KPMG, which focused on real estate valuation. Charlie received a BBA from the University of Wisconsin-Madison.

**Rick Yorke, Assistant Finance Manager – Financial Operations & Analysis**

Rick is an Assistant Finance Manager in the Financial Operations & Analysis group for the Heitman Value Series. In this role, Rick's responsibilities include quarterly valuations and audit requests; reviewing distributions, income/capital estimates, returns, and NAVs; reviewing compliance agreements; and analyzing property and Fund budgets. Prior to joining Heitman, Rick worked for Retail Properties of America, Inc. (RPAI) as a Senior Portfolio Analyst on the Asset Management and Portfolio Analytics teams. Rick received a BBA in Finance from the University of Iowa's Tippie College of Business.

**Larson Robinson, Senior Associate – Financial Operations & Analysis**

Larson is a Senior Associate in Heitman's Financial Operations & Analysis group, focusing on the Heitman Value Series. His responsibilities include financial analysis and reporting for investments in the Heitman Value Series, preparing internal valuations, reviewing external valuations, preparing reports used to support the Client Service & Marketing group, GIPS compliance, and assisting with the annual budget process. Larson also assists with audit requests; reviewing distributions, income/capital estimates, returns, and NAVs; reviewing compliance agreements; and analyzing property and Fund budgets. Prior to joining Heitman, Larson has held numerous jobs in the real estate industry ranging from residential, commercial and development roles.



Larson received a Bachelor of Science in Business, Real Estate from DePaul University.

**Griffon Gibbons,  
Senior Associate -  
Financial  
Operations &  
Analysis**

Griffin is a Senior Associate in the Financial Operations & Analysis group for Heitman America Real Estate Trust (“HART”) and the Heitman Value Series. His responsibilities include assisting with the preparation and review of monthly, quarterly, and annual reports for investors, consultants, and other stakeholders, which includes financial information, performance returns, property conditions, and variance analysis. Prior to joining Heitman, Griffin held an internship at Mesirow Financial.

Griffin received a BS in Real Estate and Finance from the University of Wisconsin-Madison.

**Darsh Tripathi,  
Associate -  
Financial  
Operations &  
Analysis**

Darsh is an Associate in Heitman’s Financial Operations & Analysis group. His responsibilities include both quarterly and annual financial reporting, annual audits, and quarterly property valuations for various separate accounts and the Heitman Value Series. Prior to joining Heitman, Darsh was an Assistant Underwriter at Burns & Wilcox.

Darsh received a BS in Finance and Financial Management Services from Michigan State University’s Eli Broad College of Business.

## Heitman Ownership

Name	Title/Responsibilities	Years with firm	Years in Industry
Maiko Emi Adachi	Managing Director, Co-Head of Global Investment Research	17	17
Jeff Bingham	Managing Director, Co-Head of Global Investment Research	5	16
Darrah Bixler	Chief People Officer	10	29
Gordon Black	Senior Managing Director, Portfolio Management	35	35
Jennifer Boss	Executive Vice President, Portfolio & Asset Management – North America	29	29
David Busko	Executive Vice President, Director, Acquisitions - North America	7	16
Sébastien Cavé	Managing Director, Private Real Estate Equity – Europe	11	22
Yun Choi	Managing Director and Co-Head of Asia-Pacific Private Real Estate Equity	10	23
Larry Christensen	Chief Financial Officer	34	34
Matthew Claeys	Executive Vice President, Client Service & Marketing – North America	10	22
John Clement	Executive Vice President, Acquisitions – North America	39	39
Laura Craft	Global Head of Portfolio Sustainability Strategies	8	19
Aki Dellaportas	Senior Vice President, Director, Financial Operations & Analysis – North America	5	20
Alan Dooley	Senior Vice President, Portfolio & Asset Management – North America	27	37
Pete Fawcett	Managing Director, Portfolio & Asset Management – North America	37	42
Anthony Ferrante	Executive Vice President, Private Real Estate Equity – North America	34	37
Christina Polito Fylling	Executive Vice President, Client Service & Marketing – North America	17	28
Chris Fruy	Senior Vice President, Portfolio & Asset Management – North America	11	22
Brad Fu	Managing Director and Co-Head of Asia-Pacific Private Real Estate Equity	6	17
Charles Harbin	Managing Director, Co-Head & Portfolio Manager, Public Real Estate Securities	14	22
Mark Hudgins	Senior Vice President, Portfolio & Asset Management – North America	38	42
Lewis Ingall	Senior Managing Director, Client Service & Marketing	36	39
Ashish Karamchandani	Executive Vice President, Director, Acquisitions – North America	6	18
Blaise Keane	Executive Vice President, Portfolio & Asset Management – North America	36	39
Tom Kelly	Executive Vice President, Closing & Due Diligence – North America	38	38
Takayuki Kiura	Senior Advisor (former Managing Director, Client Service & Marketing – Asia-Pacific)	19	36
Amy Krass	Senior Vice President, Portfolio & Asset Management - North America	19	19
Greg Leadholm	Senior Managing Director, Co-Head, Real Estate Debt	17	39
Jon Lindell	Executive Vice President, Real Estate Debt	19	19
Mary Ludgin	Senior Advisor (Investment Research) and Global Investment Committee Member	34	39
David Maki	Senior Managing Director, Co-Head, Real Estate Debt	12	37
John Mancuso	Interim Managing Director, Head of Global Sales, Client Service & Marketing	9	21
Tom McCarthy	Senior Managing Director, Private Real Estate Equity – North America	40	41
Caleb Mercer	Managing Director, Head of European Investment	8 <sup>3</sup>	22
Olin Needle	Executive Vice President, Director of North American Investment Research	27	36
Brian Pieracci	Managing Director, Head of North America Private Equity	25	25
Tim Podboy	Managing Director, Real Estate Debt	13	24
Colleen Ryan	Senior Vice President, Portfolio & Asset Management - North America	28	28
Skip Schwartz	Managing Director, Private Real Estate Equity – Asia-Pacific	27	27

<sup>3</sup> Caleb Mercer was with Heitman's European Acquisitions group from 2012 to 2015; he rejoined in 2019.

<b>Name</b>	<b>Title/Responsibilities</b>	<b>Years with firm</b>	<b>Years in Industry</b>
Tony Smedley	Managing Director, Head of European Private Equity	6	32
Anthony Stamato	Chief Legal Officer	10	32
Beau Titchkosky	Managing Director, Client Service & Marketing - Pacific	7	27
Maury Tognarelli	Chief Executive Officer	40	40
Mike Trench	Executive Vice President, Portfolio & Asset Management – North America	19	19
Rachna Velamati	Chief Diversity Officer	8	17
Irene Yartey-Onyango	Executive Vice President, Head of Product Strategy & Design, Client Service & Marketing	5	17
Jeffrey Yurk	Managing Director, Co-Head & Portfolio Manager, Public Real Estate Securities	20	22

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## Important Disclosures

The investment evaluation of the candidate sponsor and the candidate investment vehicle(s) are compiled by Callan at the request of Mississippi Public Employees' Retirement System, exclusively for use by Mississippi Public Employees' Retirement System.

Information contained in this document may include confidential, trade secret and/or proprietary information of Callan and the client. It is incumbent upon the user to maintain such information in strict confidence. Neither this document nor any specific information contained herein is to be used other than by the intended recipient for its intended purpose.

The content of this document is particular to the client and should not be relied upon by any other individual or entity. There can be no assurance that the performance of any account or investment will be comparable to the performance information presented in this document.

Certain information herein has been compiled by Callan from a variety of sources believed to be reliable but for which Callan has not necessarily verified for accuracy or completeness. Information contained herein may not be current. Callan has no obligation to bring current the information contained herein.

Callan's performance, market value, and, if applicable, liability calculations are inherently estimates based on data available at the time each calculation is performed and may later be determined to be incorrect or require subsequent material adjustment due to many variables including, but not limited to, reliance on third party data, differences in calculation methodology, presence of illiquid assets, the timing and magnitude of unrecognized cash flows, and other data/assumptions needed to prepare such estimated calculations. In no event should the performance measurement and reporting services provided by Callan be used in the calculation, deliberation, policy determination, or any other action of the client as it pertains to determining amounts, timing or activity of contribution levels or funding amounts, rebalancing activity, benefit payments, distribution amounts, and/or performance-based fee amounts, unless the client understands and accepts the inherent limitations of Callan's estimated performance, market value, and liability calculations.

Callan's performance measurement service reports estimated returns for a portfolio and compares them against relevant benchmarks and peer groups, as appropriate; such service may also report on historical portfolio holdings, comparing them to holdings of relevant benchmarks and peer groups, as appropriate ("portfolio holdings analysis"). To the extent that Callan's reports include a portfolio holdings analysis, Callan relies entirely on holdings, pricing, characteristics, and risk data provided by third parties including custodian banks, record keepers, pricing services, index providers, and investment managers. Callan reports the performance and holdings data as received and does not attempt to audit or verify the holdings data. Callan is not responsible for the accuracy or completeness of the performance or holdings data received from third parties and such data may not have been verified for accuracy or completeness.

Callan's performance measurement service may report on illiquid asset classes, including, but not limited to, private real estate, private equity, private credit, hedge funds and infrastructure. The final valuation reports, which Callan receives from third parties, for of these types of asset classes may not be available at the time a Callan performance report is issued. As a result, the estimated returns and market values reported for these illiquid asset classes, as well as for any composites including these illiquid asset classes, including any total fund composite prepared, may not reflect final data, and therefore may be subject to revision in future quarters.

The content of this document may consist of statements of opinion, which are made as of the date they are expressed and are not statements of fact. The opinions expressed herein may change based upon changes in economic, market, financial and political conditions and other factors. Callan has no obligation to bring current the opinions expressed herein.

The information contained herein may include forward-looking statements regarding future results. The forward-looking statements herein: (i) are best estimations consistent with the information available as of the date hereof and (ii) involve known and unknown risks and uncertainties. Actual results may vary, perhaps materially, from the future results projected in this document. Undue reliance should not be placed on forward-looking statements.

Callan is not responsible for reviewing the risks of individual securities or the compliance/non-compliance of individual security holdings with a client's investment policy guidelines.

This document should not be construed as legal or tax advice on any matter. You should consult with legal and tax advisers before applying any of this information to your particular situation.

Reference to, or inclusion in this document of, any product, service or entity should not necessarily be construed as recommendation, approval, or endorsement or such product, service or entity by Callan. This document is provided in connection with Callan's consulting services and should not be viewed as an advertisement of Callan, or of the strategies or products discussed or referenced herein.

The issues considered and risks highlighted herein are not comprehensive and other risks may exist that the user of this document may deem material regarding the enclosed information. Please see any applicable full performance report or annual communication for other important disclosures.

Unless Callan has been specifically engaged to do so, Callan does not conduct background checks or in-depth due diligence of the operations of any investment manager search candidate or investment vehicle, as may be typically performed in an operational due diligence evaluation assignment and in no event does Callan conduct due diligence beyond what is described in its report to the client.

Any decision made on the basis of this document is sole responsibility of the client, as the intended recipient, and it is incumbent upon the client to make an independent determination of the suitability and consequences of such a decision.

Callan undertakes no obligation to update the information contained herein except as specifically requested by the client.

Past performance is no guarantee of future results.

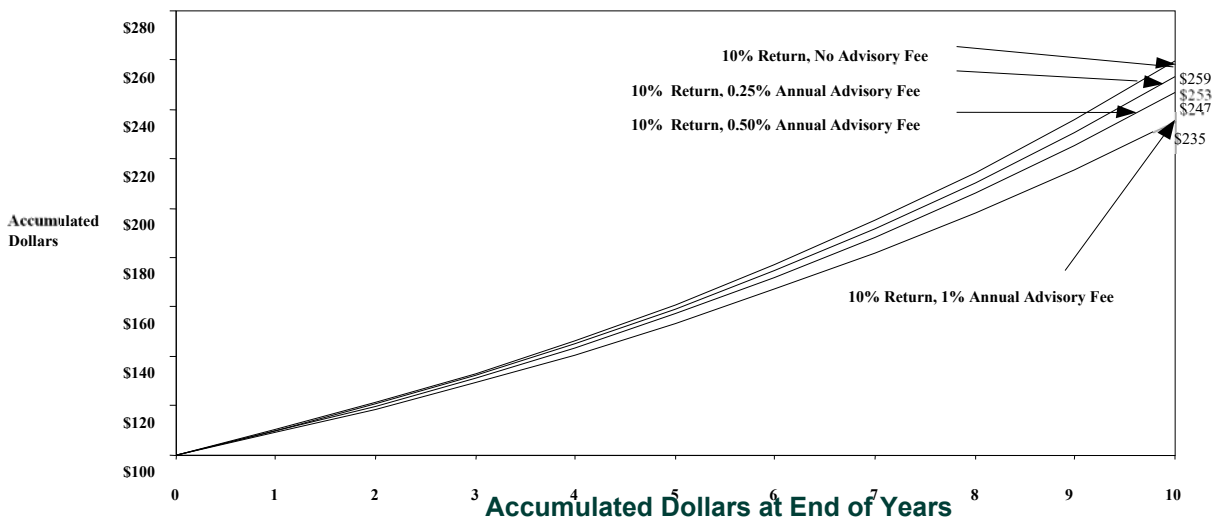
## Disclosure

The preceding report has been prepared for the exclusive use of Mississippi Public Employees' Retirement System. Unless otherwise noted, performance returns contained in this report do not reflect the deduction of investment advisory fees. The returns in this report will be reduced by the advisory fees and any other expenses incurred in the management of an investment account. The investment advisory fees applicable to the advisors listed in this report are described in Part II of each advisor's form ADV.

The following graphical and tabular example illustrates the cumulative effect of investment advisory fees on a \$100 investment growing at 10% over ten years. Fees are assumed to be paid monthly.

In addition to asset-based investment advisory fees, some strategies may include performance-based fees ("carry") that may further lower the returns realized by investors. These performance-based fees can be substantial, are most prevalent in "Alternative" strategies like hedge funds and many types of private markets but can occur elsewhere. The effects of performance-based fees are dependent on investment outcomes and are not included in the example below

### The Cumulative Effect of Advisory Fees



	1	2	3	4	5	6	7	8	9	10
No Fee	110.0	121.0	133.1	146.4	161.1	177.2	194.9	214.4	235.8	259.4
25 Basis Points	109.7	120.4	132.1	145.0	159.1	174.5	191.5	210.1	230.6	253.0
50 Basis Points	109.5	119.8	131.1	143.5	157.1	172.0	188.2	206.0	225.5	246.8
100 Basis Points	108.9	118.6	129.2	140.7	153.3	166.9	181.8	198.0	215.6	234.9

10% Annual Return Compounded Monthly, Annual Fees Paid Monthly.

## Disclosure

As indicated below, one or more of the candidates listed in this report may, itself, be a client of Callan as of the date of the most recent quarter end. These clients pay Callan for educational, software, database and/or reporting products and services. Given the complex corporate and organizational ownership structures of investment management firms and/or trust/custody or securities lending firms, the parent and affiliate firm relationships are not listed here.

The client list below may include names of parent companies who allow their affiliates to use some of the services included in their client contract (e.g., educational services including published research and attendance at conferences and workshops). Affiliates will not be listed if they don't separately contract with Callan. Parent company ownership of the firms included in this report and any relationship with Callan can be provided at your request. Because Callan's clients list of investment managers changes periodically, the above information may not reflect recent changes. Clients are welcome to request a complete list of Callan's investment manager clients at any time.

As a matter of policy, Callan follows strict procedures so that investment manager client relationships do not affect the outcome or process by which Callan's searches or evaluations are conducted.

Firm	Is an Investment Manager Client of Callan*	Is Not an Investment Manager Client of Callan*
Heitman	X	

\*Based upon Callan manager clients as of the most recent quarter end.



April 23, 2024  
Global Equity Mandates

Manager Preview



# Epoch Investments - Global Equity *As of March 31, 2024*

Strategy	MS PERS Assets	Strategy Assets as of 3/31/2024	MS PERS Inception
Global Equity	\$1.04 billion	\$1.8 billion	February 2012

## Key Comments:

- Epoch seeks to produce superior risk adjusted returns by building portfolios of businesses with outstanding risk/reward profiles without running a high degree of capital risk. They analyze businesses in the same manner private investors would in looking to purchase the entire company. The strategy only invests in businesses that are understood and where they have confidence in the financial statements. They seek businesses that generate “free cash flow” and securities that have unrecognized potential yet possess a combination of above average yield, above average free cash flow growth, and/or below average valuation.
- For the year ending March 31, 2024, Epoch Global Equity portfolio returned 20.2% underperforming the benchmark return of 23.1% by approximately 290 basis points. Communication Services and Materials provided some outperformance, while Information Technology and Health Care were the largest detractors.
- For the 3-year period, the portfolio returned 5.5%, underperforming the MSCI ACWI by approximately 140 basis points. Since inception the portfolio has matched the benchmark return of 9.4%.

# Harding Loevner - Global Equity *As of March 31, 2024*

Strategy	MS PERS Assets	Strategy Assets as of 3/31/2024	MS PERS Inception
Global Equity	\$1.04 billion	\$13.1 billion	February 2012

## Key Comments:

- Harding Loevner believes that investing in the shares of high-quality growth businesses at reasonable prices leads to superior risk-adjusted returns over the long term. The firm has defined four key criteria that a company must exhibit before it will be considered for investment: Competitive Advantage, Quality Management, Financial Strength, and Sustainable Growth.
- For the year ending March 31, 2024, the Harding Loevner Global Equity portfolio returned 23.63% underperforming the benchmark return of 23.81% by approximately 18 basis points.
- For the 3-year period, the portfolio returned 1.85%, underperforming the MSCI ACWI by approximately 560 basis points. Harding Loevner's return since inception of 10.18% has outperformed the benchmark by approximately 17 basis points on an annualized basis.

Strategy	MS PERS Assets	Strategy Assets as of 3/31/2024	MS PERS Inception
Global Equity	\$1.07 billion	\$16.3 billion	August 2005

Key Comments:

- Acadian is a pioneer in quantitative investment management with a philosophy rooted in behavioral finance. Acadian’s Global Equity Strategy uses a disciplined, multi-factor approach to uncover attractively valued stocks with strong earnings prospects in both the US and non-US markets.
- For the year ending March 31, 2024, the Acadian Global Equity portfolio returned 31.6% outperforming its benchmark, the MSCI ACWI IMI, by approximately 840 basis points.
- For the 3-year period, the portfolio returned 10.8% outperforming the benchmark by approximately 380 basis points. For the 5-year period, Acadian has outperformed the benchmark by approximately 260 basis points. Since inception, Acadian’s annualized return of 8.30% has outperformed the benchmark’s annualized return of 7.30% by approximately 100 basis points on an annualized basis.

# LSV Asset Management - Global Value Equity | *As of March 31, 2024*

Strategy	MS PERS Assets	Strategy Assets as of 3/31/2024	MS PERS Inception
Global Equity	\$1.04 billion	\$8.9 billion	August 2022

## Key Comments:

- LSV believes that value factors and security selection drive returns more than sector and country allocations. The strategy is managed using quantitative techniques to select individual securities in a risk-controlled and bottom-up approach. The process ranks a broad universe of stocks on a combination of value and momentum factors to create a broadly diversified portfolio across industry groups.
- For the year ending March 31, 2024, LSV returned 23.1%, slightly underperforming the 23.2% return for the MSCI ACWI and outperforming the 18.0% return for the MSCI ACWI Value.
- Since inception the portfolio has returned 17.7% outperforming the MSCI ACWI's 14.5% return by approximately 320 basis points and the MSCI ACWI Value's 11.5% return by approximately 620 basis points.

## TD Epoch Global Choice

Public Employees  
Retirement System of  
Mississippi

April 23, 2024

William J. Booth, CFA  
*Managing Director, Co-CIO & Portfolio  
Manager*

Jeffrey C. Cino  
*Director of Research, Portfolio Manager*

Lauren LeClech  
*Managing Director, Relationship Manager*

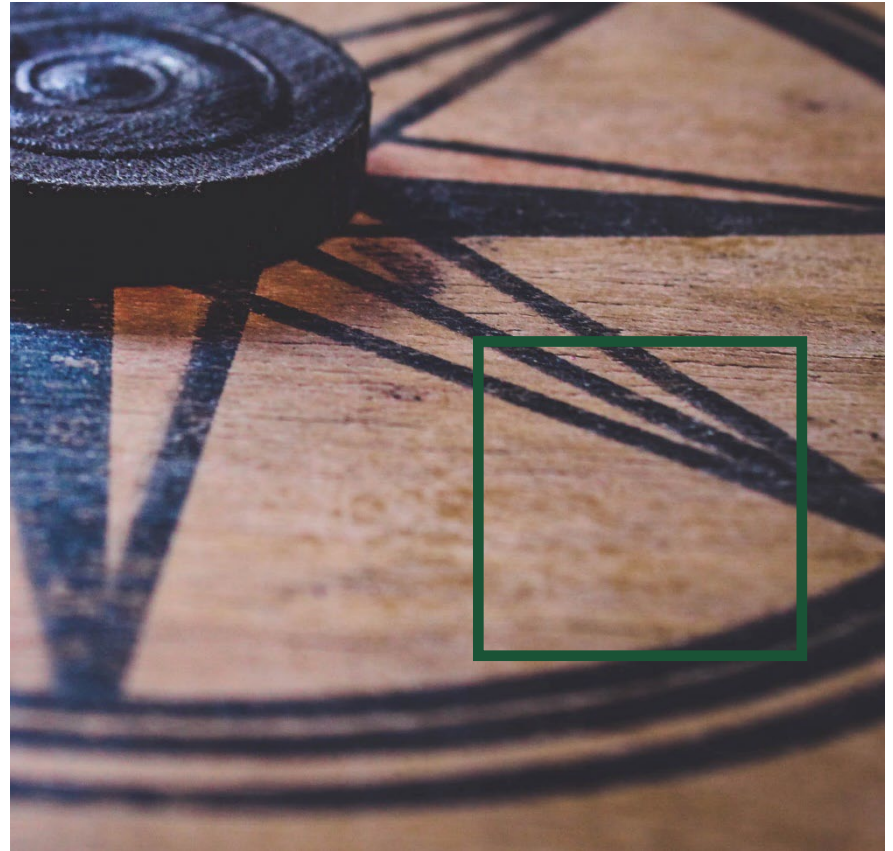


# Agenda

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- **Firm at a Glance**
  - Assets under management (AUM)
- **Strategy Overview**
  - Investment Approach
  - Dedicated Team
- **Portfolio Experience**
  - Macroeconomic Perspectives
  - Portfolio Performance & Positioning
  - New Investment Thesis
  - Characteristics & Metrics
- **Appendix**
  - Holdings
  - Disclosures



## Firm at a Glance

- Assets under management



# TD Epoch's Assets Under Management



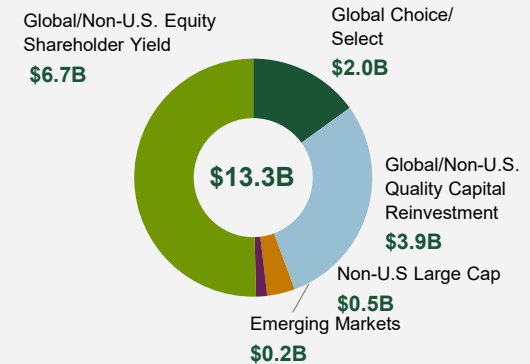
**AUM: \$36.7 Billion\***

Reporting Currency: USD

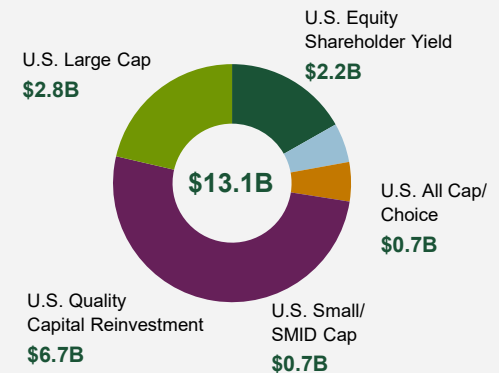
## Client Domicile



## Global Strategy



## U.S. Strategy



Total AUM includes approximately \$1.0 billion in Non-U.S. Large Cap assets and \$6.7 billion of U.S. Fixed Income assets of TDAM USA, which was merged into Epoch Investment Partners Inc. on December 31, 2021. Client domicile and strategy breakdowns do not include this additional AUM. May not total due to rounding. As of December 31, 2023.



## TD Epoch Global Choice – Strategy Overview

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- Investment Approach
- Dedicated Team





# TD Epoch Global Choice

## THE STRATEGY

- A concentrated global portfolio of 25 to 35 companies selected based on their ability to generate free cash flow and allocate it intelligently to create shareholder value
- High-conviction holdings, selected primarily from other TD Epoch portfolios
- Flexibility to invest across geographies and the market capitalization spectrum
- Bottom-up stock selection complemented by macroeconomic awareness
- Portfolio construction framework designed to diversify intended risks, mitigate unintended risks and reduce volatility

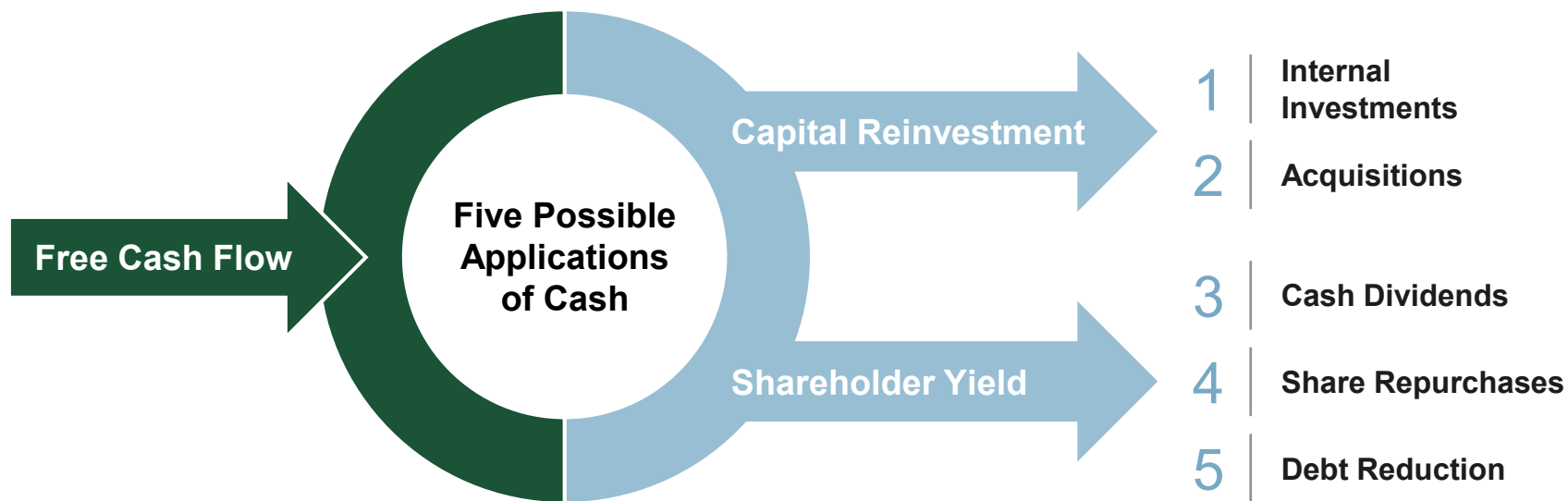
## STRATEGY ROLE IN A PORTFOLIO

- Global capital appreciation
- Source of alpha in a core/satellite allocation
- Portfolio diversifier offering low correlations with growth, value, and other accounting-based styles due to strategy emphasis on free cash flow
- Part of a best-ideas multimanager allocation

# Companies Maximize Returns Through Disciplined Capital Allocation



We believe a company should reinvest capital if the expected return on invested capital is greater than the company's cost of capital. Remaining free cash flow should be returned to shareholders via shareholder yield.

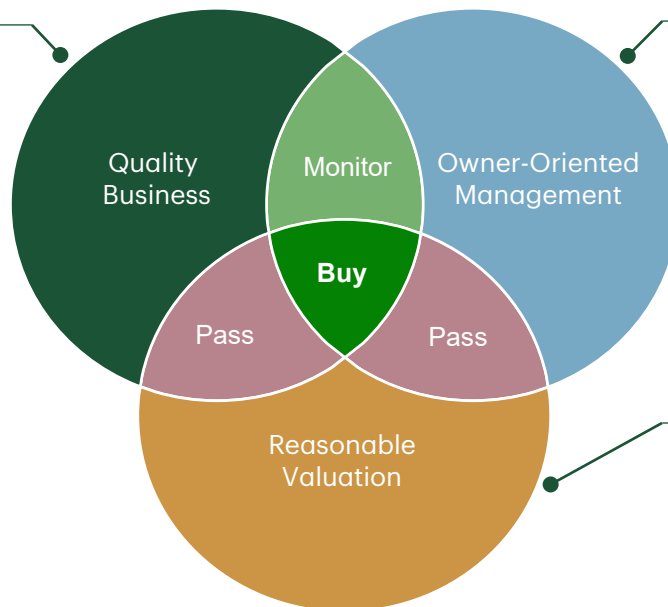


# Stock Selection

**We seek to own high-quality companies run by able managers at reasonable valuations that consistently earn excess returns and compound FCF per share at above average rates**

## Quality Business

- Compelling business model
- Wide and sustainable competitive moat
- Strong financial position
- Attractive industry structure
- Large and growing market opportunity



## Owner-Oriented Management

- Sensible strategy
- Proven operational track record
- Rational capital allocation
- Aligned economic incentives
- Robust corporate governance and candid with shareholders

## Reasonable Valuation

- Market price below intrinsic value
- Differentiated view on FCF per share prospects and/or how those cash flows should be valued
- Asymmetric risk/return profile with limited downside and attractive compounding potential
- High probability of a favorable outcome

# Portfolio Construction & Risk Management

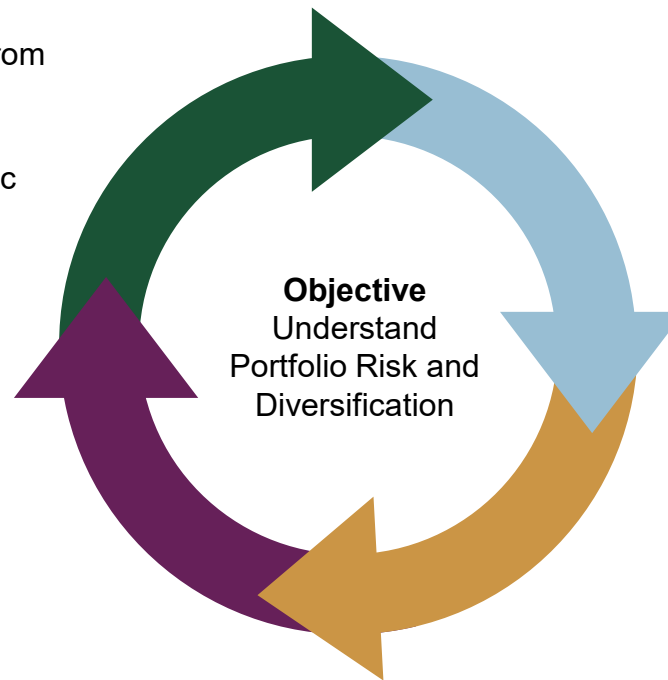
**We aim to deliver attractive risk-adjusted returns over time through skillful stock selection, astute position sizing, and robust risk management.**

## Idea Generation From other Epoch Portfolios

- Construct hypothetical portfolio of companies from the broader TD Epoch strategies
- Identify top stock specific risks as potential new ideas

## Stock Specific Risk Evaluation

- Analyze risk associated with individual stock exposures
- Analyze shifts in stock specific risk and ensure alignment to conviction



## Implied Return Analysis

- Provide perspective on implied expected return for each stock
- Utilize weights and covariances of existing holdings

## Factor Risk Evaluation

- Risk model factor exposure
- Scenario analysis
- Optimizations to identify potential portfolio diversification opportunities



# Investment Team

Our dedicated Global Choice team collaborates with the firm's other teams to source investment ideas and leverage their fundamental, quantitative, and macroeconomic insights

**Dedicated TD Epoch Global Choice Investment Team**

**Portfolio Managers**

<p><b>Bill Booth, CFA</b> CIO Experience 27 Years</p> <p><b>Jeff Cino</b> Director of Research Experience 24 Years</p> <p><b>Mike Welhoelter, CFA</b> President &amp; CIO Experience 38 Years</p>	<p><b>Jérôme Van Der Ghinst, CFA</b> Research Analyst Experience 21 Years</p> <p><b>Tyler DeGroff</b> Data Science and Quantitative Analyst Experience 9 Years</p> <p><b>Kevin Hebner, PhD</b> Global Investment Strategist Experience 29 Years</p> <p><b>Wayne Lin</b> Risk Investment Strategist Experience 23 Years</p>	<p><b>John Miller</b> Client Portfolio Manager Experience 36 Years</p>
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**Contributing Investment Teams**

- Quality Capital Reinvestment
- Shareholder Yield
- U.S. Fundamental

**Resources**

- Quantitative Research Team
- Macroeconomic & Capital Markets Group
- Sustainable Investing Team

**Choice Franchise Portfolio Managers**

<p><b>Glen Petraglia, CFA</b> Non-U.S. Choice Experience 23 Years</p>	<p><b>Justin Howell, CFA</b> U.S. Choice Experience 22 Years</p>
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## TD Epoch Global Choice – Portfolio Experience

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- Macroeconomic Perspectives
- Portfolio Performance & Positioning
- New Investment Thesis
- Characteristics & Key Metrics



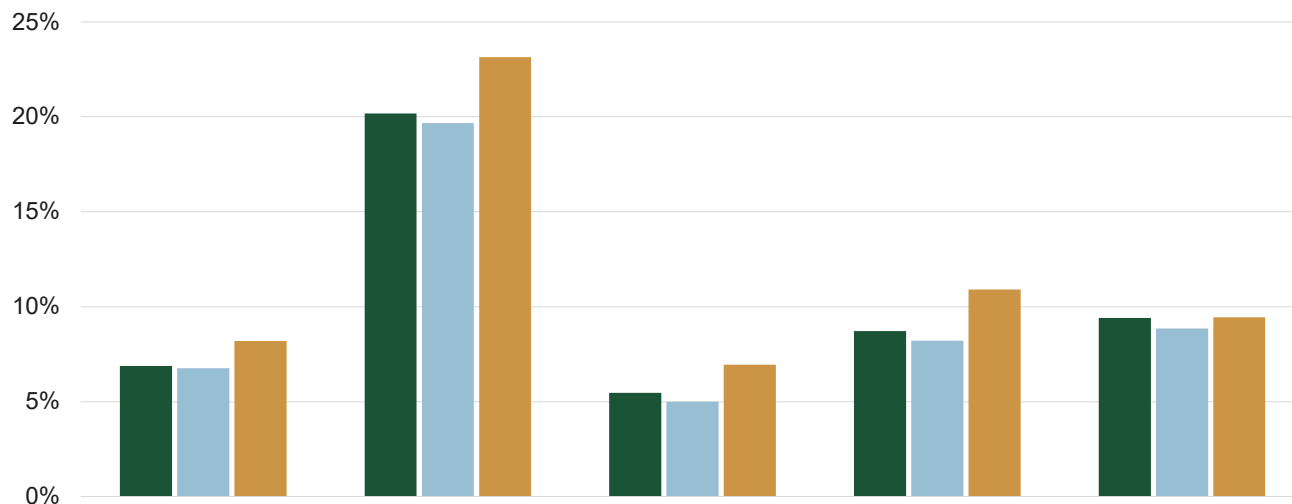
# Performance



## Public Employees Retirement System of Mississippi

Reporting Currency: USD

As of March 31, 2024



	QTR	1 Year	3 Year	5 Year	Inception to Date (02/26/12)
■ Public Employees' Retirement System of Mississippi (Gross)	6.9	20.2	5.5	8.7	9.4
■ Public Employees' Retirement System of Mississippi (Net)	6.8	19.7	5.0	8.2	8.9
■ MSCI AC World (Net)	8.2	23.1	6.9	10.9	9.4

Performance for the most recent quarter is preliminary and subject to change. Returns are annualized for periods greater than one year. Periods less than one year are cumulative, unless otherwise noted. Additional information regarding policies for calculating and reporting returns is available upon request. Past performance is no guarantee of future results.





# Performance Attribution

## Public Employees Retirement System of Mississippi

One Year Ending as of 3/31/2024

Sectors	Account		MSCI AC World		Attribution Effects		
	Average Weight	Return (%)	Average Weight	Return (%)	Allocation Effect	Stock Selection	Total Effect
Communication Services	9.8	59.8	7.5	31.0	0.2	2.6	2.8
Consumer Discretionary	9.2	15.7	11.0	20.0	-0.1	-0.1	-0.1
Consumer Staples	3.6	0.5	7.0	2.0	0.7	0.0	0.7
Energy	4.9	3.1	4.8	18.5	0.0	-0.8	-0.8
Financials	11.9	21.6	15.4	28.0	-0.2	-0.7	-0.9
Health Care	14.7	3.0	11.7	12.8	-0.1	-1.8	-1.9
Industrials	9.8	13.3	10.4	24.6	-0.1	-1.1	-1.1
Information Technology	29.1	25.2	22.6	40.6	1.0	-3.8	-2.8
Materials	3.9	32.3	4.5	8.5	0.1	0.9	1.1
Real Estate	--	--	2.3	7.0	0.4	--	0.4
Utilities	0.8	-5.9	2.7	2.6	0.4	-0.2	0.2
[Cash]	2.4	5.0	--	--	-0.3	--	-0.3
[Unassigned]	--	--	0.1	-27.9	0.0	--	0.0
<b>Total</b>					<b>2.2</b>	<b>-4.9</b>	<b>-2.7</b>

Source: FactSet Research Systems, Inc.; MSCI, Inc. Totals may not add due to rounding.



# Top Five Contributors and Detractors & New and Closed Positions

## Public Employees Retirement System of Mississippi

One Year Ending as of 3/31/2024

Top Five Contributors	Contribution to Portfolio Return (%)
Meta Platforms Inc Class A	4.5
Microsoft Corporation	2.4
Arista Networks, Inc.	2.4
Salesforce, Inc.	1.9
Alphabet Inc. Class C	1.5

### New Positions

Amazon.com, Inc.
Visa Inc. Class A
Astrazeneca PLC Sponsored ADR
Yum! Brands, Inc.
Broadcom Inc.
TotalEnergies SE
Zoetis, Inc. Class A
ON Semiconductor Corporation
Coca-Cola Europacific Partners plc
RELX PLC

Bottom Five Contributors	Contribution to Portfolio Return (%)
RTX Corporation	-0.9
ON Semiconductor Corporation	-0.7
Deutsche Telekom AG	-0.6
Moderna, Inc.	-0.5
STMicroelectronics NV	-0.4

### Closed Positions

Deutsche Telekom AG
Devon Energy Corporation
RTX Corporation
NextEra Energy, Inc.
Berkshire Hathaway Inc. Class B
Samsung Electronics Co., Ltd. Sponsored GDR
STMicroelectronics NV
Chevron Corporation
Universal Display Corporation
Synopsys, Inc.

Source: FactSet Research Systems, Inc. New and closed positions are sorted in descending order from the largest position weight.



# Performance

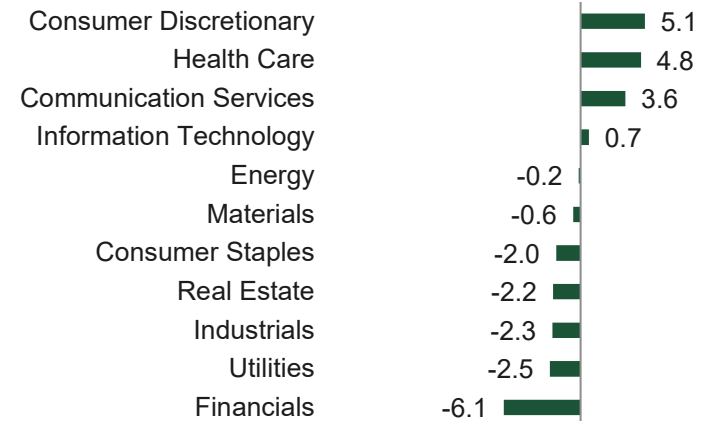
## Public Employees Retirement System of Mississippi

Reporting Currency: USD

As of 3/31/2024

Sector	Portfolio Weight (%)	MSCI AC World (%)
Communication Services	11.1	7.6
Consumer Discretionary	16.0	10.9
Consumer Staples	4.5	6.4
Energy	4.4	4.5
Financials	9.9	16.1
Health Care	16.0	11.1
Industrials	8.5	10.8
Information Technology	24.3	23.7
Materials	3.6	4.2
Real Estate	--	2.2
Utilities	--	2.5
Cash	1.6	--

### Sector Weights Relative to Benchmark



Characteristics	Portfolio	MSCI AC World
Dividend Yield (%)	1.1	1.9
Enterprise Value to EBITDA (x)	15.2	13.7
Weighted Average Market Cap (\$M)	666,413	524,069
Weighted Median Market Cap (\$M)	224,009	115,693
Predicted Beta	1.00	--
12-Month Turnover	67%	--
Number of Equity Positions	33	2,841

Revenue by Region	Portfolio Weight (%)	MSCI AC World (%)
North America	45.9	47.9
Asia	22.7	26.1
Europe	20.6	16.8
Other	10.7	9.3

Revenue by Market Classification	Portfolio Weight (%)	MSCI AC World (%)
Developed Markets	73.3	71.7
Emerging Markets	17.9	22.1
Other	8.8	6.1

Source: FactSet Research Systems; MSCI, Inc. The data is unaudited and may change at any time. The data is shown for informational purposes only and is not indicative of future portfolio characteristics or returns. Totals may not add due to rounding.



# Global Macro Perspectives

**The strategy employs a portfolio construction framework that is designed to mitigate unintended risks and reduce volatility, especially as it relates to macroeconomic and geopolitical events - emphasizing idiosyncratic or stock-specific risk as the primary source of risk.**

**U.S.** - *It really could be different this time*

- Inflation appears to have been vanquished without a recession
- Earnings and Federal Reserve rate cuts will be the focus in 2024

**Europe** - *Cheap for a reason*

- Lower ROIC and lower growth largely explains the valuation discount to the U.S.
- Favor global champions

**Japan** - *Is corporate governance reform real this time around?*

- Push for improving ROEs and higher valuation multiples; lots of talk, but will there be action?
- Bank of Japan's exit from two decades of easy monetary policy is happening, but at a glacial pace

**China** - *Housing and debt excesses constitute a secular headwind for growth*

- Massive overinvestment and terrible capital allocation
- Systemic crisis unlikely due to huge domestic savings and little external debt
- Forward PER < 10: Opportunity or value trap?

**"Known Unknowns" Ahead** - *U.S. presidential election, ongoing wars, and AI adoption*

- Trump vs. Biden, round 2? Policy implications include tax cuts, deregulation, and tariffs
- Ukraine, Gaza, Taiwan; will conflicts and tensions remain contained?
- AI is the most disruptive technology since the smartphone; separating hype from reality will help choose winners and avoid losers

# TD Epoch Global Choice - Portfolio Positioning



**We have sought to maintain a diversified portfolio against a backdrop of incredible macroeconomic and geopolitical uncertainty. We continue to allocate capital to companies that we believe will compound free cash flow per share at attractive rates, driven by structurally growing end markets.**

*Visa*  
*Microsoft*  
*Salesforce*

The Digital Age and the transition from “atoms” to “bits” implies a capital-light economy in which technology is being substituted for labor and physical assets. Free cash flow generation is increasingly dependent on how companies adapt their business model to the Digital Age. “Software as a service” business models; the Cloud, the Internet of Things, big data, AI, plus mobile and digital payments are particularly attractive.

*UnitedHealth Group*  
*AstraZeneca*  
*Thermo Fisher Scientific*  
*Zoetis*

Our health care sector positions provide exposure to a variety of structural growth trends we see shaping the industry, such as precision-based medicine, innovative drug and device development, the shift from fee for service to value based healthcare and direct-to-consumer services. A focus on innovation should drive performance regardless of the economic backdrop and provide insulation against pricing pressures.

*Alphabet*  
*Meta Platforms*

Communication Services companies exposed to growing end markets, driven by the adoption of new technologies and businesses models. We believe companies with large, proprietary datasets and best-in-class curation capabilities are well positioned in the emerging world of AI.

*Airbus*  
*Linde*  
*ON Semiconductor*

More economically sensitive companies with resilient business models due to large orderbooks, sticky customer bases, and/or high switching costs.

# Portfolio Holdings



## TD Epoch Global Choice

(As of March 31, 2024)

Sector	Security	Domicile	Portfolio Weight (%)	
Information Technology	24.3%	Microsoft Corporation	United States	5.6
		Broadcom Inc.	United States	3.7
		ON Semiconductor Corporation	United States	3.2
		Salesforce, Inc.	United States	3.2
		Keyence Corporation	Japan	2.9
		Applied Materials, Inc.	United States	2.0
		Apple Inc.	United States	1.9
		Arista Networks, Inc.	United States	1.7
Consumer Discretionary	16.0%	Amazon.com, Inc.	United States	5.7
		Yum! Brands, Inc.	United States	4.0
		Compass Group PLC	United Kingdom	2.0
		Sony Group Corporation	Japan	1.8
		Evolution AB	Sweden	1.5
Health Care	16.0%	NVR, Inc.	United States	1.0
		Astrazeneca PLC Sponsored ADR	United Kingdom	4.5
		Thermo Fisher Scientific Inc.	United States	3.4
		UnitedHealth Group Incorporated	United States	3.3
		Zoetis, Inc. Class A	United States	3.3
Communication Services	11.1%	Novo Nordisk A/S Class B	Denmark	1.4
		Meta Platforms Inc Class A	United States	6.2
Financials	9.9%	Alphabet Inc. Class C	United States	4.9
		Visa Inc. Class A	United States	4.8
Industrials	8.5%	Bank of America Corp	United States	3.6
		Marsh & McLennan Companies, Inc.	United States	1.5
		Airbus SE	France	2.8
		Jacobs Solutions Inc.	United States	2.3
Consumer Staples	4.5%	RELX PLC	United Kingdom	2.1
		Deere & Company	United States	1.4
		Coca-Cola Europacific Partners plc	Netherlands	2.9
Energy	4.4%	Pernod Ricard SA	France	1.6
		TotalEnergies SE	France	3.4
Materials	3.6%	Viper Energy, Inc.	United States	1.0
		Linde plc	United States	3.6
		Cash		1.6
	<b>Total</b>			<b>100.0</b>

Source: TD Epoch. The data shown above is of a representative account and such data may vary for each client in the strategy due to market conditions, client guidelines and diversity of portfolio holdings.



# Investment Thesis: RELX PLC (REL LN)

## Global provider of analytics and decision tools accelerating its cash flow growth rate via AI-enhanced solutions

- **Description.** RELX is a global provider of mission-critical, information-based analytics and decision tools that enable customers in the financial, legal, medical, and scientific professions to be more productive, make better decisions, and deliver better results. In the financial profession, for example, its tools help banks prevent fraud and money laundering, and insurance companies evaluate and predict risk.
- **Business.** RELX is a high-quality company with a primarily subscription-based business model that consistently generates excess returns and strong, predictable, and growing free cash flow. It holds #1 or #2 positions in several large global markets with few formidable competitors and attractive growth profiles fueled by insatiable demand to create insight from data. The combination of unique data assets and curation capability, high switching costs, and network effects creates an increasingly powerful flywheel that sustains profitable growth.
- **Management.** Management has consistently delivered excess returns and strong cash flow generation by investing in increasingly sophisticated decision tools that create differentiated value for customers at a low cost. It distributes excess cash to owners via growing dividends and opportunistic share repurchases and maintains a strong investment grade balance sheet. Executive compensation is mostly at risk based on profit, cash flow, ROIC and TSR targets. The CEO owns ~\$40M of stock.
- **Valuation.** RELX is positioned to accelerate its sustainable growth rate as it rolls out next generation AI-enhanced analytics and decision tools, which could drive upside to FCF forecasts and the multiple assigned to value those cash flows.
- **Risks.** Decelerating organic growth, Scientific, Technical & Medical (STM) business model transition, data privacy, currency, M&A

Key Data	
Ticker symbol	REL LN
Price (GBP)	3,424.00
% Above 52-week low	41.6%
% Below 52-week high	-2.3%
Market cap (USD M)	81,197
Enterprise value (USD M)	89,224
90D ADV (USD M)	105
ROIC - WACC	12.6%
Net debt/EBITDA	1.8x
Credit rating - S&P	BBB+
Credit rating - Moody's	A3
Trailing 5Y FCF CAGR	3.5%
Fwd 3Y FCF CAGR <sup>1</sup>	11.7%
Fwd avg 3Y FCF yield <sup>1</sup>	4.0%
Dividend yield	1.6%
Buyback yield	1.4%

TD Epoch Insights	
Cross held at TD Epoch <sup>2</sup>	Yes
ECM quintile	2
Passes GEGR screen	Yes
Passes GESY screen	No

(1) Consensus forecasts

(2) Capital Reinvestment and Shareholder Yield strategies

Epoch Investment Partners, RELX PLC reports, Bloomberg, and FactSet as of 3/28/2024. Information about specific companies or securities including whether they are profitable or not, is provided as a means of illustrating our investment thesis. Please see our disclosure located within the appendix section of this presentation.

TD Global Investment Solutions | For One-on-One Institutional Client/Prospect/Consultant Use only. Not for distribution to the public.

## Appendix

- 
- Holdings
  - Disclosures





# Global Choice Investment Team Evolution



## **Bill Booth**

- Co-PM on Global Choice since December 31, 2013 → Named Lead PM October 1, 2023
- Lead PM on Non-U.S. Choice and U.S. Choice
- Co-CIO since December 31, 2017

## **Jeff Cino**

- Named Co-PM October 1, 2023
- Director of Research since March 31, 2022

## **Bill Priest**

- Co-PM and Co-CIO until March 31, 2024
- Will continue as Chair of TD Epoch Board and member of TD Epoch's Macroeconomic and Capital Markets Group
- New role as Vice-Chair of TD Wealth working on long-term strategy and special projects

## **Mike Welhoelter**

- Co-CIO and Head of Risk Management, has been a Co-PM on the strategy since inception



# Performance Attribution

## Public Employees Retirement System of Mississippi

One Year Ending as of 3/31/2024

Country	Account		MSCI AC World		Attribution Effects				
	Average Weight	Return (%)	Average Weight	Return (%)	Allocation Effect (Local)	Stock Selection (Local)	Total Effect (Local)	Total Currency Effect	Total Effect
Australia	--	--	1.8	12.6	0.2	--	0.2	0.0	0.2
Austria	--	--	0.0	14.8	0.0	--	0.0	-0.0	0.0
Belgium	--	--	0.2	1.4	0.1	--	0.1	-0.0	0.1
Brazil	--	--	0.6	27.0	-0.0	--	-0.0	-0.0	-0.0
Canada	--	--	2.8	15.1	0.3	--	0.3	-0.0	0.2
Chile	--	--	0.1	-5.9	0.0	--	0.0	0.0	0.0
China	--	--	3.0	-17.0	1.5	--	1.5	-0.0	1.5
Colombia	--	--	0.0	48.3	0.0	--	0.0	-0.0	-0.0
Czech Republic	--	--	0.0	-7.6	0.0	--	0.0	0.0	0.0
Denmark	0.0	-1.3	0.8	34.4	-0.1	-0.0	-0.1	-0.0	-0.1
Egypt	--	--	0.0	3.2	-0.0	--	-0.0	0.0	0.0
Finland	--	--	0.2	-9.3	0.1	--	0.1	-0.0	0.1
France	8.8	13.7	3.0	12.2	-0.7	-0.1	-0.7	0.1	-0.6
Germany	1.1	-12.1	2.1	14.8	0.0	-0.7	-0.6	-0.0	-0.6
Greece	--	--	0.0	37.4	-0.0	--	-0.0	-0.0	-0.0
Hong Kong	--	--	0.6	-22.9	0.3	--	0.3	-0.0	0.3
Hungary	--	--	0.0	47.4	-0.0	--	-0.0	0.0	-0.0
India	--	--	1.6	36.8	-0.2	--	-0.2	0.0	-0.2
Indonesia	--	--	0.2	3.4	0.0	--	0.0	0.0	0.0
Ireland	--	--	0.2	19.1	0.0	--	0.0	-0.0	0.0
Israel	--	--	0.2	23.9	-0.0	--	-0.0	0.0	-0.0
Italy	--	--	0.6	35.9	-0.1	--	-0.1	-0.0	-0.1
Japan	7.3	0.6	5.5	25.8	0.3	-1.9	-1.5	-0.3	-1.9
Korea	2.9	13.0	1.3	14.2	-0.3	0.3	0.0	0.0	0.1
Kuwait	--	--	0.1	4.1	0.0	--	0.0	-0.0	0.0
Malaysia	--	--	0.1	3.1	0.0	--	0.0	0.0	0.0
Mexico	--	--	0.3	17.7	0.0	--	0.0	-0.0	0.0
Netherlands	2.8	10.6	1.1	24.6	0.2	-0.6	-0.4	0.0	-0.4
New Zealand	--	--	0.0	-5.6	0.0	--	0.0	0.0	0.0
Norway	--	--	0.2	6.1	0.0	--	0.0	0.0	0.0
Peru	--	--	0.0	46.2	-0.0	--	-0.0	-0.0	-0.0
Philippines	--	--	0.1	7.2	0.0	--	0.0	0.0	0.0

Source: FactSet Research Systems, Inc.; MSCI, Inc. Totals may not add due to rounding.



# Performance Attribution

## Public Employees Retirement System of Mississippi

One Year Ending as of 3/31/2024

Country	Account		MSCI AC World		Attribution Effects				
	Average Weight	Return (%)	Average Weight	Return (%)	Allocation Effect (Local)	Stock Selection (Local)	Total Effect (Local)	Total Currency Effect	Total Effect
Poland	--	--	0.1	55.3	-0.0	--	-0.0	-0.0	-0.0
Portugal	--	--	0.1	-14.6	0.0	--	0.0	-0.0	0.0
Qatar	--	--	0.1	-1.4	0.0	--	0.0	-0.0	0.0
Saudi Arabia	--	--	0.4	15.8	0.0	--	0.0	-0.0	0.0
Singapore	--	--	0.3	-1.5	0.1	--	0.1	0.0	0.1
South Africa	--	--	0.3	-4.9	0.1	--	0.1	0.0	0.1
Spain	--	--	0.6	23.4	0.0	--	0.0	-0.0	0.0
Sweden	0.5	7.5	0.8	14.4	0.0	0.1	0.1	-0.0	0.0
Switzerland	--	--	2.4	7.0	0.5	--	0.5	-0.1	0.4
Taiwan	--	--	1.6	27.8	-0.2	--	-0.2	0.1	-0.1
Thailand	--	--	0.2	-16.4	0.1	--	0.1	0.0	0.1
Turkey	--	--	0.1	19.3	-0.0	--	-0.0	0.0	0.0
United Arab Emirates	--	--	0.1	9.2	0.0	--	0.0	-0.0	0.0
United Kingdom	5.9	4.9	3.6	10.8	-0.4	-0.3	-0.7	-0.0	-0.8
United States	68.3	27.6	62.3	29.7	0.2	-1.4	-1.2	0.1	-1.1
[Cash]	2.4	5.0	--	--	-0.3	--	-0.3	0.0	-0.3
<b>Total</b>					<b>2.0</b>	<b>-4.5</b>	<b>-2.6</b>	<b>-0.1</b>	<b>-2.7</b>

Source: FactSet Research Systems, Inc.; MSCI, Inc. Totals may not add due to rounding.

# Holdings (as of 3/31/2024)



Public Employees' Retirement System of Mississippi

3/31/2024

Reporting Currency: USD

Portfolio Appraisal											
Quantity	Security	Ticker	Cusip/Sedol	Purchase Date	Unit Cost	Cost Basis	Price	Yield	Market Value	Pct.	Unrealized GL
<b>Communication Services</b>											
132,843	META PLATFORMS INC	meta	30303m102	2/2/2023	212.48	28,227,126.19	485.58	0.41%	64,505,903.94	6.20%	36,278,777.75
337,549	ALPHABET INC CL C	goog	02079k107	7/28/2021	128.76	43,461,185.57	152.26	--	51,395,210.74	4.94%	7,934,025.17
						<b>71,688,311.76</b>		<b>0.23%</b>	<b>115,901,114.68</b>	<b>11.13%</b>	<b>44,212,802.92</b>
<b>Consumer Discretionary</b>											
326,672	AMAZON COM INC COM	amzn	023135106	8/11/2023	143.88	47,001,162.67	180.38	--	58,925,095.36	5.66%	11,923,932.69
299,369	YUM BRANDS INC	yum	988498101	12/14/2023	131.53	39,376,658.25	138.65	1.93%	41,507,511.85	3.99%	2,130,853.60
719,669	COMPASS GROUP	cpg	bd6k457	5/4/2023	27.14	19,533,226.43	29.35	1.86%	21,118,899.44	2.03%	1,585,673.02
213,500	SONY GROUP CORPORATION	6758	6821506	8/25/2021	105.51	22,526,275.07	85.80	0.65%	18,317,734.32	1.76%	(4,208,540.76)
126,930	EVOLUTION AB	evo	bjxsch4	12/15/2023	116.75	14,819,099.09	124.44	0.20%	15,795,321.81	1.52%	976,222.72
1,336	NVR INC COM	nvr	62944t105	3/18/2024	7,728.91	10,325,830.01	8,099.96	--	10,821,546.56	1.04%	495,716.55
						<b>153,582,251.52</b>		<b>0.81%</b>	<b>166,486,109.34</b>	<b>15.99%</b>	<b>12,903,857.82</b>
<b>Consumer Staples</b>											
427,914	COCA-COLA EUROPEAN PARTNERS	ccep	g25839104	5/2/2023	65.26	27,923,733.38	69.95	2.82%	29,932,584.30	2.88%	2,008,850.92
102,222	PERNOD RICARD	ri_fp	4682329	10/19/2023	177.71	18,165,666.93	161.95	3.13%	16,554,442.69	1.59%	(1,611,224.24)
						<b>46,089,400.31</b>		<b>2.93%</b>	<b>46,487,026.99</b>	<b>4.47%</b>	<b>397,626.68</b>
<b>Energy</b>											
511,528	TOTALENERGIES SE	tte_fp	b15c557	8/10/2023	64.42	32,954,285.43	68.55	4.74%	35,064,013.93	3.37%	2,109,728.49
278,550	VIPER ENERGY INC CL A	vnom	927959106	3/4/2024	37.19	10,359,451.48	38.46	2.81%	10,713,033.00	1.03%	353,581.52
						<b>43,313,736.91</b>		<b>4.29%</b>	<b>45,777,046.93</b>	<b>4.40%</b>	<b>2,463,310.01</b>
<b>Financials</b>											
180,618	VISA INC	v	92826c839	12/14/2023	260.40	47,032,537.11	279.08	0.75%	50,406,871.44	4.84%	3,374,334.33
984,700	BANK OF AMERICA CORP	bac	060505104	9/15/2022	33.24	32,728,499.01	37.92	2.53%	37,339,824.00	3.59%	4,611,324.99
74,903	MARSH & MCLENNAN COS	mmc	571748102	3/20/2024	207.04	15,508,111.87	205.98	1.38%	15,428,519.94	1.48%	(79,591.93)
						<b>95,269,147.99</b>		<b>1.49%</b>	<b>103,175,215.38</b>	<b>9.91%</b>	<b>7,906,067.39</b>
<b>Health Care</b>											
688,386	ASTRAZENECA PLC SPON ADR	azn	046353108	6/7/2023	69.28	47,692,476.76	67.75	2.10%	46,638,151.50	4.48%	(1,054,325.26)
60,939	THERMO FISHER SCIENTIFIC INC	tmo	883556102	4/26/2021	525.79	32,041,410.92	581.21	0.27%	35,418,356.19	3.40%	3,376,945.27
69,875	UNITEDHEALTH GROUP INC	unh	91324p102	12/16/2019	385.06	26,906,016.80	494.70	1.52%	34,567,162.50	3.32%	7,661,145.70
204,249	ZOETIS INC	zts	98978v103	11/15/2023	176.68	36,086,663.59	169.21	1.02%	34,560,973.29	3.32%	(1,525,690.30)
118,012	NOVO-NORDISK AS	novob	bp6kmj1	3/21/2024	129.17	15,243,558.86	127.60	1.07%	15,058,854.07	1.45%	(184,704.79)
						<b>157,970,126.92</b>		<b>1.27%</b>	<b>166,243,497.55</b>	<b>15.97%</b>	<b>8,273,370.62</b>
<b>Industrials</b>											
160,696	AIRBUS GROUP SE	air_fp	4012250	2/17/2023	135.37	21,753,275.87	184.38	0.97%	29,628,740.44	2.85%	7,875,464.57
153,065	JACOBS SOLUTIONS INC	j	469821108	2/1/2023	122.21	18,705,427.61	153.73	0.75%	23,530,682.45	2.26%	4,825,254.84
496,931	RELX PLC	rel	b2b0dg9	11/23/2023	38.74	19,250,383.50	43.25	1.72%	21,494,092.97	2.06%	2,243,709.47
34,445	DEERE & CO	de	244199105	6/24/2022	310.94	10,710,476.54	410.74	1.43%	14,147,939.30	1.36%	3,437,462.76
						<b>70,419,563.52</b>		<b>1.17%</b>	<b>88,801,455.16</b>	<b>8.53%</b>	<b>18,381,891.64</b>

# Holdings (as of 3/31/2024)



Quantity	Security	Ticker	Cusip/Sedol	Purchase Date	Unit Cost	Cost Basis	Price	Yield	Market Value	Pct.	Unrealized GL
<b>Information Technology</b>											
138,922	MICROSOFT CORP	msft	594918104	11/13/2018	245.87	34,156,824.05	420.72	0.71%	58,447,263.84	5.61%	24,290,439.79
29,238	BROADCOM INC	avgo	11135F101	1/31/2024	1,226.23	35,852,458.67	1,325.41	1.58%	38,752,337.58	3.72%	2,899,878.91
459,536	ON SEMICONDUCTOR CORP COM	on	682189105	6/20/2023	85.25	39,175,365.33	73.55	--	33,798,872.80	3.25%	(5,376,492.53)
111,636	SALESFORCE INC	crm	79466I302	6/21/2022	170.87	19,075,753.26	301.18	0.53%	33,622,530.48	3.23%	14,546,777.22
66,000	KEYENCE CORP	6861	6490995	1/18/2022	498.00	32,867,759.83	459.48	0.29%	30,325,679.74	2.91%	(2,542,080.09)
101,201	APPLIED MATLS INC COM	amat	038222105	3/18/2024	202.08	20,450,859.51	206.23	0.78%	20,870,682.23	2.00%	419,822.72
117,502	APPLE INC	aapl	037833100	2/3/2022	160.49	18,858,300.67	171.48	0.56%	20,149,242.96	1.94%	1,290,942.29
60,340	ARISTA NETWORKS INC	anet	040413106	5/2/2023	136.79	8,254,071.52	289.98	--	17,497,393.20	1.68%	9,243,321.68
						<b>208,691,392.84</b>	<b>0.62%</b>		<b>253,464,002.83</b>	<b>24.35%</b>	<b>44,772,609.98</b>
<b>Materials</b>											
81,250	LINDE PLC COM	lin	g54950103	12/26/2018	207.72	16,877,077.98	464.32	1.20%	37,726,000.00	3.62%	20,848,922.02
						<b>16,877,077.98</b>	<b>1.20%</b>		<b>37,726,000.00</b>	<b>3.62%</b>	<b>20,848,922.02</b>
<b>Cash and Equivalents</b>											
	CASH ACCOUNT US DOLLAR	cash	cash			16,046,103.67		--	16,046,103.67	1.54%	0.00
288,538	DIVIDEND ACCRUAL ACCOUNT - EURO	divacc	divacc		1.09	313,179.56	1.08	--	311,621.32	0.03%	(1,558.24)
	DIVIDEND ACCRUAL ACCOUNT - US	divacc	divacc			273,303.02		--	273,303.02	0.03%	0.00
247,109	EUROPEAN UNION EURO	cash	cash		1.08	267,425.03	1.08	--	266,878.07	0.03%	(546.96)
19,507,500	JAPANESE YEN DIVIDEND ACCRUAL ACCOUNT	divacc	divacc		0.01	129,861.37	0.01	--	128,894.25	0.01%	(967.12)
10	BRITISH POUND STERLING	cash	cash		1.26	12.05	1.26	--	12.04	0.00%	(0.01)
						<b>17,029,884.70</b>	<b>0.00%</b>		<b>17,026,812.36</b>	<b>1.64%</b>	<b>(3,072.34)</b>
						<b>880,930,894.47</b>	<b>1.12%</b>		<b>1,041,088,281.21</b>	<b>100.00%</b>	<b>160,157,386.74</b>

# Disclosure



## Important Disclosures:

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All data is unaudited and may change at any time. The data is shown for informational purposes only and is not indicative of future portfolio characteristics or returns. Past performance is not indicative of future results. The securities discussed are not intended to be, and are not, an indication to buy, sell, or hold. Rather, the securities are mentioned to give insight into the largest contributors to performance and the largest detractors from performance so that clients and prospective clients can more readily obtain an understanding of the risk characteristics of the portfolio and the portfolio management process followed by TD Epoch.

Portfolio performance returns are presented gross and net of management fees. Gross-of-fee returns are presented before management fees but after all trading expenses. Net performance reflects the gross-of-fee returns reduced by the actual investment management fee and performance-based fee (where applicable) incurred. Returns include the effect of foreign currency exchange rates. Portfolio performance returns are based upon trade date accounting and include the reinvestment of all interest, dividends and all realized and unrealized gains and losses. Portfolio performance is presented net of non-reclaimable withholding taxes. Portfolios are valued daily. Multi-horizon rates of return (monthly, quarterly, annual, and annualized periods) are calculated by geometrically linking daily rates of return. Returns are annualized for periods greater than 1 year. Periods less than 1 year are cumulative, unless otherwise noted.

All attribution measures are generated using holdings-based (buy/hold) attribution. The reported returns will differ from the portfolio returns reported on our accounting system (APX). Transactions and associated costs may be a significant factor in the portfolio return and are ignored in buy/hold type analysis. In the holdings-based approach to performance attribution, the portfolio is treating each sub-period on a strictly buy-and-hold basis. Transactions are reflected through the portfolio holdings, which are updated at the end each day. Actual transaction prices, however, are not used to compute returns. This approach is equivalent to using a time-weighted method assuming that all transactions occur at the end of the day at the closing price. These assumptions may lead to discrepancies in total portfolio return if both the daily turnover and daily price volatility are large.

The Selection Effect impact information has been consolidated with the Interaction Effect. The Interaction Effect is the portion of the active return attributed to combining allocation decisions with relative performance (strength of manager's convictions).

Contribution to Performance measures the impact that each security has on the portfolio's total return. It is calculated (using daily holding information within FactSet) by multiplying the beginning weight for a given security by its total return on a daily basis and is geometrically linked for extended time periods.

Market Capitalization is the market value of a company's stock, which gives a picture of the company's size. Market capitalization is calculated by multiplying the price of shares by the number of shares outstanding. The market capitalization data is presented in millions (000s).

Dividend Yield is the asset-weighted average of the dividend yields of all the stocks in the fund's portfolio as of the report date. A stock's dividend yield is calculated by dividing the sum of the regular gross dividends declared over the twelve months ended as of the report date by the closing price of the security as of the report date.

Portfolio Turnover rate measures the Fund's buying and selling activity during the past twelve months. It is computed by dividing total purchases or sales, whichever is less, by the average monthly market value of the Fund's portfolio securities.

MSCI, EAFE, and the names of all MSCI indices are the service marks of MSCI Inc. The Russell 1000® Index, Russell 1000® Value Index, Russell 1000® Growth Index, Russell 2000® Index, Russell 2000® Value Index, Russell 2000® Growth Index, Russell 2500® Index, Russell 2500 Value Index, Russell 2500 Growth Index, Russell 3000® Index, Russell 3000® Value Index, and Russell 3000® Growth Index are the registered trademarks or tradenames of Frank Russell Company ("Russell"). Global Industry Classification Standard (GICS), GICS and GICS Direct are service marks of MSCI and Standard and Poor's.

Reference to an index does not imply that the portfolio will achieve returns, volatility, or other results similar to the index. The composition of the index is provided for your information only and may not reflect the manner in which a portfolio is constructed in relation to expected or achieved returns, portfolio guidelines, restrictions, sectors, correlations, concentrations, volatility or tracking error targets, all of which are subject to change over time. Indices are unmanaged. The figures for the index reflect the reinvestment of dividends but do not reflect the deduction of any fees or expenses which would reduce returns. Investors cannot invest directly in indices.

Sources: FactSet Research Systems, Inc.; Epoch Investment Partners, Inc.; Frank Russell Company ("Russell"); MSCI Inc., Standard and Poor's.





HARDING  
LOEVNER

Fundamental. Thinking. Worldwide.

# Global Equity Review | Biennial Presentation

Public Employees' Retirement System of Mississippi

April 23, 2024



# Performance Summary

As of March 31, 2024

## Performance (% Total Return, Net)

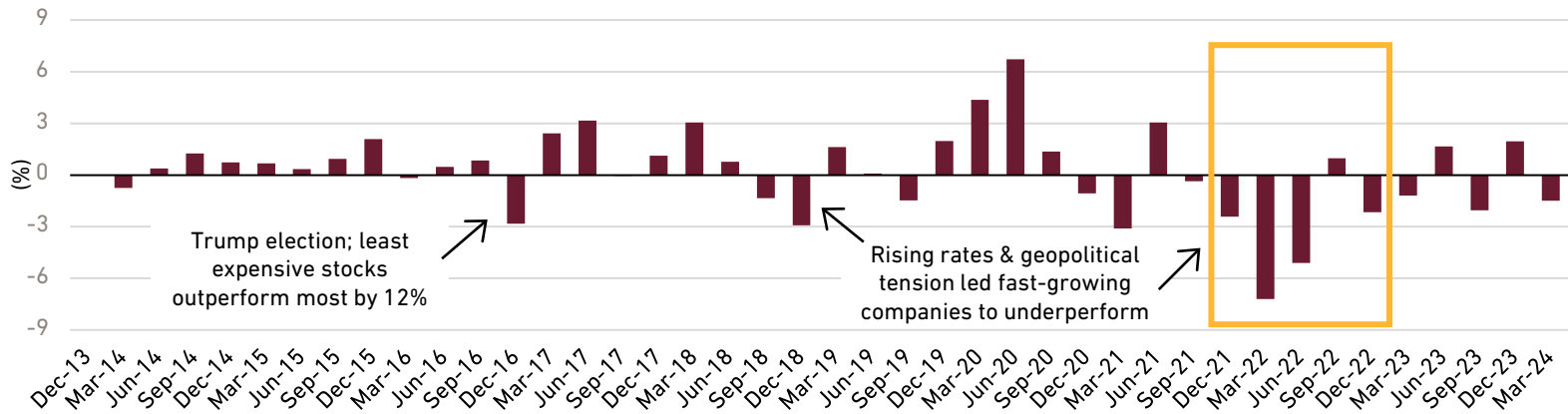
	1Q 2024	4Q 2023	3Q 2023	2Q 2023	Last 12 Months	Last 2 Years	Last 3 Years	Last 4 Years	Since Inception
Mississippi PERS Portfolio	6.85	13.06	-5.27	8.03	23.63	2.95	1.85	13.92	10.18
MSCI All Country World Index	8.32	11.15	-3.30	6.35	23.81	7.31	7.45	17.81	10.01

Returns are annualized for periods greater than one year. Inception date for performance comparison: March 1, 2012. MSCI All Country World Index, the benchmark index, is shown gross of withholding taxes. Portfolio performance is shown after management fees. Please read the disclosures on the last page, which are an integral part of this presentation. Past performance does not guarantee future results.

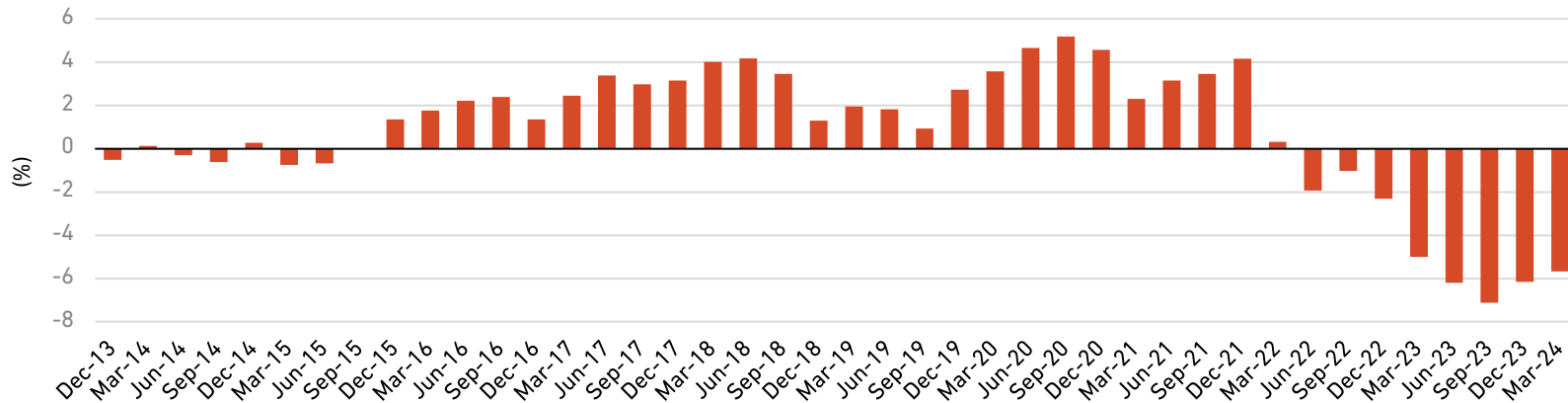
# Underperformance in 2022 Has Weighed on Trailing 3-year Results

## I. What changes took place in the last 12 months?

HL Global vs. MSCI ACWI: Quarterly Net Excess Returns



HL Global: Rolling 3-Year Net Excess Annualized Returns



Source: Harding Loevner Global Equity composite, FactSet, MSCI Inc. Data as of March 31, 2024. Performance data quoted represents past performance; past performance does not guarantee future results.

# Investment Philosophy and Strategy Summary

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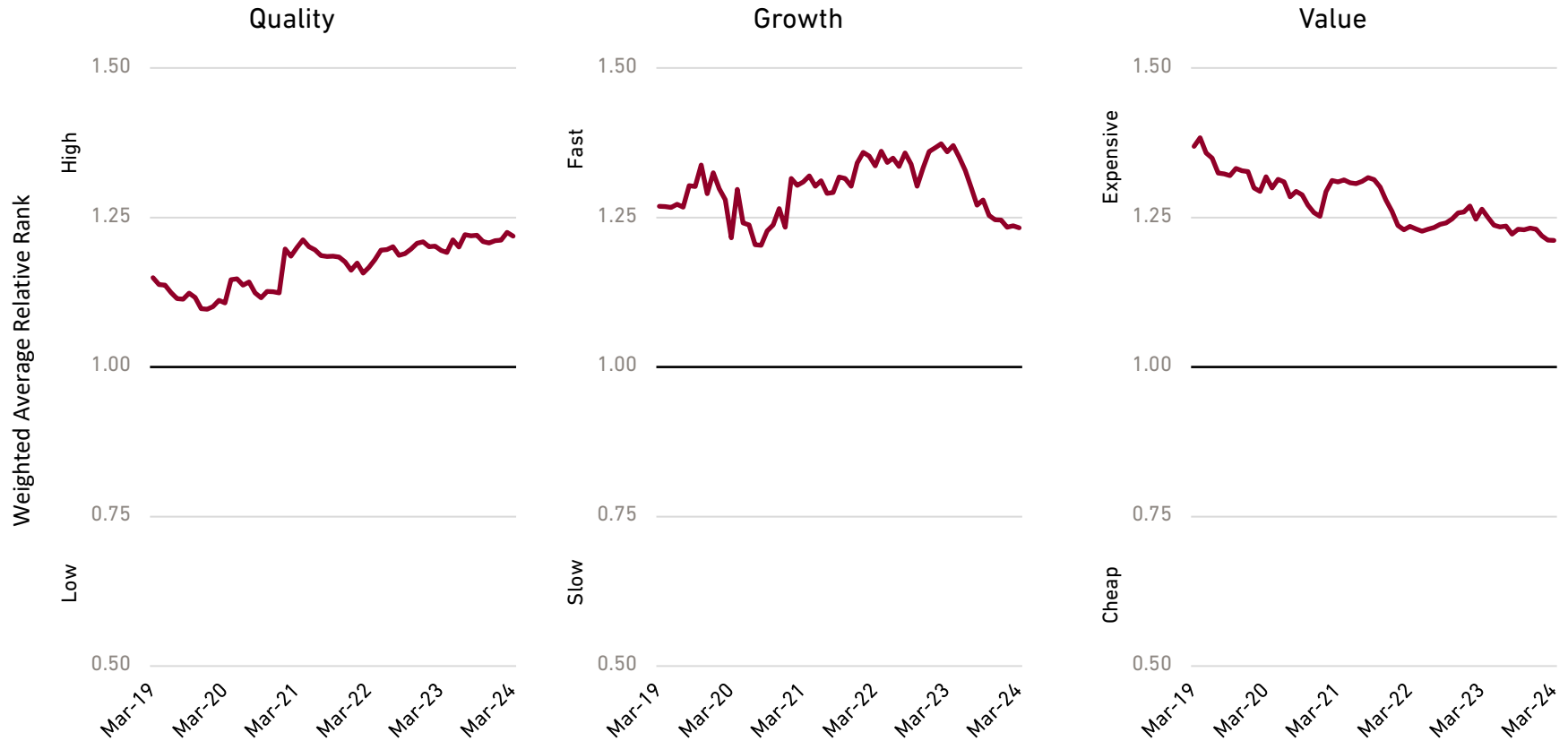
## II. Deviations from previously outlined strategy?

None

# Rising Quality at Lower Valuations

## III. Factors affecting investments over the next 6 to 12 months

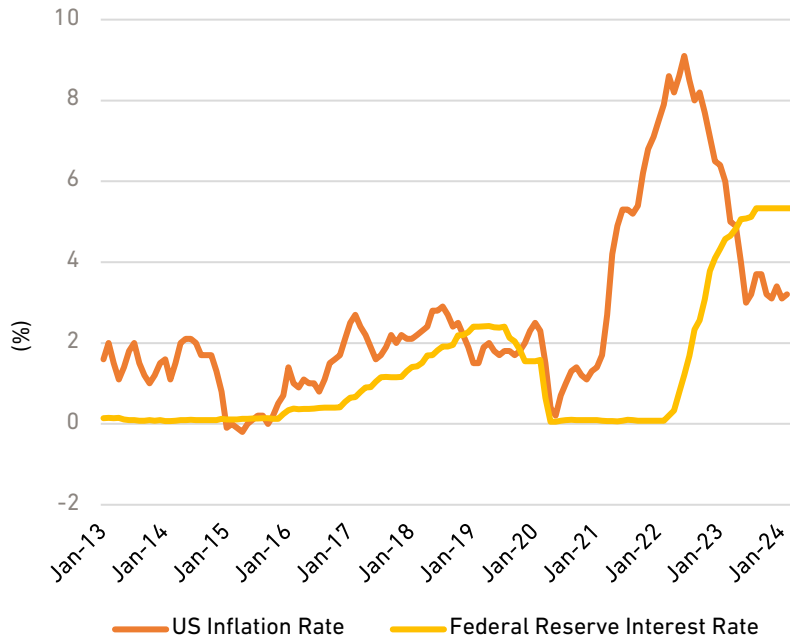
HL Global vs. MSCI ACWI: Relative Quality, Growth, and Value Rank



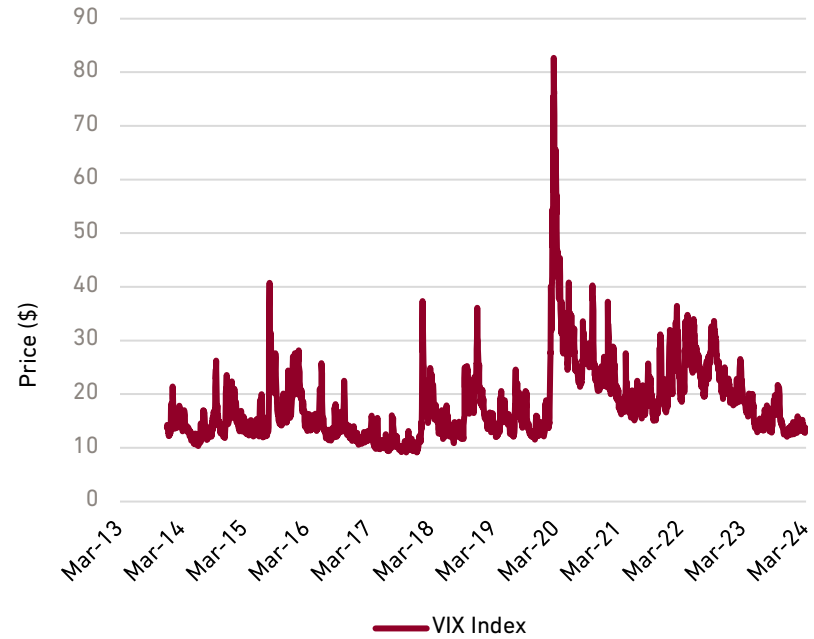
# Macroeconomy Nearly Healed, But Risks Remain

## III. Factors affecting investments over the next 6 to 12 months

### Inflation Is Abating and Rates May Have Peaked



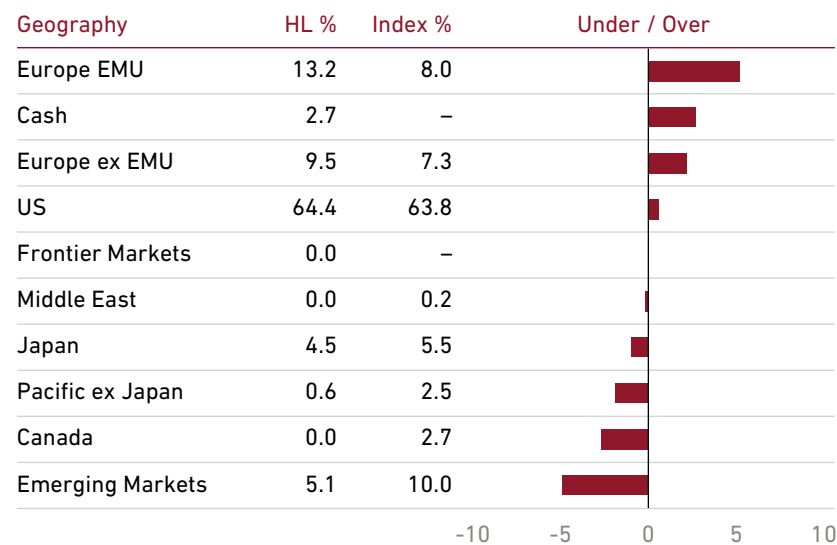
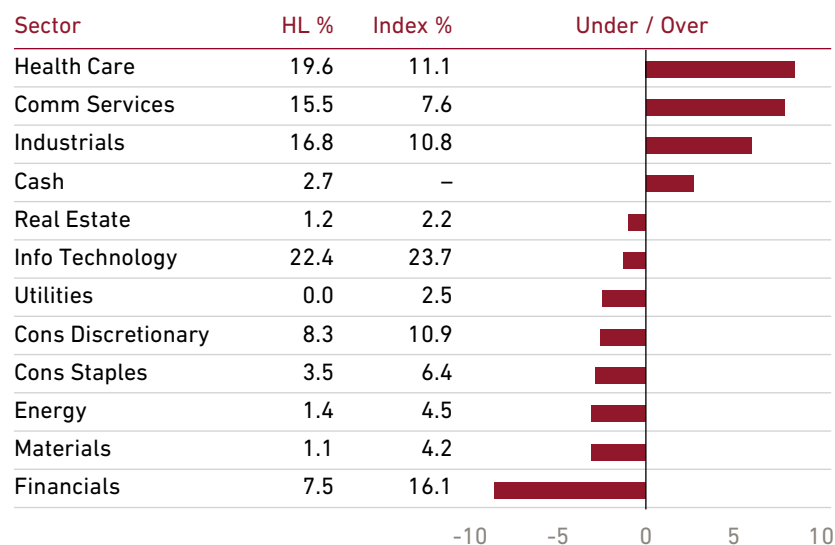
### Implied Volatility Back to Pre-Pandemic Levels



- Inflation, Rates, and the Economy → Unpredictable
- Geopolitical Risks → Significant
- Innovation → Continuing

# A Distinct Portfolio of High-Quality, Growing Companies

## IV. Strategy: Portfolio Exposures as of March 31, 2024



Ten Largest Holdings – Total Weight: 35.6%

Company	Market	Sector	Wt. (%)
Microsoft	US	Info Technology	4.7
Meta Platforms	US	Comm Services	4.6
Schneider Electric	France	Industrials	4.5
Vertex Pharmaceuticals	US	Health Care	4.0
Alphabet	US	Comm Services	3.9

Company	Market	Sector	Wt. (%)
Amazon.com	US	Cons Discretionary	3.8
Thermo Fisher Scientific	US	Health Care	2.7
Netflix	US	Comm Services	2.7
John Deere	US	Industrials	2.5
Alcon	Switzerland	Health Care	2.2

79% Active Share

"HL": Global Equity model portfolio. "Index": MSCI All Country World Index. "Frontier Markets": Includes countries with less-developed markets outside the index. Source: Harding Loevner Global Equity model, MSCI Inc. Data as of March 31, 2024. Sector and region end weights, holdings, and active share are shown as supplemental information only and complement the fully compliant Global Equity Composite GIPS Presentation. Please read the disclosures, which are an integral part of this presentation.



# Volatility Index

As of March 31, 2024

	Global Equity Composite	MSCI ACWI
Standard Deviation (1 yr)	13.74	13.46
Sharpe Ratio (1 yr)	1.35	1.36
Standard Deviation (3 yr)	18.69	16.39
Sharpe Ratio (3 yr)	-0.03	0.29
Standard Deviation (5 yr)	18.69	17.59
Sharpe Ratio (5 yr)	0.44	0.53

# Key Decision Makers – Global Equity Investment Team

Diverse perspectives, deep industry knowledge, and broad global coverage

## Global Sector and Regional Analysts

<b>33</b> Analysts	<b>23</b> Avg. years experience	<b>11</b> Avg. years at HL	<b>25</b> Advanced degrees	<b>25</b> CFA® charter holders
-----------------------	---------------------------------------	----------------------------------	----------------------------------	--------------------------------------

### CIO

Ferrill Roll, CFA

### Research Directors

Yoko Sakai, CFA (Director)  
David Glickman, CFA (Co-Deputy)  
Tim Kubarych, CFA (Co-Deputy)

## Portfolio Team



Peter Baughan, CFA  
*Global Co-Lead*

Jingyi Li  
*Global Co-Lead*



Christopher Mack, CFA  
*Global Paper*

Richard Schmidt, CFA  
*Global Paper*

Moon Surana, CFA  
*Global Paper*

## Portfolio Specialists



Hannah Hastings, CFA

Apurva Schwartz

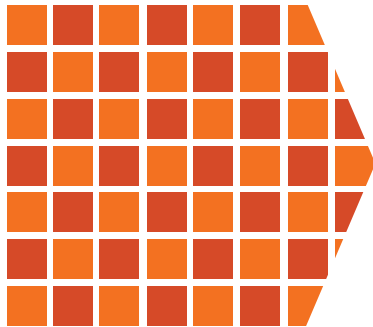
Raymond Vars, CFA

# Portfolio Construction

Our portfolio decision-making structure imposes individual accountability, mitigates biases, and ensures continuity

## Decision Process

### Analyst Recommendations



### Co-Lead Portfolios



Jingyi Li

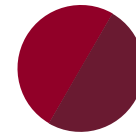
Peter Baughan, CFA

### Paper Portfolios



Christopher Mack, CFA  
Richard Schmidt, CFA  
Moon Surana, CFA

### Model Portfolio

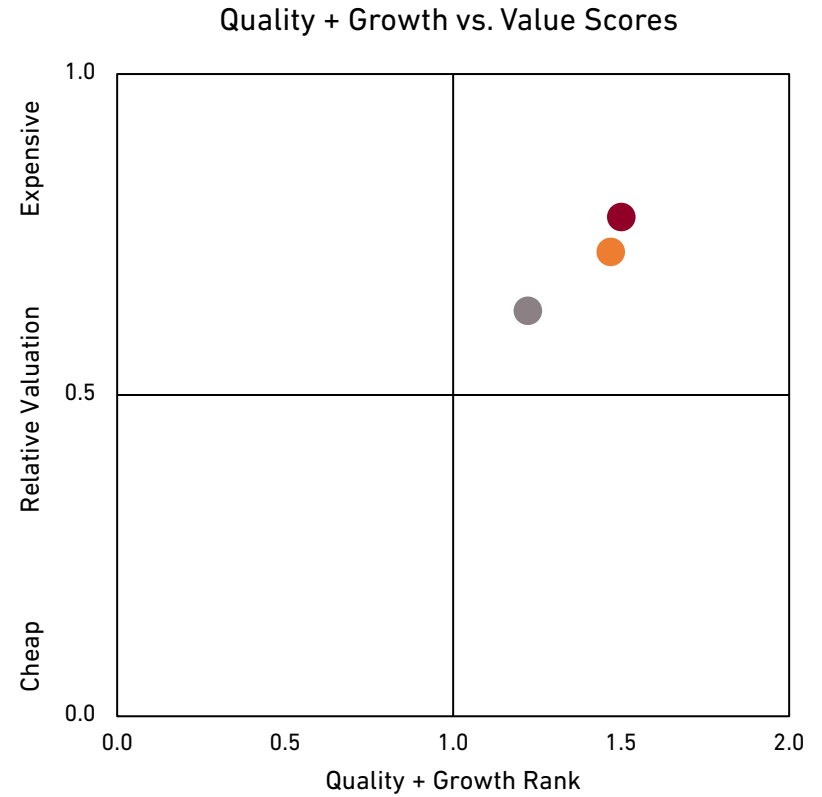


## Decision Structure

- Each PM creates a portfolio of companies researched and rated by our analysts
- Co-lead portfolios are combined to form the strategy model portfolio
- Paper portfolios are used for insight signaling and succession planning

# Similar Quality, Growth, Value Profile to Existing Model

As of December 31, 2023



● 50/50 Jingyi/Rick Global Model    ● HL Global Model (Jingyi/Peter)    ● MSCI ACWI Index

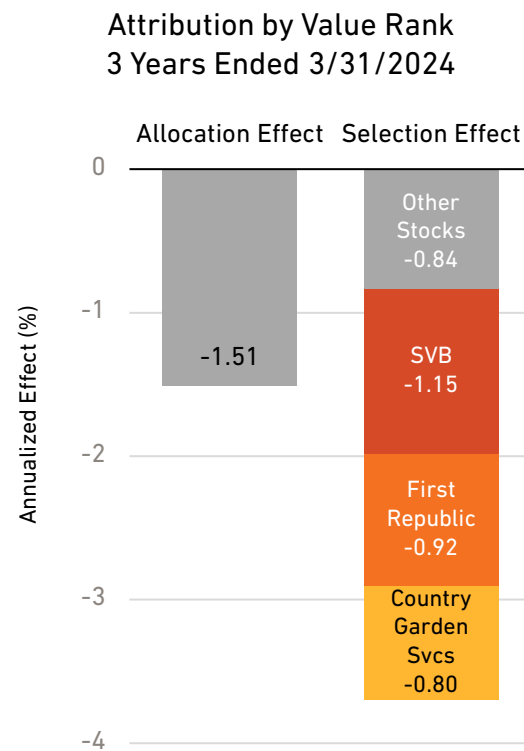
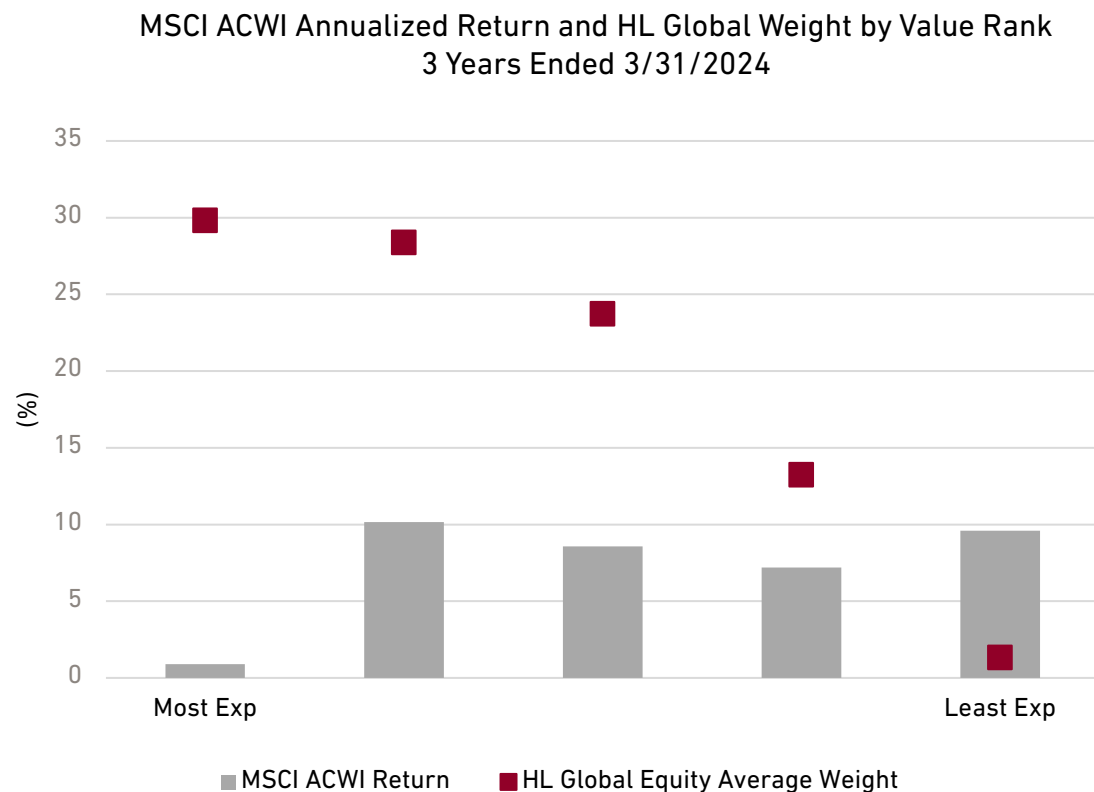
Source: Harding Loevner, HOLT database. HOLT data as of December 31, 2023 (for illustration only). The information provided in this presentation should not be considered a recommendation to purchase or sell a particular security. It should not be assumed that investment in the securities identified has been or will be profitable. Please read the disclosures on the last page, which are an integral part of this presentation.

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## Appendix

# Parsing Three-Year Performance

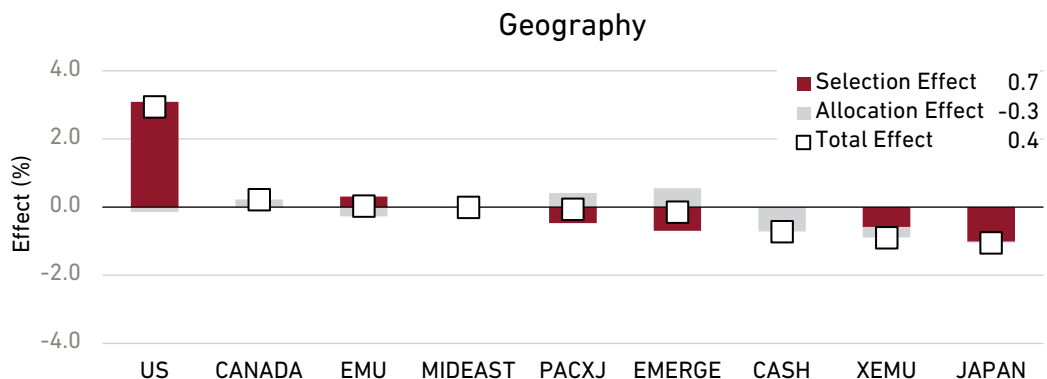
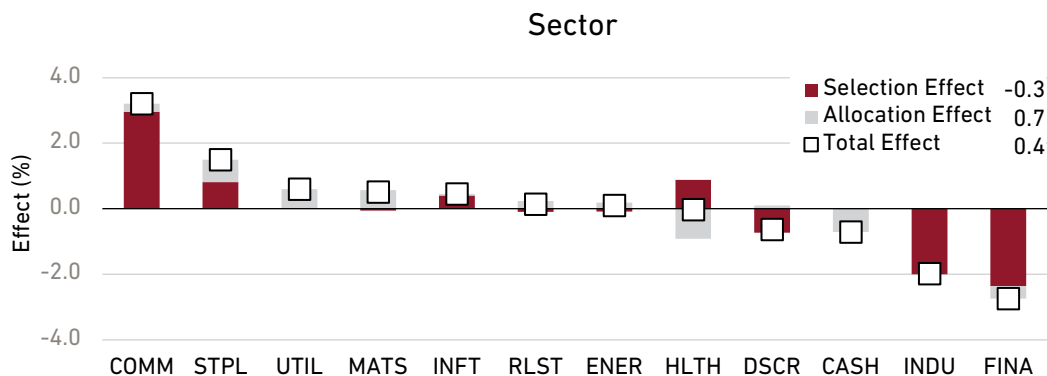
Stock selection and style headwinds since November 2021 weighed on trailing three-year returns



Source: Harding Loevner Global Equity composite, FactSet, MSCI Inc. Data as of March 31, 2024. Performance data quoted represents past performance; past performance does not guarantee future results. A single-period group-level portfolio holdings contribution to selection effect is calculated as the sum of the portfolio holdings-only security contribution to selection effects within the group. In the chart above, stock selection effect shows the portfolio-level net contribution from stock selection and therefore does not depict the gross contribution from individual securities in the portfolio. VR scoring is rebalanced monthly, which may result in individual securities appearing in multiple VR categories over time.

# Performance Attribution: Composite vs. Benchmark

Trailing 12 Months as of March 31, 2024



## Top 5 Contributors

to Relative Returns	Avg. Wt. % HL	Effect Index	Effect %
Meta Platforms	3.5	1.1	1.74
Abcam	0.5	-	0.80
Netflix	1.9	0.3	0.72
Broadcom	1.6	0.6	0.70
Schneider Electric	4.1	0.2	0.55

## Top 5 Detractors

from Relative Returns	Avg. Wt. % HL	Effect Index	Effect %
Kering	1.3	0.1	-1.09
NVIDIA	1.2	1.9	-1.04
John Deere	2.8	0.2	-0.70
Genmab	1.3	<0.1	-0.64
Hexagon	0.7	<0.1	-0.62

"HL": Global Equity composite. "Index": MSCI All Country World Index. Past performance does not guarantee future results. Sector and Region Attribution and Contributors and Detractors are shown as supplemental information only and complement the fully compliant Global Equity Composite GIPS Presentation. The portfolio holdings identified above do not represent all of the securities held in the portfolio. It should not be assumed that investment in the securities identified has been or will be profitable. The following information is available upon request: (1) information describing the methodology of the contribution data and (2) a list showing the weight and relative contribution of all holdings during the period. Contribution is the contribution to overall relative performance over the period. Performance of contributors and detractors is net of fees, which is calculated by taking the difference between net and gross composite performance for the Global Equity strategy prorated by asset weight in the portfolio and subtracted from each security's return. Contributors and detractors exclude cash and securities in the composite not held in the model portfolio. Data is not annualized. Please read the disclosures, which are an integral part of this presentation.

# Completed Portfolio Transactions

	2Q23	3Q23	4Q23	1Q24
Positions Established	Estée Lauder	Diploma		
	Haleon	Honeywell		
	Sony	Repligen		Booking Holdings
	Symrise	SGS	Scout24	Globant
Positions Sold	CD Projekt	Abcam	There were no completed sales this quarter.	Edwards Lifesciences
	Illumina	Country Garden Services		NVIDIA
	PayPal	Estée Lauder		Veralto*
	The Trade Desk	Hello Fresh		WuXi AppTec
	VAT Group	Hexagon		

- Portfolio Turnover (5-year annualized average): 32.6%

\*Shares of Veralto received as part of a spin-off from portfolio holding Danaher

The portfolio is actively managed therefore holdings shown may not be current. The portfolio holdings identified above do not represent all of the securities held in the portfolio. It should not be assumed that investment in the securities identified has been or will be profitable. To request a complete list of portfolio holdings for the past year, contact Harding Loevner. Holdings are shown as supplemental information only and complement the fully compliant Global Equity Composite GIPS Presentation. Please read the disclosures, which are an integral part of this presentation.



# Statement of Portfolio Assets

As of March 31, 2024

Sector / Industry	(%)	Sector / Industry	(%)	Sector / Industry	(%)	Sector / Industry	(%)
<b>Communication Services</b>	<b>15.6</b>	SLB	1.4	Vertex Pharmaceuticals	4.0	Microsoft	4.7
<i>Media &amp; Entertainment</i>		<b>Financials</b>	<b>7.4</b>	<b>Industrials</b>	<b>16.7</b>	Salesforce	2.0
Alphabet	3.9	<i>Banks</i>		<i>Capital Goods</i>		SAP	1.8
Meta Platforms	4.7	Bank Central Asia	0.9	Ametek	1.0	ServiceNow	1.5
Netflix	2.7	HDFC Bank	0.7	Atlas Copco	1.1	Synopsys	1.2
Pinterest	1.7	<i>Financial Services</i>		Diploma	1.1	Globant	1.0
Scout24	1.0	Adyen	1.1	Epiroc	0.9	<i>Tech. Hardware &amp; Equipment</i>	
Tencent	1.6	B3	0.7	Honeywell	0.9	Apple	1.2
<b>Consumer Discretionary</b>	<b>8.4</b>	CME Group	1.9	John Deere	2.5	Keyence	0.9
<i>Cons. Disc. Distribution &amp; Retail</i>		Tradeweb	1.5	MISUMI Group	0.3	<b>Materials</b>	<b>1.1</b>
Amazon.com	3.9	<i>Insurance</i>		Northrop Grumman	0.9	<i>Materials</i>	
<i>Hotels, Restaurants &amp; Leisure</i>		AIA Group	0.6	Rockwell Automation	1.7	Symrise	1.1
Booking	1.0	<b>Health Care</b>	<b>19.5</b>	Schneider Electric	4.5	<b>Real Estate</b>	<b>1.2</b>
<i>Consumer Durables &amp; Apparel</i>		<i>Health Care Equipment &amp; Services</i>		Spirax-Sarco	0.7	<i>Management &amp; Development</i>	
Kering	1.0	Alcon	2.2	<i>Commercial &amp; Professional Services</i>		CoStar	1.2
Nike	0.7	Intuitive Surgical	1.4	SGS	0.9	<b>Utilities</b>	<b>0.0</b>
Sony	1.8	UnitedHealth Group	1.8	<b>Information Technology</b>	<b>22.4</b>	<b>Cash</b>	<b>2.6</b>
<b>Consumer Staples</b>	<b>3.5</b>	<i>Pharma. Biotechnology &amp; Life Sciences</i>		<i>Semiconductors &amp; Semiconductor Eqpt.</i>			
<i>Cons. Staples Distribution &amp; Retail</i>		AbbVie	1.2	Applied Materials	1.6		
Costco	1.0	Chugai Pharmaceutical	1.5	ASML	0.9		
<i>Household &amp; Personal Products</i>		Danaher	2.1	Broadcom	1.4		
Haleon	0.8	Genmab	1.0	TSMC	1.1		
L'Oréal	1.7	Repligen	0.9	<i>Software &amp; Services</i>			
<b>Energy</b>	<b>1.4</b>	Roche	0.7	Accenture	1.8		
<i>Energy</i>		Thermo Fisher Scientific	2.7	Adobe	1.3		

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# Analyst Responsibilities

Sector	Industry Group
<b>Communication Services</b>	
Uday Cheruvu, CFA	Telecommunication Services, Media and Entertainment
Christopher Nealand, CFA	Telecommunication Services, Media and Entertainment
Jafar Rizvi, CFA	
<b>Consumer Discretionary</b>	
Peter Baughan, CFA	Consumer Services
Samuel Hosseini, CFA, ACA	Distribution and Retail
Maria Lernerman, CFA	Consumer Durables and Apparel
Sergei Pluitsinski	Consumer Durables and Apparel, Distribution and Retail
Andrew West, CFA	Automobiles and Components
<b>Consumer Staples</b>	
Christopher Nealand, CFA	Food, Beverage and Tobacco
Sergei Pluitsinski	Distribution and Retail, Household and Personal Products
Richard Schmidt, CFA	Food, Beverage and Tobacco
<b>Energy</b>	
Michael Purtill, CFA	
<b>Financials</b>	
Isaac May, CFA	Financial Services
Bryan Lloyd, CFA	Banks, Financial Services, Insurance
Ferrill Roll, CFA	Banks
Moon Surana, CFA	Banks, Financial Services
<b>Health Care</b>	
David Glickman, CFA	Pharmaceuticals Biotech and Life Sciences
Samuel Hosseini, CFA, ACA	
Patrick Todd, CFA	Health Care Equipment and Services, Pharmaceuticals Biotech and Life Sciences
<b>Industrials</b>	
Sean Contant, CFA	Capital Goods, Commercial and Professional Services
Jingyi Li	Capital Goods
Christopher Nealand, CFA	Capital Goods
Anix Vyas, CFA	Capital Goods
Andrew West, CFA	Transportation

Sector	Industry Group
<b>Information Technology</b>	
Uday Cheruvu, CFA	Tech Hardware and Equipment
Christopher Mack, CFA	Software and Services
Isaac May, CFA	
Igor Tishin, PhD	Software and Services, Tech Hardware and Equipment, Semiconductors and Semi Equipment
<b>Materials</b>	
Anix Vyas, CFA	
<b>Real Estate</b>	
Patrick Todd, CFA	
<b>Utilities</b>	
Jingyi Li	
<b>Country/Region</b>	
<b>China</b>	
Lee Gao	
Jingyi Li	
Wenting Shen, CFA	
<b>Emerging Markets</b>	
Scott Crawshaw	
Lee Gao	
<b>Frontier Emerging Markets</b>	
Pradipta Chakraborty	
Sergey Dubin, CFA	
Babatunde Ojo, CFA	
<b>Japan</b>	
Takayuki Hayano, CFA	
Yoko Sakai, CFA	
<b>Other</b>	
<b>Quantitative Analysis</b>	
Edmund Bellord	
Ping Wang, PhD	
<b>Associate Analysts</b>	
Safia Williams, CFA	
<b>Deputy Directors of Research</b>	
David Glickman, CFA	
Timothy Kubarych, CFA	
<b>ESG</b>	
Maryna Arabei, CESGA	
Maria Lernerman, CFA	

# Disclosures

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The information provided in this presentation should not be considered a recommendation to purchase or sell a particular security. Unless otherwise stated, non-performance based criteria have been used to select the securities listed. The portfolio is actively managed therefore securities shown may not be current. It should not be assumed that investment in the securities identified has been or will be profitable. To request a complete list of portfolio holdings for the past year contact Harding Loevner. A complete list of holdings for the Global Equity model at March 31, 2024 is available on request.

All Global Equity client accounts are based on the Harding Loevner Global Equity model, and are managed in strict accordance with this model. No deviation from the Harding Loevner Global Equity model is permissible except to accommodate unique, agreed-upon client guidelines or restrictions.

Investing in stocks entails the risks of market volatility. The value of all types of stocks may increase or decrease over varying time periods. To the extent the investments depicted herein represent international securities, you should be aware that there may be additional risks associated with international investing, including foreign economic, political, monetary and/or legal factors, changing currency exchange rates, foreign taxes, and differences in financial and accounting standards.

Quality and Growth Characteristics, Investment Statistics, Benchmark Returns, Performance Attribution, Portfolio Exposures and Portfolio Transactions are shown as supplemental information only and complement the fully compliant Global Equity Composite GIPS Presentation, which is available on request.

*Alpha*: a measure of risk-adjusted return. *Beta*: a measure of the portfolio's sensitivity to the market. *R-Squared*: a measure of how well a portfolio tracks the market. *Standard Deviation*: the statistical measure of the degree to which an individual value in a probability distribution tends to vary from the mean of the distribution. *Information Ratio*: a measure of risk-adjusted return calculated by dividing the portfolio active return (i.e., portfolio returns minus benchmark return) by the standard deviation of the active return. *Sharpe Ratio*: the return over the risk free rate per unit of risk. *Up/Down Capture*: a measure of the manager's performance in up/down markets relative to the market itself. *Profit Margin*: relationship of net profits to net sales. *Return on Assets*: net income for past 12 months divided by total assets. *Return on Equity*: the net income divided by total common equity outstanding, expressed as a percent. *Debt/Equity Ratio*: total long-term debt divided by total shareholder's equity. *Sales Per Share*: the total revenue earned per share over a 12-month period, net of returns, allowances, and discounts. *Earnings Per Share*: portion of a company's profit allocated to each outstanding share of common stock. *Cash Flow*: a measure of the cash generating capability of a company calculated by adding non-cash charges (e.g. depreciation) and interest expense to pretax income. *Turnover*: calculated by dividing the lesser of Purchases or Sales by Average Capital. *Active Share*: the proportion of holdings by weight that differ from holdings of the benchmark index.

The MSCI All Country World Index is a free float-adjusted market capitalization index that is designed to measure equity market performance in the global developed and emerging markets. The index consists of 47 developed and emerging market countries. You cannot invest directly in this index.

All performance and data shown are in US dollar terms, unless otherwise noted.

Harding Loevner's Quality, Growth, and Value rankings are proprietary measures determined using objective data. Quality rankings are based on the stability, trend, and level of profitability, as well as balance sheet strength. Growth rankings are based on historical growth of earnings, sales, and assets, as well as expected changes in earnings and profitability. Value rankings are based on several valuation measures, including price ratios.

The composite and attribution returns may show discrepancies due to the different data sources for these returns. Composite performance is preliminary and obtained from Harding Loevner's accounting system and Attribution returns are obtained from the FactSet portfolio analysis system. Please note returns from FactSet are not audited for GIPS compliance and are for reference only.

Source (Benchmark Performance, Performance Attribution, Contributors and Detractors): FactSet, Harding Loevner Global Equity composite, MSCI Inc.

Source (Portfolio Positioning, Portfolio Transactions, Portfolio Allocation Comparison, Quality and Growth Characteristics [Run date: April 3, 2024, based on the latest available data in FactSet on this date.]): FactSet, Harding Loevner Global Equity model, MSCI Inc.

Source (Investment Statistics): eVestment Alliance LLC, Harding Loevner Global Equity composite, based on composite returns.

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# Disclosures: PM Models

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Jingyi Li and Peter Baughan serve as co-lead portfolio managers on the Harding Loevner Global Equity strategy. Rick Schmidt will replace Peter Baughan as co-lead portfolio manager on October 1, 2024.

The Rick Schmidt, Jingyi Li, Peter Baughan, and 50/50 Jingyi/Rick Global Equity models ("Paper Models") are virtual model portfolios in which no actual dollar amounts are invested. Actual results (if available in the future) may significantly differ from the theoretical results presented herein and would be more relevant to an investment decision than the theoretical results. The hypothetical performance results do not reflect any actual trading or the effect of client cash flows and may not reflect the impact that material economic and market factors might have had on Harding Loevner's decision-making if Harding Loevner were actually managing clients' money. Interpretation of these results should take into consideration the limitations inherent in the results of models. The returns shown in this presentation for the models do not reflect any commissions or other trading costs that would have been incurred in investing actual dollars. Had those costs been reflected, the returns shown would have been lower.

Performance is shown net of fees. To calculate net performance of the Rick Schmidt, Jingyi Li, Peter Baughan, and the 50/50 Jingyi/Rick Global Equity model portfolios, we applied the quarterly effective rate of the fees that were accrued by the HL Global Equity composite.

The performance information in this presentation is confidential and is provided for illustrative purposes only in response to your specific request. Paper Model performance is supplemental to the actual historical composite performance information for the Harding Loevner Global Equity strategy, which is available on request.

Jingyi Li's and Peter Baughan's models are merged to create the Current Global Equity model portfolio, on which all Global Equity client portfolios are based. The holdings of the merged model portfolio are adjusted as required to comply with the strategy's portfolio guidelines. However, no individual models were required to comply strictly with the strategy's portfolio guidelines. Therefore, had the guidelines strictly applied, performance and other portfolio-related information shown in this presentation in relation to the models may have been different.

The MSCI All Country World Index is a free float-adjusted market capitalization index that is designed to measure equity market performance in the global developed and emerging markets. The index consists of 47 developed and emerging market countries. The MSCI World Index is a free float-adjusted market capitalization index that is designed to measure global developed market equity performance. The index consists of 23 developed market countries. You cannot invest directly in these indexes.

Characteristics run date January 30, 2024.

All performance and data shown are in US dollar terms, unless otherwise noted. Past performance is no guarantee of future results.



# The Public Employees' Retirement System of Mississippi (PERS)

Global All-Country Equity

April 23, 2024

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# Presentation Team



## **Scott Brymer, CFA — Senior Vice President, Portfolio Manager**

Scott joined Acadian in 2006 and is a senior member of the Equity Team, focusing primarily on portfolio oversight and portfolio-related research. He was previously a member of the Portfolio Construction Group, where he specialized in simulation-based research, portfolio analytics, optimization, and trading. He earned a B.B.A. in finance from the University of Massachusetts at Amherst. Scott is a CFA charterholder and a member of CFA Society Boston.



## **James Klapman — Senior Vice President, Relationship Manager**

Jim joined Acadian in 1996 and is a senior member of Acadian's Global Client Group. He is a Relationship Manager responsible for servicing our clients in North America. Jim previously worked with Acadian's clients in the Middle East, Asia, and Australia and was Head of Portfolio Construction for Acadian Asset Management (Australia) Limited. Jim holds an M.B.A. with a concentration in finance from Northeastern University and a B.A. in economics and government/legal studies from Bowdoin College.



# OVERVIEW

# Acadian Systematic Investing Built On



**Economic intuition & insights of a talented, experienced, diverse group of investors:**

100+ person investment team | 1600+ years' collective experience  
100+ advanced analytical degrees

**PEOPLE**

**DATA**

**Extensive data repository supplemented by alternative data scouting effort:**

518M+ daily observations | 58TB+ data  
150+ global markets | 40K+ traded assets



**Transforming information into insights:**

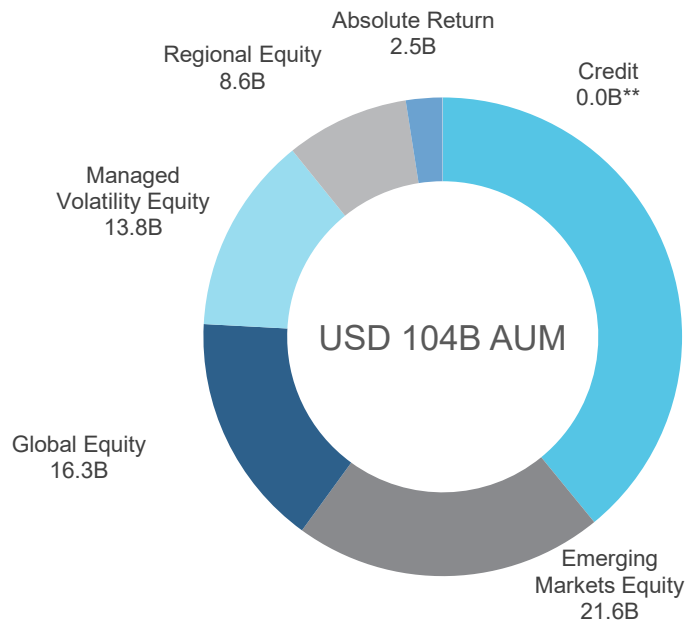
Robust technological infrastructure  
Sophisticated analytical tools & portfolio attribution illuminate trends, relationships, and drivers of alpha

**CLARITY**



# Organizational Overview

- Acadian has been a pioneer in systematic investing since our founding in 1986
- We believe that a systematic approach grounded in fundamentals is well suited to delivering consistent risk-adjusted returns
- Our 366-person team is focused on continuous research and innovation



December 31, 2023

Rounding is applied to the total firm AUM which includes \$813.3 million in model advisory contracts where Acadian does not have trading authority. The individual strategy level assets under management (AUM) are rounded to the nearest decimal point and do not include model advisory assets.

\*As a separate legal entity, Acadian Asset Management (Australia) Limited. This was initially established as a joint venture with Colonial First State Investments Limited and became a wholly owned entity on June 30, 2015.

\*\*Credit AUM: \$15.8M

# Investment Team – Equities



# Representative Investors

## Public

---

Employees' Retirement Fund of the City of Dallas  
Florida State Board of Administration  
Los Angeles County Employees Retirement Association  
Massachusetts Pension Reserves Investment Management Board  
Municipal Employees' Retirement System of Michigan  
New York City Employees Retirement System  
Ohio Public Employees Retirement System  
Oregon Public Employees  
Public School & Education Employee Retirement Systems of Missouri  
Tennessee Consolidated Retirement System  
Virginia Retirement System  
West Virginia Investment Management Board

## Corporate

---

3M Company  
Altria Group  
Dow Inc.  
JM Family Enterprises, Inc.  
Pfizer

## Endowment/Foundation

---

Carnegie Mellon University  
Cornell University

## Sub-Advisory

---

Harbor Overseas Fund  
Optimum International Fund  
SEI

## Taft-Hartley

---

North Atlantic States Carpenters Benefit Funds  
Producer-Writers Guild of America Pension Plan

## Australia

---

Colonial First State Investments Ltd.  
Aware Super

## Canada

---

Mouvement Desjardins  
Ville de Montréal

## Europe

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Fidelity International  
Hampshire County Council  
Ireland Strategic Investment Fund  
Kempen Capital Management



# PROCESS

# Investment Philosophy

- Financial assets are often **mispriced** due to investors incorrectly processing information, having incomplete information, or both
- **Systematic** processes best capture inefficiencies arising from mispriced fundamental and market information
- Our **edge** comes from embracing new ideas and a continuous investment in people, technology, and data

# Investment Process



## Global All-Country

44,000 stock investment universe



## Objective Return Forecast

### Stock-specific

Selection within traditionally defined groups

+

### Peer

Overlooked information from alternative peer groups

+

### Macro

Top-down group signals (industry and country)



## Disciplined Portfolio Construction

Multi-horizon forecasts

Proprietary risk models

Dynamic transaction cost modeling



## Structured Trading Process

Systematic approach

Dynamic routing based on order profiling

Real-time oversight

# Return Forecast Example

Model	Theme	Sample signals	Forecast
Stock-Specific	Value	→ Adjusted Intrinsic Value Extended Asset Value	+0.09
	Quality	→ Financial Strength Management Behavior	+0.15
	Growth	→ Earnings Surprise Recommendation Change	+0.31
	Technical	→ Institutional Investor Crowding Smart Reversal	+0.62
Peer	Proprietary Networks	→ Momentum Fundamentals	+0.43
Macro	Country	→ Corruption Adjusted Valuation Macro Environment	-0.05
	Industry	→ Quality Global Growth Sensitivity	+0.31
	Country/Industry Intersection	→ Price Momentum Adjusted Valuation	-0.02

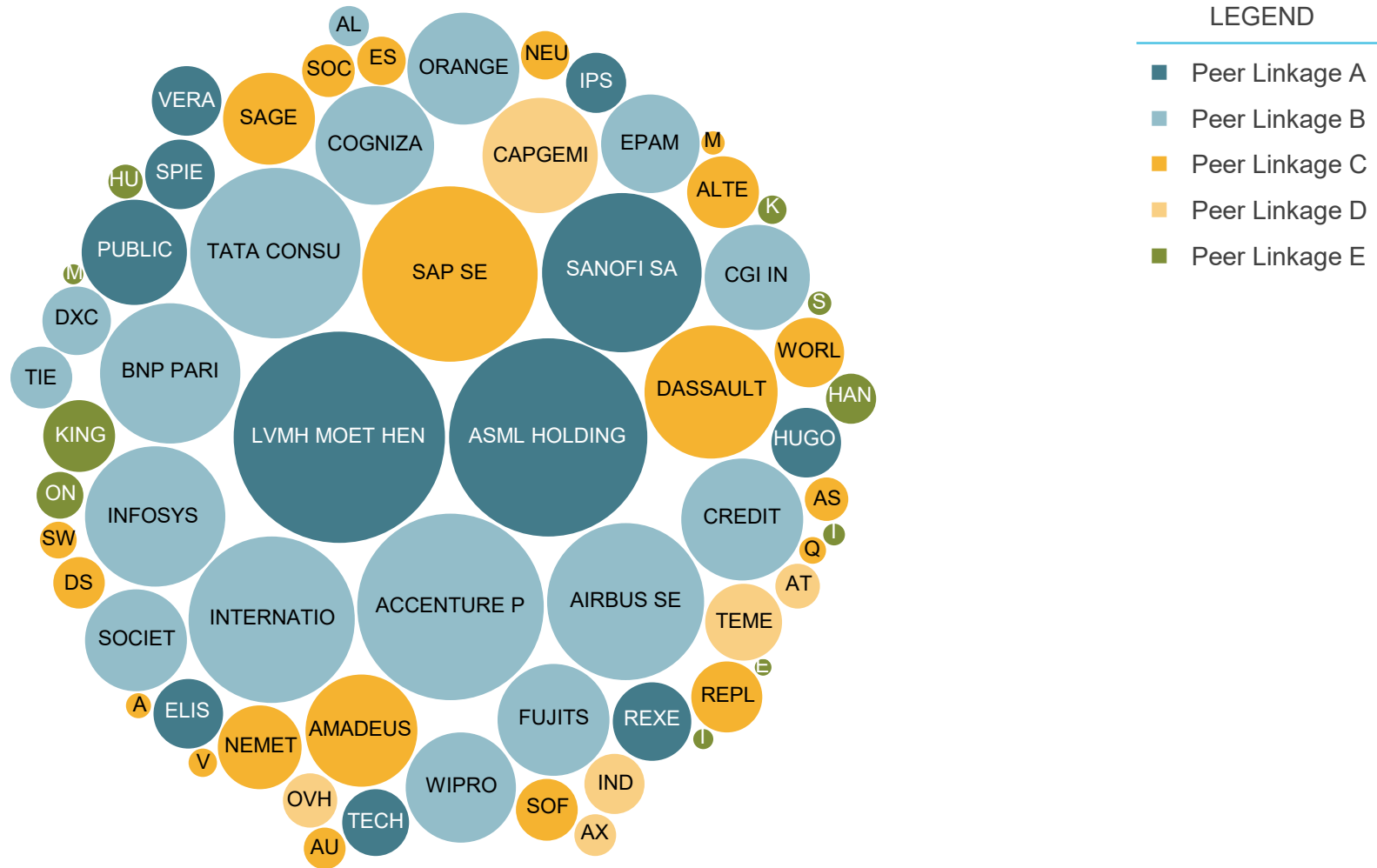
  

<b>Total Forecast</b> <b>+1.79%</b>	
<b>Company:</b> SOPRA STERIA GROUP	
<b>Market Cap:</b> USD 4B	
<b>Country:</b> France	
<b>Industry:</b> IT Services	
<b>Description:</b> Consultancy, systems integration and application outsourcing company	

Source: Acadian Asset Management LLC. The information provided is for illustrative purposes only based on proprietary models. There can be no assurance that the forecasts will be achieved. The selected stock is intended to be an example of the process and is not a recommendation to buy or sell this specific security.

# Stock Forecast Example: Mapping Peer Relationships

Sopra Steria Group

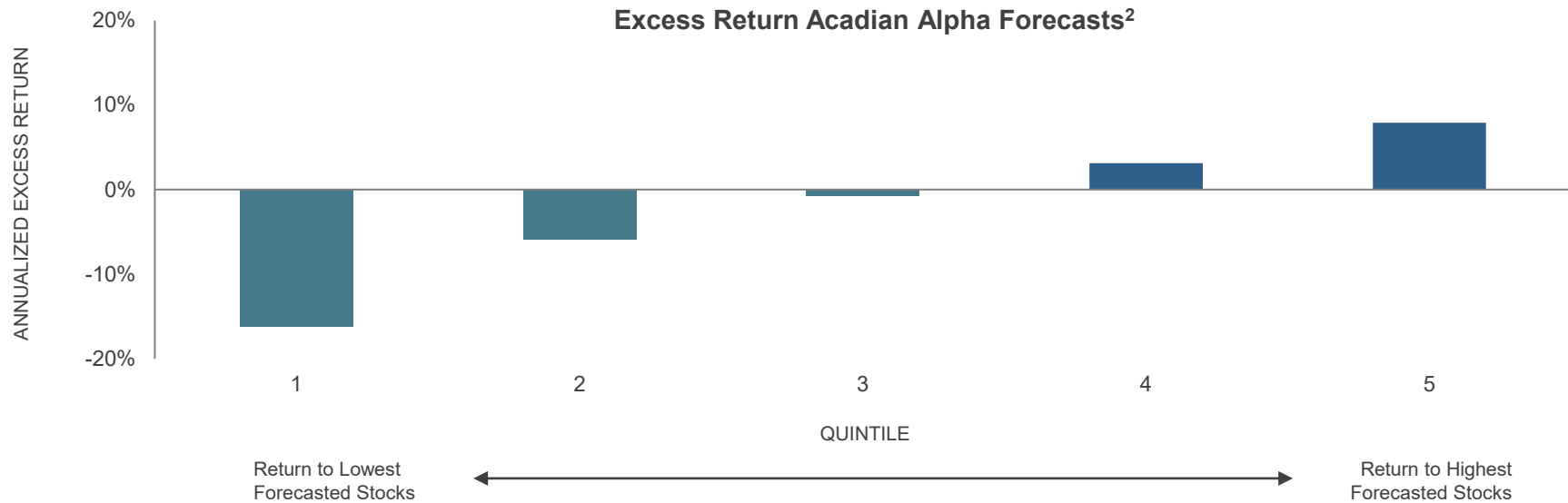
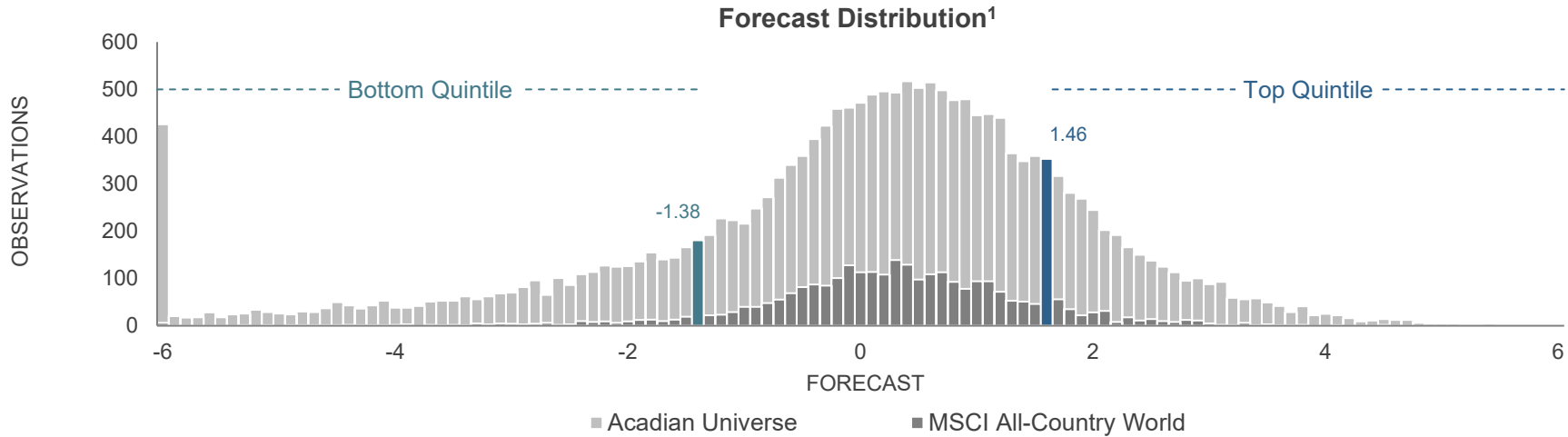


Source: Acadian Asset Management LLC. The information provided is for illustrative purposes only based on proprietary models. The selected stocks are intended to be an example of the process and are not a recommendation to buy or sell a specific security.



# Stock Forecast Distribution and Returns

Trailing 10 Years as of December 2023



Source: Acadian Asset Management LLC. For illustrative purposes only

<sup>1</sup>Source: Acadian's All-Country World universe with a market cap greater than \$100M. Methodology: Observations represents the number of forecasts. The highlighted values represent the observations in the top and bottom quintiles. The information is not reflective of a particular time period and is provided for illustrative purposes only. The chart depicts our forecast distribution process based on proprietary models. There can be no assurance that the forecasts will be achieved.

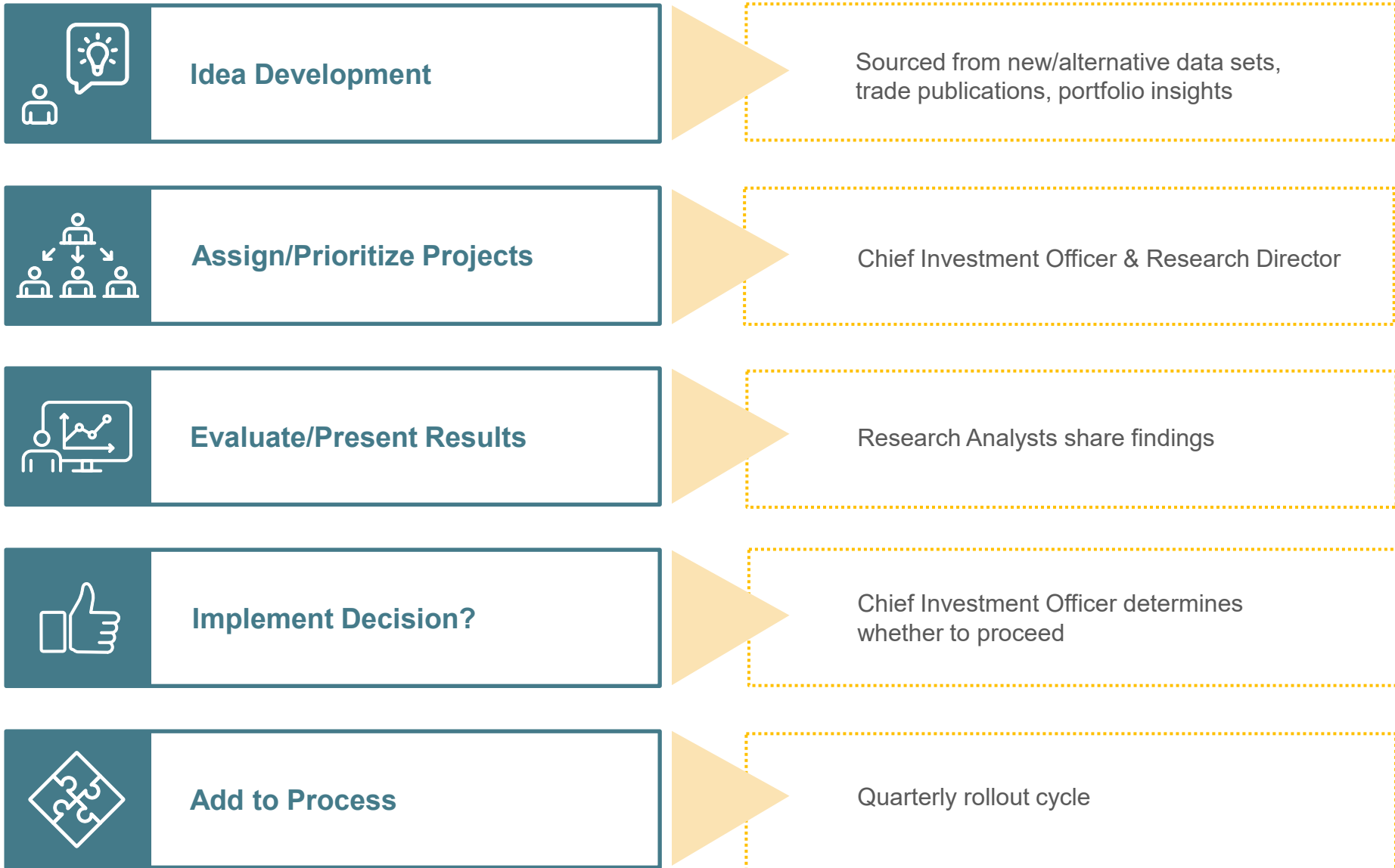
<sup>2</sup>This is not intended to represent investment returns generated by an actual portfolio. They do not represent actual trading or an actual account but were achieved by means of using Acadian's All-Country World universe of securities for the period specified above. Results do not reflect transaction costs or other implementation costs. Past performance is no guarantee of future results. Index Source: MSCI Copyright MSCI 2024. All Rights Reserved. Unpublished. PROPRIETARY TO MSCI.

# Risk Management and Portfolio Construction

Global All-Country Equity

<b>Active risk</b>	4% - 6% tracking error
<b>Market risk</b>	Beta, volatility & size constrained to market
<b>Security risk</b>	2.25% active weight (dynamic)
<b>Sector risk</b>	+/- 16% active weight
<b>Country risk</b>	+/- 6% active weight
<b>Factor crowding</b>	Mitigate factor crowding through Dynamic Factor Weighting
<b>Human oversight</b>	Portfolio review, discretionary risk management

# Research: Process



# Research: Representative Projects

Project Theme	Investment Thesis	Representative Project
Alternative Data	The rich dynamics of short sellers' granular positions contain insights not present in aggregated summary measures →	Short Sellers' Position Dynamics
Machine Learning	Machine Learning can capture a wider variety of events, their interactions with each other and other relevant features, and their impact on returns →	ML Event Alpha
Macro	Investors underappreciate the nuances of global trade links at product level →	Product Trade Links
Group Networks	Current peer networks play different roles in defining future linkages →	Predicted Similarity



# CLIENT MANDATE

# Portfolio Mandate – March 31, 2024

Mississippi Public Employees Retirement System

<b>Portfolio Name</b>	Mississippi Public Employees Retirement System
<b>Strategy</b>	Global All-Country Equity
<b>Mandate</b>	Equity investing in the developed and emerging markets
<b>Inception Date</b>	August 15, 2005
<b>Market value</b>	USD 1,071,840,366
<b>Benchmark Index</b>	MSCI All-Country World

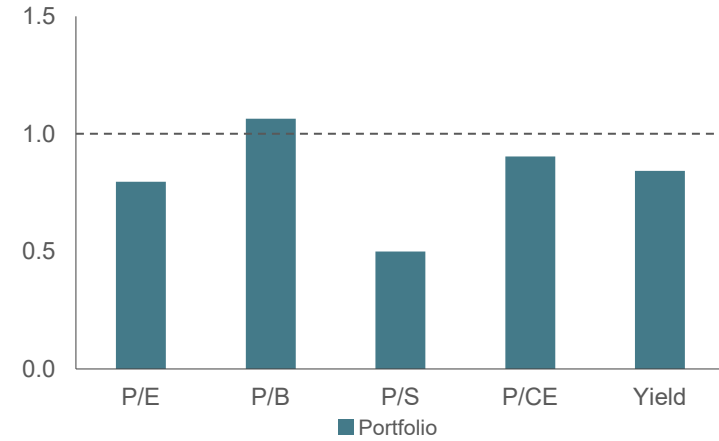
# Mississippi Public Employees Retirement System

Key Characteristics – March 31, 2024\*

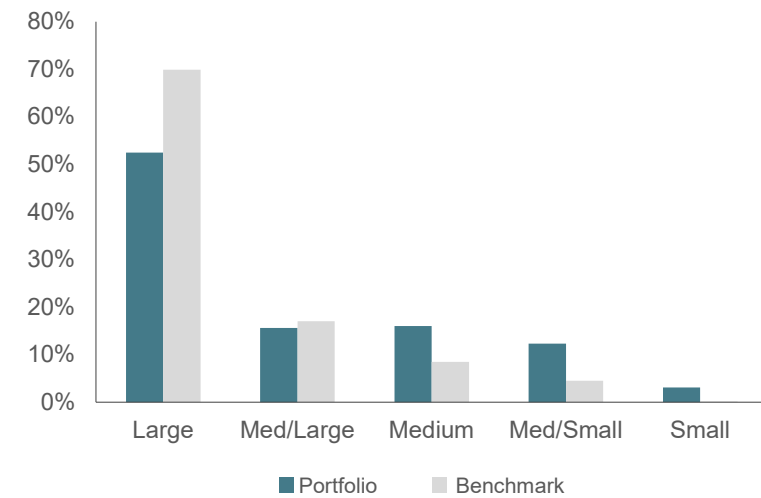
Valuation	Portfolio	Benchmark
Price/Earnings	16.8	21.1
Price/Book	3.3	3.1
Price/Sales	1.1	2.2
Price/Cash Earnings	12.3	13.6
Yield	1.6%	1.9%
Total Securities	309	2841

Cap Size (USD Billions)	Portfolio	Benchmark
Large > \$50B	52.5%	69.9%
Med/Large \$20-\$50	15.6%	17.0%
Medium \$10-\$20	16.0%	8.5%
Med/Small \$3-\$10	12.3%	4.5%
Small < \$3	3.1%	0.1%
Median	4.4	12.4
Weighted Average	467.1	525.4

Benchmark-Relative Valuation



Cap Size (USD Billions)



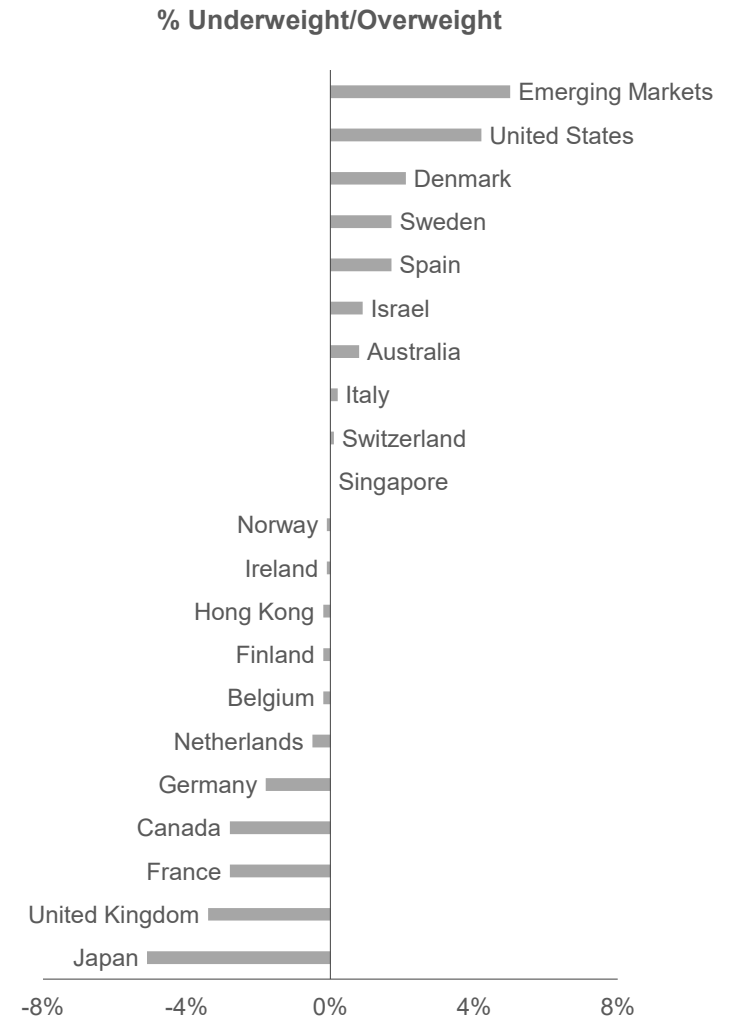
**Portfolio:** Mississippi Public Employees Retirement System. **Benchmark:** MSCI All-Country World.

\*Preliminary. The information provided has been prepared by Acadian from our internal records. It is not intended to replace the official records of your account that you receive directly from the custodian. You are encouraged to compare the information provided to you by Acadian to that provided by the custodian and to contact us with any questions. Reference to the benchmark is for comparative purposes only and is not intended to indicate that the portfolio will contain the same investments as the benchmark. Investors have the opportunity for losses as well as profits. Past performance is no guarantee of future returns. The complete performance disclosure can be found in the composite performance disclosure page attached. Index Source: MSCI Copyright MSCI 2024. All Rights Reserved. Unpublished. PROPRIETARY TO MSCI.

# Mississippi Public Employees Retirement System

Regional Allocations – March 31, 2024\*

	Portfolio	Benchmark	Difference
<b>Continental Europe</b>	<b>11.8%</b>	<b>11.9%</b>	<b>-0.1%</b>
Austria	0.0	0.0	0.0
Belgium	0.0	0.2	-0.2
Denmark	2.9	0.9	2.1
Finland	0.0	0.2	-0.2
France	0.0	2.8	-2.8
Germany	0.2	2.0	-1.8
Ireland	0.0	0.1	-0.1
Italy	0.9	0.7	0.2
Netherlands	0.7	1.2	-0.5
Norway	0.1	0.1	-0.1
Portugal	0.0	0.0	0.0
Spain	2.3	0.6	1.7
Sweden	2.4	0.7	1.7
Switzerland	2.3	2.2	0.1
<b>United Kingdom</b>	<b>0.1%</b>	<b>3.4%</b>	<b>-3.4%</b>
<b>Australia/New Zealand</b>	<b>2.5%</b>	<b>1.7%</b>	<b>0.8%</b>
Australia	2.5	1.7	0.8
New Zealand	0.0	0.0	0.0
<b>Hong Kong/Singapore</b>	<b>0.6%</b>	<b>0.7%</b>	<b>-0.1%</b>
Hong Kong	0.2	0.4	-0.2
Singapore	0.3	0.3	0.0
<b>Japan</b>	<b>0.4%</b>	<b>5.5%</b>	<b>-5.1%</b>
<b>North America</b>	<b>68.0%</b>	<b>66.6%</b>	<b>1.4%</b>
Canada	0.0	2.8	-2.8
United States	68.0	63.8	4.2
<b>Middle East</b>	<b>1.1%</b>	<b>0.2%</b>	<b>0.9%</b>
Israel	1.1	0.2	0.9
<b>Emerging Markets</b>	<b>15.0%</b>	<b>10.0%</b>	<b>5.0%</b>
<b>Frontier Markets</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>
<b>Cash Equitization</b>	<b>0.0</b>		
<b>Cash</b>	<b>0.5</b>		



**Portfolio:** Mississippi Public Employees Retirement System. **Benchmark:** MSCI All-Country World.

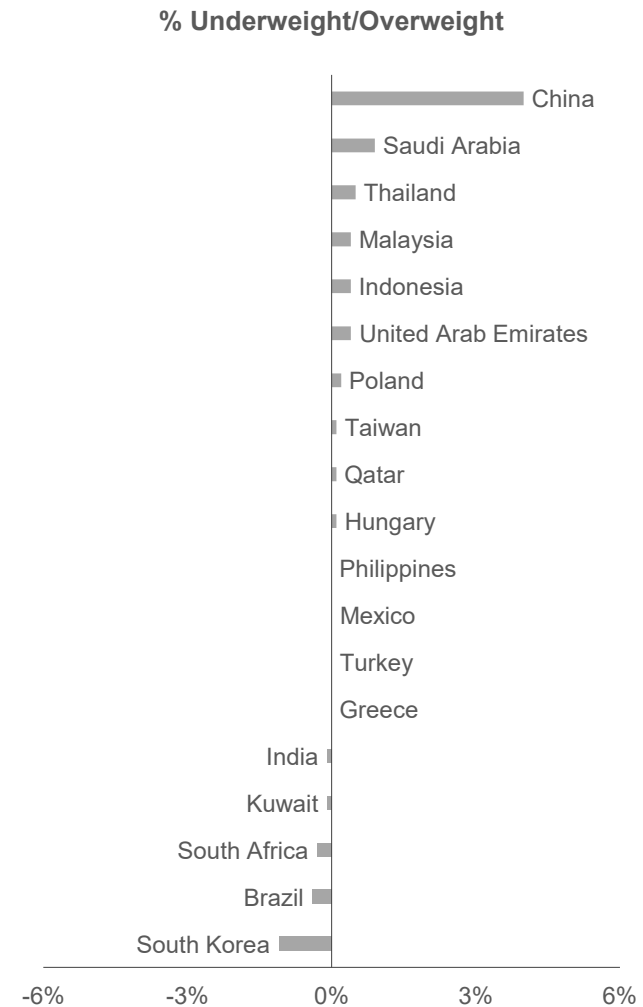
\*Preliminary. The information provided has been prepared by Acadian from our internal records. It is not intended to replace the official records of your account that you receive directly from the custodian. You are encouraged to compare the information provided to you by Acadian to that provided by the custodian and to contact us with any questions. Reference to the benchmark is for comparative purposes only and is not intended to indicate that the portfolio will contain the same investments as the benchmark. Investors have the opportunity for losses as well as profits. Past performance is no guarantee of future returns. The complete performance disclosure can be found in the composite performance disclosure page attached. Index Source: MSCI Copyright MSCI 2024. All Rights Reserved. Unpublished. PROPRIETARY TO MSCI.



# Mississippi Public Employees Retirement System

Emerging Markets Allocations – March 31, 2024\*

	Portfolio	Benchmark	Difference
<b>Europe/Mid East/Africa</b>	<b>2.5%</b>	<b>1.2%</b>	<b>1.2%</b>
Czech Republic	0.0	0.0	0.0
Egypt	0.0	0.0	0.0
Greece	0.0	0.1	0.0
Hungary	0.1	0.0	0.1
Kuwait	0.0	0.1	-0.1
Poland	0.3	0.1	0.2
Qatar	0.2	0.1	0.1
Saudi Arabia	1.3	0.4	0.9
South Africa	0.0	0.3	-0.3
Turkey	0.1	0.1	0.0
United Arab Emirates	0.5	0.1	0.4
<b>Latin America</b>	<b>0.4%</b>	<b>0.9%</b>	<b>-0.5%</b>
Brazil	0.1	0.5	-0.4
Chile	0.0	0.0	0.0
Colombia	0.0	0.0	0.0
Mexico	0.3	0.3	0.0
Peru	0.0	0.0	0.0
<b>Asia</b>	<b>12.1%</b>	<b>7.8%</b>	<b>4.3%</b>
China	6.6	2.5	4.0
India	1.7	1.8	-0.1
Indonesia	0.6	0.2	0.4
Malaysia	0.6	0.1	0.4
Philippines	0.0	0.1	0.0
South Korea	0.1	1.3	-1.1
Taiwan	1.9	1.8	0.1
Thailand	0.7	0.2	0.5



**Portfolio:** Mississippi Public Employees Retirement System. **Benchmark:** MSCI All-Country World.

\*Preliminary. The information provided has been prepared by Acadian from our internal records. It is not intended to replace the official records of your account that you receive directly from the custodian. You are encouraged to compare the information provided to you by Acadian to that provided by the custodian and to contact us with any questions. Reference to the benchmark is for comparative purposes only and is not intended to indicate that the portfolio will contain the same investments as the benchmark. Investors have the opportunity for losses as well as profits. Past performance is no guarantee of future returns. The complete performance disclosure can be found in the composite performance disclosure page attached. Index Source: MSCI Copyright MSCI 2024. All Rights Reserved. Unpublished. PROPRIETARY TO MSCI.

# Mississippi Public Employees Retirement System

Industry Allocations – March 31, 2024\*

	Portfolio	Benchmark	Difference
<b>Communication Services</b>	<b>12.5%</b>	<b>7.6%</b>	<b>5.0%</b>
Media & Entertainment	11.8	6.1	5.7
Telecommunication Services	0.7	1.5	-0.8
<b>Consumer Discretionary</b>	<b>15.4%</b>	<b>10.9%</b>	<b>4.5%</b>
Automobiles & Components	0.8	2.4	-1.6
Consumer Discretionary Distribution & Retail	7.3	4.8	2.5
Consumer Durables & Apparel	3.7	1.6	2.1
Consumer Services	3.6	2.0	1.6
<b>Consumer Staples</b>	<b>0.7%</b>	<b>6.4%</b>	<b>-5.7%</b>
Consumer Staples Distribution & Retail	0.1	1.7	-1.6
Food, Beverage & Tobacco	0.0	3.3	-3.3
Household & Personal Products	0.6	1.5	-0.9
<b>Energy</b>	<b>8.7%</b>	<b>4.5%</b>	<b>4.1%</b>
<b>Financials</b>	<b>6.5%</b>	<b>16.1%</b>	<b>-9.5%</b>
Banks	2.9	6.8	-3.9
Financial Services	1.3	6.2	-4.9
Insurance	2.4	3.1	-0.7
<b>Health Care</b>	<b>9.6%</b>	<b>11.1%</b>	<b>-1.5%</b>
Health Care Equipment & Services	6.2	3.9	2.3
Pharmaceuticals, Biotechnology & Life Sciences	3.4	7.3	-3.9
<b>Industrials</b>	<b>8.7%</b>	<b>10.8%</b>	<b>-2.1%</b>
Capital Goods	7.3	7.4	-0.1
Commercial & Professional Services	1.1	1.5	-0.4
Transportation	0.3	1.9	-1.6
<b>Information Technology</b>	<b>30.1%</b>	<b>23.7%</b>	<b>6.4%</b>
Semiconductors & Semiconductor Equipment	7.6	8.6	-1.0
Software & Services	15.4	9.0	6.4
Technology Hardware & Equipment	7.1	6.1	1.0
<b>Materials</b>	<b>5.9%</b>	<b>4.2%</b>	<b>1.7%</b>
<b>Real Estate</b>	<b>0.1%</b>	<b>2.2%</b>	<b>-2.1%</b>
Equity Real Estate Investment Trusts (REITs)	0.0	1.7	-1.7
Real Estate Management	0.1	0.5	-0.4
<b>Utilities</b>	<b>1.2%</b>	<b>2.5%</b>	<b>-1.3%</b>
<b>Cash Equitization</b>	<b>0.0</b>		
<b>Cash</b>	<b>0.5</b>		



**Portfolio:** Mississippi Public Employees Retirement System. **Benchmark:** MSCI All-Country World.

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# Mississippi Public Employees Retirement System

Top Ten Portfolio Holdings – March 31, 2024\*

Name	Country	Industry	Portfolio (%)
NVIDIA CORP	United States	Semiconductors & Semiconductor Equipment	4.6
AMAZON.COM INC	United States	Consumer Discretionary Distribution & Retail	4.5
ALPHABET INC	United States	Media & Entertainment	4.5
META PLATFORMS INC	United States	Media & Entertainment	3.1
NOVO NORDISK A S	Denmark	Pharmaceuticals, Biotechnology & Life Sciences	2.7
MARATHON PETROLEUM CORP	United States	Energy	2.4
INDUSTRIA DE DISEÑO TEXTIL SA	Spain	Consumer Discretionary Distribution & Retail	2.3
MCKESSON CORP	United States	Health Care Equipment & Services	2.3
SERVICENOW INC	United States	Software & Services	2.3
RELIANCE INC	United States	Materials	2.2

Summary	Portfolio	Benchmark	Active Weight
% of Portfolio for Top 10 Active Weights	27.7	6.0	21.8
% of Portfolio for Top 20 Current Holdings	49.7	15.0	34.7
% of Non-Benchmark Portfolio Holdings	15.7		
Active Share of Portfolio	82.5		

**Portfolio:** Mississippi Public Employees Retirement System. **Benchmark:** MSCI All-Country World.

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# Mississippi Public Employees Retirement System

Performance (Returns in USD – Before and After Management Fees)

Calendar Year Ending 12/31	Portfolio (gross)*	Portfolio (net)*	Benchmark	Value-Added (gross) vs. Benchmark	Value-Added (net) vs. Benchmark
2005 (Inception: Aug 15, 2005)	7.6%	7.5%	4.7%	2.9%	2.8%
2006	28.6	28.0	20.1	8.5	7.9
2007	12.7	12.0	9.0	3.7	3.0
2008	(45.3)	(45.6)	(40.7)	(4.6)	(4.9)
2009	21.1	20.6	30.0	(8.9)	(9.4)
2010	10.2	9.6	11.8	(1.6)	(2.2)
2011	(1.5)	(1.9)	(5.5)	4.0	3.6
2012	17.2	16.6	16.4	0.8	0.2
2013	27.1	26.5	22.8	4.3	3.7
2014	7.7	7.2	4.2	3.5	3.0
2015	(4.3)	(4.7)	(2.4)	(1.9)	(2.3)
2016	8.7	8.2	7.9	0.8	0.3
2017	24.6	24.1	24.0	0.6	0.1
2018	(10.3)	(10.6)	(9.4)	(0.9)	(1.2)
2019	22.7	22.2	26.6	(3.9)	(4.4)
2020	17.9	17.5	16.3	1.6	1.2
2021	25.2	24.7	18.5	6.7	6.2
2022	(17.4)	(17.7)	(18.4)	1.0	0.7
2023	24.6	24.1	22.2	2.4	1.9
2024 through March	13.1	13.0	8.2	4.9	4.8
One Year Annualized Return	31.6	31.1	23.2	8.4	7.9
Three Year Annualized Return	10.8	10.4	7.0	3.8	3.4
Five Year Annualized Return	13.5	13.1	10.9	2.6	2.2
Ten Year Annualized Return	9.9	9.4	8.7	1.2	0.7
Since-Inception Annualized Return	8.3	7.8	7.3	1.0	0.5
Since-Inception Annualized Standard Deviation	16.3	16.2	15.7		
Since-Inception Active Risk				3.9	3.9
Since-Inception Information Ratio				0.3	0.1

**Portfolio:** Mississippi Public Employees Retirement System. **Benchmark:** MSCI All-Country World (net) 2012-07-01 To Present, MSCI World (net) 2006-01-01 To 2012-07-01, MSCI World (net) 2005-08-12 To 2006-01-01.

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# Mississippi Public Employees Retirement System

Performance (Returns in USD – Before and After Management Fees)

Fiscal Year Ending 6/30	Portfolio (gross)*	Portfolio (net)*	Benchmark	Value-Added (gross) vs. Benchmark	Value-Added (net) vs. Benchmark
2005 (Inception: Aug 15, 2005)	21.2%	20.7%	11.0%	10.2%	9.7%
2006	28.5	27.8	23.6	4.9	4.2
2007	(10.3)	(10.6)	(10.7)	0.4	0.1
2008	(38.3)	(38.6)	(29.5)	(8.8)	(9.1)
2009	7.6	7.0	10.2	(2.6)	(3.2)
2010	34.5	33.8	30.5	4.0	3.3
2011	(4.2)	(4.7)	(5.0)	0.8	0.3
2012	19.9	19.3	16.6	3.3	2.7
2013	25.9	25.3	22.9	3.0	2.4
2014	1.7	1.2	0.7	1.0	0.5
2015	(5.0)	(5.5)	(3.7)	(1.3)	(1.8)
2016	19.7	19.1	18.8	0.9	0.3
2017	10.3	9.9	10.7	(0.4)	(0.8)
2018	3.4	3.0	5.7	(2.3)	(2.7)
2019	2.9	2.5	2.1	0.8	0.4
2020	44.4	43.8	39.3	5.1	4.5
2021	(15.0)	(15.3)	(15.8)	0.8	0.5
2022	18.5	18.1	16.5	2.0	1.6
2023 Third Quarter	13.1	13.0	8.2	4.9	4.8
2023 FYTD through March	23.8	23.5	16.0	7.8	7.5
One Year Annualized Return	31.6	31.1	23.2	8.4	7.9
Three Year Annualized Return	10.8	10.4	7.0	3.8	3.4
Five Year Annualized Return	13.5	13.1	10.9	2.6	2.2
Ten Year Annualized Return	9.9	9.4	8.7	1.2	0.7
Since-Inception Annualized Return	8.3	7.8	7.3	1.0	0.5
Since-Inception Annualized Standard Deviation	16.3	16.2	15.7		
Since-Inception Active Risk				3.9	3.9
Since-Inception Information Ratio				0.3	0.1

**Portfolio:** Mississippi Public Employees Retirement System. **Benchmark:** MSCI All-Country World (net) 2012-07-01 To Present, MSCI World (net) 2006-01-01 To 2012-07-01, MSCI World (net) 2005-08-12 To 2006-01-01.

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# Performance Attribution

Mississippi Public Employees Retirement System  
T12M through March 2024

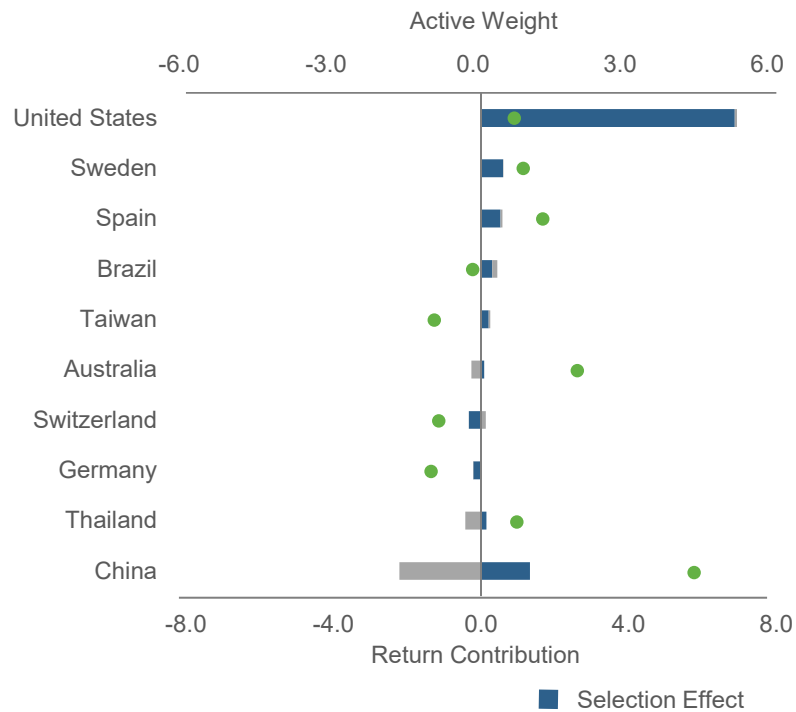
## Country

Stock Selection	10.26
Allocation	-1.92
Total	8.34

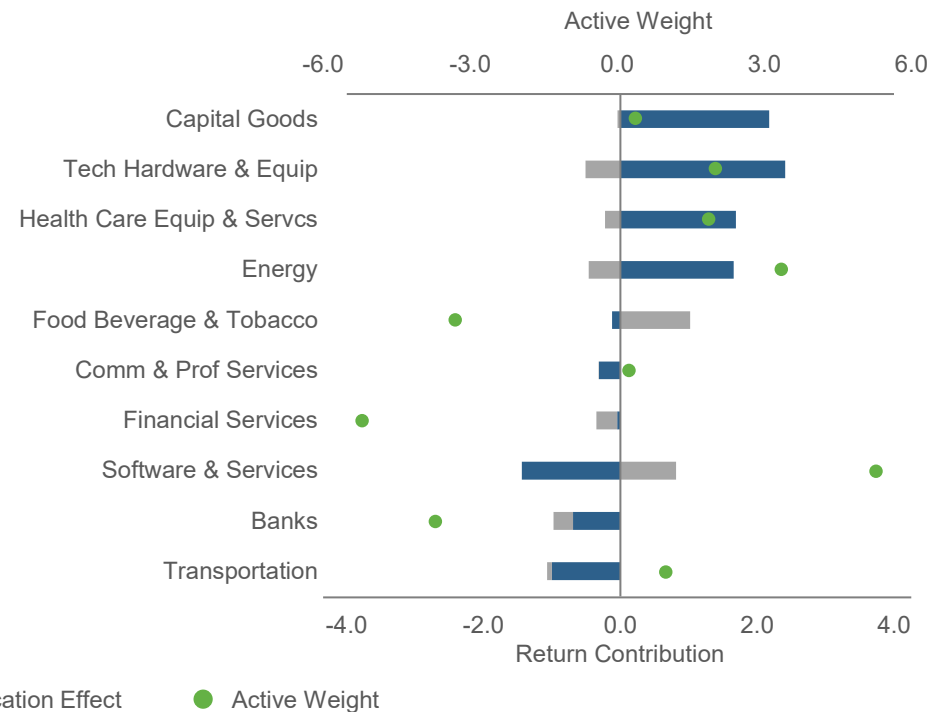
## Industry

Stock Selection	9.89
Allocation	-1.54
Total	8.34

## Top Five/Bottom Five



## Top Five/Bottom Five



**Portfolio:** Mississippi Public Employees Retirement System. **Benchmark:** MSCI All-Country World (net) 2012-07-01 To Present, MSCI World (net) 2006-01-01 To 2012-07-01, MSCI World (net) 2005-08-12 To 2006-01-01.  
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# Portfolio Return Attribution

Mississippi Public Employees Retirement System  
T12M through March 2024

	Q2 2023		Q3 2023		Q4 2023		Q1 2024		Total	
	Exposure(%)	Contrib(%)	Exposure(%)	Contrib(%)	Exposure(%)	Contrib(%)	Exposure(%)	Contrib(%)	Exposure(%)	Contrib(%)
Alpha	100.0	1.10	100.0	3.61	100.0	-0.23	100.0	7.45	100.0	11.94
Value	20.5	0.17	16.8	1.62	18.0	-0.30	15.6	0.28	17.7	1.77
Quality	29.0	0.51	25.6	0.50	24.2	0.25	24.6	0.88	25.9	2.15
Growth	10.7	-0.44	14.4	0.35	12.4	0.21	11.3	1.37	12.2	1.48
Technical	17.7	-0.12	20.1	0.59	22.5	-0.37	25.0	2.11	21.3	2.22
Peer	12.2	0.72	14.1	-0.01	13.5	-0.37	13.7	1.01	13.4	1.35
Top-Down	9.9	0.26	9.0	0.57	9.4	0.35	9.8	1.80	9.5	2.97
Residual		0.12		0.04		0.11		0.10		0.37
Risk		-1.07		-0.81		-0.27		-2.92		-5.07
Cash Equitization		0.00		0.00		0.00		0.00		0.00
Trading Costs		-0.04		-0.08		-0.26		-0.08		-0.47
Compounding		-0.03		-0.09		-0.11		0.36		1.57
Active Return		0.07		2.66		-0.76		4.92		8.34

**Source:** Acadian and MSCI All-Country World (net) 2012-07-01 To Present, MSCI World (net) 2006-01-01 To 2012-07-01, MSCI World (net) 2005-08-12 To 2006-01-01

This report utilizes average exposures and factor returns alongside total contributions, which can result in periods where positive average exposure and positive average factor return do not result in positive contribution because of the timing effect between exposures and factor returns. More precisely, if both exposures and returns were time-varying, with higher exposures corresponding to negative factor return periods and lower exposures corresponding to positive factor return periods, we can have negative total contribution despite having positive average exposure and factor return. Past performance is no guarantee of future returns. Investors have the opportunity for loss as well as profit. The complete performance disclosure can be found in the composite performance disclosure page attached. The information provided has been prepared by Acadian from our internal records. It is not intended to replace the official records of your account that you receive directly from the custodian. You are encouraged to compare the information provided to you by Acadian Asset Management LLC to that provided by the custodian and to contact us with any questions. Index Source: MSCI Copyright MSCI 2024. All Rights Reserved. Unpublished. PROPRIETARY TO MSCI.



# SUPPORTING EXHIBITS



# Holding

As of March 31, 2024

SEDOL	CUSIP	Security Name	Security Type	Country	Currency	Sector	Shares	Local Market Value
BD5CMH2	NA	37 INTERACTIVE ENT 'A'CNY1	Equities	China	CNY	Communication Services	1,360,477	23,685,904.57
BVTVXT0	NA	3BB INTERNET THB9.5316(LOCAL)	Equities	Thailand	THB	Real Estate	152,200	875,150.00
7108899	NA	ABB LTD NAMEN AKT	Equities	Switzerland	CHF	Industrials	151,129	6,330,793.81
B7D5YC0	NA	ABM INVESTAMA TBK IDR500	Equities	Indonesia	IDR	Energy	93,415	355,911,150.00
B13H3N8	NA	ABSA BANK LTD ZAR0.01 NON CUM NON REDEEMA	Equities	South Africa	ZAR	Financials	754	579,072.00
6001728	NA	ABU DHABI ISLAM BK AED1	Equities	United Arab Emirates	AED	Financials	857,533	9,450,013.66
B3BQFC4	NA	ADARO ENERGY INDONESIA TBK SHS	Equities	Indonesia	IDR	Energy	14,592,200	39,398,940,000.00
B60LZR6	NA	AGRICULTURAL BK CHINA LTD SHS -H -	Equities	China	HKD	Financials	10,495,000	34,633,500.00
B23DL40	NA	AIR ARABIA AED1	Equities	United Arab Emirates	AED	Industrials	497,775	1,388,792.25
6166616	NA	AK HOLDINGS INC KRW500	Equities	South Korea	KRW	Industrials	1,680	25,368,000.00
BYXBLB5	NA	AKATSUKI INC COM STK	Equities	Japan	JPY	Communication Services	10,800	27,853,200.00
BPW7GB6	NA	AL-DAWAA MEDICAL S SAR10	Equities	Saudi Arabia	SAR	Consumer Staples	5,403	510,583.50
BK709S3	NA	ALLY LEASEHOLD REI THB9.7996(LOCAL)	Equities	Thailand	THB	Real Estate	122,100	714,285.00
BYVY8G0	02079K30	ALPHABET INC CAP STK CL A	Equities	United States	USD	Communication Services	316,889	47,828,056.77
BD6D4Y5	02136910	ALTAIR ENGR INC COM CL A	Equities	United States	USD	Information Technology	5,369	462,539.35
2000019	02313510	AMAZON COM INC COM	Equities	United States	USD	Consumer Discretionary	269,582	48,627,201.16
2256908	G0260210	AMDOCS LTD SHS	Equities	United States	USD	Information Technology	3,533	319,277.21
BP83HF9	NA	ANAND RATHI WEALTH INR5	Equities	India	INR	Financials	6,167	22,783,056.45
BP3RG26	NA	ANHUI HENGYUAN COAL INDUSTRY A 'A' CNY1	Equities	China	CNY	Energy	1,687,120	20,734,704.80
BN44JF6	03769M10	APOLLO GLOBAL MGMT INC COM	Equities	United States	USD	Financials	2,474	278,201.30
BYN7H48	03783C10	APPFOLIO INC COM CL A	Equities	United States	USD	Information Technology	8,016	1,977,867.84
2046251	03783310	APPLE INC COM	Equities	United States	USD	Information Technology	83,996	14,403,634.08
2086309	03820C10	APPLIED INDL TECHNOLOGIES INC COM	Equities	United States	USD	Industrials	17,537	3,464,434.35
2046552	03822210	APPLIED MATLS INC COM	Equities	United States	USD	Information Technology	27,666	5,705,559.18
BN33VM5	04041310	ARISTA NETWORKS INC COM	Equities	United States	USD	Information Technology	16,672	4,834,546.56
6253983	NA	ARISTOCRAT LEISURE LTD ORD	Equities	Australia	AUD	Consumer Discretionary	37,720	1,621,960.00
B1HTX96	NA	ASAHI NET INC NPV	Equities	Japan	JPY	Communication Services	9,200	5,924,800.00
BFXQ991	00215W10	ASE TECHNOLOGY HLDG CO LTD SPONSORED ADS	Equities	Taiwan	USD	Information Technology	1,697,748	18,658,250.52
B19X5X4	NA	ASTARTA HLDG PLC EUR0.01	Equities	Ukraine	PLN	Consumer Staples	346	9,999.40

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# Holding

As of March 31, 2024

SEDOL	CUSIP	Security Name	Security Type	Country	Currency	Sector	Shares	Local Market Value
B7LQNH3	NA	ATEAM INC COM	Equities	Japan	JPY	Communication Services	4,800	3,043,200.00
BQ1PC76	04946810	ATLISSIAN CORPORATION CL A	Equities	United States	USD	Information Technology	49,853	9,726,818.83
BYWP840	NA	BANCA MEDIOLANUM SPA ORD SHS	Equities	Italy	EUR	Financials	5,257	53,516.26
B0B8Z29	NA	BANK OF COMMUNICATIONS CO LT SHS H	Equities	China	HKD	Financials	733,000	3,767,620.00
5473113	NA	BANK POLSKA KASA OPIEKI SA SHS	Equities	Poland	PLN	Financials	1,952	354,971.20
B8HP627	NA	BARAMULTI SUKSES IDR100	Equities	Indonesia	IDR	Energy	116,786	437,947,500.00
B02TS99	07368510	BEACON ROOFING SUPPLY INC COM	Equities	United States	USD	Industrials	16,815	1,648,206.30
2073390	08467070	BERKSHIRE HATHAWAY INC DEL CL B NEW	Equities	United States	USD	Financials	3,585	1,507,564.20
6099723	NA	BHARAT PETROL CORP INR10	Equities	India	INR	Energy	237,949	143,340,477.60
6533232	NA	BLUESCOPE STEEL LTD SHS NEW	Equities	Australia	AUD	Materials	100,590	2,399,071.50
B3S98W7	NA	BNK FINANCIAL GROU KRW5000	Equities	South Korea	KRW	Financials	175,440	1,363,168,800.00
B9BP4R1	09739D10	BOISE CASCADE CO DEL COM	Equities	United States	USD	Industrials	122,437	18,778,162.69
BDRXDB4	09857L10	BOOKING HOLDINGS INC COM	Equities	United States	USD	Consumer Discretionary	6,581	23,875,078.28
B5367T7	09950210	BOOZ ALLEN HAMILTON HLDG COR CL A	Equities	United States	USD	Industrials	20,817	3,090,075.48
6218670	NA	BORAL LTD NEW ORD	Equities	Australia	AUD	Materials	9,529	58,317.48
B07ZBW6	NA	BUCHER HLDG AG NIEDERWENINGE NAMEN AKT	Equities	Switzerland	CHF	Industrials	92	36,505.60
2302232	12738710	CADENCE DESIGN SYSTEM INC COM	Equities	United States	USD	Information Technology	71,026	22,108,973.28
BD5M1F3	NA	CANNY ELEVATOR CO LTD 'A' CNY1	Equities	China	CNY	Industrials	542,809	3,908,224.80
2175672	14149Y10	CARDINAL HEALTH INC COM	Equities	United States	USD	Health Care	212,449	23,773,043.10
BRTZMC0	NA	CARLO GAVAZZI HLDG CHF15 (REG) 'B'	Equities	Switzerland	CHF	Industrials	85	27,625.00
6086231	NA	CCK CONSOLIDATED NPV	Equities	Malaysia	MYR	Consumer Staples	157,900	161,058.00
2807061	15135B10	CENTENE CORP DEL COM	Equities	United States	USD	Health Care	87,211	6,844,319.28
BNVXB61	NA	CESC INR1	Equities	India	INR	Utilities	873,482	106,259,085.30
BYV1SM7	NA	CHANGJIANG PUBLISHING & MEDIA 'A' CNY1	Equities	China	CNY	Communication Services	42,700	342,881.00
2181334	M2246510	CHECK POINT SOFTWARE TECH LTD ORD	Equities	Israel	USD	Information Technology	28,646	4,698,230.46
BD5LXK9	NA	CHENGDU HONGQI CHAIN CO LTD COM	Equities	China	CNY	Consumer Staples	765,984	3,699,702.72
B03G3Q1	NA	CHEVIOT CO LTD INR10	Equities	India	INR	Consumer Discretionary	2,359	2,960,898.85
B0LMTQ3	NA	CHINA CONSTRUCTION BANK CORP SHS H	Equities	China	HKD	Financials	28,507,000	134,553,040.00
B57JY24	NA	CHINA MINSHENG BKG CORP LTD SHS H	Equities	China	HKD	Financials	1,134,757	3,075,191.47

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# Holding

As of March 31, 2024

SEDOL	CUSIP	Security Name	Security Type	Country	Currency	Sector	Shares	Local Market Value
BK5QZW9	NA	CHINA SUNSINE CHEM NPV (POST-SPLT)	Equities	Singapore	SGD	Materials	4,600	1,817.00
6264048	NA	CHINA TAIPING INS HLDG CO LT SHS	Equities	China	HKD	Financials	608,000	4,164,800.00
BP3R1Q5	NA	CHINESE UNIV.PUB.M 'A'CNY1	Equities	China	CNY	Communication Services	545,400	8,333,712.00
B4Q1Y57	NA	CHONGQING RURAL COMMERC BANK SHS H	Equities	China	HKD	Financials	168,126	544,728.24
B1YBRG0	NA	CIA ENERG MG-CEMIG PRF BRL5.00	Equities	Brazil	BRL	Utilities	79,100	993,496.00
BKYC3F7	G2143T10	CIMPRESS PLC SHS EURO	Equities	United States	USD	Industrials	11,345	1,004,145.95
2197308	17275510	CIRRUS LOGIC INC COM	Equities	United States	USD	Information Technology	7,695	712,249.20
6189516	NA	CJ CORP KRW5000	Equities	South Korea	KRW	Industrials	752	97,609,600.00
2204026	18905410	CLOROX CO DEL COM	Equities	United States	USD	Consumer Staples	27,226	4,168,572.86
B4Z9XF5	NA	COAL INDIA LTD INR10	Equities	India	INR	Energy	1,532,362	665,198,344.20
6211798	NA	COCHLEAR LIMITED SHS	Equities	Australia	AUD	Health Care	2,474	835,024.48
5806225	NA	COLRUYT GROUP NV SHS NEW	Equities	Belgium	EUR	Consumer Staples	1,348	57,721.36
2036047	19990810	COMFORT SYS USA INC COM	Equities	United States	USD	Industrials	3,233	1,027,156.43
B142B38	20416610	COMMVAULT SYS INC COM	Equities	United States	USD	Information Technology	29,778	3,020,382.54
6300191	NA	CONTROL PRINT LTD INR10	Equities	India	INR	Information Technology	7,200	6,694,920.00
BMTX0G9	21871X10	COREBRIDGE FINL INC COM	Equities	United States	USD	Financials	137,432	3,948,421.36
BJJP138	22788C10	CROWDSTRIKE HLDGS INC CL A	Equities	United States	USD	Information Technology	48,412	15,520,403.08
B05DZD1	NA	CSC STEEL HOLDINGS NPV	Equities	Malaysia	MYR	Materials	66,376	88,943.84
6238645	NA	CSR LTD ORD	Equities	Australia	AUD	Materials	29,677	261,751.14
BQT3XY6	M2682V10	CYBERARK SOFTWARE LTD SHS	Equities	Israel	USD	Information Technology	113	30,016.19
BPXYP75	NA	D AMICO INTERNATIONAL SHIPPI SHS NEW	Equities	Italy	EUR	Energy	5,618	35,786.66
B01R678	NA	DAE HYUN CO KRW500	Equities	South Korea	KRW	Consumer Discretionary	27,400	53,731,400.00
6149479	NA	DATATEC LTD SHS	Equities	South Africa	ZAR	Information Technology	62,674	2,374,717.86
BHKD3S6	24703L20	DELL TECHNOLOGIES INC CL C	Equities	United States	USD	Information Technology	108,606	12,393,030.66
4557847	NA	DEUTZ AG ORD	Equities	Germany	EUR	Industrials	60,651	356,931.14
B030X30	NA	DMS CO LTD KRW500	Equities	South Korea	KRW	Information Technology	6,681	45,965,280.00
B1G6TS9	NA	DOM DEVELOPMENT SA PLN1.00	Equities	Poland	PLN	Consumer Discretionary	25	4,385.00
B01SD70	25754A20	DOMINOS PIZZA INC COM	Equities	United States	USD	Consumer Discretionary	478	237,508.64
6235992	NA	DOSHISHA CO LTD SHS	Equities	Japan	JPY	Consumer Discretionary	10,000	21,070,000.00
B3P3LW3	NA	DRAEGERWERK AG & CO KGAA SHS	Equities	Germany	EUR	Health Care	373	16,896.90
BG0T321	26210C10	DROPBOX INC CL A	Equities	United States	USD	Information Technology	186,601	4,534,404.30

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BJLTVJ4	NA	DUBAI ELECTRICITY AED0.01	Equities	United Arab Emirates	AED	Utilities	839,529	2,048,450.76
BMCM6P4	26603R10	DUOLINGO INC CL A COM	Equities	United States	USD	Consumer Discretionary	23,381	5,157,380.98
6298177	NA	EASTERN TOBACCO EGP1 (POST SUBDIVISION)	Equities	Egypt	EGP	Consumer Staples	26,679	720,333.00
BMQBTD6	NA	EDAN INSTRUMENTS INC 'A' CNY1	Equities	China	CNY	Health Care	45,100	492,492.00
2310194	28551210	ELECTRONIC ARTS INC COM	Equities	United States	USD	Communication Services	26,324	3,492,405.08
BNYDSH8	NA	ELM CO SAR10	Equities	Saudi Arabia	SAR	Information Technology	17,789	17,059,651.00
BDG1977	NA	EMAAR DEVELOPMENT AED1	Equities	United Arab Emirates	AED	Real Estate	219,346	1,829,345.64
B01RM25	NA	EMAAR PROPERTIES AED1	Equities	United Arab Emirates	AED	Real Estate	338,485	2,765,422.45
2311454	NA	EMBOTELLA ANDINA PRF'B'NPV	Equities	Chile	CLP	Consumer Staples	775	1,923,628.00
2474164	29084Q10	EMCOR GROUP INC COM	Equities	United States	USD	Industrials	30,782	10,779,856.40
B28PFX8	NA	EMIRATES NBD BANK AED1	Equities	United Arab Emirates	AED	Financials	149,955	2,624,212.50
B12LR51	NA	ETIHAD ETISALAT CO SAR10	Equities	Saudi Arabia	SAR	Communication Services	387,096	20,361,249.60
4295374	NA	EVN AG NPV	Equities	Austria	EUR	Utilities	1,361	33,344.50
2576941	30161Q10	EXELIXIS INC COM	Equities	United States	USD	Health Care	23,701	562,424.73
B748CK2	30212P30	EXPEDIA GROUP INC COM NEW	Equities	United States	USD	Consumer Discretionary	57,204	7,879,851.00
B19NLV4	NA	EXPERIAN PLC SHS	Equities	United Kingdom	GBP	Industrials	11,708	404,394.32
2427599	31561610	F5 INC COM	Equities	United States	USD	Information Technology	8,973	1,701,191.07
6354853	NA	FALCO HLDGS CO LTD SHS	Equities	Japan	JPY	Health Care	800	1,870,400.00
BMF5Q83	33768G10	FIRSTCASH HOLDING INC COM	Equities	United States	USD	Financials	15,985	2,038,726.90
B088VB3	NA	FRENCKEN GROUP LTD NPV	Equities	Singapore	SGD	Industrials	26,200	43,754.00
6357614	NA	FURUNO ELECTRIC CO LTD SHS	Equities	Japan	JPY	Information Technology	700	1,768,900.00
BM9VMX4	NA	G RES GROUP LTD SHS	Equities	Hong Kong	HKD	Financials	93,243	225,648.06
BYZQW37	NA	G-BITS NETWORK TEC A CNY1	Equities	China	CNY	Communication Services	30,125	5,746,946.25
BN65GC3	NA	GENTRACK GROUP LTD NPV	Equities	New Zealand	NZD	Information Technology	8,025	71,422.50
BSBML96	NA	GODFREY PHILLIPS INR2	Equities	India	INR	Consumer Staples	430	1,328,356.00
BFY8HS1	NA	GOLDCARD SMART GROUP CO LTD COM	Equities	China	CNY	Information Technology	147,400	1,916,200.00
6164472	NA	GOLDEN AGRI RESOUR SHS	Equities	Singapore	SGD	Consumer Staples	162,200	43,794.00
BGP6LG7	NA	GOLDPAC GRP LTD NPV	Equities	Hong Kong	HKD	Information Technology	77,130	110,295.90
2380863	38480210	GRAINGER W W INC COM	Equities	United States	USD	Industrials	4,445	4,521,898.50
6407713	NA	HANIL HOLDINGS CO KRW1000.00	Equities	South Korea	KRW	Materials	2,830	35,346,700.00

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B17MN62	NA	HANSAE YES24HLDS KRW500	Equities	South Korea	KRW	Consumer Discretionary	129	632,100.00
6409032	NA	HANYANG SECS CO KRW5000	Equities	South Korea	KRW	Financials	3,154	34,473,220.00
B4KDQG4	NA	HARUM ENERGY TBK IDR20	Equities	Indonesia	IDR	Energy	2,634,388	3,556,423,800.00
6294896	NA	HCL TECHNOLOGIES INR2	Equities	India	INR	Information Technology	26,066	40,234,174.30
5475658	NA	HELLENIQ ENERGY HOLDINGS S.A SHS	Equities	Greece	EUR	Energy	5,561	46,378.74
BR56KD4	NA	HINDUSTAN AERONAUT INR5(POST SUBD)	Equities	India	INR	Industrials	1,866	6,208,182.00
5108664	NA	HOCHTIEF AG VORMGEBRHELFMANN AKT	Equities	Germany	EUR	Industrials	11,635	1,253,089.50
BMFDP24	NA	HOEGH AUTOLINER ASA ORD SHS	Equities	Norway	NOK	Industrials	9,859	908,999.80
6436450	NA	HONG LEONG FINANCIAL GROUP B SHS	Equities	Malaysia	MYR	Financials	1,300	21,554.00
6436308	NA	HONG LEONG INDS NPV	Equities	Malaysia	MYR	Industrials	12,300	126,198.00
6106485	NA	HORIZON OIL LTD SHS	Equities	Australia	AUD	Energy	385,013	69,302.34
BTDY3B3	NA	IFAST CORP LTD SHS	Equities	Singapore	SGD	Financials	9,300	61,938.00
2471950	45337C10	INCYTE CORP COM	Equities	United States	USD	Health Care	88,539	5,044,066.83
6253767	NA	INDIAN OIL CORP INR10	Equities	India	INR	Energy	784,743	131,640,638.25
BP9DL90	NA	INDUSTRIA DE DISENO TEXTIL I SHS NEW	Equities	Spain	EUR	Consumer Discretionary	495,772	23,137,679.24
B1G1QD8	NA	INDUSTRIAL AND COMM BK OF CN HKD SHS H	Equities	China	HKD	Financials	2,258,000	8,896,520.00
2473150	45833410	INTER PARFUMS INC COM	Equities	United States	USD	Consumer Staples	10,639	1,494,885.89
BDGTGK3	NA	INTL HOUSEWARES RETAIL CO LT HKD SHS	Equities	Hong Kong	HKD	Consumer Discretionary	50,668	67,895.12
B60QWJ2	NA	JAMES HARDIE INDS PLC CHESS DEP INT	Equities	Australia	AUD	Materials	461,748	28,448,294.28
BNHPQ33	NA	JIANGSU RAINBOW HEAVY INDUSTRI 'A' CNY1	Equities	China	CNY	Industrials	134,100	622,224.00
BP4JH17	NA	JOHNSON ELECTRIC HLDGS LTD SHS NEW	Equities	Hong Kong	HKD	Consumer Discretionary	27,000	292,680.00
BL3N3C5	46591M10	JOYY INC ADS REPSTG COM A	Equities	China	USD	Communication Services	34,143	1,049,897.25
6482550	NA	KAMEI CORP NPV	Equities	Japan	JPY	Industrials	4,300	9,189,100.00
6482903	NA	KANAMOTO CO LTD ORD SHS	Equities	Japan	JPY	Industrials	8,200	22,082,600.00
6127378	NA	KC CO LTD KRW500	Equities	South Korea	KRW	Information Technology	1,693	41,647,800.00
BD3S0S9	NA	KCTECH CO LTD KRW500	Equities	South Korea	KRW	Information Technology	3,253	147,523,550.00
6493080	NA	KIMURA UNITY CO NPV	Equities	Japan	JPY	Industrials	2,900	4,947,400.00
B28XBW3	NA	KISHIN CORPORATION KRW500	Equities	South Korea	KRW	Industrials	13,864	41,730,640.00
B1RKG34	NA	KOLTE-PATIL DEVELO INR10	Equities	India	INR	Real Estate	10,948	5,070,566.20
5523881	NA	KRONES AG AKT SHS	Equities	Germany	EUR	Industrials	546	66,994.20

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BM94NT6	NA	KSOLVES INDIA LTD INR10	Equities	India	INR	Information Technology	4,631	5,181,857.45
6497651	NA	KURABO INDUSTRIES NPV	Equities	Japan	JPY	Consumer Discretionary	2,800	9,800,000.00
B06MW58	NA	KYOKUTO SECURITIES NPV	Equities	Japan	JPY	Financials	7,300	11,424,500.00
2511920	52605710	LENNAR CORP CL A	Equities	United States	USD	Consumer Discretionary	9,095	1,564,158.10
6218089	NA	LENOVO GROUP LTD SHS	Equities	China	HKD	Information Technology	2,206,000	20,008,420.00
B1GKF27	NA	LF CORP KRW5000	Equities	South Korea	KRW	Consumer Discretionary	952	14,613,200.00
6375371	NA	LINC LIMITED INR10	Equities	India	INR	Industrials	1,083	556,878.60
BLORRT5	NA	LIVECHAT SOFTWARE SA ORD	Equities	Poland	PLN	Information Technology	601	54,090.00
B18ZRK2	NA	LOGITECH INTL S A SHS	Equities	Switzerland	CHF	Information Technology	140,920	11,380,699.20
B543NN3	NA	LUBEL.WEG.BOGDANKA PLN5.00	Equities	Poland	PLN	Energy	3,303	110,980.80
2549385	55305B10	M/I HOMES INC COM	Equities	United States	USD	Consumer Discretionary	70,996	9,676,044.84
6121530	NA	MANGALORE REF &PET INR10	Equities	India	INR	Energy	241,811	52,847,794.05
2239471	56275010	MANHATTAN ASSOCIATES INC COM	Equities	United States	USD	Information Technology	52,907	13,238,918.61
B3K3L40	56585A10	MARATHON PETE CORP COM	Equities	United States	USD	Energy	127,070	25,604,605.00
2599131	NA	MARCOPOLO SA PRF NPV	Equities	Brazil	BRL	Industrials	27,480	207,199.20
2567741	57174810	MARSH & MCLENNAN COS INC COM	Equities	United States	USD	Financials	64,792	13,345,856.16
2570200	57459910	MASCO CORP COM	Equities	United States	USD	Industrials	46,315	3,653,327.20
B121557	57636Q10	MASTERCARD INCORPORATED CL A	Equities	United States	USD	Financials	516	248,490.12
6574220	NA	MAX CO LTD SHS	Equities	Japan	JPY	Industrials	7,900	25,714,500.00
6900308	NA	MAZDA MOTOR CORP SHS NEW	Equities	Japan	JPY	Consumer Discretionary	12,600	22,119,300.00
2378534	58155Q10	MCKESSON CORP COM	Equities	United States	USD	Health Care	45,997	24,693,489.45
0563042	NA	MEARS GROUP ORD GBP0.01	Equities	United Kingdom	GBP	Industrials	4,213	15,545.97
6123923	NA	MEGACHIPS CORP NPV	Equities	Japan	JPY	Information Technology	1,500	5,812,500.00
6688143	NA	MELCO HLDGS INC NPV	Equities	Japan	JPY	Information Technology	500	1,825,000.00
B7TL820	30303M10	META PLATFORMS INC CL A	Equities	United States	USD	Communication Services	67,666	32,857,256.28
2588173	59491810	MICROSOFT CORP COM	Equities	United States	USD	Information Technology	49,196	20,697,741.12
6594358	NA	MIROKU JYOHU SERVICE CO LTD SHS	Equities	Japan	JPY	Information Technology	4,300	7,795,900.00
BD5ZXH8	NA	MOL HUNGARIAN OIL AND GAS PL SHS	Equities	Hungary	HUF	Energy	128,761	381,132,560.00
2212706	60855R10	MOLINA HEALTHCARE INC COM	Equities	United States	USD	Health Care	11,099	4,559,802.17
5996234	NA	MOTOR OIL HELLAS CORINTH REF REG SHS	Equities	Greece	EUR	Energy	1,564	43,197.68
7018556	NA	NAVIGATOR CO S A REG SHS	Equities	Portugal	EUR	Materials	7,840	31,752.00
5228614	NA	NEDERLANDSCHE APPARATENFABRI SHS	Equities	Netherlands	EUR	Information Technology	455	30,758.00
2630643	64110D10	NETAPP INC COM	Equities	United States	USD	Information Technology	124,108	13,027,616.76
BM7RZM4	NA	NEXXEN INTERNATIONAL LTD SHS	Equities	United Kingdom	GBP	Communication Services	506	1,062.60
6638483	NA	NICE CORPORATION NPV	Equities	Japan	JPY	Industrials	900	1,638,000.00
BKTT3Z3	NA	NINETY ONE PLC SHS	Equities	United Kingdom	ZAR	Financials	20,201	826,220.90
BP6KMJ1	NA	NOVO-NORDISK A S ALMINDELIG AKTIE	Equities	Denmark	DKK	Health Care	134,360	118,411,468.00
6648761	NA	NSW INC NPV	Equities	Japan	JPY	Information Technology	7,156	22,541,400.00
6335331	NA	NUFARM LTD SHS	Equities	Australia	AUD	Materials	48,150	264,825.00
2379504	67066G10	NVIDIA CORPORATION COM	Equities	United States	USD	Information Technology	54,936	49,637,972.16

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2637785	62944T10	NVR INC COM	Equities	United States	USD	Consumer Discretionary	1,401	11,348,043.96
6158174	NA	OOREDOO QAR1	Equities	Qatar	QAR	Communication Services	749,368	7,943,300.80
BYW5N56	NA	OPPLE LIGHTING CO LTD 'A' CNY1	Equities	China	CNY	Consumer Staples	277,367	4,473,929.71
6458001	NA	ORICA LIMITED SHS	Equities	Australia	AUD	Materials	409,450	7,476,557.00
6661508	NA	ORIGIN COMPANY LTD NPV	Equities	Japan	JPY	Industrials	900	1,107,000.00
6662006	NA	OSAKI ELECTRIC CO NPV	Equities	Japan	JPY	Information Technology	18,000	12,294,000.00
B44TX8	NA	PANDORA A S SHS	Equities	Denmark	DKK	Consumer Discretionary	9,353	10,423,918.50
B7F4TJ7	69318G10	PBF ENERGY INC CL A	Equities	United States	USD	Energy	23,547	1,355,600.79
B6RRLG8	NA	PC PARTNER GROUP LTD SHS	Equities	Hong Kong	HKD	Information Technology	233,407	679,214.37
2675860	70557310	PEGASYSTEMS INC COM	Equities	United States	USD	Information Technology	10,551	682,016.64
6226576	NA	PETROCHINA CO LTD SHS H	Equities	China	HKD	Energy	18,204,000	121,784,760.00
6321590	NA	PETRON MALAYSIA RE NPV	Equities	Malaysia	MYR	Energy	17,900	83,235.00
B544PW9	NA	PGE POLSKA GRUPA ENER SA WAR SHS	Equities	Poland	PLN	Utilities	8,023	57,781.65
BJ2Z0H2	72352L10	PINTEREST INC CL A	Equities	United States	USD	Communication Services	320,906	11,125,811.02
2311960	72650310	PLAINS ALL AMERN PIPELINE L UNIT LTD PARTN	Equities	United States	USD	Energy	122,196	2,145,761.76
2697422	73912810	POWELL INDS INC COM	Equities	United States	USD	Industrials	6,291	895,209.30
B1S7225	NA	POWER FINANCE CORP INR10	Equities	India	INR	Financials	427,588	166,866,217.00
B1XFDH6	NA	POWER ROOT BERHAD NPV	Equities	Malaysia	MYR	Consumer Staples	87,000	143,550.00
B63DG21	NA	POWSZECHNY ZAKLAD UBEZPIECZE SHS	Equities	Poland	PLN	Financials	210,467	10,272,894.27
BYQ3G24	NA	PR TIMES CORP NPV	Equities	Japan	JPY	Communication Services	2,100	4,477,200.00
BPDZSQ8	NA	PRIMA ANDALAN MAND IDR100	Equities	Indonesia	IDR	Energy	107,080	621,064,000.00
6292782	NA	PRO MEDICUS LTD SHS	Equities	Australia	AUD	Health Care	1,641	170,253.75
BLH11J8	74275K10	PROCORE TECHNOLOGIES INC COM	Equities	United States	USD	Information Technology	48,886	4,016,962.62
2705024	74331510	PROGRESSIVE CORP COM	Equities	United States	USD	Financials	28,842	5,965,102.44
6587604	NA	PT BANK NISP TBK SHS	Equities	Indonesia	IDR	Financials	1,315,200	1,801,824,000.00
6719764	NA	PT PERUSAHAAN GAS NEGARA PER SHS SERIES B	Equities	Indonesia	IDR	Utilities	10,597,874	14,413,108,640.00
6230845	NA	PT UNITED TRACTORS ORD	Equities	Indonesia	IDR	Energy	1,773,500	42,874,362,500.00
BYZ62T3	74624M10	PURE STORAGE INC CL A	Equities	United States	USD	Information Technology	248,496	12,919,307.04
6148205	NA	QATAR NAVIGATION QAR1	Equities	Qatar	QAR	Industrials	16,654	175,366.62
2714923	74752510	QUALCOMM INC COM	Equities	United States	USD	Information Technology	12,548	2,124,376.40
B7XJTN8	74758T30	QUALYS INC COM	Equities	United States	USD	Information Technology	1,976	329,735.12
B0704T9	NA	RAIFFEISEN BK INTL AG SHS	Equities	Austria	EUR	Financials	4,890	90,269.40
B4V9661	75121210	RALPH LAUREN CORP CL A	Equities	United States	USD	Consumer Discretionary	16,881	3,169,576.56
6737658	NA	RAS AL KHAIMAH CO AED1	Equities	United Arab Emirates	AED	Materials	71,903	76,217.18
B2Q7WL3	NA	REC LTD INR10	Equities	India	INR	Financials	336,801	151,897,251.00
2729068	75950910	RELIANCE INC COM	Equities	United States	USD	Materials	72,090	24,091,036.20
B96RL59	NA	REPCO HOME FIN LTD INR10	Equities	India	INR	Financials	28,637	11,474,845.90
7110388	NA	ROCHE HLDGS AG BASEL DIVIDN RIGT CERT	Equities	Switzerland	CHF	Health Care	7,562	1,736,991.40
4713490	NA	ROCKWOOL A S SHS B	Equities	Denmark	DKK	Industrials	1,746	3,961,674.00
2756174	74968510	RPM INTL INC COM	Equities	United States	USD	Materials	25,338	3,013,955.10

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BP0QSF3	NA	SAKSOFT LTD INR1(POST SUBD)	Equities	India	INR	Information Technology	32,440	8,306,262.00
6145938	NA	SAM YUNG TRADING KRW500	Equities	South Korea	KRW	Industrials	1,865	24,151,750.00
B23WT10	NA	SARAWAK PLANTATION NPV	Equities	Malaysia	MYR	Consumer Staples	38,900	85,191.00
B132NM2	NA	SAUDI ELECTRIC CO SAR10	Equities	Saudi Arabia	SAR	Utilities	715,295	14,148,535.10
B11TCY0	NA	SCHINDLER HOLDING AG HERGISW PARTN CTFS	Equities	Switzerland	CHF	Industrials	8,618	1,957,147.80
6251028	NA	SCREEN HLDGS CO LTD SHS NEW	Equities	Japan	JPY	Information Technology	21,600	431,244,000.00
6793865	NA	SEKISUI KASEI CO L NPV	Equities	Japan	JPY	Materials	9,300	4,724,400.00
BQ13Z04	NA	SEMIRARA MNG & PWR CORP SHS	Equities	Philippines	PHP	Energy	329,100	11,485,590.00
B80NXX8	81762P10	SERVICENOW INC COM	Equities	United States	USD	Information Technology	32,106	24,477,614.40
BFYQHB8	NA	SHANDONG PUBLISHIN A CNY1	Equities	China	CNY	Communication Services	2,413,000	26,494,740.00
BD5C7R7	NA	SHENZHEN LAIBAO HI-TECH CO LTD 'A' CNY1	Equities	China	CNY	Information Technology	628,101	5,885,306.37
6829414	NA	SHIMOJIMA CO LTD SHS	Equities	Japan	JPY	Industrials	4,900	6,732,600.00
BLR63X1	NA	SIERRA RUTILE HLDGS LTD ORD SHS	Equities	Australia	AUD	Materials	6,078	729.36
B0CL646	82706C10	SILICON MOTION TECHNOLOGY CO SPONSORED ADR	Equities	Taiwan	USD	Information Technology	16,617	1,278,511.98
6807658	NA	SINGAMAS CONTAINER HLDNGS LT SHS	Equities	Hong Kong	HKD	Industrials	376,773	210,992.88
B61X7R5	NA	SITC INTERNATIONAL HOLDINGS SHS	Equities	Hong Kong	HKD	Industrials	1,177,000	16,831,100.00
6680138	NA	SK ELECTRONICS CO LTD SHS	Equities	Japan	JPY	Information Technology	6,141	21,616,320.00
BFZ1K46	L8681T10	SPOTIFY TECHNOLOGY S A SHS	Equities	Sweden	USD	Communication Services	55,978	14,772,594.20
BKPGJQ1	85225A10	SQUARESPACE INC CLASS A	Equities	United States	USD	Information Technology	123,783	4,510,652.52
2849472	85811910	STEEL DYNAMICS INC COM	Equities	United States	USD	Materials	31,995	4,742,618.85
B1Z6560	NA	STELLA INTL HLDGS LTD SHS	Equities	Hong Kong	HKD	Consumer Discretionary	22,000	274,560.00
BMD8KX7	NA	STELLANTIS N.V SHS	Equities	Italy	EUR	Consumer Discretionary	312,140	8,223,328.30
6140074	NA	SWARAJ ENGINES INR10	Equities	India	INR	Industrials	1,782	4,068,484.20
B1X3KP7	NA	SWISSQUOTE GROUP HOLDING AG ORD	Equities	Switzerland	CHF	Financials	2,920	739,344.00
B832462	87724P10	TAYLOR MORRISON HOME CORP COM	Equities	United States	USD	Consumer Discretionary	133,695	8,311,818.15
BJV9B83	Y8565N30	TEEKAY TANKERS LTD CL A	Equities	United States	USD	Energy	28,504	1,664,918.64
B0XGGY0	88089010	TERNIUM SA SPONSORED ADS	Equities	Mexico	USD	Materials	78,830	3,280,904.60
BGY7PJ2	NA	THAILAND FUTURE FU THB9.9569 (LOCAL)	Equities	Thailand	THB	Financials	344,500	2,273,700.00
6894434	NA	TOA CORP NPV	Equities	Japan	JPY	Consumer Discretionary	8,500	9,970,500.00
BKF1H51	NA	TRATON SE SHS	Equities	Germany	EUR	Industrials	14,429	481,062.86
B03MYT9	NA	TURKIYE PETROL RAFINERILERI COM	Equities	Turkey	TRY	Energy	136,234	24,113,418.00
BDZSR08	NA	UBIQUOSS KRW500	Equities	South Korea	KRW	Information Technology	2,390	41,131,900.00
B00PSW2	NA	UCHI TECHNOLOGIES NPV	Equities	Malaysia	MYR	Information Technology	19,600	76,636.00
B0FHTN1	NA	ULTRAPAR PARTICIPA COM NPV	Equities	Brazil	BRL	Energy	94,700	2,696,109.00
75SF135	NA	UNIPOL GRUPPO SPA NPV	Equities	Italy	EUR	Financials	20,152	156,500.43
B1P70H9	NA	UNITED LABS INT HLDS LTD SHS	Equities	Hong Kong	HKD	Health Care	86,000	770,560.00
6917148	NA	UNITED PLANTATIONS BERHAD SHS	Equities	Malaysia	MYR	Consumer Staples	18,200	436,436.00
BP3R4F5	NA	UNIVERSAL SCIENTIFIC INDUSTRIA 'A' CNY1	Equities	China	CNY	Information Technology	200,300	2,772,152.00
2041364	91913Y10	VALERO ENERGY CORP COM	Equities	United States	USD	Energy	112,665	19,230,788.85
BFH3N85	92247510	VEEVA SYS INC CL A COM	Equities	United States	USD	Health Care	25,394	5,883,535.86

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# Holding

As of March 31, 2024

SEDOL	CUSIP	Security Name	Security Type	Country	Currency	Sector	Shares	Local Market Value
BD9GZV5	NA	VINCENT MEDICAL HO HKD0.01	Equities	Hong Kong	HKD	Health Care	406,000	162,400.00
B3N0H17	92763W10	VIPSHOP HLDGS LTD SPONSORED ADS A	Equities	China	USD	Consumer Discretionary	269,848	4,465,984.40
B3WYBN0	NA	VODAFONE QATAR QAR1	Equities	Qatar	QAR	Communication Services	346,894	606,023.82
B1QH830	NA	VOLVO AB CL B	Equities	Sweden	SEK	Industrials	406,132	117,818,893.20
2931205	92916010	VULCAN MATLS CO COM	Equities	United States	USD	Materials	9,677	2,641,046.84
B55WMQ5	NA	WALLENIIUS WILHELMS SHS	Equities	Norway	NOK	Industrials	70,204	6,202,523.40
B29LLQ0	NA	WIELTON SA PLN0.2	Equities	Poland	PLN	Industrials	10,254	83,365.02
5699373	NA	WIENERBERGER AG AKT	Equities	Austria	EUR	Materials	11	371.36
BDB6Q21	G9662910	WILLIS TOWERS WATSON PLC LTD SHS	Equities	United States	USD	Financials	11,715	3,221,625.00
BFZCHN7	M9806810	WIX COM LTD SHS	Equities	Israel	USD	Information Technology	51,156	7,032,926.88
5671519	NA	WOLTERS KLUWER N V SHS	Equities	Netherlands	EUR	Industrials	45,662	6,630,122.40
6977056	NA	WONG'S KONG KING HKD0.10	Equities	Hong Kong	HKD	Information Technology	72,834	34,231.98
2948089	98074510	WOODWARD INC COM	Equities	United States	USD	Industrials	12,496	1,925,883.52
BMTCVP2	NA	XIAMEN JIHONG TECH 'A'CNY1	Equities	China	CNY	Communication Services	93,000	1,613,550.00
B1VT035	NA	YANGZIJANG SHIPBUILDING HLD SHS	Equities	Singapore	SGD	Industrials	2,538,600	4,848,726.00
B7KCD72	98581710	YELP INC CL A	Equities	United States	USD	Communication Services	149,379	5,885,532.60
6436126	NA	YTL CORP BERHAD SHS	Equities	Malaysia	MYR	Utilities	3,029,900	7,968,637.00
B01GQS6	NA	YTL POWER INTL NPV	Equities	Malaysia	MYR	Utilities	5,013,200	19,401,084.00
6586537	NA	YUE YUEN INDL HLDGS LTD SHS	Equities	Hong Kong	HKD	Consumer Discretionary	51,000	559,980.00
6983893	NA	YUSHIN PRECSN EQPT NPV	Equities	Japan	JPY	Industrials	3,900	2,687,100.00
BP3R5T6	NA	YUTONG BUS CO LTD 'A'CNY1	Equities	China	CNY	Industrials	1,093,700	21,731,819.00
BD5CM83	NA	ZHEJIANG SEMIR GARMENT CO LTD 'A' CNY1	Equities	China	CNY	Consumer Discretionary	5,412,122	29,496,064.90
BZ0CZF0	NA	ZHONGTAI FUTURES C 'H' CNY1	Equities	China	HKD	Financials	90,000	45,900.00
BGSP7M9	98980L10	ZOOM VIDEO COMMUNICATIONS IN CL A	Equities	United States	USD	Information Technology	268,377	17,543,804.49
BZ00V34	98980G10	ZSCALER INC COM	Equities	United States	USD	Information Technology	22,642	4,361,528.46
6360032	NA	BANGCHAK CORP PUB CO LTD NON VTG DEP	GDR	Thailand	THB	Energy	162,000	7,371,000.00
6368360	NA	BANGKOK BK PLC DP RCT NON VTG	GDR	Thailand	THB	Financials	612,500	85,137,500.00
BFM8868	16965P20	CHIPMOS TECHNOLOGIES INC SPONSORD ADS NEW	GDR	Taiwan	USD	Information Technology	1,189	37,394.05
BG0V275	NA	HON HAI PRECISION INDS LTD SP GDS REG S NEW	GDR	Taiwan	USD	Information Technology	20,829	198,500.37
6610470	NA	LANNA RESOURCES THB1(NVDR)	GDR	Thailand	THB	Energy	94,800	1,327,200.00
B1VX446	NA	MAGNITOGORSK IRON& GDR EACH REPR 13 ORD 'REGS'	GDR	Russia	USD	Materials	3,263	-
B0RTNX3	NA	NOVOLIPETSK STEEL GDR EACH REP 10 RUB1 'REGS'	GDR	Russia	USD	Materials	37,323	-
B1359L2	NA	PTT EXPL & PRODTN PUB CO LTD NVDR SHS	GDR	Thailand	THB	Energy	939,400	143,728,200.00
BNGL6L0	NA	SAPPE THB1(NVDR)	GDR	Thailand	THB	Consumer Staples	40,900	3,742,350.00
B0V9LT1	NA	SPCG PUBLIC CO LTD THB1(NVDR)	GDR	Thailand	THB	Utilities	38,000	433,200.00
BD4DCB0	NA	STAR PETROLEUM PLC THB6.92 (NVDR)	GDR	Thailand	THB	Energy	165,500	1,489,500.00
B030K62	NA	THAI OIL PUBLIC CO LTD NVDR SHARES	GDR	Thailand	THB	Energy	163,500	9,728,250.00

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# Holding

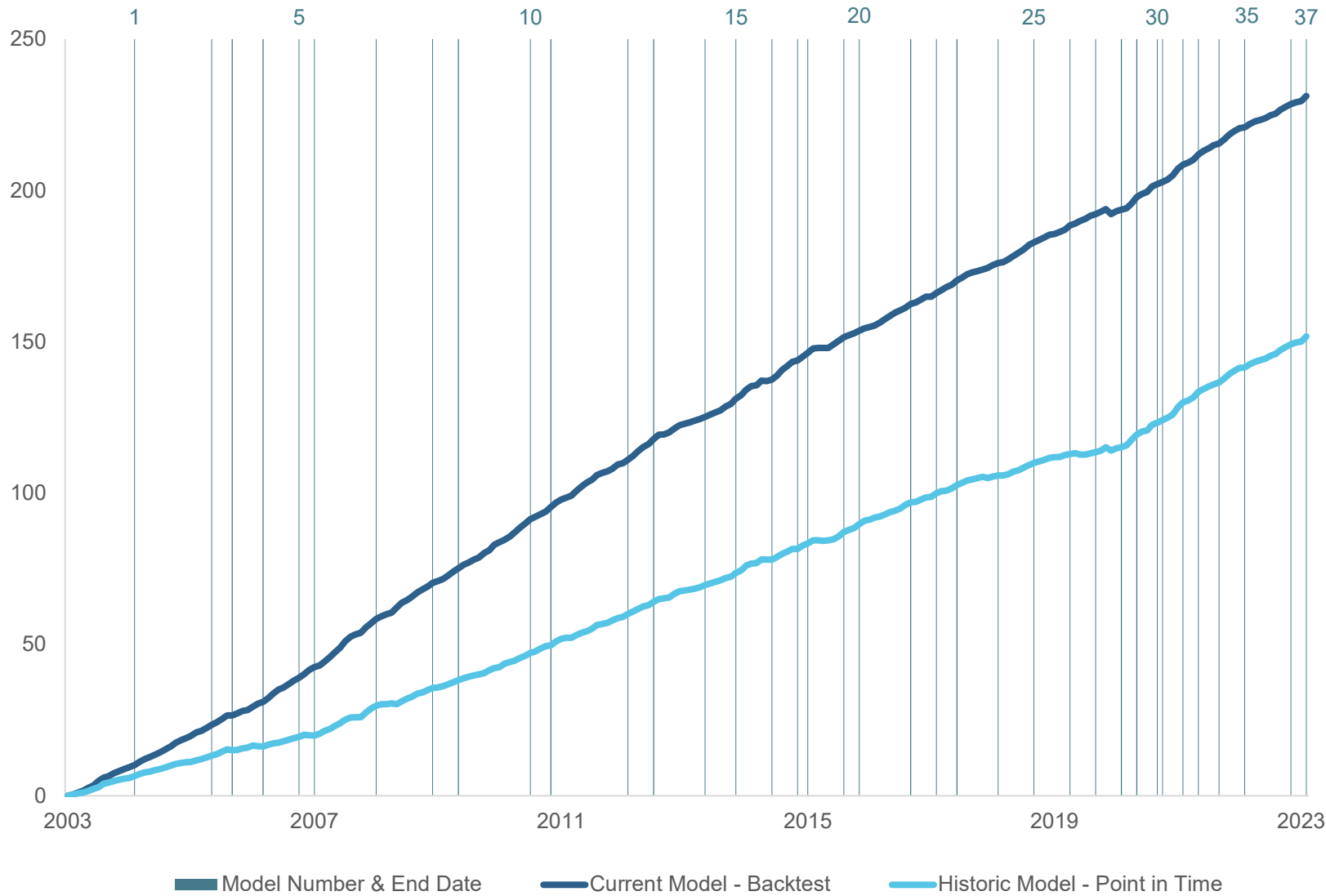
As of March 31, 2024

SEDOL	CUSIP	Security Name	Security Type	Country	Currency	Sector	Shares	Local Market Value
BD9GZV5	NA	VINCENT MEDICAL HO HKD0.01	Equities	Hong Kong	HKD	Health Care	406,000	162,400.00
NA	NA	Dividend Accrual (Australian Dollar)	Accruals	NA	AUD	NA	4,948	4,948.00
NA	NA	Dividend Accrual (Brazilian Real)	Accruals	NA	BRL	NA	64,985	64,984.60
NA	NA	Dividend Accrual (Indian Rupee)	Accruals	NA	INR	NA	2,216,308	2,216,307.85
NA	NA	Dividend Accrual (Indonesian Rupiah)	Accruals	NA	IDR	NA	80,490,240	80,490,240.00
NA	NA	Dividend Accrual (Japanese Yen)	Accruals	NA	JPY	NA	5,930,465	5,930,465.00
NA	NA	Dividend Accrual (Malaysian Ringgit)	Accruals	NA	MYR	NA	7,281	7,281.00
NA	NA	Dividend Accrual (South Korean Won)	Accruals	NA	KRW	NA	72,168,571	72,168,571.00
NA	NA	Dividend Accrual (Swedish Kroner)	Accruals	NA	SEK	NA	6,213,820	6,213,819.60
NA	NA	Dividend Accrual (Thai Baht)	Accruals	NA	THB	NA	5,186,642	5,186,641.50
NA	NA	Dividend Accrual (UAE dirham)	Accruals	NA	AED	NA	104,614	104,613.50
NA	NA	Dividend Accrual (United States Dollar)	Accruals	NA	USD	NA	354,090	354,089.95
NA	NA	Australian Dollar	Cash	NA	AUD	NA	1,658,263	1,658,263.08
NA	NA	Brazilian Real	Cash	NA	BRL	NA	42,357	42,356.95
NA	NA	Canadian Dollars	Cash	NA	CAD	NA	3,670	3,670.37
NA	NA	Chilean Peso	Cash	NA	CLP	NA	2,615,133	2,615,133.00
NA	NA	Chinese (Yuan) Renminbi	Cash	NA	CNY	NA	330,966	330,966.00
NA	NA	Danish Kroner	Cash	NA	DKK	NA	627,730	627,729.92
NA	NA	Egyptian Pound	Cash	NA	EGP	NA	406,922	406,922.05
NA	NA	Euro	Cash	NA	EUR	NA	1,892	1,892.12
NA	NA	Indian Rupee	Cash	NA	INR	NA	10,531,487	10,531,486.54
NA	NA	Indonesian Rupiah	Cash	NA	IDR	NA	11,061,484	11,061,484.00
NA	NA	Malaysian Ringgit	Cash	NA	MYR	NA	116,812	116,812.33
NA	NA	Peruvian New Sol	Cash	NA	PEN	NA	8,186	8,186.01
NA	NA	Philippine Peso	Cash	NA	PHP	NA	1,249,763	1,249,762.50
NA	NA	Pounds Sterling	Cash	NA	GBP	NA	29	29.21
NA	NA	Qatari Rial	Cash	NA	QAR	NA	456,556	456,555.99
NA	NA	Saudi Arabian Riyal	Cash	NA	SAR	NA	85,977	85,976.66
NA	NA	Swiss Francs	Cash	NA	CHF	NA	85,463	85,463.45
NA	NA	Thai Baht	Cash	NA	THB	NA	50,126	50,126.26
NA	NA	UAE dirham	Cash	NA	AED	NA	797,807	797,807.45
NA	NA	United States Dollar	Cash	NA	USD	NA	2,106,357	2,106,357.33
NA	NA	Trade Payables (United States Dollar)	Commitments	NA	USD	NA	(218,082)	(218,081.96)
2651202	67010020	NOVO-NORDISK A S ADR	ADR	Denmark	USD	Health Care	93,796	12,043,406.40
B01WHG9	NA	SURGUTNEFTEGAS PJS ADR-REPR 10 ORD RUB1	ADR	Russia	USD	Energy	36,784	-
2840215	78462F10	SPDR S&P 500 ETF TR TR UNIT	Unit	Cash Equitization	USD	Cash Equitization	897	469,193.79

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# Research: Impact

Hypothetical Cumulative Sum of Monthly Payoffs in All-Country World (%)



Historical Model Number	Correlation to Current Model
38 (Current)	1.00
37	0.99
36	0.99
35	0.97
34	0.97
33	0.97
32	0.95
31	0.95
30	0.91
29	0.89
28	0.86
27	0.84
26	0.82
25	0.81
24	0.78
23	0.77
22	0.73
21	0.71
20	0.68
19	0.70
18	0.71
17	0.67
16	0.66
15	0.65
14	0.64
13	0.64
12	0.63
11	0.62
10	0.58
9	0.52
8	0.47
7	0.46
6	0.37
5	0.39
4	0.34
3	0.36
2	0.38
1	0.37

The chart presented here is a hypothetical illustration for educational purposes only showing the cumulative sum of monthly payoffs in All-Country World. The light blue solid line represents the historic model's efficacy, while the dark blue solid line represents the efficacy of the current model in a backcast. Source: Acadian investable universe with a market capitalization greater than \$100MM. This is meant to be an educational illustrative example and is not intended to represent investment results generated by an actual portfolio. The payoffs do not represent actual trading or an actual account. Results do not reflect transaction costs, other implementation costs and do not reflect advisory fees or their potential impact. Hypothetical results are not indicative of actual future results. Every investment program has the opportunity for loss as well as profit.

# World Equity Valuation

March 31, 2024\*

Universe	Index	Price/ Earnings	Price/ Book	Price/ Sales	Price/ Cash	Yield
Emerging Markets	MSCI Emerging Markets	15.5	1.7	1.4	9.8	2.8%
Emerging Markets Small-Cap	MSCI EM Small-Cap	20.5	1.5	1.0	10.7	2.4%
Europe	MSCI Europe	15.1	2.1	1.5	9.4	3.1%
Frontier Markets	MSCI Frontier 15% Country Capped	10.5	1.5	1.3	7.3	4.0%
Japan Large-Cap	TOPIX	16.3	1.5	1.0	9.3	2.0%
Non-U.S. Equity	MSCI EAFE	15.7	1.9	1.5	9.8	2.9%
Non-U.S. Small-Cap Equity	MSCI EAFE Small-Cap	16.8	1.4	0.9	8.4	2.9%
Non-U.S. Micro-Cap	MSCI World ex-U.S. Micro-Cap	31.3	0.9	0.6	12.9	2.5%
U.S. Large-Cap	S&P 500	25.7	4.8	2.9	17.2	1.4%
U.S. Small-Cap	Russell 2000	38.6	2.1	1.3	15.8	1.3%
U.S. Micro-Cap	MSCI U.S. Micro-Cap	-10.2	1.3	0.7	-4.9	1.1%
World	MSCI World	22.0	3.4	2.3	14.2	1.8%

\*Preliminary. Data Source: MSCI, TOPIX, Russell, and S&P.

It is not possible to invest directly in any index.

Index Sources: Standard & Poor's, Russell, Morgan Stanley Capital International and Russell/Nomura. MSCI Copyright MSCI 2024. All Rights Reserved. Unpublished. PROPRIETARY TO MSCI. Copyright © 2024, Standard & Poor's Financial Services LLC. All rights reserved. Russell Investments Copyright © Russell Investments 1998 – 2024. All rights reserved.

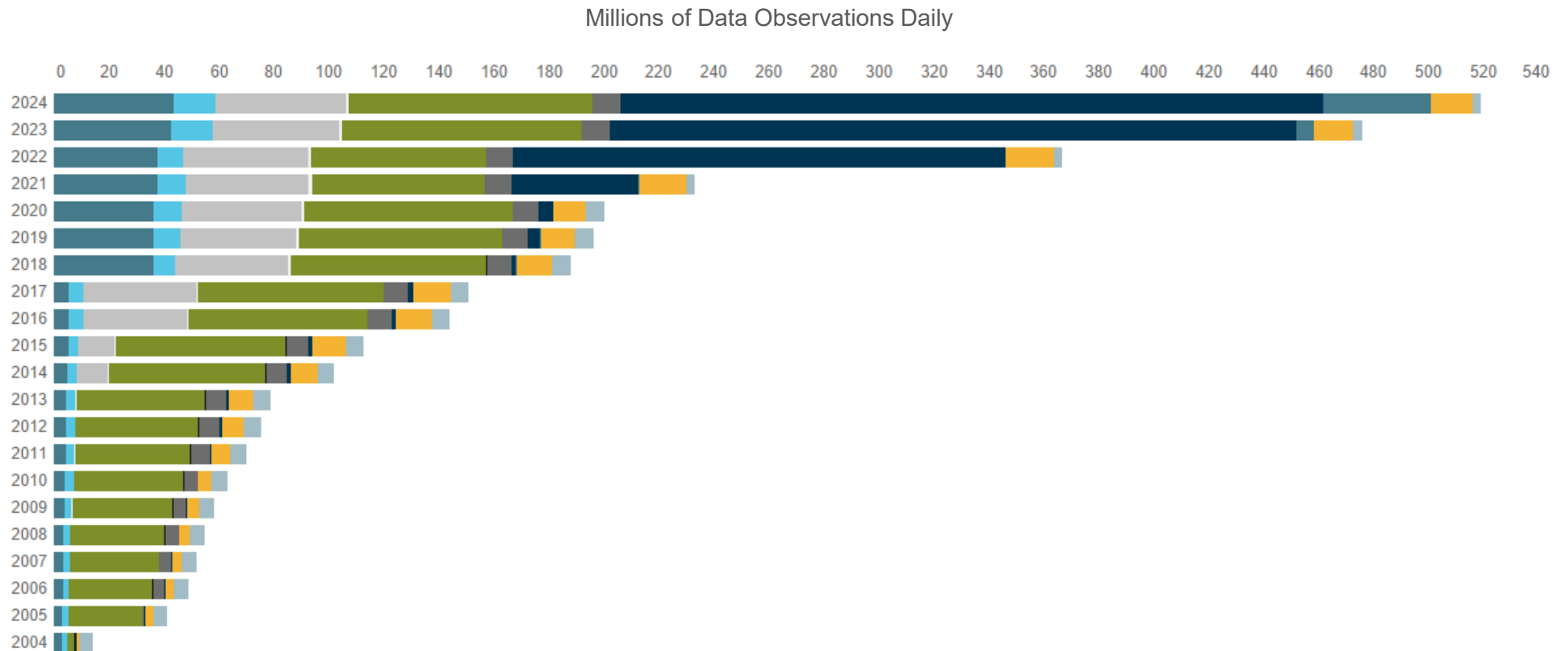
# Global Data

44,000 COMPANIES  
100 COUNTRIES

518 MILLION DAILY  
OBSERVATIONS

58 TERABYTE  
DATABASE

Daily data from over 40 sources including regulatory authorities, company websites, media sources, and industry trade organizations not available in standard vendor offerings:



Colors on the chart symbolize different data sources. Data as of January 2024.



# BIOGRAPHIES

# Investment Team

## **Brendan Bradley, Ph.D. – Executive Vice President, Chief Investment Officer**

- 26 years of investment experience
- Member of the Acadian Board of Managers, Executive Management Team, Executive Committee, Responsible Investing Committee
- Ph.D. in applied mathematics from Boston University
- B.A. in physics from Boston College

## **Alexandre Voitenok – Senior Vice President, Deputy Chief Investment Officer**

- 23 years of investment experience
- Member of Acadian's Executive Committee, Executive Management Team and Diversity & Inclusion Forum
- M.Sc. in software engineering from Minsk Radio Engineering Institute

## **Malcolm Baker, Ph.D. – Director, Research**

- 22 years of investment experience
- Research consultant since 2006
- Robert G. Kirby Professor of Finance, Harvard Business School
- Ph.D. from Harvard University
- M.Phil. From Cambridge University
- B.A. from Brown University

## **James Dufort, CFA – Senior Vice President, Director, Investment Analytics & Data**

- 21 years of Investment experience
- Member of Acadian's Compliance and Risk Committee
- M.B.A. from Indiana University, Kelley School of Business
- B.S. in electrical engineering from Tufts University
- CFA charterholder

## **Michael Gleason – Senior Vice President, Director, Equity Alternative**

- 28 years of investment experience
- MSF from Northeastern University
- B.S. in management science from Bridgewater State University

## **Andy Moniz Ph.D., CFA – Senior Vice President, Director of Responsible Investing**

### **Acadian Asset Management (U.K.) Limited**

- 24 years of professional experience
- Ph.D. in natural language processing and information retrieval from Erasmus University
- MSc. in applied statistics from the University of London
- M.A. in economics from Cambridge University
- B.A. in economics from Cambridge University
- CFA charterholder and member of CFA Society U.K.

## **Ryan Taliaferro, Ph.D. – Senior Vice President, Director, Investment Strategies**

- 22 years of professional experience
- Member of Acadian's Executive Committee
- Ph.D. in business economics (finance) from Harvard University
- M.B.A. in finance and economics from the University of Chicago
- A.M. in economics from Harvard University
- A.M. and A.B. in physics from Harvard University

## **Fanesca Young, Ph.D., CFA – Senior Vice President, Director, Equity Portfolio Management**

- 19 years of professional experience
- Ph.D. in statistics from Columbia University
- M.Phil. in statistics from Columbia University
- M.A. in statistics from Columbia University
- B.A. in mathematics from the University of Virginia
- CFA charterholder

## **Vladimir Zdorovtsov, Ph.D. – Senior Vice President, Director, Global Equity Research**

- 22 years of investment experience
- Ph.D. in finance from University of South Carolina
- M.B.A. from University of Arkansas
- B.A. in international economics from Sumy University, Ukraine

## **Francis Seah, CFA – Senior Vice President, Portfolio Manager and Managing Director, Acadian Singapore Acadian Asset Management (Singapore) Pte Ltd**

- 20 years of investment experience
- B.S. and M.S. from Nanyang Technological University
- CPA, Institute of Certified Public Accountants Singapore
- CFA charterholder and a member of CFA Singapore
- Computational Finance Certificate from Carnegie Mellon University

## **Thomas Dobler, Ph.D. – Senior Vice President, Interim Director, Multi-Asset Class Strategies**

- 28 years of investment experience
- Member of Acadian's Diversity & Inclusion Forum
- Ph.D. in mathematics from Columbia University
- M.S. in mathematics from University of Illinois
- B.S. in mathematics from University of Vienna, Austria

# Investment Team

## **Joseph Bacchi – Senior Vice President, Head of Trading, Multi Asset Class Strategies**

- 27 years of investment experience
- M.B.A. in international/executive management from St. John's University
- B.S. in finance from St. John's University

## **Jean Christophe (J.C.) De Beaulieu, CFA – Senior Vice President, Head of Investments, Australia**

### **Acadian Asset Management (Australia) Limited**

- 26 years of investment experience
- Advanced Master in financial techniques from ESSEC Business School
- D.E.A. in numerical analysis from Pierre and Marie Curie University and Ecole Polytechnique
- M.S. in mathematics from Pierre and Marie Curie University
- CFA charterholder and member of CFA Society Boston

## **Mark Birmingham, CFA – Senior Vice President, Head of Risk Modeling, Portfolio Manager**

- 29 years of investment experience
- A.B. in computer science from Princeton University
- CFA charterholder and member of CFA Society Boston

## **Doug Eisenstein – Senior Vice President, Head of Investment Data Solutions**

- 24 years of professional experience
- Studied computer science at Suffolk University

## **Joel Feinberg – Senior Vice President, Head of Trading**

- 18 years of investment experience
- MSIM from Boston University
- B.B.A. in finance from the University of Massachusetts

## **Alexander Galakatos, Ph.D. – Senior Vice President, Head of Investment Data Engineering**

- 5 years of professional experience
- Ph.D. in computer science from Brown University
- ScM in computer science from Brown University
- B.Sc. in computer engineering from Lehigh University

## **Anton Kapliy, Ph.D., CFA – Senior Vice President, Head of Portfolio Analytics**

- 10 years of professional experience
- Ph.D. in high energy physics from University of Chicago
- B.A. in physics from University of Pennsylvania
- CFA charterholder and a member of CFA Society Boston

## **Boris Kovtunenکو, Ph.D. – Senior Vice President, Head of Implementation Research**

- 19 years of investment experience
- Ph.D. in economics from Harvard University
- M.A. in economics from New Economics School
- M.S. in physics from Moscow State University

## **Jian Pan, CFA – Senior Vice President, Head of Quantitative Systems**

- 30 years of professional experience
- M.S. in computer science from the University of Massachusetts
- B.S. industrial automation control from Nanjing University of Technology, China

## **Michael McCart, CFA – Senior Vice President, Investment Systems Architect**

- 26 years of investment experience
- B.S. in engineering and economics, University of Pennsylvania
- CFA charterholder and a member of CFA Society Boston

## **Javier Alcazar, Ph.D. – Senior Vice President, Portfolio Manager, Research Acadian Asset Management (U.K.) Limited**

- 22 years of professional experience
- Ph.D. in mechanical engineering from the Universidad Pontificia Comillas, ICAI, Spain
- M.Sc. in advanced mathematics and theoretical Physics from the University of Cambridge
- M.Sc. in aeronautical engineering from the Universidad Politecnica de Madrid, Spain
- M.Sc. in parallel computing from Imperial College London
- B.Sc. in theoretical physics from Universidad Complutense de Ciencias Fisicas, Spain

## **Daniel Adamson – Senior Vice President, Portfolio Manager, Implementation**

- 21 years of professional experience
- M.B.A. from Boston College
- B.A. in accountancy and management information systems from Miami University

## **Ioannis Baltopoulos – Senior Vice President, Portfolio Manager**

- 15 years of professional experience
- M.Sc. in advanced computing from Imperial College London
- B.Sc. in computer science from the University of Kent

## **Pavel Bandarchuk, Ph.D., CFA – Senior Vice President, Portfolio Manager, Research**

- 17 years of investment experience
- Ph.D. in international economics and finance from Brandeis University
- M.S. in finance from Brandeis University
- Diploma in international economics from Belarusian State University
- Certified FRM and CFA charterholder



# Investment Team

## Scott Brymer, CFA – Senior Vice President, Portfolio Manager

- 26 years of professional experience
- B.B.A. in finance from the University of Massachusetts Amherst
- CFA charterholder and a member of CFA Society Boston

## Heidi Chen, CFA – Senior Vice President, Portfolio Manager

- 10 years of professional experience
- S.M. in computational science and engineering from Harvard University
- B.A. with Honors in mathematics from Williams College
- CFA charterholder and member of CFA Society Boston

## Zhe Chen, Ph.D., CFA – Senior Vice President, Portfolio Manager, Research

### Acadian Asset Management (Australia) Limited

- 15 years of professional experience
- Ph.D. in empirical finance from Macquarie University
- Bachelor of Engineering (bioinformatics), First Class Honours and University Medal, from the University of New South Wales
- Bachelor of Commerce (finance) from UNSW
- CFA charterholder

## Chris Covington, CFA – Senior Vice President, Portfolio Manager

- 17 years of professional experience
- M.S. in investment management from Boston University
- B.A. in mathematical economics from Colorado College
- CFA charterholder

## Denys Glushkov, Ph.D. – Senior Vice President, Portfolio Manager, Research

- 18 years of professional experience
- Ph.D. in finance, University of Texas at Austin
- M.S. in economic cybernetics, Dnipropetrovsk State University (Ukraine)
- M.A. in economics, Central European University (Hungary)

## Clifton Hill – Senior Vice President, Portfolio Manager, Multi-Asset Class Strategies

- 23 years of investment experience
- Member of Acadian's Diversity & Inclusion Forum
- B.A. in political science from Brown University

## Katrina Khouponsy, CFA – Senior Vice President, Portfolio Manager, Research

### Acadian Asset Management (Australia) Limited

- 30 years of professional experience
- Bachelor in mathematics and finance (Hons) from the University of Technology, Sydney
- Graduate Diploma in applied finance and investments from the Securities Institute of Australia
- CFA charterholder

## Owen Lamont, Ph.D. – Senior Vice President, Portfolio Manager, Research

- 36 years of professional experience
- Ph.D. in economics from the Massachusetts Institute of Technology
- B.A. in economics from Oberlin College

## Devin Nial – Senior Vice President, Portfolio Manager, ESG

- 19 years of professional experience
- M.S. in finance from Boston College
- M.A. in computer science from Boston University
- B.A. in English literature from SUNY Albany

## Dmitry Olevsky, CFA – Senior Vice President, Portfolio Manager, Research

- 22 years of investment experience
- M.B.A. from Harvard Business School
- B.S. in structural engineering from Michigan Technological University
- FRM designation and CFA charterholder

## Shailesh Parmar – Senior Vice President, Portfolio Manager, Multi Asset Class Strategies

- 17 years of investment experience
- M.B.A. in finance and economics from Columbia Business School
- B.A. in chemistry from Columbia University

## Matthew Picone, CFA – Senior Vice President, Portfolio Manager, ESG Acadian Asset Management (Australia) Limited

- 20 years of professional experience
- Bachelor of Commerce in finance and econometrics from the University of Sydney
- CFA charterholder
- Member of the PRI Australian Advisory Committee

## Lukasz Pomorski, Ph.D. – Senior Vice President, Portfolio Manager

- 18 years of professional experience
- Ph.D. in finance from the University of Chicago
- M.A. in finance from Tilburg University
- M.A. and B.A. in economics from the Warsaw School of Economics

# Investment Team

## Mark Roemer – Senior Vice President, Portfolio Manager

- 28 years of professional experience
- M.S. in finance from London Business School
- M.S. in engineering from Stanford University
- B.S. in mechanical engineering from Virginia Polytechnic Institute & State University

## Bin Shi, Ph.D., CFA – Senior Vice President, Portfolio Manager, Research

- 18 years of investment experience
- Ph.D. in industrial and systems engineering from Georgia Institute of Technology
- M.S. in operations research from Georgia Institute of Technology
- B.S. in mechanical engineering from Southeast University, China
- CFA charterholder

## Olivia Tang, Ph.D., CFA – Senior Vice President, Portfolio Manager, Research

- 14 years of professional experience
- Ph.D. in systems engineering, with a concentration in operations research, from Boston University
- B.S. in mathematics from Peking University (China)
- CFA charterholder

## Charles Augello, CFA – Senior Vice President, Lead Analyst, Integration, Multi-Asset Class Strategies

- 19 years of professional experience
- B.A. in engineering sciences and economics from Dartmouth College
- CFA charterholder

## Rob Ricciarelli, CFA – Senior Vice President, Lead Analyst, IPD

- 28 years of professional experience
- M.B.A. from Suffolk University
- B.S. in management and B.A. in psychology from the University of Massachusetts, Boston
- CFA charterholder

## Jeffrey Sutthoff, CFA – Senior Vice President, Lead Analyst, Integration

- 29 years of professional experience
- M.B.A. in finance from Boston College
- B.S. in mathematics from Stetson University
- CFA charterholder

## Mark Weissman – Senior Vice President, Lead Analyst, Research

- 18 years of investment experience
- B.S. in computer science, SUNY at Buffalo
- B.S. in chemical engineering from SUNY at Buffalo

## Xiaoting Zhang, CFA, FRM – Senior Vice President, Lead Analyst, Integration

- 20 years of investment experience
- M.B.A. from the University of Chicago
- M.S. in financial mathematics from the University of Chicago
- M.S. in computer science from Loyola University Chicago
- B.A. in architecture from Tianjin University, China
- Certified FRM and CFA charterholder

## Deborah Waters – Senior Vice President, Senior Trader, Implementation

- 34 years of professional experience
- B.S. in finance from Northeastern University

## Dominique Abdi – Vice President, Portfolio Manager, Multi Asset Class Strategies

- 11 years of investment experience
- M.S. in mathematics from New York University
- B.S. in mathematics with a minor in economics from University of Miami
- B.B.A. in finance with a minor in accounting from the University of Miami

## Giuliano Amantini, Ph.D. – Vice President, Portfolio Manager

- 19 years of professional experience
- Ph.D. in engineering and applied sciences from Yale University
- M.S. in mathematical finance from Bocconi University
- M.S. in mechanical engineering from Yale University
- M.S. in aerospace engineering from La Sapienza University
- B.S. in mechanical engineering from Tor Vergata University

## Paul Duchnowski, Sc.D. – Vice President, Portfolio Manager

- 17 years of investment experience
- B.S., M.S., and Sc.D. in electrical engineering from the Massachusetts Institute of Technology

## Timothy Ellerton, CFA – Vice President, Portfolio Manager Acadian Asset Management (U.K.) Limited

- 24 years of professional experience
- M.Sc. in mathematical trading & finance from the Bayes Business School at City University
- B.A. in law & society from the University of Exeter
- CFA charterholder and member of CFA Society U.K.

## Stephen Fang – Vice President, Portfolio Manager, Research

- 7 years of investment experience
- M.S. in computational science and engineering from Harvard University
- B.A. in mathematics and economics from Middlebury College

# Investment Team

## Sean Geary, CFA – Vice President, Portfolio Manager

- 16 years of professional experience
- M.B.A. from Boston College
- M.S. in mechanical engineering from Boston University
- B.S. in physics from James Madison University
- CFA charterholder and member of CFA Society Boston

## Charles Johnson – Vice President, Portfolio Manager

- 22 years of professional experience
- M.S. in finance from Northeastern University
- M.B.A. from Northeastern University
- B.S. in finance from the University of Massachusetts at Dartmouth

## John King – Vice President, Portfolio Manager

- 23 years of professional experience
- Associate's degree in computer technology from Southern Maine Community College
- B.S. in analytics from Northeastern University

## Dan Le, CFA – Vice President, Portfolio Manager

- 19 years of professional experience
- B.A. in psychology from Brown University
- CFA charterholder and a member of CFA Society Boston

## Adhi Mallik, CFA – Vice President, Portfolio Manager

- 13 years of investment experience
- M.B.A. with a concentration in finance & accounting from Carnegie Mellon University
- B.A. in economics from University of CA – San Diego
- CFA charterholder

## Ken Masse, CFA – Vice President, Portfolio Manager

- 32 years of investment experience
- M.S. in finance from Boston College Carroll School of Management
- B.S. in finance from Bentley University
- CFA charterholder

## Brendan O'Leary, CFA – Vice President, Portfolio Manager, Research

- 11 years of professional experience
- B.S.E. in mechanical & aerospace engineering from Princeton University
- CFA charterholder

## Aditya Panda – Vice President, Portfolio Manager, Multi Asset Class Strategies

- 15 years of investment experience
- Master of financial engineering from UCLA
- Bachelor of engineering from the School of Electrical and Electronic Engineering, Nanyang Technical University, Singapore

## Michael Ponikiewicz – Vice President, Portfolio Manager, Multi Asset Class Strategies

- 12 years of investment experience
- M.B.A. with concentration in asset management from Boston College
- M.S. in finance from Boston College
- B.S. in industrial engineering from Pennsylvania State University

## Linda Wang – Vice President, Portfolio Manager, Research

- 11 years of investment experience
- Master of Finance from MIT's Sloan School of Management
- B.S. in finance and accounting from Drexel University
- Certified FRM

## Kyle McCarthy, CFA – Vice President, Associate Portfolio Manager, Implementation

- 18 years of professional experience
- B.S. in finance from Bentley University
- CFA charterholder and member of CFA Society Boston

## Wesley Jeng, CFA – Vice President, Associate Portfolio Manager, Implementation

### Acadian Asset Management (Australia) Limited

- 11 years of investment experience
- Dual Master's Degree from UT Austin and ESCP Europe
- BA (Hons) from University of Nottingham
- CFA charterholder

## Anna Papush, Ph.D. – Vice President, Associate Portfolio Manager,

- 10 years of professional experience
- Ph.D. in operations research from Massachusetts Institute of Technology
- B.A. in mathematics from Cornell University

## Shivani Patnaik – Vice President, Associate Portfolio Manager

- 13 years of professional experience
- M.S. in mathematical finance from Boston University
- B.S. in chemical engineering from University of Maryland

## Alexander Rikun – Vice President, Associate Portfolio Manager

- 14 years of professional experience
- Ph.D. in operations research from Massachusetts Institute of Technology
- B.S. in applied mathematics with a minor in economics from Columbia University

## Louis Seng – Vice President, Associate Portfolio Manager, Implementation Acadian Asset Management (Singapore) Pte Ltd

- 15 years of investment experience
- B.B.M in finance from Singapore Management University

# Investment Team

## **Steven Wong –Vice President, Associate Portfolio Manager, Research Acadian Asset Management (Australia) Limited**

- 13 years of professional experience
- Doctor of Philosophy in statistics from the University of Sydney
- Master of Finance from the University of New South Wales
- Bachelor of Commerce and Bachelor of Engineering from the University of New South Wales

## **Xunqi (Richie) Yu, CFA – Vice President, Associate Portfolio Manager**

- 16 years of professional experience
- Ph.D. in electrical and computer engineering from the University of Miami
- M.S. in computational finance from Carnegie Mellon University, Tepper School of Business
- B.S. in information engineering from Wuhan University, School of Remote Sensing and Information Engineering
- CFA charterholder

## **James Coder, CFA – Vice President, Lead Analyst, Integration, Multi Asset Class Strategies**

- 11 years of investment experience
- B.S. in finance from the University of Kansas
- CFA charterholder

## **Bhaskar Edara, CFA, FRM – Vice President, Lead Analyst, Implementation**

- 29 years of professional experience
- M.S. in finance from Boston College
- B.Tech. in mechanical engineering from the National Institute of Technology, India
- Certified FRM and CFA charterholder

## **Lucas Manley, CFA – Vice President, Lead Analyst**

- 20 years of investment experience
- M.S. in investment management from Boston University
- B.S. in business administration from Northeastern University
- CFA charterholder and a member of CFA Society Boston

## **Bernard Sim – Vice President, Lead Analyst, IPD Acadian Asset Management (Singapore) Pte Ltd**

- 23 years of professional experience
- Bachelor of Commerce in finance from the Australia National University

## **Michael Szrom, CFA – Vice President, Lead Analyst, Implementation**

- 7 years of professional experience
- B.S. in computer science and computer engineering from Northeastern University
- CFA charterholder

## **Michael Vashevko – Vice President, Lead Analyst, Implementation**

- 28 years of professional experience
- M.S. in applied mathematics and computer science from Belarusian State University

## **Shin Zhao, CFA – Vice President, Lead Analyst, Integration**

- 21 years of professional experience
- M.S. in electrical and computer engineering from the University of Massachusetts
- B.S. in physics from the University of Science and Technology of China
- CFA charterholder

## **Chong Chen – Vice President, Senior Analyst, Integration**

- 9 years of professional experience
- M.A. in mathematics of finance from Columbia University
- M.S. in economics from Shanghai Jiao Tong University
- B.S. in finance and mathematics from Wuhan University

## **Rei Cheong, CFA – Vice President, Senior Analyst, IPD Acadian Asset Management (Singapore) Pte Ltd**

- 20 years of professional experience
- Masters in Business Administration from the Singapore Management University
- Graduate Diploma in Financial Management from the Singapore Institute of Management
- Bachelor of Electrical Engineering from the National University of Singapore
- CFA charterholder

## **Soichi Hayashi – Vice President, Senior Analyst, Implementation**

- 23 years of professional experience
- B.S. in computer science and physics from Henderson State University

## **Shi He – Vice President, Senior Analyst, Integration**

- 6 years of professional experience
- M.S. in data science from Worcester Polytechnic Institute
- B.S. in computer science from Hubei University of Police, China

## **Michael Kelsey – Vice President, Senior Analyst, Implementation**

- 22 years of professional experience
- M.B.A. from Northeastern University
- B.S. from Babson College

## **Anthony King- Vice President, Senior Analyst, IPD**

- 24 years of professional experience
- M.S. in computer science from Boston University
- B.S. in management science and information systems from The Pennsylvania State University

## **Anna Lang, CFA – Vice President, Senior Analyst, IPD**

- 12 years of professional experience
- M.B.A. from Boston University
- B.S. in accounting from the International Slavic University
- CFA charterholder and a member of CFA Society Boston

# Investment Team

## Zhenan (Micky) Li, CFA – Vice President, Senior Analyst, IPD

- 13 years of investment experience
- M.S. in economics from Boston University
- B.S. in international business and trade from ShanDong University of Science & Technology
- B.S. in business management and administration from Cambridge College
- CFA charterholder and member of CFA Society Boston

## Ian MacClancy- Vice President, Senior Analyst, Investment Data Engineering

- 9 years of professional experience
- B.A. in computer science from Colby College

## Guy Mann – Vice President, Senior Analyst, Implementation

- 21 years of professional experience
- B.S. in computer science from Worcester Polytechnic Institute

## David Meadows – Vice President, Senior Analyst

- 15 years of professional experience
- B.Sc. in computer science from Newcastle University

## Diego Torres Patino, Ph.D. – Vice President, Senior Analyst, Implementation

- 9 years of investment experience
- Ph.D. in economics from Stanford University
- B.S. degrees in industrial engineering and in economics from Instituto Tecnológico Autónomo de México

## Yevgen Revtsov, CFA – Vice President, Senior Analyst, Integration

- 11 years of professional experience
- B.S. in computer systems engineering from Boston University
- CFA charterholder

## Kamlun Shek, Ph.D., CFA – Vice President, Senior Analyst, Integration, Multi-Asset Class Strategies

- 26 years of professional experience
- Ph.D. in mechanical engineering from Rensselaer Polytechnic Institute
- M.S. mechanics from Rensselaer Polytechnic Institute
- M.S. in computer science from Rensselaer Polytechnic Institute
- M.S. and B.S. in civil engineering from National Cheng Kung University, Taiwan
- CFA charterholder

## Alagappan Solaippan – Vice President, Senior Analyst, Data Engineering

- 19 years of professional experience
- M.E. in engineering from Anna University
- B.E. in engineering from Madurai Kamaraj University

## Carl Thunman – Vice President, Senior Analyst, Implementation

- 13 years of professional experience
- B.S. in engineering and computer science from Princeton University

## Yi Yi (Richard) XU, CFA, FRM – Vice President, Senior Analyst, Integration

- 22 years of professional experience
- M.B.A. from Boston College
- M.S. in electrical engineering from Northern Illinois University
- B.S. in computer science from Fudan University, Shanghai, China
- FRM designation and CFA charterholder

## Shikun (George) Xue, CFA – Vice President, Senior Analyst, Integration

- 15 years of professional experience
- M.A. in finance from Peking University
- B.A. in economics and B.S. in mathematics from Wuhan University
- CFA charterholder

## Jason Withrow – Vice President, Senior Analyst, Integration

- 27 years of professional experience
- Member of Acadian's Diversity & Inclusion Forum
- B.A. in computer science from the University of Rhode Island

## Ted Zhang, CFA – Vice President, Senior Analyst, IPD

- 18 years of professional experience
- M.S. in finance from Bentley University
- B.S. accounting from Bentley University
- CFA charterholder and a member of CFA Society Boston

## Benjamin Hutchens, CAIA – Vice President, Senior Trader, Implementation

- 17 years of professional experience
- M.S. in investment management from Boston University
- B.A. in international affairs and political science from Northeastern University
- CAIA charterholder

## Jason Littlefield – Vice President, Senior Trader, Implementation

- 19 years of professional experience
- M.S. in finance from Northeastern University
- B.S. in business administration, with a dual concentration in accounting and marketing, from Northeastern University

## Sean Paylor – Vice President, Senior Trader, Implementation

- 18 years of professional experience
- B.A. in sociology from Princeton University

# Investment Team

## **Christopher Sinpraseuth – Vice President, Trader, Implementation Acadian Asset Management (Australia) Limited**

- 20 years of professional experience
- Master of Commerce in finance and human resource management from the University of New South Wales
- University Foundation Studies of Commerce at St. Paul's International College

## **Gregory Spyropoulos, CFA – Vice President, Credit Trader, Implementation**

- 21 years of professional experience
- B.S in finance from Bentley College
- CFA charterholder

## **Eric Huang – Assistant Vice President, Associate Portfolio Manager**

- 8 years of professional experience
- B.S. in operations research and financial engineering from Princeton University

## **Jeffrey Lobdell, CMT – Assistant Vice President, Associate Portfolio Manager, Implementation**

- 16 years of professional experience
- M.B.A.in finance from the University of Massachusetts
- B.A. in communications from the University of Massachusetts
- CMT charterholder

## **Vincent Tang – Assistant Vice President, Associate Portfolio Manager, Research**

- 7 years of investment experience
- M. Eng. in financial engineering from Cornell University
- B. Econ in finance, with a minor in computer science, from Wuhan University

## **James Toppa, CFA, CAIA – Assistant Vice President, Associate Portfolio Manager, Implementation**

- 16 years of professional experience
- B.S. in business administration from Bryant University
- CAIA charterholder
- CFA charterholder

## **Jerry Yu, Ph.D., CFA – Assistant Vice President, Associate Portfolio Manager, ESG**

- 4 years of investment experience
- Ph.D. in political science and scientific computing from the University of Michigan
- M.A. in statistics from the University of Michigan
- M.A. in political science from Peking University
- B.A. in economics and political science from Peking University

## **Anh Huynh – Assistant Vice President, Senior Analyst, Integration**

- 10 years of professional experience
- M.Sc. in mathematics from the University of Washington
- B.Sc. in mathematics from MIT

## **Aashir Naqvi – Assistant Vice President, Senior Analyst, Implementation**

- 5 years of professional experience
- B.S. in industrial engineering from Northeastern University

## **Steven Wang – Assistant Vice President, Senior Analyst Acadian Asset Management (Australia) Limited**

- 17 years of professional experience
- Bachelor of Engineering (software engineering), First Class Honours, from the University of New South Wales
- Bachelor of Commerce (finance) from the University of New South Wales

## **Rajasekar (Raj) Karupiah – Assistant Vice President, Data Engineer**

- 18 years of professional experience
- B.E. in electrical and electronics engineering from Anna University, Chennai, India

## **Siyu Chen – Assistant Vice President, Analyst, IPD**

- 5 years of professional experience
- M.S. in management and finance from Case Western Reserve University
- B.S. in economics from Beihang University

## **Ian Chong, CFA – Assistant Vice President, Analyst, IPD Acadian Asset Management (Singapore) Pte Ltd**

- 7 years of professional experience
- Master of IT in business (artificial intelligence) from Singapore Management University
- M.S. in applied finance from Singapore Management University
- Specialist diploma in data science (artificial intelligence) from Singapore Polytechnic
- Bachelor of Business and Commerce from Monash University
- CFA charterholder

## **Jianing Duan – Assistant Vice President, Analyst, Research**

- 6 years of professional experience
- Ph.D. in mathematical finance from Boston University
- MSc in financial mathematics from University of Chicago
- BSc in applied mathematics from Peking University

## **Jacob Hall – Assistant Vice President, Analyst, IPD**

- 5 years of professional experience
- B.A. in business, entrepreneurship, and organizations from Brown University



# APPENDIX

# Hypothetical Disclosure

*Acadian is providing hypothetical performance information for your review as we believe you have access to resources to independently analyze this information and have the financial expertise to understand the risks and limitations of the presentation of hypothetical performance. Please immediately advise if that is not the case.*

*Hypothetical performance results have many inherent limitations, some of which are described below. No representation is being made that any account will or is likely to achieve profits or losses similar to those shown. In fact, there are frequently sharp differences between hypothetical performance results and the actual performance results subsequently achieved by any particular trading program.*

*One of the limitations of hypothetical performance results is that they are generally prepared with the benefit of hindsight. In addition, hypothetical trading does not involve financial risk, and no hypothetical trading record can completely account for the impact of financial risk in actual trading. For example, the ability to withstand losses or to adhere to a particular trading program in spite of trading losses are material points which can also adversely affect actual trading results. There are numerous other factors related to the markets in general or to the implementation of any specific trading program which cannot be fully accounted for in the preparation of hypothetical performance results and all of which can adversely affect actual trading results.*



# Annual Performance Disclosure

## Global All-Country Equity Composite

	Composite Return (%) Gross-of-Fees	Composite Return (%) Net-of-Fees	Benchmark Return (%)	Dispersion of Returns Within Composite (%)	Three-Year ex-Post Standard Deviation of Absolute Gross Returns		Number of Portfolios in Composite	Assets In Composite (\$MMs)	Total Firm Assets Under Management (\$MMs)
					Composite	Benchmark			
2014	7.0	6.2	4.2	1.0	10.5	10.5	16	8,362	70,339
2015	-4.5	-5.3	-2.4	1.0	10.3	10.8	15	7,536	66,834
2016	7.5	6.7	7.9	1.1	10.3	11.1	12	7,149	74,174
2017	26.7	25.8	24.0	1.2	9.7	10.4	13	7,887	96,765
2018	-10.9	-11.5	-9.4	1.4	10.7	10.5	12	4,799	85,338
2019	21.8	20.9	26.6	0.8	11.5	11.2	10	5,091	101,232
2020	19.2	18.3	16.3	1.2	17.5	18.1	8	5,293	107,229
2021	26.7	25.8	18.5	1.5	16.5	16.8	8	6,162	116,160
2022	-15.9	-16.5	-18.4	1.3	19.7	19.9	8	4,793	92,796
2023	25.9	25.0	22.2	1.2	16.7	16.3	8	5,740	102,930

Performance Inception: October 1, 2003. This composite was created on: August 1, 2013. All figures stated in USD.

Acadian Asset Management claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS standards. Acadian Asset Management has been independently verified for the periods January 1, 1994 through December 31, 2022<sup>1</sup>. A copy of the verification report is available upon request. A firm that claims compliance with the GIPS standards must establish policies and procedures for complying with all the applicable requirements of the GIPS standards. Verification provides assurance on whether the firm's policies and procedures related to composite and pooled fund maintenance, as well as the calculation, presentation, and distribution of performance, have been designed in compliance with the GIPS standards and have been implemented on a firm-wide basis. Verification does not provide assurance on the accuracy of any specific performance report. Reference to the benchmark is for comparative purposes only and is not intended to indicate that the composite will contain the same investments as the benchmark. Investors have the opportunity for losses as well as profits. **Past performance is no guarantee of future returns.** Acadian Asset Management is an investment adviser specializing in global equity management. Acadian Asset Management is defined to include assets managed by Acadian Asset Management LLC, an investment adviser registered with and regulated by the United States Securities and Exchange Commission, as well as assets managed by its wholly-owned affiliates, Acadian Asset Management (Australia) Limited (ABN 41 114 200 127), Acadian Asset Management Singapore Pte Ltd, (Registration Number: 199902125D) is licensed by the Monetary Authority of Singapore, and Acadian Asset Management (UK) Limited, authorized and regulated by the Financial Conduct Authority of the United Kingdom. On June 30, 2015, Acadian acquired the assets of Acadian's Australian office.

**Methodology:** Returns are net of foreign withholding taxes on dividends, interest, and capital gains. Since January 1, 2010 Acadian's methodology was augmented to produce a more accurate gross return figure by eliminating modest cash flows such as securities lending income and custodial fees which are regarded as independent of the investment management process; the reinvestment of all income and trading expenses continue to be included. Monthly composite results are asset-weighted by beginning-of-month asset values of member portfolios which are geometrically linked to arrive at the annual composite return. Net-of-fee performance is calculated on a monthly basis by deducting a model management fee equal to 1/12 of the highest annual management fee listed in the standard fee schedule for accounts shown below. The standard fee schedule for accounts managed with this product is 0.75% on the first \$25 million, 0.65% on the next \$25 million, 0.5% on the next \$100 million, and 0.4% thereafter. The standard management fee schedule and total expense ratio for the Acadian Global Equity Fund, which is included in the composite, are 0.75% on all assets and 0.97%, respectively. Management fees may vary according to the range of services provided, investment performance, and the amount of assets under management. Constituent portfolios are included from the first full month after inception to the present or the last full month prior to cessation of the client relationship with the firm. For example, an account that opened January 15, 2019 will be included beginning February 1, 2019. An account that terminated February 12, 2019 will be included through January 31, 2019. Policies for valuing investments, calculating performance, and preparing GIPS reports are available upon request.

**Dispersion and Standard Deviation:** Acadian's broad definitions are mainly the product of a highly customized process that may result in modest differences with regards to portfolio characteristics among constituents. All accounts managed with directly comparable investment objectives are included, though it's possible for members to utilize slightly different benchmarks in optimization and reporting. Although at times dispersion among constituents may be high, the long-term forecast for each portfolio is consistent with the overall composite. The 'Dispersion' statistic presented above uses gross of fee returns and is an annual, asset-weighted standard deviation calculation performed only on those portfolios who have been members for the entire calendar year. These figures are not applicable if there is only one portfolio in the composite for the full year. Thirty-six months are required to calculate the 'Three Year ex-Post Standard Deviation' statistic. These figures are not applicable if thirty-six months of composite returns are not available.

**Composite Description:** This composite invests in global equities with a dedicated allocation to emerging markets. Complete lists of the firm's composite descriptions, limited distribution pooled fund descriptions, and broad distribution funds are available upon request.

**Benchmark Description:** The benchmark for the composite is MSCI All-Country World (net of dividend withholding taxes). The MSCI ACWI (All Country World Index) Index is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed and emerging markets.

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<sup>1</sup>Ashland Partners verified Acadian's GIPS Compliance claim through March 31, 2017. ACA Compliance Group acquired Ashland's GIPS Verification unit and provided subsequent verifications.

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GLOBAL AFFILIATES

Boston London Singapore Sydney

ACADIAN-ASSET.COM



# Public Employees' Retirement System of Mississippi

*Global Value Equity*

April 23, 2024

**LSV Asset Management**

155 N. Wacker Drive, Suite 4600

Chicago, IL 60606

P: (312) 460-2443 | W: [lsvasset.com](http://lsvasset.com)

**Scott S. Kemper**

Partner & Director, Client Portfolio Services

P: (312) 327-4334

**Jason Karceski, Ph.D.**

Partner, Portfolio Manager & Research

P: (312) 460-2332

*LSV*  
*Asset Management*

# Organization

# Organizational Update

## LSV's Key Organizational Strengths

- Academic foundation
- 29+ years of research
- Successfully applied model for over 29 years
- Value equity focus- our sole business
- Consistency of people, philosophy & portfolio
- Employee ownership

## All Strategies Built From Same Model

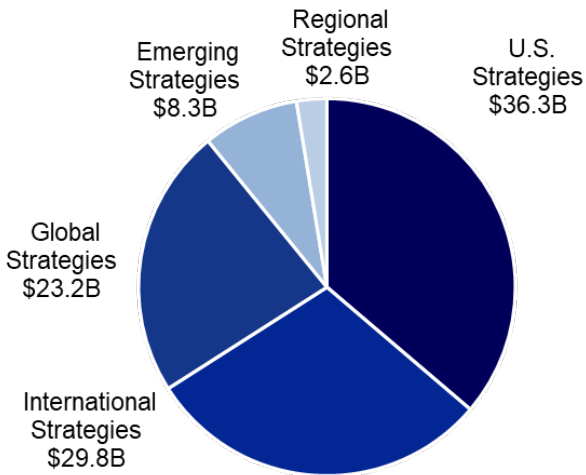
- \$100.2 billion in firmwide assets under management
- Limited capacity offerings

United States		International (Non-U.S.)		Global	
Large Cap Value	\$23.6 B	Developed Markets Large Cap Value	\$10.4 B	Developed Markets Global Value	\$8.9 B
Mid Cap Value	\$1.8 B	All-Country Large Cap Value	\$13.3 B	All-Country Global Value	\$9.9 B
Small/ Mid Cap Value	\$3.0 B	Developed Markets Small Cap Value	\$4.0 B	Global Small Cap Value	\$1.2 B
Small Cap Value	\$3.5 B	Emerging Markets Value	\$7.1 B	Managed Volatility	\$2.0 B
Micro Cap Value	\$0.2 B	Emerging Markets Small Cap Value	\$1.0 B	Concentrated Value	\$0.7 B
Enhanced Index	\$0.2 B	Regional Strategies - Large & Small Cap - Europe, Asia, Canada, Japan, Australia	\$2.6 B		
Managed Volatility	\$1.7 B	Managed Volatility	\$0.3 B		
		Concentrated Value	\$1.6 B		

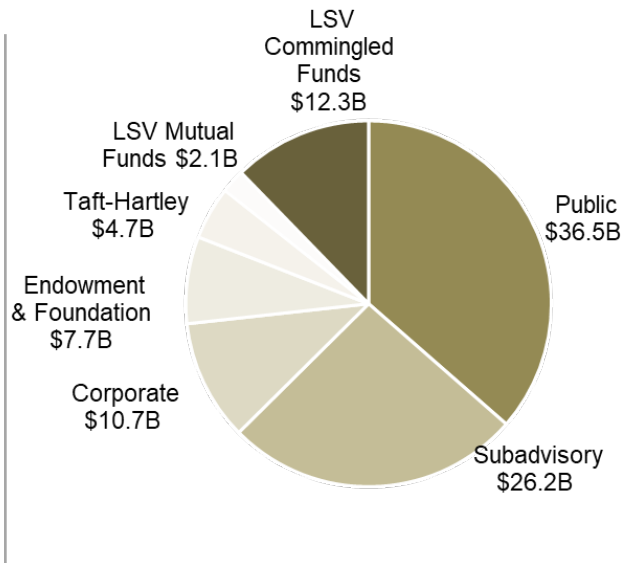
## Diversified Asset and Client Base

185+ Clients with Track Records of 10 Years or Longer. 100+ Clients with Multiple Mandates

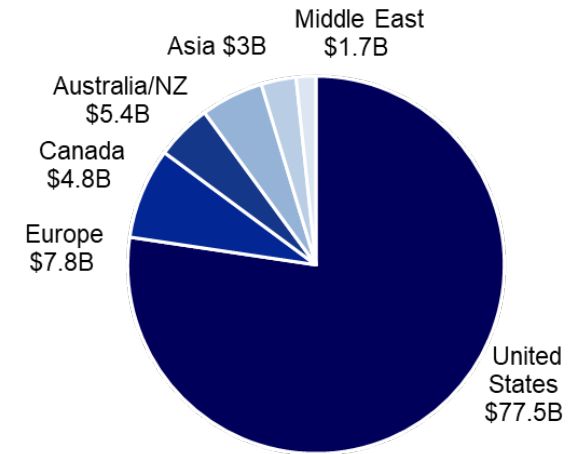
**Total Assets – \$100.2 B**



**Total Clients – 320+**



**Global Investor Base**



### Value Equity

*Investment Specialists*

As of 3/31/24.

It is not known whether such clients approve of the services provided by LSV Asset Management or the advisory services provided.

# Organizational Structure

**Josef Lakonishok, Ph.D.**

Partner, CEO, CIO  
Portfolio Manager (29)

## Portfolio Services & Business Development

**James Owens**

Partner  
Portfolio Services (23)

**Keith Bruch, CFA**

Partner  
Portfolio Services (20)

**Scott Kemper**

Partner  
Portfolio Services (17)

**Michael Wagner**

Partner  
Portfolio Services, Taft-Hartley (11)

**Josh Dupont**

Partner  
New Business/Portfolio Services (7)

**Jim Cavanaugh**

Director  
Portfolio Services (1)

**David Beata**

Partner  
Portfolio Services (19)

**Paul Robertson**

Director  
Portfolio Services, Canada (5)

## Research, Portfolio Construction

**Menno Vermeulen, CFA**

Partner  
Systems Dev. & Port Manager (28)

**Bala Ragothaman, CFA**

Partner  
Head of Quant. Development  
Chief Technology Officer (17)

**Titus Liu**

Partner  
Systems Development (12)

**Suvrat Chakradeo, CFA**

Systems Development (4)

**Philip Owrutsky, Ph.D., CFA**

Senior Quantitative Analyst (1)

**Puneet Mansharamani, CFA**

Partner  
Portfolio Manager (23)

**Guy Lakonishok, CFA**

Partner  
Portfolio Manager & Research (14)

**Greg Sleight**

Partner  
Portfolio Manager & Research (17)

**Gal Skarishevsky**

Partner  
Sr. Quant. Analyst & Research (7)

**Paul Wells**

Quantitative Analyst (2)

**Jason Karceski, Ph.D.**

Partner  
Portfolio Manager & Research (14)

**Ron Graziano, CPA**

Director of Accounting Research (1)

## Academic Advisors

**Harrison Hong, Ph.D.**

Columbia University (5)

**Dan Givoly, Ph.D.**

Penn State University (18)

**Ravi Jagannathan, Ph.D.**

Northwestern University (1)

**Bhaskaran Swaminathan, Ph.D. (18)**

## Trading

**Dan Newman**

Partner  
Trading (24)

**Eric Miller**

Partner  
Trading (25)

**Claude O'Malley**

Partner  
Trading (18)

**Brian Sanderson**

Partner  
Trading (11)

**Brian Weber**

Partner  
Trading (12)

**Erika Edmonson**

Associate  
Trading (6)

## Operations

**Kevin Phelan, CFA**

Partner  
Chief Operating Officer (19)

**Rajeev Uppalapati, CFA**

Partner (13)

**Sara Paeth**

Associate (8)

**Fuhaad Apatira**

Associate (1)

## Portfolio Accounting

**Monika Miniati**

Partner  
Portfolio Accounting (26)

**Gloria Balta**

Associate (19)

**Lisa Lewis**

Associate (16)

## Compliance & Legal

**Josh O'Donnell**

Partner  
Chief Legal, Compliance  
& Risk Officer (10)

**Leslie Kondziela**

Partner  
Compliance Officer (19)

**John Dunbar**

Associate (7)

**Jessica Roberts**

Associate (7)

**Danny Flaherty**

Associate (3)

## Client Service & Marketing Support

**Marisa Rosenblatt, CIPM**

Partner (19)

**Jessica Merz**

Associate (14)

**Erin Varner**

Associate (7)

**Brett Goldacker**

Director (7)

## Value Equity

*Investment Specialists*

Note: Number indicates years at LSV.

## Research and Investment Team

	Years Experience / LSV	Role & Responsibilities	Education
<b>Josef Lakonishok</b>	46/29	CEO, CIO, Founding Partner Portfolio Management	Ph.D. Cornell University, Finance MS Cornell University, Statistics MBA/BA Tel-Aviv University, Economics & Statistics
<b>Puneet Mansharamani, CFA</b>	25/23	Partner Portfolio Management	MS Case Western University, Engineering BS Delhi University, Engineering
<b>Guy Lakonishok, CFA</b>	23/14	Partner Portfolio Management	MBA University of Chicago, Analytical Finance & Accounting BS Washington University, Electrical Engineering
<b>Greg Sleight</b>	17/17	Partner Portfolio Management	MBA University of Chicago, Econometrics, Econ. & Analytic Finance BS University of Illinois, Material Science & Engineering
<b>Gal Skarishevsky</b>	13/7	Partner Senior Quantitative Analyst	MBA University of Chicago, Finance & Accounting BS Ben-Gurion University, Computer Science
<b>Paul Wells</b>	8/2	Quantitative Analyst	MBA Northwestern University, Finance BS University of California Berkeley, Economics
<b>Jason Karceski</b>	30/14	Partner Portfolio Management & Research	Ph.D. University of Illinois, Finance MBA University of North Florida BS California Institute of Technology, Electrical Engineering
<b>Ron Graziano, CPA</b>	27/1	Director of Accounting Research	MBA DePaul University, Finance BS Loyola University Chicago, Accounting
<b>Menno Vermeulen, CFA</b>	32/28	Partner Portfolio Management & Systems Development	MS Erasmus University-Rotterdam, Econometrics
<b>Bala Ragothaman, CFA</b>	26/17	Partner Systems Development Chief Technology Officer	MBA University of Chicago MS University of Iowa, Computer Science & Networks BS PSG College, Bharathiar University, Computer Engineering
<b>Titus Liu</b>	22/12	Partner Systems Development	MS University of Chicago, Finance, Econometrics & Accounting BS University of Illinois, Electrical Engineering
<b>Suvrat Chakradeo, CFA</b>	15/4	Systems Development	MBA University of Chicago, Finance, Econometrics & Statistics MS Carnegie Mellon University, Information Security & Management BE Government College of Engineering Pune, Computer Engineering
<b>Philip Owrutsky, CFA</b>	12/1	Senior Quantitative Analyst	Ph.D. Harvard University, Applied Mathematics MS Georgia Tech, Computer Science BS Cornell University, Engineering Physics



## Client Portfolio Services Team

	Years Experience / LSV	Role & Responsibilities	Education
<b>James Owens</b>	34/23	Partner Portfolio Services	BA Iowa State University, Finance
<b>Keith Bruch, CFA</b>	35/20	Partner Portfolio Services	MBA University of Chicago, Finance BA Northwestern University, Economics
<b>Scott Kemper</b>	27/17	Partner Portfolio Services	MBA University of Chicago BA DePauw University
<b>Michael Wagner</b>	36/11	Partner Client Portfolio Services, Taft-Hartley	MBA Loyola University, Finance BS Elmhurst College, Marketing
<b>Josh Dupont</b>	13/7	Partner Business Development & Portfolio Services	MBA University of Chicago, Finance, Economics BA Northwestern University, Economics
<b>Jim Cavanaugh</b>	23/1	Director Portfolio Services	BS Georgetown University, Marketing
<b>Paul Robertson</b>	33/5	Director Client Portfolio Services, Canada	BA University of Hull, United Kingdom, Economics/ Geography
<b>Kevin Phelan, CFA</b>	22/19	Partner Chief Operating Officer	BA University of Chicago, Economics
<b>Josh O'Donnell</b>	19/10	Partner Chief Compliance Officer Chief Legal Officer Chief Risk Officer	JD Vanderbilt University Law School BA Wake Forest University, Politics

# Representative Client List

## 20+ Years

Bank of America  
 BASF  
 Bridger Coal Company - Reclamation Trust  
 Cement Masons Local 502 Pension Fund  
 City of Gainesville Police Officers' & Firefighters' Ret. Plan  
 City of Kansas City Employee's Retirement System  
 Deere & Company  
 Empower Investments  
 FM Global  
 Formanek Investment Trust  
 General Laborers' Local 66 Pension Fund  
 Hoogovens Pensioenfond  
 Howard County (MD) Master Trust  
 I.A.T.S.E. National Pension Fund  
 I.B.E.W. Local 98 Pension Plan  
 I.U.O.E. Local 478 Pension Fund  
 I.U.O.E. Local 825  
 Illinois State Board of Investment  
 Laundry & Dry Cleaning Workers Pension Fund, UNITE  
 Louisiana State Employees' Retirement System  
 McConnell Foundation  
 Methodist Le Bonheur Healthcare  
 Municipal Police Employees' Ret. System of Louisiana  
 New Jersey Health Foundation  
 Olin Corporation  
 PacifiCorp/I.B.E.W. Local 57 Retirement Trust Fund  
 Parkland Management Company  
 Parochial Employees' Retirement System of Louisiana  
 Plumbers & Pipefitters National Pension Fund  
 Roy J. Carver Charitable Trust  
 RTD (Denver) Salaried Employees' Pension Trust  
 SEI Investments  
 Sheet Metal Workers Local 73  
 Shell Pensioenfond  
 Stellantis  
 Teachers' Retirement System of Louisiana  
 U.F.C.W. International Union-Industry Pension Fund  
 Anonymous Clients - 10

## Summary

As of 3/31/24:  
**Approximately \$100.2 Billion**  
**In Assets Under Management**

**320+ Total Clients**

**185+ Clients**  
**with Track Records of**  
**10 Years or Longer**

**100+ Clients with Multiple Mandates**

## 15-20 Years (Cont.)

Desjardins Global Asset Management  
 Detroit Free Press Inc. Newspaper Guild  
 District of Columbia Retirement Board  
 Duke Energy  
 Firefighters' Retirement System of Louisiana  
 Funds SA  
 G.C.I.U. Local 119B Pension & Welfare Funds  
 Harbor Capital Advisors, Inc.  
 Hess Corporation  
 I.B.E.W. Local 25 Pension Fund  
 I.U.O.E. Local 302 & 612  
 Illinois Municipal Retirement Fund  
 Iron Workers Local Union 16  
 Irving S. Gilmore Foundation  
 Jacksonville Plumbers & Pipefitters Pension Fund  
 Jewish Healthcare Foundation  
 Kansas City Police Employees' Retirement System  
 Laborers' Pension Fund - Chicago  
 Laborers' National Pension Fund  
 Lattner Family Foundation  
 McGill University  
 Midwest Pension Plan  
 Minnesota State Board of Investment  
 Municipal Employees' Annuity & Benefit Fund of Chicago  
 National Asbestos Workers Pension Fund  
 National Roofing Industry Pension Fund  
 New England Healthcare Workers  
 New Jersey Transit Corporation  
 New York City District Council of Carpenters  
 Nexcom  
 Norwalk City Employees' Pension Fund  
 Ohio Public Employees Retirement System  
 Ohio School Employees' Retirement System  
 Operating Engineers Local 428  
 Paper Products Local 27 Pension & Welfare Funds  
 Pavers & Roadbuilders Pension Trust  
 Prudential Investments

## 15-20 Years

1199 National Benefit & Pension Fund  
 Active Super  
 Alberta Investment Management Corporation  
 Alma College Endowment  
 ANZ Global Wealth  
 AustralianSuper  
 Bayerische Versorgungskammer (BVK)  
 Bricklayers & Allied Craftworkers Local 5  
 Bristol County Retirement System  
 Carpenters Pension Fund of Illinois  
 Carpenters Pension Trust of St. Louis  
 Chicago Area I.B.O.T. Local 703  
 Chicago Firemen's Annuity & Benefit Fund  
 City of St. Louis Employees Retirement System  
 Cleveland Bakers & Teamsters  
 College of the Ozarks  
 Covenant Health  
 Daimler NA

# Representative Client List

## 15-20 Years (Cont.)

Retail, Wholesale & Dept. Store Union  
Richmond Retirement System  
S.E.I.U. Local 25  
Sacramento County Employees' Retirement System  
Saint Louis University  
Salvation Army Central Territory  
Southern Alaska Carpenters Retirement Fund  
Stanislaus County Employees' Retirement Association  
Teachers' Retirement System of Illinois  
Teamsters Joint Council No. 83 of Virginia  
Texas Presbyterian Foundation  
The Seeing Eye, Inc.  
Twin Disc, Inc.  
U.F.C.W. Local 1546 Pension Fund  
U.F.C.W. Midwest Pension Fund  
Virginia Retirement System  
Wells Fargo  
West Virginia Investment Management Board  
Anonymous Clients - 31

## 10-15 Years

Archdiocese of Cincinnati  
Asbestos Workers Philadelphia Pension & Welfare Fund  
Chicago Transit Authority  
Delphi  
Denver Employees Retirement Plan  
I.B.E.W. Local 103 Pension Fund  
Mercy Investment Services Inc.

## 10-15 Years (Cont.)

Methodist Hospital System  
Mine Super  
Misericordia Home  
New York State Teachers' Retirement System  
PORTICO  
Salvation Army Eastern Territory  
Anonymous Clients - 13

## 5-10 Years

Alaska Permanent Fund  
Arkansas Public Employees Retirement System  
Boilermakers-Blacksmith National Pension Fund  
Bridge Builder Mutual Funds  
City of Newport News  
Diocese of Brooklyn  
Dogwood Health Trust  
Dominican Sisters of Springfield Illinois  
E-I Financial Corporation  
Emerson Electric  
Entergy  
Immanuel  
Kentucky Public Pensions Authority  
Legacy Health  
LIUNA Pension Plans  
Louisiana School Employees' Retirement System  
Mercer  
National Elevator Industry Plan  
New Mexico State Investment Council  
Nova Scotia Health Employees' Pension Plan  
Parkland Health & Hospital System

## 5-10 Years (Cont.)

PGA Tour Inc.  
Plumbers & Pipefitters Local Union 25  
The General Retirement System for Employees of Jefferson County  
The Sisters of the Holy Family of Nazareth  
University of Alberta  
Voya Investments  
Anonymous Clients -40

## 0-5 Years

Connecticut Laborers' Pension Fund  
Crown Cork & Seal Co. Inc. Master Trust  
FirstEnergy Corp.  
Franciscan Sisters of Little Falls, Minnesota  
I.B. of T. Union Local No. 710 Pension Fund  
IUPAT Industry Pension Plan  
Mother Theresa Mission Care and Trust  
New York State Common Retirement Fund  
**Public Employees' Retirement System of Mississippi**  
State of Michigan Retirement System  
University of Idaho Foundation  
Velliv  
Anonymous Clients - 64

*LSV*  
*Asset Management*

## Portfolio/Market Review

## Relationship Summary

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### Public Employees' Retirement System of Mississippi

Investment Strategy:	Global Value Equity		<u>Portfolio Growth</u>
Inception Date:	August 22, 2022	<b>Beginning Value - 8/22/22:</b>	<b>\$ 745,200,000</b>
Initial Funding:	\$745,200,000	Net Contributions/Withdrawals:	\$ 60,000,000
		Net Return on Investment:	\$ 235,916,724
Custodian:	BNY Mellon	<b>Ending Value - 3/31/24:</b>	<b><u>\$ 1,041,116,724</u></b>
Consultant:	Callan		
Benchmark:	MSCI AC World		

#### Objectives/Investment Process:

The objective of our Global Value Equity strategy is to outperform the benchmark by at least 250 basis points (gross of fees) per annum over a full investment cycle. LSV will attempt to meet this performance objective with a tracking error of approximately 5-6% relative to the Index.

The process used to select stocks is a quantitative approach developed by our founding partners through years of academic research on a variety of investment and investor behavior topics. The process ranks a broad universe of stocks on a combination of value and momentum factors and seeks to invest approximately 275 stocks in the most attractive securities possible within our strict risk parameters to control the portfolio's tracking error relative to the benchmark. The resulting portfolio will be broadly diversified across industry groups and fully invested (cash balances are typically less than 1% of the portfolio). Initial positions must be in stocks with a market capitalization greater than \$500 million.

## Portfolio Characteristics – March 31, 2024

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	PERS Portfolio	MSCI ACWI	MSCI ACWI Value
<b>Value Measures</b>			
Price / Earnings (FY1)	<b>10.3x</b>	18.5x	13.9x
Price / Earnings (FY2)	<b>9.5x</b>	16.5x	12.6x
Price / Cash Flow	<b>7.2x</b>	15.2x	10.5x
Price / Book	<b>1.6x</b>	3.1x	2.0x
Dividend Yield	<b>3.1%</b>	1.9%	3.0%
<b>Size Measures</b>			
Weighted Average Market Cap	<b>\$69.2 billion</b>	\$530.2 billion	\$146.1 billion
Weighted Median Market Cap	<b>\$23.9 billion</b>	\$113.6 billion	\$77.4 billion
# of Holdings	<b>270</b>		

# Market Update

Large Cap Developed Global Indices	Periods Ending 3/31/24				
	1Q24	1 Yr	3 Yrs	5 Yrs	10 Yrs
MSCI World	8.9%	25.1%	8.6%	12.1%	9.4%
MSCI World (Local)	10.1%	26.2%	10.0%	12.6%	10.5%
MSCI World Value	7.5%	18.8%	7.6%	8.3%	6.4%
MSCI World Minimum Volatility	5.6%	11.1%	4.9%	6.0%	7.7%
<b>Value vs Growth Spread:</b>	<b>-2.7%</b>	<b>-12.4%</b>	<b>-1.3%</b>	<b>-6.7%</b>	<b>-5.5%</b>

Small Cap Developed Global Indices					
MSCI World Small Cap	4.4%	15.9%	1.3%	7.9%	6.9%
MSCI World Small Cap Value	3.4%	15.9%	3.7%	7.3%	5.9%
<b>Value vs Growth Spread:</b>	<b>-1.9%</b>	<b>0.1%</b>	<b>5.1%</b>	<b>-0.7%</b>	<b>-1.8%</b>

Emerging Markets Indices					
MSCI Emerging Markets	2.4%	8.2%	-5.1%	2.2%	2.9%
MSCI Emerging Markets Value	1.3%	11.4%	-0.9%	2.1%	2.2%
MSCI Emerging Markets (Local)	4.5%	10.6%	-2.4%	4.4%	5.7%
MSCI Emerging Markets Small Cap	1.1%	20.6%	4.2%	8.5%	5.1%
<b>Value vs Growth Spread:</b>	<b>-2.0%</b>	<b>6.2%</b>	<b>7.9%</b>	<b>-0.1%</b>	<b>-1.5%</b>

All-Country Indices					
MSCI AC-World	8.2%	23.2%	7.0%	10.9%	8.7%
MSCI AC-World Value	6.9%	18.0%	6.7%	7.6%	6.0%
MSCI AC-World Minimum Volatility	4.7%	11.1%	4.3%	5.4%	7.2%
<b>Value vs Growth Spread:</b>	<b>-2.7%</b>	<b>-10.2%</b>	<b>-0.1%</b>	<b>-5.9%</b>	<b>-5.0%</b>

Value Equity

Investment Specialists

All returns are in USD; periods longer than one year are annualized.

# Performance

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*Periods Ended March 31, 2024*

*Assets Managed: \$1,041,116,724*

	QTD	One Year	Since Inception*
<b>PERS of Mississippi</b>	<b>8.9%</b>	<b>23.1%</b>	<b>17.7%</b>
MSCI AC World	8.2%	23.2%	14.5%
MSCI AC World Value	6.9%	18.0%	11.5%

## Calendar Year Summary

	2023	2022*
<b>PERS of Mississippi</b>	<b>18.7%</b>	<b>0.6%</b>
MSCI AC World	22.2%	-5.9%
MSCI AC World Value	11.8%	-0.2%

## Value Equity

*Investment Specialists*

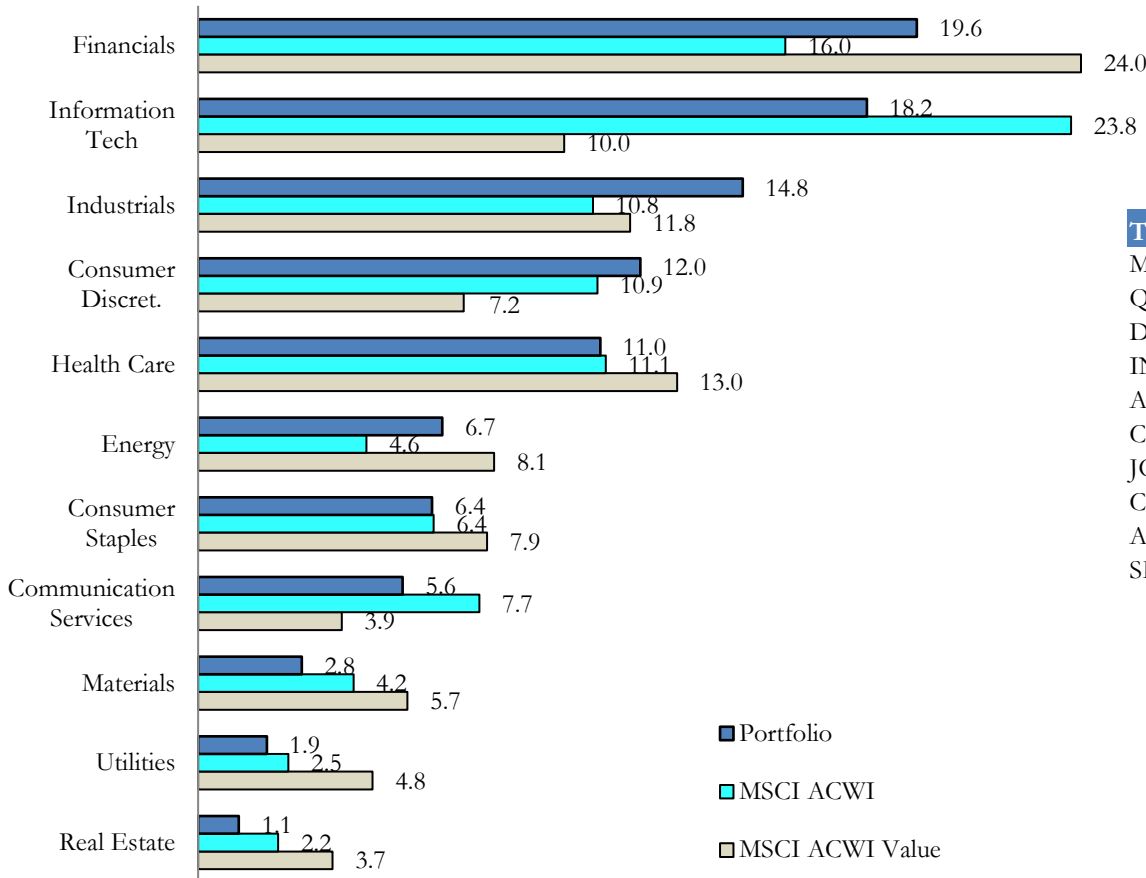
\*Inception date: 8/22/22

Note: All returns are gross of fees and in USD; indices shown net of withholding taxes.

Periods greater than one year are annualized.



# Portfolio Characteristics – March 31, 2024



Top 10 Holdings	% of Portfolio
MERCK & CO INC	1.5%
QUALCOMM INC	1.3%
DELL TECHNOLOGIES INC	1.2%
INTERNATIONAL BUSINESS MACHS CORP	1.0%
AT&T INC	0.9%
COMCAST CORP	0.9%
JOHNSON & JOHNSON	0.9%
CISCO SYSTEMS INC	0.9%
AMERICAN INTERNATIONAL GROUP INC	0.8%
SHELL PLC	0.8%

## Country Exposures – March 31, 2024

Developed Countries	Portfolio	MSCI ACWI	MSCI ACWI Value	Emerging Countries	Portfolio	MSCI ACWI	MSCI ACWI Value
Australia	0.55%	1.70%	1.64%	Brazil	0.57%	0.51%	0.51%
Austria	0.99%	0.04%	0.07%	Chile	0.18%	0.05%	0.05%
Belgium	0.35%	0.22%	0.16%	China	3.23%	2.53%	2.50%
Canada	1.76%	2.76%	2.79%	Colombia	0.00%	0.01%	0.01%
Denmark	0.41%	0.85%	0.15%	Czech Republic	0.00%	0.01%	0.01%
Finland	0.60%	0.23%	0.40%	Egypt	0.00%	0.01%	0.01%
France	2.77%	2.84%	2.47%	Greece	0.00%	0.05%	0.06%
Germany	2.85%	2.04%	2.34%	Hungary	0.00%	0.02%	0.03%
Hong Kong	0.47%	0.42%	0.46%	India	1.49%	1.79%	1.89%
Ireland	0.26%	0.08%	0.07%	Indonesia	0.00%	0.18%	0.18%
Israel	0.55%	0.17%	0.17%	Korea (South)	1.39%	1.28%	1.31%
Italy	1.71%	0.65%	0.97%	Kuwait	0.00%	0.08%	0.09%
Japan	4.61%	5.44%	5.50%	Malaysia	0.17%	0.14%	0.14%
Netherlands	0.80%	1.19%	0.66%	Mexico	0.00%	0.27%	0.28%
New Zealand	0.00%	0.04%	0.04%	Peru	0.00%	0.03%	0.03%
Norway	0.15%	0.14%	0.25%	Philippines	0.00%	0.06%	0.06%
Portugal	0.00%	0.04%	0.05%	Poland	0.00%	0.10%	0.10%
Singapore	0.43%	0.31%	0.32%	Qatar	0.00%	0.08%	0.09%
Spain	1.76%	0.62%	0.93%	Saudi Arabia	0.00%	0.42%	0.41%
Sweden	1.44%	0.72%	0.55%	South Africa	0.33%	0.28%	0.27%
Switzerland	1.80%	2.19%	1.95%	Taiwan	2.77%	1.75%	1.48%
UK	3.50%	3.40%	3.80%	Thailand	0.41%	0.15%	0.16%
USA	61.50%	63.90%	64.39%	Turkey	0.20%	0.07%	0.07%
<b>Total</b>	<b>89%</b>	<b>90%</b>	<b>90%</b>	UAE	0.00%	0.12%	0.13%
				<b>Total</b>	<b>11%</b>	<b>10%</b>	<b>10%</b>

# Portfolio Holdings by Country – March 31, 2024

COUNTRY	% PORT
<b>AUSTRALIA</b>	<b>0.5%</b>
Rio Tinto Ltd	0.3%
Qantas Airways Ltd	0.2%
<b>AUSTRIA</b>	<b>1.0%</b>
Erste Group Bank Ag	0.4%
Omv Ag	0.3%
Bawag Group Ag	0.3%
<b>BELGIUM</b>	<b>0.3%</b>
Syensqo Sa	0.3%
Solvay Sa	0.1%
<b>BRAZIL</b>	<b>0.6%</b>
Banco Do Brasil Sa	0.3%
Jbs S/A	0.2%
<b>CANADA</b>	<b>1.7%</b>
Suncor Energy Inc	0.4%
Bank Of Montreal	0.3%
Celestica Inc	0.3%
Canadian Tire Corp Ltd	0.2%
B2Gold Corp	0.2%
Empire Co Ltd	0.2%
<b>CHILE</b>	<b>0.2%</b>
Cencosud Sa	0.2%
<b>CHINA</b>	<b>3.2%</b>
Petrochina Co Ltd	0.6%
Alibaba Group Holding Ltd	0.5%
Lenovo Group Ltd	0.4%
Bank Of China Ltd	0.4%
Sinopharm Group Co Ltd	0.3%
China Coal Energy Co Ltd	0.3%
Postal Savings Bank Of China Co Ltd	0.2%
3Sbio Inc	0.2%
Ssy Group Ltd	0.2%
<b>DENMARK</b>	<b>0.4%</b>
D/S Norden A/S	0.2%
Pandora A/S	0.2%
<b>FINLAND</b>	<b>0.6%</b>
Nokia Oyj	0.3%
Valmet Oyj	0.2%
Metsa Board Oyj	0.1%

COUNTRY	% PORT
<b>FRANCE</b>	<b>2.7%</b>
Totalenergies Se	0.5%
Orange Sa	0.4%
Bnp Paribas Sa	0.4%
Sanofi Sa	0.4%
Rexel Sa	0.4%
Carrefour Sa	0.3%
Capgemini Se	0.2%
Klepierre Sa	0.1%
<b>GERMANY</b>	<b>2.8%</b>
Daimler Truck Holding Ag	0.6%
Bayerische Motoren Werke Ag	0.5%
Mercedes-Benz Group Ag	0.5%
Deutsche Post Ag	0.4%
Muenchener Rueckversicherungs-Gesellschaft Ag In Muenchen	0.4%
Infineon Technologies Ag	0.3%
United Internet Ag	0.2%
<b>HONG KONG</b>	<b>0.5%</b>
Wh Group Ltd	0.3%
Ck Hutchison Holdings Ltd	0.2%
<b>INDIA</b>	<b>1.4%</b>
Coal India Ltd	0.4%
Gail India Ltd	0.4%
Petronet Lng Ltd	0.2%
Redington Ltd	0.2%
Firstsource Solutions Ltd	0.2%
<b>IRELAND</b>	<b>0.3%</b>
Smurfit Kappa Group Plc	0.3%
<b>ISRAEL</b>	<b>0.5%</b>
Check Point Software Technologies Ltd	0.4%
Harel Insurance Investments & Financial Services Ltd	0.1%
<b>ITALY</b>	<b>1.7%</b>
Leonardo Spa	0.6%
Unicredit Spa	0.4%
Banco Bpm Spa	0.4%
Pirelli & C Spa	0.3%
<b>JAPAN</b>	<b>4.6%</b>
Mitsubishi Ufj Financial Group Inc	0.5%
Mitsui & Co Ltd	0.5%
Honda Motor Co Ltd	0.4%
Marubeni Corp	0.4%
Macnica Holdings Inc	0.3%

COUNTRY	% PORT
<b>JAPAN (continued)</b>	
Itochu Corp	0.3%
Nippon Telegraph & Telephone Corp	0.3%
Nippon Television Holdings Inc	0.3%
Nomura Real Estate Holdings Inc	0.3%
Mitsubishi Gas Chemical Co Inc	0.3%
Agc Inc	0.3%
Isuzu Motors Ltd	0.3%
K'S Holdings Corp	0.2%
Nissui Corp	0.2%
<b>KOREA, REPUBLIC OF</b>	<b>1.4%</b>
Doosan Bobcat Inc	0.4%
Kia Corp	0.3%
Samsung Electronics Co Ltd	0.2%
Kt Corp	0.2%
Hyundai Marine & Fire Insurance Co Ltd	0.2%
Korean Air Lines Co Ltd	0.1%
<b>MALAYSIA</b>	<b>0.2%</b>
Rhb Bank Bhd	0.2%
<b>NETHERLANDS</b>	<b>1.0%</b>
Koninklijke Ahold Delhaize Nv	0.5%
Abn Amro Bank Nv	0.3%
Aegon Ltd	0.2%
<b>NORWAY</b>	<b>0.1%</b>
Orkla Asa	0.1%
<b>SINGAPORE</b>	<b>0.4%</b>
Dbs Group Holdings Ltd	0.3%
Jardine Cycle & Carriage Ltd	0.2%
<b>SOUTH AFRICA</b>	<b>0.3%</b>
Mtn Group Ltd	0.2%
African Rainbow Minerals Ltd	0.1%
<b>SPAIN</b>	<b>1.7%</b>
Banco Bilbao Vizcaya Argentaria Sa	0.6%
Banco Santander Sa	0.5%
Repsol Sa	0.4%
Cia De Distribucion Integral Logista Holdings Sa	0.2%
<b>SWEDEN</b>	<b>1.4%</b>
Swedbank Ab	0.4%
Volvo Ab	0.4%
Securitas Ab	0.4%
Telefonaktiebolaget Lm Ericsson	0.2%

# Portfolio Holdings by Country – March 31, 2024

COUNTRY	% PORT
<b>SWITZERLAND</b>	<b>1.8%</b>
Novartis Ag	0.8%
Ubs Group Ag	0.4%
Julius Baer Group Ltd	0.3%
Swatch Group Ag/The	0.2%
Sandoz Group Ag	0.0%
<b>TAIWAN</b>	<b>2.8%</b>
Mediatek Inc	0.6%
Ase Technology Holding Co Ltd	0.6%
Powertech Technology Inc	0.4%
Hon Hai Precision Industry Co Ltd	0.4%
Zhen Ding Technology Holding Ltd	0.3%
Compeq Manufacturing Co Ltd	0.3%
Micro-Star International Co Ltd	0.2%
<b>THAILAND</b>	<b>0.4%</b>
Krung Thai Bank Pcl	0.3%
Ap Thailand Pcl	0.1%
<b>TURKEY</b>	<b>0.2%</b>
Turkiye Sise Ve Cam Fabrikalari As	0.2%
<b>UNITED KINGDOM</b>	<b>3.5%</b>
Shell Plc	0.8%
Associated British Foods Plc	0.4%
Tesco Plc	0.4%
Gsk Plc	0.3%
Coca-Cola Hbc Ag	0.3%
Natwest Group Plc	0.3%
Imperial Brands Plc	0.3%
Computacenter Plc	0.3%
Kingfisher Plc	0.3%
Airtel Africa Plc	0.1%
<b>UNITED STATES</b>	<b>60.7%</b>
Merck & Co Inc	1.5%
Qualcomm Inc	1.3%
Dell Technologies Inc	1.2%
International Business Machines Corp	1.0%
At&T Inc	0.9%
Comcast Corp	0.9%
Johnson & Johnson	0.9%
Cisco Systems Inc	0.9%
American International Group Inc	0.8%
Vistra Corp	0.8%
Wells Fargo & Co	0.8%
Paccar Inc	0.7%
Exxon Mobil Corp	0.7%
Phillips 66	0.7%
General Motors Co	0.7%
Toll Brothers Inc	0.7%
Builders Firstsource Inc	0.7%
Jabil Inc	0.6%
Hartford Financial Services Group Inc/The	0.6%
Fedex Corp	0.6%
Bank Of New York Mellon Corp/The	0.6%
State Street Corp	0.6%
Textron Inc	0.6%
Hp Inc	0.6%
Meta Platforms Inc	0.6%
Bristol-Myers Squibb Co	0.6%
Williams-Sonoma Inc	0.5%

COUNTRY	% PORT
<b>UNITED STATES (continued)</b>	
Gilead Sciences Inc	0.5%
Oracle Corp	0.5%
Caterpillar Inc	0.5%
Cummins Inc	0.5%
Hewlett Packard Enterprise Co	0.5%
Kroger Co/The	0.5%
Cigna Group/The	0.5%
Ameriprise Financial Inc	0.5%
Everest Group Ltd	0.5%
Pfizer Inc	0.5%
Hca Healthcare Inc	0.5%
Gen Digital Inc	0.5%
Goldman Sachs Group Inc/The	0.5%
Citigroup Inc	0.5%
Cvs Health Corp	0.5%
Tri Pointe Homes Inc	0.5%
Nrg Energy Inc	0.5%
Flex Ltd	0.5%
M&T Bank Corp	0.5%
Aflac Inc	0.5%
Mckesson Corp	0.5%
Applied Materials Inc	0.5%
Capital One Financial Corp	0.4%
Verizon Communications Inc	0.4%
Skyworks Solutions Inc	0.4%
Lockheed Martin Corp	0.4%
Molson Coors Beverage Co	0.4%
Conagra Brands Inc	0.4%
Cognizant Technology Solutions Corp	0.4%
Ryder System Inc	0.4%
Reliance Inc	0.4%
Cirrus Logic Inc	0.4%
Owens Corning	0.4%
Amkor Technology Inc	0.4%
Amdocs Ltd	0.4%
Atkore Inc	0.4%
Agco Corp	0.4%
PulteGroup Inc	0.4%
Exelixis Inc	0.4%
Mgc Investment Corp	0.4%
Metlife Inc	0.4%
Centene Corp	0.4%
Jazz Pharmaceuticals Plc	0.4%
Radian Group Inc	0.4%
Amgen Inc	0.4%
Regions Financial Corp	0.4%
Ingredion Inc	0.4%
Arcbest Corp	0.4%
Oshkosh Corp	0.3%
Victory Capital Holdings Inc	0.3%
Science Applications International Corp	0.3%
Autonation Inc	0.3%
Ss&C Technologies Holdings Inc	0.3%
Bunge Global Sa	0.3%
Cnh Industrial Nv	0.3%
Scorpio Tankers Inc	0.3%
Td Synnex Corp	0.3%
Crocs Inc	0.3%
Berry Global Group Inc	0.3%
Kraft Heinz Co/The	0.3%
Delta Air Lines Inc	0.3%
Unum Group	0.3%

COUNTRY	% PORT
<b>UNITED STATES (continued)</b>	
Altria Group Inc	0.3%
First Horizon Corp	0.3%
Arrow Electronics Inc	0.3%
Truist Financial Corp	0.3%
Viatis Inc	0.3%
Lyondellbasell Industries Nv	0.3%
Intel Corp	0.3%
Carter'S Inc	0.3%
Ebay Inc	0.3%
Archer-Daniels-Midland Co	0.3%
Zions Bancorp Na	0.3%
Brunswick Corp/De	0.3%
Bloomin' Brands Inc	0.3%
Fs Kkr Capital Corp	0.3%
Avnet Inc	0.3%
Harley-Davidson Inc	0.3%
La-Z-Boy Inc	0.3%
United Airlines Holdings Inc	0.3%
Sonic Automotive Inc	0.3%
Hf Sinclair Corp	0.3%
Upbound Group Inc	0.3%
Ford Motor Co	0.3%
Incyte Corp	0.3%
United Therapeutics Corp	0.2%
Comera Inc	0.2%
Shutterstock Inc	0.2%
Alaska Air Group Inc	0.2%
Winnipeg Industries Inc	0.2%
Apple Hospitality Reit Inc	0.2%
California Resources Corp	0.2%
Dropbox Inc	0.2%
Fox Corp	0.2%
Travel + Leisure Co	0.2%
Organon & Co	0.2%
Photronics Inc	0.2%
Western Union Co/The	0.2%
Ofg Bancorp	0.2%
Academy Sports & Outdoors Inc	0.2%
Paypal Holdings Inc	0.2%
Nexstar Media Group Inc	0.2%
Vishay Intertechnology Inc	0.2%
Macy'S Inc	0.2%
Thor Industries Inc	0.2%
Whirlpool Corp	0.2%
Manpowergroup Inc	0.2%
Adeia Inc	0.2%
Jack In The Box Inc	0.2%
Marathon Oil Corp	0.2%
Annaly Capital Management Inc	0.2%
Ugi Corp	0.2%
Chesapeake Energy Corp	0.2%
Borgwarner Inc	0.2%
Epr Properties	0.2%
Capri Holdings Ltd	0.2%
Kohl'S Corp	0.2%
Ironwood Pharmaceuticals Inc	0.2%
Mosaic Co/The	0.2%
Tegna Inc	0.1%
Nextracker Inc	0.1%
Host Hotels & Resorts Inc	0.1%
Phinia Inc	0.0%
<b>CASH</b>	<b>0.9%</b>
<b>TOTAL</b>	<b>100%</b>

*LSV*  
*Asset Management*

Philosophy & Process

## Investment Philosophy

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**LSV believes in the systematic implementation of fundamental investment ideas**

### Deep Value

- We identify cheap companies that are underappreciated by the market
  - A patient approach that focuses on undervalued companies can deliver superior returns
- 

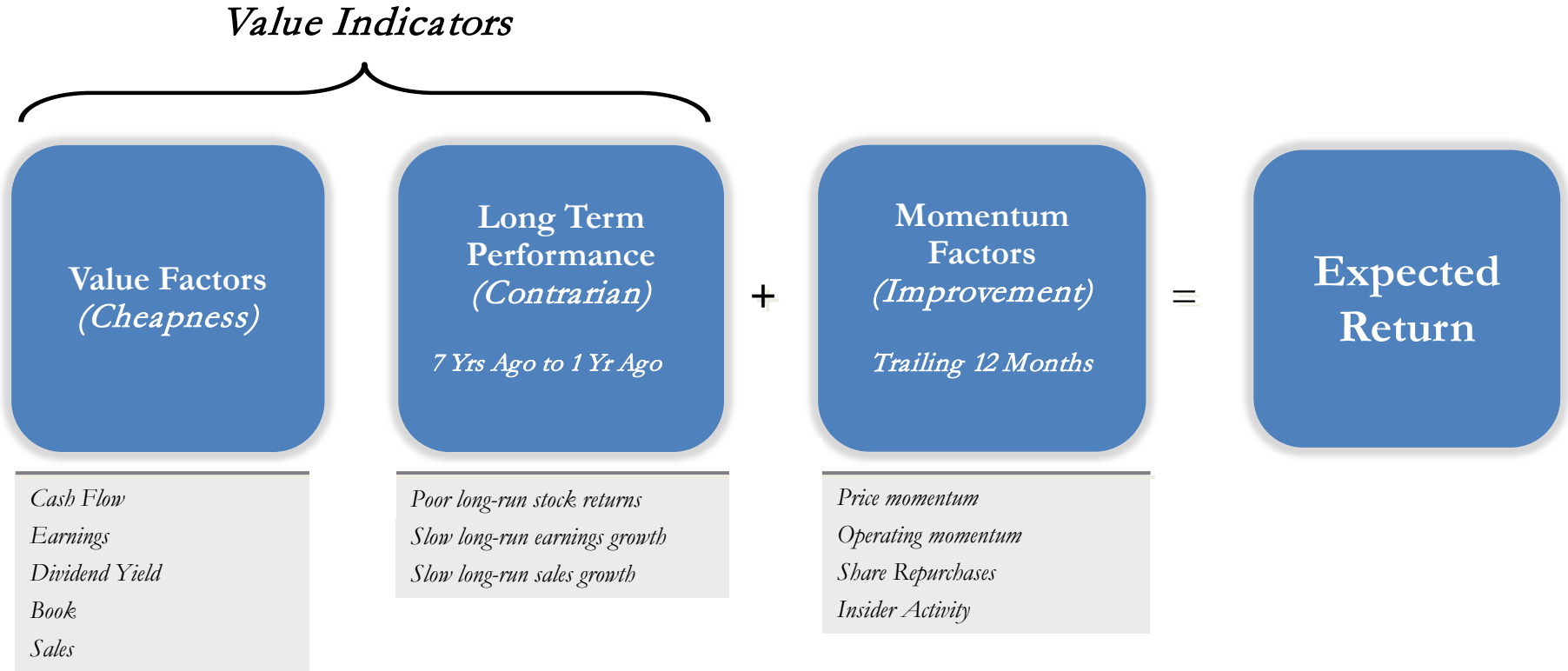
### Quantitative

- LSV's quantitative investment strategy is based on comprehensive empirical research which addresses the complexities of financial statements
  - Our common sense approach avoids the pitfalls of data mining
- 

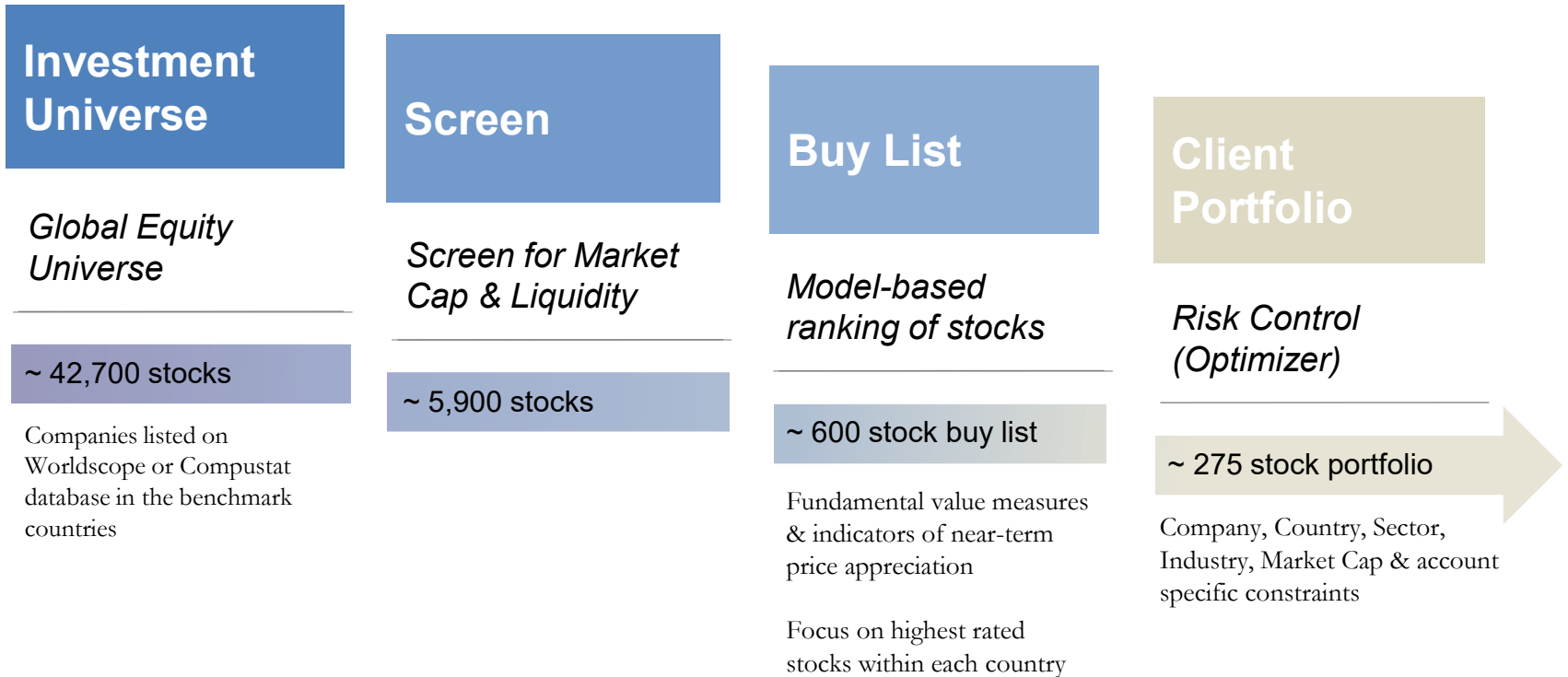
### Risk Control

- We construct well diversified portfolios across sectors, industries, individual names and countries utilizing our proprietary optimization process

## Investment Process – Expected Return Model



# Investment Process





## **Sell Discipline**

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### **A stock is sold when:**

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- Model ranking deteriorates

### **A stock is cut back when:**

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- Portfolio weight becomes excessive

### **Turnover**

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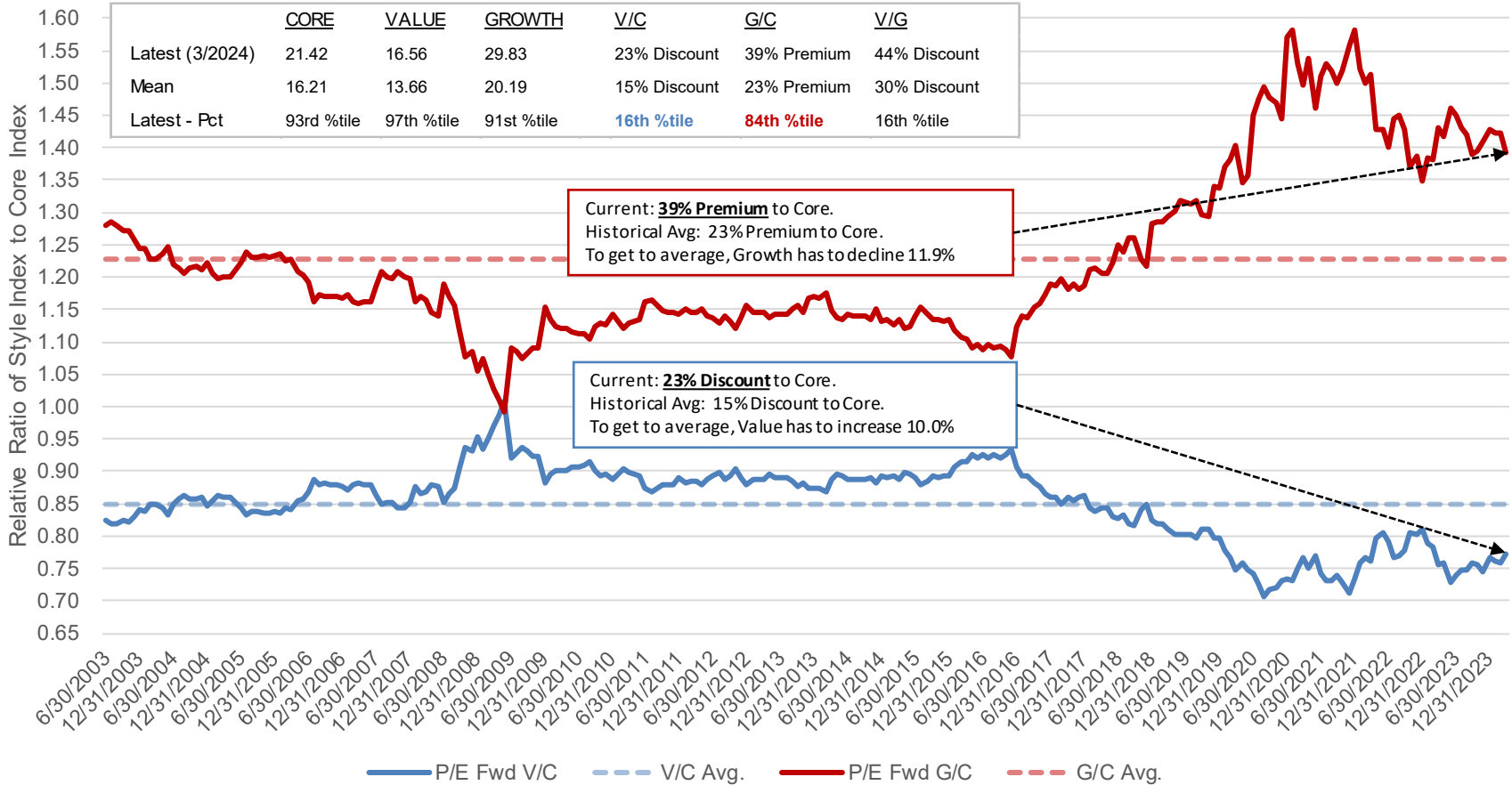
- Approximately 25% per year

*LSV*  
*Asset Management*

Supplemental Slides

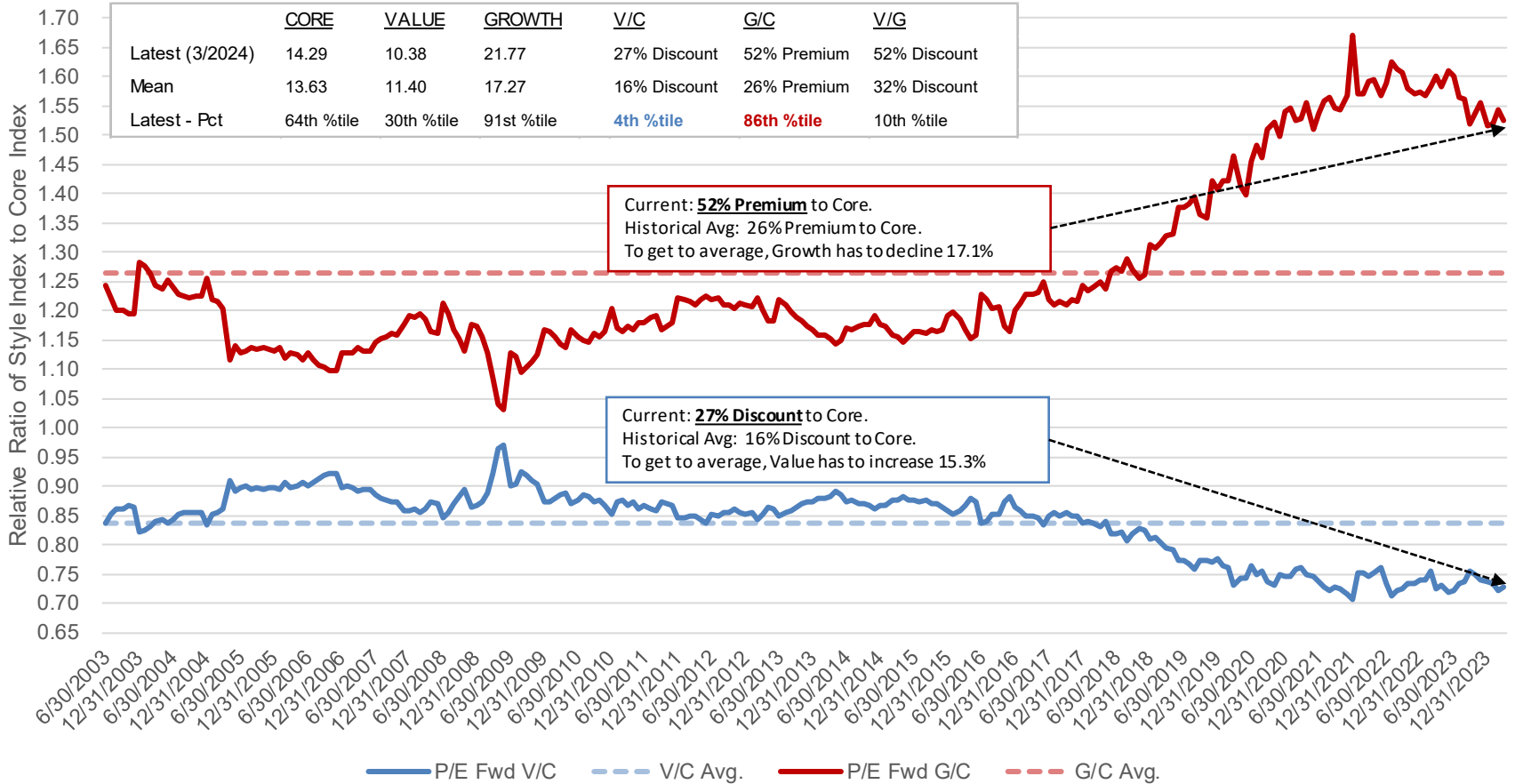
# Relative Valuations of Value vs. Growth at Extreme Levels

Forward PE Ratio for MSCI USA Value and Growth Index Relative to MSCI USA Core (Mar-2024)



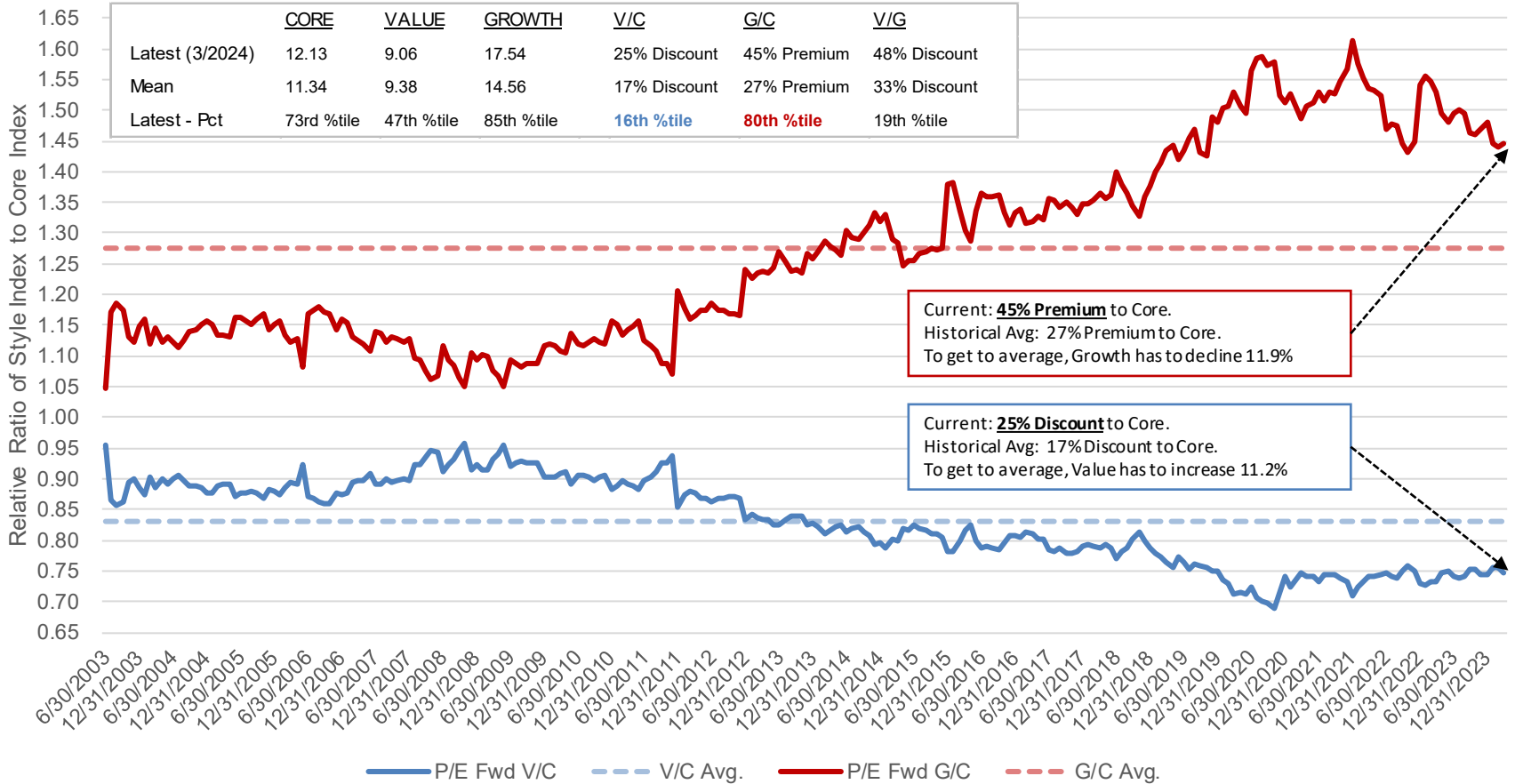
# Relative Valuations of Value vs. Growth at Extreme Levels

**Forward PE Ratio for MSCI EAFE Value and Growth Index Relative to MSCI EAFE Core (Mar-2024)**



# Relative Valuations of Value vs. Growth at Extreme Levels

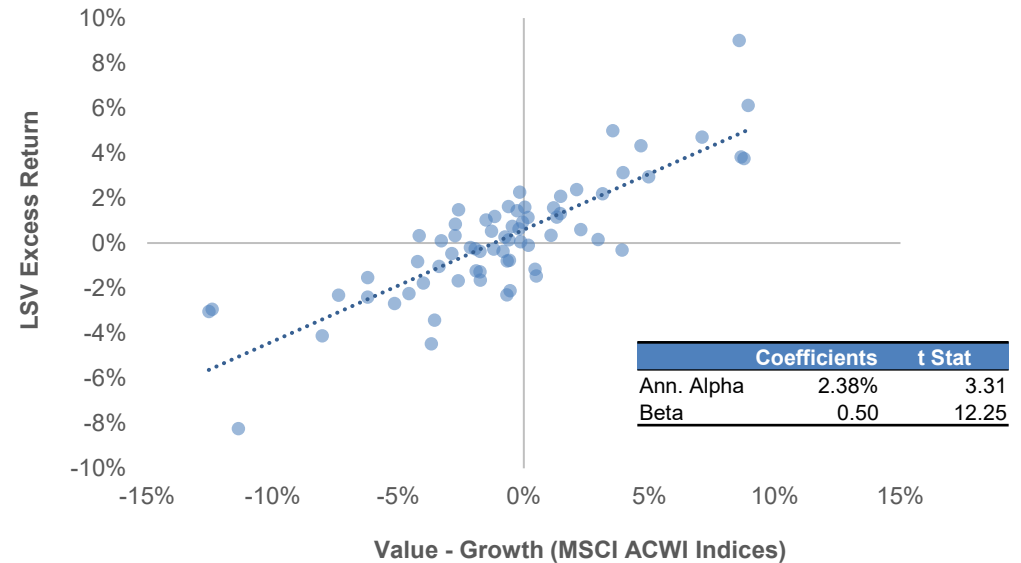
Forward PE Ratio for MSCI Emerging Value and Growth Index Relative to MSCI Emerging Core (Mar-2024)



## Regression Analysis – LSV Global Value (MSCI ACWI)

LSV Global Value (ACWI) Composite (Gross) vs. MSCI ACWI (Quarterly Returns)  
July 2006 – September 2023

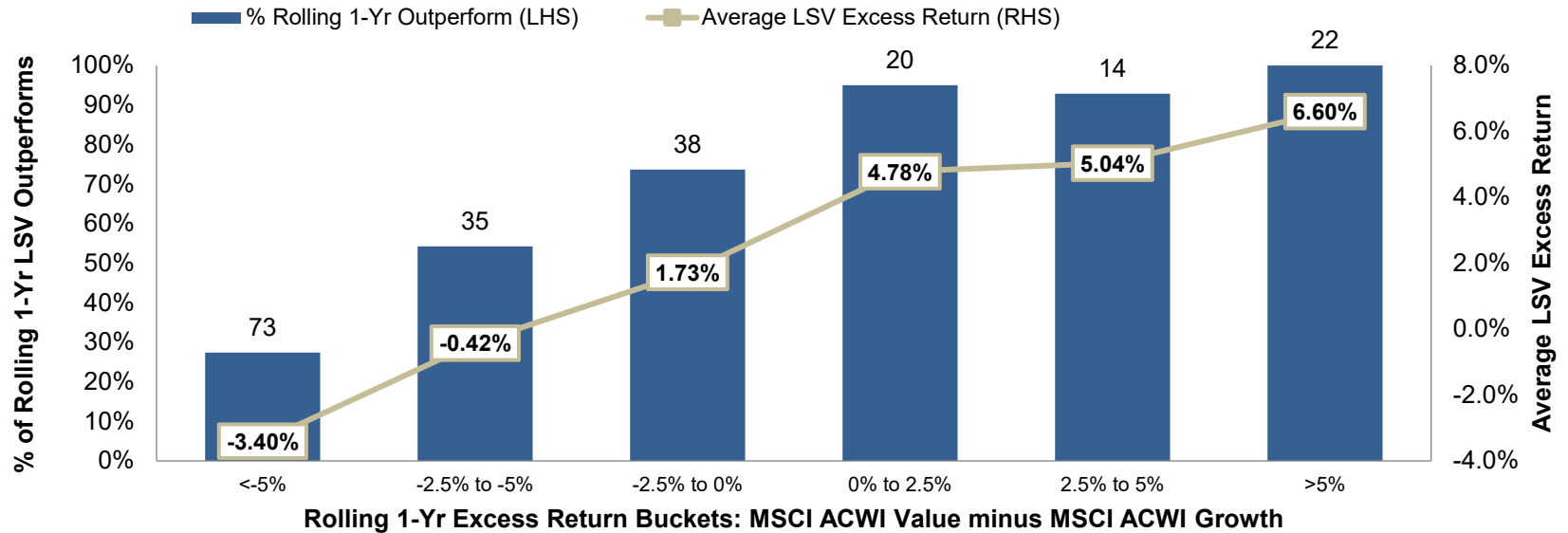
Calendar Year	LSV Excess Return	Value - Growth
2007	-5.5%	-10.0%
2008	1.6%	1.4%
2009	3.4%	-5.8%
2010	1.1%	-4.9%
2011	1.0%	0.0%
2012	2.0%	-1.1%
2013	7.5%	-0.7%
2014	1.7%	-2.6%
2015	-1.6%	-7.8%
2016	5.5%	9.3%
2017	-0.6%	-11.7%
2018	-4.0%	-2.7%
2019	-2.7%	-12.1%
2020	-14.4%	-33.9%
2021	3.3%	2.5%
2022	10.4%	21.1%



- When Value has performed well historically, LSV has outperformed substantially
- LSV does not need value to “work” in order to outperform
- LSV has struggled when Growth outperformance is at extreme levels

## LSV Excess Returns Throughout Time – Global Value (ACWI)

LSV Global Value (ACWI) Composite (Gross) vs. MSCI ACWI in Various Market Environments  
September 2006 – March 2024

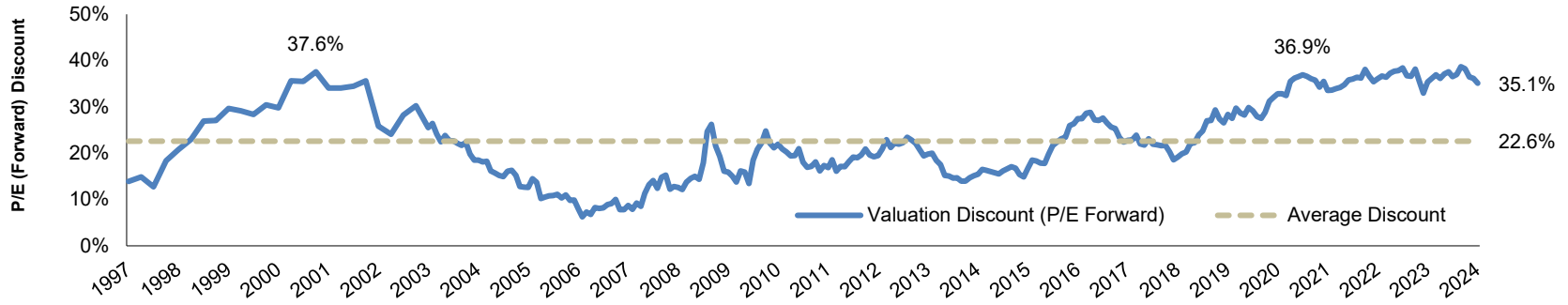


- When Value has performed well historically, LSV has outperformed
- LSV does not need value to “work” in order to outperform
- LSV has struggled when Growth outperformance is at extreme levels

Data as of 03/31/2024. Numbers above columns indicate months in period during which the Value index rolling 1-year excess return over the Growth index fell within the stated bucket. Inception date of the Global Value (ACWI) strategy composite is July 1, 2006. Sources: LSV, MSCI. Returns are gross of fees and in USD; indices shown net of withholding taxes. Past performance is not indicative of future results.

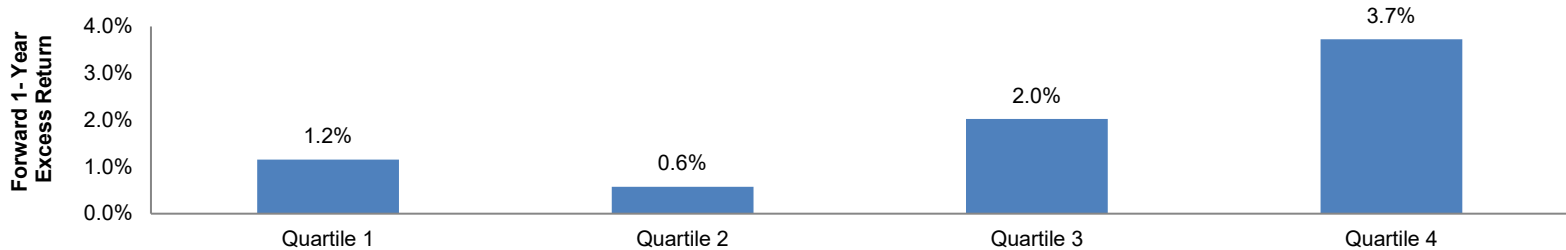
# Portfolio Valuations are Attractive Relative to History

## LSV U.S. Large Cap Value Valuation Spreads Relative to Russell 1000 Value Index



## Historical Relationship between Current Valuation Discount and Forward 1-Year Excess Returns

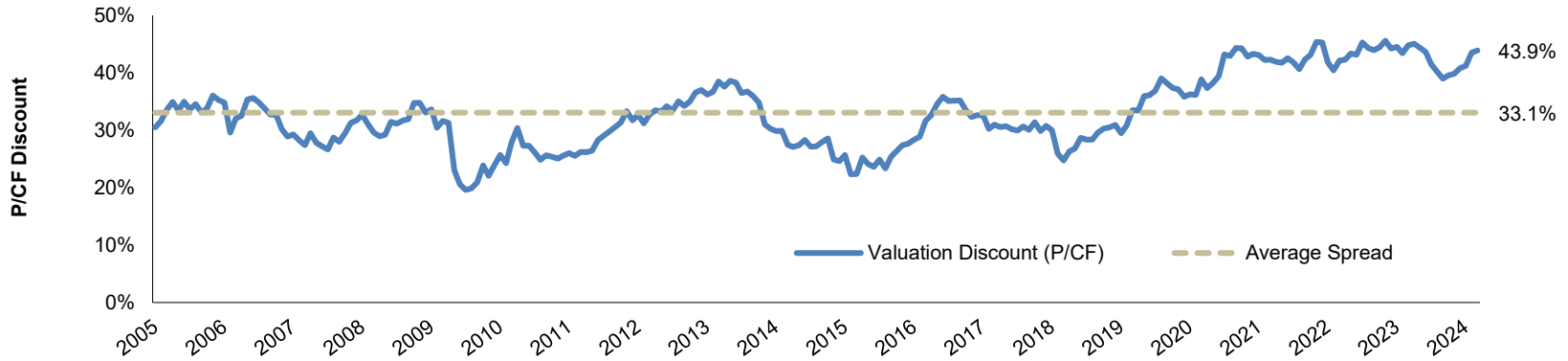
	P/E Discount	Average Forward 1-Year LSV Return	Average Forward 1-Year Benchmark Return	Excess Return	Hit Ratio
Quartile 1	6.2% ---> 16.0%	4.6%	3.5%	1.1%	69%
Quartile 2	16.0% ---> 21.6%	12.2%	11.5%	0.7%	62%
Quartile 3	21.6% ---> 28.6%	15.0%	13.0%	2.0%	62%
Quartile 4	28.6% ---> 38.7%	12.7%	9.1%	3.6%	65%



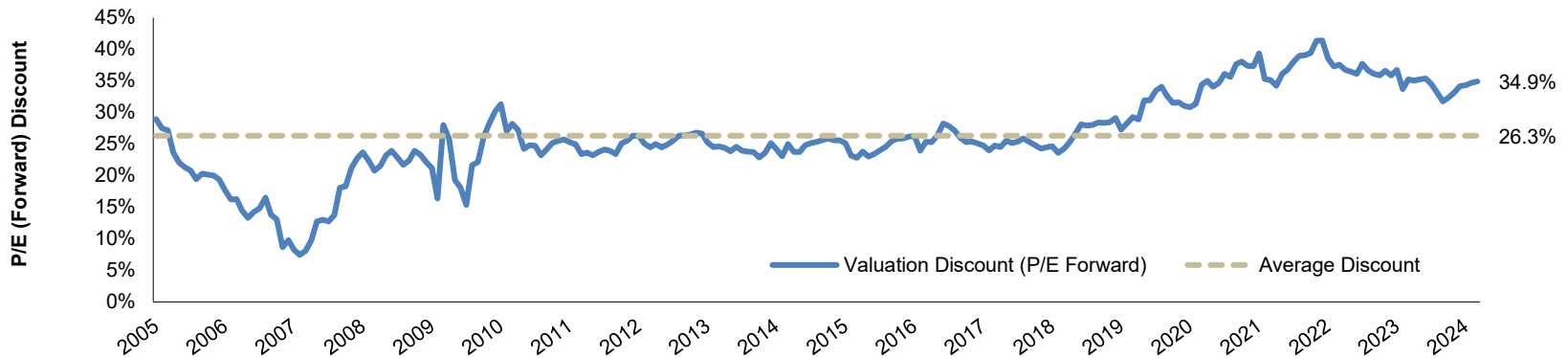


# Portfolio Valuations are Attractive Relative to History

**LSV International Value Price-to-Cash Flow Discount Relative to MSCI EAFE Index**

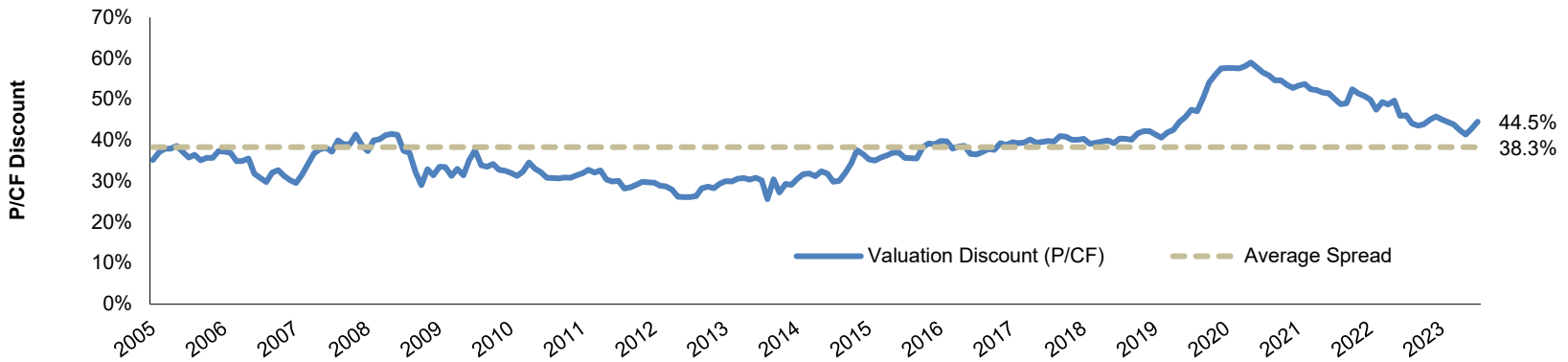


**LSV International Value Price-to-Forward Earnings Discount Relative to MSCI EAFE Index**

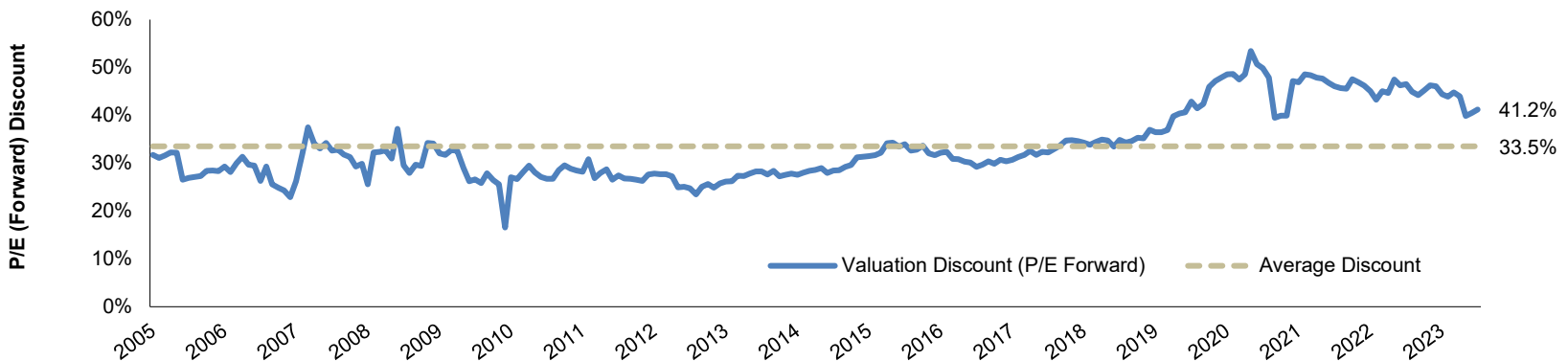


# Portfolio Valuations are Attractive Relative to History

**LSV Emerging Markets Price-to-Cash Flow Discount Relative to MSCI EM Index**



**LSV Emerging Markets Price-to-Forward Earnings Discount Relative to MSCI EM Index**



## Current vs. Historical Valuations by Size and Valuation

**Largest 2,000 U.S. Companies: Top 500, Mid 500, Small 1000 by Market Value**

*30-40-30 Market cap portfolios sorted by Comprehensive Valuation Measure*

*As of February 29, 2024*

Size:	Wt Mean											
	Small1000			Mid500			Top500			Top500 ex Mag7		
	Expensive	Middle	Cheap	Expensive	Middle	Cheap	Expensive	Middle	Cheap	Expensive	Middle	Cheap
<b>30-40-30:</b>	<b>P1</b>	<b>P2</b>	<b>P3</b>	<b>P1</b>	<b>P2</b>	<b>P3</b>	<b>P1</b>	<b>P2</b>	<b>P3</b>	<b>P1</b>	<b>P2</b>	<b>P3</b>
Number of Firms	303	381	316	145	198	157	109	172	219	106	168	219
Rank on Valuation	0.211	0.517	0.848	0.232	0.508	0.839	0.208	0.365	0.687	0.207	0.373	0.687
Market to book ratio	4.28	1.95	1.34	6.51	2.82	1.53	14.09	7.32	2.26	12.77	6.01	2.26
<b>P/E FY1</b>												
<b>2024-02-29 Level</b>	<b>98.7</b>	<b>19.3</b>	<b>10.1</b>	<b>46.2</b>	<b>17.4</b>	<b>9.9</b>	<b>38.9</b>	<b>25.5</b>	<b>13.3</b>	<b>41.0</b>	<b>24.5</b>	<b>13.3</b>
2003-2023 Median	60.9	21.0	12.1	43.1	18.7	11.9	27.6	17.6	11.8	27.6	17.6	11.8
<b>Premium to Median %</b>	<b>62.0</b>	<b>-8.1</b>	<b>-16.3</b>	<b>7.3</b>	<b>-7.2</b>	<b>-16.6</b>	<b>40.8</b>	<b>45.2</b>	<b>12.7</b>	<b>48.5</b>	<b>39.9</b>	<b>12.7</b>
Rank(2003-2023)	0.939	0.226	0.206	0.677	0.292	0.174	0.891	0.922	0.860	0.903	0.918	0.860

## Current vs. Historical Valuations by Size and Valuation

**Largest 2,000 Developed EAFE + Canadian Companies: Top 500, Mid 500, Small 1000 by Market Value**

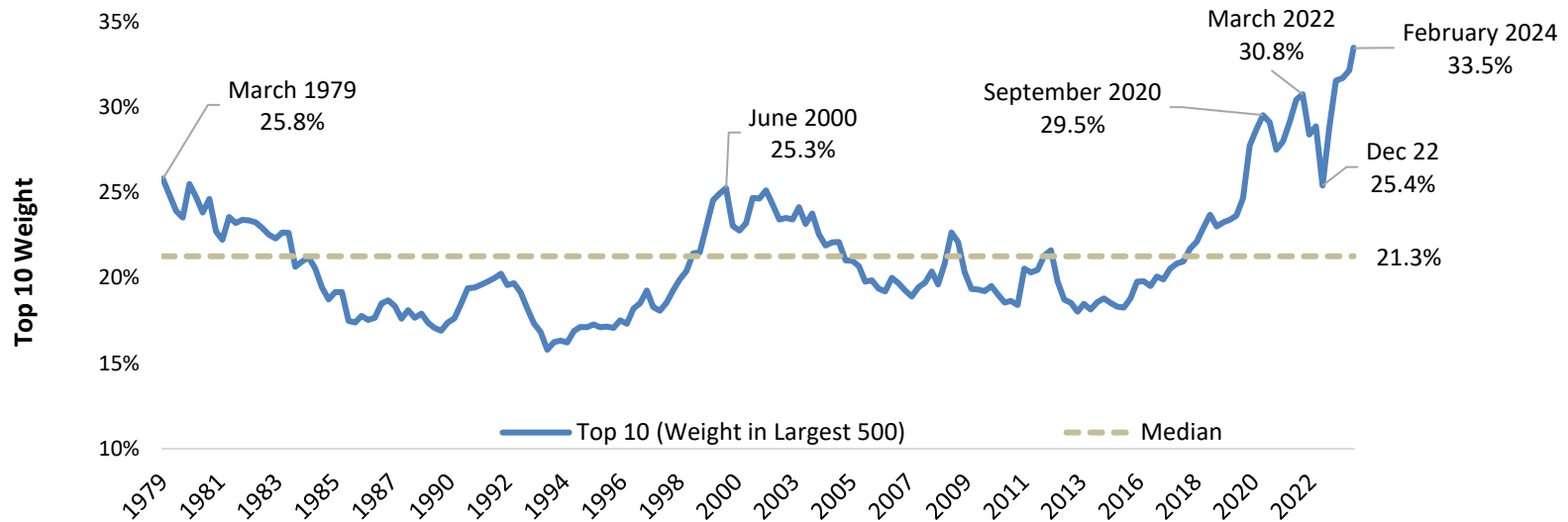
*30-40-30 Market cap portfolios sorted by Comprehensive Valuation Measure*

*As of February 29, 2024*

Size:	Wt Mean								
	Small1000			Mid500			Top500		
	Expensive	Middle	Cheap	Expensive	Middle	Cheap	Expensive	Middle	Cheap
30-40-30:	P1	P2	P3	P1	P2	P3	P1	P2	P3
Number of Firms	297	403	300	149	199	152	129	211	160
Rank on Valuation	0.158	0.521	0.853	0.162	0.490	0.833	0.106	0.427	0.850
Market to book ratio	2.70	1.34	0.90	2.78	1.54	1.05	6.10	2.29	1.03
P/E FY1									
<b>2024-02-29 Level</b>	<b>33.5</b>	<b>15.2</b>	<b>8.8</b>	<b>31.8</b>	<b>15.9</b>	<b>8.7</b>	<b>35.5</b>	<b>16.3</b>	<b>8.4</b>
2003-2023 Median	32.7	17.6	12.3	28.3	17.7	12.4	23.3	16.4	11.3
<b>Premium to Median %</b>	<b>2.5</b>	<b>-13.9</b>	<b>-28.9</b>	<b>12.3</b>	<b>-10.3</b>	<b>-30.2</b>	<b>52.1</b>	<b>-0.4</b>	<b>-25.5</b>
Rank(2003-2023)	0.534	0.189	0.130	0.742	0.222	0.085	0.915	0.489	0.130

## Are There Signs of Irrational Exuberance?

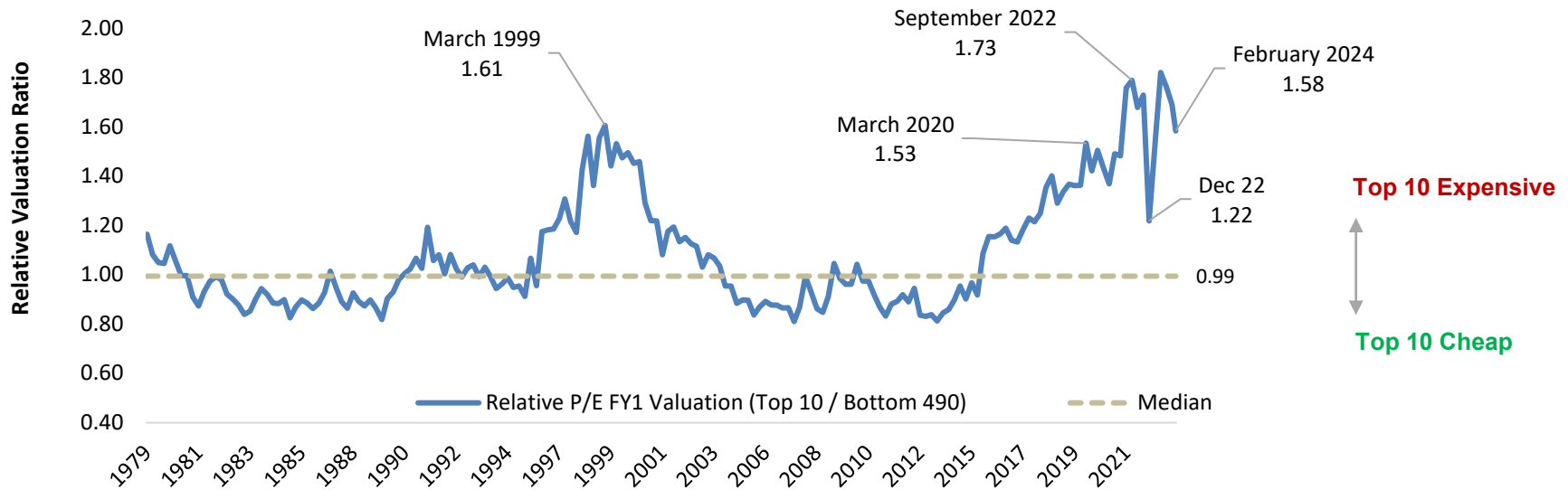
### Weight of Top 10 Stocks in the U.S. Over Time



- **As of February 2024, the Top 10 stocks in the U.S. represent 33.5% of the market cap of the largest 500 companies, one of the highest on record dating back to the 1970's**
  - The historical median weight of the top 10 names is 21.3%

# Are There Signs of Irrational Exuberance?

## Relative Valuation of Top 10 Stocks vs. Bottom 490 in the U.S. Over Time



- **The Top 10 stocks in the U.S. are also incredibly expensive today relative to the Bottom 490 companies**
  - Historically, the Top 10 stocks and Bottom 490 trade on par with one another
  - As of February 2024, the relative valuation ratio stands at 1.58

## Portfolio Holdings

# Portfolio Holdings by Country – March 31, 2024

COUNTRY	% PORT
<b>AUSTRALIA</b>	<b>0.5%</b>
Rio Tinto Ltd	0.3%
Qantas Airways Ltd	0.2%
<b>AUSTRIA</b>	<b>1.0%</b>
Erste Group Bank Ag	0.4%
Omv Ag	0.3%
Bawag Group Ag	0.3%
<b>BELGIUM</b>	<b>0.3%</b>
Syensqo Sa	0.3%
Solvay Sa	0.1%
<b>BRAZIL</b>	<b>0.6%</b>
Banco Do Brasil Sa	0.3%
Jbs S/A	0.2%
<b>CANADA</b>	<b>1.7%</b>
Suncor Energy Inc	0.4%
Bank Of Montreal	0.3%
Celestica Inc	0.3%
Canadian Tire Corp Ltd	0.2%
B2Gold Corp	0.2%
Empire Co Ltd	0.2%
<b>CHILE</b>	<b>0.2%</b>
Cencosud Sa	0.2%
<b>CHINA</b>	<b>3.2%</b>
Petrochina Co Ltd	0.6%
Alibaba Group Holding Ltd	0.5%
Lenovo Group Ltd	0.4%
Bank Of China Ltd	0.4%
Sinopharm Group Co Ltd	0.3%
China Coal Energy Co Ltd	0.3%
Postal Savings Bank Of China Co Ltd	0.2%
3Sbio Inc	0.2%
Ssy Group Ltd	0.2%
<b>DENMARK</b>	<b>0.4%</b>
D/S Norden A/S	0.2%
Pandora A/S	0.2%
<b>FINLAND</b>	<b>0.6%</b>
Nokia Oyj	0.3%
Valmet Oyj	0.2%
Metsa Board Oyj	0.1%

COUNTRY	% PORT
<b>FRANCE</b>	<b>2.7%</b>
Totalenergies Se	0.5%
Orange Sa	0.4%
Bnp Paribas Sa	0.4%
Sanofi Sa	0.4%
Rexel Sa	0.4%
Carrefour Sa	0.3%
Capgemini Se	0.2%
Klepierre Sa	0.1%
<b>GERMANY</b>	<b>2.8%</b>
Daimler Truck Holding Ag	0.6%
Bayerische Motoren Werke Ag	0.5%
Mercedes-Benz Group Ag	0.5%
Deutsche Post Ag	0.4%
Muenchener Rueckversicherungs-Gesellschaft Ag In Muenchen	0.4%
Infineon Technologies Ag	0.3%
United Internet Ag	0.2%
<b>HONG KONG</b>	<b>0.5%</b>
Wh Group Ltd	0.3%
Ck Hutchison Holdings Ltd	0.2%
<b>INDIA</b>	<b>1.4%</b>
Coal India Ltd	0.4%
Gail India Ltd	0.4%
Petronet Lng Ltd	0.2%
Redington Ltd	0.2%
Firstsource Solutions Ltd	0.2%
<b>IRELAND</b>	<b>0.3%</b>
Smurfit Kappa Group Plc	0.3%
<b>ISRAEL</b>	<b>0.5%</b>
Check Point Software Technologies Ltd	0.4%
Harel Insurance Investments & Financial Services Ltd	0.1%
<b>ITALY</b>	<b>1.7%</b>
Leonardo Spa	0.6%
Unicredit Spa	0.4%
Banco Bpm Spa	0.4%
Pirelli & C Spa	0.3%
<b>JAPAN</b>	<b>4.6%</b>
Mitsubishi Ufj Financial Group Inc	0.5%
Mitsui & Co Ltd	0.5%
Honda Motor Co Ltd	0.4%
Marubeni Corp	0.4%
Macnica Holdings Inc	0.3%

COUNTRY	% PORT
<b>JAPAN (continued)</b>	
Itochu Corp	0.3%
Nippon Telegraph & Telephone Corp	0.3%
Nippon Television Holdings Inc	0.3%
Nomura Real Estate Holdings Inc	0.3%
Mitsubishi Gas Chemical Co Inc	0.3%
Agc Inc	0.3%
Isuzu Motors Ltd	0.3%
K'S Holdings Corp	0.2%
Nissui Corp	0.2%
<b>KOREA, REPUBLIC OF</b>	<b>1.4%</b>
Doosan Bobcat Inc	0.4%
Kia Corp	0.3%
Samsung Electronics Co Ltd	0.2%
Kt Corp	0.2%
Hyundai Marine & Fire Insurance Co Ltd	0.2%
Korean Air Lines Co Ltd	0.1%
<b>MALAYSIA</b>	<b>0.2%</b>
Rhb Bank Bhd	0.2%
<b>NETHERLANDS</b>	<b>1.0%</b>
Koninklijke Ahold Delhaize Nv	0.5%
Abn Amro Bank Nv	0.3%
Aegon Ltd	0.2%
<b>NORWAY</b>	<b>0.1%</b>
Orkla Asa	0.1%
<b>SINGAPORE</b>	<b>0.4%</b>
Dbs Group Holdings Ltd	0.3%
Jardine Cycle & Carriage Ltd	0.2%
<b>SOUTH AFRICA</b>	<b>0.3%</b>
Mtn Group Ltd	0.2%
African Rainbow Minerals Ltd	0.1%
<b>SPAIN</b>	<b>1.7%</b>
Banco Bilbao Vizcaya Argentaria Sa	0.6%
Banco Santander Sa	0.5%
Repsol Sa	0.4%
Cia De Distribucion Integral Logista Holdings Sa	0.2%
<b>SWEDEN</b>	<b>1.4%</b>
Swedbank Ab	0.4%
Volvo Ab	0.4%
Securitas Ab	0.4%
Telefonaktiebolaget Lm Ericsson	0.2%



# Portfolio Holdings by Country – March 31, 2024

COUNTRY	% PORT
<b>SWITZERLAND</b>	<b>1.8%</b>
Novartis Ag	0.8%
Ubs Group Ag	0.4%
Julius Baer Group Ltd	0.3%
Swatch Group Ag/The	0.2%
Sandoz Group Ag	0.0%
<b>TAIWAN</b>	<b>2.8%</b>
Mediatek Inc	0.6%
Ase Technology Holding Co Ltd	0.6%
Powertech Technology Inc	0.4%
Hon Hai Precision Industry Co Ltd	0.4%
Zhen Ding Technology Holding Ltd	0.3%
Compeq Manufacturing Co Ltd	0.3%
Micro-Star International Co Ltd	0.2%
<b>THAILAND</b>	<b>0.4%</b>
Krung Thai Bank Pcl	0.3%
Ap Thailand Pcl	0.1%
<b>TURKEY</b>	<b>0.2%</b>
Turkiye Sise Ve Cam Fabrikalari As	0.2%
<b>UNITED KINGDOM</b>	<b>3.5%</b>
Shell Plc	0.8%
Associated British Foods Plc	0.4%
Tesco Plc	0.4%
Gsk Plc	0.3%
Coca-Cola Hbc Ag	0.3%
Natwest Group Plc	0.3%
Imperial Brands Plc	0.3%
Computacenter Plc	0.3%
Kingfisher Plc	0.3%
Airtel Africa Plc	0.1%
<b>UNITED STATES</b>	<b>60.7%</b>
Merck & Co Inc	1.5%
Qualcomm Inc	1.3%
Dell Technologies Inc	1.2%
International Business Machines Corp	1.0%
At&T Inc	0.9%
Comcast Corp	0.9%
Johnson & Johnson	0.9%
Cisco Systems Inc	0.9%
American International Group Inc	0.8%
Vistra Corp	0.8%
Wells Fargo & Co	0.8%
Paccar Inc	0.7%
Exxon Mobil Corp	0.7%
Phillips 66	0.7%
General Motors Co	0.7%
Toll Brothers Inc	0.7%
Builders Firstsource Inc	0.7%
Jabil Inc	0.6%
Hartford Financial Services Group Inc/The	0.6%
Fedex Corp	0.6%
Bank Of New York Mellon Corp/The	0.6%
State Street Corp	0.6%
Textron Inc	0.6%
Hp Inc	0.6%
Meta Platforms Inc	0.6%
Bristol-Myers Squibb Co	0.6%
Williams-Sonoma Inc	0.5%

COUNTRY	% PORT
<b>UNITED STATES (continued)</b>	
Gilead Sciences Inc	0.5%
Oracle Corp	0.5%
Caterpillar Inc	0.5%
Cummins Inc	0.5%
Hewlett Packard Enterprise Co	0.5%
Kroger Co/The	0.5%
Cigna Group/The	0.5%
Ameriprise Financial Inc	0.5%
Everest Group Ltd	0.5%
Pfizer Inc	0.5%
Hca Healthcare Inc	0.5%
Gen Digital Inc	0.5%
Goldman Sachs Group Inc/The	0.5%
Citigroup Inc	0.5%
Cvs Health Corp	0.5%
Tri Pointe Homes Inc	0.5%
Nrg Energy Inc	0.5%
Flex Ltd	0.5%
M&T Bank Corp	0.5%
Aflac Inc	0.5%
Mckesson Corp	0.5%
Applied Materials Inc	0.5%
Capital One Financial Corp	0.4%
Verizon Communications Inc	0.4%
Skyworks Solutions Inc	0.4%
Lockheed Martin Corp	0.4%
Molson Coors Beverage Co	0.4%
Conagra Brands Inc	0.4%
Cognizant Technology Solutions Corp	0.4%
Ryder System Inc	0.4%
Reliance Inc	0.4%
Cirrus Logic Inc	0.4%
Owens Corning	0.4%
Amkor Technology Inc	0.4%
Amdocs Ltd	0.4%
Atkore Inc	0.4%
Agco Corp	0.4%
PulteGroup Inc	0.4%
Exelixis Inc	0.4%
Mgc Investment Corp	0.4%
Metlife Inc	0.4%
Centene Corp	0.4%
Jazz Pharmaceuticals Plc	0.4%
Radian Group Inc	0.4%
Amgen Inc	0.4%
Regions Financial Corp	0.4%
Ingredion Inc	0.4%
Arcbest Corp	0.4%
Oshkosh Corp	0.3%
Victory Capital Holdings Inc	0.3%
Science Applications International Corp	0.3%
Autonation Inc	0.3%
Ss&C Technologies Holdings Inc	0.3%
Bunge Global Sa	0.3%
Cnh Industrial Nv	0.3%
Scorpio Tankers Inc	0.3%
Td Synnex Corp	0.3%
Crocs Inc	0.3%
Berry Global Group Inc	0.3%
Kraft Heinz Co/The	0.3%
Delta Air Lines Inc	0.3%
Unum Group	0.3%

COUNTRY	% PORT
<b>UNITED STATES (continued)</b>	
Altria Group Inc	0.3%
First Horizon Corp	0.3%
Arrow Electronics Inc	0.3%
Truist Financial Corp	0.3%
Viatis Inc	0.3%
Lyondellbasell Industries Nv	0.3%
Intel Corp	0.3%
Carter'S Inc	0.3%
Ebay Inc	0.3%
Archer-Daniels-Midland Co	0.3%
Zions Bancorp Na	0.3%
Brunswick Corp/De	0.3%
Bloomin' Brands Inc	0.3%
Fs Kkr Capital Corp	0.3%
Avnet Inc	0.3%
Harley-Davidson Inc	0.3%
La-Z-Boy Inc	0.3%
United Airlines Holdings Inc	0.3%
Sonic Automotive Inc	0.3%
Hf Sinclair Corp	0.3%
Upbound Group Inc	0.3%
Ford Motor Co	0.3%
Incyte Corp	0.3%
United Therapeutics Corp	0.2%
Comera Inc	0.2%
Shutterstock Inc	0.2%
Alaska Air Group Inc	0.2%
Winnipeg Industries Inc	0.2%
Apple Hospitality Reit Inc	0.2%
California Resources Corp	0.2%
Dropbox Inc	0.2%
Fox Corp	0.2%
Travel + Leisure Co	0.2%
Organon & Co	0.2%
Photronics Inc	0.2%
Western Union Co/The	0.2%
Ofg Bancorp	0.2%
Academy Sports & Outdoors Inc	0.2%
Paypal Holdings Inc	0.2%
Nexstar Media Group Inc	0.2%
Vishay Intertechnology Inc	0.2%
Macy'S Inc	0.2%
Thor Industries Inc	0.2%
Whirlpool Corp	0.2%
Manpowergroup Inc	0.2%
Adeia Inc	0.2%
Jack In The Box Inc	0.2%
Marathon Oil Corp	0.2%
Annaly Capital Management Inc	0.2%
Ugi Corp	0.2%
Chesapeake Energy Corp	0.2%
Borgwarner Inc	0.2%
Epr Properties	0.2%
Capri Holdings Ltd	0.2%
Kohl'S Corp	0.2%
Ironwood Pharmaceuticals Inc	0.2%
Mosaic Co/The	0.2%
Tegna Inc	0.1%
Nextracker Inc	0.1%
Host Hotels & Resorts Inc	0.1%
Phinia Inc	0.0%
<b>CASH</b>	<b>0.9%</b>
<b>TOTAL</b>	<b>100%</b>



# **Investment Committee Meeting**

## **Miscellaneous Updates**

April 23, 2024

## Ryan Holliday

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**From:** Lindsey Andresen  
**Sent:** Monday, April 8, 2024 2:57 PM  
**To:** Charles Nielsen; Ryan Holliday  
**Cc:** Steven Anzalone; Raymond Vars  
**Subject:** [EXTERNAL] HL Global Equity Co-Lead PM Change - October 1  
**Attachments:** Harding Loevner Global Equity Portfolio Manager Announcement April 2024.pdf; Harding Loevner Global Equity PM Change - April 2024 Supplement.pdf

**EXTERNAL EMAIL WARNING! Use caution with links or attachments. DO NOT provide your credentials!**

Dear Charles and Ryan,

I hope you are both well. I am writing to share the news that on October 1<sup>st</sup>, Rick Schmidt will succeed Peter Baughan as a co-lead portfolio manager of the Global Equity strategy. Peter will remain on the Global Equity team until 30 September. He is retiring at year-end from Harding Loevner after 27 years. With an experienced, proven successor in Rick and Jingyi's continued stewardship, Peter—along with the rest of senior management at Harding Loevner—is confident that the strategy will remain in good hands. Jingyi Li will continue as the strategy's other co-lead portfolio manager, and Chris Mack and Moon Surana will continue in their supporting roles managing paper portfolios. At no time does more than half of the capital shift to a new co-lead PM, which provides continuity and keeps transaction costs down.

Rick has over 36 years of experience in fundamental equity research and portfolio management. He joined the firm in 2011 and has been a Global Equity portfolio manager since 2014 and a Consumer Staples sector analyst since 2011. Among our Global PMs, Rick defended the best during the growth-style headwind yet rebounded strongly the past 1.5 years as growth stocks have been resurgent.

I've attached both a letter from Ferrill Roll describing the change, as well as a packet of supplemental information that contains key data points and observations that inform aspects of our decision to select Rick as a co-lead PM. I'd be happy to give you a call after you have had the time to review this information, or set up a call with Ferrill Roll or any of the PMs to discuss the upcoming change. When Rick and I visit in two weeks for the Board meeting, we will spend a couple of minutes on the change in our presentation. We, of course, can meet with you separately on that visit if you'd like.

The presentation materials for April 23<sup>rd</sup> are forthcoming.

Kind regards,  
Lindsey

**HARDING • LOEVNER** | *Fundamental. Thinking. Worldwide.*

Lindsey Andresen | [andresen@hardingloevner.com](mailto:andresen@hardingloevner.com)

The information contained in this e-mail message, together with any attachment, is intended only for the personal and confidential use of the intended addressee[s].



April 2024

Dear Client,

We are writing to inform you that Rick Schmidt will become a co-lead portfolio manager of the Global Equity strategy on October 1, 2024, replacing Peter Baughan who will retire from Harding Loevner at year end. Jingyi Li will remain the other co-lead portfolio manager. Chris Mack and Moon Surana will continue in their supporting roles managing a model, or “paper,” portfolio.

Rick brings long, broad, and deep experience to the job, having managed a paper portfolio for Global since 2014. His performance over the past three years, in which all HL portfolios have been buffeted by both style headwinds and by exogenous events, sets Rick’s performance record apart from his fellow Global PMs. His global portfolio delivered higher returns while exhibiting lower risk—both in tracking error and in absolute volatility. His provocative engagement with analysts and his clear communication have offered a window into his investment decision making, an important qualitative factor in our decision to appoint Rick. Prior to joining Harding Loevner in 2011, Rick was chief investment officer of Oranda Capital Management, and had worked for a decade as a portfolio manager at JPMorgan Asset Management and Jardine Fleming Investment Management. He graduated from Georgetown University with a BS in Foreign Service.

Peter has been co-lead PM of the Global strategy for over two decades, since early 2003. His strong performance over many years and his spirited and charismatic communication style have helped build the strategy from a minor product that was “flagship” in name only to a key pillar of our business, particularly in its expansion to non-US clients.

On October 1, authority over half of the capital of the Global Equity strategy will transfer from Peter to Rick. Harding Loevner is experienced in planning and managing such PM transitions to ensure continuity and consistency of approach, and efficient low-cost implementation. We can assure you that the portfolio will continue to hew to the high-quality and faster-growing investments that have long characterized the Harding Loevner Global Equity portfolio.

We thank you for the trust you place in our firm. As always, we encourage you to reach out to your contacts at Harding Loevner or to either of us if you have questions or concerns.

Sincerely,

**Ferrill Roll**  
Chief Investment Officer

**Aaron Bellish**  
Chief Executive Officer