

December 2024

BUILDING THE TRUST

Investment Management



**Teacher Retirement System of
Texas**
1000 Red River Street
Austin, Texas
78701-2698

**TEACHER RETIREMENT SYSTEM OF TEXAS MEETING
BOARD OF TRUSTEES
AND
INVESTMENT MANAGEMENT COMMITTEE**

(Committee Chair and Members: Mr. Corpus, Chair; Ms. Allred; Mr. Elliott, Ms. Sissney and Mr. Walls, Jr.)

All or part of the December 5, 2024, meeting of the TRS Investment Management Committee and Board of Trustees may be held by telephone or video conference call as authorized under Sections 551.130 and 551.127 of the Texas Government Code. The Board intends to have a quorum and the presiding officer of the meeting physically present at the following location, which will be open to the public during the open portions of the meeting: 1000 Red River, Austin, Texas 78701 in the TRS East Building, 5th Floor, Boardroom.

The open portions of the December 5, 2024, meeting are being broadcast over the Internet. Access to the Internet broadcast and agenda materials of the meeting is provided at www.trs.texas.gov. A recording of the meeting will be available at www.trs.texas.gov.

**AGENDA
December 5, 2024 – 12:00 p.m.**

1. Call roll of Committee members.
2. Consider the approval of the proposed minutes of the September 2024 committee meeting – Committee Chair.
3. CIO Update including Talent Management; Accomplishments; Notices; Awards; Key Dates and Upcoming Events – Jase Auby.
4. Discuss the Third Quarter 2024 Performance Review – Mike Comstock and Amy Woeste, Aon.
5. Update of the Trading Group – Jamie Llano.
6. Update on the IMD Legal & Compliance – Heather Traeger, Denise Lopez and Chris Bowlin
7. Update of Risk and Portfolio Management – James Nield and Mark Telschow.

NOTE: The Board of Trustees (Board) of the Teacher Retirement System of Texas will not consider or act upon any item before the Investment Management Committee (Committee) at this meeting of the Committee. This meeting is not a regular meeting of the Board. However, because the full Committee constitutes a quorum of the Board, the meeting of the Committee is also being posted as a meeting of the Board out of an abundance of caution.

Minutes of the Investment Management Committee
September 19, 2024

The Investment Management Committee of the Board of Trustees of the Teacher Retirement System of Texas met on Thursday, September 19, 2024, in the boardroom located on the Fifth Floor in the East Building of TRS' offices located at 1000 Red River Street, Austin, Texas, 78701.

Committee members present:

Mr. David Corpus, Chair

Ms. Brittney Allred

Mr. John Elliott

Mrs. Nanette Sissney

Mr. Robert H. Walls, Jr.

Other TRS Board Members present:

Mr. Mike Ball

Mr. James D. Nance

Mr. John R. Rutherford

Mr. Elvis Williams

Others present:

Brian Guthrie, TRS

Caasi Lamb, TRS

Heather Traeger, TRS

Jase Auby, TRS

Amanda Jenami, TRS

Don Green, TRS

Katy Hoffman, TRS

James Nield, TRS

Melissa Jerkins, TRS

Katherine Farrell, TRS

Suzanne Dugan, Cohen Milstein

Dr. Keith Brown, Board Advisor

Mike McCormick, Aon

Mike Comstock, Aon.

Investment Management Committee Chair, Mr. David Corpus, called the meeting to order at 8:03 a.m.

1. Call roll of Committee members.

Ms. Farrell called the roll. A quorum was present.

2. Consider the approval of the proposed minutes of the July 2024, Investment Management Committee meeting – Chair David Corpus.

On a motion by Ms. Sissney, seconded by Mr. Elliott, the committee approved the proposed minutes for the July 2024 Investment Management Committee meeting as presented.

3. CIO Update including Fleet Strategy; Talent Management; Accomplishments; Notices; Awards; Key Dates and Upcoming Events, and Market Update – Jase Auby.

Mr. Jase Auby provided a high-level review reporting the Trust ended the second quarter of 2024 with a one-year return of 9.0 percent as of June 30th with 333 basis points of excess points or alpha. He noted this was the highest alpha in the history of TRS. He said at the last Board meeting the SAA was approved and the teams working hard getting all of those transactions up and running, setting up new accounts, all well in hand. He announced the Investment Data Management (IDM) program executed a key contract with a company called SimCorp. He said this will allow TRS to calculate our own investment book of record, a shadow accounting book.

Mr. Auby provided a historical background to what the markets have done when the Federal Reserve makes its first rate cut in response the Federal Reserve cutting the short-term interest rate by 50 basis points yesterday. He discussed the Sahm Rule being triggered, which has in the past been highly predictive of recessions, since the last Board meeting. He said the main reason why a recession has been forestalled so far has been the strength of the U.S. consumer.

Mr. Auby concluded his report with his semiannual special topic focused on the importance of corporate earnings to the performance of the stock market.

4. Discuss the Second Quarter 2024 Performance Review – Mike McCormick and Mike Comstock, Aon.

Mr. Mike McCormick began by noting global equities have driven growth for the Trust. He reported global equities is about 55 percent of the portfolio and up about 14 percent. He said back in 2022 there was a lot of uncertainty in equities as well as interest rates, while the real estate portfolio did very well. He said today there is uncertainty in the real estate market and real estate prices are starting to decline. He said there were positive outcomes from the risk parity part of the portfolio. He said the absolute return continues to intentionally be overweight. He reported that every asset class but one beat its benchmark. In response to Dr. Brown's inquiry about the benchmarks, Mr. McCormick stated 75 percent of the assets have a benchmark of no debate but for 25 percent of the assets, such as private equity, absolute return there are potentially many different reasonable benchmarks. Dr. Brown noted that while performance has been remarkable with regard to alpha, the peer performance comparisons present a different picture where TRS is in the bottom quartile. Dr. Brown stated the Board sets the Strategic Asset allocation, or the package of risk the system takes, and performance indicates a different vision than other systems trying to do the same thing. Dr. Brown agreed with Mr. Elliott, that nobody knows the future and the peer group that has a different vision of how to invest assets at a strategic level may be in a different position and it was important for the Board to be comfortable with its positioning.

5. Review of the Semi-annual Risk Report – James Nield and Melissa Jerkins.

Mr. James Nield began by reporting all eight key metrics remain in compliance with policy. He reviewed four of the metrics: asset allocation, value at risk (VaR), Tracking Error and Securities Lending. He said for asset allocation the second quarter ended at 104.7 percent investment exposure, or 0.7 percent above the policy allocation. Ms. Melissa Jerkins reported the VaR was 6.3 percent. She reviewed how Tracking Error measures how much a portfolio differs from its benchmarks. She said the total Trust tracking error has been 97 basis points for the past three years, almost one percent. Mr. Nield concluded with reporting \$20 million was made over the past year from Securities Lending.

There being no more business before the Investment Management Committee, the committee adjourned at 9:18 a.m.

Approved by the Investment Management Committee of the Board of Trustees of the Teacher Retirement System of Texas on December __ 2024.

Katherine H. Farrell
Secretary to the Board of Trustees
Teacher Retirement Systems of Texas

Date

CIO Update

Jase Auby, Chief Investment Officer

December 2024



CIO Update

IMD at a Glance

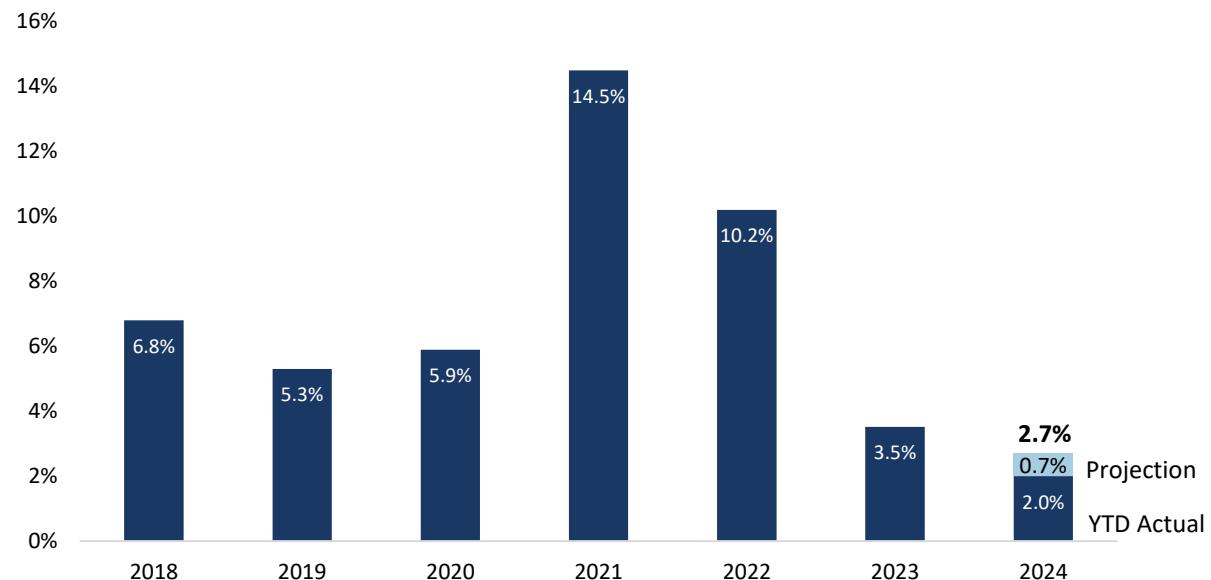
Priorities

- Performance.** The Trust ended the third quarter of 2024 with a 1-year return of 17.1% and +241 bp of excess return. The 3-year return is 4.1% with +146 bp of excess return
- SPN Summit.** Hosted Strategic Partnership Network (SPN) Public Summit in New York
- SAA Update.** Continued implementation across the Trust on planned asset and portfolio transitions
- Annual Planning.** Engaged in annual priority-setting and capital-planning processes in preparation for 2025

Our People

Snapshot as of September 2024	
IMD FTEs	256
Contractors	9

As of September 2024





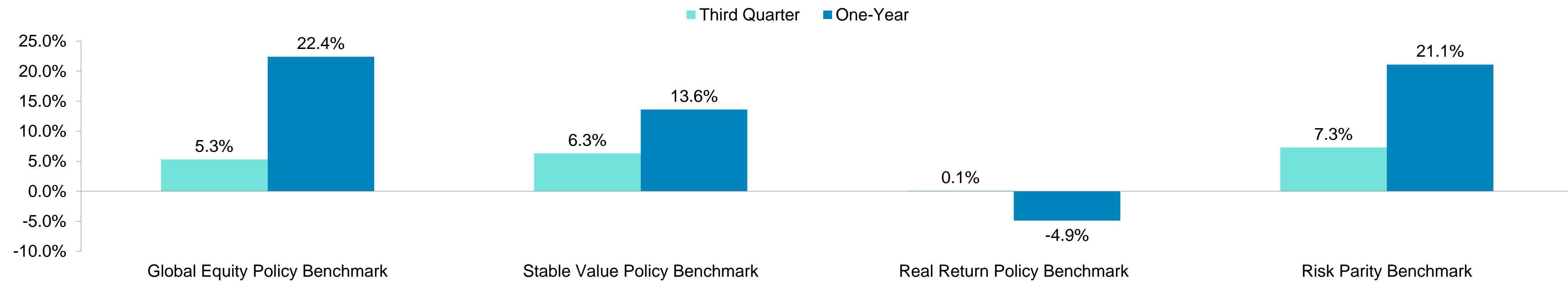
Teacher Retirement System of Texas

Performance Review:
Third Quarter 2024

Investment advice and consulting services provided by Aon Investments USA, Inc.
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Summary



In Q3 2024, the global equity markets rose amid volatility. The S&P 500 Index continued making new highs, despite a mixed outlook on earnings and a slightly weaker-than expected labor market. Easing inflation, continued economic growth, and outperformance by financials and industrials pushed the S&P 500 higher.

Global equities rose 5.3% for the quarter, and they returned 22.4% over a trailing 1-year period

The U.S. Fed cut its benchmark interest rate by 0.5% to a range of 4.75%–5.0%, the first rate cut in more than 4 years. The Federal Open Market Committee (FOMC) stated that “inflation is moving sustainably toward 2%, and judges that the risks to achieving its employment and inflation goals are roughly in balance.” According to the latest Fed “dot plot”, policymakers are projecting a target range of 4.25% to 4.50% by the end of 2024, a full percentage point reduction in 2025, and the rate falling below 3% in 2026.

TRS returned 4.5% for the quarter which was 0.2 percentage points below its benchmark

–Underperformance at the asset class level for Global Equity was the primary driver for relative results.

For the trailing twelve months, TRS returned 17.1% versus the benchmark return of 14.7%

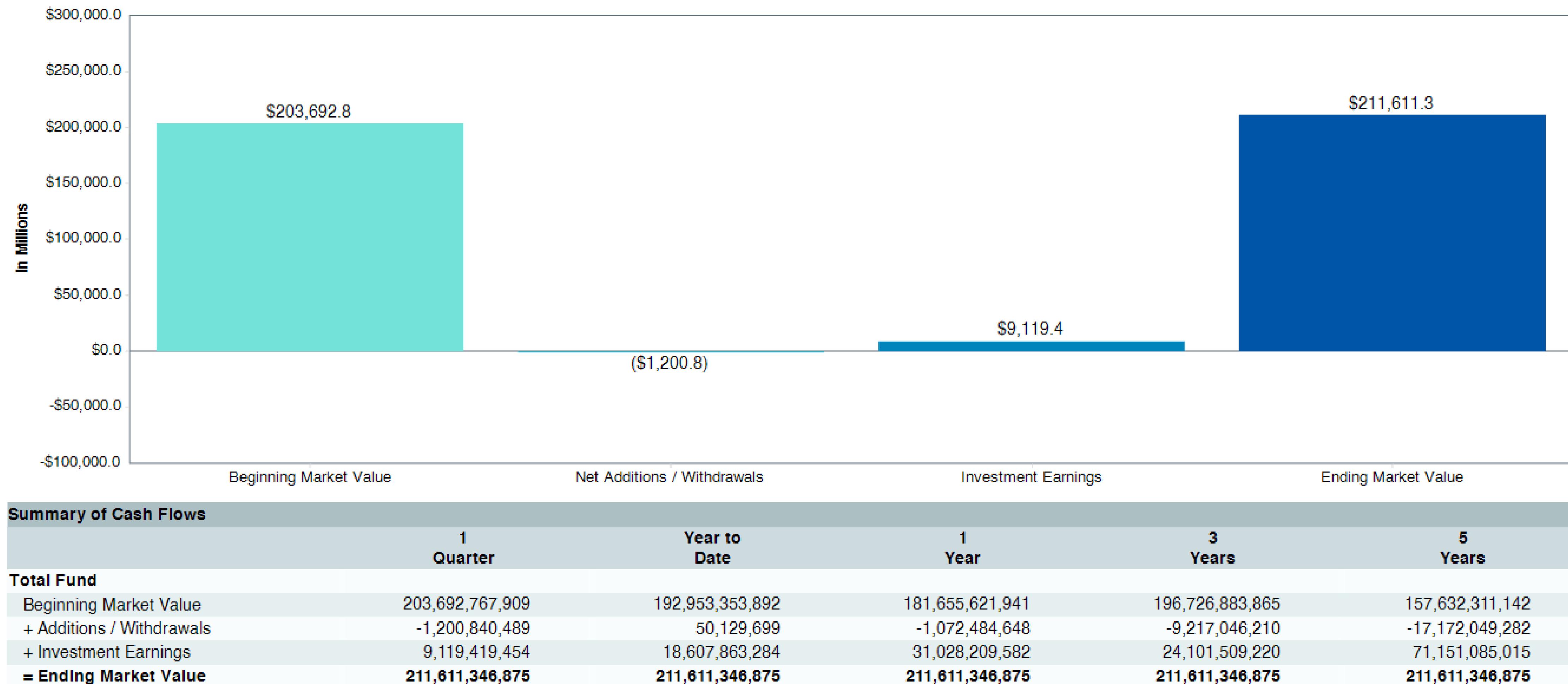
–Outperformance from the Global Equity and Real Return asset classes were the primary drivers of relative performance

1. Market Summary – Third Quarter 2024

	Third Quarter	YTD	One Year	Three Years	Five Years	Ten Years
Global Equity:						
TF USA Benchmark	6.1%	20.7%	35.3%	10.4%	15.4%	12.9%
TRS Non-US Developed Benchmark	7.7	13.0	25.0	5.5	8.3	5.6
TRS Emerging Markets Benchmark	6.3	14.8	26.8	0.4	5.8	4.0
HFRI Fund of Funds Composite Index	2.0	7.0	10.3	2.6	5.5	3.7
State Street Private Equity Index (quarter lagged)	1.3	5.7	5.8	5.3	13.5	11.8
Global Equity Policy Benchmark	5.3	13.5	22.4	6.5	11.9	9.4
Stable Value:						
Bloomberg Barclays Long Treasury Index	7.8%	2.4%	15.4%	-8.4%	-4.3%	1.1%
HFRI Fund of Funds Conservative Index	1.4	4.8	6.8	3.7	5.2	3.6
Absolute Return Benchmark	2.4	7.3	9.9	8.0	5.8	4.6
90 Day U.S. Treasury Bill	1.4	4.2	5.6	3.6	2.4	1.7
Stable Value Policy Benchmark	6.3	3.1	13.6	-5.4	-1.9	1.8
Real Return:						
Bloomberg Barclays U.S. TIPS Index	4.1%	4.9%	9.8%	-0.6%	2.6%	2.5%
NCREIF ODCE (quarter lagged)	-0.7	-8.1	-10.0	1.0	2.3	5.5
Energy, Natural Resources & Infrastructure Benchmark	1.7	5.0	7.2	10.4	7.9	--
Goldman Sachs Commodities Index	-5.3	5.2	-6.1	8.8	8.0	-2.4
Real Return Policy Benchmark	0.1	-4.0	-4.9	3.8	4.0	5.1
Risk Parity:						
Risk Parity Benchmark	7.3%	11.3%	21.1%	-2.3%	2.8%	4.0%
TRS Policy Benchmark	4.7%	7.6%	14.7%	2.7%	7.1%	6.8%

2. Market Value Change

From July 1, 2024 to September 30, 2024

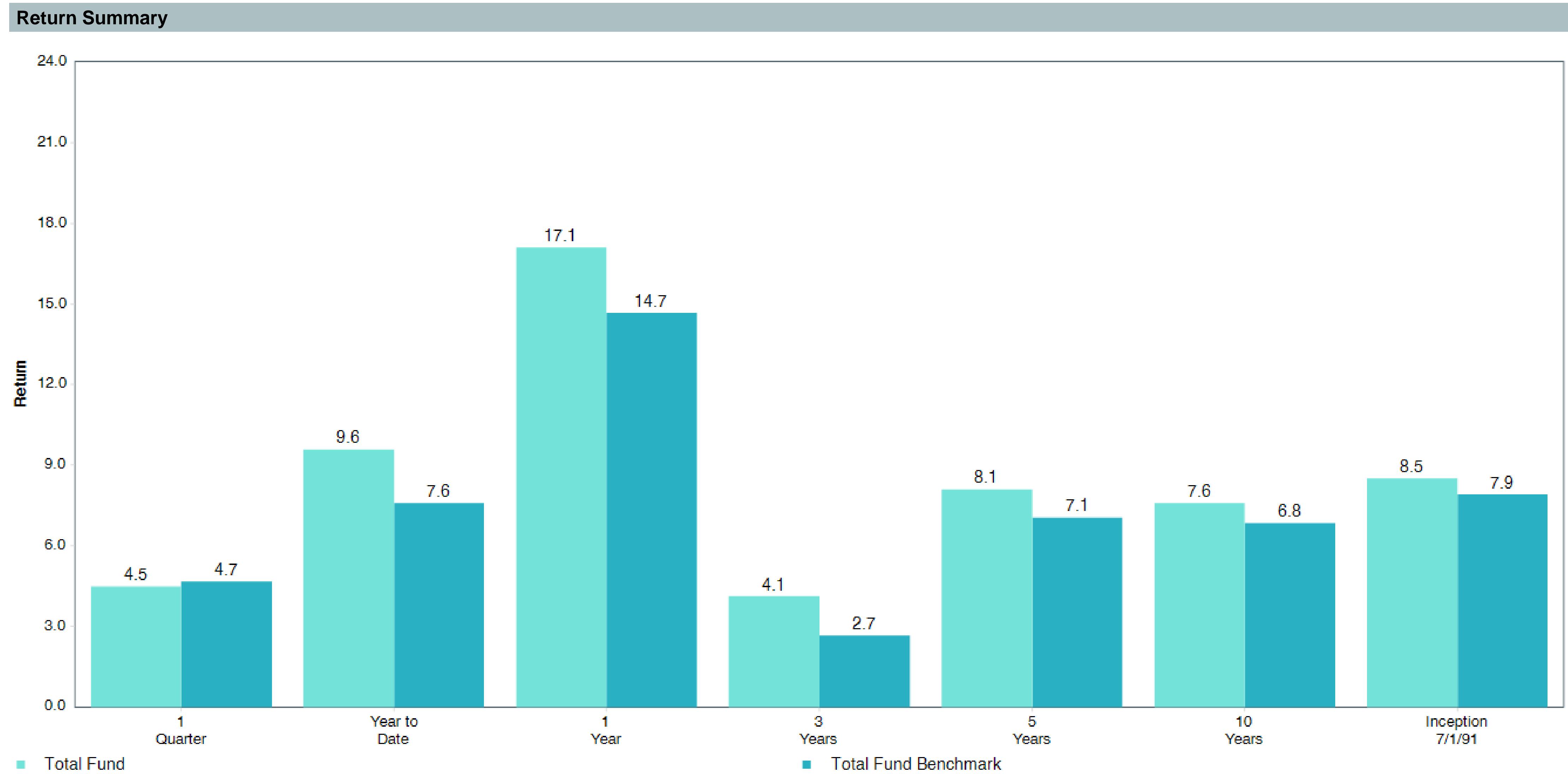


3. Asset Allocation Detail

	Market Value \$ in millions) as of 9/30/2024		Interim Policy Target	Relative to Interim Policy Target	Long Term Policy Target	Long Term Policy Ranges
	(\$)	(%)				
Investment Exposure	--	105.2%	104.0%	+1.2%	104.0%	93-115%
Total U.S.A.	\$39,313	18.6%	17.3%	+1.3%	18.0	13-23%
Non-U.S. Developed	\$28,349	13.4%	12.5%	+0.9%	13.0	8-18%
Emerging Markets	\$16,658	7.9%	8.6%	-0.7%	9.0	4-14%
Private Equity	\$33,369	15.8%	16.5%	-0.7%	14.0	9-19%
Global Equity	\$117,688	55.6%	55.0%	+0.6%	54.0	47-61%
Government Bonds	\$29,392	13.9%	15.4%	-1.5%	16.0	0-21%
Stable Value Hedge Funds	\$10,436	4.9%	4.8%	+0.1%	5.0	0-10%
Absolute Return	\$7,478	3.5%	0.0%	+3.5%	0.0	0-20%
Stable Value	\$47,306	22.4%	20.2%	+2.2%	21.0	14-28%
Real Estate	\$29,751	14.1%	14.4%	-0.3%	15.0	10-20%
Energy, Natural Resource and Inf.	\$14,299	6.8%	6.8%	0.0%	6.0	1-11%
Commodities	\$236	0.1%	0.0%	+0.1%	0.0	0-5%
Real Return	\$44,285	20.9%	21.2%	-0.3%	21.0	14-28%
Risk Parity	\$13,388	6.3%	7.7%	-1.4%	8.0	0-13%
Risk Parity	\$13,388	6.3%	7.7%	-1.4%	8.0	0-13%
Cash	\$7,002	3.3%	2.0%	+1.3%	2.0	0-7%
Asset Allocation Leverage	-\$18,058	-8.5%	-6.0%	-2.5%	-6.0	--
Net Asset Allocation	-\$11,056	-5.2%	-4.0%	-1.2%	-4.0	--
Total Fund	\$211,611			---	100.0%	--

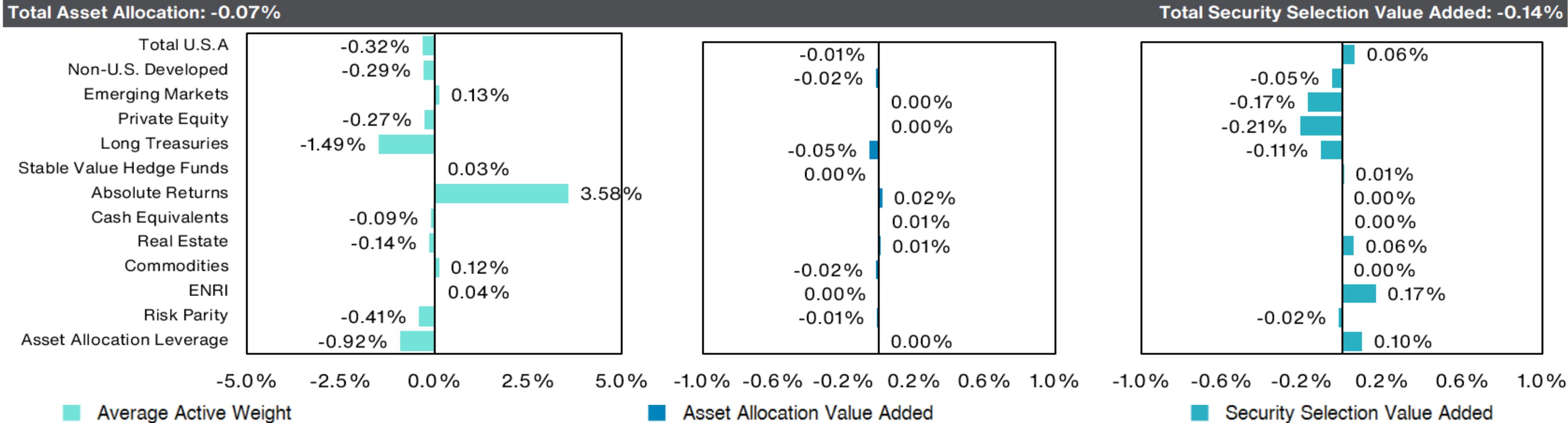
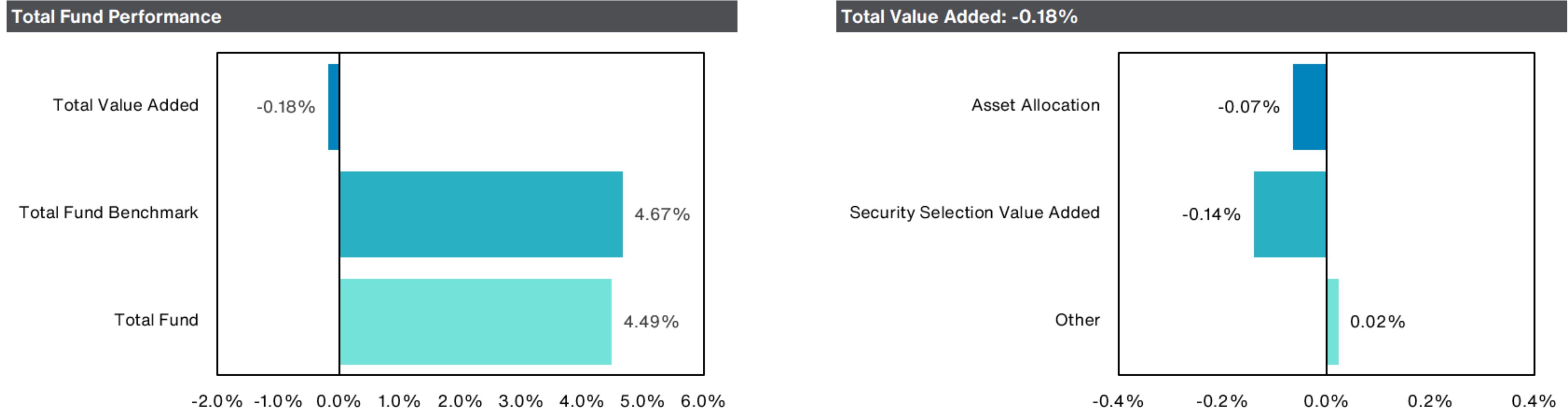
Note: Asset allocation information shown above is based upon MOPAR reporting. The excess returns shown above may not be a perfect difference between the actual and benchmark returns due entirely to rounding.

4. Total TRS Performance Ending 9/30/2024

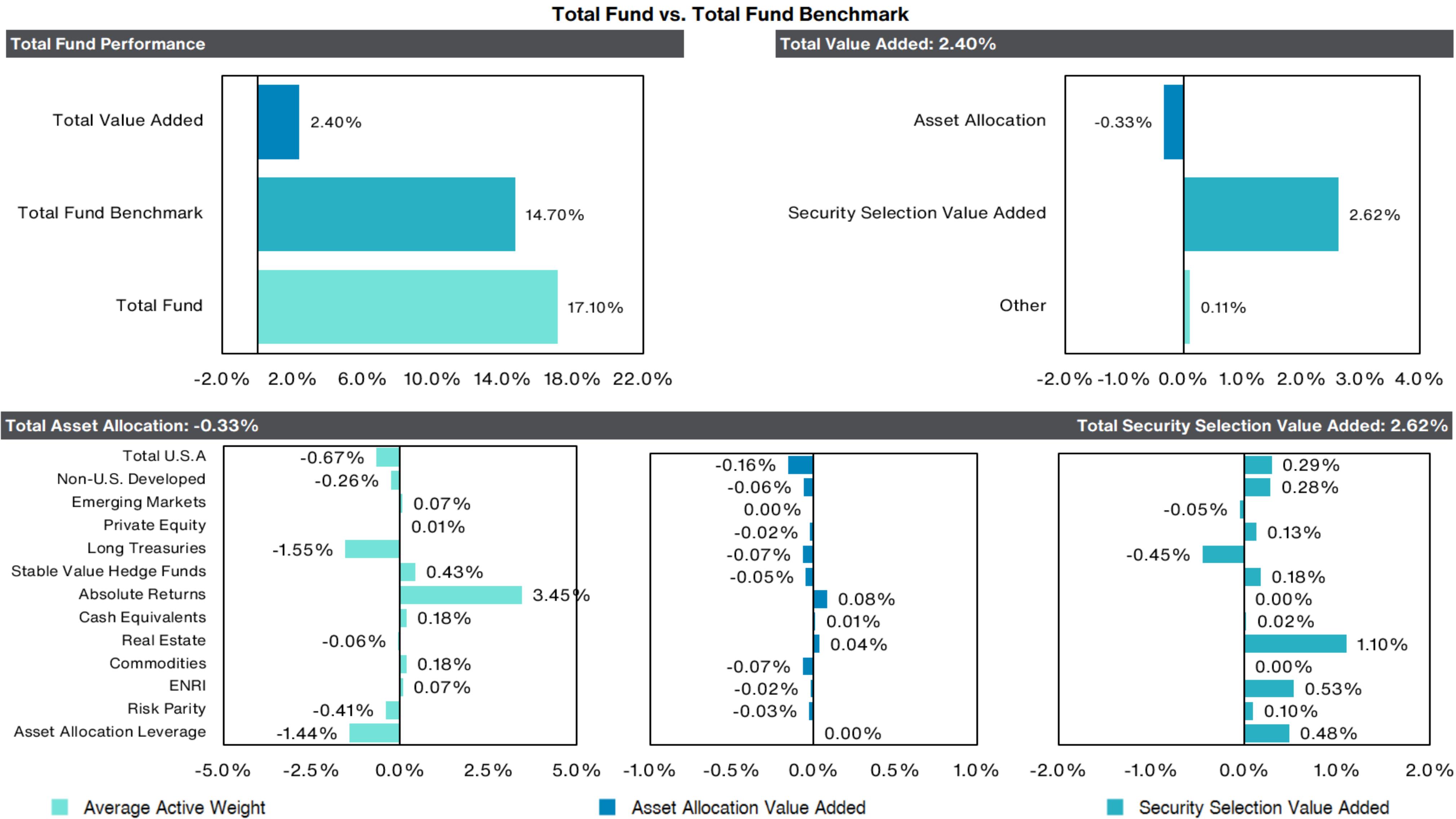


5. Total Fund Attribution – One Quarter Ending 9/30/2024

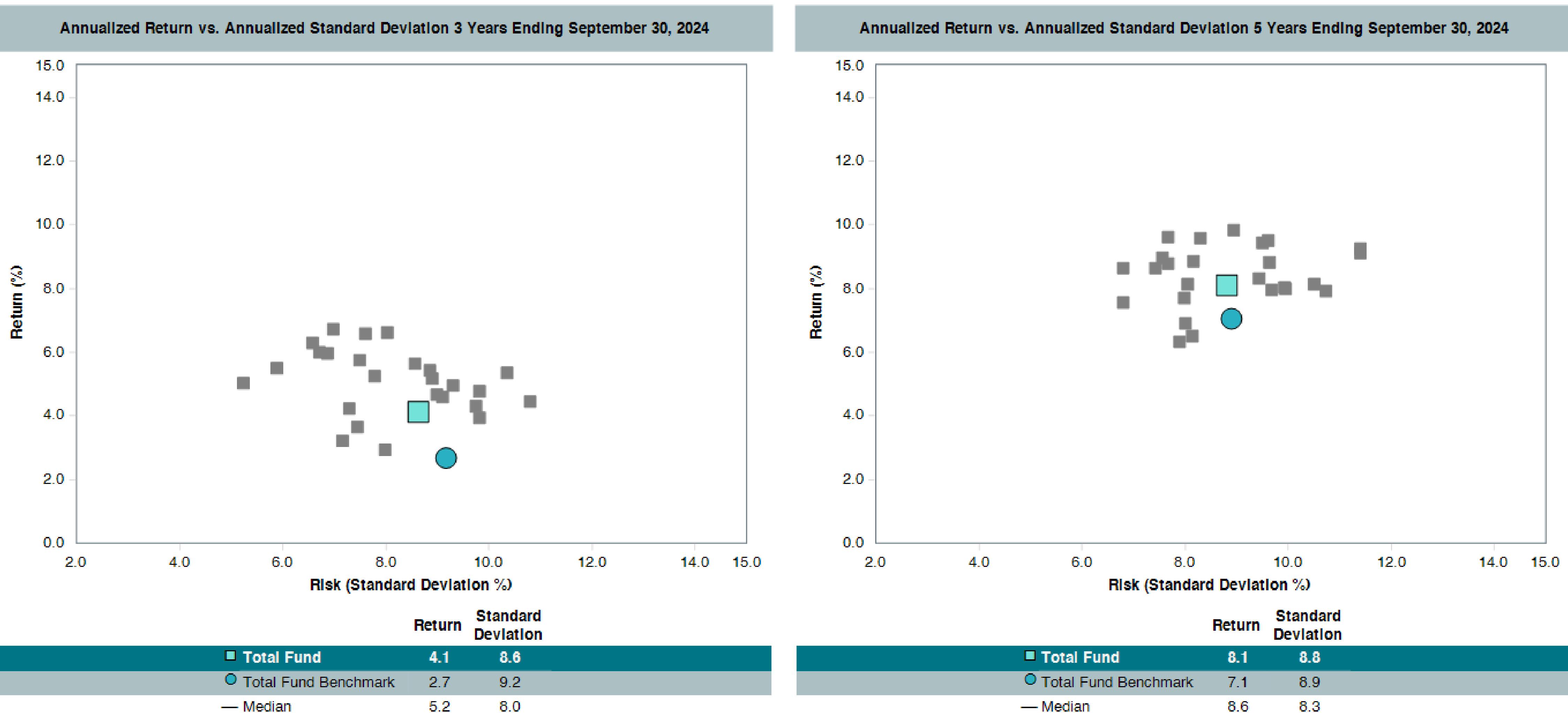
Total Fund vs. Total Fund Benchmark



5. Total Fund Attribution – One Year Ending 9/30/2024

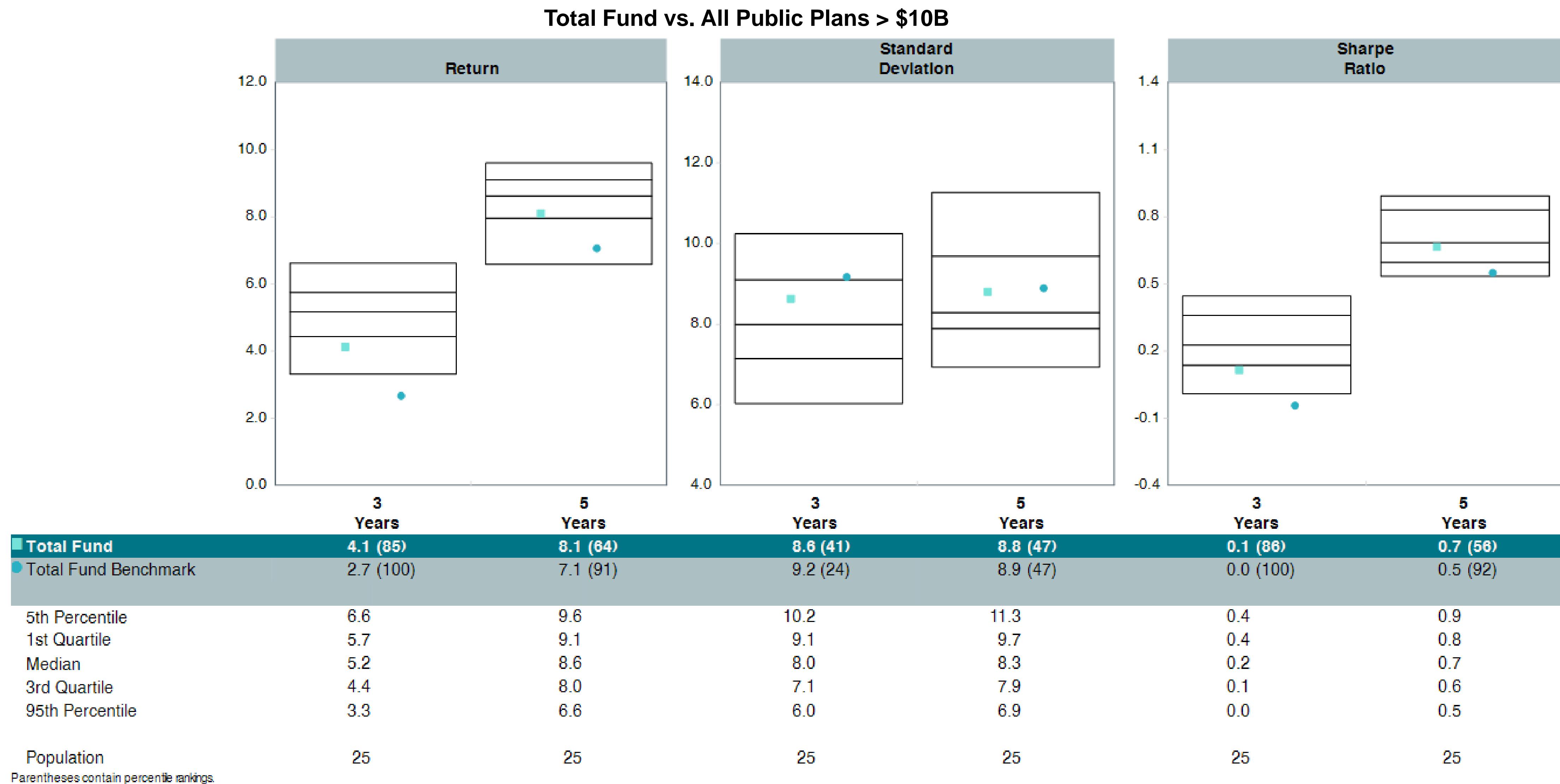


6. Risk Profile: Total Fund Risk-Return vs. Peers

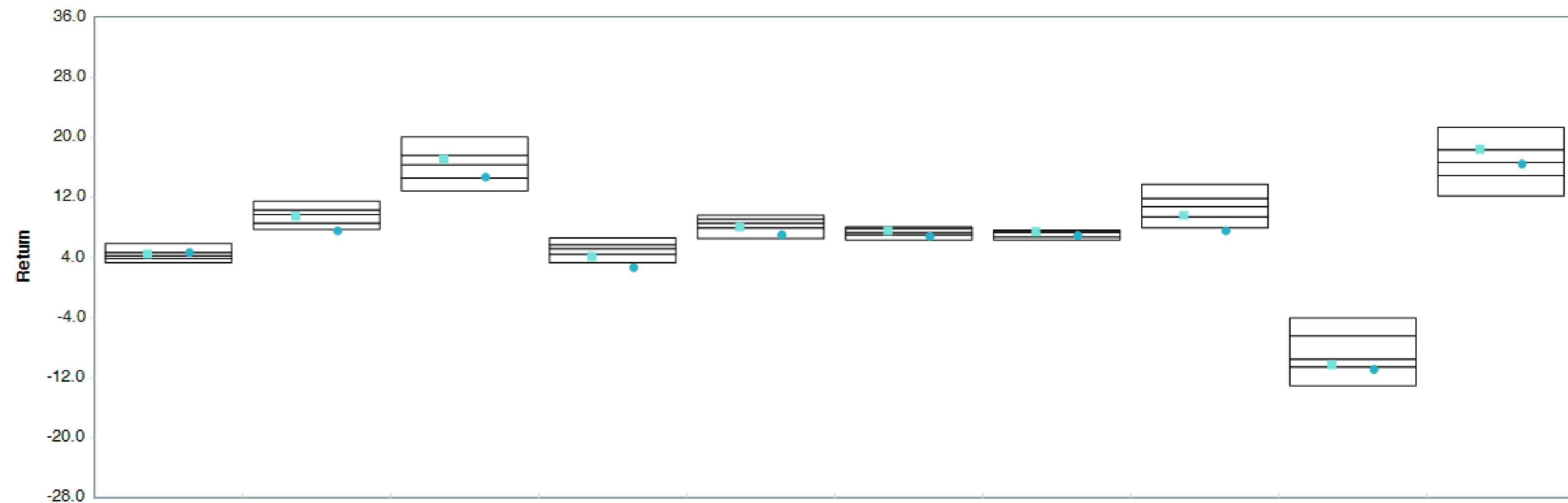


Note: Public Plan peer group composed of 25 public funds, for 3- and 5-year periods, with total assets in excess of \$10B as of 9/30/2024. An exhibit outlining the asset allocation of the peer portfolios is provided in the appendix of this report.

6. Risk Profile: Trailing 3-Year and 5-Year Risk Metrics Peer Comparison



6. TRS Performance vs. Peers (>\$10 Billion) as of 9/30/2024



	1 Quarter	Year to Date	1 Year	3 Years	5 Years	10 Years	20 Years	2023	2022	2021
Total Fund	4.5 (32)	9.6 (56)	17.1 (45)	4.1 (85)	8.1 (64)	7.6 (46)	7.4 (36)	9.7 (72)	-10.3 (65)	18.5 (25)
Total Fund Benchmark	4.7 (27)	7.6 (98)	14.7 (74)	2.7 (100)	7.1 (91)	6.8 (79)	6.9 (71)	7.6 (97)	-10.9 (78)	16.5 (59)
5th Percentile	5.9	11.6	20.2	6.6	9.6	8.1	7.7	13.8	-4.0	21.4
1st Quartile	4.7	10.4	17.6	5.7	9.1	7.9	7.5	12.0	-6.4	18.4
Median	4.2	9.7	16.4	5.2	8.6	7.4	7.4	10.8	-9.5	16.7
3rd Quartile	3.8	8.7	14.6	4.4	8.0	7.1	6.8	9.5	-10.6	15.0
95th Percentile	3.3	7.8	12.9	3.3	6.6	6.4	6.3	8.0	-13.0	12.3
Population	26	26	26	25	25	24	23	52	53	65

Parentheses contain percentile rankings.

7. IPS Stated Trust Return Objectives ending 9/30/2024

	Five Year	Seven Year	Ten Year	Twenty Year
Total Fund	8.1	7.7	7.6	7.4
Total Fund Benchmark	7.1	6.9	6.8	6.9
Difference	+1.0	+0.8	+0.8	+0.5
Total Fund	8.1	7.7	7.6	7.4
Assumed Rate of Return	7.1	7.3	7.5	7.7
Difference	+1.0	+0.4	+0.1	-0.3
Total Fund	8.1	7.7	7.6	7.4
CPI + 5%	9.4	8.7	8.0	7.7
Difference	-1.3	-1.0	-0.4	-0.3

Note: The excess returns shown in this presentation may differ from State Street statements due entirely to rounding. These differences are generally within a few basis points and are not material.

8. Global Equity: Performance Summary Ending 9/30/2024

	Third Quarter	YTD	One Year	Three Year	Five Year	Ten Year
Total Global Equity	4.6	14.4	23.3	6.2	11.7	9.2
Total Global Equity Benchmark	5.3	13.5	22.4	6.5	11.9	9.4
<i>Difference</i>	-0.7	+0.9	+0.9	-0.3	-0.2	-0.2
Total U.S. Equity	6.6	22.2	37.5	11.6	15.1	11.9
Total U.S. Equity Benchmark	6.1	20.7	35.3	10.4	15.4	12.9
<i>Difference</i>	+0.5	+1.5	+2.2	+1.2	-0.3	-1.0
Non-U.S. Equity	6.3	15.4	27.3	4.0	8.1	5.8
Non-U.S. Equity Benchmark	7.2	13.8	25.8	3.5	7.4	5.1
<i>Difference</i>	-0.9	+1.6	+1.5	+0.5	+0.7	+0.7
Non-U.S. Developed	7.3	15.5	27.5	6.1	9.0	6.3
TRS Non-U.S. Developed Benchmark	7.7	13.0	25.0	5.5	8.3	5.6
<i>Difference</i>	-0.4	+2.5	+2.5	+0.6	+0.7	+0.7
Emerging Markets	4.4	14.6	26.3	0.7	6.6	4.9
TRS Emerging Market Benchmark	6.3	14.8	26.8	0.4	5.8	4.0
<i>Difference</i>	-1.9	-0.2	-0.5	+0.3	+0.8	+0.9

8. Global Equity: Performance Summary Ending 9/30/2024 (cont'd)

	Third Quarter	YTD	One Year	Three Year	Five Year	Ten Year
Total Public Equity	6.3	18.2	31.6	7.4	11.2	8.3
Public Equity Benchmark	6.7	16.9	30.1	6.7	11.1	8.5
<i>Difference</i>	<i>-0.4</i>	<i>+1.3</i>	<i>+1.5</i>	<i>+0.7</i>	<i>+0.1</i>	<i>-0.2</i>
Total Private Equity	0.7	6.2	7.5	3.9	13.1	12.2
Private Equity Benchmark	1.9	5.8	6.9	5.8	13.8	12.2
<i>Difference</i>	<i>-1.2</i>	<i>+0.4</i>	<i>+0.6</i>	<i>-1.9</i>	<i>-0.7</i>	<i>+0.0</i>

Note: The excess returns shown in this presentation may differ from State Street statements due entirely to rounding. These differences are generally within a few basis points and are not material.

9. Stable Value: Performance Summary Ending 9/30/2024

	Third Quarter	YTD	One Year	Three Year	Five Year	Ten Year
Total Stable Value	5.5	3.9	12.4	-3.5	-0.2	3.2
Total Stable Value Benchmark	6.3	3.1	13.6	-5.4	-1.9	1.8
<i>Difference</i>	<i>-0.8</i>	<i>+0.8</i>	<i>-1.2</i>	<i>+1.9</i>	<i>+1.7</i>	<i>+1.4</i>
Total Government Bonds	7.0	0.2	12.1	-10.3	-5.6	0.7
Treasury Benchmark	7.8	2.4	15.4	-8.4	-4.3	1.1
<i>Difference</i>	<i>-0.8</i>	<i>-2.2</i>	<i>-3.3</i>	<i>-1.9</i>	<i>-1.3</i>	<i>-0.4</i>
Stable Value Hedge Funds	1.6	7.9	10.1	8.1	8.4	6.4
Hedge Funds Benchmark	1.4	4.8	6.8	3.7	5.2	3.6
<i>Difference</i>	<i>+0.2</i>	<i>+3.1</i>	<i>+3.3</i>	<i>+4.4</i>	<i>+3.2</i>	<i>+2.8</i>
Absolute Return	5.2	13.0	17.3	8.9	9.6	7.7
Absolute Return Benchmark	2.4	7.3	9.9	8.0	5.8	4.6
<i>Difference</i>	<i>+2.8</i>	<i>+5.7</i>	<i>+7.4</i>	<i>+0.9</i>	<i>+3.8</i>	<i>+3.1</i>

Note: The excess returns shown in this presentation may differ from State Street statements due entirely to rounding. These differences are generally within a few basis points and are not material.

10. Real Return: Performance Summary Ending 9/30/2024

	Third Quarter	YTD	One Year	Three Year	Five Year	Ten Year
Total Real Return	1.1	0.5	1.5	7.4	7.4	7.8
Real Return Benchmark	0.1	-4.0	-4.9	3.8	4.0	5.1
<i>Difference</i>	+1.0	+4.5	+6.4	+3.6	+3.4	+2.7
Real Estate	-0.3	-3.5	-3.8	4.8	6.5	8.9
Real Estate Benchmark	-0.7	-8.1	-10.0	1.0	2.3	5.5
<i>Difference</i>	+0.4	+4.6	+6.2	+3.8	+4.2	+3.4
Energy, Natural Resources, and Infrastructure	4.2	10.1	14.6	13.8	9.3	--
Energy and Natural Res. Benchmark	1.7	5.0	7.2	10.4	7.9	--
<i>Difference</i>	+2.5	+5.1	+7.4	+3.4	+1.4	
Commodities	-9.1	-14.2	-11.9	1.5	7.2	-4.5
Commodities Benchmark	-5.3	5.2	-6.1	8.8	8.0	-2.4
<i>Difference</i>	-3.8	-19.4	-5.8	-7.3	-0.8	-2.1

Note: The excess returns shown in this presentation may differ from State Street statements due entirely to rounding. These differences are generally within a few basis points and are not material.

11. Risk Parity: Performance Summary Ending 9/30/2024

	Third Quarter	YTD	One Year	Three Year	Five Year	Ten Year
Total Risk Parity	7.1	11.4	22.6	0.2	2.9	4.5
Risk Parity Benchmark	7.3	11.3	21.1	-2.3	2.8	4.0
<i>Difference</i>	-0.2	+0.1	+1.5	+2.5	+0.1	+0.5

Note: The excess returns shown in this presentation may differ from State Street statements due entirely to rounding. These differences are generally within a few basis points and are not material.

12. Cash Equivalents: Performance Summary Ending 9/30/2024

	Third Quarter	YTD	One Year	Three Year	Five Year	Ten Year
Cash Equivalents	1.7	4.8	6.7	4.7	3.2	2.7
Cash Benchmark	1.4	4.2	5.6	3.6	2.4	1.7
<i>Difference</i>	+0.3	+0.6	+1.1	+1.1	+0.8	+1.0

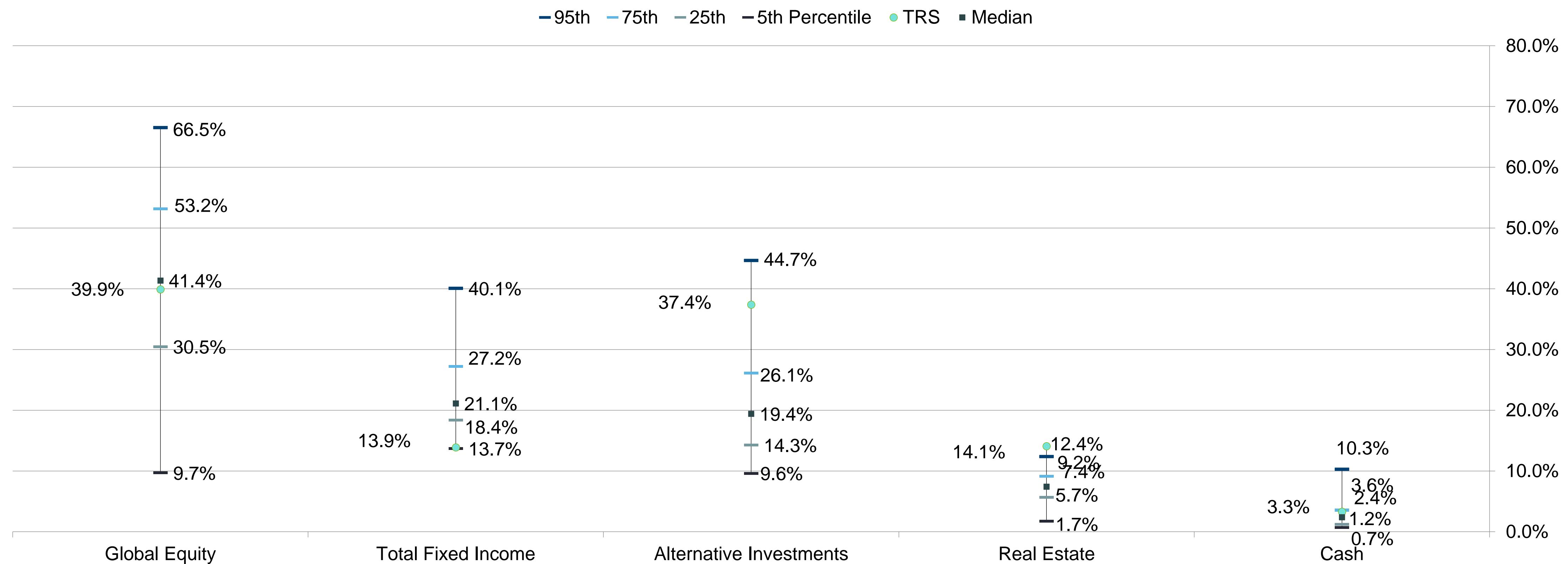
Note: The excess returns shown in this presentation may differ from State Street statements due entirely to rounding. These differences are generally within a few basis points and are not material.

Appendix – Supplemental Reporting



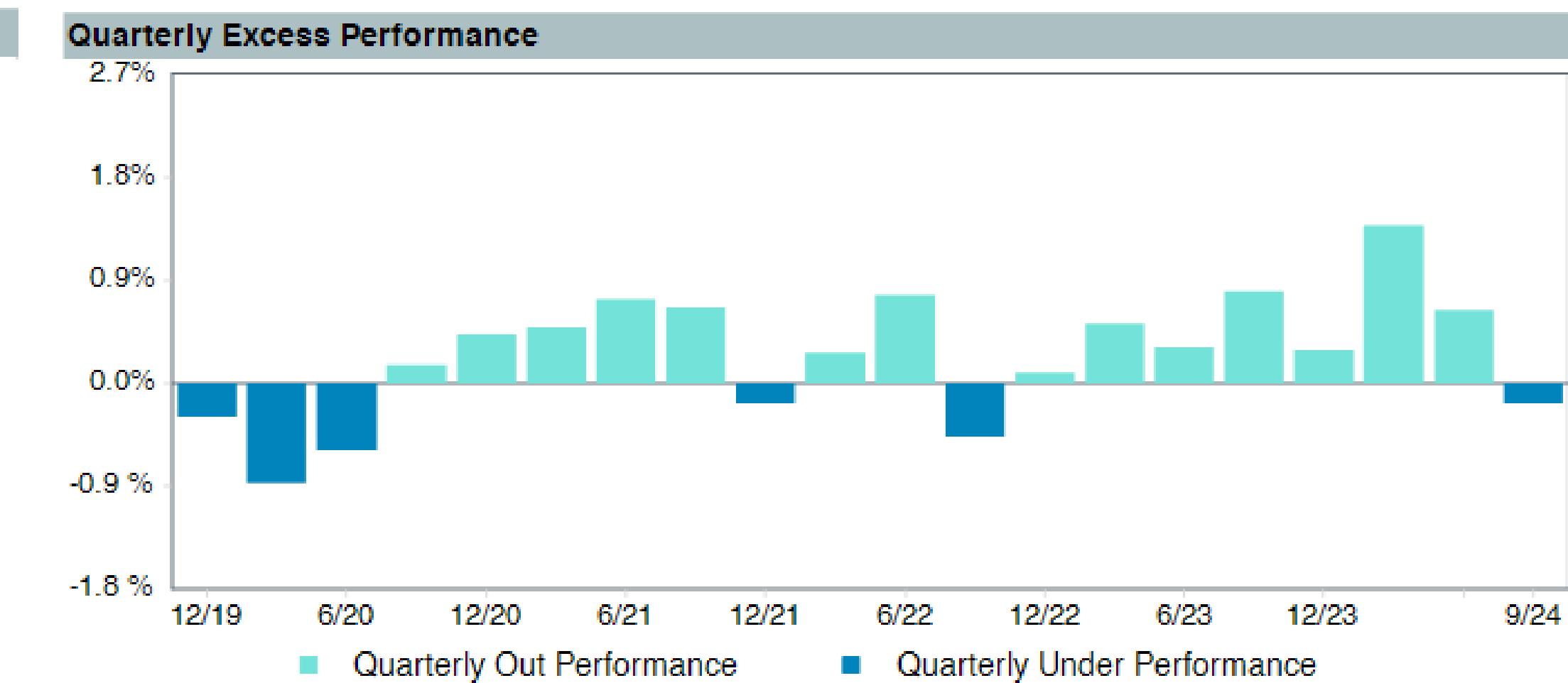
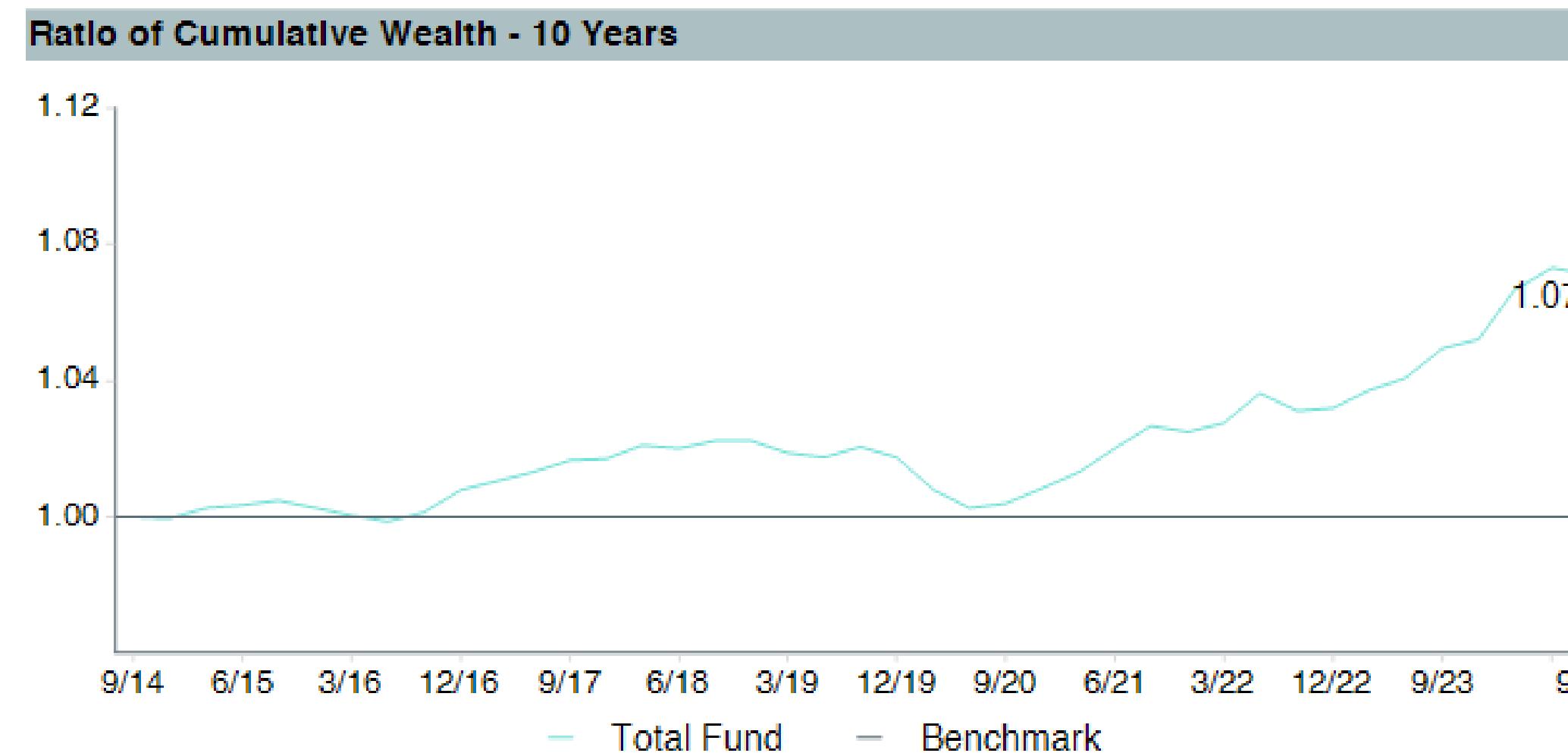
TRS Commitment Levels vs. Peers (>\$10 Billion) as of 9/30/2024

- The chart below depicts the asset allocation of peer public funds with assets greater than \$10 billion.
 - The ends of each line represent the 95th and 5th percentile of exposures, the middle light blue and grey lines represent the 25th and 75th percentile of exposures, the purple square represents the median, and the green dot represents TRS exposure.



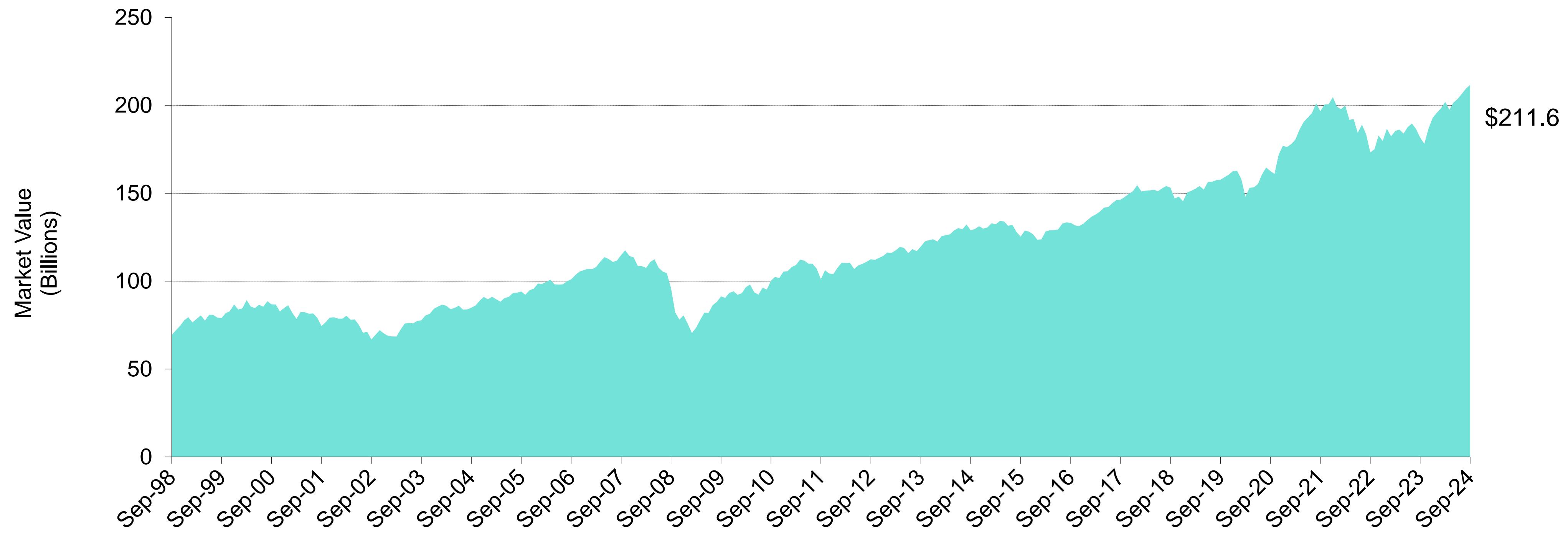
Historical Excess Performance Ending 9/30/2024

Total Fund vs. Total Fund Benchmark



TRS Asset Growth

Total Fund Historical Growth (September 1997 - September 2024)



External Manager Program: Public Equity Performance as of 9/30/2024

	Allocation (\$ in billions)	Third Quarter	YTD	One Year	Three Year	Five Year
EP Total Global Equity	\$37.8	6.1	18.5	31.9	7.6	12.9
EP Global Equity Benchmark	--	6.6	17.2	30.6	6.9	11.5
<i>Difference</i>	--	-0.5	+1.3	+1.3	+0.7	+1.4
EP U.S.A.	\$15.0	5.1	18.9	33.8	9.9	15.3
EP U.S.A. Benchmark	--	6.1	20.7	35.3	10.4	15.4
<i>Difference</i>	--	-1.0	-1.8	-1.5	-0.5	-0.1
EP Non-U.S. Developed	\$9.4	9.7	18.1	30.5	6.3	11.5
MSCI EAFE + Canada Policy Index	--	7.7	13.0	25.0	5.5	8.3
<i>Difference</i>	--	+2.0	+5.1	+5.5	+0.8	+3.2
EP Emerging Markets	\$5.3	4.0	14.1	24.5	0.7	7.8
MSCI Emerging Markets Policy Index	--	6.3	14.8	26.8	0.4	5.8
<i>Difference</i>	--	-2.3	-0.7	-2.3	+0.3	+2.0
EP World Equity	\$8.1	6.4	22.5	37.4	11.8	15.6
EP World Equity Benchmark	--	6.6	18.0	31.7	7.9	12.4
<i>Difference</i>	--	-0.2	+4.5	+5.7	+3.9	+3.2

External Manager Program: Stable Value/Total Program Performance as of 9/30/2024

	Allocation (\$ in billions)	Third Quarter	YTD	One Year	Three Year
EP Total Stable Value	\$10.4	1.6	7.9	10.1	8.1
EP Stable Value Benchmark	--	1.4	4.8	6.8	3.7
<i>Difference</i>	--	+0.2	+3.1	+3.3	+4.4
Total External Public Program	\$54.3	5.4	15.5	26.3	7.0
EP External Public Benchmark	--	5.7	14.1	24.8	5.7
<i>Difference</i>	--	-0.3	+1.4	+1.5	+1.3

Note: The excess returns shown in this presentation may differ from State Street statements due entirely to rounding. These differences are generally within a few basis points and are not material.

Public Strategic Partnership Program (SPN): Performance as of 9/30/2024

	Allocation (\$ in billions)	Third Quarter	YTD	One Year	Three Year
Public Strategic Partnership	\$6.1	6.4	12.1	25.7	2.3
Public SPN Benchmark	--	7.0	12.5	25.5	2.3
<i>Difference</i>	--	-0.6	-0.4	+0.2	0.0
BlackRock	\$3.1	6.5	14.4	27.3	3.9
JP Morgan	\$3.0	6.0	11.6	26.4	1.7

Note: The excess returns shown in this presentation may differ from State Street statements due entirely to rounding. These differences are generally within a few basis points and are not material.

Benchmarks

Total Fund Performance Benchmark – 17.3% MSCI U.S.A. IMI, 12.5% MSCI EAFE plus Canada Index, 8.6% MSCI Emerging Markets Index, 16.5% State Street Private Equity Index (1 quarter lagged), 15.4% Blmb. Barc. Long Term Treasury Index, 4.8% HFRI FoF Conservative Index, 2.0% Citigroup 3 Mo. T-Bill Index, 14.4% NCREIF ODCE Index (1 quarter lagged), 6.8% Energy and Natural Resources Benchmark, 7.7% Risk Parity Benchmark, and -6.0% Asset Allocation Leverage Benchmark.

Global Equity Benchmark – 31.5% MSCI U.S.A. IMI, 22.8% MSCI EAFE plus Canada Index, 15.7% MSCI Emerging Markets Index, and 30.1% State Street Private Equity Index (1 quarter lagged)

- TF U.S. Equity Benchmark - MSCI U.S.A. Investable Markets Index (IMI)
- Emerging Markets Equity Benchmark – MSCI Emerging Markets Index
- Non-US Developed Equity Benchmark– MSCI EAFE + Canada Index
- Private Equity Benchmark - State Street Private Equity Index (1 quarter lagged)

Benchmarks (cont'd)

Stable Value Benchmark – 76.3% Blmb. Barc. Long Term Treasury Index and 23.7% HFRI FoF Conservative Index

- US Treasuries Benchmark – Bloomberg Barclays Long Term Treasury Index
- Stable Value Hedge Funds – HFRI Fund of Funds (FoF) Conservative Index
- Absolute Return Benchmark - SOFR + 4%

Real Return Benchmark – 68.0% NCREIF ODCE Index and 32.0% Energy & Natural Resources Benchmark

- Real Estate Benchmark – NCREIF ODCE Index (1 quarter lagged)
- Energy and Natural Resources Benchmark – 75% Cambridge Associates Natural Resources Index (reweighted) and 25% quarterly Seasonally-Adjusted Consumer Price Index (1 quarter lagged)
- Commodities Benchmark – Goldman Sachs Commodity Index

▪Risk Parity Benchmark – 100% HFR Risk Parity Vol 12 Institutional Index

Description of Performance Attribution

- A measure of the source of the deviation of a fund's performance from that of its policy benchmark. Each bar on the attribution graph represents the contribution made by the asset class to the total difference in performance. A positive value for a component indicates a positive contribution to the aggregate relative performance. A negative value indicates a detrimental impact. The magnitude of each component's contribution is a function of (1) the performance of the component relative to its benchmark, and (2) the weight (beginning of period) of the component in the aggregate.
- The individual Asset Class effect, also called **Selection Effect**, is calculated as
$$\text{Actual Weight of Asset Class} \times (\text{Actual Asset Class Return} - \text{Asset Class Benchmark Return})$$
- The bar labeled **Allocation Effect** illustrates the effect that a Total Fund's asset allocation has on its relative performance.
$$\text{Allocation Effect calculation} = (\text{Asset Class Benchmark Return} - \text{Total Benchmark Return}) \times (\text{Actual Weight of Asset Class} - \text{Target Policy Weight of Asset Class})$$
- The bar labeled **Other** is a combination of Cash Flow Effect and Benchmark Effect:
 - **Cash Flow Effect** describes the impact of asset movements on the Total Fund results. Cash Flow Effect calculation = $(\text{Total Fund Actual Return} - \text{Total Fund Policy Return}) - \text{Current Selection Effect} - \text{Current Allocation Effect}$
 - **Benchmark Effect** results from the weighted average return of the asset classes' benchmarks being different from the Total Funds' policy benchmark return. Benchmark Effect calculation = $\text{Total Fund Policy Return} - (\text{Asset Class Benchmark Return} \times \text{Target Policy Weight of Asset Class})$
- **Cumulative Effect**
$$\text{Cumulative Effect calculation} = \text{Current Effect t} * (1 + \text{Cumulative Total Fund Actual Return t-1}) + \text{Cumulative Effect t-1} * (1 + \text{Total Fund Benchmark Return t})$$

Disclaimers and Notes

AON

Investment advice and consulting services provided by Aon Investments USA Inc.



Disclaimers and Notes

Disclaimers:

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- The client portfolio data presented in this report have been obtained from the custodian. Aon has compared this information to the investment managers' reported returns and believes the information to be accurate. Aon has not conducted additional audits and cannot warrant its accuracy or completeness. This document is not intended to provide, and shall not be relied upon for, accounting and legal or tax advice.
- Refer to Hedge Fund Research, Inc. www.hedgefundresearch.com for more information on HFR indices

Notes:

- The rates of return contained in this report are shown on an after-fees basis unless otherwise noted. They are geometric and time weighted. Returns for periods longer than one year are annualized.
- Universe percentiles are based upon an ordering system in which 1 is the best ranking and 100 is the worst ranking.
- Due to rounding throughout the report, percentage totals displayed may not sum up to 100.0%. Additionally, individual fund totals in dollar terms may not sum up to the plan totals.

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Aon Investments USA Inc.
200 E. Randolph Street
Suite 700
Chicago, IL 60601
ATTN: Aon Investments Compliance Officer

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Annual Update to the Board:

Trading

Jaime Llano

Managing Director

December 2024



Trading Group

19

Years of average
investment
experience

3

MBAs

2

CFAs

2

CAIAs

1

FRM

1

CMT



Jaime Llano
Managing Director
Futures and Currency
MBA, Finance, St. Edwards
19 years TRS
25 years experience



Steve Peterson, CFA, CAIA
Director
US Equity
MBA, California Lutheran University
16 years TRS
27 years experience



Demetrius Pope
Director
Global Equity – Europe/MENA
BBA, Sam Houston
18 years TRS
24 years experience



Sean Letcher, CFA, FRM, CAIA, CMT
Investment Manager
US Equity and Futures
BS, Business, Texas A & M
12 years TRS
17 years experience



Don Stanley
Investment Manager
Global Equity - Asia
BBA, UT Austin
11 years TRS
14 years experience



Andrew Moynihan
Senior Associate
FX/Derivatives
MBA, Boston College
6 years TRS
12 years experience

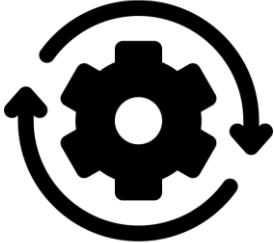


Brandon Bilton
Associate
US Equity
BBA, Prairie View A & M
7 years TRS
7 years experience



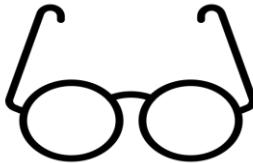
Maribel Nesuda
Administrative Assistant
Team Support
14 years TRS
29 years experience

Trading Mandate



Implementation

- **Total Trust Execution:** Global execution across multiple asset classes totaled \$338.2 billion over past 12 months
- **Network:** Manage a global network of 42 brokerage firms
- **Performance:** Outperformed the median peer equity trading desk by 6 basis points over past 12 months, placing us in the 2nd quartile



Market Intelligence

- **Insight:** Participate in conferences, broker visits, and buy-side calls to stay current with market structure trends and changes
- **Collaboration:** Collaborate across the IMD to provide implementation solutions
- **Committees:** IMD Management Committee Co-Chair, Diversity Council, Ambassadors

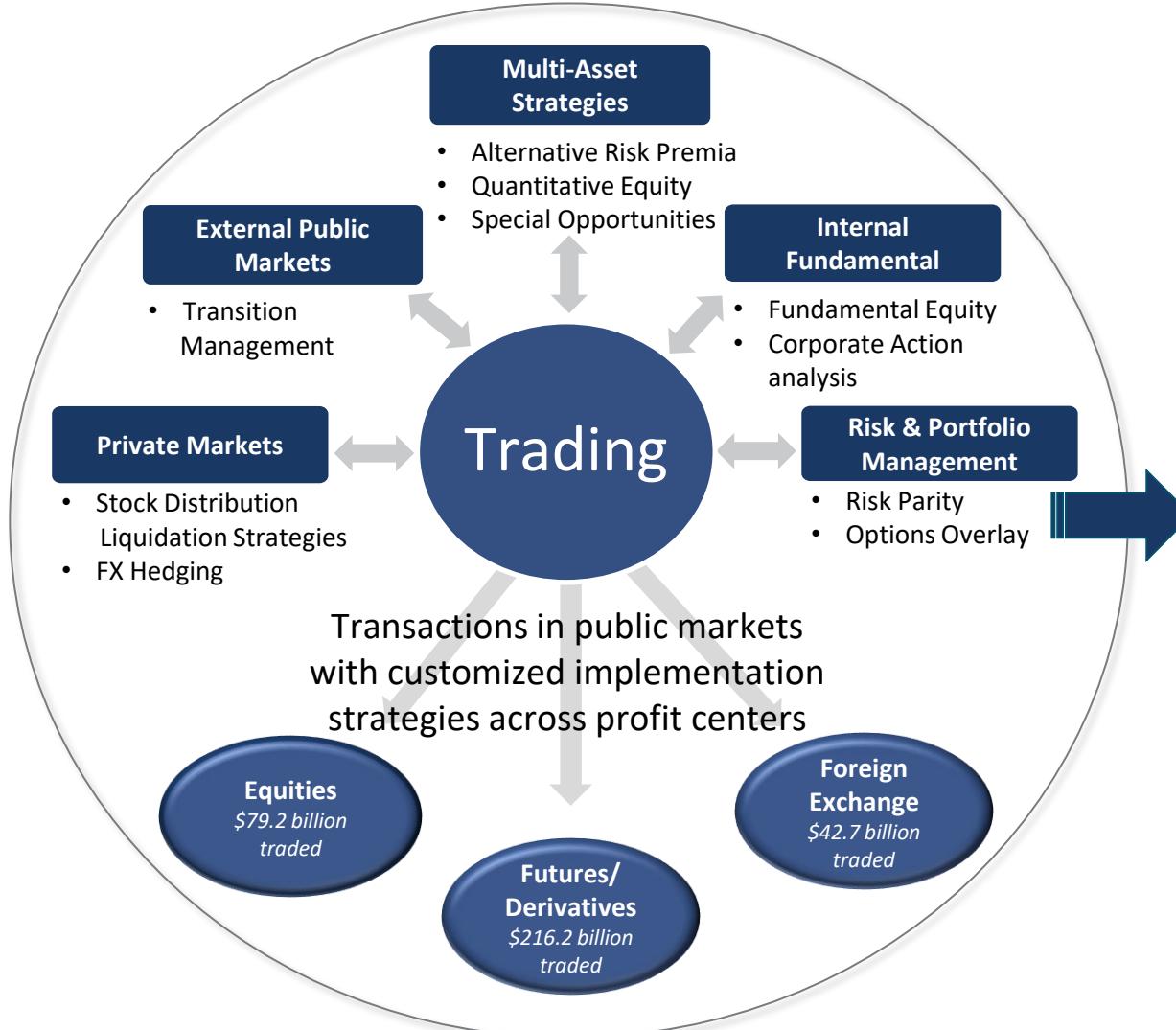


Index Management

- **Index Portfolio:** Manage 6 Passive Equity Portfolios which totaled \$4.1 billion as of 9/30/24
- **Full Replication:** Benchmark indices are fully replicated in the portfolio
- **Execution:** A market-on-close (MOC) order instructs the broker to buy or sell a security at the day's closing price, ensuring trade execution at the prevailing market price at the end of the trading day

Whom We Serve

Cross-Divisional Collaboration



Value Creation for TRS Members



Special Topic

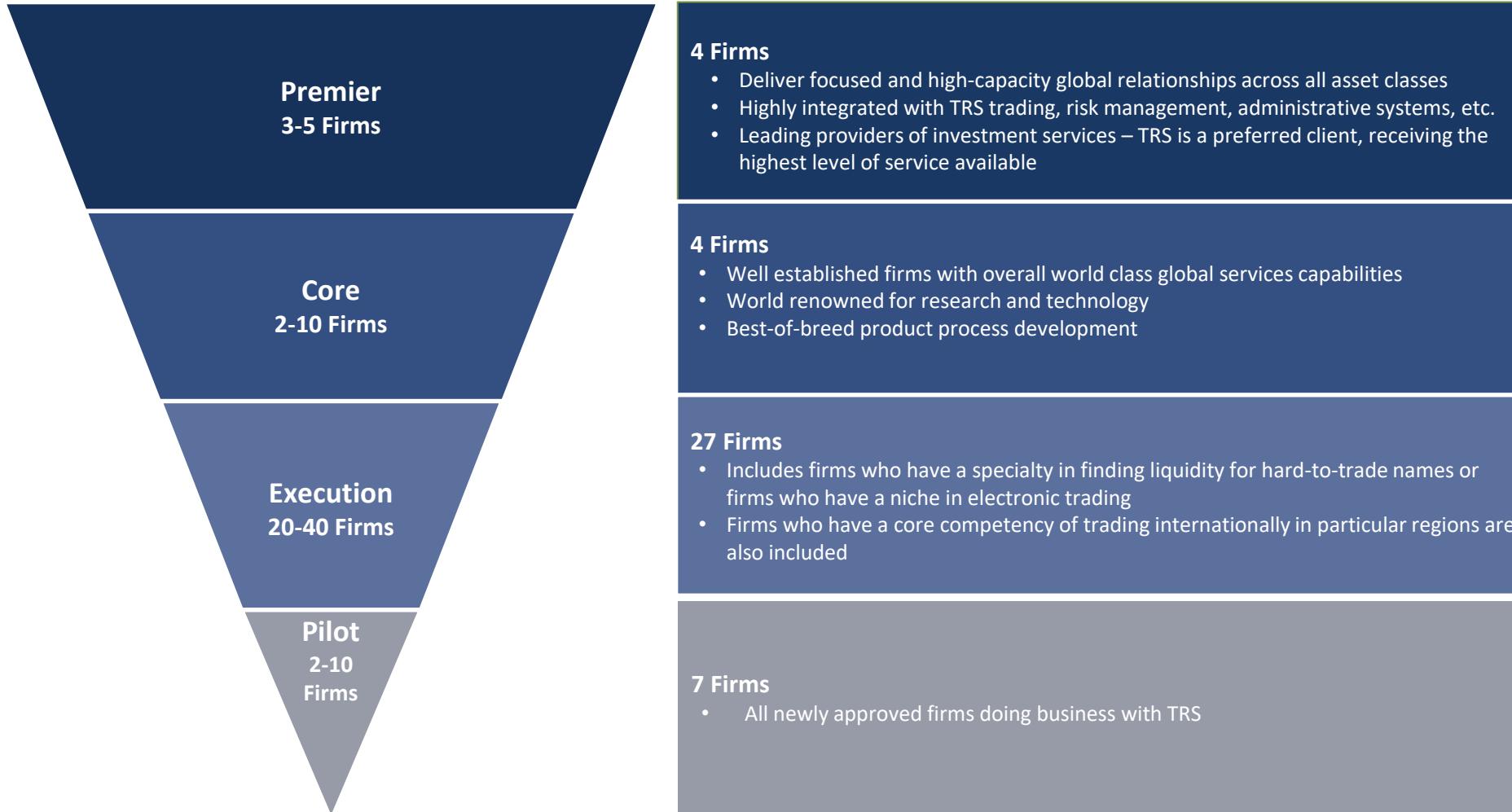
Life of an Equity Trade

Life of an Equity Trade

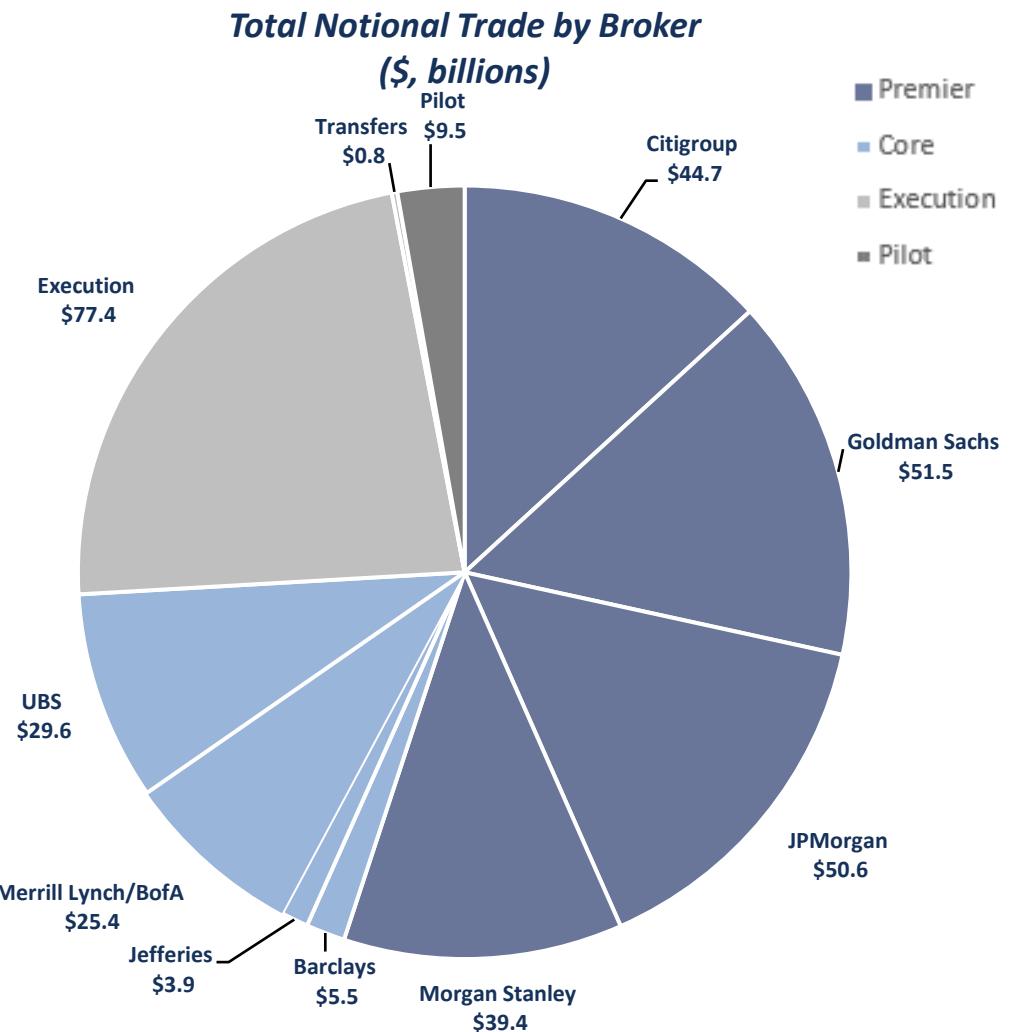
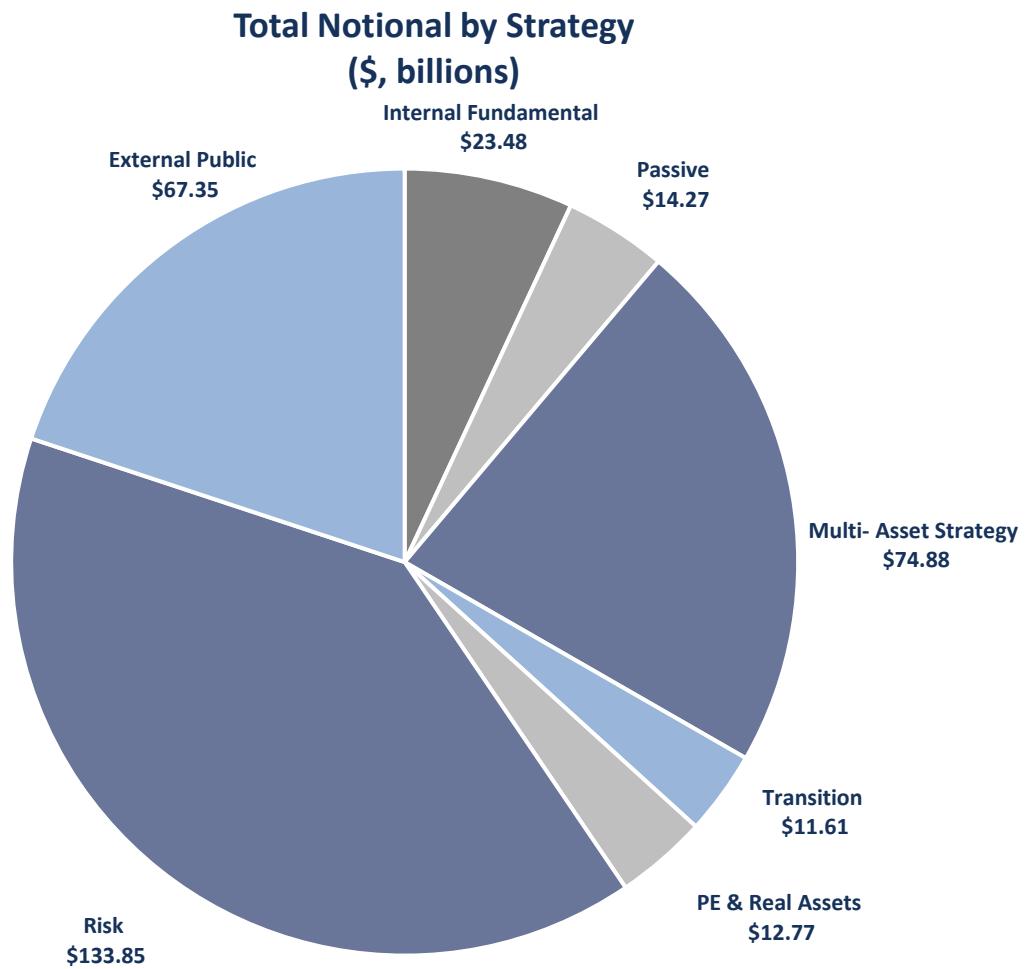


Trading Partner Network

As of September 30, 2024



Annual Trading Activity



Equity Trading & Passive Performance

Passive Equity Performance Alpha (bp)			
Portfolio	AUM (\$,mm)	1-Year	3-Year
Passive USA	0.2	227	64
Passive EAFE+CA	2,209.8	15	38
Passive EM	1,490.6	NA	NA
Pristine USA	170.4	1	6
Pristine EAFE+CA	187.1	24	41
Pristine EM	63.3	(43)	3

- Trading managed \$4.1 billion in Passive equities
- Passive portfolios have close to zero tracking error and performance should mirror the underlying equity index
- Annual savings of passive portfolio vs holding ETFs is \$21.4 million
- Transitioning passive management to Active Public Markets due to the planned expansion of passive portfolios

Equity Trading Performance

Year Ended Sept 30th	TRS Trading Performance	
	vs. Peer Benchmark	Quartile Ranking
2024	+6	2 nd
2023	+4	2 nd
2022	+7	2 nd
2021	+8	1 st
2020	+10	1 st
2019	+6	1 st
2018	+6	2 nd
2017	+3	2 nd
2016	+6	2 nd
2015	+8	1 st
2014	0	2 nd
Target	+9bp	1 st

- TRS has performed in-line with the median peer desk or better for 10 straight years
- Relative to our median peer we outperformed by \$49 million over the last year and over the last 10 years Trading retained \$601 million of TRS alpha over this time
- TRS equity execution is measured against the Virtu peer universe of institutional investors

APPENDIX

Broker Certification Process

Phase 1 - Certification Process for New Firms

Procedures for New Firms

- Broker qualifications questionnaire
- Minimum standard requirements

Evaluation Period

- 6 to 18 month process
- Identify valued services
- Transaction cost analysis review
- Recommendations
- Category fit

Annual Review

- Adds/Deletions
- Promotions/Demotions
- Qualitative review
- On-Site visit

Certification Process

- Senior management review

If acceptable, then ...

Phase 2 - Broker added to Pilot Program

Pilot Program

- Pilot brokers evaluated quarterly using same criteria as all TRS brokers

Quarterly Review Process

- Trader vote
- Transaction cost analysis
- Quarterly report card to each broker

Two Year Process

- Pilot brokers typically have up to a 2 year evaluation process to qualify for advancement to execution category

Completion of Pilot Program

- Advance to execution /core category or remove from broker list
- Broker has opportunity to advance based on performance after 1 year

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Investment Legal & Compliance Update

Heather Traeger, Managing Director, General Counsel & Chief
Compliance Officer

Denise Lopez, Director of Legal & Compliance, Investments

Chris Bowlin, Sr. Compliance Counsel, Investments

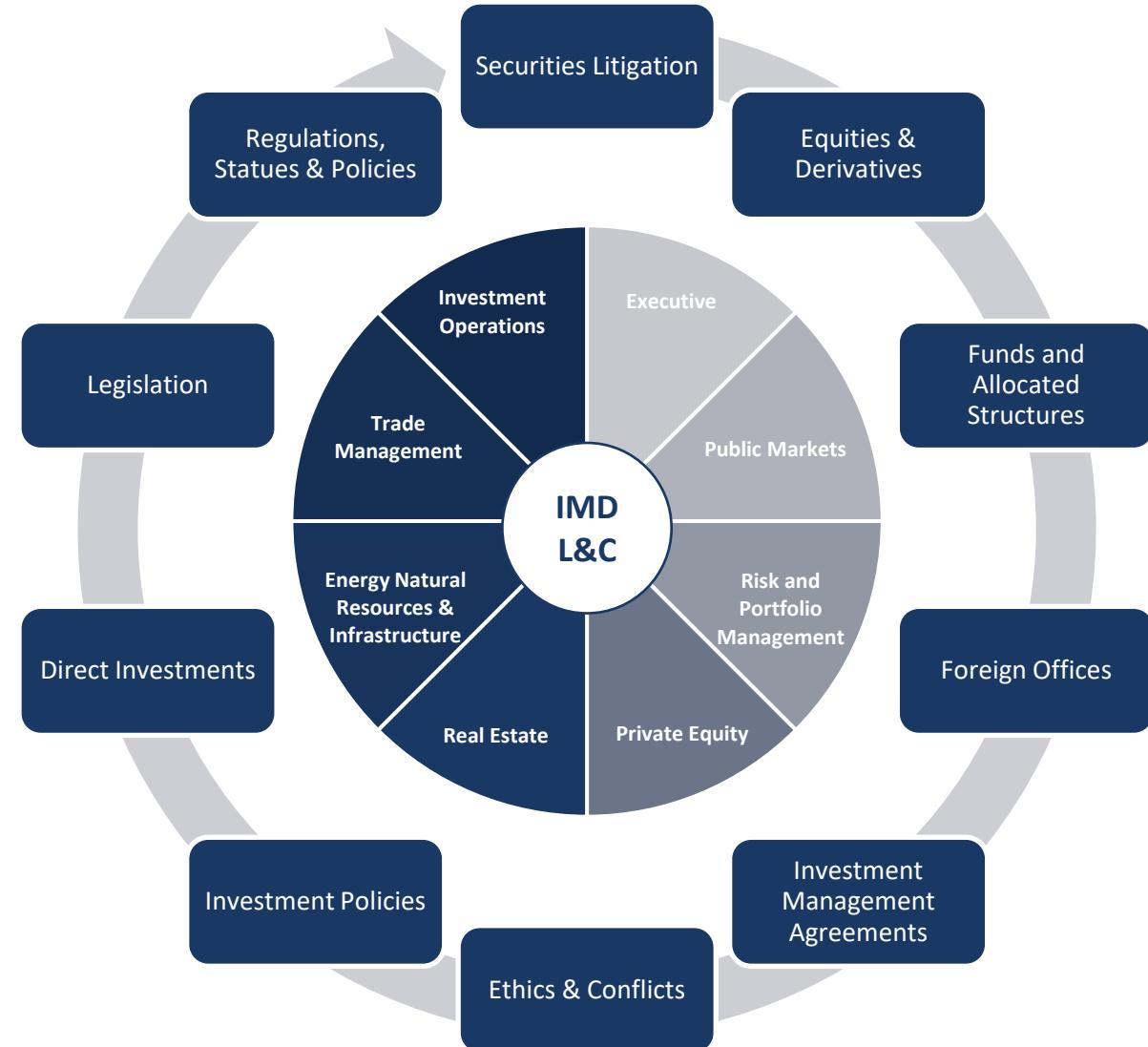
December 2024



Investment Legal & Compliance: Philosophy

L&C guiding principles: better deal terms, risk mitigation, compliance, ethical integrity, and profit center

- Expert Legal Advice
- Relentless Agency Focus
- Trusted Business Partner

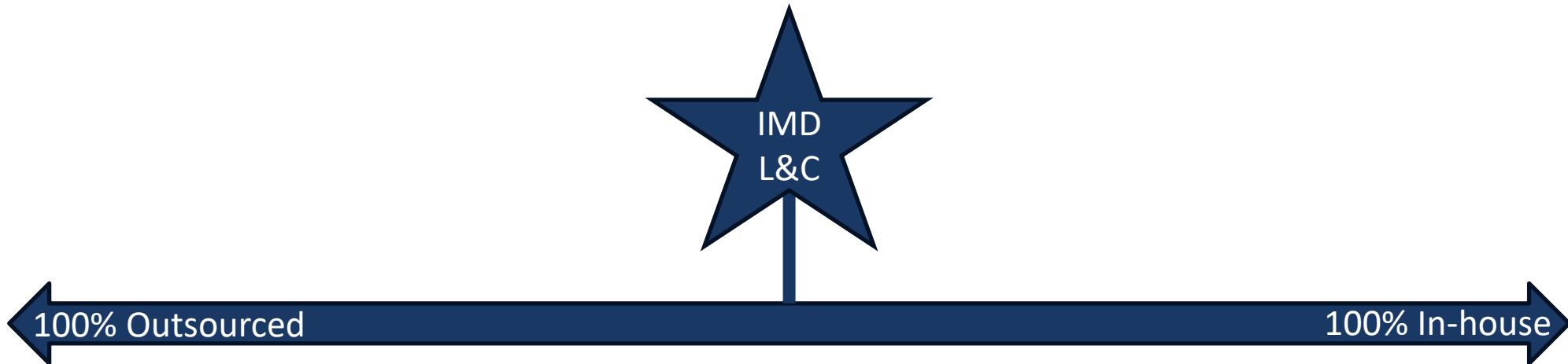


Who Are We?

- **Experience**
 - 15 years average legal expertise
 - 16 years average compliance expertise
 - 27 advanced degrees and certificates
 - **Broad Expertise**
 - Advise every portfolio
 - **Industry Leader**
 - Drive industry best practices and “Texas Way” negotiating for terms
 - Participate on boards and committees:
 - Institutional Limited Partners Association
 - National Society of Compliance Professionals
 - National Association of Public Pension Attorneys
 - Standards Board for Alternative Investments
 - **Mentors**
 - Participate in legal fellows program and IMD mentorship program
- 

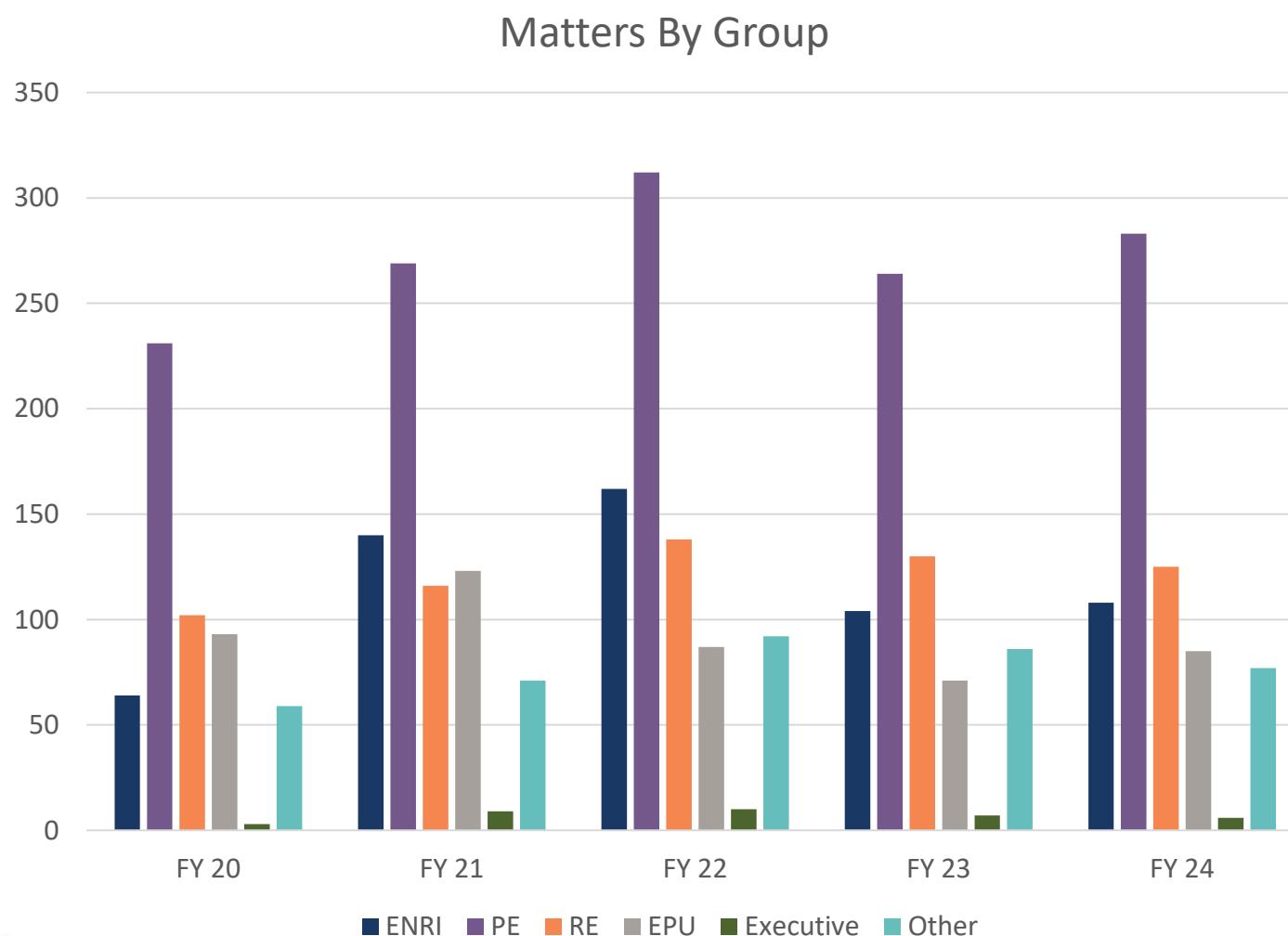
How Do We Work?

Wide Variety of Approaches Across the Industry . . .

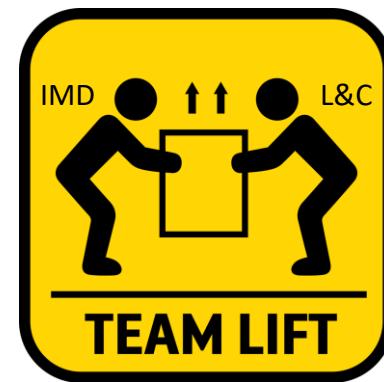


- Retain substantial amount of work in-house
- Allocate legal resources strategically and effectively
- Advocate for TRS
- Manage external counsel on complex matters

What Do We Do?

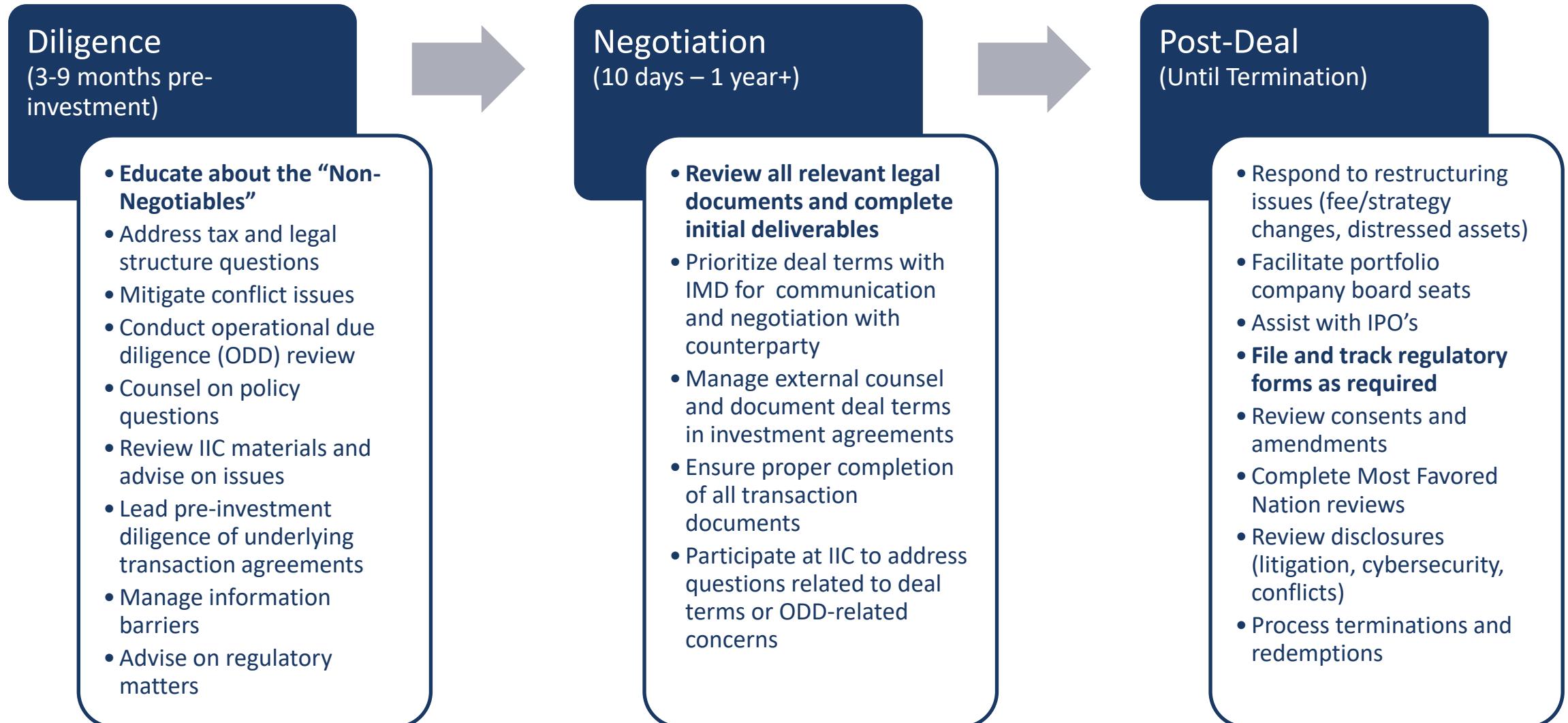


FY	Total # of Matters
2024	684
2023	662
2022	801
2021	728
2020	552



TOGETHER FROM THE BEGINNING

What Do We Do? *Transaction Lifecycle*



Investment Legal & Compliance: Accomplishments and Priorities

2024 Accomplishments

- Advised on legislation for wholly-owning and controlling title holding corporations
- Developed Knowledge Management Library as an IMD resource that contains various legal presentation and training materials
- Created and presented various IMD internal legal trainings
- **Provided input and support for implementation of changes to the IMD IIC Process and Guidelines and Investment Policy Statement updates**
- **Hosted 9th Annual Legal & Compliance Summit**
- Reviewed new regulatory rules and implemented the requirements

2025 Priorities

- Initiate legislative review process for upcoming session
- Provide support and advice on use of various new software platforms and investment data modernization
- Complete global RFQ for external counsel including for investments
- Host 10th Annual Legal & Compliance Summit
- **Leverage workflows for more efficient resolution of compliance and ethics matters**
- **Develop training approaches for comprehensive understanding of current policies and evolving statutory, regulatory, and enforcement landscape**

APPENDIX

Investment Legal & Compliance: Organization



Denise Lopez
Director, Investments
JD, Cornell
MPA, BBA, UT Austin
CPA



Heather Traeger
General Counsel &
Chief Compliance Officer
JD, University of Houston
BA, Williams College

Experience Summary

27 Advanced degrees and certificates

15 Years average of legal experience

16 Years average of compliance experience

INVESTMENT LEGAL



Deanna Buck
Sr. Investment Counsel
LLM, NYU
JD, BA, Georgetown
CPA



Steve Poliner
Sr. Investment Counsel
JD, NYU
BS, BA, Duke University



Bianca Green
Sr. Investment Counsel
BA, JD UT Austin



Bo Simmons
Sr. Investment Counsel
JD, Columbia
BA, University of Missouri



J.R. Morgan
Sr. Investment Counsel
JD, UCLA
BA, BS, Evergreen State



Howell Li
Investment Counsel
JD, Boston College
MA, Harvard; BA, Berkeley



Manfred Wellington
Investment Counsel
JD, Columbia University
BA, UT Austin



Saira Khan
Investment Counsel
BA, JD UT Austin



Abdullah Syed
Associate Attorney
JD, Univ. Of Texas at Austin



Anna Espinosa
Legal Specialist
BA, Paralegal Certification,
UT Austin



Lisa Lopez
Legal Specialist
Paralegal Certification,
University of Incarnate Word



Novi Campbell
Legal Specialist
Paralegal Certification, UT
MA, Southern Illinois
BA, Universitas Indonesia

INVESTMENT COMPLIANCE



Chris Bowlin
Sr. Compliance Counsel
JD, Texas Wesleyan
MS, BS, Texas A&M



Michael Schaff
Compliance Counsel
JD, Hofstra University
BS, UT Austin



Adam Costa
Sr. Compliance Specialist
BA, University of Pittsburgh



Elena Barreiro
Compliance Specialist
BA, MEBIK



Carlos Montoya
Compliance Officer
JD, Univ. Of Wisconsin
BA, UT Austin

Shared Services

BOARD, PIA, PROCUREMENT



Alice McAfee
Team Lead, Government
Procurement Solutions (GPS)
JD, MA, BA, UT Austin

EMPLOYMENT / IP



Stephanie Perkins
Assistant General Counsel
JD, UT Austin
BA, Vanderbilt

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Annual Update to the Board Risk and Portfolio Management

James Nield, Chief Risk Officer
Mark Telschow, Director

December 2024



Risk and Portfolio Management (RPM) Group



James Nield, CFA, FRM
Chief Risk Officer
*MBA, Finance,
New York University
BS, Finance,
Pennsylvania State University*



Mark Telschow, CFA
Director
*BS, Civil Engineering,
University of Texas*



Stephen Kim
Director
*MBA, Finance,
University of Texas,
BS, Computer Science,
Dartmouth College*



Mike Simmons, CFA
Director
*MPA, Accounting,
University of Texas
BBA, Finance,
Texas A&M University*



Hasim Mardin, FRM
Director
*MS, Economics,
University of Texas*



Teresa Lwin, PhD
Investment Manager
*PhD, Finance,
MBA, Chicago Booth
School of Business*



Melissa Jenkins, PhD
Investment Manager
*PhD, Physics,
University of Texas
BS, Abilene Christian University*



Chris Pan
Investment Manager
*BBA, Accounting,
University of Texas
MPA, University of Texas*



Steven Lambert
Senior Associate
*MBA, Finance,
Northeastern University
BS, Business Management,
Saint Joseph's College*



Andrew Arts
Senior Associate
*BA, Economics,
University of Wisconsin-Madison*



Mike Attanucci, CFA, CPA
Senior Associate
*MPA, Accounting,
University of Texas
BBA, Accounting and Finance,
Texas Christian University*



Alex Zhang, PhD, CFA
Senior Associate
*PhD, Finance,
University of Kansas
MBA, University of Wisconsin-Madison*



Paul Waclawsky, CFA
Associate
*BS, Accounting,
University of Maryland*



Emily Lu
Senior Analyst
*BS, Statistics & Data Science,
UC Santa Barbara*



Deral Robison
Senior Analyst
*BS, Finance, Analytics & Technology,
Trinity University*



Melissa Juranek
Assistant
*BBA, Management,
University of Texas*

11

Years of average direct
investment experience

18

Advanced degrees
and certifications

RPM delivers four key mandates to Trust

1. Risk Management

- Monitor daily risk signals
- Provide monthly update
- Develop battle plans

Board Report



3. Trust Management

- Rebalance asset classes
- Optimize balance sheet
- Manage cash balance

Liquidity



2. RPM Portfolios

- Build repeatable processes
- Create scalable solutions
- Generate alpha

Portfolios



4. Trust Strategy

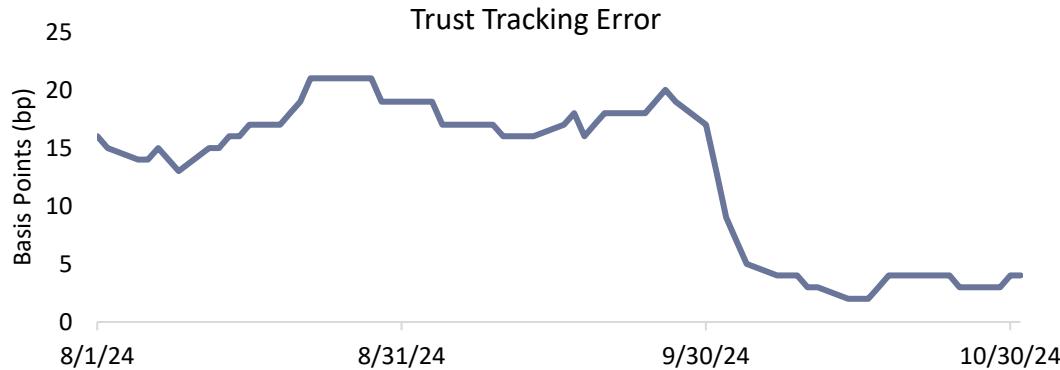
- Shape Asset Allocation (SAA)
- Inform decision making
- Research market conditions

Strategy

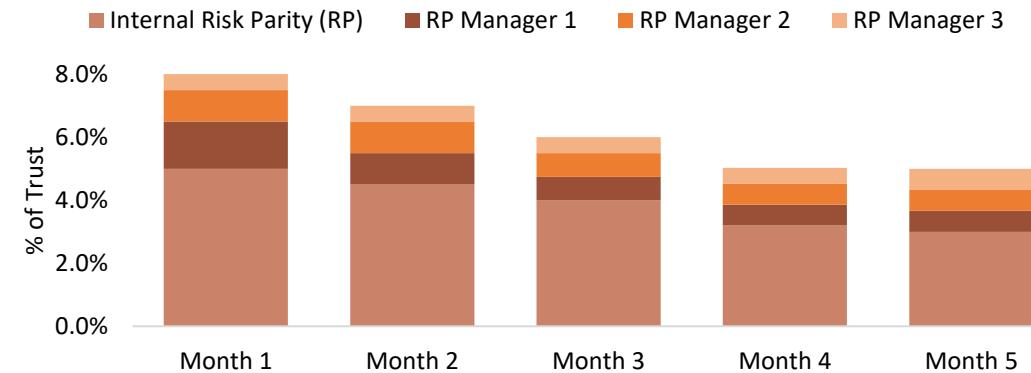


RPM mandates in action during SAA transition

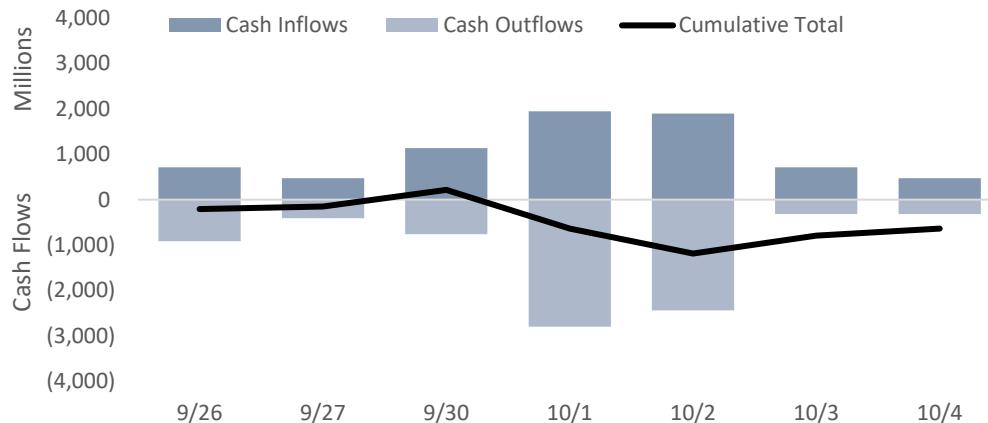
1. Risk Management measuring active risk



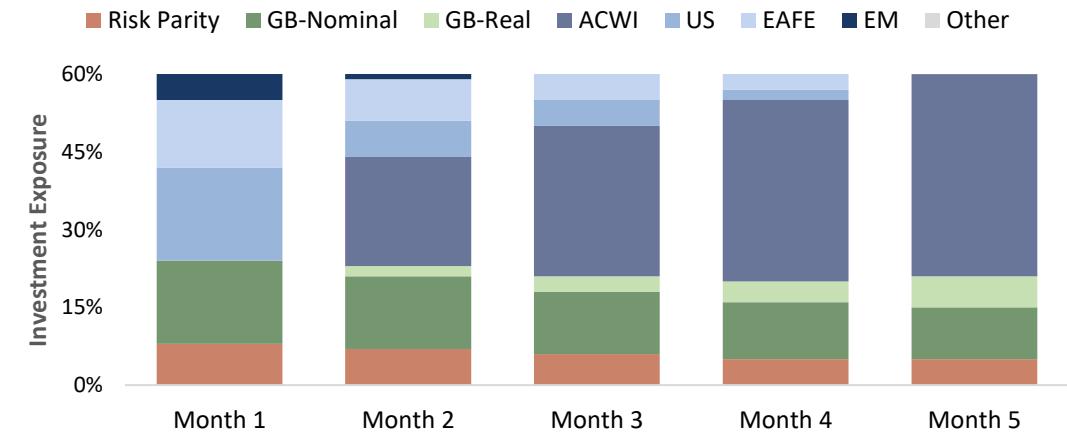
2. RPM Portfolios trading to new target



3. Trust Management managing cash balance



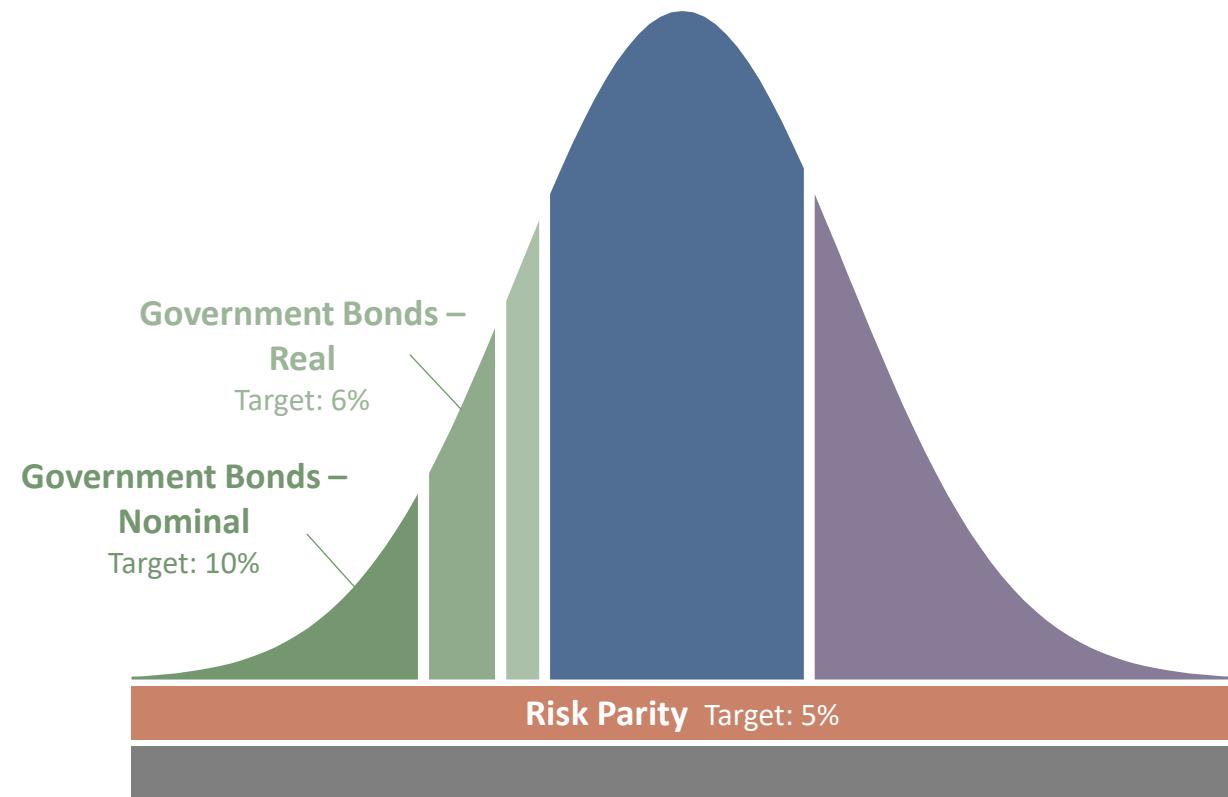
4. Trust Strategy coordinating profit center trades



Note: Information shown on this page has been stylized

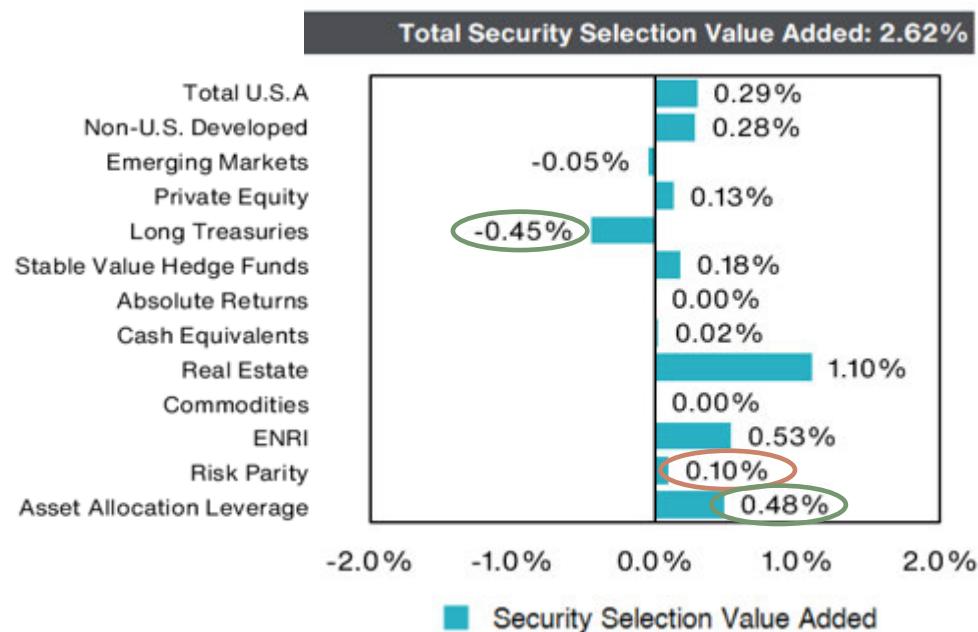
RPM Portfolios have delivered alpha to the Trust

RPM Portfolios Role in Trust



Source: IMD, SSB, Aon

	As of September 30, 2024		1-Year		3-Year	
	Return	Excess	Return	Excess	Return	Excess
Risk Parity	22.6%	1.5%			0.2%	2.4%
Internal Risk Parity (\$8.2B)	23.3%	2.2%			0.4%	2.7%
External Risk Parity (\$5.4B)	21.4%	0.3%			0.0%	2.2%
Gov Bonds ex-Repo Costs	15.6%	0.2%			-8.3%	0.1%
Government Bonds (\$24.8B)	12.0%	-3.4%			-10.1%	-1.7%

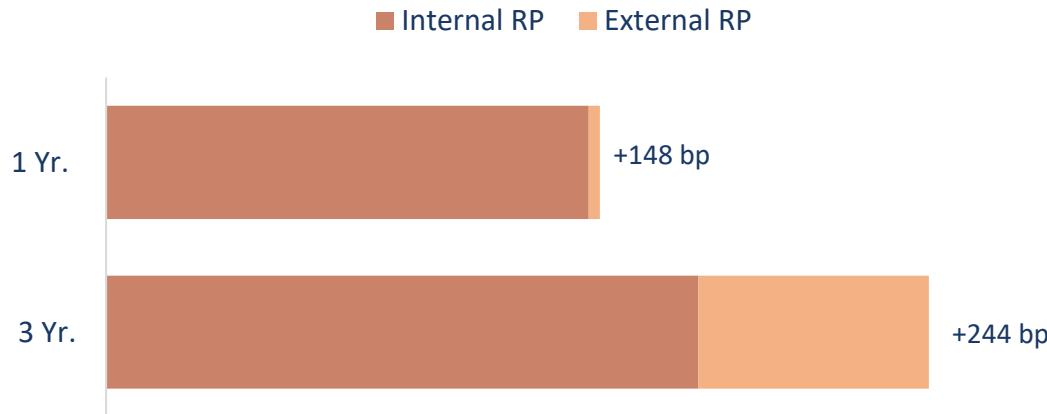


RPM Portfolios delivering on portfolio mandates

- Risk Parity

- Mandate: Deliver diversified beta and fee savings
 1. Positive external manager selection
 2. Internal portfolio outperformance
 - Internal portfolio accounts for two-thirds of allocation

Risk Parity Internal / External Alpha Split



Source: IMD, SSB

- Government Bonds – Nominal

- Mandate: Provide liquid passive-like exposure
 1. Low tracking error
 2. Craftsmanship alpha adding value
 - Three-year cumulative value-add of \$71mm

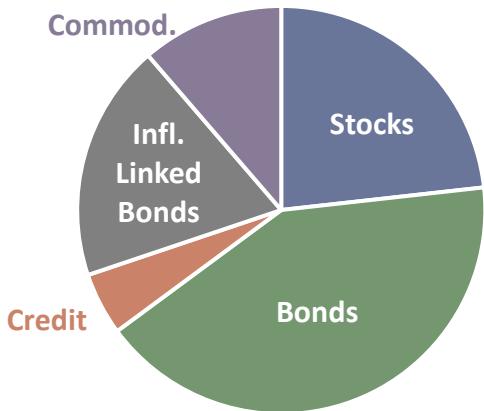
Government Bonds Tracking Error



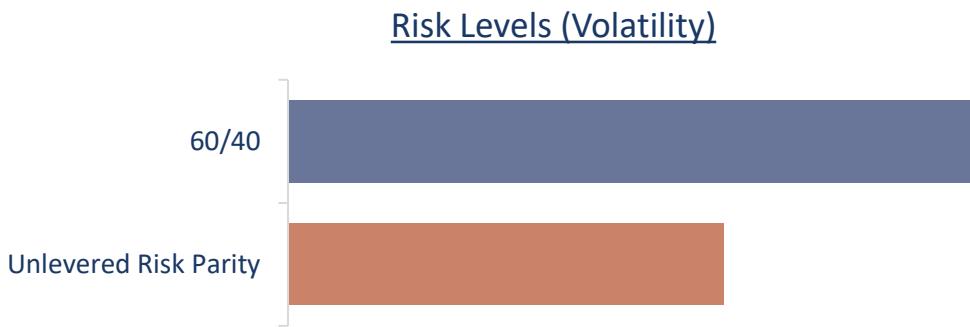
Risk Parity going to 5% Trust allocation

- **What is Risk Parity?**

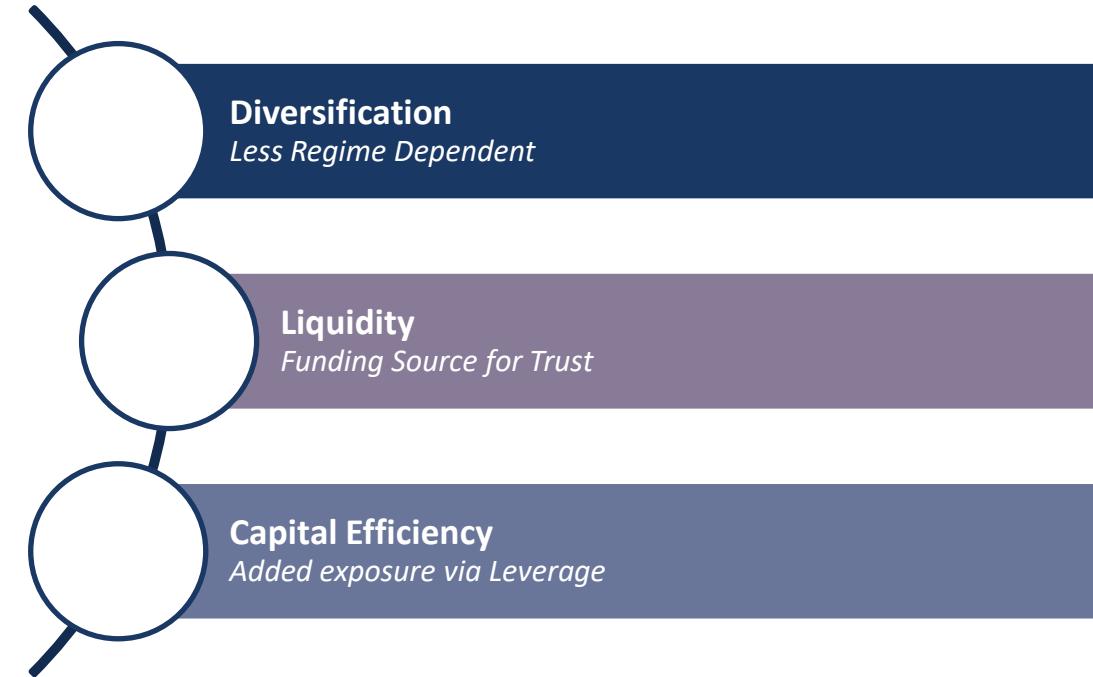
- Diversified portfolio of public-market assets



- Levered prudently given lower risk levels



- A portfolio that provides multiple benefits to Trust

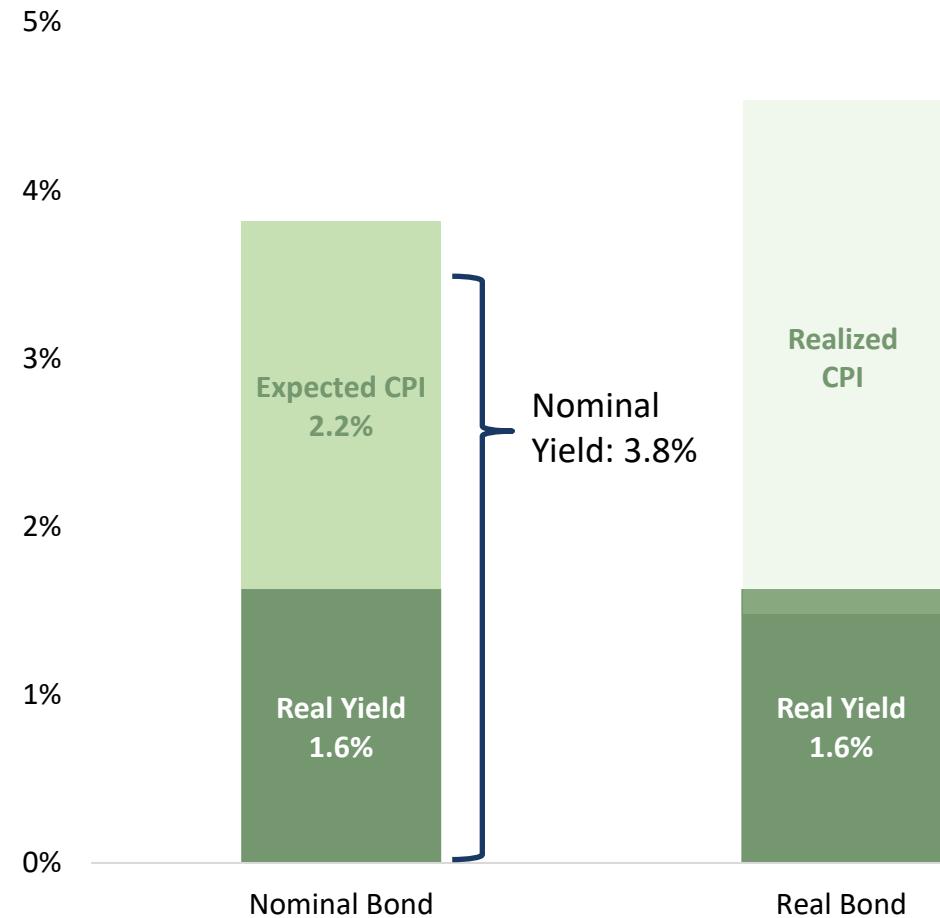


Note: 60/40 represents a 60% MSCI ACWI equity allocation and a 40% Bloomberg US Aggregate bond index allocation

Government Bonds-Real (GB-Real) portfolio up and running

- **GB-Real** provides inflation protected cash flows by linking bond value to CPI (consumer price index)
 - GB-Real allocation lowers trust duration and inflation sensitivity
 - Portfolio will be managed internally with low tracking error similar to the nominal government bonds portfolio
 - Real government bonds will also be used to:
 - Support Trust financing (repo program)
 - Meet collateral needs for derivative trades
 - Fund securities lending program

Nominal Bonds vs. Real Bonds (GB-Real)



What we are focused on

- Streamline the SAA process
 - How to make process better and more efficient
- Incorporate new risk system
 - Better leverage TRS data
- Enhance Trust liquidity tools
 - Incorporate second Securities Lending agent
- Generate better beta and add alpha