

# Pennsylvania Municipal Retirement System

Quarterly Performance Report  
As of June 30, 2024



[Page Intentionally Left Blank]

# TABLE OF CONTENTS

---

## EXHIBITS

Marquette Update ..... I  
Market Environment..... II  
Portfolio Overview ..... III  
Investment Managers..... IV

## DISCLOSURE

---

Marquette Associates, Inc. ("Marquette") has prepared this document for the exclusive use by the client or third party for which it was prepared. The information herein was obtained from various sources, including but not limited to third party investment managers, the client's custodian(s) accounting statements, commercially available databases, and other economic and financial market data sources.

The sources of information used in this document are believed to be reliable. Marquette has not independently verified all of the information in this document and its accuracy cannot be guaranteed. Marquette accepts no liability for any direct or consequential losses arising from its use. The information provided herein is as of the date appearing in this material only and is subject to change without prior notice. Thus, all such information is subject to independent verification and we urge clients to compare the information set forth in this statement with the statements you receive directly from the custodian in order to ensure accuracy of all account information. Past performance does not guarantee future results and investing involves risk of loss. No graph, chart, or formula can, in and of itself, be used to determine which securities or investments to buy or sell.

Forward-looking statements, including without limitation any statement or prediction about a future event contained in this presentation, are based on a variety of estimates and assumptions by Marquette, including, but not limited to, estimates of future operating results, the value of assets and market conditions. These estimates and assumptions, including the risk assessments and projections referenced, are inherently uncertain and are subject to numerous business, industry, market, regulatory, geo-political, competitive, and financial risks that are outside of Marquette's control. There can be no assurance that the assumptions made in connection with any forward-looking statement will prove accurate, and actual results may differ materially.

The inclusion of any forward-looking statement herein should not be regarded as an indication that Marquette considers forward-looking statements to be a reliable prediction of future events. The views contained herein are those of Marquette and should not be taken as financial advice or a recommendation to buy or sell any security. Any forecasts, figures, opinions or investment techniques and strategies described are intended for informational purposes only. They are based on certain assumptions and current market conditions, and although accurate at the time of writing, are subject to change without prior notice. Opinions, estimates, projections, and comments on financial market trends constitute our judgment and are subject to change without notice. Marquette expressly disclaims all liability in respect to actions taken based on any or all of the information included or referenced in this document. The information is being provided based on the understanding that each recipient has sufficient knowledge and experience to evaluate the merits and risks of investing.

Marquette is an independent investment adviser registered under the Investment Advisers Act of 1940, as amended. Registration does not imply a certain level of skill or training. More information about Marquette including our investment strategies, fees and objectives can be found in our ADV Part 2, which is available upon request.

# Marquette Update



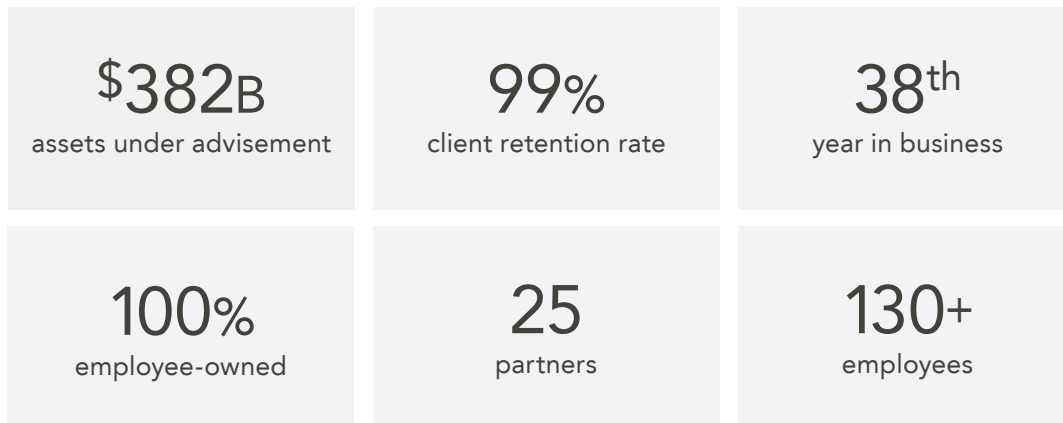
[Page Intentionally Left Blank]

# Marquette Update

3Q 2024



Our 2024 Halftime Market Insights webinar hosted by our research team will be live July 23 at 1:00pm CT, featuring in-depth analysis of the first half of 2024 and a look ahead at risks and opportunities to monitor in the coming months. Reach out to our team for registration information at [clientservice@marquetteassociates.com](mailto:clientservice@marquetteassociates.com). We'll post the recording to our website and YouTube channel on July 24.



[Subscribe to research email alerts](#) Follow us on [YouTube](#) [Twitter](#) [LinkedIn](#)

## MID-YEAR PROMOTIONS

**Matt Nowak, AIF®**  
Associate Director of Defined Contribution

**Frank Valle, CFA, CAIA**  
Associate Director of Fixed Income

**Catherine Hillier**  
Sr. Research Analyst

**Kat Armstrong, RPA**  
AVP, OCIO Services

**Mike Barry, CFA, CAIA**  
AVP, Client Service

**Jonathan Bryant, CFA**  
AVP, Client Service

**Sam Frymier**  
AVP, Client Service

**Michael Snooks, CFA**  
AVP, Client Service

**Jaclyn Rachanski**  
Client Analyst

**Artem Rozenshteyn**  
Assoc. Client Analyst, OCIO Services

**Ryan Maher**  
Sr. Performance Analyst

**Ben Piasecki**  
Sr. Performance Analyst

**Anthony Wang**  
Sr. Performance Analyst

**Jake Wilson**  
Sr. Performance Analyst

## UPCOMING SPEAKING ENGAGEMENTS

- ▶ Jack Sannes speaking at CFNEIA Professional Advisor Education Series 7/16 ([link](#))
- ▶ Lee Martin speaking at KORIED Global Summit 7/18 ([link](#))
- ▶ David Smith, Kweku Obed, Greg Leonberger speaking at ALTSCHI 2024 7/22–23 ([link](#))
- ▶ Nat Kellogg, Jamie Wesner speaking at Pension Bridge Private Equity Exclusive 2024 7/23–24 ([link](#))
- ▶ Kris Katariski speaking at Titan Investors Denver Institutional Exchange 7/23 ([link](#))
- ▶ Ryan P. Tracy speaking at Titan Investors Denver Private Active Exchange 7/24 ([link](#))
- ▶ Brad Hampton speaking at Titan Investors Washington D.C. Institutional Exchange 8/22 ([link](#))
- ▶ Evan Frazier speaking at Portfolio Summits 2024 Fiduciary Investor Central Summit 9/12 ([link](#))
- ▶ Sam Frymier speaking at 2024 GAPPT Trustee School 9/16 ([link](#))
- ▶ Greg Leonberger speaking at P&I Chicago Fixed Income & Credit Conference 9/24 ([link](#))

Client data as of March 31, 2024; firm data as of July 2024. Client retention rate calculated 2014–2023. Owned by current and former employees. Marquette is an independent investment adviser registered under the Investment Advisers Act of 1940, as amended. Registration does not imply a certain level of skill or training. More information about Marquette including our investment strategies, fees and objectives can be found in our ADV Part 2, which is available upon request and on our website.

[Page Intentionally Left Blank]



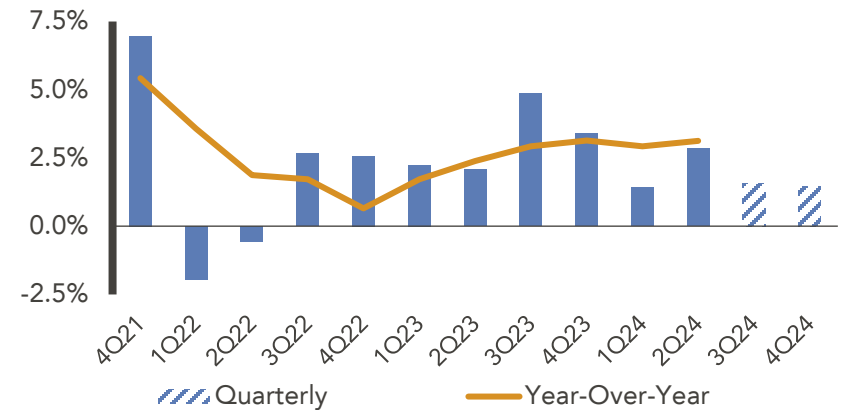
# Market Environment



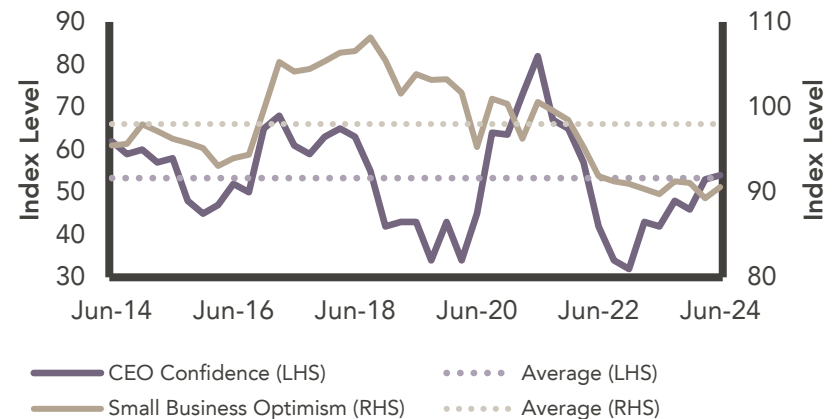
# U.S. Economy

- U.S. economic growth picked up notably in Q2, with real GDP increasing at an annual rate of 2.8%. The better-than-expected headline print reflected an upturn in inventory investment, nonresidential fixed investment, and an acceleration in consumer spending.
- While the economy has remained largely resilient since early 2023 amid higher interest rates, it has become increasingly bifurcated with larger corporations and higher-income households doing better than smaller firms and lower-income households, respectively.
- For example, CEO confidence is near its 10-year average, while small business optimism is languishing near decade lows, with smaller firms having more difficulty hiring, securing inventory, and managing higher interest rates. Credit card and auto loan delinquency rates for younger households, meanwhile, are rising at faster rates than for older (e.g., 50+) households.

U.S. Real GDP Growth<sup>1</sup>



U.S. Business Confidence

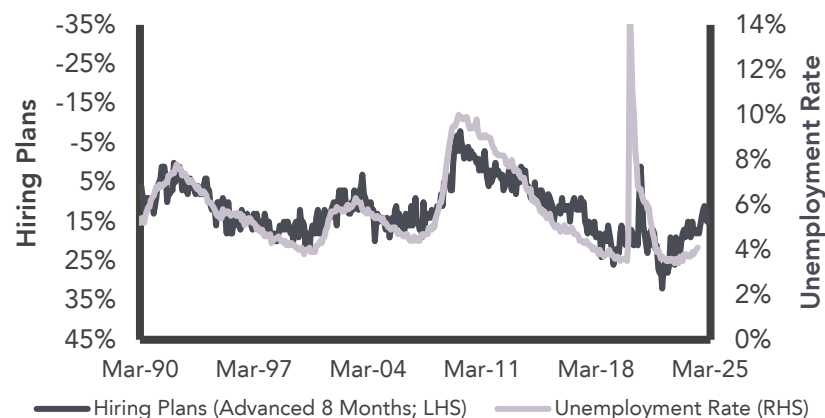


Source: Federal Reserve Bank of St. Louis, Refinitiv, The Wall Street Journal  
<sup>1</sup>Striped bars reflect economist estimates from The Wall Street Journal Economic Forecasting Survey

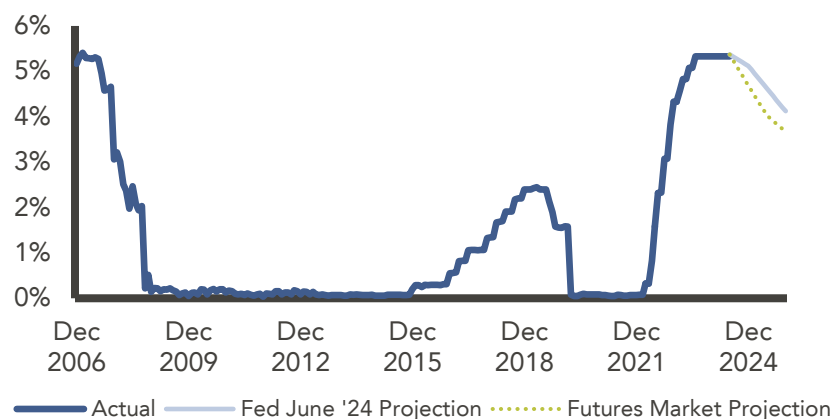
# U.S. Economy

- Despite a slight increase in economic activity, the labor market has begun to soften. The unemployment rate, for example, was 4.1% at the end of June—a notable increase above its 12-month low of 3.5%. Further, the one-year change in temporary help positions—often a leading indicator for the overall labor market—was **-7.7%** in June, marking its worst level since April 2020.
- Looking ahead, it seems that further loosening of labor market conditions is more likely than not. Small business hiring plans have weakened over the past year, which is consistent with a higher unemployment rate in the coming quarters.
- Given this, markets now see nearly three rate cuts in 2024 and another four cuts in 2025. While the Fed’s June base case showed one cut in 2024 and another four cuts in 2025, most market participants now expect the Fed to cut at least twice this year.

Small Business Hiring Plans<sup>1</sup> vs. Unemployment Rate



Short-Term Interest Rates



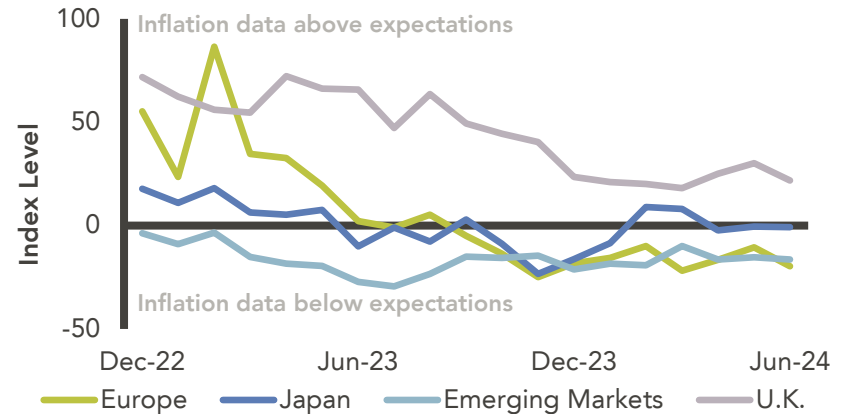
Source: Refinitiv

<sup>1</sup>NFIB small business survey: net percentage of respondents planning to increase minus decreases total employees in the next three months

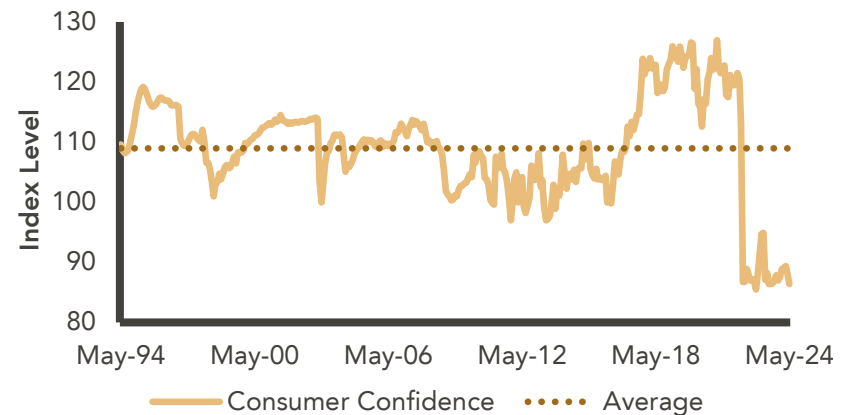
# Global Economy

- Similar to the U.S., inflation data in most major economic regions was better-than-expected in Q2, particularly in the eurozone and emerging markets.
- Annual inflation fell to 2.5% in the eurozone through June—well below its peak of 10.6%. Given lower inflation and softening economic data in Q2, the European Central Bank cut its key rate by 25 basis points in June.
- In China, meanwhile, consumer inflation has been much less of a problem compared to developed market economies. In June, its CPI rose just 0.2% from a year earlier—below expectations of 0.4%.
- Policymaker efforts to rebalance the Chinese economy toward consumption have been unsuccessful, as domestic demand remains weak after an unimpressive post-COVID recovery. Recent economic growth has been driven by exports and investment, while household savings is at record levels amid generational lows in consumer confidence.

Citigroup Inflation Surprise Indices



China Consumer Confidence

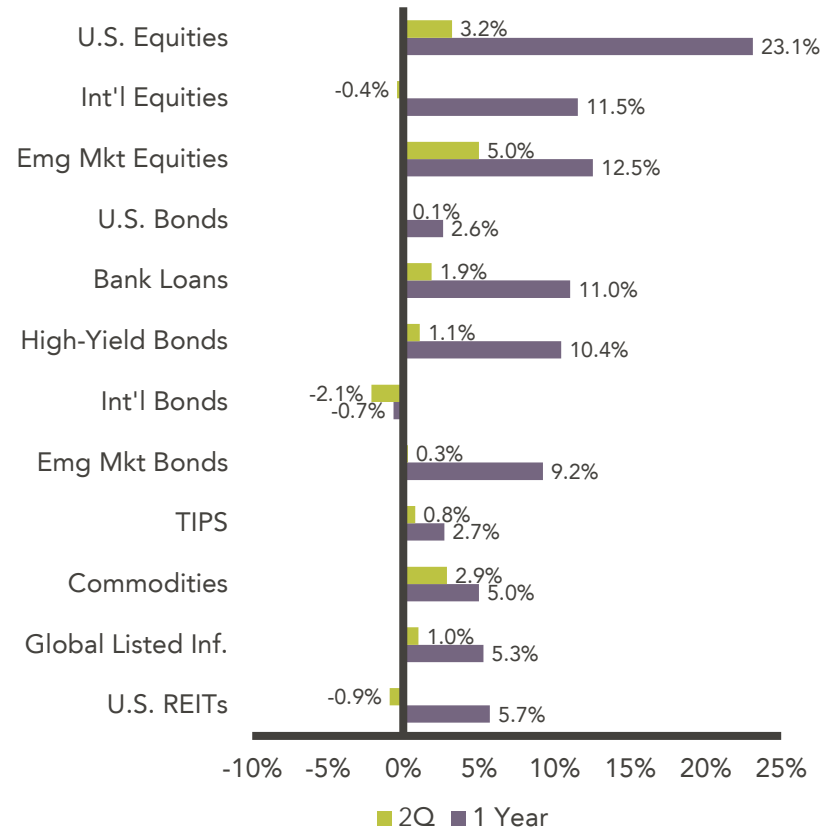


Source: Refinitiv

# Global Asset Class Performance

- Global equities continued to rally in Q2, though performance was muted compared to Q1 amid mixed economic data. U.S equities posted a solid quarter, while emerging markets led the way. U.S. dollar strength played a role, detracting approximately 1.4 and 1.2 percentage points, respectively, from international developed and emerging markets returns.
- Fixed income market returns were broadly positive. Investment-grade bonds were slightly in the black as income offset marginally higher rates across most of the yield curve. Sub-investment grade debt posted gains, with bank loans outperforming high yield given their floating-rate characteristics.
- Inflation-sensitive assets were also mostly positive in Q2. TIPS outperformed their nominal government bond counterparts. Global listed infrastructure was in the black though lagged broad global equity markets, while REITs were negative as higher rates drove the relative underperformance for both asset classes. Despite a slight decline in oil prices, commodities were in the black with gold prices rising more than 5% in the quarter.

Asset Class Returns: Select Asset Class Performance

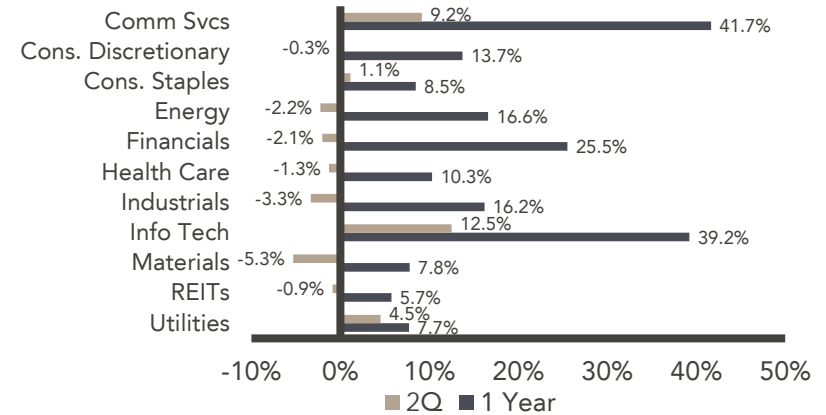


Source: Refinitiv

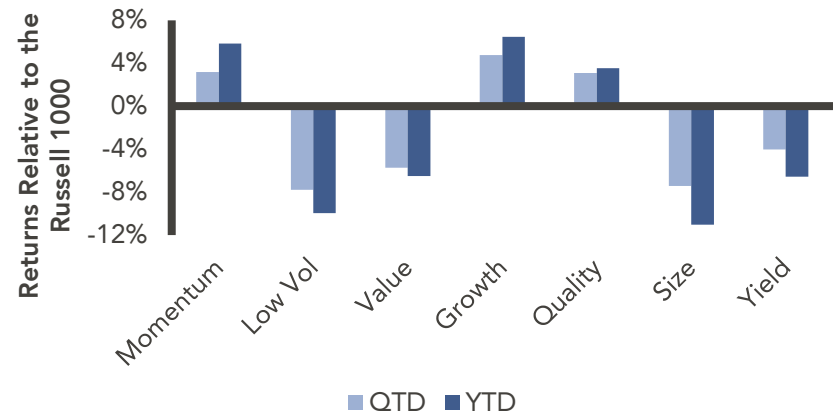
# U.S. Equity Markets

- Economic sector performance was mixed in Q2, with most sectors in the red, despite the broad market gains. Materials and Industrials were the worst-performing sectors amid tepid economic data. At the other end of the spectrum, Information Technology led the way, followed by Communication Services.
- From a style perspective, growth stocks topped value stocks once again in Q2. Over the past year, growth has outperformed value by more than 19 percentage points (as measured by their respective Russell 3000 Indices) thanks to continued outperformance by a handful of mega-cap growth stocks.
- High momentum stocks, which are currently dominated by mega-cap growth names (Nvidia, Amazon, Eli Lilly, etc.) outperformed once again in Q2, while small caps, mid caps, and higher-yielding stocks underperformed notably amid higher interest rates.

## Sector Returns



## 2Q Returns Relative to the Russell 1000

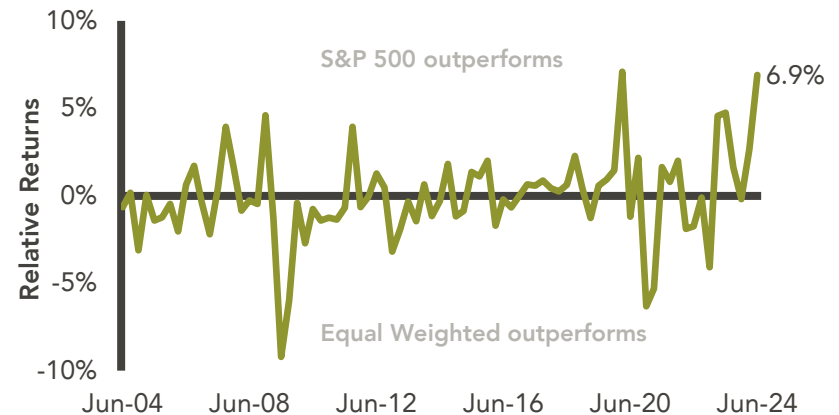


Source: Bloomberg, Refinitiv

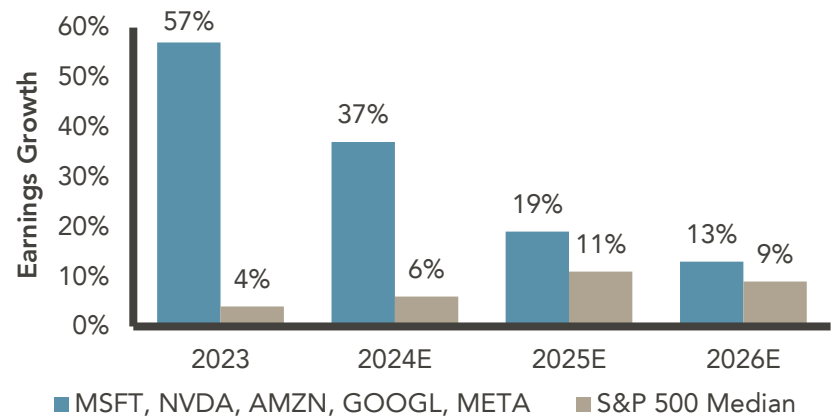
# U.S. Equity Markets

- Much like the bifurcation in the U.S. economy, larger stocks have outperformed notably better than their smaller stock peers. Indeed, a handful of mega-cap stocks continue to account for the bulk of U.S. equity market returns. Market breadth was extremely poor in Q2, with mid- and small-cap equities comfortably in the red.
- For the quarter, the S&P 500 Index outperformed its equal-weighted counterpart by nearly 7 percentage points. This marked the second-largest quarterly outperformance by the market cap weighted index vs. the equal weighted version in the past 20 years.
- Mega-cap outperformance has been driven by superior fundamentals and the AI narrative that has gripped markets over the past year. Five stocks have accounted for approximately 60% of the S&P 500 year-to-date return.
- Moving forward, superior earnings growth for these mega-cap names is expected to continue in the coming years, though the spread compared to the median S&P 500 stock is estimated to narrow considerably in 2025 and 2026.

Quarterly Performance: S&P 500 vs. S&P 500 Equal Weighted



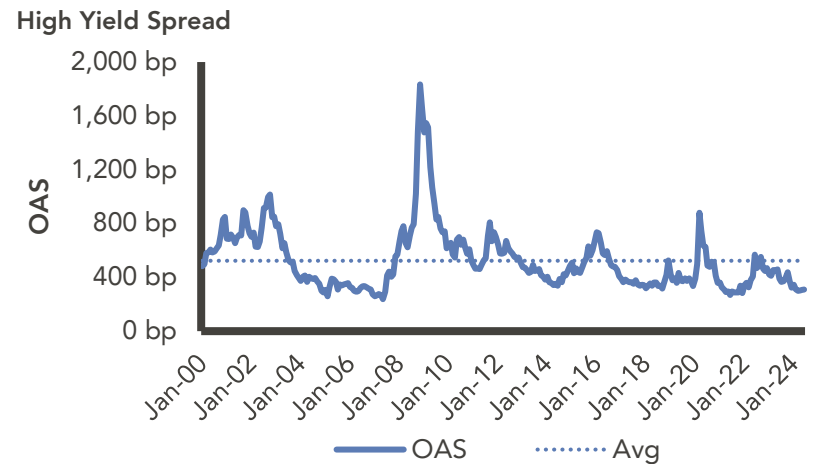
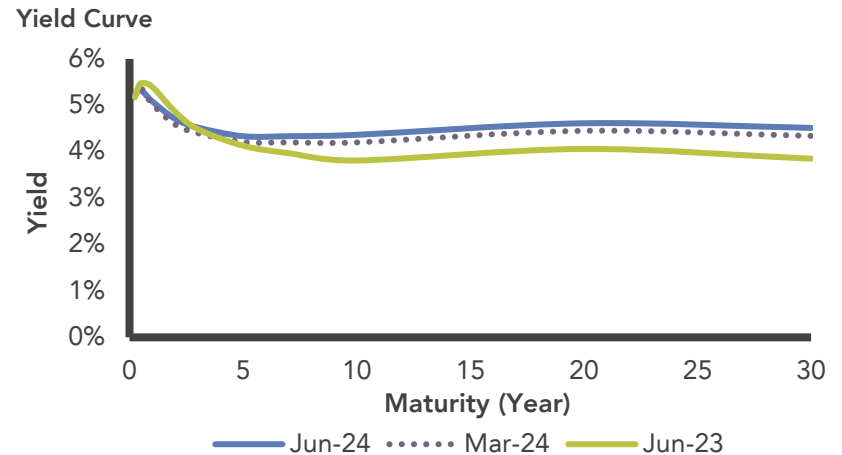
Annual Earnings Growth (Year-Over-Year)



Source: Refinitiv, Goldman Sachs

# U.S. Fixed Income

- Treasury yields rose marginally across most of the yield curve in Q2, with longer-dated maturities seeing the largest increases despite better-than-expected inflation data.
- Despite the recent inflation data, the Federal Reserve's Summary of Economic Projections, which was updated in June, reduced the median forecast of three interest rate cuts in 2024 to just one. That said, most market participants now expect the Fed to cut at least twice this year.
- Given the move in rates, the broad investment-grade bond market was flat for the quarter, with income offsetting higher rates.
- Sub-investment grade debt, on the other hand, posted gains, with bank loans outperforming high-yield debt given their floating-rate characteristics. High-yield spreads ended Q2 modestly above 300 basis points, which is well below the long-term average.



Source: Refinitiv



# Global Index Returns

DOMESTIC EQUITY	QTR	YTD	1 Year	3 Year	5 Year	10 Year
S&P 500 Index	4.3	15.3	24.6	10.0	15.0	12.9
Russell 3000 Index	3.2	13.6	23.1	8.1	14.1	12.1
Russell 3000 Growth Index	7.8	19.9	32.2	10.3	18.5	15.8
Russell 3000 Value Index	(2.3)	6.2	12.9	5.1	8.9	8.1
Russell TOP 200 Index	5.7	17.2	27.4	10.9	16.4	13.8
Russell TOP 200 Growth Index	10.0	22.9	36.3	13.5	21.3	17.8
Russell TOP 200 Value Index	(1.4)	7.9	13.7	6.5	9.2	8.5
Russell 1000 Index	3.6	14.2	23.9	8.7	14.6	12.5
Russell 1000 Growth Index	8.3	20.7	33.5	8.7	19.3	16.3
Russell 1000 Value Index	(2.2)	6.6	13.1	5.5	9.0	8.2
Russell Mid-Cap Index	(3.3)	5.0	12.9	2.4	9.5	9.0
Russell Mid-Cap Growth Index	(3.2)	6.0	15.1	(0.1)	9.9	10.5
Russell Mid-Cap Value Index	(3.4)	4.5	12.0	3.7	8.5	7.6
Russell 2000 Index	(3.3)	1.7	10.1	(2.6)	6.9	7.0
Russell 2000 Growth Index	(2.9)	4.4	9.1	(4.9)	6.2	7.4
Russell 2000 Value Index	(3.6)	(0.8)	10.9	(0.5)	7.1	6.2
<b>DOMESTIC EQUITY BY SECTOR (MSCI)</b>						
Communication Services	9.2	24.7	41.7	3.9	13.4	10.1
Consumer Discretionary	(0.3)	5.2	13.7	0.7	12.5	12.5
Consumer Staples	1.1	8.8	8.5	7.0	9.6	8.8
Energy	(2.2)	10.6	16.6	23.7	13.0	2.3
Financials	(2.1)	9.2	25.5	5.7	10.2	10.4
Health Care	(1.3)	7.0	10.3	4.0	10.5	10.7
Industrials	(3.3)	7.4	16.2	7.8	11.8	10.5
Information Technology	12.5	26.0	39.2	16.4	25.0	21.4
Materials	(5.3)	2.2	7.8	4.1	10.6	7.8
Real Estate	(0.9)	(2.2)	5.7	(1.7)	3.4	6.0
Utilities	4.5	9.6	7.7	5.6	5.5	7.8

Source: Refinitiv

# Global Index Returns

INTERNATIONAL/GLOBAL EQUITY	QTR	YTD	1 Year	3 Year	5 Year	10 Year
MSCI EAFE (Net)	(0.4)	5.3	11.5	2.9	6.5	4.3
MSCI EAFE Growth (Net)	(0.8)	6.2	9.4	0.1	6.5	5.4
MSCI EAFE Value (Net)	0.0	4.5	13.7	5.5	6.1	3.0
MSCI EAFE Small Cap (Net)	(1.8)	0.5	7.8	(3.4)	4.2	4.3
MSCI AC World Index (Net)	2.9	11.3	19.4	5.4	10.8	8.4
MSCI AC World Index Growth (Net)	6.2	16.3	24.7	5.5	13.8	11.1
MSCI AC World Index Value (Net)	(0.6)	6.2	13.9	4.8	7.0	5.4
MSCI Europe ex UK (Net)	(0.4)	5.5	11.5	3.0	7.6	4.7
MSCI United Kingdom (Net)	3.7	6.9	12.5	6.9	5.7	2.7
MSCI Pacific ex Japan (Net)	2.5	0.7	6.8	(1.3)	2.4	3.2
MSCI Japan (Net)	(4.3)	6.3	13.1	2.3	6.6	5.5
MSCI Emerging Markets (Net)	5.0	7.5	12.5	(5.1)	3.1	2.8

Source: Refinitiv

# Global Index Returns

FIXED INCOME	QTR	YTD	1 Year	3 Year	5 Year	10 Year
Merrill Lynch 3-month T-Bill	1.3	2.6	5.4	3.0	2.2	1.5
Barclays Intermediate Gov't./Credit	0.6	0.5	4.2	(1.2)	0.7	1.5
Barclays Aggregate Bond	0.1	(0.7)	2.6	(3.0)	(0.2)	1.3
Barclays Short Government	0.9	1.2	4.5	0.3	1.0	1.1
Barclays Intermediate Government	0.6	0.2	3.4	(1.4)	0.3	1.1
Barclays Long Government	(1.8)	(5.0)	(5.6)	(10.4)	(4.2)	0.6
Barclays Investment Grade Corp.	(0.1)	(0.5)	4.6	(3.0)	0.6	2.3
Barclays High Yield Corp. Bond	1.1	2.6	10.4	1.6	3.9	4.3
Credit Suisse Leveraged Loan	1.9	4.4	11.0	6.0	5.4	4.6
JPMorgan Global ex US Bond	(2.1)	(5.3)	(0.7)	(7.5)	(3.6)	(1.9)
JPMorgan Emerging Market Bond	0.3	2.3	9.2	(2.6)	(0.0)	2.6
INFLATION SENSITIVE						
Consumer Price Index	0.6	2.4	3.0	5.0	4.2	2.8
BC TIPS	0.8	0.7	2.7	(1.3)	2.1	1.9
Commodities	2.9	5.1	5.0	5.7	7.2	(1.3)
Gold	4.9	12.7	20.6	9.1	9.4	5.0
REITs	(0.9)	(2.2)	5.7	(1.7)	3.4	6.0
FTSE EPRA/NAREIT Global REITs	(2.3)	(3.8)	3.9	(5.3)	(1.5)	1.8
NCREIF ODCE*	(0.7)	(3.2)	(10.0)	1.0	2.3	5.5

\*Data are preliminary.

Source: Refinitiv



PREPARED BY MARQUETTE ASSOCIATES

180 North LaSalle St, Ste 3500, Chicago, Illinois 60601 PHONE 312-527-5500

CHICAGO BALTIMORE MILWAUKEE PHILADELPHIA ST. LOUIS WEB [MarquetteAssociates.com](http://MarquetteAssociates.com)

**CONFIDENTIALITY NOTICE:** This communication, including attachments, is for the exclusive use of the addressee and contains proprietary, confidential and/or privileged information; any use, copying, disclosure, dissemination or distribution is strictly prohibited. Marquette Associates, Inc. retains all proprietary rights they may have in the information.

Marquette Associates, Inc. ("Marquette") has prepared this document for the exclusive use by the client or third party for which it was prepared. The information herein was obtained from various sources, including but not limited to third party investment managers, the client's custodian(s) accounting statements, commercially available databases, and other economic and financial market data sources.

The sources of information used in this document are believed to be reliable. Marquette has not independently verified all of the information in this document and its accuracy cannot be guaranteed. Marquette accepts no liability for any direct or consequential losses arising from its use. The information provided herein is as of the date appearing in this material only and is subject to change without prior notice. Thus, all such information is subject to independent verification, and we urge clients to compare the information set forth in this statement with the statements you receive directly from the custodian in order to ensure accuracy of all account information. Past performance does not guarantee future results and investing involves risk of loss. No graph, chart, or formula can, in and of itself, be used to determine which securities or investments to buy or sell.

Forward-looking statements, including without limitation any statement or prediction about a future event contained in this presentation, are based on a variety of estimates and assumptions by Marquette, including, but not limited to, estimates of future operating results, the value of assets and market conditions. These estimates and assumptions, including the risk assessments and projections referenced, are inherently uncertain and are subject to numerous business, industry, market, regulatory, geopolitical, competitive, and financial risks that are outside of Marquette's control. There can be no assurance that the assumptions made in connection with any forward-looking statement will prove accurate, and actual results may differ materially. Indices have been selected for comparison purposes only. Client account holdings may differ significantly from the securities in the indices and the volatility of the index may be materially different from client account performance. You cannot invest directly in an index.

The inclusion of any forward-looking statement herein should not be regarded as an indication that Marquette considers forward-looking statements to be a reliable prediction of future events. The views contained herein are those of Marquette and should not be taken as financial advice or a recommendation to buy or sell any security. Any forecasts, figures, opinions, or investment techniques and strategies described are intended for informational purposes only. They are based on certain assumptions and current market conditions, and although accurate at the time of writing, are subject to change without prior notice. Opinions, estimates, projections, and comments on financial market trends constitute our judgment and are subject to change without notice. Marquette expressly disclaims all liability in respect to actions taken based on any or all of the information included or referenced in this document. The information is being provided based on the understanding that each recipient has sufficient knowledge and experience to evaluate the merits and risks of investing.

This presentation does not constitute an offer to sell, or a solicitation of an offer to buy, any interest in any investment vehicle, and should not be relied on as such. Targets, ranges and expectations set forth in this presentation are approximations; actual results may differ. The information and opinions expressed herein are as of the date appearing in this material only, are subject to change without prior notice, and do not contain material information regarding the Marquette Model Portfolio, including specific information relating to portfolio investments and related important risk disclosures. The descriptions herein of Marquette's investment objectives or criteria, the characteristics of its investments, investment process, or investment strategies and styles may not be fully indicative of any present or future investments, are not intended to reflect performance and may be changed in the discretion of Marquette. While the data contained herein has been prepared from information that Marquette believes to be reliable, Marquette does not warrant the accuracy or completeness of such information. Client account holdings may differ significantly from the securities in the indices and the volatility of the index may be materially different from client account performance. You cannot invest directly in an index.

## ABOUT MARQUETTE ASSOCIATES

Marquette was founded in 1986 with the sole objective of providing investment consulting at the highest caliber of service. Our expertise is grounded in our commitment to client service — our team aims to be a trusted partner and as fiduciaries, our clients' interests and objectives are at the center of everything we do. Our approach brings together the real-world experience of our people and our dedication to creativity and critical thinking in order to empower our clients to meet their goals. Marquette is an independent investment adviser registered under the Investment Advisers Act of 1940, as amended. Registration does not imply a certain level of skill or training. More information about Marquette including our investment strategies, fees and objectives can be found in our ADV Part 2, which is available upon request and on our website. For more information, please visit [www.MarquetteAssociates.com](http://www.MarquetteAssociates.com).

# Portfolio Overview



## Observations

- Market Value as of June 30, 2024, was \$3.41 billion.
- 2<sup>nd</sup> Qtr. '24 Return: Total Fund 0.6% (net) vs. Policy Index 1.3%; investment gain of \$21.8 million.
- Contributors to 1<sup>st</sup> Qtr. Performance:
  - Passive Growth Equity
  - Int'l Growth Equity
  - Emerging Market Equity
  - Opportunistic Credit
- Detractors from 1<sup>st</sup> Qtr. Performance:
  - US Active Large Cap Growth Equity
  - Small Cap Equity
  - Real Estate
- Longer term performance has been strong:
  - 5-Year Return: 6.9% (46<sup>th</sup> percentile) vs. Policy Index 7.3%; investment gain of \$1.0 billion
  - 10-Year Return: 6.8% (29<sup>th</sup> percentile) vs. Policy Index 6.8%; investment gain of \$1.8 billion
- Low Investment Management Fees: 0.28%

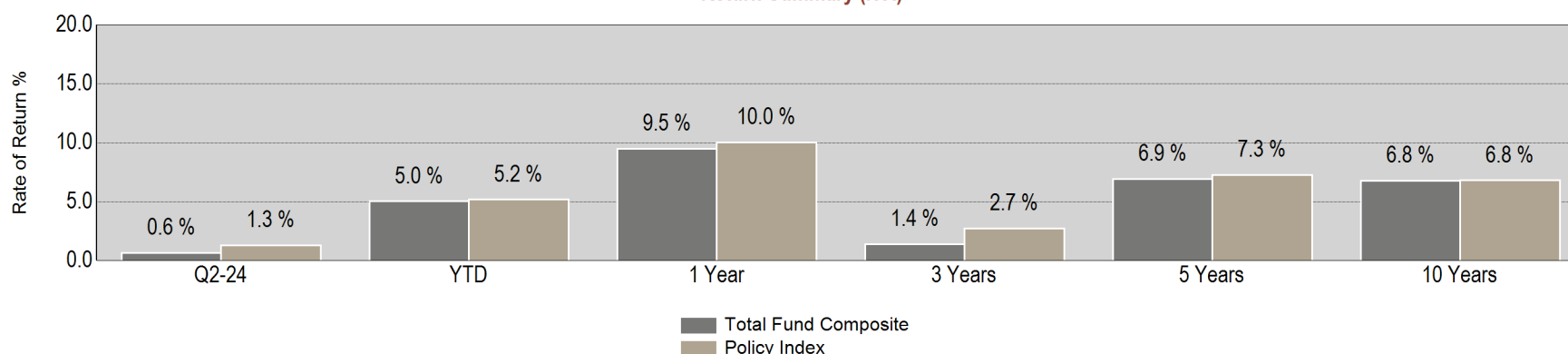
## Recent Changes / Looking Ahead

- Smith Graham SCV to Channing SCV transition ongoing
- International Value Equity Manager Selection
- Rebalancing for Cash Flows

Summary of Cash Flows

	Second Quarter	Year-To-Date	One Year	Three Years	Five Years	Ten Years
Beginning Market Value	\$3,417,098,147	\$3,290,113,763	\$3,170,648,200	\$3,459,809,786	\$2,638,888,040	\$2,021,902,516
Net Cash Flow	-\$32,074,706	-\$48,257,511	-\$64,942,867	-\$189,809,626	-\$263,900,769	-\$432,089,302
Net Investment Change	\$21,812,250	\$164,979,440	\$301,130,358	\$136,835,531	\$1,031,848,420	\$1,817,022,477
Ending Market Value	\$3,406,835,691	\$3,406,835,691	\$3,406,835,691	\$3,406,835,691	\$3,406,835,691	\$3,406,835,691

Return Summary (Net)



Asset Allocation vs. Target

	Current	Policy	Difference*	Policy Range	Within Range
U.S. Equity	34.2%	32.5%	\$59,506,891	27.0% - 38.0%	Yes
Global Equity	4.9%	5.0%	-\$2,254,055	0.0% - 10.0%	Yes
Non-U.S. Equity	17.5%	17.5%	\$1,159,169	12.0% - 23.0%	Yes
Timberland/Farmland	4.8%	5.0%	-\$7,793,060	0.0% - 10.0%	Yes
Private Real Estate	10.5%	10.0%	\$17,726,312	5.0% - 15.0%	Yes
High Yield	5.4%	5.0%	\$13,166,903	0.0% - 10.0%	Yes
U.S. Fixed Income	22.1%	24.0%	-\$64,558,274	19.0% - 29.0%	Yes
Cash Equivalent	0.5%	1.0%	-\$16,953,886	0.0% - 5.0%	Yes
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>			

\*Difference between Policy and Current Allocation

As of June 30, 2024

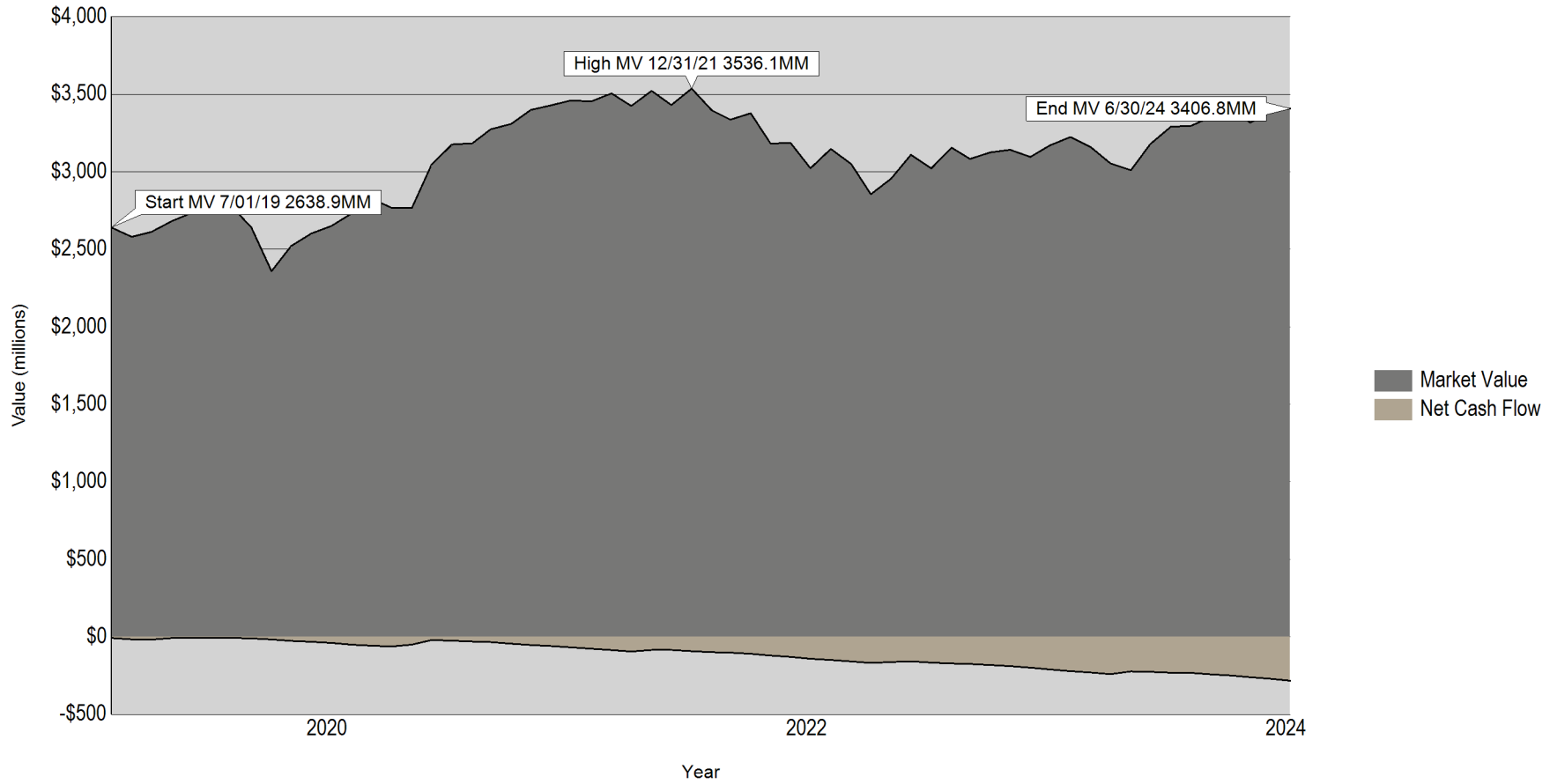
**Cash Flow Summary by Manager From April 01, 2024 to June 30, 2024**

	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
MFS Large Cap Value	\$150,653,384	\$0	-\$2,949,182	\$147,704,202
Xpounce S&P 500	\$326,440,990	-\$25,000,000	\$13,266,116	\$314,707,106
Northern Trust S&P 500	\$321,484,766	-\$24,996,905	\$12,900,875	\$309,388,737
Polen Focus Growth	\$125,389,647	\$0	-\$1,245,939	\$124,143,709
Northern Trust Dow Jones Completion Index	\$120,531,949	\$4,339	-\$4,133,032	\$116,403,257
Copeland SMID Cap Dividend Growth	\$59,355,313	\$0	-\$2,666,964	\$56,688,349
Dana Inv. Advisors Small Cap Value	\$51,336,725	\$0	-\$1,668,671	\$49,668,054
Emerald Small Cap Growth	\$46,580,277	\$0	\$1,444,800	\$48,025,077
Rhumbline Global Min. Volatility	\$167,398,879	\$26,689	\$662,161	\$168,087,729
SSGA MSCI World ex US	\$292,564,147	\$28,442	-\$1,462,247	\$291,130,342
Hardman Johnston Int'l Equity	\$106,736,686	\$0	\$4,020,522	\$110,757,208
Hudson Edge Int'l Equity	\$142,850,579	-\$25,000,000	-\$1,313,362	\$116,537,217
Jarislowsky, Fraser Limited	\$130,411	\$0	-\$939	\$129,472
SSGA MSCI Emerging Markets Index	\$75,222,415	\$9,116	\$3,569,646	\$78,801,176
Forest Investment Associates	\$162,459,526	-\$97,242	\$186,441	\$162,548,725
PRISA LP	\$55,825,241	-\$508,243	-\$967,699	\$54,349,299
PRISA II	\$112,789,314	-\$588,655	-\$3,364,765	\$108,835,894
PennMuni-Nuveen U.S. Real Estate Fund	\$193,866,420	\$0	\$0	\$193,866,420
N. Front Street (Nuveen)	\$1,358,268	\$0	\$0	\$1,358,268
SSGA US Aggregate Bond Index	\$349,003,183	\$50,011,210	\$523,505	\$399,537,899
Federated Hermes Core Aggregate Strategy	\$352,475,467	\$0	\$1,068,926	\$353,544,393
Ares Global Multi-Asset Credit	\$179,877,312	\$0	\$3,631,375	\$183,508,687
Cash Management	\$22,767,246	-\$5,963,457	\$310,682	\$17,114,471
<b>Total</b>	<b>\$3,417,098,147</b>	<b>-\$32,074,706</b>	<b>\$21,812,250</b>	<b>\$3,406,835,691</b>

\*N. Front St. value as of 12/31/23. PennMuni-Nuveen RE value as of 3/31/24.



Market Value History



# Pennsylvania Municipal Retirement System

# Asset Allocation Summary

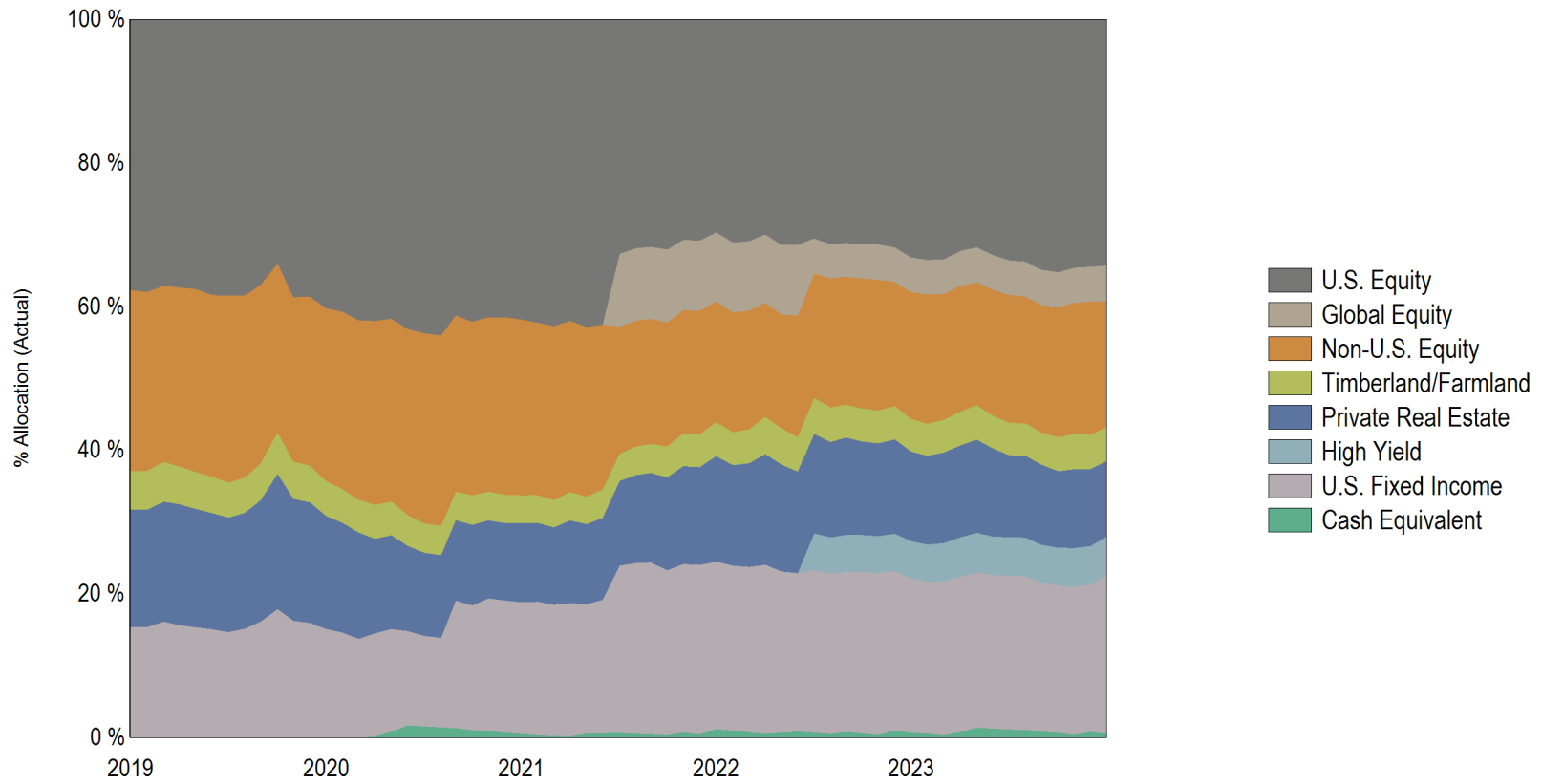
As of June 30, 2024

	Market Value	% of Portfolio	Policy %	Policy Difference
<b>Total Fund Composite</b>	<b>3,406,835,692</b>	<b>100.0</b>	<b>100.0</b>	<b>0</b>
<b>Total Equity Composite</b>	<b>1,932,171,635</b>	<b>56.7</b>	<b>55.0</b>	<b>58,412,005</b>
<b>U.S. Equity Composite</b>	<b>1,166,728,491</b>	<b>34.2</b>	<b>32.5</b>	<b>59,506,891</b>
MFS Large Cap Value	147,704,202	4.3		
Xponance S&P 500	314,707,106	9.2		
Northern Trust S&P 500	309,388,737	9.1		
Polen Focus Growth	124,143,709	3.6		
Northern Trust Dow Jones Completion Index	116,403,257	3.4		
Copeland SMID Cap Dividend Growth	56,688,349	1.7		
Dana Inv. Advisors Small Cap Value	49,668,054	1.5		
Emerald Small Cap Growth	48,025,077	1.4		
<b>Global Equity Composite</b>	<b>168,087,729</b>	<b>4.9</b>	<b>5.0</b>	<b>-2,254,055</b>
Rhumblin Global Min. Volatility	168,087,729	4.9		
<b>Non-U.S Equity Composite</b>	<b>597,355,415</b>	<b>17.5</b>	<b>17.5</b>	<b>1,159,169</b>
SSGA MSCI World ex US	291,130,342	8.5		
Hardman Johnston Int'l Equity	110,757,208	3.3		
Hudson Edge Int'l Equity	116,537,217	3.4		
SSGA MSCI Emerging Markets Index	78,801,176	2.3		
<b>Real Assets Composite</b>	<b>520,958,606</b>	<b>15.3</b>	<b>15.0</b>	<b>9,933,253</b>
Forest Investment Associates	162,548,725	4.8		
PRISA LP	54,349,299	1.6		
PRISA II	108,835,894	3.2		
PennMuni-Nuveen U.S. Real Estate Fund	193,866,420	5.7		
N. Front Street (Nuveen)	1,358,268	0.0		
<b>Total Fixed Income Composite</b>	<b>936,590,980</b>	<b>27.5</b>	<b>29.0</b>	<b>-51,391,371</b>
SSGA US Aggregate Bond Index	399,537,899	11.7		
Federated Hermes Core Aggregate Strategy	353,544,393	10.4		
Ares Global Multi-Asset Credit	183,508,687	5.4		
<b>Cash Composite</b>	<b>17,114,471</b>	<b>0.5</b>	<b>1.0</b>	<b>-16,953,886</b>

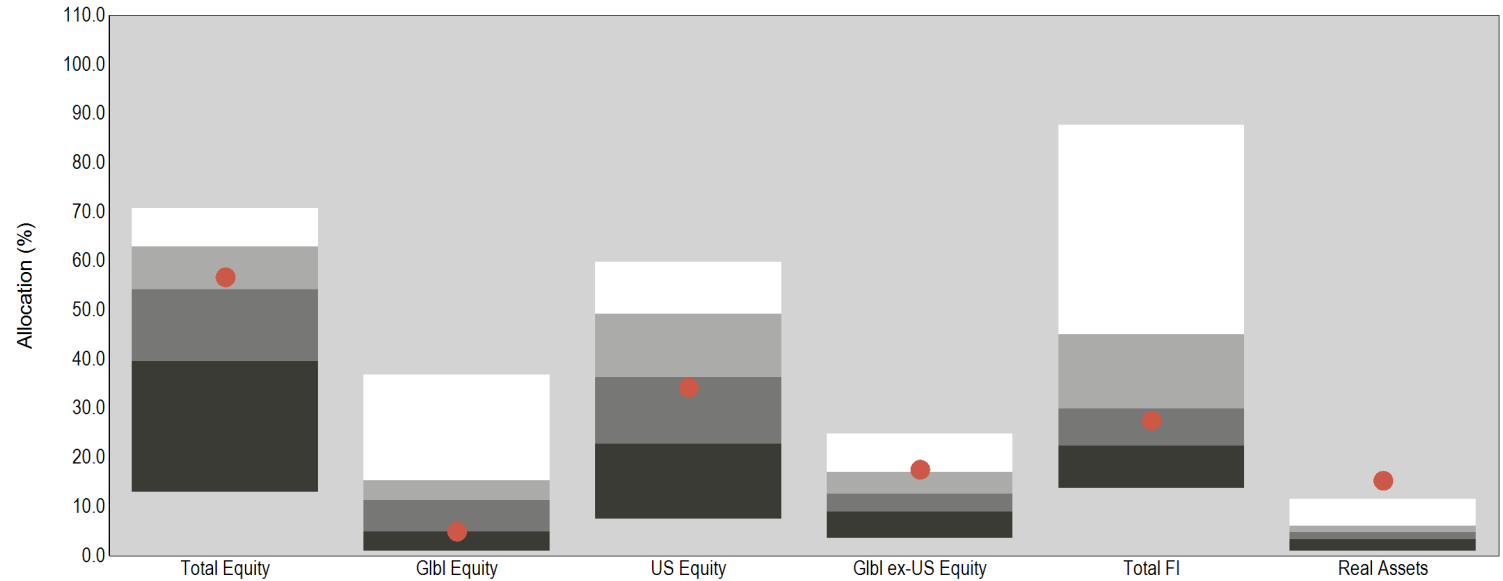
\*N. Front St. value as of 12/31/23. PennMuni-Nuveen value as of 3/31/24.

\*Residual value for Jarislowsky (approx. \$129K) included in Non-US Equity and Total Fund Composite values.

Asset Allocation History



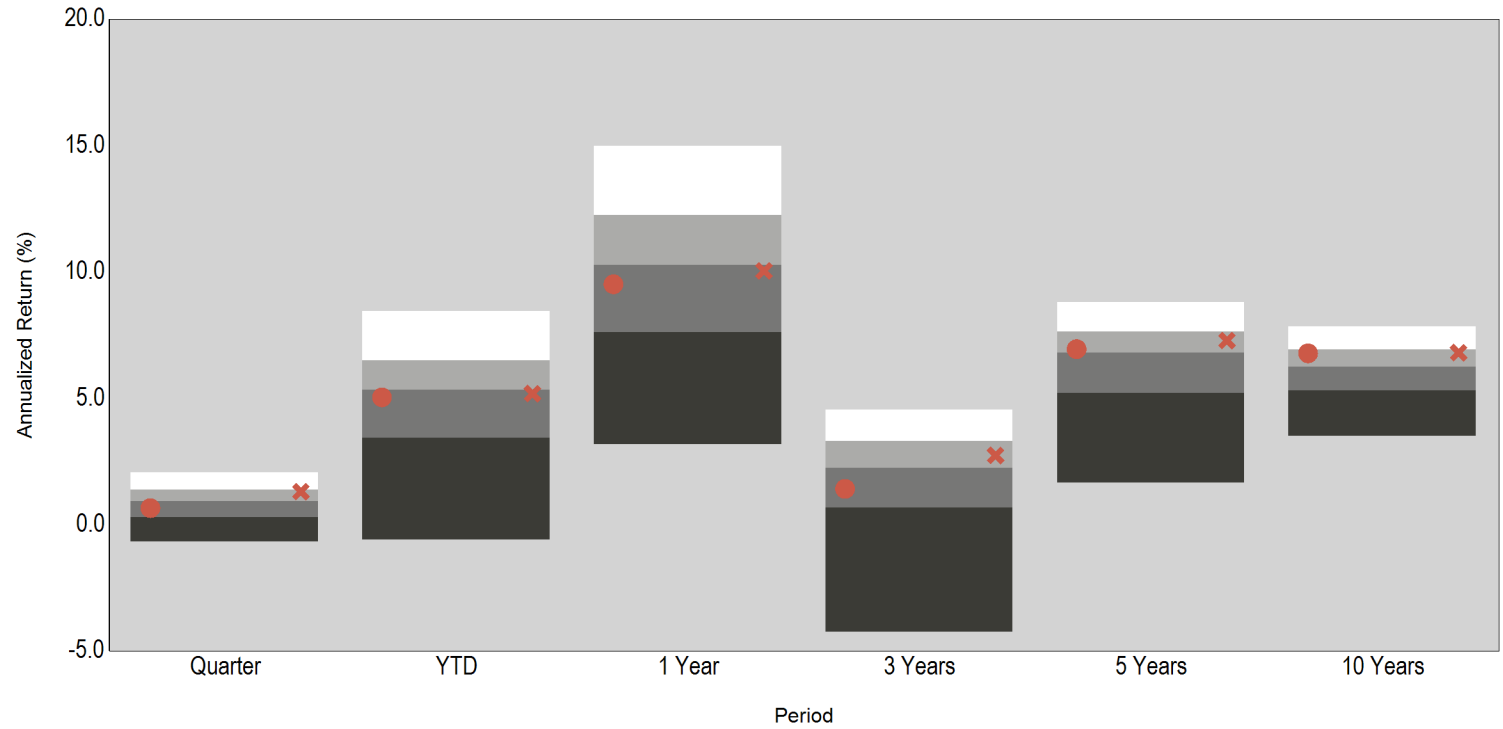
Total Plan Allocation vs. InvMetrics All DB Net  
As of June 30, 2024



Allocation (Rank)

5th Percentile	70.8	36.8	59.8	24.9	87.7	11.6						
25th Percentile	62.9	15.4	49.2	17.0	45.1	6.1						
Median	54.2	11.3	36.4	12.7	30.0	4.8						
75th Percentile	39.6	4.9	22.7	9.0	22.4	3.3						
95th Percentile	13.0	1.0	7.5	3.6	13.8	1.0						
# of Portfolios	1,264	312	1,192	1,103	1,304	311						
● Total Fund Composite	56.7	(45)	4.9	(75)	34.2	(55)	17.5	(24)	27.5	(58)	15.3	(2)

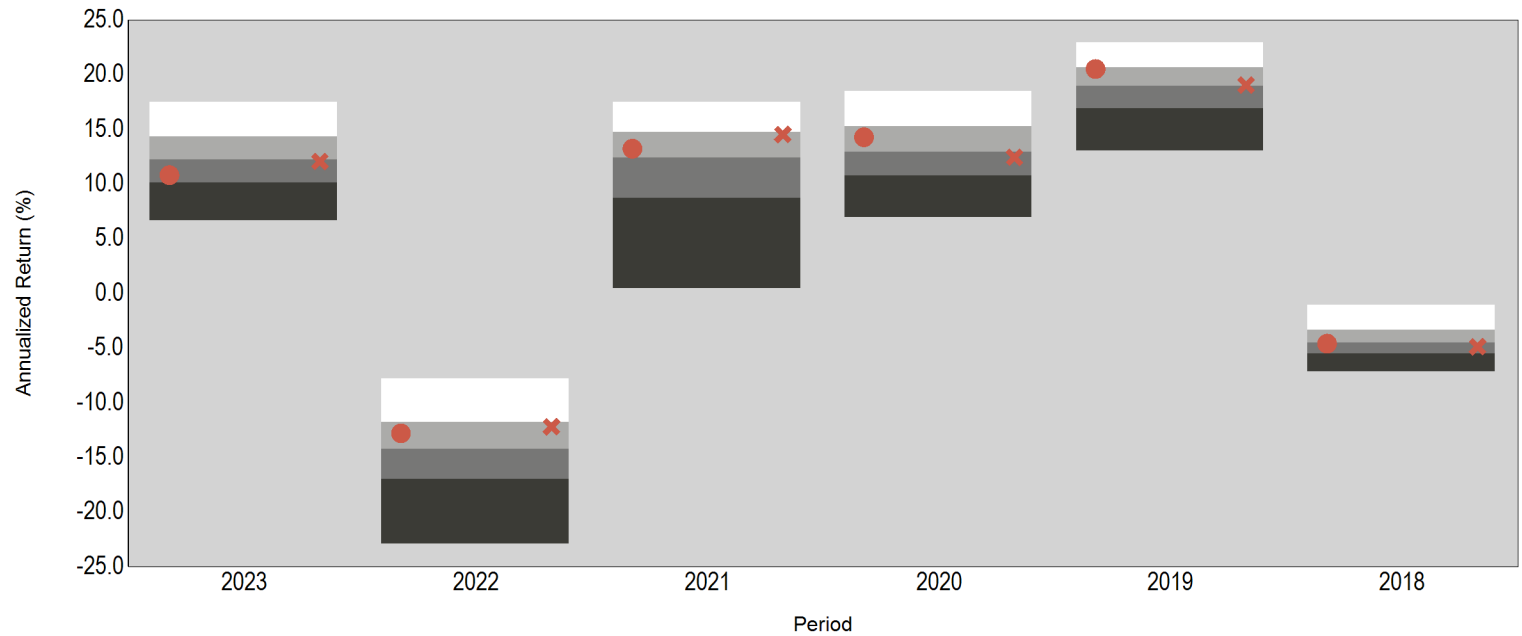
InvMetrics All DB Net Return Comparison



Return (Rank)

5th Percentile	2.0	8.4	15.0	4.5	8.8	7.8
25th Percentile	1.4	6.5	12.2	3.3	7.6	6.9
Median	0.9	5.3	10.3	2.2	6.8	6.2
75th Percentile	0.3	3.4	7.6	0.7	5.2	5.3
95th Percentile	-0.7	-0.6	3.2	-4.2	1.6	3.5
# of Portfolios	1,407	1,404	1,385	1,318	1,275	1,068
● Total Fund Composite	0.6 (63)	5.0 (56)	9.5 (59)	1.4 (67)	6.9 (46)	6.8 (29)
▲ Policy Index	1.3 (29)	5.2 (53)	10.0 (53)	2.7 (38)	7.3 (36)	6.8 (29)

InvMetrics All DB Net Return Comparison



	2023		2022		2021		2020		2019		2018	
<b>Return (Rank)</b>												
5th Percentile	17.5		-7.8		17.5		18.5		23.0		-1.1	
25th Percentile	14.3		-11.8		14.7		15.3		20.7		-3.3	
Median	12.2		-14.2		12.4		12.9		18.9		-4.5	
75th Percentile	10.1		-17.0		8.7		10.8		16.9		-5.5	
95th Percentile	6.7		-22.9		0.5		7.0		13.0		-7.2	
# of Portfolios	1,452		1,531		1,646		1,745		1,580		1,647	
● Total Fund Composite	10.8	(68)	-12.8	(35)	13.2	(42)	14.3	(36)	20.5	(27)	-4.6	(53)
▲ Policy Index	12.1	(53)	-12.2	(30)	14.5	(27)	12.4	(56)	19.0	(49)	-4.9	(60)

**RISK RETURN STATISTICS**

July 01, 2019 Through June 30, 2024

	Total Fund Composite	Policy Index
<b>RETURN SUMMARY STATISTICS</b>		
Number of Periods	20	20
Maximum Return	13.40	12.26
Minimum Return	-15.48	-14.88
Annualized Return	6.94	7.28
Total Return	39.85	42.09
Annualized Excess Return Over Risk Free	4.86	5.20
Annualized Excess Return	-0.34	0.00

**RISK SUMMARY STATISTICS**

Beta	1.03	1.00
Upside Deviation	7.49	6.96
Downside Deviation	10.94	10.81

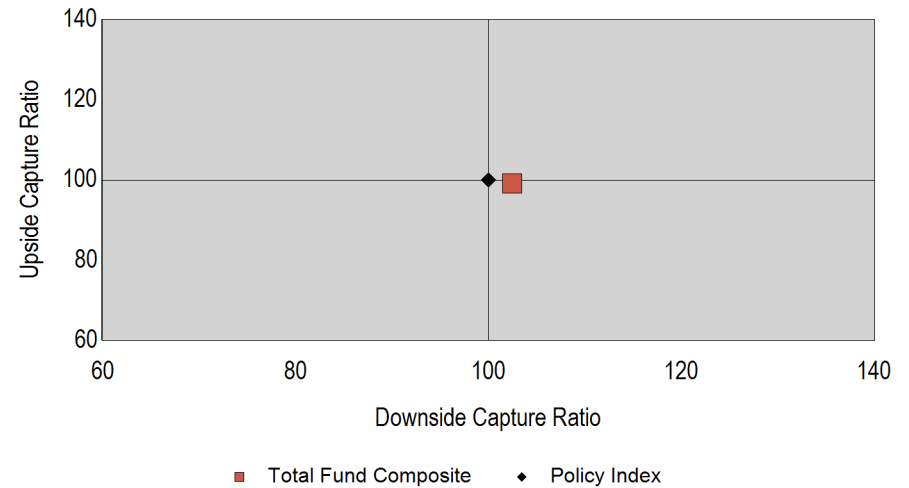
**RISK/RETURN SUMMARY STATISTICS**

Annualized Standard Deviation	13.90	13.40
Alpha	-0.13	0.00
Sharpe Ratio	0.35	0.39
Excess Return Over Market / Risk	-0.02	0.00
Tracking Error	1.34	0.00
Information Ratio	-0.25	--

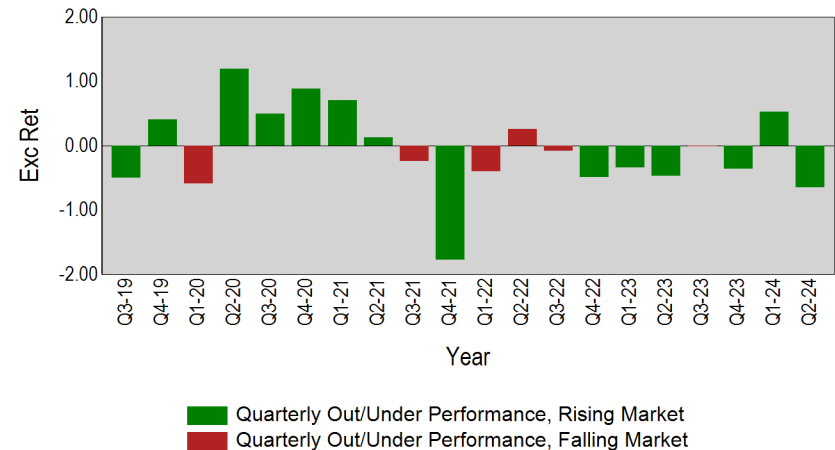
**CORRELATION STATISTICS**

R-Squared	0.99	1.00
Correlation	1.00	1.00

Upside Capture Ratio vs. Downside Capture Ratio  
5 Years Ending June 30, 2024



Quarterly Excess Performance  
Total Fund Composite vs. Policy Index



# Pennsylvania Municipal Retirement System

## Performance Summary (Net)

As of June 30, 2024

	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Market Value	Inception	Inception Date
<b>Total Fund Composite</b>	<b>0.6</b>	<b>5.0</b>	<b>9.5</b>	<b>1.4</b>	<b>6.9</b>	<b>6.8</b>	<b>3,406,835,692</b>	<b>8.4</b>	<b>Jan-86</b>
<i>Policy Index</i>	1.3	5.2	10.0	2.7	7.3	6.8		8.9	Jan-86
<i>InvMetrics All DB Net Rank</i>	63	56	59	67	46	29		30	Jan-86
<b>Total Equity Composite</b>	<b>1.1</b>	<b>8.7</b>	<b>15.8</b>	<b>3.0</b>	<b>--</b>	<b>--</b>	<b>1,932,171,635</b>	<b>11.3</b>	<b>Oct-20</b>
<i>MSCI ACWI IMI Net USD</i>	2.4	10.3	18.4	4.7	--	--		11.3	Oct-20
<b>U.S. Equity Composite</b>	<b>1.3</b>	<b>10.5</b>	<b>19.4</b>	<b>5.0</b>	<b>12.4</b>	<b>11.1</b>	<b>1,166,728,491</b>	<b>9.3</b>	<b>Jan-06</b>
<i>Russell 3000</i>	3.2	13.6	23.1	8.1	14.1	12.1		10.2	Jan-06
<i>InvMetrics Public DB US Eq Net Rank</i>	74	78	78	87	77	57		80	Jan-06
MFS Large Cap Value	-2.0	6.7	13.0	--	--	--	147,704,202	11.9	Jun-22
<i>Russell 1000 Value</i>	-2.2	6.6	13.1	--	--	--		12.3	Jun-22
<i>eV US Large Cap Value Equity Net Rank</i>	65	61	71	--	--	--		64	Jun-22
Xponance S&P 500	4.3	15.3	24.5	--	--	--	314,707,106	7.3	Dec-21
<i>S&amp;P 500</i>	4.3	15.3	24.6	--	--	--		7.3	Dec-21
<i>eV US Large Cap Core Equity Net Rank</i>	26	38	40	--	--	--		36	Dec-21
Northern Trust S&P 500	4.3	15.3	24.6	--	--	--	309,388,737	7.3	Dec-21
<i>S&amp;P 500</i>	4.3	15.3	24.6	--	--	--		7.3	Dec-21
<i>eV US Large Cap Core Equity Net Rank</i>	26	38	40	--	--	--		36	Dec-21
Polen Focus Growth	-1.0	6.4	17.4	-0.2	11.3	14.4	124,143,709	14.8	Oct-10
<i>Russell 1000 Growth</i>	8.3	20.7	33.5	11.3	19.3	16.3		16.9	Oct-10
<i>eV US Large Cap Growth Equity Net Rank</i>	94	93	90	96	92	49		51	Oct-10
Northern Trust Dow Jones Completion Index	-3.4	3.3	14.8	--	--	--	116,403,257	-2.0	Dec-21
<i>Dow Jones U.S. Completion Total Stock Market</i>	-3.4	3.3	14.7	--	--	--		-2.1	Dec-21
<i>eV US Small-Mid Cap Core Equity Net Rank</i>	38	58	26	--	--	--		83	Dec-21
Copeland SMID Cap Dividend Growth	-4.5	1.6	6.4	3.9	8.9	--	56,688,349	9.4	Sep-17
<i>Russell 2500</i>	-4.3	2.3	10.5	-2.2	7.2	--		6.4	Sep-17
<i>Russell 2000</i>	-3.3	1.7	10.1	-2.6	6.9	--		6.2	Sep-17
<i>eV US Small Cap Core Equity Net Rank</i>	78	68	78	22	53	--		21	Sep-17
Dana Inv. Advisors Small Cap Value	-3.3	2.8	11.8	-2.4	8.2	--	49,668,054	6.1	Dec-16
<i>Russell 2000 Value</i>	-3.6	-0.8	10.9	-0.5	7.1	--		6.1	Dec-16
<i>Russell 2000</i>	-3.3	1.7	10.1	-2.6	6.9	--		7.4	Dec-16
<i>eV US Small Cap Value Equity Net Rank</i>	50	37	50	96	59	--		77	Dec-16
Emerald Small Cap Growth	3.1	8.9	14.2	-1.5	7.9	9.8	48,025,077	10.3	Oct-98
<i>Russell 2000 Growth</i>	-2.9	4.4	9.1	-4.9	6.2	7.4		7.6	Oct-98
<i>eV US Small Cap Growth Equity Net Rank</i>	6	22	21	32	44	35		52	Oct-98



# Pennsylvania Municipal Retirement System

## Performance Summary (Net)

As of June 30, 2024

	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Market Value	Inception	Inception Date
<b>Global Equity Composite</b>	<b>0.4</b>	<b>5.7</b>	<b>9.4</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>168,087,729</b>	<b>-0.4</b>	<b>Dec-21</b>
<i>Global Equity Policy Index</i>	0.3	5.1	9.1	--	--	--		-0.8	Dec-21
<i>InvMetrics Public DB Gbl Eq Net Rank</i>	86	86	99	--	--	--		98	Dec-21
Rhumblin Global Min. Volatility	0.4	5.7	9.4	--	--	--	168,087,729	0.9	Dec-21
<i>MSCI ACWI Minimum Volatility Index</i>	0.3	5.1	9.1	--	--	--		0.6	Dec-21
<i>MSCI ACWI</i>	2.9	11.3	19.4	--	--	--		4.3	Dec-21
<i>eV Global Low Volatility Equity Net Rank</i>	53	62	62	--	--	--		71	Dec-21
<b>Non-U.S Equity Composite</b>	<b>0.8</b>	<b>6.2</b>	<b>11.1</b>	<b>-0.3</b>	<b>6.6</b>	<b>4.9</b>	<b>597,355,415</b>	<b>7.1</b>	<b>May-12</b>
<i>MSCI ACWI ex USA IMI</i>	0.9	5.3	11.6	0.2	5.6	3.9		6.6	May-12
<i>InvMetrics Public DB ex-US Eq Net Rank</i>	64	27	51	64	25	17		21	May-12
SSGA MSCI World ex US	-0.5	5.2	11.5	3.1	6.9	4.6	291,130,342	6.4	Apr-12
<i>MSCI World ex USA</i>	-0.6	5.0	11.2	2.8	6.6	4.3		6.0	Apr-12
<i>eV ACWI ex-US Large Cap Equity Net Rank</i>	65	58	44	24	43	51		39	Apr-12
Hardman Johnston Int'l Equity	3.8	10.6	9.1	-4.5	6.5	6.3	110,757,208	7.7	Apr-12
<i>MSCI EAFE</i>	-0.4	5.3	11.5	2.9	6.5	4.3		6.2	Apr-12
<i>eV EAFE All Cap Equity Net Rank</i>	1	5	62	94	46	14		18	Apr-12
Hudson Edge Int'l Equity	-1.4	4.3	11.0	3.3	9.0	6.2	116,537,217	8.8	Feb-12
<i>MSCI EAFE</i>	-0.4	5.3	11.5	2.9	6.5	4.3		6.5	Feb-12
<i>eV EAFE All Cap Equity Net Rank</i>	78	56	52	25	11	15		10	Feb-12
SSGA MSCI Emerging Markets Index	4.7	7.2	11.7	-5.3	2.9	2.7	78,801,176	6.5	Nov-08
<i>MSCI Emerging Markets</i>	5.0	7.5	12.5	-5.1	3.1	2.8		6.7	Nov-08
<i>eV Emg Mkts Equity Net Rank</i>	46	53	56	61	70	76		77	Nov-08

# Pennsylvania Municipal Retirement System

## Performance Summary (Net)

As of June 30, 2024

	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Market Value	Inception	Inception Date
<b>Real Assets Composite</b>	<b>-0.8</b>	<b>-0.1</b>	<b>-2.6</b>	<b>2.4</b>	<b>2.8</b>	<b>5.2</b>	<b>520,958,606</b>	<b>7.0</b>	<b>Apr-93</b>
<i>Real Assets Policy Index</i>	0.1	-0.9	-3.7	5.2	4.8	6.8		7.2	Apr-93
Forest Investment Associates	0.1	8.8	14.4	11.3	6.1	5.7	162,548,725	4.6	Mar-99
<i>NCREIF Timberland Property Index</i>	1.7	3.9	9.9	11.0	7.2	5.9		6.4	Mar-99
PRISA LP	-1.7	-4.6	-12.1	0.5	2.2	5.6	54,349,299	5.8	Jan-86
<i>NFI-ODCE</i>	-0.7	-3.2	-10.1	1.0	2.3	5.5		5.7	Jan-86
<i>InvMetrics Public DB Real Estate Priv Net Rank</i>	80	77	97	63	58	23		--	Jan-86
PRISA II	-3.0	-5.3	-13.8	-0.2	1.8	5.9	108,835,894	3.1	Jul-07
<i>NFI-ODCE</i>	-0.7	-3.2	-10.1	1.0	2.3	5.5		3.9	Jul-07
<i>InvMetrics Public DB Real Estate Priv Net Rank</i>	99	96	99	71	68	22		--	Jul-07
PennMuni-Nuveen U.S. Real Estate Fund	0.0	-2.5	-4.6	-1.5	1.5	5.2	193,866,420	4.6	Dec-08
<i>NFI-ODCE</i>	-0.7	-3.2	-10.1	1.0	2.3	5.5		4.7	Dec-08
<i>InvMetrics Public DB Real Estate Priv Net Rank</i>	23	26	9	94	78	25		--	Dec-08
N. Front Street (Nuveen)	0.0	0.0	-5.3	-10.6	-6.3	--	1,358,268	-7.6	Sep-16
<i>Consumer Price Index</i>	0.6	2.4	3.0	5.0	4.2	--		3.5	Sep-16
<b>Total Fixed Income Composite</b>	<b>0.5</b>	<b>0.5</b>	<b>4.6</b>	<b>-2.4</b>	<b>0.2</b>	<b>1.6</b>	<b>936,590,980</b>	<b>5.6</b>	<b>Jan-86</b>
<i>Bloomberg US Aggregate TR</i>	0.1	-0.7	2.6	-3.0	-0.2	1.3		5.5	Jan-86
<i>InvMetrics Public DB US Fix Inc Net Rank</i>	34	37	19	64	71	78		--	Jan-86
SSGA US Aggregate Bond Index	0.1	-0.6	2.7	-3.0	-0.2	1.4	399,537,899	4.2	Apr-97
<i>Bloomberg US Aggregate TR</i>	0.1	-0.7	2.6	-3.0	-0.2	1.3		4.2	Apr-97
<i>eV US Core Fixed Inc Net Rank</i>	67	81	80	73	86	80		78	Apr-97
Federated Hermes Core Aggregate Strategy	0.3	-0.3	3.2	--	--	--	353,544,393	0.9	Jul-22
<i>Bloomberg US Aggregate TR</i>	0.1	-0.7	2.6	--	--	--		0.8	Jul-22
<i>eV US Core Fixed Inc Net Rank</i>	29	54	51	--	--	--		79	Jul-22
Ares Global Multi-Asset Credit	2.0	4.3	11.9	--	--	--	183,508,687	12.0	Dec-22
<i>50% Bloomberg HY / 50% CSFB Lev Loans</i>	1.5	3.5	10.8	--	--	--		11.2	Dec-22
<i>eV US High Yield Fixed Inc Net Rank</i>	3	7	8	--	--	--		5	Dec-22
<b>Cash Composite</b>							<b>17,114,471</b>		

\*N. Front St. value as of 12/31/23. PennMuni-Nuveen value as of 3/31/24.

Investment Manager	Asset Class	Status	Reason
MFS Large Cap Value	US Stock Large Cap Value	In Compliance	---
Xponance S&P 500	US Stock Large Cap Core	In Compliance	---
Northern Trust S&P 500	US Stock Large Cap Core	In Compliance	---
Polen Focus Growth	US Stock Large Cap Growth	In Compliance	---
Northern Trust Dow Jones Completion Index	US Stock SMID Cap Core	In Compliance	---
Dana Inv. Advisors Small Cap Value	US Stock Small Cap Value	On Alert	Organizational Issues
Copeland Small Cap Dividend Growth	US Stock Small Cap Core	In Compliance	---
Emerald Small Cap Growth	US Stock Small Cap Growth	In Compliance	---
Rhumblin Global Min. Volatility	Global Stock Low Volatility	In Compliance	---
SSGA MSCI World ex US	Non-US Stock All Cap Core	In Compliance	---
Hardman Johnston Int'l Equity	Non-US Stock All Cap Core	In Compliance	---
HGK Int'l Equity	Non-US Stock All Cap Core	In Compliance	---
SSGA MSCI Emerging Markets Index	Non-US Stock Emerging	In Compliance	---
Forest Investment Associates	Real Assets - Timberland	In Compliance	---
PRISA LP	Real Estate	In Compliance	---
PRISA II	Real Estate	In Compliance	---
PennMuni-Nuveen U.S. Real Estate Fund	Real Estate	In Compliance	---
N. Front Street (Nuveen)	Real Estate	In Compliance	---
SSGA US Aggregate Bond Index	US Fixed Income Core	In Compliance	---
Federated Hermes Core Aggregate Strategy	US Fixed Income Core	In Compliance	---
Ares Global Multi-Asset Credit Fund	Opportunistic Credit	In Compliance	---

### Investment Manager Evaluation Terminology

The following terminology has been developed by Marquette Associates to facilitate efficient communication between the investment program's responsible parties. Each term signifies a particular status with the investment program.

**In Compliance** – Marquette has not been notified of any issues or changes to the investment manager that would materially impede upon its ability to execute the investment strategy or adhere to any applicable investment guidelines.

**Alert** – The investment manager has experienced a problem in performance (usually relative to a benchmark), a change in investment characteristics, an alteration in management style, ownership, or key investment professionals, and/or any other irregularities that may impede upon its ability to execute the investment strategy or adhere to any applicable investment guidelines.

**On Notice** – The investment manager has experienced continued concern with one or more Alert issues. Failure to improve upon stated issues within a certain time frame may justify termination.

**Termination** – The investment manager has been terminated and transition plans are in place.

**Policy Index History**

<b>Total Fund Composite</b>		
12/1/2022	Present	32.5% Russell 3000 / 5% Global Equity Policy Index / 17.5% MSCI ACWI ex USA IMI / 15% Real Assets Policy Index / 29% Bloomberg US Aggregate TR / 1% 91 Day T-Bills
1/1/2022	11/30/2022	32.5% Russell 3000 / 10% Global Equity Policy Index / 17.5% MSCI ACWI ex USA IMI / 15% Real Assets Policy Index / 24% Bloomberg US Aggregate TR / 1% 91 Day T-Bills
10/1/2020	12/31/2021	25% S&P 500 / 15% Russell 2000 / 15% MSCI EAFE / 10% MSCI Emerging Markets / 20% NFI-ODCE / 15% Bloomberg US Aggregate TR
<b>Total Equity Composite</b>		
10/1/2020	Present	MSCI ACWI IMI Net USD
<b>U.S. Equity Composite</b>		
1/1/2006	Present	Russell 3000
<b>Large Cap U.S. Equity Composite</b>		
1/1/1986	Present	S&P 500
<b>SMID Cap U.S. Equity Composite</b>		
1/1/1993	Present	Russell 2000
<b>Global Equity Composite</b>		
12/1/2022	Present	100% MSCI ACWI Minimum Volatility Index
1/1/2022	11/30/2022	50% MSCI ACWI / 50% MSCI ACWI Minimum Volatility Index
<b>Non-U.S Equity Composite</b>		
5/31/2012	Present	MSCI ACWI ex USA IMI
<b>Developed Non-U.S. Equity Composite</b>		
1/1/1993	Present	MSCI EAFE
<b>Emerging Markets Composite</b>		
1/1/2009	Present	MSCI Emerging Markets
<b>Real Assets Composite</b>		
7/1/2024	Present	0.00
1/1/2022	6/30/2024	66.67% NFI-ODCE / 33.33% NCREIF Timberland Property Index
4/1/1993	12/31/2021	100% NFI-ODCE
<b>Total Fixed Income Composite</b>		
1/31/1986	Present	Bloomberg US Aggregate TR
<b>Cash Composite</b>		
	Present	91 Day T-Bills

# Pennsylvania Municipal Retirement System

## Fee Summary

As of June 30, 2024

Account	Fee Schedule	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
MFS Large Cap Value	0.35% of First 100.0 Mil, 0.33% Thereafter	4.4%	\$505,039	0.34%
Xponance S&P 500	0.02% of Assets	9.3%	\$62,941	0.02%
Northern Trust S&P 500	0.00% of Assets	9.1%	\$12,376	0.00%
Polen Focus Growth	0.50% of First 100.0 Mil, 0.40% Thereafter	3.7%	\$596,575	0.48%
Northern Trust Dow Jones Completion Index	0.02% of Assets	3.4%	\$17,460	0.02%
Copeland SMID Cap Dividend Growth	0.50% of Assets	1.7%	\$283,442	0.50%
Dana Inv. Advisors Small Cap Value	0.75% of First 50.0 Mil, 0.60% Thereafter	1.5%	\$372,510	0.75%
Emerald Small Cap Growth	0.60% of First 10.0 Mil, 0.55% of Next 5.0 Mil, 0.50% Thereafter	1.4%	\$252,625	0.53%
Rhumblin Global Min. Volatility	0.07% of Assets	5.0%	\$109,257	0.06%
SSGA MSCI World ex US	0.04% of Assets	8.6%	\$116,452	0.04%
Hardman Johnston Int'l Equity	0.75% of First 25.0 Mil, 0.60% Thereafter	3.3%	\$702,043	0.63%
Hudson Edge Int'l Equity	0.65% of Assets	3.4%	\$757,492	0.65%
SSGA MSCI Emerging Markets Index	0.05% of Assets	2.3%	\$39,401	0.05%
Forest Investment Associates	0.75% of Assets	4.8%	\$1,219,115	0.75%
PRISA LP	1.00% of First 25.0 Mil, 0.95% of Next 25.0 Mil, 0.85% of Next 50.0 Mil, 0.75% of Next 100.0 Mil, 0.70% of Next 100.0 Mil, 0.65% Thereafter	1.6%	\$524,469	0.96%

# Pennsylvania Municipal Retirement System

## Fee Summary

As of June 30, 2024

Account	Fee Schedule	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
PRISA II	1.20% of First 25.0 Mil, 1.15% of Next 25.0 Mil, 1.05% of Next 50.0 Mil, 0.95% of Next 100.0 Mil, 0.90% of Next 100.0 Mil, 0.85% Thereafter	3.2%	\$1,196,441	1.10%
PennMuni-Nuveen U.S. Real Estate Fund	0.85% of Assets	5.7%	\$1,647,865	0.85%
N. Front Street (Nuveen)	0.85% of Assets	0.0%	\$11,545	0.85%
SSGA US Aggregate Bond Index	0.02% of First 100.0 Mil, 0.01% of Next 300.0 Mil, 0.01% Thereafter	11.8%	\$49,954	0.01%
Federated Hermes Core Aggregate Strategy	0.12% of First 100.0 Mil, 0.10% of Next 400.0 Mil, 0.07% Thereafter	10.4%	\$373,544	0.11%
Ares Global Multi-Asset Credit	0.35% of Assets	5.4%	\$642,280	0.35%
<b>Investment Management Fee</b>		<b>100.0%</b>	<b>\$9,492,827</b>	<b>0.28%</b>

**Characteristics**

	Portfolio	MSCI ACWI IMI Net USD
Number of Holdings	6,060	8,803
Weighted Avg. Market Cap. (\$B)	456.4	604.8
Median Market Cap. (\$B)	6.2	2.2
Price To Earnings	22.1	22.0
Price To Book	3.5	3.6
Price To Sales	1.8	1.9
Return on Equity (%)	19.1	19.4
Yield (%)	1.8	2.0

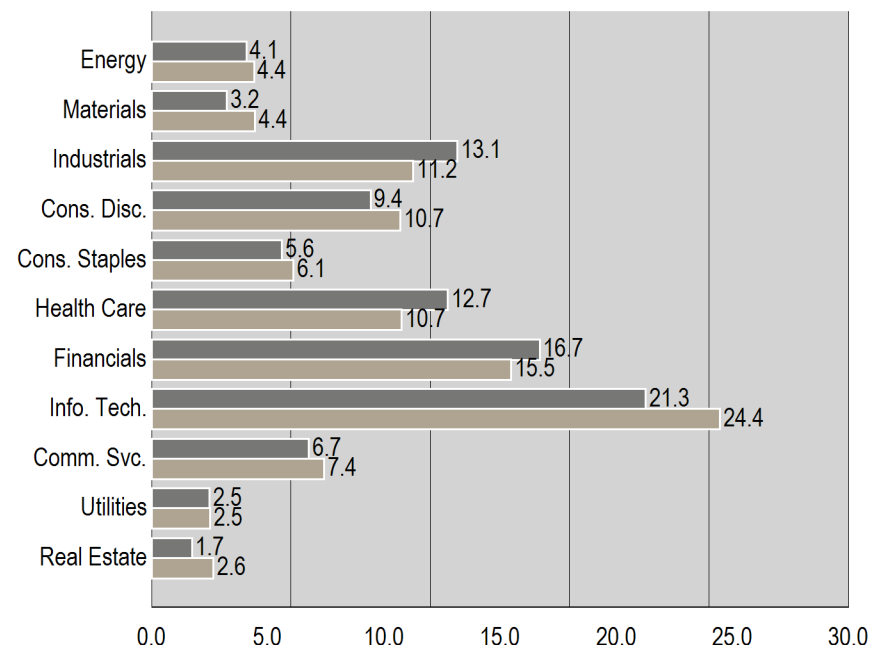
**Top Holdings**

MICROSOFT CORP	3.2%
NVIDIA CORPORATION	2.2%
APPLE INC	2.2%
AMAZON.COM INC	1.7%
ISHARES MSCI EMERGING MARKETS MIN VOL FACTOR ETF	1.1%
ALPHABET INC	1.0%
ALPHABET INC	0.9%
JPMORGAN CHASE & CO	0.8%
META PLATFORMS INC	0.8%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	0.7%
<b>Total</b>	<b>14.7%</b>

**Market Capitalization**

	Small Cap	Mid Cap	Large Cap	Unclassified
Total Equity Composite	14.3%	16.3%	64.8%	4.6%
MSCI ACWI IMI Net USD	15.8%	14.7%	69.5%	0.0%
<i>Weight Over/Under</i>	<i>-1.5%</i>	<i>1.6%</i>	<i>-4.7%</i>	<i>4.6%</i>

**Sector Allocation (%) vs MSCI ACWI IMI Net USD**



**Region Allocation Summary**

Region	% of Total	% of Bench	% Diff
North America ex U.S.	3.1%	2.7%	0.4%
United States	64.2%	63.3%	0.9%
Europe Ex U.K.	14.5%	11.3%	3.2%
United Kingdom	3.5%	3.5%	0.0%
Pacific Basin Ex Japan	2.5%	2.6%	-0.1%
Japan	5.6%	5.7%	-0.1%
Emerging Markets	5.8%	10.6%	-4.8%
Other	0.8%	0.3%	0.5%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.0%</b>

**Characteristics**

	Portfolio	Russell 3000
Number of Holdings	3,722	2,922
Weighted Avg. Market Cap. (\$B)	670.2	896.1
Median Market Cap. (\$B)	2.6	2.6
Price To Earnings	24.9	26.2
Price To Book	4.2	4.4
Price To Sales	2.2	2.6
Return on Equity (%)	21.8	23.2
Yield (%)	1.4	1.4

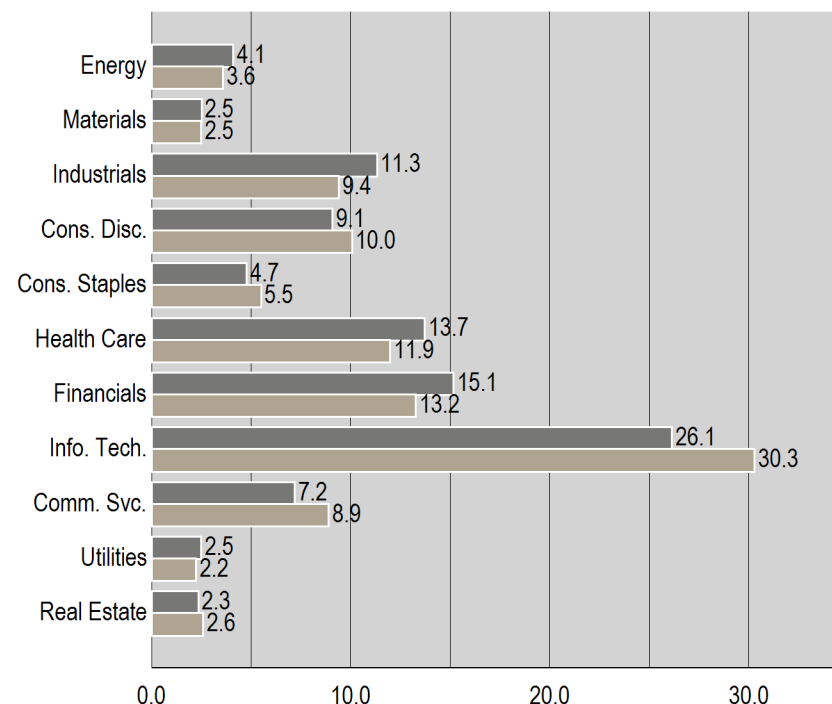
**Top Holdings**

MICROSOFT CORP	5.2%
NVIDIA CORPORATION	3.6%
APPLE INC	3.6%
AMAZON.COM INC	2.9%
ALPHABET INC	1.6%
ALPHABET INC	1.5%
JPMORGAN CHASE & CO	1.3%
META PLATFORMS INC	1.3%
VISA INC	1.1%
ELI LILLY AND CO	1.0%
<b>Total</b>	<b>23.1%</b>

**Market Capitalization**

	Small Cap	Mid Cap	Large Cap	Unclassified
U.S. Equity Composite	7.6%	21.7%	67.3%	3.5%
Russell 3000	5.1%	18.7%	76.1%	0.0%
<i>Weight Over/Under</i>	2.4%	2.9%	-8.9%	3.5%

**Sector Allocation (%) vs Russell 3000**





Common Holdings Matrix

	<i>MFS Large Cap Value</i>		<i>Xponance S&amp;P 500</i>		<i>Northern Trust S&amp;P 500</i>		<i>Polen Focus Growth</i>		<i>Northern Trust Dow Jones Completion Index</i>		<i>Copeland SMID Cap Dividend Growth</i>		<i>Dana Inv. Advisors Small Cap Value</i>		<i>Emerald Small Cap Growth</i>	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
MFS Large Cap Value	--	--	66	16	66	17	2	8	1	0	0	0	0	0	0	0
Xponance S&P 500	66	94	--	--	499	100	20	87	4	0	9	12	1	2	0	0
Northern Trust S&P 500	66	94	499	99	--	--	20	87	9	0	9	12	1	2	0	0
Polen Focus Growth	2	3	20	24	20	24	--	--	1	1	0	0	0	0	0	0
Northern Trust Dow Jones Completion Index	1	1	4	0	9	0	1	2	--	--	57	83	63	95	109	95
Copeland SMID Cap Dividend Growth	0	0	9	0	9	0	0	0	57	6	--	--	1	2	6	4
Dana Inv. Advisors Small Cap Value	0	0	1	0	1	0	0	0	63	2	1	2	--	--	2	1
Emerald Small Cap Growth	0	0	0	0	0	0	0	0	109	6	6	8	2	3	--	--

**Characteristics**

	Portfolio	MSCI ACWI IMI Net USD
Number of Holdings	285	8,803
Weighted Avg. Market Cap. (\$B)	127.3	604.8
Median Market Cap. (\$B)	21.8	2.2
Price To Earnings	19.5	22.0
Price To Book	3.2	3.6
Price To Sales	1.3	1.9
Return on Equity (%)	21.8	19.4
Yield (%)	2.4	2.0

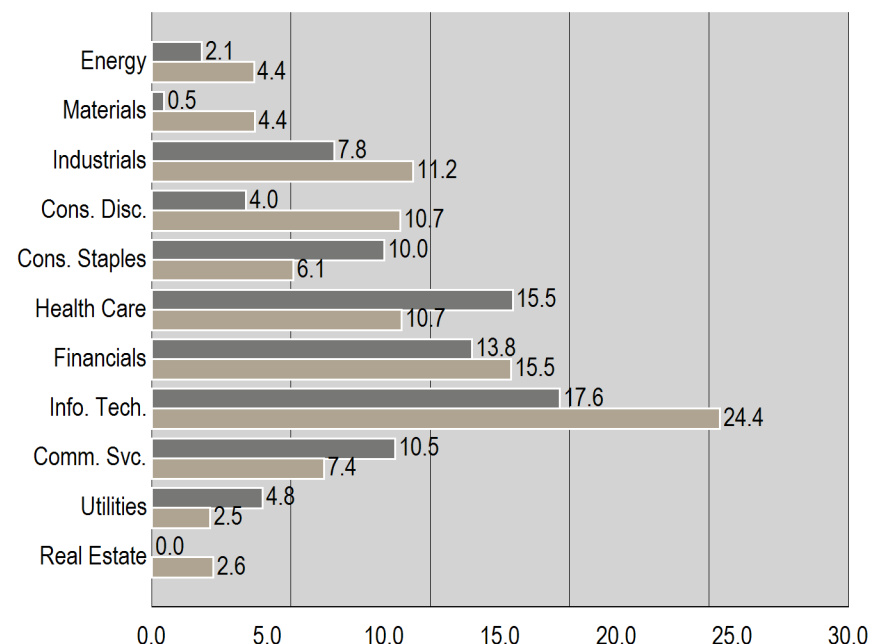
**Top Holdings**

ISHARES MSCI EMERGING MARKETS MIN VOL FACTOR ETF	12.4%
WASTE MANAGEMENT INC.	1.6%
T-MOBILE US INC	1.6%
MOTOROLA SOLUTIONS INC	1.6%
WALMART INC	1.5%
ROPER TECHNOLOGIES INC	1.5%
MCKESSON CORP	1.5%
MERCK & CO INC	1.5%
CISCO SYSTEMS INC	1.4%
REPUBLIC SERVICES INC.	1.3%
<b>Total</b>	<b>25.9%</b>

**Market Capitalization**

	Small Cap	Mid Cap	Large Cap	Unclassified
Global Equity Composite	18.6%	25.0%	55.4%	1.0%
MSCI ACWI IMI Net USD	15.8%	14.7%	69.5%	0.0%
<i>Weight Over/Under</i>	<i>2.8%</i>	<i>10.4%</i>	<i>-14.2%</i>	<i>1.0%</i>

**Sector Allocation (%) vs MSCI ACWI IMI Net USD**



**Region Allocation Summary**

Region	% of Total	% of Bench	% Diff
North America ex U.S.	1.2%	2.7%	-1.5%
United States	69.7%	63.3%	6.4%
Europe Ex U.K.	6.0%	11.3%	-5.3%
United Kingdom	0.4%	3.5%	-3.1%
Pacific Basin Ex Japan	3.2%	2.6%	0.6%
Japan	10.0%	5.7%	4.4%
Emerging Markets	7.9%	10.6%	-2.7%
Other	1.5%	0.3%	1.2%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.0%</b>

**Characteristics**

	Portfolio	MSCI ACWI ex USA IMI
Number of Holdings	2,335	6,473
Weighted Avg. Market Cap. (\$B)	114.4	99.9
Median Market Cap. (\$B)	10.1	1.8
Price To Earnings	18.2	16.5
Price To Book	2.7	2.5
Price To Sales	1.5	1.3
Return on Equity (%)	14.7	13.9
Yield (%)	2.6	3.0

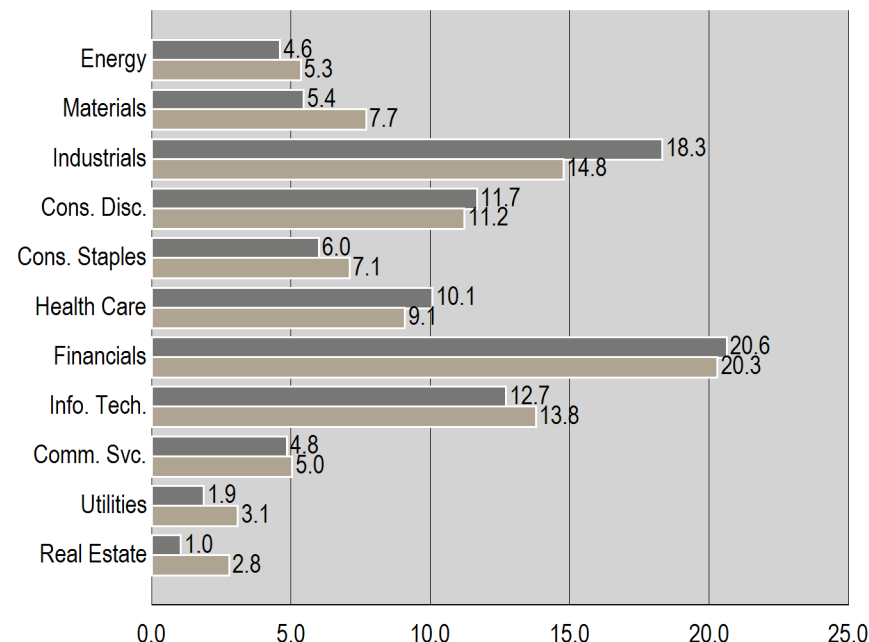
**Top Holdings**

TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	2.4%
NOVO NORDISK A/S	2.3%
ASML HOLDING NV	2.0%
RHEINMETALL	1.7%
ASTRAZENECA PLC	1.6%
SUZUKI MOTOR CORP	1.5%
HDFC BANK LIMITED	1.4%
LVMH MOET HENNESSY LOUIS VUITTON SE	1.3%
SAMSUNG ELECTRONICS CO LTD	1.2%
BAE SYSTEMS PLC	1.1%
<b>Total</b>	<b>16.4%</b>

**Market Capitalization**

	Small Cap	Mid Cap	Large Cap	Unclassified
Non-U.S Equity Composite	9.1%	27.5%	55.5%	7.9%
MSCI ACWI ex USA IMI	27.0%	21.7%	51.3%	0.0%
<i>Weight Over/Under</i>	-18.0%	5.9%	4.2%	7.9%

**Sector Allocation (%) vs MSCI ACWI ex USA IMI**



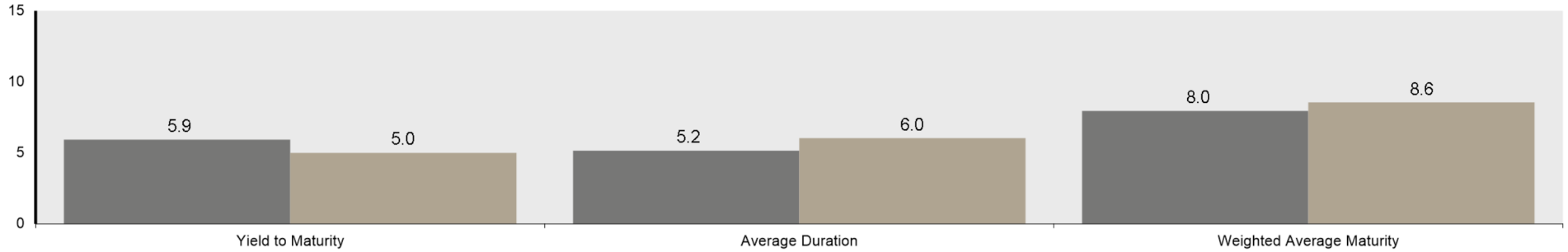
**Region Allocation Summary**

Region	% of Total	% of Bench	% Diff
North America ex U.S.	8.9%	7.3%	1.6%
United States	1.1%	0.0%	1.1%
Europe Ex U.K.	39.9%	30.8%	9.1%
United Kingdom	9.3%	9.5%	-0.1%
Pacific Basin Ex Japan	6.9%	7.1%	-0.3%
Japan	15.4%	15.4%	0.0%
Emerging Markets	16.9%	28.9%	-12.0%
Other	1.5%	0.9%	0.6%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.0%</b>

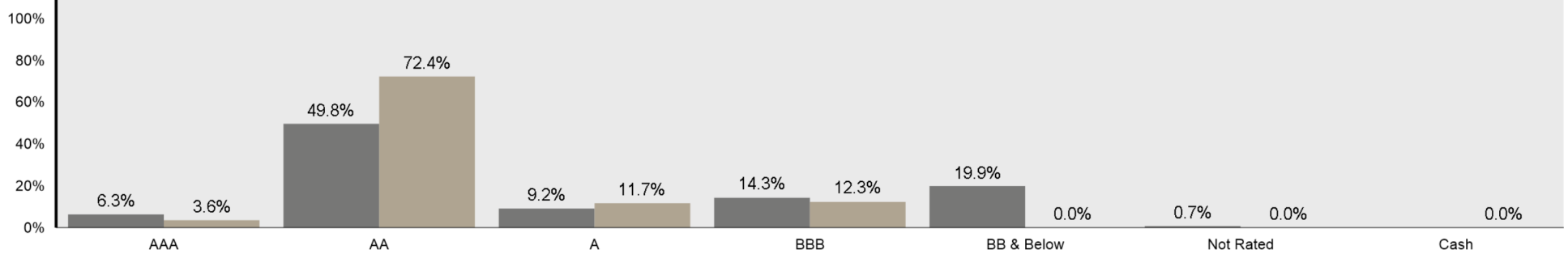
Common Holdings Matrix

	<i>SSGA MSCI World ex US</i>		<i>Hardman Johnston Int'l Equity</i>		<i>Hudson Edge Int'l Equity</i>		<i>SSGA MSCI Emerging Markets Index</i>	
	#	%	#	%	#	%	#	%
SSGA MSCI World ex US	--	--	19	74	25	75	2	0
Hardman Johnston Int'l Equity	19	9	--	--	4	13	3	10
Hudson Edge Int'l Equity	25	4	4	13	--	--	3	4
SSGA MSCI Emerging Markets Index	2	0	3	14	3	9	--	--

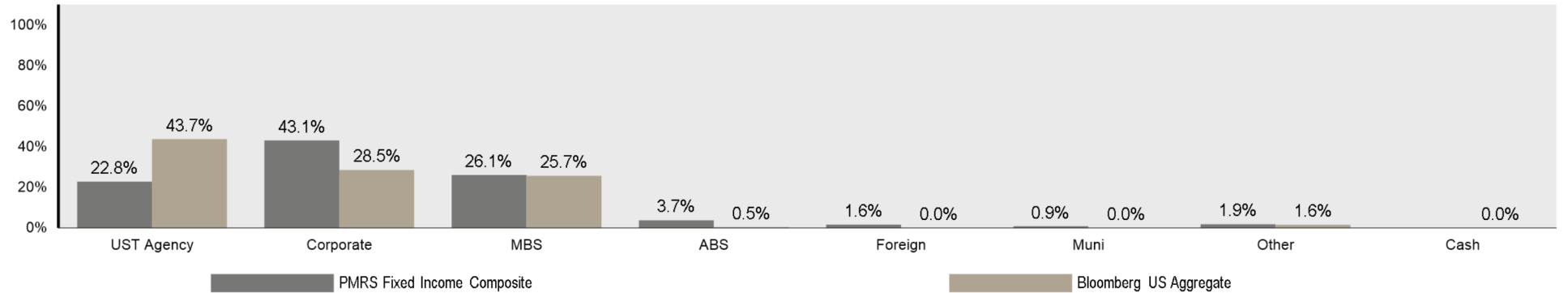
Yield to Maturity



Credit Quality



US Sector



[Page Intentionally Left Blank]

# Investment Managers



**Manager Summary:** Active strategy holding diversified portfolio of 70-80 stocks. Stock selection focuses on bottom-up company analysis seeking to identify high quality undervalued stocks that have durable franchises, significant free cash flow, solid balance sheets and strong management teams.

**Characteristics**

	Portfolio	Russell 1000 Value
Number of Holdings	73	844
Weighted Avg. Market Cap. (\$B)	149.9	163.4
Median Market Cap. (\$B)	90.6	13.6
Price To Earnings	20.8	19.3
Price To Book	3.1	2.5
Price To Sales	2.1	1.8
Return on Equity (%)	21.7	14.6
Yield (%)	2.3	2.3

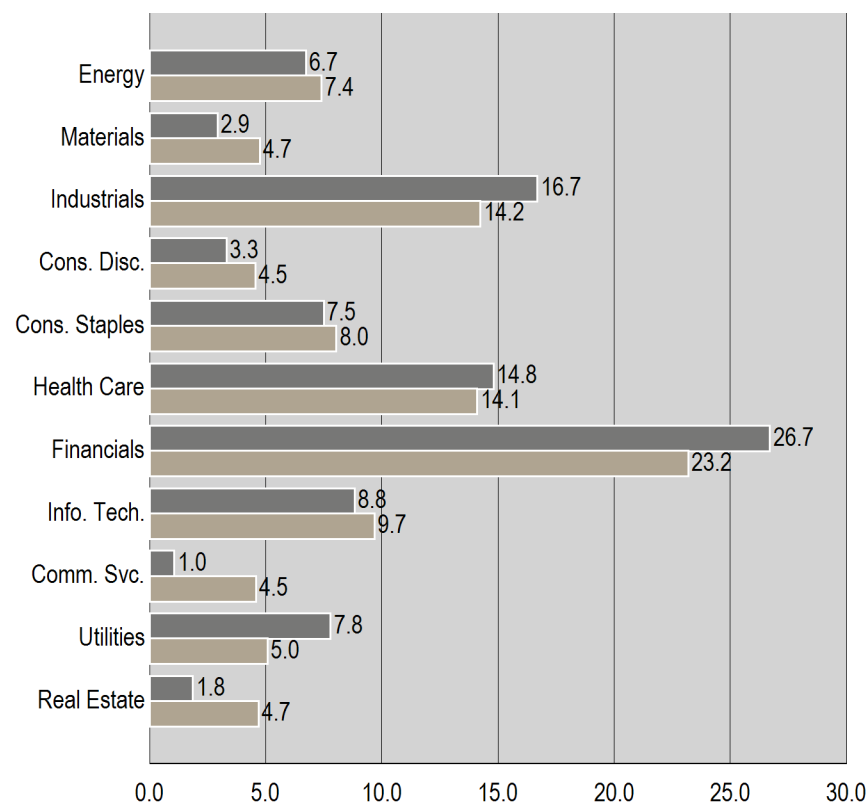
**Top Holdings**

JPMORGAN CHASE & CO	5.0%
PROGRESSIVE CORP (THE)	3.5%
THE CIGNA GROUP	3.0%
MCKESSON CORP	2.7%
CONOCOPHILLIPS	2.6%
MARSH & MCLENNAN COMPANIES INC	2.5%
AON PLC	2.2%
ANALOG DEVICES INC	2.2%
GENERAL DYNAMICS CORP	2.2%
JOHNSON & JOHNSON	2.2%
<b>Total</b>	<b>28.1%</b>

**Market Capitalization**

	Small Cap	Mid Cap	Large Cap
MFS Large Cap Value	0.0%	9.6%	90.4%
Russell 1000 Value	3.1%	30.4%	66.4%
<i>Weight Over/Under</i>	<i>-3.1%</i>	<i>-20.8%</i>	<i>24.0%</i>

**Sector Allocation (%) vs Russell 1000 Value**





**Manager Summary:** Passive strategy that seeks to replicate the return of the Standard & Poor’s 500 index. This strategy is a low-cost option to gain diversified exposure to U.S. domiciled companies by owning the 500 largest companies by market capitalization in the U.S.

**Characteristics**

	Portfolio	S&P 500
Number of Holdings	505	502
Weighted Avg. Market Cap. (\$B)	1,003.6	998.8
Median Market Cap. (\$B)	34.6	34.4
Price To Earnings	27.2	27.2
Price To Book	4.9	4.9
Price To Sales	3.0	3.0
Return on Equity (%)	33.7	33.7
Yield (%)	1.4	1.4

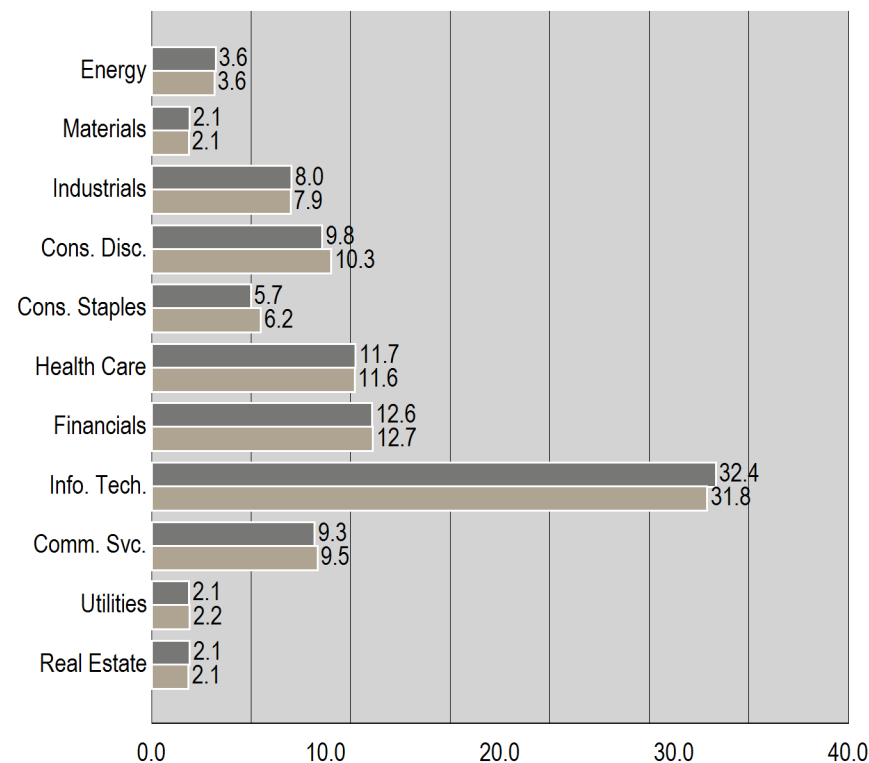
**Top Holdings**

MICROSOFT CORP	7.2%
NVIDIA CORPORATION	6.6%
APPLE INC	6.6%
AMAZON.COM INC	3.9%
META PLATFORMS INC	2.4%
ALPHABET INC	2.3%
ALPHABET INC	2.0%
BERKSHIRE HATHAWAY INC	1.6%
ELI LILLY AND CO	1.6%
BROADCOM INC	1.5%
<b>Total</b>	<b>35.7%</b>

**Market Capitalization**

	Small Cap	Mid Cap	Large Cap
Xponance S&P 500	0.0%	13.1%	86.9%
S&P 500	0.6%	12.8%	86.6%
<i>Weight Over/Under</i>	<i>-0.6%</i>	<i>0.2%</i>	<i>0.3%</i>

**Sector Allocation (%) vs S&P 500**



**Manager Summary:** Passive strategy that seeks to replicate the return of the Standard & Poor’s 500 index. This strategy is a low-cost option to gain diversified exposure to U.S. domiciled companies by owning the 500 largest companies by market capitalization in the U.S.

**Characteristics**

	Portfolio	S&P 500
Number of Holdings	506	502
Weighted Avg. Market Cap. (\$B)	1,004.3	998.8
Median Market Cap. (\$B)	33.8	34.4
Price To Earnings	27.2	27.2
Price To Book	4.9	4.9
Price To Sales	3.0	3.0
Return on Equity (%)	33.7	33.7
Yield (%)	1.4	1.4

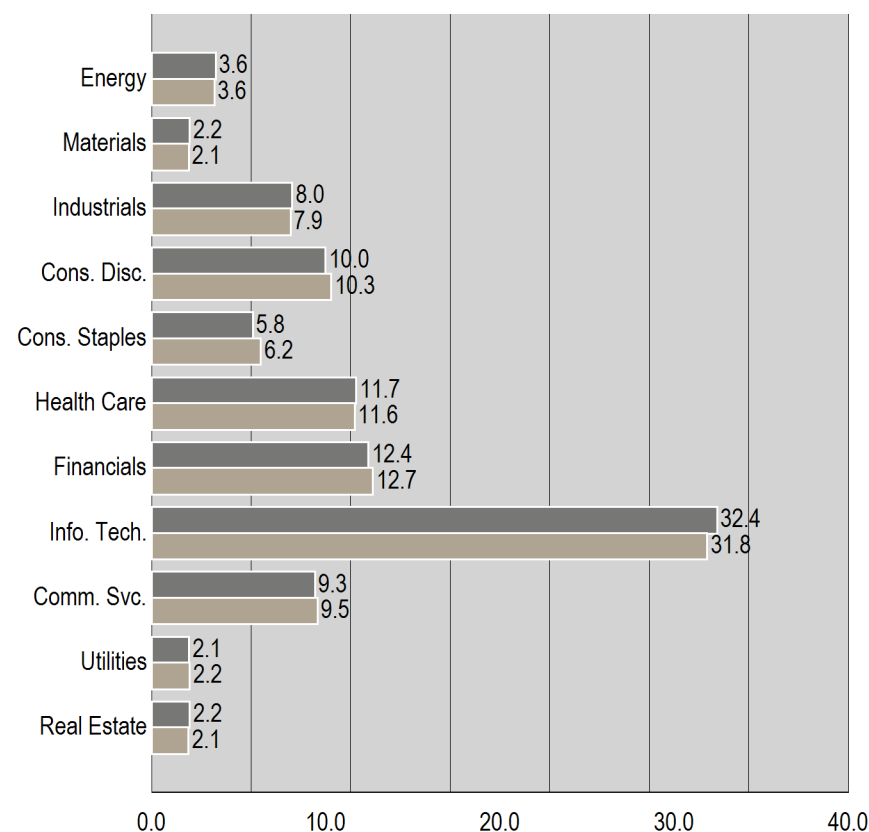
**Top Holdings**

MICROSOFT CORP	7.2%
NVIDIA CORPORATION	6.6%
APPLE INC	6.6%
AMAZON.COM INC	3.9%
META PLATFORMS INC	2.4%
ALPHABET INC	2.3%
ALPHABET INC	2.0%
BERKSHIRE HATHAWAY INC	1.6%
ELI LILLY AND CO	1.6%
BROADCOM INC	1.5%
<b>Total</b>	<b>35.7%</b>

**Market Capitalization**

	Small Cap	Mid Cap	Large Cap
Northern Trust S&P 500	0.0%	13.1%	86.9%
S&P 500	0.6%	12.8%	86.6%
<i>Weight Over/Under</i>	<i>-0.6%</i>	<i>0.3%</i>	<i>0.3%</i>

**Sector Allocation (%) vs S&P 500**



**Manager Summary:** Concentrated U.S. large cap growth portfolio with 20-30 names. Investment process begins with negative screening, only including names with robust financials, strong management and attractive earnings growth potential. Then team of generalists perform bottom-up fundamental analysis reviewing industry dynamics, competitive advantage, free cash flow modeling, meet with mgmt. and perform worst case scenarios. High active share. Position limit: 50% limit on sector exposure. Low portfolio turnover (30%).

**Characteristics**

	Portfolio	Russell 1000 Growth
Number of Holdings	24	439
Weighted Avg. Market Cap. (\$B)	923.0	1,508.9
Median Market Cap. (\$B)	246.3	20.6
Price To Earnings	37.5	36.6
Price To Book	9.5	12.2
Price To Sales	6.8	4.8
Return on Equity (%)	35.4	53.8
Yield (%)	0.6	0.7

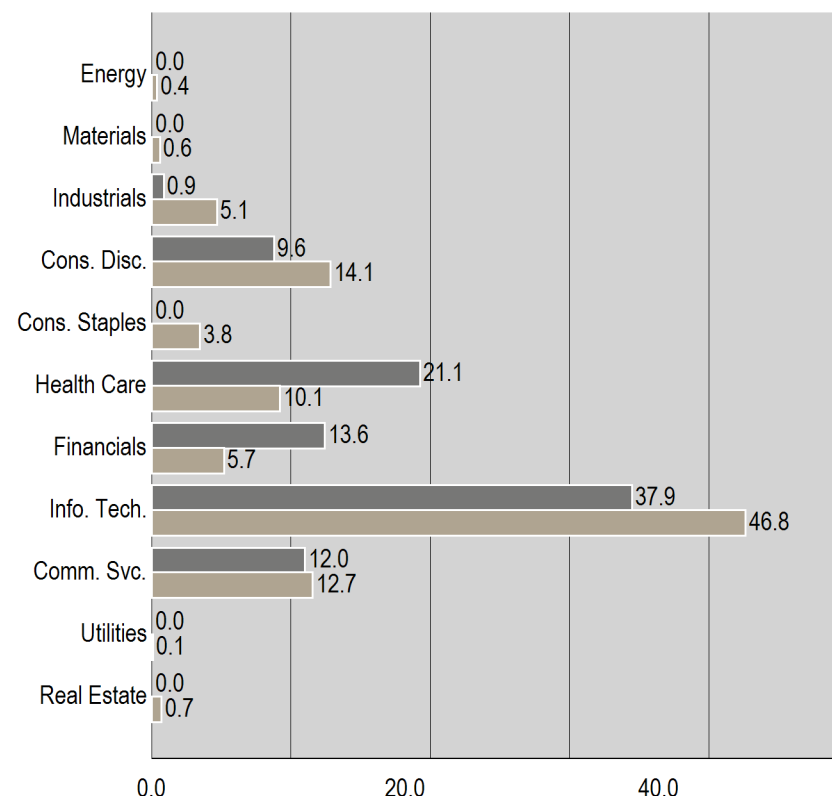
**Top Holdings**

MICROSOFT CORP	12.5%
AMAZON.COM INC	7.9%
VISA INC	6.4%
SERVICENOW INC	6.2%
MASTERCARD INC	5.6%
SALESFORCE INC	5.6%
THERMO FISHER SCIENTIFIC INC	5.4%
ALPHABET INC	5.3%
NETFLIX INC	4.8%
ABBOTT LABORATORIES	4.7%
<b>Total</b>	<b>64.3%</b>

**Market Capitalization**

	Small Cap	Mid Cap	Large Cap
Polen Focus Growth	0.0%	5.9%	94.1%
Russell 1000 Growth	1.3%	8.7%	90.0%
<i>Weight Over/Under</i>	-1.3%	-2.7%	4.1%

**Sector Allocation (%) vs Russell 1000 Growth**



**Manager Summary:** The fund employs a replication technique in order to approximate the risk and return characteristics of the Dow Jones U.S. Completion Total Stock Market Index. This Index is commonly used to represent the small and mid cap segments of the U.S. equity market. The 'completion' index is a sub-set of the DJ US Total Stock Market Index that excludes components of the S&P500.

**Characteristics**

	Portfolio	Dow Jones U.S. Completion Total Stock Market
Number of Holdings	3,177	3,528
Weighted Avg. Market Cap. (\$B)	11.2	11.2
Median Market Cap. (\$B)	0.7	0.6
Price To Earnings	18.9	18.8
Price To Book	2.8	2.8
Price To Sales	1.5	1.5
Return on Equity (%)	6.8	6.7
Yield (%)	1.4	1.4

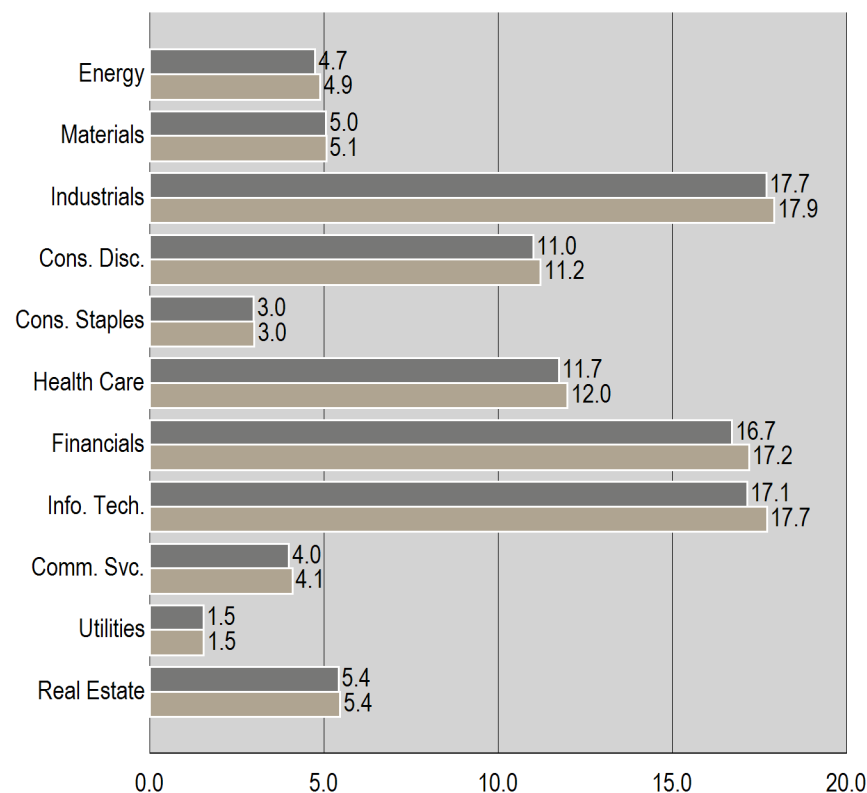
**Top Holdings**

MARVELL TECHNOLOGY INC	0.9%
APOLLO GLOBAL MANAGEMENT INC	0.8%
CRH PLC	0.8%
PALANTIR TECHNOLOGIES INC CL A CL A	0.8%
WORKDAY INC	0.7%
SNOWFLAKE INC	0.7%
TRADE DESK INC (THE)	0.7%
DATADOG INC	0.6%
CHENIERE ENERGY INC	0.6%
COINBASE GLOBAL INC CL A	0.6%
<b>Total</b>	<b>7.2%</b>

**Market Capitalization**

	Small Cap	Mid Cap	Large Cap
Northern Trust Dow Jones Completion Index	27.6%	68.0%	4.5%
Dow Jones U.S. Completion Total Stock Market	36.7%	59.4%	3.9%
<i>Weight Over/Under</i>	-9.2%	8.6%	0.6%

**Sector Allocation (%) vs Dow Jones U.S. Completion Total Stock Market**



**Manager Summary:** Minority-owned investment management firm with fundamental bottom-up process. Stocks are first screened based on earnings, book value, and cash flow criteria with fundamental analysis performed on the top 20% within each respective sector. Sell candidates are companies that have dropped to the bottom 40% of their screen. The strategy holds 50-75 positions and is typically within plus/minus 5% of index sector weightings.

**Characteristics**

	Portfolio	Russell 2000 Value
Number of Holdings	67	1,401
Weighted Avg. Market Cap. (\$B)	3.4	3.0
Median Market Cap. (\$B)	1.6	0.8
Price To Earnings	13.3	13.7
Price To Book	1.9	1.6
Price To Sales	0.6	1.0
Return on Equity (%)	8.6	4.6
Yield (%)	1.6	2.4

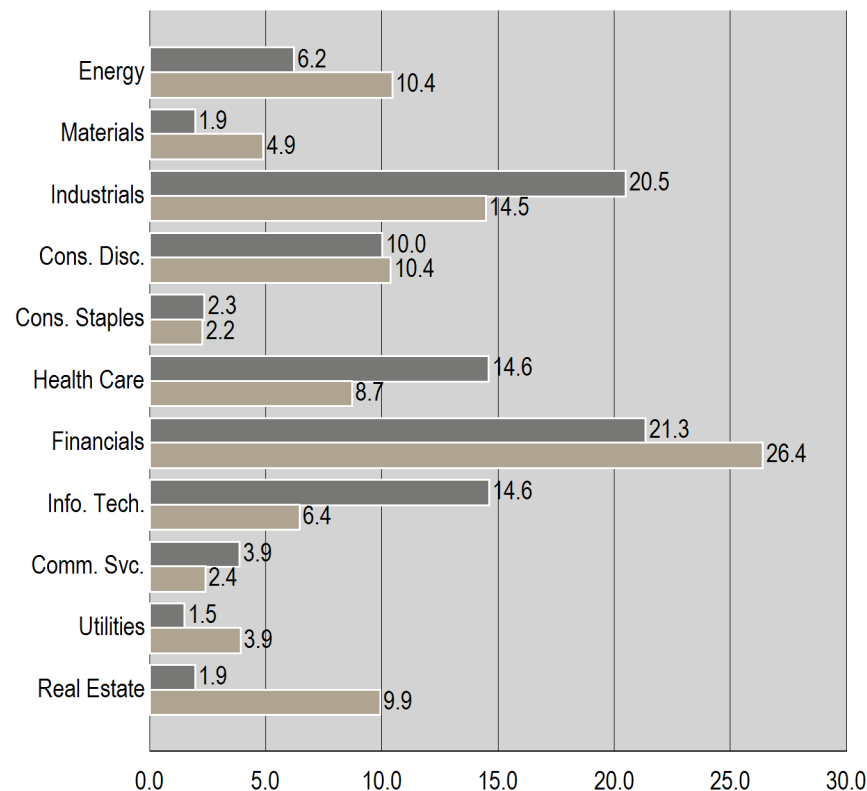
**Top Holdings**

ULTRA CLEAN HOLDINGS INC	2.7%
DYCOM INDUSTRIES INC.	2.7%
SELECT MEDICAL HOLDINGS CORP	2.6%
GRIFFON CORP.	2.5%
PRIMORIS SERVICES CORP	2.5%
SCANSOURCE INC	2.4%
DECKERS OUTDOOR CORP	2.4%
GROUP 1 AUTOMOTIVE INC	2.4%
CIRRUS LOGIC INC.	2.3%
TETRA TECH INC	2.2%
<b>Total</b>	<b>24.6%</b>

**Market Capitalization**

	Small Cap	Mid Cap	Large Cap
Dana Inv. Advisors Small Cap Value	66.6%	33.4%	0.0%
Russell 2000 Value	76.4%	23.6%	0.0%
<i>Weight Over/Under</i>	<i>-9.7%</i>	<i>9.7%</i>	<i>0.0%</i>

**Sector Allocation (%) vs Russell 2000 Value**



**Manager Summary:** A bottom-up fundamental manager who views dividend growth as a litmus test for earnings quality and focuses on attributes such as dividend coverage, cash flow strength, earnings growth, and return on capital. Fundamental research is focused on identifying companies with strong competitive positions that support steadily rising dividends. Strategy invests in larger, more established small cap firms while tending to underweight the lower market cap ranges. The strategy seeks sector diversification with 45-60 holdings.

**Characteristics**

	Portfolio	Russell 2500
Number of Holdings	70	2,415
Weighted Avg. Market Cap. (\$B)	8.7	8.2
Median Market Cap. (\$B)	6.6	1.6
Price To Earnings	21.3	18.3
Price To Book	3.6	2.7
Price To Sales	1.9	1.4
Return on Equity (%)	18.3	10.3
Yield (%)	1.7	1.6

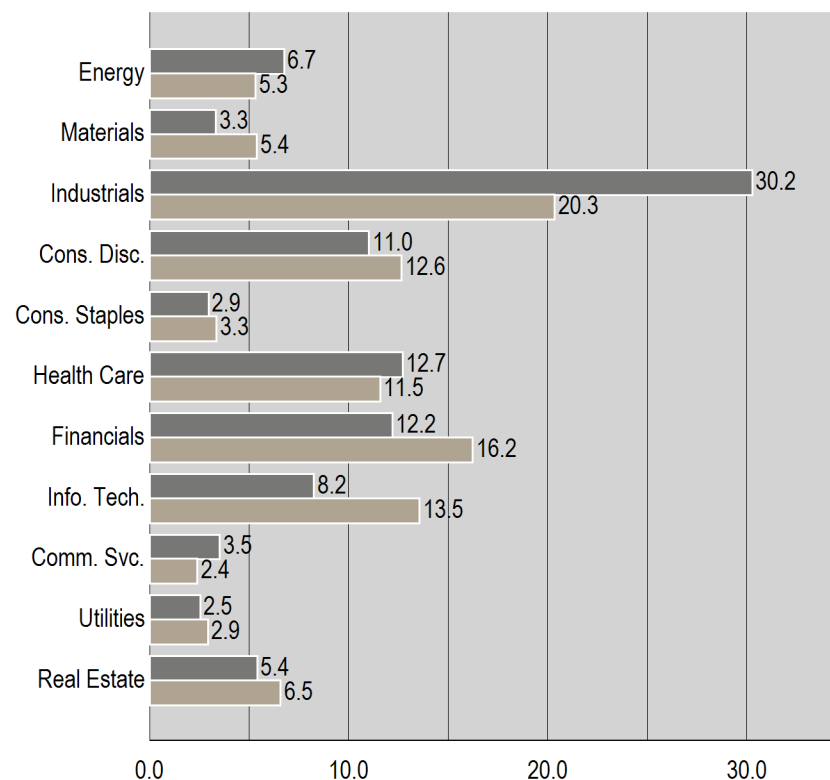
**Top Holdings**

ENSIGN GROUP INC (THE)	2.3%
ENCOMPASS HEALTH CORP	2.1%
WINGSTOP INC	2.1%
CARLISLE COS INC	2.1%
HAMILTON LANE INC	2.0%
RELIANCE INC	2.0%
TETRA TECH INC	2.0%
BOOZ ALLEN HAMILTON HOLDING CORPORATION	1.9%
DOMINO'S PIZZA INC	1.9%
LEMAITRE VASCULAR INC	1.8%
<b>Total</b>	<b>20.1%</b>

**Market Capitalization**

	Small Cap	Mid Cap	Large Cap
Copeland SMID Cap Dividend Growth	21.3%	78.7%	0.0%
Russell 2500	34.3%	65.0%	0.7%
<i>Weight Over/Under</i>	<i>-13.1%</i>	<i>13.8%</i>	<i>-0.7%</i>

**Sector Allocation (%) vs Russell 2500**



**Manager Summary:** Core growth strategy, fundamental, bottom-up process seeking companies with a competitive advantage, market leadership, growth rates exceeding peers, differentiated growth drivers, and low research coverage. Analysts work across the market cap spectrum supporting small, mid, and all-cap strategies with coverage of dynamic sectors. The strategy holds 110-125 companies and portfolio construction limits of no more than 15% in any one industry group.

**Characteristics**

	Portfolio	Russell 2000 Growth
Number of Holdings	116	1,053
Weighted Avg. Market Cap. (\$B)	4.7	6.3
Median Market Cap. (\$B)	3.5	1.3
Price To Earnings	27.6	23.6
Price To Book	4.5	4.1
Price To Sales	2.8	2.0
Return on Equity (%)	-1.6	6.9
Yield (%)	0.4	0.7

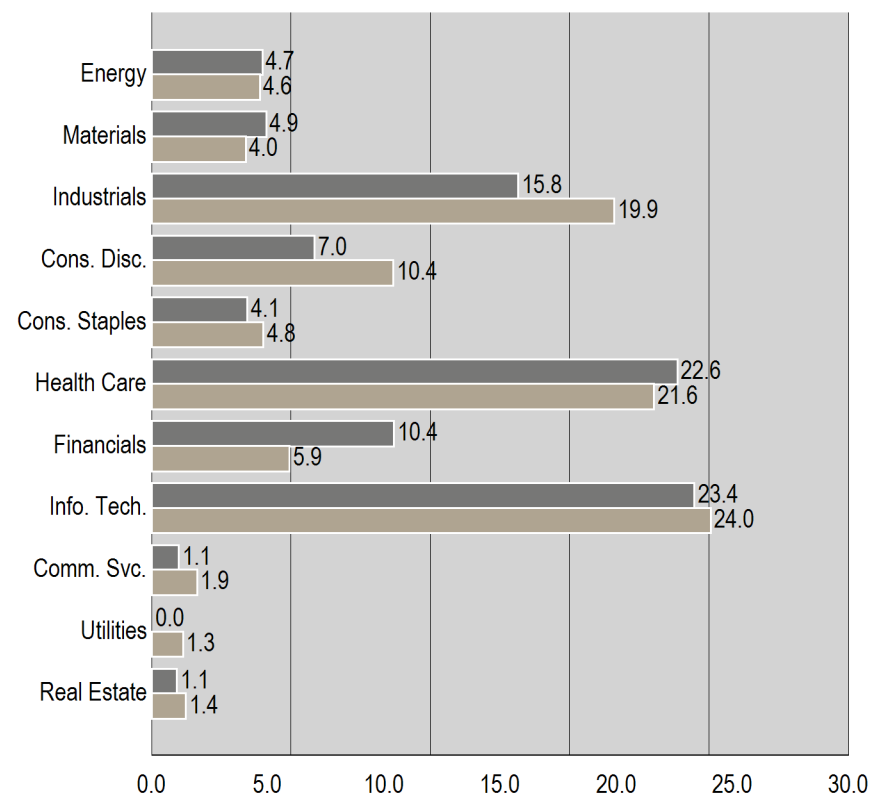
**Top Holdings**

FTAI AVIATION LTD	3.8%
FRESHPET INC	3.0%
CARPENTER TECHNOLOGY CORP	2.5%
CREDO TECHNOLOGY GROUP HOLDING	2.1%
TRANSMEDICS GROUP INC	2.1%
VARONIS SYSTEMS INC	2.0%
INSMED INC	1.8%
RADNET INC	1.7%
BLUEPRINT MEDICINES CORP	1.6%
Q2 HOLDINGS INC	1.6%
<b>Total</b>	<b>22.2%</b>

**Market Capitalization**

	Small Cap	Mid Cap	Large Cap
Emerald Small Cap Growth	41.6%	58.4%	0.0%
Russell 2000 Growth	53.3%	43.5%	3.2%
<i>Weight Over/Under</i>	<i>-11.7%</i>	<i>14.9%</i>	<i>-3.2%</i>

**Sector Allocation (%) vs Russell 2000 Growth**



**Manager Summary:** The fund invests primarily in U.S. and foreign stocks that are expected to minimize volatility relative to the global equity market. To reduce volatility, the fund will consider stocks' risk and diversification characteristics and seek to hedge away most of the currency exposure resulting from its foreign stock holdings.

**Characteristics**

	Portfolio	MSCI ACWI
Number of Holdings	285	2,757
Weighted Avg. Market Cap. (\$B)	127.3	671.3
Median Market Cap. (\$B)	21.8	14.1
Price To Earnings	19.5	22.7
Price To Book	3.2	3.8
Price To Sales	1.3	2.1
Return on Equity (%)	21.8	22.2
Yield (%)	2.4	1.9

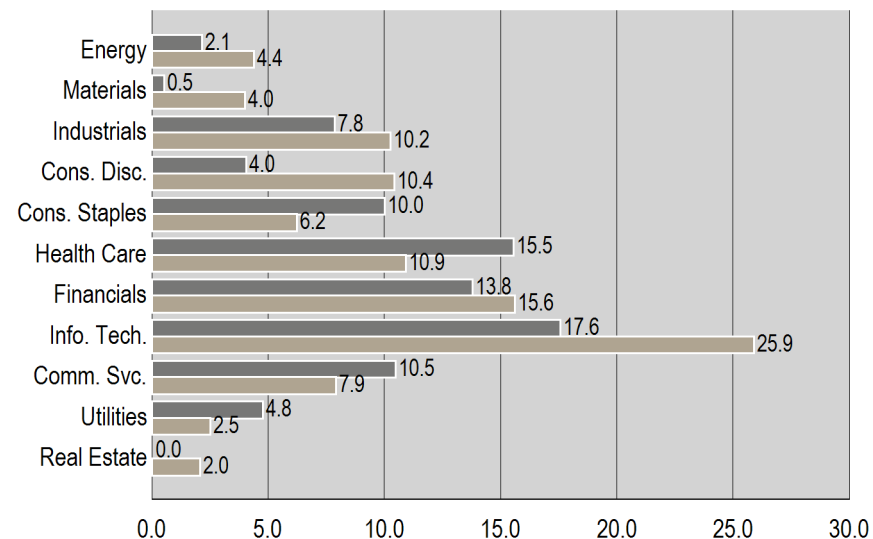
**Top Holdings**

ISHARES MSCI EMERGING MARKETS MIN VOL FACTOR ETF	12.4%
WASTE MANAGEMENT INC.	1.6%
T-MOBILE US INC	1.6%
MOTOROLA SOLUTIONS INC	1.6%
WALMART INC	1.5%
ROPER TECHNOLOGIES INC	1.5%
MCKESSON CORP	1.5%
MERCK & CO INC	1.5%
CISCO SYSTEMS INC	1.4%
REPUBLIC SERVICES INC.	1.3%
<b>Total</b>	<b>25.9%</b>

**Market Capitalization**

	Small Cap	Mid Cap	Large Cap	Unclassified
Rhumblin Global Min. Volatility	18.6%	25.0%	55.4%	1.0%
MSCI ACWI	6.5%	15.7%	77.8%	0.0%
<i>Weight Over/Under</i>	<i>12.1%</i>	<i>9.3%</i>	<i>-22.4%</i>	<i>1.0%</i>

**Sector Allocation (%) vs MSCI ACWI**



**Region Allocation Summary**

Region	% of Total	% of Bench	% Diff
North America ex U.S.	1.2%	2.6%	-1.4%
United States	69.7%	64.7%	5.1%
Europe Ex U.K.	6.0%	11.5%	-5.4%
United Kingdom	0.4%	3.3%	-3.0%
Pacific Basin Ex Japan	3.2%	2.4%	0.8%
Japan	10.0%	5.1%	4.9%
Emerging Markets	7.9%	10.1%	-2.2%
Other	1.5%	0.2%	1.2%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.0%</b>



**Manager Summary:** Passive strategy that seeks to replicate the returns of the MSCI ACWI ex US index. This strategy is a low-cost option to gain diversified exposure to internationally based companies.

**Characteristics**

	Portfolio	MSCI World ex USA
Number of Holdings	966	829
Weighted Avg. Market Cap. (\$B)	94.0	96.9
Median Market Cap. (\$B)	12.1	14.2
Price To Earnings	17.3	17.3
Price To Book	2.5	2.5
Price To Sales	1.4	1.4
Return on Equity (%)	14.5	14.8
Yield (%)	3.1	3.1

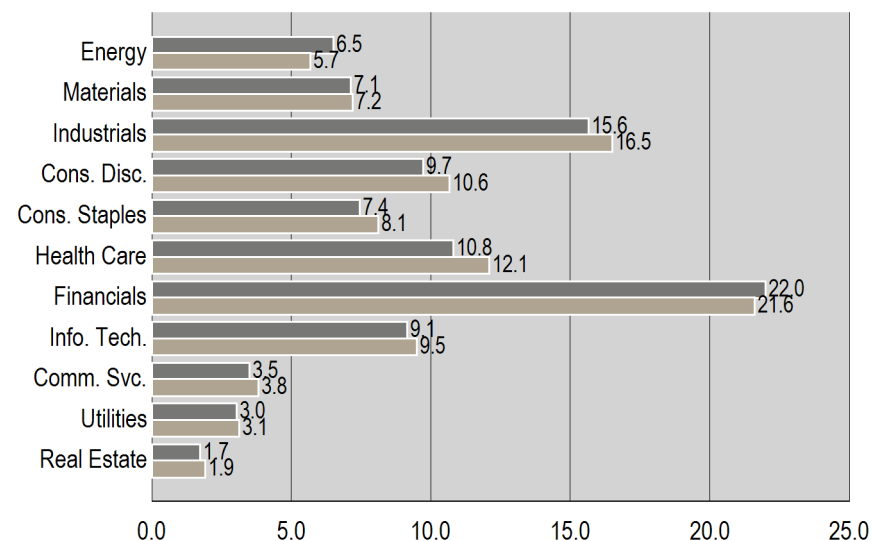
**Top Holdings**

NOVO NORDISK A/S	2.3%
ASML HOLDING NV	2.1%
NESTLE SA, CHAM UND VEVEY	1.4%
ROYAL BANK OF CANADA	1.4%
ASTRAZENECA PLC	1.2%
SHELL PLC	1.1%
NOVARTIS AG	1.1%
TOYOTA MOTOR CORP	1.1%
SAP SE	1.1%
LVMH MOET HENNESSY LOUIS VUITTON SE	1.0%
<b>Total</b>	<b>13.7%</b>

**Market Capitalization**

	Small Cap	Mid Cap	Large Cap	Unclassified
SSGA MSCI World ex US	8.4%	24.5%	59.6%	7.6%
MSCI World ex USA	10.2%	25.4%	64.4%	0.0%
<i>Weight Over/Under</i>	-1.8%	-0.9%	-4.9%	7.6%

**Sector Allocation (%) vs MSCI World ex USA**



**Region Allocation Summary**

Region	% of Total	% of Bench	% Diff
North America ex U.S.	17.4%	10.5%	6.9%
United States	1.3%	0.0%	1.3%
Europe Ex U.K.	44.1%	45.5%	-1.4%
United Kingdom	9.6%	13.3%	-3.8%
Pacific Basin Ex Japan	8.5%	9.7%	-1.2%
Japan	18.5%	20.3%	-1.8%
Emerging Markets	0.0%	0.0%	0.0%
Other	0.6%	0.7%	0.0%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.0%</b>

**Manager Summary:** Concentrated portfolio (20-30 names). Utilizes fundamental research invests in quality companies with 10% EPS growth and market leaders, invest at attractive valuation. Turnover is between 20-30%. Maximum position is 5%. Given the concentrated nature of the portfolio, high idiosyncratic risk in the portfolio and sizable tracking error. High active share (around 90-95%). No currency hedge.

**Characteristics**

	Portfolio	MSCI EAFE
Number of Holdings	27	742
Weighted Avg. Market Cap. (\$B)	171.2	102.0
Median Market Cap. (\$B)	76.0	14.1
Price To Earnings	25.7	17.5
Price To Book	3.7	2.6
Price To Sales	1.6	1.3
Return on Equity (%)	20.0	15.4
Yield (%)	1.3	3.1

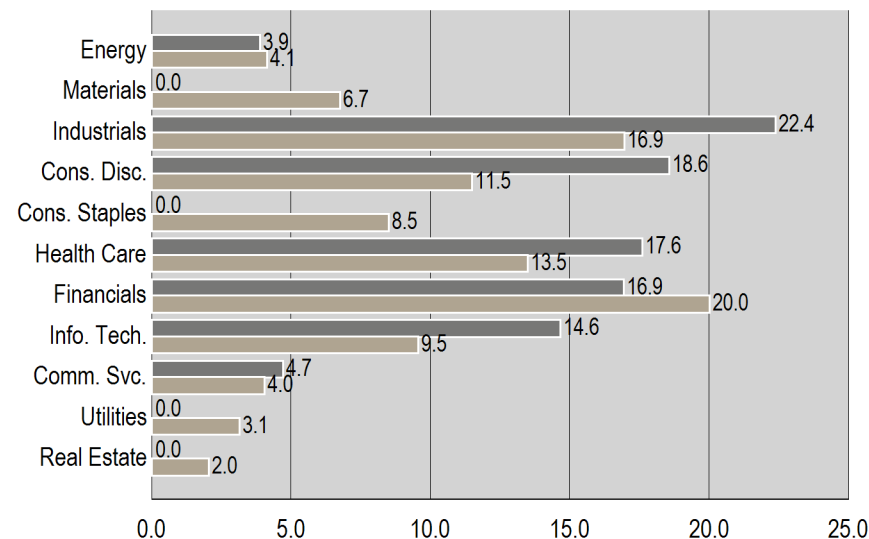
**Top Holdings**

NOVO NORDISK A/S	5.8%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	5.8%
ASTRAZENECA PLC	5.5%
MERCADOLIBRE INC	5.3%
MITSUBISHI HEAVY INDUSTRIES LTD	5.3%
ASML HOLDING NV	5.2%
PROSUS ORD	5.1%
DAI-ICHI LIFE HOLDINGS INC	5.0%
DEUTSCHE TELEKOM AG	4.8%
PRYSMIAN SPA	4.7%
<b>Total</b>	<b>52.5%</b>

**Market Capitalization**

	Small Cap	Mid Cap	Large Cap	Unclassified
Hardman Johnston Int'l Equity	6.3%	26.1%	62.5%	5.1%
MSCI EAFE	10.2%	24.8%	65.0%	0.0%
<i>Weight Over/Under</i>	-3.9%	1.3%	-2.5%	5.1%

**Sector Allocation (%) vs MSCI EAFE**



**Region Allocation Summary**

Region	% of Total	% of Bench	% Diff
North America ex U.S.	0.0%	0.0%	0.0%
United States	0.0%	0.0%	0.0%
Europe Ex U.K.	50.9%	50.8%	0.1%
United Kingdom	11.6%	14.9%	-3.3%
Pacific Basin Ex Japan	3.1%	10.8%	-7.7%
Japan	16.9%	22.7%	-5.8%
Emerging Markets	12.1%	0.0%	12.1%
Other	5.3%	0.7%	4.6%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.0%</b>

**Manager Summary:** Bottom-up fundamental manager looking for businesses that are undergoing structural change. Analysts are generalists who are unconstrained in their candidates. Looking for upside over a time horizon of 2-3 years through assessing and predicting earnings estimates. Concentrated portfolio: 25-35 names equally weighted with a max of 5% initial allocation. Sector and countries limits of 30%. Turnover is roughly 30-40%.

**Characteristics**

	Portfolio	MSCI EAFE
Number of Holdings	33	742
Weighted Avg. Market Cap. (\$B)	73.6	102.0
Median Market Cap. (\$B)	27.1	14.1
Price To Earnings	17.8	17.5
Price To Book	2.6	2.6
Price To Sales	2.1	1.3
Return on Equity (%)	12.0	15.4
Yield (%)	2.4	3.1

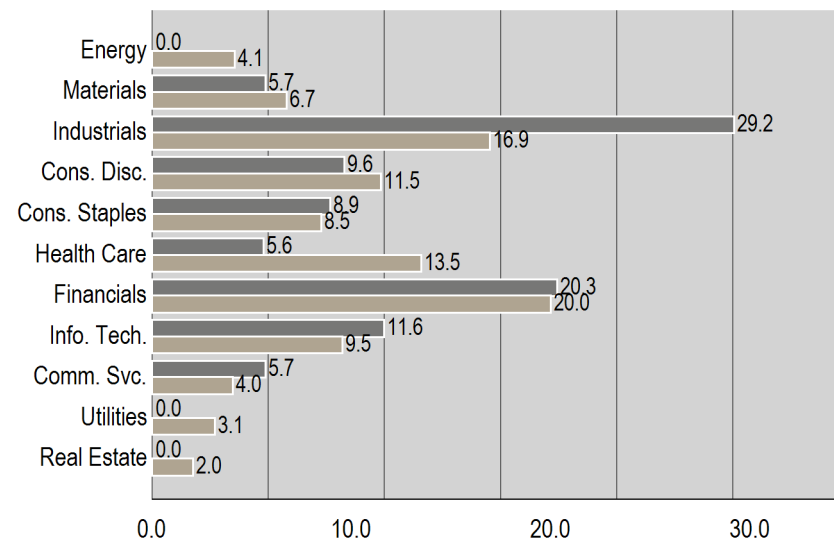
**Top Holdings**

BAE SYSTEMS PLC	5.3%
RHEINMETALL	4.7%
THALES SA	4.0%
DBS GROUP HOLDINGS LTD	3.7%
SAMSUNG ELECTRONICS CO LTD	3.7%
HDFC BANK LIMITED	3.7%
SONY GROUP CORPORATION	3.5%
TREASURY WINE ESTATES LTD	3.5%
DEUTSCHE BOERSE AG	3.5%
UNIVERSAL MUSIC GROUP INC	3.5%
<b>Total</b>	<b>39.3%</b>

**Market Capitalization**

	Small Cap	Mid Cap	Large Cap	Unclassified
Hudson Edge Int'l Equity	6.3%	38.9%	43.5%	11.3%
MSCI EAFE	10.2%	24.8%	65.0%	0.0%
<i>Weight Over/Under</i>	<i>-3.9%</i>	<i>14.1%</i>	<i>-21.5%</i>	<i>11.3%</i>

**Sector Allocation (%) vs MSCI EAFE**



**Region Allocation Summary**

Region	% of Total	% of Bench	% Diff
North America ex U.S.	2.5%	0.0%	2.5%
United States	0.0%	0.0%	0.0%
Europe Ex U.K.	45.9%	50.8%	-5.0%
United Kingdom	13.0%	14.9%	-1.9%
Pacific Basin Ex Japan	8.7%	10.8%	-2.1%
Japan	17.0%	22.7%	-5.7%
Emerging Markets	12.9%	0.0%	12.9%
Other	0.0%	0.7%	-0.7%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.0%</b>

**Manager Summary:** Passive strategy that seeks to replicate the return of the MSCI Emerging Markets index. This strategy is a low-cost option to gain diversified exposure to emerging market based companies.

**Characteristics**

	Portfolio	MSCI Emerging Markets
Number of Holdings	1,368	1,328
Weighted Avg. Market Cap. (\$B)	163.2	162.6
Median Market Cap. (\$B)	8.1	8.2
Price To Earnings	15.6	15.6
Price To Book	2.6	2.6
Price To Sales	1.2	1.2
Return on Equity (%)	13.8	13.8
Yield (%)	2.8	2.8

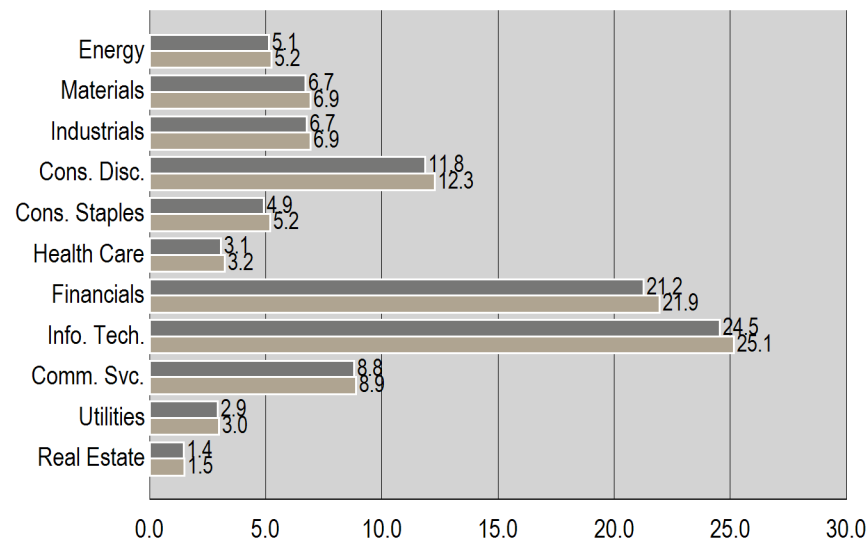
**Top Holdings**

TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	9.8%
TENCENT HOLDINGS LTD	4.2%
SAMSUNG ELECTRONICS CO LTD	3.8%
ALIBABA GROUP HOLDING LTD	1.9%
RELIANCE INDUSTRIES LTD	1.5%
SK HYNIX INC	1.3%
HON HAI PRECISION INDUSTRY CO LTD	1.1%
PDD HOLDINGS INC	1.1%
ICICI BANK	1.0%
MEITUAN	1.0%
<b>Total</b>	<b>26.6%</b>

**Market Capitalization**

	Small Cap	Mid Cap	Large Cap	Unclassified
SSGA MSCI Emerging Markets Index	6.3%	25.3%	59.9%	8.4%
MSCI Emerging Markets	14.2%	25.6%	60.2%	0.0%
<i>Weight Over/Under</i>	<i>-7.8%</i>	<i>-0.3%</i>	<i>-0.3%</i>	<i>8.4%</i>

**Sector Allocation (%) vs MSCI Emerging Markets**



**Region Allocation Summary**

Region	% of Total	% of Bench	% Diff
North America ex U.S.	0.0%	0.0%	0.0%
United States	3.8%	0.0%	3.8%
Europe Ex U.K.	0.8%	0.5%	0.3%
United Kingdom	0.1%	0.0%	0.1%
Pacific Basin Ex Japan	4.0%	0.0%	4.0%
Japan	0.0%	0.0%	0.0%
Emerging Markets	89.9%	98.8%	-8.9%
Other	1.5%	0.7%	0.7%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.0%</b>

**Characteristics**

Fund GAV (\$MM)	\$28,261.0
Fund NAV (\$MM)	\$21,747.0
Cash (% of NAV)	2.0%
# of Investments	282
% in Top 10 by NAV	18.3%
Leverage %	25.4%
Occupancy	91.2%
# of MSAs	47
1-Year Dividend Yield	3.4%
As of Date	30-Jun-24

**Strategy Breakdown**

	% of Portfolio
Pre-Development	1.2%
Development	1.9%
Initial Leasing	0.8%
Operating	96.2%
Re-Development	
Other	
<b>Queue In:</b>	
Contribution Queue (\$MM)	\$225.68
Anticipated Drawdown (Months)	

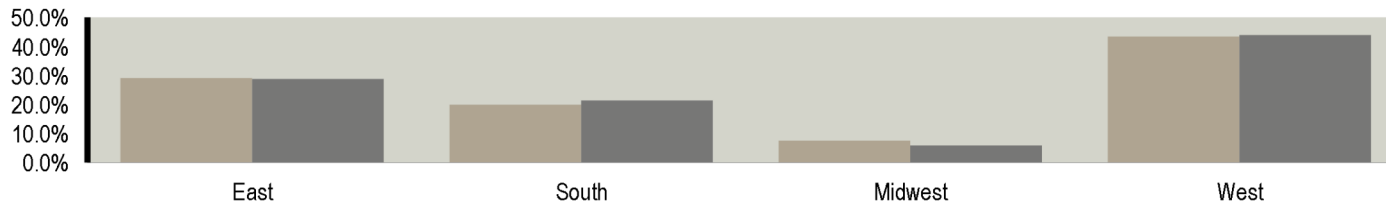
**Top Five Metro Areas**

	% of NAV
Los Angeles-Long Beach, CA	22.5%
New York-Newark, NY-NJ-CT-F	12.7%
Washington-Baltimore-Arlington	9.4%
San Jose-San Francisco-Oaklar	7.1%
Atlanta--Athens-Clarke County-	6.2%

**Queue Out:**

Redemption Queue (\$MM)	\$2,438.92
Anticipated Payout (Months)	

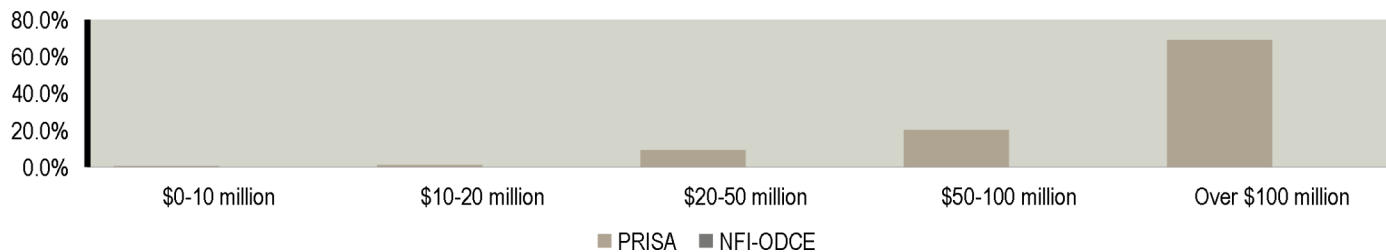
**Regional Breakdown by NAV (Excluding Cash & Debt)**



**Property Type Breakdown by NAV (Excluding Cash & Debt)**



**Property Size Breakdown by NAV (Excluding Cash & Debt)**



■ PRISA ■ NFI-ODCE

**Characteristics**

Fund GAV (\$MM)	\$15,726.0
Fund NAV (\$MM)	\$8,933.0
Cash (% of NAV)	0.8%
# of Investments	143
% in Top 10 by NAV	30.3%
Leverage %	39.4%
Occupancy	85.8%
# of MSAs	68
1-Year Dividend Yield	2.4%
As of Date	31-Dec-23

**Strategy Breakdown**

	% of Portfolio
Pre-Development	5.0%
Development	10.1%
Initial Leasing	9.3%
Operating	68.2%
Re-Development	
Other	7.4%
<b>Queue In:</b>	
Contribution Queue (\$MM)	\$750.00
Anticipated Drawdown (Months)	

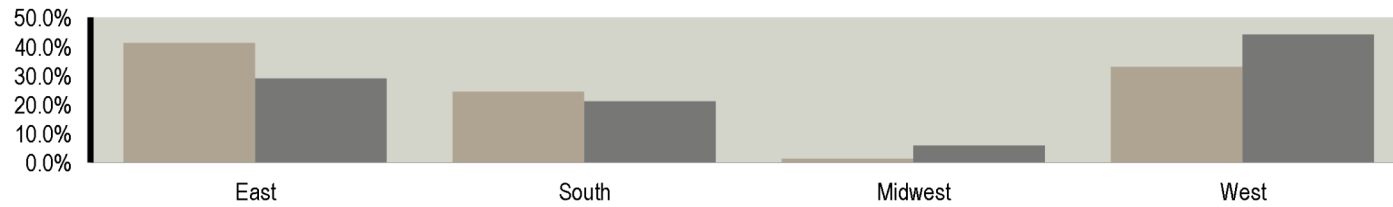
**Top Five Metro Areas**

	% of NAV
Northern NJ	9.7%
San Francisco	7.6%
Boston	7.3%
Riverside	5.9%
Fort Lauderdale	5.3%

**Queue Out:**

Redemption Queue (\$MM)	\$1,358.80
Anticipated Payout (Months)	

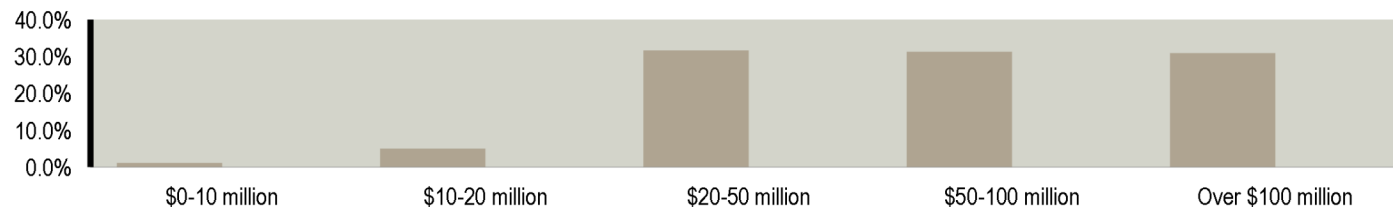
**Regional Breakdown by NAV (Excluding Cash & Debt)**



**Property Type Breakdown by NAV (Excluding Cash & Debt)**



**Property Size Breakdown by NAV (Excluding Cash & Debt)**



■ PRISA II ■ NFI-ODCE

**Characteristics**

Fund NAV (\$MM)	\$258,124.0
Cash (% of NAV)	1.9%
# of Investments	8
Occupancy	90.4%
NOI	3.9%
Loan to Value	7.1%
As of Date	3/31/2024

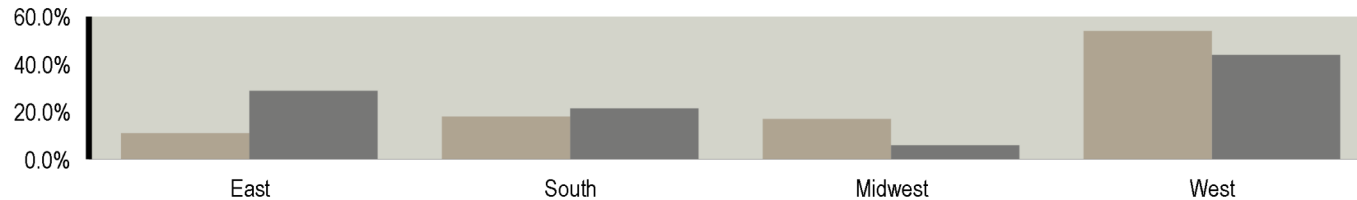
**Asset Summary**

Property	Acquisition
Copley Corporate Center	2010
SR Ranch	2011
Des Peres Corners	2010
708 Uptown	2014
Fairway Center II	2016
Republic Distribution Center	2013
526 Route 46	2014
Shoppes at Monarch Lakes	2010

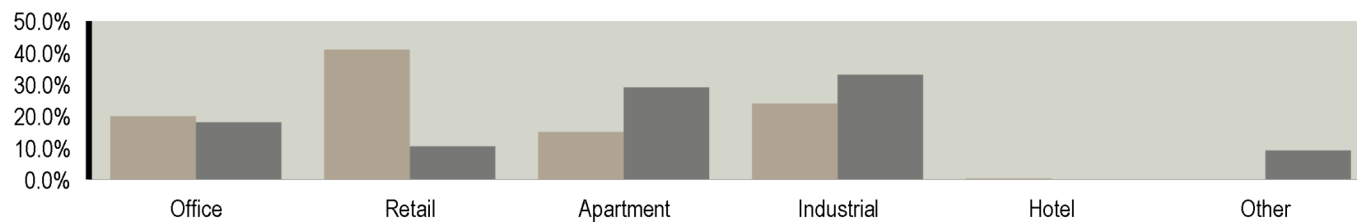
**Portfolio Allocation**

#	Property	Type	Location	% of Fund NAV
1	Copley Corporate Center	Office	San Diego, CA	9.5%
2	SR Ranch	Retail	San Diego, CA	19.3%
3	Des Peres Corners	Retail	Des Peres, MO	16.3%
4	708 Uptown	Apartment	Seattle, WA	14.6%
5	Fairway Center II	Office	Brea, CA	10.9%
6	Republic Distribution Center	Industrial	Houston, TX	12.7%
7	526 Route 46	Industrial	Teterboro, NJ	11.2%
8	Shoppes at Monarch Lakes	Retail	Miramar, FL	5.5%
<b>Total</b>				<b>100.0%</b>

**Regional Breakdown by NAV**



**Property Type Breakdown by NAV**



Net Assets (\$MM) 161.6

**Portfolio Allocation**

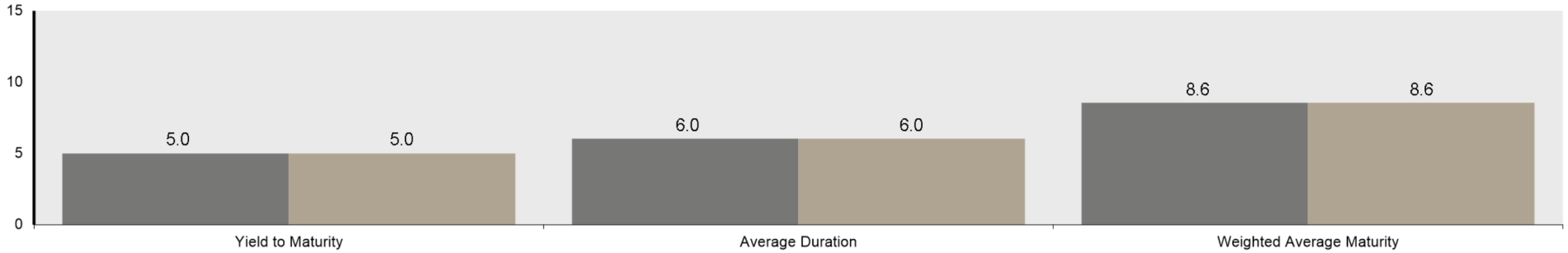
#	Property	Type	Location	% of Fund NAV
1	Bear Island	Pine	Virginia	5.7%
2	Fitz-Weller	Pine	New York	3.1%
3	Carter Pasture	Douglas Fir/Cedar	Texas	8.2%
4	Dupont	Douglas Fir/Hemlock	Georgia	19.6%
5	Black River	Pine	South Carolina	18.8%
6	Coquille	Pine	Oregon	18.6%
7	Bucktails	Pine	Pennsylvania	9.8%
8	North River	Maple/Oak	Washington	16.1%
<b>Total</b>				<b>100.0%</b>

**Regional Breakdown by NAV**

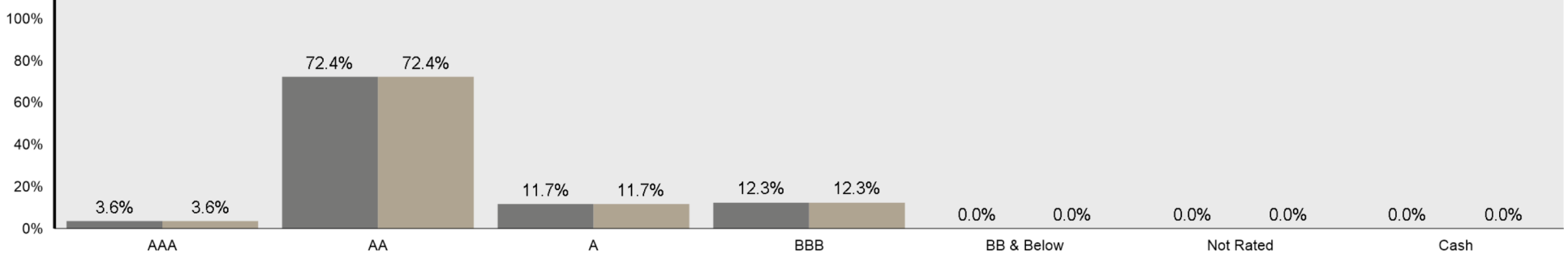




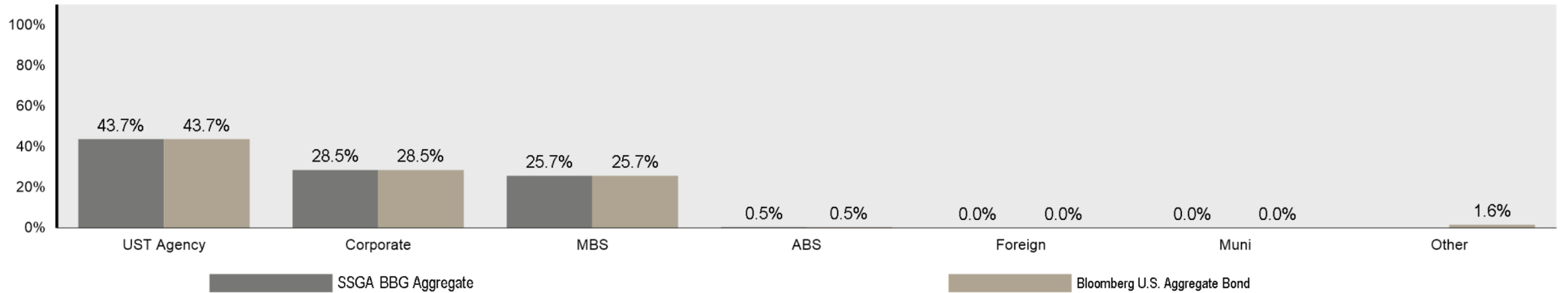
Yield to Maturity

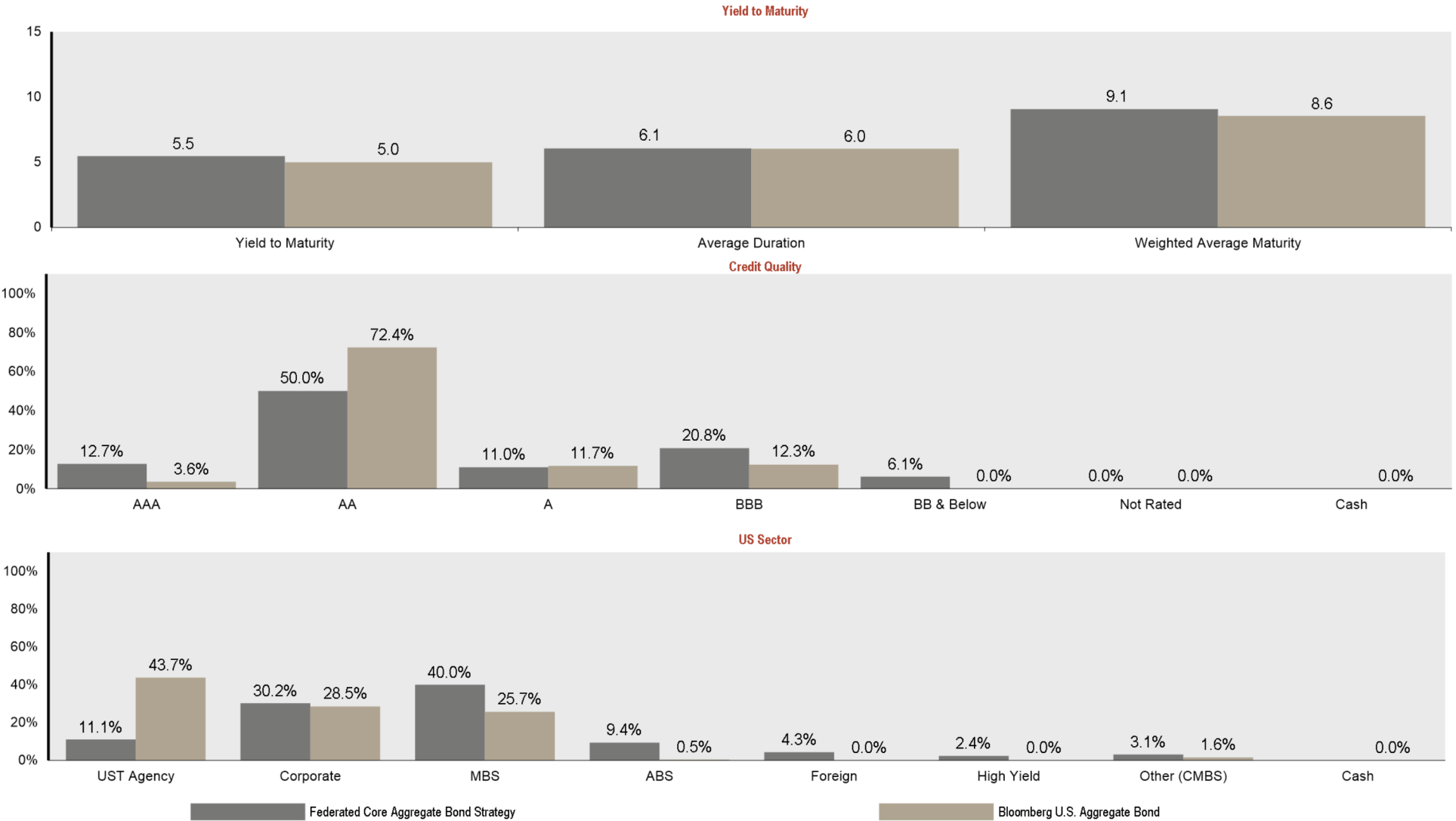


Credit Quality

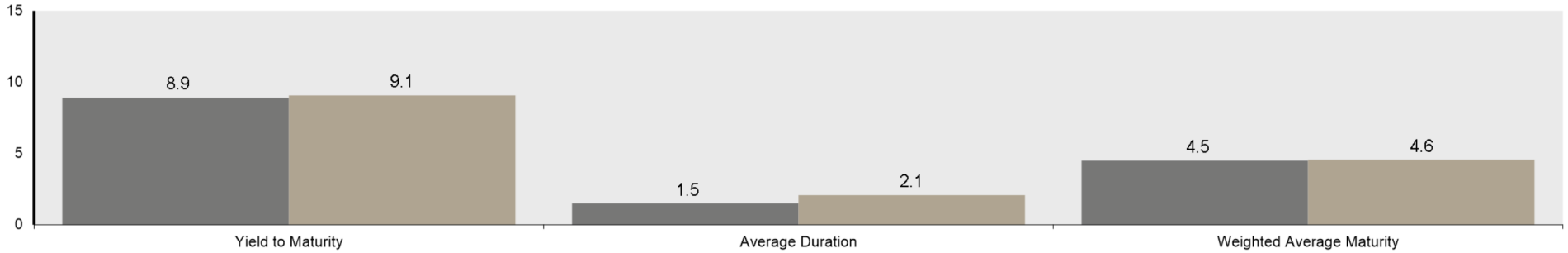


US Sector

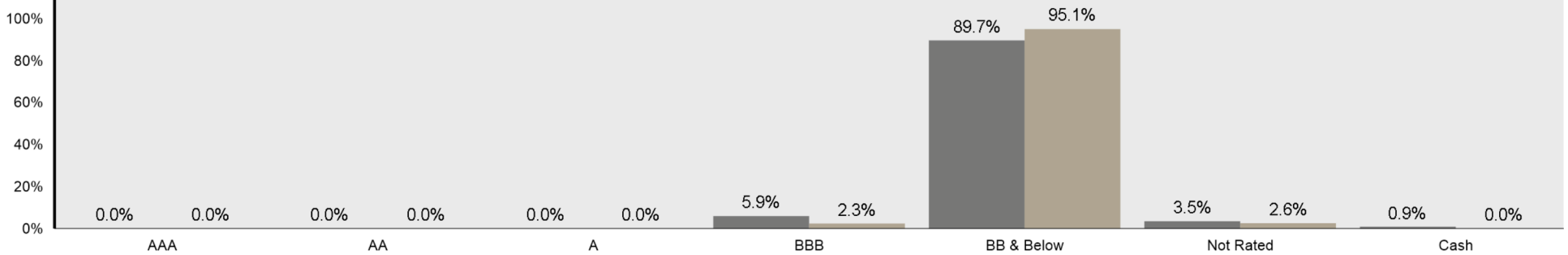




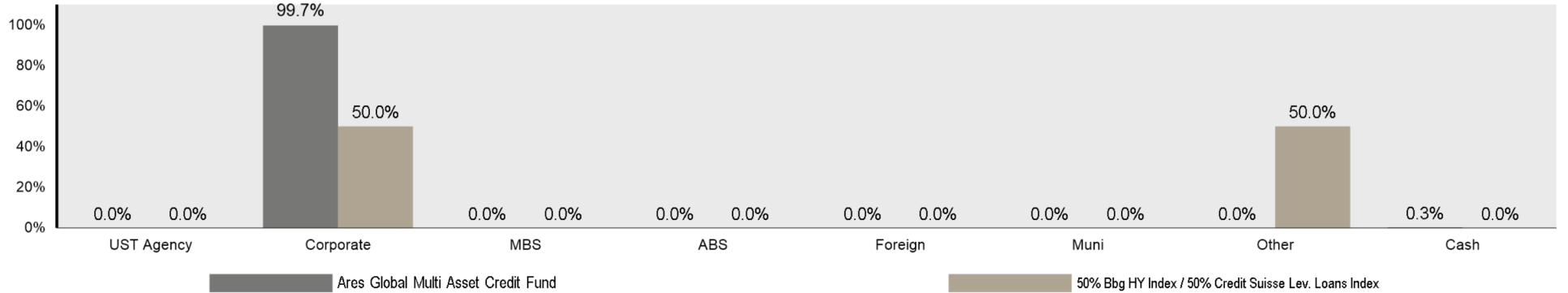
Yield to Maturity



Credit Quality



US Sector



[Page Intentionally Left Blank]