

Pennsylvania Municipal Retirement System

Quarterly Performance Report
As of September 30, 2022



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Marquette Update



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Marquette Update

4Q 2022

\$349B

assets under advisement

99%

client retention rate

36th

year in business

100%

employee-owned

24

full-time partners

130+

employees

QUARTERLY RESEARCH

▶ **Live Q3 2022 Market Insights Webinar: 10/27**
Available on YouTube 10/28

✉ **Letter from the Director of Research: 10/27**

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2022 Investment Symposium — Thank you!

We truly enjoyed hosting this year's Symposium on September 23rd — it was great to see so many of you in Chicago and hear from so many of you that watched the livestream. We've published the flash talks by our research team to our website if you'd like to watch, rewatch, or share with a colleague. Until next year!

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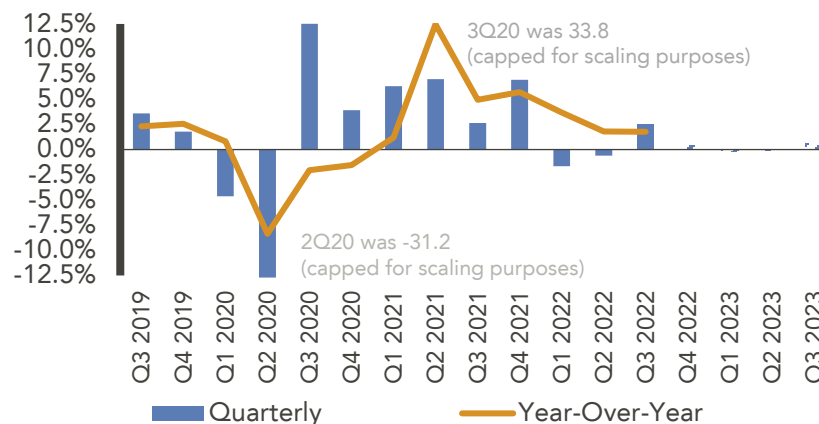
Market Environment



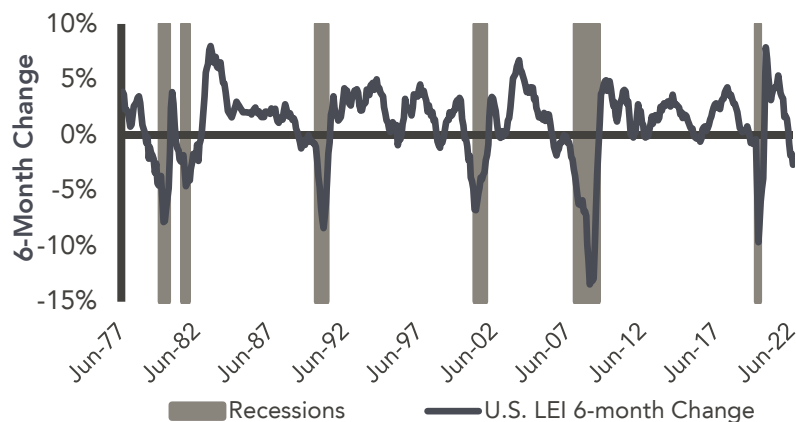
U.S. Economy

- The economy rebounded in Q3, with real GDP growth of 2.6%. Net exports accounted for the entire rebound, contributing 2.8% to the headline number, and offset a slowdown in consumer spending and a deep contraction in residential investment.
- The contraction in residential investment follows a double-digit contraction in Q1 as rising mortgage rates pressure the housing market. According to the National Association of Realtors, housing affordability is at its lowest level since 1989.
- While economic growth was positive in Q3, the economy seems to be in a precarious position. Through August, The Conference Board's U.S. Leading Economic Indicators Index had declined 2.7% over the previous six months. A decline of this magnitude has consistently signaled a pending economic recession dating back to the mid-70s. Further, economists now forecast growth to slow in Q4 before turning negative again in both Q1 and Q2 of 2023.

U.S. Real GDP Growth



U.S. Leading Economic Indicators and U.S. Recessions

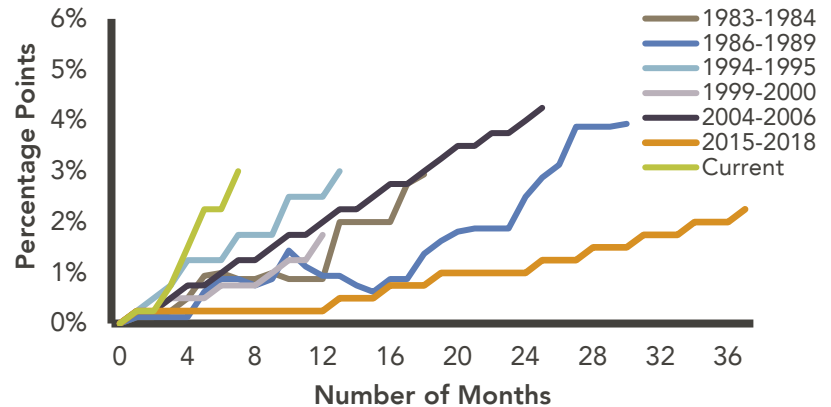


Sources: Refinitiv and The Wall Street Journal. In the "Real GDP Growth" chart, striped bars reflect economist estimates from *The Wall Street Journal Economic Forecasting Survey*.

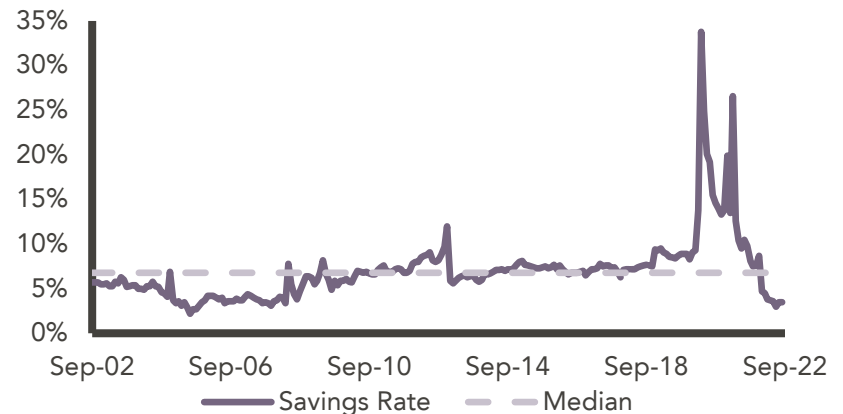
U.S. Economy

- Despite the cloudy economic outlook, the Federal Reserve appears steadfast in its commitment to bring down inflation via tighter monetary policy. In fact, the current rate-hiking cycle has been the most aggressive in decades, with Federal Reserve Chairman Powell acknowledging that policy tightening will bring “some pain to households and businesses.”
- To date, the labor market has withstood tighter Federal Reserve policy. While job gains have slowed in recent months, the average monthly nonfarm payroll report showed a gain of approximately 372,000 jobs in Q3.
- Continued strength in the labor market is of utmost importance if the economy is to skirt a recession. With consumers continuing to dip into their savings to support expenditures, there is little room for an acceleration in consumer spending absent employment-driven income growth in the coming quarters.

Historical Fed Rate Hiking Cycles: Increase in Fed Funds Rate



Personal Savings Rate

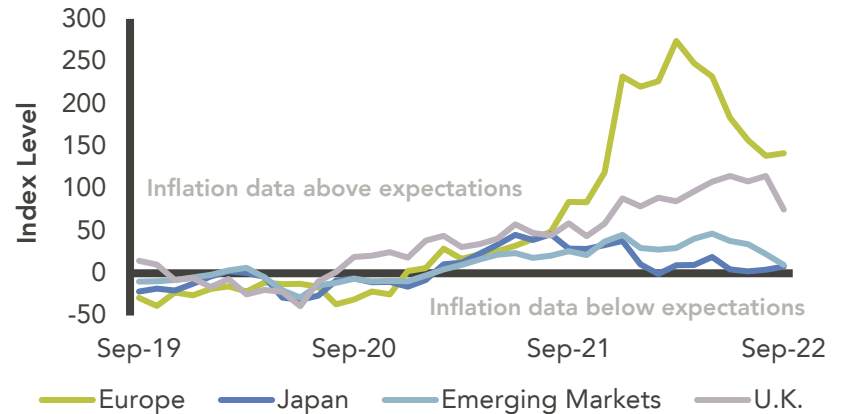


Source: Refinitiv

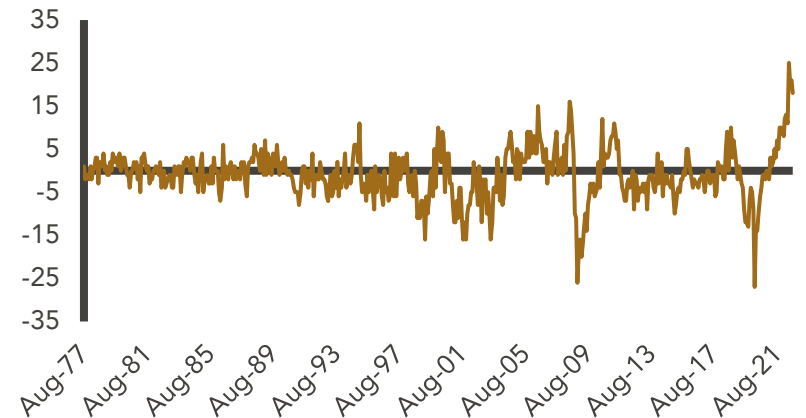
Global Economy

- Outside the U.S., similar dynamics are playing out across the global economy, with inflation data refusing to moderate as quickly as most economists and policymakers expect, particularly in Continental Europe and the U.K.
- With inflation elevated across much of the world, global central banks are in the midst of a historic rate hiking cycle. According to the Bank for International Settlements, the number of central banks hiking rates less those cutting rates was near 20 in August, leaving it near the highest levels on record.
- These hiking cycles have put upward pressure on intermediate- and long-term yields across the globe, particularly in developed market economies. 10-year government bond rates in Germany and the U.K., for example, ended the quarter near their highest levels in more than a decade.

Citigroup Inflation Surprise Indices



Global Central Banks Hiking Rates Less Those Cutting Rates

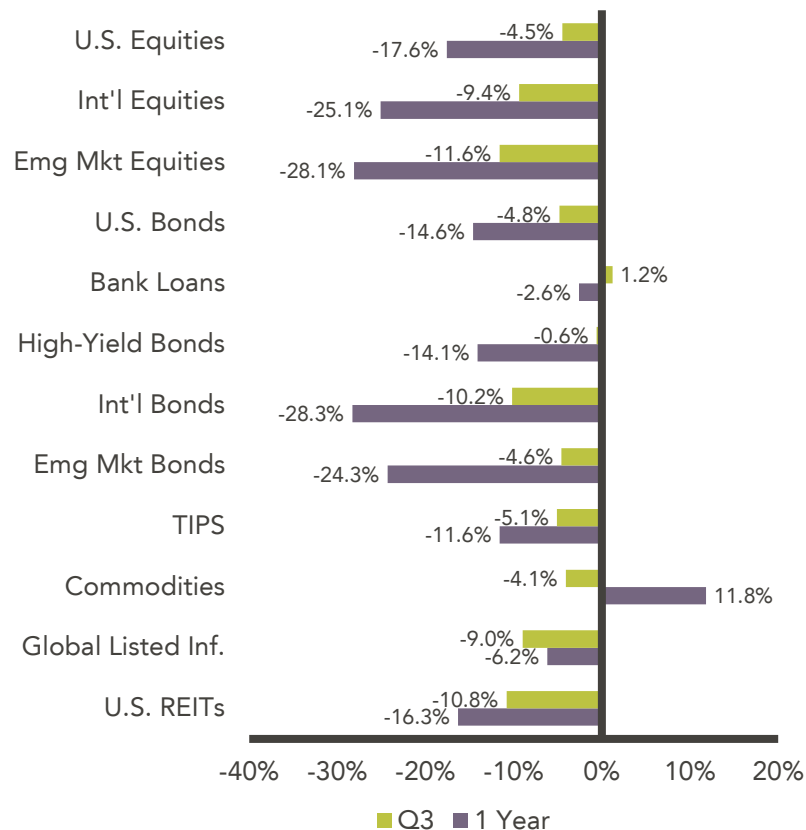


Sources: Bank for International Settlements and Refinitiv

Global Asset Class Performance

- Global equities** ended Q3 firmly in the red for the third consecutive quarter as rising interest rates and the uncertain economic outlook weighed on investor sentiment. U.S. equities outperformed their international developed and emerging market counterparts. U.S. dollar strength exacerbated losses for unhedged U.S.-based investors, with the greenback detracting approximately 5.8 and 3.4 percentage points, respectively, from international developed and emerging markets returns.
- Fixed income** returns were poor during Q3, with investment-grade bonds lagging due to their longer duration. Sub-investment grade debt performance was mixed, with high yield posting a slightly negative return, while bank loans were in the black due to their floating-rate characteristics.
- Inflation-sensitive assets** returns were also in the red. TIPS slightly underperformed nominal bonds, while commodities fell amid demand concerns and a stronger U.S. dollar. REITs ended Q3 well behind the broad U.S. equity market. Finally, global listed infrastructure equities lagged global equities by approximately 2.5 percentage points.

Asset Class Returns: Select Asset Class Performance

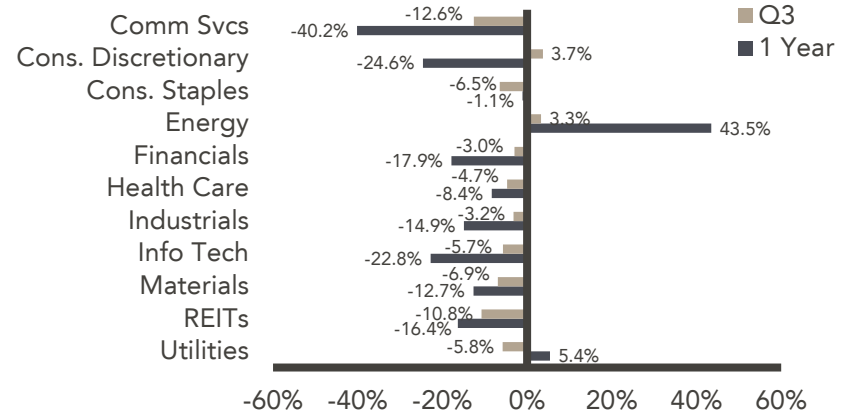


Source: Markov Processes International

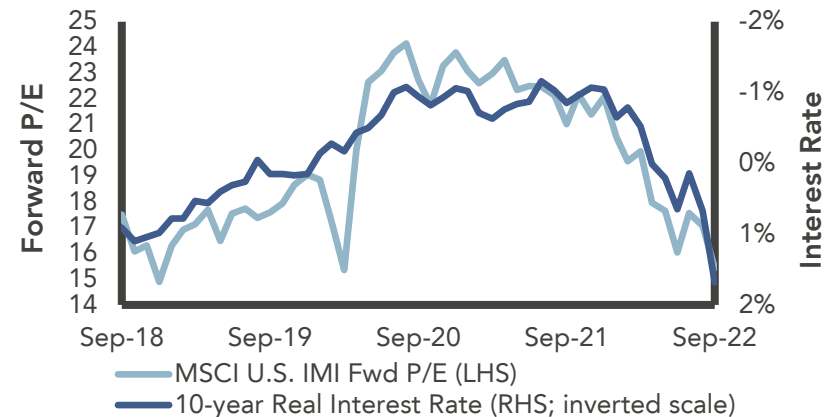
U.S. Equity Markets

- Most economic sectors posted negative returns for the quarter, with Communications Services and REITs the worst performers. Consumer Discretionary and Energy, on the other hand, were the only two sectors to post positive returns in Q3.
- Value stocks lagged growth stocks during the quarter, with the latter benefitting from outperformance within mid-cap and small-cap stocks. In fact, small-cap growth was the lone style to finish the quarter in the black. Across the capitalization spectrum, small caps were the best performers, followed by mid caps then large caps.
- Rising interest rates have pressured equity valuations this year as markets continue to price in the Federal Reserve's monetary tightening. Year-to-date, equity valuations have contracted more than 30% (i.e., more than market prices have declined).

Sector Returns



Forward P/E vs. 10-Year Real Interest Rates

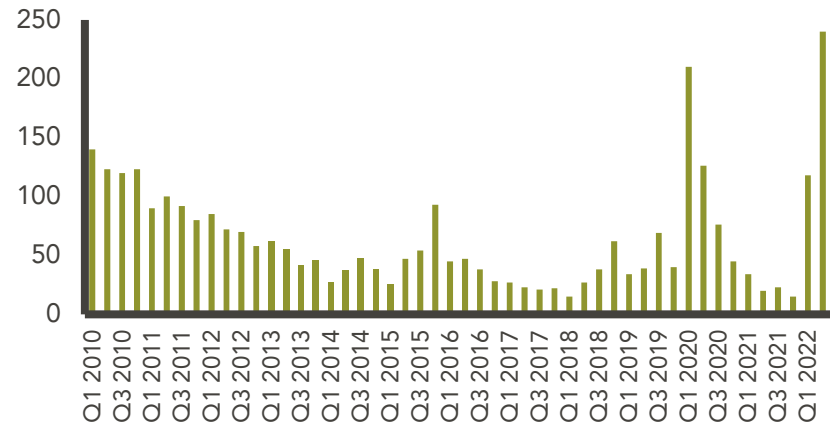


Sources: Markov Processes International and Refinitiv

U.S. Equity Markets

- The U.S. equity market has experienced one of its worst starts to any calendar year in its history amid rising interest rates and concerns over a possible economic recession.
- According to FactSet, 240 companies in the S&P 500 cited the term “recession” during their earnings calls for the second quarter, marking the highest number going back to at least 2010 (i.e., eclipsing the level seen amid the pandemic).
- If the economy does enter a recession, earnings are likely to come under pressure. According to FactSet, the median earnings contraction coinciding with a recession is nearly 19%, based on data from the last 10 economic recessions.
- To-date, equity analysts are not expecting a decline in earnings of this magnitude as the forward 12-month earnings per share (“EPS”) estimate for the S&P 500 Index has remained relatively unchanged since the beginning of the year.

S&P 500 Companies Citing “Recession” on Earnings Calls



Earnings Contractions Amid Economic Recessions

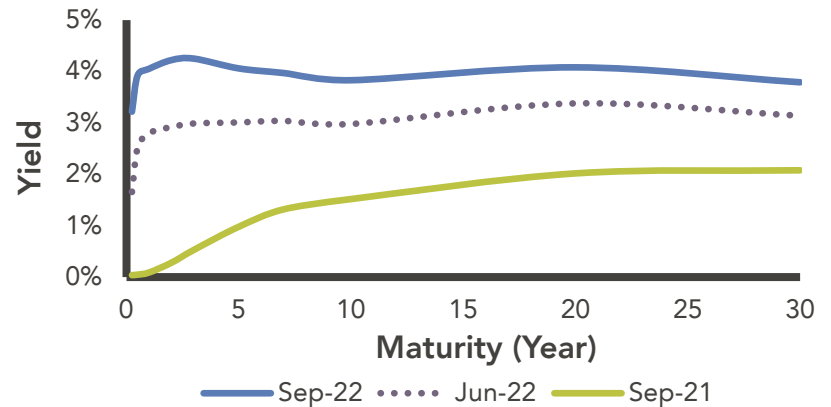
Peak Month	Trough Month	Months of Contraction	Quarters of EPS Decline	EPS Change
Aug 1957	Apr 1958	8	4	-17.0%
Apr 1960	Feb 1961	10	7	-11.7%
Dec 1969	Nov 1970	11	5	-12.9%
Nov 1973	Mar 1975	16	4	-14.8%
Jan 1980	Jul 1980	6	4	-4.6%
Jul 1981	Nov 1982	16	4	-19.1%
Jul 1990	Mar 1991	8	5	-36.7%
Mar 2011	Nov 2011	8	5	-54.0%
Dec 2007	Jun 2009	18	7	-91.9%
Feb 2020	Apr 2020	2	4	-32.5%
Average				-29.5%
Median				-18.7%

Sources: FactSet and Refinitiv

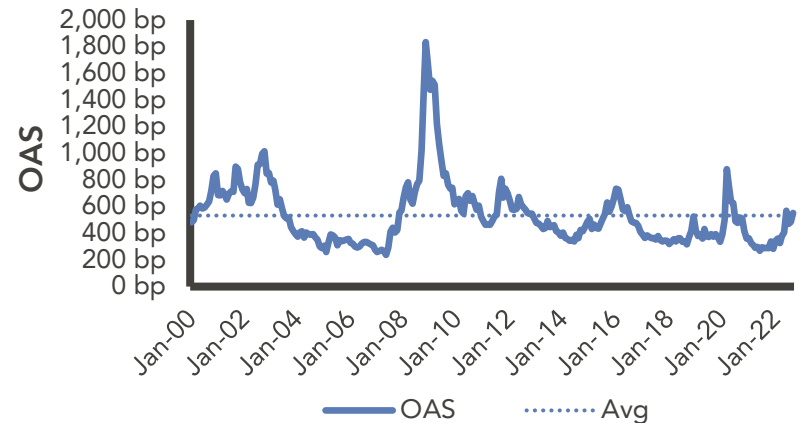
U.S. Fixed Income

- Interest rates continued to rise in Q3, with shorter-dated issues experiencing the largest increase. Various segments across the curve remain inverted amid the prospects of tighter monetary policy and economic uncertainty.
- The bond market remained under pressure during the quarter, with the Bloomberg Aggregate Bond Index returning -4.8%. Year-to-date, the index has posted a return of -14.6%, putting it on pace for its worst calendar year since the inception of the index in the mid-1970s.
- Sub-investment grade debt outperformed their investment-grade counterparts. High yield slightly outperformed amid a slight tightening in spreads and due to its shorter duration compared to investment-grade bonds. Bank Loans, on the other hand, were one of the few asset classes to post a positive return in Q3 as their floating-rate characteristics shielded the asset class from rising rates.

Yield Curve



High Yield Spread



Source: Refinitiv

Global Index Returns

DOMESTIC EQUITY	QTR	YTD	1 Year	3 Year	5 Year	10 Year
S&P 500 Index	(4.9)	(23.9)	(15.5)	8.2	9.2	11.7
Russell 3000 Index	(4.5)	(24.6)	(17.6)	7.7	8.6	11.4
Russell 3000 Growth Index	(3.4)	(30.6)	(23.0)	10.2	11.6	13.4
Russell 3000 Value Index	(5.6)	(18.0)	(11.8)	4.4	5.1	9.1
Russell TOP 200 Index	(5.0)	(24.7)	(16.4)	9.0	10.0	12.1
Russell TOP 200 Growth Index	(4.2)	(30.5)	(21.0)	12.2	13.3	14.5
Russell TOP 200 Value Index	(6.0)	(16.3)	(10.2)	4.3	5.5	9.1
Russell 1000 Index	(4.6)	(24.6)	(17.2)	7.9	9.0	11.6
Russell 1000 Growth Index	(3.6)	(30.7)	(22.6)	10.7	12.2	13.7
Russell 1000 Value Index	(5.6)	(17.8)	(11.4)	4.4	5.3	9.2
Russell Mid-Cap Index	(3.4)	(24.3)	(19.4)	5.2	6.5	10.3
Russell Mid-Cap Growth Index	(0.7)	(31.5)	(29.5)	4.3	7.6	10.9
Russell Mid-Cap Value Index	(4.9)	(20.4)	(13.6)	4.5	4.8	9.4
Russell 2000 Index	(2.2)	(25.1)	(23.5)	4.3	3.6	8.6
Russell 2000 Growth Index	0.2	(29.3)	(29.3)	2.9	3.6	8.8
Russell 2000 Value Index	(4.6)	(21.1)	(17.7)	4.7	2.9	7.9
DOMESTIC EQUITY BY SECTOR (MSCI)						
Communication Services	(12.6)	(39.4)	(40.2)	(0.5)	3.0	4.7
Consumer Discretionary	3.7	(31.3)	(24.6)	9.5	11.4	13.5
Consumer Staples	(6.5)	(12.1)	(1.1)	6.1	7.4	9.4
Energy	3.3	34.8	43.5	14.2	5.6	2.7
Financials	(3.0)	(21.7)	(17.9)	4.5	5.0	10.9
Health Care	(4.7)	(15.2)	(8.4)	11.6	9.6	13.5
Industrials	(3.2)	(21.5)	(14.9)	4.1	5.0	10.6
Information Technology	(5.7)	(32.5)	(22.8)	13.7	15.8	16.6
Materials	(6.9)	(23.5)	(12.7)	7.6	4.9	8.3
Real Estate	(10.8)	(28.0)	(16.4)	(1.1)	4.1	6.7
Utilities	(5.8)	(6.9)	5.4	2.9	7.4	9.8

Source: Markov Processes International

Global Index Returns

INTERNATIONAL/GLOBAL EQUITY	QTR	YTD	1 Year	3 Year	5 Year	10 Year
MSCI EAFE (Net)	(9.4)	(27.1)	(25.1)	(1.8)	(0.8)	3.7
MSCI EAFE Growth (Net)	(8.5)	(33.0)	(30.3)	(1.5)	0.7	4.7
MSCI EAFE Value (Net)	(10.2)	(21.1)	(20.2)	(2.8)	(2.7)	2.4
MSCI EAFE Small Cap (Net)	(9.8)	(32.1)	(32.1)	(2.2)	(1.8)	5.3
MSCI AC World Index (Net)	(6.8)	(25.6)	(20.7)	3.7	4.4	7.3
MSCI AC World Index Growth (Net)	(5.9)	(32.2)	(27.5)	5.4	6.6	8.9
MSCI AC World Index Value (Net)	(7.7)	(19.1)	(14.0)	1.3	1.7	5.4
MSCI Europe ex UK (Net)	(9.9)	(31.7)	(27.8)	(1.7)	(1.3)	4.2
MSCI United Kingdom (Net)	(10.8)	(18.7)	(14.1)	(1.7)	(1.1)	1.9
MSCI Pacific ex Japan (Net)	(8.8)	(18.7)	(18.8)	(1.4)	0.6	2.9
MSCI Japan (Net)	(7.7)	(26.4)	(29.3)	(2.6)	(0.6)	4.8
MSCI Emerging Markets (Net)	(11.6)	(27.2)	(28.1)	(2.1)	(1.8)	1.0

Source: Markov Processes International

Global Index Returns

FIXED INCOME	QTR	YTD	1 Year	3 Year	5 Year	10 Year
Merrill Lynch 3-month T-Bill	0.5	0.6	0.6	0.6	1.1	0.7
Barclays Intermediate Gov't./Credit	(3.1)	(9.6)	(10.1)	(1.6)	0.4	1.0
Barclays Aggregate Bond	(4.8)	(14.6)	(14.6)	(3.3)	(0.3)	0.9
Barclays Short Government	(0.6)	(2.0)	(2.2)	0.1	0.9	0.7
Barclays Intermediate Government	(3.1)	(8.6)	(9.2)	(1.7)	0.2	0.6
Barclays Long Government	(9.6)	(28.8)	(26.6)	(8.5)	(1.6)	0.6
Barclays Investment Grade Corp.	(5.1)	(18.7)	(18.5)	(3.7)	0.0	1.7
Barclays High Yield Corp. Bond	(0.6)	(14.7)	(14.1)	(0.5)	1.6	3.9
Credit Suisse Leveraged Loan	1.2	(3.3)	(2.6)	2.1	3.0	3.7
JPMorgan Global ex US Bond	(10.2)	(27.0)	(28.3)	(10.0)	(5.2)	(3.2)
JPMorgan Emerging Market Bond	(4.6)	(23.9)	(24.3)	(7.2)	(2.6)	1.1
INFLATION SENSITIVE						
Consumer Price Index	0.2	6.5	8.2	5.0	3.8	2.5
BC TIPS	(5.1)	(13.6)	(11.6)	0.8	2.0	1.0
Commodities	(4.1)	13.6	11.8	13.5	7.0	(2.1)
Gold	(7.9)	(9.3)	(5.7)	2.8	4.2	(1.5)
REITs	(10.8)	(27.9)	(16.3)	(1.1)	4.1	7.0
FTSE EPRA/NAREIT Global REITs	(11.1)	(29.1)	(20.5)	(6.0)	(0.3)	3.2
NCREIF ODCE*	0.4	12.4	21.0	11.4	9.3	9.9
NCREIF Farmland**	1.5	4.1	9.7	6.1	6.1	9.5
NCREIF Timberland**	1.9	5.1	12.0	5.0	4.3	5.7

*Data are preliminary.

**Data are as of June 30, 2022.

Source: Markov Processes International

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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. For more information, please visit www.MarquetteAssociates.com.

Portfolio Overview



Observations

- Market Value as of September 30, 2022, was \$2.85 billion.
- 3rd Qtr. '22 Return: Total Fund -4.8% (net) vs. Policy Index -4.7%; investment loss of \$142 million.
- Contributors to 3rd Qtr. Performance:
 - Overweight to Small Cap Equities
 - Core Plus Real Estate
 - Timber Investments
 - Active Fixed Income
- Detractors from 3rd Qtr. Performance:
 - Growth oriented U.S. and non-U.S. equities
 - Relative performance of Core Real Estate
- Longer term performance has been strong
 - Year-to-date Return: -17.5% (35th percentile) vs. Policy Index -17.3%; investment loss of \$611 million
 - 5-Year Return: 5.0% (34th percentile) vs. Policy Index 4.6%; investment gain of \$685 million
 - 10-Year Return: 7.2% (21st percentile) vs. Policy Index 6.9%; investment gain of \$1.62 billion
- Low Investment Management Fees: 0.32%

Looking Ahead

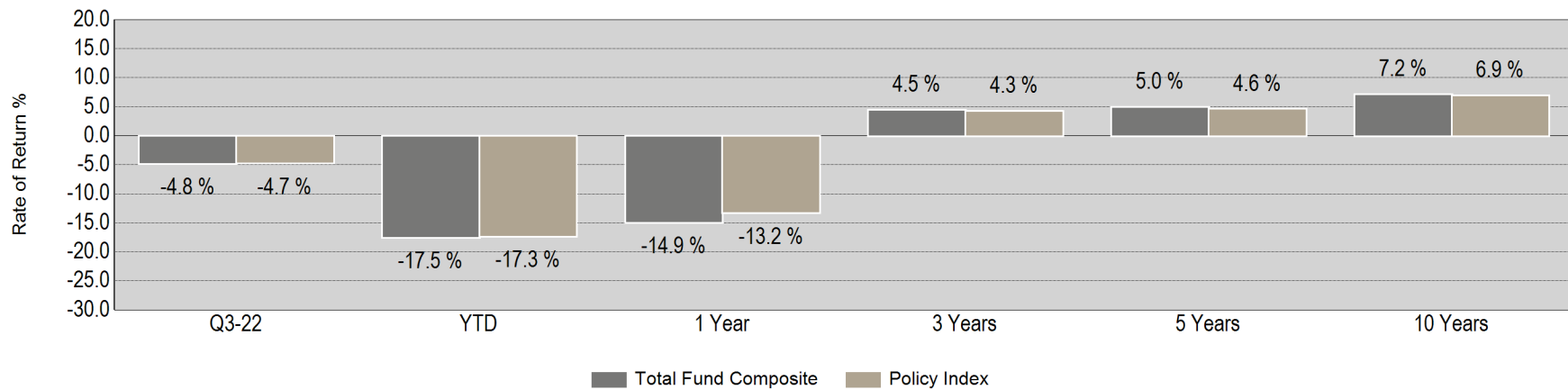
- Upcoming Transitions
 - Ares GMAC Fund (Opportunistic Credit)
- Upcoming Investment Manager Search
 - U.S. Equity - SMID Cap Core (Copeland Contract expiration)
- Forest Timber Farm transaction and contract expiration

As of September 30, 2022

Summary of Cash Flows

	Third Quarter	Year-To-Date	One Year	Three Years	Five Years	Ten Years
Beginning Market Value	\$3,022,152,580	\$3,536,117,615	\$3,424,004,219	\$2,611,855,597	\$2,398,478,839	\$1,608,028,579
Net Cash Flow	-\$24,908,016	-\$70,241,403	-\$64,532,029	-\$142,096,113	-\$228,700,185	-\$373,519,355
Net Investment Change	-\$142,569,292	-\$611,200,940	-\$504,796,918	\$384,915,788	\$684,896,618	\$1,620,166,048
Ending Market Value	\$2,854,675,272	\$2,854,675,272	\$2,854,675,272	\$2,854,675,272	\$2,854,675,272	\$2,854,675,272

Return Summary (Net)

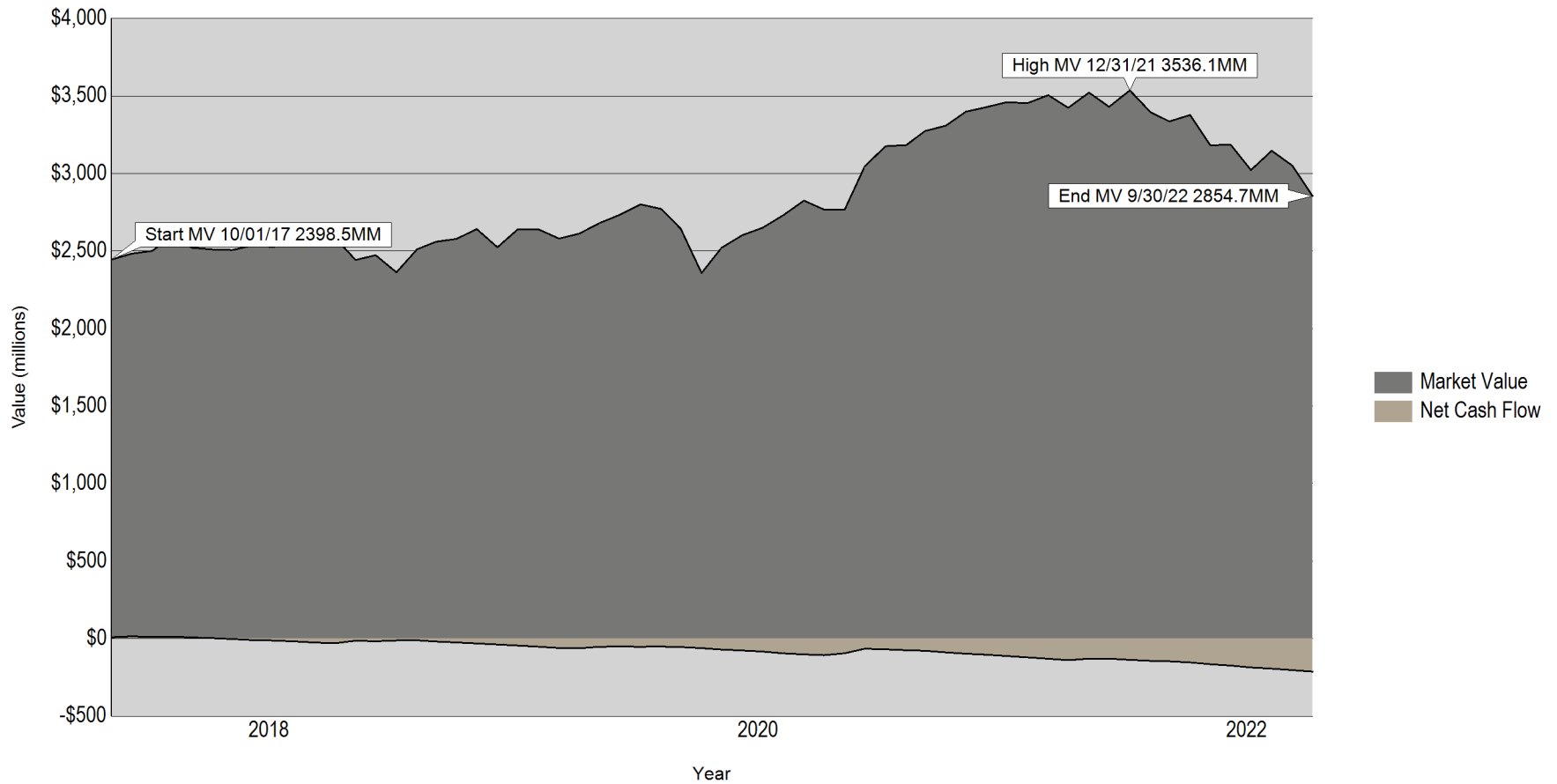


Asset Allocation vs. Target

	Current	Policy	Difference*
U.S. Equity	29.9%	32.5%	-\$74,220,791
Global Equity	9.5%	10.0%	-\$13,474,424
Non-U.S. Equity	13.7%	15.0%	-\$36,244,430
Emerging Markets	2.1%	2.5%	-\$10,565,945
Real Assets	20.6%	15.0%	\$160,979,309
U.S. Fixed Income	23.6%	24.0%	-\$12,269,897
Cash Equivalent	0.5%	1.0%	-\$14,203,821
Total	100.0%	100.0%	

The above is an interim policy allocation until Opp. Credit is funded (5% from Global Equity)

Market Value History



Pennsylvania Municipal Retirement System

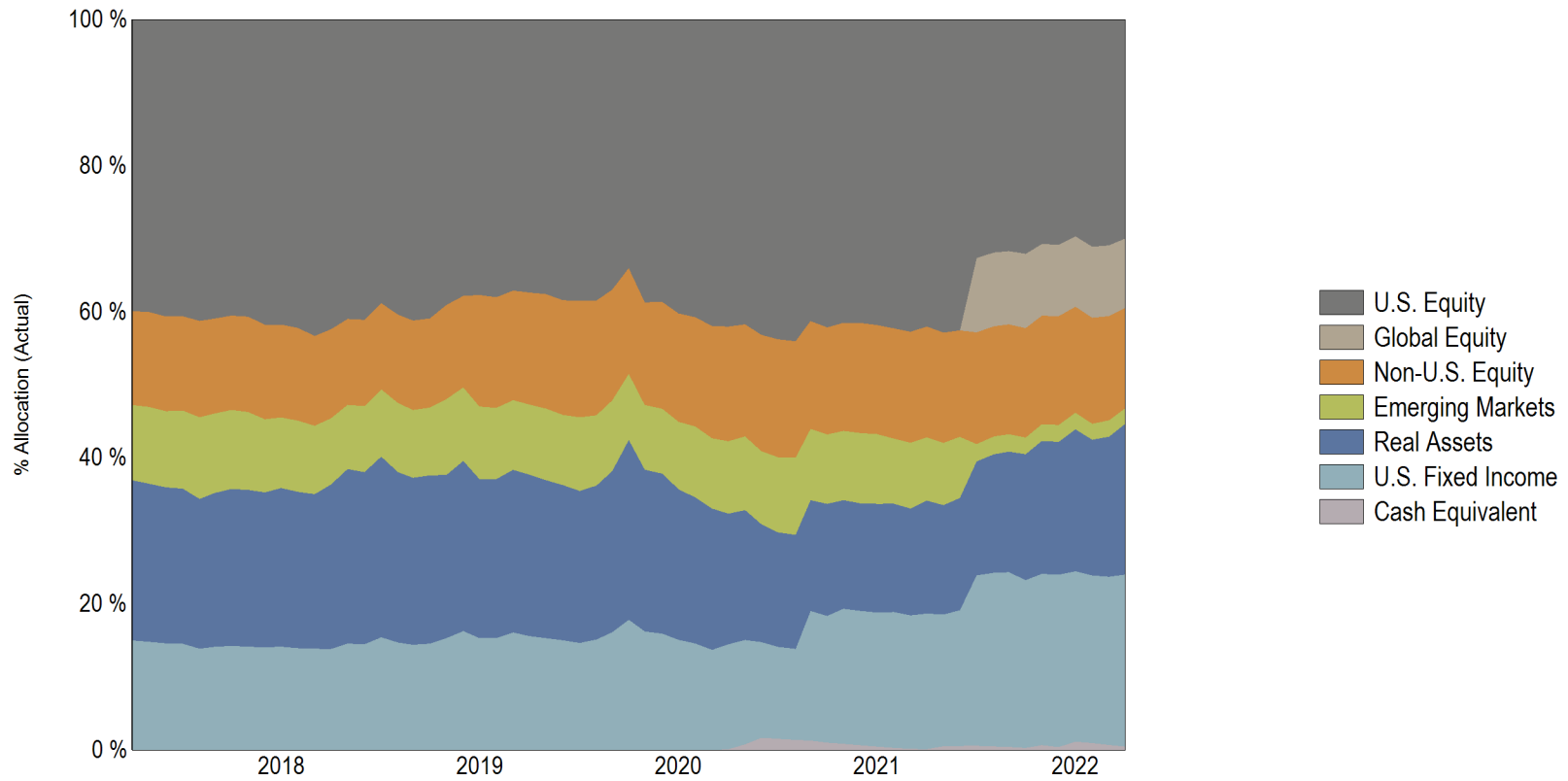
Asset Allocation Summary

As of September 30, 2022

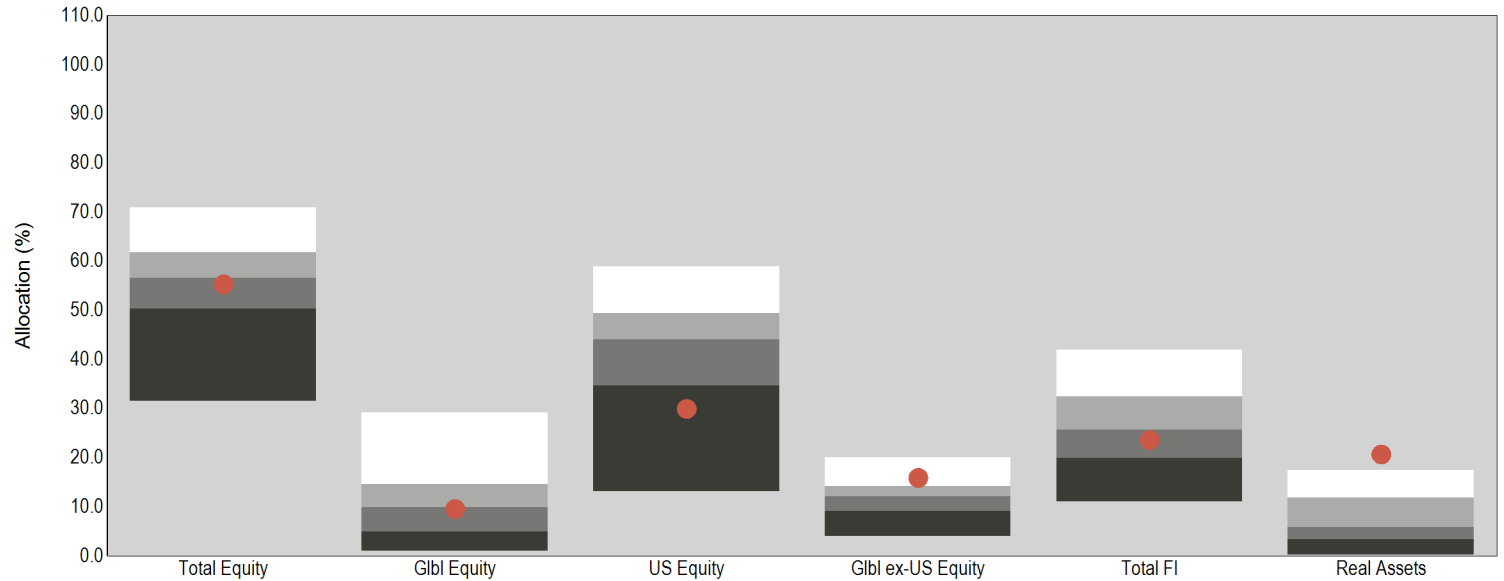
	Market Value	% of Portfolio	Policy %	Policy Difference
Total Fund Composite	2,854,675,272	100.0	100.0	0
Total Equity Composite	1,578,299,573	55.3	60.0	-134,505,591
U.S. Equity Composite	853,548,673	29.9	32.5	-74,220,791
MFS Large Cap Value	129,846,439	4.5		
Xponance S&P 500	217,506,445	7.6		
Northern Trust S&P 500	221,046,906	7.7		
Polen Focus Growth	83,316,587	2.9		
Northern Trust Dow Jones Completion Index	85,630,570	3.0		
Smith, Graham & Co Small Cap Value	38,961,107	1.4		
Copeland Small Cap Dividend Growth	42,433,180	1.5		
Emerald Small Cap Growth	34,807,439	1.2		
Global Equity Composite	271,993,103	9.5	10.0	-13,474,424
Rhumbline Global Min. Volatility	135,728,339	4.8		
iShares MSCI ACWI	136,264,764	4.8		
Non-U.S. Equity Composite	452,757,797	15.9	17.5	-46,810,376
SSGA MSCI World ex US	212,836,660	7.5		
Hardman Johnston Int'l Equity	79,429,021	2.8		
HGK Int'l Equity	99,410,732	3.5		
SSGA MSCI Emerging Markets Index	60,800,937	2.1		
Real Assets Composite	589,180,600	20.6	15.0	160,979,309
Forest Investment Associates	149,271,744	5.2		
PRISA LP	70,847,258	2.5		
PRISA II	145,088,445	5.1		
PennMuni-Nuveen U.S. Real Estate Fund	221,952,992	7.8		
N. Front Street (Nuveen)	2,020,161	0.1		
Total Fixed Income Composite	672,852,168	23.6	24.0	-12,269,897
SSGA US Aggregate Bond Index	341,581,321	12.0		
Federated Hermes Core Aggregate Strategy	331,270,847	11.6		
Cash Composite	14,342,932	0.5	1.0	-14,203,821

Residual value for Jarislowsky (approx. \$280k) included in Non-US Equity and Total Fund Composite values.

Asset Allocation History



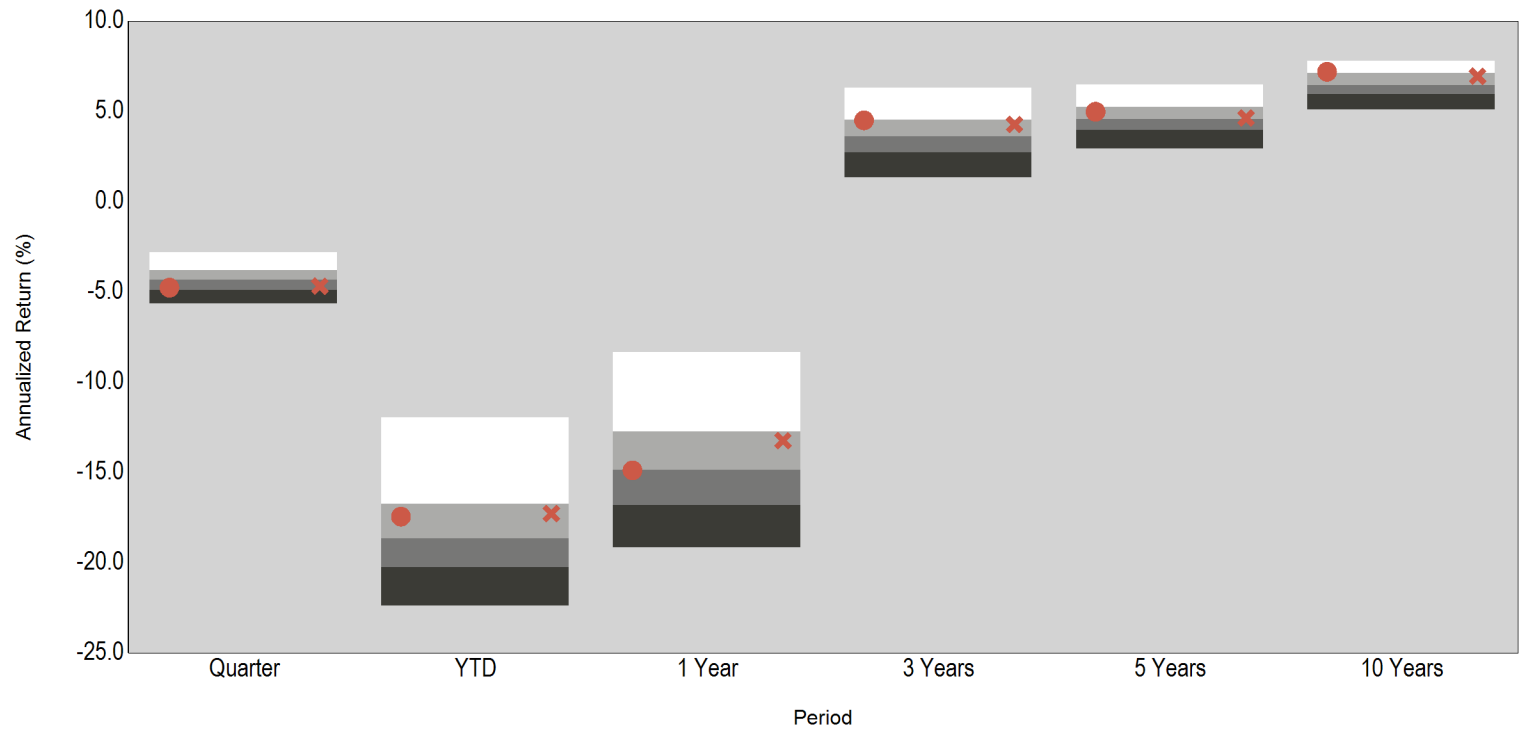
Total Plan Allocation vs. InvMetrics Public DB Net
As of September 30, 2022



Allocation (Rank)

5th Percentile	70.9	29.2	58.9	20.1	42.0	17.4						
25th Percentile	61.8	14.6	49.4	14.2	32.5	11.8						
Median	56.5	9.9	44.1	12.1	25.6	5.9						
75th Percentile	50.3	4.9	34.6	9.1	20.0	3.3						
95th Percentile	31.6	1.0	13.1	4.1	11.1	0.3						
# of Portfolios	530	93	436	458	535	104						
● Total Fund Composite	55.3	(55)	9.5	(56)	29.9	(83)	15.9	(17)	23.6	(61)	20.6	(4)

InvMetrics Public DB Net Return Comparison

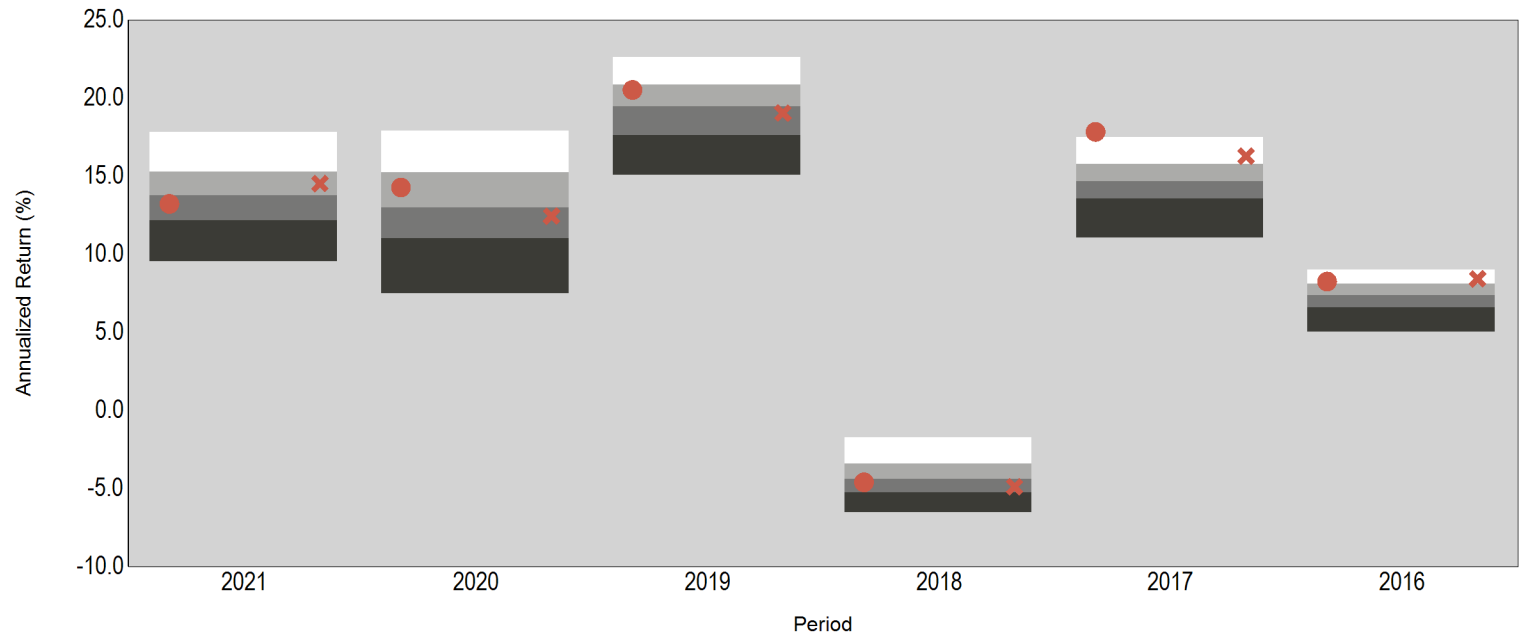


Return (Rank)

5th Percentile	-2.8	-12.0	-8.4	6.3	6.5	7.8
25th Percentile	-3.8	-16.8	-12.7	4.5	5.2	7.1
Median	-4.3	-18.7	-14.9	3.6	4.6	6.4
75th Percentile	-4.9	-20.3	-16.8	2.7	4.0	5.9
95th Percentile	-5.7	-22.4	-19.2	1.3	2.9	5.1
# of Portfolios	561	559	553	535	522	440
● Total Fund Composite	-4.8 (69)	-17.5 (35)	-14.9 (51)	4.5 (26)	5.0 (34)	7.2 (21)
▲ Policy Index	-4.7 (64)	-17.3 (32)	-13.2 (30)	4.3 (30)	4.6 (48)	6.9 (31)

As of September 30, 2022

InvMetrics Public DB Net Return Comparison



	2021		2020		2019		2018		2017		2016	
Return (Rank)												
5th Percentile	17.8		17.9		22.6		-1.7		17.5		9.0	
25th Percentile	15.3		15.3		20.8		-3.4		15.8		8.1	
Median	13.8		13.0		19.5		-4.4		14.7		7.4	
75th Percentile	12.2		11.0		17.6		-5.2		13.6		6.6	
95th Percentile	9.6		7.5		15.1		-6.5		11.1		5.0	
# of Portfolios	559		596		550		496		269		269	
● Total Fund Composite	13.2	(58)	14.3	(37)	20.5	(32)	-4.6	(56)	17.8	(5)	8.3	(24)
▲ Policy Index	14.5	(35)	12.4	(57)	19.0	(57)	-4.9	(66)	16.3	(18)	8.4	(19)

RISK RETURN STATISTICS
October 01, 2017 Through September 30, 2022

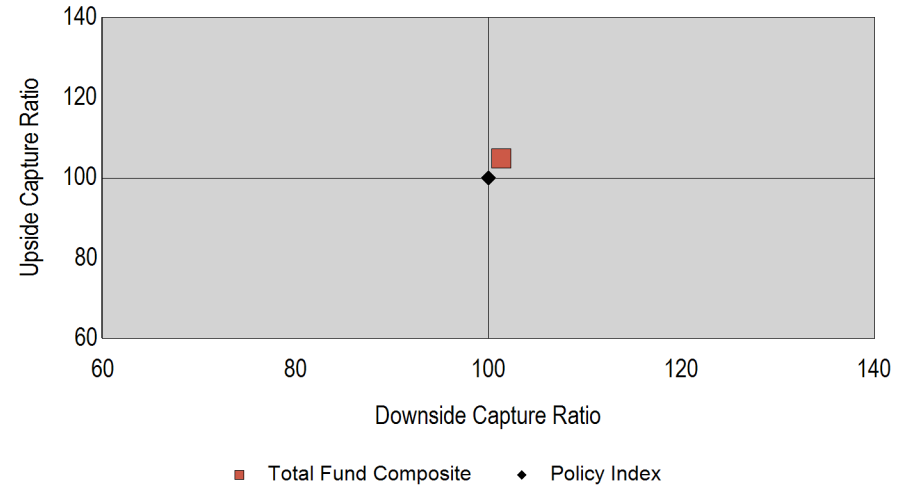
	Total Fund Composite	Policy Index
RETURN SUMMARY STATISTICS		
Number of Periods	20	20
Maximum Return	13.40	12.26
Minimum Return	-15.48	-14.88
Annualized Return	4.98	4.63
Total Return	27.48	25.39
Annualized Excess Return Over Risk Free	3.90	3.55
Annualized Excess Return	0.35	0.00

	Total Fund Composite	Policy Index
RISK SUMMARY STATISTICS		
Beta	1.05	1.00
Upside Deviation	8.19	7.40
Downside Deviation	11.04	10.84

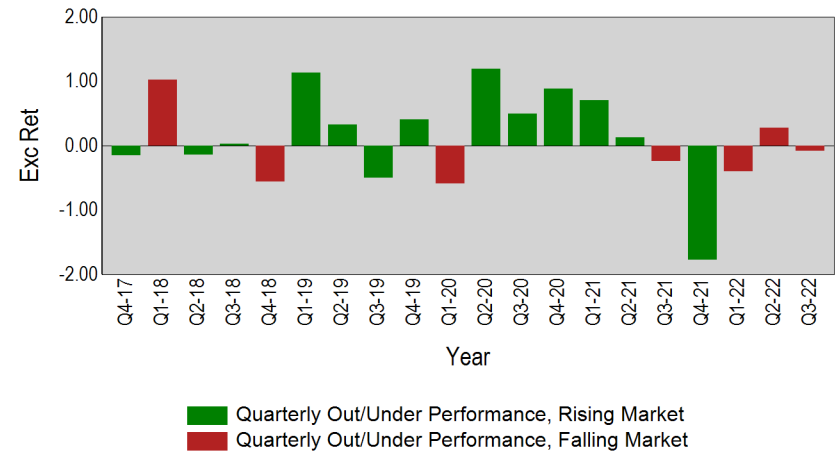
	Total Fund Composite	Policy Index
RISK/RETURN SUMMARY STATISTICS		
Annualized Standard Deviation	14.75	14.02
Alpha	0.04	0.00
Sharpe Ratio	0.26	0.25
Excess Return Over Market / Risk	0.02	0.00
Tracking Error	1.43	0.00
Information Ratio	0.24	--

	Total Fund Composite	Policy Index
CORRELATION STATISTICS		
R-Squared	0.99	1.00
Correlation	1.00	1.00

Upside Capture Ratio vs. Downside Capture Ratio
5 Years Ending September 30, 2022



Quarterly Excess Performance
Total Fund Composite vs. Policy Index



Pennsylvania Municipal Retirement System

Performance Summary (Net)

As of September 30, 2022

	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Market Value	Inception	Inception Date
Total Fund Composite	-4.8	-17.5	-14.9	4.5	5.0	7.2	2,854,675,272	8.2	Jan-86
Policy Index	-4.7	-17.3	-13.2	4.3	4.6	6.9		8.7	Jan-86
InvMetrics Public DB Net Rank	69	35	51	26	34	21		28	Jan-86
Total Equity Composite	-6.8	-25.0	-22.6	--	--	--	1,578,299,573	2.3	Oct-20
MSCI ACWI IMI Net USD	-6.6	-25.7	-21.2	--	--	--		0.8	Oct-20
U.S. Equity Composite	-4.6	-24.6	-20.9	7.1	8.0	11.1	853,548,673	7.9	Jan-06
Russell 3000	-4.5	-24.6	-17.6	7.7	8.6	11.4		8.5	Jan-06
InvMetrics Public DB US Eq Net Rank	50	70	91	47	51	35		51	Jan-06
MFS Large Cap Value	-4.4	--	--	--	--	--	129,846,439	-4.4	Jun-22
Russell 1000 Value	-5.6	--	--	--	--	--		-5.6	Jun-22
eV US Large Cap Value Equity Net Rank	22	--	--	--	--	--		22	Jun-22
Xponance S&P 500	-4.9	-23.8	--	--	--	--	217,506,445	-23.8	Dec-21
S&P 500	-4.9	-23.9	--	--	--	--		-23.9	Dec-21
eV US Large Cap Core Equity Net Rank	46	61	--	--	--	--		61	Dec-21
Northern Trust S&P 500	-4.9	-23.9	--	--	--	--	221,046,906	-23.9	Dec-21
S&P 500	-4.9	-23.9	--	--	--	--		-23.9	Dec-21
eV US Large Cap Core Equity Net Rank	46	61	--	--	--	--		61	Dec-21
Polen Focus Growth	-6.0	-38.4	-35.0	4.4	10.2	12.6	83,316,587	13.3	Oct-10
Russell 1000 Growth	-3.6	-30.7	-22.6	10.7	12.2	13.7		14.0	Oct-10
eV US Large Cap Growth Equity Net Rank	84	92	89	85	43	33		18	Oct-10
Northern Trust Dow Jones Completion Index	-2.8	-30.0	--	--	--	--	85,630,570	-30.0	Dec-21
Dow Jones U.S. Completion Total Stock Market	-2.8	-30.1	--	--	--	--		-30.1	Dec-21
eV US Small-Mid Cap Core Equity Net Rank	30	87	--	--	--	--		87	Dec-21
Smith, Graham & Co Small Cap Value	-7.0	-26.0	-22.3	5.1	1.9	--	38,961,107	3.6	Dec-16
Russell 2000 Value	-4.6	-21.1	-17.7	4.7	2.9	--		4.2	Dec-16
Russell 2000	-2.2	-25.1	-23.5	4.3	3.6	--		5.4	Dec-16
eV US Small Cap Value Equity Net Rank	81	90	90	53	80	--		72	Dec-16
Copeland Small Cap Dividend Growth	-3.5	-21.0	-14.4	4.0	6.6	--	42,433,180	6.6	Sep-17
Russell 2000	-2.2	-25.1	-23.5	4.3	3.6	--		3.6	Sep-17
eV US Small Cap Core Equity Net Rank	54	19	16	78	26	--		26	Sep-17
Emerald Small Cap Growth	-0.1	-29.2	-29.5	4.4	5.1	10.6	34,807,439	9.6	Oct-98
Russell 2000 Growth	0.2	-29.3	-29.3	2.9	3.6	8.8		7.0	Oct-98
eV US Small Cap Growth Equity Net Rank	37	34	46	65	76	48		60	Oct-98

Pennsylvania Municipal Retirement System

Performance Summary (Net)

As of September 30, 2022

	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Market Value	Inception	Inception Date
Global Equity Composite	-6.8	-21.7	--	--	--	--	271,993,103	-21.7	Dec-21
Global Equity Policy Index	-6.4	-21.5	--	--	--	--		-21.5	Dec-21
InvMetrics Public DB Gbl Eq Net Rank	33	18	--	--	--	--		18	Dec-21
Rhumbline Global Min. Volatility	-6.4	-17.4	--	--	--	--	135,728,339	-17.4	Dec-21
MSCI ACWI Minimum Volatility Index	-6.0	-17.3	--	--	--	--		-17.3	Dec-21
eV Global Low Volatility Equity Net Rank	29	41	--	--	--	--		41	Dec-21
iShares MSCI ACWI	-7.2	-25.7	--	--	--	--	136,264,764	-25.7	Dec-21
MSCI ACWI	-6.8	-25.6	--	--	--	--		-25.6	Dec-21
eV Global Large Cap Core Eq Net Rank	72	53	--	--	--	--		53	Dec-21
Non-U.S. Equity Composite	-10.8	-27.6	-27.4	-0.1	0.0	3.8	452,757,797	4.8	May-12
MSCI ACWI ex USA IMI	-9.7	-26.9	-25.7	-1.3	-0.8	3.2		4.4	May-12
InvMetrics Public DB ex-US Eq Net Rank	84	57	66	20	21	29		35	May-12
SSGA MSCI World ex US	-9.1	-25.9	-23.6	-0.9	-0.1	4.0	212,836,660	3.8	Apr-12
MSCI World ex USA	-9.2	-26.2	-23.9	-1.2	-0.4	3.6		3.4	Apr-12
eV ACWI ex-US Core Equity Net Rank	32	27	21	61	40	57		53	Apr-12
Hardman Johnston Int'l Equity	-12.9	-36.1	-38.3	0.0	1.3	5.7	79,429,021	5.7	Apr-12
MSCI EAFE	-9.4	-27.1	-25.1	-1.8	-0.8	3.7		3.4	Apr-12
eV EAFE All Cap Equity Net Rank	95	93	96	23	13	12		13	Apr-12
HGK Int'l Equity	-11.8	-23.1	-22.3	2.9	1.6	7.6	99,410,732	6.9	Feb-12
MSCI EAFE	-9.4	-27.1	-25.1	-1.8	-0.8	3.7		3.9	Feb-12
eV EAFE All Cap Equity Net Rank	92	25	27	6	9	1		7	Feb-12
SSGA MSCI Emerging Markets Index	-12.1	-27.6	-28.3	-2.3	-2.0	0.9	60,800,937	5.4	Nov-08
MSCI Emerging Markets	-11.6	-27.2	-28.1	-2.1	-1.8	1.0		5.6	Nov-08
eV Emg Mkts Equity Net Rank	82	54	54	64	58	77		71	Nov-08

Pennsylvania Municipal Retirement System

Performance Summary (Net)

As of September 30, 2022

	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Market Value	Inception	Inception Date
Real Assets Composite	0.9	8.7	13.8	7.9	7.2	8.0	589,180,600	7.8	Apr-93
<i>Real Assets Policy Index</i>	1.0	10.8	19.3	10.9	9.0	9.8		8.0	Apr-93
Forest Investment Associates	4.1	13.7	13.4	5.6	4.5	5.5	149,271,744	4.2	Mar-99
<i>NCREIF Timberland Property Index</i>	2.4	7.6	12.6	5.8	4.7	5.9		6.1	Mar-99
PRISA LP	0.0	11.9	18.8	11.5	9.6	10.3	70,847,258	6.8	Jan-86
<i>NFI-ODCE</i>	0.3	12.4	21.0	11.4	9.3	9.9		6.7	Jan-86
<i>InvMetrics Public DB Real Estate Priv Net Rank</i>	67	42	75	55	57	51		--	Jan-86
PRISA II	1.0	13.2	20.5	12.0	10.1	11.1	145,088,445	5.3	Jul-07
<i>NFI-ODCE</i>	0.3	12.4	21.0	11.4	9.3	9.9		5.9	Jul-07
<i>InvMetrics Public DB Real Estate Priv Net Rank</i>	13	32	67	44	16	17		69	Jul-07
PennMuni-Nuveen U.S. Real Estate Fund	-1.0	2.2	9.0	6.5	7.4	8.7	221,952,992	6.4	Dec-08
<i>NFI-ODCE</i>	0.3	12.4	21.0	11.4	9.3	9.9		7.1	Dec-08
<i>NCREIF Property Index</i>	0.6	9.4	16.1	9.9	8.6	9.5		8.0	Dec-08
<i>InvMetrics Public DB Real Estate Priv Net Rank</i>	96	98	97	97	84	99		87	Dec-08
N. Front Street (Nuveen)	1.0	3.0	-3.4	-0.3	-4.6	--	2,020,161	-4.9	Sep-16
<i>Consumer Price Index</i>	0.2	6.5	8.2	5.0	3.8	--		3.5	Sep-16
Total Fixed Income Composite	-4.6	-15.0	-15.0	-3.4	-0.3	0.9	672,852,168	5.6	Jan-86
<i>Bloomberg US Aggregate TR</i>	-4.8	-14.6	-14.6	-3.3	-0.3	0.9		5.6	Jan-86
<i>InvMetrics Public DB US Fix Inc Net Rank</i>	81	89	87	95	89	75		--	Jan-86
SSGA US Aggregate Bond Index	-4.7	-14.6	-14.6	-3.2	-0.3	0.9	341,581,321	4.2	Apr-97
<i>Bloomberg US Aggregate TR</i>	-4.8	-14.6	-14.6	-3.3	-0.3	0.9		4.2	Apr-97
<i>eV US Core Fixed Inc Net Rank</i>	72	52	52	74	76	77		67	Apr-97
Federated Hermes Core Aggregate Strategy	-4.5	--	--	--	--	--	331,270,847	-4.5	Jun-22
<i>Bloomberg US Aggregate TR</i>	-4.8	--	--	--	--	--		-4.8	Jun-22
<i>eV US Core Fixed Inc Net Rank</i>	41	--	--	--	--	--		41	Jun-22
Cash Composite							14,342,932		

As of September 30, 2022

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	---
Smith, Graham & Co Small Cap Value	US Stock Small Cap Value	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	---
Rhumbline Global Min. Volatility	Global Stock Low Volatility	In Compliance	---
iShares MSCI ACWI	Global Stock Large Cap Core	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	---

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.

Pennsylvania Municipal Retirement System

Fee Summary

As of September 30, 2022

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	4.6%	\$447,001	0.34%
Xponance S&P 500	0.02% of Assets	7.7%	\$43,501	0.02%
Northern Trust S&P 500	0.00% of Assets	7.8%	\$8,842	0.00%
Polen Focus Growth	0.50% of First 100.0 Mil, 0.40% Thereafter	2.9%	\$416,583	0.50%
Northern Trust Dow Jones Completion Index	0.02% of Assets	3.0%	\$12,845	0.02%
Smith, Graham & Co Small Cap Value	0.75% of First 50.0 Mil, 0.60% Thereafter	1.4%	\$292,208	0.75%
Copeland Small Cap Dividend Growth	0.50% of Assets	1.5%	\$212,166	0.50%
Emerald Small Cap Growth	0.60% of First 10.0 Mil, 0.55% of Next 5.0 Mil, 0.50% Thereafter	1.2%	\$186,537	0.54%
Rhumblin Global Min. Volatility	0.07% of Assets	4.8%	\$88,223	0.06%
iShares MSCI ACWI	0.32% of Assets	4.8%	\$436,047	0.32%
SSGA MSCI World ex US	0.04% of Assets	7.5%	\$85,135	0.04%
Hardman Johnston Int'l Equity	0.75% of First 25.0 Mil, 0.60% Thereafter	2.8%	\$514,074	0.65%
HGK Int'l Equity	0.65% of Assets	3.5%	\$646,170	0.65%
SSGA MSCI Emerging Markets Index	0.05% of Assets	2.1%	\$30,400	0.05%
Forest Investment Associates	0.75% of Assets	5.3%	\$1,119,538	0.75%

Pennsylvania Municipal Retirement System

Fee Summary

As of September 30, 2022

Account	Fee Schedule	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
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	2.5%	\$664,702	0.94%
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	5.1%	\$1,540,840	1.06%
PennMuni-Nuveen U.S. Real Estate Fund	0.85% of Assets	7.8%	\$1,886,600	0.85%
N. Front Street (Nuveen)	0.85% of Assets	0.1%	\$17,171	0.85%
SSGA US Aggregate Bond Index	0.02% of First 100.0 Mil, 0.01% of Next 300.0 Mil, 0.01% Thereafter	12.0%	\$44,158	0.01%
Federated Hermes Core Aggregate Strategy	0.12% of First 100.0 Mil, 0.10% of Next 400.0 Mil, 0.07% Thereafter	11.7%	\$351,271	0.11%
Investment Management Fee		100.0%	\$9,044,013	0.32%

Characteristics

	Portfolio	MSCI ACWI IMI Net USD
Number of Holdings	6,862	9,237
Weighted Avg. Market Cap. (\$B)	224.2	272.0
Median Market Cap. (\$B)	5.3	1.7
Price To Earnings	15.5	14.3
Price To Book	3.1	3.0
Price To Sales	1.5	1.4
Return on Equity (%)	19.8	19.9
Yield (%)	2.2	2.5

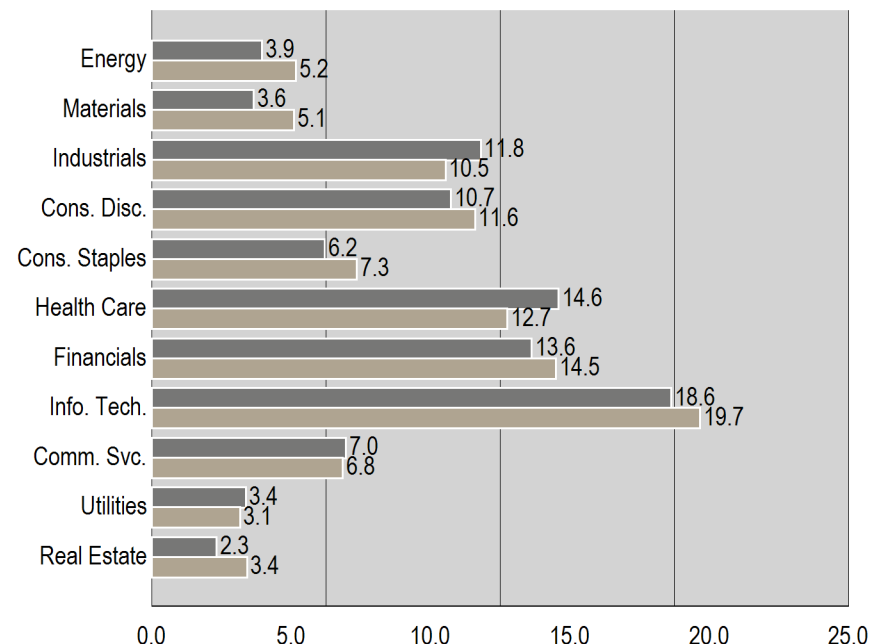
Top Holdings

MICROSOFT CORP	2.4%
APPLE INC	2.4%
AMAZON.COM INC	1.5%
ISHARES MSCI EMERGING MARKETS MIN VOL FACTOR ETF	1.2%
JOHNSON & JOHNSON	0.9%
ALPHABET INC	0.9%
ALPHABET INC	0.8%
UNITEDHEALTH GROUP INC	0.8%
TESLA INC	0.7%
ASTRAZENECA PLC	0.7%
Total	12.4%

Market Capitalization

	Small Cap	Mid Cap	Large Cap	Unclassified
Total Equity Composite	16.5%	14.8%	63.5%	5.2%
MSCI ACWI IMI Net USD	18.2%	16.6%	65.1%	0.0%
<i>Weight Over/Under</i>	<i>-1.8%</i>	<i>-1.8%</i>	<i>-1.6%</i>	<i>5.2%</i>

Sector Allocation (%) vs MSCI ACWI IMI Net USD



Region Allocation Summary

Region	% of Total	% of Bench	% Diff
North America ex U.S.	3.4%	3.2%	0.3%
United States	66.3%	61.0%	5.3%
Europe Ex U.K.	13.2%	11.3%	1.9%
United Kingdom	3.8%	3.8%	0.1%
Pacific Basin Ex Japan	2.9%	3.3%	-0.4%
Japan	4.5%	5.9%	-1.4%
Emerging Markets	5.2%	11.2%	-5.9%
Other	0.6%	0.4%	0.2%
Total	100.0%	100.0%	0.0%

Characteristics

	Portfolio	Russell 3000
Number of Holdings	4,097	2,986
Weighted Avg. Market Cap. (\$B)	302.4	402.3
Median Market Cap. (\$B)	1.8	2.3
Price To Earnings	16.9	17.5
Price To Book	3.3	3.5
Price To Sales	1.6	1.7
Return on Equity (%)	23.1	24.7
Yield (%)	1.8	1.8

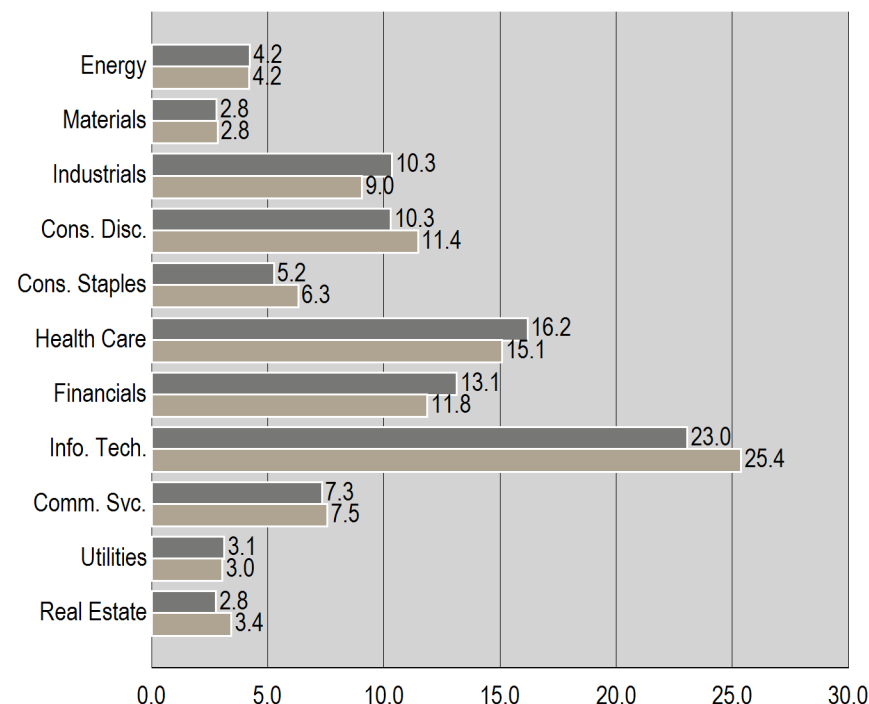
Top Holdings

MICROSOFT CORP	3.7%
APPLE INC	3.5%
AMAZON.COM INC	2.3%
ALPHABET INC	1.3%
ALPHABET INC	1.3%
UNITEDHEALTH GROUP INC	1.3%
JOHNSON & JOHNSON	1.3%
META PLATFORMS INC	1.1%
TESLA INC	1.1%
JPMORGAN CHASE & CO	1.0%
Total	17.9%

Market Capitalization

	Small Cap	Mid Cap	Large Cap	Unclassified
U.S. Equity Composite	11.4%	19.6%	65.5%	3.5%
Russell 3000	6.0%	22.4%	71.6%	0.0%
<i>Weight Over/Under</i>	5.5%	-2.8%	-6.1%	3.5%

Sector Allocation (%) vs Russell 3000



Characteristics

	Portfolio	MSCI ACWI IMI Net USD
Number of Holdings	1,151	9,237
Weighted Avg. Market Cap. (\$B)	213.5	272.0
Median Market Cap. (\$B)	17.3	1.7
Price To Earnings	17.0	14.3
Price To Book	3.4	3.0
Price To Sales	1.9	1.4
Return on Equity (%)	24.8	19.9
Yield (%)	2.3	2.5

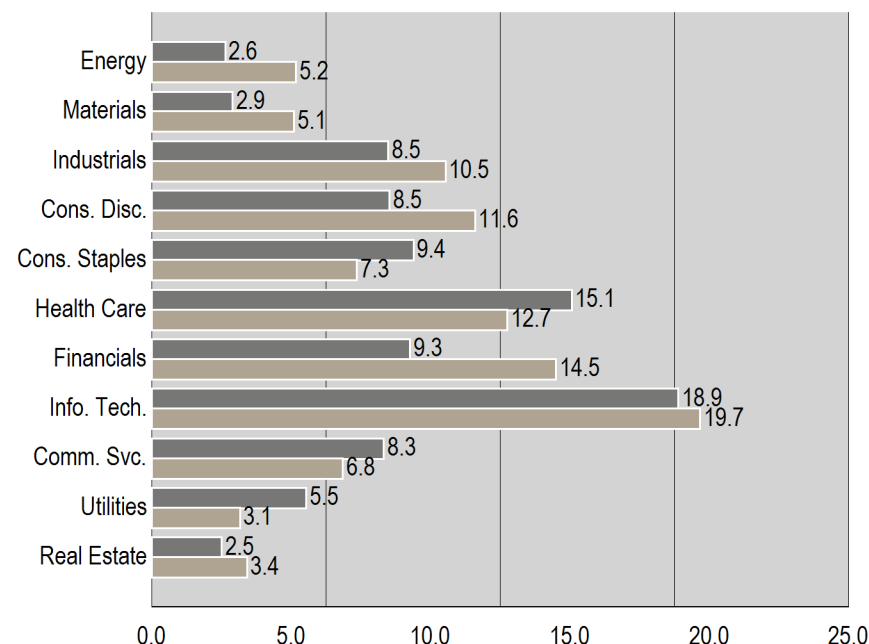
Top Holdings

ISHARES MSCI EMERGING MARKETS MIN VOL FACTOR ETF	7.4%
APPLE INC	2.6%
MICROSOFT CORP	2.1%
JOHNSON & JOHNSON	1.4%
AMAZON.COM INC	1.3%
WASTE MANAGEMENT INC.	1.1%
MERCK & CO INC	1.1%
PEPSICO INC	1.0%
VERIZON COMMUNICATIONS INC	0.9%
WALMART INC	0.9%
Total	19.7%

Market Capitalization

	Small Cap	Mid Cap	Large Cap	Unclassified
Global Equity Composite	13.9%	17.3%	67.1%	1.7%
MSCI ACWI IMI Net USD	18.2%	16.6%	65.1%	0.0%
<i>Weight Over/Under</i>	-4.3%	0.6%	2.0%	1.7%

Sector Allocation (%) vs MSCI ACWI IMI Net USD



Region Allocation Summary

Region	% of Total	% of Bench	% Diff
North America ex U.S.	2.9%	3.2%	-0.3%
United States	77.3%	61.0%	16.3%
Europe Ex U.K.	5.6%	11.3%	-5.7%
United Kingdom	1.1%	3.8%	-2.7%
Pacific Basin Ex Japan	2.9%	3.3%	-0.3%
Japan	5.9%	5.9%	0.0%
Emerging Markets	3.4%	11.2%	-7.7%
Other	0.9%	0.4%	0.5%
Total	100.0%	100.0%	0.0%

Characteristics

	Portfolio	MSCI ACWI ex USA IMI
Number of Holdings	2,551	6,650
Weighted Avg. Market Cap. (\$B)	66.6	61.5
Median Market Cap. (\$B)	7.3	1.4
Price To Earnings	12.2	11.2
Price To Book	2.6	2.3
Price To Sales	1.3	1.1
Return on Equity (%)	13.6	14.4
Yield (%)	3.0	3.7

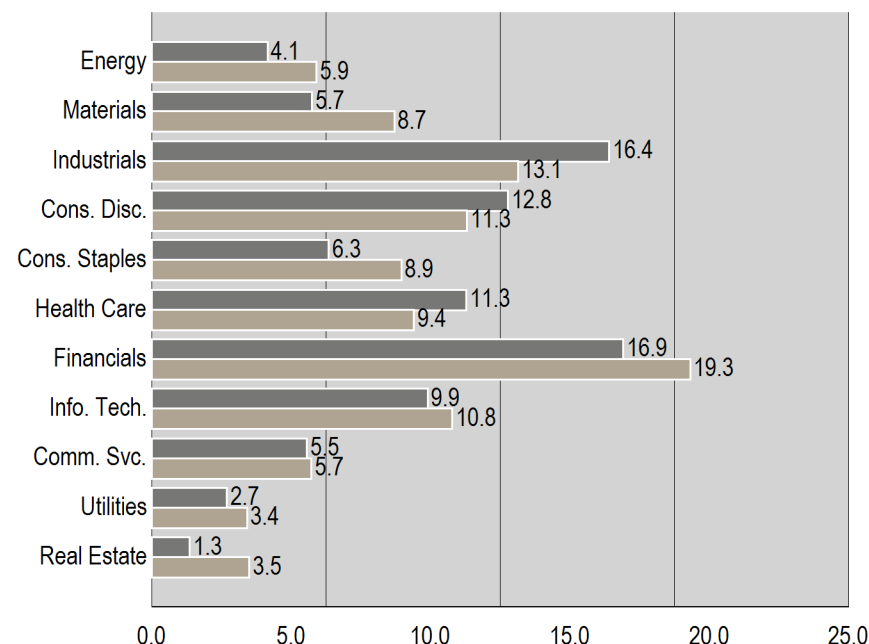
Top Holdings

ASTRAZENECA PLC	2.5%
AIA GROUP LTD	1.9%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	1.7%
BAE SYSTEMS PLC	1.4%
ASML HOLDING NV	1.4%
THALES	1.3%
PROSUS ORD	1.2%
GENMAB A/S	1.1%
DEUTSCHE TELEKOM AG	1.1%
MEITUAN DIANPING USD0.00001 A B CLASS ISIN KYG596691041	1.1%
Total	14.9%

Market Capitalization

	Small Cap	Mid Cap	Large Cap	Unclassified
Non-U.S Equity Composite	13.1%	24.5%	52.1%	10.3%
MSCI ACWI ex USA IMI	29.3%	22.8%	47.9%	0.0%
<i>Weight Over/Under</i>	-16.2%	1.6%	4.2%	10.3%

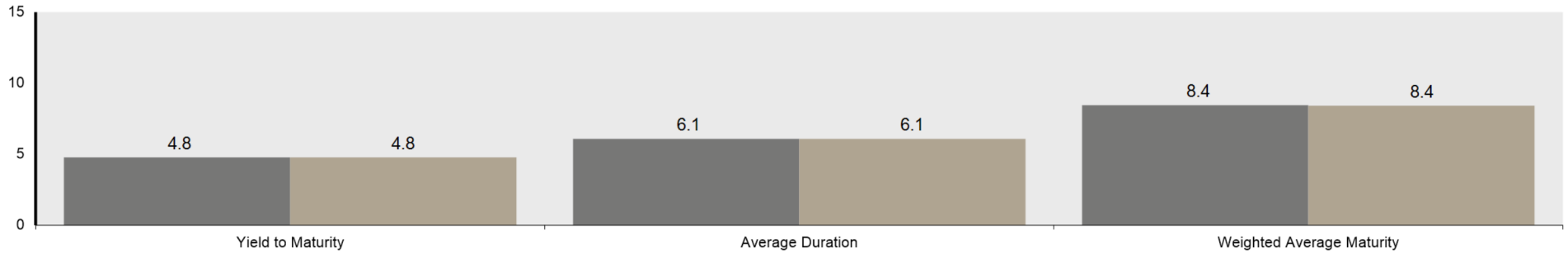
Sector Allocation (%) vs MSCI ACWI ex USA IMI



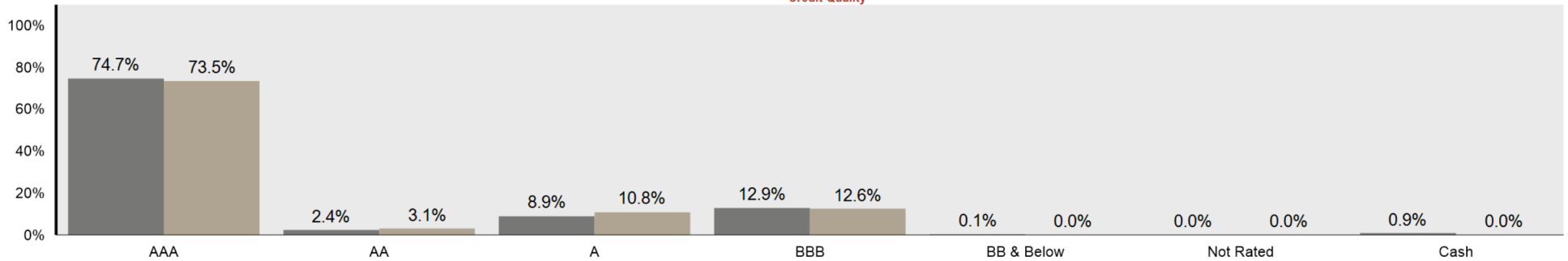
Region Allocation Summary

Region	% of Total	% of Bench	% Diff
North America ex U.S.	10.2%	8.2%	2.1%
United States	1.9%	0.0%	1.9%
Europe Ex U.K.	37.3%	29.0%	8.3%
United Kingdom	10.8%	9.7%	1.1%
Pacific Basin Ex Japan	8.7%	8.4%	0.3%
Japan	13.1%	15.1%	-2.0%
Emerging Markets	16.9%	28.6%	-11.7%
Other	1.0%	1.0%	0.0%
Total	100.0%	100.0%	0.0%

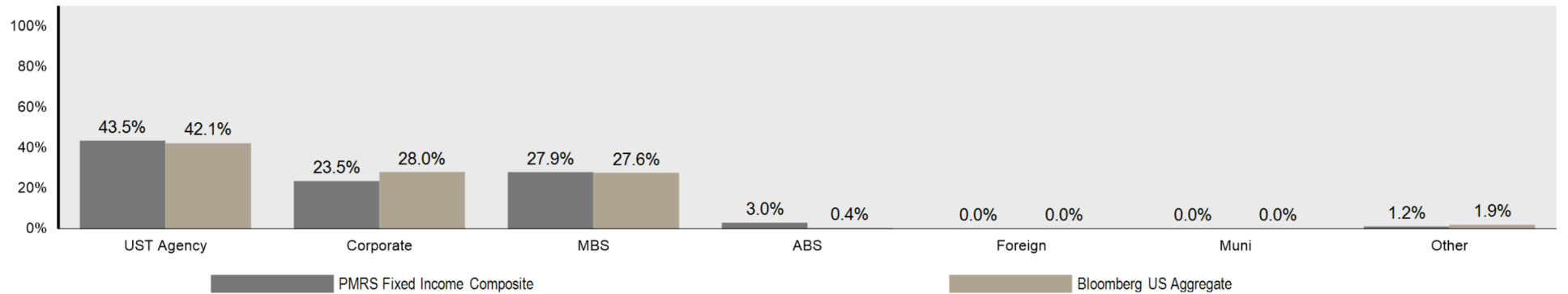
Yield to Maturity



Credit Quality



US Sector



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Investment Managers



As of September 30, 2022

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	72	855
Weighted Avg. Market Cap. (\$B)	112.5	135.4
Median Market Cap. (\$B)	66.7	11.5
Price To Earnings	16.3	14.1
Price To Book	3.1	2.3
Price To Sales	2.1	1.6
Return on Equity (%)	29.6	17.0
Yield (%)	2.5	2.5

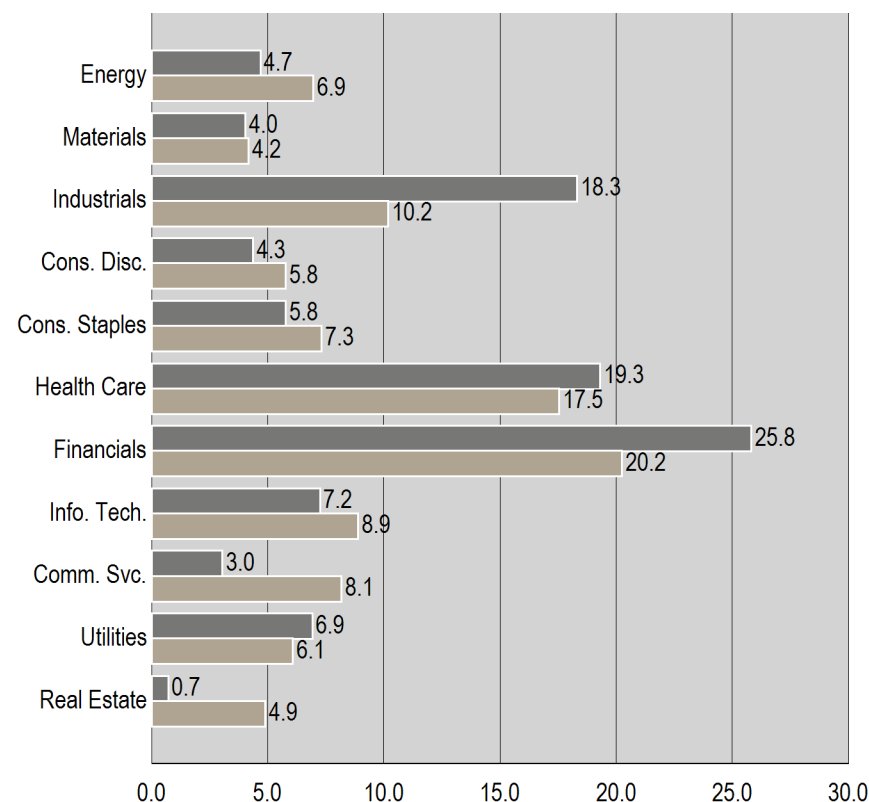
Top Holdings

JOHNSON & JOHNSON	3.4%
JPMORGAN CHASE & CO	3.4%
NORTHROP GRUMMAN CORP	3.0%
CIGNA CORP	2.9%
AON PLC	2.6%
TEXAS INSTRUMENTS INC	2.5%
PFIZER INC	2.4%
PROGRESSIVE CORP (THE)	2.4%
MARSH & MCLENNAN COMPANIES INC	2.3%
CHUBB LTD	2.2%
Total	27.0%

Market Capitalization

	Small Cap	Mid Cap	Large Cap
MFS Large Cap Value	0.0%	8.0%	92.0%
Russell 1000 Value	1.9%	30.4%	67.6%
<i>Weight Over/Under</i>	<i>-1.9%</i>	<i>-22.5%</i>	<i>24.4%</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	507	503
Weighted Avg. Market Cap. (\$B)	463.5	468.4
Median Market Cap. (\$B)	27.1	27.1
Price To Earnings	18.4	18.6
Price To Book	3.8	3.8
Price To Sales	2.0	2.0
Return on Equity (%)	32.2	32.1
Yield (%)	1.8	1.8

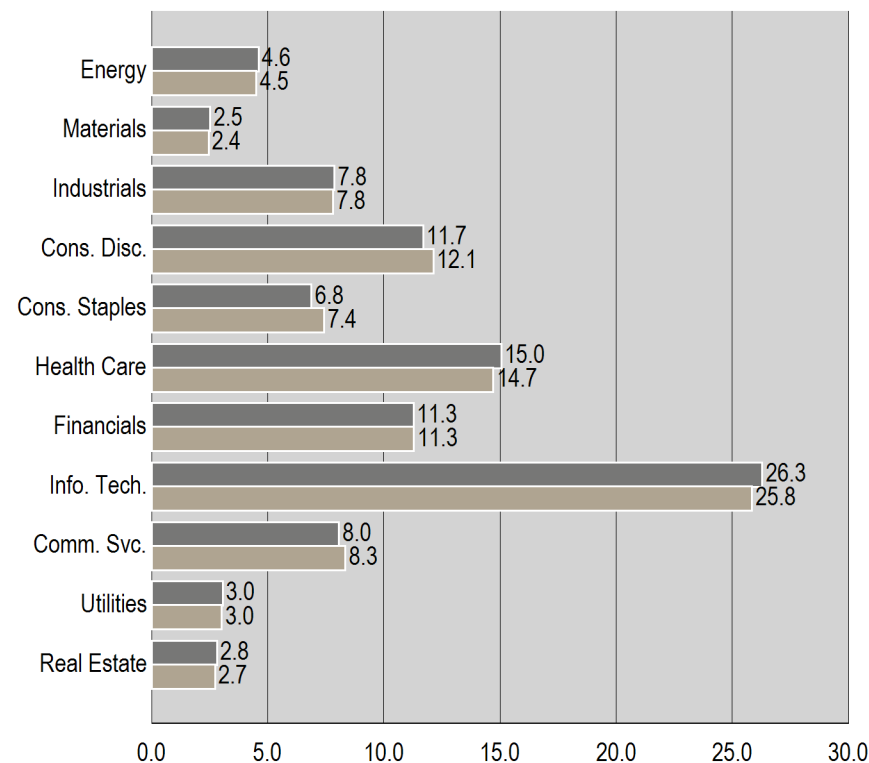
Top Holdings

APPLE INC	6.9%
MICROSOFT CORP	5.7%
AMAZON.COM INC	3.3%
TESLA INC	2.3%
ALPHABET INC	1.9%
ALPHABET INC	1.7%
BERKSHIRE HATHAWAY INC	1.6%
UNITEDHEALTH GROUP INC	1.6%
JOHNSON & JOHNSON	1.4%
EXXON MOBIL CORP	1.2%
Total	27.7%

Market Capitalization

	Small Cap	Mid Cap	Large Cap
Xponance S&P 500	0.0%	16.1%	83.9%
S&P 500	0.1%	15.8%	84.1%
<i>Weight Over/Under</i>	-0.1%	0.2%	-0.1%

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	503
Weighted Avg. Market Cap. (\$B)	456.6	468.4
Median Market Cap. (\$B)	27.0	27.1
Price To Earnings	17.9	18.6
Price To Book	3.7	3.8
Price To Sales	2.0	2.0
Return on Equity (%)	32.0	32.1
Yield (%)	1.9	1.8

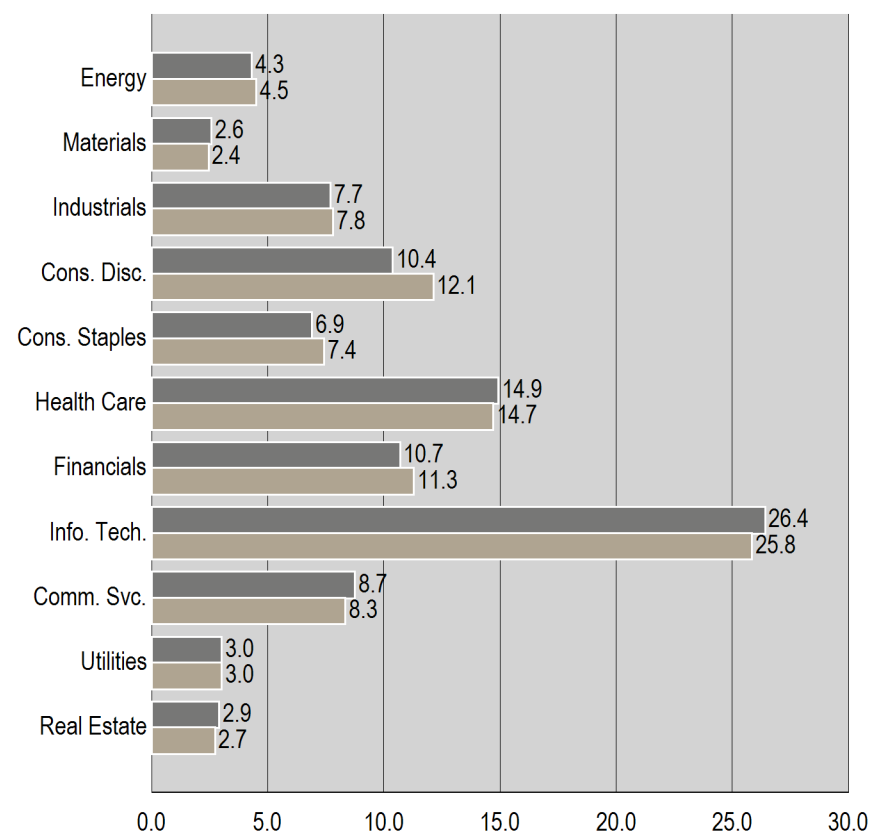
Top Holdings

APPLE INC	6.6%
MICROSOFT CORP	6.0%
AMAZON.COM INC	2.9%
ALPHABET INC	2.1%
ALPHABET INC	1.9%
TESLA INC	1.8%
BERKSHIRE HATHAWAY INC	1.5%
UNITEDHEALTH GROUP INC	1.5%
JOHNSON & JOHNSON	1.5%
NVIDIA CORPORATION	1.2%
Total	26.9%

Market Capitalization

	Small Cap	Mid Cap	Large Cap
Northern Trust S&P 500	0.0%	16.1%	83.9%
S&P 500	0.1%	15.8%	84.1%
<i>Weight Over/Under</i>	<i>-0.1%</i>	<i>0.3%</i>	<i>-0.2%</i>

Sector Allocation (%) vs S&P 500



As of September 30, 2022

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	518
Weighted Avg. Market Cap. (\$B)	426.5	708.7
Median Market Cap. (\$B)	135.9	14.7
Price To Earnings	29.7	25.0
Price To Book	6.3	9.1
Price To Sales	2.0	2.6
Return on Equity (%)	28.4	44.2
Yield (%)	0.5	1.1

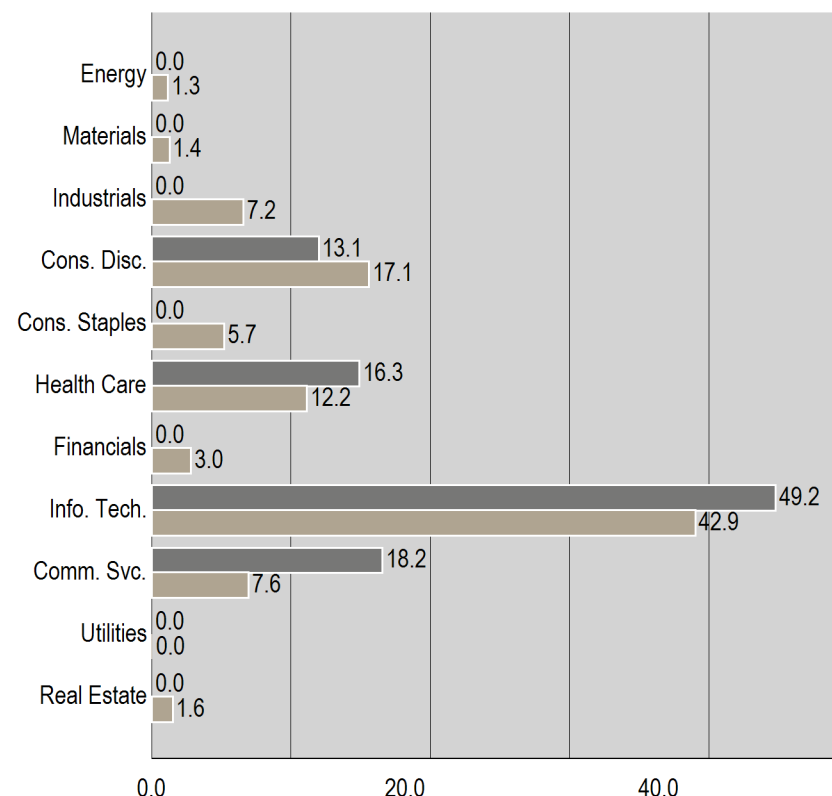
Top Holdings

MICROSOFT CORP	7.1%
AMAZON.COM INC	7.0%
NETFLIX INC	6.0%
META PLATFORMS INC	5.8%
ADOBE INC	5.6%
SALESFORCE INC	5.6%
SERVICENOW INC	5.0%
MASTERCARD INC	5.0%
UNITEDHEALTH GROUP INC	5.0%
AUTODESK INC	4.9%
Total	56.9%

Market Capitalization

	Small Cap	Mid Cap	Large Cap
Polen Focus Growth	0.0%	9.4%	90.6%
Russell 1000 Growth	1.4%	13.9%	84.6%
<i>Weight Over/Under</i>	-1.4%	-4.6%	6.0%

Sector Allocation (%) vs Russell 1000 Growth



As of September 30, 2022

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	3,579	3,772
Weighted Avg. Market Cap. (\$B)	9.2	9.5
Median Market Cap. (\$B)	0.7	0.6
Price To Earnings	12.5	12.7
Price To Book	2.5	2.6
Price To Sales	1.3	1.4
Return on Equity (%)	2.1	0.5
Yield (%)	1.7	1.5

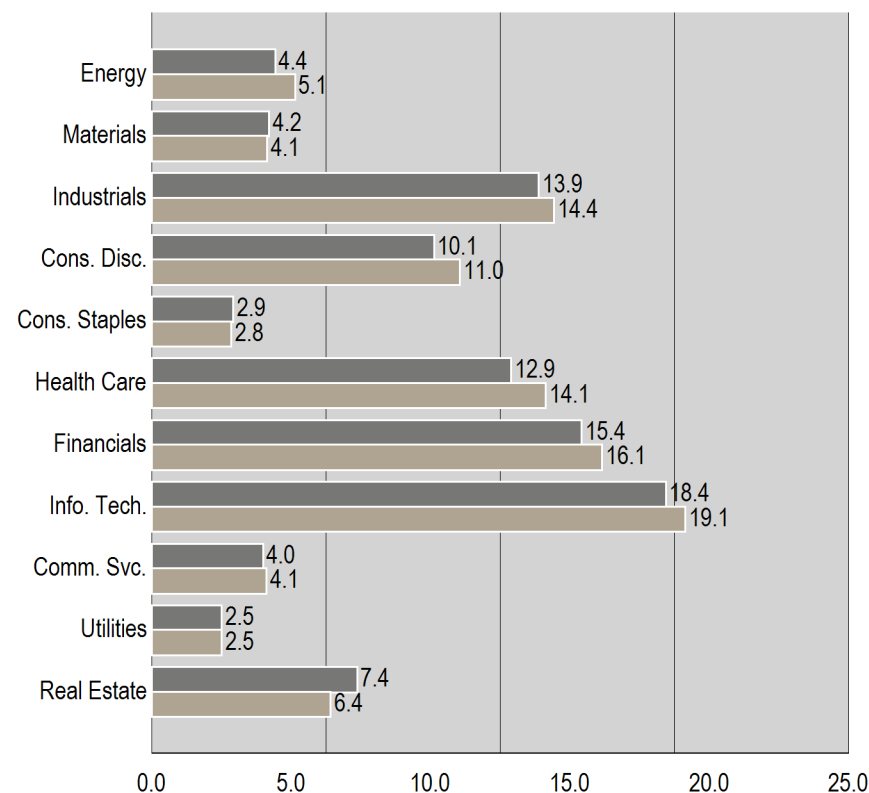
Top Holdings

BLACKSTONE INC	1.1%
PALO ALTO NETWORKS INC	0.8%
MARVELL TECHNOLOGY INC	0.6%
CROWDSTRIKE HOLDINGS INC	0.6%
UBER TECHNOLOGIES INC	0.6%
AIRBNB INC	0.6%
SNOWFLAKE INC	0.6%
LULULEMON ATHLETICA INC	0.6%
CHENIERE ENERGY INC.	0.5%
BLOCK INC	0.5%
Total	6.6%

Market Capitalization

	Small Cap	Mid Cap	Large Cap
Northern Trust Dow Jones Completion Index	31.7%	61.9%	6.4%
Dow Jones U.S. Completion Total Stock Market	37.6%	56.2%	6.3%
<i>Weight Over/Under</i>	-5.8%	5.7%	0.1%

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	1,394
Weighted Avg. Market Cap. (\$B)	2.5	2.2
Median Market Cap. (\$B)	1.7	0.9
Price To Earnings	9.6	9.5
Price To Book	1.7	1.5
Price To Sales	0.6	1.0
Return on Equity (%)	13.0	5.9
Yield (%)	1.7	2.5

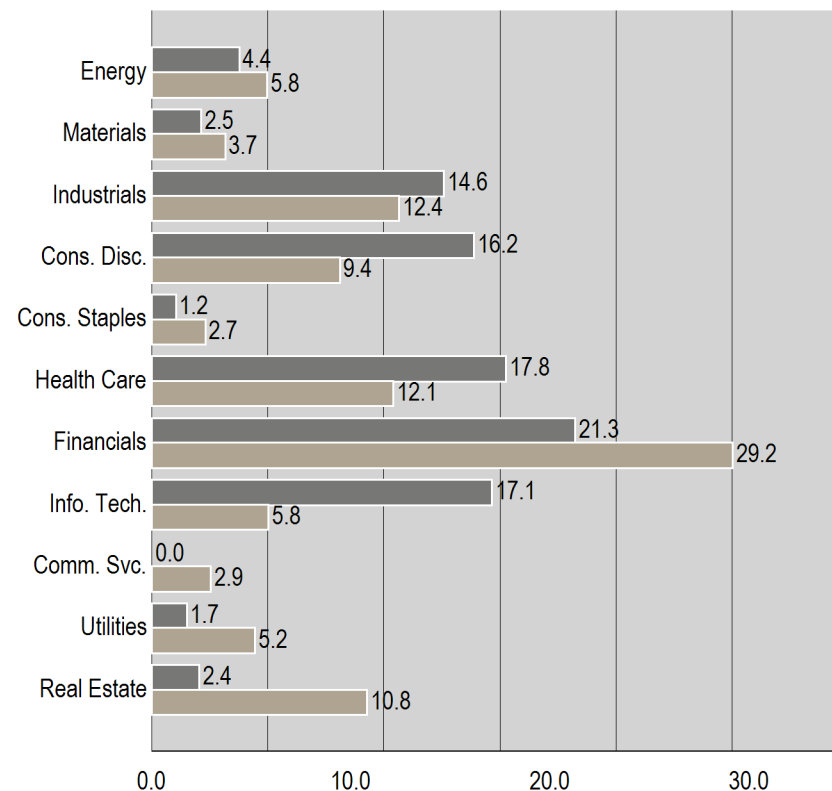
Top Holdings

ATLAS AIR WORLDWIDE HOLDINGS INC.	3.1%
COMSTOCK RESOURCES INC	3.0%
DYCOM INDUSTRIES INC.	2.8%
NEXTGEN HEALTHCARE INC	2.6%
DECKERS OUTDOOR CORP	2.5%
GROUP 1 AUTOMOTIVE INC.	2.4%
HIBBETT INC	2.4%
SELECTIVE INSURANCE GROUP INC	2.3%
WEBSTER FINANCIAL CORP	2.3%
COMMSCOPE HOLDING CO INC	2.1%
Total	25.4%

Market Capitalization

	Small Cap	Mid Cap	Large Cap
Smith, Graham & Co Small Cap Value	80.0%	20.0%	0.0%
Russell 2000 Value	81.5%	18.5%	0.0%
<i>Weight Over/Under</i>	<i>-1.4%</i>	<i>1.4%</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 2000
Number of Holdings	61	1,970
Weighted Avg. Market Cap. (\$B)	3.3	2.6
Median Market Cap. (\$B)	2.7	1.0
Price To Earnings	14.5	11.7
Price To Book	2.5	2.2
Price To Sales	1.5	1.3
Return on Equity (%)	21.6	5.4
Yield (%)	2.3	1.7

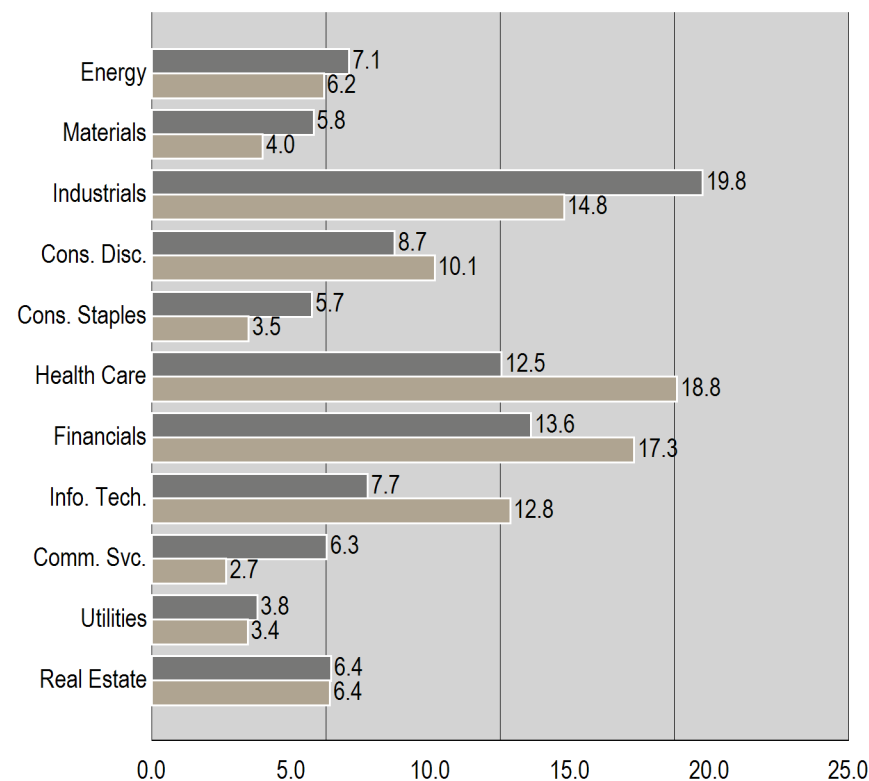
Top Holdings

ENSIGN GROUP INC (THE)	3.0%
LEMAITRE VASCULAR INC	2.6%
BANK OZK	2.6%
NORTHERN OIL AND GAS INC	2.4%
OASIS PETROLEUM INC	2.4%
CIVITAS RESOURCES INC	2.3%
LAKELAND FINANCIAL CORP	2.3%
HOME BANCSHARES INC	2.3%
NEXSTAR MEDIA GROUP INC.	2.2%
CHEMED CORP	2.2%
Total	24.4%

Market Capitalization

	Small Cap	Mid Cap	Large Cap
Copeland Small Cap Dividend Growth	54.9%	45.1%	0.0%
Russell 2000	72.7%	27.3%	0.0%
<i>Weight Over/Under</i>	<i>-17.8%</i>	<i>17.8%</i>	<i>0.0%</i>

Sector Allocation (%) vs Russell 2000



As of September 30, 2022

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	112	1,121
Weighted Avg. Market Cap. (\$B)	2.9	3.0
Median Market Cap. (\$B)	2.4	1.2
Price To Earnings	20.7	15.4
Price To Book	3.3	3.5
Price To Sales	2.4	1.6
Return on Equity (%)	0.8	2.9
Yield (%)	0.5	0.8

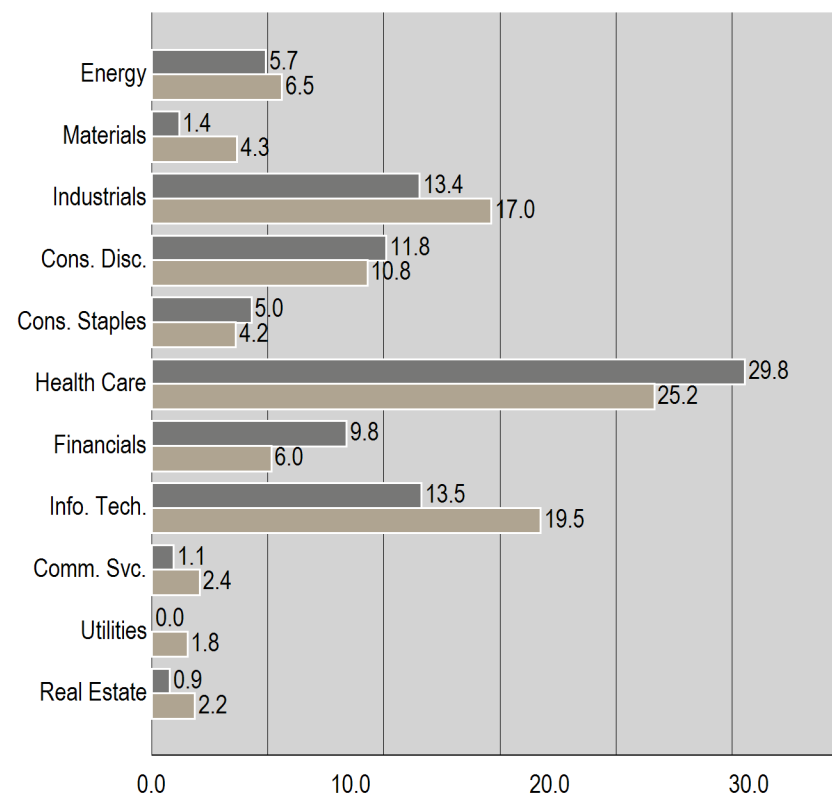
Top Holdings

CHART INDUSTRIES INC	2.5%
PALOMAR HOLDINGS INC	2.3%
SIMPLY GOOD FOODS CO (THE)	2.0%
MACOM TECHNOLOGY SOLUTIONS HOLDINGS INC	2.0%
SUPER MICRO COMPUTER INC	1.8%
PACIFIC PREMIER BANCORP INC	1.7%
EVERI HOLDINGS INC	1.7%
NV5 GLOBAL INC	1.7%
CHURCHILL DOWNS INC	1.7%
MERIT MEDICAL SYSTEMS INC	1.6%
Total	19.1%

Market Capitalization

	Small Cap	Mid Cap	Large Cap
Emerald Small Cap Growth	72.8%	27.2%	0.0%
Russell 2000 Growth	64.4%	35.6%	0.0%
<i>Weight Over/Under</i>	8.4%	-8.4%	0.0%

Sector Allocation (%) vs Russell 2000 Growth



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 ACWI
Number of Holdings	1,009	2,895
Weighted Avg. Market Cap. (\$B)	380.0	306.8
Median Market Cap. (\$B)	16.8	10.7
Price To Earnings	16.3	14.9
Price To Book	3.5	3.1
Price To Sales	1.8	1.5
Return on Equity (%)	27.1	22.4
Yield (%)	2.1	2.5

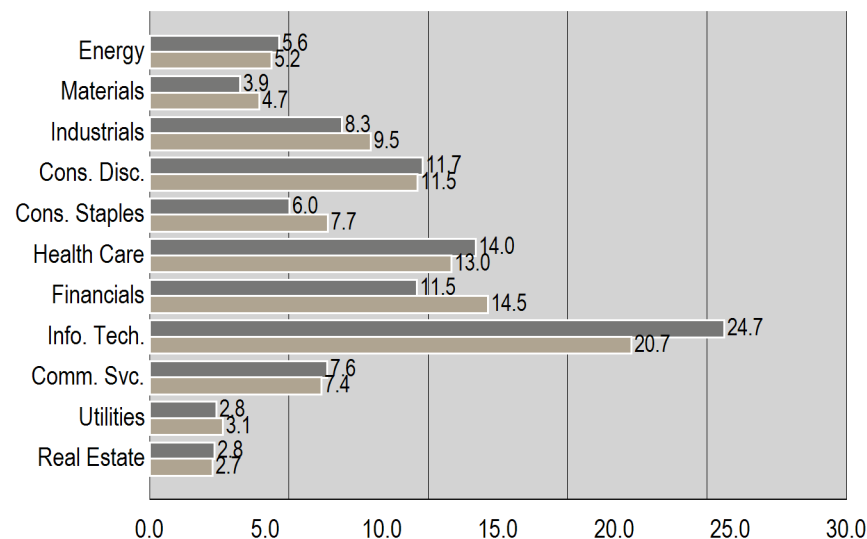
Top Holdings

APPLE INC	5.8%
MICROSOFT CORP	4.3%
AMAZON.COM INC	2.7%
TESLA INC	1.8%
ALPHABET INC	1.5%
ALPHABET INC	1.4%
UNITEDHEALTH GROUP INC	1.2%
JOHNSON & JOHNSON	1.1%
EXXON MOBIL CORP	1.0%
META PLATFORMS INC	0.8%
Total	21.6%

Market Capitalization

	Small Cap	Mid Cap	Large Cap	Unclassified
iShares MSCI ACWI	6.1%	13.8%	77.4%	2.7%
MSCI ACWI	7.9%	18.1%	74.0%	0.0%
<i>Weight Over/Under</i>	-1.8%	-4.3%	3.4%	2.7%

Sector Allocation (%) vs MSCI ACWI



Region Allocation Summary

Region	% of Total	% of Bench	% Diff
North America ex U.S.	2.0%	3.1%	-1.2%
United States	72.0%	62.0%	10.0%
Europe Ex U.K.	5.7%	11.5%	-5.8%
United Kingdom	0.4%	3.7%	-3.3%
Pacific Basin Ex Japan	3.6%	3.0%	0.5%
Japan	10.5%	5.4%	5.1%
Emerging Markets	5.0%	11.0%	-6.0%
Other	0.9%	0.3%	0.6%
Total	100.0%	100.0%	0.0%

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	272	2,895
Weighted Avg. Market Cap. (\$B)	85.2	306.8
Median Market Cap. (\$B)	19.4	10.7
Price To Earnings	18.0	14.9
Price To Book	3.2	3.1
Price To Sales	1.9	1.5
Return on Equity (%)	22.7	22.4
Yield (%)	2.5	2.5

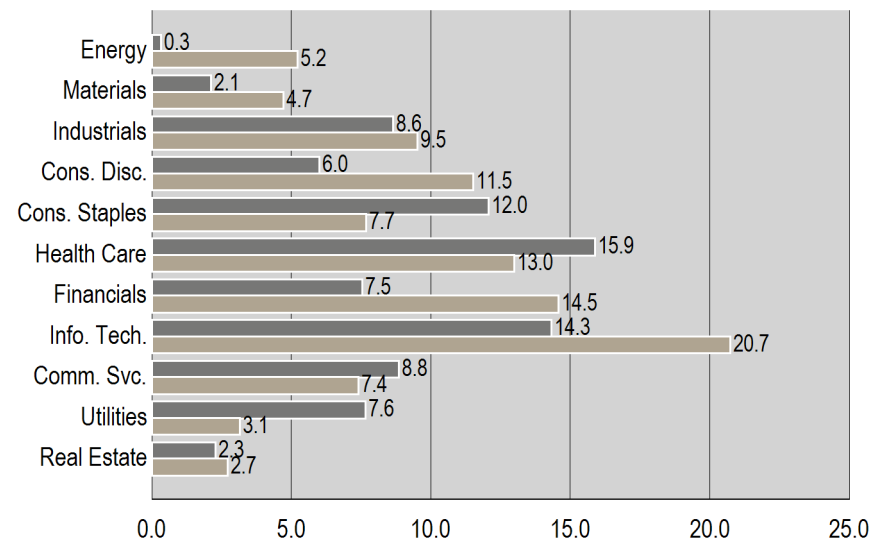
Top Holdings

ISHARES MSCI EMERGING MARKETS MIN VOL FACTOR ETF	13.1%
WASTE MANAGEMENT INC.	1.8%
JOHNSON & JOHNSON	1.6%
MERCK & CO INC	1.4%
PEPSICO INC	1.3%
VERIZON COMMUNICATIONS INC	1.3%
REGENERON PHARMACEUTICALS INC	1.3%
NESTLE SA, CHAM UND VEVEY	1.2%
WALMART INC	1.2%
VERTEX PHARMACEUTICALS INC	1.2%
Total	25.5%

Market Capitalization

	Small Cap	Mid Cap	Large Cap	Unclassified
Rhumblin Global Min. Volatility	20.1%	20.0%	59.1%	0.9%
MSCI ACWI	7.9%	18.1%	74.0%	0.0%
<i>Weight Over/Under</i>	<i>12.2%</i>	<i>1.8%</i>	<i>-14.9%</i>	<i>0.9%</i>

Sector Allocation (%) vs MSCI ACWI



Region Allocation Summary

Region	% of Total	% of Bench	% Diff
North America ex U.S.	2.0%	3.1%	-1.2%
United States	72.0%	62.0%	10.0%
Europe Ex U.K.	5.7%	11.5%	-5.8%
United Kingdom	0.4%	3.7%	-3.3%
Pacific Basin Ex Japan	3.6%	3.0%	0.5%
Japan	10.5%	5.4%	5.1%
Emerging Markets	5.0%	11.0%	-6.0%
Other	0.9%	0.3%	0.6%
Total	100.0%	100.0%	0.0%

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	1,058	886
Weighted Avg. Market Cap. (\$B)	64.3	65.1
Median Market Cap. (\$B)	8.9	10.6
Price To Earnings	12.1	12.1
Price To Book	2.3	2.3
Price To Sales	1.3	1.3
Return on Equity (%)	14.9	14.9
Yield (%)	3.6	3.7

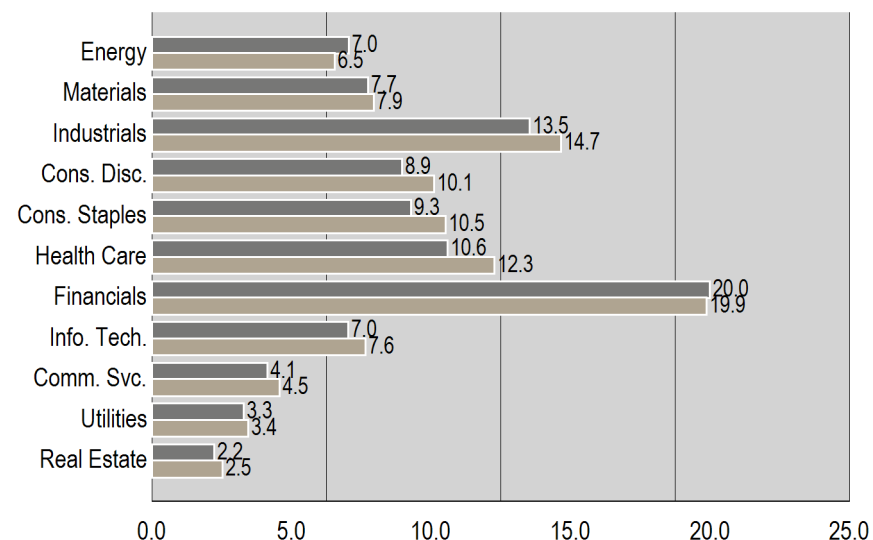
Top Holdings

NESTLE SA, CHAM UND VEVEY	2.0%
ROCHE HOLDING AG	1.5%
ROYAL BANK OF CANADA	1.5%
TORONTO-DOMINION BANK (THE)	1.3%
SHELL PLC	1.2%
ASML HOLDING NV	1.2%
ASTRAZENECA PLC	1.1%
NOVARTIS AG	1.1%
NOVO NORDISK 'B'	1.1%
LVMH MOET HENNESSY LOUIS VUITTON SE	1.1%
Total	13.1%

Market Capitalization

	Small Cap	Mid Cap	Large Cap	Unclassified
SSGA MSCI World ex US	10.5%	24.7%	55.4%	9.5%
MSCI World ex USA	12.3%	27.1%	60.6%	0.0%
<i>Weight Over/Under</i>	-1.8%	-2.5%	-5.2%	9.5%

Sector Allocation (%) vs MSCI World ex USA



Region Allocation Summary

Region	% of Total	% of Bench	% Diff
North America ex U.S.	18.5%	11.7%	6.8%
United States	0.5%	0.0%	0.5%
Europe Ex U.K.	41.9%	42.6%	-0.7%
United Kingdom	9.9%	13.7%	-3.8%
Pacific Basin Ex Japan	9.9%	11.3%	-1.3%
Japan	18.4%	20.0%	-1.6%
Emerging Markets	0.0%	0.0%	0.0%
Other	0.9%	0.7%	0.1%
Total	100.0%	100.0%	0.0%

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	798
Weighted Avg. Market Cap. (\$B)	82.4	67.3
Median Market Cap. (\$B)	36.4	10.4
Price To Earnings	18.1	12.2
Price To Book	3.5	2.4
Price To Sales	2.4	1.2
Return on Equity (%)	7.7	15.1
Yield (%)	1.1	3.7

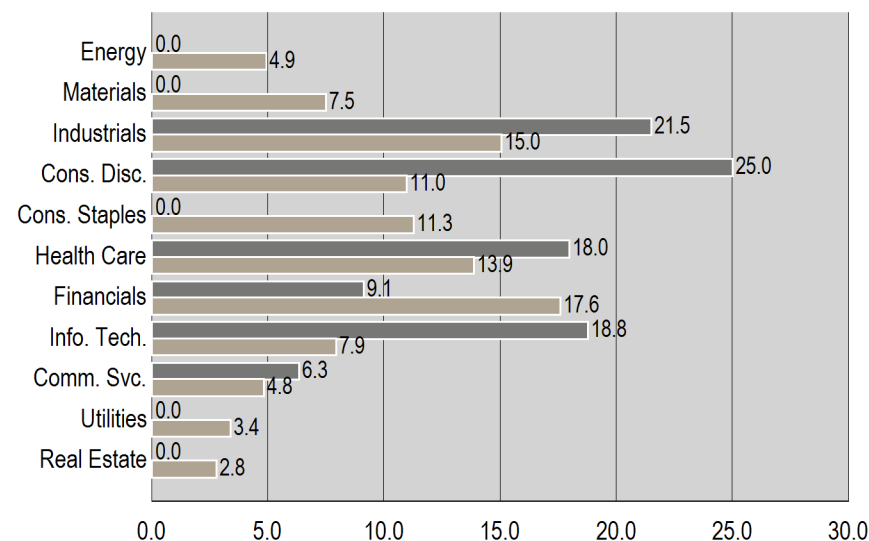
Top Holdings

GENMAB A/S	5.6%
PROSUS ORD	5.5%
PRYSMIAN SPA	5.4%
SAFRAN SA	5.3%
ASTRAZENECA PLC	5.2%
AIA GROUP LTD	5.2%
DEUTSCHE TELEKOM AG	5.0%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	4.9%
AIRBUS SE	4.8%
MEITUAN DIANPING USD0.00001 A B CLASS ISIN KYG596691041	4.6%
Total	51.6%

Market Capitalization

	Small Cap	Mid Cap	Large Cap	Unclassified
Hardman Johnston Int'l Equity	20.1%	13.5%	65.1%	1.4%
MSCI EAFE	12.6%	27.4%	60.0%	0.0%
<i>Weight Over/Under</i>	7.4%	-13.9%	5.1%	1.4%

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.	47.9%	48.2%	-0.3%
United Kingdom	9.5%	15.5%	-6.0%
Pacific Basin Ex Japan	13.2%	12.8%	0.4%
Japan	10.7%	22.6%	-11.9%
Emerging Markets	17.3%	0.0%	17.3%
Other	1.4%	0.8%	0.6%
Total	100.0%	100.0%	0.0%

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	26	798
Weighted Avg. Market Cap. (\$B)	38.6	67.3
Median Market Cap. (\$B)	23.3	10.4
Price To Earnings	8.9	12.2
Price To Book	2.9	2.4
Price To Sales	1.3	1.2
Return on Equity (%)	2.3	15.1
Yield (%)	2.5	3.7

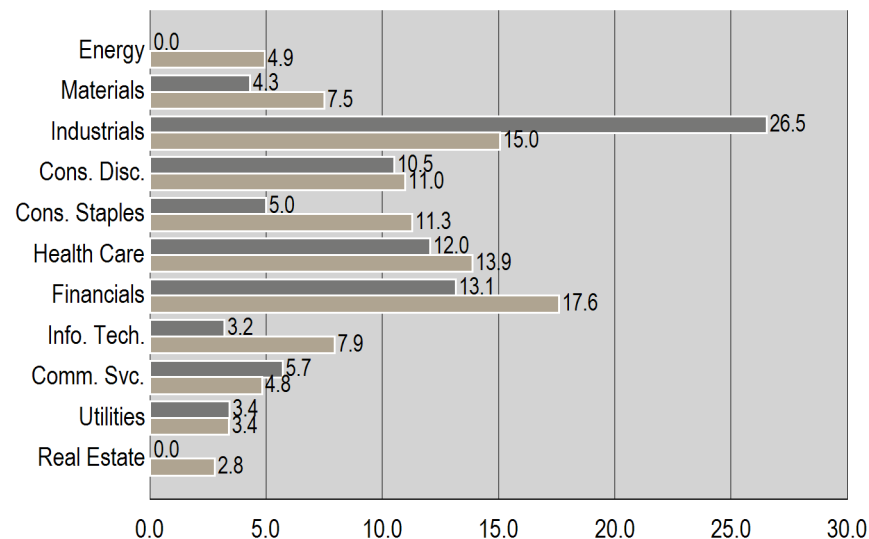
Top Holdings

BAE SYSTEMS PLC	7.3%
THALES	7.0%
RHEINMETALL	5.5%
ASTRAZENECA PLC	5.3%
DEUTSCHE BOERSE AG	5.0%
FRANCO-NEVADA CORP	4.9%
COMPASS GROUP PLC	4.9%
ICON PLC	4.5%
SHIMANO INC	4.5%
DAIKIN INDUSTRIES LTD	4.2%
Total	53.2%

Market Capitalization

	Small Cap	Mid Cap	Large Cap	Unclassified
HGK Int'l Equity	7.2%	34.2%	37.5%	21.1%
MSCI EAFE	12.6%	27.4%	60.0%	0.0%
<i>Weight Over/Under</i>	<i>-5.4%</i>	<i>6.8%</i>	<i>-22.5%</i>	<i>21.1%</i>

Sector Allocation (%) vs MSCI EAFE



Region Allocation Summary

Region	% of Total	% of Bench	% Diff
North America ex U.S.	6.8%	0.0%	6.8%
United States	7.8%	0.0%	7.8%
Europe Ex U.K.	41.8%	48.2%	-6.4%
United Kingdom	22.6%	15.5%	7.0%
Pacific Basin Ex Japan	3.2%	12.8%	-9.6%
Japan	11.5%	22.6%	-11.2%
Emerging Markets	6.4%	0.0%	6.4%
Other	0.0%	0.8%	-0.8%
Total	100.0%	100.0%	0.0%

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	1,484	1,384
Weighted Avg. Market Cap. (\$B)	86.8	86.9
Median Market Cap. (\$B)	5.6	5.5
Price To Earnings	10.0	10.1
Price To Book	2.5	2.5
Price To Sales	0.9	1.0
Return on Equity (%)	14.9	14.6
Yield (%)	3.8	3.8

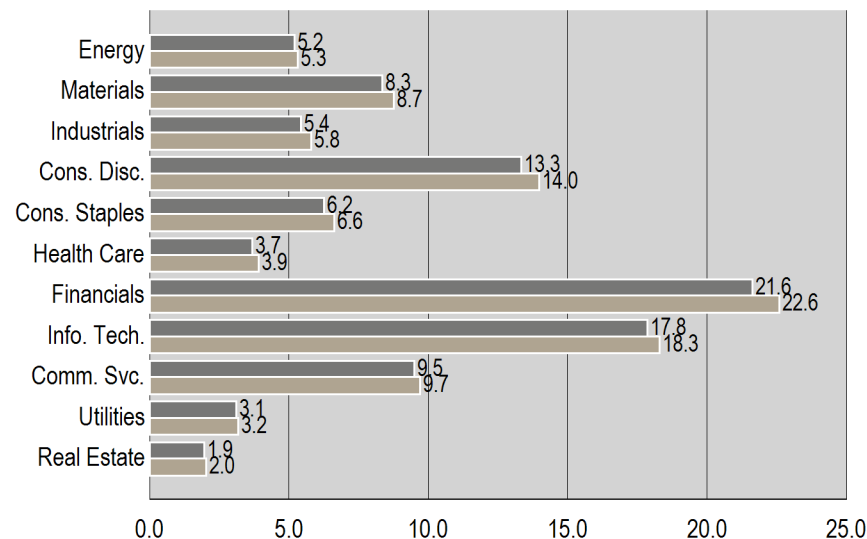
Top Holdings

TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	5.8%
TENCENT HOLDINGS LTD	3.8%
SAMSUNG ELECTRONICS CO LTD	3.2%
ALIBABA GROUP HOLDING LTD	2.6%
MEITUAN DIANPING USD0.00001 A B CLASS ISIN KYG596691041	1.6%
RELIANCE INDUSTRIES LTD	1.6%
INFOSYS LTD	1.0%
CHINA CONSTRUCTION BANK CORP	1.0%
JD.COM INC	1.0%
ICICI BANK	1.0%
Total	22.5%

Market Capitalization

	Small Cap	Mid Cap	Large Cap	Unclassified
SSGA MSCI Emerging Markets Index	8.5%	23.0%	58.4%	10.1%
MSCI Emerging Markets	17.0%	23.6%	59.5%	0.0%
<i>Weight Over/Under</i>	-8.5%	-0.5%	-1.1%	10.1%

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	1.3%	0.0%	1.3%
Europe Ex U.K.	0.8%	0.3%	0.5%
United Kingdom	0.0%	0.0%	0.0%
Pacific Basin Ex Japan	5.7%	0.0%	5.7%
Japan	0.0%	0.0%	0.0%
Emerging Markets	89.8%	98.9%	-9.1%
Other	2.4%	0.9%	1.5%
Total	100.0%	100.0%	0.0%

Characteristics

Fund GAV (\$MM)	\$35,802.0
Fund NAV (\$MM)	\$28,960.0
Cash (% of NAV)	2.8%
# of Investments	291
% in Top 10 by NAV	19.4%
Leverage %	19.6%
Occupancy	93.4%
# of MSAs	45
1-Year Dividend Yield	3.0%
As of Date	30-Sep-22

Strategy Breakdown

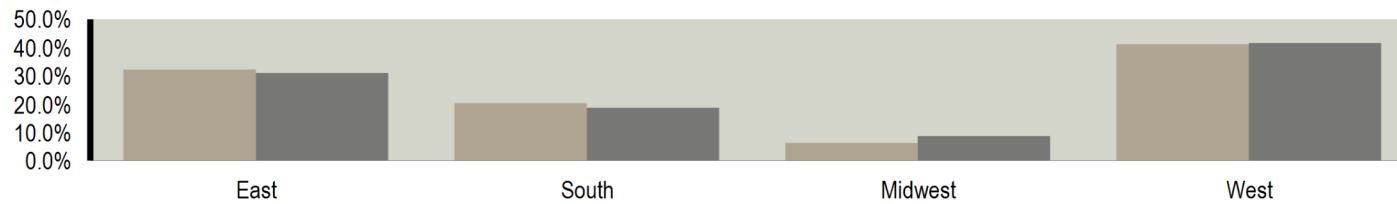
	% of Portfolio
Pre-Development	0.8%
Development	3.8%
Initial Leasing	0.8%
Operating	94.6%
Re-Development	
Other	

Queue In:	
Contribution Queue (\$MM)	
Anticipated Drawdown (Months)	

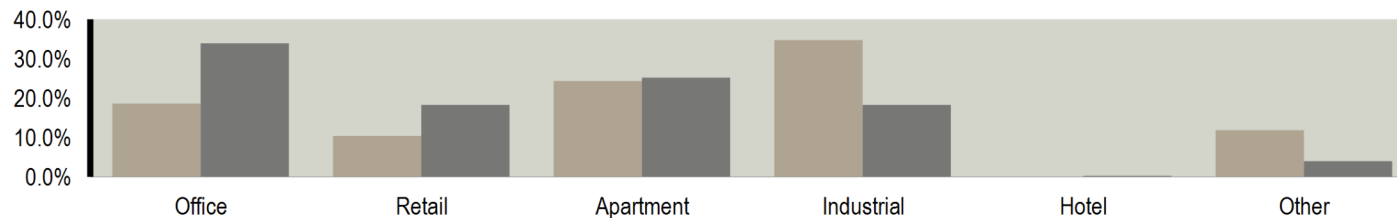
Top Five Metro Areas	% of NAV
Los Angeles-Long Beach, CA	22.6%
New York-Newark, NY-NJ-CT-F	14.1%
Washington-Baltimore-Arlington	10.4%
San Jose-San Francisco-Oakland	6.8%
Boston-Worcester-Providence,	5.2%

Queue Out:	
Redemption Queue (\$MM)	\$1,715.83
Anticipated Payout (Months)	

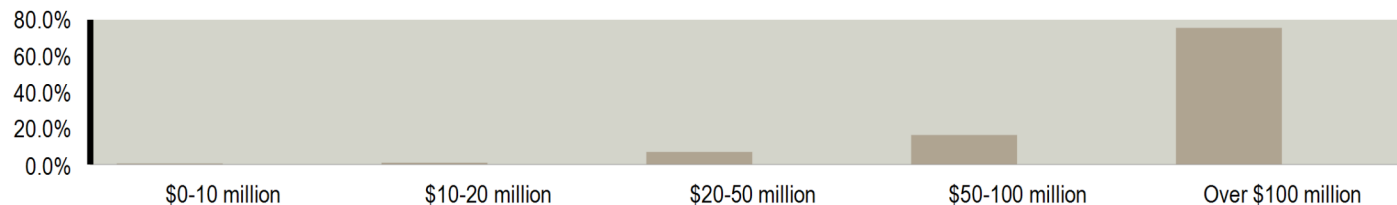
Regional Breakdown by NAV (Excluding Cash & Debt)



Property Type Breakdown by NAV (Excluding Cash & Debt)



Property Size Breakdown by NAV (Excluding Cash & Debt)



■ PRISA ■ NCREIF-ODCE

Characteristics

Fund GAV (\$MM)	\$14,165.6
Fund NAV (\$MM)	\$10,503.0
Cash (% of NAV)	2.0%
# of Investments	160
% in Top 10 by NAV	29.6%
Leverage %	23.0%
Occupancy	92.4%
# of MSAs	49
1-Year Dividend Yield	0.0%
As of Date	30-Sep-22

Strategy Breakdown

	% of Portfolio
Pre-Development	0.7%
Development	4.4%
Initial Leasing	2.6%
Operating	92.1%
Re-Development	0.3%
Other	0.0%

Top Five Metro Areas

	% of NAV
Riverside, CA	8.9%
Austin, TX	8.4%
New York, NY	6.8%
Los Angeles, CA	6.6%
Phoenix, AZ	6.1%

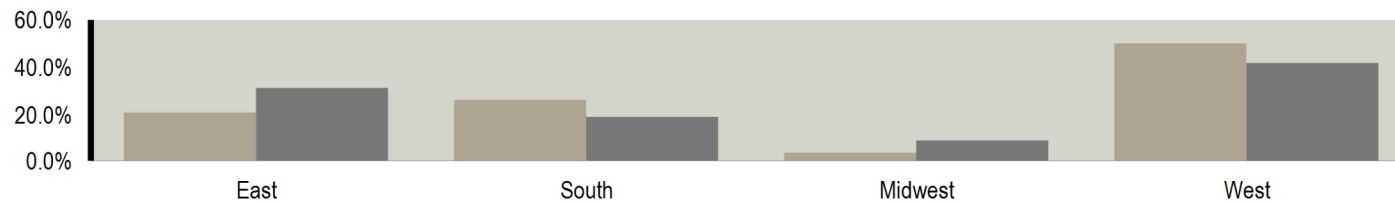
Queue In:

Contribution Queue (\$MM)	\$547.70
Anticipated Drawdown (Months)	

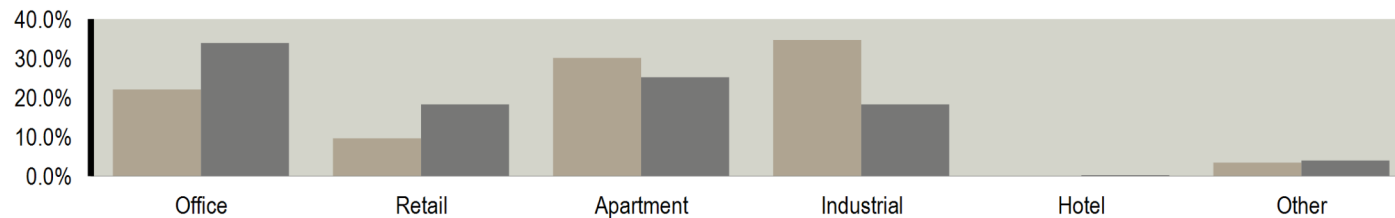
Queue Out:

Redemption Queue (\$MM)	\$427.50
Anticipated Payout (Months)	

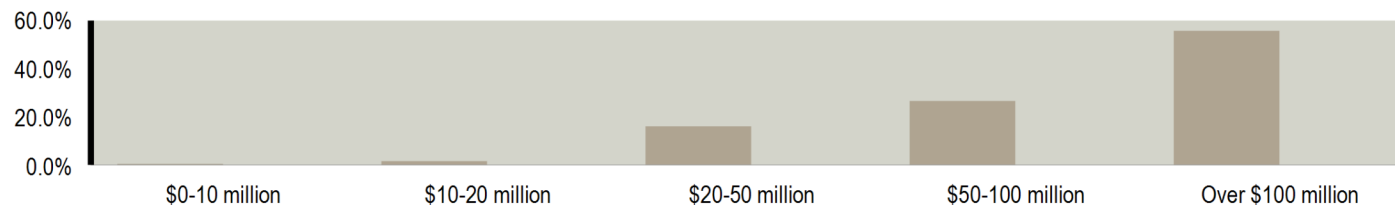
Regional Breakdown by NAV (Excluding Cash & Debt)



Property Type Breakdown by NAV (Excluding Cash & Debt)



Property Size Breakdown by NAV (Excluding Cash & Debt)



■ Principal U.S.P.A. ■ NCREIF-ODCE

As of September 30, 2022

Characteristics

Fund GAV (\$MM)	\$279.4
Fund NAV (\$MM)	\$259.7
Cash (% of NAV)	0.0%
# of Investments	8
Occupancy	67.0%
NOI	5.9%
Loan to Value	7.1%
As of Date	6/30/2021

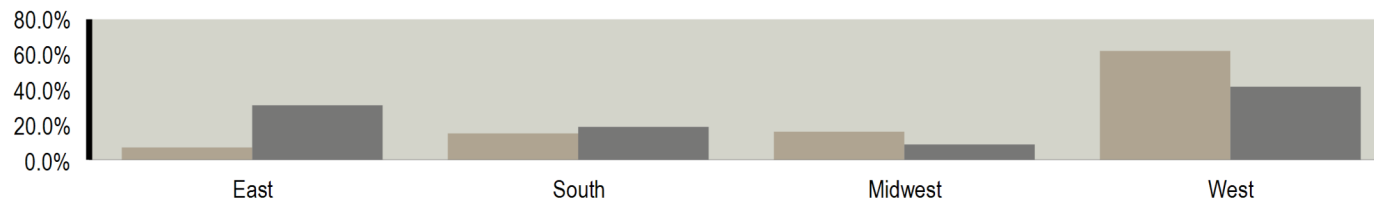
Asset Summary

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

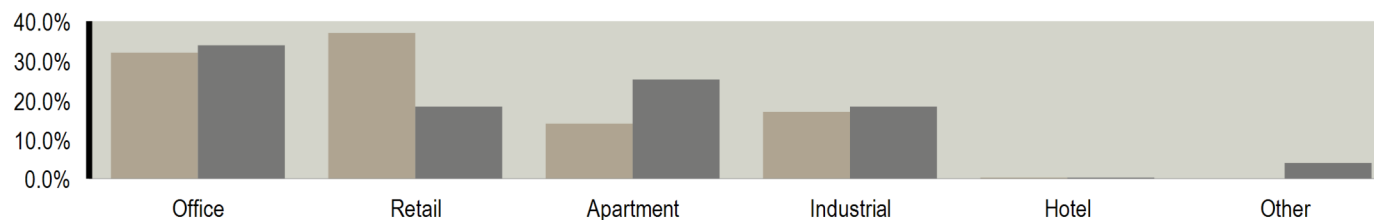
Portfolio Allocation

#	Property	Type	Location	% of Fund NAV
1	Copley Corporate Center	Office	San Diego, CA	18.2%
2	SR Ranch	Retail	San Diego, CA	16.1%
3	Des Peres Corners	Retail	Des Peres, MO	15.8%
4	708 Uptown	Apartment	Seattle, WA	14.6%
5	Fairway Center II	Office	Brea, CA	13.0%
6	Republic Distribution Center	Industrial	Houston, TX	10.3%
7	526 Route 46	Industrial	Teterboro, NJ	6.9%
8	Shoppes at Monarch Lakes	Retail	Miramar, FL	5.0%
Total				100.0%

Regional Breakdown by NAV



Property Type Breakdown by NAV



Net Assets (\$MM) 144.2

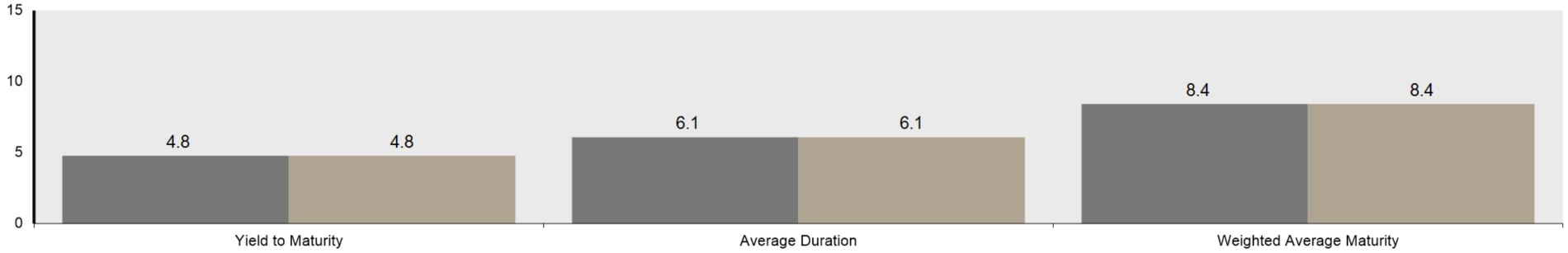
Portfolio Allocation

#	Property	Type	Location	% of Fund NAV
1	Bear Island	Pine	Virginia	5.5%
2	Fitz-Weller	Pine	New York	3.9%
3	Carter Pasture	Douglas Fir/Cedar	Texas	6.4%
4	Dupont	Douglas Fir/Hemlock	Georgia	22.4%
5	Bennetts Creek	Maple/Oak/Cherry	North Carolina	5.9%
6	Black River	Pine	South Carolina	16.1%
7	Coquille	Pine	Oregon	16.3%
8	Bucktails	Pine	Pennsylvania	10.1%
9	North River	Maple/Oak	Washington	13.4%
Total				100.0%

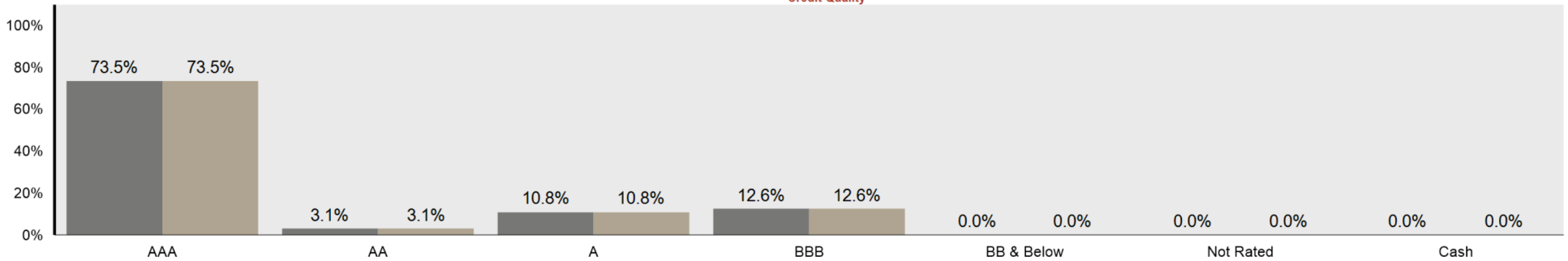
Regional Breakdown by NAV



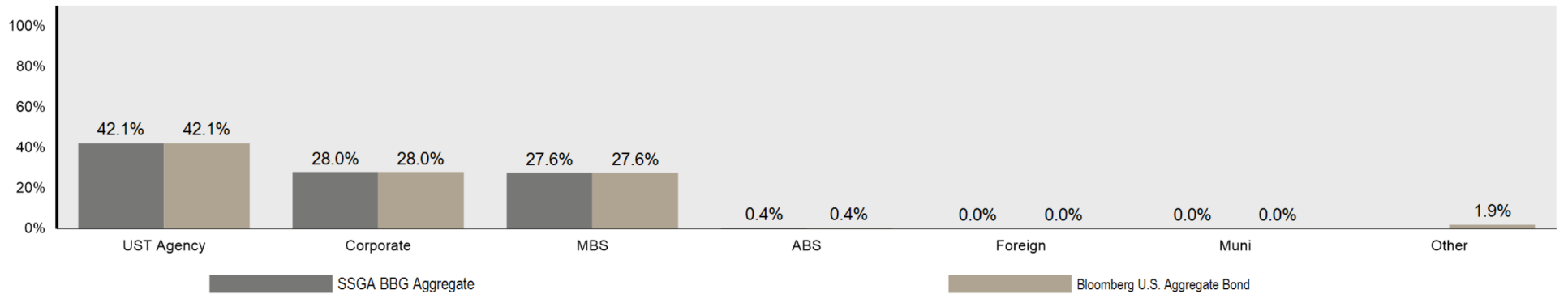
Yield to Maturity



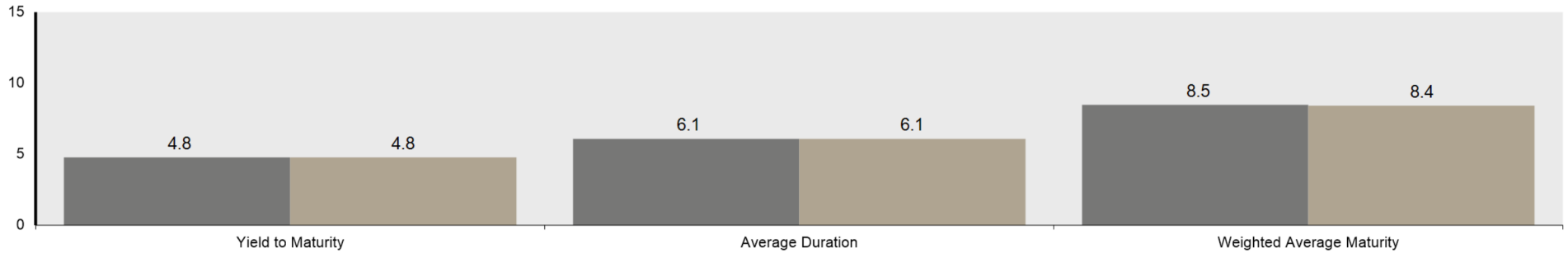
Credit Quality



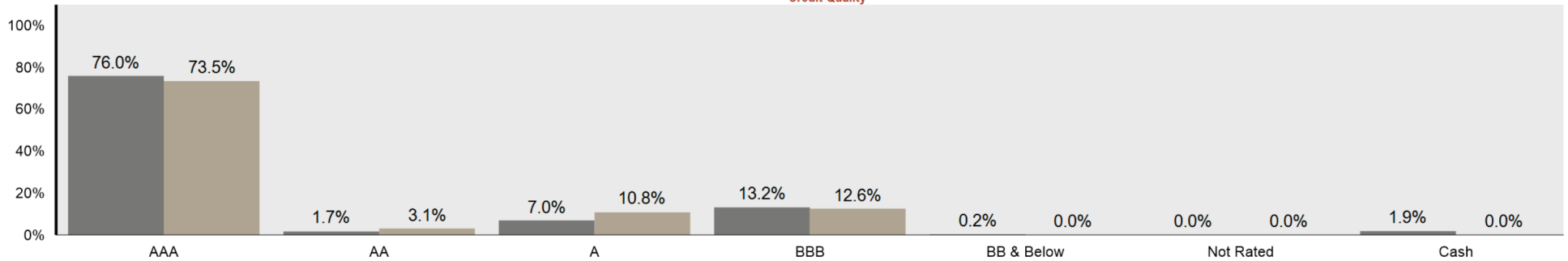
US Sector



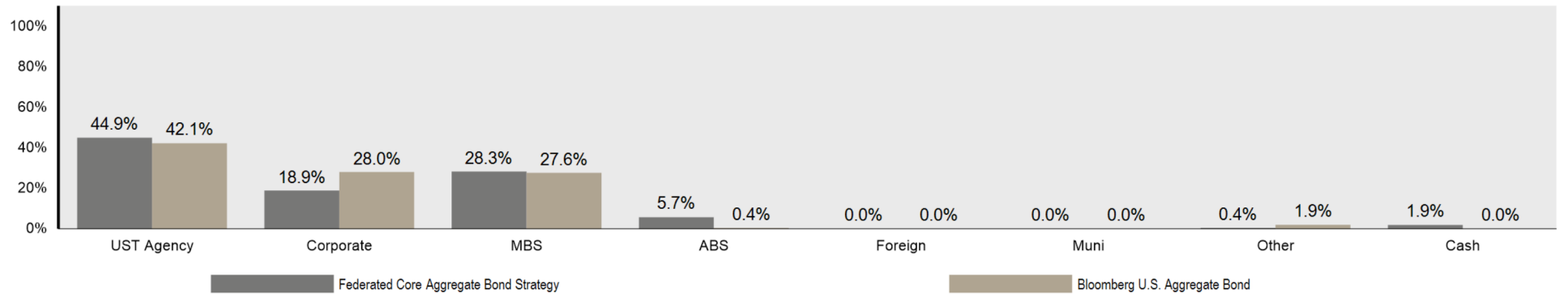
Yield to Maturity



Credit Quality



US Sector



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Appendix



As of September 30, 2022

Cash Flow Summary by Manager From July 01, 2022 to September 30, 2022

	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
LSV Large Cap Value	\$165,345	-\$134,089	-\$31,257	--
MFS Large Cap Value	\$135,779,168	\$0	-\$5,932,729	\$129,846,439
Xpance S&P 500	\$228,668,578	\$0	-\$11,162,132	\$217,506,445
Northern Trust S&P 500	\$232,389,438	\$5,798	-\$11,348,330	\$221,046,906
Polen Focus Growth	\$88,609,954	\$0	-\$5,293,367	\$83,316,587
Eagle Asset Mgmt	\$486	-\$57	-\$429	\$0
Northern Trust Dow Jones Completion Index	\$88,068,813	\$8,426	-\$2,446,669	\$85,630,570
Smith, Graham & Co Small Cap Value	\$41,888,155	\$0	-\$2,927,048	\$38,961,107
Copeland Small Cap Dividend Growth	\$43,972,858	\$0	-\$1,539,678	\$42,433,180
Emerald Small Cap Growth	\$34,846,142	\$0	-\$38,704	\$34,807,439
Rhumblin Global Min. Volatility	\$145,028,027	\$24,246	-\$9,323,934	\$135,728,339
iShares MSCI ACWI	\$146,874,612	\$0	-\$10,609,848	\$136,264,764
SSGA MSCI World ex US	\$234,265,589	\$0	-\$21,428,930	\$212,836,660
Hardman Johnston Int'l Equity	\$91,146,290	\$0	-\$11,717,269	\$79,429,021
HGK Int'l Equity	\$112,531,175	\$0	-\$13,120,443	\$99,410,732
Jarislowsky, Fraser Limited	\$295,632	\$0	-\$15,185	\$280,448
SSGA MSCI Emerging Markets Index	\$69,203,329	\$0	-\$8,402,393	\$60,800,937
Forest Investment Associates	\$144,149,283	-\$732,934	\$5,855,396	\$149,271,744
PRISA LP	\$70,859,235	\$0	-\$11,977	\$70,847,258
PRISA II	\$143,700,153	\$0	\$1,388,293	\$145,088,445
PennMuni-Nuveen U.S. Real Estate Fund	\$226,559,450	-\$2,378,527	-\$2,227,931	\$221,952,992
N. Front Street (Nuveen)	\$1,999,829	\$0	\$20,332	\$2,020,161
SSGA US Aggregate Bond Index	\$358,560,678	\$0	-\$16,979,357	\$341,581,321
Federated Hermes Core Aggregate Strategy	\$346,675,791	\$0	-\$15,404,944	\$331,270,847
Cash Management	\$34,322,180	-\$20,116,504	\$137,255	\$14,342,932
Abel Noser Transition Account	\$1,592,389	-\$1,584,375	-\$8,014	\$0
Total	\$3,022,152,580	-\$24,908,016	-\$142,569,292	\$2,854,675,272

Policy Index History

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

Common Holdings Matrix

	<i>MFS Large Cap Value</i>		<i>Xponance S&P 500</i>		<i>Northern Trust S&P 500</i>		<i>Polen Focus Growth</i>		<i>Eagle Asset Mgmt</i>		<i>Northern Trust Dow Jones Completion Index</i>		<i>Smith, Graham & Co Small Cap Value</i>		<i>Copeland Small Cap Dividend Growth</i>		<i>Emerald Small Cap Growth</i>	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
MFS Large Cap Value	--	--	66	19	66	19	2	9	0	0	1	0	0	0	0	0	0	0
Xponance S&P 500	66	95	--	--	500	98	21	91	0	0	8	1	0	0	0	0	0	0
Northern Trust S&P 500	66	95	500	99	--	--	21	91	0	0	7	0	0	0	0	0	0	0
Polen Focus Growth	2	3	21	21	21	21	--	--	0	0	2	1	0	0	0	0	0	0
Eagle Asset Mgmt	0	0	0	0	0	0	0	0	--	--	0	0	0	0	0	0	0	0
Northern Trust Dow Jones Completion Index	1	1	8	1	7	0	2	6	0	0	--	--	65	99	56	93	104	92
Smith, Graham & Co Small Cap Value	0	0	0	0	0	0	0	0	0	0	65	3	--	--	1	2	2	1
Copeland Small Cap Dividend Growth	0	0	0	0	0	0	0	0	0	0	56	3	1	2	--	--	6	3
Emerald Small Cap Growth	0	0	0	0	0	0	0	0	0	0	104	4	2	3	6	10	--	--

Common Holdings Matrix

	<i>Rhumbleline Global Min. Volatility</i>		<i>iShares MSCI ACWI</i>	
	#	%	#	%
Rhumbleline Global Min. Volatility	--	--	134	31
iShares MSCI ACWI	134	59	--	--

Common Holdings Matrix

	<i>SSGA MSCI World ex US</i>		<i>Hardman Johnston Int'l Equity</i>		<i>HGK Int'l Equity</i>		<i>SSGA MSCI Emerging Markets Index</i>	
	#	%	#	%	#	%	#	%
SSGA MSCI World ex US	--	--	16	65	18	69	1	0
Hardman Johnston Int'l Equity	16	6	--	--	2	8	6	8
HGK Int'l Equity	18	4	2	10	--	--	1	1
SSGA MSCI Emerging Markets Index	1	0	6	24	1	3	--	--