

Pennsylvania Municipal Retirement System

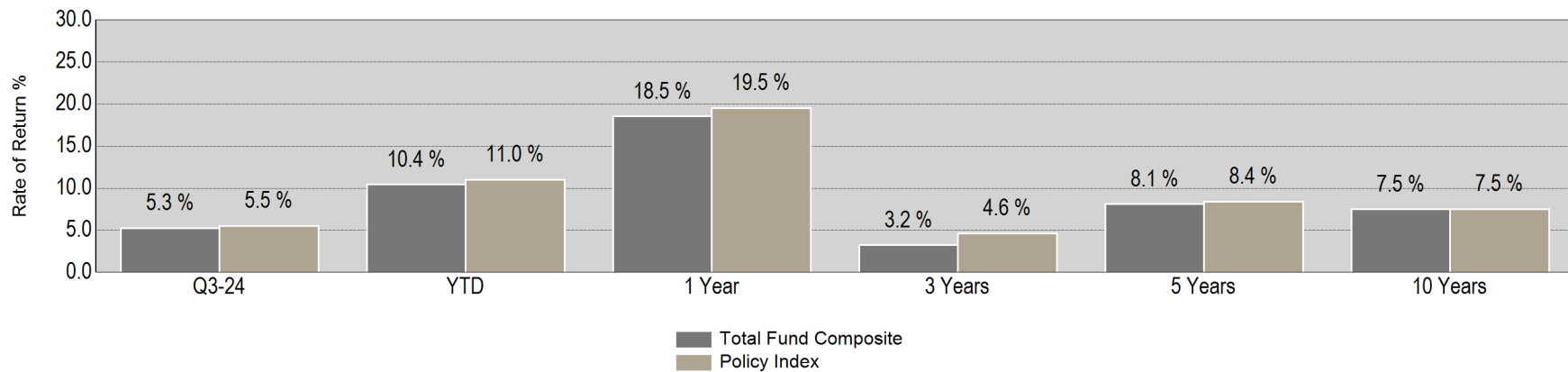
Quarterly Performance Report
As of September 30, 2024



Summary of Cash Flows

	Third Quarter	Year-To-Date	One Year	Three Years	Five Years	Ten Years
Beginning Market Value	\$3,403,160,448	\$3,290,113,763	\$3,053,608,056	\$3,424,004,219	\$2,611,855,597	\$1,971,541,479
Net Cash Flow	-\$25,996,615	-\$74,254,126	-\$62,950,895	-\$191,634,080	-\$269,198,163	-\$437,873,287
Net Investment Change	\$178,685,269	\$339,989,465	\$565,191,940	\$323,478,962	\$1,213,191,668	\$2,022,180,910
Ending Market Value	\$3,555,849,102	\$3,555,849,102	\$3,555,849,102	\$3,555,849,102	\$3,555,849,102	\$3,555,849,102

Return Summary (Net)



Asset Allocation vs. Target

	Current	Policy	Difference*	Policy Range	Within Range
U.S. Equity	34.9%	32.5%	\$85,093,037	27.0% - 38.0%	Yes
Global Equity	5.2%	5.0%	\$6,385,776	0.0% - 10.0%	Yes
Non-U.S. Equity	17.8%	17.5%	\$12,262,663	12.0% - 23.0%	Yes
Timberland/Farmland	4.7%	5.0%	-\$12,217,929	0.0% - 10.0%	Yes
Private Real Estate	9.2%	10.0%	-\$30,085,019	5.0% - 15.0%	Yes
High Yield	5.4%	5.0%	\$12,755,631	0.0% - 10.0%	Yes
U.S. Fixed Income	22.3%	24.0%	-\$60,453,051	19.0% - 29.0%	Yes
Cash Equivalent	0.6%	1.0%	-\$13,741,107	0.0% - 5.0%	Yes
Total	100.0%	100.0%			

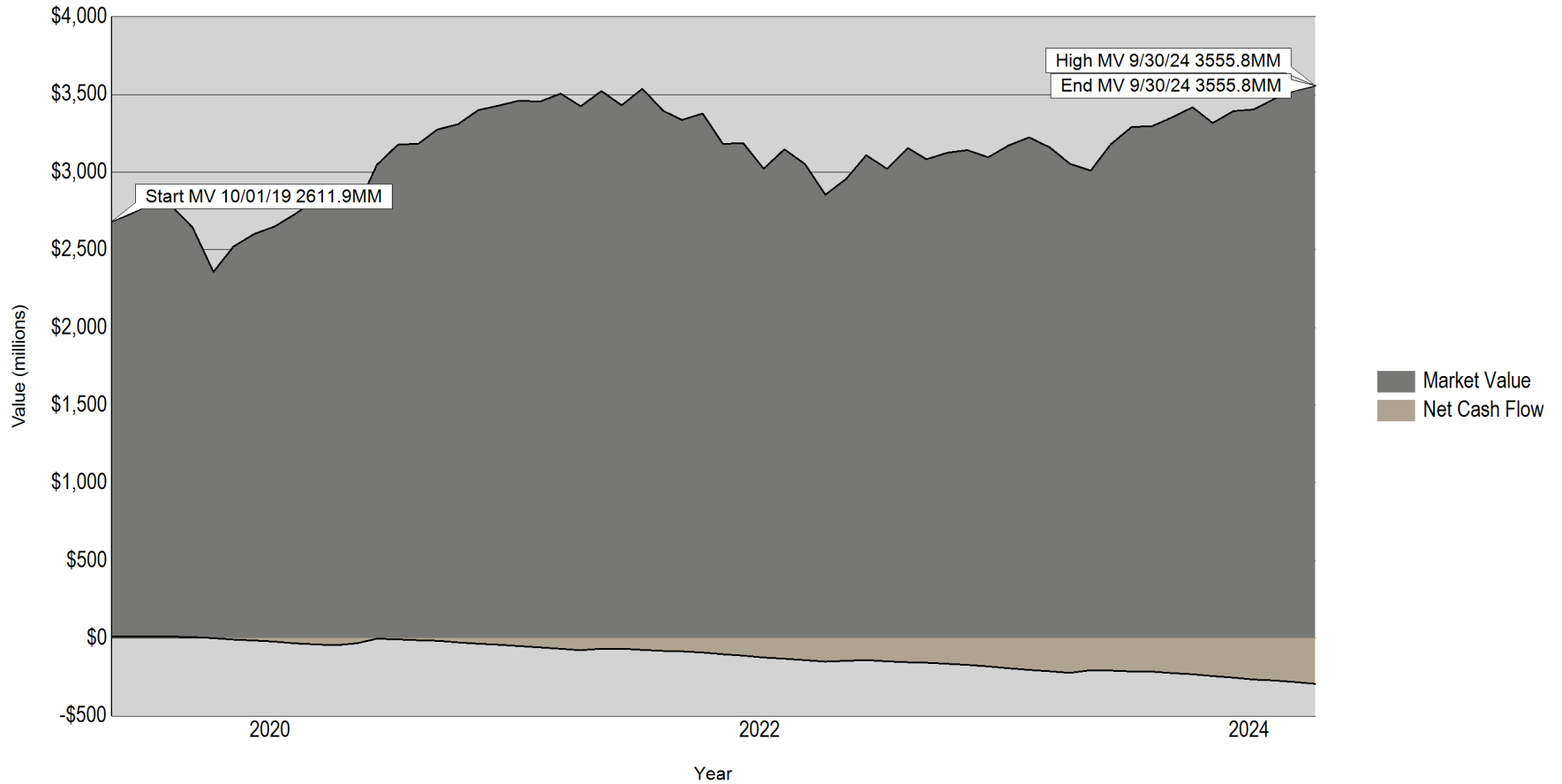
*Difference between Policy and Current Allocation

Cash Flow Summary by Manager From July 01, 2024 to September 30, 2024

	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
MFS Large Cap Value	\$147,704,202	\$0	\$12,306,954	\$160,011,156
Xponance S&P 500	\$314,707,106	\$0	\$18,482,703	\$333,189,810
Northern Trust S&P 500	\$309,388,737	\$3,138	\$18,205,744	\$327,597,618
Polen Focus Growth	\$124,143,709	\$0	\$4,848,744	\$128,992,453
Northern Trust Dow Jones Completion Index	\$116,403,257	\$4,321	\$9,402,030	\$125,809,608
Copeland SMID Cap Dividend Growth	\$56,688,349	\$0	\$3,976,444	\$60,664,793
Emerald Small Cap Growth	\$48,025,077	\$0	\$2,894,261	\$50,919,338
Channing Capital Management Small Cap Value	--	\$52,941,316	\$612,854	\$53,554,171
Dana Inv. Advisors Small Cap Value	\$49,668,054	-\$53,586,081	\$3,923,076	\$5,049
Rhumblin Global Min. Volatility	\$168,087,729	\$0	\$16,090,502	\$184,178,231
SSGA MSCI World ex US	\$291,130,342	\$29,076	\$22,605,189	\$313,764,607
Hardman Johnston Int'l Equity	\$110,757,208	\$0	\$6,498,181	\$117,255,389
Hudson Edge Int'l Equity	\$116,537,217	\$0	\$1,663,000	\$118,200,217
Jarislowsky, Fraser Limited	\$129,472	-\$6,889	\$4,489	\$127,071
SSGA MSCI Emerging Markets Index	\$78,801,176	\$9,585	\$6,378,210	\$85,188,971
Forest Investment Associates	\$162,548,725	\$303,024	\$2,722,777	\$165,574,526
PRISA LP	\$54,349,299	-\$530,834	\$273,481	\$54,091,947
PRISA II	\$108,835,894	-\$660,167	\$1,086,710	\$109,262,438
PennMuni-Nuveen U.S. Real Estate Fund	\$190,191,176	-\$29,403,938	\$0	\$160,787,238
N. Front Street (Nuveen)	\$1,358,268	\$0	\$0	\$1,358,268
SSGA US Aggregate Bond Index	\$399,537,899	\$11,548	\$20,788,252	\$420,337,699
Federated Hermes Core Aggregate Strategy	\$353,544,393	\$0	\$19,068,642	\$372,613,035
Ares Global Multi-Asset Credit	\$183,508,687	\$0	\$7,039,399	\$190,548,086
Cash Management	\$17,114,471	\$4,889,285	-\$186,373	\$21,817,384
Total	\$3,403,160,448	-\$25,996,615	\$178,685,269	\$3,555,849,102

*N. Front St. value as of 12/31/23. PennMuni-Nuveen RE value as of 6/30/24 adjusted for asset sale.

Market Value History



Pennsylvania Municipal Retirement System

Asset Allocation Summary

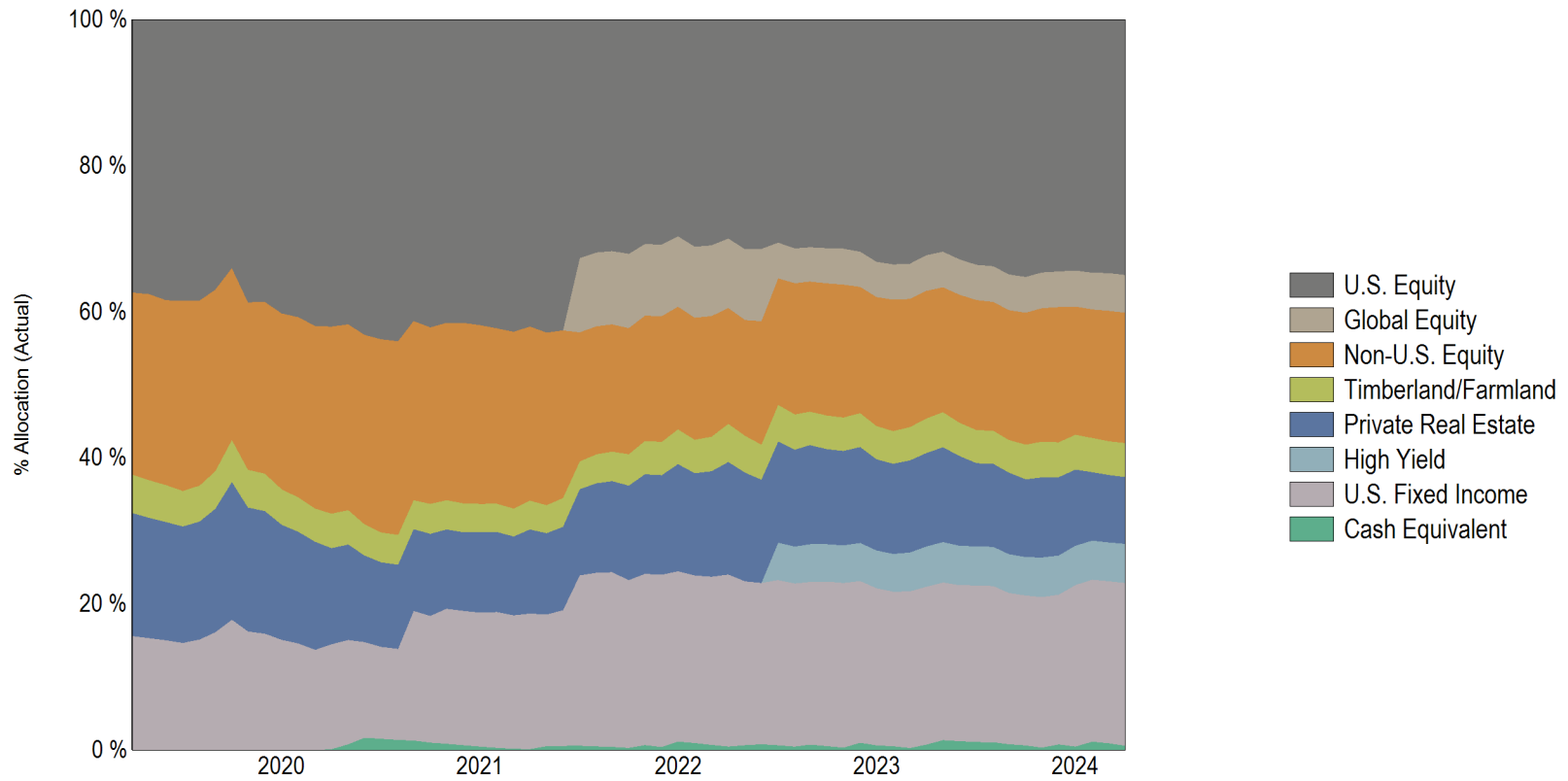
As of September 30, 2024

	Market Value	% of Portfolio	Policy %	Policy Difference
Total Fund Composite	3,555,849,102	100.0	100.0	0
Total Equity Composite	2,059,458,482	57.9	55.0	103,741,476
U.S. Equity Composite	1,240,743,995	34.9	32.5	85,093,037
MFS Large Cap Value	160,011,156	4.5		
Xponance S&P 500	333,189,810	9.4		
Northern Trust S&P 500	327,597,618	9.2		
Polen Focus Growth	128,992,453	3.6		
Northern Trust Dow Jones Completion Index	125,809,608	3.5		
Copeland SMID Cap Dividend Growth	60,664,793	1.7		
Emerald Small Cap Growth	50,919,338	1.4		
Channing Capital Management Small Cap Value	53,554,171	1.5		
Global Equity Composite	184,178,231	5.2	5.0	6,385,776
Rhumblin Global Min. Volatility	184,178,231	5.2		
Non-U.S. Equity Composite	634,536,256	17.8	17.5	12,262,663
SSGA MSCI World ex US	313,764,607	8.8		
Hardman Johnston Int'l Equity	117,255,389	3.3		
Hudson Edge Int'l Equity	118,200,217	3.3		
SSGA MSCI Emerging Markets Index	85,188,971	2.4		
Real Assets Composite	491,074,416	13.8	15.0	-42,302,949
Forest Investment Associates	165,574,526	4.7		
PRISA LP	54,091,947	1.5		
PRISA II	109,262,438	3.1		
PennMuni-Nuveen U.S. Real Estate Fund	160,787,238	4.5		
N. Front Street (Nuveen)	1,358,268	0.0		
Total Fixed Income Composite	983,498,820	27.7	29.0	-47,697,420
SSGA US Aggregate Bond Index	420,337,699	11.8		
Federated Hermes Core Aggregate Strategy	372,613,035	10.5		
Ares Global Multi-Asset Credit	190,548,086	5.4		
Cash Composite	21,817,384	0.6	1.0	-13,741,107

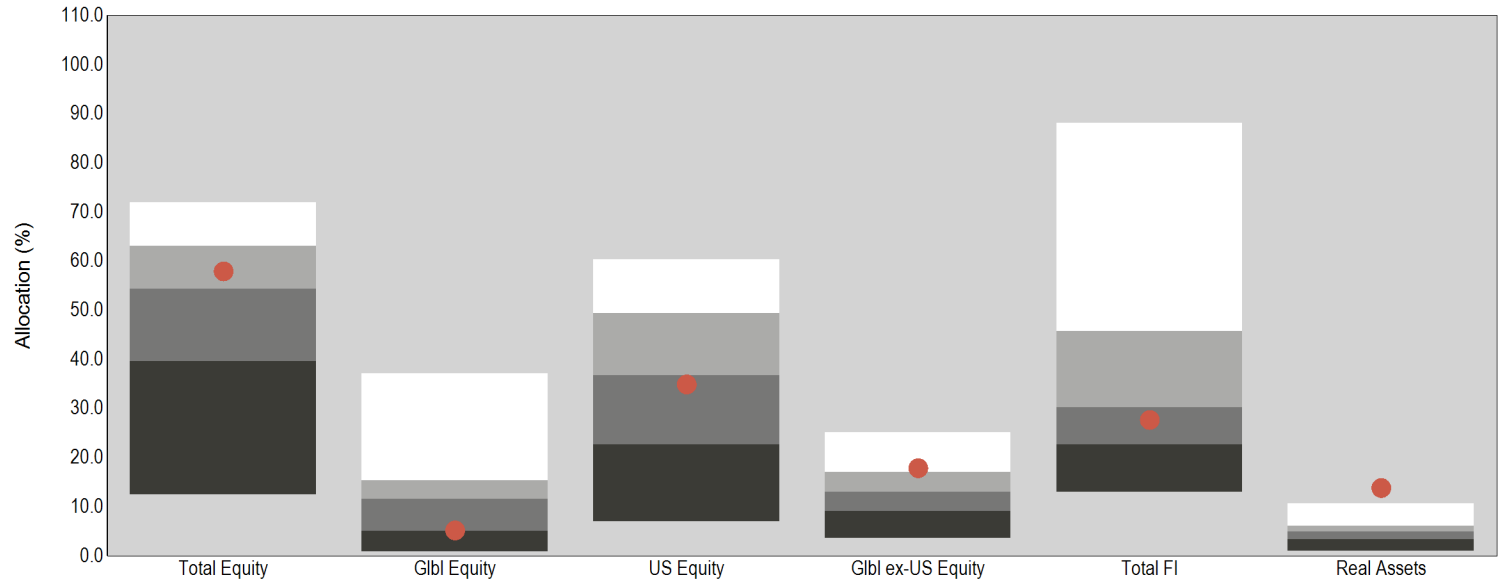
*N. Front St. value as of 12/31/23. PennMuni-Nuveen value as of 6/30/24 adjusted for asset sale.

*Residual value for Jarislowsky (approx. \$127k), and Dana (approx. \$5k) included in Non-US Equity, US Equity and Total Fund Composite values.

Asset Allocation History



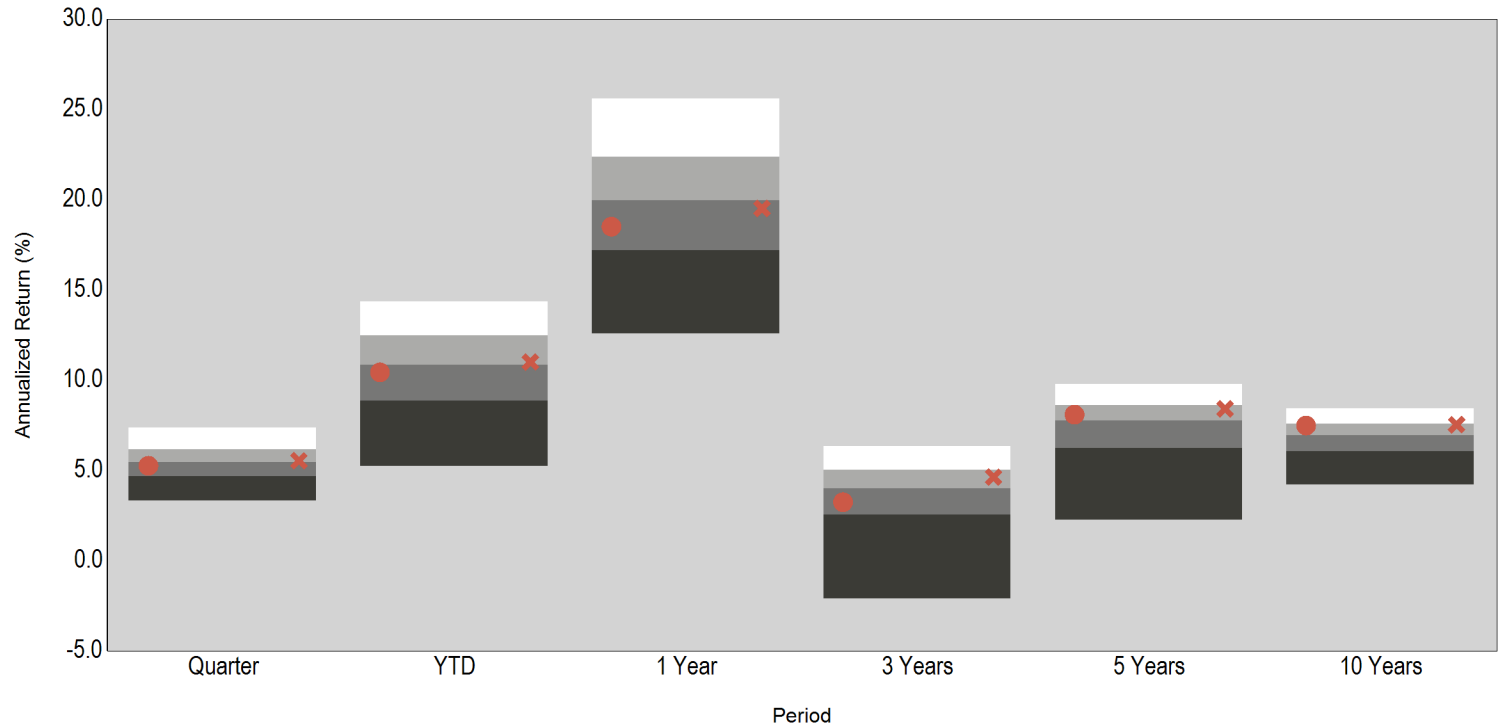
Total Plan Allocation vs. InvMetrics All DB Net
As of September 30, 2024



Allocation (Rank)

5th Percentile	72.0	37.1	60.3	25.1	88.2	10.6						
25th Percentile	63.1	15.4	49.4	17.1	45.7	6.1						
Median	54.4	11.6	36.7	12.9	30.2	4.9						
75th Percentile	39.6	5.1	22.7	9.0	22.7	3.3						
95th Percentile	12.4	0.8	7.0	3.6	13.0	1.0						
# of Portfolios	1,344	310	1,279	1,163	1,389	316						
● Total Fund Composite	57.9	(41)	5.2	(75)	34.9	(54)	17.8	(24)	27.7	(58)	13.8	(3)

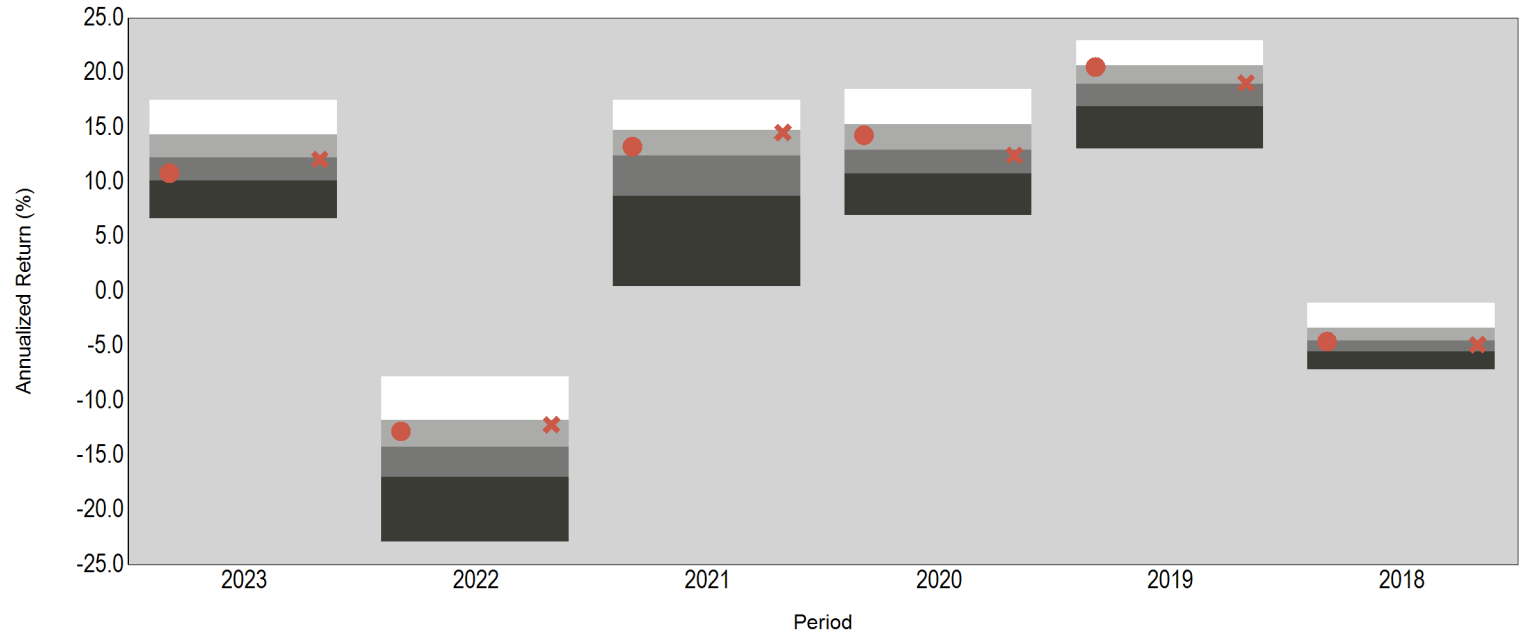
InvMetrics All DB Net Return Comparison



Return (Rank)

5th Percentile	7.4	14.4	25.6	6.3	9.8	8.4
25th Percentile	6.2	12.5	22.4	5.0	8.6	7.6
Median	5.4	10.8	19.9	4.0	7.7	6.9
75th Percentile	4.6	8.8	17.2	2.5	6.2	6.1
95th Percentile	3.3	5.2	12.6	-2.1	2.3	4.2
# of Portfolios	1,485	1,471	1,453	1,397	1,360	1,149
● Total Fund Composite	5.3 (58)	10.4 (55)	18.5 (64)	3.2 (67)	8.1 (41)	7.5 (29)
▲ Policy Index	5.5 (47)	11.0 (48)	19.5 (55)	4.6 (34)	8.4 (32)	7.5 (27)

InvMetrics All DB Net Return Comparison



Return (Rank)

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
October 01, 2019 Through September 30, 2024

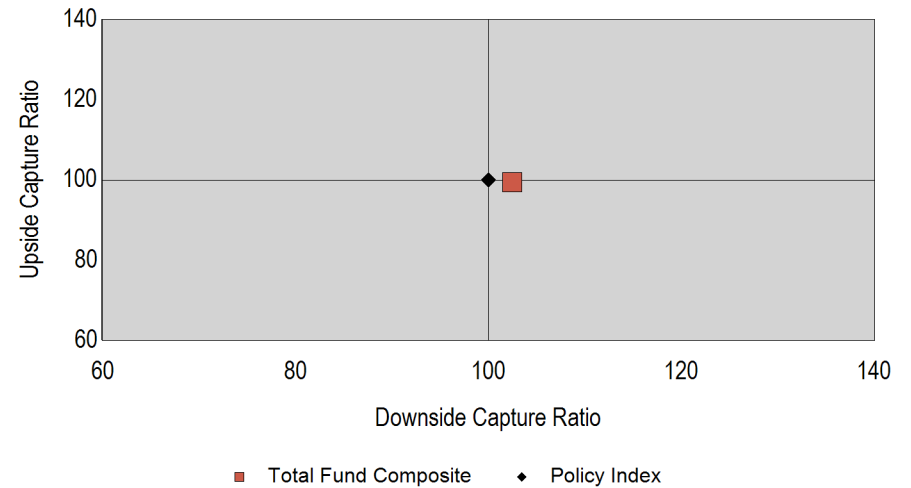
	Total Fund Composite	Policy Index
RETURN SUMMARY STATISTICS		
Number of Periods	20	20
Maximum Return	13.40	12.26
Minimum Return	-15.48	-14.88
Annualized Return	8.09	8.40
Total Return	47.53	49.69
Annualized Excess Return Over Risk Free	5.83	6.14
Annualized Excess Return	-0.32	0.00

	Total Fund Composite	Policy Index
RISK SUMMARY STATISTICS		
Beta	1.03	1.00
Upside Deviation	7.23	6.27
Downside Deviation	10.95	10.81

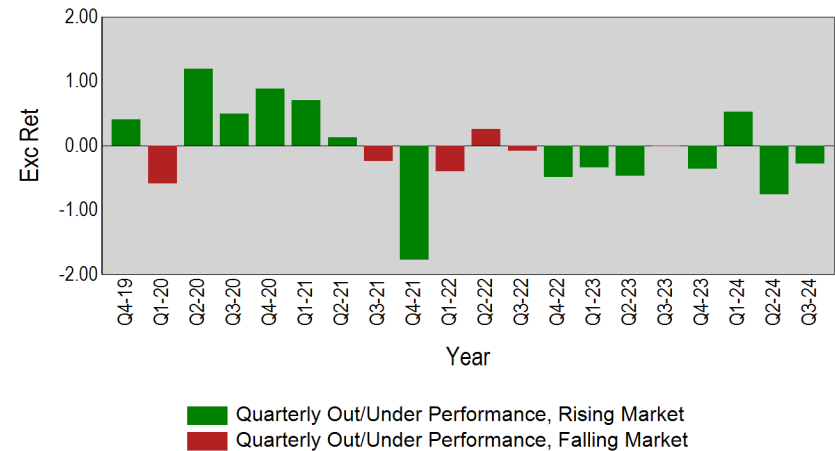
	Total Fund Composite	Policy Index
RISK/RETURN SUMMARY STATISTICS		
Annualized Standard Deviation	13.94	13.46
Alpha	-0.13	0.00
Sharpe Ratio	0.42	0.46
Excess Return Over Market / Risk	-0.02	0.00
Tracking Error	1.34	0.00
Information Ratio	-0.24	--

	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, 2024



Quarterly Excess Performance
Total Fund Composite vs. Policy Index



RISK RETURN STATISTICS
October 01, 2019 Through September 30, 2024

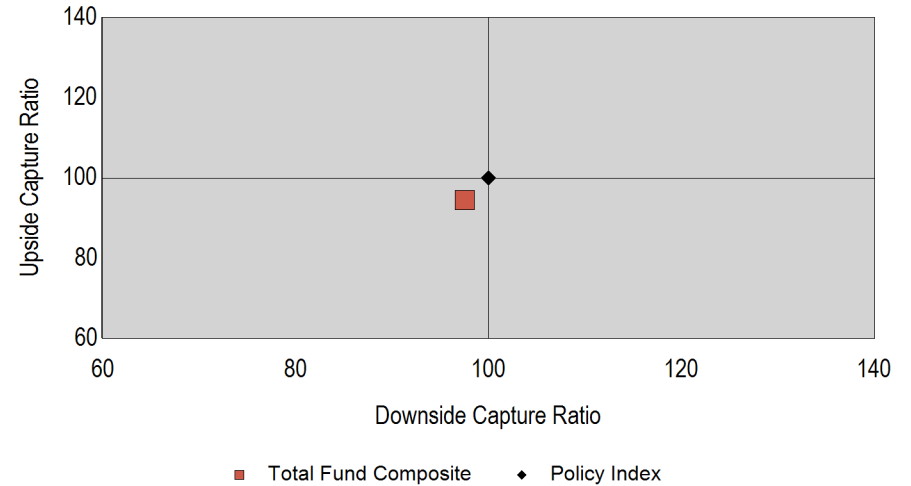
	Total Fund Composite	Policy Index
RETURN SUMMARY STATISTICS		
Number of Periods	60	60
Maximum Return	8.96	8.97
Minimum Return	-6.12	-9.50
Annualized Return	8.09	8.40
Total Return	47.53	49.69
Annualized Excess Return Over Risk Free	5.83	6.14
Annualized Excess Return	-0.32	0.00

	Total Fund Composite	Policy Index
RISK SUMMARY STATISTICS		
Beta	0.90	1.00
Upside Deviation	6.03	6.37
Downside Deviation	5.90	7.59

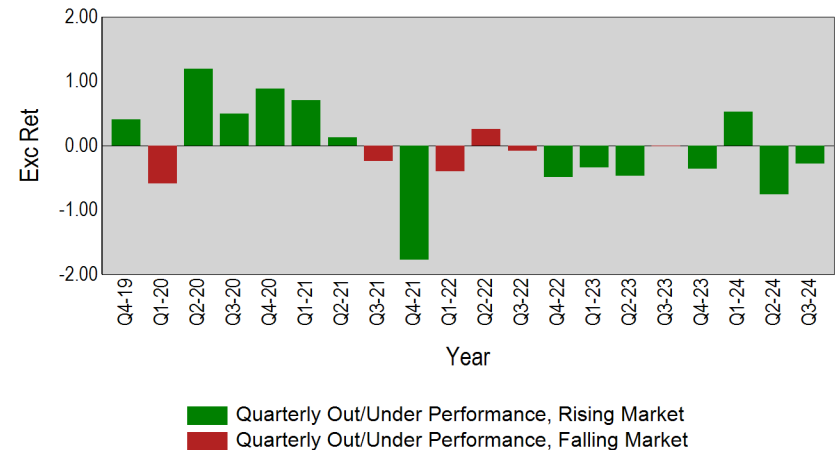
	Total Fund Composite	Policy Index
RISK/RETURN SUMMARY STATISTICS		
Annualized Standard Deviation	11.09	11.59
Alpha	0.04	0.00
Sharpe Ratio	0.53	0.53
Excess Return Over Market / Risk	-0.03	0.00
Tracking Error	3.93	0.00
Information Ratio	-0.08	--

	Total Fund Composite	Policy Index
CORRELATION STATISTICS		
R-Squared	0.89	1.00
Correlation	0.94	1.00

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



Quarterly Excess Performance
Total Fund Composite vs. Policy Index



Pennsylvania Municipal Retirement System

Performance Summary (Net)

As of September 30, 2024

	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Market Value	Inception	Inception Date
Total Fund Composite	5.3	10.4	18.5	3.2	8.1	7.5	3,555,849,102	8.5	Jan-86
Policy Index	5.5	11.0	19.5	4.6	8.4	7.5		9.0	Jan-86
InvMetrics All DB Net Rank	58	55	64	67	41	29		26	Jan-86
Total Equity Composite	6.6	15.9	28.5	5.7	--	--	2,059,458,482	12.4	Oct-20
MSCI ACWI IMI Net USD	6.8	17.8	31.0	7.4	--	--		12.4	Oct-20
U.S. Equity Composite	6.4	17.6	31.8	7.3	13.9	12.1	1,240,743,995	9.6	Jan-06
Russell 3000	6.2	20.6	35.2	10.3	15.3	12.8		10.4	Jan-06
InvMetrics Public DB US Eq Net Rank	65	78	81	89	72	55		76	Jan-06
MFS Large Cap Value	8.3	15.6	26.5	--	--	--	160,011,156	14.5	Jun-22
Russell 1000 Value	9.4	16.7	27.8	--	--	--		15.4	Jun-22
eV US Large Cap Value Equity Net Rank	43	58	61	--	--	--		63	Jun-22
Xponance S&P 500	5.9	22.1	36.3	--	--	--	333,189,810	8.8	Dec-21
S&P 500	5.9	22.1	36.4	--	--	--		8.8	Dec-21
eV US Large Cap Core Equity Net Rank	46	35	34	--	--	--		33	Dec-21
Northern Trust S&P 500	5.9	22.1	36.3	--	--	--	327,597,618	8.8	Dec-21
S&P 500	5.9	22.1	36.4	--	--	--		8.8	Dec-21
eV US Large Cap Core Equity Net Rank	45	35	34	--	--	--		33	Dec-21
Polen Focus Growth	3.9	10.6	26.2	0.2	12.0	14.6	128,992,453	14.8	Oct-10
Russell 1000 Growth	3.2	24.5	42.2	12.0	19.7	16.5		16.8	Oct-10
eV US Large Cap Growth Equity Net Rank	39	98	95	95	92	47		51	Oct-10
Northern Trust Dow Jones Completion Index	8.1	11.6	28.5	--	--	--	125,809,608	1.0	Dec-21
Dow Jones U.S. Completion Total Stock Market	8.1	11.6	28.2	--	--	--		0.9	Dec-21
eV US Small-Mid Cap Core Equity Net Rank	55	60	23	--	--	--		83	Dec-21
Copeland SMID Cap Dividend Growth	7.0	8.8	20.3	6.9	10.0	--	60,664,793	10.1	Sep-17
Russell 2500	8.7	11.3	26.2	2.0	9.5	--		7.4	Sep-17
Russell 2000	9.3	11.2	26.8	1.8	9.4	--		7.4	Sep-17
eV US Small Cap Core Equity Net Rank	78	76	86	24	70	--		24	Sep-17
Emerald Small Cap Growth	6.0	15.5	32.5	1.0	10.7	11.0	50,919,338	10.5	Oct-98
Russell 2000 Growth	8.4	13.2	27.7	-0.4	8.8	8.9		7.9	Oct-98
eV US Small Cap Growth Equity Net Rank	77	30	17	33	42	42		53	Oct-98
Channing Capital Management Small Cap Value	--	--	--	--	--	--	53,554,171	0.6	Aug-24
Russell 2000 Value	--	--	--	--	--	--		0.1	Aug-24
eV US Small Cap Value Equity Net Rank	--	--	--	--	--	--		32	Aug-24

Pennsylvania Municipal Retirement System

Performance Summary (Net)

As of September 30, 2024

	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Market Value	Inception	Inception Date
Global Equity Composite	9.6	15.8	23.3	--	--	--	184,178,231	3.0	Dec-21
<i>Global Equity Policy Index</i>	9.8	15.4	22.9	--	--	--		2.7	Dec-21
<i>InvMetrics Public DB Gbl Eq Net Rank</i>	3	73	82	--	--	--		98	Dec-21
Rhumblin Global Min. Volatility	9.6	15.8	23.3	--	--	--	184,178,231	4.2	Dec-21
<i>MSCI ACWI Minimum Volatility Index</i>	9.8	15.4	22.9	--	--	--		4.0	Dec-21
<i>MSCI ACWI</i>	6.6	18.7	31.8	--	--	--		6.3	Dec-21
<i>eV Global Low Volatility Equity Net Rank</i>	39	48	63	--	--	--		73	Dec-21
Non-U.S Equity Composite	6.2	12.8	23.8	2.8	8.3	6.1	634,536,256	7.5	May-12
<i>MSCI ACWI ex USA IMI</i>	8.2	13.9	25.1	3.7	7.7	5.3		7.1	May-12
<i>InvMetrics Public DB ex-US Eq Net Rank</i>	88	71	64	60	26	18		30	May-12
SSGA MSCI World ex US	7.8	13.3	25.3	6.0	8.7	6.0	313,764,607	6.9	Apr-12
<i>MSCI World ex USA</i>	7.8	13.1	25.0	5.6	8.4	5.7		6.5	Apr-12
<i>eV ACWI ex-US Large Cap Equity Net Rank</i>	37	51	50	29	41	49		40	Apr-12
Hardman Johnston Int'l Equity	5.9	17.1	23.1	-3.1	8.1	7.5	117,255,389	8.0	Apr-12
<i>MSCI EAFE</i>	7.3	13.0	24.8	5.5	8.2	5.7		6.6	Apr-12
<i>eV EAFE All Cap Equity Net Rank</i>	76	8	63	95	50	11		17	Apr-12
Hudson Edge Int'l Equity	1.4	5.8	19.4	3.5	9.2	7.1	118,200,217	8.8	Feb-12
<i>MSCI EAFE</i>	7.3	13.0	24.8	5.5	8.2	5.7		7.0	Feb-12
<i>eV EAFE All Cap Equity Net Rank</i>	99	97	90	67	27	17		11	Feb-12
SSGA MSCI Emerging Markets Index	8.1	15.8	24.8	0.1	5.5	3.8	85,188,971	6.9	Nov-08
<i>MSCI Emerging Markets</i>	8.7	16.9	26.1	0.4	5.7	4.0		7.2	Nov-08
<i>eV Emg Mkts Equity Net Rank</i>	34	42	45	56	64	72		76	Nov-08

Pennsylvania Municipal Retirement System

Performance Summary (Net)

As of September 30, 2024

	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Market Value	Inception	Inception Date
Real Assets Composite	0.8	0.0	-1.8	1.2	2.7	4.8	491,074,416	7.0	Apr-93
<i>Real Assets Policy Index</i>	0.5	-0.4	-2.2	3.2	4.7	6.5		7.2	Apr-93
Forest Investment Associates	1.7	10.6	14.7	11.1	7.4	5.6	165,574,526	4.7	Mar-99
<i>NCREIF Timberland Property Index</i>	1.5	5.5	10.0	10.9	7.5	5.9		6.4	Mar-99
PRISA LP	0.5	-4.1	-8.7	-1.7	2.0	5.4	54,091,947	5.8	Jan-86
<i>NFI-ODCE</i>	0.0	-3.2	-8.0	-1.0	2.1	5.2		5.7	Jan-86
<i>InvMetrics Public DB Real Estate Priv Net Rank</i>	7	72	64	64	50	21		--	Jan-86
PRISA II	1.0	-4.4	-9.5	-2.2	1.7	5.6	109,262,438	3.1	Jul-07
<i>NFI-ODCE</i>	0.0	-3.2	-8.0	-1.0	2.1	5.2		3.9	Jul-07
<i>InvMetrics Public DB Real Estate Priv Net Rank</i>	6	73	91	74	63	17		--	Jul-07
PennMuni-Nuveen U.S. Real Estate Fund	0.0	-4.4	-6.8	-2.7	0.4	4.7	160,787,238	4.4	Dec-08
<i>NFI-ODCE</i>	0.0	-3.2	-8.0	-1.0	2.1	5.2		4.6	Dec-08
<i>InvMetrics Public DB Real Estate Priv Net Rank</i>	57	73	32	91	91	44		--	Dec-08
N. Front Street (Nuveen)	0.0	0.0	-7.2	-10.9	-6.3	--	1,358,268	-7.4	Sep-16
<i>Consumer Price Index</i>	0.4	2.8	2.4	4.8	4.2	--		3.4	Sep-16
Total Fixed Income Composite	5.0	5.5	12.3	-0.8	0.7	2.0	983,498,820	5.7	Jan-86
<i>Bloomberg US Aggregate TR</i>	5.2	4.4	11.6	-1.4	0.3	1.8		5.6	Jan-86
<i>InvMetrics Public DB US Fix Inc Net Rank</i>	42	20	23	69	79	65		--	Jan-86
SSGA US Aggregate Bond Index	5.2	4.6	11.6	-1.4	0.3	1.9	420,337,699	4.4	Apr-97
<i>Bloomberg US Aggregate TR</i>	5.2	4.4	11.6	-1.4	0.3	1.8		4.3	Apr-97
<i>eV US Core Fixed Inc Net Rank</i>	41	77	69	74	85	78		78	Apr-97
Federated Hermes Core Aggregate Strategy	5.4	5.0	12.4	--	--	--	372,613,035	3.1	Jul-22
<i>Bloomberg US Aggregate TR</i>	5.2	4.4	11.6	--	--	--		3.0	Jul-22
<i>eV US Core Fixed Inc Net Rank</i>	16	28	21	--	--	--		72	Jul-22
Ares Global Multi-Asset Credit	3.8	8.3	13.4	--	--	--	190,548,086	12.6	Dec-22
<i>50% Bloomberg HY / 50% CSFB Lev Loans</i>	3.7	7.3	12.7	--	--	--		11.8	Dec-22
<i>eV US High Yield Fixed Inc Net Rank</i>	74	17	73	--	--	--		11	Dec-22
Cash Composite							21,817,384		

*N. Front St. value as of 12/31/23. PennMuni-Nuveen value as of 6/30/24 adjusted for asset sale.

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	---
Channing Capital Small Cap Value	US Stock Small Cap Value	In Compliance	---
Copeland SMID Cap Dividend Growth	US Stock SMID 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

Total Fund Composite		
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
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		
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
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		
10/1/2024	Present	0.0
1/1/2022	9/30/2024	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

Pennsylvania Municipal Retirement System

Fee Summary

As of September 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	4.5%	\$545,036	0.34%
Xponance S&P 500	0.02% of Assets	9.4%	\$66,638	0.02%
Northern Trust S&P 500	0.00% of Assets	9.3%	\$13,104	0.00%
Polen Focus Growth	0.50% of First 100.0 Mil, 0.40% Thereafter	3.7%	\$615,970	0.48%
Northern Trust Dow Jones Completion Index	0.02% of Assets	3.6%	\$18,871	0.02%
Copeland SMID Cap Dividend Growth	0.50% of Assets	1.7%	\$303,324	0.50%
Emerald Small Cap Growth	0.60% of First 10.0 Mil, 0.55% of Next 5.0 Mil, 0.50% Thereafter	1.4%	\$267,097	0.52%
Channing Capital Management Small Cap Value	0.65% of First 25.0 Mil, 0.60% of Next 75.0 Mil, 0.50% Thereafter	1.5%	\$333,825	0.62%
Rhumblin Global Min. Volatility	0.07% of Assets	5.2%	\$119,716	0.06%
SSGA MSCI World ex US	0.04% of Assets	8.9%	\$125,506	0.04%
Hardman Johnston Int'l Equity	0.75% of First 25.0 Mil, 0.60% Thereafter	3.3%	\$741,032	0.63%
Hudson Edge Int'l Equity	0.65% of Assets	3.3%	\$768,301	0.65%
SSGA MSCI Emerging Markets Index	0.05% of Assets	2.4%	\$42,594	0.05%
Forest Investment Associates	0.75% of Assets	4.7%	\$1,241,809	0.75%

Pennsylvania Municipal Retirement System

Fee Summary

As of September 30, 2024

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	1.5%	\$522,282	0.97%
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	3.1%	\$1,200,493	1.10%
PennMuni-Nuveen U.S. Real Estate Fund	0.85% of Assets	4.5%	\$1,366,692	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	11.9%	\$51,525	0.01%
Federated Hermes Core Aggregate Strategy	0.12% of First 100.0 Mil, 0.10% of Next 400.0 Mil, 0.07% Thereafter	10.5%	\$392,613	0.11%
Ares Global Multi-Asset Credit	0.35% of Assets	5.4%	\$666,918	0.35%
Investment Management Fee		100.0%	\$9,414,892	0.27%

Pennsylvania Municipal Retirement System

Total Equity Composite

As of September 30, 2024

Characteristics

	Portfolio	MSCI ACWI IMI Net USD
Number of Holdings	5,937	8,713
Weighted Avg. Market Cap. (\$B)	450.9	587.5
Median Market Cap. (\$B)	6.9	2.4
Price To Earnings	22.6	22.0
Price To Book	3.7	3.7
Price To Sales	2.0	1.9
Return on Equity (%)	18.9	19.0
Yield (%)	1.8	1.9

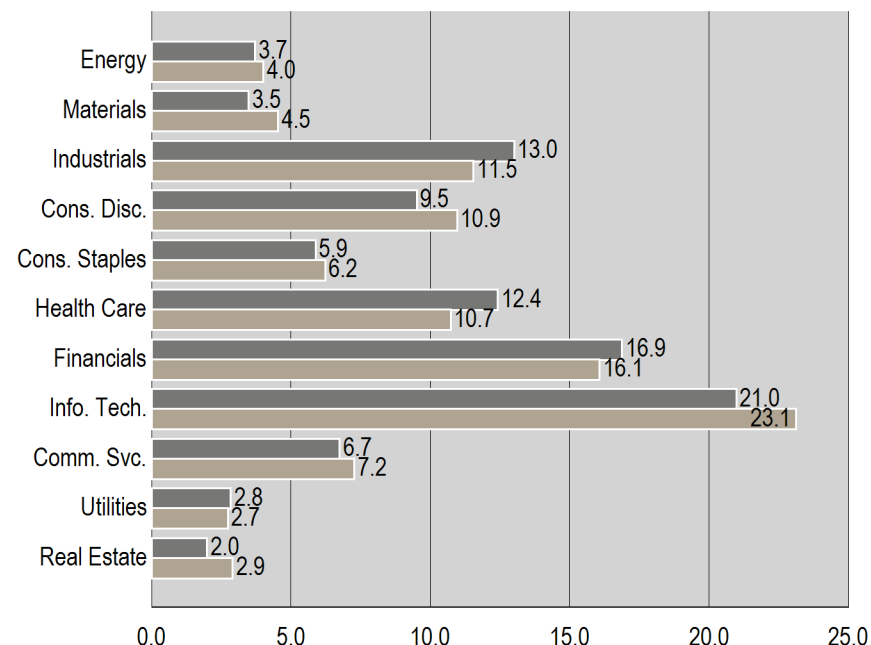
Top Holdings

MICROSOFT CORP	2.8%
APPLE INC	2.7%
NVIDIA CORPORATION	2.0%
AMAZON.COM INC	1.6%
ISHARES MSCI EMERGING MARKETS MIN VOL FACTOR ETF	1.2%
META PLATFORMS INC	0.8%
ALPHABET INC	0.8%
ALPHABET INC	0.8%
JPMORGAN CHASE & CO	0.8%
VISA INC	0.7%
Total	14.1%

Market Capitalization

	Small Cap	Mid Cap	Large Cap	Unclassified
Total Equity Composite	15.4%	16.4%	63.4%	4.8%
MSCI ACWI IMI Net USD	16.5%	15.2%	68.3%	0.0%
<i>Weight Over/Under</i>	<i>-1.1%</i>	<i>1.1%</i>	<i>-4.8%</i>	<i>4.8%</i>

Sector Allocation (%) vs MSCI ACWI IMI Net USD



Region Allocation Summary

Region	% of Total	% of Bench	% Diff
North America ex U.S.	3.5%	2.8%	0.7%
United States	64.6%	62.9%	1.7%
Europe Ex U.K.	13.6%	11.2%	2.3%
United Kingdom	3.6%	3.4%	0.1%
Pacific Basin Ex Japan	3.1%	2.8%	0.4%
Japan	5.0%	5.6%	-0.6%
Emerging Markets	5.9%	10.9%	-5.0%
Other	0.7%	0.3%	0.4%
Total	100.0%	100.0%	0.0%

Characteristics

	Portfolio	Russell 3000
Number of Holdings	3,685	2,964
Weighted Avg. Market Cap. (\$B)	662.6	874.2
Median Market Cap. (\$B)	3.0	2.7
Price To Earnings	26.4	27.2
Price To Book	4.4	4.6
Price To Sales	2.6	2.9
Return on Equity (%)	21.8	22.7
Yield (%)	1.3	1.3

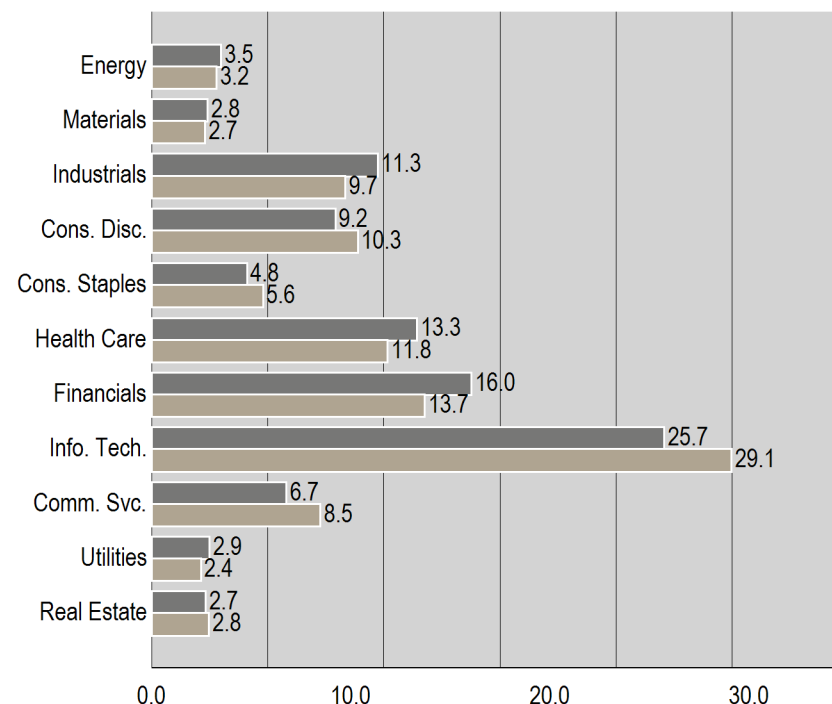
Top Holdings

MICROSOFT CORP	4.4%
APPLE INC	4.4%
NVIDIA CORPORATION	3.3%
AMAZON.COM INC	2.6%
META PLATFORMS INC	1.4%
ALPHABET INC	1.3%
ALPHABET INC	1.3%
JPMORGAN CHASE & CO	1.2%
VISA INC	1.1%
MASTERCARD INC	1.0%
Total	22.0%

Market Capitalization

	Small Cap	Mid Cap	Large Cap	Unclassified
U.S. Equity Composite	5.7%	24.2%	66.5%	3.6%
Russell 3000	5.8%	19.5%	74.7%	0.0%
<i>Weight Over/Under</i>	-0.1%	4.7%	-8.2%	3.6%

Sector Allocation (%) vs Russell 3000



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>Northern Trust Dow Jones Completion Index</i>		<i>Copeland SMID Cap Dividend Growth</i>		<i>Emerald Small Cap Growth</i>		<i>Channing Capital Management Small Cap Value</i>		<i>Dana Inv. Advisors Small Cap Value</i>		
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	
MFS Large Cap Value	--	--	65	16	67	17	2	8	0	0	0	0	0	0	0	0	0	0	0
Xponance S&P 500	65	95	--	--	500	100	21	89	3	0	9	12	0	0	0	0	0	0	0
Northern Trust S&P 500	67	97	500	99	--	--	21	89	6	0	9	12	0	0	0	0	0	0	0
Polen Focus Growth	2	3	21	29	21	29	--	--	1	1	0	0	0	0	0	0	0	0	0
Northern Trust Dow Jones Completion Index	0	0	3	0	6	0	1	3	--	--	58	82	106	95	43	97	0	0	0
Copeland SMID Cap Dividend Growth	0	0	9	0	9	0	0	0	58	6	--	--	6	4	5	11	0	0	0
Emerald Small Cap Growth	0	0	0	0	0	0	0	0	106	5	6	8	--	--	8	16	0	0	0
Channing Capital Management Small Cap Value	0	0	0	0	0	0	0	0	43	3	5	6	8	8	--	--	0	0	0
Dana Inv. Advisors Small Cap Value	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	--	--	0

Characteristics

	Portfolio	MSCI ACWI IMI Net USD
Number of Holdings	269	8,713
Weighted Avg. Market Cap. (\$B)	132.4	587.5
Median Market Cap. (\$B)	25.6	2.4
Price To Earnings	19.0	22.0
Price To Book	3.4	3.7
Price To Sales	1.3	1.9
Return on Equity (%)	20.2	19.0
Yield (%)	2.3	1.9

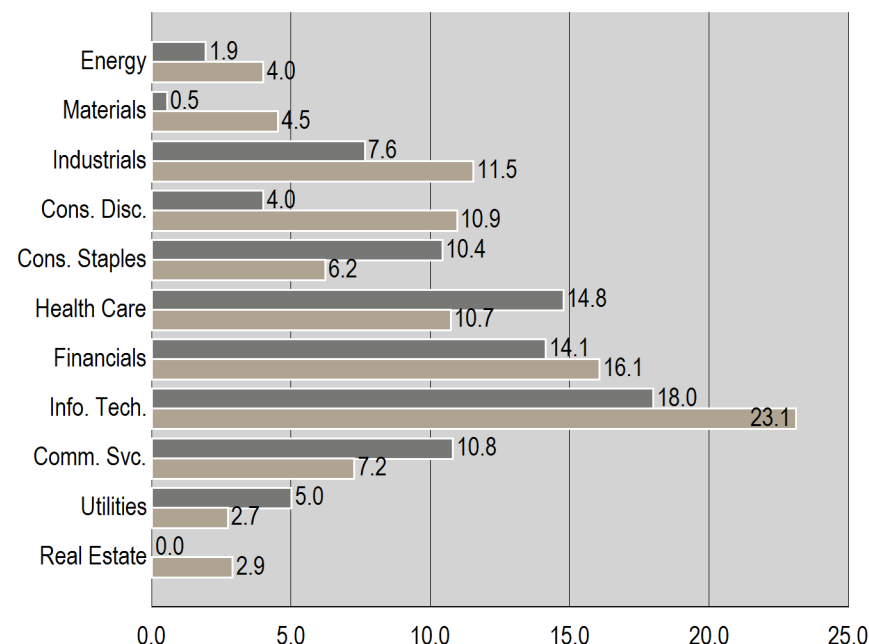
Top Holdings

ISHARES MSCI EMERGING MARKETS MIN VOL FACTOR ETF	12.8%
T-MOBILE US INC	1.8%
WALMART INC	1.7%
MOTOROLA SOLUTIONS INC	1.7%
WASTE MANAGEMENT INC.	1.5%
CISCO SYSTEMS INC	1.4%
ROPER TECHNOLOGIES INC	1.3%
MERCK & CO INC	1.2%
REPUBLIC SERVICES INC.	1.2%
MCKESSON CORP	1.2%
Total	25.8%

Market Capitalization

	Small Cap	Mid Cap	Large Cap	Unclassified
Global Equity Composite	18.4%	25.7%	55.9%	0.1%
MSCI ACWI IMI Net USD	16.5%	15.2%	68.3%	0.0%
<i>Weight Over/Under</i>	1.9%	10.4%	-12.4%	0.1%

Sector Allocation (%) vs MSCI ACWI IMI Net USD



Region Allocation Summary

Region	% of Total	% of Bench	% Diff
North America ex U.S.	1.2%	2.8%	-1.6%
United States	69.6%	62.9%	6.7%
Europe Ex U.K.	6.3%	11.2%	-4.9%
United Kingdom	0.4%	3.4%	-3.1%
Pacific Basin Ex Japan	3.1%	2.8%	0.4%
Japan	10.3%	5.6%	4.6%
Emerging Markets	7.6%	10.9%	-3.3%
Other	1.5%	0.3%	1.2%
Total	100.0%	100.0%	0.0%

Characteristics

	Portfolio	MSCI ACWI ex USA IMI
Number of Holdings	2,255	6,388
Weighted Avg. Market Cap. (\$B)	107.0	97.9
Median Market Cap. (\$B)	11.0	2.0
Price To Earnings	17.4	16.2
Price To Book	2.8	2.6
Price To Sales	1.4	1.2
Return on Equity (%)	14.0	13.7
Yield (%)	2.5	2.9

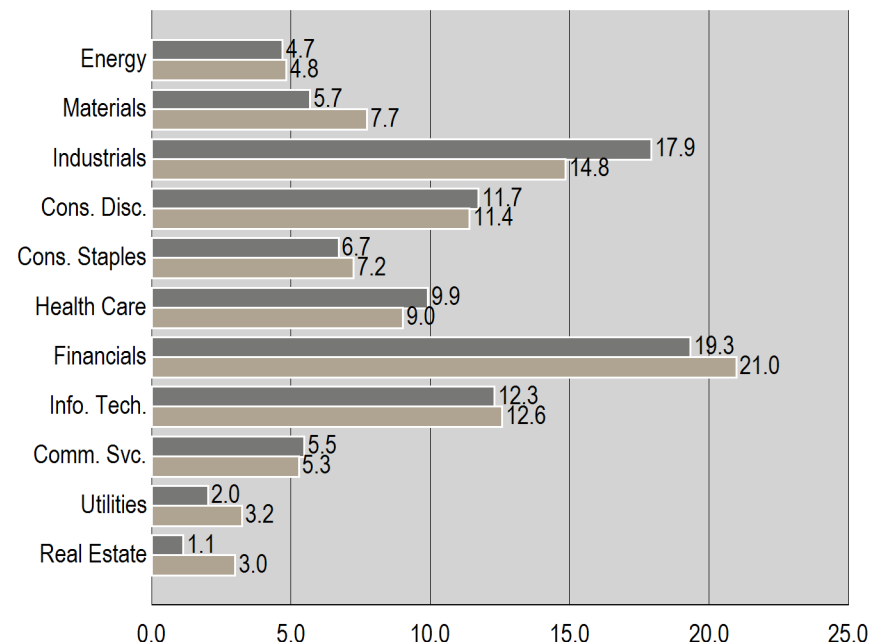
Top Holdings

TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	2.3%
RHEINMETALL	1.8%
ASTRAZENECA PLC	1.5%
ASML HOLDING NV	1.5%
AIA GROUP LTD	1.5%
AIRBUS SE	1.3%
SAFRAN SA	1.2%
KEYENCE CORP	1.2%
DEUTSCHE TELEKOM AG	1.2%
BAE SYSTEMS PLC	1.1%
Total	14.5%

Market Capitalization

	Small Cap	Mid Cap	Large Cap	Unclassified
Non-U.S Equity Composite	11.7%	27.2%	52.5%	8.6%
MSCI ACWI ex USA IMI	27.8%	22.2%	50.0%	0.0%
<i>Weight Over/Under</i>	-16.1%	5.0%	2.5%	8.6%

Sector Allocation (%) vs MSCI ACWI ex USA IMI



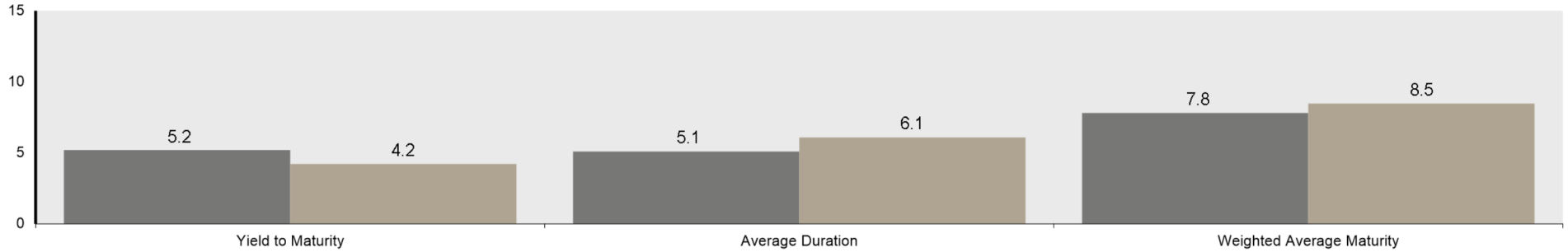
Region Allocation Summary

Region	% of Total	% of Bench	% Diff
North America ex U.S.	10.1%	7.6%	2.5%
United States	1.6%	0.0%	1.6%
Europe Ex U.K.	37.2%	30.3%	7.0%
United Kingdom	9.7%	9.3%	0.4%
Pacific Basin Ex Japan	9.1%	7.4%	1.7%
Japan	13.6%	15.2%	-1.6%
Emerging Markets	17.5%	29.4%	-11.9%
Other	1.2%	0.9%	0.3%
Total	100.0%	100.0%	0.0%

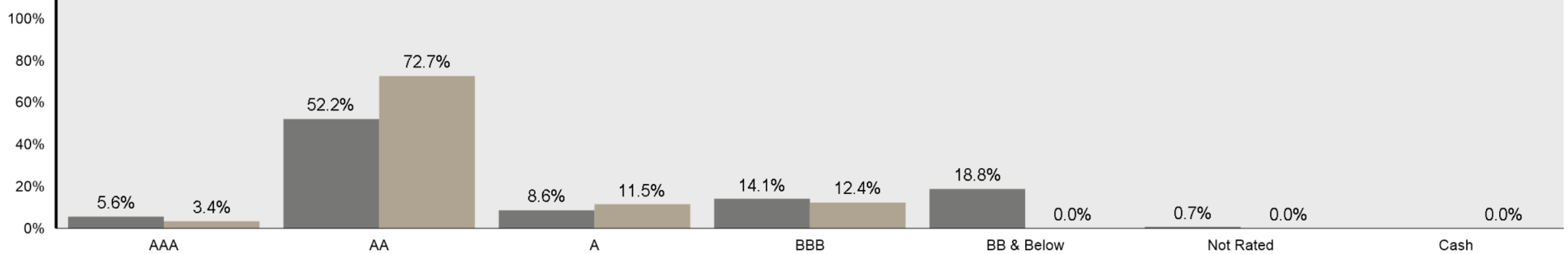
Common Holdings Matrix

	<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	--	--	15	61	24	73	2	0
Hardman Johnston Int'l Equity	15	6	--	--	2	6	5	11
Hudson Edge Int'l Equity	24	4	2	10	--	--	3	3
SSGA MSCI Emerging Markets Index	2	0	5	15	3	9	--	--

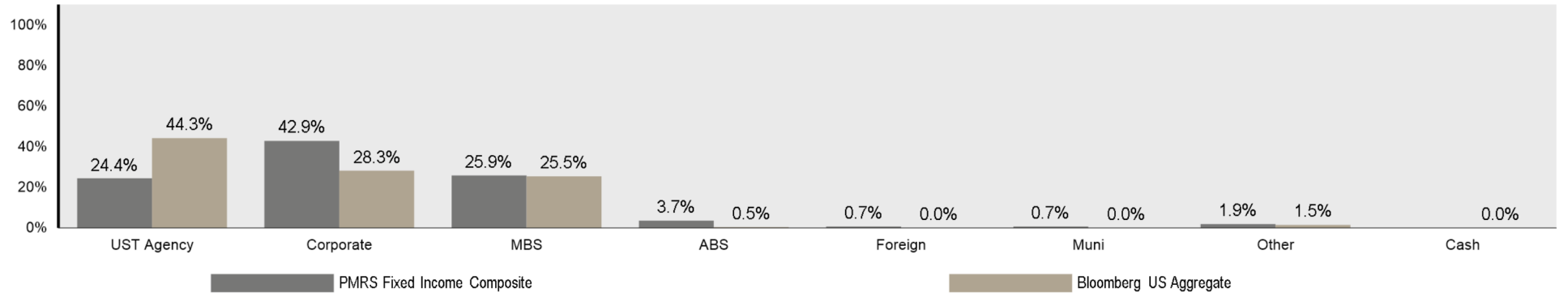
Yield to Maturity



Credit Quality



US Sector



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	72	864
Weighted Avg. Market Cap. (\$B)	155.2	175.4
Median Market Cap. (\$B)	97.6	15.1
Price To Earnings	21.7	21.2
Price To Book	3.3	2.8
Price To Sales	2.2	2.0
Return on Equity (%)	22.9	16.1
Yield (%)	2.2	2.1

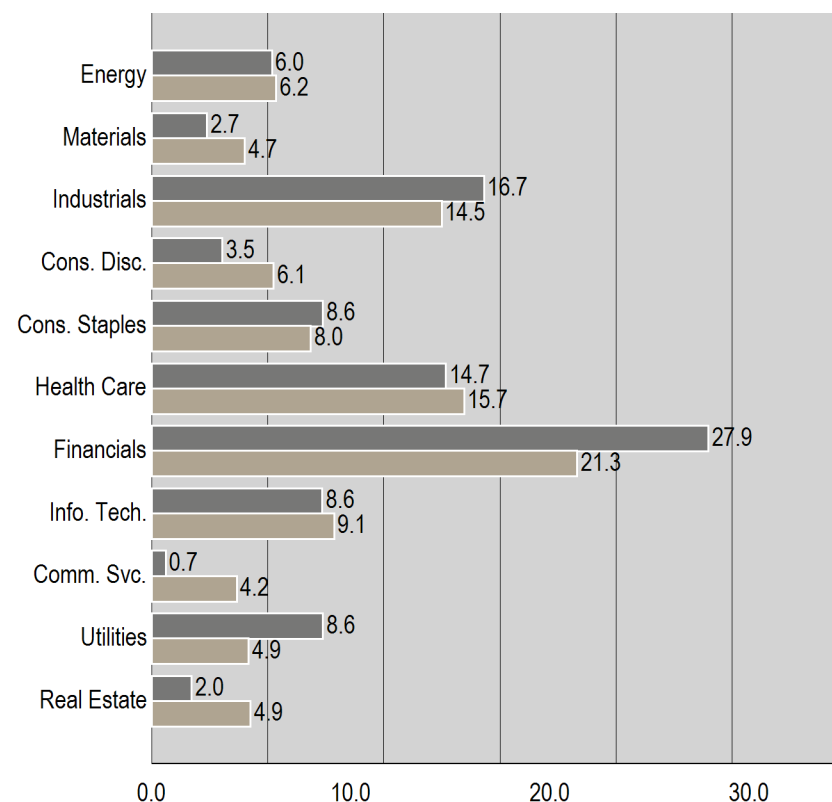
Top Holdings

JPMORGAN CHASE & CO	4.6%
PROGRESSIVE CORP (THE)	4.0%
THE CIGNA GROUP	3.1%
AON PLC	2.4%
MARSH & MCLENNAN COMPANIES INC	2.4%
MCKESSON CORP	2.3%
AMERICAN EXPRESS CO	2.3%
LOWE'S COS INC	2.3%
JOHNSON & JOHNSON	2.2%
GENERAL DYNAMICS CORP	2.2%
Total	27.7%

Market Capitalization

	Small Cap	Mid Cap	Large Cap
MFS Large Cap Value	0.0%	8.8%	91.2%
Russell 1000 Value	3.0%	30.8%	66.2%
<i>Weight Over/Under</i>	<i>-3.0%</i>	<i>-22.0%</i>	<i>25.0%</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	500
Weighted Avg. Market Cap. (\$B)	995.0	980.9
Median Market Cap. (\$B)	38.2	38.2
Price To Earnings	28.2	28.2
Price To Book	5.1	5.1
Price To Sales	3.3	3.3
Return on Equity (%)	33.7	33.6
Yield (%)	1.3	1.3

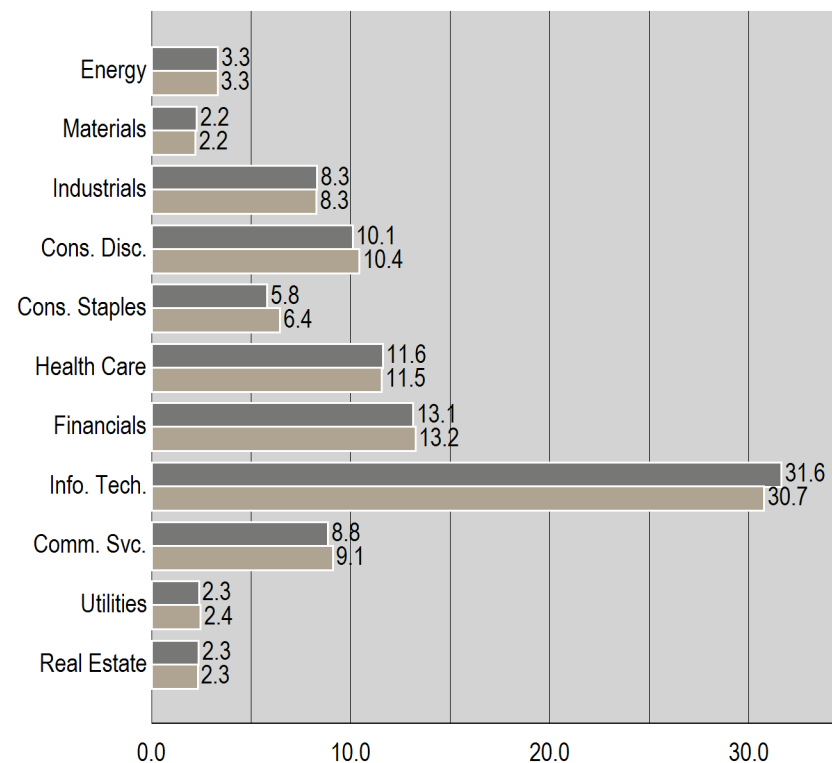
Top Holdings

APPLE INC	7.3%
MICROSOFT CORP	6.6%
NVIDIA CORPORATION	6.1%
AMAZON.COM INC	3.6%
META PLATFORMS INC	2.6%
ALPHABET INC	2.0%
BERKSHIRE HATHAWAY INC	1.7%
ALPHABET INC	1.6%
BROADCOM INC	1.6%
TESLA INC	1.5%
Total	34.6%

Market Capitalization

	Small Cap	Mid Cap	Large Cap
Xponance S&P 500	0.0%	14.0%	86.0%
S&P 500	0.9%	13.7%	85.4%
<i>Weight Over/Under</i>	<i>-0.9%</i>	<i>0.3%</i>	<i>0.6%</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	505	500
Weighted Avg. Market Cap. (\$B)	995.9	980.9
Median Market Cap. (\$B)	38.0	38.2
Price To Earnings	28.2	28.2
Price To Book	5.1	5.1
Price To Sales	3.3	3.3
Return on Equity (%)	33.7	33.6
Yield (%)	1.3	1.3

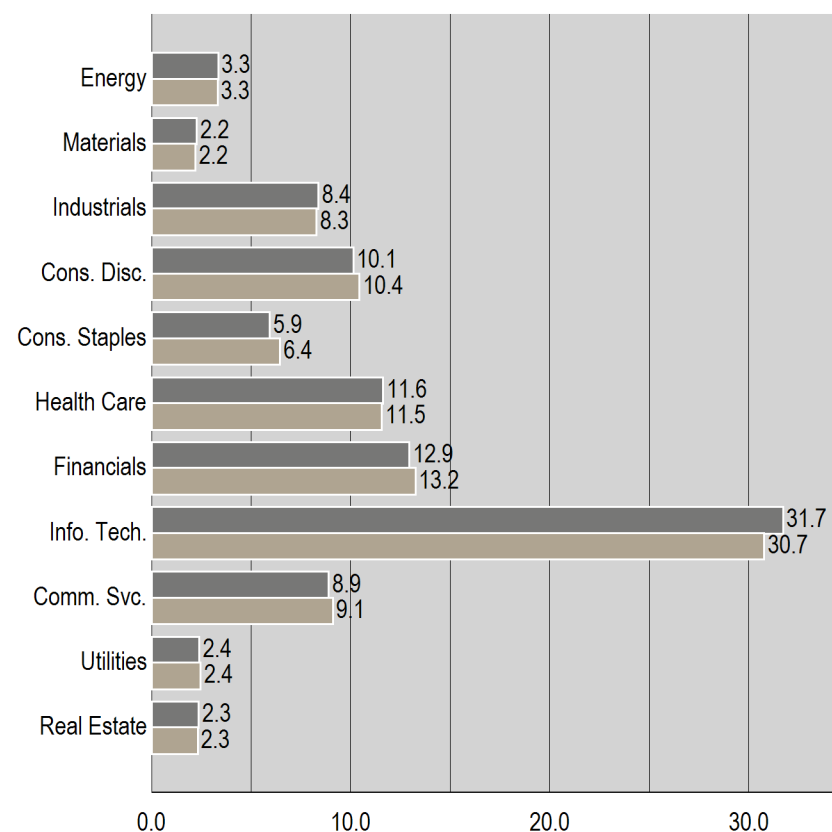
Top Holdings

APPLE INC	7.3%
MICROSOFT CORP	6.6%
NVIDIA CORPORATION	6.1%
AMAZON.COM INC	3.6%
META PLATFORMS INC	2.6%
ALPHABET INC	2.0%
BERKSHIRE HATHAWAY INC	1.7%
ALPHABET INC	1.6%
BROADCOM INC	1.6%
TESLA INC	1.5%
Total	34.6%

Market Capitalization

	Small Cap	Mid Cap	Large Cap
Northern Trust S&P 500	0.0%	14.0%	86.0%
S&P 500	0.9%	13.7%	85.4%
<i>Weight Over/Under</i>	<i>-0.9%</i>	<i>0.3%</i>	<i>0.6%</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	25	392
Weighted Avg. Market Cap. (\$B)	926.1	1,584.3
Median Market Cap. (\$B)	304.4	20.6
Price To Earnings	39.1	38.0
Price To Book	11.1	13.0
Price To Sales	7.7	6.3
Return on Equity (%)	47.7	58.0
Yield (%)	0.6	0.6

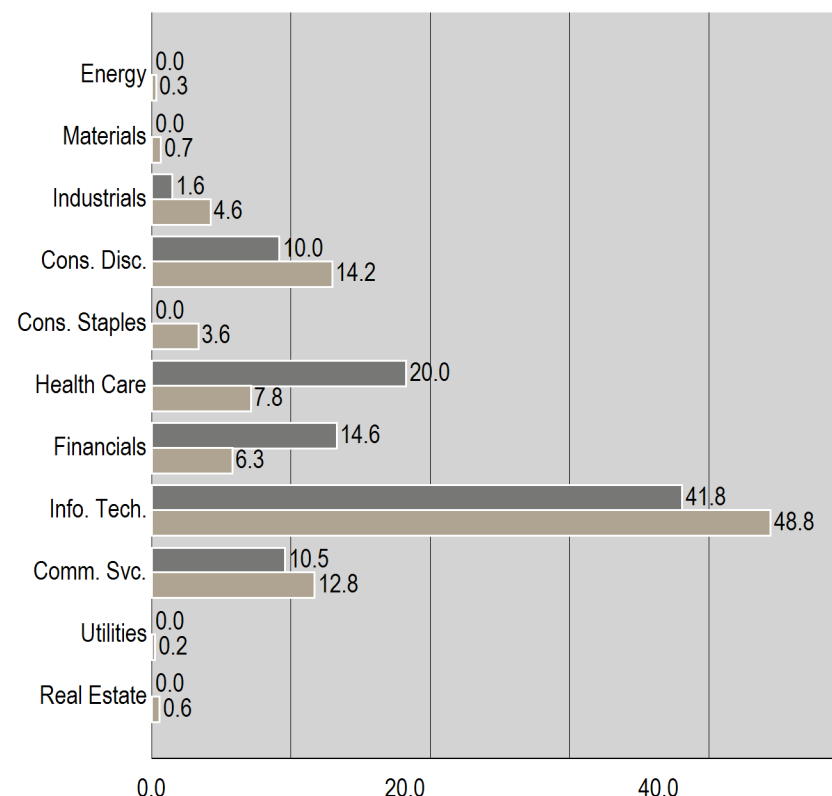
Top Holdings

MICROSOFT CORP	8.7%
AMAZON.COM INC	6.8%
SERVICENOW INC	5.9%
VISA INC	5.6%
MASTERCARD INC	5.3%
THERMO FISHER SCIENTIFIC INC	5.1%
APPLE INC	5.0%
ADOBE INC	4.8%
ORACLE CORP	4.5%
ABBOTT LABORATORIES	4.4%
Total	56.2%

Market Capitalization

	Small Cap	Mid Cap	Large Cap
Polen Focus Growth	0.0%	8.2%	91.8%
Russell 1000 Growth	1.9%	8.3%	89.8%
<i>Weight Over/Under</i>	<i>-1.9%</i>	<i>-0.1%</i>	<i>2.0%</i>

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	3,137	3,483
Weighted Avg. Market Cap. (\$B)	11.8	11.8
Median Market Cap. (\$B)	0.8	0.8
Price To Earnings	20.6	20.5
Price To Book	2.9	2.9
Price To Sales	1.6	1.6
Return on Equity (%)	4.6	4.2
Yield (%)	1.3	1.3

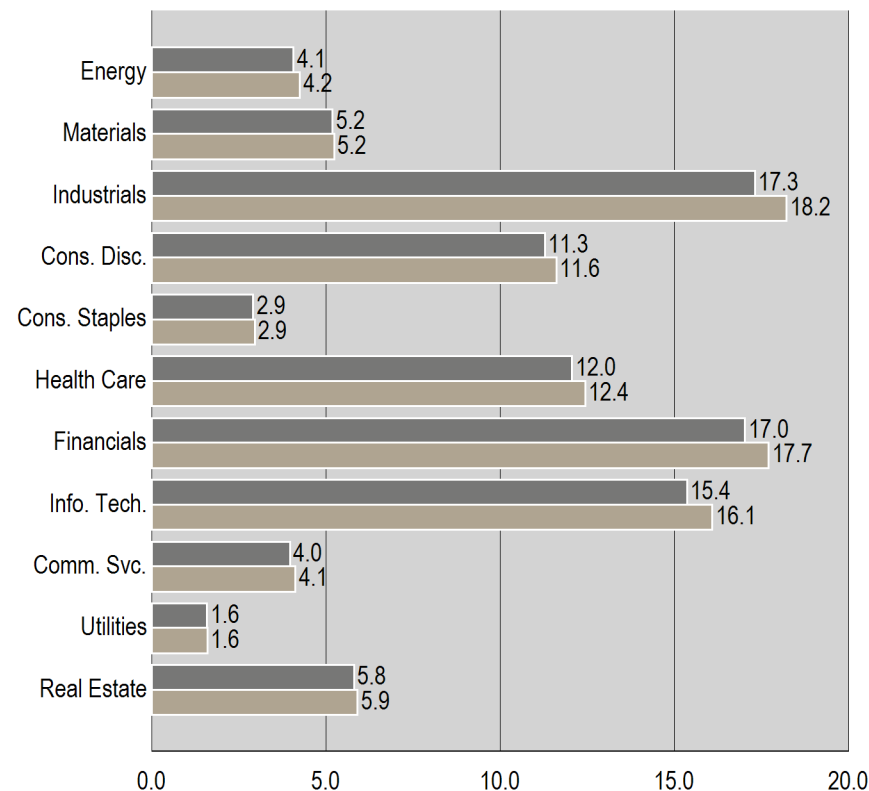
Top Holdings

CRH PLC	0.9%
MARVELL TECHNOLOGY INC	0.9%
APOLLO GLOBAL MANAGEMENT INC	0.8%
WORKDAY INC	0.7%
TRADE DESK INC (THE)	0.7%
DOORDASH INC CL A COM USD0.00001 CLASS A	0.7%
FLUTTER ENTERTAINMENT PLC DI COMMON STOCK EUR.09	0.6%
CHENIERE ENERGY INC	0.6%
FERGUSON ENTERPRISES INCDE	0.6%
SNOWFLAKE INC	0.5%
Total	6.9%

Market Capitalization

	Small Cap	Mid Cap	Large Cap
Northern Trust Dow Jones Completion Index	28.6%	66.8%	4.6%
Dow Jones U.S. Completion Total Stock Market	38.3%	57.7%	3.9%
<i>Weight Over/Under</i>	-9.7%	9.1%	0.6%

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



Pennsylvania Municipal Retirement System

Channing Capital Management Small Cap Value

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	44	1,430
Weighted Avg. Market Cap. (\$B)	6.0	2.9
Median Market Cap. (\$B)	5.5	0.9
Price To Earnings	19.7	15.0
Price To Book	2.3	1.6
Price To Sales	1.9	1.1
Return on Equity (%)	14.1	1.6
Yield (%)	1.6	2.2

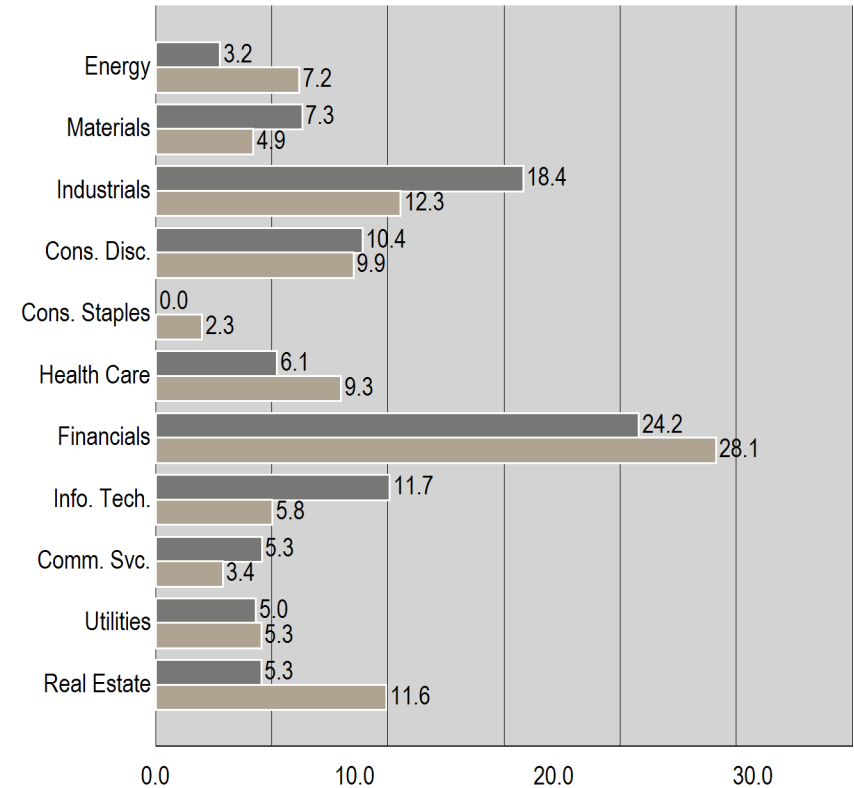
Top Holdings

BRINK'S CO (THE)	3.1%
LITTELFUSE INC	3.0%
AVIENT CORP	3.0%
SOUTHSTATE CORPORATION	3.0%
COPT DEFENSE PROPERTIES	2.9%
PINNACLE FINANCIAL PARTNERS INC	2.8%
MADISON SQUARE GARDEN SPINCO	2.8%
STIFEL FINANCIAL CORP.	2.8%
AFFILIATED MANAGERS GROUP INC.	2.7%
HERC HOLDINGS INC	2.7%
Total	28.8%

Market Capitalization

	Small Cap	Mid Cap	Large Cap
Channing Capital Management Small Cap Value	19.1%	80.9%	0.0%
Russell 2000 Value	81.2%	18.8%	0.0%
<i>Weight Over/Under</i>	<i>-62.1%</i>	<i>62.1%</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	71	2,458
Weighted Avg. Market Cap. (\$B)	9.1	7.6
Median Market Cap. (\$B)	6.8	1.7
Price To Earnings	23.8	19.7
Price To Book	3.9	2.7
Price To Sales	1.9	1.5
Return on Equity (%)	18.3	8.4
Yield (%)	1.7	1.5

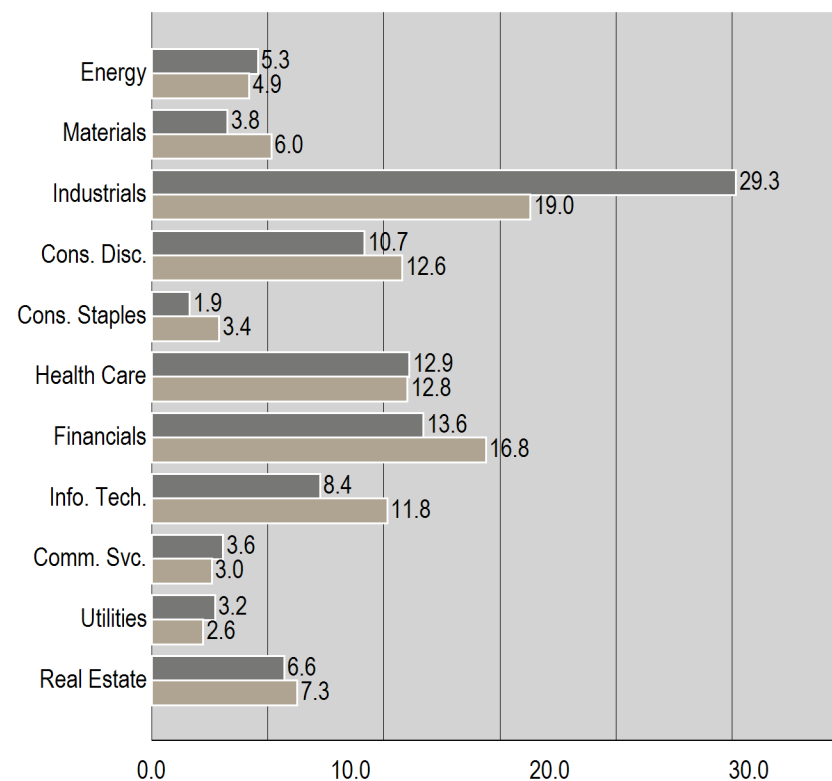
Top Holdings

HAMILTON LANE INC	2.5%
ENCOMPASS HEALTH CORP	2.2%
ENSIGN GROUP INC (THE)	2.2%
COHEN & STEERS INC	2.1%
LEMAITRE VASCULAR INC	1.9%
WINGSTOP INC	1.9%
KINSALE CAPITAL GROUP INC	1.9%
BOOZ ALLEN HAMILTON HOLDING CORPORATION	1.9%
RELIANCE INC	1.9%
VALMONT INDUSTRIES INC	1.8%
Total	20.2%

Market Capitalization

	Small Cap	Mid Cap	Large Cap
Copeland SMID Cap Dividend Growth	20.6%	79.4%	0.0%
Russell 2500	38.4%	61.6%	0.0%
<i>Weight Over/Under</i>	<i>-17.8%</i>	<i>17.8%</i>	<i>0.0%</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	114	1,107
Weighted Avg. Market Cap. (\$B)	5.1	4.4
Median Market Cap. (\$B)	3.7	1.3
Price To Earnings	32.0	25.0
Price To Book	4.4	4.2
Price To Sales	3.2	2.1
Return on Equity (%)	-16.7	0.9
Yield (%)	0.4	0.6

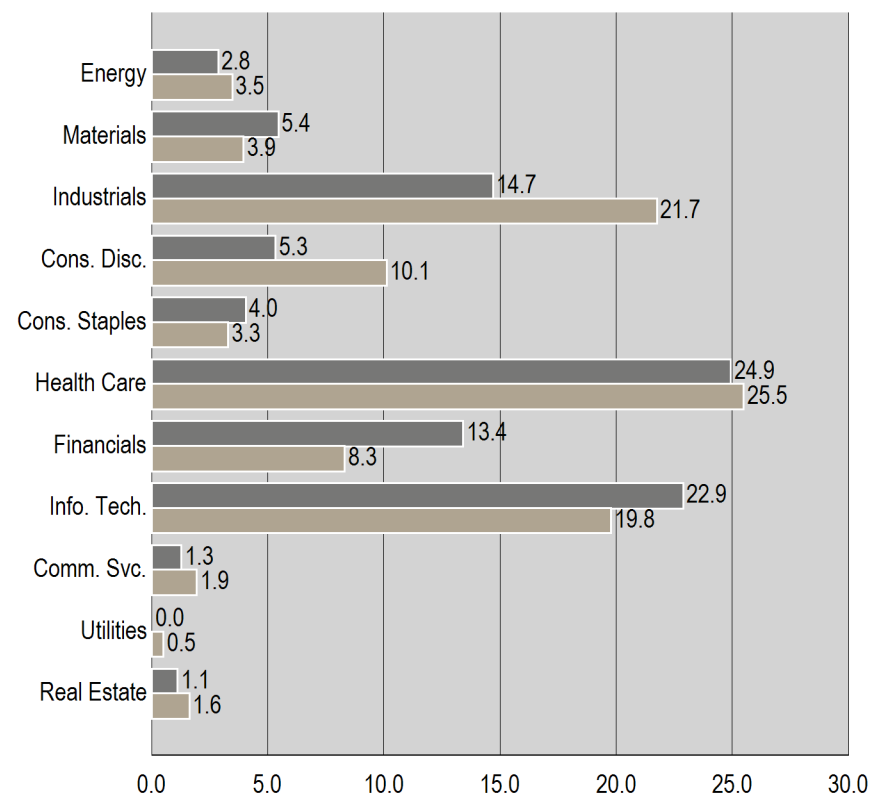
Top Holdings

FTAI AVIATION LTD	3.4%
FRESHPET INC	2.7%
CARPENTER TECHNOLOGY CORP	2.5%
VARONIS SYSTEMS INC	2.2%
INSMED INC	2.0%
Q2 HOLDINGS INC	2.0%
CREDO TECHNOLOGY GROUP HOLDING	2.0%
RADNET INC	1.8%
BALDWIN INSURANCE GROUP INC (THE)	1.7%
ATI INC	1.7%
Total	22.1%

Market Capitalization

	Small Cap	Mid Cap	Large Cap
Emerald Small Cap Growth	42.8%	57.2%	0.0%
Russell 2000 Growth	63.6%	36.4%	0.0%
Weight Over/Under	-20.8%	20.8%	0.0%

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	269	2,682
Weighted Avg. Market Cap. (\$B)	132.4	654.1
Median Market Cap. (\$B)	25.6	15.6
Price To Earnings	19.0	22.7
Price To Book	3.4	3.9
Price To Sales	1.3	2.1
Return on Equity (%)	20.2	21.9
Yield (%)	2.3	1.9

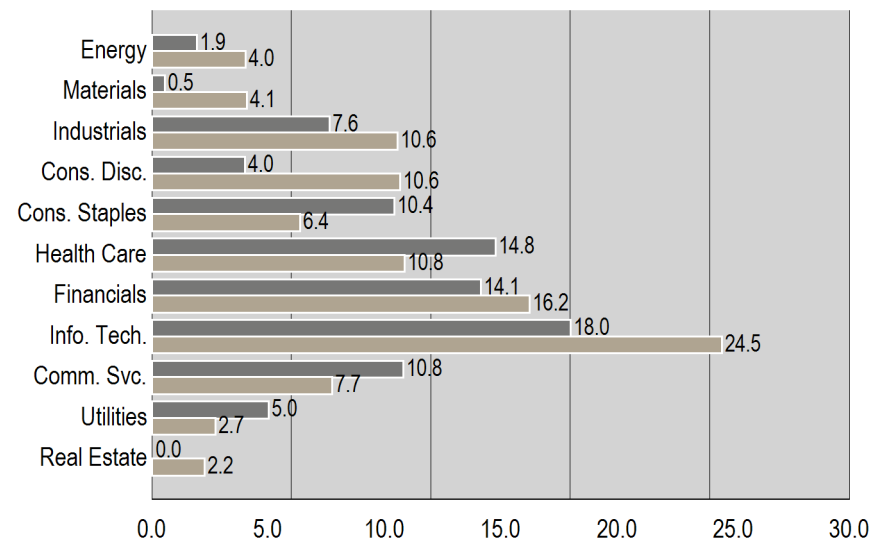
Top Holdings

ISHARES MSCI EMERGING MARKETS MIN VOL FACTOR ETF	12.8%
T-MOBILE US INC	1.8%
WALMART INC	1.7%
MOTOROLA SOLUTIONS INC	1.7%
WASTE MANAGEMENT INC.	1.5%
CISCO SYSTEMS INC	1.4%
ROPER TECHNOLOGIES INC	1.3%
MERCK & CO INC	1.2%
REPUBLIC SERVICES INC.	1.2%
MCKESSON CORP	1.2%
Total	25.8%

Market Capitalization

	Small Cap	Mid Cap	Large Cap	Unclassified
Rhumblin Global Min. Volatility	18.4%	25.7%	55.9%	0.1%
MSCI ACWI	6.9%	16.4%	76.7%	0.0%
<i>Weight Over/Under</i>	<i>11.4%</i>	<i>9.3%</i>	<i>-20.8%</i>	<i>0.1%</i>

Sector Allocation (%) vs MSCI ACWI



Region Allocation Summary

Region	% of Total	% of Bench	% Diff
North America ex U.S.	1.2%	2.7%	-1.6%
United States	69.6%	64.2%	5.4%
Europe Ex U.K.	6.3%	11.4%	-5.1%
United Kingdom	0.4%	3.3%	-2.9%
Pacific Basin Ex Japan	3.1%	2.6%	0.6%
Japan	10.3%	5.0%	5.3%
Emerging Markets	7.6%	10.5%	-2.9%
Other	1.5%	0.2%	1.3%
Total	100.0%	100.0%	0.0%

Pennsylvania Municipal Retirement System

SSGA MSCI World ex US

As of September 30, 2024

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	942	815
Weighted Avg. Market Cap. (\$B)	90.1	92.7
Median Market Cap. (\$B)	13.2	15.9
Price To Earnings	17.1	16.7
Price To Book	2.5	2.6
Price To Sales	1.3	1.3
Return on Equity (%)	13.9	14.2
Yield (%)	3.0	3.0

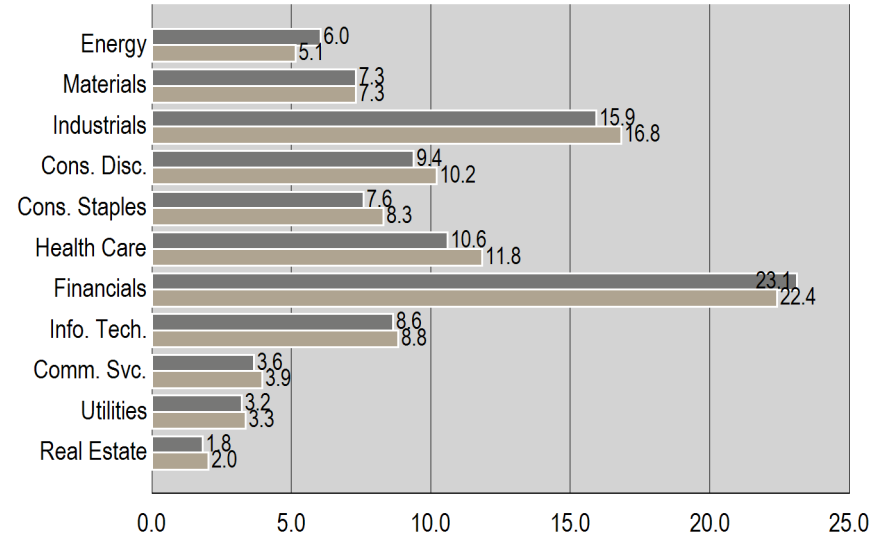
Top Holdings

NOVO NORDISK A/S	1.8%
ASML HOLDING NV	1.5%
ROYAL BANK OF CANADA	1.5%
NESTLE SA, CHAM UND VEVEY	1.3%
SAP SE	1.1%
ASTRAZENECA PLC	1.1%
NOVARTIS AG	1.1%
ROCHE HOLDING AG	1.1%
LVMH MOET HENNESSY LOUIS VUITTON SE	1.0%
TORONTO-DOMINION BANK (THE)	0.9%
Total	12.4%

Market Capitalization

	Small Cap	Mid Cap	Large Cap	Unclassified
SSGA MSCI World ex US	8.5%	25.8%	58.7%	7.1%
MSCI World ex USA	10.3%	26.8%	63.0%	0.0%
<i>Weight Over/Under</i>	-1.8%	-1.0%	-4.2%	7.1%

Sector Allocation (%) vs MSCI World ex USA



Region Allocation Summary

Region	% of Total	% of Bench	% Diff
North America ex U.S.	18.1%	10.9%	7.2%
United States	2.0%	0.0%	2.0%
Europe Ex U.K.	43.1%	45.2%	-2.0%
United Kingdom	9.4%	13.1%	-3.7%
Pacific Basin Ex Japan	8.8%	10.2%	-1.4%
Japan	17.9%	19.9%	-2.0%
Emerging Markets	0.0%	0.0%	0.0%
Other	0.6%	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	29	730
Weighted Avg. Market Cap. (\$B)	142.2	96.5
Median Market Cap. (\$B)	98.3	15.8
Price To Earnings	27.2	16.3
Price To Book	4.0	2.6
Price To Sales	2.7	1.2
Return on Equity (%)	15.4	14.6
Yield (%)	1.2	3.0

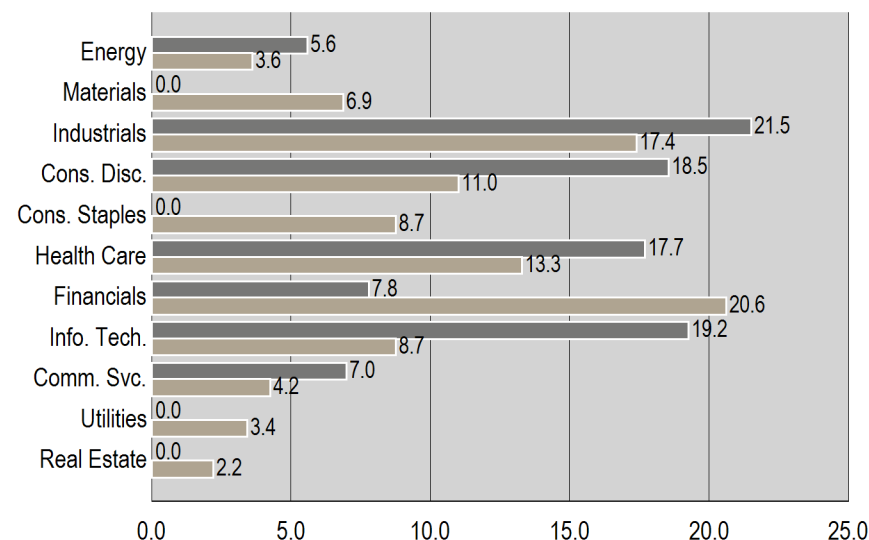
Top Holdings

AIRBUS SE	5.9%
TECHNIPFMC PLC	5.7%
SAFRAN SA	5.7%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	5.5%
ASTRAZENECA PLC	5.5%
KEYENCE CORP	5.5%
DEUTSCHE TELEKOM AG	5.3%
AIA GROUP LTD	5.1%
GENMAB A/S	5.0%
RHEINMETALL	4.8%
Total	54.0%

Market Capitalization

	Small Cap	Mid Cap	Large Cap	Unclassified
Hardman Johnston Int'l Equity	15.6%	19.4%	57.6%	7.5%
MSCI EAFE	10.4%	26.4%	63.2%	0.0%
<i>Weight Over/Under</i>	5.2%	-7.0%	-5.7%	7.5%

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.	46.7%	50.7%	-3.9%
United Kingdom	12.9%	14.8%	-1.8%
Pacific Basin Ex Japan	12.6%	11.4%	1.1%
Japan	8.4%	22.3%	-14.0%
Emerging Markets	16.1%	0.0%	16.1%
Other	3.3%	0.8%	2.5%
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	32	730
Weighted Avg. Market Cap. (\$B)	73.7	96.5
Median Market Cap. (\$B)	25.7	15.8
Price To Earnings	16.1	16.3
Price To Book	2.5	2.6
Price To Sales	1.6	1.2
Return on Equity (%)	13.4	14.6
Yield (%)	2.4	3.0

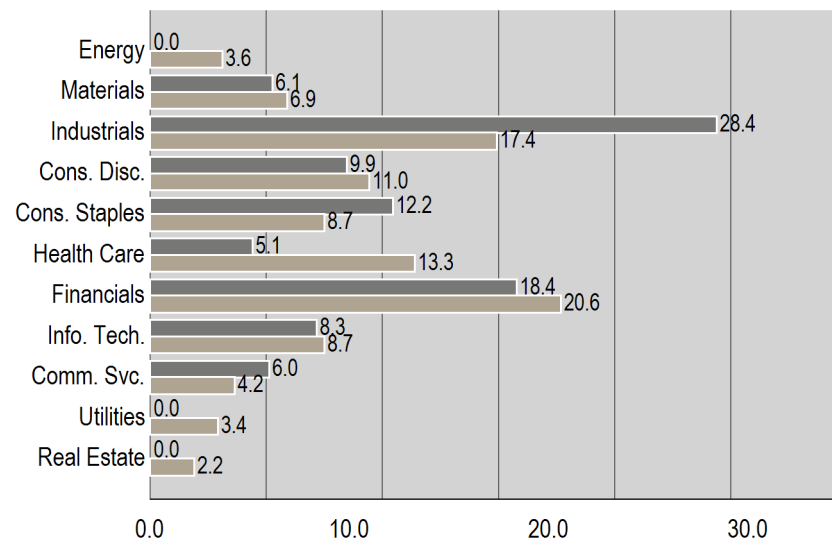
Top Holdings

BAE SYSTEMS PLC	5.3%
RHEINMETALL	4.8%
DBS GROUP HOLDINGS LTD	4.2%
SONY GROUP CORPORATION	4.1%
UNIVERSAL MUSIC GROUP INC	3.9%
SMURFIT WESTROCK PLC	3.8%
LONDON STOCK EXCHANGE GROUP PLC	3.8%
TREASURY WINE ESTATES LTD	3.7%
HDFC BANK LIMITED	3.7%
SAMSUNG ELECTRONICS CO LTD	3.4%
Total	40.8%

Market Capitalization

	Small Cap	Mid Cap	Large Cap	Unclassified
Hudson Edge Int'l Equity	10.6%	41.3%	34.2%	13.8%
MSCI EAFE	10.4%	26.4%	63.2%	0.0%
<i>Weight Over/Under</i>	<i>0.3%</i>	<i>14.9%</i>	<i>-29.0%</i>	<i>13.8%</i>

Sector Allocation (%) vs MSCI EAFE



Region Allocation Summary

Region	% of Total	% of Bench	% Diff
North America ex U.S.	5.4%	0.0%	5.4%
United States	0.0%	0.0%	0.0%
Europe Ex U.K.	39.6%	50.7%	-11.1%
United Kingdom	15.1%	14.8%	0.3%
Pacific Basin Ex Japan	9.9%	11.4%	-1.6%
Japan	17.3%	22.3%	-5.0%
Emerging Markets	12.8%	0.0%	12.8%
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	1,304	1,275
Weighted Avg. Market Cap. (\$B)	165.1	165.0
Median Market Cap. (\$B)	8.8	8.9
Price To Earnings	15.7	15.8
Price To Book	2.9	2.9
Price To Sales	1.3	1.3
Return on Equity (%)	14.2	14.2
Yield (%)	2.7	2.7

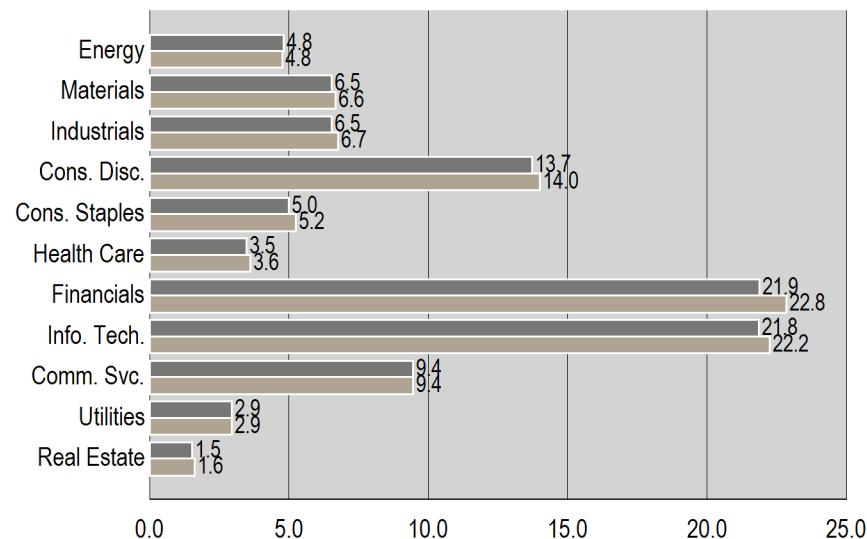
Top Holdings

TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	9.1%
TENCENT HOLDINGS LTD	4.6%
SAMSUNG ELECTRONICS CO LTD	2.7%
ALIBABA GROUP HOLDING LTD	2.7%
MEITUAN	1.4%
RELIANCE INDUSTRIES LTD	1.3%
PDD HOLDINGS INC	1.1%
HDFC BANK LIMITED	1.1%
ICICI BANK	1.0%
INFOSYS LTD	0.9%
Total	25.8%

Market Capitalization

	Small Cap	Mid Cap	Large Cap	Unclassified
SSGA MSCI Emerging Markets Index	6.0%	26.3%	58.9%	8.8%
MSCI Emerging Markets	15.3%	26.4%	58.3%	0.0%
<i>Weight Over/Under</i>	-9.2%	-0.1%	0.5%	8.8%

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	4.4%	0.0%	4.4%
Europe Ex U.K.	0.9%	0.5%	0.4%
United Kingdom	0.0%	0.0%	0.0%
Pacific Basin Ex Japan	4.8%	0.0%	4.8%
Japan	0.0%	0.0%	0.0%
Emerging Markets	88.2%	98.9%	-10.7%
Other	1.7%	0.7%	1.1%
Total	100.0%	100.0%	0.0%

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	
Queue In:	
Contribution Queue (\$MM)	\$225.68
Anticipated Drawdown (Months)	

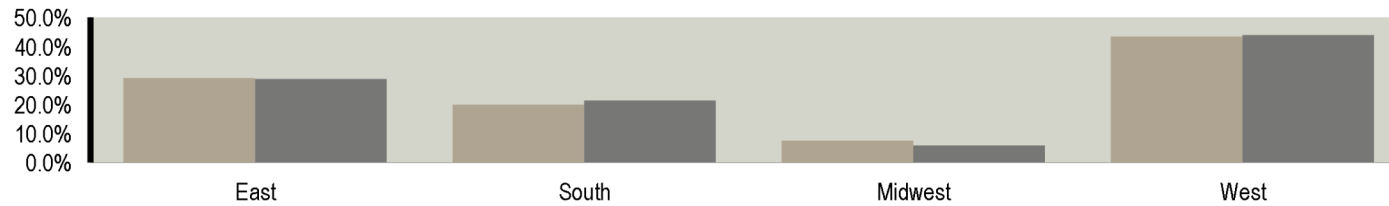
Top Five Metro Areas

	% 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)	

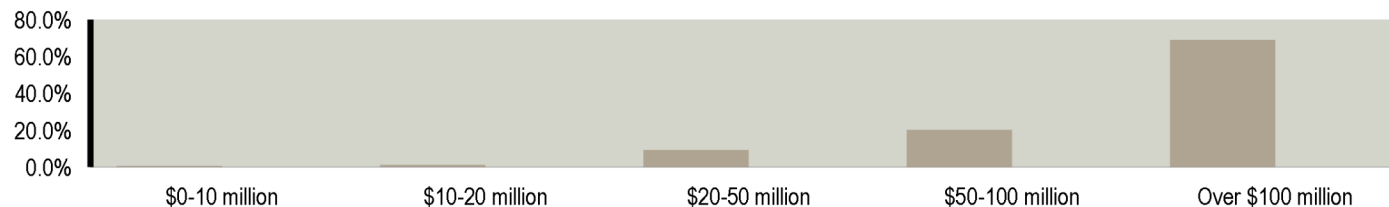
Regional Breakdown by NAV (Excluding Cash & Debt)



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%
<u>Queue In:</u>	
Contribution Queue (\$MM)	\$750.00
Anticipated Drawdown (Months)	

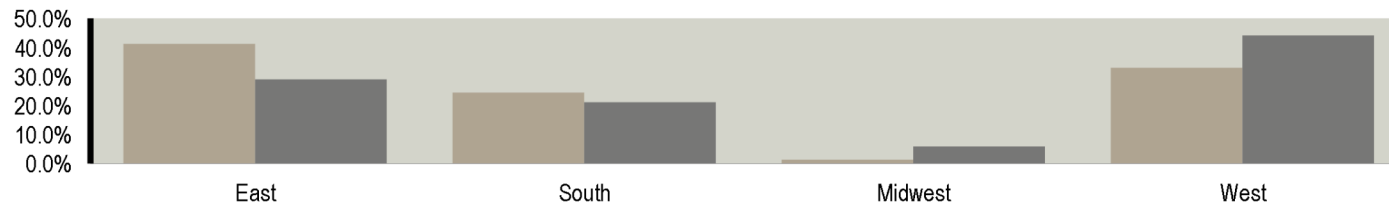
Top Five Metro Areas

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

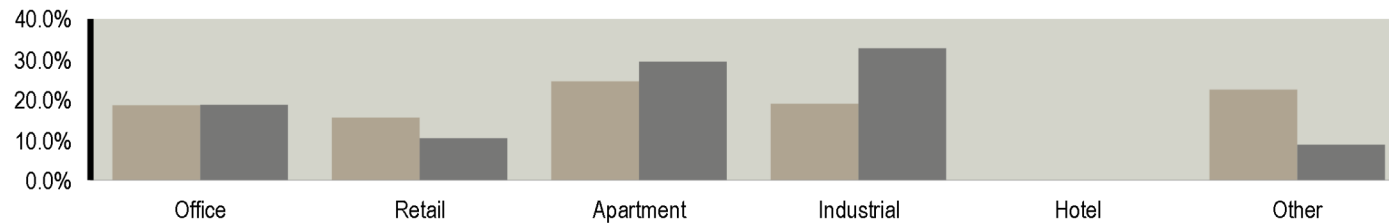
Queue Out:

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

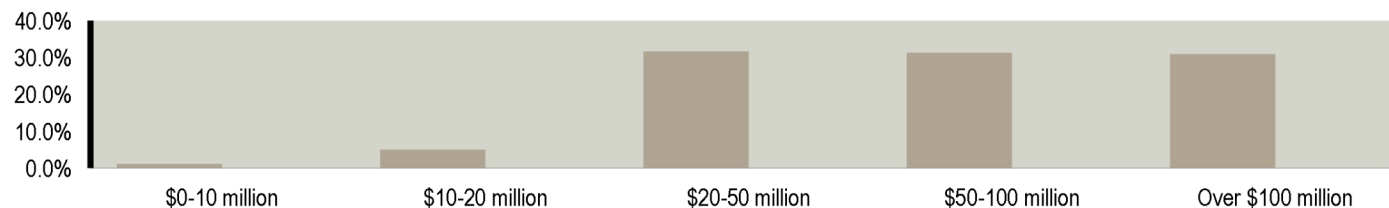
Regional Breakdown by NAV (Excluding Cash & Debt)



Property Type Breakdown by NAV (Excluding Cash & Debt)



Property Size Breakdown by NAV (Excluding Cash & Debt)



■ PRISA II ■ NFI-ODCE

Characteristics

Fund NAV (\$MM)	\$216,327.0
Cash (% of NAV)	1.9%
# of Investments	7
Occupancy	90.4%
NOI	3.9%
Loan to Value	7.1%
As of Date	6/30/2024

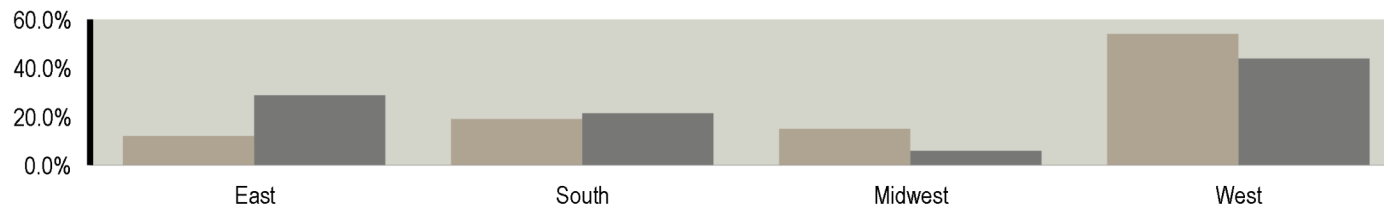
Asset Summary

Property	Acquisition
Copley Corporate Center	2010
SR Ranch	2011
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	11.3%
2	SR Ranch	Retail	San Diego, CA	23.2%
3	708 Uptown	Apartment	Seattle, WA	17.4%
4	Fairway Center II	Office	Brea, CA	13.0%
5	Republic Distribution Center	Industrial	Houston, TX	15.1%
6	526 Route 46	Industrial	Teterboro, NJ	13.3%
7	Shoppes at Monarch Lakes	Retail	Miramar, FL	6.7%
Total				100.0%

Regional Breakdown by NAV



Property Type Breakdown by NAV



Net Assets (\$MM) 161.6

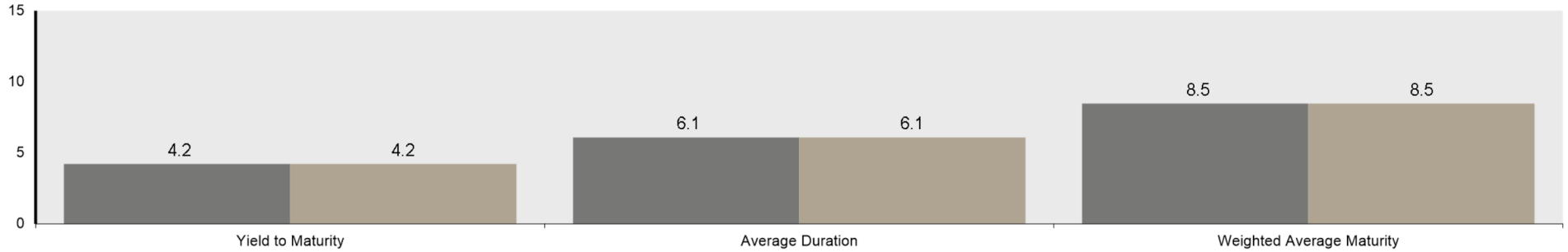
Portfolio Allocation

#	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%
Total				100.0%

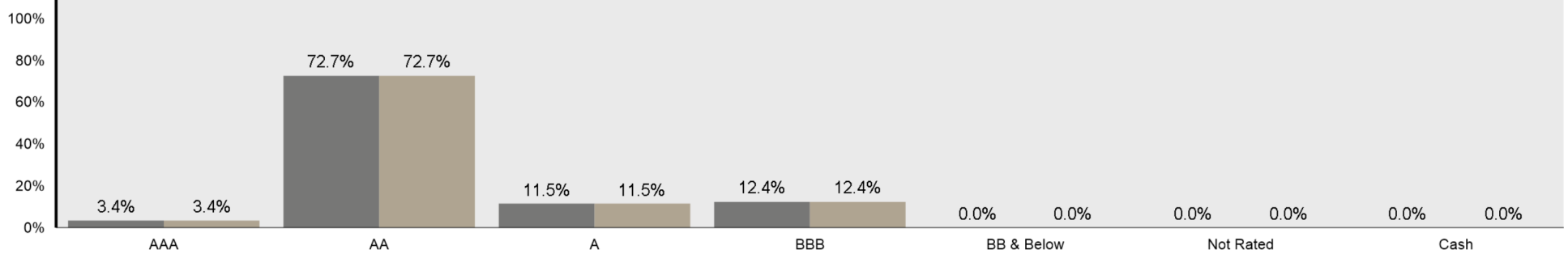
Regional Breakdown by NAV



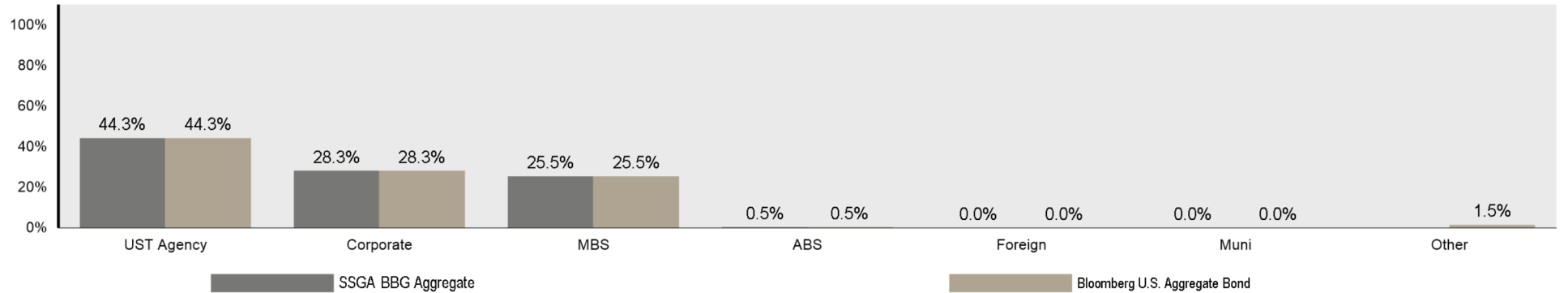
Yield to Maturity



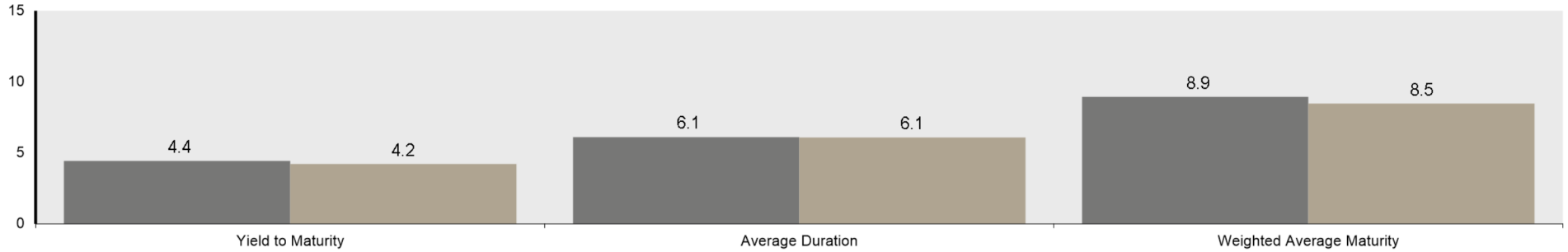
Credit Quality



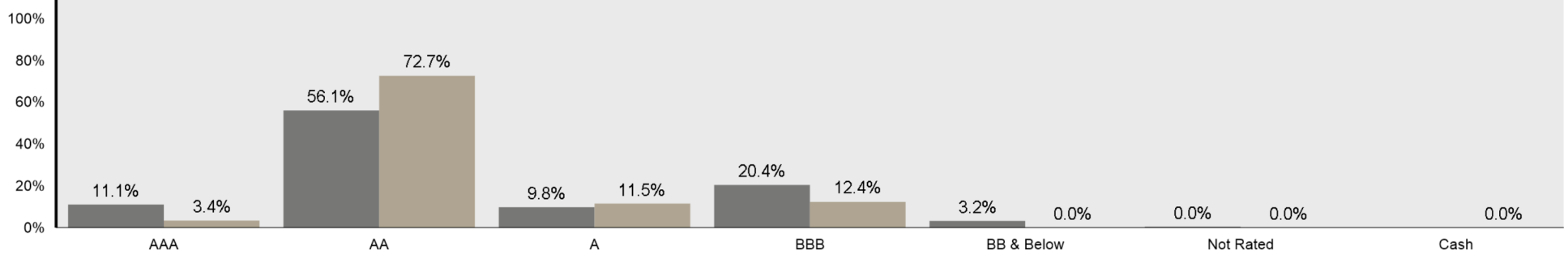
US Sector



Yield to Maturity



Credit Quality



US Sector

