

Pennsylvania Municipal Retirement System

Quarterly Performance Report
as of June 30, 2021



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I. Marquette Update



Marquette Update

3Q 2021

\$297B

assets under advisement

99%

client retention rate

35th

year in business

120+

employees

23

full-time partners

11 years

avg. client tenure

Firm and client statistics as of March 31, 2021. Employees as of June 30, 2021. Client retention rate calculated 2011–2020.

UPCOMING SPEAKING ENGAGEMENTS

- ▶ Ben Mohr speaking on “How is Fixed Income Allocation Changing?” panel at Institutional Investor’s Fixed Income Forum Senior Delegate Virtual Roundtable 7/22
- ▶ Ben Mohr speaking on “Global Fixed Income” Markets Group roundtable 7/27
- ▶ Jessica Noviskis speaking on “The Death of 60/40 and the New Perfect Portfolio” panel at Portfolio Summits’ Portfolio Construction and Asset Allocation Summit 8/5
- ▶ Greg Leonberger moderating “Defining the Modern Allocator/Consultant/Manager Relationship” panel at Institutional Investor Institute’s Regional Roundtable 8/11
- ▶ Brett Graffy speaking on “Managers’ Perspectives: Constructing a Granular Portfolio in Turbulent Times” panel at LPGP’s Private Debt Chicago Conference 9/8

▶ Halftime Market Insights Video: July 22nd

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RECENT HIRES

Josh Cabrera, CFA
Sr. Research Analyst

Matt Nowak, AIF®
Defined Contribution Specialist

Mike Snooks
Client Analyst

Mike Barry, CFA
Client Analyst



RECENT PROMOTIONS

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Sr. Research Analyst

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Sr. RFP Coordinator

Hayley Kane
Research Associate

Rodrigo De La Peña Alanis
Research Associate

Tanner Maupin
Research Associate



Save the date: November 12th

Please save the date for our 2021 Investment Symposium, being held at the Palmer House in Chicago. We’re excited to welcome Dr. Jean Twenge and Ted Seides as featured speakers, plus two series of flash talks by our research team that will brief attendees on popular topics and encourage timely conversations with our consultants.

Full agenda coming in September.

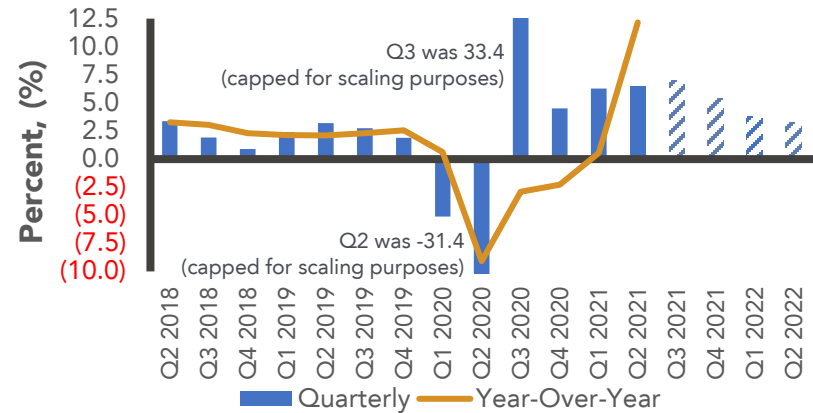
II. Market Environment



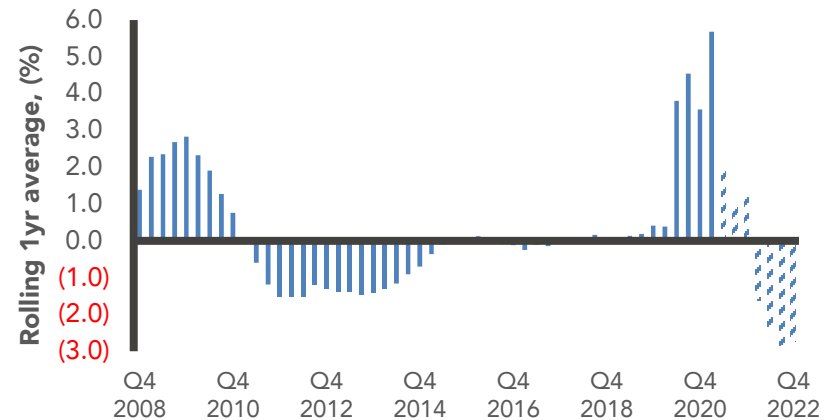
U.S. Economy

- While economic activity maintained its robust pace in Q2, growth was below economist expectations, at 6.5%. Moving forward, growth is expected to moderate over the next several quarters as fiscal spending is set to become contractionary, based on current policy measures.
- If fiscal policy does become a drag on economic growth, it will be imperative for the recovery in the private sector to continue.
- According to Morgan Stanley estimates, consumers are sitting on more than \$2 trillion in excess savings relative to the pre-pandemic trend, while business inventories reside at multi-decade lows. Both estimates argue that the private sector is positioned to take the baton from the public sector as the economy heads into 2022.

U.S. Real GDP Growth



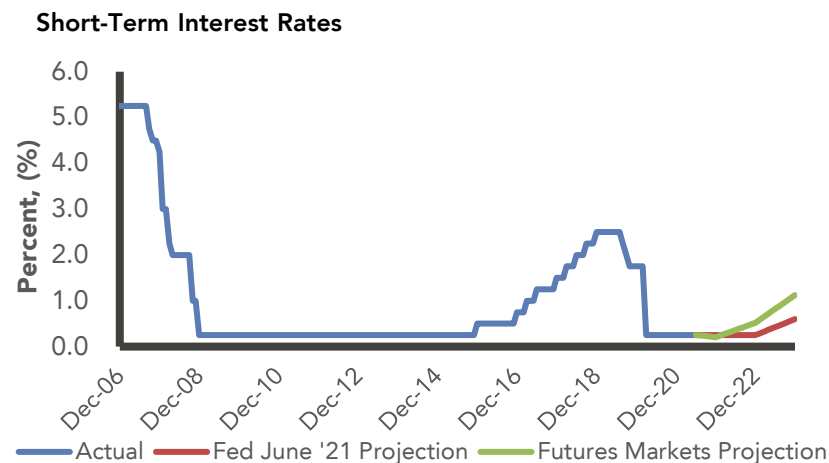
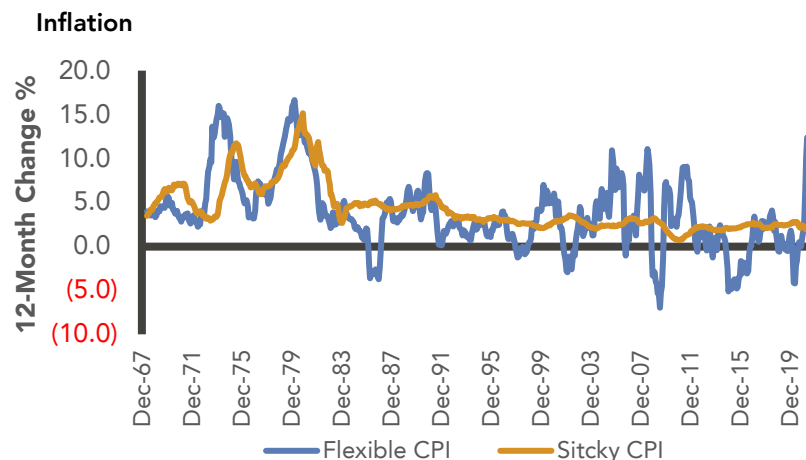
Fiscal Contribution to GDP Growth



Sources: Hutchins Center, Refinitiv and The Wall Street Journal. Striped bars reflect estimates.

U.S. Economy

- Currently, 5-year breakeven inflation remains higher than 10-year breakeven inflation (as measured by the TIPS market), continuing to imply that inflation over the next 5 years will be higher than inflation in the latter half of the next decade.
- The actual data appear to bear this out. According to the Federal Reserve Bank of Atlanta, the institution's flexible-price consumer price index (CPI)—a weighted basket of items that change price relatively frequently—increased 12.4% over the past year, while their sticky CPI—a weighted basket of items that change price relatively slowly—increased just 2.7% over the same period.
- A strong economic backdrop and recent inflationary pressures have driven a shift in the Federal Reserve's outlook for short-term interest rates. As of June, the Federal Reserve anticipates raising rates at least once before the end of 2023. The futures market, on the other hand, continues to expect multiple rate hikes over the same period.

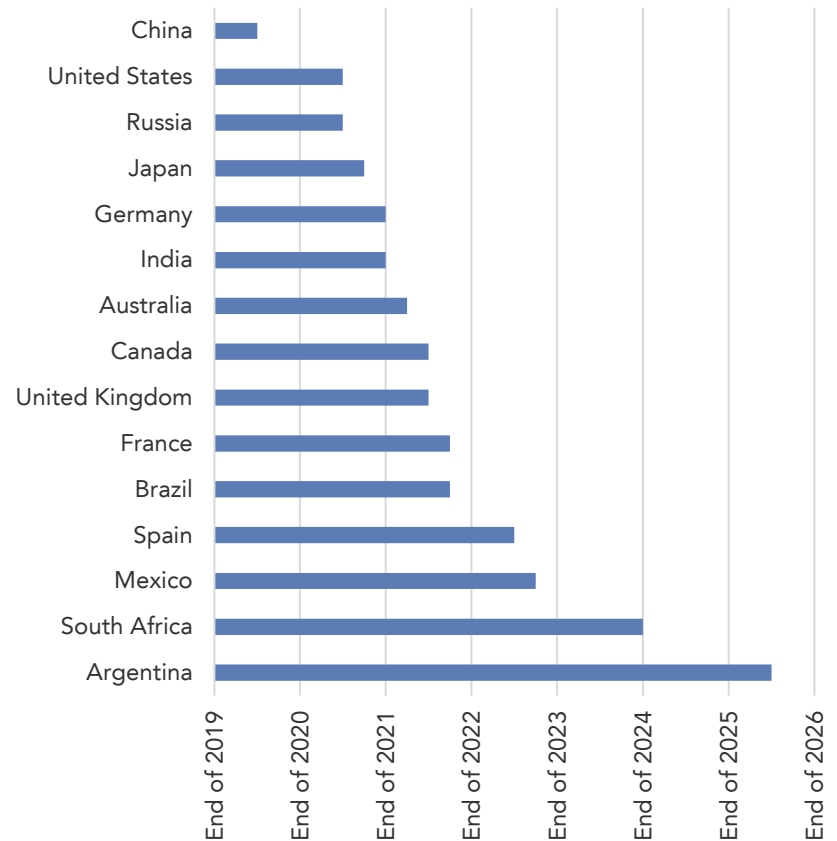


Sources: Federal Reserve Bank of Atlanta and Refinitiv.

Global Economy

- Outside the U.S., economic recoveries continue to diverge across countries and regions, depending on the success of vaccine rollout and policy support.
- According to the OECD, many countries will not recover their respective pre-pandemic GDP levels until 2022 or even longer in some cases, most notably in several emerging market economies.
- Amid these divergences, policymakers continue to provide economic support through various fiscal and monetary measures. China, for instance, recently cut the reserve requirement for all its banks by 0.50%. The move has the potential to release around 1 trillion yuan (or about \$155 billion) in long-term liquidity to support the post-COVID recovery.

Time Until Projected GDP per Capita Reached Pre-Pandemic Levels

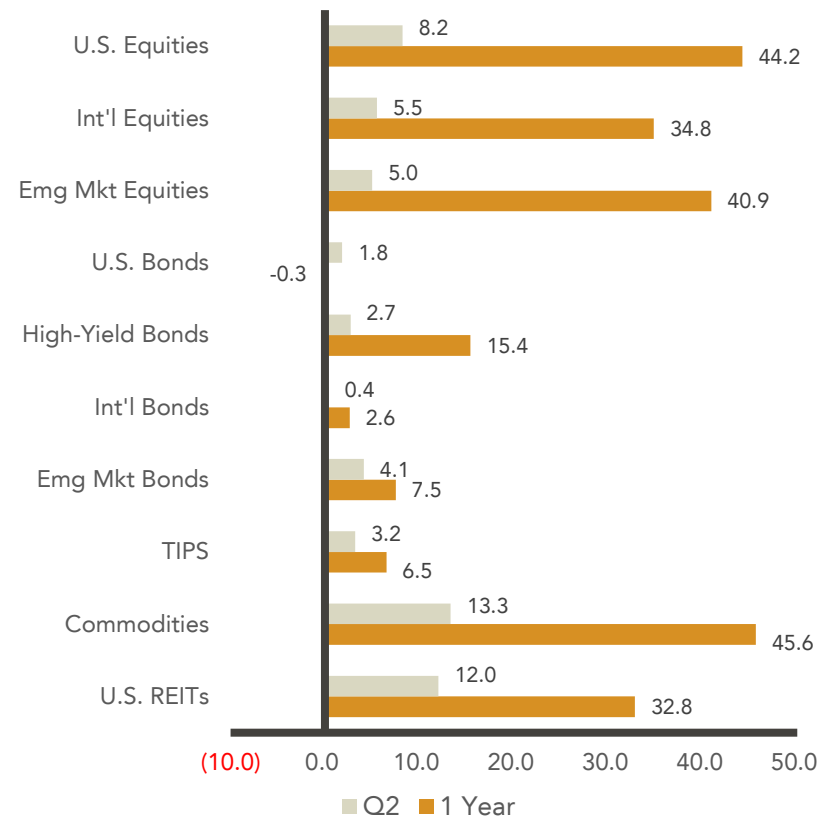


Sources: Organization for Economic Co-operation and Development Outlook No. 109 (Edition 2021/1); recovery to pre-pandemic level: sustained increase in forecasted real GDP per capita above its Q4 2019 level; for countries recovering after Q4 2022, calculations are based on average projected quarterly growth rates in 2022.

Global Asset Class Performance

- **Global equities** rallied in Q2, continuing their strong start in 2021. U.S. equities (+8.2%) topped their international developed (+5.5%) and emerging market equity (+5.0%) counterparts as the continued economic recovery and high expectations for the upcoming Q2 earnings season drove U.S. stocks to all-time highs.
- **Fixed income** markets rebounded strongly in Q2 amid a decline in Treasury yields. Longer-dated securities were the best performers as the 10-year note and 30-year bond yields fell, 29 and 35 basis points, respectively. Sub-investment grade debt also did well amid the strong environment for equities. High yield (+2.7%) and bank loan (+1.4%) spreads continued to decline amid the economic rebound.
- **Inflation-sensitive assets** also posted solid results for the quarter. TIPS (+3.2%) were firmly in the black, outperforming their nominal government bond counterparts. REITs (+12.0%) topped the broad equity markets for the second straight quarter amid continued stabilization in the commercial property markets, while commodities (+13.3%) rose strongly given increased demand and a slightly weaker U.S. dollar.

Asset Class Returns: Select Asset Class Performance (%)

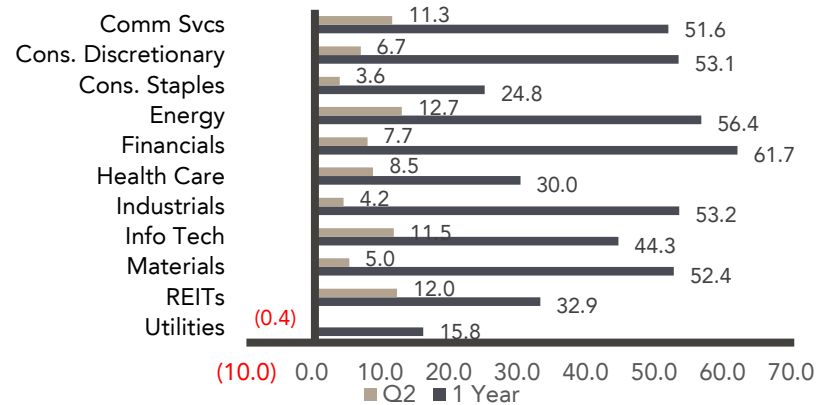


Sources: Markov Processes International

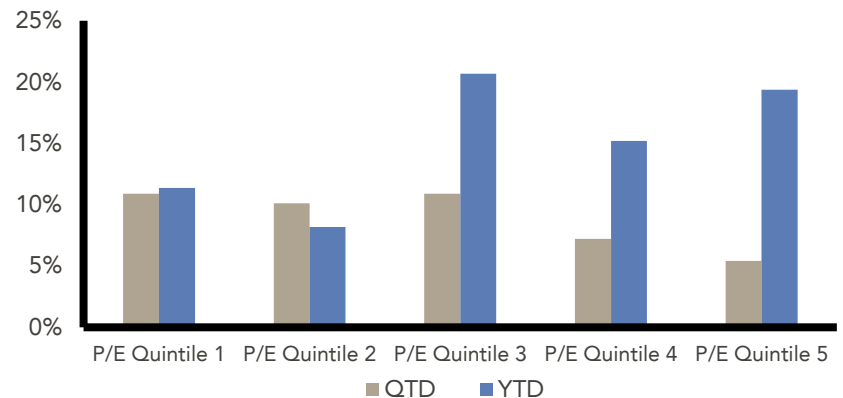
U.S. Equity Markets

- U.S equity markets continued their strength in Q2. All sectors finished the quarter in the black, except Utilities, with more cyclical areas generally outperforming their more defensive counterparts. Energy (+12.7%) and REITs (+12.0%) led the way again, while Utilities (-0.4%) and Consumer Staples (+3.6%) lagged.
- While more cyclical sectors outperformed, growth stocks and large caps were best from a style and capitalization perspective, halting two consecutive quarters of relative underperformance.
- The decline in interest rates proved to be a tailwind for the most expensive stocks relative to cheaper names in Q2, though value remains ahead of growth during the first half of 2021.

Sector Returns (%)



S&P 500 Returns by P/E Quintile

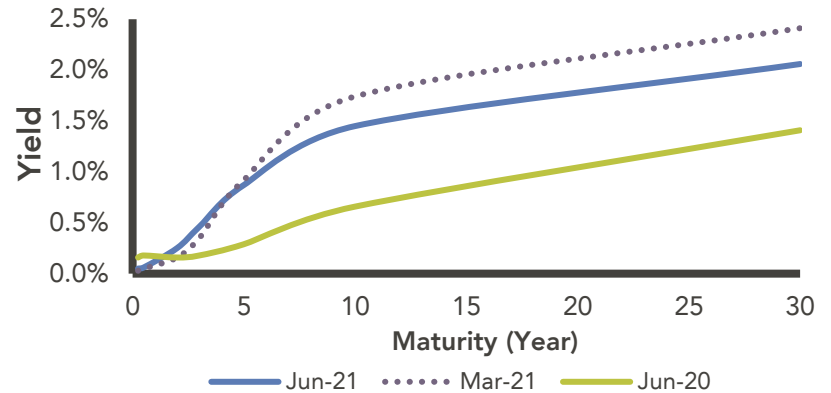


Sources: FactSet and Refinitiv. SPY ETF used as a proxy for the S&P 500.

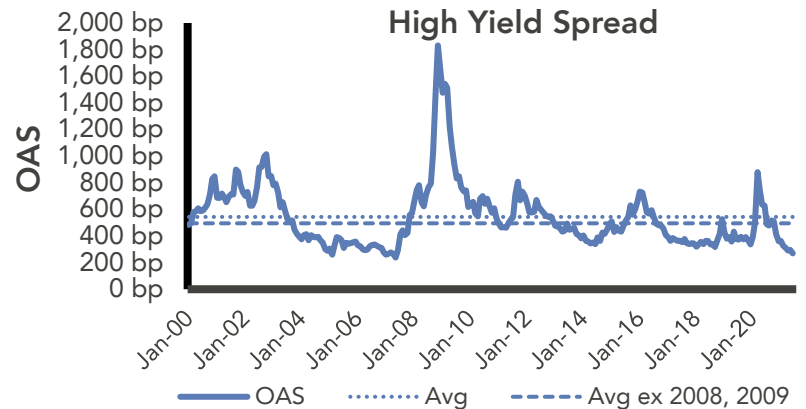
U.S. Fixed Income

- Interest rates fell for intermediate- and long-term Treasuries in Q2. Most market participants attribute the drop to technical factors. More specifically, net Treasury issuance declined notably in Q2, leaving Federal Reserve purchases of Treasury debt higher than entire net issuance during the quarter.
- Sub-investment grade debt continued to do well amid the strong environment for equities. High yield (+2.7%) and bank loan (+1.4%) spreads declined further amid the economic rebound. High yield spreads, for example, ended the quarter at just 268 basis points—well below the long-term average of about 542 basis points.

Yield Curve



High Yield Spread



Sources: Bloomberg Barclays and Refinitiv.

Global Index Returns

U.S. EQUITY	QTR	YTD	1 Year	3 Year	5 Year	10 Year
S&P 500 Index	8.5	15.3	40.8	18.7	17.6	14.8
Russell 3000 Index	8.2	15.1	44.2	18.7	17.9	14.7
Russell 3000 Growth Index	11.4	12.7	43.0	24.5	23.3	17.5
Russell 3000 Value Index	5.2	17.7	45.4	12.2	12.0	11.5
Russell TOP 200 Index	8.9	14.5	40.8	20.2	18.9	15.6
Russell TOP 200 Growth Index	12.1	13.6	42.3	25.8	24.6	18.9
Russell TOP 200 Value Index	5.0	15.8	39.0	12.6	11.9	11.5
Russell 1000 Index	8.5	15.0	43.1	19.2	18.0	14.9
Russell 1000 Growth Index	11.9	13.0	42.5	25.1	23.7	17.9
Russell 1000 Value Index	5.2	17.0	43.7	12.4	11.9	11.6
Russell Mid-Cap Index	7.5	16.2	49.8	16.4	15.6	13.2
Russell Mid-Cap Growth Index	11.1	10.4	43.8	22.4	20.5	15.1
Russell Mid-Cap Value Index	5.7	19.5	53.1	11.9	11.8	11.7
Russell 2000 Index	4.3	17.5	62.0	13.5	16.5	12.3
Russell 2000 Growth Index	3.9	9.0	51.4	15.9	18.8	13.5
Russell 2000 Value Index	4.6	26.7	73.3	10.3	13.6	10.8

U.S. EQUITY BY SECTOR	QTR	YTD	1 Year	3 Year	5 Year	10 Year
Communication Services	11.3	19.7	51.6	26.8	13.2	12.5
Consumer Discretionary	6.7	12.0	53.1	24.1	22.4	18.7
Consumer Staples	3.6	5.7	24.8	13.9	8.1	11.5
Energy	12.7	48.8	56.4	(6.7)	(1.2)	(0.9)
Financials	7.7	25.4	61.7	13.0	16.4	13.4
Health Care	8.5	11.2	30.0	17.7	15.4	16.2
Industrials	4.2	16.2	53.2	15.1	15.1	13.1
Information Technology	11.5	13.1	44.3	30.3	31.0	21.4
Materials	5.0	15.9	52.4	13.5	14.2	10.0
Real Estate	12.0	21.3	32.9	12.0	8.2	10.1
Utilities	(0.4)	2.6	15.8	9.6	7.3	10.6

Source: Markov Processes International.

Global Index Returns

INT'L/GLOBAL EQUITY	QTR	YTD	1 Year	3 Year	5 Year	10 Year
MSCI EAFE (Net)	5.2	8.8	32.4	8.3	10.3	5.9
MSCI EAFE Growth (Net)	7.4	6.8	31.0	12.5	12.5	7.8
MSCI EAFE Value (Net)	3.0	10.7	33.5	3.8	7.8	3.9
MSCI EAFE Small Cap (Net)	4.3	9.0	41.0	8.4	12.0	8.4
MSCI AC World Index (Net)	7.4	12.3	39.3	14.6	14.6	9.9
MSCI AC World Index Growth (Net)	10.0	10.3	39.7	20.4	19.2	12.7
MSCI AC World Index Value (Net)	4.8	14.1	38.4	8.4	9.8	7.0
MSCI Europe ex UK (Net)	7.8	11.6	36.2	11.0	12.0	6.2
MSCI United Kingdom (Net)	6.0	12.5	31.3	1.9	5.7	3.7
MSCI Pacific ex Japan (Net)	4.8	9.6	34.2	8.2	10.4	5.5
MSCI Japan (Net)	(0.3)	1.3	24.8	7.2	10.2	7.2
MSCI Emerging Markets (Net)	5.0	7.4	40.9	11.3	13.0	4.3

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	0.0	0.0	0.1	1.3	1.2	0.6
Barclays Intermediate <u>Gov't</u> /Credit	1.0	(0.9)	0.2	4.7	2.6	2.8
Barclays Aggregate Bond	1.8	(1.6)	(0.3)	5.3	3.0	3.4
Barclays Short Government	0.0	0.0	0.2	2.1	1.5	1.0
Barclays Intermediate Government	0.6	(1.1)	(1.1)	3.9	1.9	2.1
Barclays Long Government	6.4	(7.8)	(10.4)	8.0	3.2	6.6
Barclays Investment Grade Corp.	3.5	(1.3)	3.3	7.8	4.9	5.2
Barclays High Yield Corp. Bond	2.7	3.6	15.4	7.4	7.5	6.7
JPMorgan Global ex US Bond	0.4	(6.0)	2.6	2.7	1.1	0.8
JPMorgan Emerging Market Bond	4.1	(0.7)	7.5	6.7	4.9	5.7

INFLATION SENSITIVE	QTR	YTD	1 Year	3 Year	5 Year	10 Year
Consumer Price Index	2.6	4.3	5.4	2.5	2.4	1.8
BC TIPS	3.2	1.7	6.5	6.5	4.2	3.4
Commodities	13.3	21.1	45.6	3.9	2.4	(4.4)
Gold	3.2	(7.0)	(3.9)	10.6	4.8	0.8
REITs	12.0	21.3	32.8	12.0	8.1	10.3
FTSE EPRA/NAREIT Global REITs	9.7	17.4	35.3	6.3	4.0	6.5
NCREIF ODCE*	3.7	5.7	7.1	4.6	5.6	8.6
NCREIF Farmland**	0.9	0.9	4.1	4.7	5.5	10.2
NCREIF Timberland**	0.8	0.8	1.5	1.7	2.5	4.5

*Data are preliminary.

**Data are as of March 31, 2021.

Source: Markov Processes International.

III. Portfolio Review



Observations

- Market Value as of June 30, 2021 was \$3.5B
- 2Q '21 Return: Total Fund 5.2% (net) vs. Policy Index 5.1%; investment gain of \$175 million.
- Contributors 2Q '21 Performance:
 - Large Cap Growth
 - Developed International Equity
 - Opportunistic Real Estate
- Detractors 2Q '21 Performance
 - Deeper Value U.S. Large Cap Equities
 - Overweight U.S. Small Cap Equities
- Year-to-date Return: Total Fund 10.2% (net) vs. Policy Index 9.3%; investment gain of \$327 million.
- 1 Year Return: Total Fund 31.5% (net) vs. Policy Index 28.7%; investment gain of \$837 million.
- 5 Year Return: Total Fund 13.1% (net) vs. Policy Index 11.3%; investment gain of \$1.59 billion.
- Estimated Annual Plan Investment Management Expenses: 0.40%

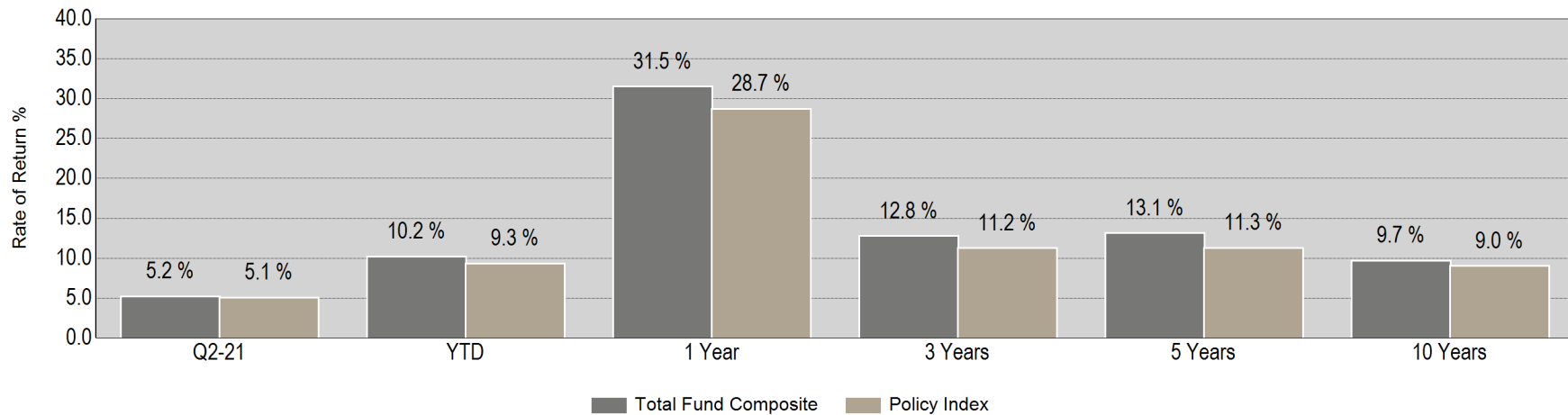
Recent Changes/Looking Ahead

- Approve investment manager for outstanding U.S. Equity searches
 - U.S. Small Cap Value and U.S. Large Cap Value
- Upcoming investment manager searches:
 - Fixed Income: Active Core Fixed Income and Opportunistic Credit

Summary of Cash Flows

	Second Quarter	Year-To-Date	One Year	Three Years	Five Years	Ten Years
Beginning Market Value	\$3,308,194,183	\$3,175,810,695	\$2,649,623,811	\$2,526,229,643	\$2,007,673,361	\$1,602,046,065
Net Cash Flow	-\$23,461,199	-\$42,999,164	-\$27,187,087	-\$98,654,142	-\$138,380,784	-\$251,285,805
Net Investment Change	\$175,076,803	\$326,998,255	\$837,373,063	\$1,032,234,285	\$1,590,517,210	\$2,109,049,527
Ending Market Value	\$3,459,809,786	\$3,459,809,786	\$3,459,809,786	\$3,459,809,786	\$3,459,809,786	\$3,459,809,786

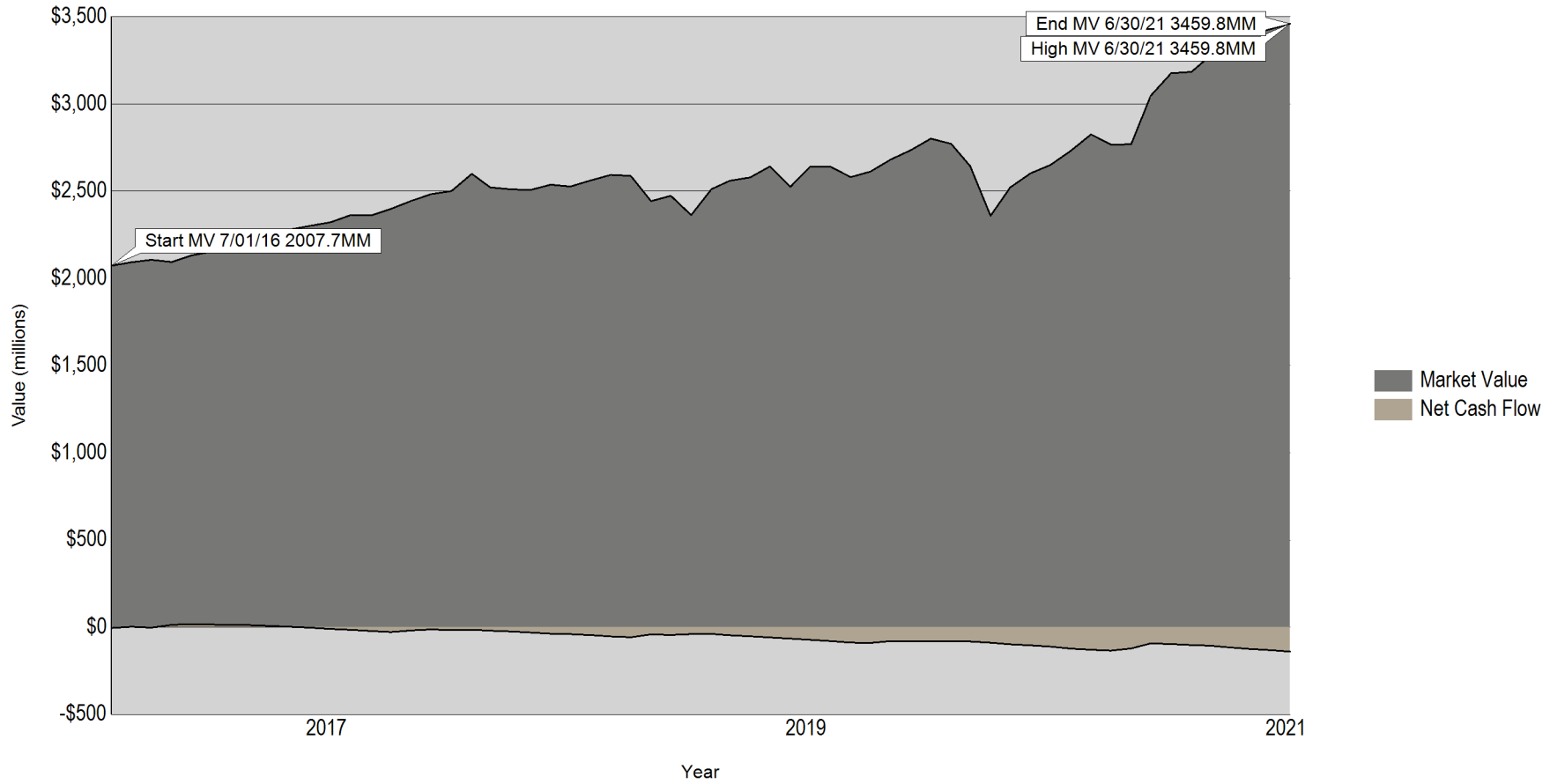
Return Summary (Net)



Asset Allocation vs. Target

	Current	Policy
U.S. Equity	41.8%	40.0%
Non-U.S. Equity	14.9%	15.0%
Emerging Markets	9.6%	10.0%
Real Assets	14.9%	20.0%
U.S. Fixed Income	18.4%	15.0%
Cash Equivalent	0.5%	0.0%
Total	100.0%	100.0%

Market Value History



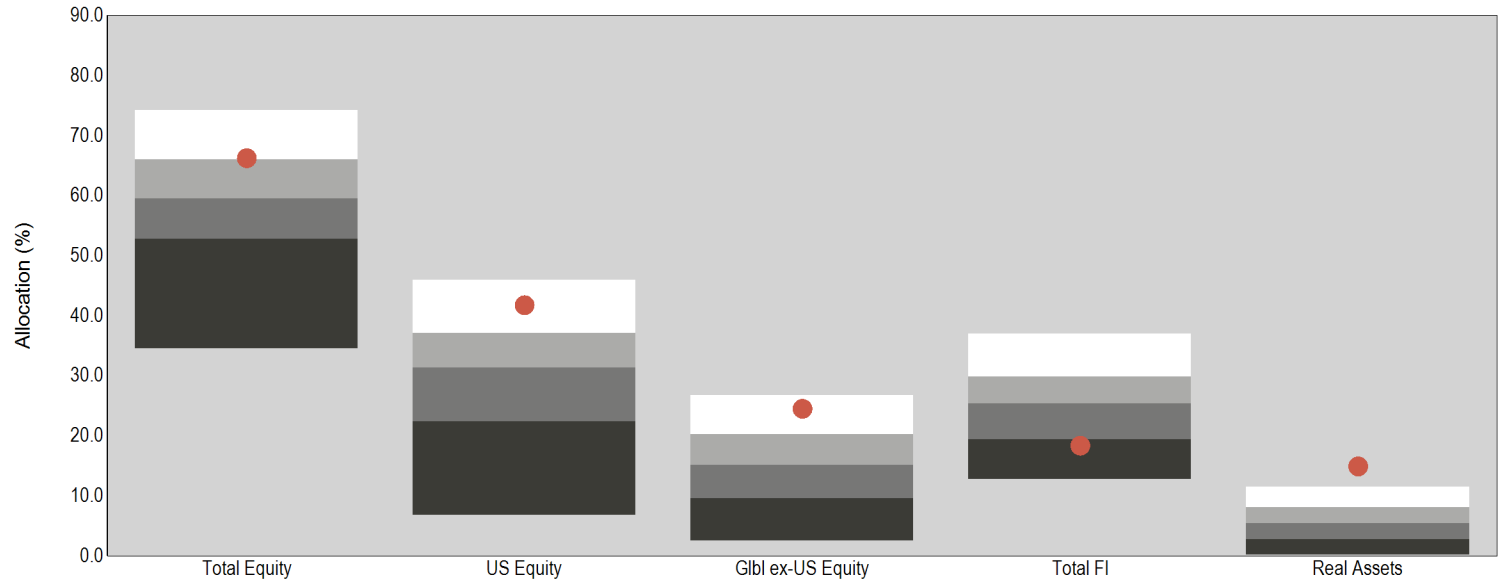
Pennsylvania Municipal Retirement System

Asset Allocation Summary

As of June 30, 2021

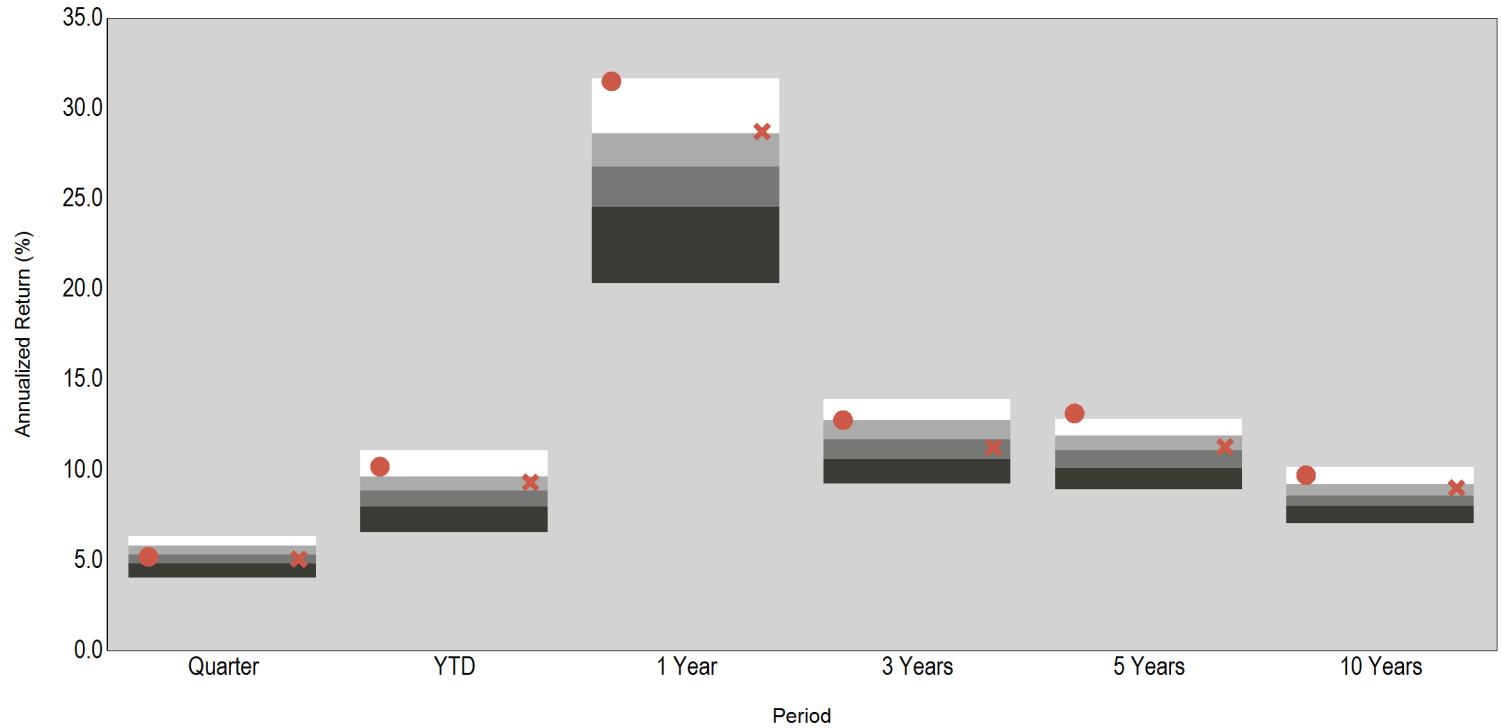
	Market Value	% of Portfolio	Policy %	Policy Difference
Total Fund Composite	3,459,809,786	100.0	100.0	0
Total Equity Composite	2,291,922,500	66.2	65.0	43,046,139
U.S. Equity Composite	1,444,534,118	41.8	40.0	60,610,204
Large Cap U.S. Equity Composite	915,146,207	26.5	25.0	50,193,760
Eagle Asset Mgmt	227,119,805	6.6		
LSV Large Cap Value	215,981,647	6.2		
SSGA S&P 500	116,089,964	3.4		
Polen Focus Growth	277,278,621	8.0		
William & Blair Large Cap Growth	78,676,170	2.3		
Small Cap U.S. Equity Composite	529,387,911	15.3	15.0	10,416,443
LSV Small Cap Value	100,437,933	2.9		
Smith, Graham & Co Small Cap Value	102,681,641	3.0		
SSGA Russell 2000	118,824,275	3.4		
Copeland Small Cap Dividend Growth	60,835,665	1.8		
AMI Small Cap Growth	54,143,314	1.6		
Emerald Small Cap Growth	92,465,084	2.7		
Non-U.S. Equity Composite	847,388,381	24.5	25.0	-17,564,065
Developed Non-U.S. Equity Composite	516,867,624	14.9	15.0	-2,103,844
SSGA MSCI World ex US	168,951,073	4.9		
Hardman Johnston Int'l Equity	179,465,060	5.2		
HGK Int'l Equity	168,109,615	4.9		
Emerging Markets Composite	330,520,758	9.6	10.0	-15,460,221
SSGA MSCI Emerging Markets Index	330,520,758	9.6		
Real Assets Composite	515,190,277	14.9	20.0	-176,771,680
Forest Investment Associates	133,963,103	3.9		
PRISA LP	55,445,216	1.6		
PRISA II	112,243,471	3.2		
PennMuni-Nuveen U.S. Real Estate Fund	211,438,010	6.1		
N. Front Street (Nuveen)	2,100,476	0.1		
Total Fixed Income Composite	635,136,465	18.4	15.0	116,164,997
SSGA US Aggregate Bond Index	635,136,465	18.4		
Cash Composite	17,560,544	0.5	0.0	17,560,544
Cash Management	10,867,896	0.3		
Pool 999	6,692,648	0.2		

Total Plan Allocation vs. InvMetrics Public DB Net
As of June 30, 2021



	Allocation (Rank)									
5th Percentile	74.3		45.9		26.7		37.0		11.5	
25th Percentile	66.0		37.1		20.2		29.8		8.0	
Median	59.5		31.4		15.2		25.4		5.4	
75th Percentile	52.8		22.4		9.6		19.4		2.7	
95th Percentile	34.6		6.8		2.6		12.8		0.1	
# of Portfolios	228		127		181		228		63	
● Total Fund Composite	66.2	(25)	41.8	(12)	24.5	(8)	18.4	(79)	14.9	(1)

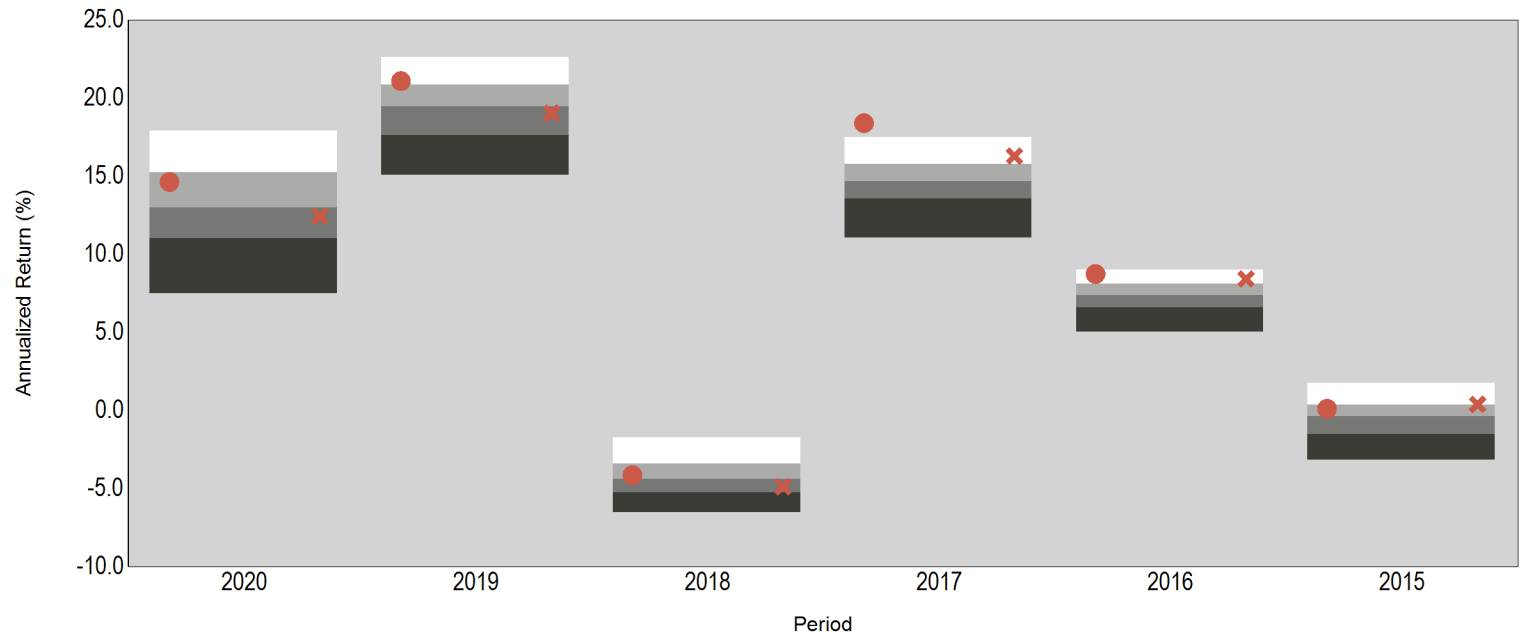
InvMetrics Public DB Net Return Comparison



Return (Rank)

5th Percentile	6.3	11.1	31.6	13.9	12.8	10.2						
25th Percentile	5.8	9.6	28.6	12.8	11.9	9.2						
Median	5.3	8.8	26.8	11.7	11.1	8.6						
75th Percentile	4.8	8.0	24.6	10.6	10.1	8.0						
95th Percentile	4.1	6.6	20.3	9.3	8.9	7.0						
# of Portfolios	609	607	603	580	558	453						
● Total Fund Composite	5.2	(57)	10.2	(14)	31.5	(6)	12.8	(24)	13.1	(4)	9.7	(13)
▲ Policy Index	5.1	(64)	9.3	(36)	28.7	(24)	11.2	(61)	11.3	(44)	9.0	(34)

InvMetrics Public DB Net Return Comparison



	2020		2019		2018		2017		2016		2015	
5th Percentile	17.9		22.6		-1.7		17.5		9.0		1.7	
25th Percentile	15.3		20.8		-3.4		15.8		8.1		0.4	
Median	13.0		19.5		-4.4		14.7		7.4		-0.4	
75th Percentile	11.0		17.6		-5.2		13.6		6.6		-1.5	
95th Percentile	7.5		15.1		-6.5		11.1		5.0		-3.2	
# of Portfolios	596		550		496		269		269		262	
● Total Fund Composite	14.6	(33)	21.1	(23)	-4.1	(44)	18.4	(3)	8.7	(10)	0.1	(31)
▲ Policy Index	12.4	(57)	19.0	(57)	-4.9	(66)	16.3	(18)	8.4	(19)	0.4	(24)

RISK RETURN STATISTICS

July 01, 2016 Through June 30, 2021

	Total Fund Composite	Policy Index
RETURN SUMMARY STATISTICS		
Number of Periods	20	20
Maximum Return	13.50	12.26
Minimum Return	-15.37	-14.88
Annualized Return	13.14	11.29
Total Return	85.37	70.73
Annualized Excess Return Over Risk Free	12.03	10.18
Annualized Excess Return	1.85	0.00

RISK SUMMARY STATISTICS

Beta	1.06	1.00
Upside Deviation	7.33	6.82
Downside Deviation	15.25	14.65

RISK/RETURN SUMMARY STATISTICS

Annualized Standard Deviation	13.03	12.23
Alpha	0.26	0.00
Sharpe Ratio	0.92	0.83
Excess Return Over Market / Risk	0.14	0.00
Tracking Error	1.07	0.00
Information Ratio	1.73	--

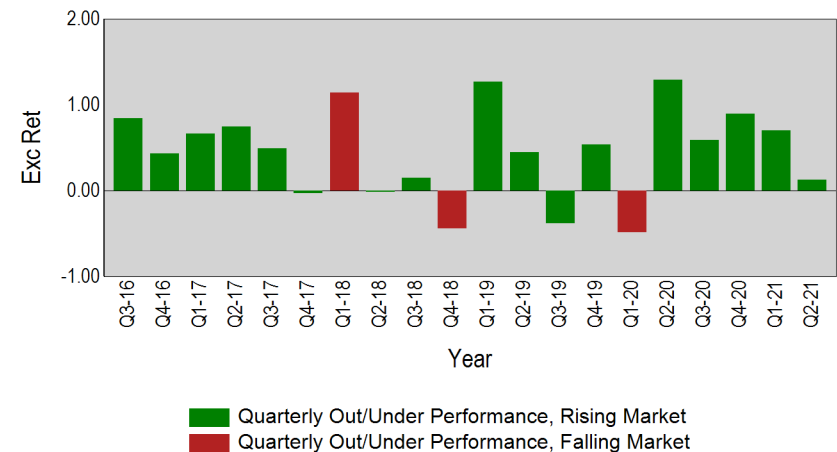
CORRELATION STATISTICS

R-Squared	1.00	1.00
Correlation	1.00	1.00

Upside Capture Ratio vs. Downside Capture Ratio
5 Years Ending June 30, 2021



Quarterly Excess Performance
Total Fund Composite vs. Policy Index



Pennsylvania Municipal Retirement System

Total Equity Composite

As of June 30, 2021

Characteristics

	Portfolio	MSCI ACWI
Number of Holdings	4,923	2,973
Weighted Avg. Market Cap. (\$B)	232.1	340.9
Median Market Cap. (\$B)	5.5	14.0
Price To Earnings	21.8	23.4
Price To Book	3.6	3.7
Price To Sales	2.1	2.4
Return on Equity (%)	13.9	17.4
Yield (%)	1.3	1.8

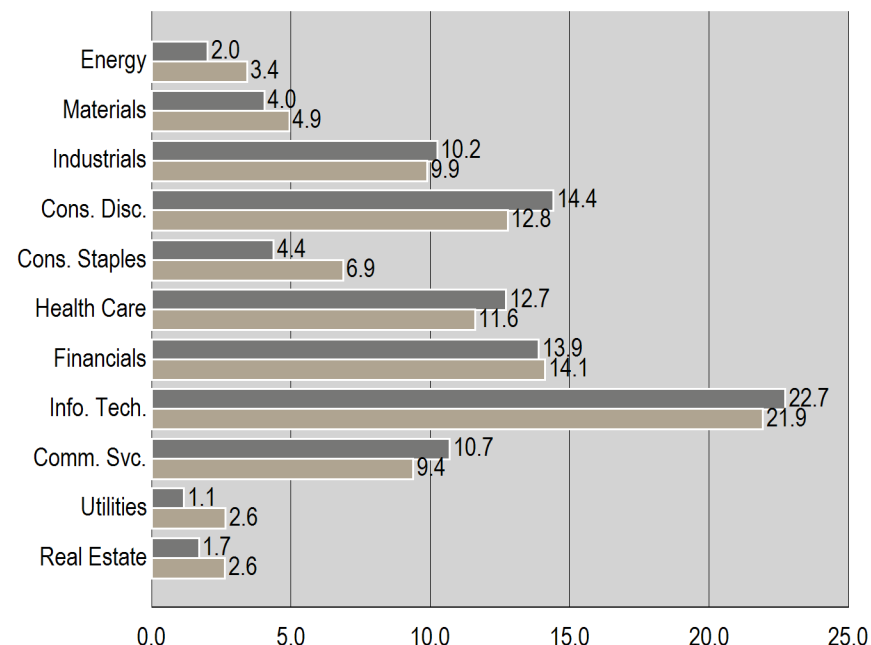
Top Holdings

MICROSOFT CORP	2.5%
AMAZON.COM INC	1.8%
FACEBOOK INC	1.7%
ALPHABET INC	1.4%
ADOBE INC	1.1%
TENCENT HOLDINGS LTD	1.1%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	1.1%
UNITEDHEALTH GROUP INC	1.0%
ALIBABA GROUP HOLDING LTD	0.9%
NETFLIX INC	0.8%
Total	13.4%

Market Capitalization

	Small Cap	Mid Cap	Large Cap	Unclassified
Total Equity Composite	27.9%	13.5%	55.0%	3.7%
MSCI ACWI	5.7%	16.3%	78.1%	0.0%
<i>Weight Over/Under</i>	<i>22.2%</i>	<i>-2.8%</i>	<i>-23.1%</i>	<i>3.7%</i>

Sector Allocation (%) vs MSCI ACWI



Region Allocation Summary

Region	% of Total	% of Bench	% Diff
North America ex U.S.	1.1%	2.9%	-1.8%
United States	62.5%	58.7%	3.8%
Europe Ex U.K.	8.9%	12.8%	-3.9%
United Kingdom	2.7%	3.7%	-1.0%
Pacific Basin Ex Japan	3.9%	3.0%	0.9%
Japan	3.4%	5.9%	-2.5%
Emerging Markets	16.9%	12.8%	4.1%
Other	0.6%	0.2%	0.4%
Total	100.0%	100.0%	0.0%

Characteristics

	Portfolio	Russell 3000
Number of Holdings	2,661	2,916
Weighted Avg. Market Cap. (\$B)	288.6	408.7
Median Market Cap. (\$B)	2.3	2.8
Price To Earnings	22.7	26.5
Price To Book	3.7	4.4
Price To Sales	2.2	3.2
Return on Equity (%)	16.0	18.4
Yield (%)	1.0	1.3

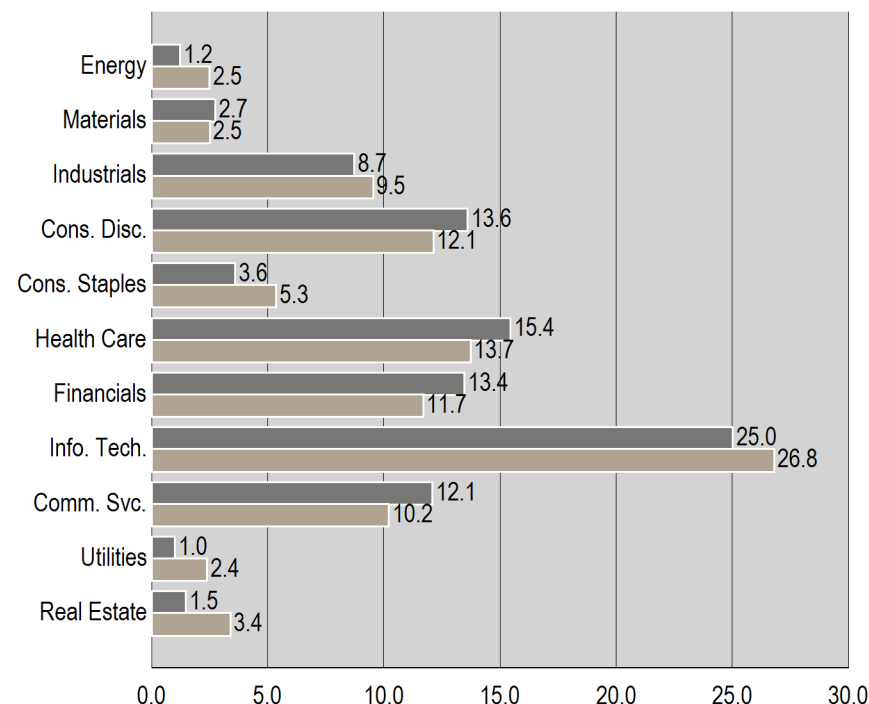
Top Holdings

MICROSOFT CORP	3.9%
AMAZON.COM INC	2.8%
FACEBOOK INC	2.7%
ALPHABET INC	2.2%
ADOBE INC	1.7%
UNITEDHEALTH GROUP INC	1.5%
NETFLIX INC	1.3%
MASTERCARD INC	1.2%
SALESFORCE.COM INC	1.2%
ACCENTURE PLC	1.1%
Total	19.7%

Market Capitalization

	Small Cap	Mid Cap	Large Cap	Unclassified
U.S. Equity Composite	25.9%	23.0%	49.0%	2.1%
Russell 3000	5.7%	24.3%	70.0%	0.0%
<i>Weight Over/Under</i>	<i>20.2%</i>	<i>-1.3%</i>	<i>-21.0%</i>	<i>2.1%</i>

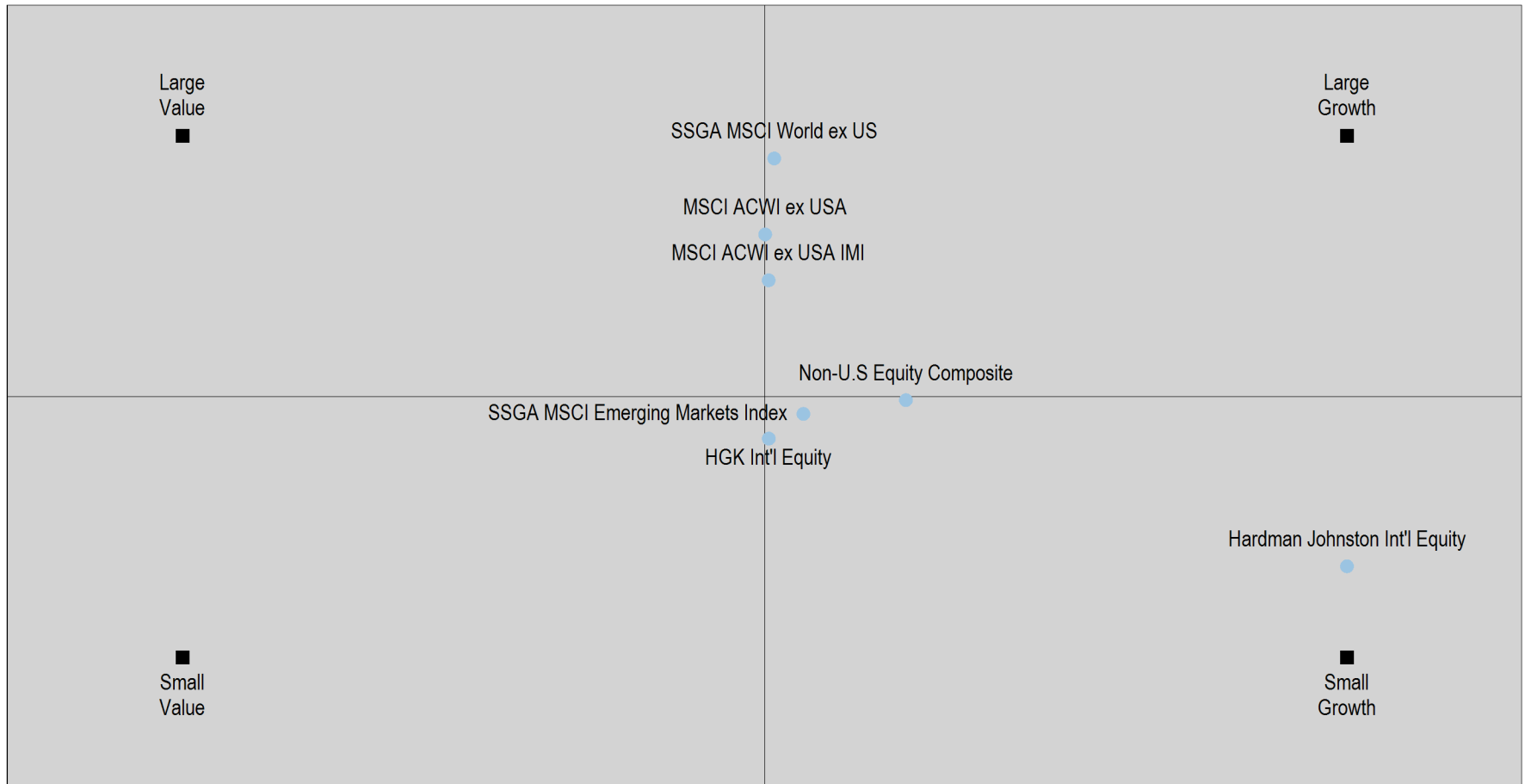
Sector Allocation (%) vs Russell 3000



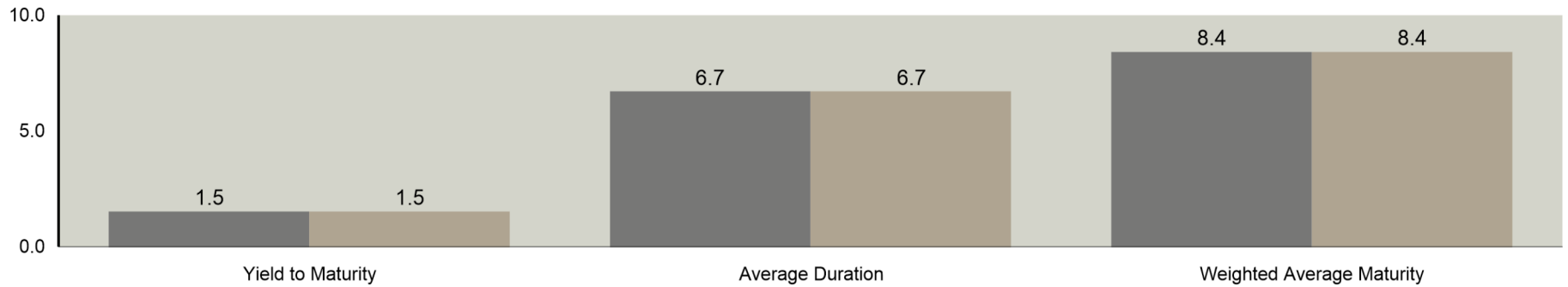
Style Map
3 Years Ending June 30, 2021



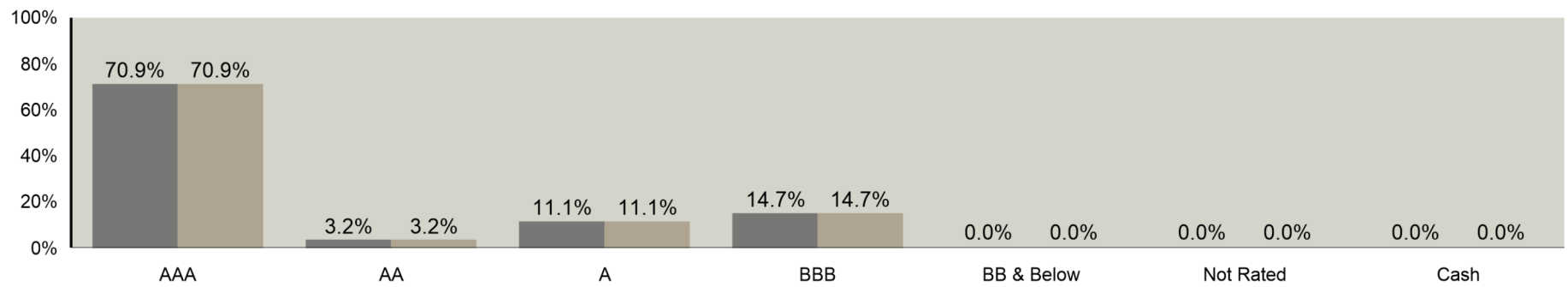
Style Map
3 Years Ending June 30, 2021



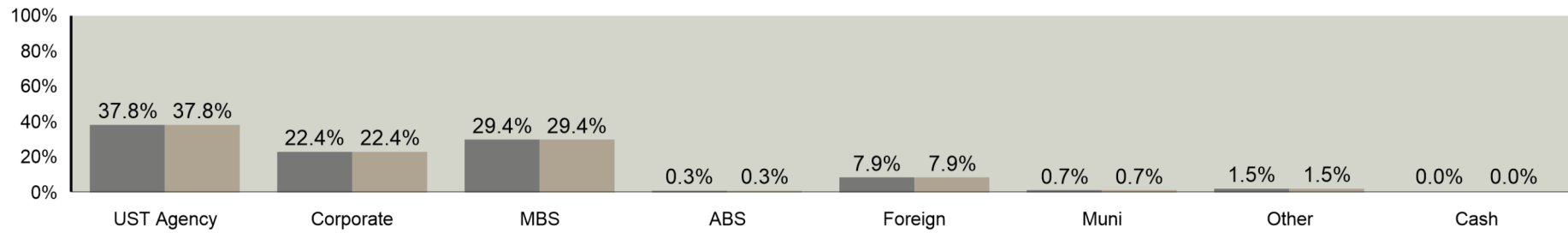
Summary Characteristics



Credibility Quality Allocation



US Sector Allocation



Fixed Income Composite

BBgBarc U.S. Aggregate Bond

Pennsylvania Municipal Retirement System

Performance Summary (Net)

As of June 30, 2021

	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Inception	Inception Date
Total Fund Composite	5.2	10.2	31.5	12.8	13.1	9.7	9.2	Jan-86
<i>Policy Index</i>	5.1	9.3	28.7	11.2	11.3	9.0	9.5	Jan-86
<i>InvMetrics Public DB Net Rank</i>	57	14	6	24	4	13	13	Jan-86
Total Equity Composite	7.0	14.9	--	--	--	--	37.1	Oct-20
<i>MSCI ACWI IMI Net USD</i>	7.2	12.7	--	--	--	--	30.4	Oct-20
U.S. Equity Composite	7.6	19.1	52.9	18.9	19.5	14.1	10.2	Jan-06
<i>Russell 3000</i>	8.2	15.1	44.2	18.7	17.9	14.7	10.6	Jan-06
<i>InvMetrics Public DB US Eq Net Rank</i>	53	4	3	5	3	41	44	Jan-06
Large Cap U.S. Equity Composite	9.4	18.1	45.7	21.1	20.5	15.9	11.6	Jan-86
<i>S&P 500</i>	8.5	15.3	40.8	18.7	17.6	14.8	11.3	Jan-86
<i>Eagle Asset Mgmt</i>	9.0	21.1	53.3	19.4	19.4	--	20.1	Feb-16
<i>Russell 1000 Value</i>	5.2	17.0	43.7	12.4	11.9	--	13.3	Feb-16
<i>eV US Large Cap Value Equity Net Rank</i>	4	20	16	5	2	--	2	Feb-16
<i>LSV Large Cap Value</i>	4.6	21.4	50.1	11.4	13.1	12.0	9.0	Apr-04
<i>Russell 1000 Value</i>	5.2	17.0	43.7	12.4	11.9	11.6	8.5	Apr-04
<i>S&P 500</i>	8.5	15.3	40.8	18.7	17.6	14.8	10.3	Apr-04
<i>eV US Large Cap Value Equity Net Rank</i>	82	17	24	66	44	39	42	Apr-04
<i>SSGA S&P 500</i>	8.5	15.2	40.7	18.6	17.6	14.8	9.2	Feb-97
<i>S&P 500</i>	8.5	15.3	40.8	18.7	17.6	14.8	9.2	Feb-97
<i>eV US Large Cap Core Equity Net Rank</i>	27	45	40	27	21	14	67	Feb-97
<i>Polen Focus Growth</i>	13.1	15.0	39.3	27.3	25.2	18.8	19.3	Oct-10
<i>Russell 1000 Growth</i>	11.9	13.0	42.5	25.1	23.7	17.9	18.5	Oct-10
<i>eV US Large Cap Growth Equity Net Rank</i>	15	18	55	11	19	7	7	Oct-10
<i>William & Blair Large Cap Growth</i>	12.0	14.5	42.5	--	--	--	42.8	Jun-20
<i>Russell 1000 Growth</i>	11.9	13.0	42.5	--	--	--	44.2	Jun-20
<i>eV US Large Cap Growth Equity Net Rank</i>	31	25	32	--	--	--	37	Jun-20

Pennsylvania Municipal Retirement System

Performance Summary (Net)

As of June 30, 2021

	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Inception	Inception Date
Small Cap U.S. Equity Composite	4.5	20.4	64.7	13.9	17.1	12.2	11.3	Jan-93
<i>Russell 2000</i>	4.3	17.5	62.0	13.5	16.5	12.3	10.1	Jan-93
LSV Small Cap Value	5.1	29.6	77.5	8.9	--	--	9.1	Dec-16
<i>Russell 2000 Value</i>	4.6	26.7	73.3	10.3	--	--	10.6	Dec-16
<i>Russell 2000</i>	4.3	17.5	62.0	13.5	--	--	14.4	Dec-16
<i>eV US Small Cap Value Equity Net Rank</i>	33	17	18	63	--	--	66	Dec-16
Smith, Graham & Co Small Cap Value	3.3	25.2	79.5	14.5	--	--	12.0	Dec-16
<i>Russell 2000 Value</i>	4.6	26.7	73.3	10.3	--	--	10.6	Dec-16
<i>eV US Small Cap Value Equity Net Rank</i>	65	45	15	16	--	--	28	Dec-16
SSGA Russell 2000	4.3	17.6	62.1	13.5	16.5	12.4	9.3	Mar-97
<i>Russell 2000</i>	4.3	17.5	62.0	13.5	16.5	12.3	9.4	Mar-97
<i>eV US Small Cap Core Equity Net Rank</i>	59	60	37	40	35	46	99	Mar-97
Copeland Small Cap Dividend Growth	4.1	19.1	49.5	13.5	--	--	14.1	Sep-17
<i>Russell 2000</i>	4.3	17.5	62.0	13.5	--	--	13.9	Sep-17
<i>eV US Small Cap Core Equity Net Rank</i>	63	48	84	40	--	--	37	Sep-17
AMI Small Cap Growth	8.1	11.5	44.6	9.7	--	--	12.1	Sep-17
<i>Russell 2000 Growth</i>	3.9	9.0	51.4	15.9	--	--	18.0	Sep-17
<i>eV US Small Cap Growth Equity Net Rank</i>	14	49	82	96	--	--	96	Sep-17
Emerald Small Cap Growth	4.1	6.3	47.6	17.1	20.3	15.3	12.0	Oct-98
<i>Russell 2000 Growth</i>	3.9	9.0	51.4	15.9	18.8	13.5	9.4	Oct-98
<i>eV US Small Cap Growth Equity Net Rank</i>	75	83	71	69	60	44	53	Oct-98
Non-U.S. Equity Composite	5.9	8.2	39.3	11.8	13.9	--	9.8	May-12
<i>MSCI ACWI ex USA</i>	5.5	9.2	35.7	9.4	11.1	--	8.5	May-12
<i>InvMetrics Public DB ex-US Eq Net Rank</i>	26	78	26	11	6	--	23	May-12
Developed Non-U.S. Equity Composite	6.5	8.5	38.5	12.3	14.4	8.1	8.4	Jan-93
<i>MSCI EAFE</i>	5.2	8.8	32.3	8.3	10.3	5.9	6.4	Jan-93
SSGA MSCI World ex US	5.8	10.2	34.0	9.0	10.7	--	7.4	Apr-12
<i>MSCI World ex USA</i>	5.6	9.9	33.6	8.6	10.4	--	7.1	Apr-12
<i>eV ACWI ex-US Core Equity Net Rank</i>	52	46	82	65	68	--	66	Apr-12
Hardman Johnston Int'l Equity	7.7	3.8	43.2	17.2	18.7	--	12.0	Apr-12
<i>MSCI EAFE</i>	5.2	8.8	32.3	8.3	10.3	--	7.2	Apr-12
<i>eV EAFE All Cap Equity Net Rank</i>	7	94	11	3	1	--	1	Apr-12
HGK Int'l Equity	6.1	11.1	37.7	10.8	14.1	--	10.6	Feb-12
<i>MSCI EAFE</i>	5.2	8.8	32.3	8.3	10.3	--	7.7	Feb-12
<i>eV EAFE All Cap Equity Net Rank</i>	28	37	26	25	15	--	22	Feb-12

Pennsylvania Municipal Retirement System

Performance Summary (Net)

As of June 30, 2021

	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Inception	Inception Date
Emerging Markets Composite								
SSGA MSCI Emerging Markets Index	5.0	7.4	40.2	11.2	12.9	4.2	9.5	Nov-08
MSCI Emerging Markets	5.0	7.4	40.9	11.3	13.0	4.3	9.7	Nov-08
eV Emg Mkts Equity Net Rank	52	61	69	51	56	71	70	Nov-08
Real Assets Composite								
NFI	2.2	4.7	7.2	4.5	5.3	7.1	7.5	Apr-93
Forest Investment Associates	3.7	5.7	7.1	4.6	5.6	8.6	--	Apr-93
NCREIF Timberland Property Index	-0.5	4.7	5.0	0.8	2.4	4.1	3.8	Mar-99
PRISA LP	1.7	2.5	3.1	2.1	2.7	4.7	5.8	Mar-99
NFI	3.7	5.6	7.2	5.5	6.1	9.0	6.3	Jan-86
PRISA II	3.7	5.7	7.1	4.6	5.6	8.6	--	Jan-86
NFI	4.8	6.7	8.4	5.4	6.5	10.2	3.9	Jul-07
PennMuni-Nuveen U.S. Real Estate Fund	3.7	5.7	7.1	4.6	5.6	8.6	4.6	Jul-07
NFI	2.3	3.4	8.3	7.2	7.4	8.9	6.2	Dec-08
NCREIF Property Index	3.7	5.7	7.1	4.6	5.6	8.6	5.6	Dec-08
N. Front Street (Nuveen)	3.6	5.4	7.4	5.5	6.1	8.8	7.1	Dec-08
Consumer Price Index	1.1	1.9	-7.4	-3.3	--	--	-5.7	Sep-16
Total Fixed Income Composite								
SSGA US Aggregate Bond Index	2.6	4.3	5.4	2.5	--	--	2.5	Sep-16
Bloomberg US Aggregate TR	1.8	-1.6	-0.3	5.4	3.0	3.4	5.1	Apr-97
eV US Core Fixed Inc Net Rank	1.8	-1.6	-0.3	5.3	3.0	3.4	5.1	Apr-97
Cash Composite								
Cash Management								
Pool 999								

IV. Investment Managers



Manager Summary: Concentrated portfolio (25-35 names) focused on finding undervalued companies that have high growth potential yet low risk of significant downside loss. 8 member team performs bottom-up fundamental analysis, all generalists: 4 member committee that meets weekly to discuss the portfolio. Low portfolio turnover around 20%. Sectors cannot be above 35% of portfolio.

Characteristics

	Portfolio	Russell 1000 Value
Number of Holdings	28	832
Weighted Avg. Market Cap. (\$B)	561.4	153.1
Median Market Cap. (\$B)	131.0	14.3
Price To Earnings	20.8	20.8
Price To Book	3.4	2.7
Price To Sales	2.8	2.4
Return on Equity (%)	17.7	13.3
Yield (%)	0.7	1.9

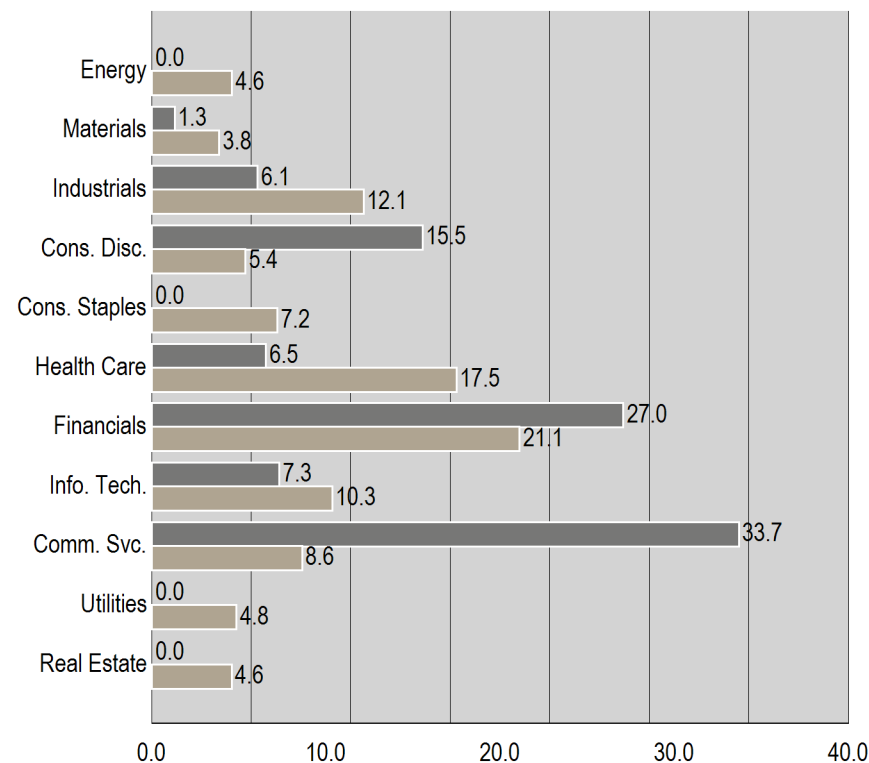
Top Holdings

MICROSOFT CORP	7.5%
FACEBOOK INC	7.5%
ALPHABET INC	7.4%
AMAZON.COM INC	7.1%
COMCAST CORP	5.1%
GENERAL ELECTRIC CO	4.8%
AON PLC	4.7%
WELLS FARGO & CO	4.7%
LIBERTY BROADBAND CORP	4.6%
GOLDMAN SACHS GROUP INC (THE)	4.6%
Total	57.8%

Market Capitalization

	Small Cap	Mid Cap	Large Cap
Eagle Asset Mgmt	0.0%	13.9%	86.1%
Russell 1000 Value	0.6%	33.6%	65.8%
<i>Weight Over/Under</i>	-0.6%	-19.7%	20.3%

Sector Allocation (%) vs Russell 1000 Value



Manager Summary: Quantitative model that selects deep value stocks. Model ranks stocks based on fundamental measures of value and indicators of price recovery. The model contains three basic blocks of variables: 1) Cheapness/Fundamentals (60%), 2) Past Long-Term Performance/Contrarian (15%) and 3) Momentum (25%). The top 15% of stocks are ranked by expected return and then optimized for risk control. The resulting portfolio consists of approximately 100-160 stocks.

Characteristics

	Portfolio	S&P 500
Number of Holdings	158	504
Weighted Avg. Market Cap. (\$B)	67.3	540.3
Median Market Cap. (\$B)	16.9	30.4
Price To Earnings	15.7	28.0
Price To Book	2.7	4.7
Price To Sales	1.2	3.4
Return on Equity (%)	24.1	28.7
Yield (%)	2.2	1.4

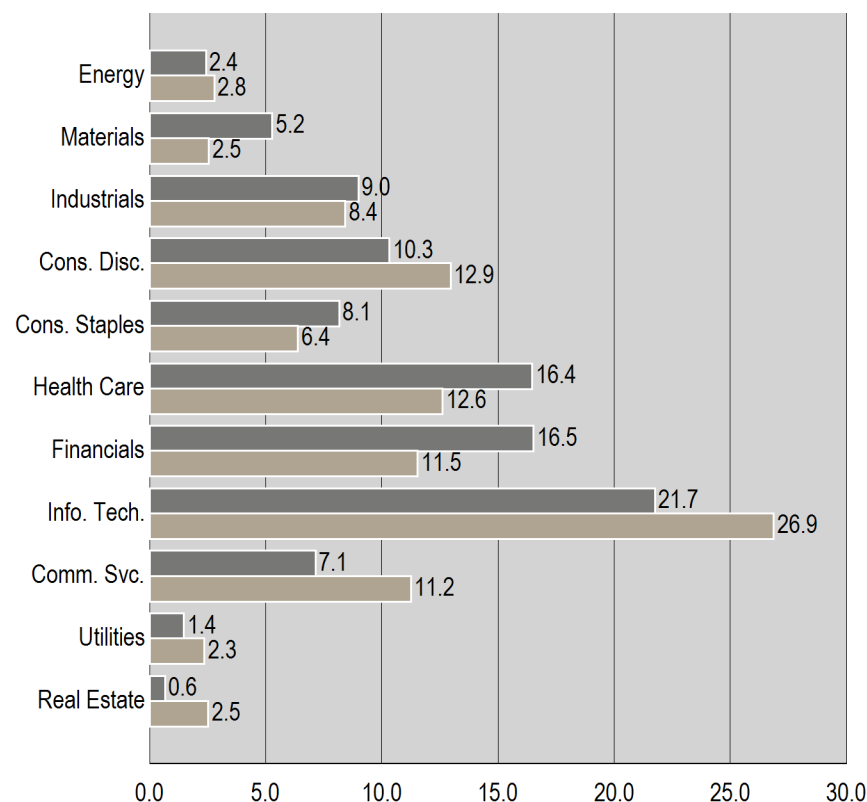
Top Holdings

MERCK & CO INC	2.2%
ORACLE CORP	2.0%
INTEL CORP	1.9%
CISCO SYSTEMS INC	1.9%
APPLIED MATERIALS INC.	1.6%
EBAY INC.	1.6%
VERIZON COMMUNICATIONS INC	1.6%
PFIZER INC	1.6%
HCA HEALTHCARE INC	1.5%
COMCAST CORP	1.5%
Total	17.3%

Market Capitalization

	Small Cap	Mid Cap	Large Cap
LSV Large Cap Value	4.9%	53.5%	41.6%
S&P 500	0.0%	16.9%	83.1%
<i>Weight Over/Under</i>	4.9%	36.6%	-41.5%

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	508	504
Weighted Avg. Market Cap. (\$B)	533.2	540.3
Median Market Cap. (\$B)	30.2	30.4
Price To Earnings	27.9	28.0
Price To Book	4.7	4.7
Price To Sales	3.5	3.4
Return on Equity (%)	28.7	28.7
Yield (%)	1.4	1.4

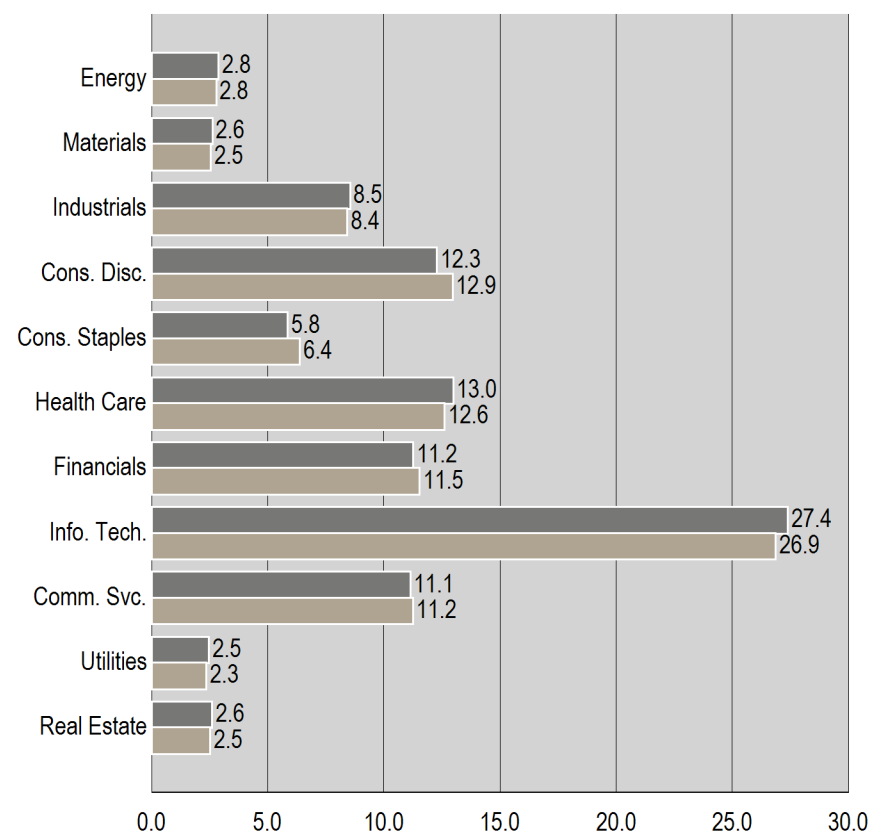
Top Holdings

APPLE INC	5.9%
MICROSOFT CORP	5.6%
AMAZON.COM INC	4.1%
FACEBOOK INC	2.3%
ALPHABET INC	2.0%
ALPHABET INC	2.0%
BERKSHIRE HATHAWAY INC	1.4%
TESLA INC	1.4%
NVIDIA CORPORATION	1.4%
JPMORGAN CHASE & CO	1.3%
Total	27.4%

Market Capitalization

	Small Cap	Mid Cap	Large Cap
SSGA S&P 500	0.1%	17.0%	82.9%
S&P 500	0.0%	16.9%	83.1%
<i>Weight Over/Under</i>	<i>0.1%</i>	<i>0.1%</i>	<i>-0.1%</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	486
Weighted Avg. Market Cap. (\$B)	586.7	787.8
Median Market Cap. (\$B)	216.1	19.4
Price To Earnings	47.2	38.3
Price To Book	11.9	13.5
Price To Sales	9.6	6.1
Return on Equity (%)	33.8	41.4
Yield (%)	0.4	0.7

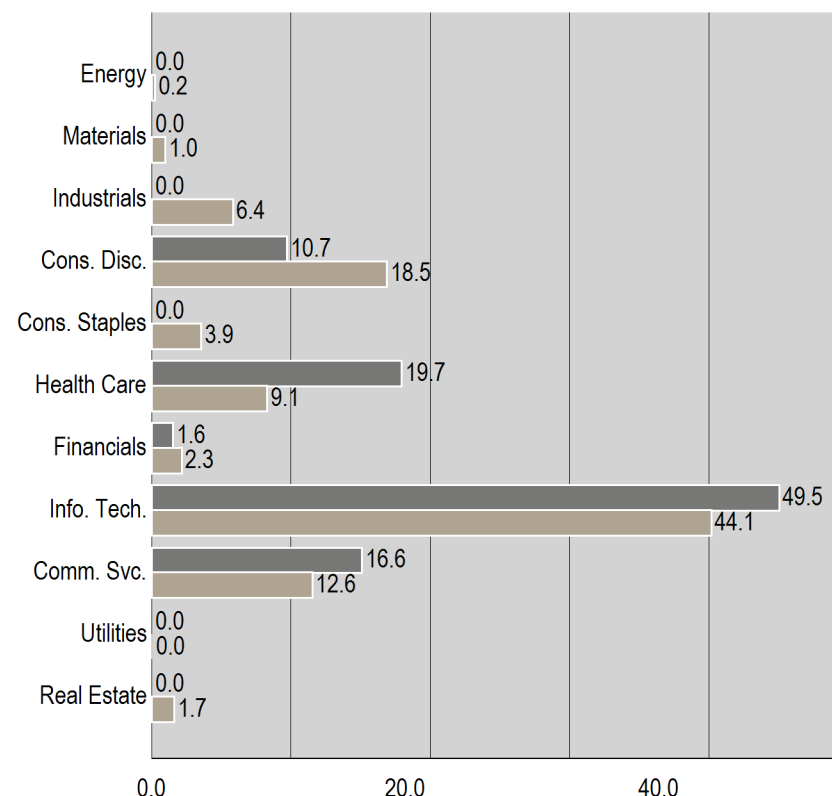
Top Holdings

MICROSOFT CORP	9.0%
ADOBE INC	7.6%
FACEBOOK INC	7.1%
ABBOTT LABORATORIES	5.3%
SALESFORCE.COM INC	5.2%
AMAZON.COM INC	5.1%
VISA INC	4.9%
ACCENTURE PLC	4.8%
ZOETIS INC	4.7%
MASTERCARD INC	4.6%
Total	58.4%

Market Capitalization

	Small Cap	Mid Cap	Large Cap
Polen Focus Growth	0.0%	2.6%	97.4%
Russell 1000 Growth	0.4%	16.1%	83.6%
<i>Weight Over/Under</i>	<i>-0.4%</i>	<i>-13.5%</i>	<i>13.9%</i>

Sector Allocation (%) vs Russell 1000 Growth



Manager Summary: U.S. large cap growth strategy with concentrated portfolio of 30-40 names. Invest in companies with long term earnings growth over a 3-5 year time horizon. Approximately 90% of their portfolio is based on quality growth and 10% fallen quality which may have some short term event which has caused undervaluation. The strategy is market and sector neutral to the Russell 1000 Growth. Names must have a market cap \$5bn<.

Characteristics

	Portfolio	Russell 1000 Growth
Number of Holdings	33	486
Weighted Avg. Market Cap. (\$B)	587.4	787.8
Median Market Cap. (\$B)	132.8	19.4
Price To Earnings	40.4	38.3
Price To Book	10.1	13.5
Price To Sales	6.6	6.1
Return on Equity (%)	33.8	41.4
Yield (%)	0.6	0.7

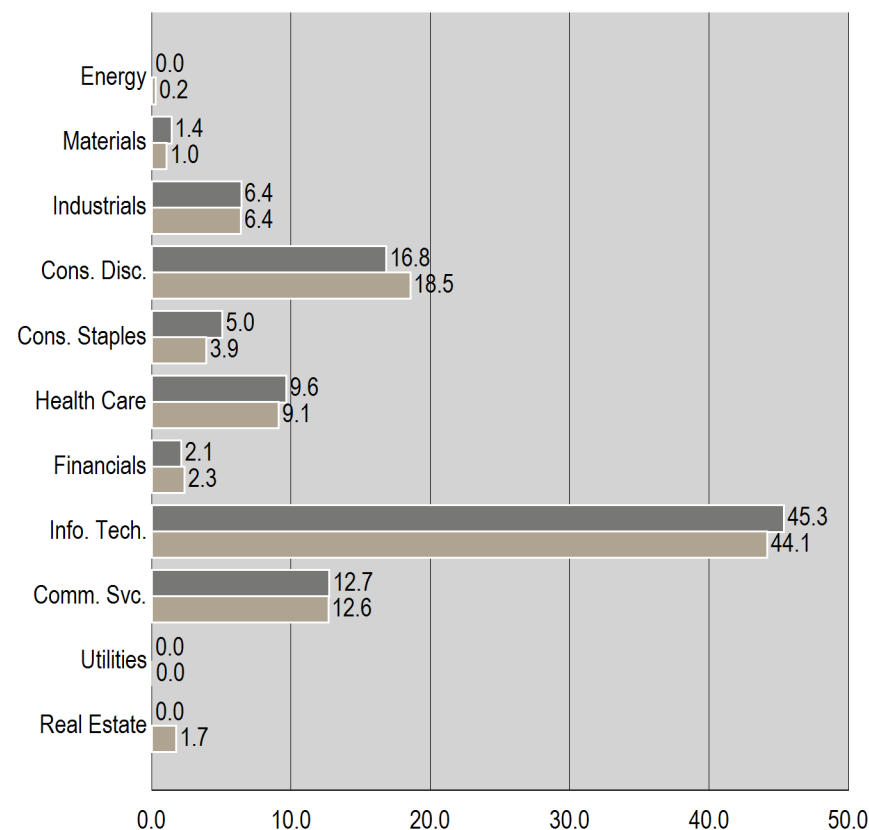
Top Holdings

MICROSOFT CORP	10.6%
AMAZON.COM INC	7.7%
ALPHABET INC	5.9%
MASTERCARD INC	4.8%
PAYPAL HOLDINGS INC	4.5%
NIKE INC	3.8%
ADOBE INC	3.4%
UNITEDHEALTH GROUP INC	3.4%
ACCENTURE PLC	3.3%
INTUIT INC.	3.1%
Total	50.5%

Market Capitalization

	Small Cap	Mid Cap	Large Cap
William & Blair Large Cap Growth	0.0%	13.9%	86.1%
Russell 1000 Growth	0.4%	16.1%	83.6%
Weight Over/Under	-0.4%	-2.2%	2.5%

Sector Allocation (%) vs Russell 1000 Growth



Manager Summary: Quantitative model focuses on maximizing returns for given level of tracking error. The model ranks stocks based on fundamental measures of value and indicators of a recent recovery. Same model approach as LCV. The top 15% of stocks are ranked by expected return and then optimized for risk control. The resulting portfolio consists of approximately 175-225 stocks.

Characteristics

	Portfolio	Russell 2000
Number of Holdings	216	1,903
Weighted Avg. Market Cap. (\$B)	3.4	3.4
Median Market Cap. (\$B)	2.2	1.3
Price To Earnings	12.2	19.9
Price To Book	2.1	2.9
Price To Sales	0.9	2.0
Return on Equity (%)	15.0	-3.2
Yield (%)	1.7	1.0

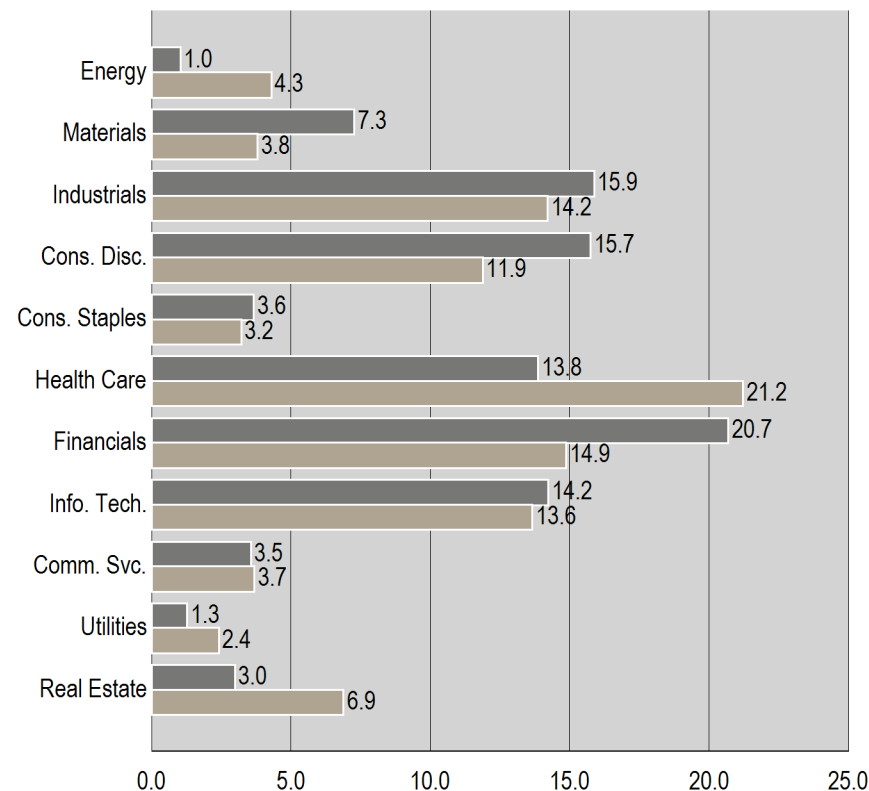
Top Holdings

SELECT MEDICAL HOLDINGS CORP	2.2%
TENET HEALTHCARE CORP	1.8%
J2 GLOBAL INC	1.3%
SYKES ENTERPRISES INC	1.3%
UNITED THERAPEUTICS CORP	1.2%
CNO FINANCIAL GROUP INC	1.2%
ATKORE INC	1.1%
AMKOR TECHNOLOGY INC	1.1%
RELIANCE STEEL & ALUMINUM CO	1.1%
KB HOME	1.1%
Total	13.3%

Market Capitalization

	Small Cap	Mid Cap	Large Cap
LSV Small Cap Value	73.1%	26.9%	0.0%
Russell 2000	77.1%	22.9%	0.0%
<i>Weight Over/Under</i>	<i>-4.0%</i>	<i>4.0%</i>	<i>0.0%</i>

Sector Allocation (%) vs Russell 2000



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	1,337
Weighted Avg. Market Cap. (\$B)	3.1	3.1
Median Market Cap. (\$B)	2.3	1.2
Price To Earnings	14.9	15.3
Price To Book	2.2	1.8
Price To Sales	0.9	1.5
Return on Equity (%)	9.6	1.7
Yield (%)	1.1	1.6

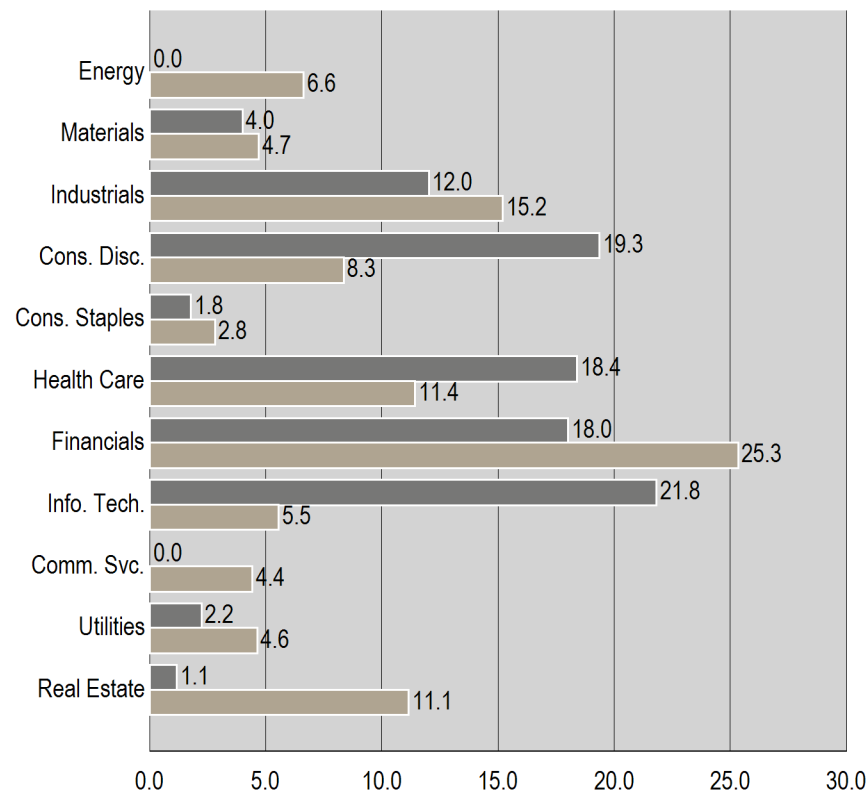
Top Holdings

SELECT MEDICAL HOLDINGS CORP	2.9%
HIBBETT INC	2.9%
OWENS & MINOR INC.	2.7%
SYNAPTICS INC	2.7%
DECKERS OUTDOOR CORP	2.6%
ULTRA CLEAN HOLDINGS INC	2.6%
LITHIA MOTORS INC.	2.4%
COMMSCOPE HOLDING CO INC	2.2%
ALLSCRIPTS HEALTHCARE SOLUTIONS INC	2.1%
CHILDRENS PLACE INC (THE)	2.1%
Total	25.3%

Market Capitalization

	Small Cap	Mid Cap	Large Cap
Smith, Graham & Co Small Cap Value	77.8%	22.2%	0.0%
Russell 2000 Value	86.7%	13.3%	0.0%
<i>Weight Over/Under</i>	<i>-8.9%</i>	<i>8.9%</i>	<i>0.0%</i>

Sector Allocation (%) vs Russell 2000 Value



Manager Summary: Passive strategy that seeks to replicate the return of the Russell 2000 index. This strategy is a low-cost option to gain diversified exposure to U.S. domiciled companies through owning the 2,000 smallest American companies by market capitalization in the Russell 3000 index.

Characteristics

	Portfolio	Russell 2000
Number of Holdings	2,015	1,903
Weighted Avg. Market Cap. (\$B)	3.4	3.4
Median Market Cap. (\$B)	1.3	1.3
Price To Earnings	19.8	19.9
Price To Book	2.9	2.9
Price To Sales	1.9	2.0
Return on Equity (%)	-3.2	-3.2
Yield (%)	1.0	1.0

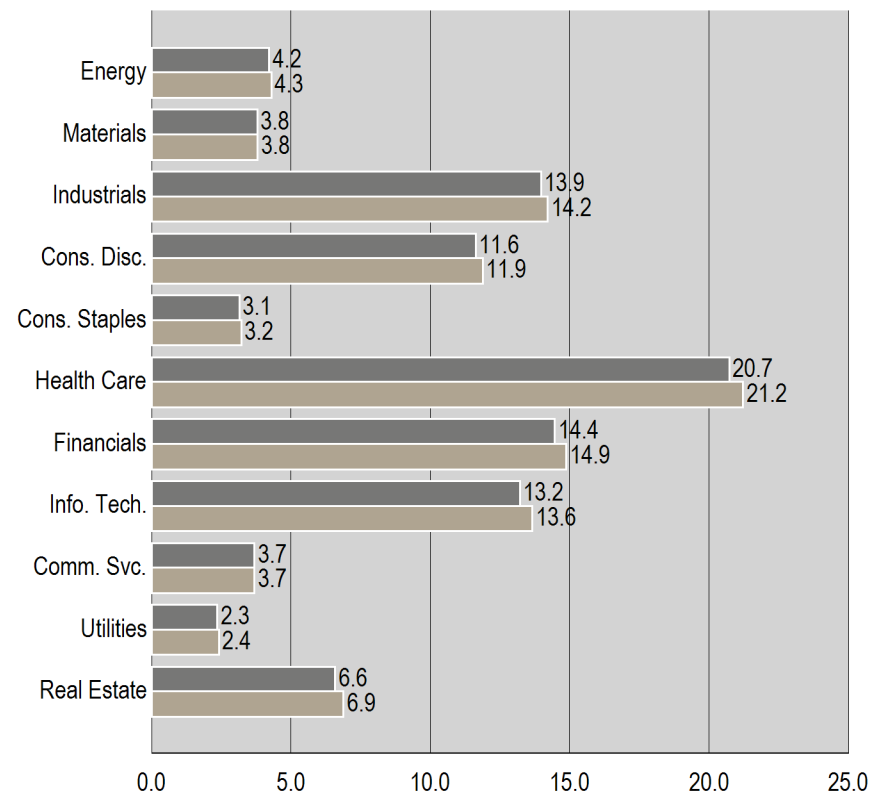
Top Holdings

AMC ENTERTAINMENT HOLDINGS INC	0.8%
INTELLIA THERAPEUTICS INC	0.3%
ARROWHEAD PHARMACEUTICALS INC	0.3%
OVINTIV INC	0.3%
LATTICE SEMICONDUCTOR CORP	0.3%
II VI INC	0.3%
CROCS INC	0.2%
SCIENTIFIC GAMES CORP	0.2%
STAAR SURGICAL CO	0.2%
DENALI THERAPEUTICS INC	0.2%
Total	3.1%

Market Capitalization

	Small Cap	Mid Cap	Large Cap
SSGA Russell 2000	76.7%	23.3%	0.0%
Russell 2000	77.1%	22.9%	0.0%
Weight Over/Under	-0.4%	0.4%	0.0%

Sector Allocation (%) vs Russell 2000



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	60	1,903
Weighted Avg. Market Cap. (\$B)	4.1	3.4
Median Market Cap. (\$B)	3.8	1.3
Price To Earnings	23.1	19.9
Price To Book	3.3	2.9
Price To Sales	2.1	2.0
Return on Equity (%)	15.9	-3.2
Yield (%)	1.6	1.0

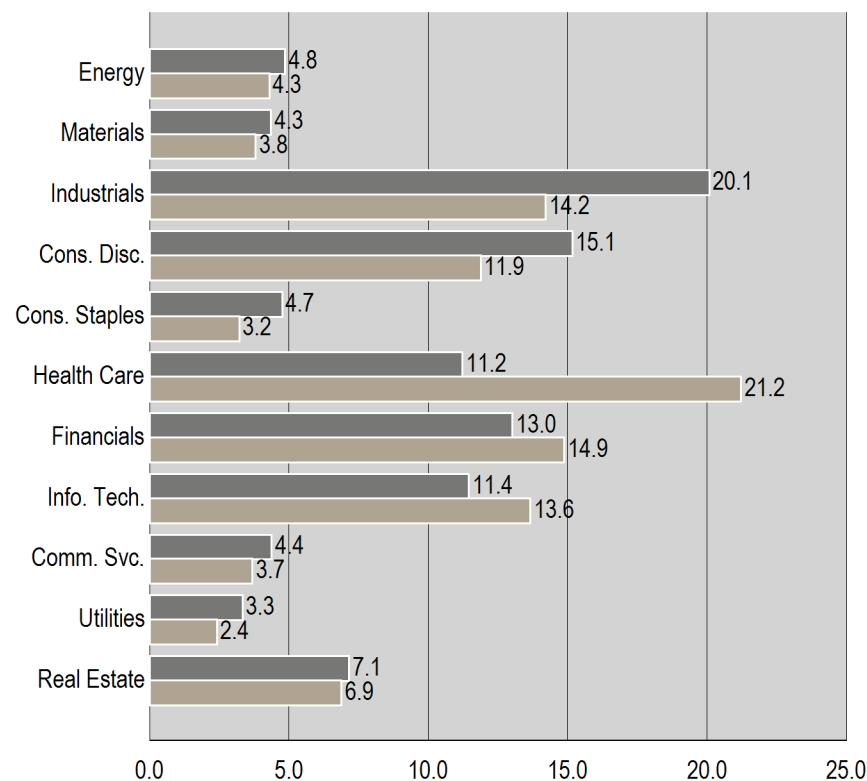
Top Holdings

ENSIGN GROUP INC (THE)	2.8%
SHOE CARNIVAL INC	2.7%
LEMAITRE VASCULAR INC	2.6%
NEXSTAR MEDIA GROUP INC.	2.5%
BRUNSWICK CORP	2.4%
BANK OZK	2.3%
AARONS CO INC COM	2.1%
STANDEX INTERNATIONAL CORP	2.1%
EVERCORE INC	2.1%
ENCOMPASS HEALTH CORP	2.1%
Total	23.7%

Market Capitalization

	Small Cap	Mid Cap	Large Cap
Copeland Small Cap Dividend Growth	59.5%	40.5%	0.0%
Russell 2000	77.1%	22.9%	0.0%
<i>Weight Over/Under</i>	<i>-17.6%</i>	<i>17.6%</i>	<i>0.0%</i>

Sector Allocation (%) vs Russell 2000



Manager Summary: Strategy invests in companies with recurring revenues. Considered a Growth at a Reasonable Price "GARP" strategy, owning companies at attractive valuations and temporary mispricing. Portfolio will traditionally hold 30-40 names in the portfolio. Turnover of the portfolio is 40-50%.

Characteristics

	Portfolio	Russell 2000 Growth
Number of Holdings	37	1,107
Weighted Avg. Market Cap. (\$B)	4.4	3.8
Median Market Cap. (\$B)	4.1	1.5
Price To Earnings	43.8	30.9
Price To Book	4.5	5.7
Price To Sales	3.0	2.8
Return on Equity (%)	20.1	-9.7
Yield (%)	0.2	0.4

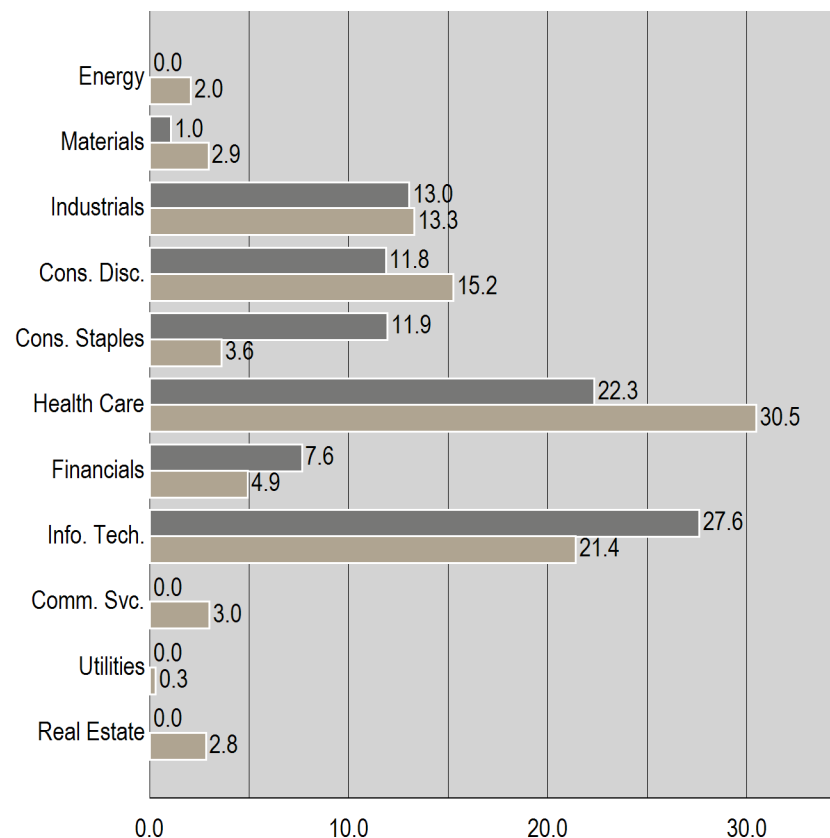
Top Holdings

HALOZYME THERAPEUTICS INC	4.3%
PERFICIENT INC	4.1%
MERIT MEDICAL SYSTEMS INC	4.0%
LESLIES INC	3.9%
WILLSCOT MOBILE MINI HOLDINGS CORP	3.7%
UPWORK INC	3.5%
MIMECAST LTD	3.5%
GENIUS SPORTS LTD	3.4%
SIMPLY GOOD FOODS CO (THE)	3.4%
NATIONAL VISION HOLDINGS INC	3.3%
Total	37.0%

Market Capitalization

	Small Cap	Mid Cap	Large Cap
AMI Small Cap Growth	61.0%	39.0%	0.0%
Russell 2000 Growth	67.9%	32.1%	0.0%
<i>Weight Over/Under</i>	<i>-7.0%</i>	<i>7.0%</i>	<i>0.0%</i>

Sector Allocation (%) vs Russell 2000 Growth



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	118	1,107
Weighted Avg. Market Cap. (\$B)	4.0	3.8
Median Market Cap. (\$B)	3.0	1.5
Price To Earnings	33.4	30.9
Price To Book	4.4	5.7
Price To Sales	3.8	2.8
Return on Equity (%)	-7.7	-9.7
Yield (%)	0.4	0.4

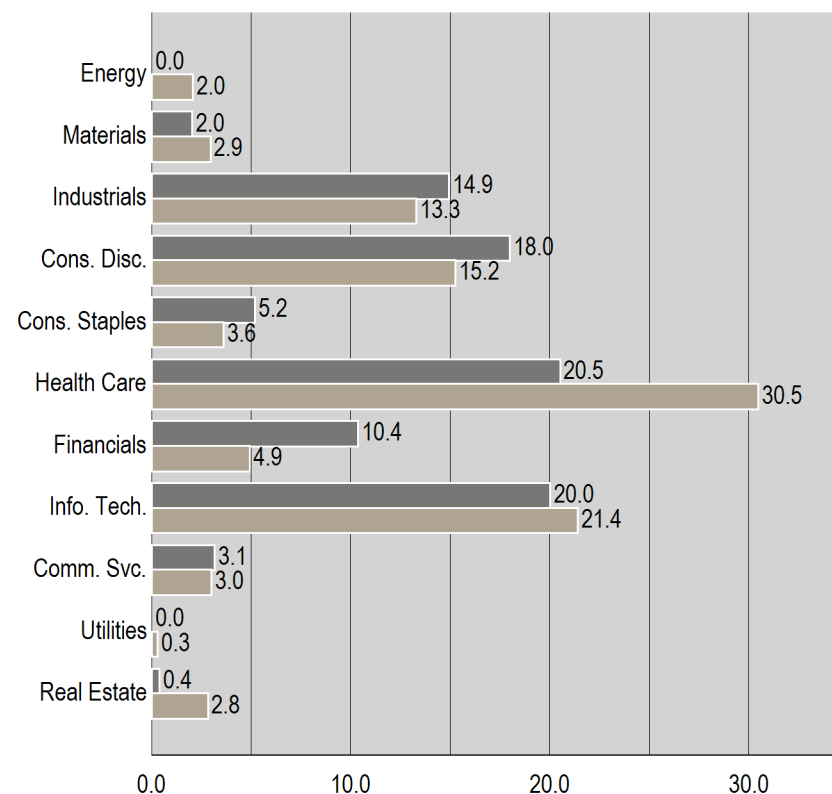
Top Holdings

RAPID7 INC	2.3%
FRESHPET INC	2.3%
MACOM TECHNOLOGY SOLUTIONS HOLDINGS INC	2.1%
CHART INDUSTRIES INC	1.9%
VARONIS SYSTEMS INC	1.9%
CHEGG INC	1.8%
SIMPLY GOOD FOODS CO (THE)	1.7%
EVERI HOLDINGS INC	1.7%
MOELIS & CO	1.6%
ATRICURE INC	1.6%
Total	18.8%

Market Capitalization

	Small Cap	Mid Cap	Large Cap
Emerald Small Cap Growth	66.2%	33.8%	0.0%
Russell 2000 Growth	67.9%	32.1%	0.0%
<i>Weight Over/Under</i>	<i>-1.8%</i>	<i>1.8%</i>	<i>0.0%</i>

Sector Allocation (%) vs Russell 2000 Growth



Pennsylvania Municipal Retirement System

SSGA MSCI World ex US

As of June 30, 2021

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 ex USA
Number of Holdings	1,869	2,344
Weighted Avg. Market Cap. (\$B)	106.0	105.9
Median Market Cap. (\$B)	11.0	10.4
Price To Earnings	19.1	19.1
Price To Book	2.8	2.7
Price To Sales	1.6	1.6
Return on Equity (%)	12.1	11.7
Yield (%)	2.4	2.4

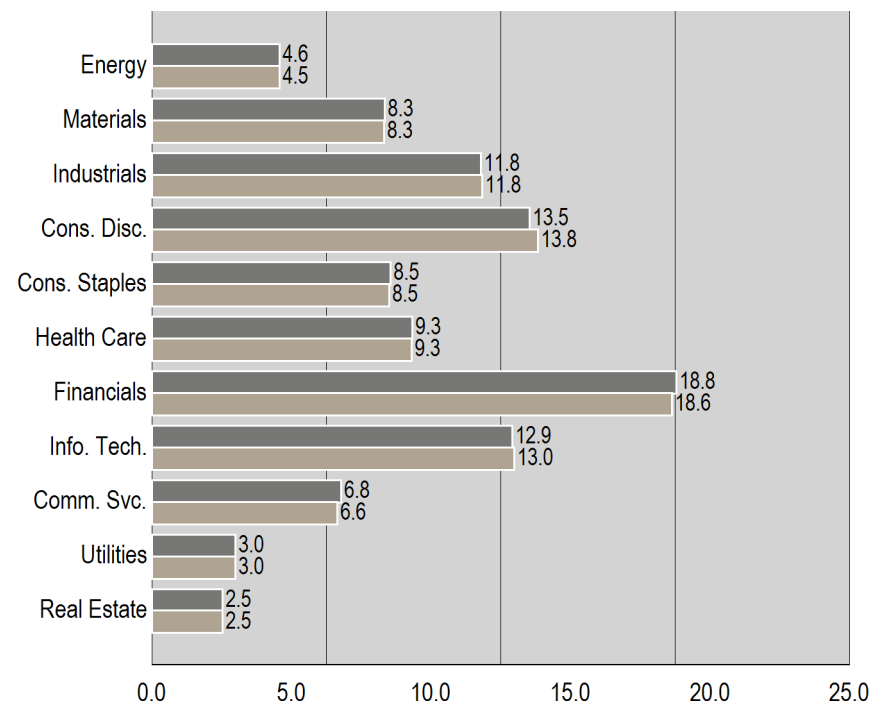
Top Holdings

TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	1.9%
TENCENT HOLDINGS LTD	1.6%
ALIBABA GROUP HOLDING LTD	1.6%
NESTLE SA, CHAM UND VEVEY	1.3%
SAMSUNG ELECTRONICS CO LTD	1.3%
ASML HOLDING NV	1.1%
ROCHE HOLDING AG	1.0%
LVMH MOET HENNESSY LOUIS VUITTON SE	0.8%
NOVARTIS AG	0.7%
TOYOTA MOTOR CORP	0.7%
Total	11.9%

Market Capitalization

	Small Cap	Mid Cap	Large Cap	Unclassified
SSGA MSCI World ex US	11.2%	23.0%	63.1%	2.8%
MSCI ACWI ex USA	12.9%	23.1%	63.9%	0.0%
<i>Weight Over/Under</i>	-1.8%	-0.2%	-0.8%	2.8%

Sector Allocation (%) vs MSCI ACWI ex USA



Region Allocation Summary

Region	% of Total	% of Bench	% Diff
North America ex U.S.	7.1%	7.0%	0.0%
United States	0.4%	0.0%	0.4%
Europe Ex U.K.	32.0%	30.9%	1.0%
United Kingdom	7.5%	8.9%	-1.3%
Pacific Basin Ex Japan	9.6%	7.2%	2.4%
Japan	14.4%	14.3%	0.1%
Emerging Markets	27.9%	31.0%	-3.1%
Other	1.1%	0.6%	0.6%
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	25	843
Weighted Avg. Market Cap. (\$B)	113.3	80.2
Median Market Cap. (\$B)	59.0	14.3
Price To Earnings	44.5	21.1
Price To Book	6.6	2.7
Price To Sales	5.0	1.5
Return on Equity (%)	-3.3	11.0
Yield (%)	0.5	2.5

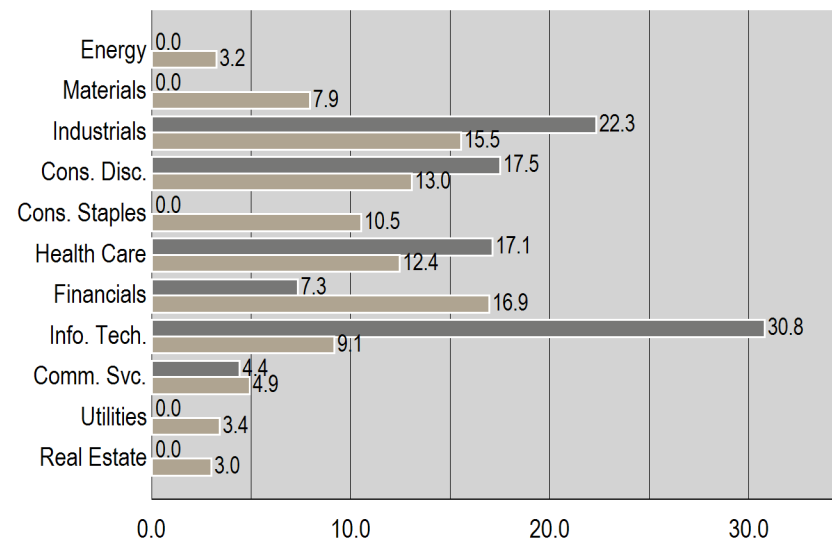
Top Holdings

WUXI BIOLOGICS (CAYMAN) INC	5.8%
AIRBUS SE	5.5%
ATLASSIAN CORP PLC	5.5%
APTIV PLC	5.4%
ASML HOLDING NV	5.3%
ASTRAZENECA PLC	5.1%
PUMA SE	5.1%
SAFRAN SA	5.0%
KEYENCE CORP	4.9%
ICICI BANK LTD	4.9%
Total	52.4%

Market Capitalization

	Small Cap	Mid Cap	Large Cap	Unclassified
Hardman Johnston Int'l Equity	6.0%	21.9%	71.4%	0.6%
MSCI EAFE	8.2%	24.0%	67.8%	0.0%
<i>Weight Over/Under</i>	-2.2%	-2.0%	3.7%	0.6%

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.	34.6%	50.1%	-15.5%
United Kingdom	10.5%	14.4%	-3.9%
Pacific Basin Ex Japan	20.0%	11.7%	8.3%
Japan	16.9%	23.2%	-6.4%
Emerging Markets	18.0%	0.0%	18.0%
Other	0.0%	0.6%	-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	843
Weighted Avg. Market Cap. (\$B)	48.1	80.2
Median Market Cap. (\$B)	23.3	14.3
Price To Earnings	21.5	21.1
Price To Book	2.5	2.7
Price To Sales	2.2	1.5
Return on Equity (%)	7.9	11.0
Yield (%)	1.8	2.5

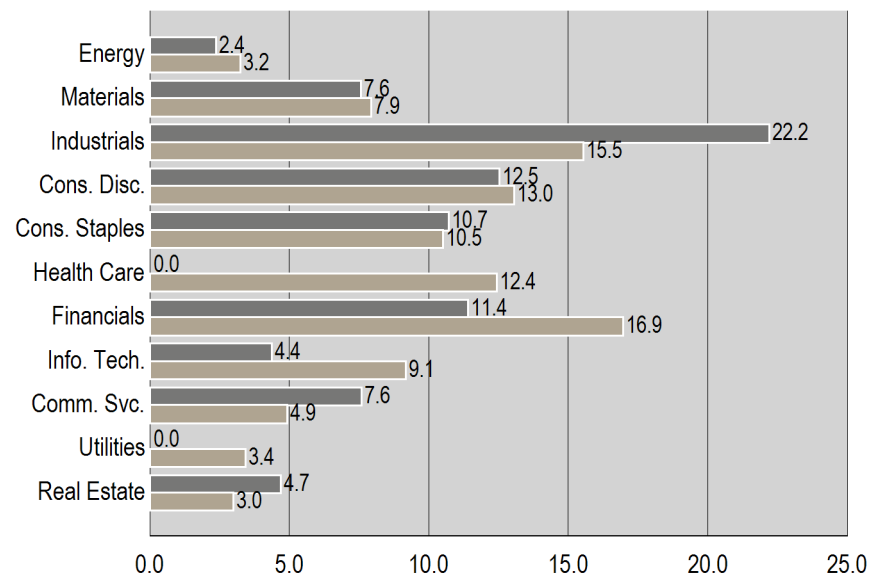
Top Holdings

SHIMANO INC	5.8%
DEUTSCHE WOHNEN SE	5.6%
TOYOTA MOTOR CORP	5.4%
CAPGEMINI SE	5.2%
FRANCO-NEVADA CORP	5.0%
LIBERTY GLOBAL PLC	4.9%
MOWI ASA	4.9%
DEUTSCHE BOERSE AG	4.8%
DAIKIN INDUSTRIES LTD	4.6%
ALIMENTATION COUCHE-TARD INC	4.6%
Total	50.8%

Market Capitalization

	Small Cap	Mid Cap	Large Cap	Unclassified
HGK Int'l Equity	2.4%	40.4%	37.7%	19.6%
MSCI EAFE	8.2%	24.0%	67.8%	0.0%
<i>Weight Over/Under</i>	<i>-5.8%</i>	<i>16.4%</i>	<i>-30.1%</i>	<i>19.6%</i>

Sector Allocation (%) vs MSCI EAFE



Region Allocation Summary

Region	% of Total	% of Bench	% Diff
North America ex U.S.	9.1%	0.0%	9.1%
United States	5.4%	0.0%	5.4%
Europe Ex U.K.	50.6%	50.1%	0.6%
United Kingdom	8.2%	14.4%	-6.2%
Pacific Basin Ex Japan	7.8%	11.7%	-4.0%
Japan	18.9%	23.2%	-4.3%
Emerging Markets	0.0%	0.0%	0.0%
Other	0.0%	0.6%	-0.6%
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	1,229	1,411
Weighted Avg. Market Cap. (\$B)	170.0	169.1
Median Market Cap. (\$B)	7.2	7.3
Price To Earnings	16.4	16.4
Price To Book	3.1	3.1
Price To Sales	1.5	1.5
Return on Equity (%)	12.5	12.5
Yield (%)	2.1	2.1

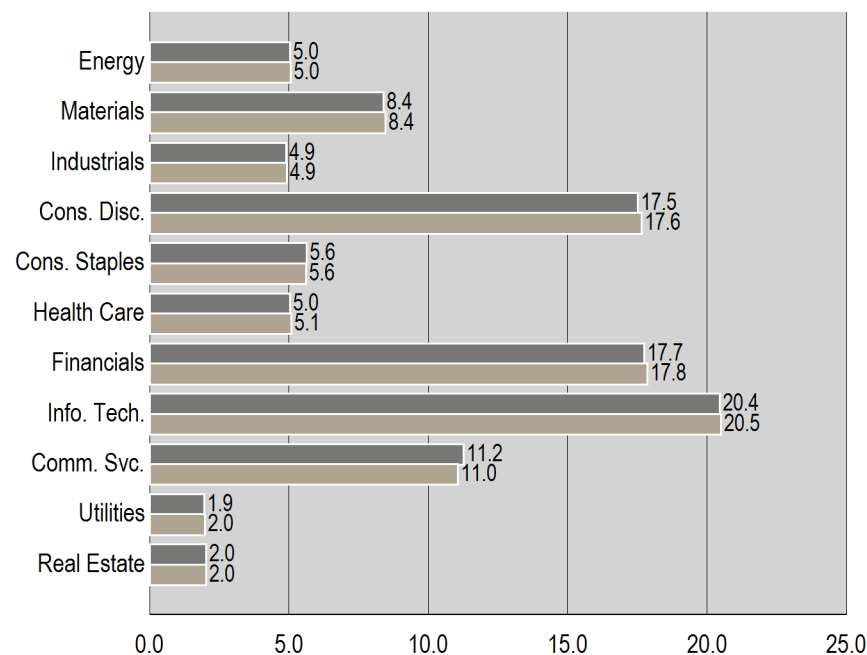
Top Holdings

TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	6.1%
TENCENT HOLDINGS LTD	5.0%
ALIBABA GROUP HOLDING LTD	5.0%
SAMSUNG ELECTRONICS CO LTD	4.0%
MEITUAN DIANPING USD0.00001 A B CLASS ISIN KYG596691041	1.7%
NASPERS LTD	1.1%
VALE SA	1.0%
RELIANCE INDUSTRIES LTD	0.9%
CHINA CONSTRUCTION BANK CORP	0.9%
INFOSYS LTD	0.8%
Total	26.6%

Market Capitalization

	Small Cap	Mid Cap	Large Cap	Unclassified
SSGA MSCI Emerging Markets Index	5.9%	19.4%	68.4%	6.3%
MSCI Emerging Markets	11.4%	19.5%	69.0%	0.0%
<i>Weight Over/Under</i>	<i>-5.5%</i>	<i>-0.2%</i>	<i>-0.6%</i>	<i>6.3%</i>

Sector Allocation (%) vs MSCI Emerging Markets



Region Allocation Summary

Region	% of Total	% of Bench	% Diff
North America ex U.S.	0.0%	0.0%	0.0%
United States	0.8%	0.0%	0.8%
Europe Ex U.K.	0.3%	0.1%	0.1%
United Kingdom	0.1%	0.0%	0.1%
Pacific Basin Ex Japan	7.8%	0.0%	7.8%
Japan	0.0%	0.0%	0.0%
Emerging Markets	89.2%	99.2%	-10.1%
Other	1.8%	0.6%	1.2%
Total	100.0%	100.0%	0.0%

Characteristics

Fund GAV (\$MM)	\$26,851.0
Fund NAV (\$MM)	\$20,643.0
Cash (% of NAV)	4.0%
# of Investments	267
% in Top 10 by NAV	26.7%
Leverage %	23.6%
Occupancy	90.1%
# of MSAs	42
1-Year Dividend Yield	3.2%
As of Date	31-Mar-21

Strategy Breakdown

	% of Portfolio
Pre-Development	0.5%
Development	4.0%
Initial Leasing	2.3%
Operating	93.1%
Re-Development	
Other	0.2%

Queue In:

Contribution Queue (\$MM)	\$512.20
Anticipated Drawdown (Months)	

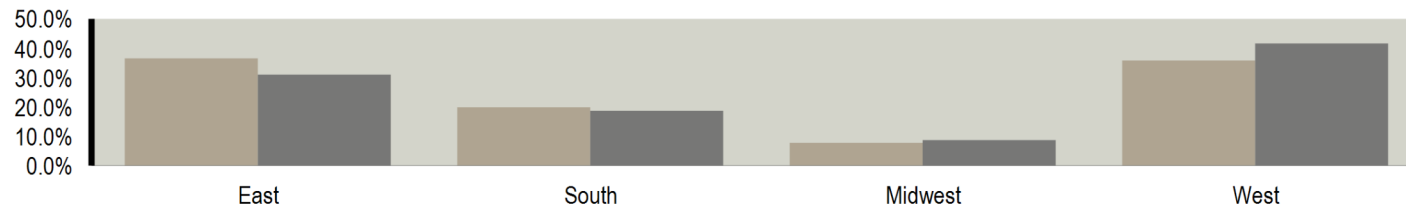
Top Five Metro Areas

	% of NAV
Los Angeles-Long Beach, CA	17.2%
New York-Newark, NY-NJ-CT-F	15.5%
Washington-Baltimore-Arlington	12.3%
San Jose-San Francisco-Oakland	9.0%
Boston-Worcester-Providence,	6.8%

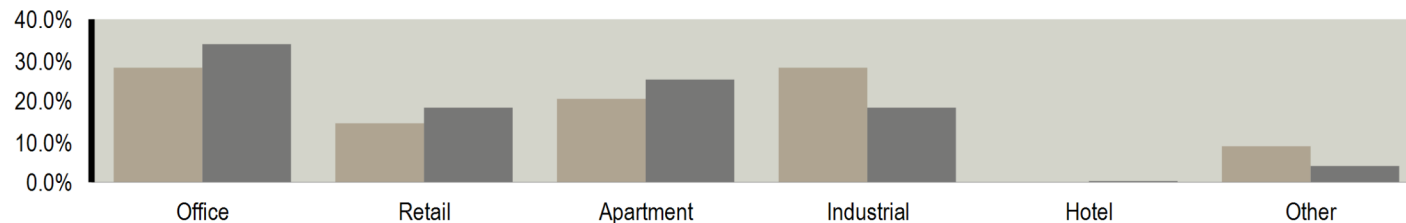
Queue Out:

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

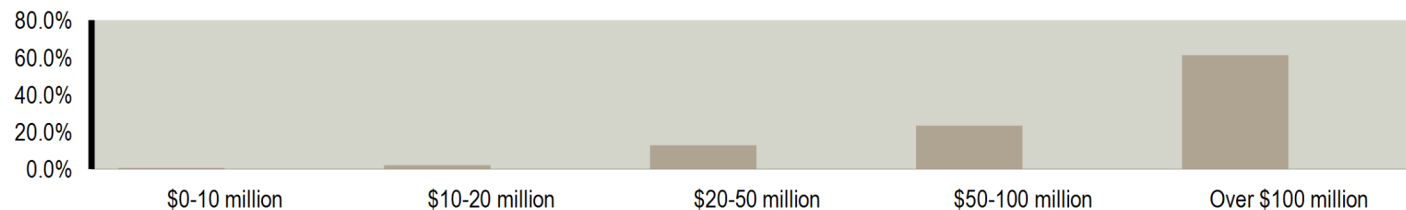
Regional Breakdown by NAV (Excluding Cash & Debt)



Property Type Breakdown by NAV (Excluding Cash & Debt)



Property Size Breakdown by NAV (Excluding Cash & Debt)



■ PRISA ■ NCREIF-ODCE

Characteristics

Fund GAV (\$MM)	\$13,821.0
Fund NAV (\$MM)	\$8,271.0
Cash (% of NAV)	2.2%
# of Investments	156
% in Top 10 by NAV	25.3%
Leverage %	37.7%
Occupancy	86.4%
# of MSAs	67
1-Year Dividend Yield	2.9%
As of Date	31-Mar-21

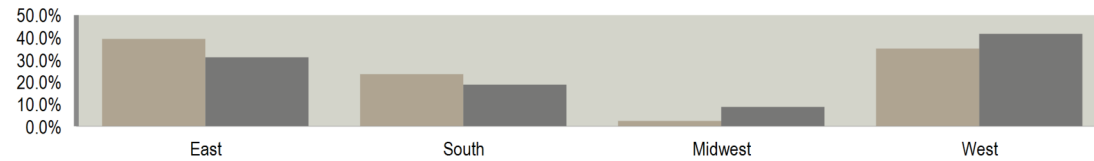
Strategy Breakdown

	% of Portfolio	Top Five Metro Areas	% of NAV
Pre-Development	8.3%	San Francisco	7.8%
Development	5.1%	Washington DC	7.8%
Initial Leasing	14.9%	Northern NJ	7.4%
Operating	70.2%	Boston	6.8%
Re-Development	0.0%	San Jose	6.3%
Other	1.6%		
Queue In:		Queue Out:	
Contribution Queue (\$MM)	\$121.00	Redemption Queue (\$MM)	\$0.00
Anticipated Drawdown (Months)	0	Anticipated Payout (Months)	0

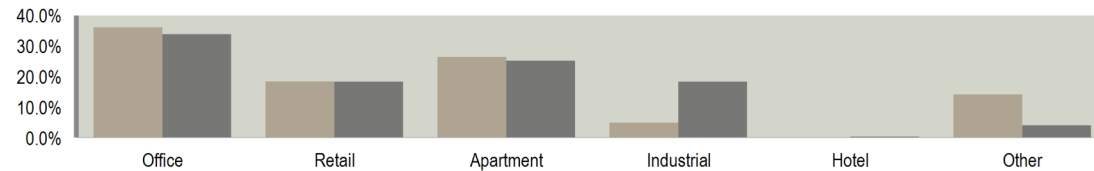
Top Ten Holdings Investment Detail

#	Property	Type	Location	% of Fund NAV
1	Great America Commons	Office	Santa Clara, CA	3.9%
2	Citigroup Center	Office	San Francisco, CA	3.7%
3	Redwood LIFE	Office	Redwood Shores, CA	2.5%
4	Twenty 20	Apartment	Cambridge, MA	2.4%
5	Tremley Point Logistics Center	Other	Linden, NJ	2.3%
6	1015 Half Street	Office	Washington, DC	2.3%
7	The MET (MetroCenter at South Coast)	Office	Costa Mesa, CA	2.1%
8	Regions Plaza	Office	Atlanta, GA	2.1%
9	Franklin Square North	Office	Washington, DC	2.0%
10	Sayreville Seaport	Other	Sayreville, NJ	2.0%
Total				25.3%

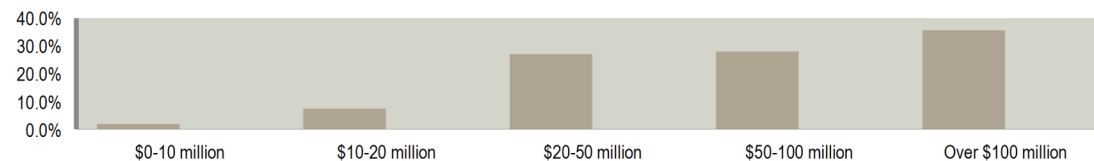
Regional Breakdown by NAV (Excluding Cash & Debt)



Property Type Breakdown by NAV (Excluding Cash & Debt)



Property Size Breakdown by NAV (Excluding Cash & Debt)



■ PRISA II ■ NCREIF-ODCE

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

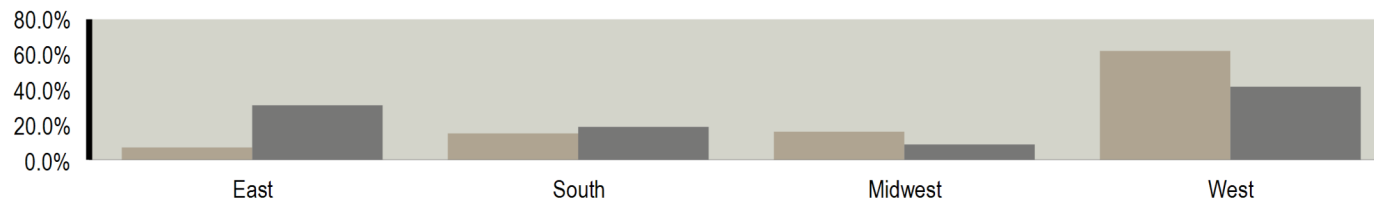
Asset Summary

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

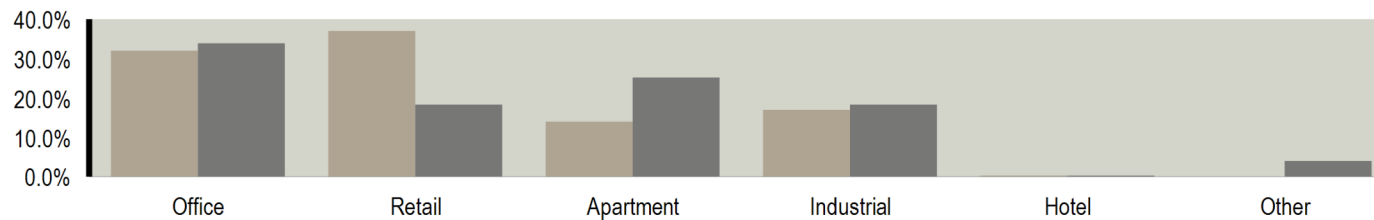
Portfolio Allocation

#	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) 132.3

Portfolio Allocation

#	Property	Type	Location	% of Fund NAV
1	Dupont	Pine	Georgia	26.8%
2	Black River	Pine	South Carolina	25.1%
3	Coquille	Douglas Fir/Cedar	Oregon	23.8%
4	North River	Douglas Fir/Hemlock	Washington	21.1%
5	Bucktails	Maple/Oak/Cherry	Pennsylvania	20.3%
6	Carter Pasture	Pine	Texas	10.7%
7	Bennetts Creek	Pine	North Carolina	9.9%
8	Bear Island	Pine	Virginia	8.2%
9	Fitz-Weller	Maple/Oak	New York	5.9%
Total				151.9%

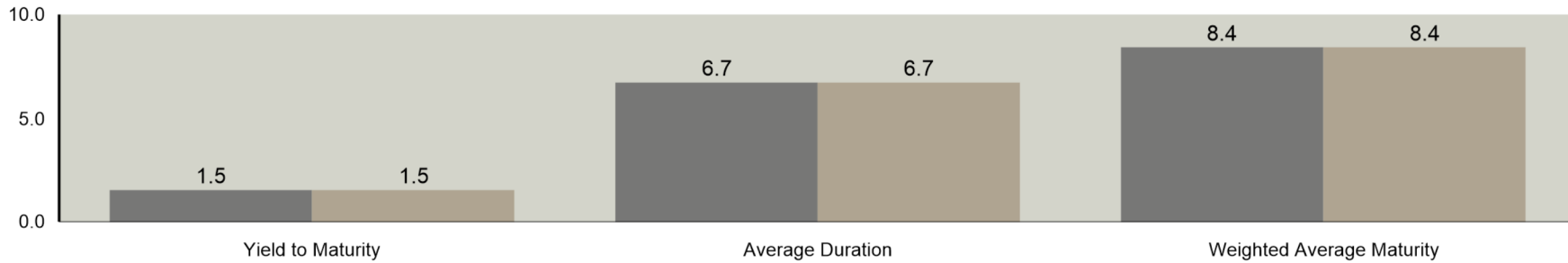
Regional Breakdown by NAV



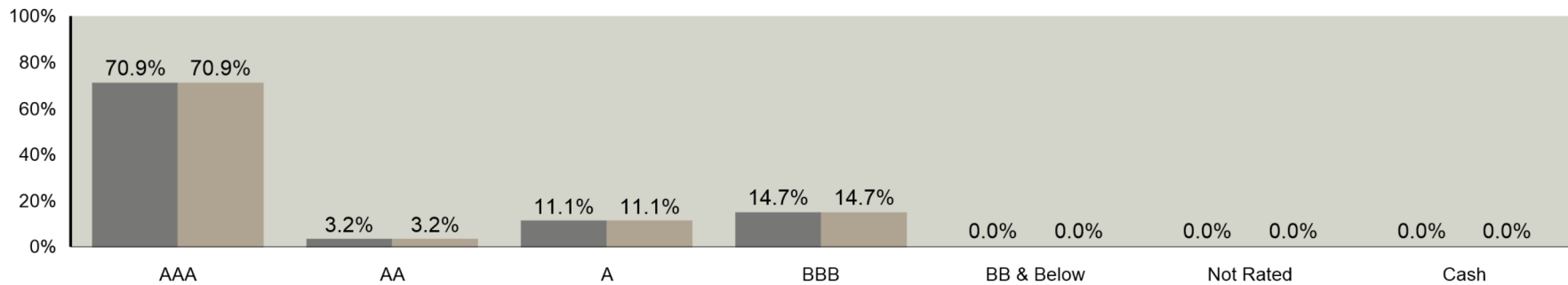
Manager Summary

Passive strategy, tracks the BBgBarc U.S. Aggregate Bond Index. Using statistical sampling techniques based on duration, maturity, interest rate sensitivity, security structure, and credit quality to attempt to replicate the returns of the Index using a smaller number of securities.

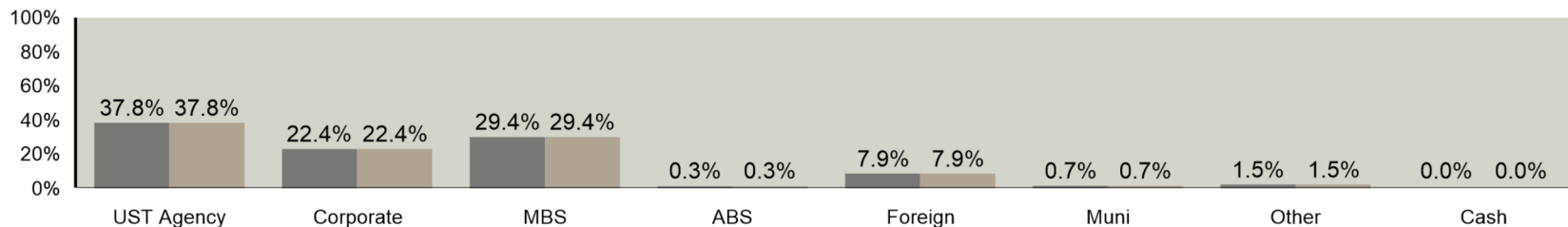
Summary Characteristics



Credibility Quality Allocation



US Sector Allocation



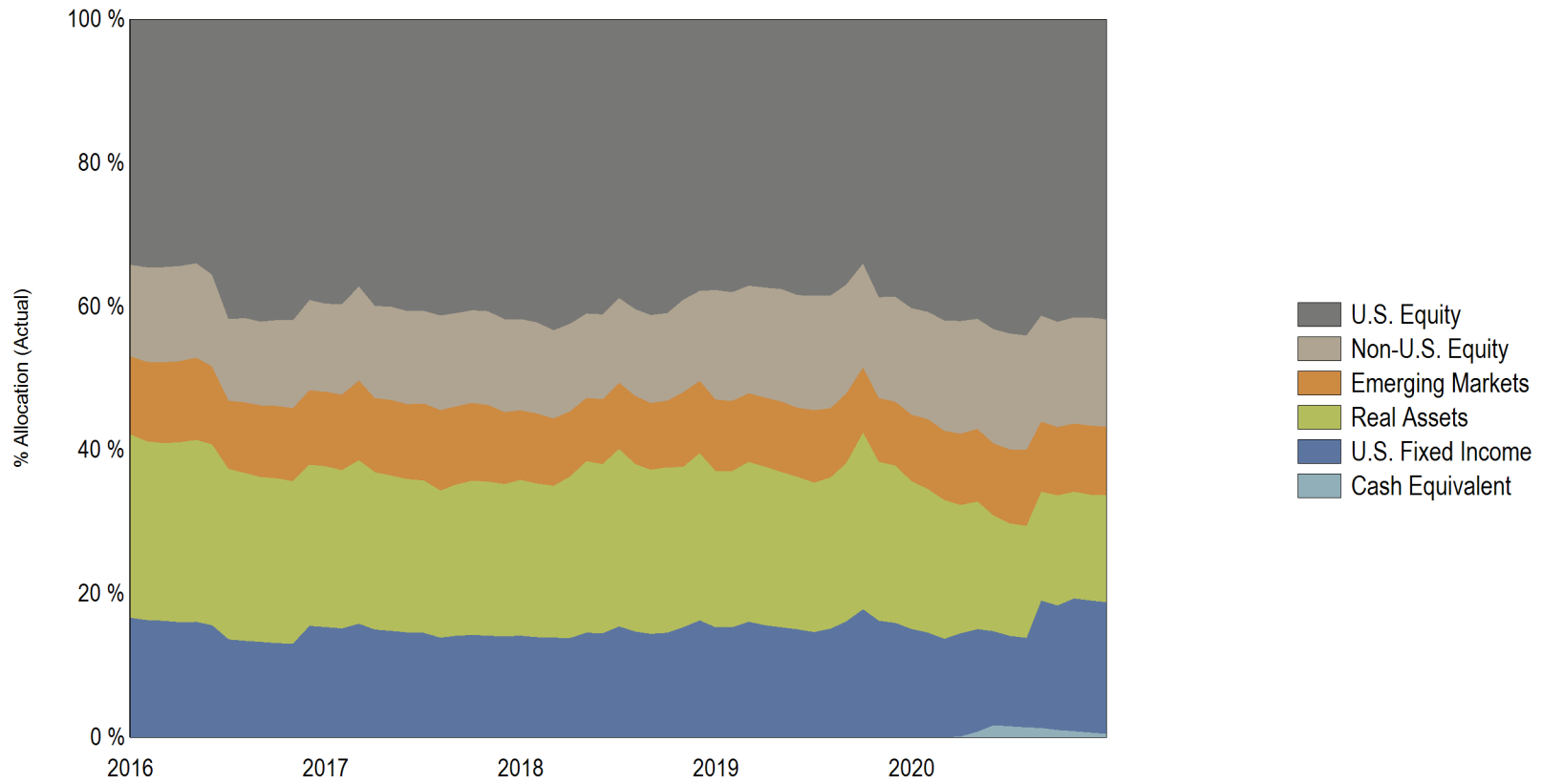
SSGA BBG Barclays Aggregate

BBgBarc U.S. Aggregate Bond

V. Appendix



Asset Allocation History



Cash Flow Summary by Manager From April 01, 2021 to June 30, 2021

	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Eagle Asset Mgmt	\$208,276,222	-\$155,191	\$18,998,774	\$227,119,805
LSV Large Cap Value	\$206,459,272	-\$172,450	\$9,694,825	\$215,981,647
SSGA S&P 500	\$106,967,487	\$0	\$9,122,477	\$116,089,964
Polen Focus Growth	\$273,474,088	-\$30,268,452	\$34,072,984	\$277,278,621
William & Blair Large Cap Growth	\$70,253,037	-\$78,920	\$8,502,053	\$78,676,170
LSV Small Cap Value	\$95,565,493	-\$125,896	\$4,998,336	\$100,437,933
Smith, Graham & Co Small Cap Value	\$109,568,316	-\$10,174,065	\$3,287,389	\$102,681,641
SSGA Russell 2000	\$113,902,756	\$0	\$4,921,519	\$118,824,275
Copeland Small Cap Dividend Growth	\$58,420,228	-\$69,470	\$2,484,907	\$60,835,665
AMI Small Cap Growth	\$50,086,085	-\$97,131	\$4,154,361	\$54,143,314
Emerald Small Cap Growth	\$98,834,891	-\$10,127,755	\$3,757,949	\$92,465,084
SSGA MSCI World ex US	\$159,709,059	\$0	\$9,242,014	\$168,951,073
Hardman Johnston Int'l Equity	\$166,563,260	-\$262,158	\$13,163,958	\$179,465,060
HGK Int'l Equity	\$158,481,955	-\$252,944	\$9,880,603	\$168,109,615
Jarislowsky, Fraser Limited	\$313,195	\$0	\$3,688	\$316,883
Mercator Asset Management	\$18,994	\$0	\$171	\$19,165
GlobeFlex Capital	\$2,634	\$0	\$24	\$2,658
WHV Investment Management	\$3,142	\$0	\$28	\$3,170
SSGA MSCI Emerging Markets Index	\$314,749,668	\$0	\$15,771,089	\$330,520,758
Forest Investment Associates	\$136,055,751	-\$1,700,000	-\$392,648	\$133,963,103
PRISA LP	\$53,473,289	-\$130,256	\$2,102,183	\$55,445,216
PRISA II	\$107,072,280	-\$294,922	\$5,466,113	\$112,243,471
PennMuni-Nuveen U.S. Real Estate Fund	\$209,106,763	-\$2,487,620	\$4,818,867	\$211,438,010
N. Front Street (Nuveen)	\$2,078,127	\$0	\$22,349	\$2,100,476
SSGA US Aggregate Bond Index	\$574,113,582	\$50,000,000	\$11,022,883	\$635,136,465
Cash Management	\$7,065,471	\$3,822,521	-\$20,096	\$10,867,896
Pool 999	\$27,579,138	-\$20,886,490	\$0	\$6,692,648
Total	\$3,308,194,183	-\$23,461,199	\$175,076,803	\$3,459,809,786

Policy Index History

Total Fund Composite		
10/1/2020	Present	25% S&P 500 / 15% Russell 2000 / 15% MSCI EAFE / 10% MSCI Emerging Markets / 20% NFI / 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
Small Cap U.S. Equity Composite		
1/1/1993	Present	Russell 2000
Non-U.S Equity Composite		
5/31/2012	Present	MSCI ACWI ex USA
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		
4/1/1993	Present	NFI
Total Fixed Income Composite		
1/31/1986	Present	Bloomberg US Aggregate TR
Cash Composite		
	Present	91 Day T-Bills

Common Holdings Matrix

	<i>Eagle Asset Mgmt</i>		<i>LSV Large Cap Value</i>		<i>SSGA S&P 500</i>		<i>Polen Focus Growth</i>		<i>William & Blair Large Cap Growth</i>		<i>LSV Small Cap Value</i>		<i>Smith, Graham & Co Small Cap Value</i>		<i>SSGA Russell 2000</i>		<i>Copeland Small Cap Dividend Growth</i>		<i>AMI Small Cap Growth</i>		<i>Emerald Small Cap Growth</i>	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Eagle Asset Mgmt	--	--	6	7	24	22	6	31	5	25	0	0	0	0	0	0	0	0	0	0	0	0
LSV Large Cap Value	6	18	--	--	99	16	0	0	1	3	24	16	1	1	21	2	2	5	0	0	0	0
SSGA S&P 500	24	91	99	76	--	--	24	98	30	96	1	0	0	0	0	0	1	1	0	0	0	0
Polen Focus Growth	6	37	0	0	24	25	--	--	13	57	0	0	0	0	0	0	0	0	0	0	0	0
William & Blair Large Cap Growth	5	29	1	0	30	25	13	60	--	--	0	0	0	0	0	0	0	0	0	0	0	0
LSV Small Cap Value	0	0	24	11	1	0	0	0	0	0	--	--	14	22	167	10	4	9	0	0	4	4
Smith, Graham & Co Small Cap Value	0	0	1	1	0	0	0	0	0	0	14	9	--	--	57	4	1	2	3	8	3	3
SSGA Russell 2000	0	0	21	7	0	0	0	0	0	0	167	77	57	85	--	--	42	69	27	75	98	80
Copeland Small Cap Dividend Growth	0	0	2	0	1	0	0	0	0	0	4	3	1	1	42	4	--	--	0	0	2	2
AMI Small Cap Growth	0	0	0	0	0	0	0	0	0	0	0	0	3	4	27	3	0	0	--	--	4	5
Emerald Small Cap Growth	0	0	0	0	0	0	0	0	0	0	4	3	3	5	98	8	2	4	4	15	--	--

Characteristics

	Portfolio	S&P 500
Number of Holdings	582	504
Weighted Avg. Market Cap. (\$B)	450.5	540.3
Median Market Cap. (\$B)	30.7	30.4
Price To Earnings	25.7	28.0
Price To Book	4.6	4.7
Price To Sales	2.9	3.4
Return on Equity (%)	26.1	28.7
Yield (%)	1.0	1.4

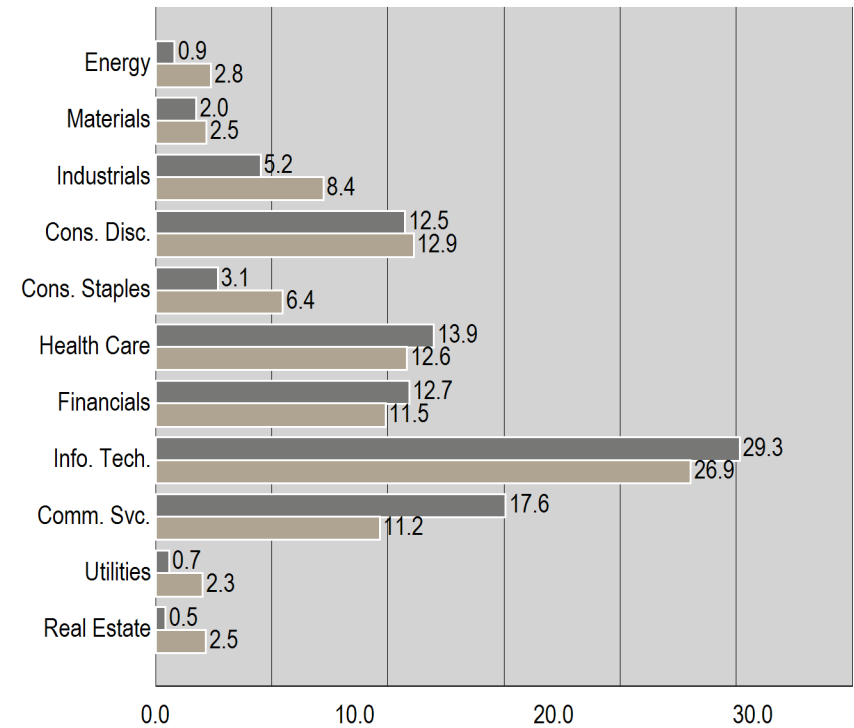
Top Holdings

MICROSOFT CORP	6.2%
AMAZON.COM INC	4.4%
FACEBOOK INC	4.3%
ALPHABET INC	3.5%
ADOBE INC	2.7%
UNITEDHEALTH GROUP INC	2.3%
NETFLIX INC	2.0%
MASTERCARD INC	1.9%
SALESFORCE.COM INC	1.9%
ACCENTURE PLC	1.8%
Total	31.0%

Market Capitalization

	Small Cap	Mid Cap	Large Cap	Unclassified
Large Cap U.S. Equity Composite	1.2%	19.9%	77.3%	1.6%
S&P 500	0.0%	16.9%	83.1%	0.0%
<i>Weight Over/Under</i>	1.2%	3.1%	-5.7%	1.6%

Sector Allocation (%) vs S&P 500



Common Holdings Matrix

	<i>Eagle Asset Mgmt</i>		<i>LSV Large Cap Value</i>		<i>SSGA S&P 500</i>		<i>Polen Focus Growth</i>		<i>William & Blair Large Cap Growth</i>	
	#	%	#	%	#	%	#	%	#	%
Eagle Asset Mgmt	--	--	6	7	24	22	6	31	5	25
LSV Large Cap Value	6	18	--	--	99	16	0	0	1	3
SSGA S&P 500	24	91	99	76	--	--	24	98	30	96
Polen Focus Growth	6	37	0	0	24	25	--	--	13	57
William & Blair Large Cap Growth	5	29	1	0	30	25	13	60	--	--

Characteristics

	Portfolio	Russell 2000
Number of Holdings	2,113	1,903
Weighted Avg. Market Cap. (\$B)	3.6	3.4
Median Market Cap. (\$B)	1.5	1.3
Price To Earnings	18.4	19.9
Price To Book	2.8	2.9
Price To Sales	1.5	2.0
Return on Equity (%)	5.0	-3.2
Yield (%)	1.0	1.0

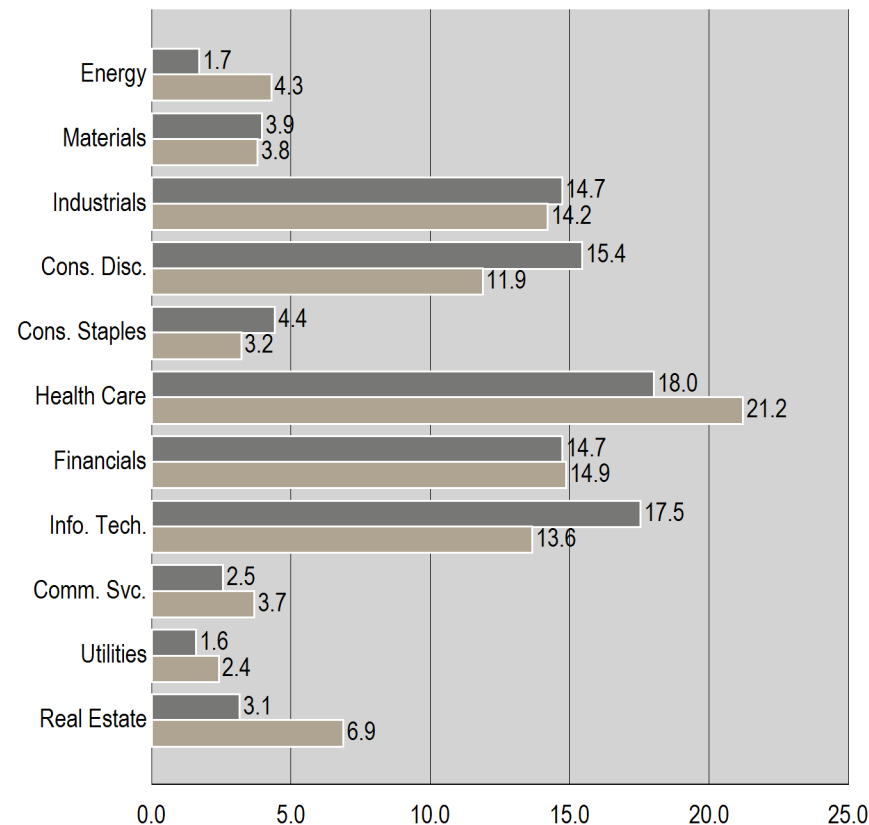
Top Holdings

SELECT MEDICAL HOLDINGS CORP	1.0%
TETRA TECH INC	0.7%
PERFICIENT INC	0.7%
SIMPLY GOOD FOODS CO (THE)	0.7%
OWENS & MINOR INC.	0.6%
LIGAND PHARMACEUTICALS INC	0.6%
MERIT MEDICAL SYSTEMS INC	0.6%
HIBBETT INC	0.6%
NATIONAL VISION HOLDINGS INC	0.6%
ITRON INC	0.6%
Total	6.6%

Market Capitalization

	Small Cap	Mid Cap	Large Cap	Unclassified
Small Cap U.S. Equity Composite	68.7%	28.2%	0.0%	3.1%
Russell 2000	77.1%	22.9%	0.0%	0.0%
<i>Weight Over/Under</i>	<i>-8.5%</i>	<i>5.3%</i>	<i>0.0%</i>	<i>3.1%</i>

Sector Allocation (%) vs Russell 2000



Common Holdings Matrix

	<i>LSV Small Cap Value</i>		<i>Smith, Graham & Co Small Cap Value</i>		<i>SSGA Russell 2000</i>		<i>Copeland Small Cap Dividend Growth</i>		<i>AMI Small Cap Growth</i>		<i>Emerald Small Cap Growth</i>	
	#	%	#	%	#	%	#	%	#	%	#	%
LSV Small Cap Value	--	--	14	22	167	10	4	9	0	0	4	4
Smith, Graham & Co Small Cap Value	14	9	--	--	57	4	1	2	3	8	3	3
SSGA Russell 2000	167	77	57	85	--	--	42	69	27	75	98	80
Copeland Small Cap Dividend Growth	4	3	1	1	42	4	--	--	0	0	2	2
AMI Small Cap Growth	0	0	3	4	27	3	0	0	--	--	4	5
Emerald Small Cap Growth	4	3	3	5	98	8	2	4	4	15	--	--

Characteristics

	Portfolio	MSCI ACWI ex USA
Number of Holdings	2,268	2,344
Weighted Avg. Market Cap. (\$B)	126.1	105.9
Median Market Cap. (\$B)	9.8	10.4
Price To Earnings	20.5	19.1
Price To Book	3.4	2.7
Price To Sales	1.9	1.6
Return on Equity (%)	11.2	11.7
Yield (%)	1.7	2.4

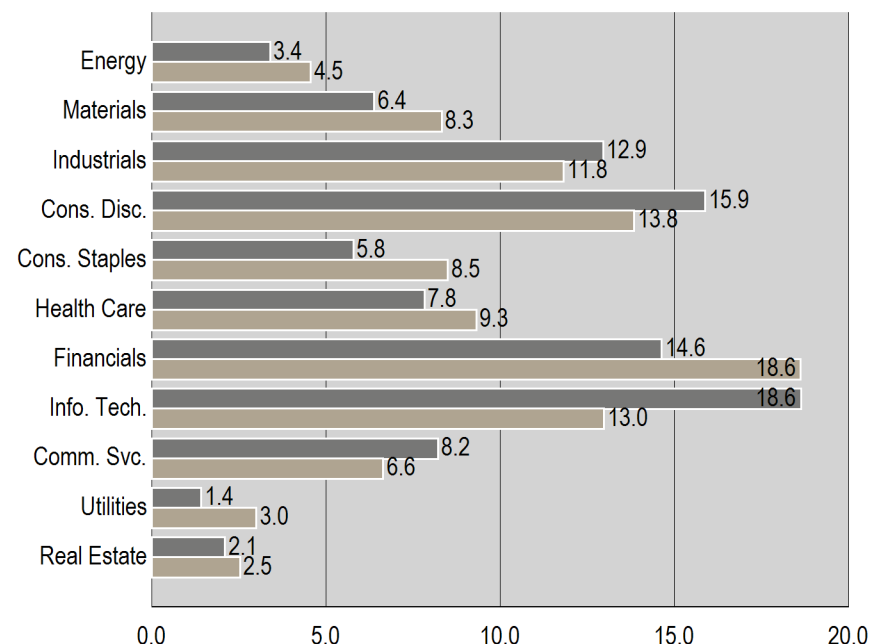
Top Holdings

TENCENT HOLDINGS LTD	3.1%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	3.0%
ALIBABA GROUP HOLDING LTD	2.4%
SAMSUNG ELECTRONICS CO LTD	1.9%
WUXI BIOLOGICS (CAYMAN) INC	1.7%
AIRBUS SE	1.3%
ASTRAZENECA PLC	1.3%
AIA GROUP LTD	1.3%
ATLISSIAN CORP PLC	1.2%
APTIV PLC	1.2%
Total	18.5%

Market Capitalization

	Small Cap	Mid Cap	Large Cap	Unclassified
Non-U.S Equity Composite	11.1%	25.0%	57.5%	6.4%
MSCI ACWI ex USA	12.9%	23.1%	63.9%	0.0%
<i>Weight Over/Under</i>	-1.8%	1.8%	-6.4%	6.4%

Sector Allocation (%) vs MSCI ACWI ex USA



Region Allocation Summary

Region	% of Total	% of Bench	% Diff
North America ex U.S.	2.8%	7.0%	-4.3%
United States	1.2%	0.0%	1.2%
Europe Ex U.K.	21.9%	30.9%	-9.0%
United Kingdom	5.2%	8.9%	-3.7%
Pacific Basin Ex Japan	10.9%	7.2%	3.7%
Japan	9.6%	14.3%	-4.8%
Emerging Markets	47.4%	31.0%	16.4%
Other	1.0%	0.6%	0.4%
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>HGK Int'l Equity</i>		<i>SSGA MSCI Emerging Markets Index</i>	
	#	%	#	%	#	%	#	%
SSGA MSCI World ex US	--	--	18	72	20	71	843	93
Hardman Johnston Int'l Equity	18	5	--	--	1	4	3	6
HGK Int'l Equity	20	3	1	2	--	--	0	0
SSGA MSCI Emerging Markets Index	843	30	3	10	0	0	--	--

Pennsylvania Municipal Retirement System

Fee Summary

As of June 30, 2021

Account	Fee Schedule	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
Eagle Asset Mgmt	1.00% of First 5.0 Mil, 0.75% Thereafter	6.6%	\$1,715,899	0.76%
LSV Large Cap Value	0.60% of First 25.0 Mil, 0.50% of Next 25.0 Mil, 0.40% of Next 50.0 Mil, 0.30% of Next 100.0 Mil, 0.30% Thereafter	6.2%	\$822,945	0.38%
SSGA S&P 500	0.03% of Assets	3.4%	\$34,827	0.03%
Polen Focus Growth	0.40% of Assets	8.0%	\$1,109,114	0.40%
William & Blair Large Cap Growth	0.50% of First 50.0 Mil, 0.35% of Next 50.0 Mil, 0.30% of Next 150.0 Mil, 0.25% Thereafter	2.3%	\$350,367	0.45%
LSV Small Cap Value	0.75% of First 25.0 Mil, 0.65% of Next 25.0 Mil, 0.55% Thereafter	2.9%	\$627,409	0.62%
Smith, Graham & Co Small Cap Value	0.75% of First 50.0 Mil, 0.60% Thereafter	3.0%	\$691,090	0.67%
SSGA Russell 2000	0.04% of First 50.0 Mil, 0.03% Thereafter	3.4%	\$40,647	0.03%
Copeland Small Cap Dividend Growth	0.50% of Assets	1.8%	\$304,178	0.50%
AMI Small Cap Growth	0.90% of First 10.0 Mil, 0.80% of Next 15.0 Mil, 0.70% of Next 25.0 Mil, 0.60% Thereafter	1.6%	\$409,860	0.76%
Emerald Small Cap Growth	0.60% of First 10.0 Mil, 0.55% of Next 5.0 Mil, 0.50% Thereafter	2.7%	\$474,825	0.51%

Pennsylvania Municipal Retirement System

Fee Summary

As of June 30, 2021

Account	Fee Schedule	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
SSGA MSCI World ex US	0.05% of Assets	4.9%	\$84,476	0.05%
Hardman Johnston Int'l Equity	0.75% of First 25.0 Mil, 0.60% Thereafter	5.2%	\$1,114,290	0.62%
HGK Int'l Equity	0.90% of First 5.0 Mil, 0.80% of Next 5.0 Mil, 0.70% of Next 15.0 Mil, 0.65% Thereafter	4.9%	\$1,120,212	0.67%
SSGA MSCI Emerging Markets Index	0.08% of First 50.0 Mil, 0.05% Thereafter	9.6%	\$180,260	0.05%
Forest Investment Associates	0.75% of Assets	3.9%	\$1,004,723	0.75%
PRISA LP	1.00% of First 25.0 Mil, 0.95% of Next 25.0 Mil, 0.85% of Next 50.0 Mil, 0.75% of Next 100.0 Mil, 0.70% of Next 100.0 Mil, 0.65% Thereafter	1.6%	\$533,784	0.96%
PRISA II	1.20% of First 25.0 Mil, 1.15% of Next 25.0 Mil, 1.05% of Next 50.0 Mil, 0.95% of Next 100.0 Mil, 0.90% of Next 100.0 Mil, 0.85% Thereafter	3.2%	\$1,228,813	1.09%
PennMuni-Nuveen U.S. Real Estate Fund	0.85% of Assets	6.1%	\$1,797,223	0.85%
N. Front Street (Nuveen)	0.85% of Assets	0.1%	\$17,854	0.85%
SSGA US Aggregate Bond Index	0.02% of Assets	18.4%	\$127,027	0.02%
Cash Management	No Fee	0.3%	--	--
Pool 999	No Fee	0.2%	--	--
Investment Management Fee		100.0%	\$13,789,825	0.40%