

# FUND EVALUATION REPORT

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## San Jose Federated City Employees' Retirement System

Quarterly Review  
As of September 30, 2019



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M E K E T A   I N V E S T M E N T   G R O U P

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**1. The World Markets in the Third Quarter 2019**

**2. Executive Summary**

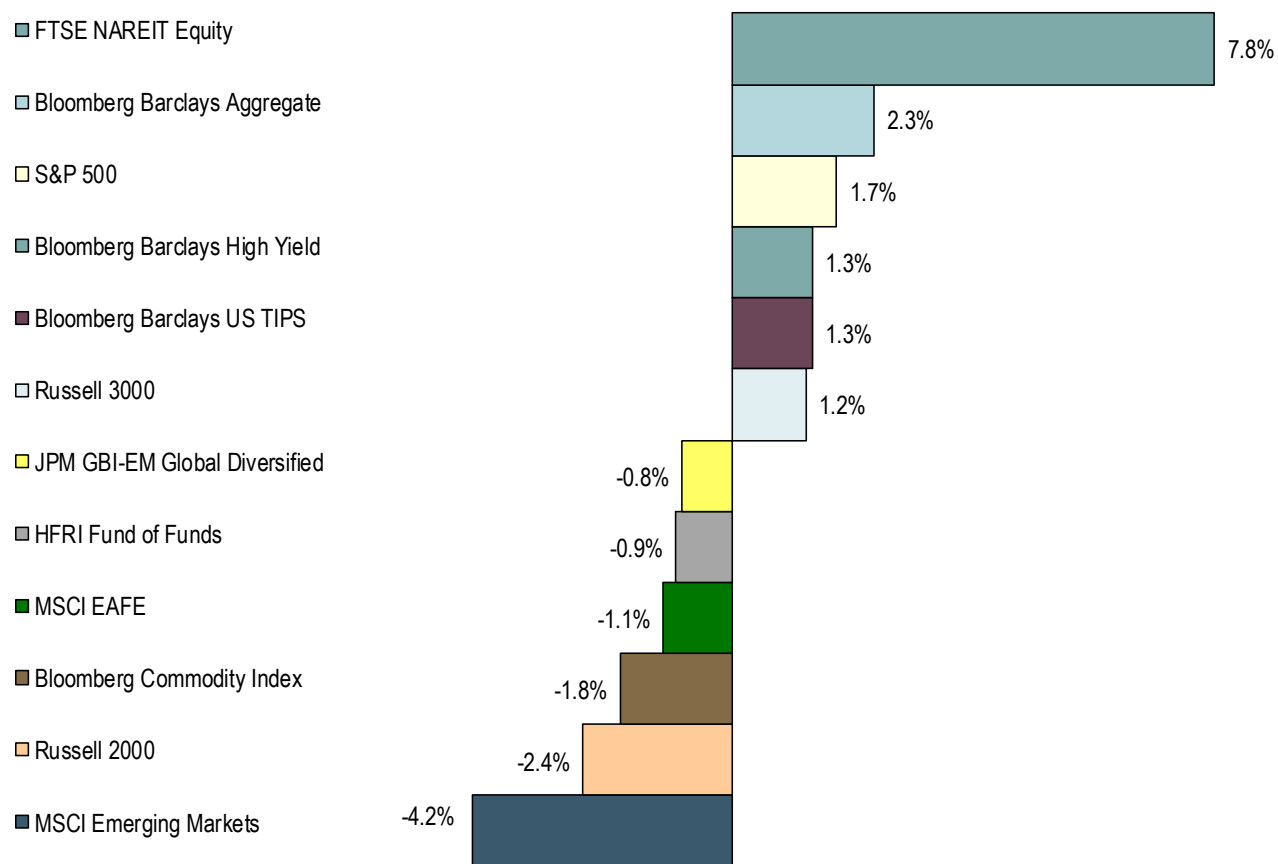
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## **The World Markets Third Quarter of 2019**

## The World Markets<sup>1</sup> Third Quarter of 2019



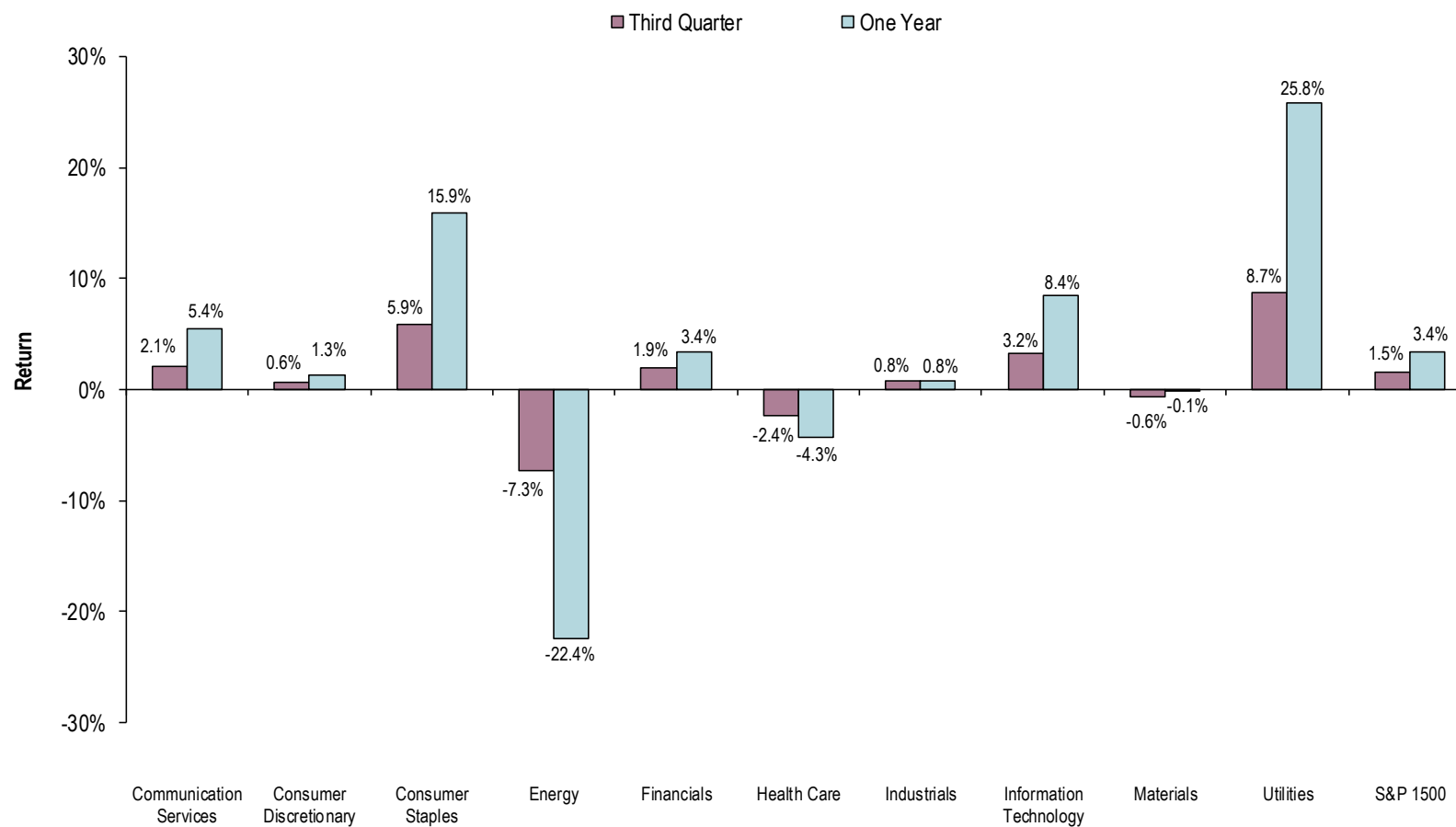
<sup>1</sup> Source: InvestorForce.

Index Returns<sup>1</sup>

	3Q19 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
<b>Domestic Equity</b>						
S&P 500	1.7	20.6	4.3	13.4	10.8	13.2
Russell 3000	1.2	20.1	2.9	12.8	10.4	13.1
Russell 1000	1.4	20.5	3.9	13.2	10.6	13.2
Russell 1000 Growth	1.5	23.3	3.7	16.9	13.4	14.9
Russell 1000 Value	1.4	17.8	4.0	9.4	7.8	11.5
Russell MidCap	0.5	21.9	3.2	10.7	9.1	13.1
Russell MidCap Growth	-0.7	25.2	5.2	14.5	11.1	14.1
Russell MidCap Value	1.2	19.5	1.6	7.8	7.6	12.3
Russell 2000	-2.4	14.2	-8.9	8.2	8.2	11.2
Russell 2000 Growth	-4.2	15.3	-9.6	9.8	9.1	12.2
Russell 2000 Value	-0.6	12.8	-8.2	6.5	7.2	10.1
<b>Foreign Equity</b>						
MSCI ACWI (ex. US)	-1.8	11.6	-1.2	6.3	2.9	4.5
MSCI EAFE	-1.1	12.8	-1.3	6.5	3.3	4.9
MSCI EAFE (Local Currency)	1.8	15.7	1.6	8.3	6.0	7.0
MSCI EAFE Small Cap	-0.4	12.1	-5.9	5.9	6.0	7.5
MSCI Emerging Markets	-4.2	5.9	-2.0	6.0	2.3	3.4
MSCI Emerging Markets (Local Currency)	-2.1	7.8	-0.2	7.6	5.5	5.9
<b>Fixed Income</b>						
Bloomberg Barclays Universal	2.1	8.8	10.1	3.2	3.6	4.1
Bloomberg Barclays Aggregate	2.3	8.5	10.3	2.9	3.4	3.7
Bloomberg Barclays US TIPS	1.3	7.6	7.1	2.2	2.4	3.5
Bloomberg Barclays High Yield	1.3	11.4	6.4	6.1	5.4	7.9
JPM GBI-EM Global Diversified	-0.8	7.9	10.1	3.1	0.6	2.4
<b>Other</b>						
FTSE NAREIT Equity	7.8	27.0	18.4	7.4	10.3	13.0
Bloomberg Commodity Index	-1.8	3.1	-6.6	-1.5	-7.2	-4.3
HFRI Fund of Funds	-0.9	5.2	0.0	3.2	2.0	2.7

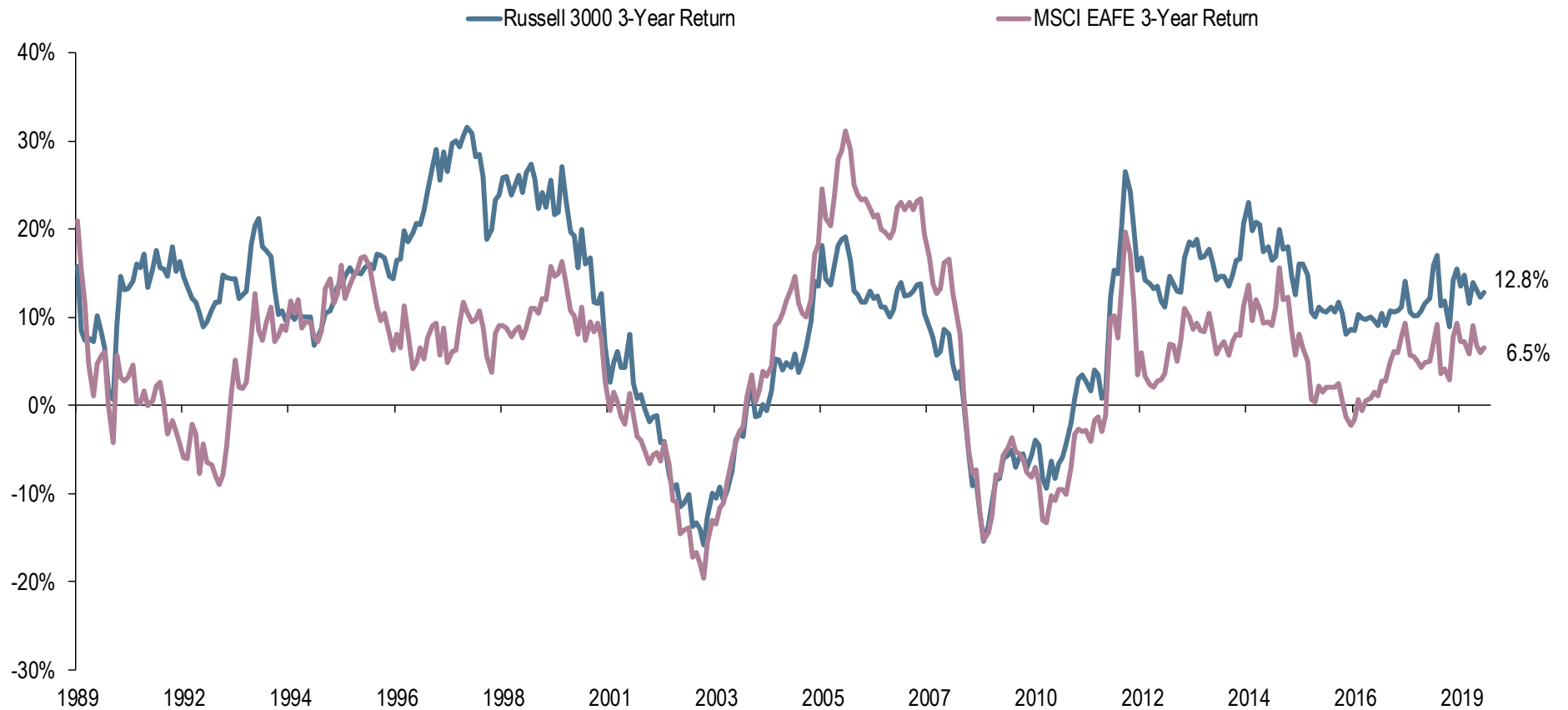
<sup>1</sup> Source: InvestorForce.

## S&P Sector Returns<sup>1</sup>



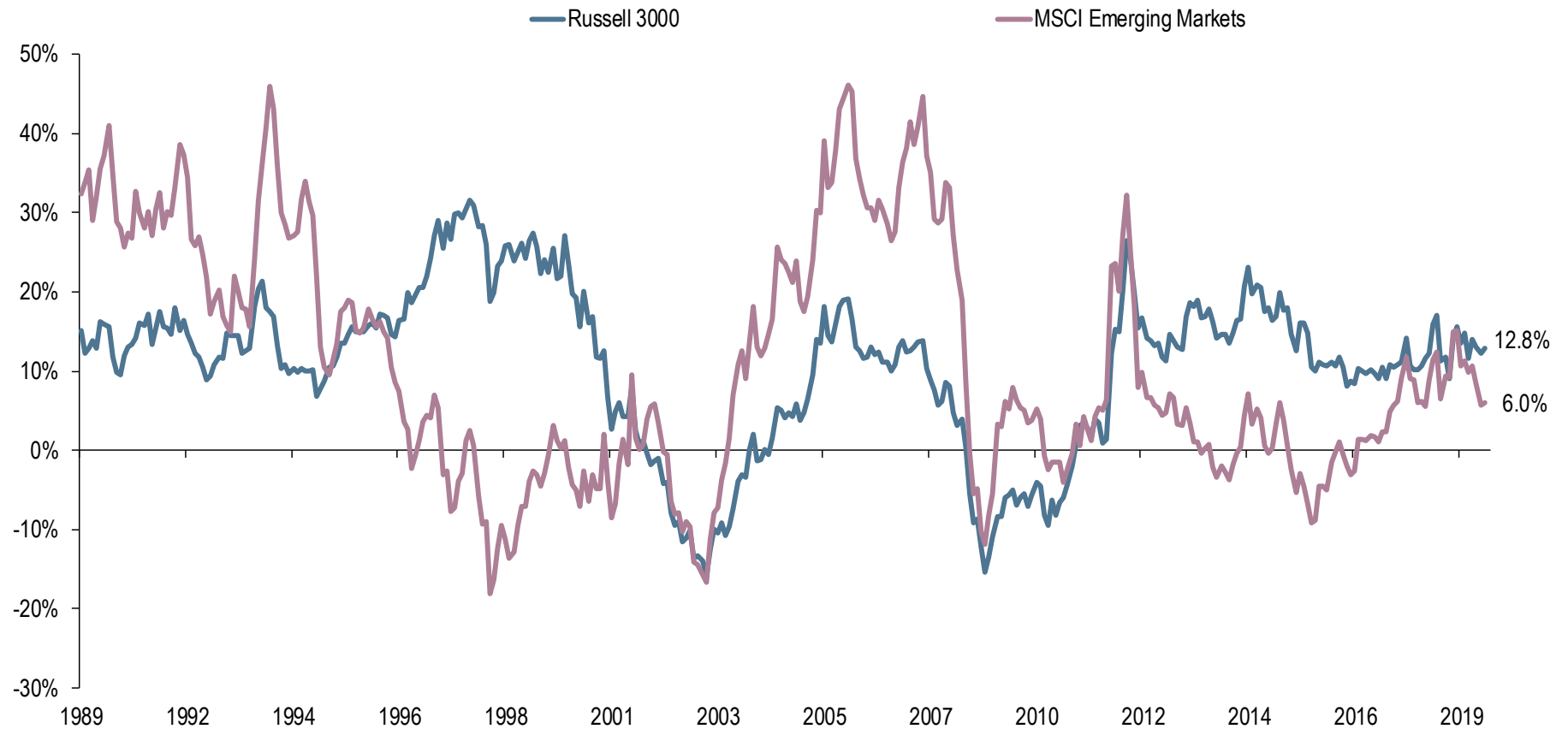
<sup>1</sup> Source: InvestorForce. Represents S&P 1500 (All Cap) data.

## US and Developed Market Foreign Equity Rolling Three-Year Returns<sup>1</sup>



<sup>1</sup> Source: InvestorForce.

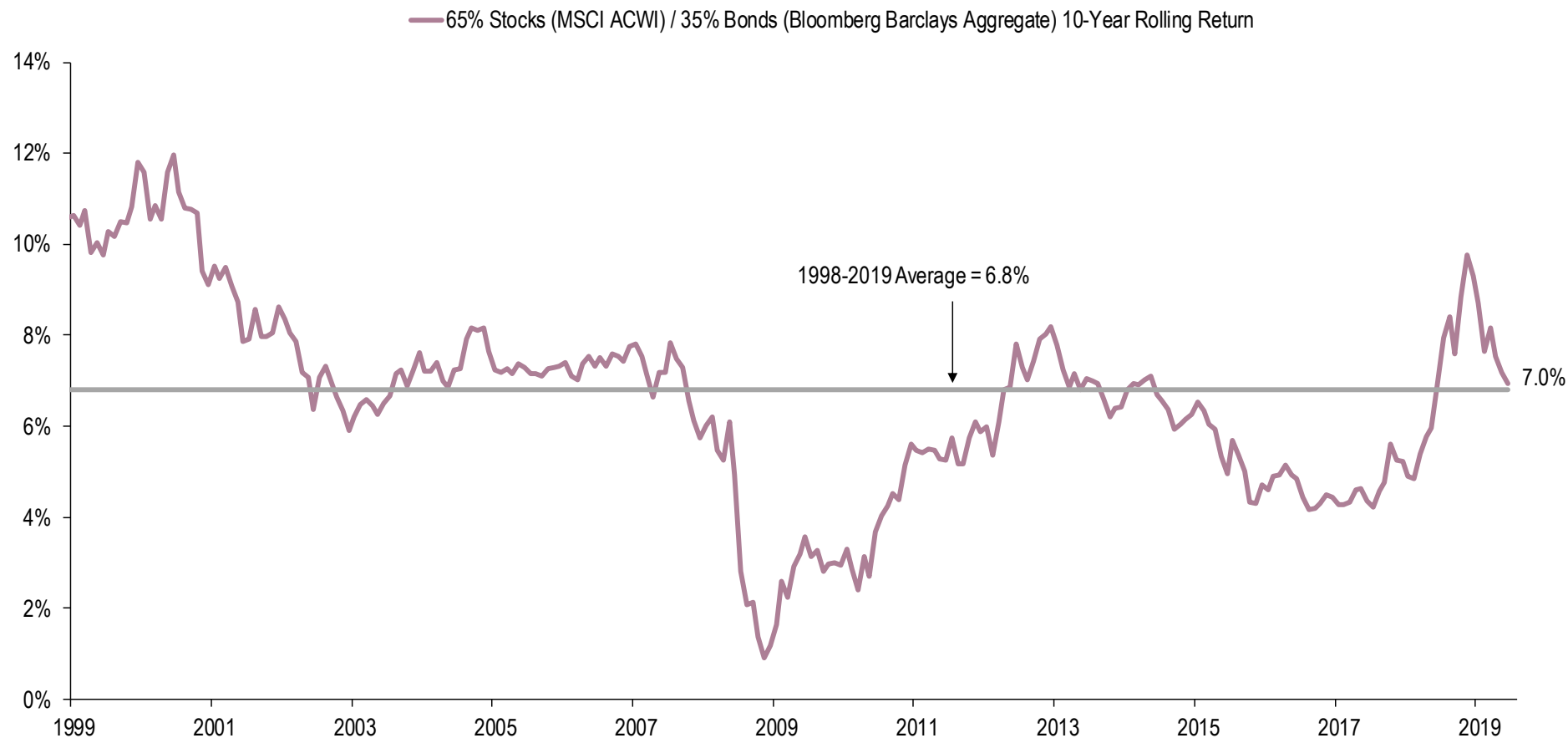
## US and Emerging Market Equity Rolling Three-Year Returns<sup>1</sup>



<sup>1</sup> Source: InvestorForce.



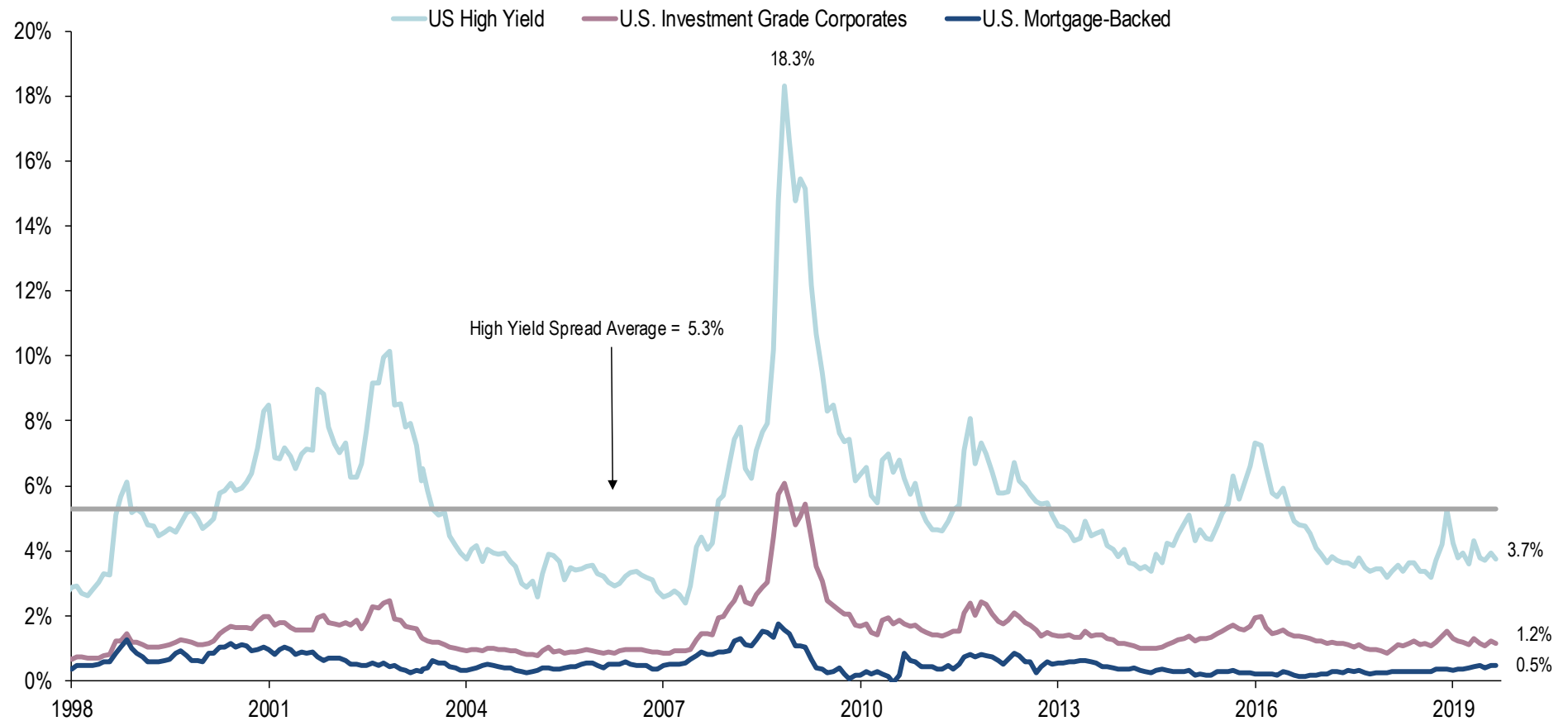
## Rolling Ten-Year Returns: 65% Stocks and 35% Bonds<sup>1</sup>



<sup>1</sup> Source: InvestorForce.



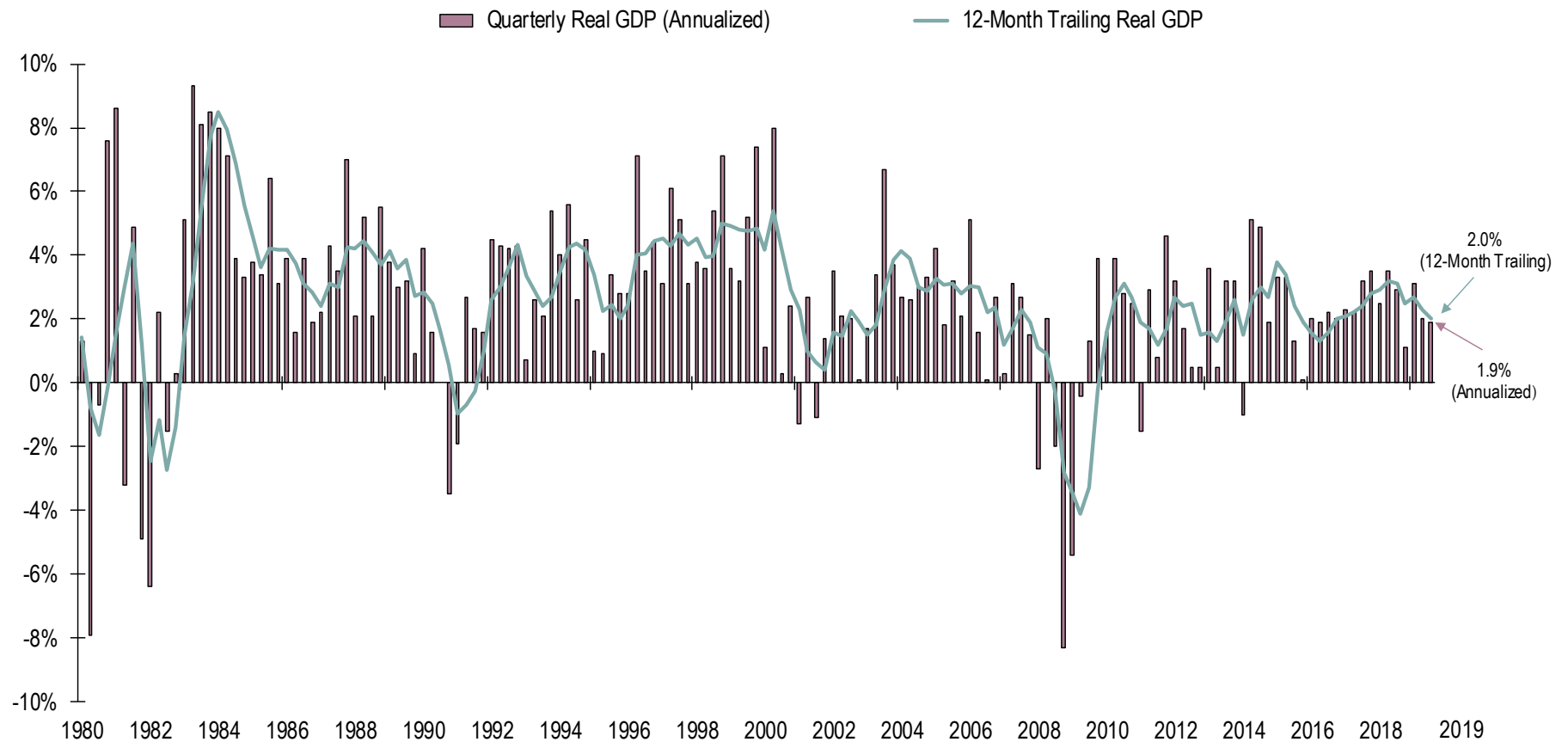
## Credit Spreads vs. US Treasury Bonds<sup>1,2</sup>



<sup>1</sup> Source: Barclays Live.

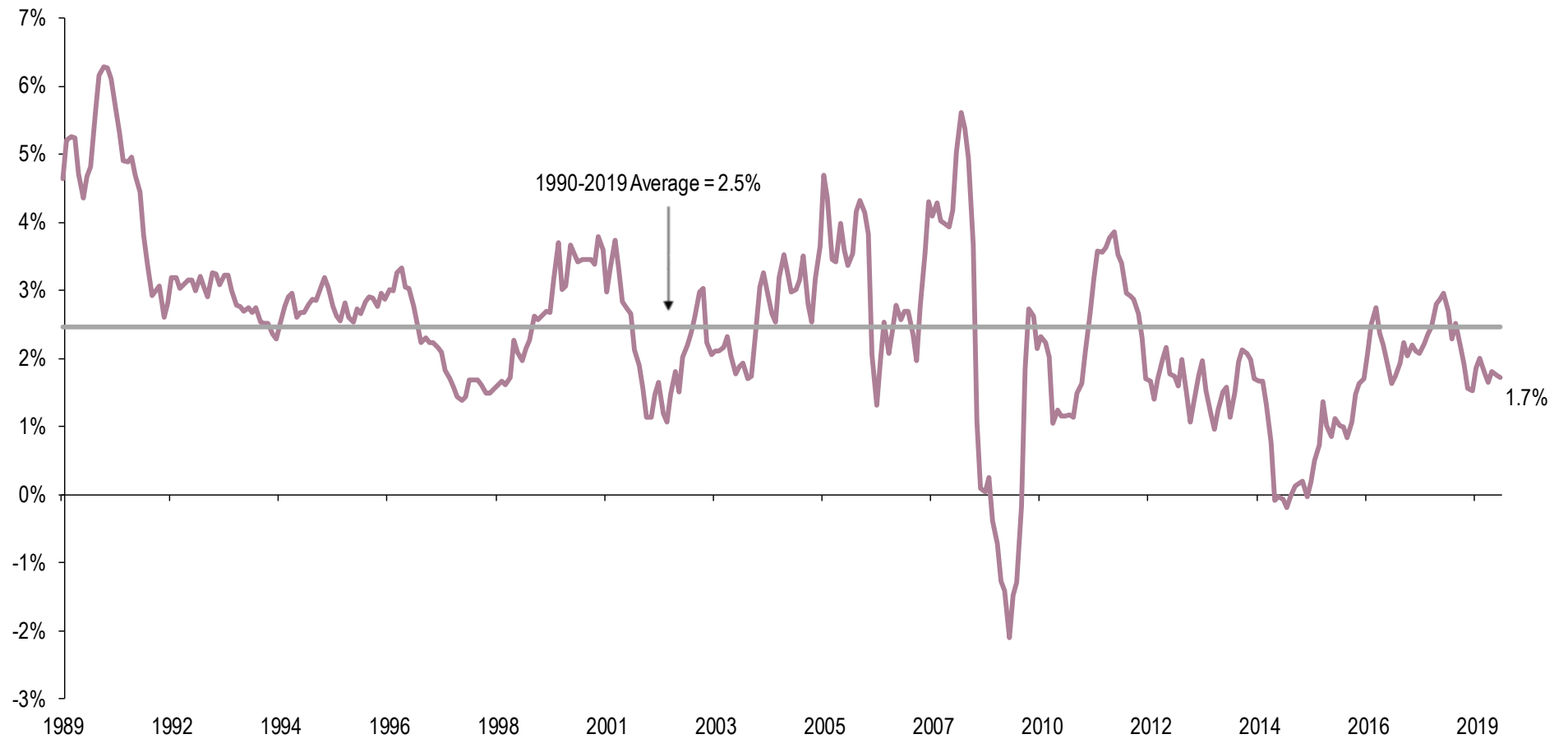
<sup>2</sup> The median high yield spread was 4.8% from 1997-2019.

## US Real Gross Domestic Product (GDP) Growth<sup>1</sup>



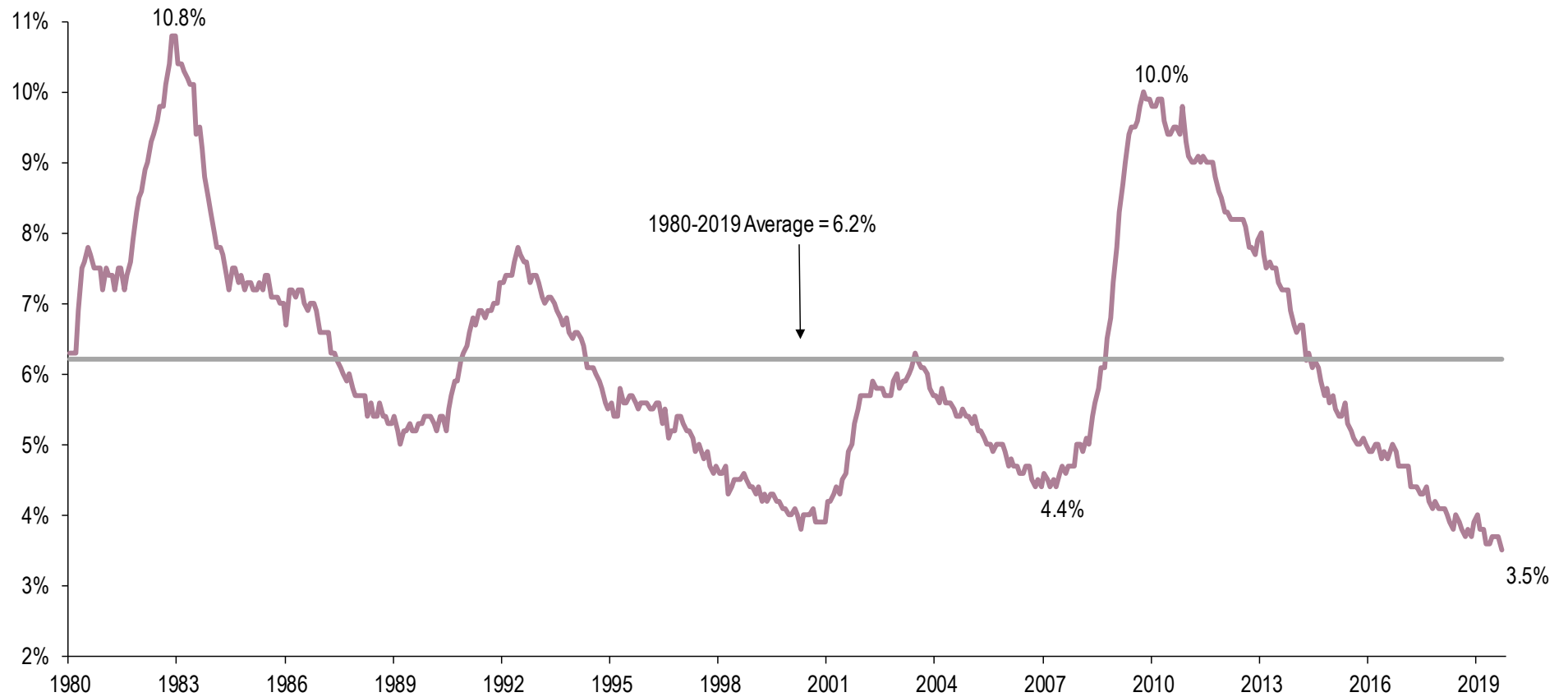
<sup>1</sup> Source: Bureau of Economic Analysis. Data is as of Q3 2019 and represents the first estimate.

## US Inflation (CPI) Trailing Twelve Months<sup>1</sup>



<sup>1</sup> Source: Bureau of Labor Statistics. Data is non-seasonally adjusted CPI, which may be volatile in the short-term. Data is as of September 30, 2019.

## US Unemployment<sup>1</sup>



<sup>1</sup> Source: Bureau of Labor Statistics. Data is as of September 30, 2019.

## **Executive Summary**

### **As of September 30, 2019**

**The value of the San Jose Federated City Employees' Retirement System assets was \$2.1 billion on September 30, 2019, an increase of approximately \$2.0 million from the end of the prior quarter. The System had net cash outflows of \$1.6 million during the quarter.**

- The Retirement System's net of fees performance for the quarter was +0.1%, slightly lagging the Policy Benchmark and Investable Benchmark Portfolio returns of +0.2%, and underperforming the peer median return of +0.5%.
- The Retirement System returned +9.0% in the year-to-date period, outperforming the Policy Benchmark (+8.6%) and Investable Benchmark Portfolio (+8.5%) returns, while underperforming the peer median return of +10.8%. The Retirement System's standard deviation of returns was 8.2% over the trailing one-year period, exhibiting lower volatility than the peer median (9.0%).
  - Growth returned -0.2% for the quarter and +12.9% over the year-to-date period, versus +0.0% and +13.2% for the Growth Benchmark over the same periods, respectively.
  - Zero Beta returned +0.5% for the quarter and +3.5% over the year-to-date period, versus +0.6% and +2.0% for the Zero Beta Benchmark over the same periods, respectively.
  - Other returned +0.7% for the quarter and +4.3% over the year-to-date period, versus +0.2% and +3.7% for the Other Benchmark over the same periods, respectively.
- The Retirement System added four investment managers during the quarter: Global Infrastructure Partners IV (Private Real Assets), Kimmeridge Energy Fund V (Private Real Assets), RWC Emerging Markets Equity (Emerging Markets Equity), and Wellington Emerging Markets Systematic Equity (Emerging Markets Equity).

**Artisan**

- Artisan Global Opportunities returned +0.5% for the quarter, outperforming the MSCI ACWI Growth NR benchmark by 20 basis points. Compared to peers, Artisan ranks in the 35th and 22nd percentiles for the quarter and since inception periods, respectively. The portfolios relative outperformance in the quarter was driven by financials and consumer discretionary stock selection.

**Cove Street**

- Cove Street Small Cap Value returned -4.0% for the quarter and +15.3% over the year-to-date period, underperforming the Russell 2000 Value benchmark by 340 basis points for the quarter and outperforming the benchmark by 250 basis points over the year-to-date period. Compared to peers, Cove Street ranks in the 92nd and 59th percentiles for the quarter and since inception periods, respectively. The largest detractor to portfolio returns in the quarter came from a communications company experiencing declining organic growth which was sold out of the portfolio.

**Oberweis**

- Oberweis International Opportunities returned -4.0% for the quarter and +15.4% over the year-to-date period, underperforming the MSCI World ex USA Small Cap Growth benchmark by 320 basis points for the quarter and outperforming the benchmark by 70 basis points over the year-to-date period. Compared to peers, GQG ranks in the 97th and 41st percentiles for the quarter and since inception periods, respectively. The largest detractor to portfolio returns in the quarter came from a specialty finance company holding which was the subject of a short sale report by a US hedge fund.

**GQG**

- GQG Partners Global Emerging Markets returned -4.0% for the quarter and +14.5% over the year-to-date period, outperforming the MSCI Emerging Markets benchmark by 20 and 860 basis points, respectively. Compared to peers, GQG ranks in the 55th and 4th percentiles for the quarter and since inception periods, respectively. The portfolios largest contributor to performance in the quarter came from a Chinese liquor company benefitting from the countries emerging middle class.

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<sup>1</sup> Net of management fees.





## Third Quarter Manager Summary

Investment Manager	Asset Class	Changes/ Announcements	Performance Concerns	Meketa Recommendation <sup>1</sup>	Comments
Artisan Global Value	Global Equity	Yes	---	Hold	Personnel Changes
Artisan Global Opportunities	Global Equity	---	---	---	---
Cove Street Small Cap Value	U.S. Equity	---	Yes	Hold	Watch List
Oberweis International Opps.	International Equity	---	Yes	Hold	Watch List
Dimensional EM Value	Emerging Markets Equity	Yes	---	Hold	Personnel Changes
GQG Partners Global EM	Emerging Markets Equity	Yes	---	Hold	Personnel Changes
RWC Emerging Markets Equity	Emerging Markets Equity	---	---	---	---
Wellington EM Systematic	Emerging Markets Equity	---	---	---	---
Senator Global Opportunity	Long-Short Equity	---	---	---	---
Sandler Plus	Long-Short Equity	---	---	---	---
Marshall Wace	Long-Short Equity	---	---	---	---
BlueBay EM Select Debt	Emerging Markets Debt	Yes	Yes	Hold	Watch List
Iguazu Partners LP Fund	Emerging Markets Debt	---	Yes	Hold	Watch List
Credit Suisse Risk Parity	Commodities	---	---	---	---

<sup>1</sup> The Meketa Investment Group recommendations are based on the noted organizational or resource changes at each manager.



**Artisan**

- One analyst left the Artisan Global Value team and one analyst joined in the quarter.

**Cove Street**

- Over the three-year period, Cove Street (+5.5%) has underperformed the Russell 2000 Value by 100 basis points. Over the five-year period, Cove Street (+5.7%) has underperformed the benchmark by 150 basis points. Since inception in May 2014, Cove Street has underperformed the benchmark by 50 basis points per year, on average and ranked in the 59th percentile compared to peers.

**Oberweis**

- Over the three-year period, Oberweis (+8.5%) has underperformed the MSCI World ex USA Small Cap Growth by 80 basis points. Since inception in November 2015, Oberweis has underperformed the benchmark by 80 basis points per year, on average and ranked in the 41st percentile compared to peers.

**Dimensional**

- Dimensional formed the Investment Solutions Group in the quarter, which consists of employees from the Investment and Research teams who plan to draw on specialized expertise to help address a wide range of investment related topics.
- There were two additions to the portfolio management team in the quarter.

**GQG**

- GQG welcomed a senior investment analyst to its Partnership, which now totals ten employees.

**BlueBay**

- Over the three-year period, BlueBay (+2.6%) has underperformed the JPM Blended Emerging Markets Index by 130 basis points. Since inception in July 2015, BlueBay (+3.2%) has underperformed the blended benchmark by 180 basis points per year, on average and ranked in the 77th percentile compared to peers.

**Iguazu**

- Since inception in May 2019 Iguazu (+2.5%) has underperformed the JPM Blended Emerging Markets Index by 270 basis points.

**Watch List<sup>1,2</sup>**

Investment Manager	Asset Class	Watch List Status	Comments
Cove Street Small Cap Value	U.S. Equity	Monitoring	Underperformance
Oberweis International Opp	International Equity	Monitoring	Underperformance
BlueBay EM Select Debt	Emerging Markets Debt	Monitoring	Underperformance
Iguazu Partners LP Fund	Emerging Markets Debt	Monitoring	Underperformance
DE Shaw	Absolute Return	Monitoring	Transparency Concerns

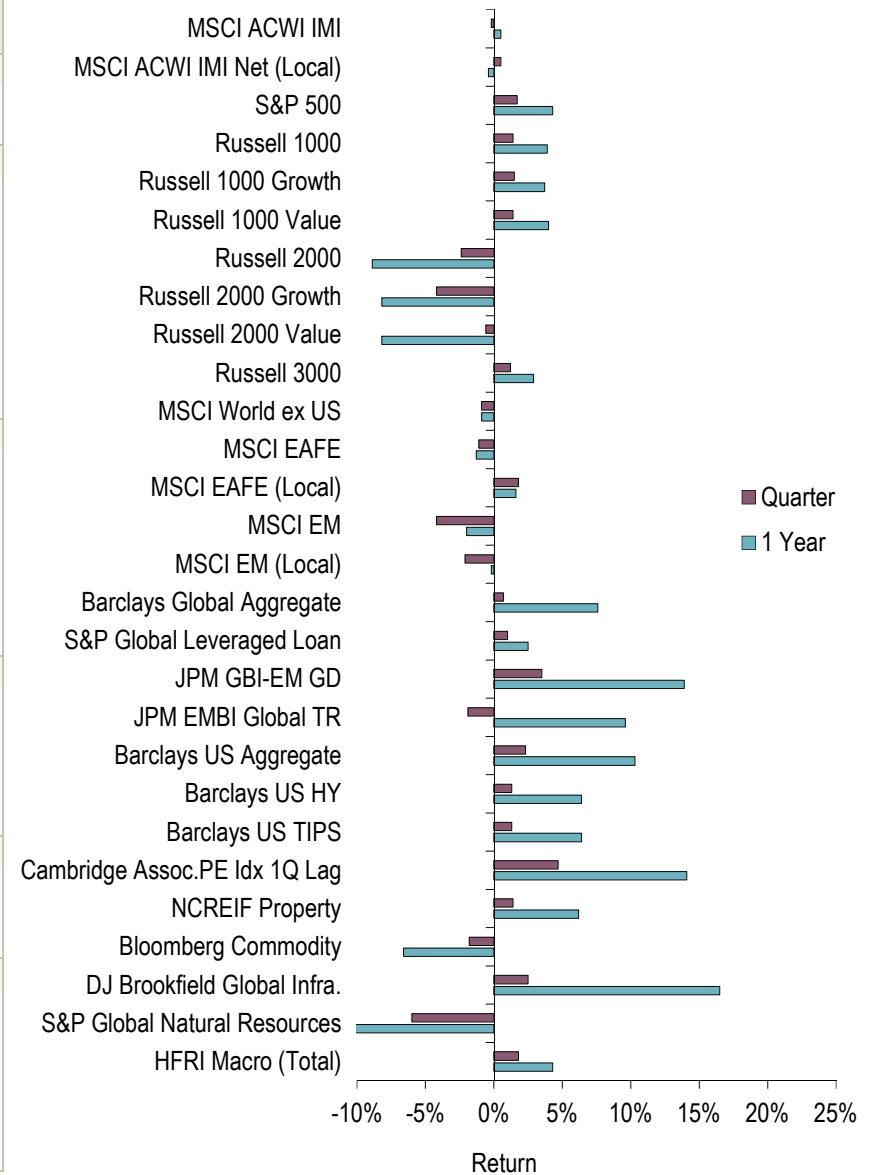
<sup>1</sup> Watch List excludes Private Markets and Passive Funds.

<sup>2</sup> Placement on the Watch List includes qualitative reasons and manager underperformance versus the appropriate benchmark over a three and or five year period as outlined in the Investment Policy Statement.



## Market Environment – 3Q19 Overview

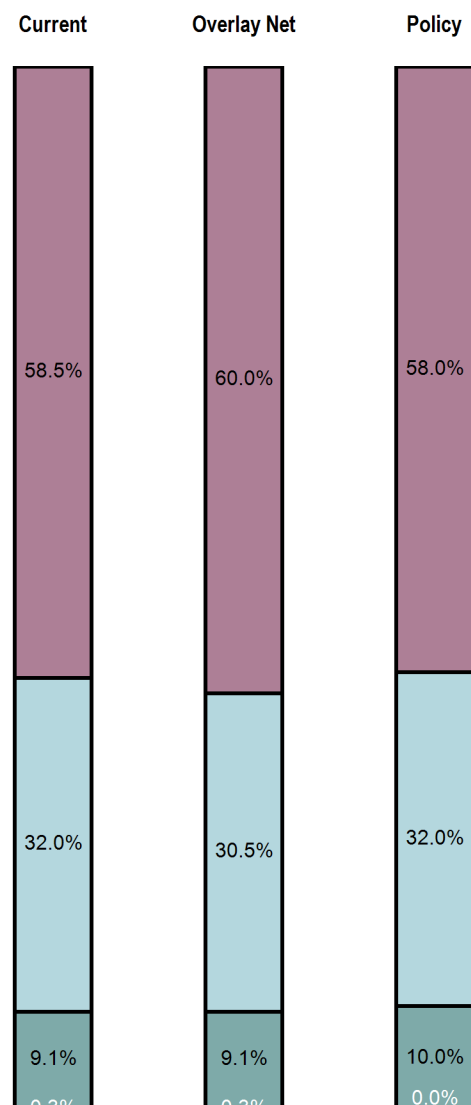
Benchmark	Scope	3Q19 (%)	1 YR (%)	3 YR (%)	5YR (%)	10 YR (%)
<b>Global Equity</b>						
MSCI ACWI IMI	World	-0.2	0.5	9.4	6.6	8.4
MSCI ACWI IMI Net (Local)	World (Local Currency)	0.5	-0.4	8.0	5.9	7.3
<b>Domestic Equity</b>						
S&P 500	Large Core	1.7	4.3	13.4	10.8	13.2
Russell 1000	Large Core	1.4	3.9	13.2	10.6	13.2
Russell 1000 Growth	Large Growth	1.5	3.7	16.9	13.4	14.9
Russell 1000 Value	Large Value	1.4	4.0	9.4	7.8	11.5
Russell 2000	Small Core	-2.4	-8.9	8.2	8.2	11.2
Russell 2000 Growth	Small Growth	-4.2	-9.6	9.8	9.1	12.2
Russell 2000 Value	Small Value	-0.6	-8.2	6.5	7.2	10.1
Russell 3000	All Cap Core	1.2	2.9	12.8	10.4	13.1
<b>International Equity</b>						
MSCI World ex US	World ex-US	-0.9	-0.9	6.5	3.1	4.8
MSCI EAFE	International Developed	-1.1	-1.3	6.5	3.3	4.9
MSCI EAFE (Local)	International Developed (Local Currency)	1.8	1.6	8.3	6.0	7.0
MSCI EM	Emerging Markets	-4.2	-2.0	6.0	2.3	3.4
MSCI EM (Local)	Emerging Markets (Local Currency)	-2.1	-0.2	7.6	5.5	5.9
<b>Global Fixed Income</b>						
Barclays Global Aggregate	Global Core Bonds	0.7	7.6	1.6	2.0	2.3
S&P Global Leveraged Loan	Bank Loans	1.0	2.5	4.4	3.4	5.0
JPM GBI-EM GD	Emerging Markets Bonds (Local Currency)	3.5	13.9	7.2	7.6	7.9
JPM EMBI Global TR	Emerging Market Bonds	-1.9	9.6	3.6	0.1	2.2
<b>Domestic Fixed Income</b>						
Barclays US Aggregate	Core Bonds	2.3	10.3	2.9	3.4	3.7
Barclays US HY	High Yield	1.3	6.4	6.1	5.4	7.9
Barclays US TIPS	Inflation	1.3	7.1	2.2	2.4	3.5
<b>Other</b>						
Cambridge Assoc. PE Index 1Q Lag	Private Equity	4.7	14.1	16.6	13.4	14.9
NCREIF Property	Real Estate	1.4	6.2	6.8	8.6	9.8
Bloomberg Commodity	Commodities	-1.8	-6.6	-1.5	-7.2	-4.3
DJ Brookfield Global Infrastructure	Infrastructure	2.5	16.5	7.8	5.2	10.9
S&P Global Natural Resources	Natural Resources	-6.0	-11.0	7.0	1.1	1.7
HFRI Macro	Hedge Funds	1.8	4.3	1.3	1.3	1.3



## 3Q19 Review

## Total Fund Aggregate

As of September 30, 2019



## Allocation vs. Targets and Policy

	Current Balance	Current Allocation	Russell Overlay Net Position	Policy	Policy Range	Within IPS Range?
<b>Growth</b>	<b>\$1,245,927,621</b>	<b>58.5%</b>	<b>60.0%</b>	<b>58.0%</b>	<b>50.0% - 70.0%</b>	<b>Yes</b>
Public Equity	\$647,205,688	30.4%	31.9%	30.0%	20.0% - 40.0%	Yes
Private Markets	\$528,231,327	24.8%	24.8%	25.0%	20.0% - 30.0%	Yes
Emerging Markets Debt	\$70,490,605	3.3%	3.3%	3.0%	0.0% - 5.0%	Yes
<b>Zero Beta</b>	<b>\$681,744,161</b>	<b>32.0%</b>	<b>30.5%</b>	<b>32.0%</b>	<b>10.0% - 35.0%</b>	<b>Yes</b>
Absolute Return	\$158,591,644	7.4%	7.4%	7.0%	0.0% - 10.0%	Yes
Short-Term IG Bonds	\$402,847,349	18.9%	18.9%	20.0%	5.0% - 25.0%	Yes
Immunized Cash Flows	\$105,730,247	5.0%	5.0%	5.0%	4.5% - 5.5%	Yes
Cash	\$14,574,921	0.7%	-0.8%	0.0%	0.0% - 5.0%	Yes
<b>Other</b>	<b>\$194,636,168</b>	<b>9.1%</b>	<b>9.1%</b>	<b>10.0%</b>	<b>5.0% - 15.0%</b>	<b>Yes</b>
Core Real Estate	\$88,544,475	4.2%	4.2%	5.0%	0.0% - 8.0%	Yes
Commodities	\$61,534,297	2.9%	2.9%	3.0%	0.0% - 8.0%	Yes
TIPS	\$44,557,395	2.1%	2.1%	2.0%	0.0% - 8.0%	Yes
<b>Overlay</b>	<b>\$6,941,995</b>	<b>0.3%</b>	<b>0.3%</b>	<b>0.0%</b>	<b>--</b>	<b>--</b>
<b>Total</b>	<b>\$2,129,249,945</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>		

<sup>1</sup> Data in the column titled "Russell Overlay Net Position" is based on physical exposures, adjusted for synthetic positions provided by Russell Investments.

<sup>2</sup> Cash composite includes the cash account, cash collateral in the Russell Investments Overlay program, and residuals from terminated manager assets.

## Total Fund Aggregate

As of September 30, 2019

## Asset Class Net Performance Summary

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Total Fund Aggregate</b>	<b>2,129,249,945</b>	<b>100.0</b>	<b>0.1</b>	<b>0.1</b>	<b>9.0</b>	<b>3.0</b>	<b>5.1</b>	<b>3.5</b>	<b>5.4</b>	<b>6.5</b>	<b>Jan-94</b>
Policy Benchmark			0.2	0.2	8.6	2.6	5.7	4.0	6.1	6.8	Jan-94
Investable Benchmark Portfolio			0.2	0.2	8.5	2.5	5.0	3.3	5.2	--	Jan-94
60/40 MSCI ACWI/BBgBarc Global Aggregate			0.3	0.3	12.4	4.2	6.6	4.9	6.1	6.4	Jan-94
Low-Cost Passive Portfolio			0.2	0.2	10.2	2.8	--	--	--	--	Jan-94
Liability Benchmark Portfolio			7.9	7.9	19.8	24.8	--	--	--	--	Jan-94
InvMetrics Public DB > \$1B Net Median			0.5	0.5	10.8	3.6	7.7	6.1	8.0	7.3	Jan-94
InvMetrics Public DB > \$1B Net Rank			83	83	95	65	98	98	97	83	Jan-94
<b>Growth</b>	<b>1,245,927,621</b>	<b>58.5</b>	<b>-0.2</b>	<b>-0.2</b>	<b>12.9</b>	<b>2.7</b>	<b>7.3</b>	<b>--</b>	<b>--</b>	<b>5.7</b>	<b>Jul-15</b>
Growth Benchmark			0.0	0.0	13.2	2.4	8.9	--	--	7.2	Jul-15
<b>Public Equity</b>	<b>647,205,688</b>	<b>30.4</b>	<b>-1.5</b>	<b>-1.5</b>	<b>13.3</b>	<b>0.3</b>	<b>7.7</b>	<b>5.4</b>	<b>--</b>	<b>7.6</b>	<b>May-10</b>
Public Equity Benchmark			-1.2	-1.2	13.5	0.1	9.2	6.5	--	8.0	May-10
<b>Global Equity</b>	<b>191,325,402</b>	<b>9.0</b>	<b>-0.1</b>	<b>-0.1</b>	<b>18.7</b>	<b>2.1</b>	<b>10.5</b>	<b>--</b>	<b>--</b>	<b>8.4</b>	<b>Jul-15</b>
MSCI ACWI IMI Net USD			-0.2	-0.2	15.9	0.5	9.4	--	--	6.9	Jul-15
eV All Global Equity Net Median			-0.2	-0.2	16.5	0.8	8.9	6.9	9.0	6.9	Jul-15
eV All Global Equity Net Rank			47	47	36	40	31	--	--	30	Jul-15
<b>US Equity</b>	<b>120,127,574</b>	<b>5.6</b>	<b>0.3</b>	<b>0.3</b>	<b>18.9</b>	<b>1.8</b>	<b>10.7</b>	<b>--</b>	<b>--</b>	<b>9.1</b>	<b>Jul-15</b>
MSCI USA IMI GR USD			1.2	1.2	20.2	3.0	12.9	--	--	10.6	Jul-15
eV All US Equity Net Median			0.4	0.4	18.5	-0.3	10.6	8.8	12.1	8.2	Jul-15
eV All US Equity Net Rank			51	51	48	39	50	--	--	40	Jul-15

<sup>1</sup> Fiscal Year begins July 1.<sup>2</sup> Please see the Appendix for composition of the Policy Benchmark, Low-Cost Passive Portfolio, Liability Benchmark Portfolio, Growth Benchmark, and Public Equity Benchmark.<sup>3</sup> Returns for the Public Equity Aggregate are gross of fees through June 2015 and net of fees thereafter.

## Total Fund Aggregate

As of September 30, 2019

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>International Equity</b>	<b>82,393,035</b>	<b>3.9</b>	<b>-1.9</b>	<b>-1.9</b>	<b>14.4</b>	<b>-4.6</b>	<b>5.7</b>	<b>--</b>	<b>--</b>	<b>3.3</b>	<b>Jul-15</b>
MSCI World ex USA IMI NR USD			-0.8	-0.8	13.4	-1.6	6.3	--	--	3.7	Jul-15
eV ACWI ex-US All Cap Equity Net Median			-1.9	-1.9	13.5	-1.8	6.7	4.1	6.5	4.0	Jul-15
eV ACWI ex-US All Cap Equity Net Rank			51	51	43	72	66	--	--	65	Jul-15
<b>Emerging Markets Equity</b>	<b>190,337,843</b>	<b>8.9</b>	<b>-4.8</b>	<b>-4.8</b>	<b>5.6</b>	<b>-1.9</b>	<b>3.1</b>	<b>--</b>	<b>--</b>	<b>0.8</b>	<b>Jul-15</b>
MSCI Emerging Market IMI Net			-4.3	-4.3	5.4	-2.4	5.4	--	--	2.7	Jul-15
eV Emg Mkts Equity Net Median			-3.8	-3.8	7.7	-0.6	5.7	2.5	4.0	3.4	Jul-15
eV Emg Mkts Equity Net Rank			76	76	70	63	88	--	--	95	Jul-15
<b>Marketable Alternative Equity</b>	<b>63,021,835</b>	<b>3.0</b>	<b>1.2</b>	<b>1.2</b>	<b>9.0</b>	<b>3.6</b>	<b>6.5</b>	<b>5.6</b>	<b>--</b>	<b>5.6</b>	<b>Oct-14</b>
HFRI Equity Hedge (Total) Index			-1.3	-1.3	7.8	-1.3	4.7	3.4	--	3.4	Oct-14
<b>Private Markets</b>	<b>528,231,328</b>	<b>24.8</b>	<b>1.2</b>	<b>1.2</b>	<b>12.9</b>	<b>3.9</b>	<b>7.4</b>	<b>--</b>	<b>--</b>	<b>6.3</b>	<b>Jul-15</b>
Private Markets Benchmark			1.2	1.2	12.9	3.9	10.7	--	--	8.9	Jul-15
MSCI ACWI IMI + 100bps			0.1	0.1	16.7	1.5	10.4	--	--	8.0	Jul-15
<b>Private Markets ex Russell 3000</b>	<b>256,048,181</b>	<b>12.0</b>	<b>1.2</b>	<b>1.2</b>	<b>3.3</b>	<b>5.9</b>	<b>7.2</b>	<b>--</b>	<b>--</b>	<b>6.2</b>	<b>Jul-15</b>
Private Markets Benchmark			1.2	1.2	12.9	3.9	10.7	--	--	8.9	Jul-15
<b>Private Equity</b>	<b>386,947,761</b>	<b>18.2</b>	<b>1.6</b>	<b>1.6</b>	<b>17.0</b>	<b>4.5</b>	<b>9.7</b>	<b>7.9</b>	<b>11.1</b>	<b>--</b>	<b>Jan-06</b>
San Jose Custom Private Equity Benchmark			4.3	4.3	7.8	11.2	15.8	11.6	11.3	--	Jan-06
<b>Private Equity ex Russell 3000</b>	<b>123,367,774</b>	<b>5.8</b>	<b>2.4</b>	<b>2.4</b>	<b>5.1</b>	<b>11.0</b>	<b>11.8</b>	<b>9.1</b>	<b>11.7</b>	<b>7.5</b>	<b>Jan-06</b>
<b>Northern Trust Russell 3000</b>	<b>263,579,987</b>	<b>12.4</b>	<b>1.2</b>	<b>1.2</b>	<b>20.2</b>	<b>3.1</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>8.2</b>	<b>Jun-18</b>
Russell 3000			1.2	1.2	20.1	2.9	--	--	--	8.1	Jun-18
<b>Private Debt</b>	<b>64,271,069</b>	<b>3.0</b>	<b>-1.2</b>	<b>-1.2</b>	<b>-0.9</b>	<b>-4.9</b>	<b>-3.4</b>	<b>-0.2</b>	<b>--</b>	<b>2.9</b>	<b>Dec-10</b>
S&P Global Leveraged Loan Index +2%			1.5	1.5	7.4	4.6	6.4	5.5	--	6.3	Dec-10

<sup>1</sup> Returns for the Fixed Income, Private Debt, and Real Assets Aggregates are gross of fees through June 2015 and net of fees thereafter.

<sup>2</sup> Prior to 7/1/2015, Fixed Income Custom Benchmark was 100% Barclays Global Aggregate. After 7/1/2015, Fixed Income Custom Benchmark consists of 80% Barclays Global Aggregate, 5% JPM GBI-EM GD, 5% JPM EMBI GD, 5% S&P Global Leveraged Loan, and 5% BAML Global HY Index.

<sup>3</sup> Please see the Appendix for composition of the Private Markets Benchmark.



## Total Fund Aggregate

As of September 30, 2019

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Private Real Estate</b>	<b>53,803,250</b>	<b>2.5</b>	<b>1.5</b>	<b>1.5</b>	<b>5.8</b>	<b>10.4</b>	<b>16.1</b>	--	--	<b>17.3</b>	<b>Jul-15</b>
<i>NCREIF Property Index</i>			1.4	1.4	4.8	6.2	6.8	--	--	7.7	Jul-15
<b>Private Real Assets</b>	<b>23,209,247</b>	<b>1.1</b>	<b>1.1</b>	<b>1.1</b>	<b>2.0</b>	<b>9.9</b>	<b>10.0</b>	--	--	<b>7.2</b>	<b>Jul-15</b>
<b>Emerging Markets Debt</b>	<b>70,490,605</b>	<b>3.3</b>	<b>0.1</b>	<b>0.1</b>	<b>9.2</b>	<b>7.9</b>	<b>2.2</b>	--	--	<b>2.9</b>	<b>Jul-15</b>
<i>50% JPM EMBI GD / 50% JPM GBI-EM</i>			0.4	0.4	10.4	10.9	3.9	--	--	5.0	Jul-15
<i>eV All Emg Mkts Fixed Inc Net Median</i>			0.0	0.0	10.0	9.8	3.9	3.8	5.5	5.0	Jul-15
<i>eV All Emg Mkts Fixed Inc Net Rank</i>			45	45	60	76	85	--	--	80	Jul-15
<b>Zero Beta</b>	<b>681,744,161</b>	<b>32.0</b>	<b>0.5</b>	<b>0.5</b>	<b>3.5</b>	<b>3.9</b>	<b>3.0</b>	--	--	<b>2.2</b>	<b>Jul-15</b>
<i>Zero Beta Benchmark</i>			0.6	0.6	2.0	2.7	0.8	--	--	0.7	Jul-15
<b>Short-Term IG Bonds</b>	<b>402,847,349</b>	<b>18.9</b>	<b>0.6</b>	<b>0.6</b>	<b>1.8</b>	<b>2.4</b>	--	--	--	<b>2.4</b>	<b>Oct-18</b>
<i>ICE BofAML 91 Days T-Bills TR</i>			0.6	0.6	1.8	2.4	--	--	--	2.4	Oct-18
<b>Immunized Cash Flows</b>	<b>105,730,247</b>	<b>5.0</b>	<b>0.7</b>	<b>0.7</b>	<b>3.0</b>	<b>4.4</b>	--	--	--	<b>4.4</b>	<b>Oct-18</b>
<i>Immunized Cash Flows Benchmark</i>			0.7	0.7	3.0	4.4	--	--	--	4.4	Oct-18
<b>Absolute Return</b>	<b>158,591,644</b>	<b>7.4</b>	<b>0.3</b>	<b>0.3</b>	<b>7.7</b>	<b>7.3</b>	<b>4.7</b>	<b>3.5</b>	--	<b>4.0</b>	<b>Nov-12</b>
<i>Absolute Return Benchmark</i>			0.6	0.6	1.9	2.6	0.7	1.0	--	1.2	Nov-12
<b>Macro</b>	<b>68,715,111</b>	<b>3.2</b>	<b>-1.4</b>	<b>-1.4</b>	<b>7.2</b>	<b>6.3</b>	<b>3.5</b>	<b>2.3</b>	--	<b>2.3</b>	<b>Oct-14</b>
<i>HFRI Macro (Total) Index</i>			1.8	1.8	6.8	4.3	1.3	1.3	--	1.3	Oct-14
<b>Relative Value</b>	<b>89,876,533</b>	<b>4.2</b>	<b>1.7</b>	<b>1.7</b>	<b>7.7</b>	<b>7.9</b>	<b>5.9</b>	<b>4.8</b>	--	<b>4.8</b>	<b>Oct-14</b>
<i>HFRI Relative Value (Total) Index</i>			0.1	0.1	5.6	2.0	4.0	3.3	--	3.3	Oct-14
<b>Cash</b>	<b>14,574,921</b>	<b>0.7</b>	<b>0.6</b>	<b>0.6</b>	<b>1.6</b>	<b>2.1</b>	<b>1.4</b>	<b>1.0</b>	--	--	<b>Jan-06</b>
<i>ICE BofAML 91 Days T-Bills TR</i>			0.6	0.6	1.8	2.4	1.5	1.0	--	--	Jan-06
<b>Other</b>	<b>194,636,168</b>	<b>9.1</b>	<b>0.7</b>	<b>0.7</b>	<b>4.3</b>	<b>3.6</b>	<b>2.9</b>	<b>1.6</b>	<b>2.5</b>	<b>2.1</b>	<b>Jul-04</b>
<i>Other Benchmark</i>			0.2	0.2	3.7	1.4	1.3	--	--	--	Jul-04

<sup>1</sup> Cash composite includes the cash account, cash collateral in the Russell Investments Overlay program, and residuals from terminated manager assets.

<sup>2</sup> Please see the Appendix for composition of the Zero Beta Benchmark, Immunized Cash Flows Benchmark, Absolute Return Benchmark, and Other Benchmark.

## Total Fund Aggregate

As of September 30, 2019

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Core Real Estate</b>	<b>88,544,475</b>	<b>4.2</b>	<b>1.2</b>	<b>1.2</b>	<b>5.1</b>	<b>7.3</b>	<b>7.3</b>	<b>9.2</b>	<b>10.3</b>	<b>7.1</b>	<b>Jul-04</b>
<i>NCREIF ODCE Equal Weighted (Net)</i>			<i>1.2</i>	<i>1.2</i>	<i>3.8</i>	<i>5.3</i>	<i>6.7</i>	<i>8.7</i>	<i>9.9</i>	<i>6.8</i>	<i>Jul-04</i>
<b>Commodities</b>	<b>61,534,297</b>	<b>2.9</b>	<b>0.1</b>	<b>0.1</b>	<b>3.7</b>	<b>-1.8</b>	<b>2.0</b>	<b>-5.8</b>	<b>--</b>	<b>-3.3</b>	<b>May-10</b>
<i>Bloomberg Commodity Index TR USD</i>			<i>-1.8</i>	<i>-1.8</i>	<i>3.1</i>	<i>-6.6</i>	<i>-1.5</i>	<i>-7.2</i>	<i>--</i>	<i>-5.1</i>	<i>May-10</i>
<b>TIPS</b>	<b>44,557,395</b>	<b>2.1</b>	<b>0.3</b>	<b>0.3</b>	<b>3.7</b>	<b>3.4</b>	<b>1.7</b>	<b>1.3</b>	<b>--</b>	<b>1.0</b>	<b>Jul-14</b>
<i>BBgBarc U.S. TIPS 0-5 Years</i>			<i>0.3</i>	<i>0.3</i>	<i>3.7</i>	<i>3.4</i>	<i>1.6</i>	<i>1.3</i>	<i>--</i>	<i>1.0</i>	<i>Jul-14</i>
<b>Overlay</b>	<b>6,941,995</b>	<b>0.3</b>									

## Total Fund Aggregate

As of September 30, 2019

## Trailing Net Performance

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Total Fund Aggregate</b>	<b>2,129,249,945</b>	<b>100.0</b>	<b>0.1</b>	<b>0.1</b>	<b>9.0</b>	<b>3.0</b>	<b>5.1</b>	<b>3.5</b>	<b>5.4</b>	<b>6.5</b>	<b>Jan-94</b>
Policy Benchmark			0.2	0.2	8.6	2.6	5.7	4.0	6.1	6.8	Jan-94
Investable Benchmark Portfolio			0.2	0.2	8.5	2.5	5.0	3.3	5.2	--	Jan-94
60/40 MSCI ACWI/BBgBarc Global Aggregate			0.3	0.3	12.4	4.2	6.6	4.9	6.1	6.4	Jan-94
Low-Cost Passive Portfolio			0.2	0.2	10.2	2.8	--	--	--	--	Jan-94
Liability Benchmark Portfolio			7.9	7.9	19.8	24.8	--	--	--	--	Jan-94
InvMetrics Public DB > \$1B Net Median			0.5	0.5	10.8	3.6	7.7	6.1	8.0	7.3	Jan-94
InvMetrics Public DB > \$1B Net Rank			83	83	95	65	98	98	97	83	Jan-94
<b>Growth</b>	<b>1,245,927,621</b>	<b>58.5</b>	<b>-0.2</b>	<b>-0.2</b>	<b>12.9</b>	<b>2.7</b>	<b>7.3</b>	<b>--</b>	<b>--</b>	<b>5.7</b>	<b>Jul-15</b>
Growth Benchmark			0.0	0.0	13.2	2.4	8.9	--	--	7.2	Jul-15
<b>Public Equity</b>	<b>647,205,688</b>	<b>30.4</b>	<b>-1.5</b>	<b>-1.5</b>	<b>13.3</b>	<b>0.3</b>	<b>7.7</b>	<b>5.4</b>	<b>--</b>	<b>7.6</b>	<b>May-10</b>
Public Equity Benchmark			-1.2	-1.2	13.5	0.1	9.2	6.5	--	8.0	May-10
<b>Global Equity</b>	<b>191,325,402</b>	<b>9.0</b>	<b>-0.1</b>	<b>-0.1</b>	<b>18.7</b>	<b>2.1</b>	<b>10.5</b>	<b>--</b>	<b>--</b>	<b>8.4</b>	<b>Jul-15</b>
MSCI ACWI IMI Net USD			-0.2	-0.2	15.9	0.5	9.4	--	--	6.9	Jul-15
eV All Global Equity Net Median			-0.2	-0.2	16.5	0.8	8.9	6.9	9.0	6.9	Jul-15
eV All Global Equity Net Rank			47	47	36	40	31	--	--	30	Jul-15
Artisan Global Value	129,433,070	6.1	-0.4	-0.4	16.2	0.7	9.2	7.3	--	10.3	Mar-11
MSCI ACWI Value NR USD			-0.3	-0.3	12.0	0.0	7.4	4.3	--	5.5	Mar-11
eV All Global Equity Net Median			-0.2	-0.2	16.5	0.8	8.9	6.9	9.0	7.6	Mar-11
eV All Global Equity Net Rank			52	52	53	51	46	42	--	14	Mar-11

<sup>1</sup> Returns for the Equity Aggregate are gross of fees through June 2015 and net of fees thereafter.<sup>2</sup> Please see final page of the performance report for composition of the Policy Benchmark.

## Total Fund Aggregate

As of September 30, 2019

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Artisan Global Opportunities	61,892,332	2.9	0.5	0.5	24.2	5.2	--	--	--	10.4	Jul-17
MSCI ACWI Growth NR USD			0.3	0.3	20.4	2.8	--	--	--	10.3	Jul-17
eV All Global Equity Net Median			-0.2	-0.2	16.5	0.8	8.9	6.9	9.0	7.0	Jul-17
eV All Global Equity Net Rank			35	35	9	27	--	--	--	22	Jul-17
<b>US Equity</b>	<b>120,127,574</b>	<b>5.6</b>	<b>0.3</b>	<b>0.3</b>	<b>18.9</b>	<b>1.8</b>	<b>10.7</b>	<b>--</b>	<b>--</b>	<b>9.1</b>	<b>Jul-15</b>
MSCI USA IMI GR USD			1.2	1.2	20.2	3.0	12.9	--	--	10.6	Jul-15
eV All US Equity Net Median			0.4	0.4	18.5	-0.3	10.6	8.8	12.1	8.2	Jul-15
eV All US Equity Net Rank			51	51	48	39	50	--	--	40	Jul-15
Northern Trust Russell 1000	88,967,409	4.2	1.4	1.4	20.6	4.0	--	--	--	14.5	Nov-16
Russell 1000			1.4	1.4	20.5	3.9	--	--	--	14.4	Nov-16
Northern Tr Russell 2000 Value	13,011,851	0.6	-0.6	-0.6	12.9	-8.2	--	--	--	-0.7	Jan-18
Russell 2000 Value			-0.6	-0.6	12.8	-8.2	--	--	--	-1.0	Jan-18
Cove Street Small Cap Value	18,148,314	0.9	-4.0	-4.0	15.3	-1.4	5.5	5.7	--	5.3	May-14
Russell 2000 Value			-0.6	-0.6	12.8	-8.2	6.5	7.2	--	5.8	May-14
eV US Small Cap Value Equity Net Median			-0.3	-0.3	14.9	-6.8	6.2	6.4	10.7	5.6	May-14
eV US Small Cap Value Equity Net Rank			92	92	47	18	63	68	--	59	May-14
<b>International Equity</b>	<b>82,393,035</b>	<b>3.9</b>	<b>-1.9</b>	<b>-1.9</b>	<b>14.4</b>	<b>-4.6</b>	<b>5.7</b>	<b>--</b>	<b>--</b>	<b>3.3</b>	<b>Jul-15</b>
MSCI World ex USA IMI NR USD			-0.8	-0.8	13.4	-1.6	6.3	--	--	3.7	Jul-15
eV ACWI ex-US All Cap Equity Net Median			-1.9	-1.9	13.5	-1.8	6.7	4.1	6.5	4.0	Jul-15
eV ACWI ex-US All Cap Equity Net Rank			51	51	43	72	66	--	--	65	Jul-15
Northern Trust MSCI World ex US	55,466,438	2.6	-0.8	-0.8	14.0	-0.7	--	--	--	7.8	Nov-16
MSCI World ex USA			-0.9	-0.9	13.6	-0.9	--	--	--	7.4	Nov-16

## Total Fund Aggregate

As of September 30, 2019

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Oberweis Intl Opportunities	26,926,598	1.3	-4.0	-4.0	15.4	-9.8	5.4	--	--	6.1	Nov-15
MSCI World ex USA Small Cap Growth NR USD			-0.8	-0.8	14.7	-5.3	6.2	--	--	6.9	Nov-15
eV ACWI ex-US All Cap Equity Net Median			-1.9	-1.9	13.5	-1.8	6.7	4.1	6.5	5.5	Nov-15
eV ACWI ex-US All Cap Equity Net Rank			97	97	37	97	69	--	--	41	Nov-15
<b>Emerging Markets Equity</b>	<b>190,337,843</b>	<b>8.9</b>	<b>-4.8</b>	<b>-4.8</b>	<b>5.6</b>	<b>-1.9</b>	<b>3.1</b>	<b>--</b>	<b>--</b>	<b>0.8</b>	<b>Jul-15</b>
MSCI Emerging Market IMI Net			-4.3	-4.3	5.4	-2.4	5.4	--	--	2.7	Jul-15
eV Emg Mkts Equity Net Median			-3.8	-3.8	7.7	-0.6	5.7	2.5	4.0	3.4	Jul-15
eV Emg Mkts Equity Net Rank			76	76	70	63	88	--	--	95	Jul-15
Northern Trust MSCI EM IMI	36,362,940	1.7	-4.2	-4.2	5.4	-2.6	--	--	--	-2.6	Oct-18
MSCI Emerging Market IMI Net			-4.3	-4.3	5.4	-2.4	--	--	--	-2.4	Oct-18
Dimensional Fund Adv EM Value	37,317,676	1.8	-7.0	-7.0	-0.4	-7.5	--	--	--	4.6	Nov-16
MSCI Emerging Markets Value NR USD			-6.5	-6.5	1.8	-5.0	--	--	--	4.4	Nov-16
eV Emg Mkts Equity Net Median			-3.8	-3.8	7.7	-0.6	5.7	2.5	4.0	5.7	Nov-16
eV Emg Mkts Equity Net Rank			99	99	99	99	--	--	--	69	Nov-16
GQG Global Emerging Markets	40,499,342	1.9	-4.0	-4.0	14.5	10.5	--	--	--	6.4	Jul-17
MSCI Emerging Markets			-4.2	-4.2	5.9	-2.0	--	--	--	2.1	Jul-17
eV Emg Mkts Equity Net Median			-3.8	-3.8	7.7	-0.6	5.7	2.5	4.0	1.8	Jul-17
eV Emg Mkts Equity Net Rank			55	55	11	3	--	--	--	4	Jul-17
RWC Emerging Markets Equity	25,681,125	1.2	--	--	--	--	--	--	--	2.7	Aug-19
MSCI Emerging Markets			--	--	--	--	--	--	--	-3.1	Aug-19
eV Emg Mkts Equity Net Median			-3.8	-3.8	7.7	-0.6	5.7	2.5	4.0	-2.7	Aug-19
eV Emg Mkts Equity Net Rank			--	--	--	--	--	--	--	1	Aug-19

## Total Fund Aggregate

As of September 30, 2019

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Wellington Emerging Markets Systematic Equity	50,476,760	2.4	--	--	--	--	--	--	--	1.0	Aug-19
<i>MSCI Emerging Markets</i>			--	--	--	--	--	--	--	-3.1	Aug-19
<i>eV Emg Mkts Equity Net Median</i>			-3.8	-3.8	7.7	-0.6	5.7	2.5	4.0	-2.7	Aug-19
<i>eV Emg Mkts Equity Net Rank</i>			--	--	--	--	--	--	--	1	Aug-19
<b>Marketable Alternative Equity</b>	<b>63,021,835</b>	<b>3.0</b>	<b>1.2</b>	<b>1.2</b>	<b>9.0</b>	<b>3.6</b>	<b>6.5</b>	<b>5.6</b>	<b>--</b>	<b>5.6</b>	<b>Oct-14</b>
<i>HFRI Equity Hedge (Total) Index</i>			-1.3	-1.3	7.8	-1.3	4.7	3.4	--	3.4	Oct-14
Senator Global Opportunity, LP	18,858,170	0.9	0.1	0.1	14.8	3.7	5.5	4.0	--	6.0	Apr-13
<i>HFRI Event-Driven (Total) Index</i>			-0.9	-0.9	4.5	-0.5	4.5	3.0	--	4.0	Apr-13
Sandler Plus Offshore Fund Ltd	20,629,945	1.0	2.8	2.8	3.9	4.9	8.9	9.8	--	8.1	May-13
<i>HFRI Equity Hedge (Total) Index</i>			-1.3	-1.3	7.8	-1.3	4.7	3.4	--	4.3	May-13
Marshall Wace Eureka Fund	23,533,719	1.1	0.8	0.8	8.4	2.3	7.2	7.4	--	7.3	Apr-14
<i>HFRI Equity Hedge (Total) Index</i>			-1.3	-1.3	7.8	-1.3	4.7	3.4	--	3.3	Apr-14
<b>Private Markets</b>	<b>528,231,328</b>	<b>24.8</b>	<b>1.2</b>	<b>1.2</b>	<b>12.9</b>	<b>3.9</b>	<b>7.4</b>	<b>--</b>	<b>--</b>	<b>6.3</b>	<b>Jul-15</b>
<i>Private Markets Benchmark</i>			1.2	1.2	12.9	3.9	10.7	--	--	8.9	Jul-15
<i>MSCI ACWI IMI + 100bps</i>			0.1	0.1	16.7	1.5	10.4	--	--	8.0	Jul-15
<b>Private Markets ex Russell 3000</b>	<b>256,048,181</b>	<b>12.0</b>	<b>1.2</b>	<b>1.2</b>	<b>3.3</b>	<b>5.9</b>	<b>7.2</b>	<b>--</b>	<b>--</b>	<b>6.2</b>	<b>Jul-15</b>
<i>Private Markets Benchmark</i>			1.2	1.2	12.9	3.9	10.7	--	--	8.9	Jul-15
<b>Private Equity</b>	<b>386,947,761</b>	<b>18.2</b>	<b>1.6</b>	<b>1.6</b>	<b>17.0</b>	<b>4.5</b>	<b>9.7</b>	<b>7.9</b>	<b>11.1</b>	<b>--</b>	<b>Jan-06</b>
<i>San Jose Custom Private Equity Benchmark</i>			4.3	4.3	7.8	11.2	15.8	11.6	11.3	--	Jan-06
<b>Private Equity ex Russell 3000</b>	<b>123,367,774</b>	<b>5.8</b>	<b>2.4</b>	<b>2.4</b>	<b>5.1</b>	<b>11.0</b>	<b>11.8</b>	<b>9.1</b>	<b>11.7</b>	<b>7.5</b>	<b>Jan-06</b>
PE Strategic Partnership, LP	82,786,916	3.9	3.2	3.2	8.4	16.6	--	--	--	6.9	Aug-17

## Total Fund Aggregate

As of September 30, 2019

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Pathway Private Eq Fund VIII	2,603,897	0.1	-2.2	-2.2	-12.8	-14.2	-2.3	-0.4	7.9	8.1	Jul-09
Pantheon USA Fund VII, LP	14,930,557	0.7	2.3	2.3	1.2	4.2	--	--	--	9.7	Jun-18
Pantheon Global Secondary III	3,844,816	0.2	-2.0	-2.0	-0.9	3.6	7.4	2.8	4.8	5.1	Jul-09
Great Hill Equity Partners IV	2,698,556	0.1	3.6	3.6	27.4	65.7	57.7	44.9	33.3	32.2	Jul-09
Partners Group Secondary 2008	1,132,906	0.1	-5.2	-5.2	-8.2	-6.2	2.9	0.6	8.3	7.9	Jul-09
Partners Group Secondary 2011	7,077,757	0.3	0.5	0.5	2.0	2.0	9.8	10.1	--	18.9	Nov-12
Innovation Endeavors III	1,472,242	0.1	-2.1	-2.1	2.6	4.5	--	--	--	-22.2	Jun-18
Crestline Portfolio Financing	6,820,127	0.3	2.1	2.1	5.3	9.4	--	--	--	7.9	Jun-18
<b>Northern Trust Russell 3000</b>	<b>263,579,987</b>	<b>12.4</b>	<b>1.2</b>	<b>1.2</b>	<b>20.2</b>	<b>3.1</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>8.2</b>	<b>Jun-18</b>
<i>Russell 3000</i>			1.2	1.2	20.1	2.9	--	--	--	8.1	Jun-18
<b>Private Debt</b>	<b>64,271,069</b>	<b>3.0</b>	<b>-1.2</b>	<b>-1.2</b>	<b>-0.9</b>	<b>-4.9</b>	<b>-3.4</b>	<b>-0.2</b>	<b>--</b>	<b>2.9</b>	<b>Dec-10</b>
<i>S&amp;P Global Leveraged Loan Index +2%</i>			1.5	1.5	7.4	4.6	6.4	5.5	--	6.3	Dec-10
White Oak Direct Lending	11,379,987	0.5	4.2	4.2	8.4	-2.3	-12.8	-4.7	--	-0.8	Feb-11
<i>S&amp;P Global Leveraged Loan Index +2%</i>			1.5	1.5	7.4	4.6	6.4	5.5	--	6.0	Feb-11
Blackstone/GSO Cap Partners	8,304,863	0.4	-3.7	-3.7	-5.6	-4.0	4.7	1.6	--	6.8	Mar-11
<i>S&amp;P Global Leveraged Loan Index +2%</i>			1.5	1.5	7.4	4.6	6.4	5.5	--	5.9	Mar-11

## Total Fund Aggregate

As of September 30, 2019

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Medley Opportunity Fund II LP	21,386,938	1.0	-4.9	-4.9	-8.6	-15.1	-5.5	-1.5	--	2.2	Jun-11
<i>S&amp;P Global Leveraged Loan Index +2%</i>			1.5	1.5	7.4	4.6	6.4	5.5	--	6.0	Jun-11
Cross Ocean USD ESS Fund II LP	10,312,518	0.5	2.8	2.8	3.7	3.2	9.5	--	--	10.4	Aug-16
<i>S&amp;P Global Leveraged Loan Index +2%</i>			1.5	1.5	7.4	4.6	6.4	--	--	6.7	Aug-16
Octagon CLO Opp Fund III	8,603,160	0.4	-1.5	-1.5	--	--	--	--	--	3.2	Feb-19
<i>S&amp;P Global Leveraged Loan Index +2%</i>			1.5	1.5	--	--	--	--	--	4.9	Feb-19
Crestline Co-Investment	1,583,923	0.1	2.0	2.0	--	--	--	--	--	2.0	Mar-19
<i>S&amp;P Global Leveraged Loan Index +2%</i>			1.5	1.5	--	--	--	--	--	3.5	Mar-19
Cross Ocean USD ESS Fund III, L.P.	2,699,680	0.1	0.0	0.0	--	--	--	--	--	--	Jun-19
<i>S&amp;P Global Leveraged Loan Index +2%</i>			1.5	1.5	--	--	--	--	--	--	Jun-19
<b>Private Real Estate</b>	<b>53,803,250</b>	<b>2.5</b>	<b>1.5</b>	<b>1.5</b>	<b>5.8</b>	<b>10.4</b>	<b>16.1</b>	<b>--</b>	<b>--</b>	<b>17.3</b>	<b>Jul-15</b>
<i>NCREIF Property Index</i>			1.4	1.4	4.8	6.2	6.8	--	--	7.7	Jul-15
DRA Growth & Income Fund VI	666,223	0.0	3.9	3.9	8.0	8.8	4.0	12.9	12.1	8.8	Jan-08
<i>NCREIF Property Index</i>			1.4	1.4	4.8	6.2	6.8	8.6	9.8	6.2	Jan-08
DRA Growth & Income Fund VII	3,680,641	0.2	29.6	29.6	39.0	54.1	42.2	32.7	--	26.8	Apr-12
<i>NCREIF Property Index</i>			1.4	1.4	4.8	6.2	6.8	8.6	--	9.4	Apr-12

<sup>1</sup> Returns for the Private Debt and Real Assets Aggregates are gross of fees through June 2015 and net of fees thereafter.



## Total Fund Aggregate

As of September 30, 2019

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
DRA Growth & Income Fund VIII <i>NCREIF Property Index</i>	11,135,323	0.5	1.2 1.4	1.2 1.4	4.3 4.8	7.6 6.2	11.5 6.8	10.5 8.6	-- --	11.1 8.4	Jan-15 Jan-15
Tristan - EPISO IV <i>NCREIF Property Index</i>	12,359,025	0.6	-4.3 1.4	-4.3 1.4	3.8 4.8	2.4 6.2	5.4 6.8	-- --	-- --	7.1 7.1	Jan-16 Jan-16
DRA Growth & Income Fund IX <i>NCREIF Property Index</i>	17,173,425	0.8	1.0 1.4	1.0 1.4	4.5 4.8	9.6 6.2	-- --	-- --	-- --	13.0 7.0	Feb-17 Feb-17
GEM Realty Fund VI <i>NCREIF Property Index</i>	1,826,858	0.1	-3.7 1.4	-3.7 1.4	-6.6 4.8	-8.8 6.2	-- --	-- --	-- --	-0.8 7.3	Dec-17 Dec-17
Torchlight Debt Opportunity VI <i>NCREIF Property Index</i>	6,766,847	0.3	0.9 1.4	0.9 1.4	-13.4 4.8	2.2 6.2	-- --	-- --	-- --	0.0 6.5	Apr-18 Apr-18
Tristan - EPISO V	194,909	0.0									
<b>Private Real Assets</b>	<b>23,209,247</b>	<b>1.1</b>	<b>1.1</b>	<b>1.1</b>	<b>2.0</b>	<b>9.9</b>	<b>10.0</b>	<b>--</b>	<b>--</b>	<b>7.2</b>	<b>Jul-15</b>
Global Infra Part III-A/B, LP <i>DJ Brookfield Global Infrastructure Net TR USD</i>	20,929,760	1.0	1.4 2.5	1.4 2.5	2.2 23.8	10.3 16.5	1.3 7.8	-- --	-- --	1.3 8.5	Sep-16 Sep-16
Lime Rock Partners VIII <i>DJ Brookfield Global Infrastructure Net TR USD</i>	2,075,636	0.1	-1.8 2.5	-1.8 2.5	0.2 23.8	-- --	-- --	-- --	-- --	0.2 17.8	Dec-18 Dec-18
Kimmeridge Energy Fund V, L.P.	160,178	0.0	--	--	--	--	--	--	--	0.0	Aug-19
Global Infra Partners IV	43,674	0.0	--	--	--	--	--	--	--	--	Sep-19

<sup>1</sup> Returns for the Private Debt and Real Assets Aggregates are gross of fees through June 2015 and net of fees thereafter.

## Total Fund Aggregate

As of September 30, 2019

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Emerging Markets Debt</b>	<b>70,490,605</b>	<b>3.3</b>	<b>0.1</b>	<b>0.1</b>	<b>9.2</b>	<b>7.9</b>	<b>2.2</b>	<b>--</b>	<b>--</b>	<b>2.9</b>	<b>Jul-15</b>
50% JPM EMBI GD / 50% JPM GBI-EM			0.4	0.4	10.4	10.9	3.9	--	--	5.0	Jul-15
eV All Emg Mkts Fixed Inc Net Median			0.0	0.0	10.0	9.8	3.9	3.8	5.5	5.0	Jul-15
eV All Emg Mkts Fixed Inc Net Rank			45	45	60	76	85	--	--	80	Jul-15
BlueBay EM Select Bond	37,687,245	1.8	0.0	0.0	10.3	9.1	2.6	--	--	3.2	Jul-15
50% JPM EMBI GD / 50% JPM GBI-EM			0.4	0.4	10.4	10.9	3.9	--	--	5.0	Jul-15
eV All Emg Mkts Fixed Inc Net Median			0.0	0.0	10.0	9.8	3.9	3.8	5.5	5.0	Jul-15
eV All Emg Mkts Fixed Inc Net Rank			47	47	44	62	82	--	--	77	Jul-15
Iguazu Partners LP Fund	32,803,360	1.5	0.2	0.2	--	--	--	--	--	2.5	May-19
50% JPM EMBI GD / 50% JPM GBI-EM			0.4	0.4	--	--	--	--	--	5.2	May-19
eV All Emg Mkts Fixed Inc Net Median			0.0	0.0	10.0	9.8	3.9	3.8	5.5	4.2	May-19
eV All Emg Mkts Fixed Inc Net Rank			45	45	--	--	--	--	--	84	May-19
<b>Zero Beta</b>	<b>681,744,161</b>	<b>32.0</b>	<b>0.5</b>	<b>0.5</b>	<b>3.5</b>	<b>3.9</b>	<b>3.0</b>	<b>--</b>	<b>--</b>	<b>2.2</b>	<b>Jul-15</b>
Zero Beta Benchmark			0.6	0.6	2.0	2.7	0.8	--	--	0.7	Jul-15
<b>Short-Term IG Bonds</b>	<b>402,847,349</b>	<b>18.9</b>	<b>0.6</b>	<b>0.6</b>	<b>1.8</b>	<b>2.4</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>2.4</b>	<b>Oct-18</b>
ICE BofAML 91 Days T-Bills TR			0.6	0.6	1.8	2.4	--	--	--	2.4	Oct-18
BlackRock 3-Month T-Bill	402,847,349	18.9	0.6	0.6	1.8	2.4	--	--	--	2.4	Oct-18
ICE BofAML 91 Days T-Bills TR			0.6	0.6	1.8	2.4	--	--	--	2.4	Oct-18
<b>Immunized Cash Flows</b>	<b>105,730,247</b>	<b>5.0</b>	<b>0.7</b>	<b>0.7</b>	<b>3.0</b>	<b>4.4</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>4.4</b>	<b>Oct-18</b>
Immunized Cash Flows Benchmark			0.7	0.7	3.0	4.4	--	--	--	4.4	Oct-18
Insight Immunized Cash Flow	105,730,247	5.0	0.7	0.7	--	--	--	--	--	--	Jun-19

## Total Fund Aggregate

As of September 30, 2019

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Absolute Return</b>	<b>158,591,644</b>	<b>7.4</b>	<b>0.3</b>	<b>0.3</b>	<b>7.7</b>	<b>7.3</b>	<b>4.7</b>	<b>3.5</b>	<b>--</b>	<b>4.0</b>	<b>Nov-12</b>
<i>Absolute Return Benchmark</i>			0.6	0.6	1.9	2.6	0.7	1.0	--	1.2	Nov-12
<b>Macro</b>	<b>68,715,111</b>	<b>3.2</b>	<b>-1.4</b>	<b>-1.4</b>	<b>7.2</b>	<b>6.3</b>	<b>3.5</b>	<b>2.3</b>	<b>--</b>	<b>2.3</b>	<b>Oct-14</b>
<i>HFRI Macro (Total) Index</i>			1.8	1.8	6.8	4.3	1.3	1.3	--	1.3	Oct-14
Kepos Alpha Fund, Ltd	14,127,346	0.7	-3.1	-3.1	19.3	11.1	0.1	-0.1	--	0.7	Mar-13
<i>HFRI Macro: Systematic Diversified Index</i>			2.8	2.8	8.7	5.3	0.4	1.1	--	1.3	Mar-13
Keynes Lev Quant Strat, Ltd	11,944,277	0.6	6.6	6.6	24.5	28.5	8.2	--	--	5.9	Jan-16
<i>Barclay BTOP50 Index TR USD</i>			3.4	3.4	8.5	6.3	0.0	--	--	-0.5	Jan-16
Pharo Management, Ltd.	22,261,461	1.0	-4.1	-4.1	4.0	6.5	7.3	--	--	8.5	Apr-16
<i>HFRI Macro (Total) Index</i>			1.8	1.8	6.8	4.3	1.3	--	--	1.2	Apr-16
AHL Partners LLP	10,758,206	0.5	0.2	0.2	4.0	-1.0	5.7	--	--	5.6	Jun-16
<i>Barclay BTOP50 Index TR USD</i>			3.4	3.4	8.5	6.3	0.0	--	--	-0.7	Jun-16
Systematica	9,623,821	0.5	2.4	2.4	8.2	8.6	--	--	--	5.5	Jul-17
<i>Barclay BTOP50 Index TR USD</i>			3.4	3.4	8.5	6.3	--	--	--	3.4	Jul-17
<b>Relative Value</b>	<b>89,876,533</b>	<b>4.2</b>	<b>1.7</b>	<b>1.7</b>	<b>7.7</b>	<b>7.9</b>	<b>5.9</b>	<b>4.8</b>	<b>--</b>	<b>4.8</b>	<b>Oct-14</b>
<i>HFRI Relative Value (Total) Index</i>			0.1	0.1	5.6	2.0	4.0	3.3	--	3.3	Oct-14
Pine River Fund, Ltd	1,203,928	0.1	-1.0	-1.0	17.1	21.2	5.6	2.4	--	3.8	Jan-13
<i>HFRI Relative Value (Total) Index</i>			0.1	0.1	5.6	2.0	4.0	3.3	--	4.2	Jan-13
DE Shaw Composite Fund, LLC	31,584,838	1.5	3.4	3.4	11.7	12.2	9.6	10.4	--	11.3	Apr-13
<i>HFRI Fund Weighted Composite Index</i>			-0.4	-0.4	6.8	0.4	3.8	2.9	--	3.5	Apr-13

## Total Fund Aggregate

As of September 30, 2019

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
JD Capital	14,705,804	0.7	0.2	0.2	3.7	5.3	5.8	--	--	5.8	Oct-16
HFRI Relative Value (Total) Index			0.1	0.1	5.6	2.0	4.0	--	--	4.0	Oct-16
Pine River Volatility Arb	15,643,440	0.7	-2.3	-2.3	2.6	0.1	--	--	--	-0.6	Mar-17
HFRI Relative Value (Total) Index			0.1	0.1	5.6	2.0	--	--	--	3.2	Mar-17
Hudson Bay	26,738,523	1.3	3.0	3.0	7.3	9.0	--	--	--	6.8	Aug-17
HFRI Relative Value (Total) Index			0.1	0.1	5.6	2.0	--	--	--	3.1	Aug-17
<b>Cash</b>	<b>14,574,921</b>	<b>0.7</b>	<b>0.6</b>	<b>0.6</b>	<b>1.6</b>	<b>2.1</b>	<b>1.4</b>	<b>1.0</b>	<b>--</b>	<b>--</b>	<b>Jan-06</b>
ICE BofAML 91 Days T-Bills TR			0.6	0.6	1.8	2.4	1.5	1.0	--	--	Jan-06
<b>Other</b>	<b>194,636,168</b>	<b>9.1</b>	<b>0.7</b>	<b>0.7</b>	<b>4.3</b>	<b>3.6</b>	<b>2.9</b>	<b>1.6</b>	<b>2.5</b>	<b>2.1</b>	<b>Jul-04</b>
Other Benchmark			0.2	0.2	3.7	1.4	1.3	--	--	--	Jul-04
<b>Core Real Estate</b>	<b>88,544,475</b>	<b>4.2</b>	<b>1.2</b>	<b>1.2</b>	<b>5.1</b>	<b>7.3</b>	<b>7.3</b>	<b>9.2</b>	<b>10.3</b>	<b>7.1</b>	<b>Jul-04</b>
NCREIF ODCE Equal Weighted (Net)			1.2	1.2	3.8	5.3	6.7	8.7	9.9	6.8	Jul-04
American Core Realty Fund, LLC	25,293,879	1.2	1.6	1.6	6.7	9.2	7.4	9.0	9.4	5.3	Jan-07
NCREIF ODCE Equal Weighted (Net)			1.2	1.2	3.8	5.3	6.7	8.7	9.9	5.1	Jan-07
BlackRock Core Property Fund	16,281,428	0.8	0.0	0.0	--	--	--	--	--	2.4	Feb-19
NCREIF ODCE Equal Weighted (Net)			1.2	1.2	--	--	--	--	--	3.8	Feb-19
Clarion Lion Properties Fund	46,969,168	2.2	1.4	1.4	--	--	--	--	--	2.9	Apr-19
NCREIF ODCE Equal Weighted (Net)			1.2	1.2	--	--	--	--	--	2.3	Apr-19

## Total Fund Aggregate

As of September 30, 2019

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Commodities</b>	<b>61,534,297</b>	<b>2.9</b>	<b>0.1</b>	<b>0.1</b>	<b>3.7</b>	<b>-1.8</b>	<b>2.0</b>	<b>-5.8</b>	<b>--</b>	<b>-3.3</b>	<b>May-10</b>
<i>Bloomberg Commodity Index TR USD</i>			-1.8	-1.8	3.1	-6.6	-1.5	-7.2	--	-5.1	May-10
Credit Suisse Risk Parity	61,534,297	2.9	0.1	0.1	3.7	-1.9	2.3	-4.6	--	-4.7	Apr-11
<i>Bloomberg Commodity Index TR USD</i>			-1.8	-1.8	3.1	-6.6	-1.5	-7.2	--	-8.2	Apr-11
<b>TIPS</b>	<b>44,557,395</b>	<b>2.1</b>	<b>0.3</b>	<b>0.3</b>	<b>3.7</b>	<b>3.4</b>	<b>1.7</b>	<b>1.3</b>	<b>--</b>	<b>1.0</b>	<b>Jul-14</b>
<i>BBgBarc U.S. TIPS 0-5 Years</i>			0.3	0.3	3.7	3.4	1.6	1.3	--	1.0	Jul-14
Northern Trust 0-5 Year TIPS	44,557,395	2.1	0.3	0.3	3.7	3.4	1.7	1.3	--	1.0	Jul-14
<i>BBgBarc US Treasury TIPS 0-5 Yr TR</i>			0.3	0.3	3.7	3.4	1.6	1.3	--	0.9	Jul-14
<b>Overlay</b>	<b>6,941,995</b>	<b>0.3</b>									
Russell Investments Overlay	6,903,696	0.3									

<sup>1</sup> Cash composite includes the cash account, cash collateral in the Russell Investments Overlay program, and residuals from terminated manager assets.

## Total Fund Aggregate

As of September 30, 2019

**Cash Flow Summary**  
**Quarter Ending September 30, 2019**

	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Net Investment Change	Ending Market Value
AHL Partners LLP	\$10,737,687	\$0	\$0	\$0	\$20,519	\$10,758,206
American Core Realty Fund, LLC	\$31,285,774	\$0	-\$6,523,810	-\$6,523,810	\$531,915	\$25,293,879
ArrowMark Co-Investment	\$5,166,796	\$0	-\$5,161,689	-\$5,161,689	-\$5,107	\$0
Artisan Global Opportunities	\$61,609,719	\$0	\$0	\$0	\$282,613	\$61,892,332
Artisan Global Value	\$129,889,500	\$3,637,896	-\$3,637,898	-\$2	-\$456,429	\$129,433,070
BlackRock 3-Month T-Bill	\$395,548,003	\$73,000,000	-\$68,000,000	\$5,000,000	\$2,299,345	\$402,847,349
BlackRock Core Property Fund	\$8,241,473	\$8,125,000	-\$98,857	\$8,026,143	\$13,813	\$16,281,428
Blackstone/GSO Cap Partners	\$8,625,266	\$0	\$0	\$0	-\$320,403	\$8,304,863
BlueBay EM Select Bond	\$37,670,246	\$0	\$0	\$0	\$16,999	\$37,687,245
Cash Account	\$18,413,252	\$264,929,443	-\$268,866,404	-\$3,936,961	\$98,630	\$14,574,921
Clarion Lion Properties Fund	\$46,659,657	\$0	-\$454,950	-\$454,950	\$764,461	\$46,969,168
Comgest Global EM Promising Co	\$14,218,220	\$0	-\$14,003,476	-\$14,003,476	-\$214,744	--
Cove Street Small Cap Value	\$18,903,565	\$0	\$0	\$0	-\$755,251	\$18,148,314
Credit Suisse Risk Parity	\$61,454,680	\$0	-\$63,280	-\$63,280	\$142,897	\$61,534,297
Crestline Co-Investment	\$1,552,952	\$0	-\$3,226	-\$3,226	\$34,197	\$1,583,923
Crestline Portfolio Financing	\$5,815,491	\$912,348	-\$29,072	\$883,276	\$121,360	\$6,820,127
Cross Ocean USD ESS Fund II LP	\$10,028,678	\$0	-\$26,768	-\$26,768	\$310,608	\$10,312,518
Cross Ocean USD ESS Fund III, L.P.	\$2,700,000	\$0	-\$6,657	-\$6,657	\$6,337	\$2,699,680
DE Shaw Composite Fund, LLC	\$30,538,220	\$0	-\$196,740	-\$196,740	\$1,243,358	\$31,584,838
Dimensional Fund Adv EM Value	\$40,119,047	\$0	\$0	\$0	-\$2,801,370	\$37,317,676
DRA Growth & Income Fund IX	\$15,513,287	\$2,093,909	-\$678,413	\$1,415,496	\$244,642	\$17,173,425
DRA Growth & Income Fund VI	\$641,044	\$0	\$0	\$0	\$25,179	\$666,223
DRA Growth & Income Fund VII	\$2,886,475	\$0	-\$88,387	-\$88,387	\$882,553	\$3,680,641
DRA Growth & Income Fund VIII	\$11,782,540	\$0	-\$841,814	-\$841,814	\$194,597	\$11,135,323
Dymon Asia Macro Fund, Ltd	\$15,421,469	\$0	-\$15,108,533	-\$15,108,533	-\$312,936	--

## Total Fund Aggregate

As of September 30, 2019

	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Net Investment Change	Ending Market Value
GEM Realty Fund VI	\$865,455	\$1,000,000	-\$45,000	\$955,000	\$6,403	\$1,826,858
Global Infra Part III-A/B, LP	\$20,273,897	\$366,882	-\$104,097	\$262,785	\$393,078	\$20,929,760
Global Infra Partners IV	--	\$43,674	\$0	\$43,674	\$0	\$43,674
GQG Global Emerging Markets	\$42,171,692	\$0	-\$51,827	-\$51,827	-\$1,620,523	\$40,499,342
Great Hill Equity Partners IV	\$2,605,261	\$0	\$0	\$0	\$93,295	\$2,698,556
Hudson Bay	\$25,949,452	\$0	\$0	\$0	\$789,071	\$26,738,523
Iguazu Partners LP Fund	\$32,746,176	\$0	\$0	\$0	\$57,184	\$32,803,360
Innovation Endeavors III	\$1,503,606	\$0	\$0	\$0	-\$31,365	\$1,472,242
Insight Immunized Cash Flow	\$104,987,892	\$5,281,535	-\$5,234,643	\$46,892	\$695,463	\$105,730,247
JD Capital	\$14,678,988	\$0	-\$55,901	-\$55,901	\$82,717	\$14,705,804
Kepos Alpha Fund, Ltd	\$14,581,157	\$0	-\$57,968	-\$57,968	-\$395,843	\$14,127,346
Keynes Lev Quant Strat, Ltd	\$11,206,876	\$0	\$0	\$0	\$737,401	\$11,944,277
Kimmeridge Energy Fund V, L.P.	--	\$0	\$0	\$0	\$160,178	\$160,178
Lime Rock Partners VIII	\$2,002,766	\$110,205	-\$16,267	\$93,938	-\$21,069	\$2,075,636
Marshall Wace Eureka Fund	\$23,356,043	\$0	-\$89,691	-\$89,691	\$267,367	\$23,533,719
Medley Opportunity Fund II LP	\$22,496,913	\$0	-\$60,245	-\$60,245	-\$1,049,730	\$21,386,938
Northern Tr Russell 2000 Value	\$13,089,626	\$0	\$0	\$0	-\$77,775	\$13,011,851
Northern Trust 0-5 Year TIPS	\$44,423,093	\$0	\$0	\$0	\$134,302	\$44,557,395
Northern Trust MSCI EM IMI	\$86,422,446	\$14,200,000	-\$58,500,000	-\$44,300,000	-\$5,759,506	\$36,362,940
Northern Trust MSCI World ex US	\$49,598,026	\$6,100,000	\$0	\$6,100,000	-\$231,589	\$55,466,438
Northern Trust Russell 1000	\$87,718,819	\$0	\$0	\$0	\$1,248,590	\$88,967,409
Northern Trust Russell 3000	\$284,069,765	\$0	-\$24,000,000	-\$24,000,000	\$3,510,222	\$263,579,987
Oberweis Intl Opportunities	\$28,059,168	\$13,330,898	-\$13,330,898	\$0	-\$1,132,571	\$26,926,598
Octagon CLO Opp Fund III	\$6,468,080	\$2,500,000	-\$248,483	\$2,251,517	-\$116,436	\$8,603,160
Pantheon Global Secondary III	\$4,247,118	\$0	-\$372,998	-\$372,998	-\$29,304	\$3,844,816
Pantheon USA Fund VII, LP	\$15,959,709	\$0	-\$1,414,524	-\$1,414,524	\$385,372	\$14,930,557

## Total Fund Aggregate

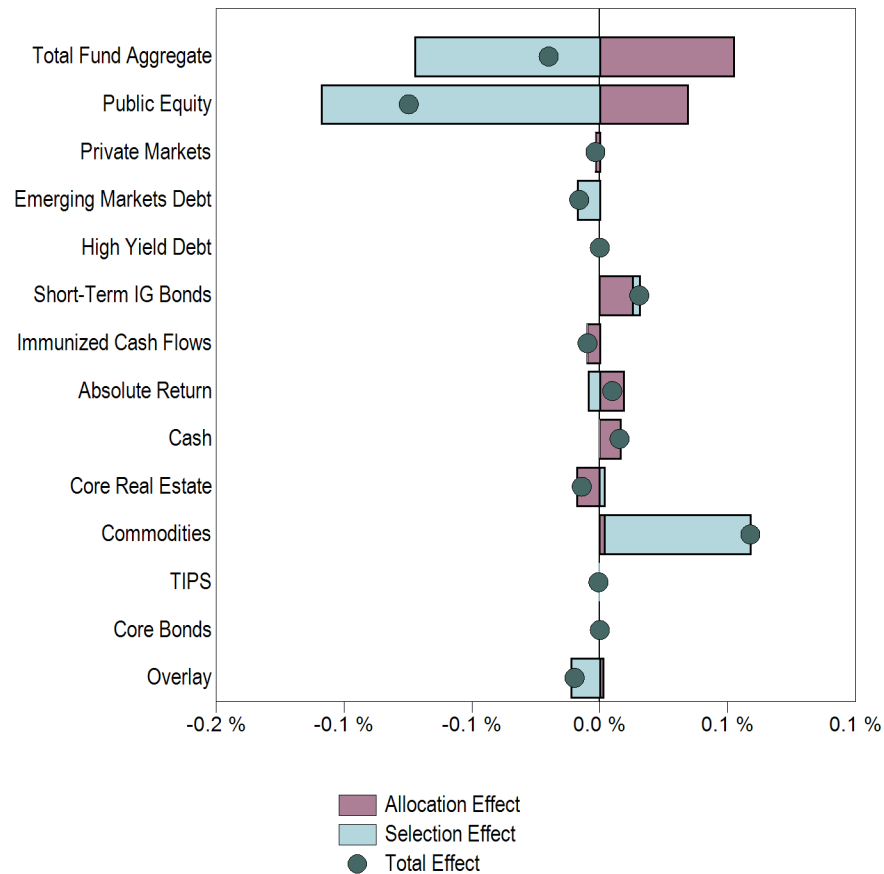
As of September 30, 2019

	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Net Investment Change	Ending Market Value
Partners Group Secondary 2008	\$1,194,221	\$177,986	-\$175,531	\$2,456	-\$63,771	\$1,132,906
Partners Group Secondary 2011	\$7,712,685	\$0	-\$675,153	-\$675,153	\$40,226	\$7,077,757
Pathway Private Eq Fund VIII	\$2,951,260	\$0	-\$282,518	-\$282,518	-\$64,844	\$2,603,897
PE Strategic Partnership, LP	\$58,184,273	\$22,250,000	-\$118,125	\$22,131,875	\$2,470,768	\$82,786,916
Pharo Management, Ltd.	\$23,206,919	\$0	\$0	\$0	-\$945,458	\$22,261,461
Pine River Fund, Ltd	\$1,393,415	\$0	-\$178,531	-\$178,531	-\$10,956	\$1,203,928
Pine River Volatility Arb	\$16,003,680	\$0	-\$13,361	-\$13,361	-\$346,879	\$15,643,440
Prudential PRISA, LP	\$1,830,835	\$0	-\$1,830,835	-\$1,830,835	\$0	--
Russell Investments Overlay	\$7,101,866	\$0	\$0	\$0	-\$198,170	\$6,903,696
RWC Emerging Markets Equity	--	\$25,000,000	\$0	\$25,000,000	\$681,125	\$25,681,125
Sandler Plus Offshore Fund Ltd	\$20,076,148	\$0	\$0	\$0	\$553,797	\$20,629,945
Senator Global Opportunity, LP	\$21,523,756	\$0	-\$2,690,469	-\$2,690,469	\$24,884	\$18,858,170
State Street Terminated Managers	\$39,374	\$1	-\$1	\$0	-\$1,074	\$38,300
Systematica	\$9,394,119	\$0	\$0	\$0	\$229,702	\$9,623,821
Torchlight Debt Opportunity VI	\$9,061,241	\$0	-\$2,456,407	-\$2,456,407	\$162,014	\$6,766,847
Tristan - EPIISO IV	\$11,587,186	\$1,092,544	-\$43,277	\$1,049,267	-\$277,429	\$12,359,025
Tristan - EPIISO V	\$111,141	\$237,075	-\$123,306	\$113,769	-\$30,001	\$194,909
Wellington Emerging Markets Systematic Equity	--	\$50,000,000	\$0	\$50,000,000	\$476,760	\$50,476,760
White Oak Direct Lending	\$10,942,467	\$0	-\$20,930	-\$20,930	\$458,450	\$11,379,987
<b>Total</b>	<b>\$2,127,219,653</b>	<b>\$494,389,396</b>	<b>-\$495,980,961</b>	<b>-\$1,591,566</b>	<b>\$3,621,858</b>	<b>\$2,129,249,945</b>



As of September 30, 2019

### Attribution Effects 3 Months Ending September 30, 2019



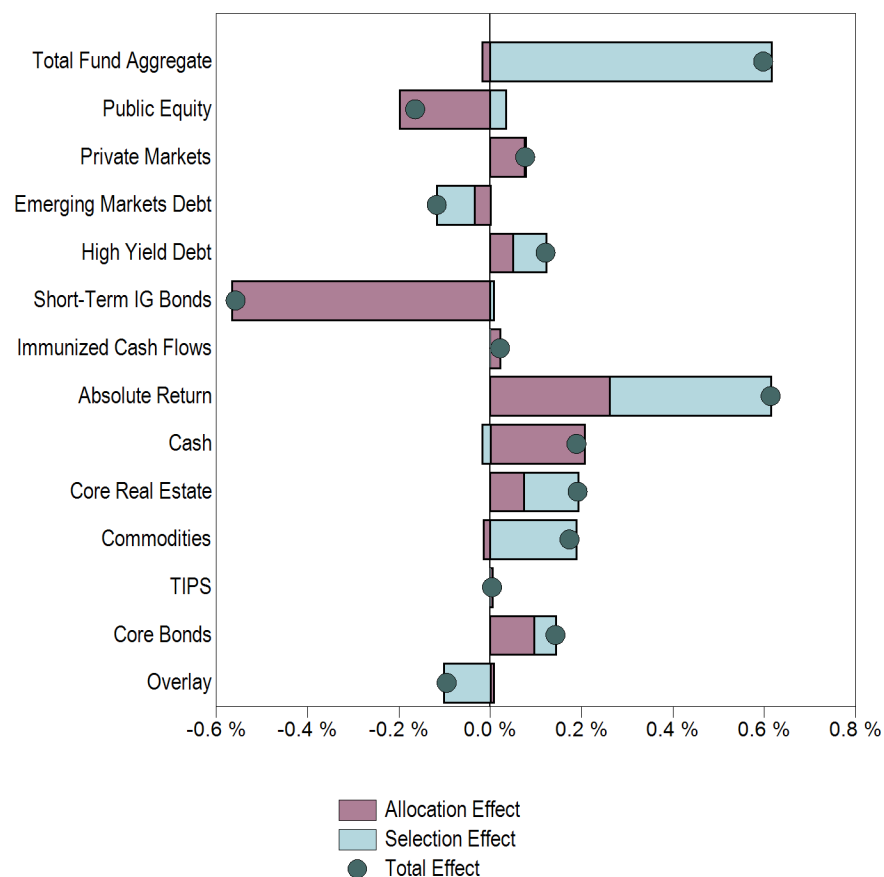
### Attribution Summary 3 Months Ending September 30, 2019

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Total Effects
Public Equity	-1.5%	-1.2%	-0.3%	-0.1%	0.0%	-0.1%
Private Markets	1.2%	1.2%	0.0%	0.0%	0.0%	0.0%
Emerging Markets Debt	0.1%	0.4%	-0.3%	0.0%	0.0%	0.0%
High Yield Debt	--	--	--	--	0.0%	--
Short-Term IG Bonds	0.6%	0.6%	0.0%	0.0%	0.0%	0.0%
Immunized Cash Flows	0.7%	0.7%	0.0%	0.0%	0.0%	0.0%
Absolute Return	0.3%	0.6%	-0.2%	0.0%	0.0%	0.0%
Cash	0.6%	0.6%	0.0%	0.0%	0.0%	0.0%
Core Real Estate	1.2%	1.2%	0.0%	0.0%	0.0%	0.0%
Commodities	0.1%	-1.8%	2.0%	0.1%	0.0%	0.1%
TIPS	0.3%	0.3%	0.0%	0.0%	0.0%	0.0%
Core Bonds	--	--	--	--	0.0%	--
Overlay	-2.8%	0.5%	-3.3%	0.0%	0.0%	0.0%
<b>Total</b>	<b>0.1%</b>	<b>0.2%</b>	<b>0.0%</b>	<b>-0.1%</b>	<b>0.1%</b>	<b>0.0%</b>

<sup>1</sup> Difference in attribution returns and returns in the performance summary may occur as a result of the different calculation methodologies that are applied by InvestorForce.

As of September 30, 2019

**Attribution Effects**  
1 Year Ending September 30, 2019

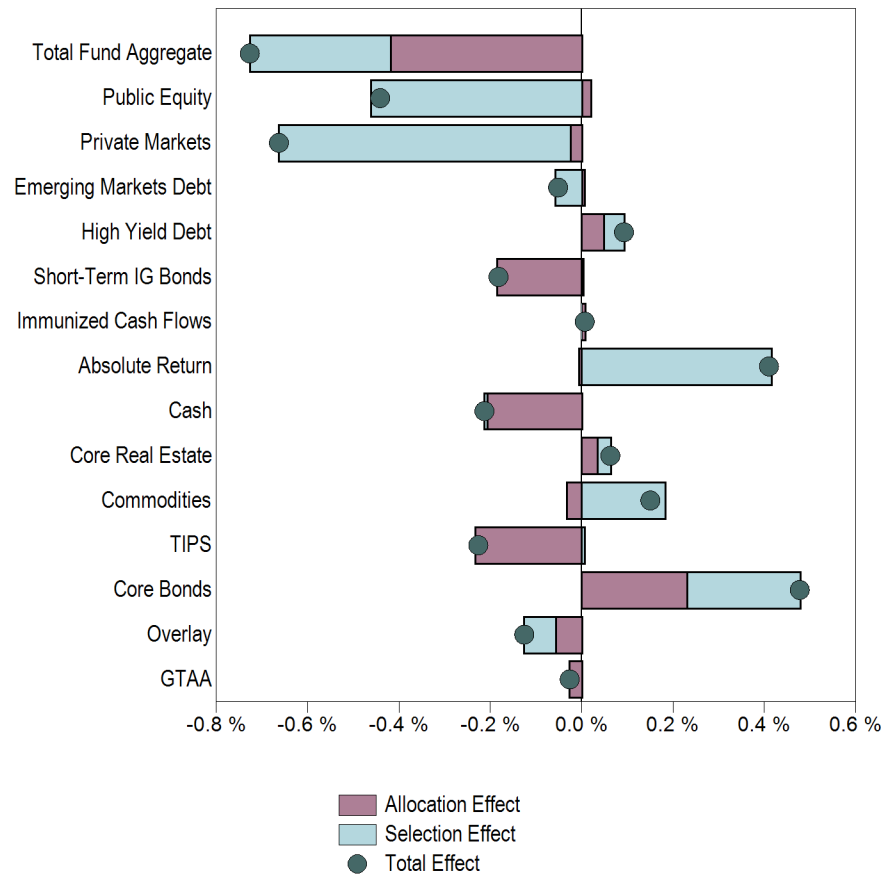


**Attribution Summary**  
1 Year Ending September 30, 2019

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Total Effects
Public Equity	0.3%	0.1%	0.2%	0.0%	-0.2%	-0.2%
Private Markets	3.9%	3.9%	0.0%	0.0%	0.1%	0.1%
Emerging Markets Debt	7.9%	10.9%	-3.0%	-0.1%	0.0%	-0.1%
High Yield Debt	--	--	--	0.1%	0.1%	0.1%
Short-Term IG Bonds	2.4%	2.4%	0.1%	0.0%	-0.6%	-0.6%
Immunized Cash Flows	4.4%	4.4%	0.0%	0.0%	0.0%	0.0%
Absolute Return	7.3%	2.6%	4.7%	0.4%	0.3%	0.6%
Cash	2.1%	2.4%	-0.3%	0.0%	0.2%	0.2%
Core Real Estate	7.3%	5.3%	2.0%	0.1%	0.1%	0.2%
Commodities	-1.8%	-6.6%	4.8%	0.2%	0.0%	0.2%
TIPS	3.4%	3.4%	0.0%	0.0%	0.0%	0.0%
Core Bonds	--	3.4%	--	0.0%	0.1%	0.1%
Overlay	-13.6%	2.3%	-15.8%	-0.1%	0.0%	-0.1%
<b>Total</b>	<b>3.2%</b>	<b>2.6%</b>	<b>0.6%</b>	<b>0.6%</b>	<b>0.0%</b>	<b>0.6%</b>

As of September 30, 2019

**Attribution Effects**  
3 Years Ending September 30, 2019

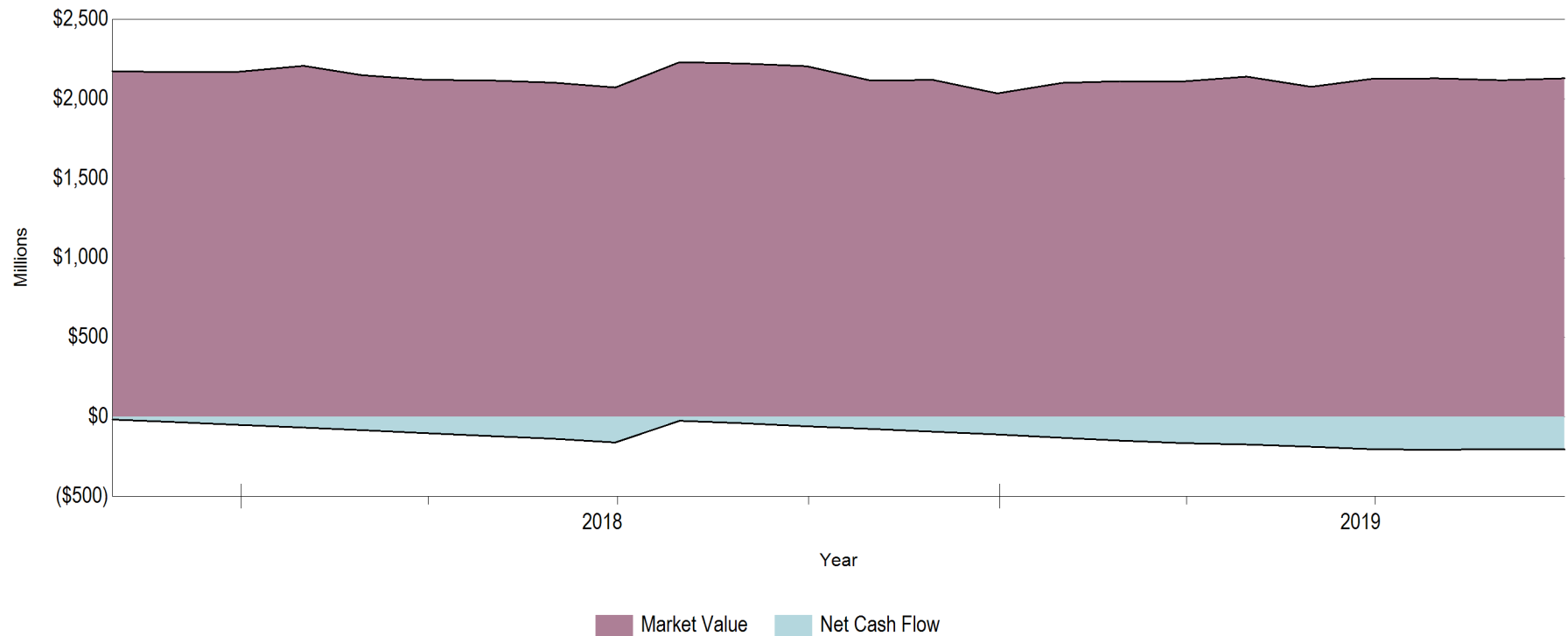


**Attribution Summary**  
3 Years Ending September 30, 2019

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Total Effects
Public Equity	7.7%	9.2%	-1.5%	-0.5%	0.0%	-0.4%
Private Markets	7.4%	10.7%	-3.3%	-0.6%	0.0%	-0.7%
Emerging Markets Debt	2.2%	3.9%	-1.7%	-0.1%	0.0%	-0.1%
High Yield Debt	--	--	--	0.0%	0.0%	0.1%
Short-Term IG Bonds	--	0.8%	--	0.0%	-0.2%	-0.2%
Immunized Cash Flows	--	--	--	0.0%	0.0%	0.0%
Absolute Return	4.7%	0.7%	3.9%	0.4%	0.0%	0.4%
Cash	1.4%	1.5%	-0.1%	0.0%	-0.2%	-0.2%
Core Real Estate	7.3%	6.7%	0.6%	0.0%	0.0%	0.1%
Commodities	2.0%	-1.5%	3.5%	0.2%	0.0%	0.2%
TIPS	1.7%	1.6%	0.1%	0.0%	-0.2%	-0.2%
Core Bonds	--	0.3%	--	0.2%	0.2%	0.5%
Overlay	-7.2%	1.5%	-8.8%	-0.1%	-0.1%	-0.1%
GTAA	--	--	--	0.0%	0.0%	0.0%
<b>Total</b>	<b>5.2%</b>	<b>5.9%</b>	<b>-0.7%</b>	<b>-0.3%</b>	<b>-0.4%</b>	<b>-0.7%</b>

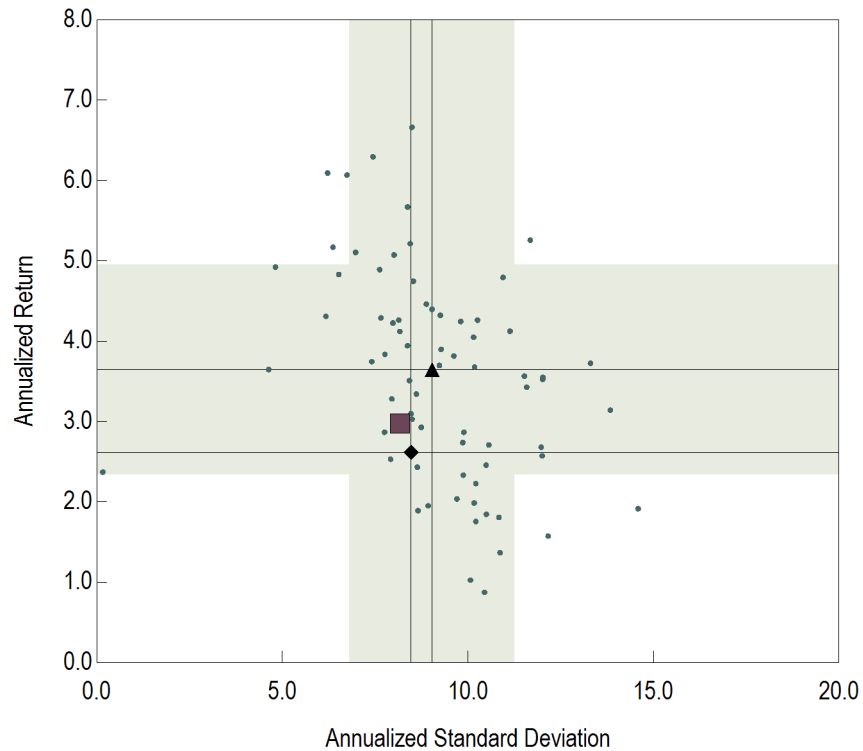
## Total Fund Asset Growth Summary

As of September 30, 2019

Market Value History  
2 Years Ending September 30, 2019

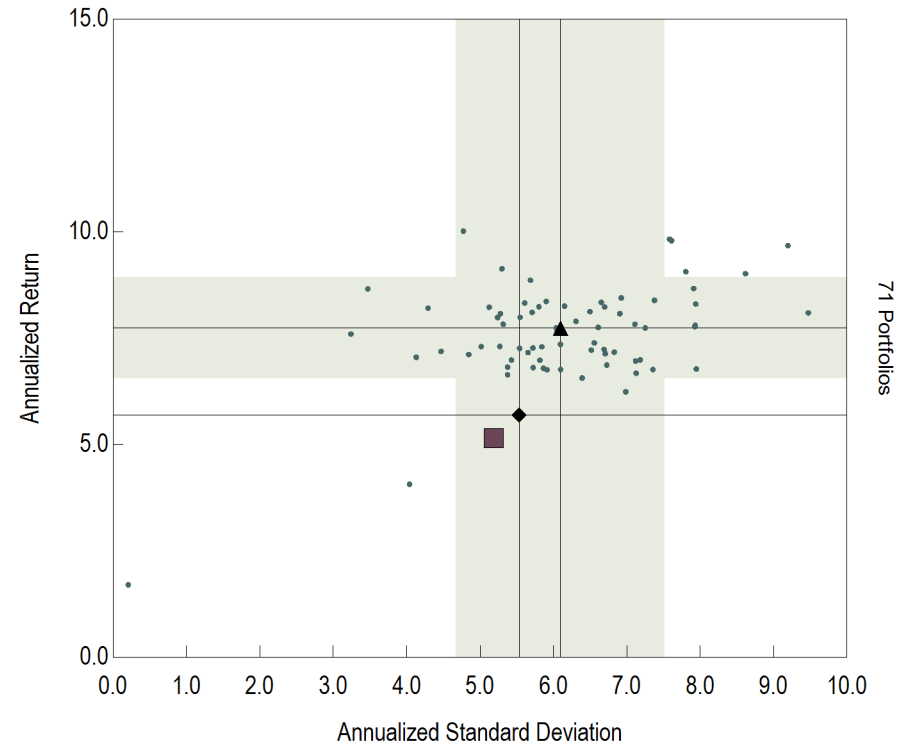
	Third Quarter	Fiscal Year-To-Date	One Year	Two Years
Beginning Market Value	\$2,127,219,653	\$2,127,219,653	\$2,205,628,556	\$2,170,152,987
Net Cash Flow	-\$1,445,370	-\$1,445,370	-\$146,201,171	-\$205,756,155
Net Investment Change	\$3,475,662	\$3,475,662	\$69,822,560	\$164,853,113
Ending Market Value	\$2,129,249,945	\$2,129,249,945	\$2,129,249,945	\$2,129,249,945

Annualized Return vs. Annualized Standard Deviation  
1 Year Ending September 30, 2019



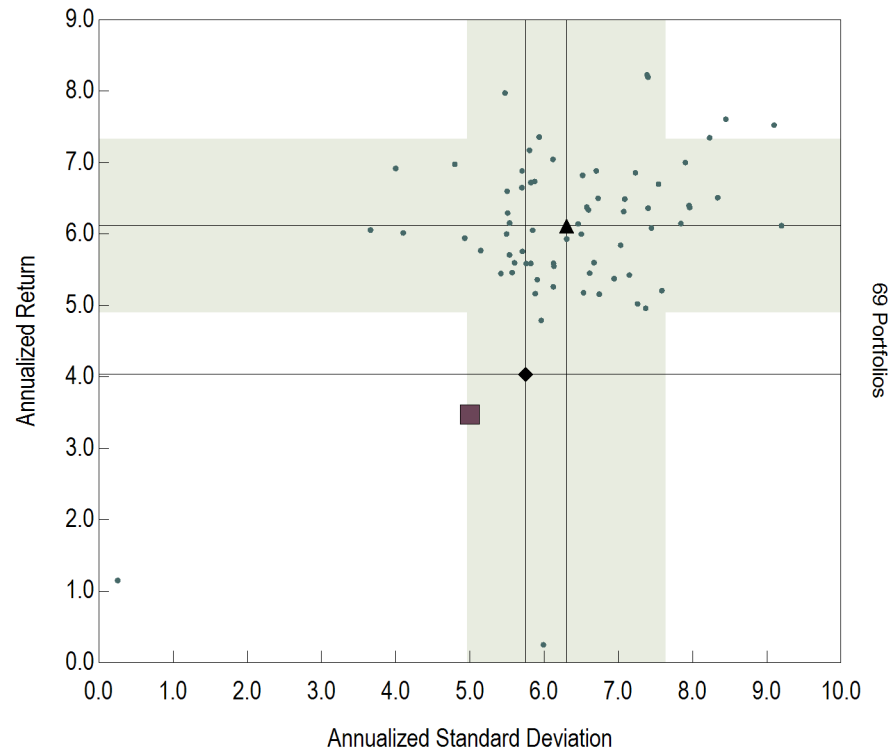
- Total Fund Aggregate
- ◆ Policy Benchmark
- ▲ Universe Median
- 68% Confidence Interval
- InvMetrics Public DB > \$1B Net

Annualized Return vs. Annualized Standard Deviation  
3 Years Ending September 30, 2019



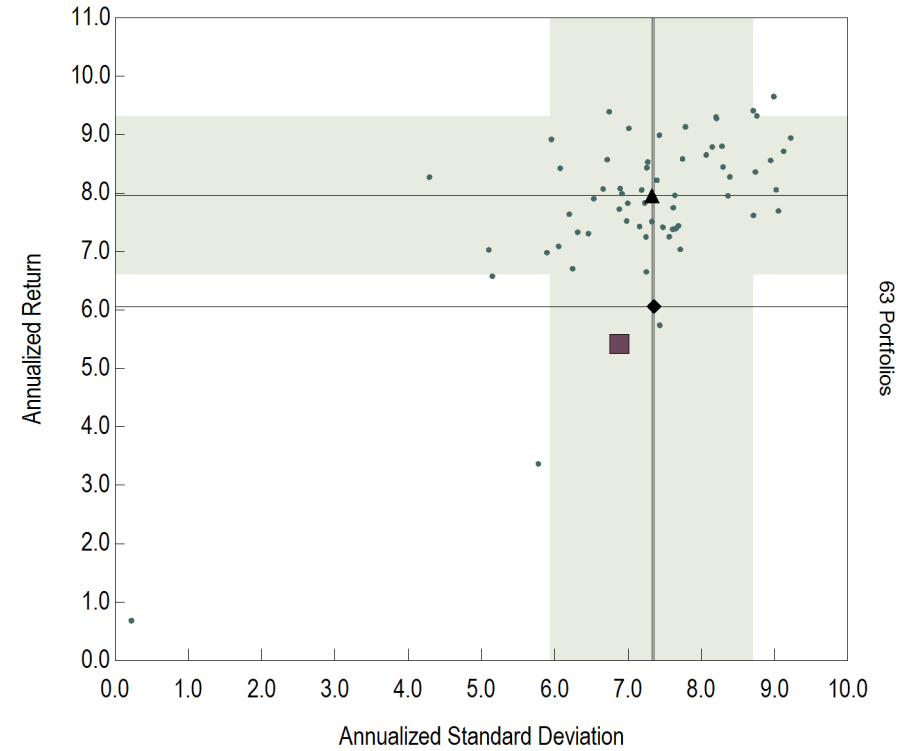
- Total Fund Aggregate
- ◆ Policy Benchmark
- ▲ Universe Median
- 68% Confidence Interval
- InvMetrics Public DB > \$1B Net

Annualized Return vs. Annualized Standard Deviation  
5 Years Ending September 30, 2019



- Total Fund Aggregate
- ◆ Policy Benchmark
- ▲ Universe Median
- 68% Confidence Interval
- InvMetrics Public DB > \$1B Net

Annualized Return vs. Annualized Standard Deviation  
10 Years Ending September 30, 2019

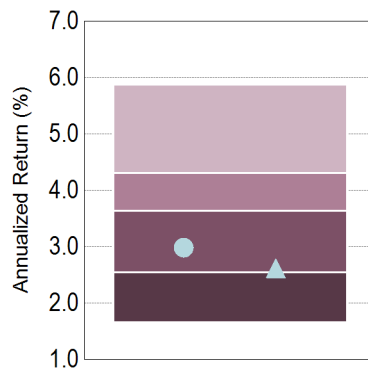


- Total Fund Aggregate
- ◆ Policy Benchmark
- ▲ Universe Median
- 68% Confidence Interval
- InvMetrics Public DB > \$1B Net

Total Fund Risk Statistics vs. Peer Universe (Trailing 1 Year)

As of September 30, 2019

Annualized Return (%)  
vs. InvMetrics Public DB > \$1B Net



● Total Fund Aggregate

Value 3.0  
Rank 65

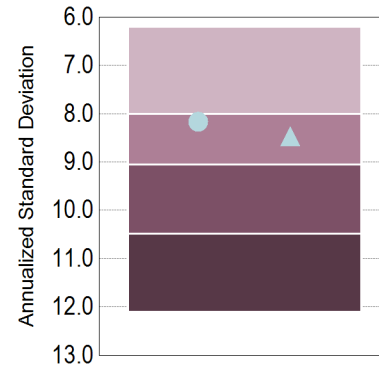
▲ Policy Benchmark

Value 2.6  
Rank 74

Universe

5th %tile 5.9  
25th %tile 4.3  
Median 3.6  
75th %tile 2.6  
95th %tile 1.7

Annualized Standard Deviation  
vs. InvMetrics Public DB > \$1B Net



● Total Fund Aggregate

Value 8.2  
Rank 29

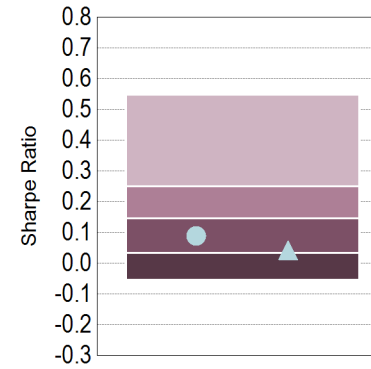
▲ Policy Benchmark

Value 8.5  
Rank 36

Universe

5th %tile 6.2  
25th %tile 8.0  
Median 9.0  
75th %tile 10.5  
95th %tile 12.1

Sharpe Ratio  
vs. InvMetrics Public DB > \$1B Net



● Total Fund Aggregate

Value 0.1  
Rank 65

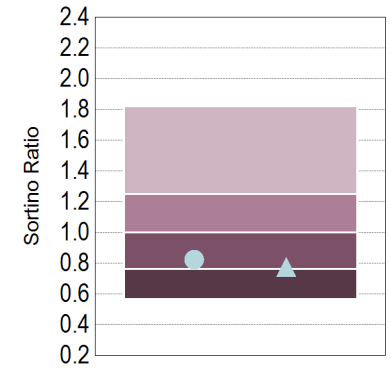
▲ Policy Benchmark

Value 0.0  
Rank 73

Universe

5th %tile 0.5  
25th %tile 0.3  
Median 0.1  
75th %tile 0.0  
95th %tile -0.1

Sortino Ratio  
vs. InvMetrics Public DB > \$1B Net



● Total Fund Aggregate

Value 0.8  
Rank 72

▲ Policy Benchmark

Value 0.8  
Rank 75

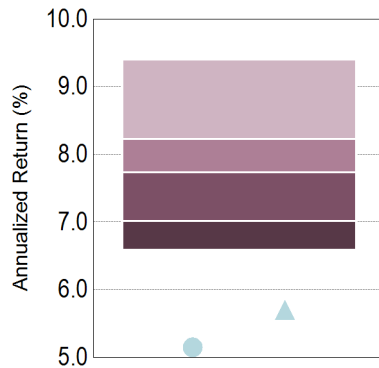
Universe

5th %tile 1.8  
25th %tile 1.3  
Median 1.0  
75th %tile 0.8  
95th %tile 0.6

Total Fund Risk Statistics vs. Peer Universe (Trailing 3 Years)

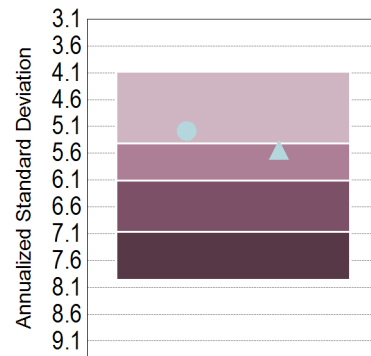
As of September 30, 2019

Annualized Return (%)  
vs. InvMetrics Public DB > \$1B Net



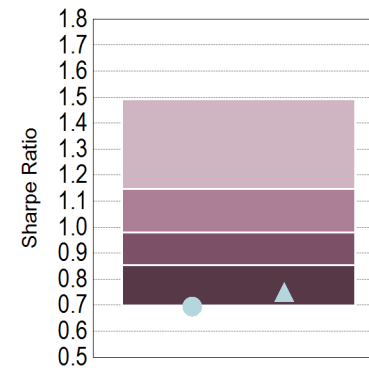
● Total Fund Aggregate	
Value	5.1
Rank	98
▲ Policy Benchmark	
Value	5.7
Rank	98
Universe	
5th %tile	9.4
25th %tile	8.2
Median	7.7
75th %tile	7.0
95th %tile	6.6

Annualized Standard Deviation  
vs. InvMetrics Public DB > \$1B Net



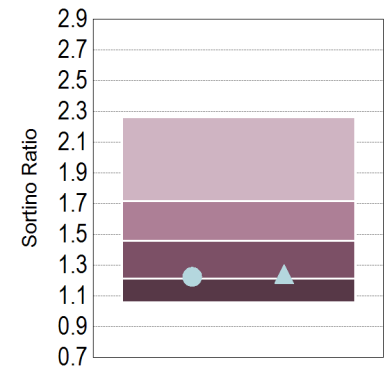
● Total Fund Aggregate	
Value	5.2
Rank	16
▲ Policy Benchmark	
Value	5.5
Rank	28
Universe	
5th %tile	4.1
25th %tile	5.4
Median	6.1
75th %tile	7.0
95th %tile	7.9

Sharpe Ratio  
vs. InvMetrics Public DB > \$1B Net



● Total Fund Aggregate	
Value	0.7
Rank	96
▲ Policy Benchmark	
Value	0.8
Rank	92
Universe	
5th %tile	1.5
25th %tile	1.1
Median	1.0
75th %tile	0.9
95th %tile	0.7

Sortino Ratio  
vs. InvMetrics Public DB > \$1B Net

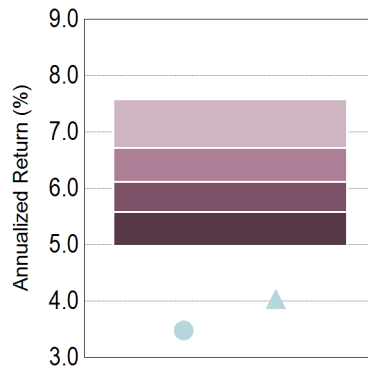


● Total Fund Aggregate	
Value	1.2
Rank	75
▲ Policy Benchmark	
Value	1.2
Rank	73
Universe	
5th %tile	2.3
25th %tile	1.7
Median	1.5
75th %tile	1.2
95th %tile	1.1



## Total Fund Risk Statistics vs. Peer Universe (Trailing 5 Years)

As of September 30, 2019

Annualized Return (%)  
vs. InvMetrics Public DB > \$1B Net

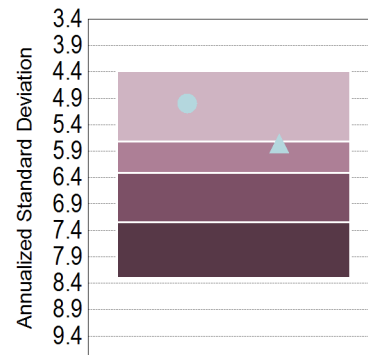
● Total Fund Aggregate

Value	3.5
Rank	98

▲ Policy Benchmark

Value	4.0
Rank	98

Universe	
5th %tile	7.6
25th %tile	6.7
Median	6.1
75th %tile	5.6
95th %tile	5.0

Annualized Standard Deviation  
vs. InvMetrics Public DB > \$1B Net

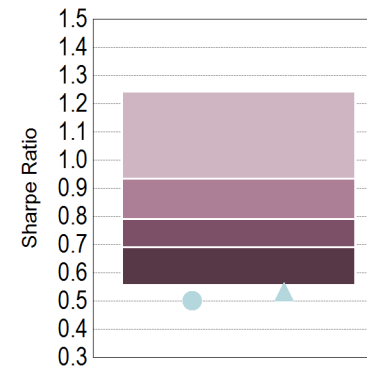
● Total Fund Aggregate

Value	5.0
Rank	8

▲ Policy Benchmark

Value	5.8
Rank	28

Universe	
5th %tile	4.4
25th %tile	5.7
Median	6.3
75th %tile	7.2
95th %tile	8.3

Sharpe Ratio  
vs. InvMetrics Public DB > \$1B Net

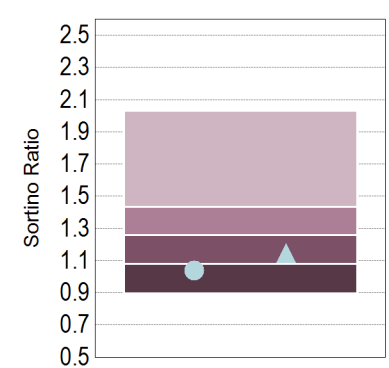
● Total Fund Aggregate

Value	0.5
Rank	99

▲ Policy Benchmark

Value	0.5
Rank	99

Universe	
5th %tile	1.2
25th %tile	0.9
Median	0.8
75th %tile	0.7
95th %tile	0.6

Sortino Ratio  
vs. InvMetrics Public DB > \$1B Net

● Total Fund Aggregate

Value	1.0
Rank	79

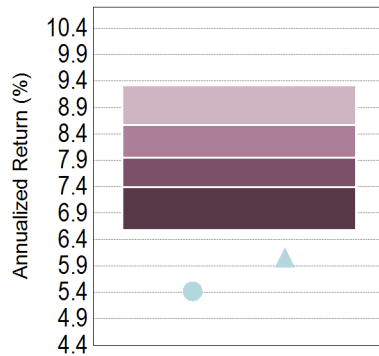
▲ Policy Benchmark

Value	1.1
Rank	66

Universe	
5th %tile	2.0
25th %tile	1.4
Median	1.3
75th %tile	1.1
95th %tile	0.9

## Total Fund Risk Statistics vs. Peer Universe (Trailing 10 Years)

As of September 30, 2019

Annualized Return (%)  
vs. InvMetrics Public DB > \$1B Net

● Total Fund Aggregate

Value 5.4

Rank 97

▲ Policy Benchmark

Value 6.1

Rank 97

Universe

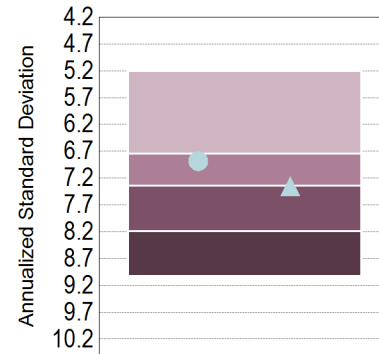
5th %tile 9.3

25th %tile 8.6

Median 8.0

75th %tile 7.4

95th %tile 6.6

Annualized Standard Deviation  
vs. InvMetrics Public DB > \$1B Net

● Total Fund Aggregate

Value 6.9

Rank 29

▲ Policy Benchmark

Value 7.4

Rank 51

Universe

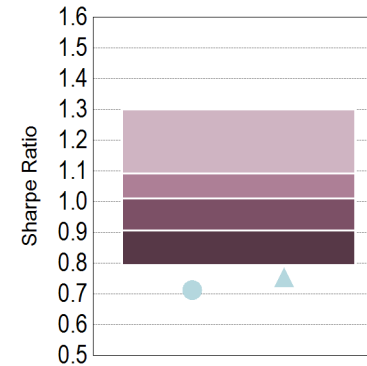
5th %tile 5.2

25th %tile 6.7

Median 7.3

75th %tile 8.2

95th %tile 9.0

Sharpe Ratio  
vs. InvMetrics Public DB > \$1B Net

● Total Fund Aggregate

Value 0.7

Rank 98

▲ Policy Benchmark

Value 0.8

Rank 97

Universe

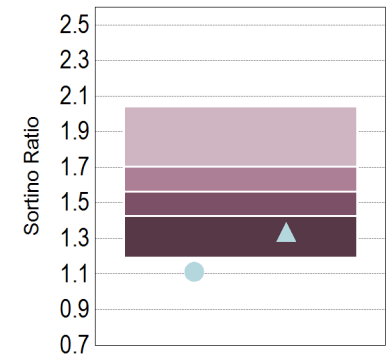
5th %tile 1.3

25th %tile 1.1

Median 1.0

75th %tile 0.9

95th %tile 0.8

Sortino Ratio  
vs. InvMetrics Public DB > \$1B Net

● Total Fund Aggregate

Value 1.1

Rank 98

▲ Policy Benchmark

Value 1.3

Rank 89

Universe

5th %tile 2.0

25th %tile 1.7

Median 1.6

75th %tile 1.4

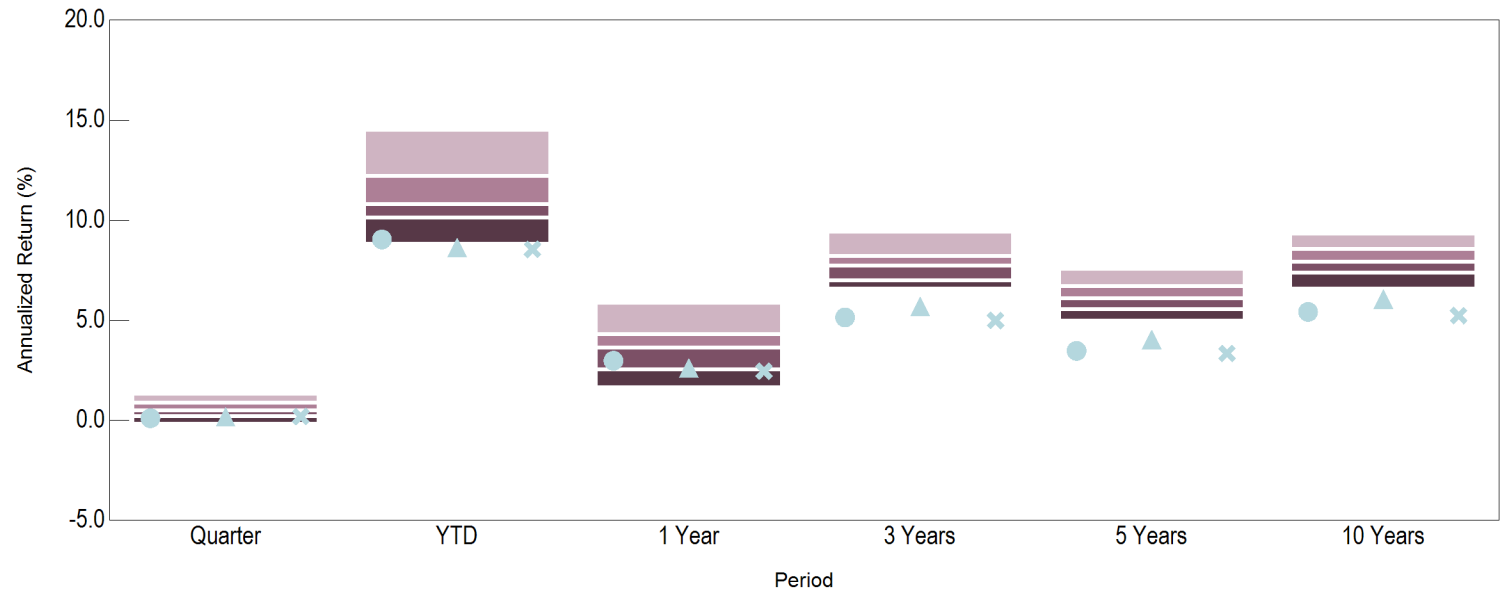
95th %tile 1.2

Rolling Annualized Excess Performance



As of September 30, 2019

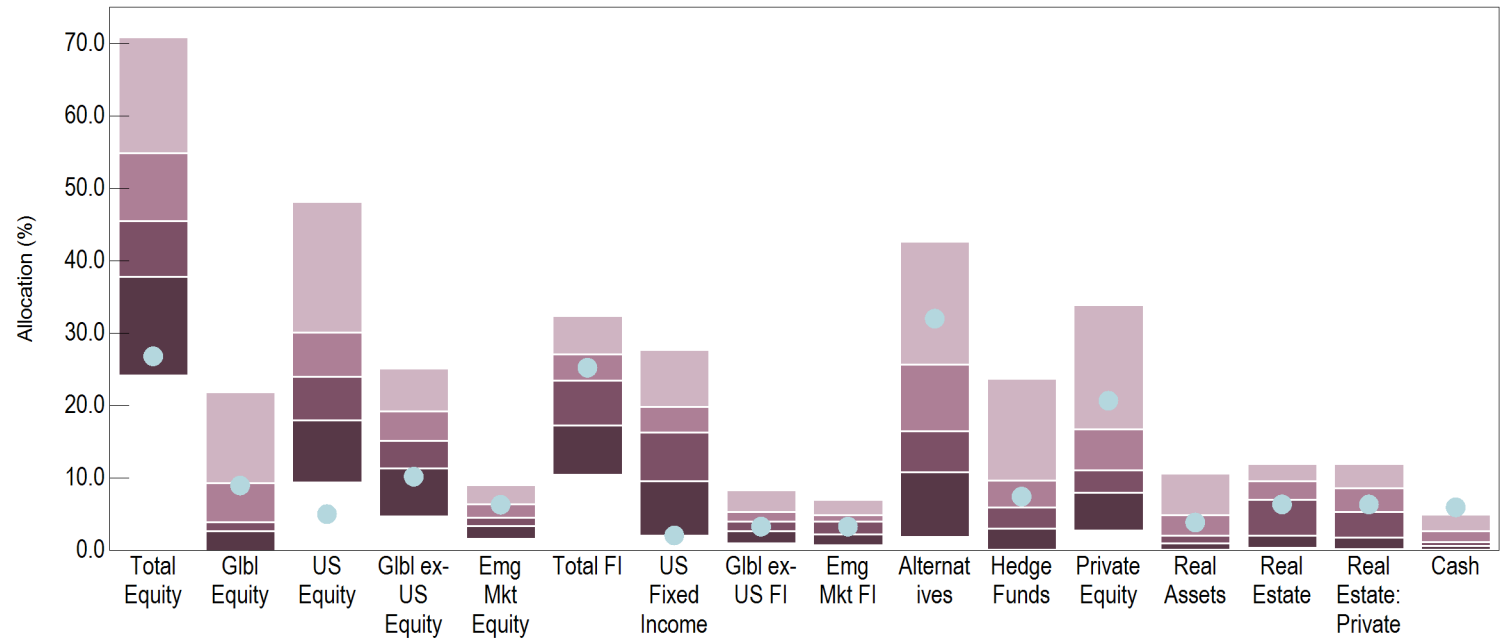
InvMetrics Public DB > \$1B Net Return Comparison  
Ending September 30, 2019



	Return (Rank)											
5th Percentile	1.3		14.5		5.9		9.4		7.6	9.3		
25th Percentile	0.9		12.2		4.3		8.2		6.7	8.6		
Median	0.5		10.8		3.6		7.7		6.1	8.0		
75th Percentile	0.2		10.1		2.6		7.0		5.6	7.4		
95th Percentile	-0.2		8.9		1.7		6.6		5.0	6.6		
# of Portfolios	71		71		71		71		69	63		
● Total Fund Aggregate	0.1	(83)	9.0	(95)	3.0	(65)	5.1	(98)	3.5	(98)	5.4	(97)
▲ Policy Benchmark	0.2	(81)	8.6	(96)	2.6	(74)	5.7	(98)	4.0	(98)	6.1	(97)
✕ Investable Benchmark Portfolio	0.2	(81)	8.5	(96)	2.5	(78)	5.0	(98)	3.3	(98)	5.2	(98)

As of September 30, 2019

Total Plan Allocation vs. InvMetrics Public DB > \$1B Net  
As of September 30, 2019



		Allocation																
5th Percentile		70.9	21.9	48.2	25.1	9.0	32.4	27.7	8.4	7.0	42.6	23.7	33.9	10.6	11.9	12.0	4.9	--
25th Percentile		55.0	9.4	30.2	19.3	6.5	27.2	19.9	5.4	5.0	25.7	9.7	16.8	5.0	9.7	8.7	2.7	--
Median		45.6	4.0	24.1	15.2	4.7	23.5	16.3	4.1	4.1	16.6	6.0	11.2	2.2	7.1	5.4	1.3	--
75th Percentile		37.9	2.8	18.1	11.4	3.5	17.3	9.6	2.8	2.3	10.9	3.1	8.0	1.1	2.2	1.8	0.7	--
95th Percentile		24.2	0.1	9.5	4.8	1.7	10.6	2.2	1.1	0.8	2.0	0.2	2.8	0.2	0.4	0.3	0.2	--
# of Portfolios		54	24	43	52	39	54	42	28	25	52	35	48	24	49	46	54	--
<div></div>	Total Fund Aggregate	26.8	9.0	5.0	10.2	6.3	25.2	2.1	3.3	3.3	32.0	7.4	20.7	3.9	6.4	6.4	6.0	--
	Rank	91	28	99	85	26	39	96	72	65	18	38	17	33	55	46	4	--

As of September 30, 2019

Major Benchmark Returns Periods Ending September 30, 2019					
Name	Q3-19	1 Yr	3 Yrs	5 Yrs	10 Yrs
<b>US Equity</b>					
Russell 3000	1.2	2.9	12.8	10.4	13.1
S&P 500	1.7	4.3	13.4	10.8	13.2
Russell 1000	1.4	3.9	13.2	10.6	13.2
Russell 1000 Growth	1.5	3.7	16.9	13.4	14.9
Russell 1000 Value	1.4	4.0	9.4	7.8	11.5
Russell MidCap	0.5	3.2	10.7	9.1	13.1
Russell 2000	-2.4	-8.9	8.2	8.2	11.2
Russell 2000 Growth	-4.2	-9.6	9.8	9.1	12.2
Russell 2000 Value	-0.6	-8.2	6.5	7.2	10.1
<b>International Equity</b>					
MSCI ACWI	0.0	1.4	9.7	6.7	8.3
MSCI World ex USA	-0.9	-0.9	6.5	3.1	4.8
MSCI EAFE	-1.1	-1.3	6.5	3.3	4.9
MSCI Emerging Markets	-4.2	-2.0	6.0	2.3	3.4
<b>Fixed Income</b>					
91 Day T-Bills	0.5	2.3	1.5	1.0	0.5
BBgBarc US Aggregate TR	2.3	10.3	2.9	3.4	3.7
BBgBarc US Govt/Credit TR	2.6	11.3	3.2	3.6	3.9
BBgBarc US Municipal TR	1.6	8.6	3.2	3.7	4.2
BBgBarc US High Yield TR	1.3	6.4	6.1	5.4	7.9
FTSE WGBI TR	0.8	8.1	1.2	1.8	1.7
FTSE WGBI ex US TR	-0.1	6.8	0.6	1.3	1.1
<b>Real Estate</b>					
FTSE NAREIT All REIT	7.2	19.6	9.0	10.9	13.3
NCREIF Property Index	1.4	6.2	6.8	8.6	9.8
<b>Alternatives</b>					
HFRI Fund of Funds Composite Index	-0.8	0.1	3.2	2.0	2.7
<b>Inflation</b>					
Consumer Price Index	0.2	1.7	2.1	1.5	1.7

## Total Fund Risk Statistics (Net of Fees)

As of September 30, 2019

**Statistics Summary**  
**3 Years Ending September 30, 2019**

	% of Total MV	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Anlzd Alpha J	Anlzd Alpha J Rank	Tracking Error	Information Ratio	Information Ratio Rank	Beta	Sharpe Ratio
Total Fund Aggregate	100.00%	5.15%	98	5.18%	16	-0.19%	63	1.28%	-0.43	73	0.91	0.69
Policy Benchmark	--	5.70%	98	5.53%	28	0.00%	57	0.00%	--	--	1.00	0.75
Growth	58.51%	7.30%	--	8.50%	--	-1.28%	--	1.75%	-0.90	--	0.96	0.68
Growth Benchmark	--	8.89%	--	8.68%	--	0.00%	--	0.00%	--	--	1.00	0.85
Public Equity	30.40%	7.72%	--	10.44%	--	-0.83%	--	1.62%	-0.93	--	0.91	0.59
Public Equity Benchmark	--	9.23%	--	11.37%	--	0.00%	--	0.00%	--	--	1.00	0.68
Global Equity	8.99%	10.47%	31	11.89%	52	1.02%	38	2.67%	0.42	26	1.01	0.75
MSCI ACWI IMI Net USD	--	9.36%	43	11.45%	41	0.00%	52	0.00%	--	--	1.00	0.68
US Equity	5.64%	10.70%	50	12.84%	31	-2.33%	51	1.79%	-1.21	96	1.01	0.71
MSCI USA IMI GR USD	--	12.86%	30	12.53%	26	0.00%	32	0.00%	--	--	1.00	0.90
International Equity	3.87%	5.73%	66	12.13%	40	-0.99%	68	2.21%	-0.28	74	1.08	0.34
MSCI World ex USA IMI NR USD	--	6.35%	58	11.11%	15	0.00%	50	0.00%	--	--	1.00	0.43
Emerging Markets Equity	8.94%	3.14%	88	12.85%	19	-1.91%	86	3.03%	-0.75	96	0.91	0.12
MSCI Emerging Market IMI Net	--	5.41%	53	13.81%	49	0.00%	56	0.00%	--	--	1.00	0.28
Marketable Alternative Equity	2.96%	6.50%	--	4.16%	--	3.75%	--	5.20%	0.34	--	0.38	1.19
HFRI Equity Hedge (Total) Index	--	4.73%	--	6.37%	--	0.00%	--	0.00%	--	--	1.00	0.50
Private Markets	24.81%	7.41%	--	7.44%	--	-0.82%	--	5.39%	-0.61	--	0.73	0.79
Private Markets Benchmark	--	10.70%	--	7.56%	--	0.00%	--	0.00%	--	--	1.00	1.21
Private Markets ex Russell 3000	12.03%	7.20%	--	4.06%	--	5.38%	--	8.39%	-0.42	--	0.03	1.39

As of September 30, 2019

	% of Total MV	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Anlzd Alpha J	Anlzd Alpha J Rank	Tracking Error	Information Ratio	Information Ratio Rank	Beta	Sharpe Ratio
Private Markets Benchmark	--	10.70%	--	7.56%	--	0.00%	--	0.00%	--	--	1.00	1.21
Private Equity	18.17%	9.69%	--	9.20%	--	7.47%	--	11.30%	-0.54	--	0.05	0.89
San Jose Custom Private Equity Benchmark	--	15.82%	--	6.90%	--	0.00%	--	0.00%	--	--	1.00	2.07
Private Equity ex Russell 3000	5.79%	11.80%	--	4.34%	--	--	--	--	--	--	--	2.36
Cambridge PE Composite BM	--	--	--	--	--	--	--	--	--	--	--	--
Private Debt	3.02%	-3.37%	--	7.41%	--	-8.43%	--	7.18%	-1.36	--	0.72	-0.66
S&P Global Leveraged Loan Index +2%	--	6.42%	--	2.71%	--	0.00%	--	0.00%	--	--	1.00	1.80
Private Real Estate	2.53%	16.06%	--	6.70%	--	20.60%	--	8.37%	1.11	--	-1.17	2.17
NCREIF Property Index	--	6.76%	--	2.75%	--	0.00%	--	0.00%	--	--	1.00	1.90
Emerging Markets Debt	3.31%	2.20%	85	8.32%	69	-1.94%	82	1.99%	-0.85	99	1.11	0.08
50% JPM EMBI GD / 50% JPM GBI-EM	--	3.89%	51	7.32%	58	0.00%	57	0.00%	--	--	1.00	0.32
High Yield Debt	--	--	--	--	--	--	--	--	--	--	--	--
50% BAML Global HY / 50% S&P Global Leveraged Loan	--	5.18%	--	3.06%	--	0.00%	--	0.00%	--	--	1.00	1.19
Zero Beta	32.02%	3.03%	--	1.46%	--	1.70%	--	2.64%	0.85	--	0.29	1.02
Zero Beta Benchmark	--	0.79%	--	3.36%	--	0.00%	--	0.00%	--	--	1.00	-0.22
Absolute Return	7.45%	4.67%	--	2.59%	--	3.44%	--	3.01%	1.30	--	0.39	1.20
Absolute Return Benchmark	--	0.74%	--	3.35%	--	0.00%	--	0.00%	--	--	1.00	-0.24



## Total Fund Aggregate

As of September 30, 2019

	% of Total MV	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Anlzd Alpha J	Anlzd Alpha J Rank	Tracking Error	Information Ratio	Information Ratio Rank	Beta	Sharpe Ratio
Macro	3.23%	3.49%	--	4.97%	--	2.17%	--	2.83%	0.77	--	0.92	0.39
HFRI Macro (Total) Index	--	1.31%	--	4.46%	--	0.00%	--	0.00%	--	--	1.00	-0.05
Relative Value	4.22%	5.87%	--	2.27%	--	3.88%	--	3.04%	0.61	--	0.18	1.91
HFRI Relative Value (Total) Index	--	4.03%	--	2.53%	--	0.00%	--	0.00%	--	--	1.00	0.98
Cash	0.68%	1.42%	--	0.22%	--	-0.12%	--	0.15%	-0.83	--	0.76	-0.57
ICE BofAML 91 Days T-Bills TR	--	1.54%	--	0.22%	--	0.00%	--	0.00%	--	--	1.00	-0.01
Other	9.14%	2.88%	--	2.13%	--	1.46%	--	2.38%	0.68	--	0.44	0.63
Other Benchmark	--	1.27%	--	3.18%	--	0.00%	--	0.00%	--	--	1.00	-0.09
Core Real Estate	4.16%	7.31%	--	1.92%	--	6.17%	--	3.55%	0.17	--	-0.08	3.00
NCREIF ODCE Equal Weighted (Net)	--	6.69%	--	2.77%	--	0.00%	--	0.00%	--	--	1.00	1.86
Commodities	2.89%	2.02%	--	6.72%	--	2.57%	--	4.63%	0.76	--	0.69	0.07
Bloomberg Commodity Index TR USD	--	-1.50%	--	7.94%	--	0.00%	--	0.00%	--	--	1.00	-0.38
TIPS	2.09%	1.71%	--	1.14%	--	0.06%	--	0.13%	0.45	--	0.99	0.14
BBgBarc U.S. TIPS 0-5 Years	--	1.65%	--	1.14%	--	0.00%	--	0.00%	--	--	1.00	0.09
Core Bonds	--	--	--	--	--	--	--	--	--	--	--	--
BBgBarc Global Aggregate TR	--	1.59%	--	4.67%	--	0.00%	--	0.00%	--	--	1.00	0.01
Overlay	0.33%	-7.22%	--	33.99%	--	-8.76%	--	33.98%	-0.26	--	3.22	-0.26
91 Day T-Bills	--	1.54%	--	0.20%	--	0.00%	--	0.00%	--	--	1.00	0.00

## **Glossary and Notes**

**Credit Risk:** Refers to the risk that the issuer of a fixed income security may default (i.e., the issuer will be unable to make timely principal and/or interest payments on the security.)

**Duration:** Measure of the sensitivity of the price of a bond to a change in its yield to maturity. Duration summarizes, in a single number, the characteristics that cause bond prices to change in response to a change in interest rates. For example, the price of a bond with a duration of three years will rise by approximately 3% for each 1% decrease in its yield to maturity. Conversely, the price will decrease 3% for each 1% increase in the bond's yield. Price changes for two different bonds can be compared using duration. A bond with a duration of six years will exhibit twice the percentage price change of a bond with a three-year duration. The actual calculation of a bond's duration is somewhat complicated, but the idea behind the calculation is straightforward. The first step is to measure the time interval until receipt for each cash flow (coupon and principal payments) from a bond. The second step is to compute a weighted average of these time intervals. Each time interval is measured by the present value of that cash flow. This weighted average is the duration of the bond measured in years.

**Information Ratio:** This statistic is a measure of the consistency of a portfolio's performance relative to a benchmark. It is calculated by subtracting the benchmark return from the portfolio return (excess return), and dividing the resulting excess return by the standard deviation (volatility) of this excess return. A positive information ratio indicates outperformance versus the benchmark, and the higher the information ratio, the more consistent the outperformance.

**Jensen's Alpha:** A measure of the average return of a portfolio or investment in excess of what is predicted by its beta or "market" risk.  $\text{Portfolio Return} - [\text{Risk Free Rate} + \text{Beta} * (\text{market return} - \text{Risk Free Rate})]$ .

**Market Capitalization:** For a firm, market capitalization is the total market value of outstanding common stock. For a portfolio, market capitalization is the sum of the capitalization of each company weighted by the ratio of holdings in that company to total portfolio holdings; thus it is a weighted-average capitalization. Meketa Investment Group considers the largest 65% of the broad domestic equity market as large capitalization, the next 25% of the market as medium capitalization, and the smallest 10% of stocks as small capitalization.

**Market Weighted:** Stocks in many indices are weighted based on the total market capitalization of the issue. Thus, the individual returns of higher market-capitalization issues will more heavily influence an index's return than the returns of the smaller market-capitalization issues in the index.

**Maturity:** The date on which a loan, bond, mortgage, or other debt/security becomes due and is to be paid off.

**Prepayment Risk:** The risk that prepayments will increase (homeowners will prepay all or part of their mortgage) when mortgage interest rates decline; hence, investors' monies will be returned to them in a lower interest rate environment. Also, the risk that prepayments will slow down when mortgage interest rates rise; hence, investors will not have as much money as previously anticipated in a higher interest rate environment. A prepayment is any payment in excess of the scheduled mortgage payment.

**Price-Book Value (P/B) Ratio:** The current market price of a stock divided by its book value per share. Meketa Investment Group calculates P/B as the current price divided by Compustat's quarterly common equity. Common equity includes common stock, capital surplus, retained earnings, and treasury stock adjusted for both common and nonredeemable preferred stock. Similar to high P/E stocks, stocks with high P/B's tend to be riskier investments.

**Price-Earnings (P/E) Ratio:** A stock's market price divided by its current or estimated future earnings. Lower P/E ratios often characterize stocks in low growth or mature industries, stocks in groups that have fallen out of favor, or stocks of established blue chip companies with long records of stable earnings and regular dividends. Sometimes a company that has good fundamentals may be viewed unfavorably by the market if it is an industry that is temporarily out of favor. Or a business may have experienced financial problems causing investors to be skeptical about its future. Either of these situations would result in lower relative P/E ratios. Some stocks exhibit above-average sales and earnings growth or expectations for above average growth. Consequently, investors are willing to pay more for these companies' earnings, which results in elevated P/E ratios. In other words, investors will pay more for shares of companies whose profits, in their opinion, are expected to increase faster than average. Because future events are in no way assured, high P/E stocks tend to be riskier and more volatile investments. Meketa Investment Group calculates P/E as the current price divided by the I/B/E/S consensus of twelve-month forecast earnings per share.

**Quality Rating:** The rank assigned a security by such rating services as Fitch, Moody's, and Standard & Poor's. The rating may be determined by such factors as (1) the likelihood of fulfillment of dividend, income, and principal payment of obligations; (2) the nature and provisions of the issue; and (3) the security's relative position in the event of liquidation of the company. Bonds assigned the top four grades (AAA, AA, A, BBB) are considered investment grade because they are eligible bank investments as determined by the controller of the currency.

**Sharpe Ratio:** A commonly used measure of risk-adjusted return. It is calculated by subtracting the risk free return (usually three-month Treasury bill) from the portfolio return and dividing the resulting excess return by the portfolio's total risk level (standard deviation). The result is a measure of return per unit of total risk taken. The higher the Sharpe ratio, the better the fund's historical risk adjusted performance.

**Standard Deviation:** A measure of the total risk of an asset or a portfolio. Standard deviation measures the dispersion of a set of numbers around a central point (e.g., the average return). If the standard deviation is small, the distribution is concentrated within a narrow range of values. For a normal distribution, about two thirds of the observations will fall within one standard deviation of the mean, and 95% of the observations will fall within two standard deviations of the mean.

**STIF Account:** Short-term investment fund at a custodian bank that invests in cash-equivalent instruments. It is generally used to safely invest the excess cash held by portfolio managers.

**Style:** The description of the type of approach and strategy utilized by an investment manager to manage funds. For example, the style for equities is determined by portfolio characteristics such as price-to-book value, price-to-earnings ratio, and dividend yield. Equity styles include growth, value, and core.

**Yield to Maturity:** The yield, or return, provided by a bond to its maturity date; determined by a mathematical process, usually requiring the use of a “basis book.” For example, a 5% bond pays \$5 a year interest on each \$100 par value. To figure its current yield, divide \$5 by \$95—the market price of the bond—and you get 5.26%. Assume that the same bond is due to mature in five years. On the maturity date, the issuer is pledged to pay \$100 for the bond that can be bought now for \$95. In other words, the bond is selling at a discount of 5% below par value. To figure yield to maturity, a simple and approximate method is to divide 5% by the five years to maturity, which equals 1% pro rata yearly. Add that 1% to the 5.26% current yield, and the yield to maturity is roughly 6.26%.

$$\frac{5\% \text{ (discount)}}{5 \text{ (yrs. to maturity)}} = 1\% \text{ pro rata, plus } 5.26\% \text{ (current yield)} = 6.26\% \text{ (yield to maturity)}$$

Sources: Investment Terminology, International Foundation of Employee Benefit Plans, 1999.  
The Handbook of Fixed Income Securities, Fabozzi, Frank J., 1991.

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Throughout this report, numbers may not sum due to rounding.

Returns for periods greater than one year are annualized throughout this report.

Values shown are in millions of dollars, unless noted otherwise.