

FUND EVALUATION REPORT

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**City of San Jose Police and Fire  
Department Retirement Plan**

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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CHICAGO  
ILLINOIS

MIAMI  
FLORIDA

NEW YORK  
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PORTLAND  
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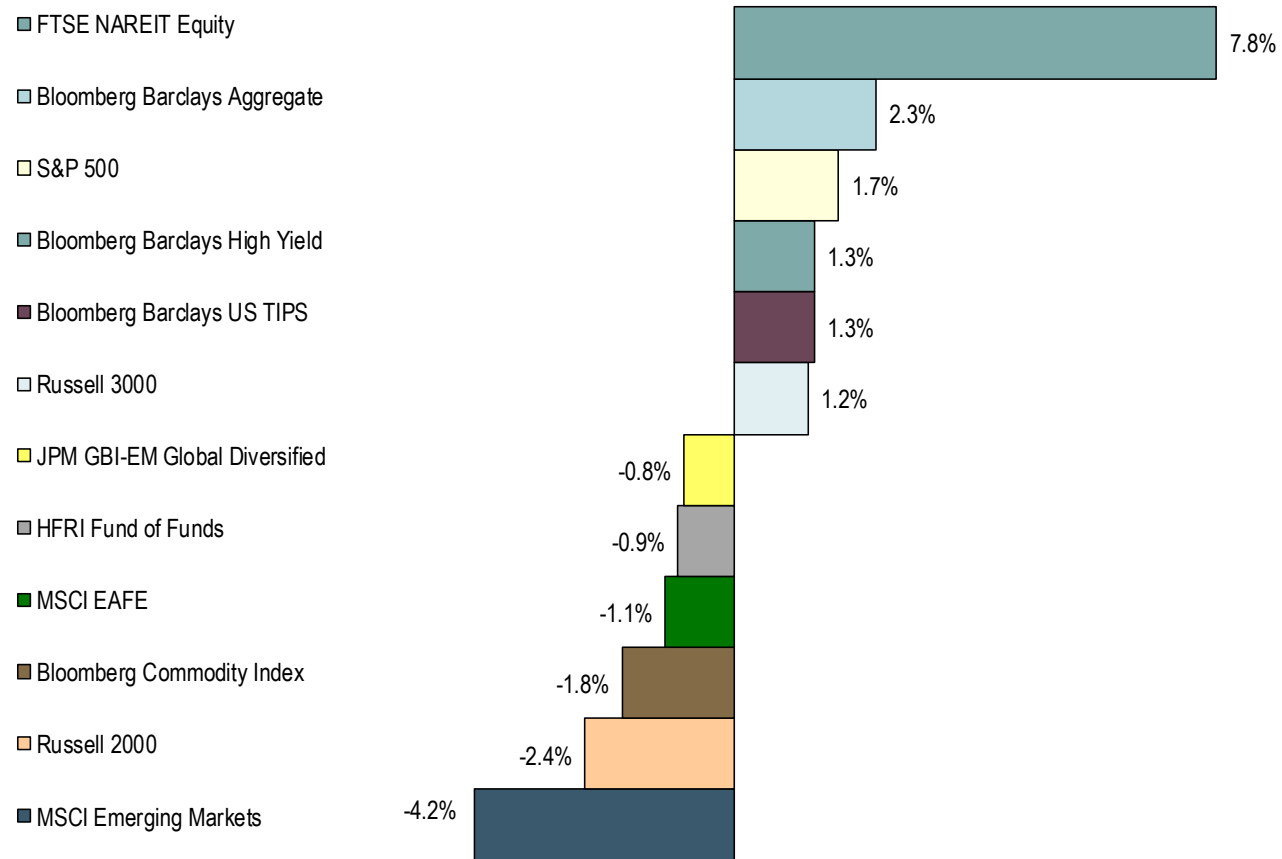
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## **The World Markets Third Quarter of 2019**

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



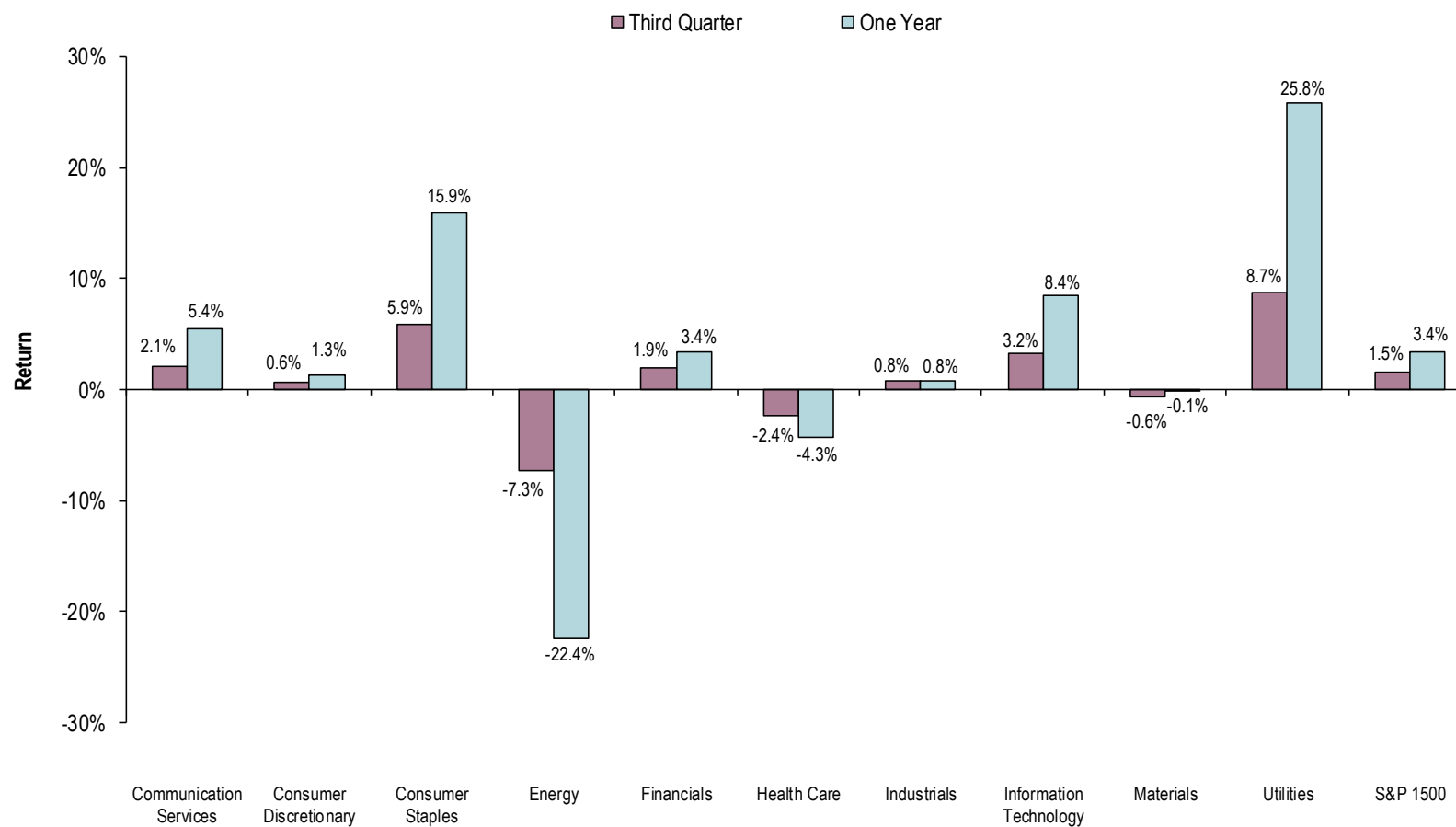
<sup>1</sup> Source: InvestorForce.

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

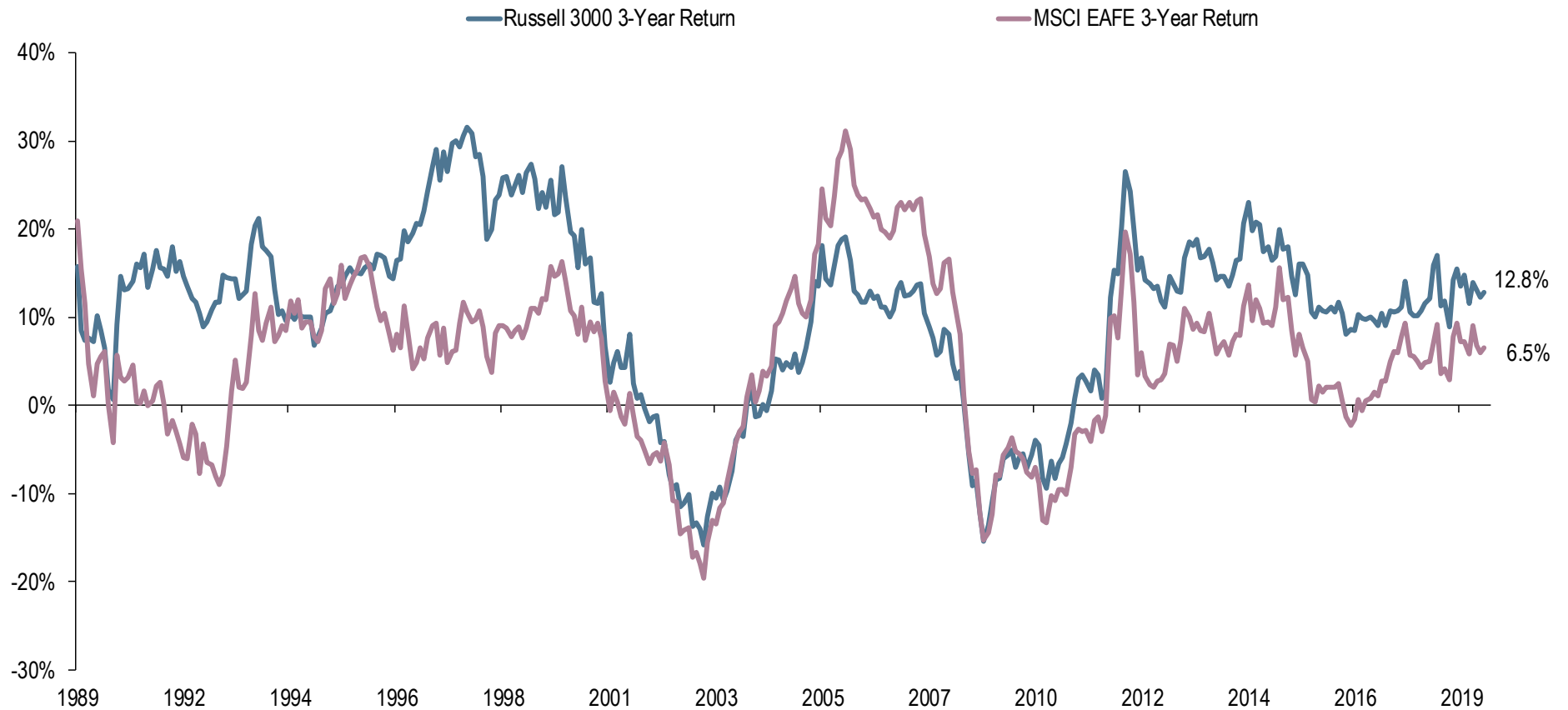
<sup>1</sup> Source: InvestorForce.

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



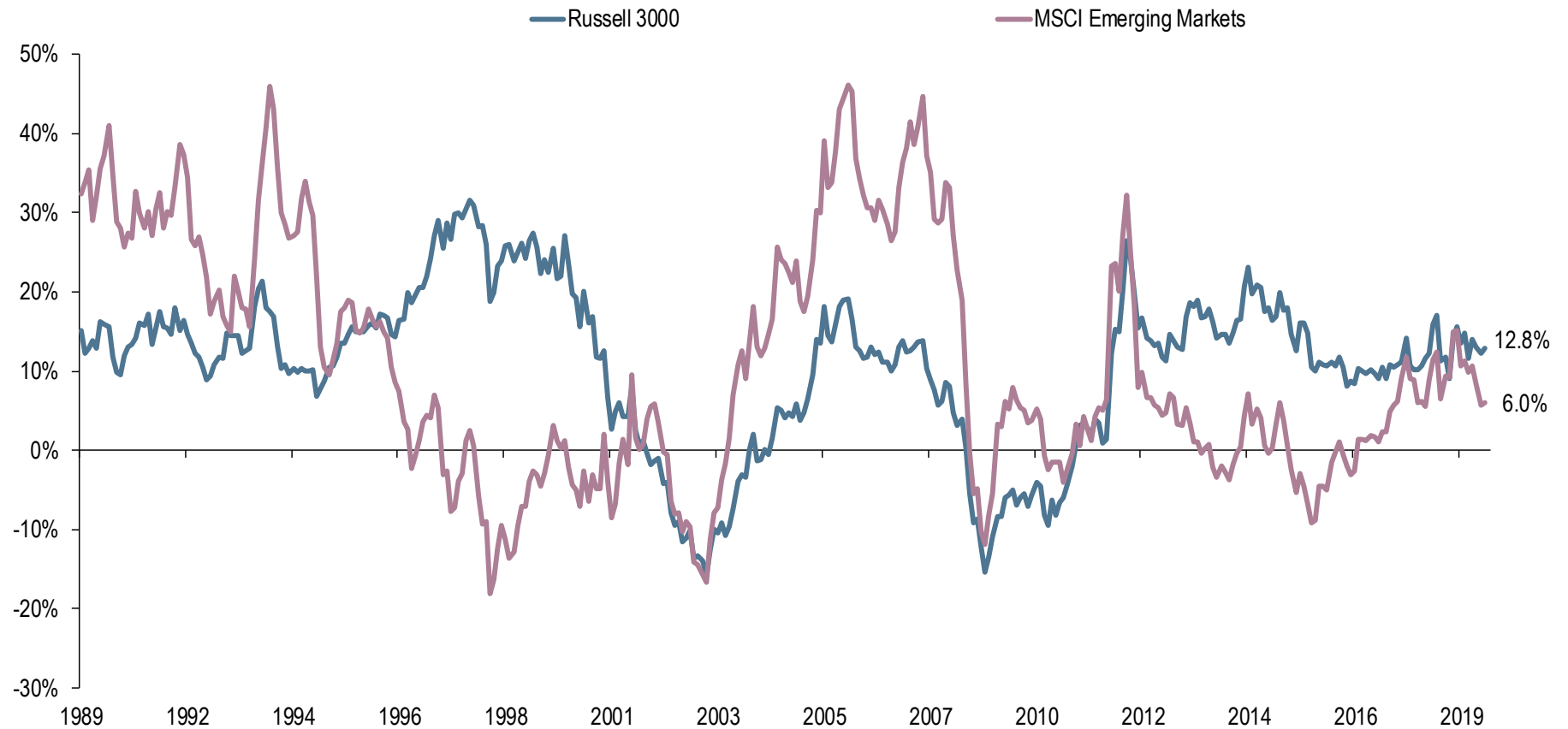
<sup>1</sup> Source: InvestorForce. Represents S&P 1500 (All Cap) data.

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



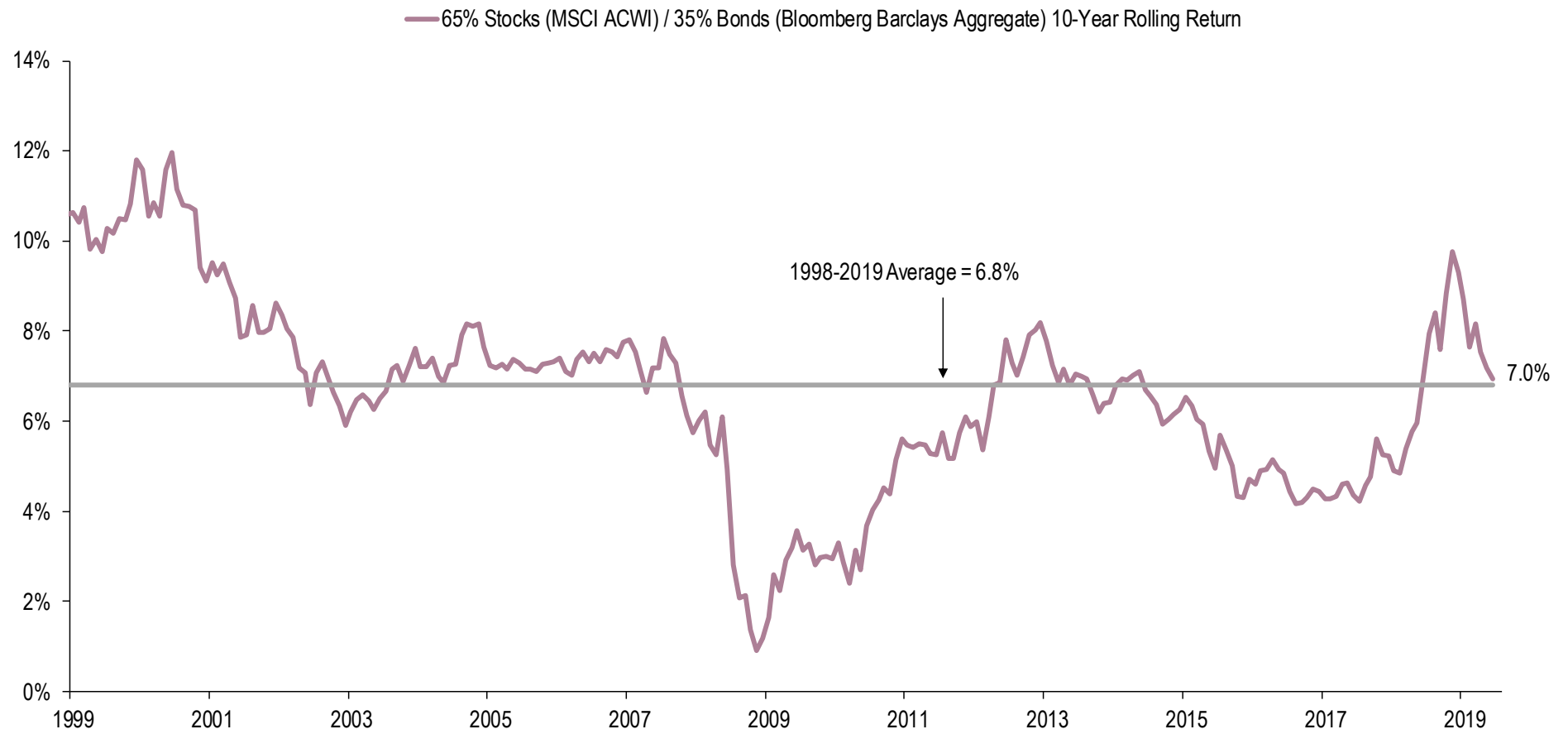
<sup>1</sup> Source: InvestorForce.

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



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

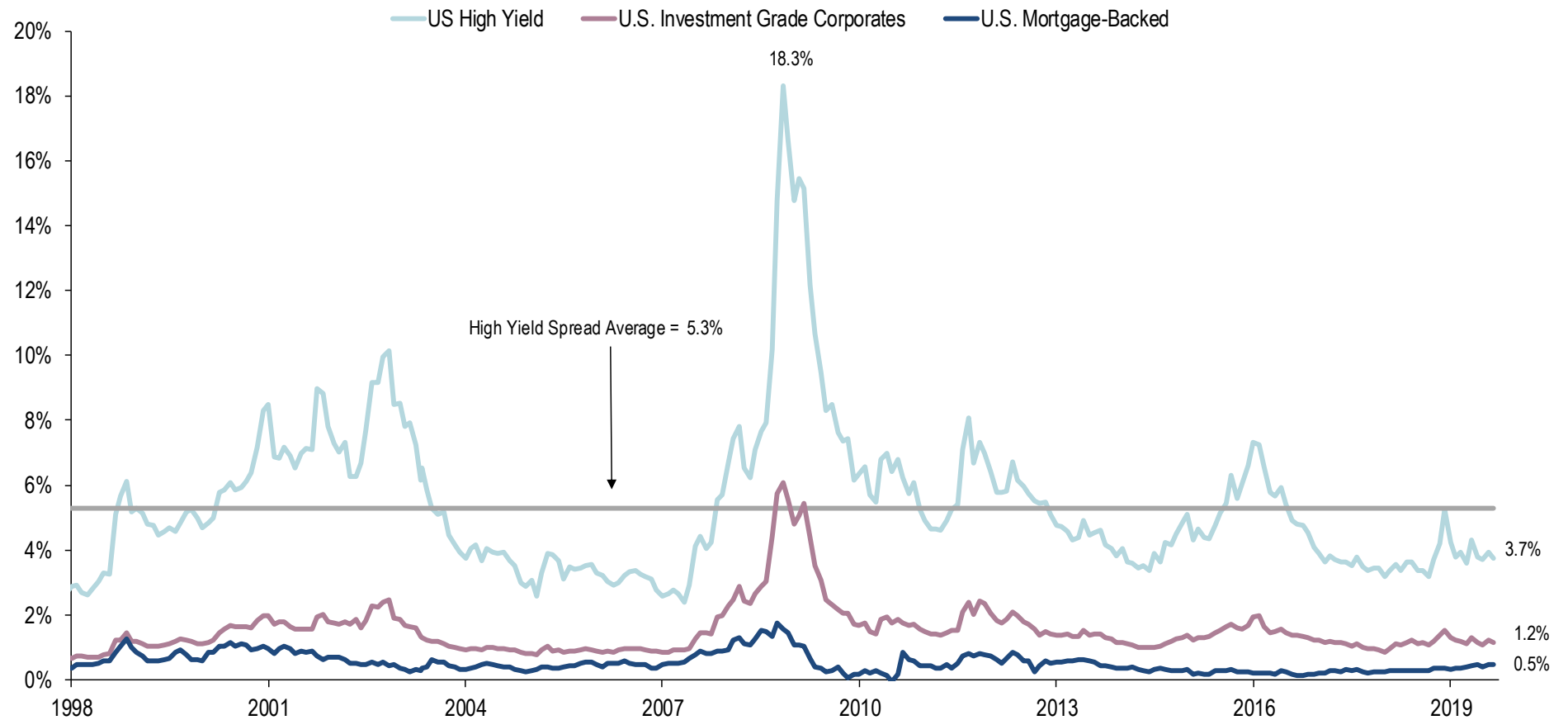
## Rolling Ten-Year Returns: 65% Stocks and 35% Bonds<sup>1</sup>



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



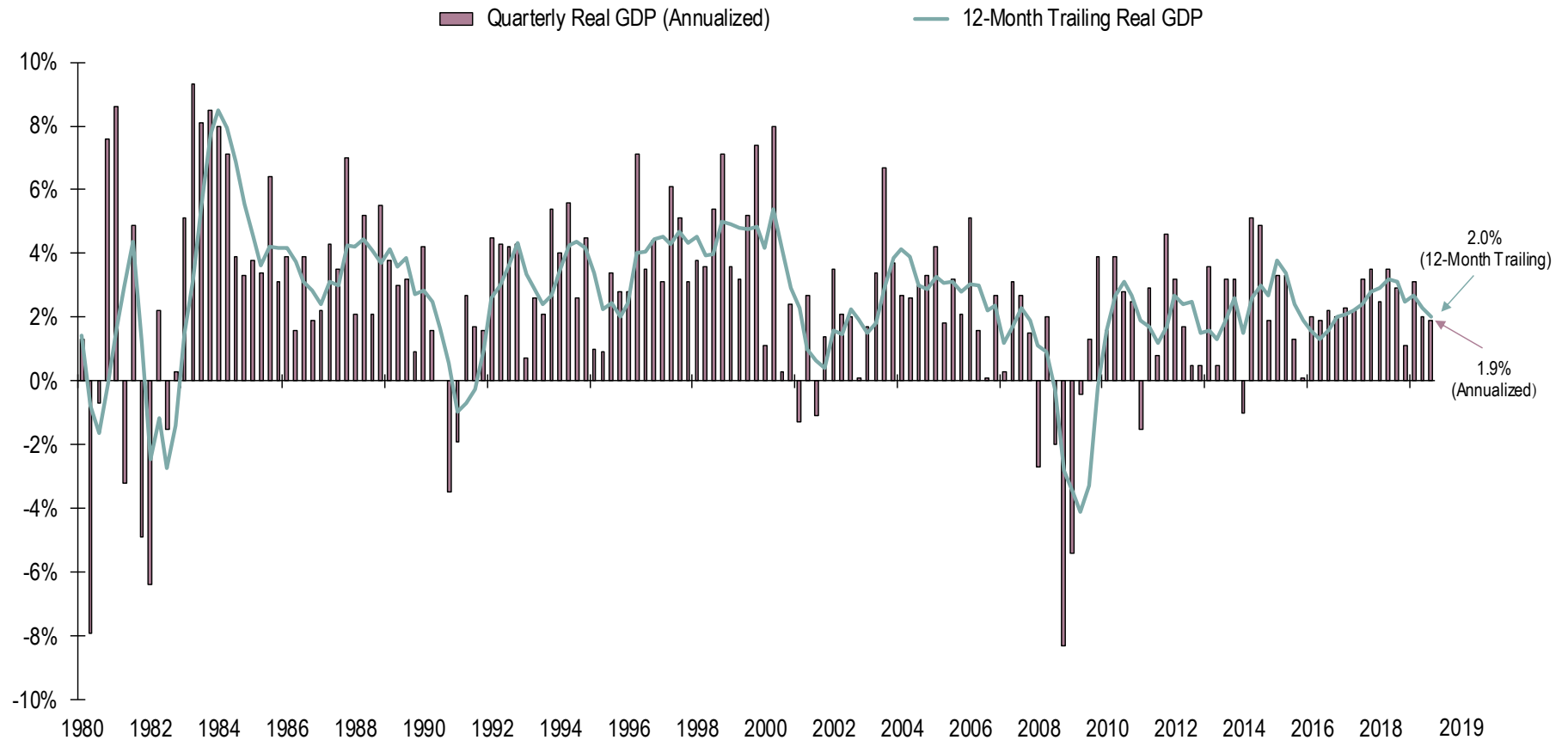
## Credit Spreads vs. US Treasury Bonds<sup>1,2</sup>



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

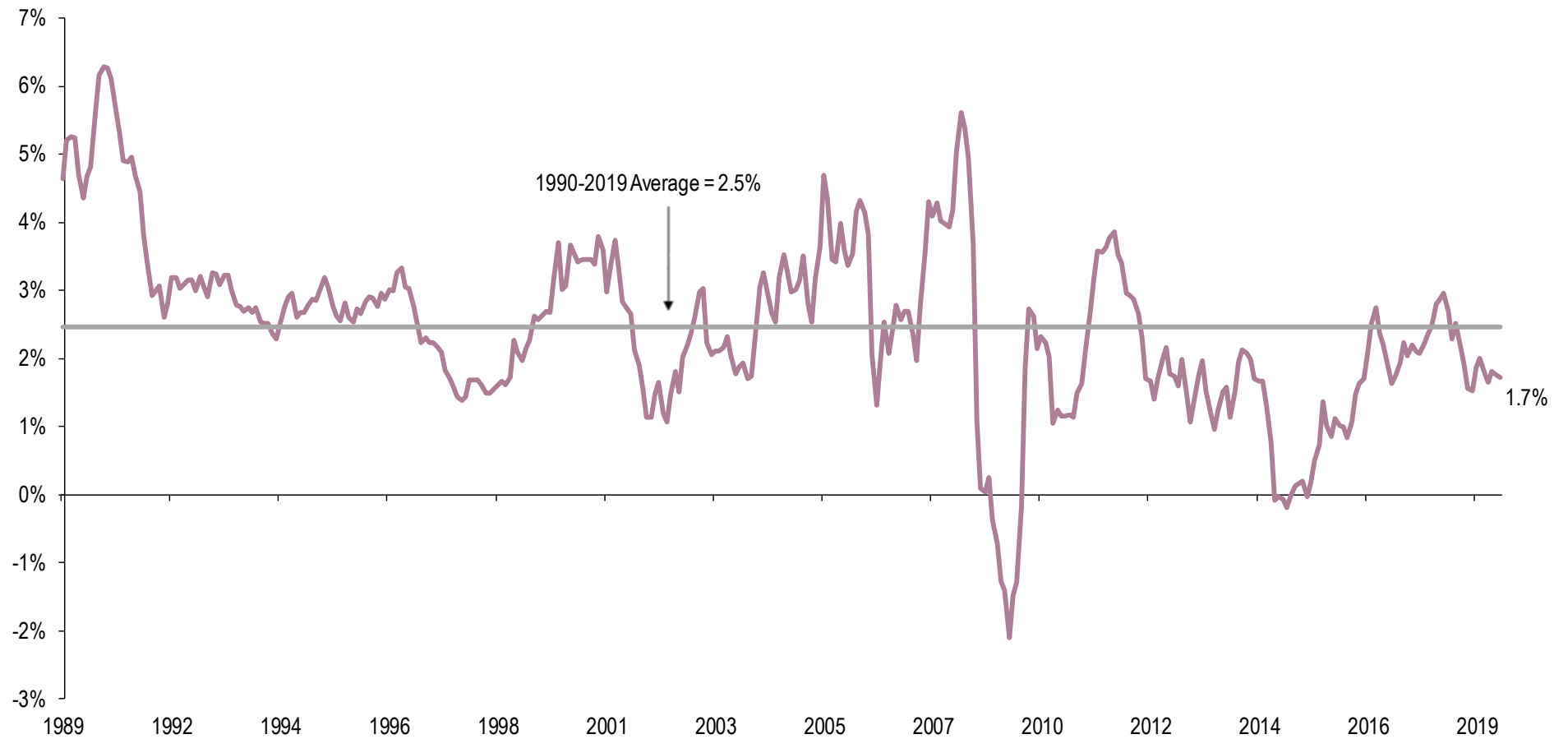
<sup>2</sup> The median high yield spread was 4.8% from 1997-2019.

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



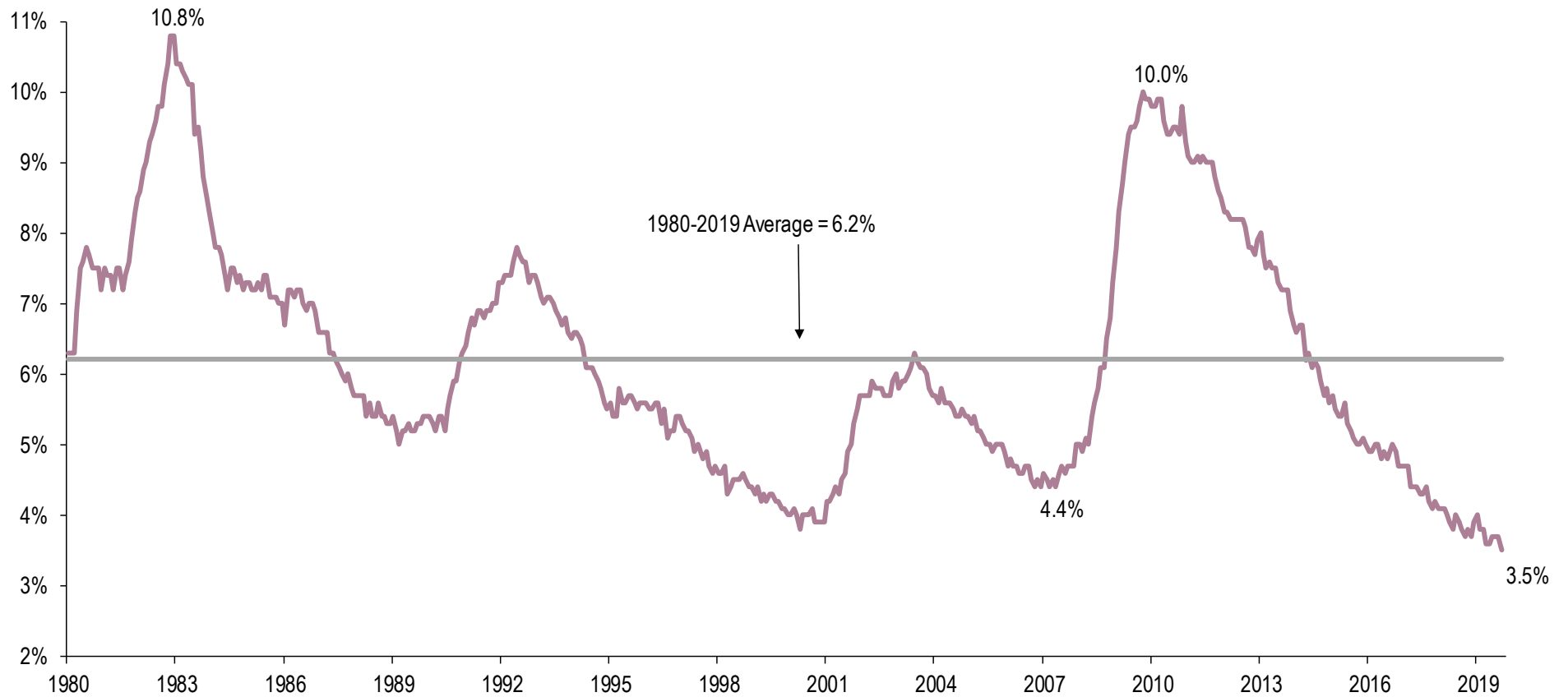
<sup>1</sup> Source: Bureau of Economic Analysis. Data is as of Q3 2019 and represents the first estimate.

## 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 City of San Jose Police & Fire Department Retirement Plan's assets was \$3.6 billion on September 30, 2019, an increase of approximately \$12.8 million from the end of the prior quarter. The Plan had net cash outflows of \$2.6 million during the quarter.**

- The Retirement Plan's net of fees performance for the quarter was +0.4%, in-line with the Policy Benchmark, outperforming the Investable Benchmark Portfolio (+0.3%), and underperforming the peer median return (+0.5%).
- The Retirement Plan returned +8.7% in the year-to-date period, compared to +8.0% for the Policy Benchmark, +8.3% for the Investable Benchmark Portfolio, and +10.8% for the peer median. The Retirement Plan's standard deviation of returns was 7.1% over the trailing one-year period, exhibiting lower volatility than the peer median (9.0%).
  - Growth returned +0.1% for the quarter and +12.3% over the year-to-date period, versus +0.4% and +12.3% for the Growth Benchmark over the same periods, respectively.
  - Zero Beta returned +0.4% for the quarter and +3.0% over the year-to-date period, versus +0.5% and +1.9% for the Zero Beta Benchmark over the same periods, respectively.
  - Other returned +0.5% for the quarter and +5.1% over the year-to-date period, versus +0.3% and +4.2% for the Other Benchmark over the same periods, respectively.
- The Retirement Plan added five investment managers during the quarter: BlackRock 1-3 Year Gov/Credit (Short-Term Investment Grade Bonds), 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 10th 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 +15.2% over the year-to-date period, underperforming the Russell 2000 Value benchmark by 340 basis points for the quarter and outperforming the benchmark by 240 basis points over the year-to-date period. Compared to peers, Cove Street ranks in the 92nd and 17th 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, Oberweis ranks in the 97th and 28th 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 +14.6% over the year-to-date period, outperforming the MSCI Emerging Markets benchmark by 20 and 870 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	---	---	---	---
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	---	---	---	---
Beach Point Total Return Fund II	Non-Investment Grade Credit	---	Yes	---	Watch List
BlueBay EM Select Debt	Emerging Markets Debt	---	Yes	Hold	Watch List
Wellington Iguazu Partners LP Fund	Emerging Markets Debt	---	---	---	---
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.

**Oberweis**

- Over the three-year period, Oberweis (+5.4%) 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 71st 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.

**Beach Point**

- Over the three-, and five-year periods, Beach Point has underperformed the Bloomberg Barclays US High Yield TR by 190, and 200 basis points, respectively. Since inception in October 2013, Beach (+3.9%) has underperformed the benchmark by 180 basis points per year, on average.

**BlueBay**

- Over the three-year period, BlueBay (+2.7%) has underperformed the JPM Blended Emerging Markets Index by 120 basis points. Since inception in August 2013, BlueBay (+1.4%) has underperformed the blended benchmark by 180 basis points per year, on average and ranked in the 71st percentile compared to peers.

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

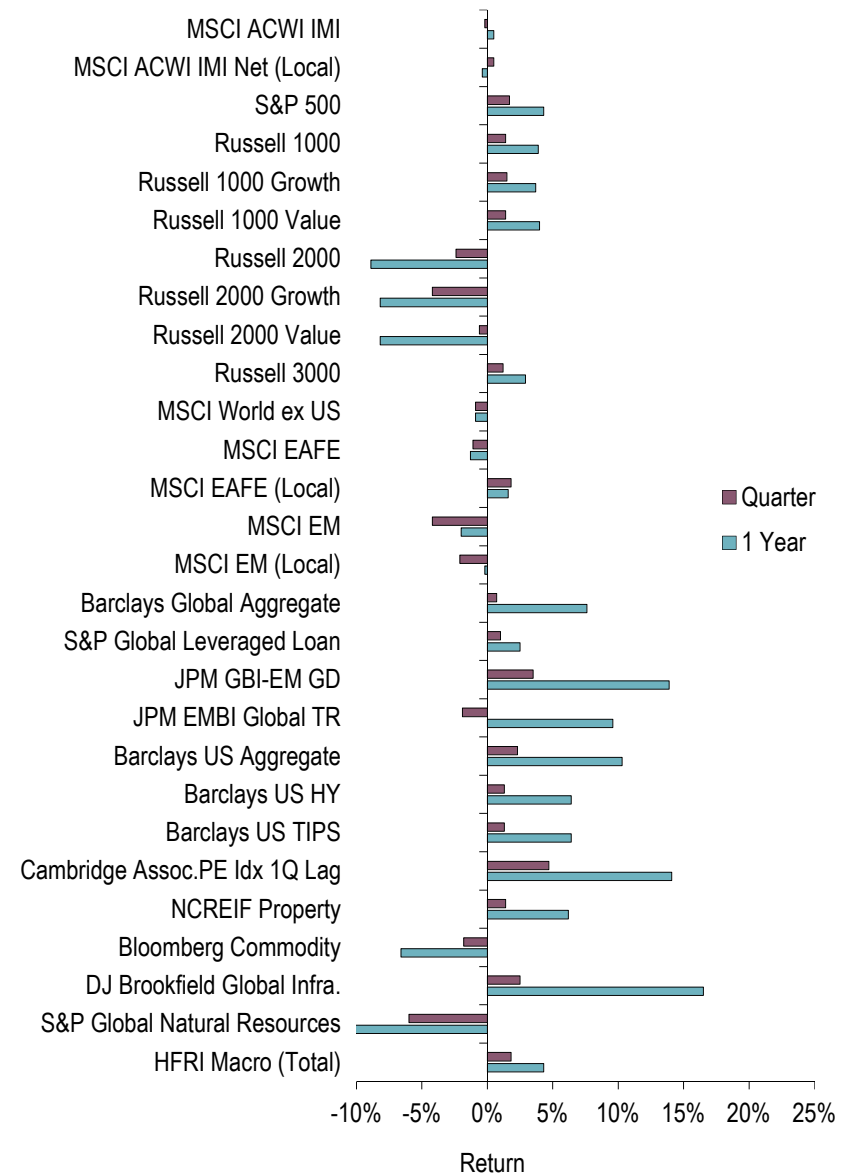
Investment Manager	Asset Class	Watch List Status	Comments
Oberweis International Opps.	International Equity	Monitoring	Underperformance
Beach Point Total Return Fund II	Non-Investment Grade Credit	Monitoring	Underperformance
BlueBay EM Select Debt	Emerging Markets Debt	Monitoring	Underperformance
DE 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.

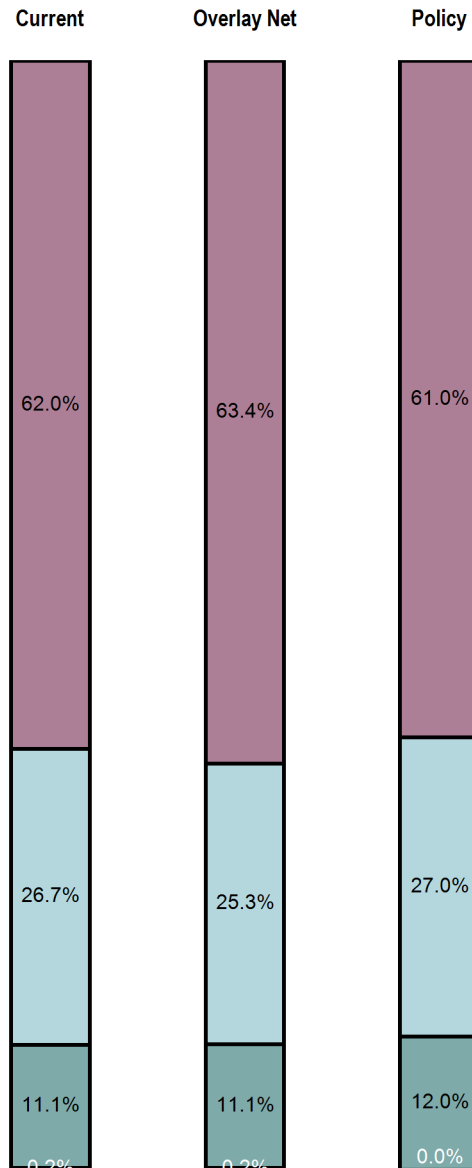
## Market Environment – 3Q19 Overview

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

As of September 30, 2019



## Allocation vs. Targets and Policy

	Current Balance	Current Allocation	Russell Overlay Net Position	Policy	Difference
<b>Growth</b>	<b>\$2,262,629,559</b>	<b>62.0%</b>	<b>63.4%</b>	<b>61.0%</b>	<b>1.0%</b>
Public Equity	\$1,327,542,435	36.4%	37.7%	36.0%	0.4%
Private Markets	\$800,991,638	22.0%	22.0%	22.0%	0.0%
Emerging Markets Debt	\$116,408,582	3.2%	3.2%	3.0%	0.2%
High Yield Debt	\$17,686,904	0.5%	0.5%	0.0%	0.5%
<b>Zero Beta</b>	<b>\$972,604,251</b>	<b>26.7%</b>	<b>25.3%</b>	<b>27.0%</b>	<b>-0.3%</b>
Absolute Return	\$245,833,056	6.7%	6.7%	5.0%	1.7%
Short-Term IG Bonds	\$514,518,960	14.1%	14.1%	17.0%	-2.9%
Immunized Cash Flows	\$178,715,836	4.9%	4.9%	5.0%	-0.1%
Cash	\$33,536,399	0.9%	-0.4%	0.0%	0.9%
<b>Other</b>	<b>\$406,070,271</b>	<b>11.1%</b>	<b>11.1%</b>	<b>12.0%</b>	<b>-0.9%</b>
Core Real Estate	\$150,218,891	4.1%	4.1%	5.0%	-0.9%
Commodities	\$72,932,360	2.0%	2.0%	2.0%	0.0%
Sovereign bonds ex-US	\$108,342,865	3.0%	3.0%	3.0%	0.0%
TIPS	\$74,576,155	2.0%	2.0%	2.0%	0.0%
<b>Overlay</b>	<b>\$6,261,201</b>	<b>0.2%</b>	<b>0.2%</b>	<b>0.0%</b>	<b>0.2%</b>
<b>Total</b>	<b>\$3,647,565,282</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	

<sup>1</sup> Data in the column titled "Russel 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</b>	<b>3,647,566,683</b>	<b>100.0</b>	<b>0.4</b>	<b>0.4</b>	<b>8.7</b>	<b>3.4</b>	<b>6.0</b>	<b>4.3</b>	<b>6.1</b>	<b>8.3</b>	<b>Mar-71</b>
Policy Benchmark			0.4	0.4	8.0	3.1	6.3	4.8	6.7	--	Mar-71
Investable Benchmark Portfolio			0.3	0.3	8.3	3.0	5.8	4.3	6.2	--	Mar-71
60/40 MSCI ACWI/BBgBarc Global Aggregate			0.3	0.3	12.4	4.2	6.6	4.9	6.1	--	Mar-71
Low-Cost Passive Portfolio			0.2	0.2	9.9	3.1	--	--	--	--	Mar-71
Liability Benchmark Portfolio			7.9	7.9	19.8	24.8	--	--	--	--	Mar-71
InvMetrics Public DB > \$1B Net Median			0.5	0.5	10.8	3.6	7.7	6.1	8.0	--	Mar-71
InvMetrics Public DB > \$1B Net Rank			64	64	96	58	98	98	97	--	Mar-71
<b>Growth</b>	<b>2,262,629,559</b>	<b>62.0</b>	<b>0.1</b>	<b>0.1</b>	<b>12.3</b>	<b>3.4</b>	<b>8.0</b>	<b>5.9</b>	<b>--</b>	<b>--</b>	<b>Apr-08</b>
Growth Benchmark			0.4	0.4	12.3	3.1	8.9	--	--	--	Apr-08
<b>Public Equity</b>	<b>1,327,542,435</b>	<b>36.4</b>	<b>-1.3</b>	<b>-1.3</b>	<b>14.1</b>	<b>0.7</b>	<b>8.5</b>	<b>6.3</b>	<b>8.3</b>	<b>5.6</b>	<b>Apr-08</b>
Public Equity Benchmark			-1.1	-1.1	13.5	0.1	9.2	6.5	8.8	5.9	Apr-08
<b>Global Equity</b>	<b>404,981,335</b>	<b>11.1</b>	<b>0.0</b>	<b>0.0</b>	<b>19.8</b>	<b>2.7</b>	<b>11.0</b>	<b>9.2</b>	<b>--</b>	<b>10.8</b>	<b>Mar-13</b>
MSCI ACWI IMI Net USD			-0.2	-0.2	15.9	0.5	9.4	6.6	--	8.2	Mar-13
eV All Global Equity Net Median			-0.2	-0.2	16.5	0.8	8.9	6.9	9.0	8.4	Mar-13
eV All Global Equity Net Rank			45	45	27	37	25	21	--	15	Mar-13
<b>U.S. Equity</b>	<b>185,688,055</b>	<b>5.1</b>	<b>0.5</b>	<b>0.5</b>	<b>19.0</b>	<b>1.9</b>	<b>11.8</b>	<b>9.9</b>	<b>13.0</b>	<b>9.5</b>	<b>Jun-95</b>
MSCI USA IMI NR USD			1.1	1.1	19.7	2.4	12.2	9.9	12.5	9.2	Jun-95
eV All US Equity Net Median			0.4	0.4	18.5	-0.3	10.6	8.8	12.1	10.4	Jun-95
eV All US Equity Net Rank			49	49	47	38	40	35	32	72	Jun-95

<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 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>223,777,011</b>	<b>6.1</b>	<b>-1.8</b>	<b>-1.8</b>	<b>14.7</b>	<b>-4.5</b>	<b>5.7</b>	<b>3.4</b>	<b>5.6</b>	<b>7.3</b>	<b>Jun-95</b>
MSCI World ex USA IMI NR USD			-0.8	-0.8	13.4	-1.6	6.3	3.3	5.0	--	Jun-95
eV ACWI ex-US All Cap Equity Net Median			-1.9	-1.9	13.5	-1.8	6.7	4.1	6.5	6.6	Jun-95
eV ACWI ex-US All Cap Equity Net Rank			41	41	41	72	66	69	76	30	Jun-95
<b>Emerging Markets Equity</b>	<b>427,497,693</b>	<b>11.7</b>	<b>-4.7</b>	<b>-4.7</b>	<b>5.7</b>	<b>-1.6</b>	<b>3.7</b>	<b>1.1</b>	<b>1.6</b>	<b>8.6</b>	<b>Sep-01</b>
MSCI Emerging Market IMI Net			-4.3	-4.3	5.4	-2.4	5.4	2.0	3.4	9.5	Sep-01
eV Emg Mkts Equity Net Median			-3.8	-3.8	7.7	-0.6	5.7	2.5	4.0	10.0	Sep-01
eV Emg Mkts Equity Net Rank			72	72	69	60	81	84	99	99	Sep-01
<b>Marketable Alternative Equity</b>	<b>85,598,341</b>	<b>2.3</b>	<b>1.1</b>	<b>1.1</b>	<b>9.1</b>	<b>3.2</b>	<b>6.3</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	-1.4	4.7	3.4	--	3.4	Oct-14
<b>Private Markets</b>	<b>800,991,638</b>	<b>22.0</b>	<b>2.0</b>	<b>2.0</b>	<b>10.0</b>	<b>5.3</b>	<b>8.1</b>	<b>--</b>	<b>--</b>	<b>6.9</b>	<b>Jul-15</b>
Private Markets Benchmark			2.0	2.0	10.0	5.3	8.5	--	--	7.8	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>560,134,130</b>	<b>15.4</b>	<b>2.5</b>	<b>2.5</b>	<b>5.3</b>	<b>7.1</b>	<b>7.9</b>	<b>--</b>	<b>--</b>	<b>6.6</b>	<b>Jul-15</b>
Private Markets Benchmark			2.0	2.0	10.0	5.3	8.5	--	--	7.8	Jul-15
<b>Private Equity</b>	<b>486,187,389</b>	<b>13.3</b>	<b>3.0</b>	<b>3.0</b>	<b>15.4</b>	<b>7.2</b>	<b>12.7</b>	<b>10.7</b>	<b>12.2</b>	<b>8.8</b>	<b>Oct-05</b>
San Jose Custom Private Equity Benchmark			4.3	4.3	7.8	11.2	15.8	11.6	11.3	11.9	Oct-05
<b>Private Equity ex Russell 3000</b>	<b>262,536,200</b>	<b>7.2</b>	<b>4.7</b>	<b>4.7</b>	<b>9.3</b>	<b>13.3</b>	<b>13.8</b>	<b>11.5</b>	<b>11.8</b>	<b>--</b>	<b>Oct-05</b>
<b>Northern Trust Russell 3000</b>	<b>223,651,188</b>	<b>6.1</b>	<b>1.2</b>	<b>1.2</b>	<b>20.1</b>	<b>3.0</b>	<b>12.9</b>	<b>10.5</b>	<b>--</b>	<b>10.5</b>	<b>Apr-14</b>
Russell 3000			1.2	1.2	20.1	2.9	12.8	10.4	--	10.4	Apr-14

<sup>1</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 Debt</b>	<b>178,195,657</b>	<b>4.9</b>	<b>0.6</b>	<b>0.6</b>	<b>1.3</b>	<b>0.1</b>	<b>3.2</b>	--	--	<b>3.5</b>	<b>Oct-15</b>
<i>S&amp;P Global Leveraged Loan + 2%</i>			0.5	0.5	6.4	3.5	6.1	--	--	6.4	Oct-15
<b>Private Real Estate</b>	<b>100,312,758</b>	<b>2.8</b>	<b>0.1</b>	<b>0.1</b>	<b>2.8</b>	<b>5.5</b>	<b>9.9</b>	--	--	<b>8.5</b>	<b>Jul-15</b>
<i>NCREIF ODCE Equal Weighted</i>			1.4	1.4	4.5	6.2	7.6	--	--	8.7	Jul-15
<b>Private Real Assets</b>	<b>36,295,834</b>	<b>1.0</b>	<b>2.3</b>	<b>2.3</b>	<b>5.2</b>	<b>9.6</b>	<b>5.2</b>	--	--	<b>5.8</b>	<b>Jun-16</b>
<b>High Yield Debt</b>	<b>17,686,904</b>	<b>0.5</b>	<b>0.4</b>	<b>0.4</b>	<b>13.0</b>	<b>6.9</b>	<b>6.8</b>	--	--	<b>5.5</b>	<b>Oct-15</b>
<i>50% Bofa Global HY/50% S&amp;P Global Leveraged Loan</i>			0.2	0.2	7.4	3.6	4.7	--	--	5.8	Oct-15
<b>Emerging Market Debt</b>	<b>116,408,582</b>	<b>3.2</b>	<b>0.1</b>	<b>0.1</b>	<b>9.8</b>	<b>9.5</b>	<b>4.0</b>	<b>3.3</b>	--	<b>1.2</b>	<b>Jan-13</b>
<i>50% JPM EMBI GD / 50% JPM GBI-EM</i>			0.4	0.4	10.4	10.9	3.9	3.2	--	1.8	Jan-13
<i>eV All Emg Mkts Fixed Inc Net Median</i>			0.0	0.0	10.0	9.8	3.9	3.8	5.5	2.6	Jan-13
<i>eV All Emg Mkts Fixed Inc Net Rank</i>			45	45	53	56	48	56	--	60	Jan-13
<b>Zero Beta</b>	<b>972,605,653</b>	<b>26.7</b>	<b>0.4</b>	<b>0.4</b>	<b>3.0</b>	<b>3.6</b>	<b>2.9</b>	--	--	<b>2.0</b>	<b>Jul-15</b>
<i>Zero Beta Benchmark</i>			0.5	0.5	1.9	2.7	0.8	--	--	0.8	Jul-15
<b>Short-Term IG Bonds</b>	<b>514,520,361</b>	<b>14.1</b>	<b>0.4</b>	<b>0.4</b>	<b>1.7</b>	<b>2.3</b>	--	--	--	<b>2.3</b>	<b>Oct-18</b>
<i>BBgBarc US Govt/Credit 1-3 Yr. TR</i>			0.7	0.7	3.4	4.6	--	--	--	4.6	Oct-18
<b>Immunized Cash Flows</b>	<b>178,715,836</b>	<b>4.9</b>	<b>0.8</b>	<b>0.8</b>	<b>3.2</b>	<b>4.6</b>	--	--	--	<b>4.6</b>	<b>Oct-18</b>
<i>Immunized Cash Flow Benchmark</i>			0.8	0.8	3.2	4.6	--	--	--	4.6	Oct-18
<b>Absolute Return</b>	<b>245,833,056</b>	<b>6.7</b>	<b>0.4</b>	<b>0.4</b>	<b>6.8</b>	<b>6.8</b>	<b>4.4</b>	<b>3.0</b>	--	<b>3.1</b>	<b>Nov-12</b>
<i>Absolute Return Benchmark</i>			0.6	0.6	1.8	2.5	0.7	1.0	--	1.2	Nov-12

<sup>1</sup> Please see the Appendix for composition of the Zero Beta Benchmark, Immunized Cash Flows Benchmark, and Absolute Return Benchmark.

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>Macro</b>	<b>102,426,276</b>	<b>2.8</b>	<b>-1.4</b>	<b>-1.4</b>	<b>5.9</b>	<b>5.4</b>	<b>2.9</b>	<b>--</b>	<b>--</b>	<b>2.3</b>	<b>Jul-15</b>
HFRI Macro (Total) Index			1.8	1.8	6.8	4.3	1.3	--	--	1.1	Jul-15
<b>Relative Value</b>	<b>143,406,780</b>	<b>3.9</b>	<b>1.7</b>	<b>1.7</b>	<b>7.1</b>	<b>7.5</b>	<b>5.7</b>	<b>--</b>	<b>--</b>	<b>4.4</b>	<b>Jul-15</b>
HFRI Relative Value (Total) Index			0.1	0.1	5.6	2.0	4.0	--	--	3.5	Jul-15
<b>Cash</b>	<b>33,536,399</b>	<b>0.9</b>	<b>0.6</b>	<b>0.6</b>	<b>1.7</b>	<b>2.2</b>	<b>1.6</b>	<b>1.0</b>	<b>0.8</b>	<b>8.8</b>	<b>Jul-02</b>
ICE BofAML 91 Days T-Bills TR			0.6	0.6	1.8	2.4	1.5	1.0	0.5	1.4	Jul-02
<b>Other</b>	<b>406,070,271</b>	<b>11.1</b>	<b>0.5</b>	<b>0.5</b>	<b>5.1</b>	<b>4.2</b>	<b>3.8</b>	<b>--</b>	<b>--</b>	<b>2.9</b>	<b>Jul-15</b>
Other Benchmark			0.3	0.3	4.2	3.5	2.6	--	--	2.6	Jul-15
<b>Core Real Estate</b>	<b>150,218,891</b>	<b>4.1</b>	<b>1.2</b>	<b>1.2</b>	<b>6.7</b>	<b>6.7</b>	<b>6.8</b>	<b>8.5</b>	<b>--</b>	<b>8.7</b>	<b>Sep-11</b>
NCREIF ODCE Equal Weighted (Net)			1.2	1.2	3.8	5.3	6.7	8.7	--	10.0	Sep-11
<b>Commodities</b>	<b>72,932,360</b>	<b>2.0</b>	<b>0.1</b>	<b>0.1</b>	<b>3.7</b>	<b>-1.9</b>	<b>1.8</b>	<b>-4.6</b>	<b>--</b>	<b>-5.3</b>	<b>Apr-11</b>
Bloomberg Commodity Index TR USD			-1.8	-1.8	3.1	-6.6	-1.5	-7.2	--	-8.2	Apr-11
<b>TIPS</b>	<b>74,576,155</b>	<b>2.0</b>	<b>0.3</b>	<b>0.3</b>	<b>4.0</b>	<b>3.5</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>3.5</b>	<b>Oct-18</b>
BBgBarc US Treasury TIPS 0-5 Yr TR			0.3	0.3	3.7	3.4	--	--	--	3.4	Oct-18
<b>Sovereign Bonds ex-US</b>	<b>108,342,865</b>	<b>3.0</b>	<b>-0.1</b>	<b>-0.1</b>	<b>3.3</b>	<b>3.3</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>3.3</b>	<b>Oct-18</b>
FTSE WGBI ex US TR			-0.1	-0.1	5.4	6.8	--	--	--	6.8	Oct-18
<b>Overlay</b>	<b>6,261,201</b>	<b>0.2</b>									

<sup>1</sup> Cash Composite includes the cash account and residuals from terminated manager assets.<sup>2</sup> Please see the Appendix for composition of the Other Benchmark.

## 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</b>	<b>3,647,566,683</b>	<b>100.5</b>	<b>0.4</b>	<b>0.4</b>	<b>8.7</b>	<b>3.4</b>	<b>6.0</b>	<b>4.3</b>	<b>6.1</b>	<b>8.3</b>	<b>Mar-71</b>
Policy Benchmark			0.4	0.4	8.0	3.1	6.3	4.8	6.7	--	Mar-71
Investable Benchmark Portfolio			0.3	0.3	8.3	3.0	5.8	4.3	6.2	--	Mar-71
60/40 MSCI ACWI/BBgBarc Global Aggregate			0.3	0.3	12.4	4.2	6.6	4.9	6.1	--	Mar-71
Low-Cost Passive Portfolio			0.2	0.2	9.9	3.1	--	--	--	--	Mar-71
Liability Benchmark Portfolio			7.9	7.9	19.8	24.8	--	--	--	--	Mar-71
InvMetrics Public DB > \$1B Net Median			0.5	0.5	10.8	3.6	7.7	6.1	8.0	--	Mar-71
InvMetrics Public DB > \$1B Net Rank			64	64	96	58	98	98	97	--	Mar-71
<b>Growth</b>	<b>2,262,629,559</b>	<b>62.3</b>	<b>0.1</b>	<b>0.1</b>	<b>12.3</b>	<b>3.4</b>	<b>8.0</b>	<b>5.9</b>	<b>--</b>	<b>--</b>	<b>Apr-08</b>
Growth Benchmark			0.4	0.4	12.3	3.1	8.9	--	--	--	Apr-08
<b>Public Equity</b>	<b>1,327,542,435</b>	<b>36.6</b>	<b>-1.3</b>	<b>-1.3</b>	<b>14.1</b>	<b>0.7</b>	<b>8.5</b>	<b>6.3</b>	<b>8.3</b>	<b>5.6</b>	<b>Apr-08</b>
Public Equity Benchmark			-1.1	-1.1	13.5	0.1	9.2	6.5	8.8	5.9	Apr-08
<b>Global Equity</b>	<b>404,981,335</b>	<b>11.2</b>	<b>0.0</b>	<b>0.0</b>	<b>19.8</b>	<b>2.7</b>	<b>11.0</b>	<b>9.2</b>	<b>--</b>	<b>10.8</b>	<b>Mar-13</b>
MSCI ACWI IMI Net USD			-0.2	-0.2	15.9	0.5	9.4	6.6	--	8.2	Mar-13
eV All Global Equity Net Median			-0.2	-0.2	16.5	0.8	8.9	6.9	9.0	8.4	Mar-13
eV All Global Equity Net Rank			45	45	27	37	25	21	--	15	Mar-13
Artisan Global Value	214,146,401	5.9	-0.4	-0.4	16.2	0.7	9.2	7.2	--	9.4	Mar-13
MSCI ACWI Value NR USD			-0.3	-0.3	12.0	0.0	7.4	4.3	--	6.3	Mar-13
eV All Global Equity Net Median			-0.2	-0.2	16.5	0.8	8.9	6.9	9.0	8.4	Mar-13
eV All Global Equity Net Rank			52	52	53	51	45	45	--	30	Mar-13

<sup>1</sup> Please see the Appendix for composition of the Policy Benchmark, Low-Cost Passive Portfolio, Liability Benchmark Portfolio, Growth Benchmark, and Public Equity 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	190,834,934	5.3	0.5	0.5	24.2	5.2	12.1	11.0	--	11.3	May-13
MSCI ACWI Growth NR USD			0.3	0.3	20.4	2.8	12.0	8.9	--	9.6	May-13
eV All Global Equity Net Median			-0.2	-0.2	16.5	0.8	8.9	6.9	9.0	7.7	May-13
eV All Global Equity Net Rank			35	35	9	27	18	8	--	10	May-13
<b>U.S. Equity</b>	<b>185,688,055</b>	<b>5.1</b>	<b>0.5</b>	<b>0.5</b>	<b>19.0</b>	<b>1.9</b>	<b>11.8</b>	<b>9.9</b>	<b>13.0</b>	<b>9.5</b>	<b>Jun-95</b>
MSCI USA IMI NR USD			1.1	1.1	19.7	2.4	12.2	9.9	12.5	9.2	Jun-95
eV All US Equity Net Median			0.4	0.4	18.5	-0.3	10.6	8.8	12.1	10.4	Jun-95
eV All US Equity Net Rank			49	49	47	38	40	35	32	72	Jun-95
Northern Trust Russell 1000	141,723,904	3.9	1.4	1.4	20.6	4.2	13.3	10.7	--	10.8	Apr-14
Russell 1000			1.4	1.4	20.5	3.9	13.2	10.6	--	10.7	Apr-14
Northern Tr Russell 2000 Value	19,583,238	0.5	-0.6	-0.6	12.9	-8.2	--	--	--	-0.9	Jan-18
Russell 2000 Value			-0.6	-0.6	12.8	-8.2	--	--	--	-1.0	Jan-18
Cove Street Small Cap Value	24,380,912	0.7	-4.0	-4.0	15.2	-1.7	--	--	--	2.3	Dec-17
Russell 2000 Value			-0.6	-0.6	12.8	-8.2	--	--	--	-1.4	Dec-17
eV US Small Cap Value Equity Net Median			-0.3	-0.3	14.9	-6.8	6.2	6.4	10.7	-1.5	Dec-17
eV US Small Cap Value Equity Net Rank			92	92	48	19	--	--	--	17	Dec-17
<b>International Equity</b>	<b>223,777,011</b>	<b>6.2</b>	<b>-1.8</b>	<b>-1.8</b>	<b>14.7</b>	<b>-4.5</b>	<b>5.7</b>	<b>3.4</b>	<b>5.6</b>	<b>7.3</b>	<b>Jun-95</b>
MSCI World ex USA IMI NR USD			-0.8	-0.8	13.4	-1.6	6.3	3.3	5.0	--	Jun-95
eV ACWI ex-US All Cap Equity Net Median			-1.9	-1.9	13.5	-1.8	6.7	4.1	6.5	6.6	Jun-95
eV ACWI ex-US All Cap Equity Net Rank			41	41	41	72	66	69	76	30	Jun-95
Northern Trust MSCI World ex US	174,983,619	4.8	-0.8	-0.8	13.9	-0.8	6.8	3.4	--	2.8	Apr-14
MSCI World ex USA			-0.9	-0.9	13.6	-0.9	6.5	3.1	--	2.5	Apr-14

## 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	48,793,392	1.3	-4.0	-4.0	15.4	-9.8	5.4	6.5	--	4.6	Mar-14
<i>MSCI World ex USA Small Cap Growth NR USD</i>			-0.8	-0.8	14.7	-5.3	6.2	6.4	--	4.6	Mar-14
<i>eV ACWI ex-US All Cap Equity Net Median</i>			-1.9	-1.9	13.5	-1.8	6.7	4.1	6.5	3.2	Mar-14
<i>eV ACWI ex-US All Cap Equity Net Rank</i>			97	97	36	97	71	18	--	28	Mar-14
<b>Emerging Markets Equity</b>	<b>427,497,693</b>	<b>11.8</b>	<b>-4.7</b>	<b>-4.7</b>	<b>5.7</b>	<b>-1.6</b>	<b>3.7</b>	<b>1.1</b>	<b>1.6</b>	<b>8.6</b>	<b>Sep-01</b>
<i>MSCI Emerging Market IMI Net</i>			-4.3	-4.3	5.4	-2.4	5.4	2.0	3.4	9.5	Sep-01
<i>eV Emg Mkts Equity Net Median</i>			-3.8	-3.8	7.7	-0.6	5.7	2.5	4.0	10.0	Sep-01
<i>eV Emg Mkts Equity Net Rank</i>			72	72	69	60	81	84	99	99	Sep-01
Northern Trust MSCI EM IMI	173,905,545	4.8	-4.3	-4.3	5.3	-2.4	--	--	--	-2.4	Oct-18
<i>MSCI Emerging Market IMI Net</i>			-4.3	-4.3	5.4	-2.4	--	--	--	-2.4	Oct-18
Dimensional Fund Adv EM Value	64,402,900	1.8	-7.0	-7.0	-0.5	-7.6	5.1	--	--	2.8	Jul-15
<i>MSCI Emerging Markets Value NR USD</i>			-6.5	-6.5	1.8	-5.0	4.8	--	--	1.5	Jul-15
<i>eV Emg Mkts Equity Net Median</i>			-3.8	-3.8	7.7	-0.6	5.7	2.5	4.0	3.4	Jul-15
<i>eV Emg Mkts Equity Net Rank</i>			99	99	99	99	56	--	--	58	Jul-15
GQG Global Emerging Markets	67,336,633	1.9	-4.0	-4.0	14.6	10.6	--	--	--	6.4	Jul-17
<i>MSCI Emerging Markets</i>			-4.2	-4.2	5.9	-2.0	--	--	--	2.1	Jul-17
<i>eV Emg Mkts Equity Net Median</i>			-3.8	-3.8	7.7	-0.6	5.7	2.5	4.0	1.8	Jul-17
<i>eV Emg Mkts Equity Net Rank</i>			55	55	11	2	--	--	--	4	Jul-17
RWC Emerging Markets Equity	41,089,800	1.1	--	--	--	--	--	--	--	2.7	Sep-19
<i>MSCI Emerging Markets</i>			--	--	--	--	--	--	--	1.9	Sep-19
<i>eV Emg Mkts Equity Net Median</i>			-3.8	-3.8	7.7	-0.6	5.7	2.5	4.0	1.8	Sep-19
<i>eV Emg Mkts Equity Net Rank</i>			--	--	--	--	--	--	--	14	Sep-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	80,762,815	2.2	--	--	--	--	--	--	--	1.0	Sep-19
<i>MSCI Emerging Markets</i>			--	--	--	--	--	--	--	1.9	Sep-19
<i>eV Emg Mkts Equity Net Median</i>			-3.8	-3.8	7.7	-0.6	5.7	2.5	4.0	1.8	Sep-19
<i>eV Emg Mkts Equity Net Rank</i>			--	--	--	--	--	--	--	80	Sep-19
<b>Marketable Alternative Equity</b>	<b>85,598,341</b>	<b>2.4</b>	<b>1.1</b>	<b>1.1</b>	<b>9.1</b>	<b>3.2</b>	<b>6.3</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	-1.4	4.7	3.4	--	3.4	Oct-14
Senator Global Opportunity, L.P.	15,930,282	0.4	-0.2	-0.2	14.4	3.2	5.4	3.9	--	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	23,260,750	0.6	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	-1.4	4.7	3.4	--	4.3	May-13
Marshall Wace Eureka Fund	46,407,309	1.3	0.8	0.8	8.4	2.3	7.3	7.7	--	7.6	Apr-14
<i>HFRI Equity Hedge (Total) Index</i>			-1.3	-1.3	7.8	-1.4	4.7	3.4	--	3.3	Apr-14
<b>Private Markets</b>	<b>800,991,638</b>	<b>22.1</b>	<b>2.0</b>	<b>2.0</b>	<b>10.0</b>	<b>5.3</b>	<b>8.1</b>	<b>--</b>	<b>--</b>	<b>6.9</b>	<b>Jul-15</b>
<i>Private Markets Benchmark</i>			2.0	2.0	10.0	5.3	8.5	--	--	7.8	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>560,134,130</b>	<b>15.4</b>	<b>2.5</b>	<b>2.5</b>	<b>5.3</b>	<b>7.1</b>	<b>7.9</b>	<b>--</b>	<b>--</b>	<b>6.6</b>	<b>Jul-15</b>
<i>Private Markets Benchmark</i>			2.0	2.0	10.0	5.3	8.5	--	--	7.8	Jul-15
<b>Private Equity</b>	<b>486,187,389</b>	<b>13.4</b>	<b>3.0</b>	<b>3.0</b>	<b>15.4</b>	<b>7.2</b>	<b>12.7</b>	<b>10.7</b>	<b>12.2</b>	<b>8.8</b>	<b>Oct-05</b>
<i>San Jose Custom Private Equity Benchmark</i>			4.3	4.3	7.8	11.2	15.8	11.6	11.3	11.9	Oct-05
<b>Private Equity ex Russell 3000</b>	<b>262,536,200</b>	<b>7.2</b>	<b>4.7</b>	<b>4.7</b>	<b>9.3</b>	<b>13.3</b>	<b>13.8</b>	<b>11.5</b>	<b>11.8</b>	<b>--</b>	<b>Oct-05</b>
PE Strategic Partnership, LP	77,056,800	2.1	3.2	3.2	8.3	16.5	--	--	--	6.9	Aug-17
<i>Cambridge Glob Priv Eq Qtr Lag</i>			4.3	4.3	7.8	11.2	--	--	--	15.7	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
Pantheon USA Fund VI, LP	7,869,390	0.2	3.2	3.2	3.7	4.9	8.1	6.1	9.5	5.9	Oct-05
<i>Cambridge Glob Priv Eq Qtr Lag</i>			4.3	4.3	7.8	11.2	15.3	11.1	13.9	12.9	Oct-05
Portfolio Advisors Private Eq	4,141,316	0.1	-0.8	-0.8	-1.2	-0.9	3.9	4.8	8.0	6.0	Nov-05
<i>Cambridge Glob Priv Eq Qtr Lag</i>			4.3	4.3	7.8	11.2	15.3	11.1	13.9	13.0	Nov-05
HarbourVest Partners VII	535,887	0.0	-1.9	-1.9	-7.3	-12.2	-1.3	3.7	10.2	8.0	Dec-05
<i>Cambridge Glob Priv Eq Qtr Lag</i>			4.3	4.3	7.8	11.2	15.3	11.1	13.9	13.1	Dec-05
Siguler Guff Distressed	4,628,449	0.1	2.6	2.6	0.0	0.3	8.9	6.4	8.8	8.6	Nov-08
<i>Cambridge Glob Priv Eq Qtr Lag</i>			4.3	4.3	7.8	11.2	15.3	11.1	13.9	9.8	Nov-08
TCW/Crescent Mezzanine	517,680	0.0	8.5	8.5	-15.5	-14.7	-0.8	2.4	7.7	6.6	Dec-08
<i>Cambridge Glob Priv Eq Qtr Lag</i>			4.3	4.3	7.8	11.2	15.3	11.1	13.9	10.9	Dec-08
TPG Opportunities Partners II	1,830,160	0.1	0.0	0.0	0.9	1.7	9.1	13.3	--	14.3	Oct-12
<i>Cambridge Glob Priv Eq Qtr Lag</i>			4.3	4.3	7.8	11.2	15.3	11.1	--	13.2	Oct-12
Crescent Mezzanine Partners VI	7,165,038	0.2	2.4	2.4	6.2	8.6	8.7	8.5	--	6.8	Feb-13
<i>Cambridge Glob Priv Eq Qtr Lag</i>			4.3	4.3	7.8	11.2	15.3	11.1	--	13.1	Feb-13
Warburg Pincus (Europa) XI	16,920,108	0.5	2.0	2.0	8.5	9.5	15.9	14.7	--	12.6	May-13
<i>Cambridge Glob Priv Eq Qtr Lag</i>			4.3	4.3	7.8	11.2	15.3	11.1	--	13.1	May-13
57 Stars Global Opportunity	30,755,266	0.8	1.7	1.7	3.7	3.0	8.2	5.8	--	1.1	Jan-14
<i>Cambridge Glob Priv Eq Qtr Lag</i>			4.3	4.3	7.8	11.2	15.3	11.1	--	12.6	Jan-14
TPG Opportunities Partners III	7,896,102	0.2	-0.1	-0.1	-0.7	3.1	11.4	9.6	--	3.6	Mar-14
<i>Cambridge Glob Priv Eq Qtr Lag</i>			4.3	4.3	7.8	11.2	15.3	11.1	--	12.8	Mar-14

## 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
CCMP Capital Investors III, LP	17,340,275	0.5	2.9	2.9	-1.7	1.8	6.6	7.8	--	7.7	Aug-14
<i>Cambridge Glob Priv Eq Qtr Lag</i>			4.3	4.3	7.8	11.2	15.3	11.1	--	12.0	Aug-14
Industry Ventures Partnership	24,583,916	0.7	17.2	17.2	28.9	47.5	24.9	20.6	--	20.6	Oct-14
<i>Cambridge Glob Priv Eq Qtr Lag</i>			4.3	4.3	7.8	11.2	15.3	11.1	--	11.1	Oct-14
Francisco Partners	19,442,622	0.5	10.8	10.8	25.7	34.8	29.5	--	--	19.5	May-15
<i>Cambridge Glob Priv Eq Qtr Lag</i>			4.3	4.3	7.8	11.2	15.3	--	--	12.6	May-15
HarbourVest Partners VIII	9,586,015	0.3	5.0	5.0	14.3	12.8	16.9	--	--	14.0	Jul-15
<i>Cambridge Glob Priv Eq Qtr Lag</i>			4.3	4.3	7.8	11.2	15.3	--	--	13.1	Jul-15
HarbourVest Dover Street IX	20,976,108	0.6	5.5	5.5	14.9	16.9	--	--	--	38.8	Jan-17
<i>Cambridge Glob Priv Eq Qtr Lag</i>			4.3	4.3	7.8	11.2	--	--	--	15.1	Jan-17
Innovation Endeavors III	1,288,211	0.0	-2.1	-2.1	2.6	4.5	--	--	--	-22.2	Jun-18
<i>Cambridge Glob Priv Eq Qtr Lag</i>			4.3	4.3	7.8	11.2	--	--	--	13.9	Jun-18
Crestline Portfolio Financing	10,002,853	0.3	2.1	2.1	5.3	9.4	--	--	--	7.9	Jun-18
<i>Cambridge Glob Priv Eq Qtr Lag</i>			4.3	4.3	7.8	11.2	--	--	--	13.9	Jun-18
<b>Northern Trust Russell 3000</b>	<b>223,651,188</b>	<b>6.2</b>	<b>1.2</b>	<b>1.2</b>	<b>20.1</b>	<b>3.0</b>	<b>12.9</b>	<b>10.5</b>	<b>--</b>	<b>10.5</b>	<b>Apr-14</b>
<i>Russell 3000</i>			1.2	1.2	20.1	2.9	12.8	10.4	--	10.4	Apr-14
<b>Private Debt</b>	<b>178,195,657</b>	<b>4.9</b>	<b>0.6</b>	<b>0.6</b>	<b>1.3</b>	<b>0.1</b>	<b>3.2</b>	<b>--</b>	<b>--</b>	<b>3.5</b>	<b>Oct-15</b>
<i>S&amp;P Global Leveraged Loan + 2%</i>			0.5	0.5	6.4	3.5	6.1	--	--	6.4	Oct-15
White Oak Direct Lending	11,379,939	0.3	4.2	4.2	9.3	-1.3	-12.6	-6.5	--	-1.9	Nov-10
<i>S&amp;P Global Leveraged Loan Index +2%</i>			0.5	0.5	6.4	3.5	6.1	5.3	--	6.2	Nov-10

## 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
Blackstone/GSO Cap Partners	8,304,861	0.2	-3.7	-3.7	-5.6	-4.0	4.7	1.6	--	8.7	Dec-10
<i>S&amp;P Global Leveraged Loan Index +2%</i>			0.5	0.5	6.4	3.5	6.1	5.3	--	6.2	Dec-10
Medley Opportunity Fund II LP	21,386,938	0.6	-4.9	-4.9	-8.6	-15.1	-5.5	-2.7	--	1.6	Mar-11
<i>S&amp;P Global Leveraged Loan Index +2%</i>			0.5	0.5	6.4	3.5	6.1	5.3	--	5.8	Mar-11
Marathon Euro Credit Opp Fund	1,873,968	0.1	3.0	3.0	10.0	16.8	15.7	12.0	--	11.4	Oct-12
<i>S&amp;P Global Leveraged Loan Index +2%</i>			0.5	0.5	6.4	3.5	6.1	5.3	--	5.7	Oct-12
Cross Ocean USD ESS Fund I, LP	6,970,493	0.2	2.1	2.1	-7.6	-10.1	3.8	4.4	--	4.7	Apr-14
<i>S&amp;P Global Leveraged Loan Index +2%</i>			0.5	0.5	6.4	3.5	6.1	5.3	--	4.9	Apr-14
Park Square Credit Opp II, LP	43,433,058	1.2	2.2	2.2	3.3	5.3	6.1	--	--	5.5	Nov-14
<i>S&amp;P Global Leveraged Loan Index +2%</i>			0.5	0.5	6.4	3.5	6.1	--	--	5.3	Nov-14
Shoreline China Value III, LP	11,278,063	0.3	-1.0	-1.0	0.4	0.0	4.8	--	--	6.4	Jul-15
<i>S&amp;P Global Leveraged Loan Index +2%</i>			0.5	0.5	6.4	3.5	6.1	--	--	5.9	Jul-15
Cross Ocean USD ESS Fund II LP	51,562,588	1.4	2.8	2.8	3.7	3.2	9.5	--	--	10.1	May-16
<i>S&amp;P Global Leveraged Loan Index +2%</i>			0.5	0.5	6.4	3.5	6.1	--	--	6.5	May-16
Octagon CLO Opp Fund III	17,206,319	0.5	-1.5	-1.5	--	--	--	--	--	3.2	Feb-19
<i>S&amp;P Global Leveraged Loan Index +2%</i>			0.5	0.5	--	--	--	--	--	3.9	Feb-19
Cross Ocean USD ESS Fund III, LP	4,799,431	0.1	0.0	0.0	--	--	--	--	--	0.0	Jun-19
<i>S&amp;P Global Leveraged Loan Index +2%</i>			0.5	0.5	--	--	--	--	--	1.4	Jun-19
<b>Private Real Estate</b>	<b>100,312,758</b>	<b>2.8</b>	<b>0.1</b>	<b>0.1</b>	<b>2.8</b>	<b>5.5</b>	<b>9.9</b>	<b>--</b>	<b>--</b>	<b>8.5</b>	<b>Jul-15</b>
<i>NCREIF ODCE Equal Weighted</i>			1.4	1.4	4.5	6.2	7.6	--	--	8.7	Jul-15

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TA Realty Associates Fund X <i>NCREIF Property Index</i>	1,780,555	0.0	11.5 1.4	11.5 1.4	21.3 4.8	26.0 6.2	16.5 6.8	15.2 8.6	-- --	13.5 9.5	Mar-13 Mar-13
Blackstone Real Estate Debt <i>NCREIF Property Index</i>	358,294	0.0	1.8 1.4	1.8 1.4	9.0 4.8	11.9 6.2	7.9 6.8	9.4 8.6	-- --	9.7 9.3	Sep-13 Sep-13
Brookfield SREP I <i>NCREIF Property Index</i>	6,966,139	0.2	-1.1 1.4	-1.1 1.4	-0.5 4.8	8.2 6.2	22.3 6.8	20.6 8.6	-- --	20.1 9.3	Sep-13 Sep-13
Tristan - EPISO III <i>NCREIF Property Index</i>	3,279,198	0.1	-5.5 1.4	-5.5 1.4	-14.3 4.8	-12.7 6.2	12.0 6.8	8.9 8.6	-- --	5.9 9.3	Dec-13 Dec-13
Orion Euro Real Estate IV LP <i>NCREIF Property Index</i>	2,936,338	0.1	-6.3 1.4	-6.3 1.4	-22.4 4.8	-31.8 6.2	-6.0 6.8	-8.1 8.6	-- --	-7.5 8.8	Apr-14 Apr-14
Och Ziff Real Estate Fund III <i>NCREIF Property Index</i>	7,761,876	0.2	3.8 1.4	3.8 1.4	12.6 4.8	18.1 6.2	27.0 6.8	14.2 8.6	-- --	14.2 8.6	Oct-14 Oct-14
Tristan - EPISO IV <i>NCREIF Property Index</i>	17,112,493	0.5	-2.6 1.4	-2.6 1.4	5.5 4.8	3.6 6.2	5.8 6.8	-- --	-- --	5.5 7.1	Dec-15 Dec-15
KSL Capital Partners IV, LP <i>NCREIF Property Index</i>	14,996,331	0.4	-0.1 1.4	-0.1 1.4	2.2 4.8	5.4 6.2	5.4 6.8	-- --	-- --	-4.4 6.9	Apr-16 Apr-16
Brookfield SREP II <i>NCREIF Property Index</i>	18,104,315	0.5	0.8 1.4	0.8 1.4	7.2 4.8	8.9 6.2	10.9 6.8	-- --	-- --	9.9 6.8	Jun-16 Jun-16
DRA Growth & Income Fund IX <i>NCREIF Property Index</i>	17,173,425	0.5	1.0 1.4	1.0 1.4	4.5 4.8	9.6 6.2	-- --	-- --	-- --	13.0 7.0	Feb-17 Feb-17

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GEM Realty Fund VI	2,740,284	0.1	-3.7	-3.7	-6.6	-8.8	--	--	--	-0.8	Nov-17
<i>NCREIF Property Index</i>			1.4	1.4	4.8	6.2	--	--	--	7.0	Nov-17
Torchlight Debt Opportunity VI	6,766,847	0.2	0.9	0.9	-13.4	2.2	--	--	--	0.0	Apr-18
<i>NCREIF Property Index</i>			1.4	1.4	4.8	6.2	--	--	--	6.5	Apr-18
Tristan - EPISO V	336,662	0.0									
<b>Private Real Assets</b>	<b>36,295,834</b>	<b>1.0</b>	<b>2.3</b>	<b>2.3</b>	<b>5.2</b>	<b>9.6</b>	<b>5.2</b>	<b>--</b>	<b>--</b>	<b>5.8</b>	<b>Jun-16</b>
Brookfield Infrastructure III	15,274,795	0.4	4.4	4.4	10.4	9.5	11.2	--	--	10.0	Jun-16
<i>DJ Brookfield Global Infrastructure Net TR USD</i>			2.5	2.5	23.8	16.5	7.8	--	--	9.3	Jun-16
Global Infra Part III-A/B, LP	16,743,817	0.5	1.4	1.4	2.2	10.3	1.3	--	--	1.3	Sep-16
<i>DJ Brookfield Global Infrastructure Net TR USD</i>			2.5	2.5	23.8	16.5	7.8	--	--	7.8	Sep-16
Lime Rock Partners VIII	3,891,840	0.1	-1.8	-1.8	0.2	--	--	--	--	0.3	Dec-18
<i>DJ Brookfield Global Infrastructure Net TR USD</i>			2.5	2.5	23.8	--	--	--	--	17.8	Dec-18
Kimmeridge Energy Fund V, L.P.	303,494	0.0									
Global Infra Partners IV	81,889	0.0									
<b>High Yield Debt</b>	<b>17,686,904</b>	<b>0.5</b>	<b>0.4</b>	<b>0.4</b>	<b>13.0</b>	<b>6.9</b>	<b>6.8</b>	<b>--</b>	<b>--</b>	<b>5.5</b>	<b>Oct-15</b>
<i>50% Bofa Global HY/50% S&amp;P Global Leveraged Loan</i>			0.2	0.2	7.4	3.6	4.7	--	--	5.8	Oct-15
Beach Point Total Ret Fund II	17,686,904	0.5	0.4	0.4	6.9	1.6	4.2	3.4	--	3.9	Oct-13
<i>BBgBarc US High Yield TR</i>			1.3	1.3	11.4	6.4	6.1	5.4	--	5.7	Oct-13

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<b>Emerging Market Debt</b>	<b>116,408,582</b>	<b>3.2</b>	<b>0.1</b>	<b>0.1</b>	<b>9.8</b>	<b>9.5</b>	<b>4.0</b>	<b>3.3</b>	<b>--</b>	<b>1.2</b>	<b>Jan-13</b>
50% JPM EMBI GD / 50% JPM GBI-EM			0.4	0.4	10.4	10.9	3.9	3.2	--	1.8	Jan-13
eV All Emg Mkts Fixed Inc Net Median			0.0	0.0	10.0	9.8	3.9	3.8	5.5	2.6	Jan-13
eV All Emg Mkts Fixed Inc Net Rank			45	45	53	56	48	56	--	60	Jan-13
BlueBay EM Select Bond	42,244,832	1.2	0.0	0.0	10.3	9.3	2.7	1.5	--	1.4	Aug-13
50% JPM EMBI GD + 50% JPM GBI EM GD			0.4	0.4	10.4	10.9	3.9	3.2	--	3.2	Aug-13
eV All Emg Mkts Fixed Inc Net Median			0.0	0.0	10.0	9.8	3.9	3.8	5.5	4.2	Aug-13
eV All Emg Mkts Fixed Inc Net Rank			49	49	45	59	77	69	--	71	Aug-13
Wellington Iguazu Partners LP Fund	74,163,750	2.0	0.2	0.2	9.5	9.7	6.3	6.8	--	7.3	Feb-14
50% JPM EMBI GD + 50% JPM GBI EM GD			0.4	0.4	10.4	10.9	3.9	3.2	--	4.0	Feb-14
eV All Emg Mkts Fixed Inc Net Median			0.0	0.0	10.0	9.8	3.9	3.8	5.5	4.6	Feb-14
eV All Emg Mkts Fixed Inc Net Rank			45	45	56	53	2	1	--	1	Feb-14
<b>Zero Beta</b>	<b>972,605,653</b>	<b>26.8</b>	<b>0.4</b>	<b>0.4</b>	<b>3.0</b>	<b>3.6</b>	<b>2.9</b>	<b>--</b>	<b>--</b>	<b>2.0</b>	<b>Jul-15</b>
Zero Beta Benchmark			0.5	0.5	1.9	2.7	0.8	--	--	0.8	Jul-15
<b>Short-Term IG Bonds</b>	<b>514,520,361</b>	<b>14.2</b>	<b>0.4</b>	<b>0.4</b>	<b>1.7</b>	<b>2.3</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>2.3</b>	<b>Oct-18</b>
BBgBarc US Govt/Credit 1-3 Yr. TR			0.7	0.7	3.4	4.6	--	--	--	4.6	Oct-18
BlackRock 1-3 Year Gov/Credit	514,518,960	14.2	--	--	--	--	--	--	--	--	Sep-19
<b>Immunized Cash Flows</b>	<b>178,715,836</b>	<b>4.9</b>	<b>0.8</b>	<b>0.8</b>	<b>3.2</b>	<b>4.6</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>4.6</b>	<b>Oct-18</b>
Immunized Cash Flow Benchmark			0.8	0.8	3.2	4.6	--	--	--	4.6	Oct-18
Insight Immunized Cash Flow	178,715,836	4.9	0.8	0.8	--	--	--	--	--	--	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>245,833,056</b>	<b>6.8</b>	<b>0.4</b>	<b>0.4</b>	<b>6.8</b>	<b>6.8</b>	<b>4.4</b>	<b>3.0</b>	<b>--</b>	<b>3.1</b>	<b>Nov-12</b>
<i>Absolute Return Benchmark</i>			0.6	0.6	1.8	2.5	0.7	1.0	--	1.2	Nov-12
<b>Macro</b>	<b>102,426,276</b>	<b>2.8</b>	<b>-1.4</b>	<b>-1.4</b>	<b>5.9</b>	<b>5.4</b>	<b>2.9</b>	<b>--</b>	<b>--</b>	<b>2.3</b>	<b>Jul-15</b>
<i>HFRI Macro (Total) Index</i>			1.8	1.8	6.8	4.3	1.3	--	--	1.1	Jul-15
Kepos Alpha Fund, Ltd	13,062,015	0.4	-3.1	-3.1	19.3	11.1	0.2	-0.1	--	0.7	Mar-13
<i>HFRI Macro: Systematic Diversified Index</i>			2.9	2.9	8.7	5.3	0.4	1.1	--	1.3	Mar-13
Keynes Lev Quant Strat, Ltd	18,120,343	0.5	6.6	6.6	24.1	28.0	8.0	--	--	5.8	Jan-16
<i>BARCLAY HEDGE BTOP 50</i>			3.7	3.7	9.2	6.9	0.3	--	--	-0.3	Jan-16
Pharo Management, Ltd	36,878,473	1.0	-4.1	-4.1	3.9	6.4	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	17,508,803	0.5	0.2	0.2	4.0	-1.1	5.7	--	--	5.6	Jul-16
<i>BARCLAY HEDGE BTOP 50</i>			3.7	3.7	9.2	6.9	0.3	--	--	-0.4	Jul-16
Systematica	16,856,643	0.5	2.4	2.4	7.9	8.5	--	--	--	5.1	Jul-17
<i>BARCLAY HEDGE BTOP 50</i>			3.7	3.7	9.2	6.9	--	--	--	3.8	Jul-17
<b>Relative Value</b>	<b>143,406,780</b>	<b>4.0</b>	<b>1.7</b>	<b>1.7</b>	<b>7.1</b>	<b>7.5</b>	<b>5.7</b>	<b>--</b>	<b>--</b>	<b>4.4</b>	<b>Jul-15</b>
<i>HFRI Relative Value (Total) Index</i>			0.1	0.1	5.6	2.0	4.0	--	--	3.5	Jul-15
Pine River Fund, Ltd	1,144,685	0.0	-1.0	-1.0	17.1	21.2	5.6	2.1	--	3.7	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	50,591,632	1.4	3.4	3.4	11.7	11.8	9.7	10.5	--	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	23,730,221	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	24,633,000	0.7	-2.3	-2.3	2.7	0.2	--	--	--	-0.6	Mar-17
HFRI Relative Value (Total) Index			0.1	0.1	5.6	2.0	--	--	--	3.2	Mar-17
Hudson Bay	43,307,242	1.2	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>33,536,399</b>	<b>0.9</b>	<b>0.6</b>	<b>0.6</b>	<b>1.7</b>	<b>2.2</b>	<b>1.6</b>	<b>1.0</b>	<b>0.8</b>	<b>8.8</b>	<b>Jul-02</b>
ICE BofAML 91 Days T-Bills TR			0.6	0.6	1.8	2.4	1.5	1.0	0.5	1.4	Jul-02
<b>Other</b>	<b>406,070,271</b>	<b>11.2</b>	<b>0.5</b>	<b>0.5</b>	<b>5.1</b>	<b>4.2</b>	<b>3.8</b>	<b>--</b>	<b>--</b>	<b>2.9</b>	<b>Jul-15</b>
Other Benchmark			0.3	0.3	4.2	3.5	2.6	--	--	2.6	Jul-15
<b>Core Real Estate</b>	<b>150,218,891</b>	<b>4.1</b>	<b>1.2</b>	<b>1.2</b>	<b>6.7</b>	<b>6.7</b>	<b>6.8</b>	<b>8.5</b>	<b>--</b>	<b>8.7</b>	<b>Sep-11</b>
NCREIF ODCE Equal Weighted (Net)			1.2	1.2	3.8	5.3	6.7	8.7	--	10.0	Sep-11
American Core Realty Fund, LLC	45,045,110	1.2	1.6	1.6	6.8	8.9	7.6	9.5	--	9.7	Sep-11
NCREIF ODCE Equal Weighted			1.4	1.4	4.5	6.2	7.6	9.6	--	10.9	Sep-11
BlackRock Core Property Fund	27,302,703	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	77,871,078	2.1	1.4	1.4	--	--	--	--	--	4.1	Mar-19
NCREIF ODCE Equal Weighted (Net)			1.2	1.2	--	--	--	--	--	3.8	Mar-19
<b>Commodities</b>	<b>72,932,360</b>	<b>2.0</b>	<b>0.1</b>	<b>0.1</b>	<b>3.7</b>	<b>-1.9</b>	<b>1.8</b>	<b>-4.6</b>	<b>--</b>	<b>-5.3</b>	<b>Apr-11</b>
Bloomberg Commodity Index TR USD			-1.8	-1.8	3.1	-6.6	-1.5	-7.2	--	-8.2	Apr-11
Credit Suisse Risk Parity	72,932,360	2.0	0.1	0.1	3.7	-1.9	2.1	-4.7	--	-4.7	Apr-11
Bloomberg Commodity Index TR USD			-1.8	-1.8	3.1	-6.6	-1.5	-7.2	--	-8.2	Apr-11

As of September 30, 2019

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<i>Custom Commodity Risk Parity Index</i>			0.4	0.4	--	--	--	--	--	--	Apr-11
<b>TIPS</b>	<b>74,576,155</b>	<b>2.1</b>	<b>0.3</b>	<b>0.3</b>	<b>4.0</b>	<b>3.5</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>3.5</b>	<b>Oct-18</b>
<i>BBgBarc US Treasury TIPS 0-5 Yr TR</i>			0.3	0.3	3.7	3.4	--	--	--	3.4	Oct-18
Northern Trust 0-5 Year TIPS	74,576,155	2.1	0.3	0.3	4.0	3.5	--	--	--	3.5	Oct-18
<i>BBgBarc U.S. TIPS 0-5 Years</i>			0.3	0.3	3.7	3.4	--	--	--	3.4	Oct-18
<b>Sovereign Bonds ex-US</b>	<b>108,342,865</b>	<b>3.0</b>	<b>-0.1</b>	<b>-0.1</b>	<b>3.3</b>	<b>3.3</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>3.3</b>	<b>Oct-18</b>
<i>FTSE WGBI ex US TR</i>			-0.1	-0.1	5.4	6.8	--	--	--	6.8	Oct-18
Northern Trust FTSE WGBI ex US	108,342,865	3.0	-0.1	-0.1	--	--	--	--	--	--	Oct-18
<i>FTSE WGBI ex US TR</i>			-0.1	-0.1	--	--	--	--	--	--	Oct-18
<b>Overlay</b>	<b>6,261,201</b>	<b>0.2</b>									
Russell Overlay	6,160,359	0.2									

<sup>1</sup> Cash composite includes the cash account 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
57 Stars Global Opportunity	\$30,477,120	\$78,122	-\$58,384	\$19,738	\$258,408	\$30,755,266
AHL Partners LLP	\$17,475,391	\$0	\$0	\$0	\$33,411	\$17,508,803
American Core Realty Fund, LLC	\$56,030,594	\$0	-\$11,937,558	-\$11,937,558	\$952,074	\$45,045,110
ArrowMark Co-Investment	\$10,333,592	\$0	-\$10,323,379	-\$10,323,379	-\$10,213	\$0
Artisan Global Opportunities	\$189,963,542	\$0	\$0	\$0	\$871,392	\$190,834,934
Artisan Global Value	\$214,925,782	\$5,933,968	-\$5,933,969	-\$1	-\$779,380	\$214,146,401
Beach Point Total Ret Fund II	\$35,177,179	\$0	-\$17,648,562	-\$17,648,562	\$158,287	\$17,686,904
BlackRock 1-3 Year Gov/Credit	--	\$515,000,000	\$0	\$515,000,000	-\$481,040	\$514,518,960
BlackRock 3-Month T-Bill	\$683,813,826	\$32,000,000	-\$719,229,258	-\$687,229,258	\$3,416,834	\$1,401
BlackRock Core Property Fund	\$13,820,315	\$13,625,000	-\$165,775	\$13,459,225	\$23,163	\$27,302,703
Blackstone Real Estate Debt	\$366,622	\$0	-\$17,008	-\$17,008	\$8,680	\$358,294
Blackstone/GSO Cap Partners	\$8,625,271	\$0	\$0	\$0	-\$320,410	\$8,304,861
BlueBay EM Select Bond	\$42,244,999	\$0	\$0	\$0	-\$167	\$42,244,832
Brookfield Infrastructure III	\$14,704,437	\$0	-\$136,484	-\$136,484	\$706,842	\$15,274,795
Brookfield SREP I	\$6,964,500	\$100,018	-\$77,078	\$22,940	-\$21,301	\$6,966,139
Brookfield SREP II	\$17,406,719	\$573,885	-\$93,743	\$480,142	\$217,454	\$18,104,315
Cash	\$25,776,895	\$927,588,906	-\$919,987,697	\$7,601,209	\$158,295	\$33,536,399
CCMP Capital Investors III, LP	\$21,016,062	\$0	-\$4,210,330	-\$4,210,330	\$534,543	\$17,340,275
Clarion Lion Properties Fund	\$77,357,934	\$0	-\$754,272	-\$754,272	\$1,267,416	\$77,871,078
Comgest Global EM Promising Co	\$33,088,630	\$0	-\$32,568,759	-\$32,568,759	-\$519,871	--
Cove Street Small Cap Value	\$25,384,158	\$49,185	-\$49,185	\$0	-\$1,003,246	\$24,380,912
Credit Suisse Risk Parity	\$72,838,044	\$0	-\$75,001	-\$75,001	\$169,317	\$72,932,360
Crescent Mezzanine Partners VI	\$7,563,456	\$0	-\$601,732	-\$601,732	\$203,314	\$7,165,038
Crestline Portfolio Financing	\$8,529,380	\$1,338,108	-\$42,638	\$1,295,470	\$178,003	\$10,002,853
Cross Ocean USD ESS Fund I, LP	\$6,826,266	\$0	\$0	\$0	\$144,227	\$6,970,493
Cross Ocean USD ESS Fund II LP	\$50,143,403	\$0	-\$133,841	-\$133,841	\$1,553,026	\$51,562,588

## Total Fund Aggregate

As of September 30, 2019

	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Net Investment Change	Ending Market Value
Cross Ocean USD ESS Fund III, LP	\$4,800,000	\$0	-\$11,836	-\$11,836	\$11,267	\$4,799,431
DE Shaw Composite Fund, LLC	\$48,915,177	\$0	-\$315,131	-\$315,131	\$1,991,586	\$50,591,632
Dimensional Fund Adv EM Value	\$69,237,509	\$0	\$0	\$0	-\$4,834,609	\$64,402,900
DRA Growth & Income Fund IX	\$15,513,287	\$2,093,909	-\$678,413	\$1,415,496	\$244,642	\$17,173,425
Dymon Asia Macro Fund, Ltd	\$27,157,301	\$0	-\$26,606,216	-\$26,606,216	-\$551,085	--
Francisco Partners	\$17,539,997	\$0	-\$46,131	-\$46,131	\$1,948,757	\$19,442,622
GEM Realty Fund VI	\$1,298,181	\$1,500,000	-\$67,500	\$1,432,500	\$9,603	\$2,740,284
Global Infra Part III-A/B, LP	\$16,219,119	\$293,507	-\$83,278	\$210,229	\$314,468	\$16,743,817
Global Infra Partners IV	--	\$81,889	\$0	\$81,889	\$0	\$81,889
GQG Global Emerging Markets	\$70,117,295	\$0	-\$86,171	-\$86,171	-\$2,694,491	\$67,336,633
HarbourVest Dover Street IX	\$18,386,243	\$1,500,000	-\$69,699	\$1,430,301	\$1,159,564	\$20,976,108
HarbourVest Partners VII	\$772,981	\$0	-\$222,750	-\$222,750	-\$14,344	\$535,887
HarbourVest Partners VIII	\$9,868,415	\$0	-\$793,933	-\$793,933	\$511,533	\$9,586,015
Hudson Bay	\$42,029,218	\$0	\$0	\$0	\$1,278,024	\$43,307,242
Industry Ventures Partnership	\$20,978,980	\$0	\$0	\$0	\$3,604,936	\$24,583,916
Innovation Endeavors III	\$1,315,655	\$0	\$0	\$0	-\$27,444	\$1,288,211
Insight Immunized Cash Flow	\$178,976,301	\$4,901,179	-\$6,597,377	-\$1,696,198	\$1,435,733	\$178,715,836
JD Capital	\$23,686,962	\$0	-\$90,206	-\$90,206	\$133,465	\$23,730,221
Kepos Alpha Fund, Ltd	\$13,481,605	\$0	-\$53,597	-\$53,597	-\$365,993	\$13,062,015
Keynes Lev Quant Strat, Ltd	\$16,999,028	\$0	-\$140,130	-\$140,130	\$1,261,445	\$18,120,343
Kimmeridge Energy Fund V, L.P.	--	\$303,494	\$0	\$303,494	\$0	\$303,494
KSL Capital Partners IV, LP	\$14,703,109	\$303,849	-\$64,676	\$239,173	\$54,049	\$14,996,331
Lime Rock Partners VIII	\$3,755,200	\$206,636	-\$30,500	\$176,136	-\$39,496	\$3,891,840
Liquidating - Russell MSCI EAFE + CAD	\$195,439	\$286	-\$195,724	-\$195,438	-\$1	--
Marathon Euro Credit Opp Fund	\$1,818,663	\$0	\$0	\$0	\$55,305	\$1,873,968
Marshall Wace Eureka Fund	\$46,056,942	\$0	-\$176,866	-\$176,866	\$527,233	\$46,407,309
Medley Opportunity Fund II LP	\$22,496,914	\$0	-\$60,245	-\$60,245	-\$1,049,732	\$21,386,938

## Total Fund Aggregate

As of September 30, 2019

	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Net Investment Change	Ending Market Value
Northern Tr Russell 2000 Value	\$19,700,292	\$0	\$0	\$0	-\$117,054	\$19,583,238
Northern Trust 0-5 Year TIPS	\$74,351,332	\$0	\$0	\$0	\$224,822	\$74,576,155
Northern Trust FTSE WGBI ex US	\$108,459,818	\$1,549,505	-\$1,549,505	\$0	-\$116,953	\$108,342,865
Northern Trust MSCI EM IMI	\$131,261,306	\$49,400,000	\$0	\$49,400,000	-\$6,755,761	\$173,905,545
Northern Trust MSCI World ex US	\$92,267,488	\$81,200,000	\$0	\$81,200,000	\$1,516,132	\$174,983,619
Northern Trust Russell 1000	\$139,734,918	\$0	\$0	\$0	\$1,988,987	\$141,723,904
Northern Trust Russell 3000	\$231,896,891	\$0	-\$11,000,000	-\$11,000,000	\$2,754,297	\$223,651,188
Oberweis Intl Opportunities	\$50,848,593	\$24,061,476	-\$24,061,476	\$0	-\$2,055,201	\$48,793,392
Och Ziff Real Estate Fund III	\$7,713,009	\$0	-\$244,043	-\$244,043	\$292,910	\$7,761,876
Octagon CLO Opp Fund III	\$12,936,160	\$5,000,000	-\$496,968	\$4,503,032	-\$232,873	\$17,206,319
Orion Euro Real Estate IV LP	\$3,161,583	\$0	-\$27,617	-\$27,617	-\$197,629	\$2,936,338
Pantheon USA Fund VI, LP	\$8,860,883	\$0	-\$1,278,276	-\$1,278,276	\$286,784	\$7,869,390
Park Square Credit Opp II, LP	\$43,251,707	\$0	-\$902,457	-\$902,457	\$1,083,808	\$43,433,058
PE Strategic Partnership, LP	\$51,697,849	\$23,275,000	-\$105,000	\$23,170,000	\$2,188,951	\$77,056,800
Pharo Management, Ltd	\$38,444,724	\$0	\$0	\$0	-\$1,566,251	\$36,878,473
Pine River Fund, Ltd	\$1,324,847	\$0	-\$169,746	-\$169,746	-\$10,417	\$1,144,685
Pine River Volatility Arb	\$25,200,250	\$0	-\$21,039	-\$21,039	-\$546,211	\$24,633,000
Portfolio Advisors Private Eq	\$4,174,937	\$0	\$0	\$0	-\$33,621	\$4,141,316
Russell Overlay	\$6,173,317	\$0	\$0	\$0	-\$12,958	\$6,160,359
RWC Emerging Markets Equity	--	\$40,000,000	\$0	\$40,000,000	\$1,089,800	\$41,089,800
Sandler Plus Offshore Fund Ltd	\$22,636,330	\$0	\$0	\$0	\$624,420	\$23,260,750
Senator Global Opportunity, L.P.	\$23,227,261	\$0	-\$7,301,871	-\$7,301,871	\$4,892	\$15,930,282
Shoreline China Value III, LP	\$12,091,332	\$0	-\$724,334	-\$724,334	-\$88,935	\$11,278,063
Siguler Guff Distressed	\$4,577,242	\$0	-\$68,288	-\$68,288	\$119,496	\$4,628,449
Systematica	\$16,454,566	\$0	\$0	\$0	\$402,078	\$16,856,643
TA Realty Associates Fund X	\$4,625,965	\$0	-\$3,362,621	-\$3,362,621	\$517,211	\$1,780,555
TCW/Crescent Mezzanine	\$477,109	\$0	-\$3,434	-\$3,434	\$44,005	\$517,680

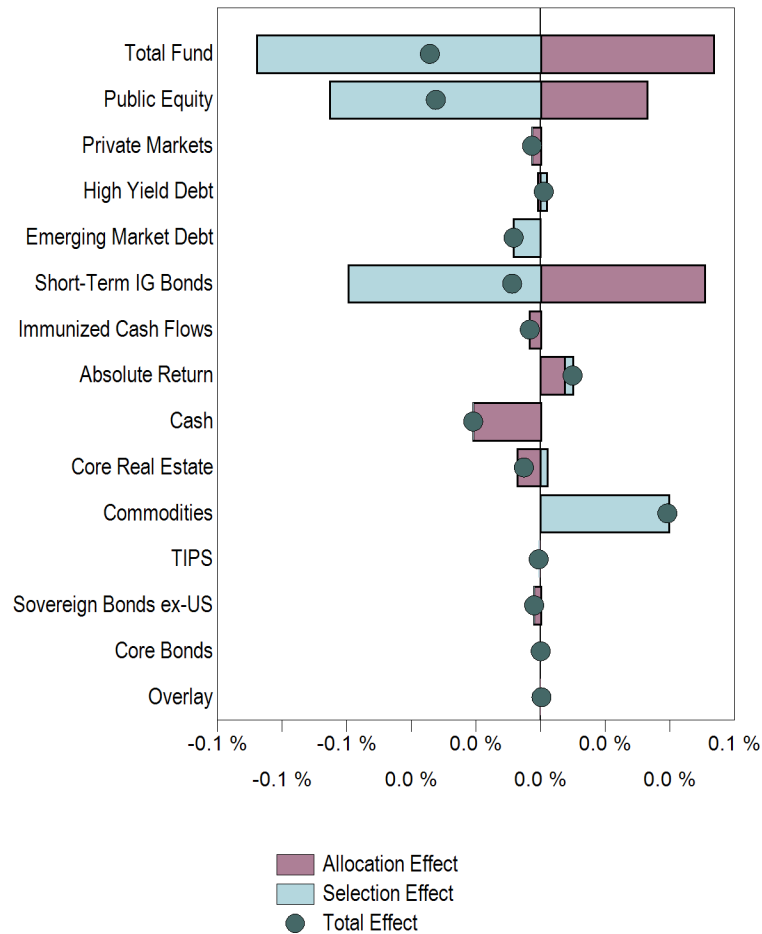
## Total Fund Aggregate

As of September 30, 2019

	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Net Investment Change	Ending Market Value
Terminated Manager Assets	\$94,540	\$650	-\$1,300	-\$650	\$6,952	\$100,843
Torchlight Debt Opportunity VI	\$9,061,241	\$0	-\$2,456,407	-\$2,456,407	\$162,014	\$6,766,847
TPG Opportunities Partners II	\$1,831,016	\$0	-\$4,761	-\$4,761	\$3,905	\$1,830,160
TPG Opportunities Partners III	\$8,197,341	\$0	-\$312,267	-\$312,267	\$11,028	\$7,896,102
Tristan - EPI SO III	\$3,836,032	\$347,434	-\$714,313	-\$366,879	-\$189,955	\$3,279,198
Tristan - EPI SO IV	\$16,043,794	\$1,512,752	-\$59,921	\$1,452,831	-\$384,132	\$17,112,493
Tristan - EPI SO V	\$54,446	\$409,493	-\$99,879	\$309,614	-\$27,398	\$336,662
Warburg Pincus (Europa) XI	\$17,943,997	\$0	-\$1,383,780	-\$1,383,780	\$359,891	\$16,920,108
Wellington Emerging Markets Systematic	--	\$80,000,000	\$0	\$80,000,000	\$762,815	\$80,762,815
Wellington Iguazu Partners LP Fund	\$74,032,600	\$0	\$0	\$0	\$131,150	\$74,163,750
White Oak Direct Lending	\$10,942,420	\$0	-\$20,930	-\$20,930	\$458,450	\$11,379,939
<b>Total</b>	<b>\$3,634,760,774</b>	<b>\$1,814,228,250</b>	<b>-\$1,816,805,265</b>	<b>-\$2,577,015</b>	<b>\$15,382,924</b>	<b>\$3,647,566,683</b>

As of September 30, 2019

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



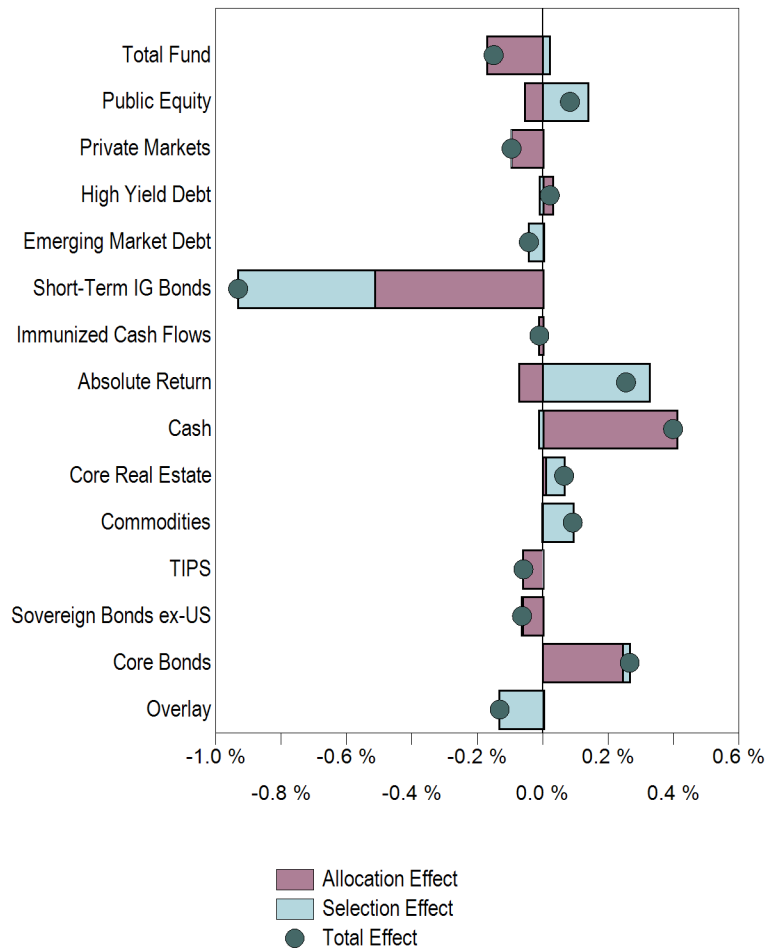
### Attribution Summary 3 Months Ending September 30, 2019

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Total Effects
Public Equity	-1.3%	-1.1%	-0.2%	-0.1%	0.0%	0.0%
Private Markets	2.0%	2.0%	0.0%	0.0%	0.0%	0.0%
High Yield Debt	0.4%	0.2%	0.2%	0.0%	0.0%	0.0%
Emerging Market Debt	0.1%	0.4%	-0.3%	0.0%	0.0%	0.0%
Short-Term IG Bonds	0.4%	0.7%	-0.3%	-0.1%	0.1%	0.0%
Immunized Cash Flows	0.8%	0.8%	0.0%	0.0%	0.0%	0.0%
Absolute Return	0.4%	0.6%	-0.1%	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%	0.1%	0.0%	0.0%	0.0%
Commodities	0.1%	-1.8%	2.0%	0.0%	0.0%	0.0%
TIPS	0.3%	0.3%	0.0%	0.0%	0.0%	0.0%
Sovereign Bonds ex-US	-0.1%	-0.1%	0.0%	0.0%	0.0%	0.0%
Core Bonds	--	--	--	--	0.0%	--
Overlay	--	--	--	--	0.0%	--
<b>Total</b>	<b>0.3%</b>	<b>0.4%</b>	<b>0.0%</b>	<b>-0.1%</b>	<b>0.1%</b>	<b>0.0%</b>

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

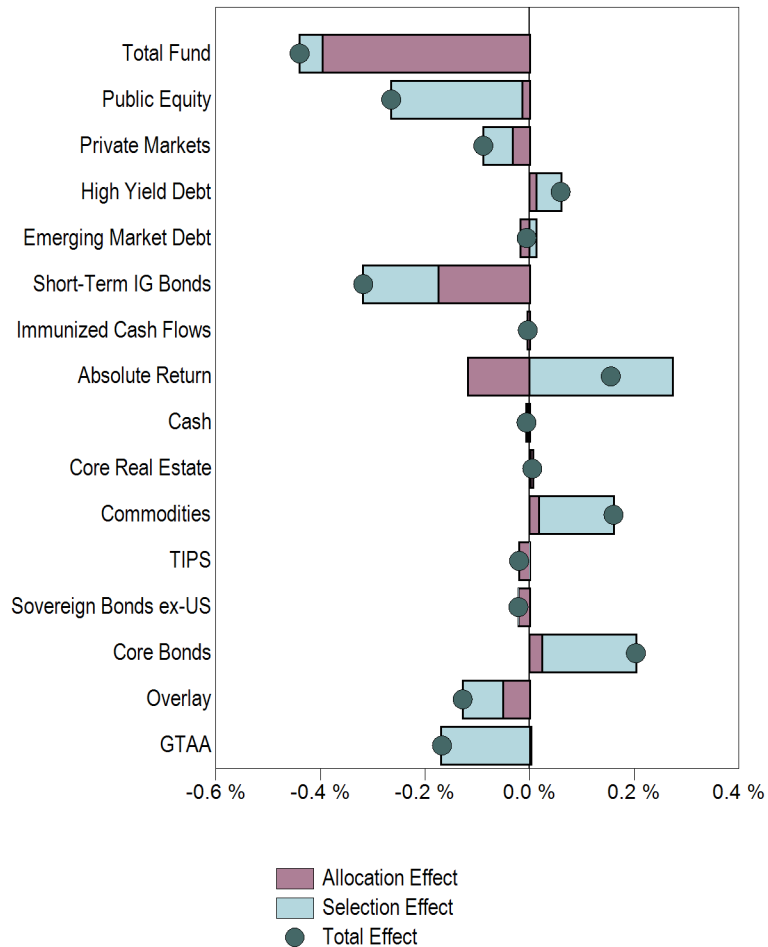


**Attribution Summary**  
1 Year Ending September 30, 2019

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Total Effects
Public Equity	0.7%	0.1%	0.6%	0.1%	-0.1%	0.1%
Private Markets	5.3%	5.3%	0.0%	0.0%	-0.1%	-0.1%
High Yield Debt	6.9%	3.6%	3.3%	0.0%	0.0%	0.0%
Emerging Market Debt	9.5%	10.9%	-1.4%	0.0%	0.0%	0.0%
Short-Term IG Bonds	2.3%	4.6%	-2.3%	-0.4%	-0.5%	-0.9%
Immunized Cash Flows	4.6%	4.6%	0.0%	0.0%	0.0%	0.0%
Absolute Return	6.8%	2.5%	4.3%	0.3%	-0.1%	0.3%
Cash	2.2%	2.4%	-0.2%	0.0%	0.4%	0.4%
Core Real Estate	6.7%	5.3%	1.4%	0.1%	0.0%	0.1%
Commodities	-1.9%	-6.6%	4.7%	0.1%	0.0%	0.1%
TIPS	3.5%	3.4%	0.1%	0.0%	-0.1%	-0.1%
Sovereign Bonds ex-US	3.3%	6.8%	-3.5%	0.0%	-0.1%	-0.1%
Core Bonds	--	3.4%	--	0.0%	0.2%	0.3%
Overlay	--	1.2%	--	-0.1%	0.0%	-0.1%
<b>Total</b>	<b>3.4%</b>	<b>3.5%</b>	<b>-0.2%</b>	<b>0.0%</b>	<b>-0.2%</b>	<b>-0.1%</b>

As of September 30, 2019

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



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

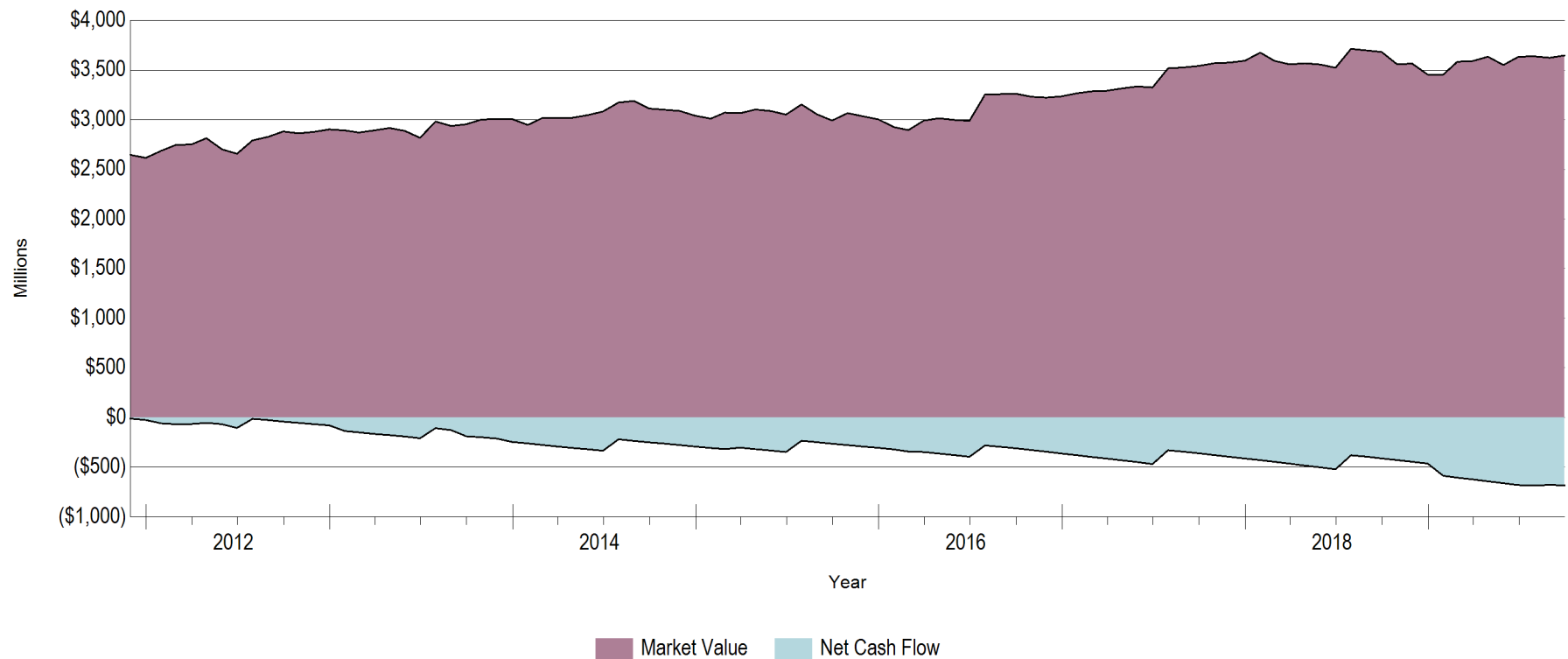
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Total Effects
Public Equity	8.5%	9.2%	-0.7%	-0.2%	0.0%	-0.3%
Private Markets	8.1%	8.5%	-0.4%	-0.1%	0.0%	-0.1%
High Yield Debt	6.8%	4.7%	2.0%	0.0%	0.0%	0.1%
Emerging Market Debt	4.0%	3.9%	0.1%	0.0%	0.0%	0.0%
Short-Term IG Bonds	--	1.5%	--	-0.1%	-0.2%	-0.3%
Immunized Cash Flows	--	--	--	0.0%	0.0%	0.0%
Absolute Return	4.4%	0.7%	3.7%	0.3%	-0.1%	0.2%
Cash	1.6%	1.5%	0.0%	0.0%	0.0%	0.0%
Core Real Estate	6.8%	6.7%	0.1%	0.0%	0.0%	0.0%
Commodities	1.8%	-1.5%	3.3%	0.1%	0.0%	0.2%
TIPS	--	1.1%	--	0.0%	0.0%	0.0%
Sovereign Bonds ex-US	--	2.2%	--	0.0%	0.0%	0.0%
Core Bonds	--	0.3%	--	0.2%	0.0%	0.2%
Overlay	--	1.2%	--	-0.1%	-0.1%	-0.1%
GTAA	--	--	--	-0.2%	0.0%	-0.2%
<b>Total</b>	<b>6.0%</b>	<b>6.4%</b>	<b>-0.4%</b>	<b>0.0%</b>	<b>-0.4%</b>	<b>-0.4%</b>

## Total Fund Asset Growth Summary

As of September 30, 2019

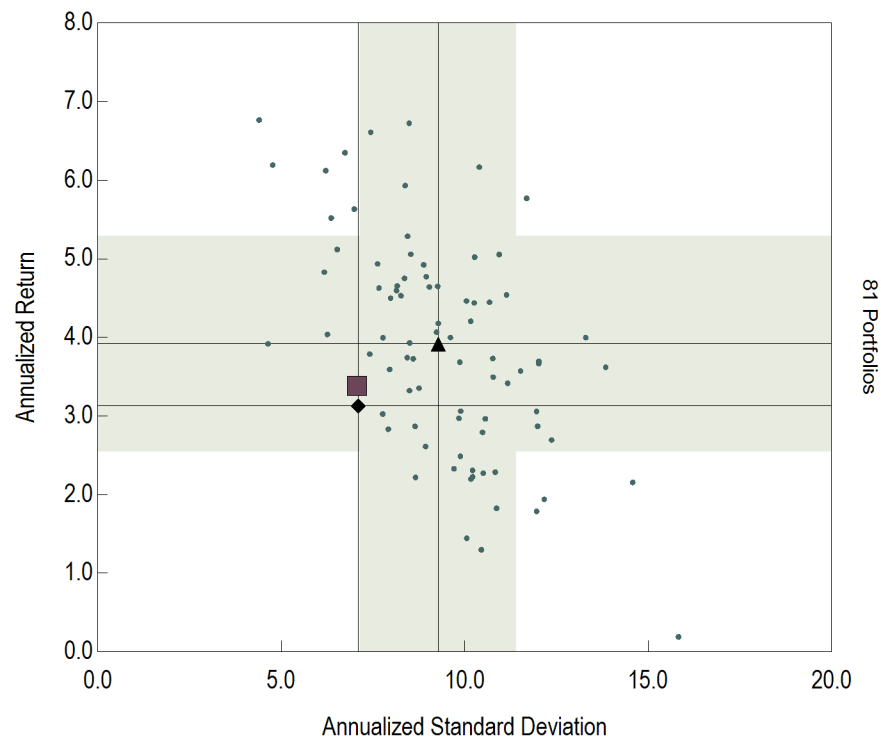
## Market Value History

7 Years 11 Months Ending September 30, 2019



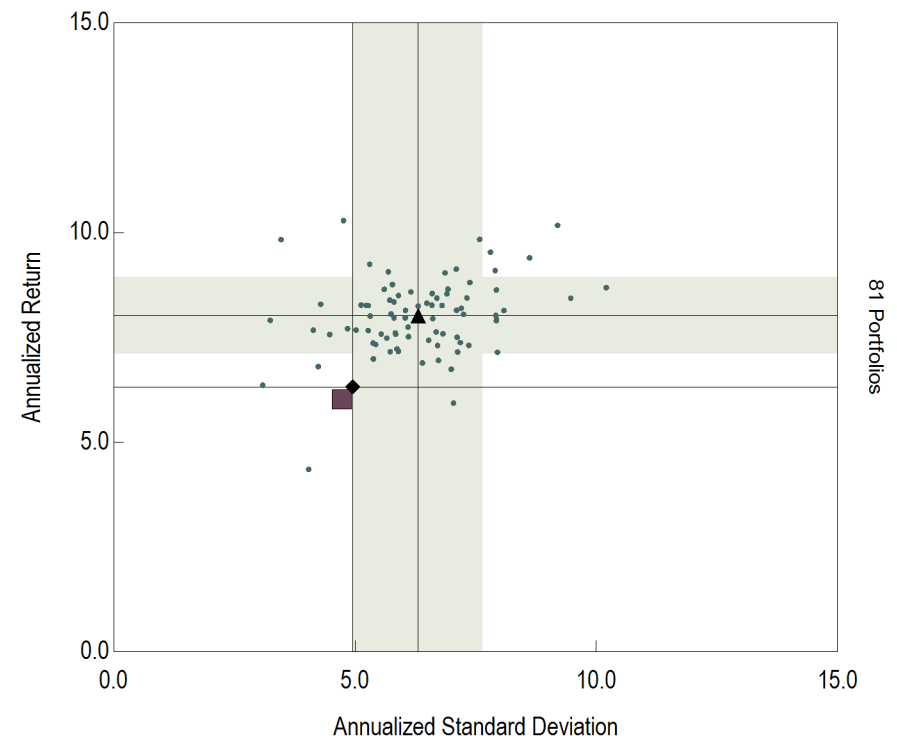
	Quarter-To-Date	One Year	Three Years	Five Years
Beginning Market Value	\$3,634,760,774	\$3,682,678,461	\$3,262,498,501	\$3,112,581,280
Net Cash Flow	-\$2,934,161	-\$271,674,391	-\$373,607,280	-\$433,380,454
Net Investment Change	\$15,740,070	\$236,562,614	\$758,675,462	\$968,365,857
Ending Market Value	\$3,647,566,683	\$3,647,566,683	\$3,647,566,683	\$3,647,566,683

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



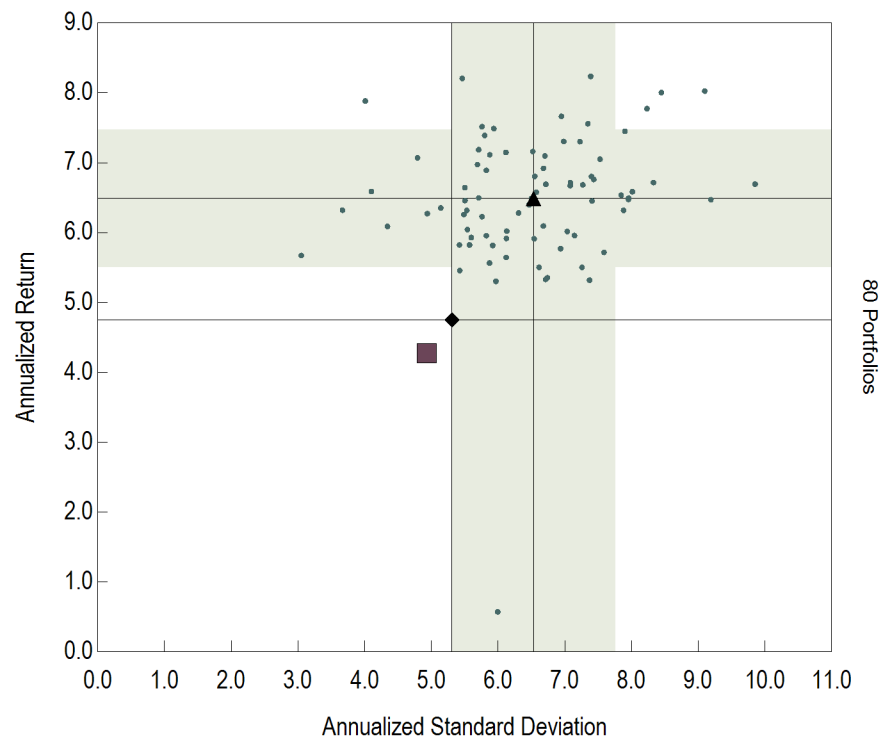
- Total Fund
- ◆ Policy Benchmark
- ▲ Universe Median
- 68% Confidence Interval
- InvMetrics Public DB > \$1B Gross

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



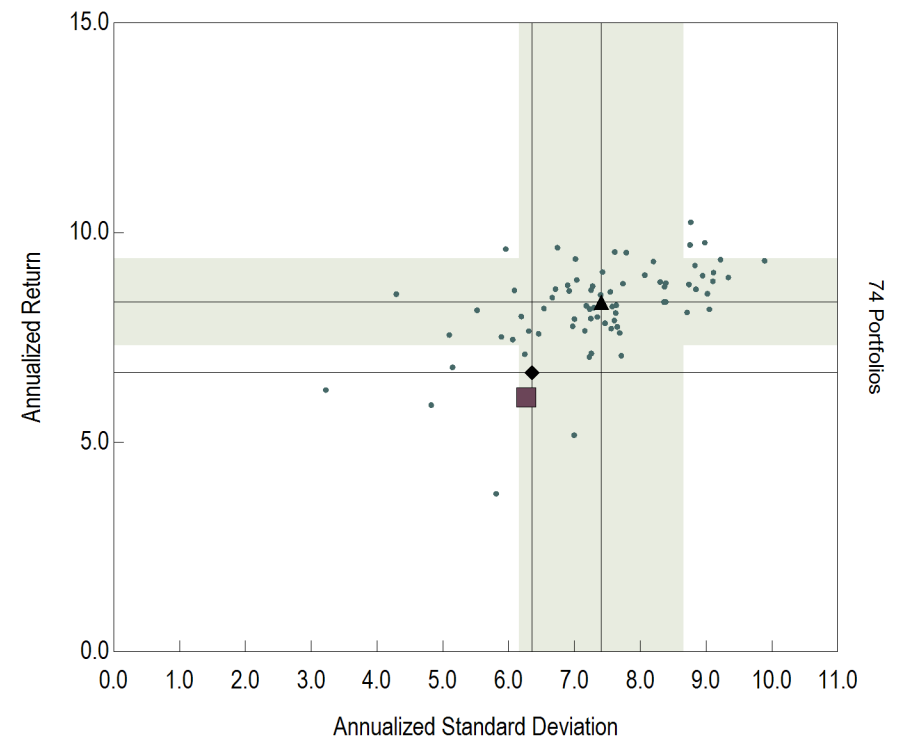
- Total Fund
- ◆ Policy Benchmark
- ▲ Universe Median
- 68% Confidence Interval
- InvMetrics Public DB > \$1B Gross

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



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

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

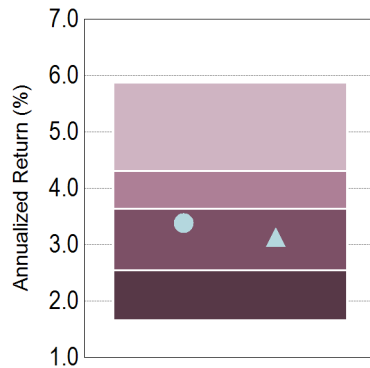


- Total Fund
- ◆ Policy Benchmark
- ▲ Universe Median
- 68% Confidence Interval
- InvMetrics Public DB > \$1B Gross

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

As of September 30, 2019

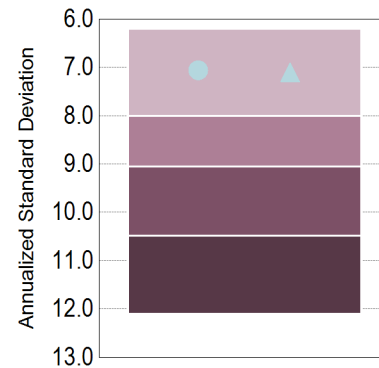
## Annualized Return (%) vs. InvMetrics Public DB > \$1B Net



● Total Fund	
Value	3.4
Rank	58
▲ Policy Benchmark	
Value	3.1
Rank	62

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

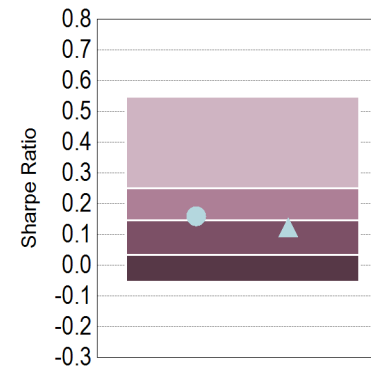
## Annualized Standard Deviation vs. InvMetrics Public DB > \$1B Net



● Total Fund	
Value	7.1
Rank	12
▲ Policy Benchmark	
Value	7.1
Rank	12

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

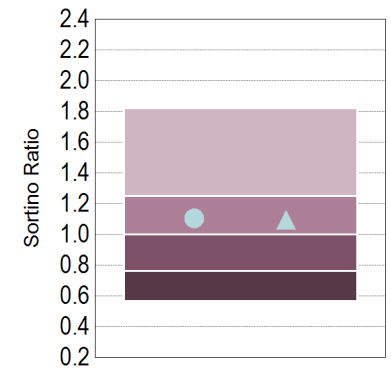
## Sharpe Ratio vs. InvMetrics Public DB > \$1B Net



● Total Fund	
Value	0.2
Rank	48
▲ Policy Benchmark	
Value	0.1
Rank	55

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



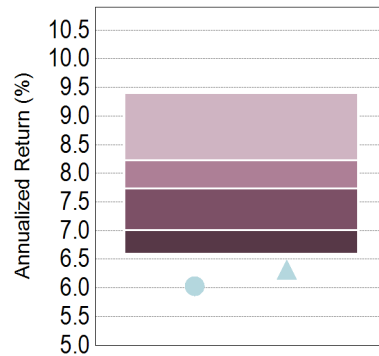
● Total Fund	
Value	1.1
Rank	38
▲ Policy Benchmark	
Value	1.1
Rank	39

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

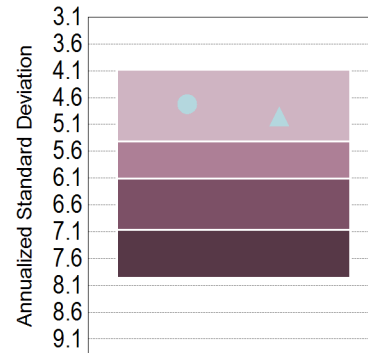
## Annualized Return (%) vs. InvMetrics Public DB > \$1B Net



● Total Fund	
Value	6.0
Rank	98
▲ Policy Benchmark	
Value	6.3
Rank	97

Universe	
5th %tile	9.4
25th %tile	8.2
Median	7.7
75th %tile	7.0
95th %tile	6.6

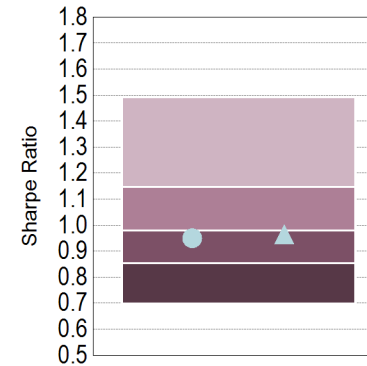
## Annualized Standard Deviation vs. InvMetrics Public DB > \$1B Net



● Total Fund	
Value	4.7
Rank	10
▲ Policy Benchmark	
Value	4.9
Rank	13

Universe	
5th %tile	4.1
25th %tile	5.4
Median	6.1
75th %tile	7.0
95th %tile	7.9

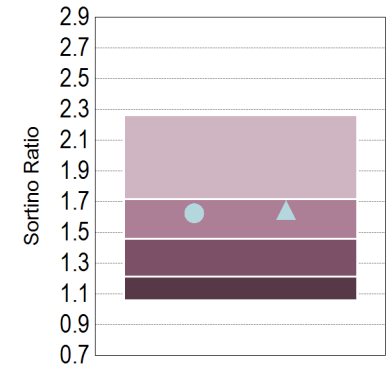
## Sharpe Ratio vs. InvMetrics Public DB > \$1B Net



● Total Fund	
Value	0.9
Rank	54
▲ Policy Benchmark	
Value	1.0
Rank	52

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



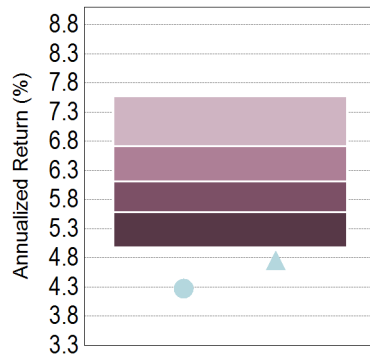
● Total Fund	
Value	1.6
Rank	35
▲ Policy Benchmark	
Value	1.6
Rank	34

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

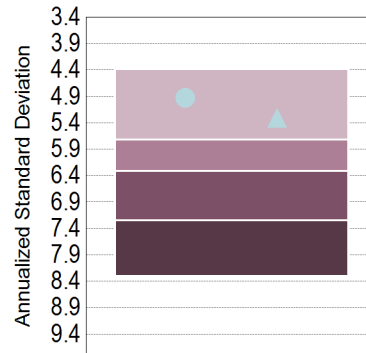
## Annualized Return (%) vs. InvMetrics Public DB > \$1B Net



● Total Fund	
Value	4.3
Rank	98
▲ Policy Benchmark	
Value	4.8
Rank	98

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

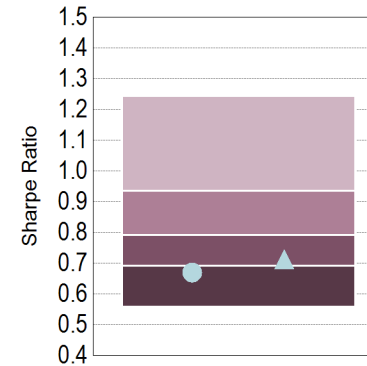
## Annualized Standard Deviation vs. InvMetrics Public DB > \$1B Net



● Total Fund	
Value	4.9
Rank	8
▲ Policy Benchmark	
Value	5.3
Rank	10

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

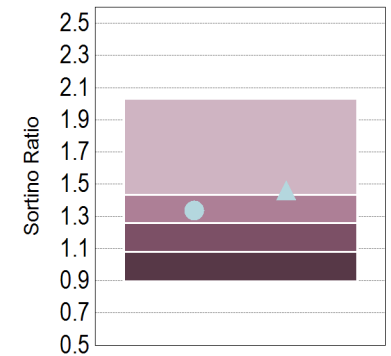
## Sharpe Ratio vs. InvMetrics Public DB > \$1B Net



● Total Fund	
Value	0.7
Rank	84
▲ Policy Benchmark	
Value	0.7
Rank	71

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



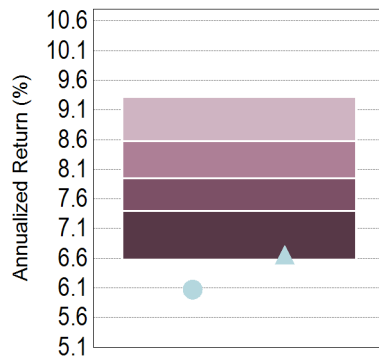
● Total Fund	
Value	1.3
Rank	40
▲ Policy Benchmark	
Value	1.5
Rank	23

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

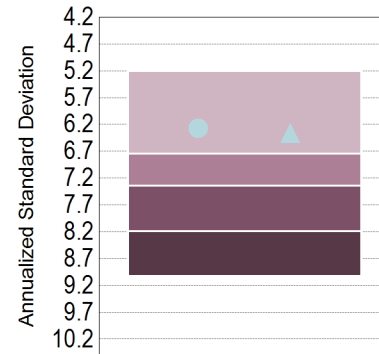
## Annualized Return (%) vs. InvMetrics Public DB > \$1B Net



● Total Fund	
Value	6.1
Rank	97
▲ Policy Benchmark	
Value	6.7
Rank	94

Universe	
5th %tile	9.3
25th %tile	8.6
Median	8.0
75th %tile	7.4
95th %tile	6.6

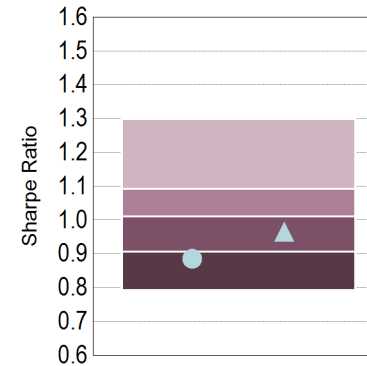
## Annualized Standard Deviation vs. InvMetrics Public DB > \$1B Net



● Total Fund	
Value	6.3
Rank	17
▲ Policy Benchmark	
Value	6.4
Rank	19

Universe	
5th %tile	5.2
25th %tile	6.7
Median	7.3
75th %tile	8.2
95th %tile	9.0

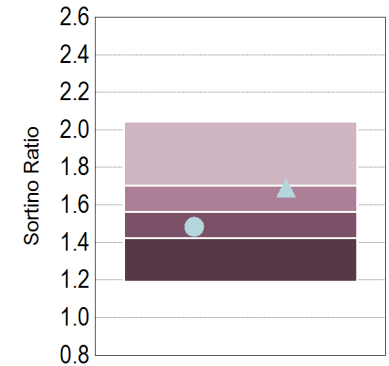
## Sharpe Ratio vs. InvMetrics Public DB > \$1B Net



● Total Fund	
Value	0.9
Rank	88
▲ Policy Benchmark	
Value	1.0
Rank	63

Universe	
5th %tile	1.3
25th %tile	1.1
Median	1.0
75th %tile	0.9
95th %tile	0.8

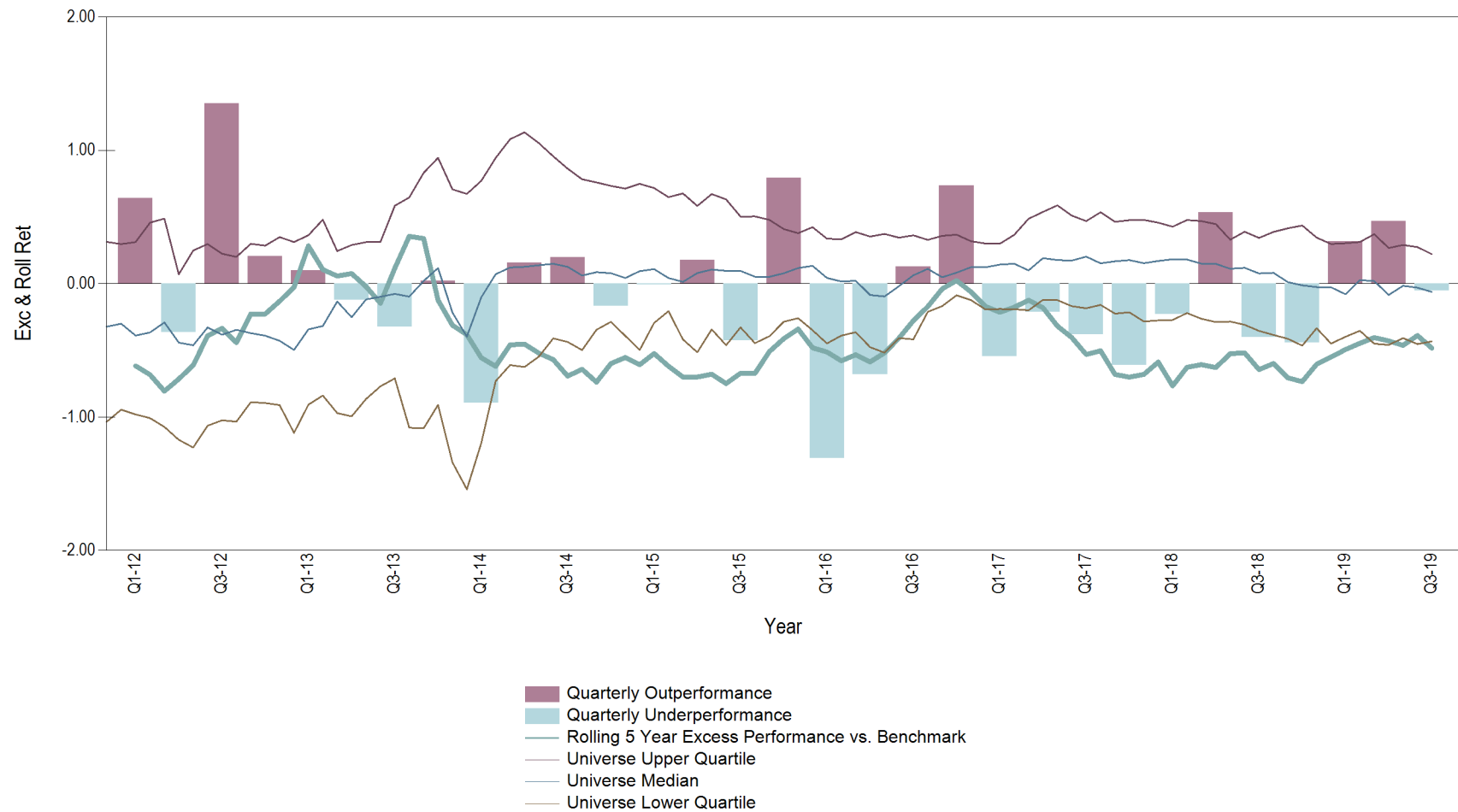
## Sortino Ratio vs. InvMetrics Public DB > \$1B Net



● Total Fund	
Value	1.5
Rank	67
▲ Policy Benchmark	
Value	1.7
Rank	30

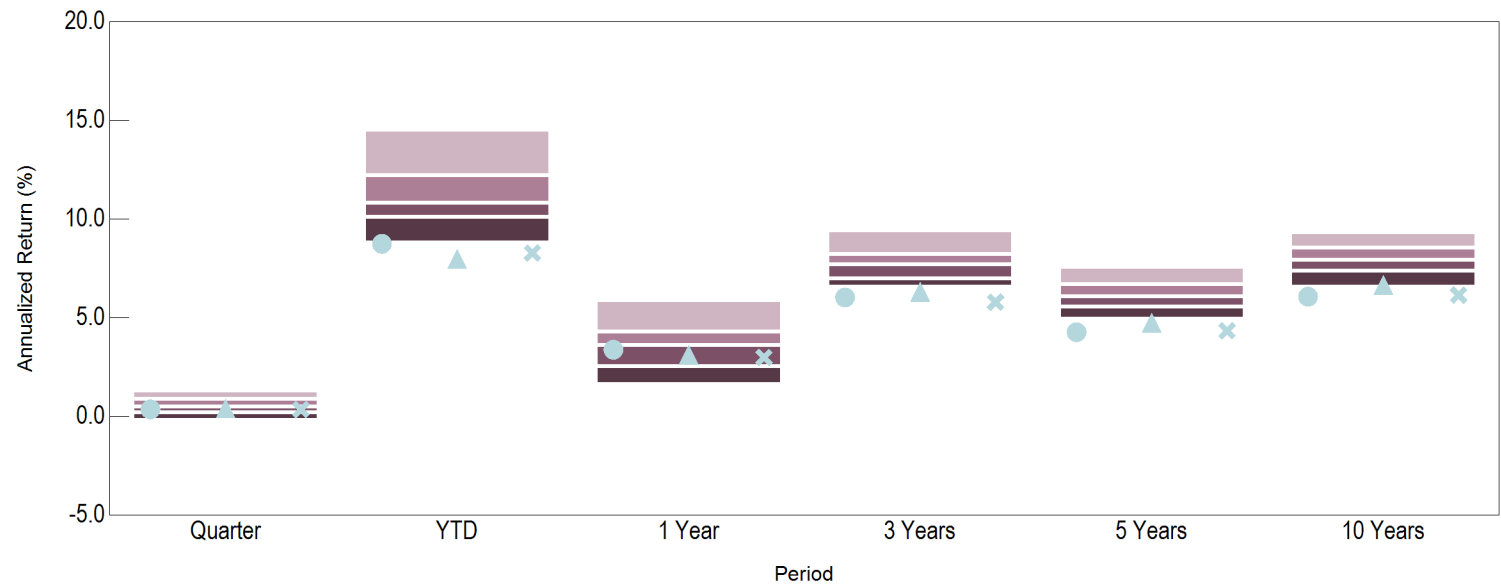
Universe	
5th %tile	2.0
25th %tile	1.7
Median	1.6
75th %tile	1.4
95th %tile	1.2

Rolling Annualized Excess Performance



As of September 30, 2019

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

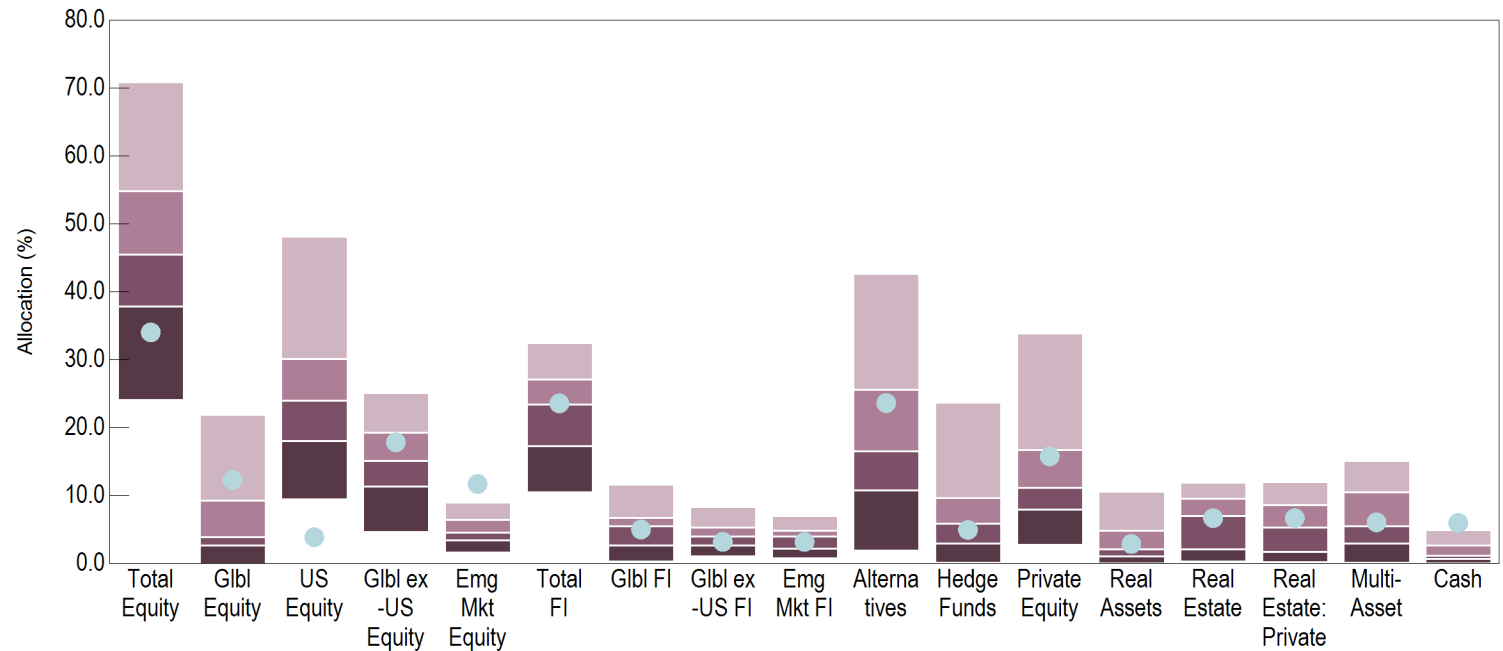


		Return (Rank)											
5th Percentile		1.3		14.5		5.9		9.4		7.6		9.3	
25th Percentile		0.9		12.2		4.3		8.2		6.7		8.6	
Median		0.5		10.8		3.6		7.7		6.1		8.0	
75th Percentile		0.2		10.1		2.6		7.0		5.6		7.4	
95th Percentile		-0.2		8.9		1.7		6.6		5.0		6.6	
# of Portfolios		71		71		71		71		69		63	
●	Total Fund	0.4	(64)	8.7	(96)	3.4	(58)	6.0	(98)	4.3	(98)	6.1	(97)
▲	Policy Benchmark	0.4	(60)	8.0	(97)	3.1	(62)	6.3	(97)	4.8	(98)	6.7	(94)
✕	Investable Benchmark Portfolio	0.3	(64)	8.3	(97)	3.0	(65)	5.8	(98)	4.3	(98)	6.2	(96)

<sup>1</sup> Fiscal Year begins July 1.

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	11.6	8.4	7.0	42.6	23.7	33.9	10.6	11.9	12.0	15.1	4.9	--
25th Percentile	55.0	9.4	30.2	19.3	6.5	27.2	6.8	5.4	5.0	25.7	9.7	16.8	5.0	9.7	8.7	10.6	2.7	--
Median	45.6	4.0	24.1	15.2	4.7	23.5	5.6	4.1	4.1	16.6	6.0	11.2	2.2	7.1	5.4	5.6	1.3	--
75th Percentile	37.9	2.8	18.1	11.4	3.5	17.3	2.8	2.8	2.3	10.9	3.1	8.0	1.1	2.2	1.8	3.0	0.7	--
95th Percentile	24.2	0.1	9.5	4.8	1.7	10.6	0.4	1.1	0.8	2.0	0.2	2.8	0.2	0.4	0.3	0.2	0.2	--
# of Portfolios	54	24	43	52	39	54	23	28	25	52	35	48	24	49	46	26	54	--
Total Fund Rank	34.0	12.3	3.9	17.9	11.7	23.6	5.0	3.2	3.2	23.6	5.0	15.8	2.9	6.7	6.7	6.1	6.0	--
	82	16	99	35	1	50	60	73	66	31	69	30	44	53	45	48	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
US Equity					
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
International Equity					
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
Fixed Income					
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
Real Estate					
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
Alternatives					
HFRI Fund of Funds Composite Index	-0.9	0.0	3.2	1.9	2.7
Inflation					
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	100.00%	6.03%	98	4.72%	10	0.05%	56	1.15%	-0.25	63	0.93	0.95
Policy Benchmark	--	6.32%	97	4.95%	13	0.00%	57	0.00%	--	--	1.00	0.96
Growth	62.03%	7.96%	--	7.22%	--	-0.32%	--	1.48%	-0.61	--	0.92	0.89
Growth Benchmark	--	8.87%	--	7.72%	--	0.00%	--	0.00%	--	--	1.00	0.95
Public Equity	36.40%	8.52%	--	10.62%	--	-0.15%	--	1.53%	-0.46	--	0.93	0.66
Public Equity Benchmark	--	9.22%	--	11.34%	--	0.00%	--	0.00%	--	--	1.00	0.68
Global Equity	11.10%	11.02%	25	11.88%	51	1.54%	32	2.47%	0.67	17	1.02	0.80
MSCI ACWI IMI Net USD	--	9.36%	43	11.45%	41	0.00%	52	0.00%	--	--	1.00	0.68
U.S. Equity	5.09%	11.77%	40	12.92%	32	-0.65%	42	2.03%	-0.22	47	1.02	0.79
MSCI USA IMI NR USD	--	12.22%	36	12.53%	26	0.00%	37	0.00%	--	--	1.00	0.85
International Equity	6.13%	5.73%	66	12.15%	41	-0.99%	68	2.19%	-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	11.72%	3.71%	81	12.92%	20	-1.35%	79	3.06%	-0.55	92	0.91	0.17
MSCI Emerging Market IMI Net	--	5.41%	53	13.81%	49	0.00%	56	0.00%	--	--	1.00	0.28
Marketable Alternative Equity	2.35%	6.30%	--	4.26%	--	3.51%	--	5.18%	0.31	--	0.39	1.12
HFRI Equity Hedge (Total) Index	--	4.72%	--	6.37%	--	0.00%	--	0.00%	--	--	1.00	0.50
Private Markets	21.96%	8.13%	--	4.29%	--	0.94%	--	2.69%	-0.14	--	0.81	1.53
Private Markets Benchmark	--	8.50%	--	4.23%	--	0.00%	--	0.00%	--	--	1.00	1.64
Private Markets ex Russell 3000	15.36%	7.94%	--	2.42%	--	6.08%	--	4.71%	-0.12	--	0.04	2.64
Private Markets Benchmark	--	8.50%	--	4.23%	--	0.00%	--	0.00%	--	--	1.00	1.64
Private Equity	13.33%	12.75%	--	6.71%	--	11.35%	--	9.68%	-0.32	--	-0.01	1.67
San Jose Custom Private Equity Benchmark	--	15.82%	--	6.90%	--	0.00%	--	0.00%	--	--	1.00	2.07
Private Equity ex Russell 3000	7.20%	14.84%	--	3.07%	--	13.61%	--	7.69%	-0.13	--	-0.02	4.33
San Jose Custom Private Equity Benchmark	--	15.82%	--	6.90%	--	0.00%	--	0.00%	--	--	1.00	2.07
Northern Trust Russell 3000	6.13%	12.90%	--	12.55%	--	0.06%	--	0.04%	1.61	--	1.00	0.91
Russell 3000	--	12.83%	--	12.54%	--	0.00%	--	0.00%	--	--	1.00	0.90
Private Debt	4.89%	3.16%	--	3.46%	--	0.32%	--	3.90%	-0.75	--	0.29	0.47

## Total Fund Risk Statistics (Net of Fees)

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
S&P Global Leveraged Loan + 2%	--	6.07%	--	2.75%	--	0.00%	--	0.00%	--	--	1.00	1.65
Private Real Estate	2.75%	9.88%	--	4.05%	--	11.16%	--	5.92%	0.39	--	-0.47	2.06
NCREIF ODCE Equal Weighted	--	7.59%	--	3.11%	--	0.00%	--	0.00%	--	--	1.00	1.94
High Yield Debt	0.48%	6.77%	--	6.04%	--	1.16%	--	4.38%	0.46	--	1.27	0.86
50% Bofa Global HY/50% S&P Global Leveraged Loan	--	4.74%	--	3.35%	--	0.00%	--	0.00%	--	--	1.00	0.96
Emerging Market Debt	3.19%	4.01%	48	4.69%	22	1.27%	36	4.59%	0.03	49	0.51	0.52
50% JPM EMBI GD / 50% JPM GBI-EM	--	3.89%	51	7.32%	58	0.00%	57	0.00%	--	--	1.00	0.32
Zero Beta	26.66%	2.87%	--	1.30%	--	1.52%	--	2.35%	0.86	--	0.27	1.02
Zero Beta Benchmark	--	0.84%	--	2.89%	--	0.00%	--	0.00%	--	--	1.00	-0.24
Absolute Return	6.74%	4.40%	--	2.35%	--	3.14%	--	3.00%	1.22	--	0.34	1.21
Absolute Return Benchmark	--	0.72%	--	3.35%	--	0.00%	--	0.00%	--	--	1.00	-0.25
Macro	2.81%	2.91%	--	4.74%	--	1.56%	--	2.98%	0.54	--	0.84	0.29
HFRI Macro (Total) Index	--	1.31%	--	4.46%	--	0.00%	--	0.00%	--	--	1.00	-0.05
Relative Value	3.93%	5.75%	--	2.03%	--	3.88%	--	2.97%	0.58	--	0.13	2.07
HFRI Relative Value (Total) Index	--	4.02%	--	2.53%	--	0.00%	--	0.00%	--	--	1.00	0.98
Cash	0.92%	1.59%	--	0.27%	--	0.05%	--	0.24%	0.21	--	0.67	0.17
ICE BofAML 91 Days T-Bills TR	--	1.54%	--	0.22%	--	0.00%	--	0.00%	--	--	1.00	-0.01
Other	11.13%	3.78%	--	2.64%	--	1.51%	--	1.93%	0.59	--	0.66	0.85
Other Benchmark	--	2.64%	--	3.14%	--	0.00%	--	0.00%	--	--	1.00	0.35
Core Real Estate	4.12%	6.83%	--	2.95%	--	7.59%	--	4.82%	0.03	--	-0.45	1.79
NCREIF ODCE Equal Weighted (Net)	--	6.69%	--	2.77%	--	0.00%	--	0.00%	--	--	1.00	1.86
Commodities	2.00%	1.76%	--	6.53%	--	2.24%	--	4.68%	0.70	--	0.66	0.03
Bloomberg Commodity Index TR USD	--	-1.50%	--	7.94%	--	0.00%	--	0.00%	--	--	1.00	-0.38
Core Bonds	0.00%	--	--	--	--	--	--	--	--	--	--	--

## Total Fund Risk Statistics (Net of Fees)

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
BBgBarc Global Aggregate TR	--	1.59%	--	4.67%	--	0.00%	--	0.00%	--	--	1.00	0.01
Overlay	0.17%	--	--	--	--	--	--	--	--	--	--	--
91 Day T-Bills	--	1.54%	--	0.20%	--	0.00%	--	0.00%	--	--	1.00	0.00

## Total Fund Aggregate

As of September 30, 2019

### Benchmark History

#### As of September 30, 2019

Total Fund		
9/1/2019	Present	13% MSCI USA IMI NR USD / 10% MSCI World ex USA IMI NR USD / 13% MSCI Emerging Market IMI Net / 22% Private Markets Benchmark / 3% 50% JPM EMBI GD / 50% JPM GBI-EM / 17% BBgBarc US Govt/Credit 1-3 Yr. TR / 5% Immunized Cash Flow Benchmark / 5% Absolute Return Benchmark / 5% NCREIF-ODCE / 2% Bloomberg Commodity Index TR USD / 3% FTSE WGBI ex US TR / 2% BBgBarc US Treasury TIPS 0-5 Yr TR
10/1/2018	8/31/2019	13% MSCI USA IMI NR USD / 8% MSCI World ex USA IMI NR USD / 10% MSCI Emerging Market IMI Net / 22% Private Markets Benchmark / 3% 50% JPM EMBI GD / 50% JPM GBI-EM / 20% ICE BofAML 91 Days T-Bills TR / 5% Immunized Cash Flow Benchmark / 7% Absolute Return Benchmark / 5% NCREIF-ODCE / 2% Bloomberg Commodity Index TR USD / 3% FTSE WGBI ex US TR / 2% BBgBarc US Treasury TIPS 0-5 Yr TR
5/1/2018	9/30/2018	34% MSCI ACWI IMI (Net) / 8% San Jose Custom Total Private Equity Index / 22.4% BBgBarc Global Aggregate TR / 1.4% S&P Global Leveraged Loan / 1.4% JP Morgan EMBI Global Diversified / 1.4% JP Morgan GBI EM Global Diversified TR USD / 6% HFRI Macro (Total) Index / 2% DJ Brookfield Global Infrastructure Net TR USD / 6% Bloomberg Commodity Index TR USD / 8% S&P Global Leveraged Loan + 2% / 8% NCREIF Property Index / 1.4% ICE BofAML Global High Yield TR
11/1/2016	4/30/2018	31% MSCI ACWI IMI (Net) / 8% San Jose Custom Total Private Equity Index / 16% Fixed Income Blended Benchmark / 11% S&P Global Leveraged Loan + 2% / 7% Custom Commodity Risk Parity Index / 3% CPI + 5% (Unadjusted) / 10% 60% MSCI World & 40% Citigroup WGBI / 1% 91 Day T-Bills / 7% San Jose Custom Total Real Estate BM / 6% Absolute Return Benchmark
Low-Cost Passive Portfolio		
9/1/2019	Present	13% MSCI USA IMI NR USD / 10% MSCI World ex USA IMI NR USD / 13% MSCI Emerging Market IMI Net / 12% Russell 3000 / 4% BBgBarc US Aggregate TR / 8% FTSE EPRA/NAREIT Global NR USD / 3% S&P Global Natural Resources Net USD / 3% 50% JPM EMBI GD / 50% JPM GBI-EM / 5% ICE BofAML 91 Days T-Bills TR / 5% 3-Month Libor + 1% / 2% BBgBarc US Treasury TIPS 0-5 Yr TR / 2% Bloomberg Commodity Index TR USD / 3% FTSE WGBI ex US TR / 17% BBgBarc US Govt/Credit 1-3 Yr. TR
10/1/2018	8/31/2019	13% MSCI USA IMI NR USD / 8% MSCI World ex USA IMI NR USD / 10% MSCI Emerging Market IMI Net / 12% Russell 3000 / 4% BBgBarc US Aggregate TR / 8% FTSE EPRA/NAREIT Global NR USD / 3% S&P Global Natural Resources Net USD / 3% 50% JPM EMBI GD / 50% JPM GBI-EM / 25% ICE BofAML 91 Days T-Bills TR / 7% 3-Month Libor + 1% / 2% BBgBarc US Treasury TIPS 0-5 Yr TR / 2% Bloomberg Commodity Index TR USD / 3% FTSE WGBI ex US TR
Liability Benchmark Portfolio		
10/1/2018	Present	BBgBarc US Treasury Long TR
Growth		
9/1/2019	Present	59.02% Public Equity Benchmark / 36.07% Private Markets Benchmark / 4.92% 50% JPM EMBI GD / 50% JPM GBI-EM
10/1/2018	8/31/2019	51.73% Public Equity Benchmark / 43.1% Private Markets Benchmark / 5.17% 50% JPM EMBI GD / 50% JPM GBI-EM
5/1/2018	9/30/2018	55.18% MSCI ACWI IMI Net USD / 12.99% S&P Global Leveraged Loan Index +2% / 12.99% Private Markets Benchmark / 6.49% NCREIF Property Index / 4.55% 50% JPM EMBI GD / 50% JPM GBI-EM / 4.55% 50% BAML Global HY / 50% S&P Global Leveraged Loan / 3.25% DJ Brookfield Global Infrastructure Net TR USD
7/1/2015	4/30/2018	51.92% MSCI ACWI IMI Net USD / 18.43% S&P Global Leveraged Loan Index +2% / 13.4% Private Markets Benchmark / 2.68% 50% JPM EMBI GD / 50% JPM GBI-EM / 2.68% 50% BAML Global HY / 50% S&P Global Leveraged Loan
Public Equity		
9/1/2019	Present	36.11% MSCI USA IMI NR USD / 27.78% MSCI World ex USA IMI NR USD / 36.11% MSCI Emerging Market IMI Net
10/1/2018	8/31/2019	41.93% MSCI USA IMI NR USD / 25.81% MSCI World ex USA IMI NR USD / 32.26% MSCI Emerging Market IMI Net
4/1/2008	9/30/2018	MSCI ACWI IMI (Net)

As of September 30, 2019

Global Equity		
3/1/2013	Present	MSCI ACWI IMI Net USD
U.S. Equity		
6/1/1995	Present	MSCI USA IMI NR USD
International Equity		
6/1/1995	Present	MSCI World ex USA IMI NR USD
Emerging Markets Equity		
9/1/2001	Present	MSCI Emerging Market IMI Net
Marketable Alternative Equity		
10/1/2014	Present	HFRI Equity Hedge (Total) Index
Private Markets		
10/1/2018	Present	Private Markets
5/1/2018	9/30/2018	36.36% Cambridge Associates PE Composite BM / 36.36% S&P Global Leveraged Loan Index +2% / 18.18% NCREIF Property Index / 9.1% DJ Brookfield Global Infrastructure Net TR USD
7/1/2015	4/30/2018	19.61% Cambridge Associates PE Composite BM / 11.76% Russell 3000 / 43.14% S&P Global Leveraged Loan Index +2% / 13.73% NCREIF Property Index / 11.76% DJ Brookfield Global Infrastructure Net TR USD
Private Markets ex Russell 3000		
10/1/2018	Present	Private Markets
5/1/2018	9/30/2018	36.36% Cambridge Associates PE Composite BM / 36.36% S&P Global Leveraged Loan Index +2% / 18.18% NCREIF Property Index / 9.1% DJ Brookfield Global Infrastructure Net TR USD
7/1/2015	4/30/2018	19.61% Cambridge Associates PE Composite BM / 11.76% Russell 3000 / 43.14% S&P Global Leveraged Loan Index +2% / 13.73% NCREIF Property Index / 11.76% DJ Brookfield Global Infrastructure Net TR USD
Private Equity		
11/1/2016	Present	Cambridge Glob Priv Eq Qtr Lag
10/1/2005	10/31/2016	Cambridge Associates US All PE (1 Qtr Lag)
Private Equity ex Russell 3000		
11/1/2016	Present	Cambridge Glob Priv Eq Qtr Lag
10/1/2005	10/31/2016	Cambridge Associates US All PE (1 Qtr Lag)

As of September 30, 2019

Private Equity ex Russell 3000		
No Benchmark Selected		
Northern Trust Russell 3000		
4/1/2014	Present	Russell 3000
Private Debt		
10/1/2015	Present	S&P Global Leveraged Loan + 0.17
Private Real Estate		
7/1/2015	Present	NCREIF ODCE Equal Weighted
Private Real Assets		
No Benchmark Selected		
High Yield Debt		
10/1/2015	Present	50% ICE BofAML Global High Yield TR / 50% S&P Global Leveraged Loan
Emerging Market Debt		
1/1/2013	Present	50% JP Morgan GBI EM Global Diversified TR USD / 50% JP Morgan EMBI Global Diversified
Zero Beta		
9/1/2019	Present	18.52% ICE BofAML 91 Days T-Bills TR / 62.96% BBgBarc US Govt/Credit 1-3 Yr. TR / 18.52% Absolute Return Benchmark
10/1/2018	8/31/2019	62.5% ICE BofAML 91 Days T-Bills TR / 15.62% Immunized Cash Flow Benchmark / 21.88% Absolute Return Benchmark
5/1/2018	9/30/2018	HFRI Macro (Total) Index
7/1/2015	4/30/2018	85.71% HFRI Macro (Total) Index / 14.29% ICE BofAML 91 Days T-Bills TR
Short-Term IG Bonds		
10/1/2018	Present	BBgBarc US Govt/Credit 1-3 Yr. TR
Immunized Cash Flows		
10/1/2018	Present	Immunized Cash Flows
Absolute Return		
10/1/2018	Present	ICE BofAML 91 Days T-Bills TR
11/1/2012	9/30/2018	HFRI Macro (Total) Index
Macro		
7/1/2015	Present	HFRI Macro (Total) Index

As of September 30, 2019

Relative Value		
7/1/2015	Present	HFRI Relative Value (Total) Index
Cash		
7/1/2002	Present	ICE BofAML 91 Days T-Bills TR
Other		
10/1/2018	Present	41.67% NCREIF ODCE Equal Weighted / 16.67% Bloomberg Commodity Index TR USD / 25% FTSE WGBI ex US TR / 16.66% BBgBarc US Treasury TIPS 0-5 Yr TR
5/1/2018	9/30/2018	69.14% BBgBarc Global Aggregate TR / 18.52% Bloomberg Commodity Index TR USD / 12.34% NCREIF Property Index
7/1/2015	4/30/2018	38.44% BBgBarc Global Aggregate TR / 30.03% 60% MSCI World & 40% Citigroup WGBI / 21.02% Bloomberg Commodity Index TR USD / 10.51% NCREIF Property Index
Core Real Estate		
9/1/2011	Present	NCREIF ODCE Equal Weighted (Net)
Commodities		
4/1/2011	Present	Bloomberg Commodity Index TR USD
TIPS		
10/1/2018	Present	BBgBarc US Treasury TIPS 0-5 Yr TR
Sovereign Bonds ex-US		
10/1/2018	Present	FTSE WGBI ex US TR
Core Bonds		
10/1/2015	Present	BBgBarc Global Aggregate TR
Overlay		
	Present	91 Day T-Bills

## **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.