



INVESTMENT GROUP

# San Jose Federated City Employees' Retirement System

As of December 31, 2019

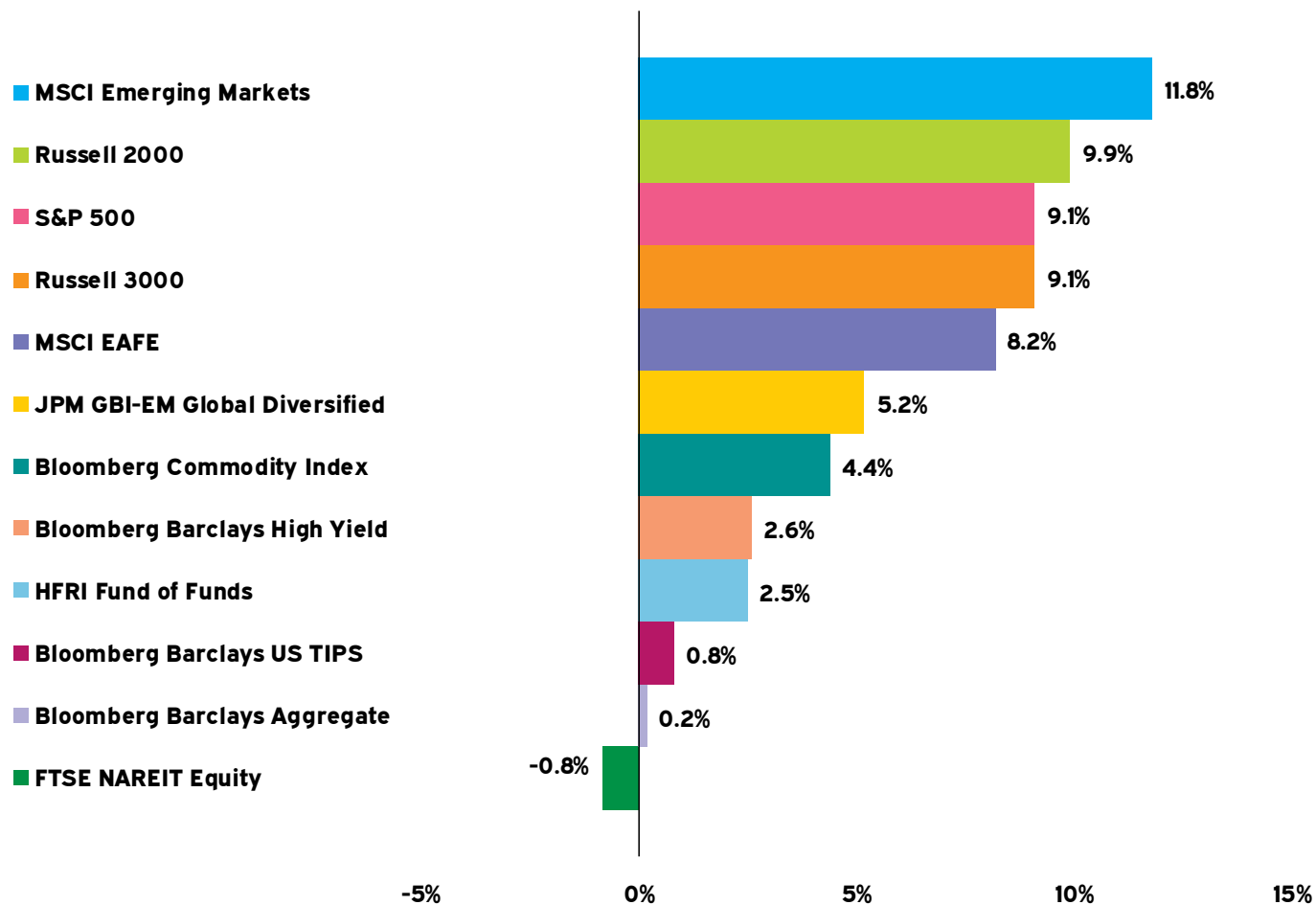
Quarterly Review

**Agenda**

- 1. The World Markets in the Fourth Quarter 2019**
- 2. Executive Summary**
  - Aggregate Plan Overview
  - Manager Highlights
  - Fourth Quarter Manager Summary
  - Watch List
  - Market Environment – 4Q19 Overview
- 3. 4Q19 Review**
- 4. Glossary and Notes**

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

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



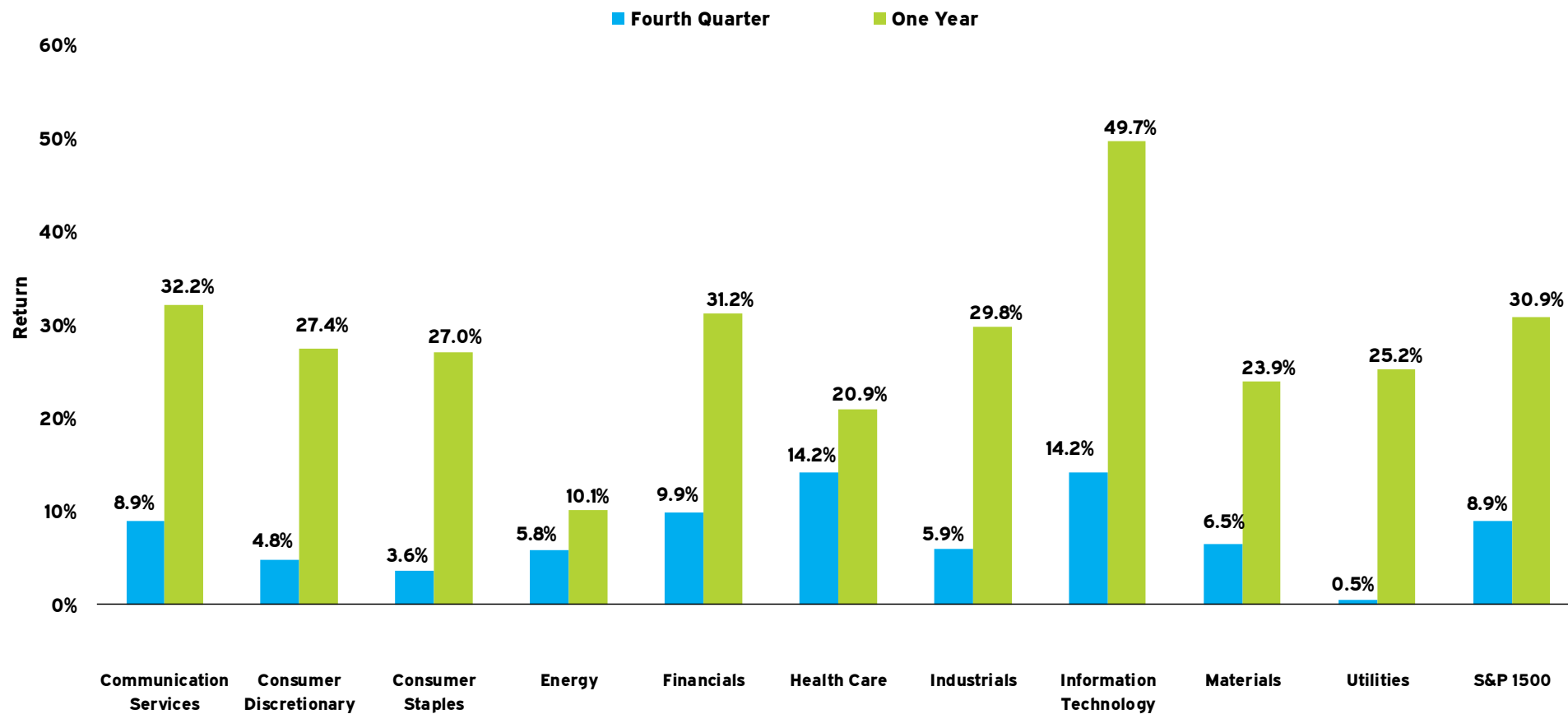
<sup>1</sup> Source: InvestorForce.

## Index Returns<sup>1</sup>

	4Q19 (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
<b>Domestic Equity</b>					
S&P 500	9.1	31.5	15.3	11.7	13.6
Russell 3000	9.1	31.0	14.6	11.2	13.4
Russell 1000	9.0	31.4	15.0	11.5	13.5
Russell 1000 Growth	10.6	36.4	20.5	14.6	15.2
Russell 1000 Value	7.4	26.5	9.7	8.3	11.8
Russell MidCap	7.1	30.5	12.1	9.3	13.2
Russell MidCap Growth	8.2	35.5	17.4	11.6	14.2
Russell MidCap Value	6.4	27.1	8.1	7.6	12.4
Russell 2000	9.9	25.5	8.6	8.2	11.8
Russell 2000 Growth	11.4	28.5	12.5	9.3	13.0
Russell 2000 Value	8.5	22.4	4.8	7.0	10.6
<b>Foreign Equity</b>					
MSCI ACWI (ex. US)	8.9	21.5	9.9	5.5	5.0
MSCI EAFE	8.2	22.0	9.6	5.7	5.5
MSCI EAFE (Local Currency)	5.2	21.7	7.7	6.7	7.2
MSCI EAFE Small Cap	11.5	25.0	10.9	8.9	8.7
MSCI Emerging Markets	11.8	18.4	11.6	5.6	3.7
MSCI Emerging Markets (Local Currency)	9.5	18.1	11.5	7.5	6.1
<b>Fixed Income</b>					
Bloomberg Barclays Universal	0.5	9.3	4.3	3.4	4.1
Bloomberg Barclays Aggregate	0.2	8.7	4.0	3.0	3.7
Bloomberg Barclays US TIPS	0.8	8.4	3.3	2.6	3.4
Bloomberg Barclays High Yield	2.6	14.3	6.4	6.1	7.6
JPM GBI-EM Global Diversified	5.2	13.5	7.0	2.8	2.7
<b>Other</b>					
FTSE NAREIT Equity	-0.8	26.0	8.1	7.2	11.9
Bloomberg Commodity Index	4.4	7.7	-0.9	-3.9	-4.7
HFRI Fund of Funds	2.5	7.8	3.7	2.2	2.8

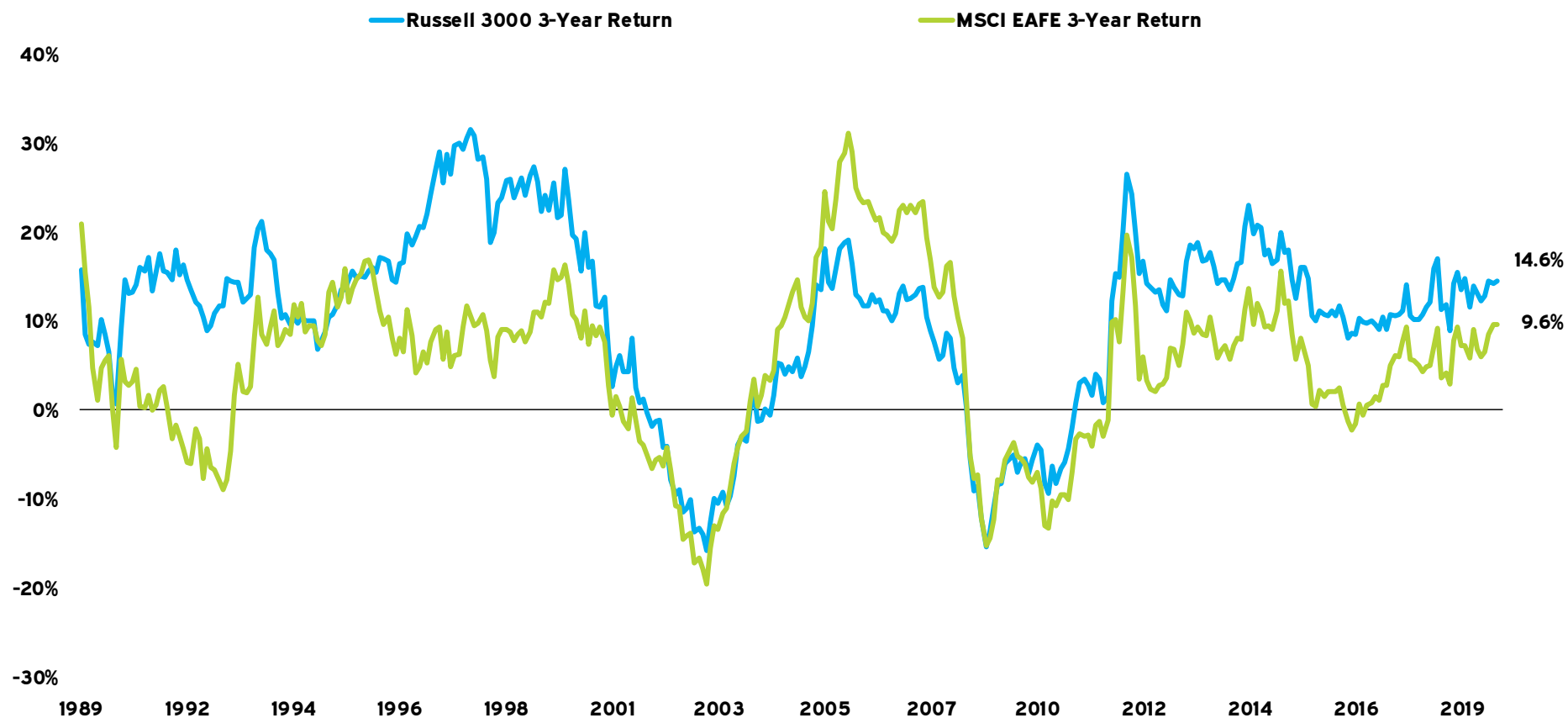
<sup>1</sup> Source: InvestorForce.

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



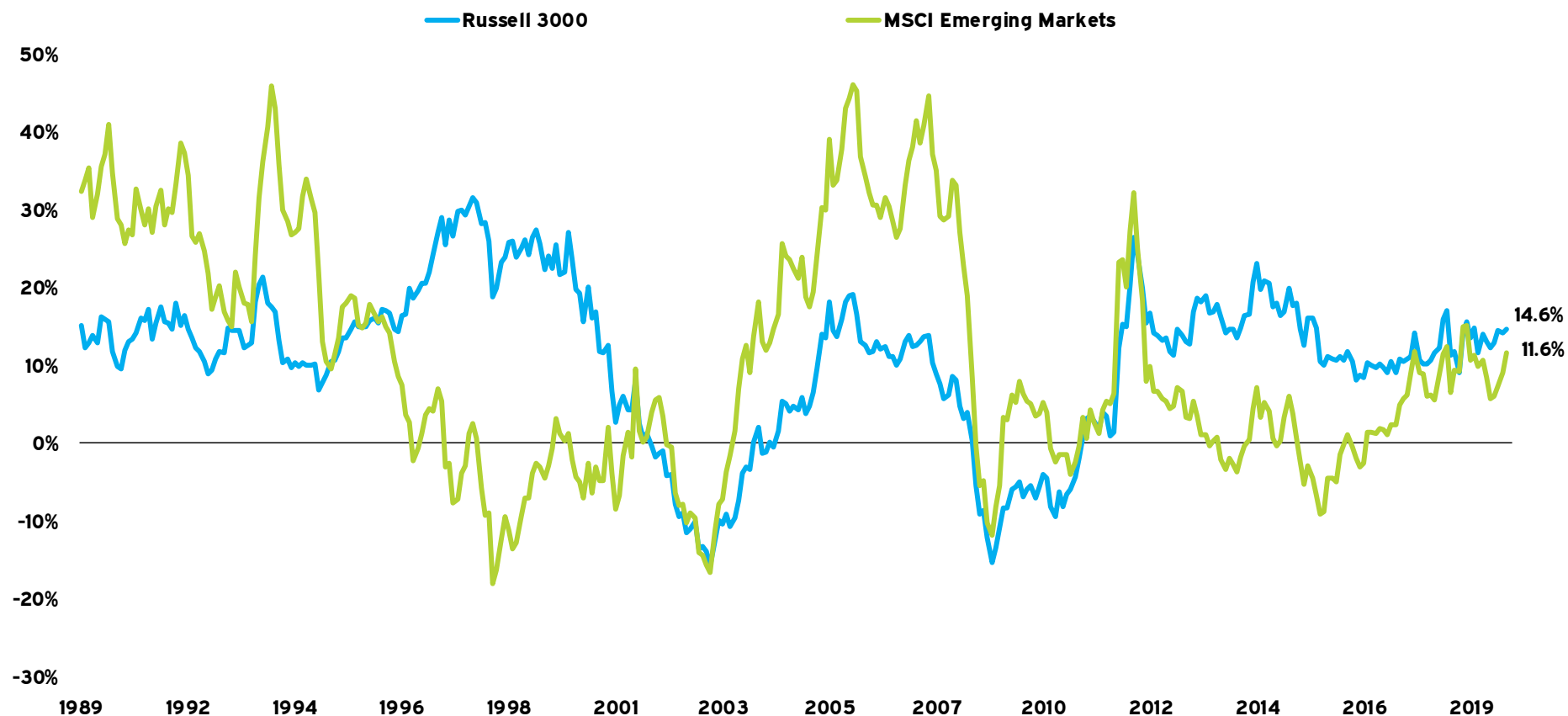
<sup>1</sup> Source: InvestorForce. Represents S&P 1500 (All Cap) data.

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



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

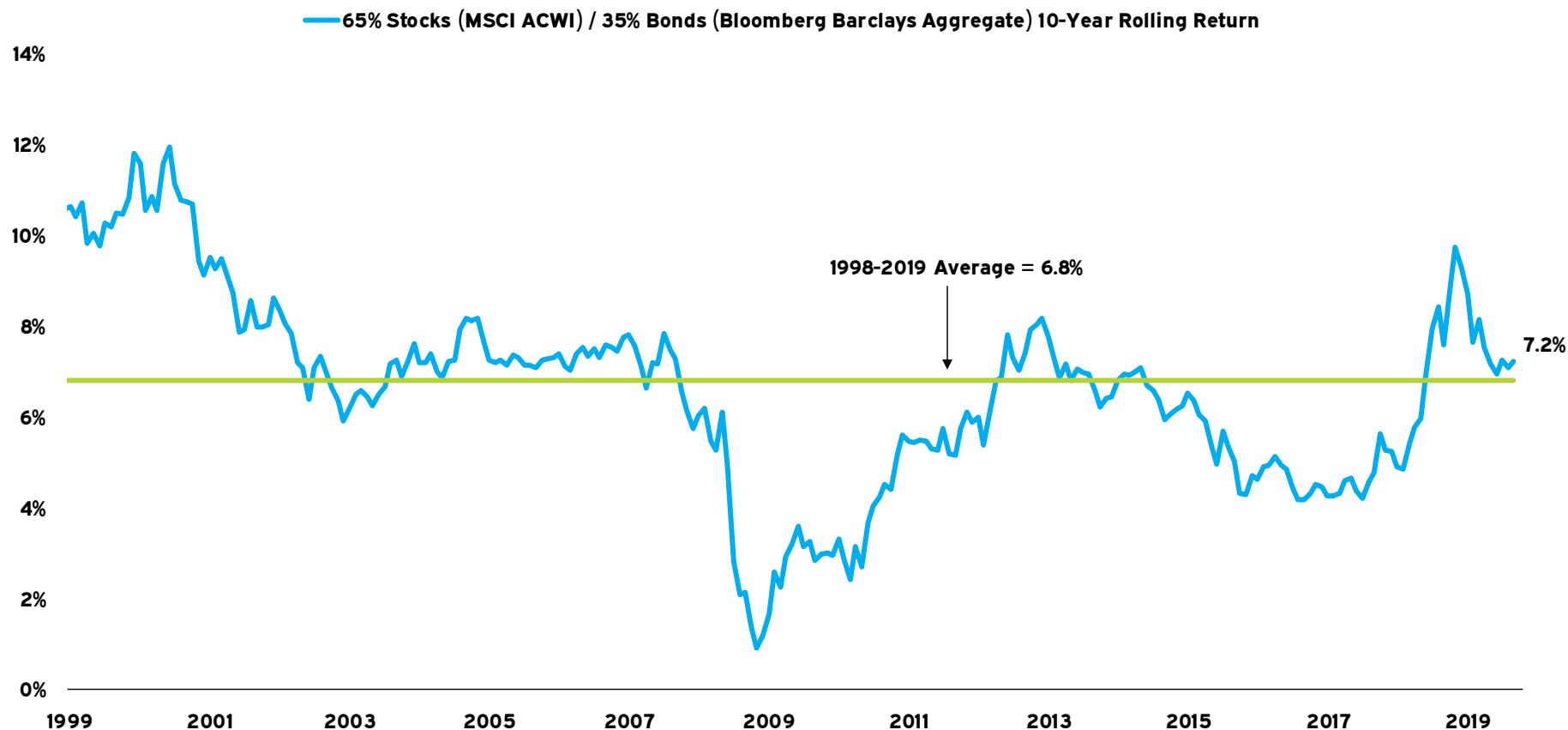
### US and Emerging Market Equity Rolling Three-Year Returns<sup>1</sup>



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

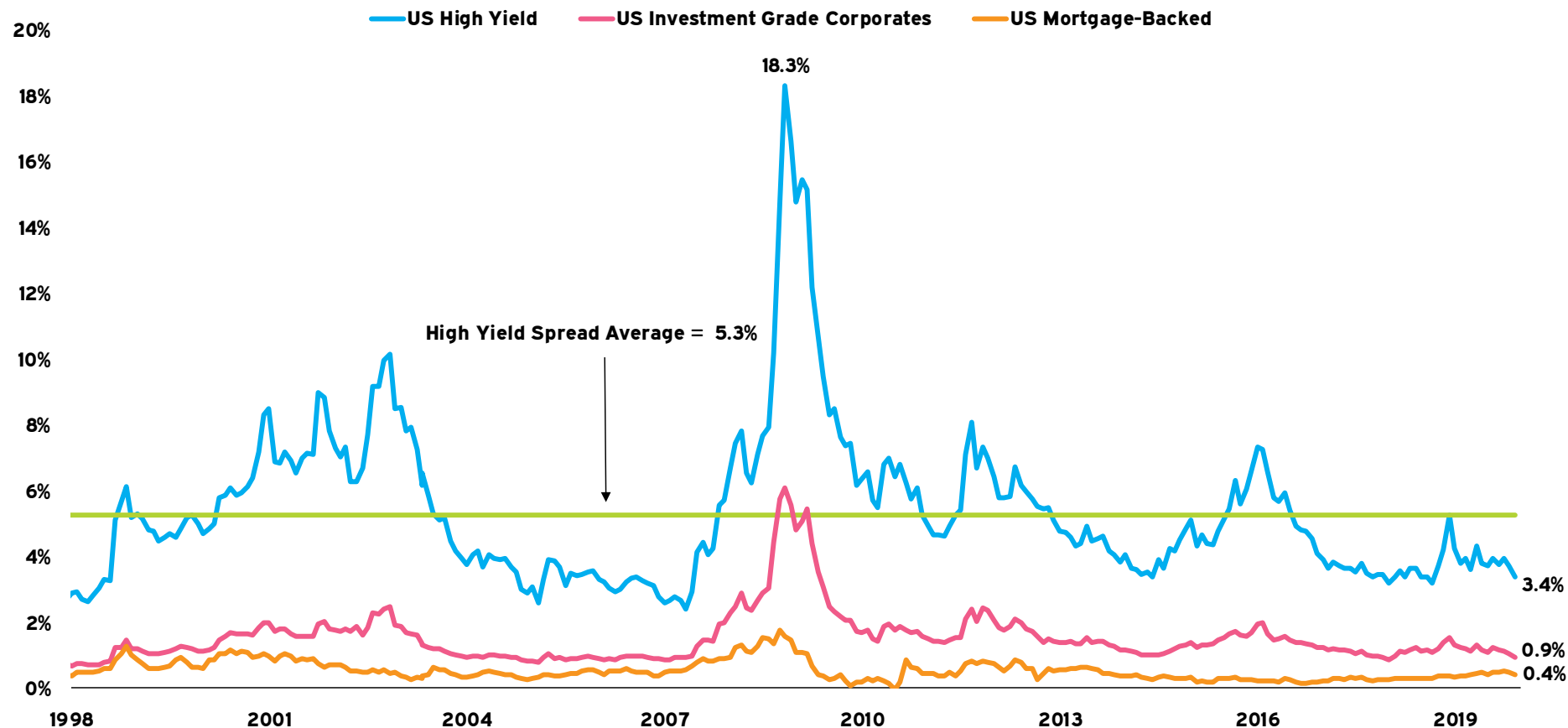


### Rolling Ten-Year Returns: 65% Stocks and 35% Bonds<sup>1</sup>



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

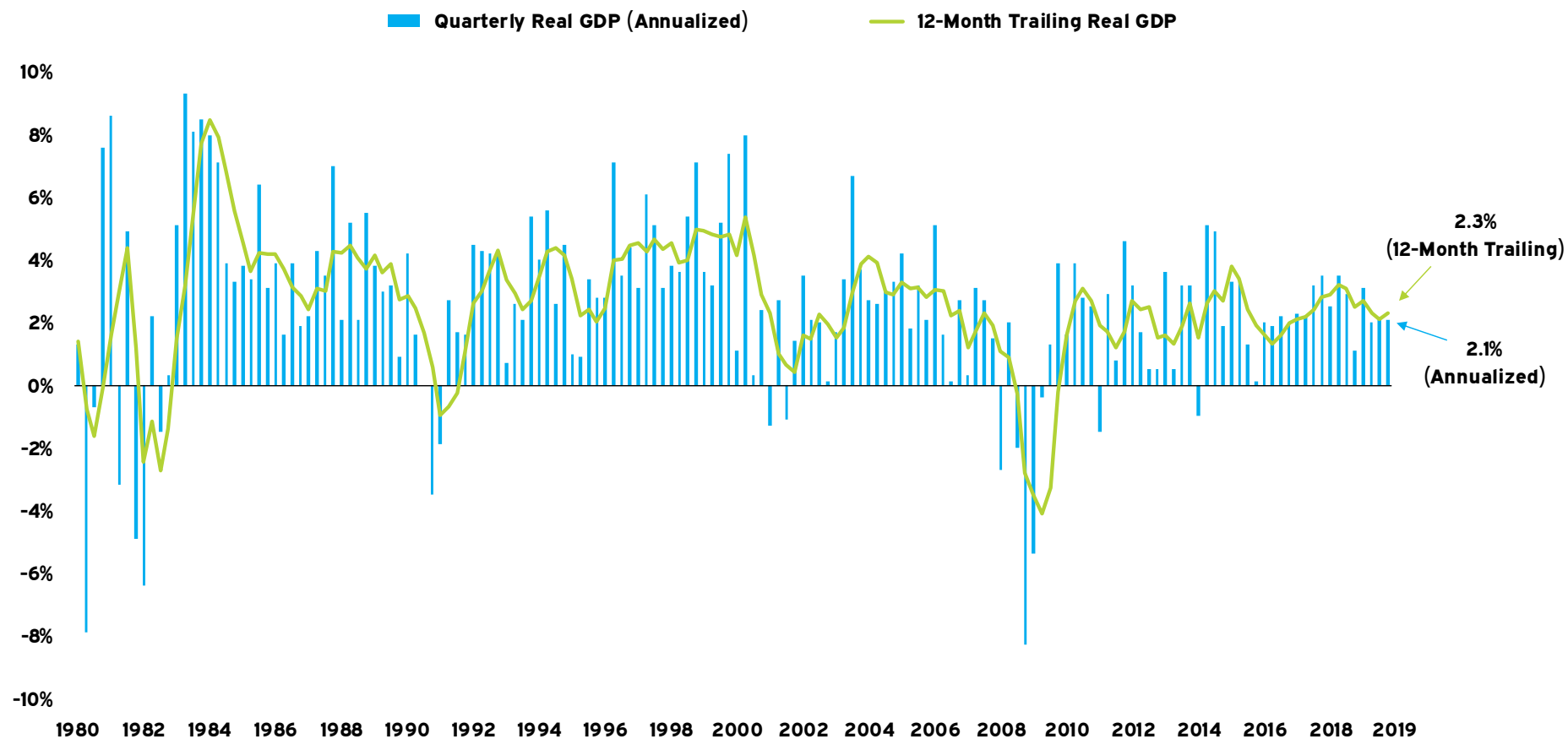
### Credit Spreads vs. US Treasury Bonds<sup>1,2</sup>



<sup>1</sup> Source: Barclays Live. Data represents the OAS.

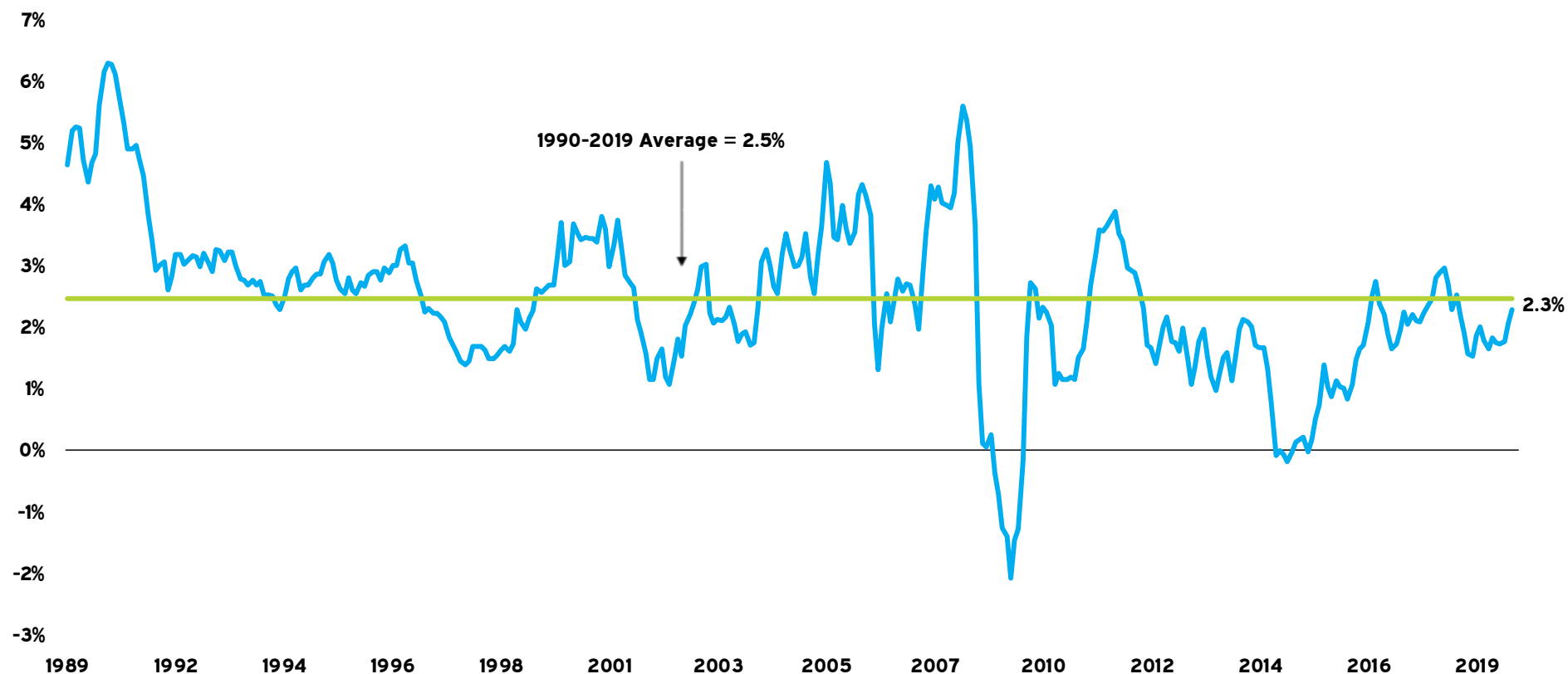
<sup>2</sup> The median high yield spread was 4.7% from 1997-2019.

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



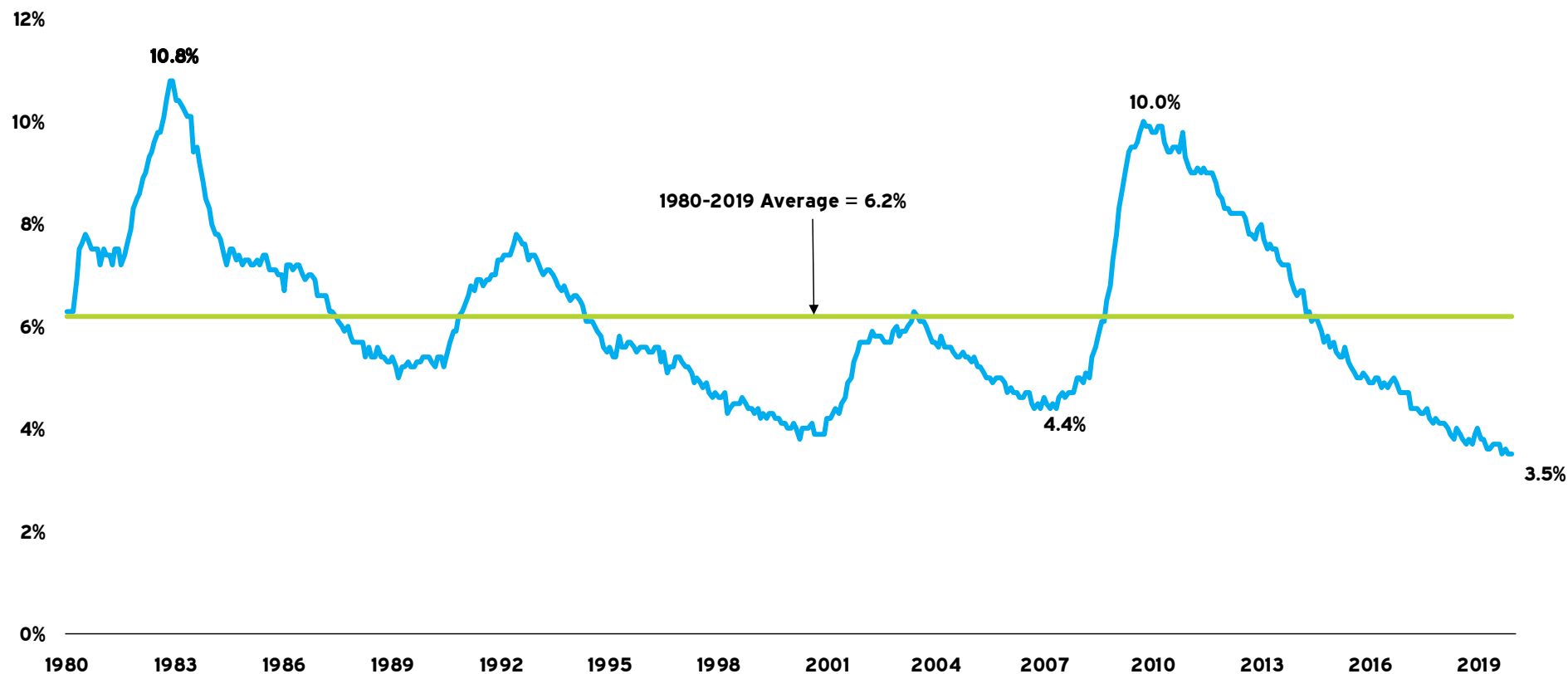
<sup>1</sup> Source: Bureau of Economic Analysis. Data is as of Q4 2019 and represents the first estimate.

### 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 December 31, 2019.

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



<sup>1</sup> Source: Bureau of Labor Statistics. Data is as of December 31, 2019.

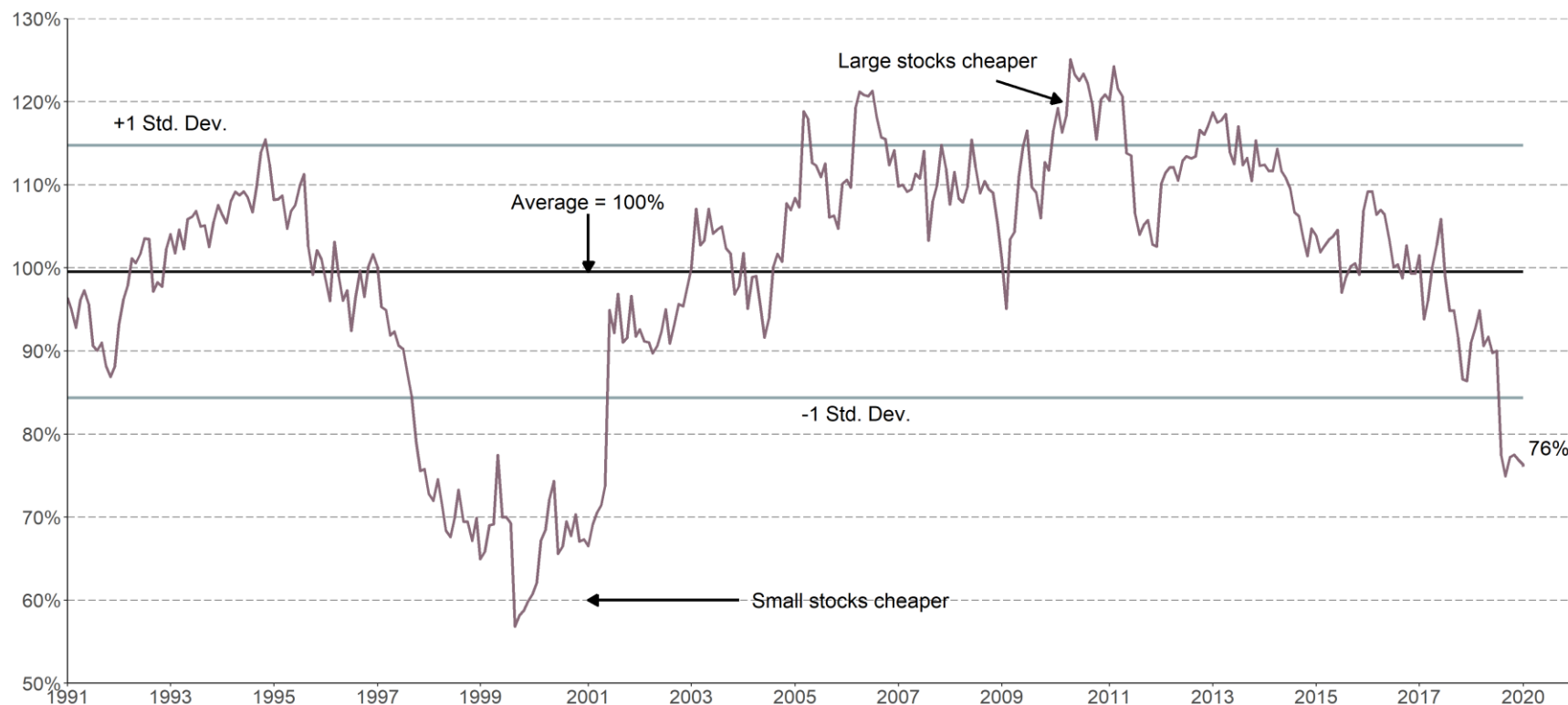
### US Equity Cyclically Adjusted P/E<sup>1</sup> (As of December 31, 2019)



- This chart details one valuation metric for US equities. A higher (lower) figure indicates more expensive (cheaper) valuation relative to history.

<sup>1</sup> US Equity Cyclically Adjusted P/E on S&P 500 Index – Source: Robert Shiller, Yale University and Meketa Investment Group.

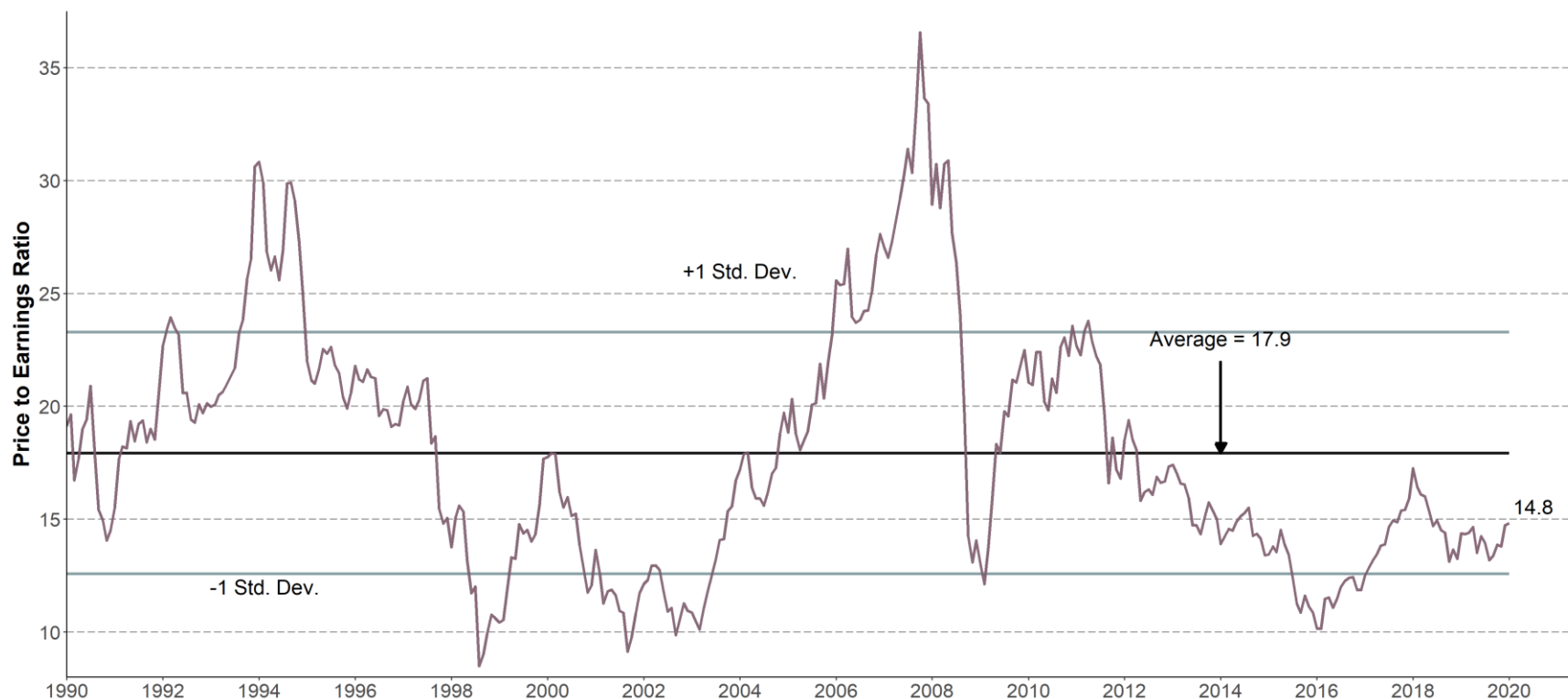
### Small Cap P/E vs. Large Cap P/E<sup>1</sup> (As of December 31, 2019)



- This chart compares the relative attractiveness of small cap US equities vs. large cap US equities on a valuation basis. A higher (lower) figure indicates that large cap (small cap) is more attractive.

<sup>1</sup> Small Cap P/E (Russell 2000 Index) vs. Large Cap P/E (Russell 1000 Index) - Source: Russell Investments. Earnings figures represent 12-month "as reported" earnings.

### Emerging Market Equity Cyclically Adjusted P/E<sup>1</sup> (As of December 31, 2019)



- This chart details one valuation metric for emerging markets equities. A higher (lower) figure indicates more expensive (cheaper) valuation relative to history.

<sup>1</sup> Emerging Market Equity (MSCI Emerging Markets Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly “as reported” earnings over the previous ten years.



## **Executive Summary**

### **As of December 31, 2019**

The value of the San Jose Federated City Employees' Retirement System assets was \$2.2 billion on December 31, 2019, an increase of approximately \$90.8 million from the end of the prior quarter. The System had net cash outflows of \$8.3 million during the quarter.

- The Retirement System's net of fees performance for the quarter was +4.5%, compared to the Policy Benchmark and Investable Benchmark Portfolio, which both returned +4.8%, and compared to the peer median return of +5.2%.
- The Retirement System returned +14.0% over the trailing one-year period, outperforming the Policy Benchmark (+13.9%) and Investable Benchmark Portfolio (+13.7%) returns, while underperforming the peer median return of +17.1%. The Retirement System's standard deviation of returns was 5.9% over the trailing one-year period, exhibiting lower volatility than the peer median (6.8%).
  - Growth returned +6.9% for the quarter and +20.7% over the trailing one-year period, versus +7.5% and +21.6% for the Growth Benchmark over the same periods, respectively.
  - Zero Beta returned +0.9% for the quarter and +4.5% over the trailing one-year period versus +0.5% and +2.5% for the Zero Beta Benchmark over the same periods, respectively.
  - Other returned +1.4% for the quarter and +5.8% over the trailing one-year period, versus +2.3% and +6.1% for the Other Benchmark over the same periods, respectively.
- The Retirement System added two investment managers during the quarter: BlackRock 1-3 Year Gov/Credit (Short-Term Investment Grade Bonds) and Northern Trust Aggregate Bond Index (Investment Grade Bonds). During the quarter, the Retirement System terminated American Core Realty Fund (Core Real Estate), Marshall Wace Eureka Fund (Marketable Alternative Equity), and Sandler Plus Offshore Fund (Marketable Alternative Equity).

**Artisan**

- Artisan Global Value returned +8.2% for the quarter, outperforming the MSCI ACWI Value NR USD benchmark by 60 basis points. Compared to peers, Artisan ranks in the 58th and 15th percentiles for the quarter and since inception periods, respectively. The portfolio's relative outperformance in the quarter was driven primarily by security selection.

**Cove Street**

- Cove Street Small Cap Value returned +8.9% for the quarter and +25.6% over the trailing one-year period, outperforming the Russell 2000 Value benchmark by 40 and 320 basis points over the same time periods, respectively. Compared to peers, Cove Street ranks in the 27th and 50th percentiles for the quarter and since inception periods, respectively. The largest contributor to portfolio returns in the quarter came from a healthcare holding which made an acquisition that is showing strong results.

**Oberweis**

- Oberweis International Opportunities returned +8.3% for the quarter and +24.9% over the trailing one-year period, underperforming the MSCI World ex USA Small Cap Growth benchmark by 330 and 310 basis points over the same time periods, respectively. Compared to peers, Oberweis ranks in the 83rd and 48th percentiles for the quarter and since inception periods, respectively. The largest detractor to portfolio returns for the year (-54.9% and detracted 229 bps) came from a specialty finance company holding which was the subject of a short sale report by a US hedge fund.

**Wellington**

- Wellington Emerging Markets Systematic Equity returned +11.8% for the quarter, in-line with the MSCI Emerging Markets benchmark. Since inception in August 2019, Wellington has outperformed the benchmark by 450 basis points and ranks in the 3rd percentile compared to peers.

Investment Manager	Asset Class	Changes/ Announcements	Meketa Recommendation <sup>1</sup>	Comments
Artisan Global Value	Global Equity	---	---	---
Artisan Global Opportunities	Global Equity	Yes	Hold	Personnel Changes
Cove Street Small Cap Value	US Equity	---	---	---
Oberweis International Opps.	International Equity	---	Hold	Watch List
Dimensional EM Value	Emerging Markets Equity	Yes	Hold	Personnel Changes
GQG Partners Global EM	Emerging Markets Equity	Yes	Hold	Organizational Update
RWC Emerging Markets Equity	Emerging Markets Equity	Yes	Hold	Ownership Changes
Wellington EM Systematic	Emerging Markets Equity	---	---	---
Senator Global Opportunity	Long-Short Equity	---	---	---
BlueBay EM Select Debt	Emerging Markets Debt	---	Hold	Watch List
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.

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

Investment Manager	Asset Class	Watch List Status	Comments
Oberweis International Opp	International Equity	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.

**Artisan**

- Artisan's Growth team announced the promotion of two investment professionals to Associate Portfolio Managers.

**Oberweis**

- Over the three-year period, Oberweis (+11.1%) has underperformed the MSCI World ex USA Small Cap Growth by 110 basis points. Since inception in November 2015, Oberweis has underperformed the benchmark by 150 basis points per year, on average, and ranked in the 48th percentile compared to peers.

**Dimensional**

- Dimensional employs a team approach in all aspects of the firm's management. There were four departures from the portfolio management team in the quarter.

**GQG**

- In November 2019, GQG Partners announced the initiation of a soft close in the Emerging Markets Equity strategy at \$10 billion in AUM, with the strategy managing approximately \$9.3 billion as of the end of the fourth quarter. Current investors, including the Retirement System, are not subject to the soft close and can still contribute funds.

**RWC**

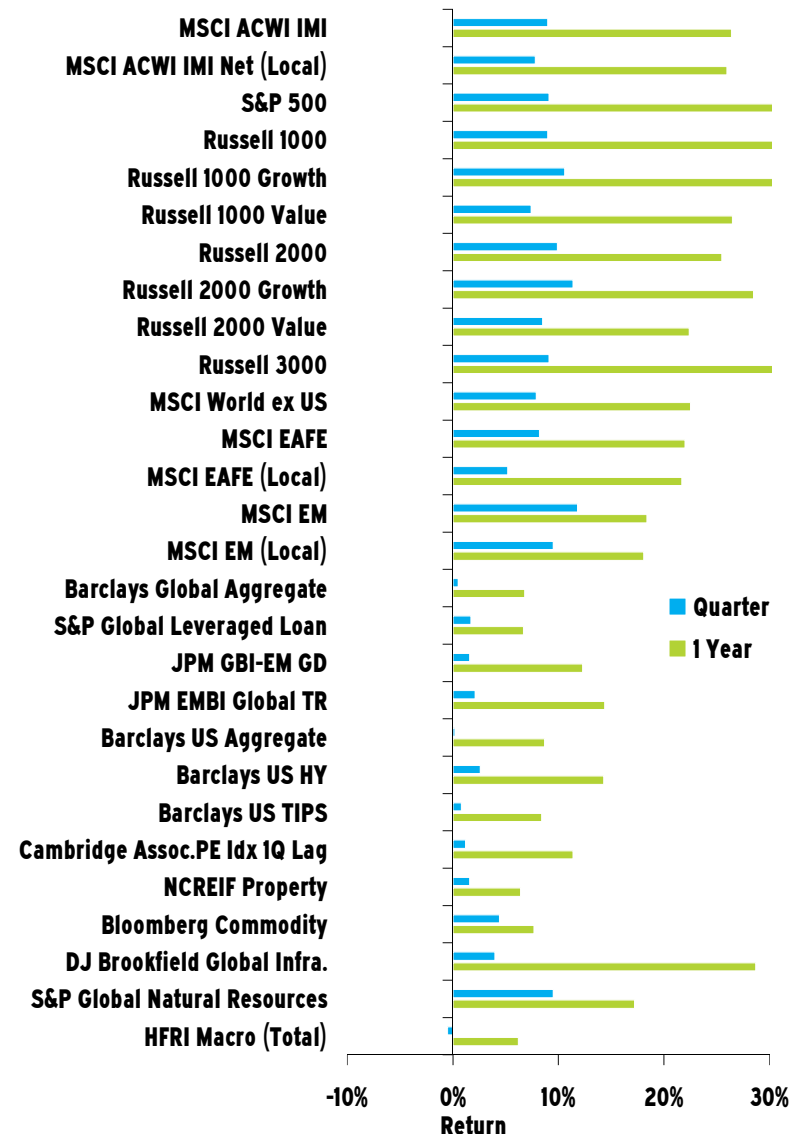
- In October 2019, RWC notified investors that Schrodgers is selling their minority equity interest in RWC Partners back to RWC and to Lincoln Peak Capital. After the transaction closes, Lincoln Peak would own roughly 28% of RWC's equity with RWC's people owning the remainder.

**BlueBay**

- Over the three-year period, BlueBay (+5.7%) has underperformed the JPM Blended Emerging Markets Index by 120 basis points. Since inception in July 2015, BlueBay (+3.8%) has underperformed the blended benchmark by 170 basis points per year, on average, and ranked in the 83rd percentile compared to peers.

### Market Environment – 4Q19 Overview

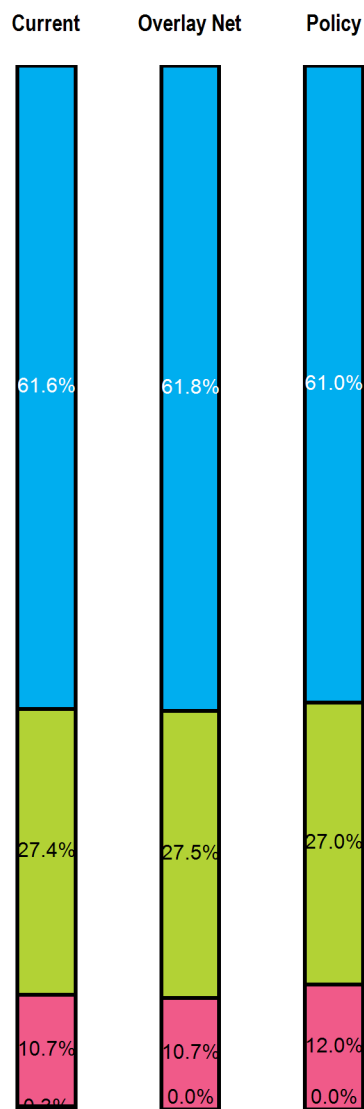
Benchmark	Scope	4Q19 (%)	1 YR (%)	3 YR (%)	5YR (%)	10 YR (%)
<b>Global Equity</b>						
MSCI ACWI IMI	World	9.0	26.4	12.1	8.3	8.9
MSCI ACWI IMI Net (Local)	World (Local Currency)	7.8	26.0	11.4	9.0	9.9
<b>Domestic Equity</b>						
S&P 500	Large Core	9.1	31.5	15.3	11.7	13.6
Russell 1000	Large Core	9.0	31.4	15.0	11.5	13.5
Russell 1000 Growth	Large Growth	10.6	36.4	20.5	14.6	15.2
Russell 1000 Value	Large Value	7.4	26.5	9.7	8.3	11.8
Russell 2000	Small Core	9.9	25.5	8.6	8.2	11.8
Russell 2000 Growth	Small Growth	11.4	28.5	12.5	9.3	13.0
Russell 2000 Value	Small Value	8.5	22.4	4.8	7.0	10.6
Russell 3000	All Cap Core	9.1	31.0	14.6	11.2	13.4
<b>International Equity</b>						
MSCI World ex US	World ex-US	7.9	22.5	9.3	5.4	5.3
MSCI EAFE	International Developed	8.2	22.0	9.6	5.7	5.5
MSCI EAFE (Local)	International Developed (Local Currency)	5.2	21.7	7.7	6.7	7.2
MSCI EM	Emerging Markets	11.8	18.4	11.6	5.6	3.7
MSCI EM (Local)	Emerging Markets (Local Currency)	9.5	18.1	11.5	7.5	6.1
<b>Global Fixed Income</b>						
Barclays Global Aggregate	Global Core Bonds	0.5	6.8	4.3	2.3	2.5
S&P Global Leveraged Loan	Bank Loans	1.7	6.7	4.4	3.9	4.7
JPM GBI-EM GD	Emerging Markets Bonds (Local Currency)	1.6	12.3	8.3	7.5	7.8
JPM EMBI Global TR	Emerging Market Bonds	2.1	14.4	6.1	5.9	6.6
<b>Domestic Fixed Income</b>						
Barclays US Aggregate	Core Bonds	0.2	8.7	4.0	3.0	3.7
Barclays US HY	High Yield	2.6	14.3	6.4	6.1	7.6
Barclays US TIPS	Inflation	0.8	8.4	3.3	2.6	3.4
<b>Other</b>						
Cambridge Assoc. PE Index 1Q Lag	Private Equity	1.2	11.4	16.1	13.9	14.7
NCREIF Property	Real Estate	1.6	6.4	6.7	8.2	10.2
Bloomberg Commodity	Commodities	4.4	7.7	-0.9	-3.9	-4.7
DJ Brookfield Global Infrastructure	Infrastructure	4.0	28.7	11.1	5.7	10.2
S&P Global Natural Resources	Natural Resources	9.5	17.2	7.9	4.8	1.6
HFRI Macro	Hedge Funds	-0.5	6.2	1.3	0.8	1.2



## **4Q19 Review**



Total Fund | As of December 31, 2019



Allocation vs. Targets and Policy				
	Current Balance	Current Allocation	Russell Overlay Net Position	Policy
<b>Growth</b>	<b>\$1,367,157,726</b>	<b>61.6%</b>	<b>61.8%</b>	<b>61.0%</b>
Public Equity	\$794,751,379	35.8%	35.9%	35.0%
Private Markets	\$506,093,522	22.8%	22.9%	23.0%
Emerging Markets Debt	\$66,312,825	3.0%	3.0%	3.0%
<b>Zero Beta</b>	<b>\$609,118,674</b>	<b>27.4%</b>	<b>27.5%</b>	<b>27.0%</b>
Absolute Return	\$161,189,670	7.3%	7.3%	7.0%
Short-Term IG Bonds	\$325,772,651	14.7%	14.7%	15.0%
Immunized Cash Flows	\$98,371,798	4.4%	4.4%	5.0%
Cash	\$23,784,555	1.1%	1.1%	0.0%
<b>Other</b>	<b>\$236,939,507</b>	<b>10.7%</b>	<b>10.7%</b>	<b>12.0%</b>
Core Real Estate	\$87,293,988	3.9%	3.9%	5.0%
Commodities	\$39,629,125	1.8%	1.8%	2.0%
TIPS	\$45,075,925	2.0%	2.0%	2.0%
Investment Grade Bonds	\$64,940,469	2.9%	3.0%	3.0%
<b>Overlay</b>	<b>\$6,878,698</b>	<b>0.3%</b>	<b>0.0%</b>	<b>0.0%</b>
<b>Total</b>	<b>\$2,220,094,606</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

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

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

#### Asset Class Net Performance Summary

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Total Fund Aggregate</b>	<b>2,220,094,606</b>	<b>100.0</b>	<b>4.5</b>	<b>4.6</b>	<b>14.0</b>	<b>6.6</b>	<b>4.5</b>	<b>5.5</b>	<b>6.7</b>	<b>Jan-94</b>
Policy Benchmark			4.8	5.0	13.9	7.5	5.2	6.3	7.0	Jan-94
Investable Benchmark Portfolio			4.8	5.0	13.7	6.8	4.6	5.4	--	Jan-94
Low-Cost Passive Portfolio			5.2	5.4	15.9	--	--	--	--	Jan-94
60/40 MSCI ACWI IMI/BBgBarc Global Aggregate			5.6	5.8	18.4	9.1	6.1	6.5	--	Jan-94
Liability Benchmark Portfolio			-4.1	3.5	14.8	--	--	--	--	Jan-94
InvMetrics Public DB > \$1B Net Median			5.2	5.6	17.1	8.9	6.8	7.9	7.3	Jan-94
<b>Growth</b>	<b>1,367,157,726</b>	<b>61.6</b>	<b>6.9</b>	<b>6.7</b>	<b>20.7</b>	<b>9.5</b>	<b>--</b>	<b>--</b>	<b>7.0</b>	<b>Jul-15</b>
Growth Benchmark			7.5	7.4	21.6	11.0	--	--	8.5	Jul-15
<b>Public Equity</b>	<b>794,751,379</b>	<b>35.8</b>	<b>8.6</b>	<b>7.0</b>	<b>23.0</b>	<b>10.3</b>	<b>7.0</b>	<b>--</b>	<b>8.3</b>	<b>May-10</b>
Public Equity Benchmark			9.7	8.5	24.6	12.2	8.4	--	8.8	May-10
<b>Global Equity</b>	<b>207,814,247</b>	<b>9.4</b>	<b>8.6</b>	<b>8.5</b>	<b>28.9</b>	<b>12.0</b>	<b>--</b>	<b>--</b>	<b>9.9</b>	<b>Jul-15</b>
MSCI ACWI IMI Index			9.0	8.9	26.4	12.1	--	--	8.6	Jul-15
eV All Global Equity Net Median			8.6	8.2	26.1	11.7	8.0	9.3	8.3	Jul-15
eV All Global Equity Net Rank			50	44	35	48	--	--	30	Jul-15
<b>US Equity</b>	<b>164,212,785</b>	<b>7.4</b>	<b>9.0</b>	<b>9.3</b>	<b>29.5</b>	<b>12.4</b>	<b>--</b>	<b>--</b>	<b>10.6</b>	<b>Jul-15</b>
MSCI USA IMI GR USD			9.1	10.4	31.1	14.7	--	--	12.1	Jul-15
eV All US Equity Net Median			8.1	8.3	28.0	11.7	9.3	12.3	9.6	Jul-15
eV All US Equity Net Rank			36	35	40	46	--	--	38	Jul-15

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

<sup>2</sup> Please see the Appendix for composition of the Policy Benchmark, Low-Cost Passive Portfolio, Liability Benchmark Portfolio, Growth Benchmark, and Public Equity Benchmark.

<sup>3</sup> Returns for the Public Equity Aggregate are gross of fees through June 2015 and net of fees thereafter.

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>International Equity</b>	<b>155,708,400</b>	<b>7.0</b>	<b>7.8</b>	<b>5.7</b>	<b>23.3</b>	<b>9.0</b>	--	--	<b>4.9</b>	<b>Jul-15</b>
MSCI World ex USA IMI NR USD			8.4	7.4	22.9	9.5	--	--	5.3	Jul-15
eV ACWI ex-US All Cap Equity Net Median			9.8	7.9	25.1	11.2	6.5	6.9	5.9	Jul-15
eV ACWI ex-US All Cap Equity Net Rank			92	90	66	82	--	--	72	Jul-15
<b>Emerging Markets Equity</b>	<b>250,205,559</b>	<b>11.3</b>	<b>10.2</b>	<b>4.9</b>	<b>16.3</b>	<b>7.5</b>	--	--	<b>3.0</b>	<b>Jul-15</b>
MSCI Emerging Market IMI Net			11.6	6.8	17.7	11.0	--	--	5.1	Jul-15
eV Emg Mkts Equity Net Median			11.4	7.0	19.3	10.7	5.5	4.4	5.6	Jul-15
eV Emg Mkts Equity Net Rank			69	77	72	90	--	--	90	Jul-15
<b>Marketable Alternative Equity</b>	<b>16,810,388</b>	<b>0.8</b>	<b>1.0</b>	<b>2.2</b>	<b>10.0</b>	<b>6.9</b>	<b>5.0</b>	--	<b>5.5</b>	<b>Oct-14</b>
HFRI Equity Hedge (Total) Index			5.7	4.1	13.7	6.2	4.6	--	4.3	Oct-14
<b>Private Markets</b>	<b>506,093,522</b>	<b>22.8</b>	<b>4.9</b>	<b>6.1</b>	<b>18.4</b>	<b>9.1</b>	--	--	<b>7.1</b>	<b>Jul-15</b>
Private Markets Benchmark			4.9	6.1	18.4	11.7	--	--	9.5	Jul-15
MSCI ACWI IMI + 100bps			9.3	9.4	27.6	13.2	--	--	9.6	Jul-15
<b>Private Markets ex Russell 3000</b>	<b>267,746,874</b>	<b>12.1</b>	<b>1.5</b>	<b>2.7</b>	<b>4.9</b>	<b>7.7</b>	--	--	<b>6.2</b>	<b>Jul-15</b>
Private Markets Benchmark			4.9	6.1	18.4	11.7	--	--	9.5	Jul-15
<b>Private Equity</b>	<b>363,214,445</b>	<b>16.4</b>	<b>6.6</b>	<b>8.2</b>	<b>24.7</b>	<b>11.2</b>	<b>9.1</b>	<b>11.4</b>	--	<b>Jan-06</b>
San Jose Custom Private Equity Benchmark			0.8	5.1	8.7	14.1	11.6	13.3	--	Jan-06
<b>Private Equity ex Russell 3000</b>	<b>132,962,858</b>	<b>6.0</b>	<b>1.8</b>	<b>4.2</b>	<b>7.0</b>	<b>11.6</b>	<b>9.3</b>	<b>11.5</b>	<b>7.5</b>	<b>Jan-06</b>
<b>Northern Trust Russell 3000</b>	<b>230,251,587</b>	<b>10.4</b>	<b>9.1</b>	<b>10.4</b>	<b>31.2</b>	--	--	--	<b>12.9</b>	<b>Jun-18</b>
Russell 3000			9.1	10.4	31.0	--	--	--	12.8	Jun-18

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

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

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

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Private Debt</b>	<b>62,491,504</b>	<b>2.8</b>	<b>-0.4</b>	<b>-1.6</b>	<b>-1.3</b>	<b>-3.0</b>	<b>-0.7</b>	<b>--</b>	<b>2.8</b>	<b>Dec-10</b>
<i>S&amp;P Global Leveraged Loan Index +2%</i>			2.7	3.2	9.2	6.6	6.0	--	6.3	Dec-10
<b>Private Real Estate</b>	<b>57,688,248</b>	<b>2.6</b>	<b>3.1</b>	<b>4.7</b>	<b>9.1</b>	<b>15.6</b>	<b>--</b>	<b>--</b>	<b>17.0</b>	<b>Jul-15</b>
<i>NCREIF Property Index</i>			1.6	3.0	6.4	6.7	--	--	7.6	Jul-15
<b>Private Real Assets</b>	<b>22,699,325</b>	<b>1.0</b>	<b>0.8</b>	<b>1.9</b>	<b>2.8</b>	<b>10.4</b>	<b>--</b>	<b>--</b>	<b>7.0</b>	<b>Jul-15</b>
<b>Emerging Markets Debt</b>	<b>66,312,825</b>	<b>3.0</b>	<b>4.2</b>	<b>4.3</b>	<b>13.8</b>	<b>5.5</b>	<b>--</b>	<b>--</b>	<b>3.7</b>	<b>Jul-15</b>
<i>50% JPM EMBI GD / 50% JPM GBI-EM</i>			3.5	3.9	14.3	6.9	--	--	5.5	Jul-15
<i>eV All Emg Mkts Fixed Inc Net Median</i>			3.5	3.5	14.0	6.4	5.3	5.6	5.4	Jul-15
<i>eV All Emg Mkts Fixed Inc Net Rank</i>			32	20	54	81	--	--	85	Jul-15
<b>Zero Beta</b>	<b>609,118,674</b>	<b>27.4</b>	<b>0.9</b>	<b>1.4</b>	<b>4.5</b>	<b>3.1</b>	<b>--</b>	<b>--</b>	<b>2.3</b>	<b>Jul-15</b>
<i>Zero Beta Benchmark</i>			0.5	1.0	2.5	1.2	--	--	0.8	Jul-15
<b>Short-Term IG Bonds</b>	<b>325,772,651</b>	<b>14.7</b>	<b>0.5</b>	<b>1.1</b>	<b>2.4</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>2.4</b>	<b>Oct-18</b>
<i>91 Day T-Bills</i>			0.4	0.9	2.1	--	--	--	2.1	Oct-18
<b>Immunized Cash Flows</b>	<b>98,371,798</b>	<b>4.4</b>	<b>0.5</b>	<b>1.2</b>	<b>3.5</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>3.9</b>	<b>Oct-18</b>
<i>Immunized Cash Flows Benchmark</i>			0.5	1.2	3.5	--	--	--	3.9	Oct-18
<b>Absolute Return</b>	<b>161,189,670</b>	<b>7.3</b>	<b>1.9</b>	<b>2.2</b>	<b>9.7</b>	<b>4.9</b>	<b>3.6</b>	<b>--</b>	<b>4.1</b>	<b>Nov-12</b>
<i>Absolute Return Benchmark</i>			0.5	1.0	2.4	1.1	0.6	--	1.3	Nov-12
<b>Macro</b>	<b>69,965,795</b>	<b>3.2</b>	<b>1.8</b>	<b>0.4</b>	<b>9.2</b>	<b>3.6</b>	<b>1.8</b>	<b>--</b>	<b>2.5</b>	<b>Oct-14</b>
<i>HFRI Macro (Total) Index</i>			-0.2	1.5	6.5	1.4	0.8	--	1.2	Oct-14
<b>Relative Value</b>	<b>91,223,875</b>	<b>4.1</b>	<b>1.9</b>	<b>3.6</b>	<b>9.7</b>	<b>6.4</b>	<b>5.1</b>	<b>--</b>	<b>5.0</b>	<b>Oct-14</b>
<i>HFRI Relative Value (Total) Index</i>			1.9	1.9	7.5	4.0	3.8	--	3.5	Oct-14

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

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

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Cash</b>	<b>23,784,555</b>	<b>1.1</b>	<b>1.0</b>	<b>1.5</b>	<b>2.6</b>	<b>1.7</b>	<b>1.2</b>	--	--	<b>Jan-06</b>
ICE BofAML 91 Days T-Bills TR			0.5	1.0	2.3	1.7	1.1	--	--	Jan-06
<b>Other</b>	<b>236,939,507</b>	<b>10.7</b>	<b>1.4</b>	<b>2.1</b>	<b>5.8</b>	<b>3.5</b>	<b>2.2</b>	<b>3.0</b>	<b>2.1</b>	<b>Jul-04</b>
Other Benchmark			2.3	2.5	6.1	3.2	--	--	--	Jul-04
<b>Investment Grade Bonds</b>	<b>64,940,469</b>	<b>2.9</b>	--	--	--	--	--	--	<b>-0.1</b>	<b>Dec-19</b>
BBgBarc US Aggregate TR			--	--	--	--	--	--	-0.1	Dec-19
<b>TIPS</b>	<b>45,075,925</b>	<b>2.0</b>	<b>1.2</b>	<b>1.5</b>	<b>4.9</b>	<b>2.2</b>	<b>1.8</b>	--	<b>1.1</b>	<b>Jul-14</b>
BBgBarc U.S. TIPS 0-5 Years			1.1	1.5	4.9	2.1	1.8	--	1.1	Jul-14
<b>Core Private Real Estate</b>	<b>87,293,988</b>	<b>3.9</b>	<b>0.8</b>	<b>2.0</b>	<b>5.9</b>	<b>6.9</b>	<b>8.8</b>	<b>10.8</b>	<b>7.0</b>	<b>Jul-04</b>
NCREIF ODCE Equal Weighted (Net)			1.3	2.5	5.2	6.5	8.3	10.5	6.8	Jul-04
NCREIF ODCE Value-Weighted			1.3	2.4	4.4	6.1	8.0	10.4	6.9	Jul-04
<b>Commodities</b>	<b>39,629,125</b>	<b>1.8</b>	<b>4.2</b>	<b>4.3</b>	<b>8.0</b>	<b>2.7</b>	<b>-2.8</b>	--	<b>-2.8</b>	<b>May-10</b>
Bloomberg Commodity Index TR USD			4.4	2.5	7.7	-0.9	-3.9	--	-4.6	May-10
<b>Overlay</b>	<b>6,878,698</b>	<b>0.3</b>								

Trailing Net Performance										
	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Total Fund Aggregate</b>	<b>2,220,094,606</b>	<b>100.0</b>	<b>4.5</b>	<b>4.6</b>	<b>14.0</b>	<b>6.6</b>	<b>4.5</b>	<b>5.5</b>	<b>6.7</b>	<b>Jan-94</b>
Policy Benchmark			4.8	5.0	13.9	7.5	5.2	6.3	7.0	Jan-94
Investable Benchmark Portfolio			4.8	5.0	13.7	6.8	4.6	5.4	--	Jan-94
Low-Cost Passive Portfolio			5.2	5.4	15.9	--	--	--	--	Jan-94
60/40 MSCI ACWI IMI/BBgBarc Global Aggregate			5.6	5.8	18.4	9.1	6.1	6.5	--	Jan-94
Liability Benchmark Portfolio			-4.1	3.5	14.8	--	--	--	--	Jan-94
InvMetrics Public DB > \$1B Net Median			5.2	5.6	17.1	8.9	6.8	7.9	7.3	Jan-94
<b>Growth</b>	<b>1,367,157,726</b>	<b>61.6</b>	<b>6.9</b>	<b>6.7</b>	<b>20.7</b>	<b>9.5</b>	<b>--</b>	<b>--</b>	<b>7.0</b>	<b>Jul-15</b>
Growth Benchmark			7.5	7.4	21.6	11.0	--	--	8.5	Jul-15
<b>Public Equity</b>	<b>794,751,379</b>	<b>35.8</b>	<b>8.6</b>	<b>7.0</b>	<b>23.0</b>	<b>10.3</b>	<b>7.0</b>	<b>--</b>	<b>8.3</b>	<b>May-10</b>
Public Equity Benchmark			9.7	8.5	24.6	12.2	8.4	--	8.8	May-10
<b>Global Equity</b>	<b>207,814,247</b>	<b>9.4</b>	<b>8.6</b>	<b>8.5</b>	<b>28.9</b>	<b>12.0</b>	<b>--</b>	<b>--</b>	<b>9.9</b>	<b>Jul-15</b>
MSCI ACWI IMI Index			9.0	8.9	26.4	12.1	--	--	8.6	Jul-15
eV All Global Equity Net Median			8.6	8.2	26.1	11.7	8.0	9.3	8.3	Jul-15
eV All Global Equity Net Rank			50	44	35	48	--	--	30	Jul-15
Artisan Global Value	140,038,418	6.3	8.2	7.8	25.7	11.1	8.4	--	10.9	Mar-11
MSCI ACWI Value NR USD			7.6	7.3	20.6	8.4	6.1	--	6.2	Mar-11
eV All Global Equity Net Median			8.6	8.2	26.1	11.7	8.0	9.3	8.2	Mar-11
eV All Global Equity Net Rank			58	58	53	58	45	--	15	Mar-11

<sup>1</sup> Returns for the Equity Aggregate are gross of fees through June 2015 and net of fees thereafter.

<sup>2</sup> Please see final page of the performance report for composition of the Policy Benchmark.

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Artisan Global Opportunities	67,775,829	3.1	9.5	10.0	36.0	--	--	--	13.4	Jul-17
MSCI ACWI Growth NR USD			10.2	10.5	32.7	--	--	--	13.6	Jul-17
eV All Global Equity Net Median			8.6	8.2	26.1	11.7	8.0	9.3	9.6	Jul-17
eV All Global Equity Net Rank			34	20	7	--	--	--	19	Jul-17
<b>US Equity</b>	<b>164,212,785</b>	<b>7.4</b>	<b>9.0</b>	<b>9.3</b>	<b>29.5</b>	<b>12.4</b>	<b>--</b>	<b>--</b>	<b>10.6</b>	<b>Jul-15</b>
MSCI USA IMI GR USD			9.1	10.4	31.1	14.7	--	--	12.1	Jul-15
eV All US Equity Net Median			8.1	8.3	28.0	11.7	9.3	12.3	9.6	Jul-15
eV All US Equity Net Rank			36	35	40	46	--	--	38	Jul-15
Northern Trust Russell 1000	130,335,709	5.9	9.0	10.6	31.5	15.2	--	--	16.4	Nov-16
Russell 1000			9.0	10.6	31.4	15.0	--	--	16.3	Nov-16
Northern Tr Russell 2000 Value	14,120,080	0.6	8.5	7.9	22.5	--	--	--	3.5	Jan-18
Russell 2000 Value			8.5	7.9	22.4	--	--	--	3.3	Jan-18
Cove Street Small Cap Value	19,756,995	0.9	8.9	4.5	25.6	6.8	7.4	--	6.6	May-14
Russell 2000 Value			8.5	7.9	22.4	4.8	7.0	--	7.1	May-14
eV US Small Cap Value Equity Net Median			7.8	7.4	23.8	4.5	6.5	11.0	6.6	May-14
eV US Small Cap Value Equity Net Rank			27	84	31	26	32	--	50	May-14
<b>International Equity</b>	<b>155,708,400</b>	<b>7.0</b>	<b>7.8</b>	<b>5.7</b>	<b>23.3</b>	<b>9.0</b>	<b>--</b>	<b>--</b>	<b>4.9</b>	<b>Jul-15</b>
MSCI World ex USA IMI NR USD			8.4	7.4	22.9	9.5	--	--	5.3	Jul-15
eV ACWI ex-US All Cap Equity Net Median			9.8	7.9	25.1	11.2	6.5	6.9	5.9	Jul-15
eV ACWI ex-US All Cap Equity Net Rank			92	90	66	82	--	--	72	Jul-15

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Northern Trust MSCI World ex US	122,520,162	5.5	7.7	6.9	22.8	9.7	--	--	9.7	Nov-16
<i>MSCI World ex USA</i>			7.9	6.9	22.5	9.3	--	--	9.4	Nov-16
Oberweis Intl Opportunities	33,188,238	1.5	8.3	3.9	24.9	11.1	--	--	7.8	Nov-15
<i>MSCI World ex USA Small Cap Growth NR USD</i>			11.6	10.7	28.0	12.2	--	--	9.3	Nov-15
<i>eV ACWI ex-US All Cap Equity Net Median</i>			9.8	7.9	25.1	11.2	6.5	6.9	7.5	Nov-15
<i>eV ACWI ex-US All Cap Equity Net Rank</i>			83	99	53	53	--	--	48	Nov-15
<b>Emerging Markets Equity</b>	<b>250,205,559</b>	<b>11.3</b>	<b>10.2</b>	<b>4.9</b>	<b>16.3</b>	<b>7.5</b>	<b>--</b>	<b>--</b>	<b>3.0</b>	<b>Jul-15</b>
<i>MSCI Emerging Market IMI Net</i>			11.6	6.8	17.7	11.0	--	--	5.1	Jul-15
<i>eV Emg Mkts Equity Net Median</i>			11.4	7.0	19.3	10.7	5.5	4.4	5.6	Jul-15
<i>eV Emg Mkts Equity Net Rank</i>			69	77	72	90	--	--	90	Jul-15
Northern Trust MSCI EM IMI	81,147,510	3.7	11.4	6.6	17.4	--	--	--	6.7	Oct-18
<i>MSCI Emerging Market IMI Net</i>			11.6	6.8	17.7	--	--	--	7.1	Oct-18
Dimensional Fund Adv EM Value	40,935,512	1.8	9.7	2.0	9.3	8.8	--	--	7.3	Nov-16
<i>MSCI Emerging Markets Value NR USD</i>			9.9	2.8	12.0	8.6	--	--	7.2	Nov-16
<i>eV Emg Mkts Equity Net Median</i>			11.4	7.0	19.3	10.7	5.5	4.4	8.7	Nov-16
<i>eV Emg Mkts Equity Net Rank</i>			74	93	96	78	--	--	73	Nov-16
GQG Global Emerging Markets	43,093,948	1.9	6.4	2.2	21.8	--	--	--	8.4	Jul-17
<i>MSCI Emerging Markets</i>			11.8	7.1	18.4	--	--	--	6.6	Jul-17
<i>eV Emg Mkts Equity Net Median</i>			11.4	7.0	19.3	10.7	5.5	4.4	5.6	Jul-17
<i>eV Emg Mkts Equity Net Rank</i>			95	92	36	--	--	--	19	Jul-17



	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
RWC Emerging Markets Equity	28,590,812	1.3	11.3	--	--	--	--	--	14.4	Sep-19
<i>MSCI Emerging Markets</i>			11.8	--	--	--	--	--	14.0	Sep-19
<i>eV Emg Mkts Equity Net Median</i>			11.4	7.0	19.3	10.7	5.5	4.4	13.4	Sep-19
<i>eV Emg Mkts Equity Net Rank</i>			51	--	--	--	--	--	29	Sep-19
Wellington Emerging Markets Systematic Equity	56,437,776	2.5	11.8	--	--	--	--	--	12.9	Sep-19
<i>MSCI Emerging Markets</i>			11.8	--	--	--	--	--	14.0	Sep-19
<i>eV Emg Mkts Equity Net Median</i>			11.4	7.0	19.3	10.7	5.5	4.4	13.4	Sep-19
<i>eV Emg Mkts Equity Net Rank</i>			37	--	--	--	--	--	59	Sep-19
<b>Marketable Alternative Equity</b>	<b>16,810,388</b>	<b>0.8</b>	<b>1.0</b>	<b>2.2</b>	<b>10.0</b>	<b>6.9</b>	<b>5.0</b>	<b>--</b>	<b>5.5</b>	<b>Oct-14</b>
<i>HFRI Equity Hedge (Total) Index</i>			5.7	4.1	13.7	6.2	4.6	--	4.3	Oct-14
Senator Global Opportunity, LP	16,810,388	0.8	4.0	4.1	19.4	7.1	4.2	--	6.4	Apr-13
<i>HFRI Event-Driven (Total) Index</i>			2.9	2.0	7.5	4.2	3.8	--	4.2	Apr-13
<b>Private Markets</b>	<b>506,093,522</b>	<b>22.8</b>	<b>4.9</b>	<b>6.1</b>	<b>18.4</b>	<b>9.1</b>	<b>--</b>	<b>--</b>	<b>7.1</b>	<b>Jul-15</b>
<i>Private Markets Benchmark</i>			4.9	6.1	18.4	11.7	--	--	9.5	Jul-15
<i>MSCI ACWI IMI + 100bps</i>			9.3	9.4	27.6	13.2	--	--	9.6	Jul-15
<b>Private Markets ex Russell 3000</b>	<b>267,746,874</b>	<b>12.1</b>	<b>1.5</b>	<b>2.7</b>	<b>4.9</b>	<b>7.7</b>	<b>--</b>	<b>--</b>	<b>6.2</b>	<b>Jul-15</b>
<i>Private Markets Benchmark</i>			4.9	6.1	18.4	11.7	--	--	9.5	Jul-15
<b>Private Equity</b>	<b>363,214,445</b>	<b>16.4</b>	<b>6.6</b>	<b>8.2</b>	<b>24.7</b>	<b>11.2</b>	<b>9.1</b>	<b>11.4</b>	<b>--</b>	<b>Jan-06</b>
<i>San Jose Custom Private Equity Benchmark</i>			0.8	5.1	8.7	14.1	11.6	13.3	--	Jan-06

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Private Equity ex Russell 3000</b>	<b>132,962,858</b>	<b>6.0</b>	<b>1.8</b>	<b>4.2</b>	<b>7.0</b>	<b>11.6</b>	<b>9.3</b>	<b>11.5</b>	<b>7.5</b>	<b>Jan-06</b>
PE Strategic Partnership, LP	95,828,751	4.3	2.9	6.2	11.5	--	--	--	7.5	Aug-17
<i>Cambridge PE Composite BM</i>			0.0	4.3	7.8	--	--	--	14.0	Aug-17
Pathway Private Eq Fund VIII	2,596,155	0.1	-0.9	-3.1	-13.6	-2.7	-1.0	7.5	7.8	Jul-09
<i>Cambridge PE Composite BM</i>			0.0	4.3	7.8	13.8	10.9	12.9	13.5	Jul-09
Pantheon USA Fund VII, LP	13,378,006	0.6	-2.2	0.0	-1.0	--	--	--	6.6	Jun-18
<i>Cambridge PE Composite BM</i>			0.0	4.3	7.8	--	--	--	11.6	Jun-18
Pantheon Global Secondary III	3,289,698	0.1	1.3	-0.7	0.5	7.1	4.1	4.7	5.1	Jul-09
<i>Cambridge PE Composite BM</i>			0.0	4.3	7.8	13.8	10.9	12.9	13.5	Jul-09
Great Hill Equity Partners IV	2,298,604	0.1	6.5	10.3	35.7	58.0	42.5	34.4	32.1	Jul-09
<i>Cambridge PE Composite BM</i>			0.0	4.3	7.8	13.8	10.9	12.9	13.5	Jul-09
Partners Group Secondary 2008	947,402	0.0	7.1	1.6	-1.6	8.0	2.6	8.9	8.4	Jul-09
<i>Cambridge PE Composite BM</i>			0.0	4.3	7.8	13.8	10.9	12.9	13.5	Jul-09
Partners Group Secondary 2011	6,236,670	0.3	-6.7	-6.2	-4.9	6.4	7.8	--	17.0	Nov-12
<i>Cambridge PE Composite BM</i>			0.0	4.3	7.8	13.8	10.9	--	12.6	Nov-12
Innovation Endeavors III	1,453,784	0.1	-1.3	-3.3	1.3	--	--	--	-19.7	Jun-18
<i>Cambridge PE Composite BM</i>			0.0	4.3	7.8	--	--	--	11.6	Jun-18
Crestline Portfolio Financing	6,933,788	0.3	3.1	5.3	8.6	--	--	--	8.7	Jun-18
<i>Cambridge PE Composite BM</i>			0.0	4.3	7.8	--	--	--	11.6	Jun-18

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Northern Trust Russell 3000</b>	<b>230,251,587</b>	<b>10.4</b>	<b>9.1</b>	<b>10.4</b>	<b>31.2</b>	--	--	--	<b>12.9</b>	<b>Jun-18</b>
<i>Russell 3000</i>			9.1	10.4	31.0	--	--	--	12.8	Jun-18
<b>Private Debt</b>	<b>62,491,504</b>	<b>2.8</b>	<b>-0.4</b>	<b>-1.6</b>	<b>-1.3</b>	<b>-3.0</b>	<b>-0.7</b>	--	<b>2.8</b>	<b>Dec-10</b>
<i>S&amp;P Global Leveraged Loan Index +2%</i>			2.7	3.2	9.2	6.6	6.0	--	6.3	Dec-10
White Oak Direct Lending	13,069,223	0.6	15.6	20.4	25.4	-5.2	-2.3	--	0.8	Feb-11
<i>S&amp;P Global Leveraged Loan Index +2%</i>			2.7	3.2	9.2	6.6	6.0	--	6.0	Feb-11
Blackstone/GSO Cap Partners	7,753,587	0.3	-8.1	-11.5	-13.2	1.1	-0.4	--	5.6	Mar-11
<i>S&amp;P Global Leveraged Loan Index +2%</i>			2.7	3.2	9.2	6.6	6.0	--	6.0	Mar-11
Medley Opportunity Fund II LP	17,447,398	0.8	-6.3	-11.0	-14.4	-8.5	-3.2	--	1.3	Jun-11
<i>S&amp;P Global Leveraged Loan Index +2%</i>			2.7	3.2	9.2	6.6	6.0	--	6.0	Jun-11
Cross Ocean USD ESS Fund II LP	8,328,209	0.4	2.0	4.8	5.7	8.9	--	--	10.2	Aug-16
<i>S&amp;P Global Leveraged Loan Index +2%</i>			2.7	3.2	9.2	6.6	--	--	6.7	Aug-16
Octagon CLO Opp Fund III	8,095,062	0.4	-2.8	-4.2	--	--	--	--	0.3	Feb-19
<i>S&amp;P Global Leveraged Loan Index +2%</i>			2.7	3.2	--	--	--	--	6.7	Feb-19
Crestline Co-Investment	1,675,403	0.1	5.8	7.9	--	--	--	--	7.9	Mar-19
<i>S&amp;P Global Leveraged Loan Index +2%</i>			2.7	3.2	--	--	--	--	5.3	Mar-19
Cross Ocean USD ESS Fund III, L.P.	6,122,622	0.3	-1.9	-1.9	--	--	--	--	-1.9	Jun-19
<i>S&amp;P Global Leveraged Loan Index +2%</i>			2.7	3.2	--	--	--	--	4.1	Jun-19

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

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Private Real Estate</b>	<b>57,688,248</b>	<b>2.6</b>	<b>3.1</b>	<b>4.7</b>	<b>9.1</b>	<b>15.6</b>	<b>--</b>	<b>--</b>	<b>17.0</b>	<b>Jul-15</b>
<i>NCREIF Property Index</i>			1.6	3.0	6.4	6.7	--	--	7.6	Jul-15
DRA Growth & Income Fund VI	636,641	0.0	1.7	5.7	9.8	3.4	7.5	12.0	8.7	Jan-08
<i>NCREIF Property Index</i>			1.6	3.0	6.4	6.7	8.2	10.2	6.2	Jan-08
DRA Growth & Income Fund VII	3,697,416	0.2	10.1	42.7	53.1	43.4	34.2	--	27.4	Apr-12
<i>NCREIF Property Index</i>			1.6	3.0	6.4	6.7	8.2	--	9.3	Apr-12
DRA Growth & Income Fund VIII	10,286,939	0.5	0.5	1.6	4.8	10.0	10.6	--	10.6	Jan-15
<i>NCREIF Property Index</i>			1.6	3.0	6.4	6.7	8.2	--	8.2	Jan-15
Tristan - EPISO IV	12,551,243	0.6	5.6	1.1	9.6	9.6	--	--	8.1	Jan-16
<i>NCREIF Property Index</i>			1.6	3.0	6.4	6.7	--	--	7.0	Jan-16
DRA Growth & Income Fund IX	17,092,885	0.8	2.6	3.6	7.2	--	--	--	12.8	Feb-17
<i>NCREIF Property Index</i>			1.6	3.0	6.4	--	--	--	6.9	Feb-17
GEM Realty Fund VI	1,749,588	0.1	-4.2	-7.8	-10.5	--	--	--	-2.7	Dec-17
<i>NCREIF Property Index</i>			1.6	3.0	6.4	--	--	--	7.2	Dec-17
Torchlight Debt Opportunity VI	11,472,851	0.5	3.0	4.0	-10.8	--	--	--	1.7	Apr-18
<i>NCREIF Property Index</i>			1.6	3.0	6.4	--	--	--	6.5	Apr-18
Tristan - EPISO V	200,684	0.0								
<i>NCREIF Property Index</i>			1.6	3.0	--	--	--	--	4.5	Apr-19

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Private Real Assets</b>	<b>22,699,325</b>	<b>1.0</b>	<b>0.8</b>	<b>1.9</b>	<b>2.8</b>	<b>10.4</b>	<b>--</b>	<b>--</b>	<b>7.0</b>	<b>Jul-15</b>
Global Infra Part III-A/B, LP	20,240,966	0.9	1.6	3.0	3.8	5.8	--	--	1.7	Sep-16
DJ Brookfield Global Infrastructure Net TR USD			4.0	6.6	28.7	11.1	--	--	9.1	Sep-16
Lime Rock Partners VIII	2,208,013	0.1	-1.0	-2.8	-0.8	--	--	--	-0.8	Dec-18
DJ Brookfield Global Infrastructure Net TR USD			4.0	6.6	28.7	--	--	--	20.6	Dec-18
Kimmeridge Energy Fund V, L.P.	237,219	0.0								
DJ Brookfield Global Infrastructure Net TR USD			4.0	--	--	--	--	--	7.0	Aug-19
Global Infra Partners IV	13,128	0.0								
DJ Brookfield Global Infrastructure Net TR USD			4.0	--	--	--	--	--	--	Sep-19
<b>Emerging Markets Debt</b>	<b>66,312,825</b>	<b>3.0</b>	<b>4.2</b>	<b>4.3</b>	<b>13.8</b>	<b>5.5</b>	<b>--</b>	<b>--</b>	<b>3.7</b>	<b>Jul-15</b>
50% JPM EMBI GD / 50% JPM GBI-EM			3.5	3.9	14.3	6.9	--	--	5.5	Jul-15
eV All Emg Mkts Fixed Inc Net Median			3.5	3.5	14.0	6.4	5.3	5.6	5.4	Jul-15
eV All Emg Mkts Fixed Inc Net Rank			32	20	54	81	--	--	85	Jul-15
BlueBay EM Select Bond	31,892,761	1.4	3.6	3.7	14.3	5.7	--	--	3.8	Jul-15
50% JPM EMBI GD / 50% JPM GBI-EM			3.5	3.9	14.3	6.9	--	--	5.5	Jul-15
eV All Emg Mkts Fixed Inc Net Median			3.5	3.5	14.0	6.4	5.3	5.6	5.4	Jul-15
eV All Emg Mkts Fixed Inc Net Rank			50	44	39	77	--	--	83	Jul-15

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

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Wellington Iguazu Partners LP Fund	34,420,064	1.6	4.9	5.1	--	--	--	--	7.6	May-19
50% JPM EMBI GD / 50% JPM GBI-EM			3.5	3.9	--	--	--	--	8.9	May-19
eV All Emg Mkts Fixed Inc Net Median			3.5	3.5	14.0	6.4	5.3	5.6	7.4	May-19
eV All Emg Mkts Fixed Inc Net Rank			24	5	--	--	--	--	47	May-19
<b>Zero Beta</b>	<b>609,118,674</b>	<b>27.4</b>	<b>0.9</b>	<b>1.4</b>	<b>4.5</b>	<b>3.1</b>	--	--	<b>2.3</b>	<b>Jul-15</b>
Zero Beta Benchmark			0.5	1.0	2.5	1.2	--	--	0.8	Jul-15
<b>Short-Term IG Bonds</b>	<b>325,772,651</b>	<b>14.7</b>	<b>0.5</b>	<b>1.1</b>	<b>2.4</b>	--	--	--	<b>2.4</b>	<b>Oct-18</b>
91 Day T-Bills			0.4	0.9	2.1	--	--	--	2.1	Oct-18
BlackRock 3-Month T-Bill	52,093	0.0	0.4	1.0	2.3	--	--	--	2.3	Oct-18
ICE BofAML 91 Days T-Bills TR			0.5	1.0	2.3	--	--	--	2.3	Oct-18
Blackrock 1-3 Year Gov/Credit	325,720,557	14.7	--	--	--	--	--	--	0.2	Nov-19
BBgBarc US Govt/Credit 1-3 Yr. TR			--	--	--	--	--	--	0.2	Nov-19
<b>Immunized Cash Flows</b>	<b>98,371,798</b>	<b>4.4</b>	<b>0.5</b>	<b>1.2</b>	<b>3.5</b>	--	--	--	<b>3.9</b>	<b>Oct-18</b>
Immunized Cash Flows Benchmark			0.5	1.2	3.5	--	--	--	3.9	Oct-18
Insight Immunized Cash Flow	98,371,798	4.4	0.5	1.2	--	--	--	--	--	Jun-19
<b>Absolute Return</b>	<b>161,189,670</b>	<b>7.3</b>	<b>1.9</b>	<b>2.2</b>	<b>9.7</b>	<b>4.9</b>	<b>3.6</b>	--	<b>4.1</b>	<b>Nov-12</b>
Absolute Return Benchmark			0.5	1.0	2.4	1.1	0.6	--	1.3	Nov-12

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Macro</b>	<b>69,965,795</b>	<b>3.2</b>	<b>1.8</b>	<b>0.4</b>	<b>9.2</b>	<b>3.6</b>	<b>1.8</b>	<b>--</b>	<b>2.5</b>	<b>Oct-14</b>
<i>HFRI Macro (Total) Index</i>			-0.2	1.5	6.5	1.4	0.8	--	1.2	Oct-14
Kepos Alpha Fund, Ltd	15,509,612	0.7	9.8	6.4	31.0	5.6	0.0	--	2.1	Mar-13
<i>HFRI Macro: Systematic Diversified Index</i>			-1.4	1.3	7.1	0.7	-0.3	--	1.1	Mar-13
Keynes Lev Quant Strat, Ltd	11,316,899	0.5	-5.3	1.0	17.9	7.0	--	--	4.1	Jan-16
<i>Barclay BTOP50 Index TR USD</i>			-2.1	1.2	6.2	0.2	--	--	-1.0	Jan-16
Pharo Management, Ltd.	22,368,580	1.0	0.5	-3.6	4.5	7.9	--	--	8.0	Apr-16
<i>HFRI Macro (Total) Index</i>			-0.2	1.5	6.5	1.4	--	--	1.0	Apr-16
AHL Partners LLP	11,264,555	0.5	4.7	4.9	8.9	7.0	--	--	6.6	Jun-16
<i>Barclay BTOP50 Index TR USD</i>			-2.1	1.2	6.2	0.2	--	--	-1.3	Jun-16
Systematica	9,506,149	0.4	-1.2	1.2	6.9	--	--	--	4.4	Jul-17
<i>Barclay BTOP50 Index TR USD</i>			-2.1	1.2	6.2	--	--	--	2.2	Jul-17
<b>Relative Value</b>	<b>91,223,875</b>	<b>4.1</b>	<b>1.9</b>	<b>3.6</b>	<b>9.7</b>	<b>6.4</b>	<b>5.1</b>	<b>--</b>	<b>5.0</b>	<b>Oct-14</b>
<i>HFRI Relative Value (Total) Index</i>			1.9	1.9	7.5	4.0	3.8	--	3.5	Oct-14
Pine River Fund, Ltd	926,344	0.0	12.0	10.9	31.1	9.1	4.6	--	5.4	Jan-13
<i>HFRI Relative Value (Total) Index</i>			1.9	1.9	7.5	4.0	3.8	--	4.3	Jan-13
DE Shaw Composite Fund, LLC	32,548,441	1.5	3.1	6.6	15.1	10.9	10.5	--	11.3	Apr-13
<i>HFRI Fund Weighted Composite Index</i>			3.6	3.0	10.4	4.5	3.6	--	3.9	Apr-13

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

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
JD Capital	14,727,407	0.7	0.1	0.3	3.9	5.7	--	--	5.4	Oct-16
HFRI Relative Value (Total) Index			1.9	1.9	7.5	4.0	--	--	4.3	Oct-16
Pine River Volatility Arb	16,056,800	0.7	2.6	0.3	5.3	--	--	--	0.4	Mar-17
HFRI Relative Value (Total) Index			1.9	1.9	7.5	--	--	--	3.5	Mar-17
Hudson Bay	26,964,882	1.2	0.8	3.9	8.2	--	--	--	6.5	Aug-17
HFRI Relative Value (Total) Index			1.9	1.9	7.5	--	--	--	3.5	Aug-17
<b>Cash</b>	<b>23,784,555</b>	<b>1.1</b>	<b>1.0</b>	<b>1.5</b>	<b>2.6</b>	<b>1.7</b>	<b>1.2</b>	<b>--</b>	<b>--</b>	<b>Jan-06</b>
ICE BofAML 91 Days T-Bills TR			0.5	1.0	2.3	1.7	1.1	--	--	Jan-06
<b>Other</b>	<b>236,939,507</b>	<b>10.7</b>	<b>1.4</b>	<b>2.1</b>	<b>5.8</b>	<b>3.5</b>	<b>2.2</b>	<b>3.0</b>	<b>2.1</b>	<b>Jul-04</b>
Other Benchmark			2.3	2.5	6.1	3.2	--	--	--	Jul-04
<b>Investment Grade Bonds</b>	<b>64,940,469</b>	<b>2.9</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>-0.1</b>	<b>Dec-19</b>
BBgBarc US Aggregate TR			--	--	--	--	--	--	-0.1	Dec-19
Northern Trust Aggregate Bond Index	64,940,469	2.9	--	--	--	--	--	--	-0.1	Dec-19
BBgBarc US Aggregate TR			--	--	--	--	--	--	-0.1	Dec-19
<b>TIPS</b>	<b>45,075,925</b>	<b>2.0</b>	<b>1.2</b>	<b>1.5</b>	<b>4.9</b>	<b>2.2</b>	<b>1.8</b>	<b>--</b>	<b>1.1</b>	<b>Jul-14</b>
BBgBarc U.S. TIPS 0-5 Years			1.1	1.5	4.9	2.1	1.8	--	1.1	Jul-14
Northern Trust 0-5 Year TIPS	45,075,925	2.0	1.2	1.5	4.9	2.2	1.8	--	1.1	Jul-14
BBgBarc US Treasury TIPS 0-5 Yr TR			1.1	1.5	4.9	2.1	1.8	--	1.1	Jul-14



	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Core Private Real Estate</b>	<b>87,293,988</b>	<b>3.9</b>	<b>0.8</b>	<b>2.0</b>	<b>5.9</b>	<b>6.9</b>	<b>8.8</b>	<b>10.8</b>	<b>7.0</b>	<b>Jul-04</b>
NCREIF ODCE Equal Weighted (Net)			1.3	2.5	5.2	6.5	8.3	10.5	6.8	Jul-04
NCREIF ODCE Value-Weighted			1.3	2.4	4.4	6.1	8.0	10.4	6.9	Jul-04
BlackRock Core Property Fund	40,691,459	1.8	1.1	1.1	--	--	--	--	3.6	Feb-19
NCREIF ODCE Equal-Weighted			1.3	2.5	--	--	--	--	4.7	Feb-19
NCREIF ODCE Value-Weighted			1.3	2.4	--	--	--	--	4.0	Feb-19
Clarion Lion Properties Fund	46,602,529	2.1	0.0	1.4	--	--	--	--	2.9	Apr-19
NCREIF ODCE Equal Weighted (Net)			1.3	2.5	--	--	--	--	3.6	Apr-19
NCREIF ODCE Value-Weighted			1.3	2.4	--	--	--	--	3.2	Apr-19
<b>Commodities</b>	<b>39,629,125</b>	<b>1.8</b>	<b>4.2</b>	<b>4.3</b>	<b>8.0</b>	<b>2.7</b>	<b>-2.8</b>	<b>--</b>	<b>-2.8</b>	<b>May-10</b>
Bloomberg Commodity Index TR USD			4.4	2.5	7.7	-0.9	-3.9	--	-4.6	May-10
Credit Suisse Risk Parity	39,629,125	1.8	4.2	4.3	8.1	2.6	-1.4	--	-4.1	Apr-11
Bloomberg Commodity Index TR USD			4.4	2.5	7.7	-0.9	-3.9	--	-7.5	Apr-11
<b>Overlay</b>	<b>6,878,698</b>	<b>0.3</b>								
Russell Investments Overlay	6,868,017	0.3								

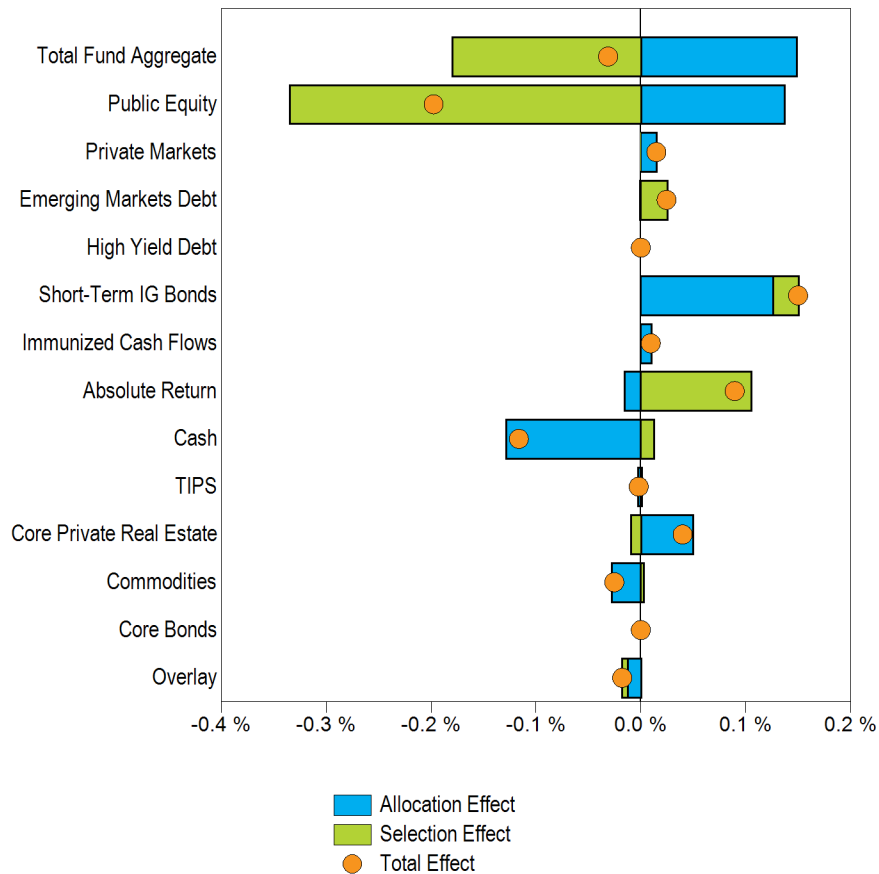
Cash Flow Summary						
Quarter Ending December 31, 2019						
	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Net Investment Change	Ending Market Value
AHL Partners LLP	\$10,758,206	\$0	\$0	\$0	\$506,349	\$11,264,555
American Core Realty Fund, LLC	\$25,293,879	\$0	-\$25,603,554	-\$25,603,554	\$309,675	--
ArrowMark Co-Investment	\$0	\$0	-\$134,440	-\$134,440	\$134,440	--
Artisan Global Opportunities	\$61,892,332	\$0	\$0	\$0	\$5,883,497	\$67,775,829
Artisan Global Value	\$129,433,070	\$11,845,225	-\$11,845,225	\$0	\$10,605,348	\$140,038,418
Blackrock 1-3 Year Gov/Credit	--	\$325,000,000	\$0	\$325,000,000	\$720,557	\$325,720,557
BlackRock 3-Month T-Bill	\$402,847,349	\$0	-\$403,995,886	-\$403,995,886	\$1,200,631	\$52,093
BlackRock Core Property Fund	\$16,281,428	\$24,375,000	-\$189,453	\$24,185,547	\$224,484	\$40,691,459
Blackstone/GSO Cap Partners	\$8,304,863	\$117,574	\$0	\$117,574	-\$668,849	\$7,753,587
BlueBay EM Select Bond	\$37,687,245	\$0	-\$7,000,000	-\$7,000,000	\$1,205,516	\$31,892,761
Cash Account	\$14,574,921	\$634,663,525	-\$625,980,683	\$8,682,842	\$526,792	\$23,784,555
Clarion Lion Properties Fund	\$46,969,168	\$0	-\$366,639	-\$366,639	\$0	\$46,602,529
Cove Street Small Cap Value	\$18,148,314	\$0	\$0	\$0	\$1,608,682	\$19,756,995
Credit Suisse Risk Parity	\$61,534,297	\$0	-\$24,050,337	-\$24,050,337	\$2,145,165	\$39,629,125
Crestline Co-Investment	\$1,583,923	\$0	-\$3,226	-\$3,226	\$94,705	\$1,675,403
Crestline Portfolio Financing	\$6,820,127	\$0	-\$98,388	-\$98,388	\$212,049	\$6,933,788
Cross Ocean USD ESS Fund II LP	\$10,312,518	\$0	-\$2,200,922	-\$2,200,922	\$216,612	\$8,328,209
Cross Ocean USD ESS Fund III, L.P.	\$2,699,680	\$3,525,815	-\$74,420	\$3,451,395	-\$28,453	\$6,122,622
DE Shaw Composite Fund, LLC	\$31,584,838	\$0	-\$205,463	-\$205,463	\$1,169,066	\$32,548,441
Dimensional Fund Adv EM Value	\$37,317,676	\$0	\$0	\$0	\$3,617,836	\$40,935,512
DRA Growth & Income Fund IX	\$17,173,425	\$0	-\$629,561	-\$629,561	\$549,022	\$17,092,885
DRA Growth & Income Fund VI	\$666,223	\$0	-\$40,800	-\$40,800	\$11,218	\$636,641

	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Net Investment Change	Ending Market Value
DRA Growth & Income Fund VII	\$3,680,641	\$0	-\$372,424	-\$372,424	\$389,199	\$3,697,416
DRA Growth & Income Fund VIII	\$11,135,323	\$277,778	-\$1,233,694	-\$955,916	\$107,533	\$10,286,939
GEM Realty Fund VI	\$1,826,858	\$0	-\$33,750	-\$33,750	-\$43,519	\$1,749,588
Global Infra Part III-A/B, LP	\$20,929,760	\$0	-\$1,124,754	-\$1,124,754	\$435,960	\$20,240,966
Global Infra Partners IV	\$43,674	\$14,000	-\$14,000	\$0	-\$30,546	\$13,128
GQG Global Emerging Markets	\$40,499,342	\$0	-\$57,737	-\$57,737	\$2,652,343	\$43,093,948
Great Hill Equity Partners IV	\$2,698,556	\$0	-\$552,736	-\$552,736	\$152,785	\$2,298,604
Hudson Bay	\$26,738,523	\$0	\$0	\$0	\$226,359	\$26,964,882
Innovation Endeavors III	\$1,472,242	\$0	\$0	\$0	-\$18,458	\$1,453,784
Insight Immunized Cash Flow	\$105,730,247	\$0	-\$7,851,964	-\$7,851,964	\$493,515	\$98,371,798
JD Capital	\$14,705,804	\$0	-\$56,024	-\$56,024	\$77,627	\$14,727,407
Kepos Alpha Fund, Ltd	\$14,127,346	\$0	-\$33,552	-\$33,552	\$1,415,819	\$15,509,612
Keynes Lev Quant Strat, Ltd	\$11,944,277	\$0	\$0	\$0	-\$627,379	\$11,316,899
Kimmeridge Energy Fund V, L.P.	\$160,178	\$155,920	-\$18,390	\$137,530	-\$60,489	\$237,219
Lime Rock Partners VIII	\$2,075,636	\$155,963	-\$18,133	\$137,830	-\$5,453	\$2,208,013
Marshall Wace Eureka Fund	\$23,533,719	\$0	-\$23,553,369	-\$23,553,369	\$19,650	--
Medley Opportunity Fund II LP	\$21,386,938	\$0	-\$2,622,147	-\$2,622,147	-\$1,317,392	\$17,447,398
Northern Tr 1-3 Yr US Gov Bond	--	\$0	\$0	\$0	\$0	--
Northern Tr Russell 2000 Value	\$13,011,851	\$0	\$0	\$0	\$1,108,229	\$14,120,080
Northern Trust 0-5 Year TIPS	\$44,557,395	\$0	\$0	\$0	\$518,529	\$45,075,925
Northern Trust Aggregate Bond Index	--	\$65,000,000	\$0	\$65,000,000	-\$59,531	\$64,940,469
Northern Trust MSCI EM IMI	\$36,362,940	\$38,000,000	\$0	\$38,000,000	\$6,784,570	\$81,147,510

	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Net Investment Change	Ending Market Value
Northern Trust MSCI World ex US	\$55,466,438	\$65,000,000	-\$5,000,000	\$60,000,000	\$7,053,724	\$122,520,162
Northern Trust Russell 1000	\$88,967,409	\$30,000,000	\$0	\$30,000,000	\$11,368,301	\$130,335,709
Northern Trust Russell 3000	\$263,579,987	\$0	-\$54,000,000	-\$54,000,000	\$20,671,600	\$230,251,587
Oberweis Intl Opportunities	\$26,926,598	\$20,893,611	-\$16,893,611	\$4,000,000	\$2,261,640	\$33,188,238
Octagon CLO Opp Fund III	\$8,603,160	\$0	-\$286,284	-\$286,284	-\$221,815	\$8,095,062
Pantheon Global Secondary III	\$3,844,816	\$0	-\$641,933	-\$641,933	\$86,815	\$3,289,698
Pantheon USA Fund VII, LP	\$14,930,557	\$0	-\$1,295,123	-\$1,295,123	-\$257,428	\$13,378,006
Partners Group Secondary 2008	\$1,132,906	\$0	-\$264,461	-\$264,461	\$78,957	\$947,402
Partners Group Secondary 2011	\$7,077,757	\$0	-\$365,708	-\$365,708	-\$475,379	\$6,236,670
Pathway Private Eq Fund VIII	\$2,603,897	\$15,744	\$0	\$15,744	-\$23,486	\$2,596,155
PE Strategic Partnership, LP	\$82,786,916	\$10,450,000	-\$137,308	\$10,312,692	\$2,729,143	\$95,828,751
Pharo Management, Ltd.	\$22,261,461	\$0	\$0	\$0	\$107,119	\$22,368,580
Pine River Fund, Ltd	\$1,203,928	\$0	-\$385,444	-\$385,444	\$107,860	\$926,344
Pine River Volatility Arb	\$15,643,440	\$0	-\$19,642	-\$19,642	\$433,002	\$16,056,800
Russell Investments Overlay	\$6,903,696	\$0	\$0	\$0	-\$35,678	\$6,868,017
RWC Emerging Markets Equity	\$25,681,125	\$0	-\$51,473	-\$51,473	\$2,961,160	\$28,590,812
Sandler Plus Offshore Fund Ltd	\$20,629,945	\$0	-\$19,598,448	-\$19,598,448	-\$1,031,497	--
Senator Global Opportunity, LP	\$18,858,170	\$0	-\$2,690,469	-\$2,690,469	\$642,687	\$16,810,388
State Street Terminated Managers	\$38,300	\$0	\$0	\$0	-\$27,619	\$10,681
Systematica	\$9,623,821	\$0	\$0	\$0	-\$117,672	\$9,506,149
Torchlight Debt Opportunity VI	\$6,766,847	\$4,500,000	-\$101,250	\$4,398,750	\$307,253	\$11,472,851
Tristan - EPISO IV	\$12,359,025	\$0	-\$527,614	-\$527,614	\$719,832	\$12,551,243

	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Net Investment Change	Ending Market Value
Tristan - EPISO V	\$194,909	\$0	\$0	\$0	\$5,775	\$200,684
Wellington Emerging Markets Systematic Equity	\$50,476,760	\$0	-\$9,680	-\$9,680	\$5,970,697	\$56,437,776
Wellington Iguazu Partners LP Fund	\$32,803,360	\$0	\$0	\$0	\$1,616,704	\$34,420,064
White Oak Direct Lending	\$11,379,987	\$0	-\$92,716	-\$92,716	\$1,781,952	\$13,069,223
<b>Total</b>	<b>\$2,129,249,945</b>	<b>\$1,233,990,157</b>	<b>-\$1,242,322,836</b>	<b>-\$8,332,680</b>	<b>\$99,177,341</b>	<b>\$2,220,094,606</b>

#### Attribution Effects 3 Months Ending December 31, 2019



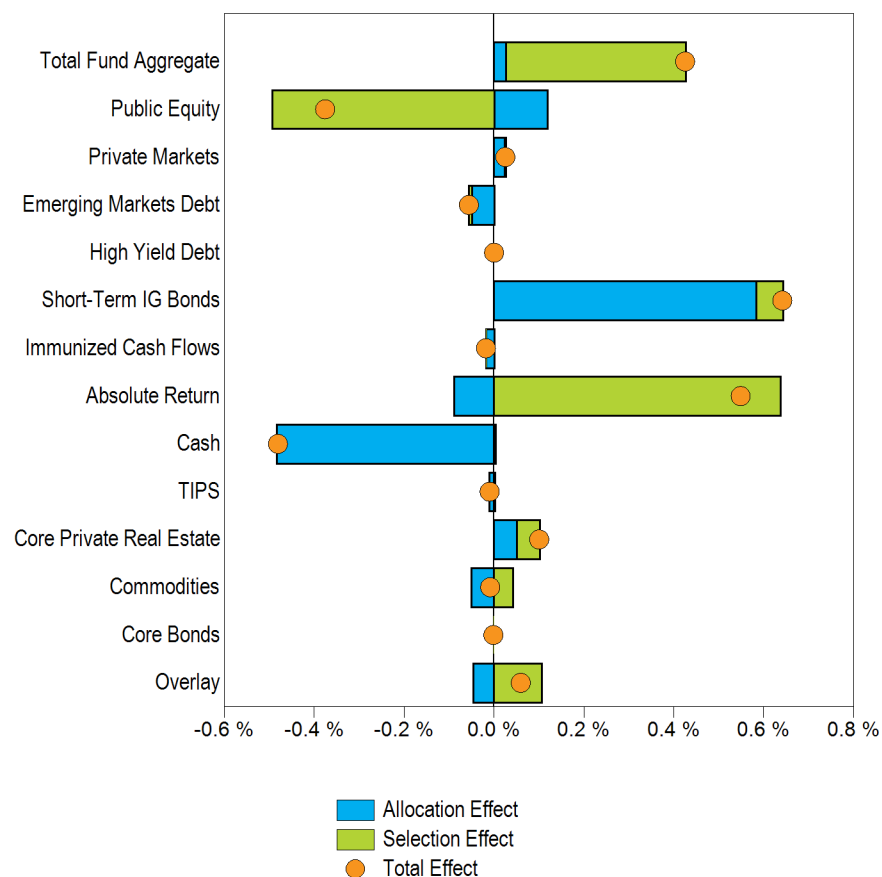
#### Attribution Summary 3 Months Ending December 31, 2019

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Total Effects
Public Equity	8.6%	9.7%	-1.1%	-0.3%	0.1%	-0.2%
Private Markets	4.9%	4.9%	0.0%	0.0%	0.0%	0.0%
Emerging Markets Debt	4.2%	3.5%	0.7%	0.0%	0.0%	0.0%
High Yield Debt	--	--	--	--	0.0%	--
Short-Term IG Bonds	0.5%	0.4%	0.1%	0.0%	0.1%	0.1%
Immunized Cash Flows	0.5%	0.5%	0.0%	0.0%	0.0%	0.0%
Absolute Return	1.9%	0.5%	1.4%	0.1%	0.0%	0.1%
Cash	1.0%	0.5%	0.5%	0.0%	-0.1%	-0.1%
TIPS	1.2%	1.1%	0.0%	0.0%	0.0%	0.0%
Core Private Real Estate	0.8%	1.3%	-0.5%	0.0%	0.0%	0.0%
Commodities	4.2%	4.4%	-0.2%	0.0%	0.0%	0.0%
Core Bonds	--	0.7%	--	0.0%	0.0%	0.0%
Overlay	-0.9%	0.4%	-1.3%	0.0%	0.0%	0.0%
<b>Total</b>	<b>4.5%</b>	<b>4.6%</b>	<b>0.0%</b>	<b>-0.2%</b>	<b>0.1%</b>	<b>0.0%</b>

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

Total Fund | As of December 31, 2019

### Attribution Effects 1 Year Ending December 31, 2019

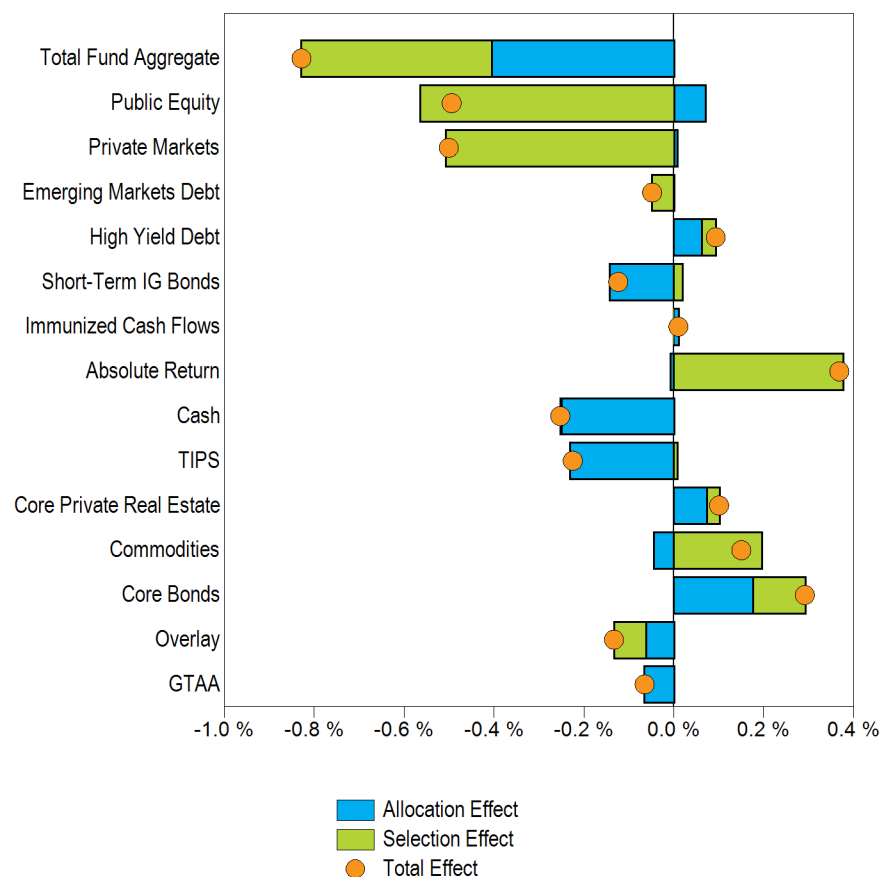


### Attribution Summary 1 Year Ending December 31, 2019

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Total Effects
Public Equity	23.0%	24.6%	-1.6%	-0.5%	0.1%	-0.4%
Private Markets	18.4%	18.4%	0.0%	0.0%	0.0%	0.0%
Emerging Markets Debt	13.8%	14.3%	-0.5%	0.0%	-0.1%	-0.1%
High Yield Debt	--	--	--	0.0%	0.0%	0.0%
Short-Term IG Bonds	2.4%	2.1%	0.3%	0.1%	0.6%	0.6%
Immunized Cash Flows	3.5%	3.5%	0.0%	0.0%	0.0%	0.0%
Absolute Return	9.7%	2.4%	7.4%	0.6%	-0.1%	0.5%
Cash	2.6%	2.3%	0.3%	0.0%	-0.5%	-0.5%
TIPS	4.9%	4.9%	0.0%	0.0%	0.0%	0.0%
Core Private Real Estate	5.9%	5.2%	0.7%	0.1%	0.1%	0.1%
Commodities	8.0%	7.7%	0.4%	0.0%	0.0%	0.0%
Core Bonds	--	2.9%	--	0.0%	0.0%	0.0%
Overlay	30.2%	2.1%	28.1%	0.1%	0.0%	0.1%
<b>Total</b>	<b>14.0%</b>	<b>13.6%</b>	<b>0.4%</b>	<b>0.4%</b>	<b>0.0%</b>	<b>0.4%</b>

Total Fund | As of December 31, 2019

### Attribution Effects 3 Years Ending December 31, 2019

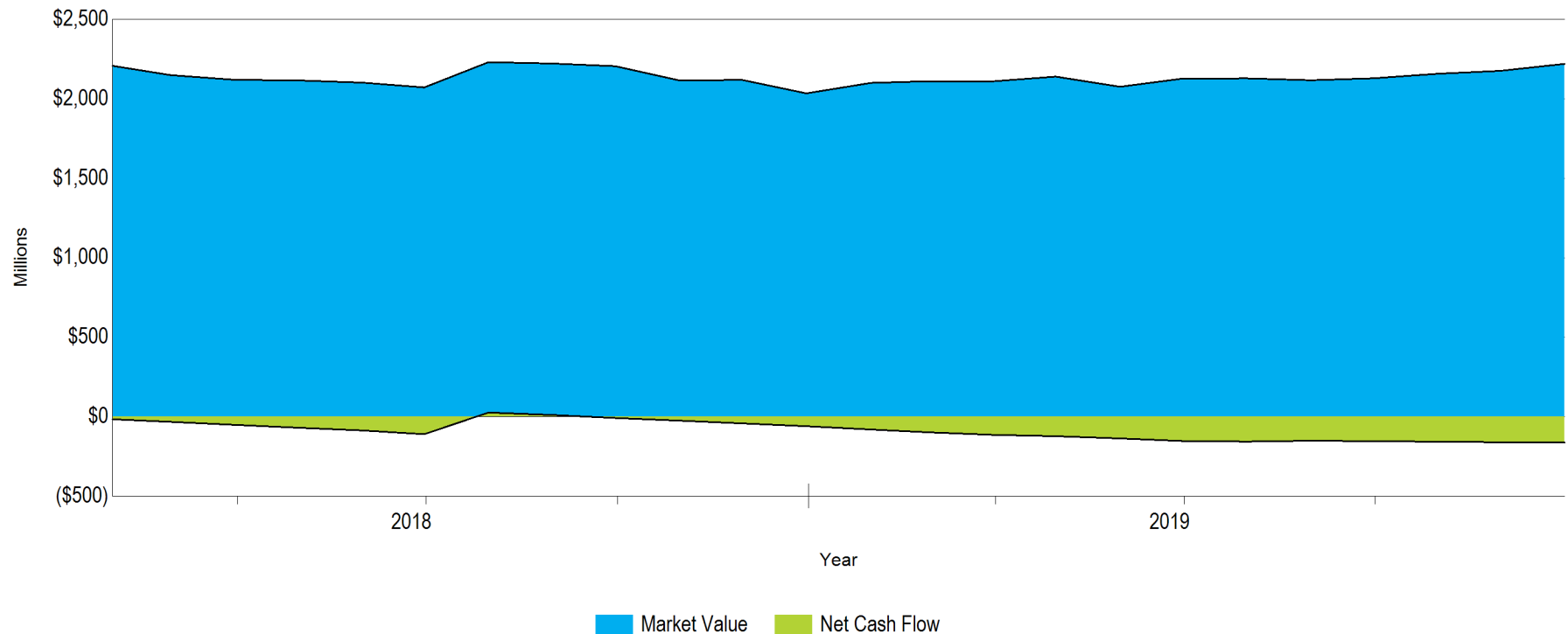


### Attribution Summary 3 Years Ending December 31, 2019

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Total Effects
Public Equity	10.3%	12.2%	-1.9%	-0.6%	0.1%	-0.5%
Private Markets	9.1%	11.7%	-2.6%	-0.5%	0.0%	-0.5%
Emerging Markets Debt	5.5%	6.9%	-1.4%	0.0%	0.0%	0.0%
High Yield Debt	--	--	--	0.0%	0.1%	0.1%
Short-Term IG Bonds	--	0.9%	--	0.0%	-0.1%	-0.1%
Immunized Cash Flows	--	--	--	0.0%	0.0%	0.0%
Absolute Return	4.9%	1.1%	3.8%	0.4%	0.0%	0.4%
Cash	1.7%	1.7%	0.0%	0.0%	-0.3%	-0.3%
TIPS	2.2%	2.1%	0.1%	0.0%	-0.2%	-0.2%
Core Private Real Estate	6.9%	6.5%	0.5%	0.0%	0.1%	0.1%
Commodities	2.7%	-0.9%	3.6%	0.2%	0.0%	0.2%
Core Bonds	--	3.0%	--	0.1%	0.2%	0.3%
Overlay	-7.5%	1.6%	-9.1%	-0.1%	-0.1%	-0.1%
GTAA	--	--	--	0.0%	-0.1%	-0.1%
<b>Total</b>	<b>6.6%</b>	<b>7.4%</b>	<b>-0.8%</b>	<b>-0.4%</b>	<b>-0.4%</b>	<b>-0.8%</b>

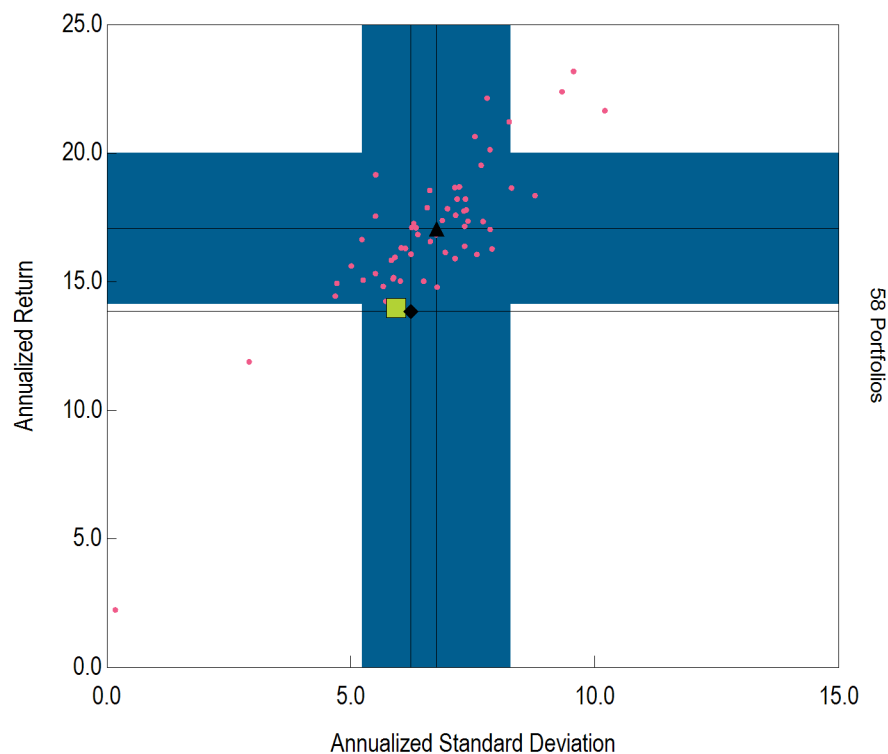


Market Value History  
2 Years Ending December 31, 2019



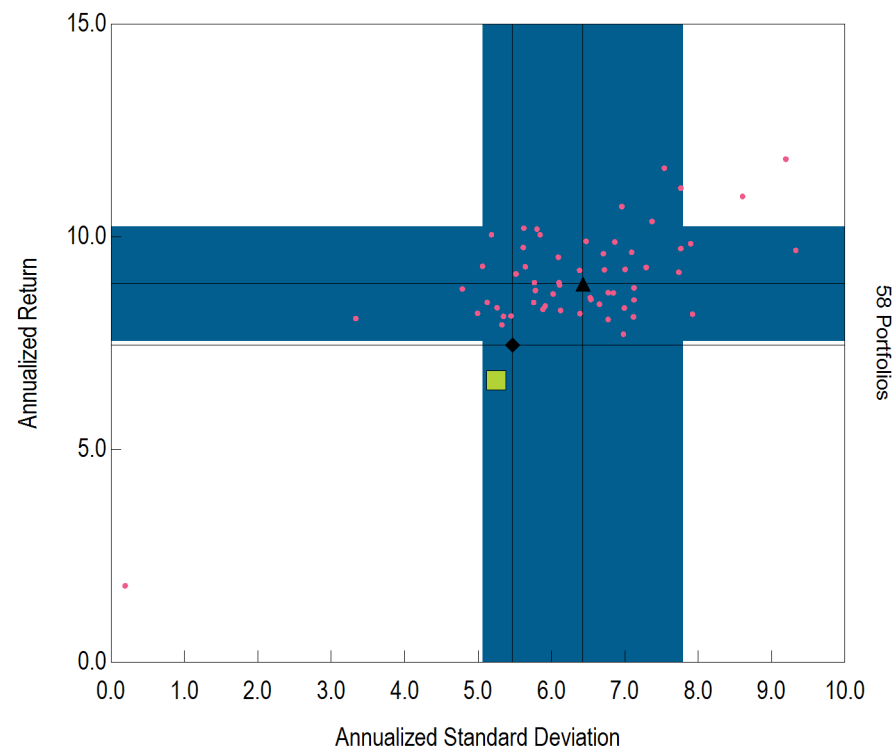
	Fourth Quarter	Fiscal Year-To-Date	One Year	Two Years
Beginning Market Value	\$2,129,249,945	\$2,127,219,653	\$2,034,505,293	\$2,170,709,925
Net Cash Flow	-\$8,332,619	-\$9,777,989	-\$102,819,800	-\$163,028,834
Net Investment Change	\$99,177,280	\$102,652,942	\$288,409,113	\$212,413,515
Ending Market Value	\$2,220,094,606	\$2,220,094,606	\$2,220,094,606	\$2,220,094,606

Annualized Return vs. Annualized Standard Deviation  
1 Year Ending December 31, 2019



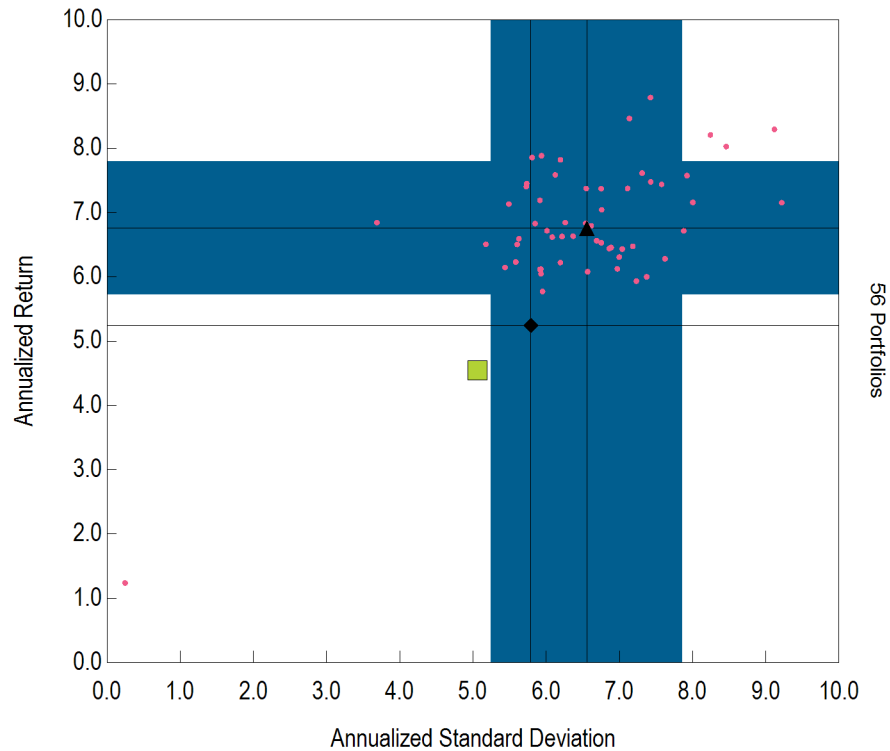
- Total Fund Aggregate
- ◆ Policy Benchmark
- ▲ Universe Median
- 68% Confidence Interval
- InvMetrics Public DB > \$1B Net

Annualized Return vs. Annualized Standard Deviation  
3 Years Ending December 31, 2019



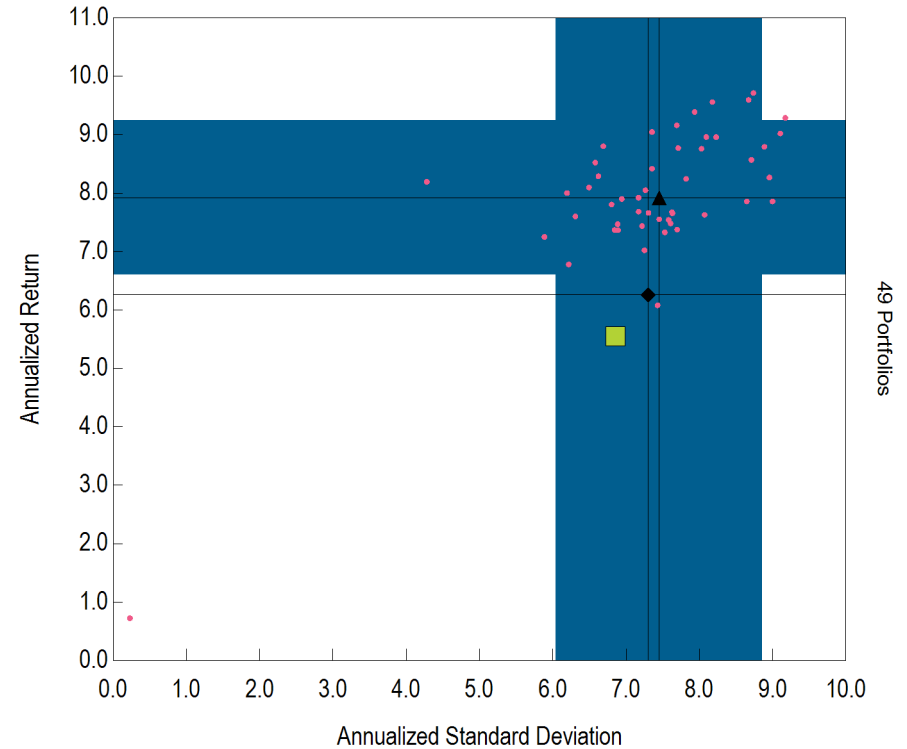
- Total Fund Aggregate
- ◆ Policy Benchmark
- ▲ Universe Median
- 68% Confidence Interval
- InvMetrics Public DB > \$1B Net

Annualized Return vs. Annualized Standard Deviation  
5 Years Ending December 31, 2019



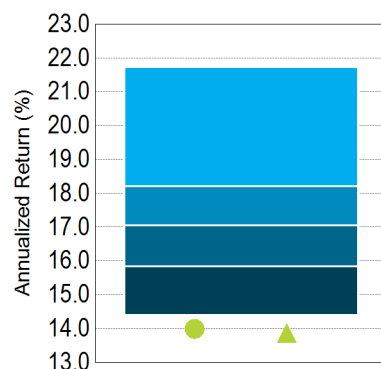
- Total Fund Aggregate
- ◆ Policy Benchmark
- ▲ Universe Median
- 68% Confidence Interval
- InvMetrics Public DB > \$1B Net

Annualized Return vs. Annualized Standard Deviation  
10 Years Ending December 31, 2019



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

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



● Total Fund Aggregate

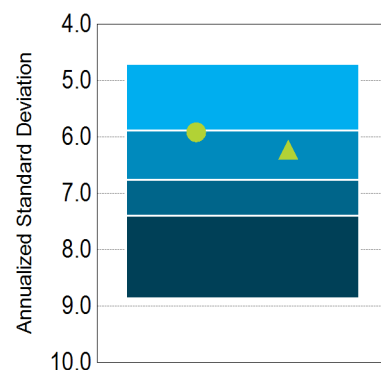
Value 14.0  
Rank 97

▲ Policy Benchmark

Value 13.9  
Rank 97

Universe  
5th %tile 21.7  
25th %tile 18.2  
Median 17.1  
75th %tile 15.9  
95th %tile 14.4

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



● Total Fund Aggregate

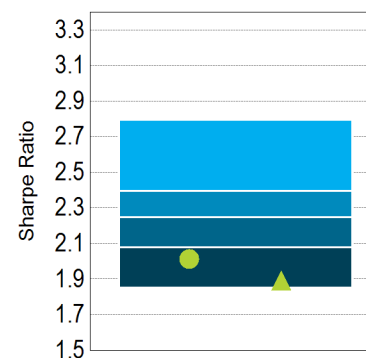
Value 5.9  
Rank 27

▲ Policy Benchmark

Value 6.2  
Rank 34

Universe  
5th %tile 4.7  
25th %tile 5.9  
Median 6.8  
75th %tile 7.4  
95th %tile 8.9

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



● Total Fund Aggregate

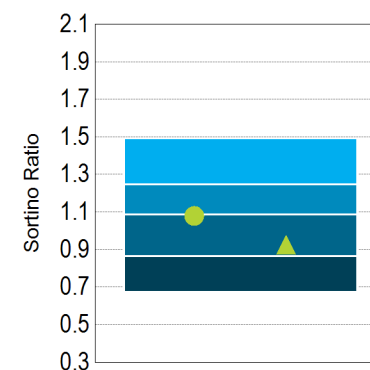
Value 2.0  
Rank 80

▲ Policy Benchmark

Value 1.9  
Rank 93

Universe  
5th %tile 2.8  
25th %tile 2.4  
Median 2.2  
75th %tile 2.1  
95th %tile 1.9

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



● Total Fund Aggregate

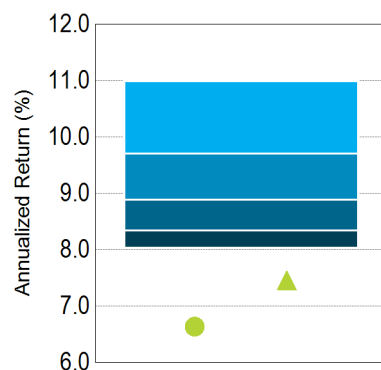
Value 1.1  
Rank 51

▲ Policy Benchmark

Value 0.9  
Rank 64

Universe  
5th %tile 1.5  
25th %tile 1.2  
Median 1.1  
75th %tile 0.9  
95th %tile 0.7

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



#### ● Total Fund Aggregate

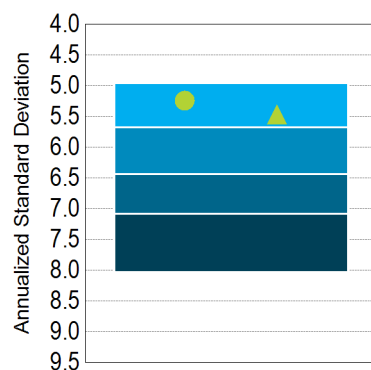
Value 6.6  
Rank 99

#### ▲ Policy Benchmark

Value 7.5  
Rank 99

Universe  
5th %tile 11.0  
25th %tile 9.7  
Median 8.9  
75th %tile 8.3  
95th %tile 8.0

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



#### ● Total Fund Aggregate

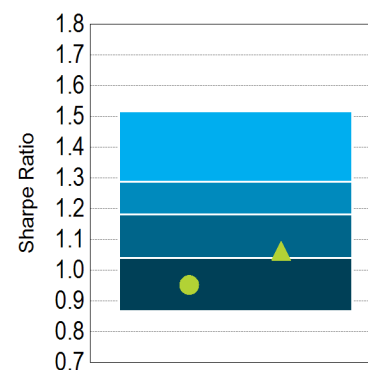
Value 5.2  
Rank 12

#### ▲ Policy Benchmark

Value 5.5  
Rank 19

Universe  
5th %tile 5.0  
25th %tile 5.7  
Median 6.4  
75th %tile 7.1  
95th %tile 8.0

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



#### ● Total Fund Aggregate

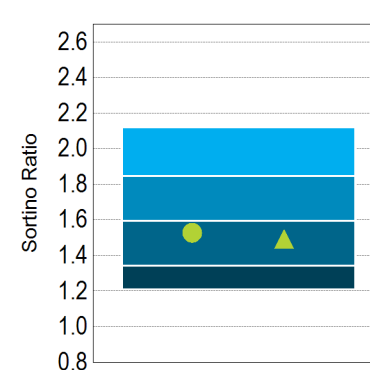
Value 1.0  
Rank 91

#### ▲ Policy Benchmark

Value 1.1  
Rank 69

Universe  
5th %tile 1.5  
25th %tile 1.3  
Median 1.2  
75th %tile 1.0  
95th %tile 0.9

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



#### ● Total Fund Aggregate

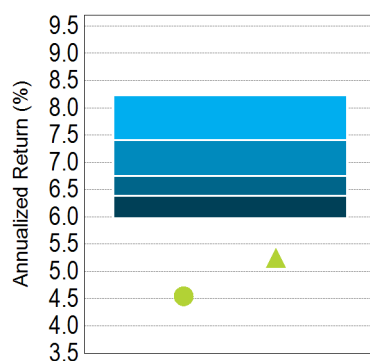
Value 1.5  
Rank 62

#### ▲ Policy Benchmark

Value 1.5  
Rank 64

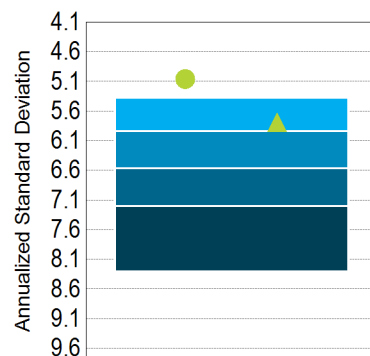
Universe  
5th %tile 2.1  
25th %tile 1.9  
Median 1.6  
75th %tile 1.3  
95th %tile 1.2

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



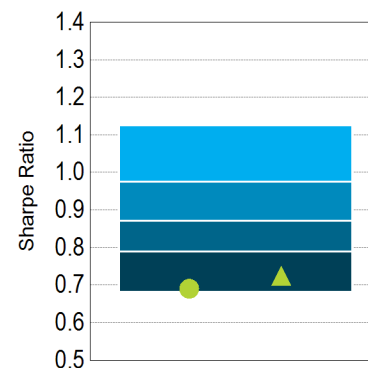
● Total Fund Aggregate	
Value	4.5
Rank	99
▲ Policy Benchmark	
Value	5.2
Rank	99
Universe	
5th %tile	8.2
25th %tile	7.4
Median	6.8
75th %tile	6.4
95th %tile	6.0

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



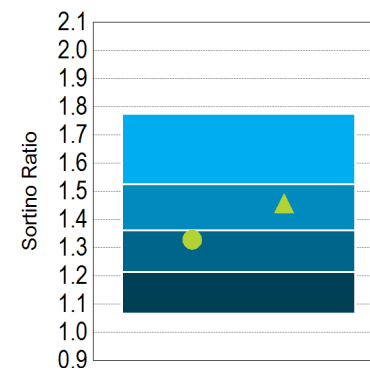
● Total Fund Aggregate	
Value	5.1
Rank	4
▲ Policy Benchmark	
Value	5.8
Rank	18
Universe	
5th %tile	5.4
25th %tile	5.9
Median	6.6
75th %tile	7.2
95th %tile	8.3

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



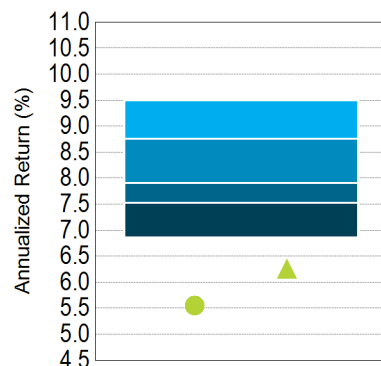
● Total Fund Aggregate	
Value	0.7
Rank	95
▲ Policy Benchmark	
Value	0.7
Rank	92
Universe	
5th %tile	1.1
25th %tile	1.0
Median	0.9
75th %tile	0.8
95th %tile	0.7

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



● Total Fund Aggregate	
Value	1.3
Rank	54
▲ Policy Benchmark	
Value	1.5
Rank	41
Universe	
5th %tile	1.8
25th %tile	1.5
Median	1.4
75th %tile	1.2
95th %tile	1.1

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



#### ● Total Fund Aggregate

Value 5.5  
Rank 99

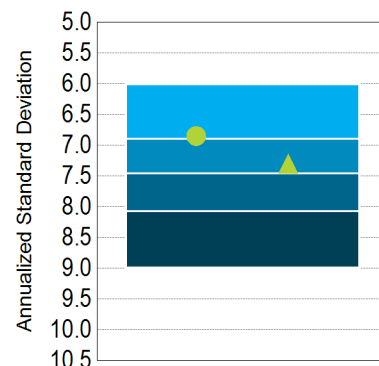
#### ▲ Policy Benchmark

Value 6.3  
Rank 98

#### Universe

5th %tile 9.5  
25th %tile 8.8  
Median 7.9  
75th %tile 7.5  
95th %tile 6.9

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



#### ● Total Fund Aggregate

Value 6.9  
Rank 24

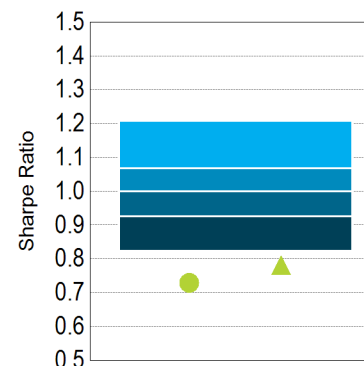
#### ▲ Policy Benchmark

Value 7.3  
Rank 42

#### Universe

5th %tile 6.0  
25th %tile 6.9  
Median 7.5  
75th %tile 8.1  
95th %tile 9.0

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



#### ● Total Fund Aggregate

Value 0.7  
Rank 99

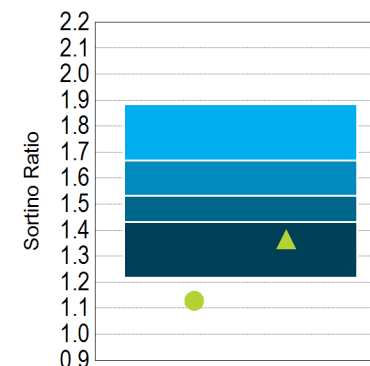
#### ▲ Policy Benchmark

Value 0.8  
Rank 97

#### Universe

5th %tile 1.2  
25th %tile 1.1  
Median 1.0  
75th %tile 0.9  
95th %tile 0.8

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



#### ● Total Fund Aggregate

Value 1.1  
Rank 99

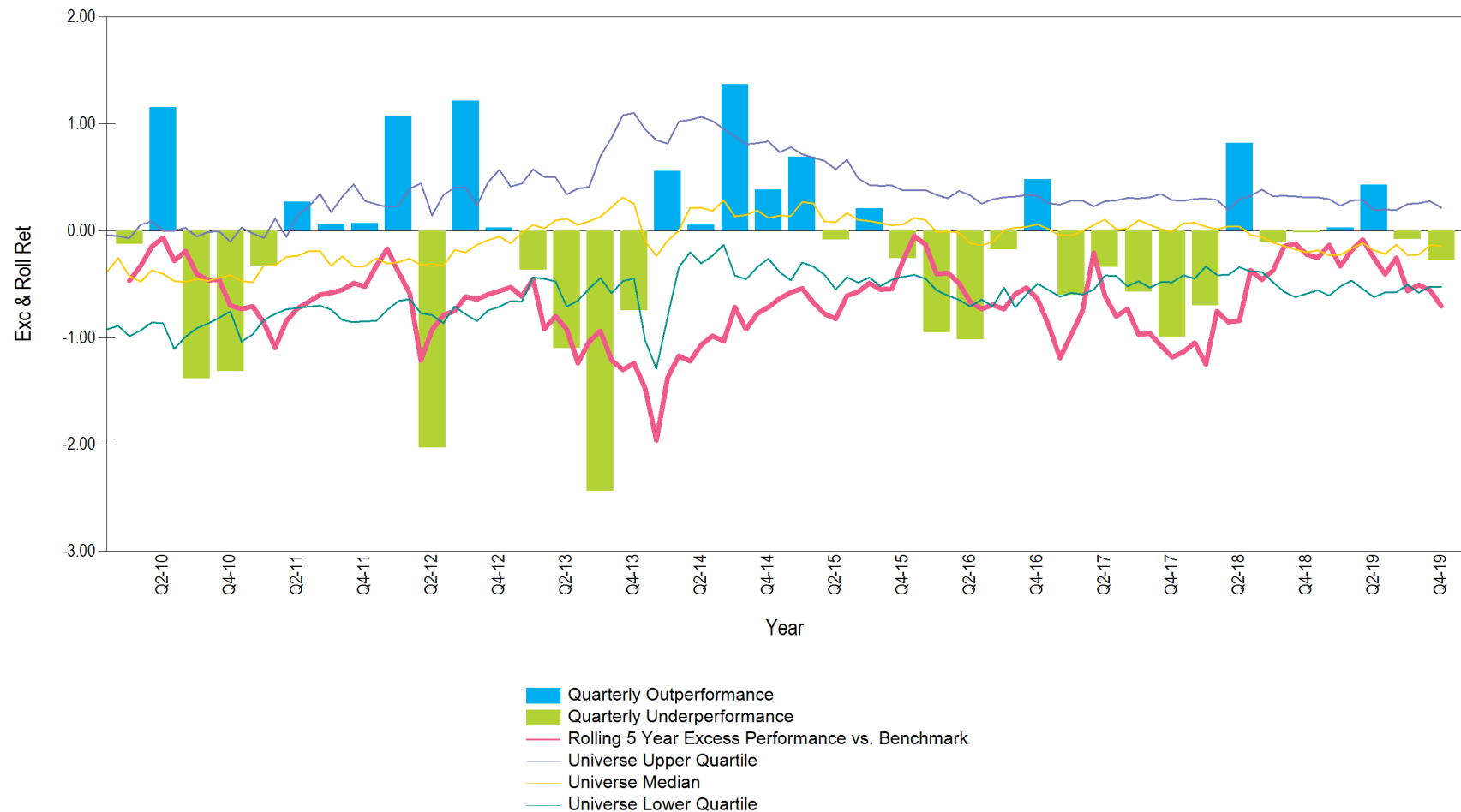
#### ▲ Policy Benchmark

Value 1.4  
Rank 88

#### Universe

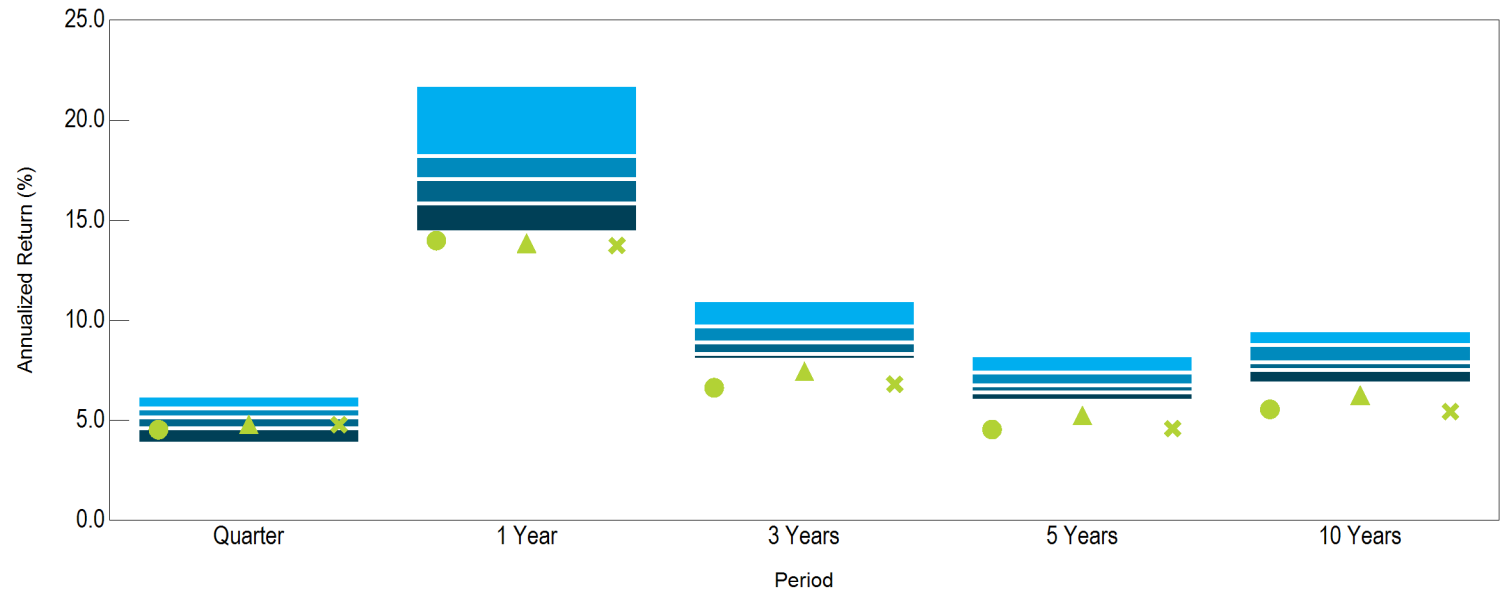
5th %tile 1.9  
25th %tile 1.7  
Median 1.5  
75th %tile 1.4  
95th %tile 1.2

### Rolling Annualized Excess Performance



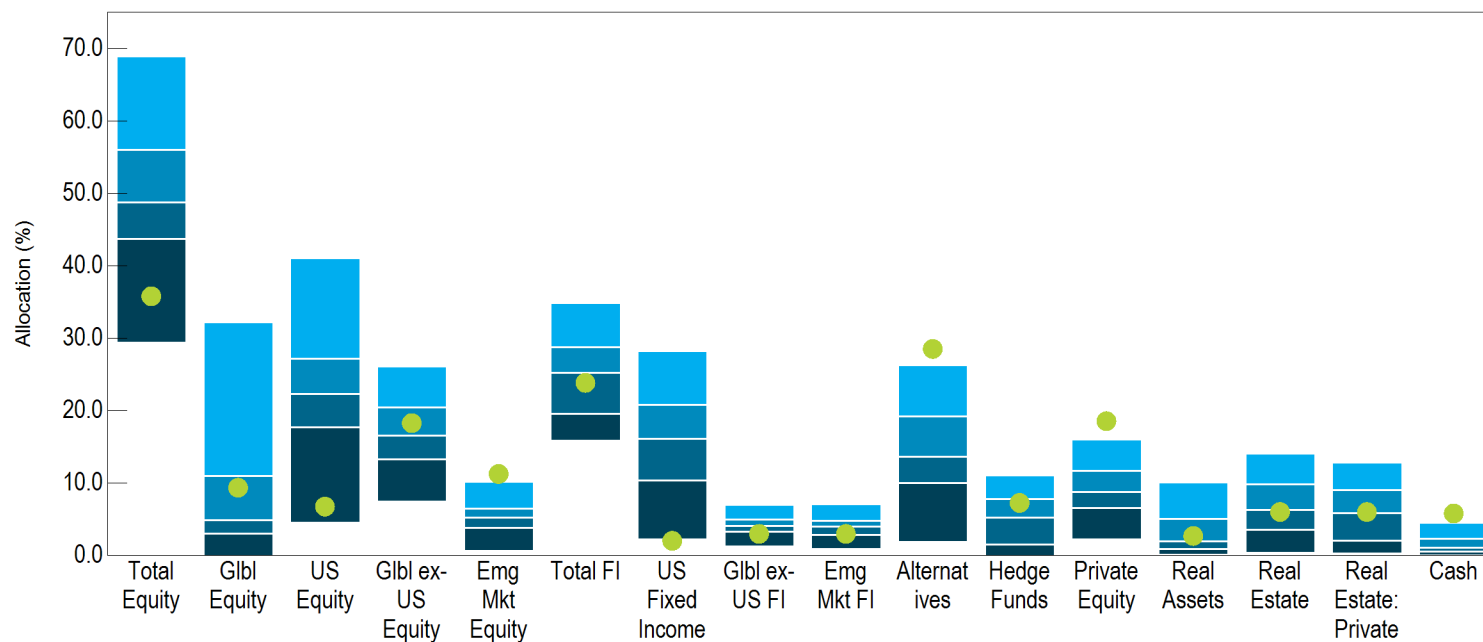



InvMetrics Public DB > \$1B Net Return Comparison  
Ending December 31, 2019



	Return (Rank)									
5th Percentile	6.2		21.7		11.0		8.2		9.5	
25th Percentile	5.6		18.2		9.7		7.4		8.8	
Median	5.2		17.1		8.9		6.8		7.9	
75th Percentile	4.6		15.9		8.3		6.4		7.5	
95th Percentile	3.9		14.4		8.0		6.0		6.9	
# of Portfolios	58		58		58		56		49	
● Total Fund Aggregate	4.5	(78)	14.0	(97)	6.6	(99)	4.5	(99)	5.5	(99)
▲ Policy Benchmark	4.8	(70)	13.9	(97)	7.5	(99)	5.2	(99)	6.3	(98)
✖ Investable Benchmark Portfolio	4.8	(71)	13.7	(97)	6.8	(99)	4.6	(99)	5.4	(99)

Total Plan Allocation vs. InvMetrics Public DB > \$1B Net  
As of December 31, 2019



		Allocation																
	5th Percentile	68.9	32.2	41.1	26.1	10.2	34.8	28.2	7.0	7.1	26.3	11.1	16.0	10.1	14.1	12.8	4.5	--
	25th Percentile	56.1	11.1	27.3	20.5	6.6	28.9	20.9	5.0	4.9	19.3	7.9	11.8	5.2	10.0	9.1	2.4	--
	Median	48.8	5.0	22.4	16.7	5.4	25.3	16.2	4.2	4.1	13.7	5.3	8.9	2.1	6.4	5.9	1.2	--
	75th Percentile	43.8	3.1	17.8	13.4	4.0	19.6	10.5	3.3	3.0	10.1	1.6	6.6	1.0	3.7	2.1	0.6	--
	95th Percentile	29.5	0.0	4.6	7.5	0.7	15.9	2.3	1.3	1.0	1.9	0.0	2.3	0.2	0.5	0.4	0.1	--
	# of Portfolios	46	22	36	44	37	46	38	24	23	44	29	40	24	42	39	47	--
	Total Fund Aggregate	35.8	9.4	6.8	18.3	11.3	23.8	2.0	3.0	3.0	28.5	7.3	18.6	2.7	6.0	6.0	5.8	--
	Rank	93	39	93	40	4	59	98	79	74	5	31	3	47	55	49	3	--

Major Benchmark Returns					
Periods Ending December 31, 2019					
Name	Q4-19	1 Yr	3 Yrs	5 Yrs	10 Yrs
US Equity					
Russell 3000	9.1	31.0	14.6	11.2	13.4
S&P 500	9.1	31.5	15.3	11.7	13.6
Russell 1000	9.0	31.4	15.0	11.5	13.5
Russell 1000 Growth	10.6	36.4	20.5	14.6	15.2
Russell 1000 Value	7.4	26.5	9.7	8.3	11.8
Russell MidCap	7.1	30.5	12.1	9.3	13.2
Russell 2000	9.9	25.5	8.6	8.2	11.8
Russell 2000 Growth	11.4	28.5	12.5	9.3	13.0
Russell 2000 Value	8.5	22.4	4.8	7.0	10.6
International Equity					
MSCI ACWI	9.0	26.6	12.4	8.4	8.8
MSCI World ex USA	7.9	22.5	9.3	5.4	5.3
MSCI EAFE	8.2	22.0	9.6	5.7	5.5
MSCI Emerging Markets	11.8	18.4	11.6	5.6	3.7
Fixed Income					
91 Day T-Bills	0.4	2.1	1.6	1.1	0.6
BBgBarc US Aggregate TR	0.2	8.7	4.0	3.0	3.7
BBgBarc US Govt/Credit TR	0.0	9.7	4.3	3.2	4.0
BBgBarc US Municipal TR	0.7	7.5	4.7	3.5	4.3
BBgBarc US High Yield TR	2.6	14.3	6.4	6.1	7.6
FTSE WGBI TR	-0.4	5.9	4.1	2.0	1.9
FTSE WGBI ex US TR	-0.1	5.3	4.5	1.9	1.4
Real Estate					
FTSE NAREIT All REIT	0.5	28.1	10.3	8.4	12.5
NCREIF Property Index	1.6	6.4	6.7	8.2	10.2
Alternatives					
HFRI Fund of Funds Composite Index	3.0	8.3	3.9	2.4	2.8
Inflation					
Consumer Price Index	0.1	2.3	2.1	1.8	1.8

Statistics Summary												
3 Years Ending December 31, 2019												
	% of Total MV	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Anlzd Alpha J	Anlzd Alpha J Rank	Tracking Error	Information Ratio	Information Ratio Rank	Beta	Sharpe Ratio
Total Fund Aggregate	100.00%	6.63%	99	5.25%	12	-0.48%	64	1.06%	-0.78	83	0.94	0.95
Policy Benchmark	--	7.46%	99	5.47%	19	0.00%	49	0.00%	--	--	1.00	1.06
Growth	61.58%	9.55%	--	8.59%	--	-1.16%	--	1.65%	-0.90	--	0.97	0.92
Growth Benchmark	--	11.03%	--	8.73%	--	0.00%	--	0.00%	--	--	1.00	1.08
Public Equity	35.80%	10.33%	--	10.61%	--	-0.97%	--	1.59%	-1.17	--	0.92	0.82
Public Equity Benchmark	--	12.20%	--	11.50%	--	0.00%	--	0.00%	--	--	1.00	0.92
Global Equity	9.36%	12.00%	48	12.01%	57	-0.36%	62	2.30%	-0.04	49	1.03	0.86
MSCI ACWI IMI Index	--	12.09%	47	11.49%	45	0.00%	59	0.00%	--	--	1.00	0.91
US Equity	7.40%	12.41%	46	12.56%	32	-2.33%	49	1.67%	-1.35	86	1.01	0.86
MSCI USA IMI GR USD	--	14.67%	31	12.38%	28	0.00%	34	0.00%	--	--	1.00	1.05
International Equity	7.01%	9.05%	82	12.02%	40	-1.02%	83	2.19%	-0.20	86	1.07	0.62
MSCI World ex USA IMI NR USD	--	9.49%	78	11.04%	21	0.00%	70	0.00%	--	--	1.00	0.71
Emerging Markets Equity	11.27%	7.47%	90	13.31%	27	-2.81%	92	2.77%	-1.27	99	0.92	0.44
MSCI Emerging Market IMI Net	--	11.00%	50	14.14%	55	0.00%	55	0.00%	--	--	1.00	0.66
Marketable Alternative Equity	0.76%	6.85%	--	4.94%	--	3.56%	--	5.99%	0.12	--	0.36	1.05
HFRI Equity Hedge (Total) Index	--	6.16%	--	6.49%	--	0.00%	--	0.00%	--	--	1.00	0.70

	% of Total MV	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Anlzd Alpha J	Anlzd Alpha J Rank	Tracking Error	Information Ratio	Information Ratio Rank	Beta	Sharpe Ratio
Private Markets	22.80%	9.07%	--	7.43%	--	-0.15%	--	5.22%	-0.50	--	0.75	1.00
Private Markets Benchmark	--	11.69%	--	7.41%	--	0.00%	--	0.00%	--	--	1.00	1.36
Private Markets ex Russell 3000	12.06%	7.67%	--	3.99%	--	5.92%	--	8.34%	-0.48	--	0.01	1.51
Private Markets Benchmark	--	11.69%	--	7.41%	--	0.00%	--	0.00%	--	--	1.00	1.36
Private Equity	16.36%	11.22%	--	9.28%	--	9.47%	--	11.44%	-0.25	--	0.01	1.03
San Jose Custom Private Equity Benchmark	--	14.08%	--	6.75%	--	0.00%	--	0.00%	--	--	1.00	1.84
Private Equity ex Russell 3000	5.99%	11.61%	--	4.39%	--	10.14%	--	8.15%	-0.27	--	-0.01	2.27
Cambridge PE Composite BM	--	13.78%	--	6.77%	--	0.00%	--	0.00%	--	--	1.00	1.79
Private Debt	2.81%	-3.03%	--	7.66%	--	-8.60%	--	7.35%	-1.31	--	0.79	-0.61
S&P Global Leveraged Loan Index +2%	--	6.59%	--	2.81%	--	0.00%	--	0.00%	--	--	1.00	1.76
Private Real Estate	2.60%	15.56%	--	6.35%	--	19.47%	--	8.00%	1.11	--	-1.10	2.19
NCREIF Property Index	--	6.70%	--	2.72%	--	0.00%	--	0.00%	--	--	1.00	1.86
Emerging Markets Debt	2.99%	5.54%	81	7.54%	66	-1.88%	74	2.25%	-0.61	95	1.09	0.52
50% JPM EMBI GD / 50% JPM GBI-EM	--	6.92%	29	6.60%	55	0.00%	50	0.00%	--	--	1.00	0.80

	% 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
High Yield Debt	--	--	--	--	--	--	--	--	--	--	--	--
50% BAML Global HY / 50% S&P Global Leveraged Loan	--	5.38%	--	3.07%	--	0.00%	--	0.00%	--	--	1.00	1.22
Zero Beta	27.44%	3.09%	--	1.44%	--	1.59%	--	2.53%	0.76	--	0.29	1.01
Zero Beta Benchmark	--	1.17%	--	3.23%	--	0.00%	--	0.00%	--	--	1.00	-0.15
Absolute Return	7.26%	4.91%	--	2.58%	--	3.48%	--	2.95%	1.28	--	0.40	1.26
Absolute Return Benchmark	--	1.12%	--	3.22%	--	0.00%	--	0.00%	--	--	1.00	-0.16
Macro	3.15%	3.55%	--	4.98%	--	2.11%	--	2.84%	0.75	--	0.94	0.38
HFRI Macro (Total) Index	--	1.43%	--	4.37%	--	0.00%	--	0.00%	--	--	1.00	-0.05
Relative Value	4.11%	6.37%	--	2.04%	--	4.15%	--	2.74%	0.87	--	0.25	2.32
HFRI Relative Value (Total) Index	--	4.00%	--	2.57%	--	0.00%	--	0.00%	--	--	1.00	0.92
Cash	1.07%	1.71%	--	0.28%	--	0.05%	--	0.23%	0.19	--	0.83	0.25
ICE BofAML 91 Days T-Bills TR	--	1.67%	--	0.20%	--	0.00%	--	0.00%	--	--	1.00	0.13
Other	10.67%	3.54%	--	2.18%	--	1.16%	--	2.26%	0.15	--	0.48	0.87
Other Benchmark	--	3.20%	--	3.02%	--	0.00%	--	0.00%	--	--	1.00	0.51
TIPS	2.03%	2.16%	--	1.12%	--	0.08%	--	0.13%	0.58	--	0.99	0.46
BBgBarc U.S. TIPS 0-5 Years	--	2.09%	--	1.12%	--	0.00%	--	0.00%	--	--	1.00	0.40

	% 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
Core Private Real Estate	3.93%	6.94%	--	1.91%	--	5.48%	--	3.37%	0.14	--	-0.04	2.78
NCREIF ODCE Equal Weighted (Net)	--	6.47%	--	2.68%	--	0.00%	--	0.00%	--	--	1.00	1.80
Commodities	1.79%	2.65%	--	7.19%	--	2.84%	--	4.59%	0.78	--	0.71	0.14
Bloomberg Commodity Index TR USD	--	-0.94%	--	8.58%	--	0.00%	--	0.00%	--	--	1.00	-0.30
Core Bonds	--	--	--	--	--	--	--	--	--	--	--	--
BBgBarc Global Aggregate TR	--	4.27%	--	3.58%	--	0.00%	--	0.00%	--	--	1.00	0.73
Overlay	0.31%	-7.50%	--	34.30%	--	-9.14%	--	34.30%	-0.27	--	4.20	-0.27
91 Day T-Bills	--	1.64%	--	0.17%	--	0.00%	--	0.00%	--	--	1.00	0.00

Benchmark History		
As of December 31, 2019		
Total Fund Aggregate		
10/1/2018	Present	13% MSCI USA IMI NR USD / 7% MSCI World ex USA IMI NR USD / 10% MSCI Emerging Market IMI Net / 25% Private Markets Benchmark / 3% 50% JPM EMBI GD / 50% JPM GBI-EM / 20% ICE BofAML 91 Days T-Bills TR / 5% Immunized Cash Flows Benchmark / 7% Absolute Return Benchmark / 5% NCREIF-ODCE / 3% Bloomberg Commodity Index TR USD / 2% BBgBarc US Treasury TIPS 0-5 Yr TR
11/1/2017	9/30/2018	28% MSCI ACWI IMI Net USD / 9% Cambridge PE Composite BM / 33% Fixed Income Custom Benchmark / 6% S&P Global Leveraged Loan Index +2% / 8% NCREIF Property Index / 4% Bloomberg Commodity Index TR USD / 1% DJ Brookfield Global Infrastructure Net TR USD / 11% HFRI Macro (Total) Index
7/1/2015	10/31/2017	28% MSCI ACWI IMI Net USD / 9% Cambridge Associates Private Equity Composite / 19% Fixed Income Custom Benchmark / 5% S&P Global Leveraged Loan Index +2% / 7% NCREIF Property Index / 6% Bloomberg Commodity Index TR USD / 5% DJ Brookfield Global Infrastructure Net TR USD / 5% S&P Global LargeMidCap Commodity and Resources GR USD / 11% HFRI Macro (Total) Index / 5% 60/40 MSCI ACWI IMI/BC Global
Low-Cost Portfolio		
9/30/2018	Present	13% MSCI USA IMI NR USD / 7% MSCI World ex USA IMI NR USD / 10% MSCI Emerging Market IMI Net / 15% 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		
10/1/2018	Present	51.73% Public Equity Benchmark / 43.1% Private Markets Benchmark / 5.17% 50% JPM EMBI GD / 50% JPM GBI-EM
11/1/2017	9/30/2018	51.29% MSCI ACWI IMI Net USD / 16.48% Cambridge PE Composite BM / 10.99% S&P Global Leveraged Loan Index +2% / 7.33% NCREIF Property Index / 60.4% 50% JPM EMBI GD (US) / 50% JPM GBIEM GD (Lcl) / 60.4% 50% BAML Global HY / 50% S&P Global Leveraged Loan / 1.83% DJ Brookfield Global Infrastructure Net TR USD
7/1/2015	10/31/2017	47.23% MSCI ACWI IMI Net USD / 15.18% Cambridge PE Composite BM / 8.43% S&P Global Leveraged Loan Index +2% / 8.43% DJ Brookfield Global Infrastructure Net TR USD / 8.43% S&P Global Natural Resources Index TR USD / 5.9% NCREIF Property Index / 3.2% 50% JPM EMBI GD (US) / 50% JPM GBIEM GD (Lcl) / 3.2% 50% BAML Global HY / 50% S&P Global Leveraged Loan



Public Equity		
10/1/2018	Present	43.33% MSCI USA IMI NR USD / 23.33% MSCI World ex USA IMI NR USD / 33.33% MSCI Emerging Market IMI Net
5/1/2010	9/30/2018	MSCI ACWI IMI Net USD
Global Equity		
7/1/2015	Present	MSCI ACWI IMI Index
US Equity		
7/1/2015	Present	MSCI USA IMI GR USD
International Equity		
7/1/2015	Present	MSCI World ex USA IMI NR USD
Emerging Markets Equity		
7/1/2015	Present	MSCI Emerging Market IMI Net
Marketable Alternative Equity		
10/1/2014	Present	HFRI Equity Hedge (Total) Index
Private Markets		
7/1/2015	Present	Private Markets
Private Markets ex Russell 3000		
7/1/2015	Present	Private Markets
Private Equity		
1/1/2006	Present	San Jose Custom Private Equity Benchmark
Private Equity ex Russell 3000		
7/1/2018	Present	Cambridge Associates Global Private Equity Index
Northern Trust Russell 3000		
6/1/2018	Present	Russell 3000
Private Debt		
12/1/2010	Present	S&P Global Leveraged Loan Index +2%
Private Real Estate		
7/1/2015	Present	NCREIF Property Index

6/1/2018	Present	Russell 3000
Private Debt		
12/1/2010	Present	S&P Global Leveraged Loan Index +2%
Private Real Estate		
7/1/2015	Present	NCREIF Property Index
Private Real Assets		
No Benchmark Selected		
Emerging Markets Debt		
7/1/2015	Present	50% JP Morgan GBI EM Global Diversified TR USD / 50% JP Morgan EMBI Global Diversified
High Yield Debt		
2/1/2013	Present	50% ICE BofAML Global High Yield Constrained Hedged TR / 50% S&P/LSTA Leveraged Loan TR
Zero Beta		
10/1/2018	Present	62.5% ICE BofAML 91 Days T-Bills TR / 15.62% Immunized Cash Flows Benchmark / 21.88% Absolute Return Benchmark
7/1/2015	9/30/2018	HFRI Macro (Total) Index
Short-Term IG Bonds		
10/1/2018	Present	91 Day T-Bills
Immunized Cash Flows		
10/1/2018	Present	Immunized Cash Flows
Absolute Return		
10/1/2018	Present	3-Month Libor Total Return USD
11/1/2012	9/30/2018	HFRI Macro (Total) Index
Macro		
10/1/2014	Present	HFRI Macro (Total) Index
Relative Value		
10/1/2014	Present	HFRI Relative Value (Total) Index
Cash		
1/1/2006	Present	ICE BofAML 91 Days T-Bills TR

Other		
10/1/2018	Present	50% NCREIF-ODCE / 30% Bloomberg Commodity Index TR USD / 20% BBgBarc U.S. TIPS 0-5 Years
11/1/2017	9/30/2018	76.74% BBgBarc Global Aggregate TR / 11.63% NCREIF Property Index / 11.63% Bloomberg Commodity Index TR USD
7/1/2015	10/31/2017	51.18% BBgBarc Global Aggregate TR / 11.78% NCREIF Property Index / 20.2% Bloomberg Commodity Index TR USD / 16.84% 60/40 MSCI ACWI/BBgBarc Global Aggregate
Investment Grade Bonds		
12/1/2019	Present	BBgBarc US Aggregate TR
TIPS		
3/1/2017	Present	100% BBgBarc US Treasury TIPS 0-5 Yr TR
Core Private Real Estate		
7/1/2004	Present	NCREIF ODCE Equal Weighted (Net)
Commodities		
5/1/2010	Present	Bloomberg Commodity Index TR USD
Core Bonds		
7/1/2015	Present	BBgBarc Global Aggregate TR
Overlay		
11/1/2011	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.  $\text{Portfolio Return} - [\text{Risk Free Rate} + \text{Beta} \times (\text{market return} - \text{Risk Free Rate})]$ .

**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.

**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.

**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.

**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.

**Tracking Error:** A divergence between the price behavior of a position or a portfolio and the price behavior of a benchmark, as defined by the difference in standard deviation.

**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%.

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

**Yield to Worst:** The lowest potential yield that can be received on a bond without the issuer actually defaulting. The yield to worst is calculated by making worst-case scenario assumptions on the issue by calculating the returns that would be received if provisions, including prepayment, call, or sinking fund, are used by the issuer.

**NCREIF Property Index (NPI):** Measures unleveraged investment performance of a very large pool of individual commercial real estate properties acquired in the private market by tax-exempt institutional investors for investment purposes only. The NPI index is capitalization-weighted for a quarterly time series composite total rate of return.

**NCREIF Fund Index - Open End Diversified Core Equity (NFI-ODCE):** Measures the investment performance of 28 open-end commingled funds pursuing a core investment strategy that reflects funds' leverage and cash positions. The NFI-ODCE index is equal-weighted and is reported gross and net of fees for a quarterly time series composite total rate of return.

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.