

FUND EVALUATION REPORT

San Jose Federated City Employees' Retirement System

Quarterly Review
December 31, 2018



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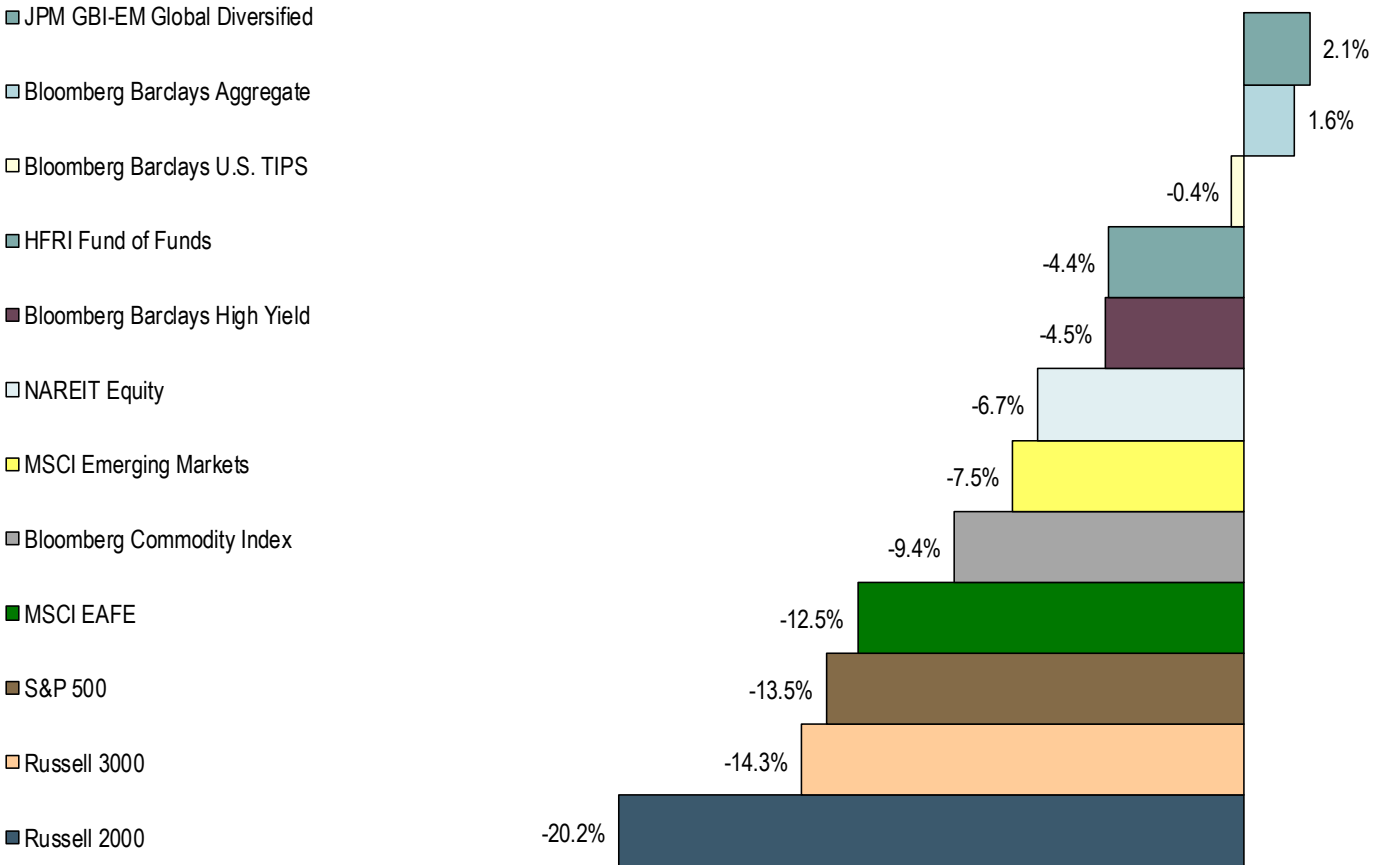
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- 1. The World Markets in the Fourth Quarter of 2018**
- 2. Executive Summary**
 - Aggregate Plan Overview
 - Manager Highlights
 - Fourth Quarter Manager Summary
 - Watch List
 - Market Environment – 4Q18 Overview
- 3. 4Q18 Review**
- 4. Glossary and Notes**

The World Markets Fourth Quarter of 2018

The World Markets¹ Fourth Quarter of 2018



¹ Source: InvestorForce.

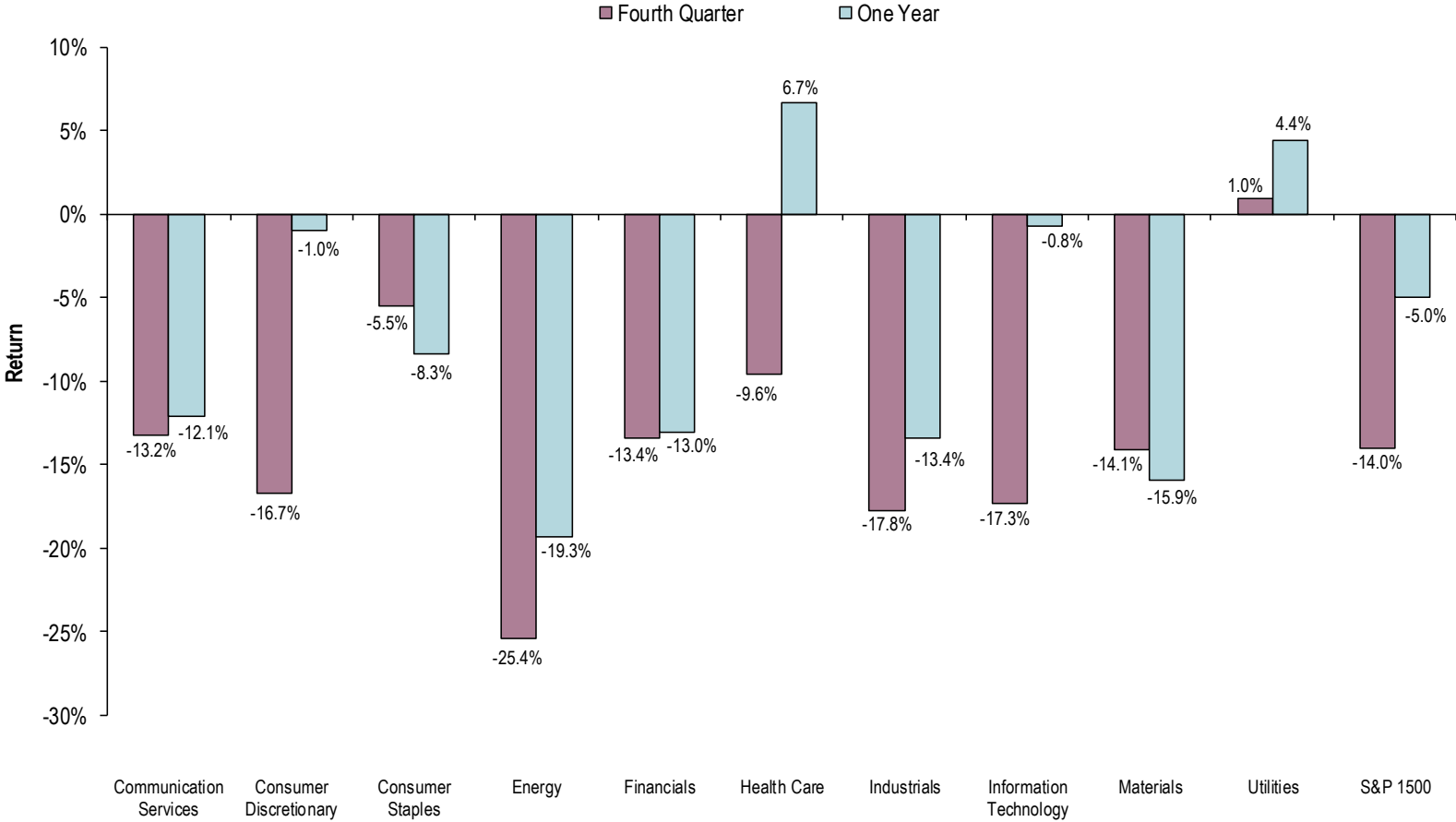


Index Returns¹

	4Q18 (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
Domestic Equity					
Russell 3000	-14.3	-5.2	9.0	7.9	13.2
Russell 1000	-13.8	-4.8	9.1	8.2	13.3
Russell 1000 Growth	-15.9	-1.5	11.1	10.4	15.3
Russell 1000 Value	-11.7	-8.3	7.0	5.9	11.2
Russell MidCap	-15.4	-9.1	7.0	6.3	14.0
Russell MidCap Growth	-16.0	-4.8	8.6	7.4	15.1
Russell MidCap Value	-15.0	-12.3	6.1	5.4	13.0
Russell 2000	-20.2	-11.0	7.4	4.4	12.0
Russell 2000 Growth	-21.7	-9.3	7.2	5.1	13.5
Russell 2000 Value	-18.7	-12.9	7.4	3.6	10.4
Foreign Equity					
MSCI ACWI (ex. U.S.)	-11.5	-14.2	4.5	0.7	6.6
MSCI EAFE	-12.5	-13.8	2.9	0.5	6.3
MSCI EAFE (Local Currency)	-12.2	-11.0	2.6	3.8	7.5
MSCI EAFE Small Cap	-16.0	-17.9	3.7	3.1	10.5
MSCI Emerging Markets	-7.5	-14.6	9.2	1.6	8.0
MSCI Emerging Markets (Local Currency)	-7.4	-10.1	8.8	5.0	9.6
Fixed Income					
Bloomberg Barclays Universal	1.2	-0.3	2.6	2.7	4.1
Bloomberg Barclays Aggregate	1.6	0.0	2.1	2.5	3.5
Bloomberg Barclays U.S. TIPS	-0.4	-1.3	2.1	1.7	3.6
Bloomberg Barclays High Yield	-4.5	-2.1	7.2	3.8	11.1
JPM GBI-EM Global Diversified	2.1	-6.2	5.9	-1.0	3.4
Other					
NAREIT Equity	-6.7	-5.0	2.7	7.8	12.1
Bloomberg Commodity Index	-9.4	-11.2	0.3	-8.8	-3.8
HFRI Fund of Funds	-4.4	-3.5	1.5	1.5	3.2

¹ Source: InvestorForce.

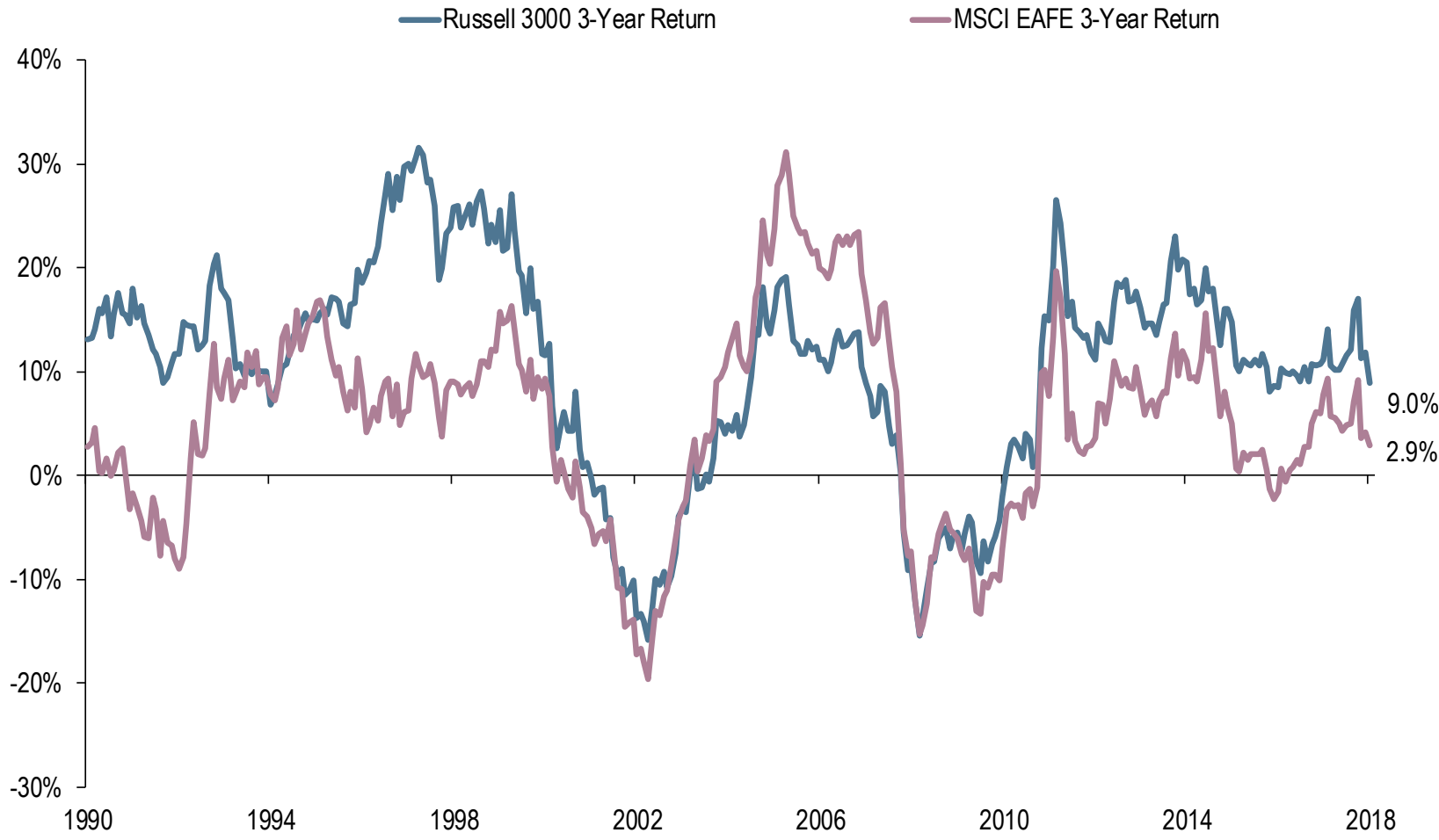
S&P Sector Returns¹



¹ Source: InvestorForce. Represents S&P 1500 (All Cap) data.



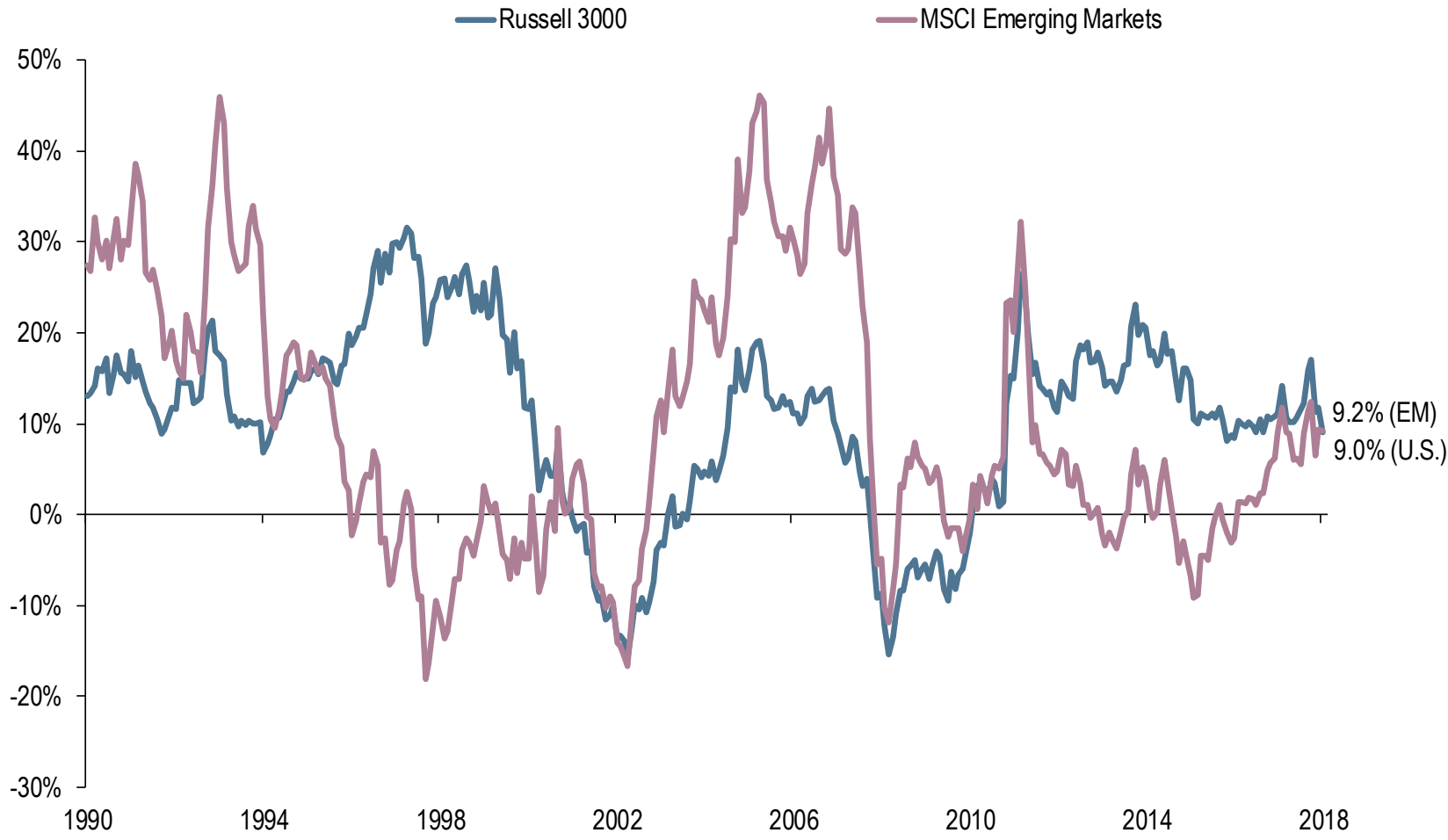
U.S. and Developed Market Foreign Equity Rolling Three-Year Returns¹



¹ Source: InvestorForce.



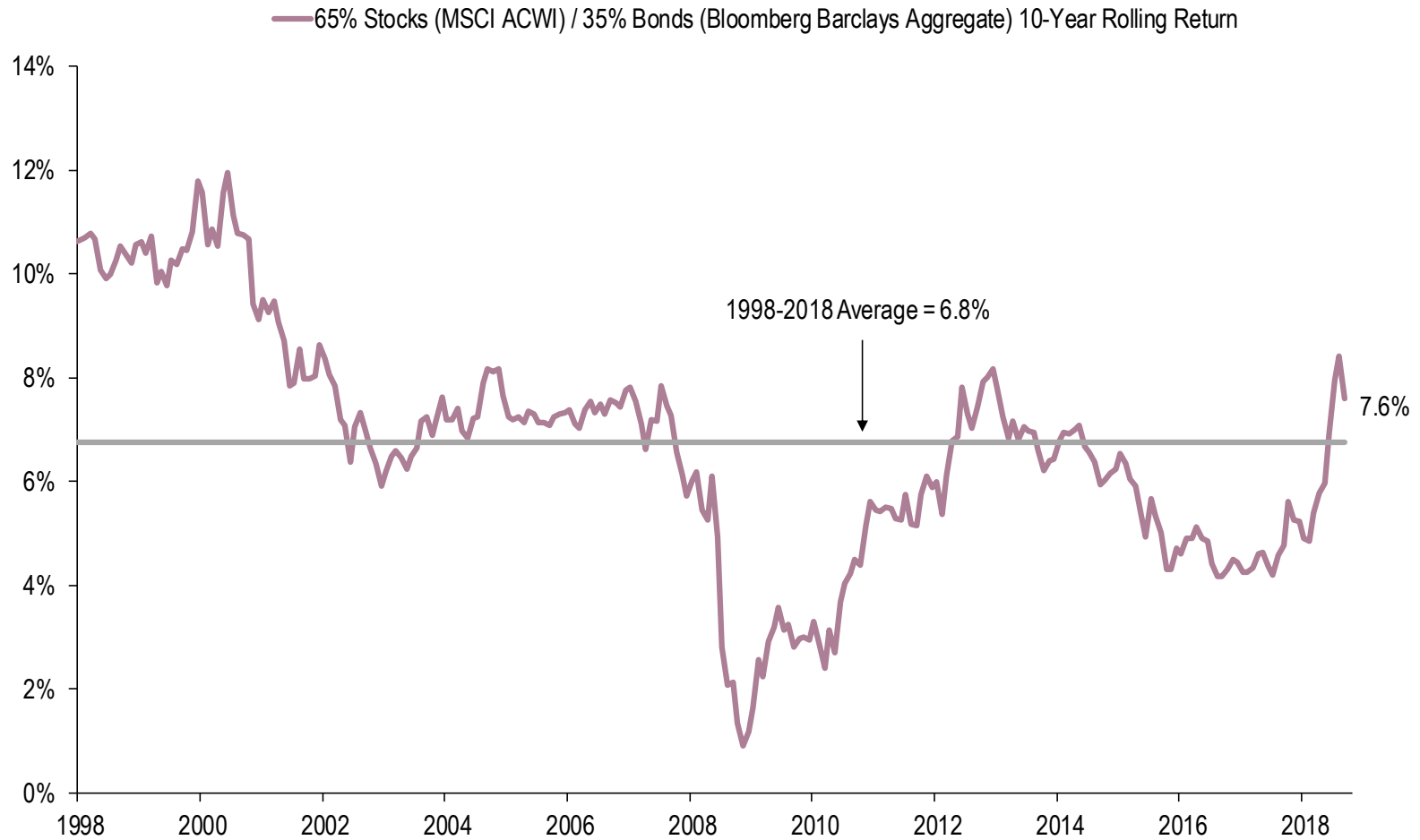
U.S. and Emerging Market Equity Rolling Three-Year Returns¹



¹ Source: InvestorForce.



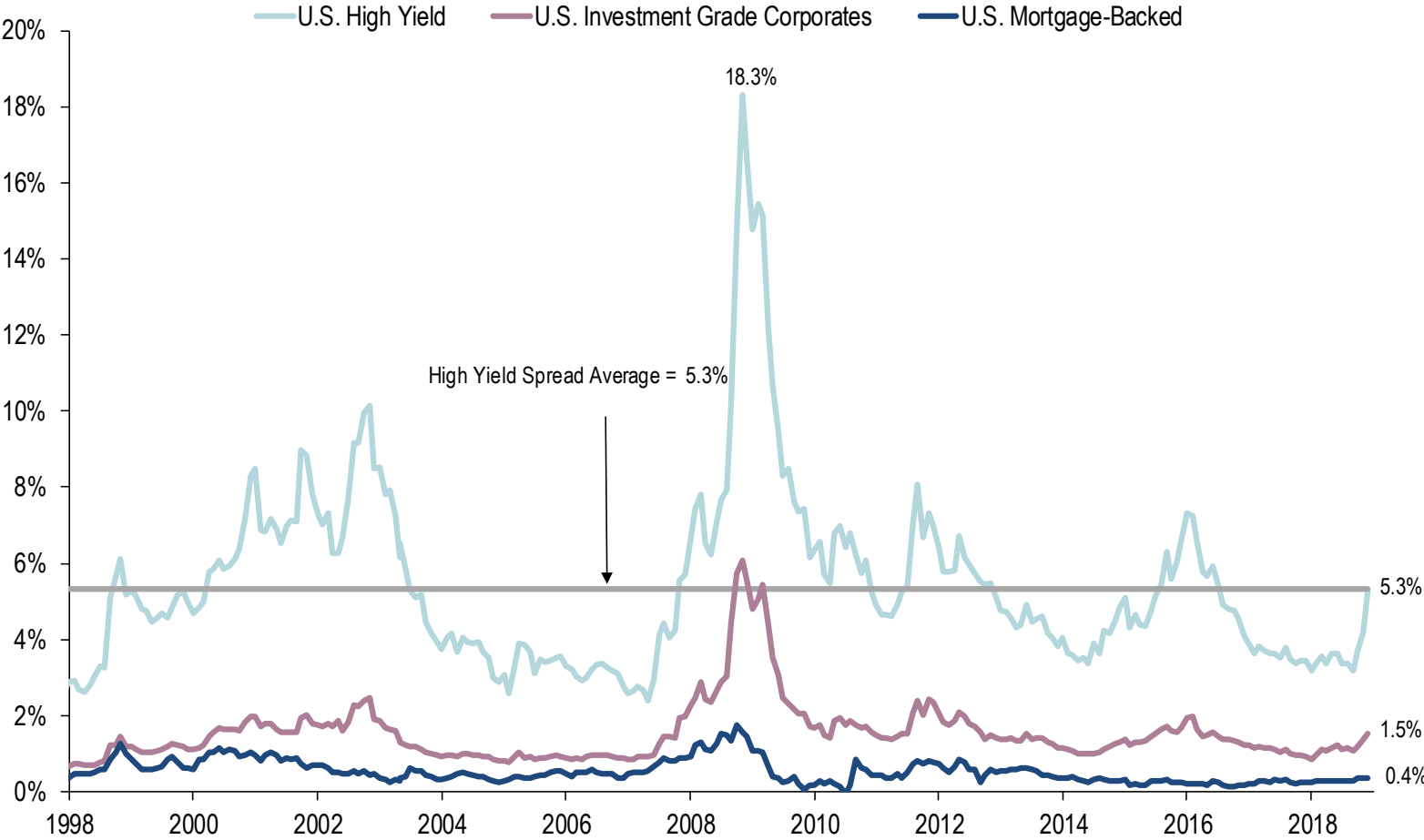
Rolling Ten-Year Returns: 65% Stocks and 35% Bonds¹



¹ Source: InvestorForce.



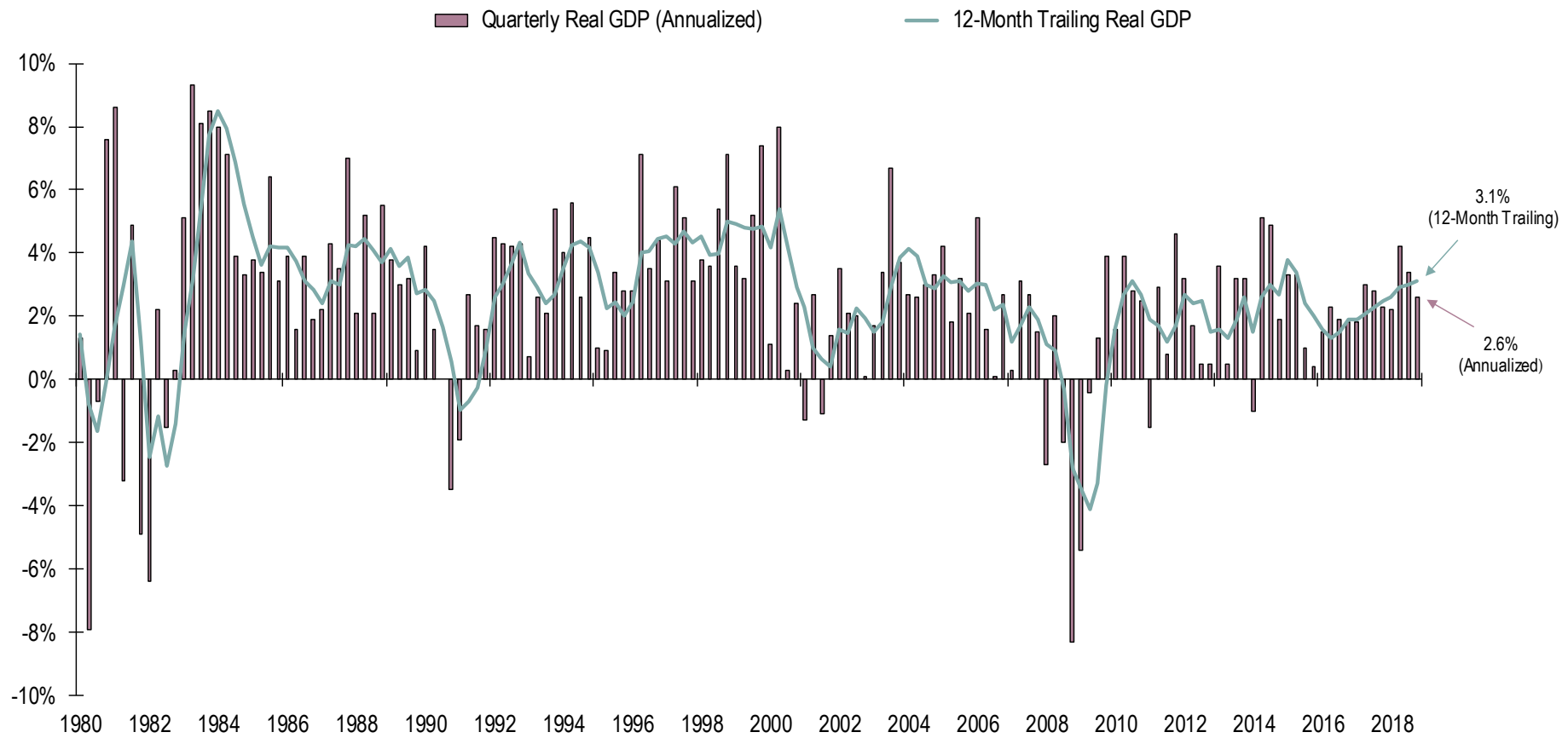
Credit Spreads vs. U.S. Treasury Bonds^{1,2}



¹ Source: Barclays Live.
² The median high yield spread was 4.8% from 1997-2018.



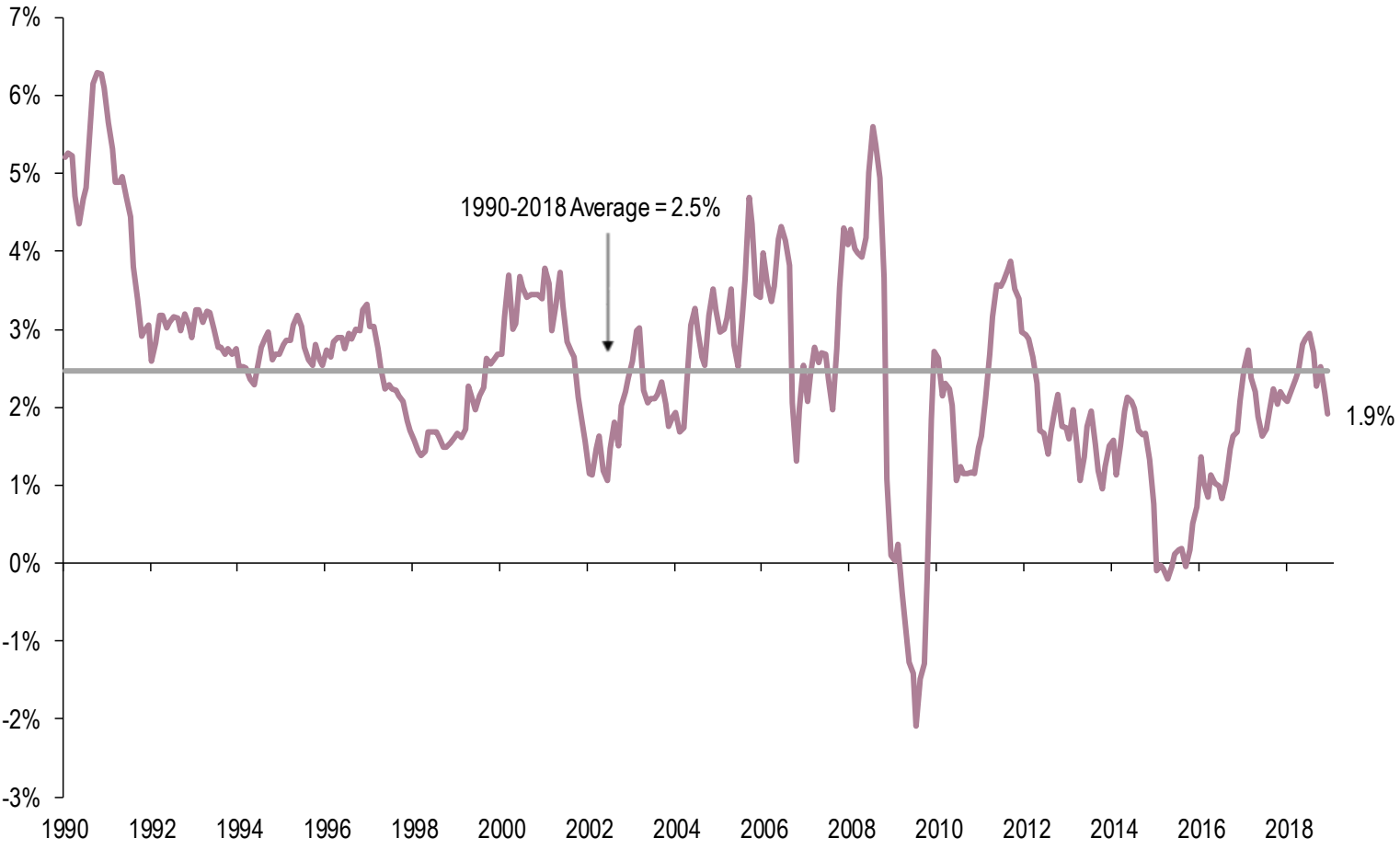
U.S. Real Gross Domestic Product (GDP) Growth¹



¹ Source: Bureau of Economic Analysis. Data is as of Q4 2018 and represents the first estimate.



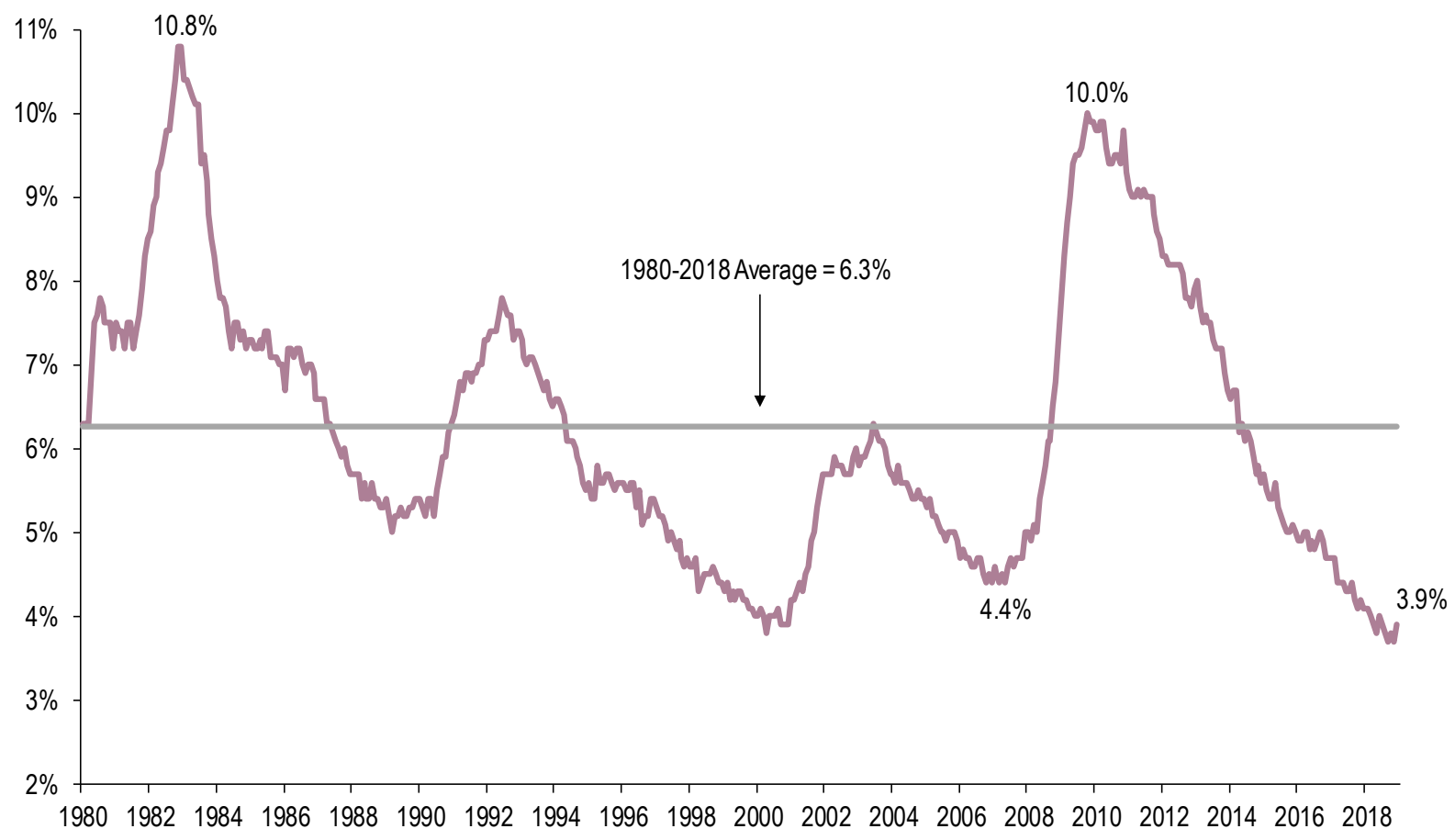
U.S. Inflation (CPI) Trailing Twelve Months¹



¹ Source: Bureau of Labor Statistics. Data is non-seasonally adjusted CPI, which may be volatile in the short-term.



U.S. Unemployment¹



¹ Source: Bureau of Labor Statistics.



Executive Summary
As of December 31, 2018

The value of the San Jose Federated City Employees' Retirement System assets was \$2.0 billion on December 31, 2018, a decrease of approximately \$171.1 million from the end of the prior quarter. The System had net cash outflows of \$53.3 million during the quarter.

- The Retirement System's net of fees performance for the quarter was -5.6%, slightly underperforming the Policy Benchmark (-5.5%) and in-line with the Investable Benchmark Portfolio (-5.6%). The Retirement System outperformed the peer Public Defined Benefit Plans > \$1 Billion Universe's median return of -6.9%, and ranked in the top quartile of the universe of 64 peer funds for the quarter.
- The Retirement System returned -3.9% in the trailing one-year period, compared to -3.8% for the Policy Benchmark, -4.3% for the Investable Benchmark Portfolio, and -4.0% for the peer median. The Retirement System's standard deviation of returns was 6.0% for the same period, exhibiting lower volatility than the peer median (7.0%).
 - Growth returned -9.1% for the quarter and -7.0% over the trailing one-year period, versus -9.5% and -4.4% for the Growth Benchmark over the same periods, respectively.
 - Zero Beta returned +0.3% for the quarter and +2.7% over the trailing one-year period, versus +0.7% and -1.1% for the Zero Beta Benchmark over the same periods, respectively.
 - Other returned -0.7% for the quarter and +0.5% over the trailing one-year period, versus -2.0% and -3.4% for the Other Benchmark over the same periods, respectively.
- The Retirement System added two investment managers during the quarter: BlackRock 3-Month T-Bill (Short-Term Investment Grade Bonds) and Lime Rock Partners VIII (Private Real Assets).
- The Retirement System positioned toward its new asset allocation in the quarter, resulting in the current allocation temporarily falling outside of the IPS Policy Range for Cash.

Artisan

- Artisan Global Value returned -13.3% for the quarter, underperforming the MSCI ACWI Value NR benchmark by 260 basis points. Compared to peers, Artisan ranks in the 49th and 11th percentiles for the quarter and since inception periods, respectively. In the quarter, the Artisan portfolio suffered along with the broader stock market, as only four stocks in the portfolio generated positive returns.

Cove Street

- Cove Street Small Cap Value returned -14.5% for the quarter and -9.0% over the one-year period, outperforming the Russell 2000 Value benchmark by 420 and 390 basis points, respectively. Compared to peers, Cove Street ranks in the 11th and 60th percentiles for the quarter and since inception periods, respectively. The portfolio benefitted in the quarter from three takeovers and an underweight to financials.

GQG

- GQG Partners Global Emerging Markets returned -3.5% for the quarter and -14.1% over the one-year period, outperforming the MSCI Emerging Markets benchmark by 400 and 50 basis points over the same time periods, respectively. Compared to peers, GQG ranks in the 7th and 13th percentiles for the quarter and since inception periods, respectively. The portfolio benefitted in the quarter from exposure to India and Indonesia while China was the largest detractor from performance.

Credit Suisse

- Credit Suisse Risk Parity Commodity Fund returned -5.4% for the quarter and -8.7% over the one-year period, outperforming the Bloomberg Commodity Index by 400 and 250 basis points over the same time periods, respectively. Since inception in April 2011, Credit Suisse has outperformed the index by 370 basis points.

¹ Net of management fees.



Fourth Quarter Manager Summary

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

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



Artisan

- Effective October 1, 2018, the Global Value team split from the International Value team into two distinct and autonomous investment teams. The Global Value team will be led by Daniel O'Keefe while the International Value team is led by David Samra. Concurrently, each of the four Associate Portfolio Managers on the Global Value team were named Co-Portfolio Managers along with Mr. O'Keefe.

Cove Street

- Over the three-year period, Cove Street (+5.2%) has underperformed the Russell 2000 Value by 220 basis points. Since inception May 2014, Cove Street has underperformance the benchmark by 110 basis points and ranked in the 60th percentile compared to peers.

Oberweis

- Over the three-year period, Oberweis (+1.6%) has underperformed the MSCI World ex USA Small Cap Growth by 200 basis points. Since inception in November 2015, Oberweis has underperformance the benchmark by 110 basis points and ranked in the 45th percentile compared to peers.

Comgest

- Since inception in March 2017, Comgest (-7.1%) has underperformed the MSCI Emerging Markets SMID Cap by 880 basis points and ranked in the 98th percentile compared to peers.

Senator

- Over the three- and five-year periods, Senator (+1.9% and +2.0%) has underperformed the HFRI Equity Hedge Index by 330 and 60 basis points, respectively. Since inception in April 2013, Senator (+4.3%) has outperformed the benchmark by 60 basis points per year, on average.

BlueBay

- Over the three-year period, BlueBay (+3.6%) has underperformed the JPM Blended Emerging Markets Index by 200 basis points. Since inception in July 2015, BlueBay (+1.0%) has underperformed the benchmark by 210 basis points and ranked in the 86th percentile compared to peers.
- During the quarter, BlueBay announced that Raphael Robelin will relinquish the role of CIO to Mark Dowding.

Kepos

- Over the three-year period, Kepos (-5.9% and -1.4%) has underperformed the HFRI Macro: Systematic Diversified Index by 380 and 170 basis points, respectively. Since inception in March 2013, Kepos (-2.2%) has underperformed the benchmark by 220 basis points per year, on average.

Watch List^{1,2}

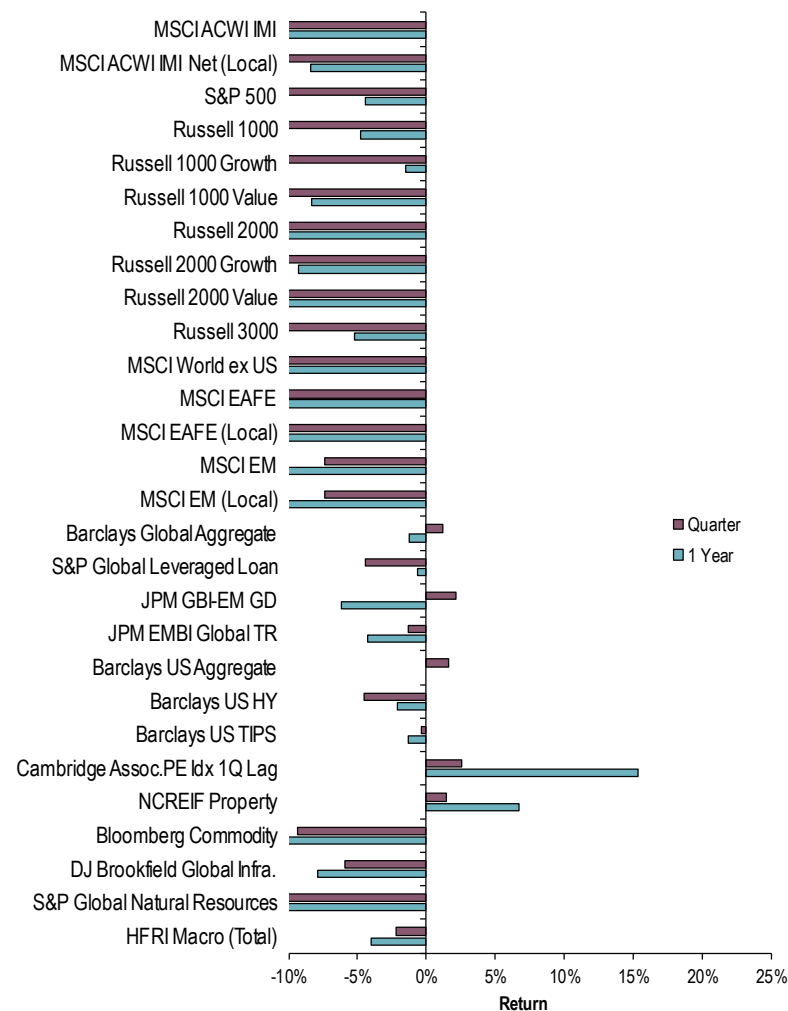
Investment Manager	Asset Class	Watch List Status	Comments
Cove Street Small Cap Value	U.S. Equity	Monitoring	Underperformance
Oberweis International Opp	International Equity	Monitoring	Underperformance
Comgest Global EM	Emerging Markets Equity	Monitoring	Underperformance
Senator Global Opportunity	Long-Short Equity	Monitoring	Underperformance
DE Shaw	Absolute Return	Monitoring	Transparency Concerns
BlueBay EM Select Debt	Emerging Markets Debt	Monitoring	Underperformance
Kepos Alpha Fund	Absolute Return	Monitoring	Underperformance

¹ Watch List excludes Private Markets and Passive Funds.

² 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.

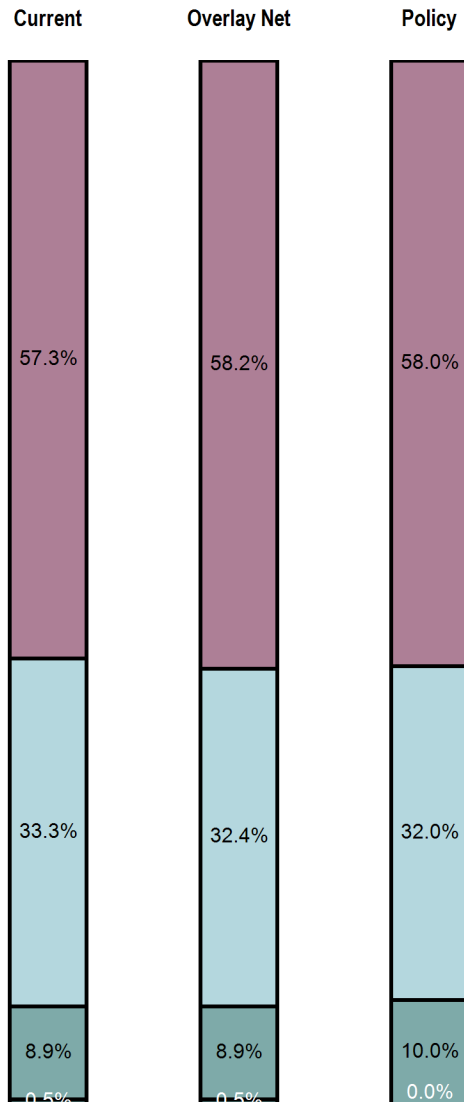


Benchmark	Scope	4Q18 (%)	1 YR (%)	3 YR (%)	5YR (%)	10 YR (%)
Global Equity						
MSCI ACWI IMI	World	-13.3	-10.1	6.5	4.2	9.7
MSCI ACWI IMI Net (Local)	World (Local Currency)	-13.1	-8.4	6.3	5.8	10.3
Domestic Equity						
S&P 500	Large Core	-13.5	-4.4	9.3	8.5	13.1
Russell 1000	Large Core	-13.8	-4.8	9.1	8.2	13.3
Russell 1000 Growth	Large Growth	-15.9	-1.5	11.2	10.4	15.3
Russell 1000 Value	Large Value	-11.7	-8.3	7.0	6.0	11.2
Russell 2000	Small Core	-20.2	-11.0	7.4	4.4	12.0
Russell 2000 Growth	Small Growth	-21.7	-9.3	7.2	5.1	13.5
Russell 2000 Value	Small Value	-18.7	-12.9	7.4	3.6	10.4
Russell 3000	All Cap Core	-14.3	-5.2	9.0	7.9	13.2
International Equity						
MSCI World ex US	World ex-US	-12.8	-14.1	3.1	0.3	6.2
MSCI EAFE	International Developed	-12.5	-13.8	2.9	0.5	6.3
MSCI EAFE (Local)	International Developed (Local Currency)	-12.2	-11.0	2.6	3.8	7.5
MSCI EM	Emerging Markets	-7.4	-14.7	8.9	1.9	8.6
MSCI EM (Local)	Emerging Markets (Local Currency)	-7.4	-10.1	8.8	5.0	9.6
Global Fixed Income						
Barclays Global Aggregate	Global Core Bonds	1.2	-1.2	2.7	1.1	2.5
S&P Global Leveraged Loan	Bank Loans	-4.4	-0.6	4.4	2.3	8.1
JPM GBI-EM GD	Emerging Markets Bonds (Local Currency)	2.1	-6.2	5.9	-1.0	3.5
JPM EMBI Global TR	Emerging Market Bonds	-1.3	-4.3	5.2	4.8	8.2
Domestic Fixed Income						
Barclays US Aggregate	Core Bonds	1.6	0.0	2.1	2.5	3.5
Barclays US HY	High Yield	-4.5	-2.1	7.2	3.8	11.1
Barclays US TIPS	Inflation	-0.4	-1.3	2.1	1.7	3.6
Other						
Cambridge Associates PE Index 1Qtr Lag	Private Equity	2.6	15.3	10.6	11.9	9.2
NCREIF Property	Real Estate	1.4	6.7	7.2	9.3	7.5
Bloomberg Commodity	Commodities	-9.4	-11.3	0.3	-8.8	-3.8
DJ Brookfield Global Infrastructure	Infrastructure	-5.9	-7.9	6.3	3.6	0.7
S&P Global Natural Resources	Natural Resources	-16.8	-12.6	12.4	-0.5	3.2
HFRI Macro	Hedge Funds	-2.2	-4.0	-0.3	0.7	1.1



4Q18 Review

As of December 31, 2018



Allocation vs. Targets and Policy						
	Current Balance	Current Allocation	Russell Overlay Net Position	Policy	Policy Range	Within IPS Range?
Growth	\$1,165,075,961	57.3%	58.2%	58.0%	50.0% - 70.0%	Yes
Public Equity	\$597,181,682	29.4%	29.9%	30.0%	20.0% - 40.0%	Yes
Private Markets	\$503,337,642	24.7%	25.1%	25.0%	20.0% - 30.0%	Yes
Emerging Markets Debt	\$64,556,637	3.2%	3.2%	3.0%	0.0% - 5.0%	Yes
High Yield Debt	\$0	0.0%	0.0%	0.0%	0.0% - 5.0%	Yes
Zero Beta	\$677,733,672	33.3%	32.4%	32.0%	10.0% - 35.0%	Yes
Absolute Return	\$161,768,391	8.0%	8.0%	7.0%	0.0% - 10.0%	Yes
Short-Term IG Bonds	\$246,240,674	12.1%	12.1%	20.0%	5.0% - 25.0%	Yes
Immunized Cash Flows	\$112,467,857	5.5%	5.5%	5.0%	4.5% - 5.5%	Yes
Cash	\$157,256,751	7.7%	6.8%	0.0%	0.0% - 5.0%	No
Other	\$181,823,554	8.9%	8.9%	10.0%	5.0% - 15.0%	Yes
Core Real Estate	\$113,348,791	5.6%	5.6%	5.0%	0.0% - 8.0%	Yes
Commodities	\$25,189,956	1.2%	1.2%	3.0%	0.0% - 8.0%	Yes
TIPS	\$42,977,880	2.1%	2.1%	2.0%	0.0% - 8.0%	Yes
Core Bonds	\$306,927	0.0%	0.0%	0.0%	0.0% - 5.0%	Yes
Overlay	\$9,872,107	0.5%	0.5%	0.0%	--	--
Total	\$2,034,505,293	100.0%	100.0%	100.0%		

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

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



As of December 31, 2018

Asset Class Net Performance Summary

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Fund Aggregate	2,034,505,293	100.0	-5.6	-4.3	-3.9	4.2	2.7	6.0	6.4	Jan-94
<i>Policy Benchmark</i>			-5.5	-4.1	-3.8	5.6	2.9	6.7	6.7	Jan-94
<i>Investable Benchmark Portfolio</i>			-5.6	-4.2	-4.3	4.8	2.5	6.0	--	Jan-94
<i>InvestorForce Public DB > \$1B Net Median</i>			-6.9	-4.7	-4.0	6.0	4.6	8.2	6.9	Jan-94
<i>InvestorForce Public DB > \$1B Net Rank</i>			20	37	48	99	99	99	70	Jan-94
Growth	1,165,075,961	57.3	-9.1	-6.6	-7.0	5.9	--	--	3.4	Jul-15
<i>Growth Benchmark</i>			-9.5	-5.0	-4.4	8.1	--	--	5.5	Jul-15
Public Equity	588,901,832	28.9	-11.4	-9.6	-10.3	5.0	3.7	--	6.7	May-10
<i>Public Equity Benchmark</i>			-11.8	-8.4	-8.6	7.1	4.5	--	7.1	May-10
Global Equity	161,195,829	7.9	-14.0	-10.4	-10.1	6.9	--	--	5.0	Jul-15
<i>MSCI ACWI IMI Net USD</i>			-13.3	-9.9	-10.1	6.5	--	--	4.0	Jul-15
<i>eV All Global Equity Net Median</i>			-13.5	-10.2	-9.4	5.8	4.3	9.7	3.6	Jul-15
<i>eV All Global Equity Net Rank</i>			57	53	56	30	--	--	32	Jul-15
US Equity	115,768,025	5.7	-14.3	-9.0	-6.1	7.9	--	--	5.8	Jul-15
<i>MSCI USA IMI NR USD</i>			-14.5	-8.5	-5.7	8.4	--	--	6.6	Jul-15
<i>eV All US Equity Net Median</i>			-16.1	-11.2	-7.7	7.3	5.9	12.6	4.9	Jul-15
<i>eV All US Equity Net Rank</i>			33	35	41	40	--	--	40	Jul-15
International Equity	70,038,082	3.4	-16.7	-16.2	-17.5	1.9	--	--	0.1	Jul-15
<i>MSCI World ex USA</i>			-12.8	-11.6	-14.1	3.1	--	--	0.5	Jul-15
<i>eV ACWI ex-US All Cap Equity Net Median</i>			-13.8	-13.2	-15.2	3.7	1.3	8.0	0.9	Jul-15
<i>eV ACWI ex-US All Cap Equity Net Rank</i>			93	83	80	75	--	--	69	Jul-15

¹ Fiscal Year begins July 1.² Please see the Appendix for composition of the Policy Benchmark.³ Allocation Index consists of the individual benchmarks that comprise the Policy Benchmark weighted accordingly to actual allocations and re-adjusted monthly.⁴ Returns for the Equity Aggregate are gross of fees through June 2015 and net of fees thereafter.

Total Fund Aggregate

As of December 31, 2018

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Emerging Markets Equity	181,566,894	8.9	-7.1	-9.9	-18.0	2.5	--	--	-0.6	Jul-15
<i>MSCI Emerging Market IMI Net</i>			-7.4	-8.8	-15.0	8.5	--	--	1.7	Jul-15
<i>eV Emg Mkts Equity Net Median</i>			-7.6	-10.6	-16.2	7.7	1.4	8.9	1.7	Jul-15
<i>eV Emg Mkts Equity Net Rank</i>			40	45	70	96	--	--	90	Jul-15
Marketable Alternative Equity	60,333,002	3.0	-4.9	-4.3	-1.0	3.8	--	--	4.5	Oct-14
<i>HFRI Equity Hedge (Total) Index</i>			-8.5	-8.2	-7.1	3.5	--	--	2.2	Oct-14
Private Markets	511,617,492	25.1	-7.9	-3.8	-2.3	7.5	--	--	4.1	Jul-15
<i>Private Markets Benchmark</i>			-7.9	-5.1	0.7	10.0	--	--	7.1	Jul-15
<i>MSCI ACWI IMI + 100bps</i>			-13.1	-9.5	-9.2	7.6	--	--	5.0	Jul-15
Private Equity	83,419,490	4.1	5.5	11.9	12.7	11.0	11.5	9.2	7.5	Jan-06
<i>Cambridge PE Composite BM</i>			3.1	7.5	16.0	12.9	12.2	11.2	11.4	Jan-06
Private Debt	60,642,611	3.0	-4.0	-4.8	-1.4	-2.2	0.9	--	3.3	Dec-10
Private Real Estate	44,583,582	2.2	4.4	10.9	19.6	19.6	--	--	19.4	Jul-15
<i>NCREIF ODCE Equal Weighted</i>			1.6	3.7	8.3	8.4	--	--	9.3	Jul-15
Private Real Assets	21,112,053	1.0	7.8	11.3	11.6	16.6	--	--	8.2	Jul-15
Emerging Markets Debt	64,556,637	3.2	-1.2	-0.9	-8.9	3.6	--	--	1.0	Jul-15
<i>50% JPM EMBI GD / 50% JPM GBI-EM</i>			0.4	0.7	-5.2	5.6	--	--	3.1	Jul-15
<i>eV All Emg Mkts Fixed Inc Net Median</i>			-0.6	0.0	-5.9	5.3	2.7	7.6	3.2	Jul-15
<i>eV All Emg Mkts Fixed Inc Net Rank</i>			66	78	90	95	--	--	86	Jul-15
High Yield Debt	0	0.0	-0.2	1.4	3.6	5.0	1.0	--	2.0	Feb-13
<i>50% BAML Global HY / 50% S&P Global Leveraged Loan</i>			-3.5	-1.5	-1.0	5.6	3.4	--	4.9	Feb-13
Zero Beta	677,733,672	33.3	0.3	1.1	2.7	2.0	--	--	1.6	Jul-15
<i>Zero Beta Benchmark</i>			0.7	0.7	-1.1	0.7	--	--	0.3	Jul-15

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

² 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.

As of December 31, 2018

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Absolute Return	161,768,391	8.0	-0.4	0.3	2.4	2.2	2.6	--	3.2	Nov-12
<i>Absolute Return Benchmark</i>			<i>0.7</i>	<i>0.6</i>	<i>-1.2</i>	<i>0.7</i>	<i>1.2</i>	<i>--</i>	<i>1.1</i>	<i>Nov-12</i>
Relative Value	84,104,387	4.1	0.2	1.8	4.8	4.2	--	--	3.9	Oct-14
<i>HFRI Relative Value (Total) Index</i>			<i>-3.2</i>	<i>-1.8</i>	<i>-0.2</i>	<i>4.1</i>	<i>--</i>	<i>--</i>	<i>2.6</i>	<i>Oct-14</i>
Macro	77,664,004	3.8	-0.9	-0.9	0.4	0.8	--	--	1.0	Oct-14
<i>HFRI Macro (Total) Index</i>			<i>-2.2</i>	<i>-2.2</i>	<i>-4.0</i>	<i>-0.3</i>	<i>--</i>	<i>--</i>	<i>0.0</i>	<i>Oct-14</i>
Short-Term IG Bonds	246,240,674	12.1	0.6	--	--	--	--	--	0.6	Oct-18
<i>ICE BofAML 91 Days T-Bills TR</i>			<i>0.6</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>0.6</i>	<i>Oct-18</i>
Immunized Cash Flows	112,467,857	5.5	1.3	--	--	--	--	--	1.3	Oct-18
<i>Immunized Cash Flows Benchmark</i>			<i>1.3</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>1.3</i>	<i>Oct-18</i>
Cash	157,256,751	7.7	0.4	0.9	1.7	1.0	0.7	--	--	Jan-06
<i>ICE BofAML 91 Days T-Bills TR</i>			<i>0.6</i>	<i>1.1</i>	<i>1.9</i>	<i>1.0</i>	<i>0.6</i>	<i>--</i>	<i>--</i>	<i>Jan-06</i>
Other	181,823,554	8.9	-0.7	-0.7	0.5	2.8	1.7	-1.6	1.9	Jul-04
<i>Other Benchmark</i>			<i>-2.0</i>	<i>-2.8</i>	<i>-3.4</i>	<i>2.8</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>Jul-04</i>
Core Real Estate	113,348,791	5.6	2.1	3.9	8.2	7.9	9.9	5.8	7.1	Jul-04
<i>NCREIF-ODCE</i>			<i>1.8</i>	<i>3.9</i>	<i>8.3</i>	<i>8.2</i>	<i>10.4</i>	<i>7.0</i>	<i>8.1</i>	<i>Jul-04</i>
Commodities	25,189,956	1.2	-5.3	-8.3	-5.2	1.3	-6.0	--	-4.0	May-10
<i>Bloomberg Commodity Index TR USD</i>			<i>-9.4</i>	<i>-11.2</i>	<i>-11.2</i>	<i>0.3</i>	<i>-8.8</i>	<i>--</i>	<i>-5.9</i>	<i>May-10</i>
TIPS	42,977,880	2.1	-0.2	0.0	0.8	1.5	--	--	0.3	Jul-14
<i>BBgBarc U.S. TIPS 0-5 Years</i>			<i>-0.2</i>	<i>-0.1</i>	<i>0.6</i>	<i>1.5</i>	<i>--</i>	<i>--</i>	<i>0.3</i>	<i>Jul-14</i>
Core Bonds	306,927	0.0	1.0	0.9	0.6	2.3	--	--	2.0	Jul-15
<i>BBgBarc Global Aggregate TR</i>			<i>1.2</i>	<i>0.3</i>	<i>-1.2</i>	<i>2.7</i>	<i>--</i>	<i>--</i>	<i>2.3</i>	<i>Jul-15</i>

¹ 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 December 31, 2018

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Overlay	9,872,107	0.5								



As of December 31, 2018

Trailing Net Performance

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Fund Aggregate	2,034,505,293	100.0	-5.6	-4.3	-3.9	4.2	2.7	6.0	6.4	Jan-94
Policy Benchmark			-5.5	-4.1	-3.8	5.6	2.9	6.7	6.7	Jan-94
Investable Benchmark Portfolio			-5.6	-4.2	-4.3	4.8	2.5	6.0	--	Jan-94
InvestorForce Public DB > \$1B Net Median			-6.9	-4.7	-4.0	6.0	4.6	8.2	6.9	Jan-94
InvestorForce Public DB > \$1B Net Rank			20	37	48	99	99	99	70	Jan-94
Growth	1,165,075,961	57.3	-9.1	-6.6	-7.0	5.9	--	--	3.4	Jul-15
Growth Benchmark			-9.5	-5.0	-4.4	8.1	--	--	5.5	Jul-15
Public Equity	588,901,832	28.9	-11.4	-9.6	-10.3	5.0	3.7	--	6.7	May-10
Public Equity Benchmark			-11.8	-8.4	-8.6	7.1	4.5	--	7.1	May-10
Global Equity	161,195,829	7.9	-14.0	-10.4	-10.1	6.9	--	--	5.0	Jul-15
MSCI ACWI IMI Net USD			-13.3	-9.9	-10.1	6.5	--	--	4.0	Jul-15
eV All Global Equity Net Median			-13.5	-10.2	-9.4	5.8	4.3	9.7	3.6	Jul-15
eV All Global Equity Net Rank			57	53	56	30	--	--	32	Jul-15
Artisan Global Value	111,378,797	5.5	-13.3	-9.7	-11.7	6.7	4.7	--	9.2	Mar-11
MSCI ACWI Value NR USD			-10.7	-7.2	-10.8	5.9	2.7	--	4.5	Mar-11
eV All Global Equity Net Median			-13.5	-10.2	-9.4	5.8	4.3	9.7	6.3	Mar-11
eV All Global Equity Net Rank			49	47	67	32	45	--	11	Mar-11
Artisan Global Opportunities	49,817,033	2.4	-15.4	-12.4	-8.6	--	--	--	0.4	Jul-17
MSCI ACWI Growth NR USD			-14.7	-10.8	-8.1	--	--	--	2.4	Jul-17
eV All Global Equity Net Median			-13.5	-10.2	-9.4	5.8	4.3	9.7	0.0	Jul-17
eV All Global Equity Net Rank			72	70	44	--	--	--	45	Jul-17

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

² Please see final page of the performance report for composition of the Policy Benchmark.

As of December 31, 2018

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
US Equity	115,768,025	5.7	-14.3	-9.0	-6.1	7.9	--	--	5.8	Jul-15
MSCI USA IMI NR USD			-14.5	-8.5	-5.7	8.4	--	--	6.6	Jul-15
eV All US Equity Net Median			-16.1	-11.2	-7.7	7.3	5.9	12.6	4.9	Jul-15
eV All US Equity Net Rank			33	35	41	40	--	--	40	Jul-15
Northern Trust Russell 1000 Index	88,504,039	4.4	-13.7	-7.3	-4.4	--	--	--	10.1	Nov-16
Russell 1000			-13.8	-7.4	-4.8	--	--	--	9.9	Nov-16
Cove Street Small Cap Value	15,736,304	0.8	-14.5	-9.7	-9.0	5.2	--	--	3.0	May-14
Russell 2000 Value			-18.7	-17.4	-12.9	7.4	--	--	4.1	May-14
eV US Small Cap Value Equity Net Median			-19.2	-18.3	-15.0	5.5	3.1	11.9	3.5	May-14
eV US Small Cap Value Equity Net Rank			11	3	12	53	--	--	60	May-14
Northern Trust Russell 2000 Value	11,527,682	0.6	-18.7	-17.4	-12.5	--	--	--	-12.5	Jan-18
Russell 2000 Value			-18.7	-17.4	-12.9	--	--	--	-12.9	Jan-18
International Equity	70,038,082	3.4	-16.7	-16.2	-17.5	1.9	--	--	0.1	Jul-15
MSCI World ex USA			-12.8	-11.6	-14.1	3.1	--	--	0.5	Jul-15
eV ACWI ex-US All Cap Equity Net Median			-13.8	-13.2	-15.2	3.7	1.3	8.0	0.9	Jul-15
eV ACWI ex-US All Cap Equity Net Rank			93	83	80	75	--	--	69	Jul-15
Northern Trust MSCI World ex. U.S.	46,705,930	2.3	-12.9	-11.7	-13.6	--	--	--	4.1	Nov-16
MSCI World ex USA			-12.8	-11.6	-14.1	--	--	--	3.8	Nov-16
Oberweis International Opportunities	23,332,152	1.1	-21.8	-23.8	-23.1	1.6	--	--	2.9	Nov-15
MSCI World ex USA Small Cap Growth NR USD			-17.5	-18.6	-17.8	3.6	--	--	4.0	Nov-15
eV ACWI ex-US All Cap Equity Net Median			-13.8	-13.2	-15.2	3.7	1.3	8.0	2.5	Nov-15
eV ACWI ex-US All Cap Equity Net Rank			99	99	99	81	--	--	45	Nov-15

As of December 31, 2018

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Emerging Markets Equity	181,566,894	8.9	-7.1	-9.9	-18.0	2.5	--	--	-0.6	Jul-15
<i>MSCI Emerging Market IMI Net</i>			-7.4	-8.8	-15.0	8.5	--	--	1.7	Jul-15
<i>eV Emg Mkts Equity Net Median</i>			-7.6	-10.6	-16.2	7.7	1.4	8.9	1.7	Jul-15
<i>eV Emg Mkts Equity Net Rank</i>			40	45	70	96	--	--	90	Jul-15
Northern Trust MSCI EM IMI	120,620,160	5.9	-7.6	--	--	--	--	--	-7.6	Aug-18
<i>MSCI Emerging Market IMI Net</i>			-7.4	--	--	--	--	--	-8.2	Aug-18
GQG Partners Global Emerging Markets	24,940,582	1.2	-3.5	-8.7	-14.1	--	--	--	0.3	Jul-17
<i>MSCI Emerging Markets</i>			-7.5	-8.5	-14.6	--	--	--	-0.7	Jul-17
<i>eV Emg Mkts Equity Net Median</i>			-7.6	-10.6	-16.2	7.7	1.4	8.9	-2.4	Jul-17
<i>eV Emg Mkts Equity Net Rank</i>			7	36	25	--	--	--	13	Jul-17
Dimensional Fund Advisors EM Value	22,909,736	1.1	-7.2	-5.1	-11.9	--	--	--	6.4	Nov-16
<i>MSCI Emerging Markets Value NR USD</i>			-6.7	-3.5	-10.7	--	--	--	5.1	Nov-16
<i>eV Emg Mkts Equity Net Median</i>			-7.6	-10.6	-16.2	7.7	1.4	8.9	4.0	Nov-16
<i>eV Emg Mkts Equity Net Rank</i>			41	11	15	--	--	--	14	Nov-16
Comgest Global Emerging Markets	13,096,416	0.6	-8.6	-15.9	-28.3	--	--	--	-7.1	Mar-17
<i>MSCI Emerging Markets SMID Cap</i>			-6.0	-9.1	-15.7	--	--	--	1.7	Mar-17
<i>eV Emg Mkts Small Cap Equity Net Median</i>			-8.1	-13.0	-18.1	5.6	2.3	12.5	1.2	Mar-17
<i>eV Emg Mkts Small Cap Equity Net Rank</i>			66	82	98	--	--	--	98	Mar-17

As of December 31, 2018

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Marketable Alternative Equity	60,333,002	3.0	-4.9	-4.3	-1.0	3.8	--	--	4.5	Oct-14
<i>HFRI Equity Hedge (Total) Index</i>			-8.5	-8.2	-7.1	3.5	--	--	2.2	Oct-14
Marshall Wace Eureka Fund	21,716,087	1.1	-5.6	-5.2	0.2	4.3	--	--	6.7	Apr-14
<i>HFRI Equity Hedge (Total) Index</i>			-8.5	-8.2	-7.1	3.5	--	--	2.1	Apr-14
Sandler Plus Offshore Fund Ltd	19,850,041	1.0	1.0	1.6	8.7	7.9	8.5	--	8.5	May-13
<i>HFRI Equity Hedge (Total) Index</i>			-8.5	-8.2	-7.1	3.5	2.3	--	3.5	May-13
Senator Global Opportunity Offshore Fund	18,766,874	0.9	-9.6	-8.9	-9.7	1.9	2.0	--	4.3	Apr-13
<i>HFRI Event-Driven (Total) Index</i>			-4.8	-4.0	-2.1	5.2	2.6	--	3.7	Apr-13
Private Markets	511,617,492	25.1	-7.9	-3.8	-2.3	7.5	--	--	4.1	Jul-15
<i>Private Markets Benchmark</i>			-7.9	-5.1	0.7	10.0	--	--	7.1	Jul-15
<i>MSCI ACWI IMI + 100bps</i>			-13.1	-9.5	-9.2	7.6	--	--	5.0	Jul-15
Northern Trust Russell 3000	301,859,756	14.8	-14.3	-8.2	--	--	--	--	-7.6	Jun-18
<i>Russell 3000</i>			-14.3	-8.2	--	--	--	--	-7.6	Jun-18
Private Equity	83,419,490	4.1	5.5	11.9	12.7	11.0	11.5	9.2	7.5	Jan-06
<i>Cambridge PE Composite BM</i>			3.1	7.5	16.0	12.9	12.2	11.2	11.4	Jan-06
PE Strategic Partnership LP	38,986,212	1.9	7.6	13.3	13.0	--	--	--	4.7	Aug-17
<i>Cambridge PE Composite BM</i>			3.1	7.5	16.0	--	--	--	18.5	Aug-17

Total Fund Aggregate

As of December 31, 2018

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Pantheon USA Fund VII	19,119,968	0.9	2.9	8.2	--	--	--	--	11.7	Jun-18
<i>Cambridge PE Composite BM</i>			3.1	7.5	--	--	--	--	10.3	Jun-18
Partners Group Secondary 2011, L.P.	8,279,850	0.4	0.0	2.1	10.7	10.9	14.4	--	21.0	Nov-12
<i>Cambridge PE Composite BM</i>			3.1	7.5	16.0	12.9	12.2	--	13.4	Nov-12
Pantheon Global Secondary Fund III 'B'	5,252,238	0.3	4.5	18.2	14.0	6.6	4.9	--	5.6	Jul-09
<i>Cambridge PE Composite BM</i>			3.1	7.5	16.0	12.9	12.2	--	14.1	Jul-09
Pathway Private Equity Fund VIII	3,834,285	0.2	-1.6	0.0	-3.8	1.3	5.8	--	10.4	Jul-09
<i>Cambridge PE Composite BM</i>			3.1	7.5	16.0	12.9	12.2	--	14.1	Jul-09
Crestline Portfolio Financing	3,695,189	0.2	3.8	5.0	--	--	--	--	5.0	Jun-18
<i>Cambridge PE Composite BM</i>			3.1	7.5	--	--	--	--	10.3	Jun-18
Great Hill Equity Partners IV, LP	2,195,266	0.1	30.0	34.4	63.1	51.3	43.2	--	31.7	Jul-09
<i>Cambridge PE Composite BM</i>			3.1	7.5	16.0	12.9	12.2	--	14.1	Jul-09
Partners Group Secondary 2008, L.P.	1,439,730	0.1	2.1	3.0	4.8	9.7	5.5	--	9.6	Jul-09
<i>Cambridge PE Composite BM</i>			3.1	7.5	16.0	12.9	12.2	--	14.1	Jul-09
Innovation Endeavors III	616,752	0.0								

¹ Returns for the Fixed Income Aggregate are gross of fees through June 2015 and net of fees thereafter.

² 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.



As of December 31, 2018

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Private Debt	60,642,611	3.0	-4.0	-4.8	-1.4	-2.2	0.9	--	3.3	Dec-10
Medley Opportunity Fund II	25,125,396	1.2	-7.1	-8.3	-13.2	-2.5	1.7	--	3.6	Jun-11
<i>S&P Global Leveraged Loan +2%</i>			-2.9	-0.9	1.3	6.9	4.4	--	5.5	Jun-11
Cross Ocean USD ESS II	11,471,157	0.6	-0.5	1.7	6.2	--	--	--	12.2	Aug-16
<i>S&P Global Leveraged Loan +2%</i>			-2.9	-0.9	1.3	--	--	--	5.6	Aug-16
White Oak Direct Lending Account	10,419,911	0.5	-9.8	-19.7	-2.8	-12.3	-5.7	--	-1.9	Feb-11
<i>S&P Global Leveraged Loan +2%</i>			-2.9	-0.9	1.3	6.9	4.4	--	5.6	Feb-11
GSO Direct Lending Account	8,473,770	0.4	1.6	12.0	13.3	5.3	3.8	--	8.3	Mar-11
<i>S&P Global Leveraged Loan +2%</i>			-2.9	-0.9	1.3	6.9	4.4	--	5.5	Mar-11
ArrowMark Co-Investment	5,152,377	0.3	3.6	6.9	13.4	--	--	--	--	Dec-17
<i>S&P Global Leveraged Loan +2%</i>			-2.9	-0.9	1.3	--	--	--	--	Dec-17
Private Real Estate	44,583,582	2.2	4.4	10.9	19.6	19.6	--	--	19.4	Jul-15
<i>NCREIF ODCE Equal Weighted</i>			1.6	3.7	8.3	8.4	--	--	9.3	Jul-15
DRA Growth & Income Fund VIII	12,404,273	0.6	3.2	6.3	9.1	12.1	--	--	12.1	Jan-15
<i>NCREIF Property Index</i>			1.4	3.1	6.7	7.2	--	--	8.7	Jan-15
Tristan Capital Partners	10,443,798	0.5	-1.4	2.1	6.3	7.6	--	--	7.6	Jan-16
<i>NCREIF Property Index</i>			1.4	3.1	6.7	7.2	--	--	7.2	Jan-16
DRA Growth and Income Fund IX	9,841,654	0.5	4.9	12.1	21.2	--	--	--	15.9	Feb-17
<i>NCREIF Property Index</i>			1.4	3.1	6.7	--	--	--	7.2	Feb-17

As of December 31, 2018

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
DRA Growth and Income Fund VII <i>NCREIF Property Index</i>	8,151,574	0.4	10.8	24.8	49.1	35.4	27.4	--	24.0	Apr-12
			1.4	3.1	6.7	7.2	9.3	--	9.7	Apr-12
Torchlight Debt Opportunity VI <i>NCREIF Property Index</i>	1,990,528	0.1	18.0	15.5	--	--	--	--	15.5	Apr-18
			1.4	3.1	--	--	--	--	4.9	Apr-18
DRA Growth and Income Fund VI <i>NCREIF Property Index</i>	1,161,772	0.1	0.8	-1.8	-1.7	5.2	13.8	8.6	8.6	Jan-08
			1.4	3.1	6.7	7.2	9.3	7.5	6.1	Jan-08
GEM Realty Fund VI <i>NCREIF Property Index</i>	589,984	0.0	-2.4	28.8	5.5	--	--	--	--	Nov-17
			1.4	3.1	6.7	--	--	--	--	Nov-17
DRA Growth and Income Fund V	0	0.0	--	--	--	--	--	--	--	Jan-06
Private Real Assets	21,112,053	1.0	7.8	11.3	11.6	16.6	--	--	8.2	Jul-15
Global Infrastructure Partners III <i>DJ Brookfield Global Infrastructure Net TR USD</i>	19,186,421	0.9	7.9	14.3	14.2	--	--	--	0.7	Sep-16
			-5.9	-6.7	-7.9	--	--	--	1.7	Sep-16
Lime Rock Partners VIII	1,879,440	0.1	--	--	--	--	--	--	0.0	Dec-18
Rhumblin S&P Global Large MidCap Commodity & NR	40,618	0.0								
Rhumblin DJ Brookfield Global Infrastructure	5,574	0.0								

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

As of December 31, 2018

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Emerging Markets Debt	64,556,637	3.2	-1.2	-0.9	-8.9	3.6	--	--	1.0	Jul-15
50% JPM EMBI GD / 50% JPM GBI-EM			0.4	0.7	-5.2	5.6	--	--	3.1	Jul-15
eV All Emg Mkts Fixed Inc Net Median			-0.6	0.0	-5.9	5.3	2.7	7.6	3.2	Jul-15
eV All Emg Mkts Fixed Inc Net Rank			66	78	90	95	--	--	86	Jul-15
BlueBay Emerging Market Select Debt	64,556,637	3.2	-1.2	-0.9	-8.9	3.6	--	--	1.0	Jul-15
50% JPM EMBI GD / 50% JPM GBI-EM			0.4	0.7	-5.2	5.6	--	--	3.1	Jul-15
eV All Emg Mkts Fixed Inc Net Median			-0.6	0.0	-5.9	5.3	2.7	7.6	3.2	Jul-15
eV All Emg Mkts Fixed Inc Net Rank			66	78	90	95	--	--	86	Jul-15
High Yield Debt	0	0.0	-0.2	1.4	3.6	5.0	1.0	--	2.0	Feb-13
50% BAML Global HY / 50% S&P Global Leveraged Loan			-3.5	-1.5	-1.0	5.6	3.4	--	4.9	Feb-13
Davidson Kempner Institutional Partners, L.P.	0	0.0	-0.2	1.4	3.6	5.4	4.4	--	5.0	Feb-13
HFRI Event-Driven (Total) Index			-4.8	-4.0	-2.1	5.2	2.6	--	3.8	Feb-13
Zero Beta	677,733,672	33.3	0.3	1.1	2.7	2.0	--	--	1.6	Jul-15
Zero Beta Benchmark			0.7	0.7	-1.1	0.7	--	--	0.3	Jul-15
Absolute Return	161,768,391	8.0	-0.4	0.3	2.4	2.2	2.6	--	3.2	Nov-12
Absolute Return Benchmark			0.7	0.6	-1.2	0.7	1.2	--	1.1	Nov-12

As of December 31, 2018

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Relative Value	84,104,387	4.1	0.2	1.8	4.8	4.2	--	--	3.9	Oct-14
<i>HFRI Relative Value (Total) Index</i>			-3.2	-1.8	-0.2	4.1	--	--	2.6	Oct-14
DE Shaw	27,868,443	1.4	0.1	1.8	7.2	7.9	10.7	--	10.6	Apr-13
<i>HFRI Fund Weighted Composite Index</i>			-5.9	-5.4	-4.6	3.0	2.1	--	2.8	Apr-13
Hudson Bay	24,915,410	1.2	1.6	3.4	6.0	--	--	--	5.2	Aug-17
<i>HFRI Relative Value (Total) Index</i>			-3.2	-1.8	-0.2	--	--	--	1.0	Aug-17
Pine River Volatility Arbitrage	14,994,848	0.7	-2.4	-0.4	-2.7	--	--	--	-2.2	Mar-17
<i>HFRI Relative Value (Total) Index</i>			-3.2	-1.8	-0.2	--	--	--	1.6	Mar-17
JD Capital	14,177,145	0.7	1.5	2.8	8.3	--	--	--	6.1	Oct-16
<i>HFRI Relative Value (Total) Index</i>			-3.2	-1.8	-0.2	--	--	--	3.0	Oct-16
Pine River Fund Ltd	2,148,541	0.1	3.5	-1.0	-1.7	-0.5	0.0	--	1.6	Jan-13
<i>HFRI Relative Value (Total) Index</i>			-3.2	-1.8	-0.2	4.1	3.2	--	3.9	Jan-13
Macro	77,664,004	3.8	-0.9	-0.9	0.4	0.8	--	--	1.0	Oct-14
<i>HFRI Macro (Total) Index</i>			-2.2	-2.2	-4.0	-0.3	--	--	0.0	Oct-14
Pharo Management, Ltd.	21,355,885	1.0	2.4	-0.3	5.5	--	--	--	9.3	Apr-16
<i>HFRI Macro (Total) Index</i>			-2.2	-2.2	-4.0	--	--	--	-0.9	Apr-16
Dymon Asia Macro	15,637,141	0.8	-0.6	-2.5	-1.5	1.0	--	--	0.6	Sep-15
<i>HFRI Macro (Total) Index</i>			-2.2	-2.2	-4.0	-0.3	--	--	-0.3	Sep-15

As of December 31, 2018

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Kepos Alpha Fund	11,838,437	0.6	-6.9	-3.3	4.3	-5.9	-1.4	--	-2.2	Mar-13
<i>HFRI Macro: Systematic Diversified Index</i>			-3.2	-2.7	-6.7	-2.1	0.3	--	0.0	Mar-13
AHL Frontier Fund	10,339,709	0.5	-4.8	-0.9	-3.0	--	--	--	5.6	Jun-16
<i>Barclay BTOP50 Index TR USD</i>			-1.6	-0.5	-4.2	--	--	--	-4.0	Jun-16
Keynes Leveraged Quantitative Strategies Fund	9,596,425	0.5	3.3	-0.2	0.6	-0.1	--	--	-0.1	Jan-16
<i>Barclay BTOP50 Index TR USD</i>			-1.6	-0.5	-4.2	-3.2	--	--	-3.2	Jan-16
Systematica	8,896,407	0.4	0.4	3.3	-1.8	--	--	--	2.8	Jul-17
<i>Barclay BTOP50 Index TR USD</i>			-1.6	-0.5	-4.2	--	--	--	-0.1	Jul-17
Short-Term IG Bonds	246,240,674	12.1	0.6	--	--	--	--	--	0.6	Oct-18
<i>ICE BofAML 91 Days T-Bills TR</i>			0.6	--	--	--	--	--	0.6	Oct-18
BlackRock 3-Month T-Bill	246,240,674	12.1	0.6	--	--	--	--	--	0.6	Oct-18
<i>ICE BofAML 91 Days T-Bills TR</i>			0.6	--	--	--	--	--	0.6	Oct-18
Immunized Cash Flows	112,467,857	5.5	1.3	--	--	--	--	--	1.3	Oct-18
<i>Immunized Cash Flows Benchmark</i>			1.3	--	--	--	--	--	1.3	Oct-18
Northern Trust 1-3 Year US Govt Bond	112,467,857	5.5	1.3	--	--	--	--	--	1.3	Aug-18
<i>BBgBarc US Govt 1-3 Yr TR</i>			1.3	--	--	--	--	--	1.2	Aug-18
Cash	157,256,751	7.7	0.4	0.9	1.7	1.0	0.7	--	--	Jan-06
<i>ICE BofAML 91 Days T-Bills TR</i>			0.6	1.1	1.9	1.0	0.6	--	--	Jan-06

As of December 31, 2018

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Other	181,823,554	8.9	-0.7	-0.7	0.5	2.8	1.7	-1.6	1.9	Jul-04
<i>Other Benchmark</i>			-2.0	-2.8	-3.4	2.8	--	--	--	Jul-04
Core Real Estate	113,348,791	5.6	2.1	3.9	8.2	7.9	9.9	5.8	7.1	Jul-04
<i>NCREIF-ODCE</i>			1.8	3.9	8.3	8.2	10.4	7.0	8.1	Jul-04
American Realty	72,834,158	3.6	2.4	4.0	7.4	7.3	9.4	5.3	5.1	Jan-07
<i>NCREIF ODCE Equal Weighted (Net)</i>			1.4	3.3	7.3	7.5	9.6	5.9	5.1	Jan-07
PRISA	40,514,633	2.0	1.6	3.8	9.5	8.6	10.5	6.2	7.2	Jul-04
<i>NCREIF ODCE Equal Weighted (Net)</i>			1.4	3.3	7.3	7.5	9.6	5.9	6.9	Jul-04
Commodities	25,189,956	1.2	-5.3	-8.3	-5.2	1.3	-6.0	--	-4.0	May-10
<i>Bloomberg Commodity Index TR USD</i>			-9.4	-11.2	-11.2	0.3	-8.8	--	-5.9	May-10
Credit Suisse Risk Parity Commodity Index	25,189,956	1.2	-5.4	-8.3	-8.7	2.8	-4.7	--	-5.6	Apr-11
<i>Bloomberg Commodity Index TR USD</i>			-9.4	-11.2	-11.2	0.3	-8.8	--	-9.3	Apr-11
Pinnacle Natural Resources, L.P.	0	0.0	-5.3	-8.4	2.2	-2.3	--	--	-2.3	Jan-16
<i>Bloomberg Commodity Index TR USD</i>			-9.4	-11.2	-11.2	0.3	--	--	0.3	Jan-16
TIPS	42,977,880	2.1	-0.2	0.0	0.8	1.5	--	--	0.3	Jul-14
<i>BBgBarc U.S. TIPS 0-5 Years</i>			-0.2	-0.1	0.6	1.5	--	--	0.3	Jul-14
Northern Trust TIPS 0-5 Years	42,977,880	2.1	-0.2	0.0	0.8	1.5	--	--	0.3	Jul-14
<i>BBgBarc US Treasury TIPS 0-5 Yr TR</i>			-0.2	-0.1	0.6	1.4	--	--	0.3	Jul-14

¹ 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 December 31, 2018

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Core Bonds	306,927	0.0	1.0	0.9	0.6	2.3	--	--	2.0	Jul-15
<i>BBgBarc Global Aggregate TR</i>			1.2	0.3	-1.2	2.7	--	--	2.3	Jul-15
Voya Securitized Credit	306,927	0.0	1.0	2.3	3.9	6.5	--	--	5.5	Jul-15
<i>BBgBarc Global Aggregate Securitized TR</i>			1.5	1.3	0.0	1.8	--	--	1.7	Jul-15
Overlay	9,872,107	0.5								
Russell Investments Overlay	9,869,831	0.5								

As of December 31, 2018

Cash Flow Summary
Quarter Ending December 31, 2018

	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Net Investment Change	Ending Market Value
AHL Frontier Fund	\$15,593,395	\$0	-\$4,500,000	-\$4,500,000	-\$753,686	\$10,339,709
American Realty	\$85,152,365	\$0	-\$14,184,926	-\$14,184,926	\$1,866,719	\$72,834,158
ArrowMark Co-Investment	\$5,132,377	\$0	-\$160,246	-\$160,246	\$180,246	\$5,152,377
Artisan Global Opportunities	\$58,860,661	\$0	\$0	\$0	-\$9,043,628	\$49,817,033
Artisan Global Value	\$128,535,485	\$14,540,913	-\$14,540,913	\$0	-\$17,156,688	\$111,378,797
BlackRock 3-Month T-Bill	\$0	\$245,000,000	\$0	\$245,000,000	\$1,240,674	\$246,240,674
BlueBay Emerging Market Select Debt	\$65,312,064	\$0	\$0	\$0	-\$755,427	\$64,556,637
Comgest Global Emerging Markets	\$14,331,270	\$0	\$0	\$0	-\$1,234,855	\$13,096,416
Cove Street Small Cap Value	\$18,415,179	\$0	\$0	\$0	-\$2,678,875	\$15,736,304
Credit Suisse Risk Parity Commodity Index	\$26,626,918	\$0	-\$27,758	-\$27,758	-\$1,409,204	\$25,189,956
Crestline Portfolio Financing	\$5,028,625	\$0	-\$1,525,572	-\$1,525,572	\$192,136	\$3,695,189
Cross Ocean USD ESS II	\$11,650,545	\$0	-\$145,603	-\$145,603	-\$33,785	\$11,471,157
Davidson Kempner Institutional Partners, L.P.	\$40,341,972	\$0	-\$40,427,175	-\$40,427,175	\$85,203	\$0
DE Shaw	\$40,100,411	\$0	-\$12,561,631	-\$12,561,631	\$329,663	\$27,868,443
Dimensional Fund Advisors EM Value	\$24,678,045	\$0	\$0	\$0	-\$1,768,308	\$22,909,736
DRA Growth & Income Fund VIII	\$13,377,286	\$0	-\$1,456,314	-\$1,456,314	\$483,301	\$12,404,273
DRA Growth and Income Fund IX	\$8,525,703	\$1,522,843	-\$663,678	\$859,165	\$456,785	\$9,841,654
DRA Growth and Income Fund V	\$21,864	\$0	-\$31,140	-\$31,140	\$9,276	\$0
DRA Growth and Income Fund VI	\$1,152,862	\$0	-\$2,660	-\$2,660	\$11,569	\$1,161,772
DRA Growth and Income Fund VII	\$9,995,118	\$0	-\$2,894,562	-\$2,894,562	\$1,051,018	\$8,151,574
Dymon Asia Macro	\$25,639,864	\$0	-\$10,000,000	-\$10,000,000	-\$2,723	\$15,637,141
GEM Realty Fund VI	\$604,396	\$0	-\$33,750	-\$33,750	\$19,338	\$589,984
Global Infrastructure Partners III	\$18,431,429	\$0	-\$918,050	-\$918,050	\$1,673,042	\$19,186,421
GQG Partners Global Emerging Markets	\$25,837,909	\$0	-\$30,824	-\$30,824	-\$866,502	\$24,940,582
Great Hill Equity Partners IV, LP	\$3,656,259	\$0	-\$2,565,458	-\$2,565,458	\$1,104,465	\$2,195,266

Total Fund Aggregate

As of December 31, 2018

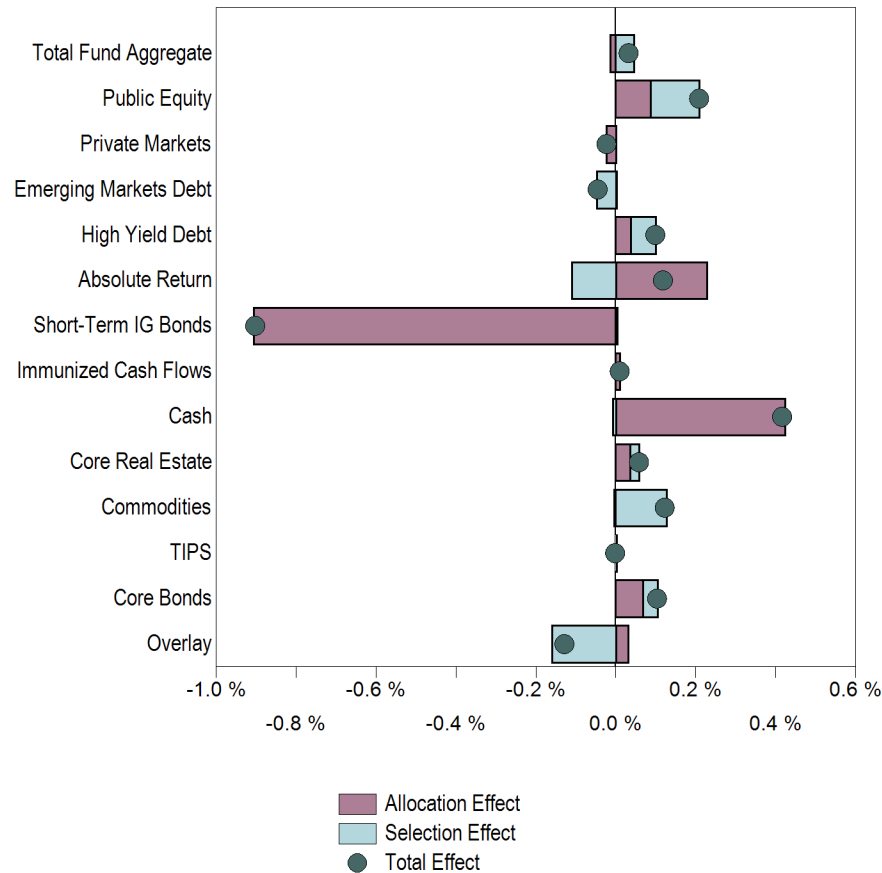
	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Net Investment Change	Ending Market Value
GSO Direct Lending Account	\$12,821,572	\$0	-\$4,645,589	-\$4,645,589	\$297,787	\$8,473,770
Hudson Bay	\$24,525,023	\$0	\$0	\$0	\$390,387	\$24,915,410
Innovation Endeavors III	\$269,748	\$335,712	\$0	\$335,712	\$11,292	\$616,752
Internal Cash Account	\$196,807,750	\$340,872,931	-\$380,646,534	-\$39,773,603	\$222,604	\$157,256,751
JD Capital	\$22,533,863	\$0	-\$8,786,328	-\$8,786,328	\$429,610	\$14,177,145
Kepos Alpha Fund	\$17,008,183	\$0	-\$4,180,166	-\$4,180,166	-\$989,581	\$11,838,437
Keynes Leveraged Quantitative Strategies Fund	\$19,294,200	\$0	-\$10,000,000	-\$10,000,000	\$302,225	\$9,596,425
Lime Rock Partners VIII	--	\$62,955	-\$16,000	\$46,955	\$1,832,485	\$1,879,440
Marshall Wace Eureka Fund	\$23,005,079	\$0	\$2,108	\$2,108	-\$1,291,100	\$21,716,087
Medley Opportunity Fund II	\$27,905,538	\$0	-\$935,341	-\$935,341	-\$1,844,801	\$25,125,396
Northern Trust 1-3 Year US Govt Bond	\$111,000,000	\$0	\$0	\$0	\$1,467,857	\$112,467,857
Northern Trust MSCI EM IMI	\$120,000,000	\$10,000,000	\$0	\$10,000,000	-\$9,379,840	\$120,620,160
Northern Trust MSCI World ex. U.S.	\$37,232,351	\$15,000,000	\$0	\$15,000,000	-\$5,526,420	\$46,705,930
Northern Trust Russell 1000 Index	\$91,879,934	\$10,000,000	\$0	\$10,000,000	-\$13,375,895	\$88,504,039
Northern Trust Russell 2000 Value	\$14,177,921	\$0	\$0	\$0	-\$2,650,239	\$11,527,682
Northern Trust Russell 3000	\$352,140,320	\$0	\$0	\$0	-\$50,280,564	\$301,859,756
Northern Trust TIPS 0-5 Years	\$43,078,355	\$0	\$0	\$0	-\$100,475	\$42,977,880
Oberweis International Opportunities	\$39,864,015	\$17,451,367	-\$27,466,493	-\$10,015,127	-\$6,516,736	\$23,332,152
Pantheon Global Secondary Fund III 'B'	\$5,448,929	\$0	-\$499,534	-\$499,534	\$302,843	\$5,252,238
Pantheon USA Fund VII	\$20,563,758	\$519,999	-\$2,581,248	-\$2,061,249	\$617,459	\$19,119,968
Partners Group Secondary 2008, L.P.	\$1,410,129	\$0	\$0	\$0	\$29,601	\$1,439,730
Partners Group Secondary 2011, L.P.	\$8,901,556	\$0	-\$618,891	-\$618,891	-\$2,816	\$8,279,850
Pathway Private Equity Fund VIII	\$4,168,151	\$0	-\$269,539	-\$269,539	-\$64,328	\$3,834,285
PE Strategic Partnership LP	\$25,378,023	\$11,250,000	-\$118,125	\$11,131,875	\$2,476,314	\$38,986,212
Pharo Management, Ltd.	\$32,190,243	\$0	-\$11,600,000	-\$11,600,000	\$765,642	\$21,355,885

Total Fund Aggregate

As of December 31, 2018

	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Net Investment Change	Ending Market Value
Pine River Fund Ltd	\$2,305,760	\$0	-\$237,357	-\$237,357	\$80,137	\$2,148,541
Pine River Volatility Arbitrage	\$24,592,425	\$0	-\$9,030,793	-\$9,030,793	-\$566,784	\$14,994,848
Pinnacle Natural Resources, L.P.	\$39,354,520	\$0	-\$37,341,496	-\$37,341,496	-\$2,013,024	\$0
PRISA	\$40,211,936	\$0	-\$336,708	-\$336,708	\$639,405	\$40,514,633
Rhumblin DJ Brookfield Global Infrastructure	\$16,688	\$1,546,554	-\$1,572,216	-\$25,662	\$14,549	\$5,574
Rhumblin S&P Global Large MidCap Commodity & NR	\$113,435	\$57,923	-\$128,346	-\$70,423	-\$2,394	\$40,618
Russell Investments Overlay	\$10,237,026	\$86,738,640	-\$83,738,640	\$3,000,000	-\$3,367,195	\$9,869,831
Sandler Plus Offshore Fund Ltd	\$19,662,377	\$0	\$0	\$0	\$187,664	\$19,850,041
Senator Global Opportunity Offshore Fund	\$20,766,624	\$0	\$0	\$0	-\$1,999,750	\$18,766,874
State Street Terminated Managers	\$5,362	\$0	-\$327	-\$327	-\$2,760	\$2,276
Systematica	\$25,806,280	\$0	-\$16,500,000	-\$16,500,000	-\$409,873	\$8,896,407
Torchlight Debt Opportunity VI	\$1,854,454	\$0	-\$281,507	-\$281,507	\$417,581	\$1,990,528
Tristan Capital Partners	\$9,038,797	\$2,682,859	-\$1,487,732	\$1,195,127	\$209,874	\$10,443,798
Voya Securitized Credit	\$98,825,420	\$0	-\$98,501,127	-\$98,501,127	-\$17,366	\$306,927
White Oak Direct Lending Account	\$14,230,810	\$0	-\$2,729,349	-\$2,729,349	-\$1,081,550	\$10,419,911
Total	\$2,205,628,556	\$757,582,694	-\$810,917,536	-\$53,334,842	-\$117,788,421	\$2,034,505,293

Attribution Effects
3 Months Ending December 31, 2018



Attribution Summary
3 Months Ending December 31, 2018

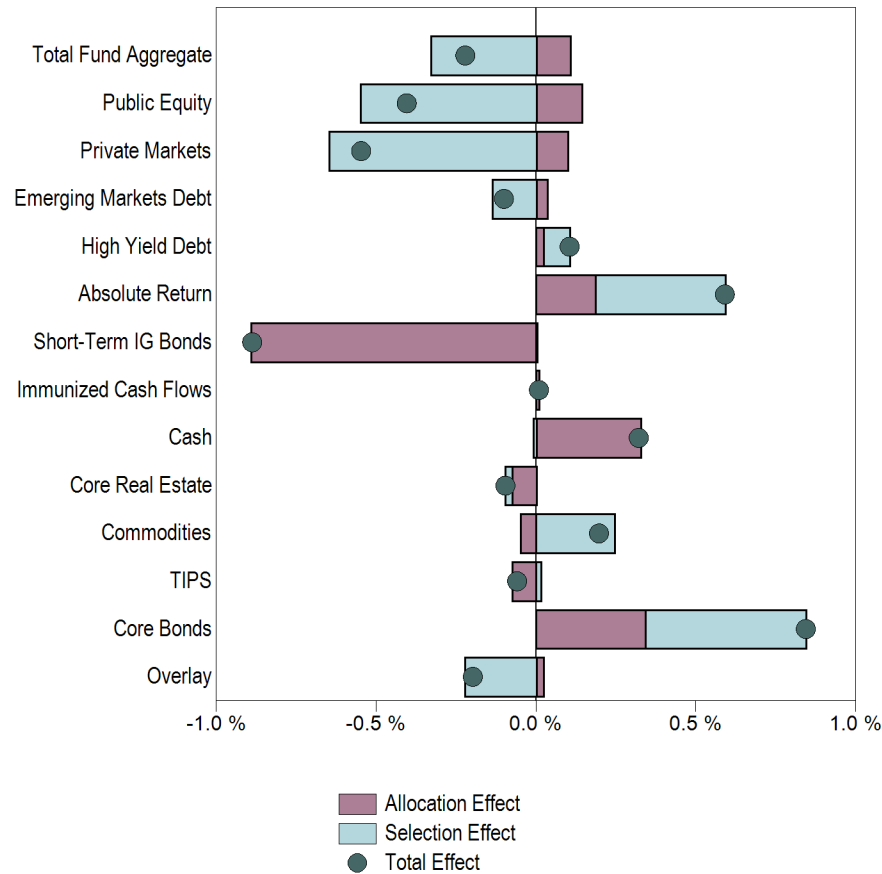
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Total Effects
Public Equity	-11.4%	-11.8%	0.4%	0.1%	0.1%	0.2%
Private Markets	-7.9%	-7.9%	0.0%	0.0%	0.0%	0.0%
Emerging Markets Debt	-1.2%	0.4%	-1.6%	0.0%	0.0%	0.0%
High Yield Debt	-0.2%	-3.5%	3.3%	0.1%	0.0%	0.1%
Absolute Return	-0.4%	0.7%	-1.1%	-0.1%	0.2%	0.1%
Short-Term IG Bonds	0.6%	0.6%	0.0%	0.0%	-0.9%	-0.9%
Immunized Cash Flows	1.3%	1.3%	0.0%	0.0%	0.0%	0.0%
Cash	0.4%	0.6%	-0.1%	0.0%	0.4%	0.4%
Core Real Estate	2.1%	1.8%	0.3%	0.0%	0.0%	0.1%
Commodities	-5.3%	-9.4%	4.1%	0.1%	0.0%	0.1%
TIPS	-0.2%	-0.2%	0.0%	0.0%	0.0%	0.0%
Core Bonds	1.0%	1.2%	-0.2%	0.0%	0.1%	0.1%
Overlay	-34.2%	0.6%	-34.8%	-0.2%	0.0%	-0.1%
Total	-5.5%	-5.5%	0.0%	0.0%	0.0%	0.0%

¹ 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.



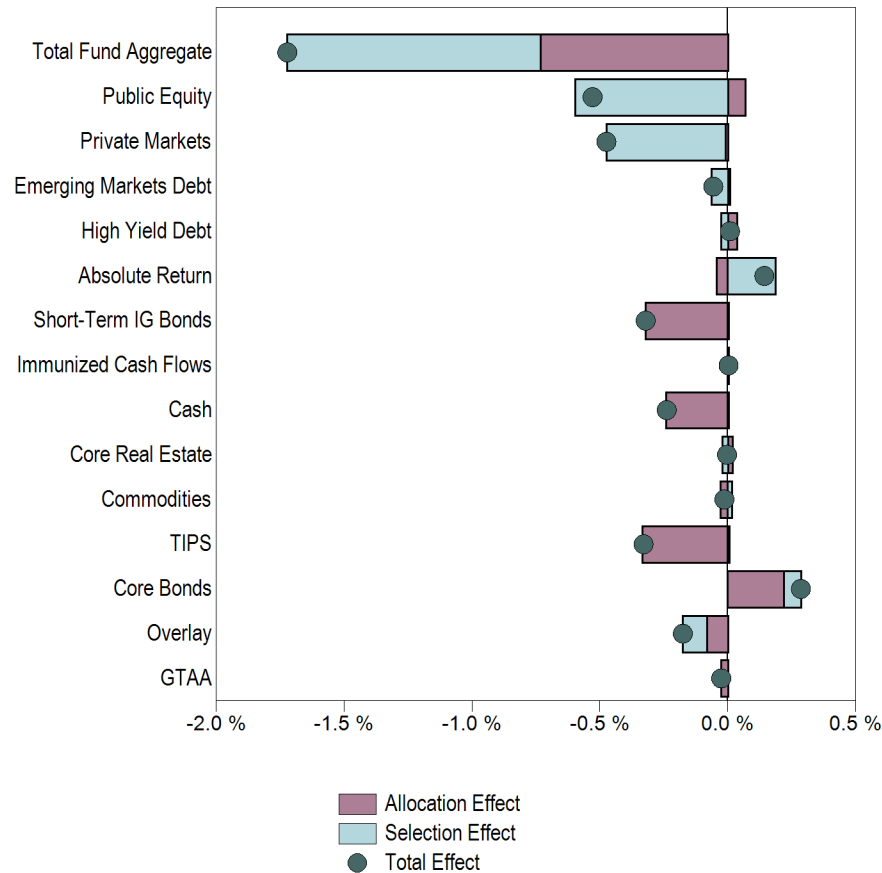
Attribution Effects
1 Year Ending December 31, 2018

Attribution Summary
1 Year Ending December 31, 2018



	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Total Effects
Public Equity	-10.3%	-8.6%	-1.7%	-0.5%	0.1%	-0.4%
Private Markets	-2.3%	0.7%	-2.9%	-0.6%	0.1%	-0.5%
Emerging Markets Debt	-8.9%	-5.2%	-3.8%	-0.1%	0.0%	-0.1%
High Yield Debt	3.6%	-1.0%	4.6%	0.1%	0.0%	0.1%
Absolute Return	2.4%	-1.2%	3.5%	0.4%	0.2%	0.6%
Short-Term IG Bonds	--	0.6%	--	0.0%	-0.9%	-0.9%
Immunized Cash Flows	--	--	--	0.0%	0.0%	0.0%
Cash	1.7%	1.9%	-0.2%	0.0%	0.3%	0.3%
Core Real Estate	8.2%	8.3%	-0.1%	0.0%	-0.1%	-0.1%
Commodities	-5.2%	-11.2%	6.1%	0.2%	0.0%	0.2%
TIPS	0.8%	0.6%	0.2%	0.0%	-0.1%	-0.1%
Core Bonds	0.6%	-1.2%	1.8%	0.5%	0.3%	0.8%
Overlay	-36.1%	1.9%	-38.1%	-0.2%	0.0%	-0.2%
Total	-3.8%	-3.6%	-0.2%	-0.3%	0.1%	-0.2%

Attribution Effects
3 Years Ending December 31, 2018



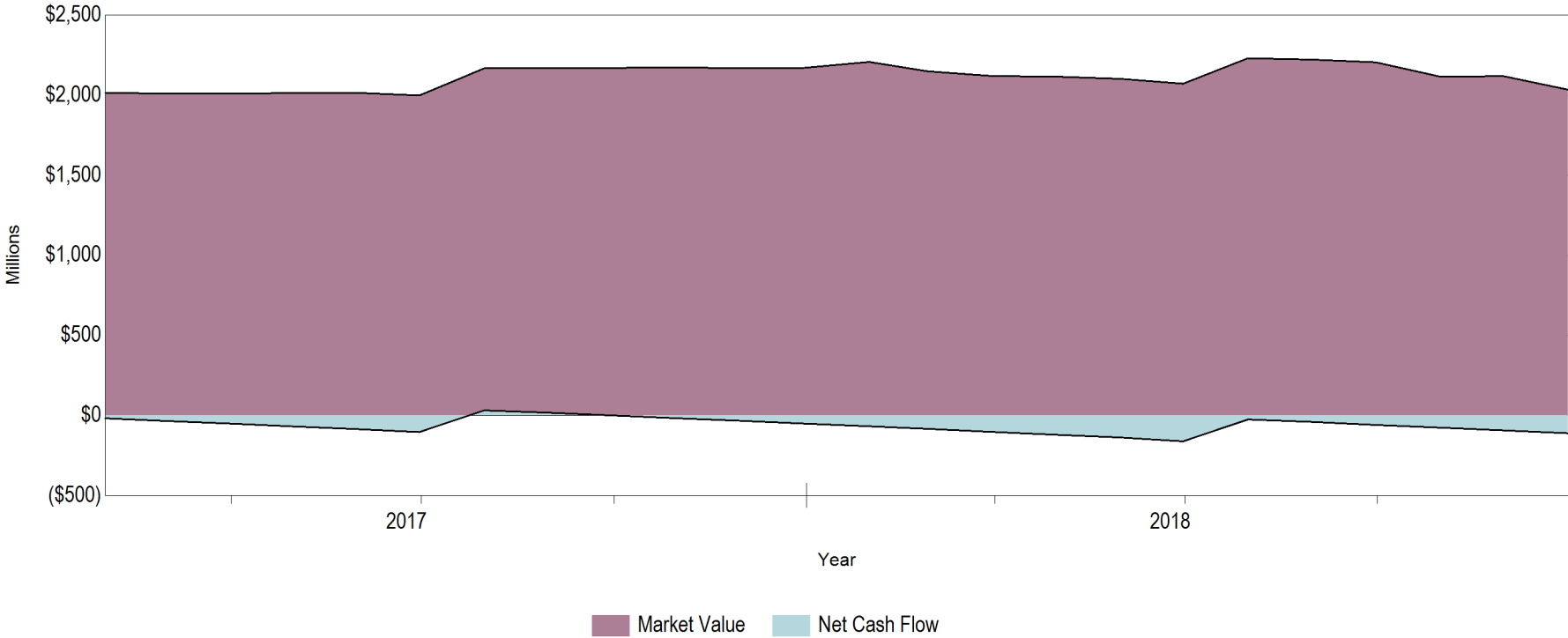
Attribution Summary
3 Years Ending December 31, 2018

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Total Effects
Public Equity	5.0%	7.1%	-2.0%	-0.6%	0.1%	-0.5%
Private Markets	7.5%	10.0%	-2.4%	-0.5%	0.0%	-0.5%
Emerging Markets Debt	3.6%	5.6%	-2.0%	-0.1%	0.0%	-0.1%
High Yield Debt	5.0%	5.6%	-0.6%	0.0%	0.0%	0.0%
Absolute Return	2.2%	0.7%	1.5%	0.2%	0.0%	0.1%
Short-Term IG Bonds	--	0.2%	--	0.0%	-0.3%	-0.3%
Immunized Cash Flows	--	--	--	0.0%	0.0%	0.0%
Cash	1.0%	1.0%	0.0%	0.0%	-0.2%	-0.2%
Core Real Estate	7.9%	8.2%	-0.4%	0.0%	0.0%	0.0%
Commodities	1.3%	0.3%	1.0%	0.0%	0.0%	0.0%
TIPS	1.5%	1.5%	0.0%	0.0%	-0.3%	-0.3%
Core Bonds	2.3%	2.7%	-0.4%	0.1%	0.2%	0.3%
Overlay	-15.3%	1.1%	-16.3%	-0.1%	-0.1%	-0.2%
GTAA	--	--	--	0.0%	0.0%	0.0%
Total	4.1%	5.8%	-1.7%	-1.0%	-0.7%	-1.7%

Total Fund Asset Growth Summary

As of December 31, 2018

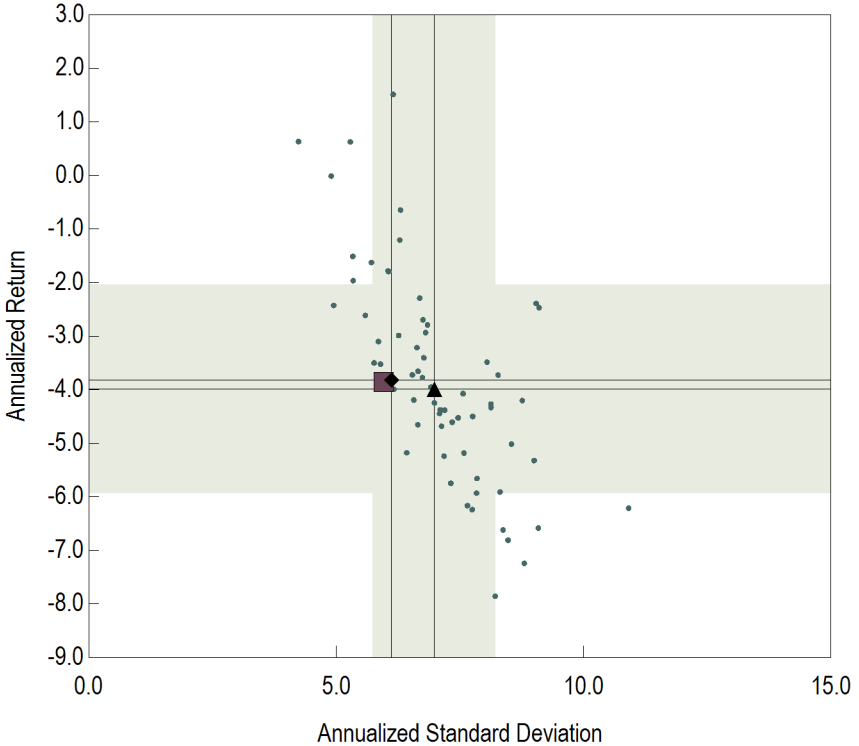
Market Value History
2 Years Ending December 31, 2018



	Fourth Quarter	Fiscal Year-To-Date	One Year	Two Years
Beginning Market Value	\$2,205,628,556	\$2,071,707,543	\$2,170,709,925	\$2,001,630,349
Net Cash Flow	-\$51,713,990	\$50,452,569	-\$60,209,034	-\$111,222,921
Net Investment Change	-\$119,409,273	-\$87,654,819	-\$75,995,598	\$144,097,865
Ending Market Value	\$2,034,505,293	\$2,034,505,293	\$2,034,505,293	\$2,034,505,293

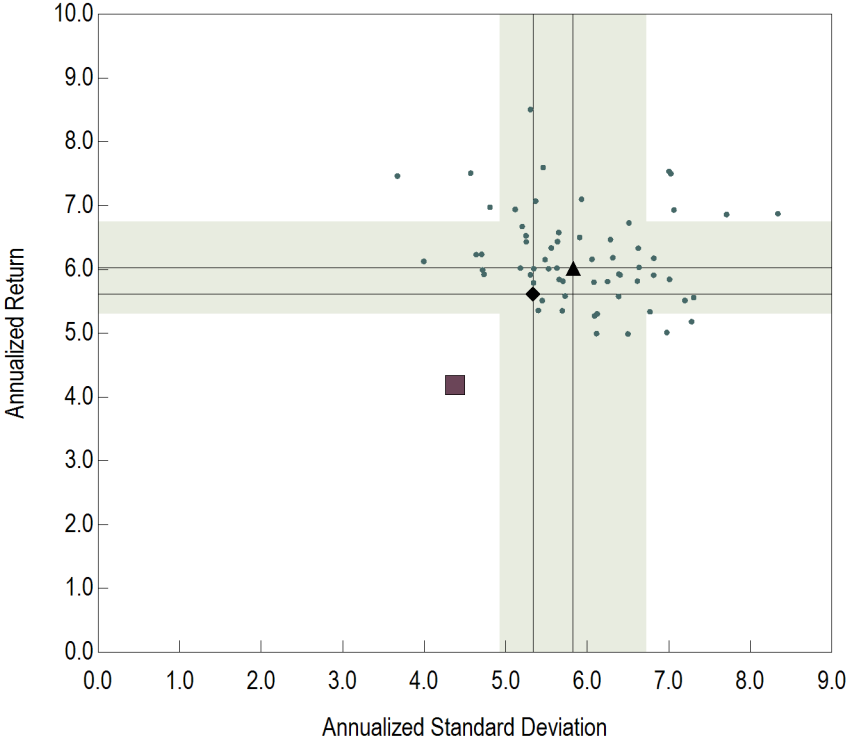


Annualized Return vs. Annualized Standard Deviation
1 Year Ending December 31, 2018



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

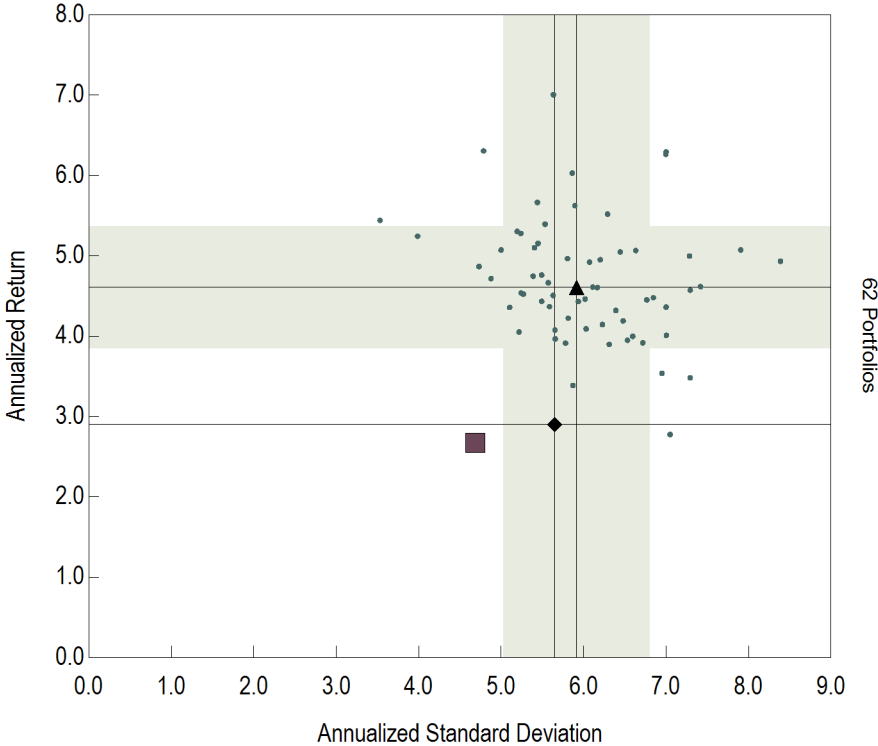
Annualized Return vs. Annualized Standard Deviation
3 Years Ending December 31, 2018



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

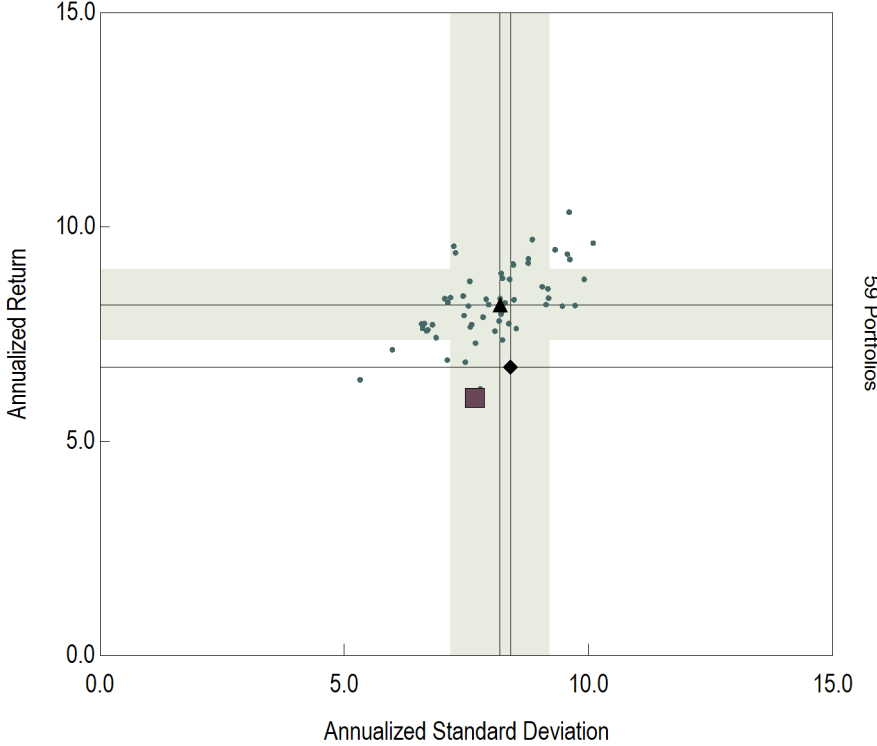


Annualized Return vs. Annualized Standard Deviation
5 Years Ending December 31, 2018



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

Annualized Return vs. Annualized Standard Deviation
10 Years Ending December 31, 2018



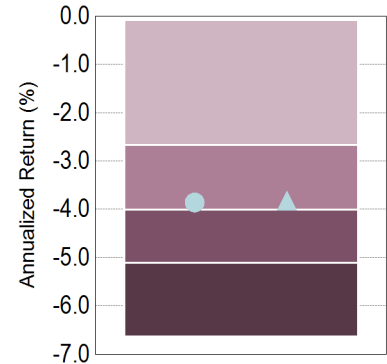
- Total Fund Aggregate
- ◆ Policy Benchmark
- ▲ Universe Median
- 68% Confidence Interval
- InvestorForce Public DB > \$1B Net



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

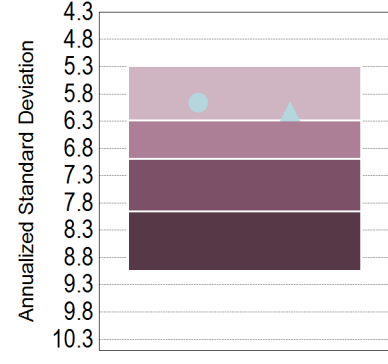
As of December 31, 2018

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



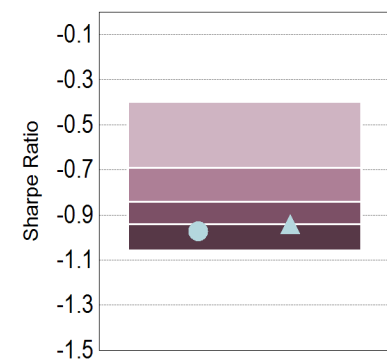
● Total Fund Aggregate	
Value	-3.9
Rank	48
▲ Policy Benchmark	
Value	-3.8
Rank	48
Universe	
5th %tile	-0.1
25th %tile	-2.7
Median	-4.0
75th %tile	-5.1
95th %tile	-6.6

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



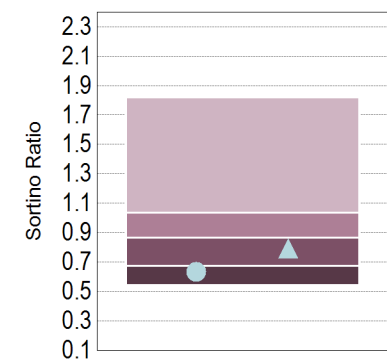
● Total Fund Aggregate	
Value	6.0
Rank	17
▲ Policy Benchmark	
Value	6.1
Rank	21
Universe	
5th %tile	5.3
25th %tile	6.3
Median	7.0
75th %tile	7.9
95th %tile	9.0

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



● Total Fund Aggregate	
Value	-1.0
Rank	83
▲ Policy Benchmark	
Value	-0.9
Rank	77
Universe	
5th %tile	-0.4
25th %tile	-0.7
Median	-0.8
75th %tile	-0.9
95th %tile	-1.1

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



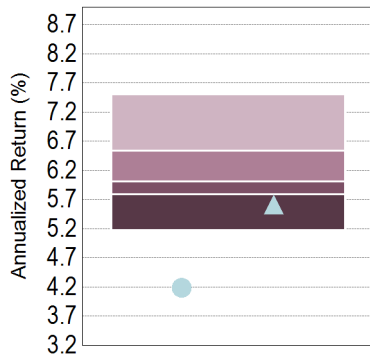
● Total Fund Aggregate	
Value	0.6
Rank	85
▲ Policy Benchmark	
Value	0.8
Rank	59
Universe	
5th %tile	1.8
25th %tile	1.0
Median	0.9
75th %tile	0.7
95th %tile	0.5



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

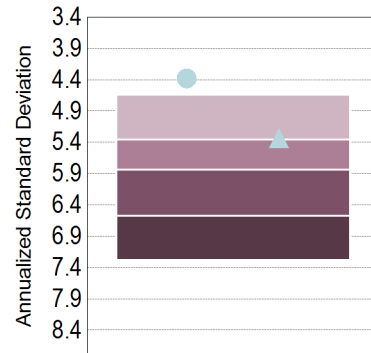
As of December 31, 2018

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



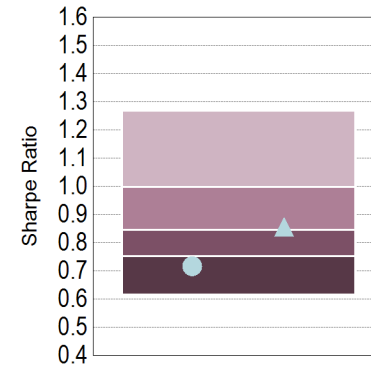
● Total Fund Aggregate	
Value	4.2
Rank	99
▲ Policy Benchmark	
Value	5.6
Rank	79
Universe	
5th %tile	7.5
25th %tile	6.6
Median	6.0
75th %tile	5.8
95th %tile	5.2

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



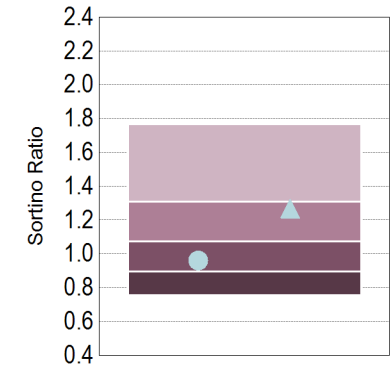
● Total Fund Aggregate	
Value	4.4
Rank	3
▲ Policy Benchmark	
Value	5.3
Rank	24
Universe	
5th %tile	4.6
25th %tile	5.3
Median	5.8
75th %tile	6.6
95th %tile	7.3

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



● Total Fund Aggregate	
Value	0.7
Rank	81
▲ Policy Benchmark	
Value	0.9
Rank	50
Universe	
5th %tile	1.3
25th %tile	1.0
Median	0.8
75th %tile	0.8
95th %tile	0.6

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

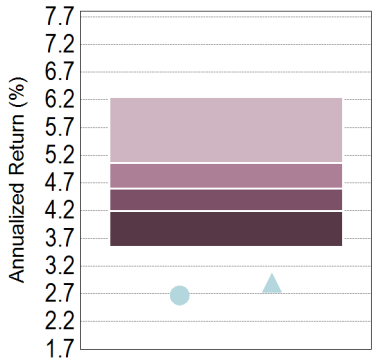


● Total Fund Aggregate	
Value	1.0
Rank	70
▲ Policy Benchmark	
Value	1.3
Rank	30
Universe	
5th %tile	1.8
25th %tile	1.3
Median	1.1
75th %tile	0.9
95th %tile	0.8

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

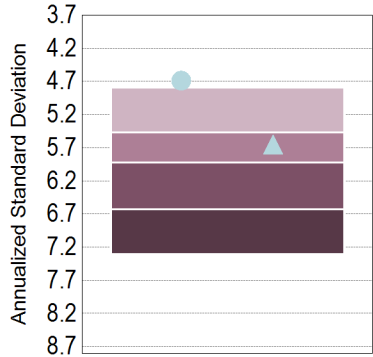
As of December 31, 2018

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



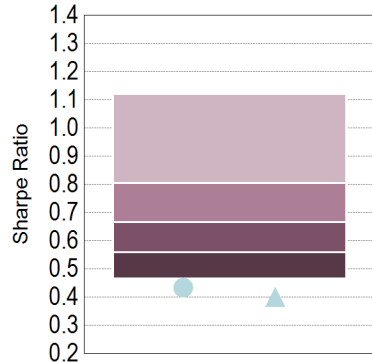
● Total Fund Aggregate	
Value	2.7
Rank	99
▲ Policy Benchmark	
Value	2.9
Rank	99
Universe	
5th %tile	6.3
25th %tile	5.1
Median	4.6
75th %tile	4.2
95th %tile	3.6

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



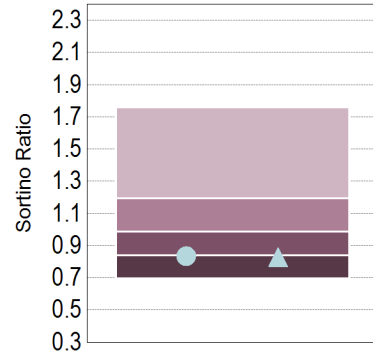
● Total Fund Aggregate	
Value	4.7
Rank	4
▲ Policy Benchmark	
Value	5.7
Rank	38
Universe	
5th %tile	4.8
25th %tile	5.5
Median	5.9
75th %tile	6.6
95th %tile	7.3

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



● Total Fund Aggregate	
Value	0.4
Rank	97
▲ Policy Benchmark	
Value	0.4
Rank	98
Universe	
5th %tile	1.1
25th %tile	0.8
Median	0.7
75th %tile	0.6
95th %tile	0.5

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

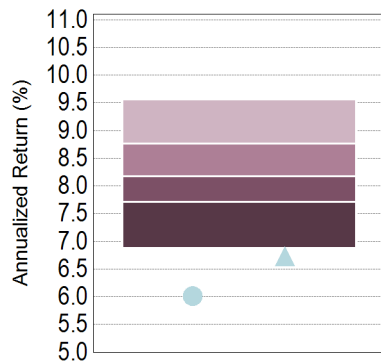


● Total Fund Aggregate	
Value	0.8
Rank	77
▲ Policy Benchmark	
Value	0.8
Rank	79
Universe	
5th %tile	1.8
25th %tile	1.2
Median	1.0
75th %tile	0.8
95th %tile	0.7

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

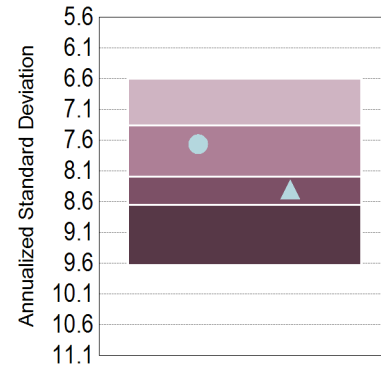
As of December 31, 2018

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



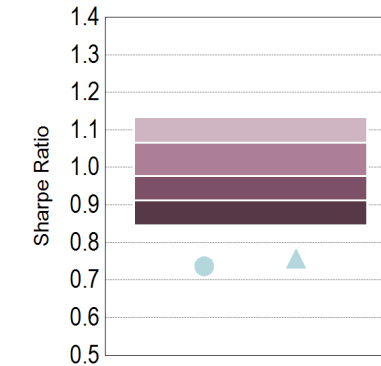
● Total Fund Aggregate	
Value	6.0
Rank	99
▲ Policy Benchmark	
Value	6.7
Rank	98
Universe	
5th %tile	9.6
25th %tile	8.8
Median	8.2
75th %tile	7.7
95th %tile	6.9

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



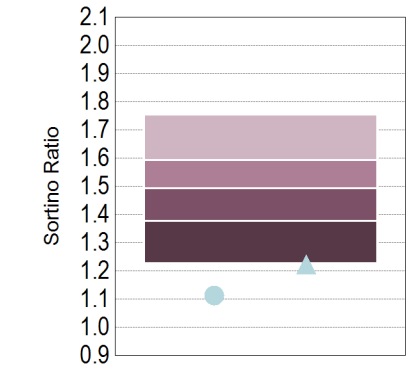
● Total Fund Aggregate	
Value	7.7
Rank	38
▲ Policy Benchmark	
Value	8.4
Rank	68
Universe	
5th %tile	6.6
25th %tile	7.4
Median	8.2
75th %tile	8.6
95th %tile	9.6

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



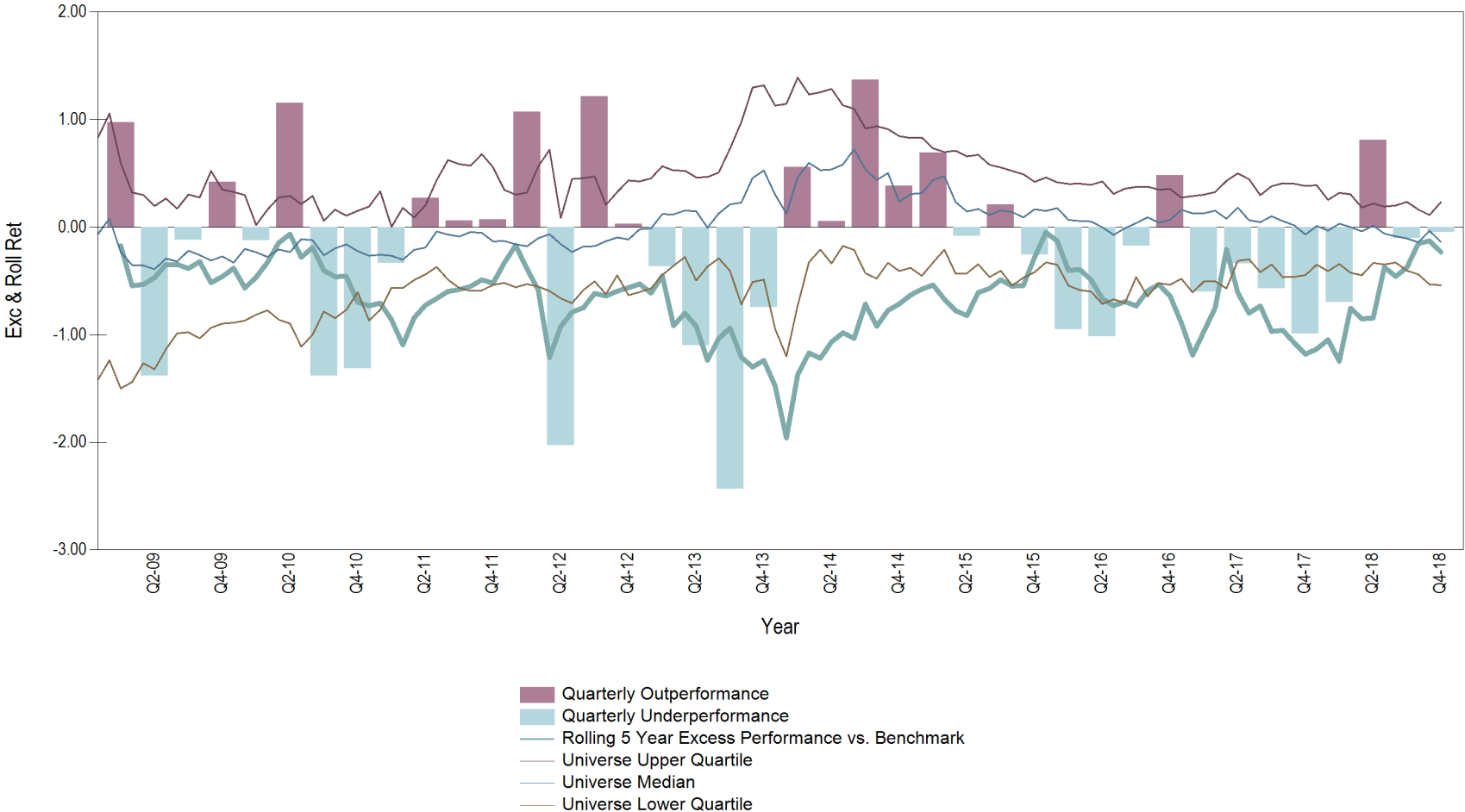
● Total Fund Aggregate	
Value	0.7
Rank	99
▲ Policy Benchmark	
Value	0.8
Rank	99
Universe	
5th %tile	1.1
25th %tile	1.1
Median	1.0
75th %tile	0.9
95th %tile	0.8

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

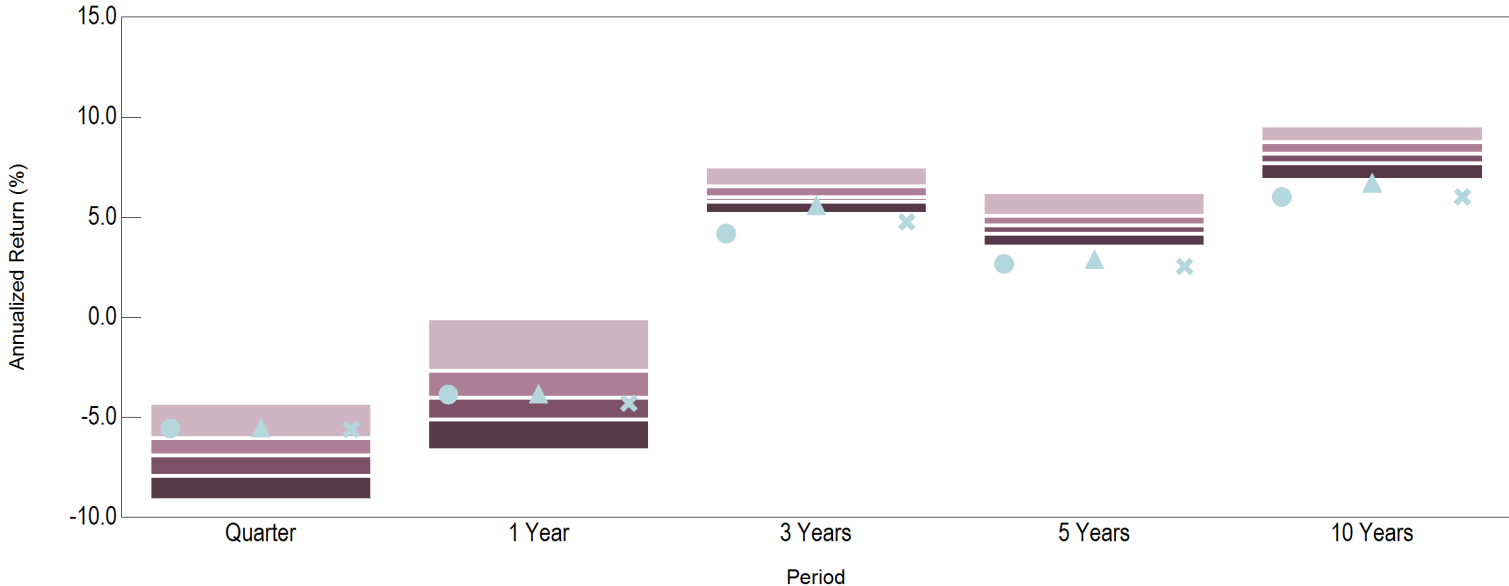


● Total Fund Aggregate	
Value	1.1
Rank	99
▲ Policy Benchmark	
Value	1.2
Rank	97
Universe	
5th %tile	1.8
25th %tile	1.6
Median	1.5
75th %tile	1.4
95th %tile	1.2

Rolling Annualized Excess Performance



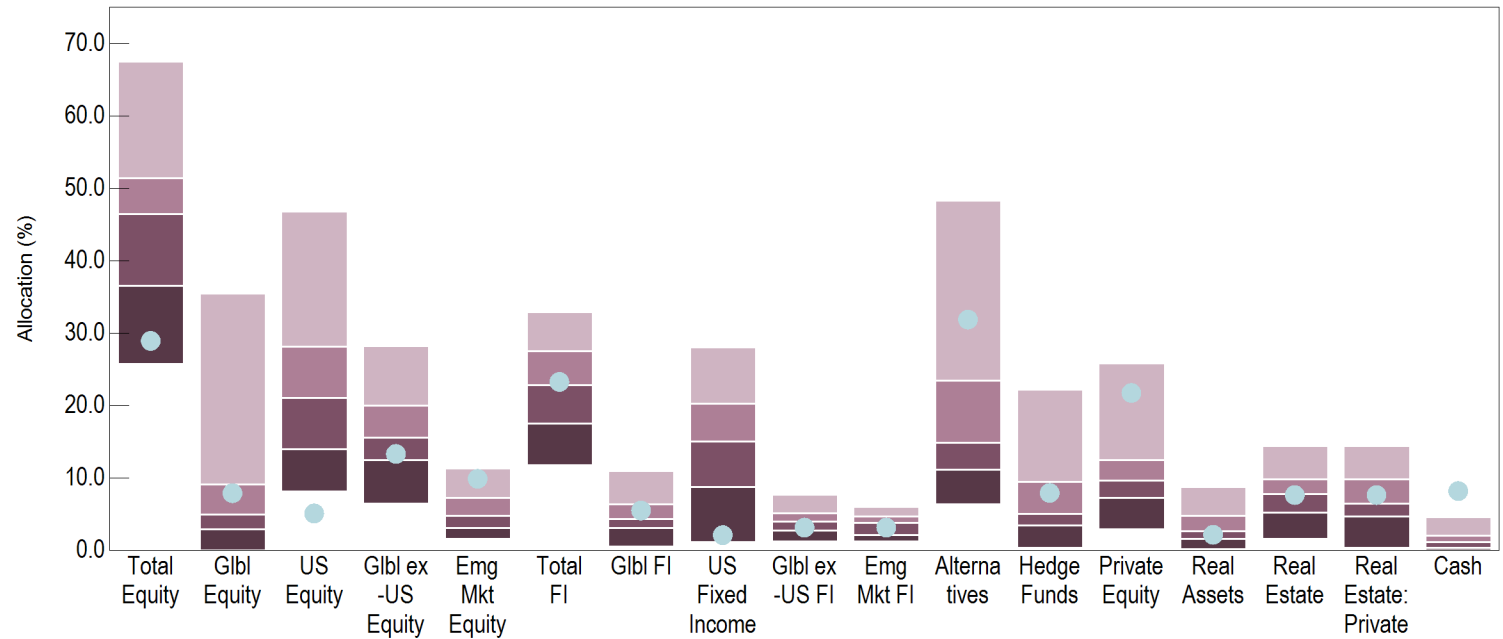
**InvestorForce Public DB > \$1B Net Return Comparison
Ending December 31, 2018**



	Return (Rank)									
5th Percentile	-4.3	-0.1	7.5	6.3	9.6					
25th Percentile	-6.0	-2.7	6.6	5.1	8.8					
Median	-6.9	-4.0	6.0	4.6	8.2					
75th Percentile	-7.9	-5.1	5.8	4.2	7.7					
95th Percentile	-9.1	-6.6	5.2	3.6	6.9					
# of Portfolios	64	63	63	62	59					
● Total Fund Aggregate	-5.6	(20)	-3.9	(48)	4.2	(99)	2.7	(99)	6.0	(99)
▲ Policy Benchmark	-5.5	(20)	-3.8	(48)	5.6	(79)	2.9	(99)	6.7	(98)
× Investable Benchmark Portfolio	-5.6	(21)	-4.3	(59)	4.8	(99)	2.5	(99)	6.0	(99)



Total Plan Allocation vs. InvestorForce Public DB > \$1B Net
As of December 31, 2018



	Allocation																	
5th Percentile	67.5	35.5	46.8	28.3	11.3	32.9	11.0	28.1	7.7	6.0	48.3	22.2	25.9	8.8	14.4	14.4	4.7	--
25th Percentile	51.5	9.2	28.3	20.1	7.4	27.6	6.5	20.4	5.3	4.8	23.5	9.6	12.6	4.9	10.0	9.9	2.2	--
Median	46.5	5.1	21.2	15.7	4.9	22.9	4.5	15.1	4.1	3.9	14.9	5.2	9.7	2.8	7.9	6.6	1.3	--
75th Percentile	36.6	3.0	14.1	12.6	3.2	17.6	3.2	8.9	2.8	2.2	11.3	3.5	7.3	1.7	5.3	4.8	0.5	--
95th Percentile	25.9	0.1	8.2	6.5	1.7	11.9	0.6	1.2	1.3	1.3	6.5	0.5	3.0	0.2	1.7	0.4	0.1	--
# of Portfolios	50	20	43	49	41	50	23	43	25	23	47	33	46	23	45	42	50	--
● Total Fund Aggregate	28.9	7.9	5.1	13.3	9.9	23.3	5.5	2.1	3.2	3.2	31.9	8.0	21.8	2.2	7.7	7.7	8.2	--
Rank	93	37	99	72	8	49	44	94	68	63	14	37	10	62	54	45	1	--

As of December 31, 2018

Major Benchmark Returns					
Periods Ending December 31, 2018					
Name	Q4-18	1 Yr	3 Yrs	5 Yrs	10 Yrs
US Equity					
Russell 3000	-14.3	-5.2	9.0	7.9	13.2
S&P 500	-13.5	-4.4	9.3	8.5	13.1
Russell 1000	-13.8	-4.8	9.1	8.2	13.3
Russell 1000 Growth	-15.9	-1.5	11.1	10.4	15.3
Russell 1000 Value	-11.7	-8.3	7.0	5.9	11.2
Russell MidCap	-15.4	-9.1	7.0	6.3	14.0
Russell 2000	-20.2	-11.0	7.4	4.4	12.0
Russell 2000 Growth	-21.7	-9.3	7.2	5.1	13.5
Russell 2000 Value	-18.7	-12.9	7.4	3.6	10.4
International Equity					
MSCI ACWI	-12.8	-9.4	6.6	4.3	9.5
MSCI World ex USA	-12.8	-14.1	3.1	0.3	6.2
MSCI EAFE	-12.5	-13.8	2.9	0.5	6.3
MSCI Emerging Markets	-7.5	-14.6	9.2	1.6	8.0
Fixed Income					
91 Day T-Bills	0.6	1.9	1.1	0.6	0.4
BBgBarc US Aggregate TR	1.6	0.0	2.1	2.5	3.5
BBgBarc US Govt/Credit TR	1.5	-0.4	2.2	2.5	3.5
BBgBarc US Municipal TR	1.7	1.3	2.3	3.8	4.9
BBgBarc US High Yield TR	-4.5	-2.1	7.2	3.8	11.1
FTSE WGBI TR	1.8	-0.8	2.7	0.8	1.5
FTSE WGBI ex US TR	1.3	-1.8	3.3	0.3	1.3
Real Estate					
FTSE NAREIT All REIT	-6.1	-4.4	4.5	8.2	12.4
NCREIF Property Index	1.4	6.7	7.2	9.3	7.5
Alternatives					
HFRI Fund of Funds Composite Index	-5.0	-4.1	1.3	1.4	3.1
Inflation					
Consumer Price Index	-0.5	1.9	2.0	1.5	1.8

Total Fund Risk Statistics (Net of Fees)

As of December 31, 2018

Statistics Summary

3 Years Ending December 31, 2018

	% 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%	4.18%	99	4.38%	3	-0.43%	72	1.78%	-0.80	92	0.78	0.72
Policy Benchmark	--	5.61%	79	5.33%	24	0.00%	51	0.00%	--	--	1.00	0.86
Growth	57.27%	5.90%	--	7.32%	--	-1.27%	--	2.22%	-0.99	--	0.87	0.66
Growth Benchmark	--	8.10%	--	8.12%	--	0.00%	--	0.00%	--	--	1.00	0.87
Public Equity	28.95%	5.04%	--	9.36%	--	-1.24%	--	2.19%	-0.93	--	0.87	0.43
Public Equity Benchmark	--	7.08%	--	10.63%	--	0.00%	--	0.00%	--	--	1.00	0.57
Global Equity	7.92%	6.92%	30	10.58%	33	0.83%	30	3.56%	0.12	28	0.93	0.55
MSCI ACWI IMI Net USD	--	6.49%	37	10.79%	41	0.00%	43	0.00%	--	--	1.00	0.50
US Equity	5.69%	7.93%	40	11.88%	33	-0.66%	42	2.27%	-0.19	49	1.03	0.58
MSCI USA IMI NR USD	--	8.37%	35	11.32%	24	0.00%	34	0.00%	--	--	1.00	0.65
International Equity	3.44%	1.85%	75	11.97%	54	-1.36%	78	2.29%	-0.55	97	1.05	0.07
MSCI World ex USA	--	3.11%	60	11.22%	23	0.00%	58	0.00%	--	--	1.00	0.18
Emerging Markets Equity	8.92%	2.48%	96	12.08%	4	-4.13%	92	6.36%	-0.95	93	0.75	0.12
MSCI Emerging Market IMI Net	--	8.51%	38	14.63%	57	0.00%	45	0.00%	--	--	1.00	0.51
Marketable Alternative Equity	2.97%	3.76%	--	4.09%	--	1.43%	--	3.95%	0.06	--	0.51	0.66
HFRI Equity Hedge (Total) Index	--	3.53%	--	6.13%	--	0.00%	--	0.00%	--	--	1.00	0.40
Private Markets	25.15%	7.52%	--	6.83%	--	0.52%	--	5.45%	-0.45	--	0.67	0.95
Private Markets Benchmark	--	9.96%	--	7.09%	--	0.00%	--	0.00%	--	--	1.00	1.26
Private Equity	4.10%	11.01%	--	4.30%	--	9.36%	--	7.25%	-0.26	--	0.05	2.32

As of December 31, 2018

	% 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
Cambridge PE Composite BM	--	12.91%	--	6.16%	--	0.00%	--	0.00%	--	--	1.00	1.93
Private Real Estate	2.19%	19.61%	--	7.44%	--	25.96%	--	9.51%	1.17	--	-1.00	2.50
NCREIF ODCE Equal Weighted	--	8.44%	--	3.42%	--	0.00%	--	0.00%	--	--	1.00	2.16
Emerging Markets Debt	3.17%	3.57%	95	8.79%	70	-2.43%	90	1.79%	-1.14	99	1.09	0.29
50% JPM EMBI GD / 50% JPM GBI-EM	--	5.61%	41	7.95%	64	0.00%	61	0.00%	--	--	1.00	0.57
High Yield Debt	0.00%	4.95%	--	2.36%	--	3.80%	--	4.35%	-0.15	--	0.02	1.65
50% BAML Global HY / 50% S&P Global Leveraged Loan	--	5.59%	--	3.73%	--	0.00%	--	0.00%	--	--	1.00	1.22
Zero Beta	33.31%	1.96%	--	1.55%	--	0.99%	--	3.34%	0.38	--	0.22	0.59
Zero Beta Benchmark	--	0.69%	--	3.94%	--	0.00%	--	0.00%	--	--	1.00	-0.09
Absolute Return	7.95%	2.20%	--	2.15%	--	1.26%	--	3.34%	0.46	--	0.29	0.54
Absolute Return Benchmark	--	0.68%	--	3.94%	--	0.00%	--	0.00%	--	--	1.00	-0.09
Relative Value	4.13%	4.20%	--	2.81%	--	3.16%	--	3.91%	0.01	--	0.00	1.12
HFRI Relative Value (Total) Index	--	4.15%	--	2.71%	--	0.00%	--	0.00%	--	--	1.00	1.14
Macro	3.82%	0.76%	--	4.11%	--	0.73%	--	2.81%	0.37	--	0.77	-0.07
HFRI Macro (Total) Index	--	-0.28%	--	4.11%	--	0.00%	--	0.00%	--	--	1.00	-0.32
Cash	7.73%	1.02%	--	0.18%	--	-0.01%	--	0.13%	0.00	--	0.69	-0.18
ICE BofAML 91 Days T-Bills TR	--	1.02%	--	0.20%	--	0.00%	--	0.00%	--	--	1.00	-0.16

As of December 31, 2018

	% 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
Other	8.94%	2.75%	--	1.79%	--	1.23%	--	3.30%	-0.02	--	0.27	0.95
Other Benchmark	--	2.83%	--	4.07%	--	0.00%	--	0.00%	--	--	1.00	0.44
Core Real Estate	5.57%	7.86%	--	2.38%	--	8.19%	--	4.58%	-0.08	--	-0.19	2.86
NCREIF-ODCE	--	8.24%	--	3.33%	--	0.00%	--	0.00%	--	--	1.00	2.16
Commodities	1.24%	1.29%	--	6.09%	--	0.60%	--	6.54%	0.15	--	0.47	0.04
Bloomberg Commodity Index TR USD	--	0.30%	--	9.73%	--	0.00%	--	0.00%	--	--	1.00	-0.08
TIPS	2.11%	1.49%	--	1.21%	--	0.04%	--	0.13%	0.30	--	0.99	0.37
BBgBarc U.S. TIPS 0-5 Years	--	1.46%	--	1.22%	--	0.00%	--	0.00%	--	--	1.00	0.33
Core Bonds	0.02%	2.25%	--	2.69%	--	0.55%	--	3.54%	-0.13	--	0.39	0.45
BBgBarc Global Aggregate TR	--	2.70%	--	4.98%	--	0.00%	--	0.00%	--	--	1.00	0.33

Benchmark History

As of December 31, 2018

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 +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 +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

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 +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 +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 Net USD
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US Equity

7/1/2015	Present	MSCI USA IMI NR USD
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International Equity

7/1/2015	Present	MSCI World ex USA
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Emerging Markets Equity

7/1/2015	Present	MSCI Emerging Market IMI Net
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Marketable Alternative Equity

10/1/2014	Present	HFRI Equity Hedge (Total) Index
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As of December 31, 2018

Private Markets		
10/1/2018	Present	Private Markets-Actual Returns
11/1/2017	9/30/2018	64.3% Cambridge PE Composite BM / 28.6% NCREIF Property Index / 7.1% DJ Brookfield Global Infrastructure Net TR USD
7/1/2015	10/31/2017	40% Cambridge PE Composite BM / 15.6% NCREIF Property Index / 22.2% DJ Brookfield Global Infrastructure Net TR USD / 22.2% S&P Global Natural Resources Index TR USD
Private Equity		
7/1/2018	Present	Cambridge Associates Global Private Equity Index
Private Debt		
11/30/2010	Present	S&P Global Leveraged Loan +2%
Private Real Estate		
7/1/2015	Present	NCREIF ODCE Equal Weighted
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
Absolute Return		
10/1/2018	Present	3-Month Libor Total Return USD
11/1/2012	9/30/2018	HFRI Macro (Total) Index
Relative Value		
10/1/2014	Present	HFRI Relative Value (Total) Index
Macro		
10/1/2014	Present	HFRI Macro (Total) Index

Short-Term IG Bonds		
10/1/2018	Present	ICE BofAML 91 Days T-Bills TR
Immunized Cash Flows		
10/1/2018	Present	Immunized Cash Flows-Actual Return
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
Core Real Estate		
7/1/2004	Present	NCREIF-ODCE
Commodities		
5/1/2010	Present	Bloomberg Commodity Index TR USD
TIPS		
3/1/2017	Present	100% BBgBarc US Treasury TIPS 0-5 Yr TR
Core Bonds		
7/1/2015	Present	BBgBarc Global Aggregate TR
Overlay		
No Benchmark Selected		

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.