

**Oklahoma Police Pension & Retirement System**

***Investment Performance Review***

*September 30, 2019*





*This year, we at Asset Consulting Group celebrate our 30th anniversary in business. As we reach this exciting milestone, it is important that we recognize and thank those who have been a critical part of our success - our clients. We are grateful for the opportunity and privilege to serve you, and we appreciate the trust and confidence you have shown us. We are in the relationship business - and it is the partnerships we cultivate that fulfill us most and that best define our success as an organization.*

*We look forward to continuing to grow our relationship with you, and we enter our next decade with much anticipation and excitement!*



*We are proud to announce that ACG has been named a Greenwich Associates Quality Leader - recognized as one of the top midsize consultants in the industry. This award is based on a number of factors, and a culmination of extensive nationwide interviews with institutional investors. We are appreciative of this honor, and we are grateful to all those who have helped us get to where we are.*

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## **Market Overview**

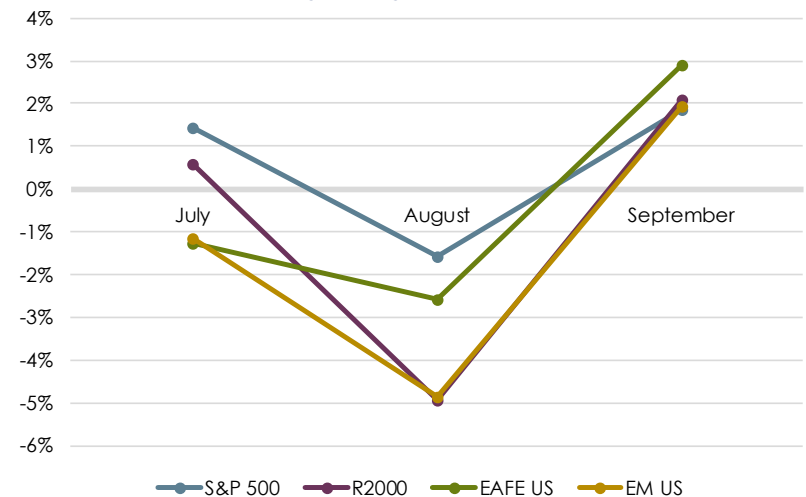
## Global Long-Only Equity

**Global equities** were relatively muted in 3Q-19, with only a 10 bps advance for the MSCI ACWI measured in US dollar terms. However, **volatility remains heightened** as headlines shook the markets with ongoing announcements around US/China trade tensions, global economic slowdown fears, declining global bond yields, and an uptick in political chatter as the US prepares for next year's election. Investors ultimately moved from the risk-on mentality present in July to a risk-off mentality through the remainder of the quarter. Global markets did rebound somewhat in September as hopes of easing trade tensions and more accommodative global monetary policies surfaced, but as the market maintained its risk-off nature we witnessed Value surge ahead of Growth.

**Domestic Large Caps advanced**, with the S&P 500 returning 1.7% in 3Q-19 as September performance effectively pulled the index back into positive territory. Small Caps declined -2.4% in the quarter as investors looked for safe havens in larger peers. With three quarters behind us, Large Caps lead with a YTD gain of 20.6% versus a gain of 14.2% in Small Caps.

International Market advances were stymied by monetary policy and global growth concerns, which also resulted in a stronger US dollar providing a headwind to domestic investors. **Developed International markets declined** -1.0% in the quarter, with most countries tallying losses and a roughly 250 bps currency headwind. **Directionally, a similar outcome was observed in Emerging Markets**, but the magnitude of the decline was greater, falling -4.1% after accounting for a roughly 220 bps unfavorable currency impact.

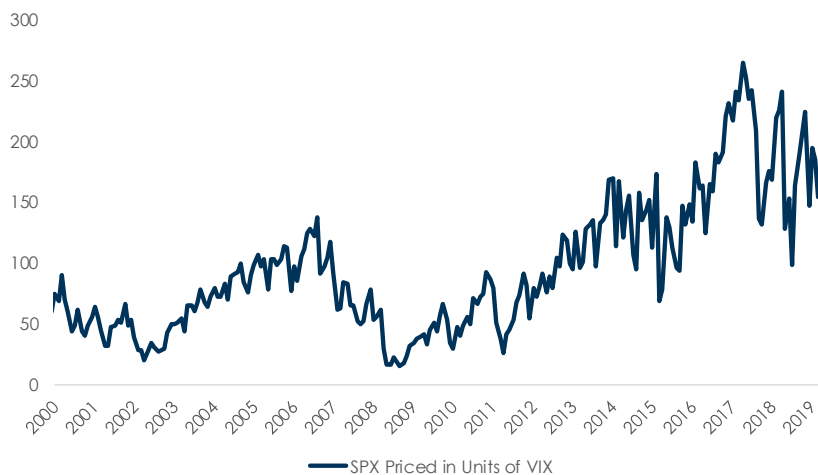
## Choppy Equity Markets in 3Q-19



Sources: Bloomberg, ACG Research

## Global Long/Short Equity

## S&amp;P Index Priced in Units of VIX



Sources: Bloomberg, ACG Research

**Volatility** in the market (both positive and negative) **continued** during 3Q-19. The S&P priced in units of volatility (VIX), though 6% lower than 2Q, remains 86% higher than year end 2018 and higher than any period prior to 2016. With heightened macro impacts we anticipate this **higher volatility to continue to be the norm** for the foreseeable future. All else being equal, an increase in market **volatility helps generate opportunities** on both the long and short side so equity long/short managers stand to benefit.

Equity long/short managers have **decreased exposure due to macro concerns** surrounding interest rates, trade wars and the new risk of impeachment proceedings. This is reflected by **net exposures** that are near the lowest point since 2010. Managers remain optimistic about the outlook for companies but are **increasingly concerned about market uncertainty**.

Style exposure was a major contributor to 3Q performance as **momentum/growth unwound** in September in favor of value. Managers with significant exposure to growth sectors of **technology and health care underperformed**. The most **crowded trades also underperformed**, partially due to overlap with tech and health care.

Global **positioning remains tilted towards the US** as European exposures decreased to the lowest since 2010 due to Brexit and other geopolitical concerns. Asia exposure has stayed near historic averages but the mix has shifted to predominantly China as **Japan and Hong Kong exposures are near historic lows**.

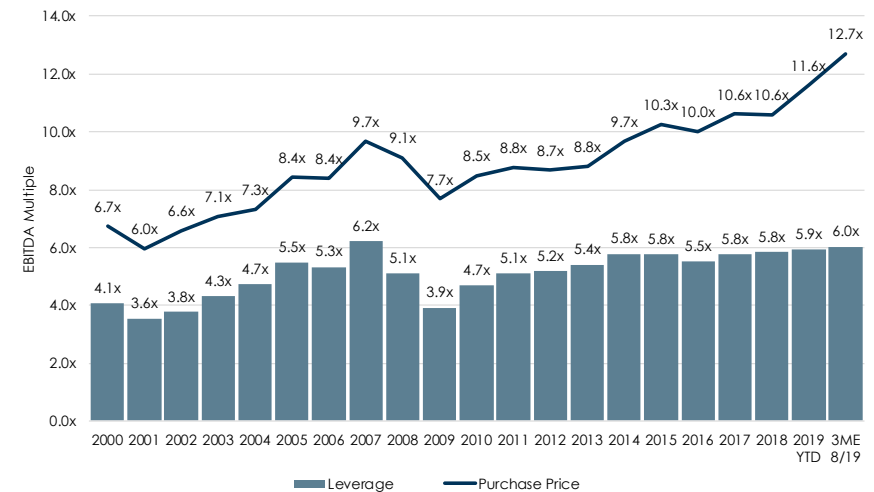


## Global Private Equity

**LBO purchase price multiples spiked up over the summer to all time highs.** Private equity sponsors appear to have taken the brunt of the price increase as the amount of debt provided by leveraged lenders increased only marginally in spite of **purchase prices moving up a full turn to 12.7x EBITDA on average.** Purchase prices for the three months ending August 31<sup>st</sup> were a turn higher than the average for the year, two turns of EBITDA higher than the average for 2018, and three turns higher than the last cyclical peak in 2007.

The US IPO market was on a tear for most of 2019 with a run of headline companies including Uber, Zoom and Pinterest making their public debuts. And then came WeWork. Although the spectacular end to their IPO bid appears closely tied to the market's negative perception of former-CEO Adam Neumann, potential IPO investors also made note of the initially sky-high valuation and ongoing operating losses. Despite WeWork's misstep, and barring another major setback, **2019 appears to be on track to deliver the best IPO market of the past five years.** If recent volatility or other market action closes the IPO window, private investors need not worry. **Later stage focused venture and growth funds continue to provide record levels of capital support to private companies.** In the first half of the year, 123 fundraising mega-rounds of \$100 million or more were completed compared to 36 for all of 2013.

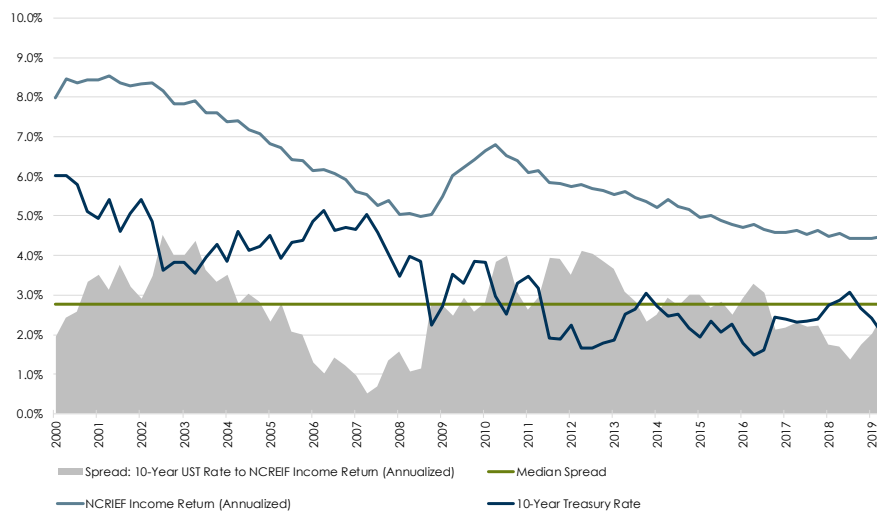
## Purchase Multiples and Leverage Remain Elevated



Sources: S&P LCD, ACG Research

## Global Real Assets

## NCREIF Income Return Spread to Treasuries



Sources: NCREIF, ACG Research

The NCREIF Property Index (NPI) posted its 37<sup>th</sup> consecutive quarter of positive appreciation in 2Q-19. This is 15 quarters longer than the second longest winning streak since the benchmark's inception in 1978. In 2Q-19, NCREIF annualized income returns (a proxy for cap rates) rose marginally to 4.5%. Broadly speaking, **fundamentals remain strong with the NPI occupancy level increasing to 94.3%, the highest level since 2000**, and income returns rising. In contrast, the trend of slowing appreciation returns became even more pronounced in the second quarter as the **retail sector weighed heavily on results**. Enclosed malls were particularly hard hit as values declined a whopping 4.2% for the quarter. Open-air retail assets declined 1.4%. Retail's large decline pulled the NPI appreciation return down to 0.4% for the quarter and the ODCE index was essentially flat for the same period.

Outside the retail sector, the story was much brighter with returns for all other property types moving higher in 2Q. **Industrial assets remain the beneficiary of retail's losses and the only NPI sector with double digit gains over the trailing 1-, 3-, 5- and 10-year periods.** Income and appreciation in the apartment and office sectors remain positive, even as hotels joined retail with negative appreciation in the quarter.

The Bloomberg Commodity Index (BCOM) fell -1.8% in 3Q-19, underperforming the BloomBar US Aggregate Bond Index by 4.1%, the S&P 500 by 3.5%, and the MSCI ACWI by 1.9%. **Any signs of rising inflation may be positive for commodities broadly, though growing concerns regarding slowing global economic growth, the strength of the US dollar, and trade tensions may drive continued volatility in the near term.**

## Global Traditional Bond Markets

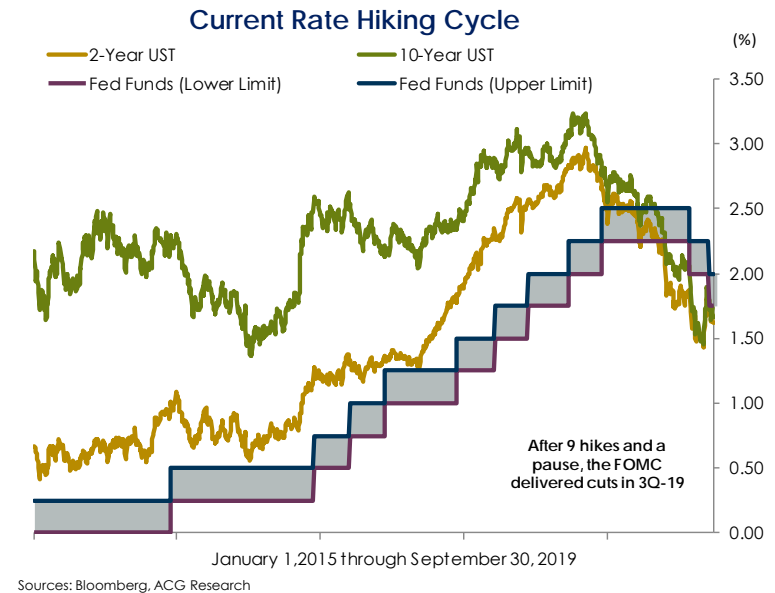
Amid heightened geopolitical noise in 3Q-19, the rally in risk-free rates was extended while income from lower-quality credit sustained positive performance. The **Federal Reserve** took action in both July and September, cutting short-term interest rates to a targeted range of 1.75% to 2.00%. The Committee's latest projections suggests the "mid-cycle adjustment" may be complete, even as the futures market is pricing in further cuts over the next 12 months. The **US Treasury yield curve (10's - 2's) ended flatter after briefly inverting**.

Given its high sensitivity to domestic interest rates, the **BloomBar US Aggregate** continued to outpace expectations. Total returns for the quarter were solid at 2.3%, with IG corporate credit a top contributor given stable spreads. The benchmark's yield-to-worst contracted by another 23 bps in the period, settling below 2.3% for the first time since October-2016.

Despite a brief interruption in investor risk appetite in August, the **High Yield** bond category managed positive performance in 3Q-19. Spreads tightened by only ~4 bps at the index level, but the focus on liquidity led to the ongoing underperformance of CCC-rated issues.

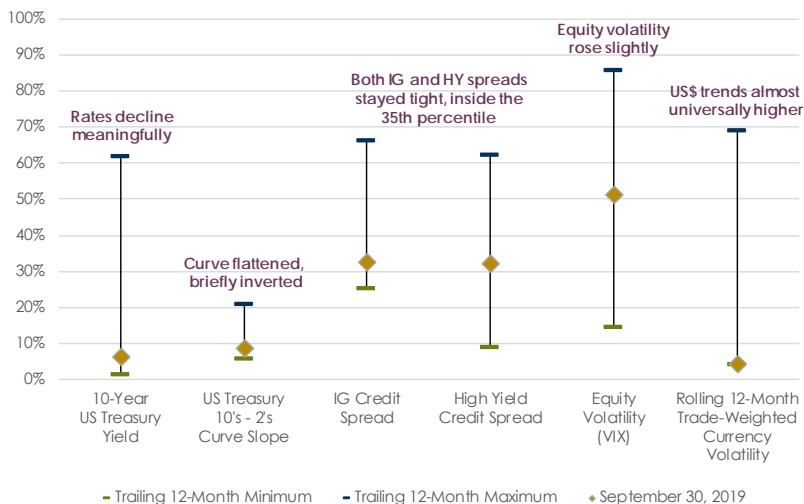
**Municipal Bonds** were solidly positive, despite lagging taxable counterparts as US Treasury rates moved lower. Robust demand for income caused the tax-exempt yield curve to flatten, with 10-year yield ratios of ~88% improving further from historically rich levels.

**Unhedged Global** government bonds underperformed with the drag of a strong US dollar offsetting the benefit of lower-trending yields. **Emerging Market** outcomes were mixed.



## Global Nontraditional Fixed Income

## Percentile Rankings of Observations for Past 15-Years



Sources: Bloomberg, ACG Research

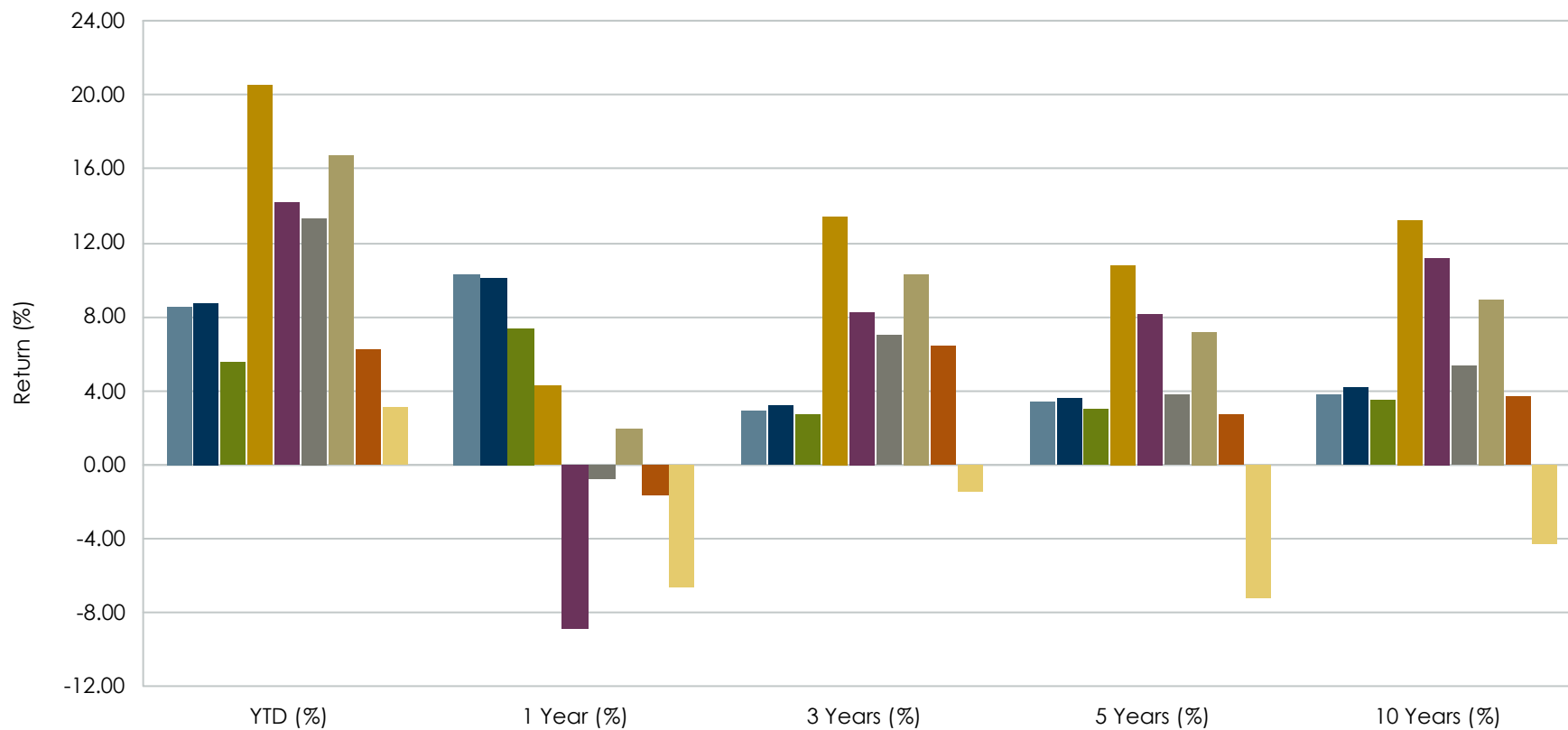
**Liquid Absolute Return** strategies produced more muted results in 3Q-19, with the willingness to tactically assume modest portfolio duration alongside diversified credit exposures defining outperformers. That said, the rally in US Treasuries again prevented the category from keeping pace with traditional bond benchmarks. We continue to believe the diversification of risk factors within portfolios remains valuable, as this aids in downside protection and reduces key correlations. **Outperforming risk-free cash becomes easier as policy rates head lower, and enhanced volatility in rates, spreads, and currency should provide alpha opportunities.**

**Long/Short Credit** strategies were challenged over the summer as defensively positioned portfolios were not rewarded and some widely held event-driven positions experienced declines. The YTD performance dispersion between high yield bonds and loans has weighed on results as **loan-heavy portfolios haven't captured the full tailwind of the high yield market**. Long/short credit strategies typically have limited interest rate sensitivity and accordingly little participation in duration-based market movements. We expect idiosyncratic relative value situations will be more likely to add value than directional positioning in the near term.

**Private Credit** strategies (typically 5- to 10-year fund life) offer the opportunity to earn both a credit spread and an illiquidity premium versus publicly traded fixed income strategies. **3Q-19 saw a surge in supply in the leveraged loan market** as more than \$40 billion of loans were launched into syndication, the busiest month this year. Spreads tightened for the more highly rated BB new issues while those rated single B widened, likely an indicator of continued risk aversion from buyers.

## Market Environment

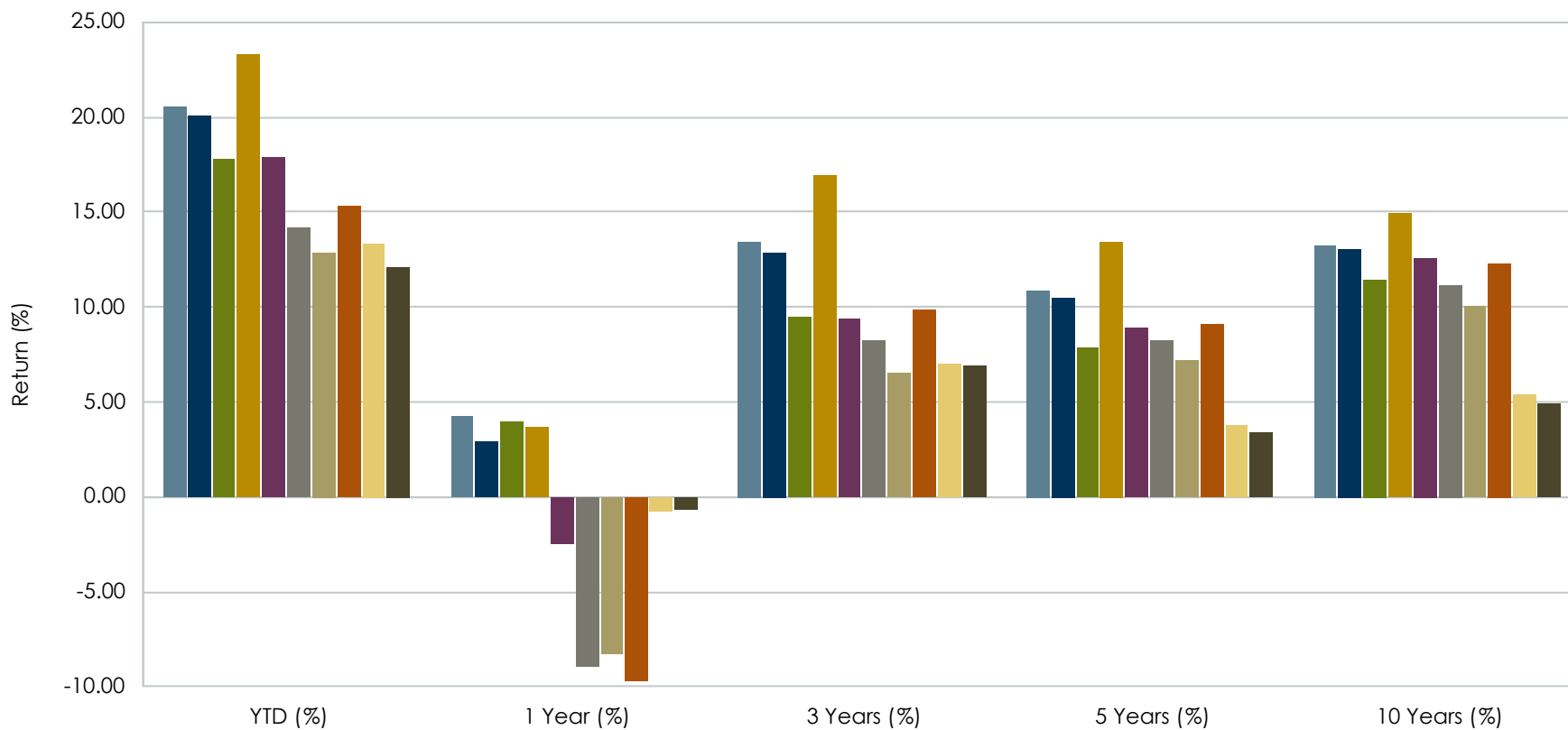
For the Periods Ending September 30, 2019



BloomBar US Aggregate	8.52
BloomBar Universal	8.80
BloomBar 1-15 Yr Municipal	5.58
S&P 500	20.55
Russell 2000	14.18
MSCI EAFE	13.35
MSCI ACWI	16.71
MSCI Emerging Markets	6.22
Bloomberg Commodity	3.13

## Equity Index Returns

For the Periods Ending September 30, 2019



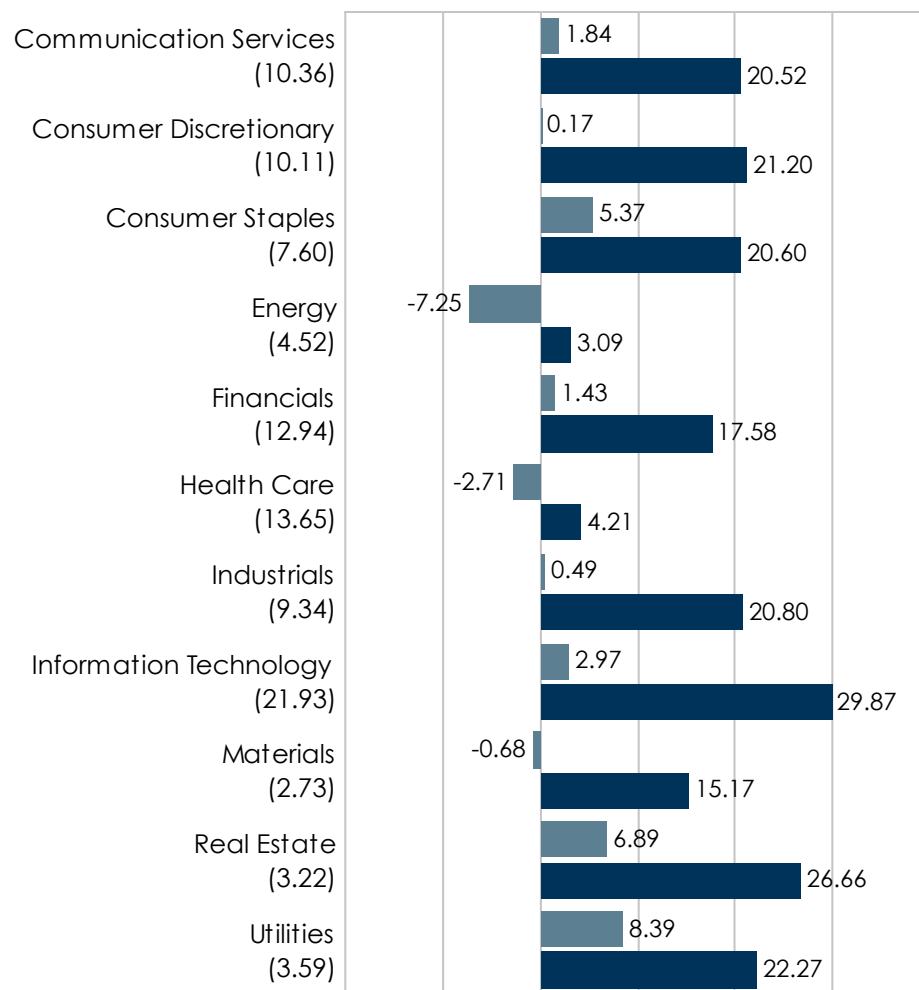
S&P 500	20.55
Russell 3000	20.09
Russell 1000 Value	17.81
Russell 1000 Growth	23.30
S&P Mid Cap 400	17.87
Russell 2000	14.18
Russell 2000 Value	12.82
Russell 2000 Growth	15.34
MSCI EAFE	13.35
MSCI ACWI ex US	12.06

4.25	13.39	10.84	13.24
2.92	12.83	10.44	13.08
4.00	9.43	7.79	11.46
3.71	16.89	13.39	14.94
-2.49	9.38	8.88	12.56
-8.89	8.23	8.19	11.19
-8.24	6.54	7.17	10.06
-9.63	9.79	9.08	12.25
-0.82	7.01	3.77	5.39
-0.72	6.85	3.39	4.93

## US Markets - Performance Breakdown

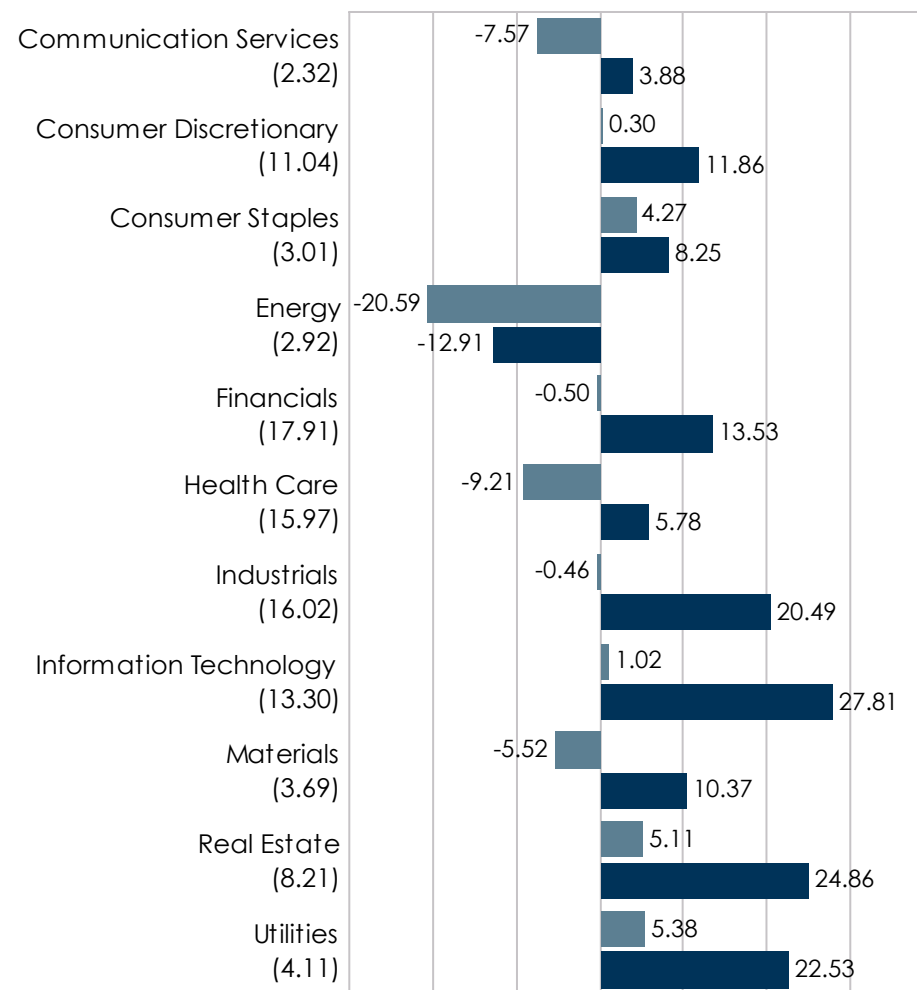
For the Periods Ending September 30, 2019

### S&P 500 - Sector Returns (%)



■ 3 Months ■ YTD

### Russell 2000 - Sector Returns (%)

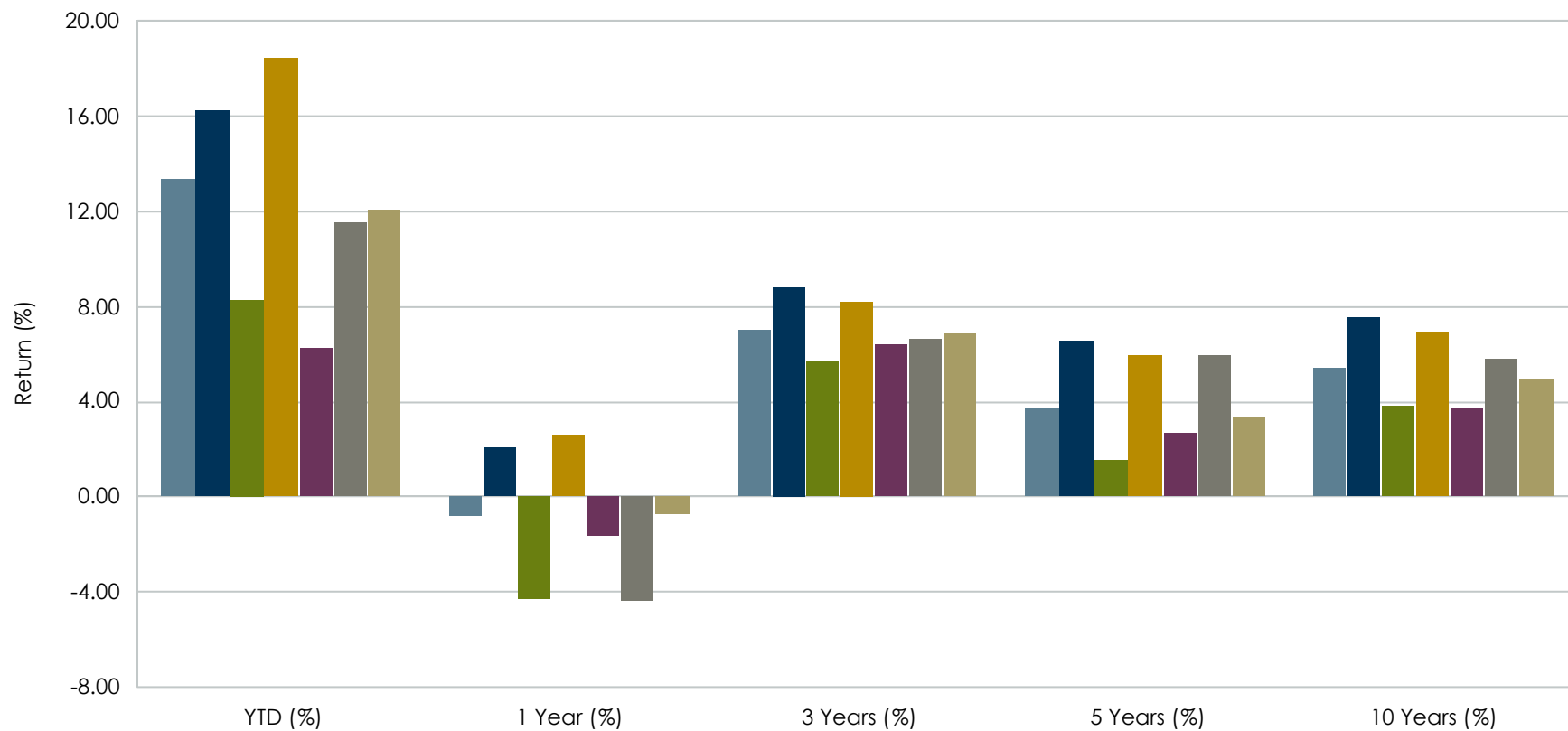


Numbers in parenthesis represent sector weightings of the index. Sector weights may not add to 100% due to rounding or securities that are not assigned to a Global Industry Classification Standard (GICS) sector.

Source: ACG Research, Bloomberg

## Non-US Equity Index Returns

For the Periods Ending September 30, 2019



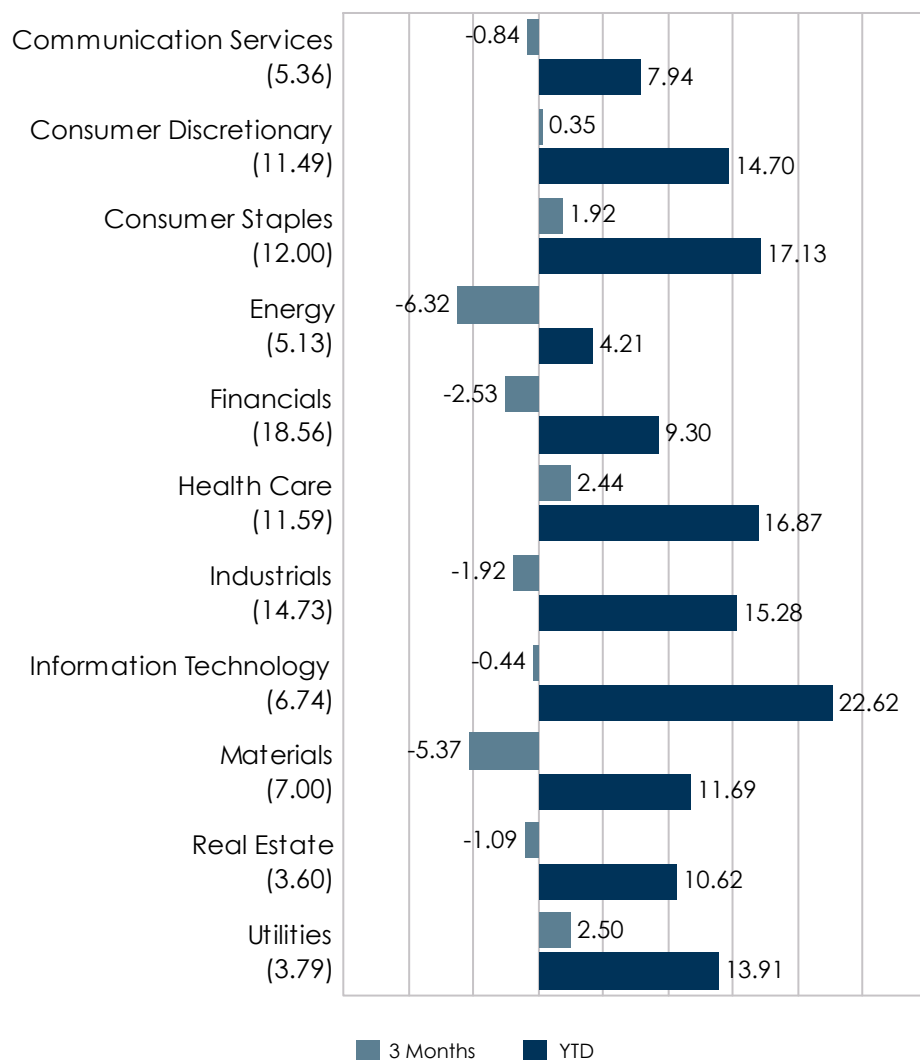
MSCI EAFE	13.35
MSCI EAFE Local Currency	16.23
MSCI EAFE Value	8.31
MSCI EAFE Growth	18.39
MSCI Emerging Markets	6.22
MSCI Japan	11.52
MSCI ACWI ex US	12.06

-0.82	7.01	3.77	5.39
2.10	8.84	6.54	7.55
-4.31	5.73	1.57	3.82
2.64	8.19	5.90	6.91
-1.63	6.37	2.71	3.73
-4.32	6.59	5.97	5.78
-0.72	6.85	3.39	4.93

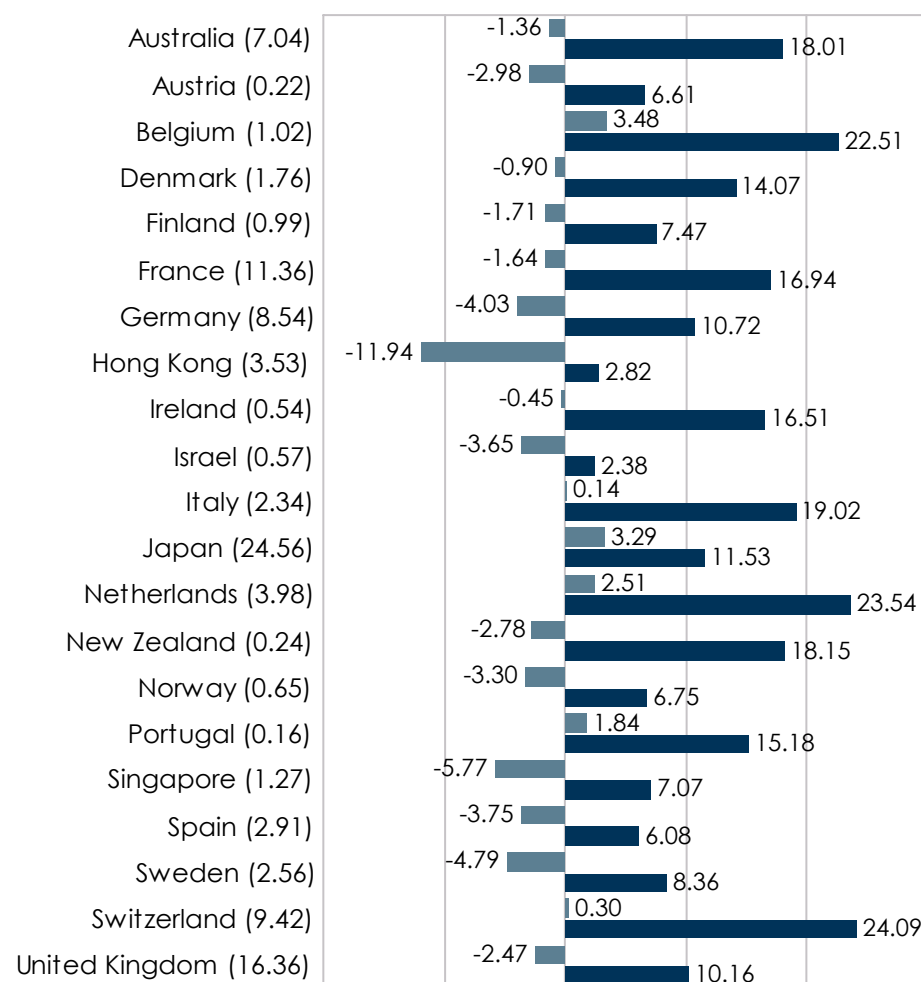
## Non-US Equity - Performance Breakdown

For the Periods Ending September 30, 2019

### MSCI EAFE - Sector Returns (%)



### MSCI EAFE - Country Returns (%)



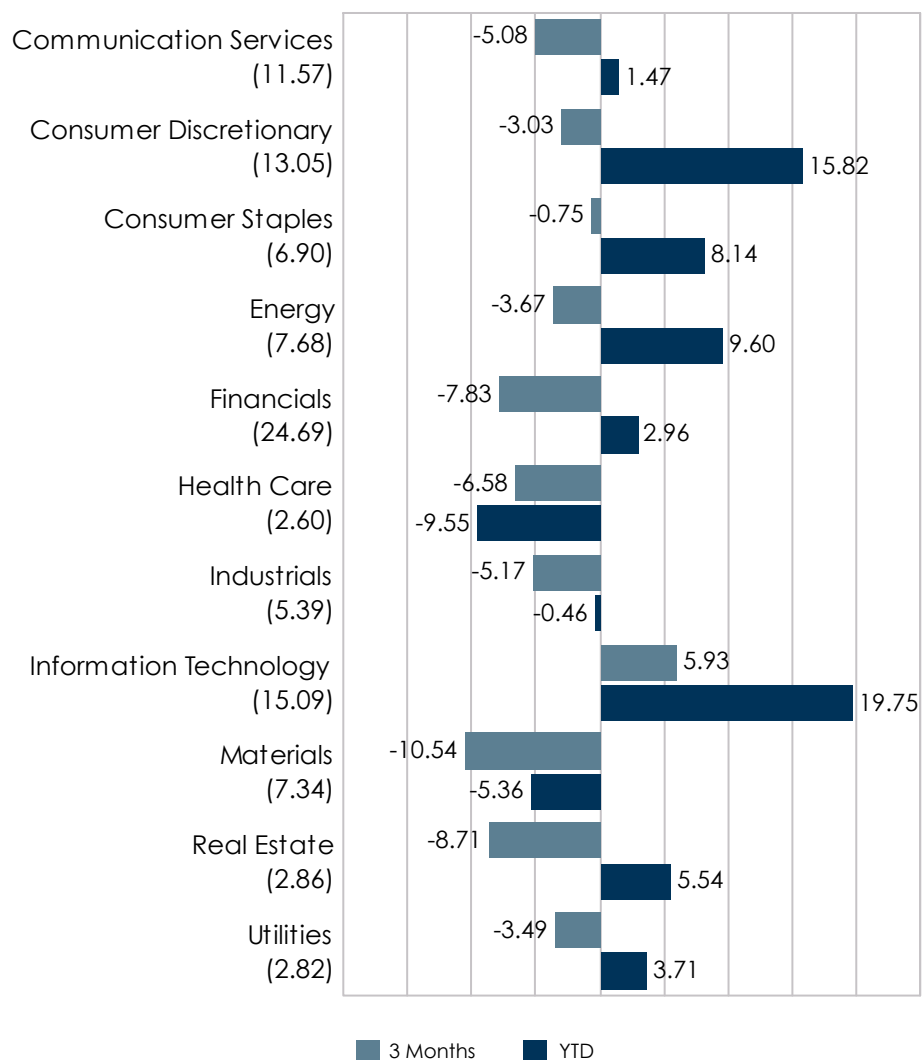
Numbers in parenthesis represent sector or country weights of the index. Sector or country weights may not add to 100% due to rounding.

Source: ACG Research, Bloomberg

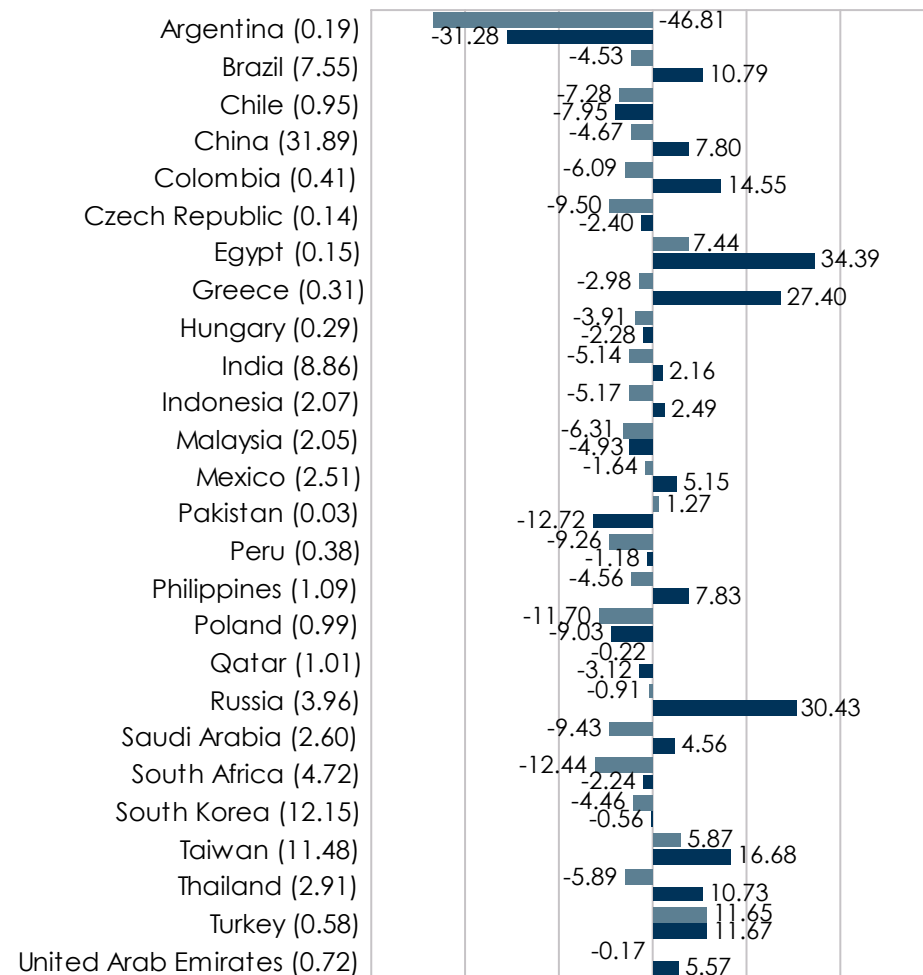
## Emerging Markets - Performance Breakdown

For the Periods Ending September 30, 2019

### MSCI Emerging Markets - Sector Returns (%)



### MSCI Emerging Markets - Country Returns (%)



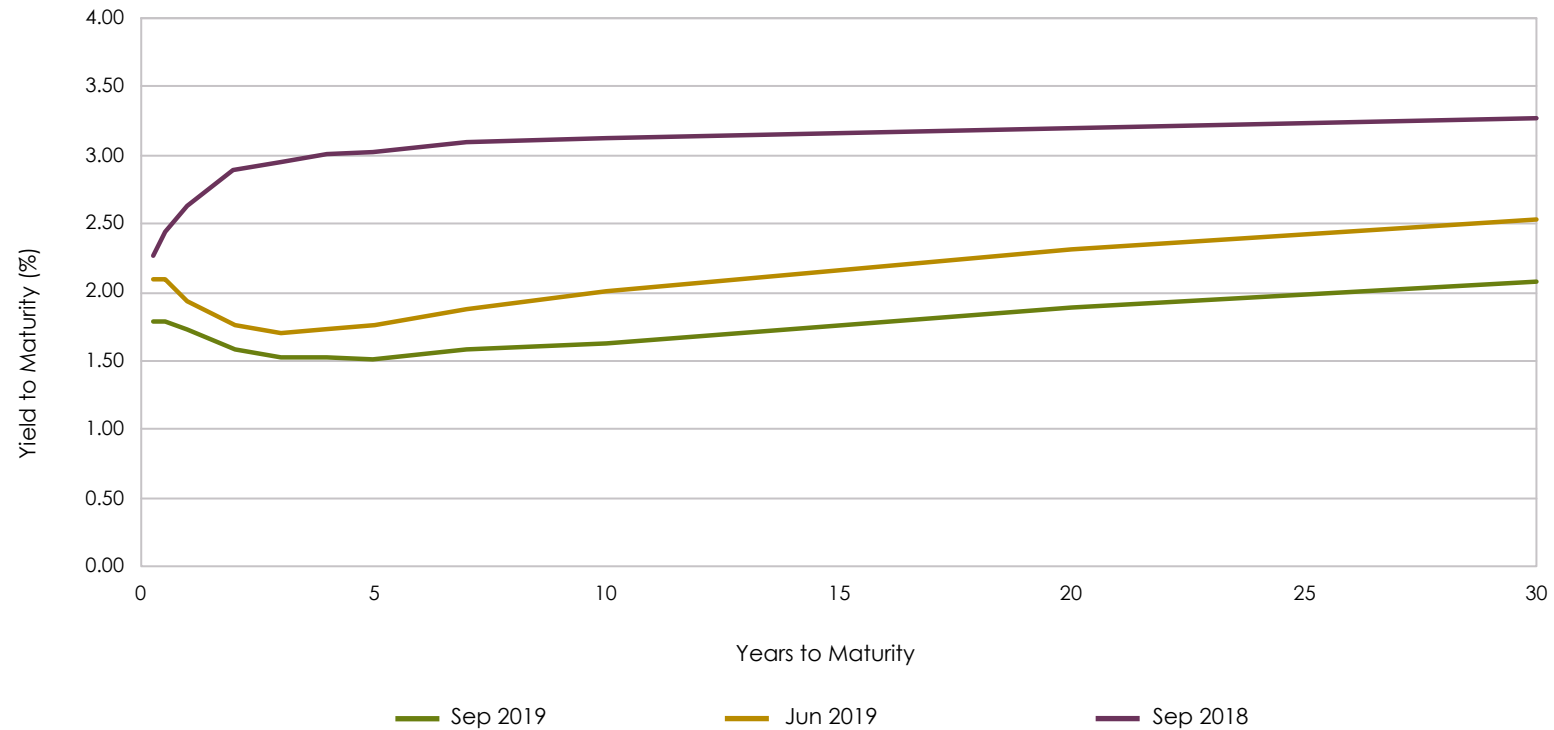
Numbers in parenthesis represent sector or country weights of the index. Sector or country weights may not add to 100% due to rounding.

Source: ACG Research, Bloomberg



## Interest Rate Term Structure

Government Issues - 3 Months to 30 Years Maturity

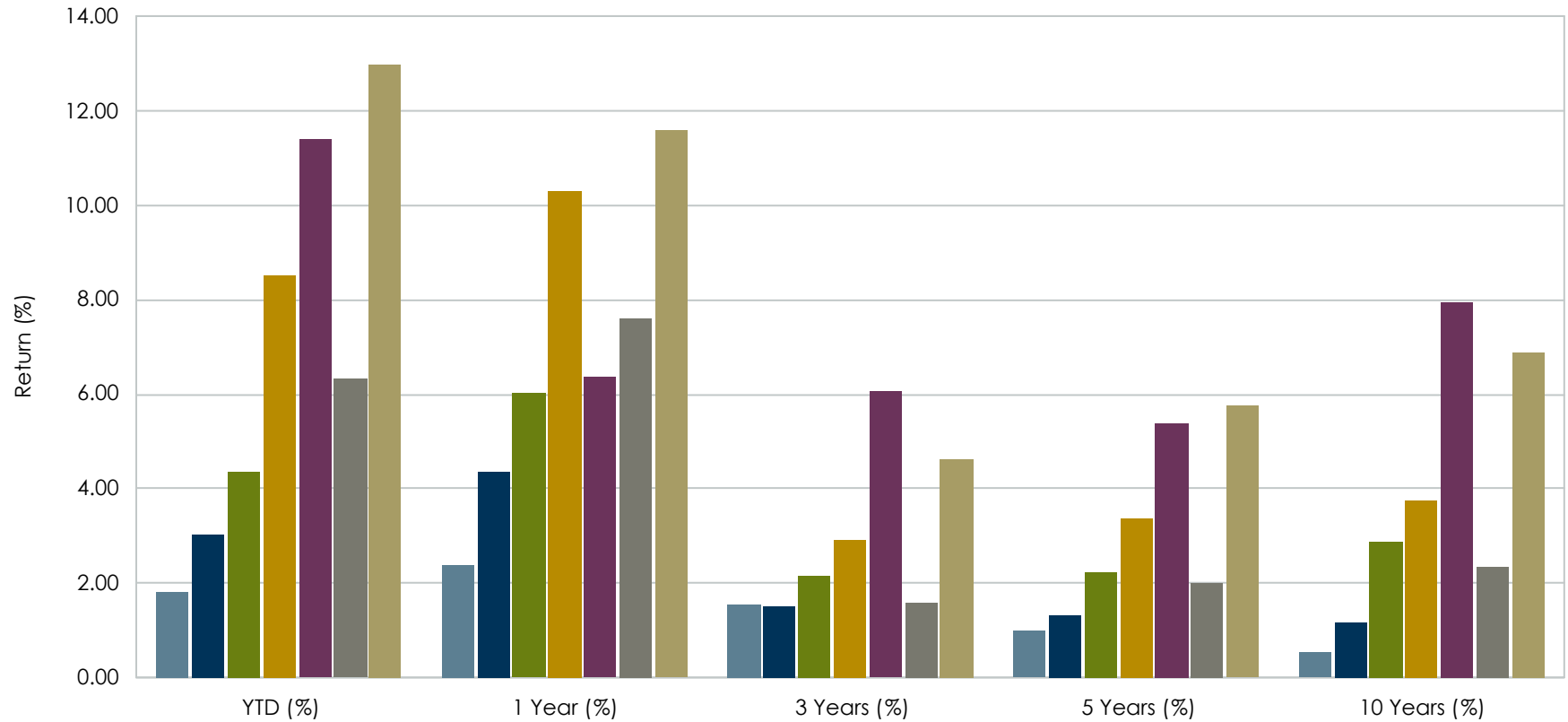


90 Days	1.82	2.09	2.20
180 Days	1.82	2.10	2.37
1 Year	1.76	1.93	2.57
2 Years	1.62	1.76	2.82
3 Years	1.56	1.71	2.88
4 Years	1.56	1.74	2.94
5 Years	1.54	1.77	2.95
7 Years	1.61	1.88	3.02
10 Years	1.67	2.01	3.06
20 Years	1.92	2.31	3.14
30 Years	2.11	2.53	3.21

Source: Bloomberg

## Fixed Income Index Returns

For the Periods Ending September 30, 2019



US T-Bills 90 Day	1.81	2.39	1.54	0.98	0.54
ICE BofA ML 1-3 Yr Treasury	3.03	4.37	1.52	1.32	1.18
BloomBar 5 Yr Municipal	4.37	6.02	2.15	2.25	2.89
BloomBar US Aggregate	8.52	10.30	2.92	3.38	3.75
BloomBar US Corp High Yield	11.41	6.36	6.07	5.37	7.94
BloomBar Global Aggregate	6.32	7.60	1.59	1.99	2.34
JPM EMBI Global Diversified	12.99	11.57	4.61	5.74	6.88

## US Fixed Income Market Environment

For the Periods Ending September 30, 2019

### Nominal Returns By Sector (%)

	<u>3 Months</u>	<u>YTD</u>	<u>1 Year</u>	<u>3 Years</u>
US Aggregate	2.27	8.53	10.31	2.93
US Treasury	2.40	7.70	10.46	2.23
US Agg: Gov't-Related	2.44	8.78	10.12	3.25
US Corporate IG	3.04	13.20	12.99	4.50
MBS	1.36	5.59	7.79	2.33
CMBS	1.90	8.65	10.52	3.14
ABS	0.92	4.11	5.40	2.24
US Corp High Yield	1.33	11.39	6.34	6.07

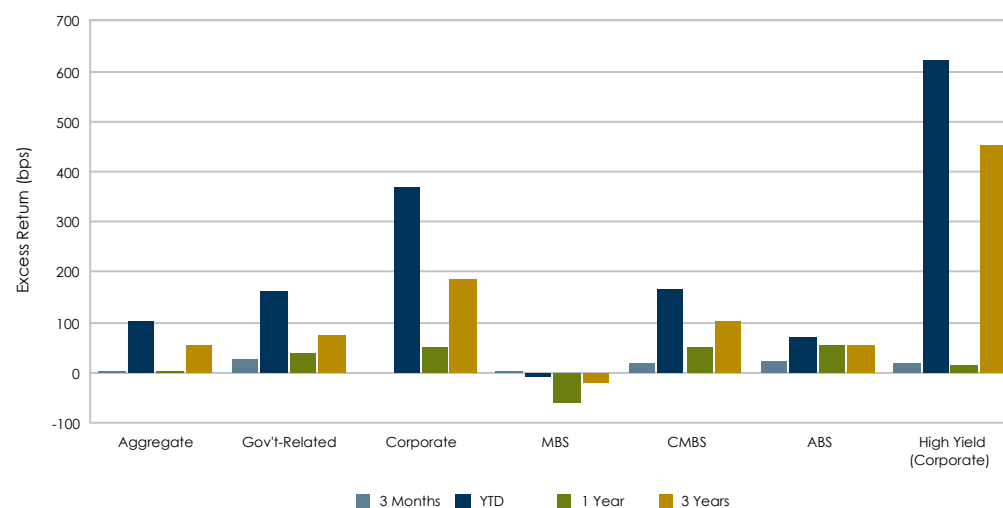
### Nominal Returns by Quality (%)

	<u>3 Months</u>	<u>YTD</u>	<u>1 Year</u>	<u>3 Years</u>
AAA	1.96	6.87	9.34	2.33
AA	2.62	9.54	10.98	3.47
A	2.91	12.16	12.55	3.97
BAA	3.25	14.50	13.47	5.12
BA	2.02	12.74	9.46	5.84
B	1.64	11.87	7.01	6.25
CAA	-1.75	5.58	-4.21	5.48

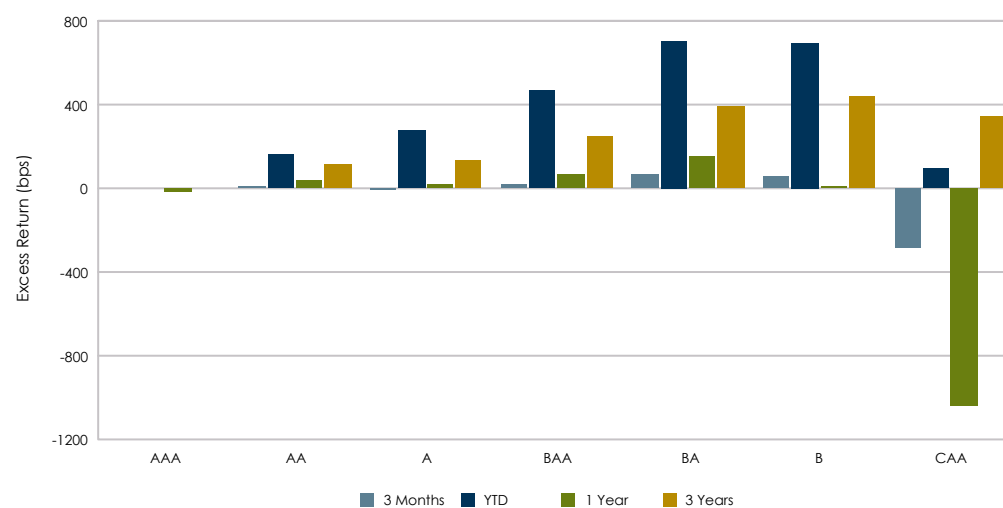
### Nominal Returns by Maturity (%)

	<u>3 Months</u>	<u>YTD</u>	<u>1 Year</u>	<u>3 Years</u>
1-3 Yr.	0.70	3.44	4.66	1.84
3-5 Yr.	1.28	5.77	7.71	2.30
5-7 Yr.	1.48	6.79	8.92	2.50
7-10 Yr.	2.79	9.82	12.11	2.90
10+ Yr.	6.58	20.92	22.01	5.53

### Excess Returns by Sector



### Excess Returns by Quality



Source: Bloomberg

Excess returns are relative to the duration-neutral Treasury.

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## Monthly Index Returns

For the Periods Ending September 30, 2019

Index Name	3 Months (%)	YTD (%)	1 Year (%)	3 Years (%)	5 Years (%)	7 Years (%)	10 Years (%)
<b>Equity</b>							
S&P 500	1.70	20.55	4.25	13.39	10.84	13.26	13.24
Russell 1000	1.42	20.53	3.87	13.19	10.62	13.21	13.23
Russell 1000 Growth	1.49	23.30	3.71	16.89	13.39	15.02	14.94
Russell 1000 Value	1.36	17.81	4.00	9.43	7.79	11.30	11.46
Russell 2500	-1.28	17.72	-4.04	9.51	8.57	11.43	12.22
Russell 2000	-2.40	14.18	-8.89	8.23	8.19	10.43	11.19
Russell 2000 Growth	-4.17	15.34	-9.63	9.79	9.08	11.43	12.25
Russell 2000 Value	-0.57	12.82	-8.24	6.54	7.17	9.35	10.06
Wilshire 5000 Cap Wtd	1.23	20.11	2.95	12.91	10.58	13.04	13.09
MSCI ACWI	0.10	16.71	1.95	10.30	7.23	9.42	8.93
MSCI ACWI ex US	-1.70	12.06	-0.72	6.85	3.39	5.50	4.93
MSCI EAFE	-1.00	13.35	-0.82	7.01	3.77	6.62	5.39
MSCI EAFE Local Currency	1.83	16.23	2.10	8.84	6.54	10.14	7.55
MSCI EAFE Growth	-0.40	18.39	2.64	8.19	5.90	7.88	6.91
MSCI EAFE Value	-1.64	8.31	-4.31	5.73	1.57	5.28	3.82
MSCI Emerging Markets	-4.11	6.22	-1.63	6.37	2.71	2.79	3.73
<b>Fixed Income</b>							
ICE BofA ML 1-3 Yr Treasury	0.59	3.03	4.37	1.52	1.32	1.07	1.18
BloomBar 5 Yr Municipal	0.54	4.37	6.02	2.15	2.25	2.14	2.89
BloomBar US Aggregate	2.27	8.52	10.30	2.92	3.38	2.72	3.75
BloomBar Gov't Bond	2.39	7.66	10.40	2.27	2.90	2.10	3.00
BloomBar US Credit	2.98	12.61	12.63	4.33	4.54	3.89	5.32
BloomBar 10 Yr Municipal	1.42	6.86	9.09	3.16	3.80	3.52	4.42
BloomBar US Corp High Yield	1.33	11.41	6.36	6.07	5.37	5.88	7.94
FTSE World Govt Bond	0.85	6.27	8.13	1.19	1.80	0.59	1.69
BloomBar Global Aggregate	0.71	6.32	7.60	1.59	1.99	1.21	2.34
BloomBar Multiverse	0.63	6.45	7.54	1.81	2.14	1.40	2.55
JPM EMBI Global Diversified	1.50	12.99	11.57	4.61	5.74	4.83	6.88
<b>Real Assets</b>							
NCREIF Property	1.41	4.80	6.24	6.77	8.57	9.29	9.77
NFI ODCE Net	1.08	3.08	4.65	6.34	8.35	9.29	9.84
FTSE NAREIT US Real Estate	7.80	26.96	18.42	7.36	10.26	10.03	13.04
Bloomberg Commodity	-1.84	3.13	-6.57	-1.50	-7.18	-8.15	-4.32
<b>Cash and Equivalents</b>							
US T-Bills 90 Day	0.57	1.81	2.39	1.54	0.98	0.72	0.54

## Monthly Index Returns

For the Periods Ending October 31, 2019

Index Name	1 Month (%)	YTD (%)	1 Year (%)	3 Years (%)	5 Years (%)	7 Years (%)	10 Years (%)
<b>Equity</b>							
S&P 500	2.17	23.16	14.33	14.91	10.78	13.91	13.70
Russell 1000	2.12	23.09	14.15	14.73	10.55	13.83	13.72
Russell 1000 Growth	2.82	26.77	17.10	18.92	13.43	15.97	15.41
Russell 1000 Value	1.40	19.46	11.21	10.51	7.61	11.60	11.96
Russell 2500	1.91	19.97	8.84	11.74	8.04	11.90	13.10
Russell 2000	2.63	17.18	4.90	10.96	7.37	11.19	12.27
Russell 2000 Growth	2.85	18.62	6.40	13.22	8.38	12.38	13.38
Russell 2000 Value	2.42	15.55	3.22	8.60	6.24	9.93	11.08
Wilshire 5000 Cap Wtd	2.19	22.74	13.48	14.50	10.46	13.68	13.62
MSCI ACWI	2.76	19.94	13.22	11.93	7.66	9.95	9.39
MSCI ACWI ex US	3.50	15.98	11.84	8.60	4.31	5.96	5.43
MSCI EAFE	3.60	17.43	11.63	9.02	4.81	7.03	5.90
MSCI EAFE Local Currency	1.68	18.19	11.07	9.01	6.96	10.22	7.97
MSCI EAFE Growth	3.59	22.64	17.10	11.09	6.84	8.36	7.30
MSCI EAFE Value	3.62	12.23	6.20	6.90	2.72	5.63	4.43
MSCI Emerging Markets	4.23	10.71	12.29	7.76	3.32	3.48	4.14
<b>Fixed Income</b>							
ICE BofA ML 1-3 Yr Treasury	0.33	3.37	4.54	1.66	1.33	1.12	1.19
BloomBar Municipal	0.18	6.94	9.42	3.62	3.55	3.38	4.40
BloomBar US Aggregate	0.30	8.85	11.51	3.29	3.24	2.74	3.73
BloomBar Gov't Bond	0.07	7.74	10.99	2.66	2.72	2.13	3.01
BloomBar US Credit	0.57	13.26	14.88	4.83	4.43	3.81	5.32
BloomBar 10 Yr Municipal	0.15	7.02	9.88	3.63	3.68	3.50	4.70
BloomBar US Corp High Yield	0.28	11.71	8.38	6.03	5.18	5.79	7.78
FTSE World Govt Bond	0.54	6.84	9.92	2.55	1.96	0.76	1.73
BloomBar Global Aggregate	0.67	7.03	9.54	2.77	2.13	1.32	2.36
BloomBar Multiverse	0.70	7.20	9.50	2.95	2.27	1.51	2.57
<b>Real Assets</b>							
Bloomberg Commodity	2.02	5.22	-2.58	-0.68	-6.65	-7.37	-4.44
<b>Cash and Equivalents</b>							
US T-Bills 90 Day	0.19	2.01	2.40	1.60	1.02	0.75	0.56

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**Total Portfolio Summary**

**Total Portfolio**

**Dollar Reconciliation (\$000s)**

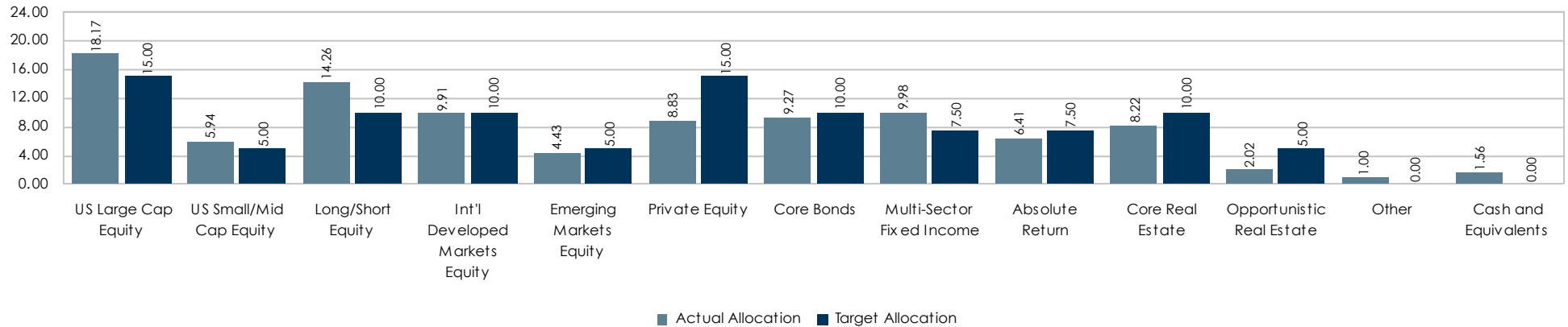
*For the Periods Ending September 30, 2019*

	<b>FYTD</b>	<b>YTD</b>	<b>5 Years</b>	<b>10 Years</b>
<b>Beginning Market Value</b>	<b>2,606,162</b>	<b>2,398,381</b>	<b>2,191,176</b>	<b>1,510,022</b>
Net Additions	-18,192	-41,466	-279,593	-471,408
Return on Investment	10,263	241,318	686,651	1,559,619
<b>Ending Market Value</b>	<b>2,598,233</b>	<b>2,598,233</b>	<b>2,598,233</b>	<b>2,598,233</b>



## Total Portfolio

For the Period Ending September 30, 2019

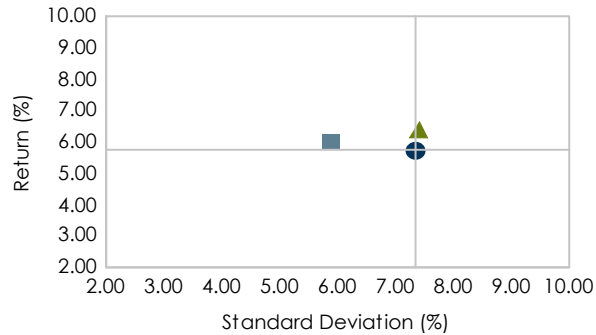


	Market Value (\$000s)	Actual Allocation (%)	Target Allocation (%)	Over/Under Target (%)	Range Min-Max (%)
<b>Total Portfolio</b>	<b>2,598,233</b>	<b>100.00</b>	<b>100.00</b>		
<b>Equity</b>	<b>1,598,993</b>	<b>61.54</b>	<b>60.00</b>	<b>1.54</b>	<b>50.00 - 70.00</b>
US Large Cap Equity	472,080	18.17	15.00	3.17	10.00 - 20.00
US Small/Mid Cap Equity	154,235	5.94	5.00	0.94	0.00 - 15.00
Long/Short Equity	370,595	14.26	10.00	4.26	5.00 - 15.00
Int'l Developed Markets Equity	257,580	9.91	10.00	-0.09	5.00 - 15.00
Emerging Markets Equity	115,062	4.43	5.00	-0.57	0.00 - 10.00
Private Equity	229,442	8.83	15.00	-6.17	5.00 - 20.00
<b>Fixed Income</b>	<b>666,560</b>	<b>25.65</b>	<b>25.00</b>	<b>0.65</b>	<b>15.00 - 35.00</b>
Core Bonds	240,915	9.27	10.00	-0.73	5.00 - 15.00
Multi-Sector Fixed Income	259,198	9.98	7.50	2.48	2.50 - 12.50
Absolute Return	166,447	6.41	7.50	-1.09	2.50 - 12.50
<b>Real Assets</b>	<b>292,048</b>	<b>11.24</b>	<b>15.00</b>	<b>-3.76</b>	<b>10.00 - 20.00</b>
Core Real Estate	213,686	8.22	10.00	-1.78	5.00 - 15.00
Opportunistic Real Estate	52,470	2.02	5.00	-2.98	0.00 - 10.00
Other	25,891	1.00	0.00	1.00	
<b>Cash and Equivalents</b>	<b>40,632</b>	<b>1.56</b>	<b>0.00</b>	<b>1.56</b>	

## Total Portfolio

For the Periods Ending September 30, 2019

### 5 Year Risk / Return



### 5 Year Relative Statistics

Total Fund Policy	
Beta	0.78
Up Capture (%)	83.56
Down Capture (%)	71.65

	Return (%)	Rank	Std Dev (%)	Sharpe Ratio
FYTD				
Total Portfolio	0.40	63	--	--
Total Fund Policy	0.62		--	--
IM TF Between 55 - 70% Equity	0.57		--	--

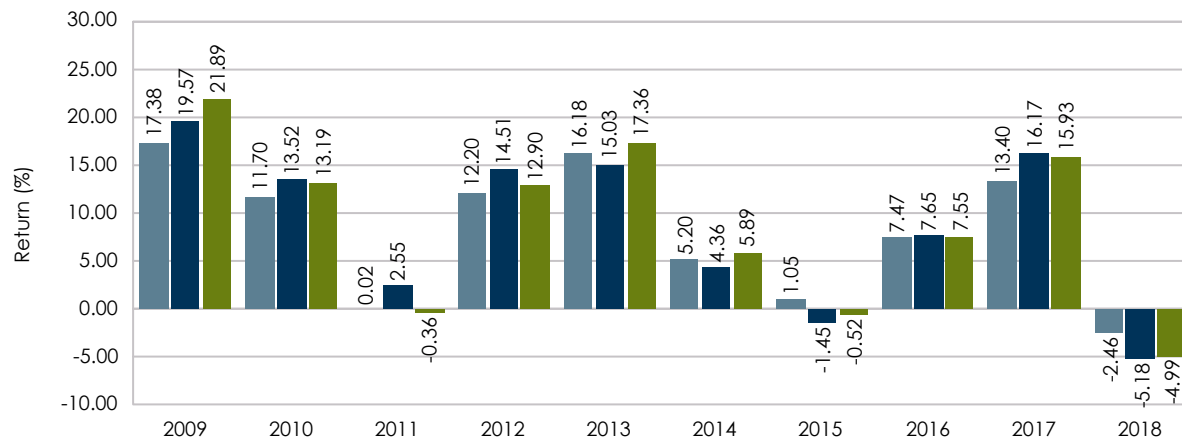
### 1 Year

Total Portfolio	2.17	86	9.05	-0.02
Total Fund Policy	4.08		10.97	0.16
IM TF Between 55 - 70% Equity	3.62		11.22	0.12

### 3 Years

Total Portfolio	7.19	82	5.82	0.98
Total Fund Policy	7.66		7.10	0.87
IM TF Between 55 - 70% Equity	8.04		7.39	0.87

### Calendar Year Returns



### 5 Years

Total Portfolio	5.98	66	5.88	0.86
Total Fund Policy	5.73		7.33	0.66
IM TF Between 55 - 70% Equity	6.38		7.40	0.72

### 10 Years

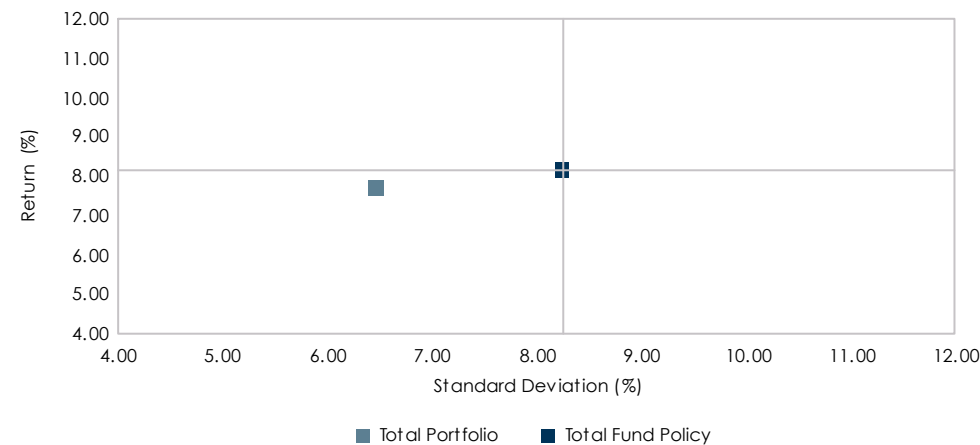
Total Portfolio	7.68	72	6.45	1.11
Total Fund Policy	8.12		8.24	0.93
IM TF Between 55 - 70% Equity	8.25		8.23	0.92

The rankings represent the portfolio's returns versus a peer universe. The rankings are on a scale of 1 to 100 with 1 being the best.

Total Portfolio

For the Periods Ending September 30, 2019

10 Year Risk / Return



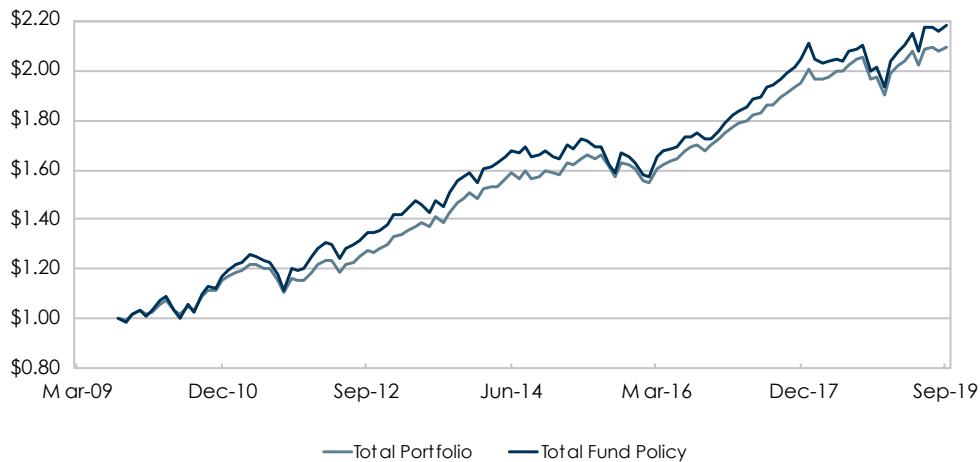
10 Year Portfolio Statistics

	Total Portfolio	Total Fund Policy
Return (%)	7.68	8.12
Standard Deviation (%)	6.45	8.24
Sharpe Ratio	1.11	0.93

Benchmark Relative Statistics

Beta	0.76
Up Capture (%)	80.71
Down Capture (%)	72.29

10 Year Growth of a Dollar

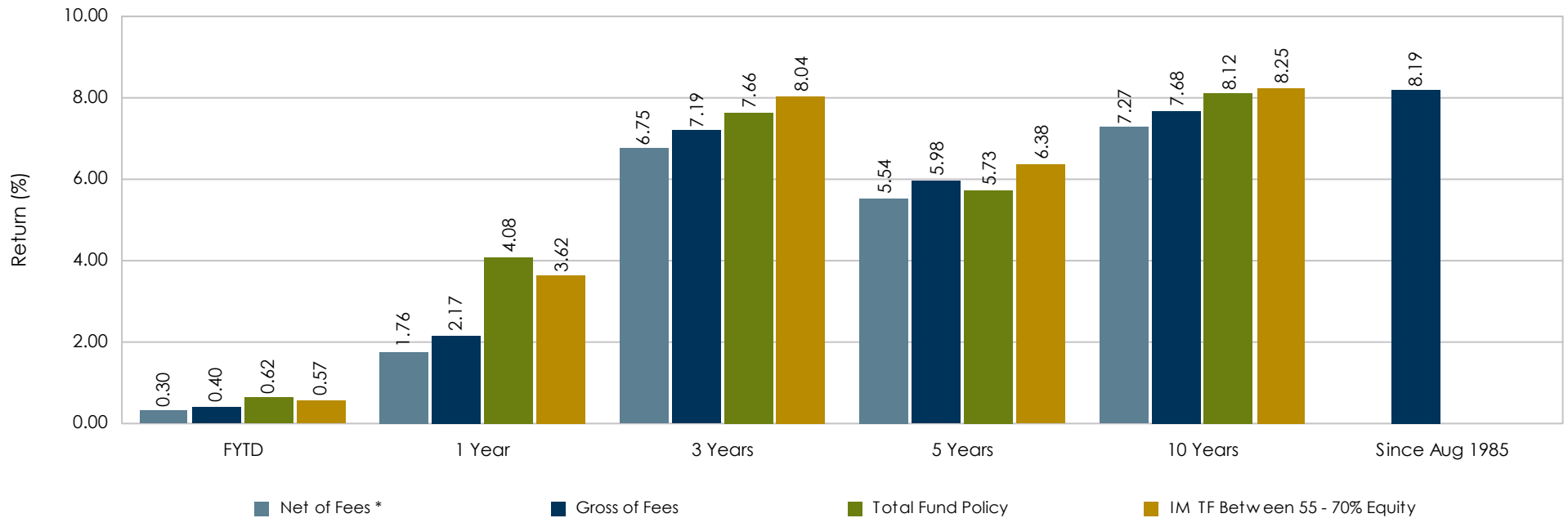


10 Year Return Analysis

	Total Portfolio	Total Fund Policy
Number of Months	120	120
Highest Monthly Return (%)	5.31	7.47
Lowest Monthly Return (%)	-4.27	-5.35
Number of Positive Months	84	79
Number of Negative Months	36	41
% of Positive Months	70.00	65.83

## Total Portfolio

For the Periods Ending September 30, 2019



Ranking	63	86	82	66	72
5th Percentile	1.53	6.14	9.51	7.86	9.67
25th Percentile	0.96	4.48	8.53	6.97	8.75
50th Percentile	0.57	3.62	8.04	6.38	8.25
75th Percentile	0.20	2.60	7.44	5.69	7.58
95th Percentile	-0.29	1.39	6.35	4.47	6.60
Observations	498	488	450	417	327

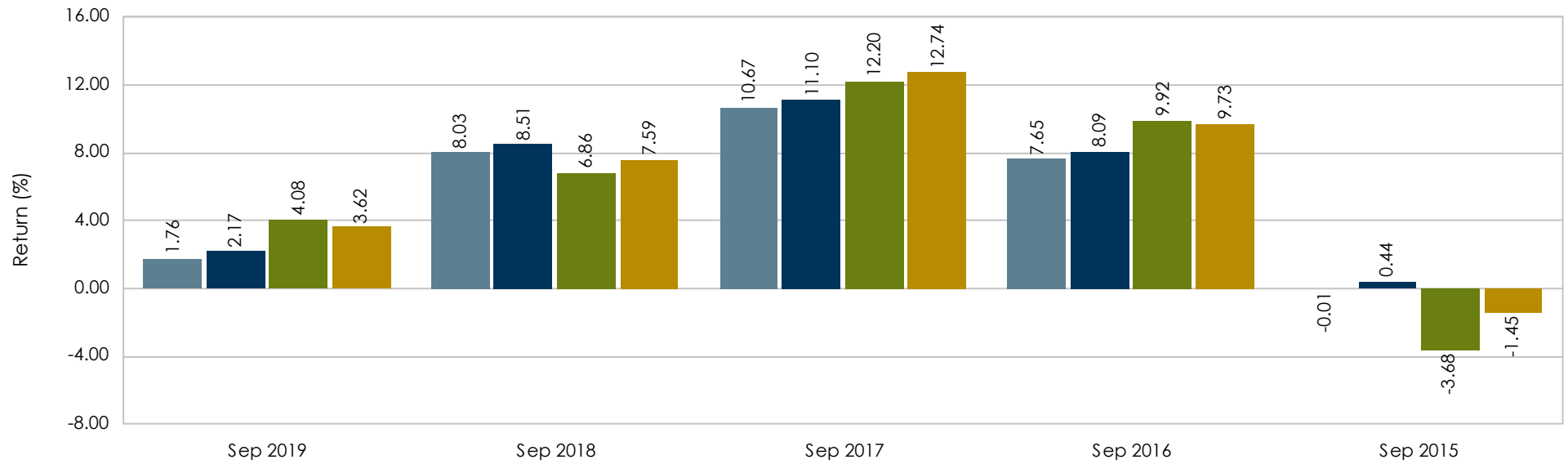
The rankings represent the portfolio's returns versus a peer universe. The rankings are on a scale of 1 to 100 with 1 being the best.

\* Performance is calculated using net of fee returns.

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### Total Portfolio

For the One Year Periods Ending September



	Net of Fees *	Gross Of Fees	Total Fund Policy	IM TF Between 55 - 70% Equity
Ranking	86	30	85	86
5th Percentile	6.14	10.80	15.22	12.34
25th Percentile	4.48	8.68	13.76	10.50
50th Percentile	3.62	7.59	12.74	9.73
75th Percentile	2.60	6.60	11.70	8.83
95th Percentile	1.39	5.21	10.21	7.13
Observations	488	614	680	601

The rankings represent the portfolio's returns versus a peer universe. The rankings are on a scale of 1 to 100 with 1 being the best.

\* Performance is calculated using net of fee returns.

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## Rates of Return Summary &amp; Universe Rankings

For the Periods Ending September 30, 2019

	Market Value (\$000s)	Actual Allocation (%)	FYTD (%)	Rank	YTD (%)	Rank	1 Year (%)	Rank	3 Years (%)	Rank	5 Years (%)	Rank	10 Years (%)
<b>Total Portfolio * (06/05) <sup>1</sup></b>	<b>2,598,233</b>	<b>100.00</b>	<b>0.30</b>		<b>9.75</b>		<b>1.76</b>		<b>6.75</b>		<b>5.54</b>		<b>7.27</b>
<b>Total Portfolio (08/85)</b>			<b>0.40</b>	<b>63</b>	<b>10.08</b>	<b>98</b>	<b>2.17</b>	<b>86</b>	<b>7.19</b>	<b>82</b>	<b>5.98</b>	<b>66</b>	<b>7.68</b>
<i>Total Fund Policy <sup>2</sup></i>			0.62		12.77		4.08		7.66		5.73		8.12
<i>IM TF Between 55 - 70% Equity</i>			0.57		13.26		3.62		8.04		6.38		8.25
<b>Equity (01/98)</b>	<b>1,598,993</b>	<b>61.54</b>	<b>0.43</b>		<b>13.74</b>		<b>1.32</b>		<b>9.34</b>		<b>7.63</b>		<b>9.41</b>
<i>MSCI ACWI</i>			0.10		16.71		1.95		10.30		7.23		8.93
<b>US Large Cap Equity</b>	<b>472,080</b>	<b>18.17</b>											
<b>Northern Trust Russell 1000 Index (08/98) <sup>3</sup></b>	<b>472,080</b>	<b>18.17</b>	<b>1.42</b>	<b>59</b>	<b>20.54</b>	<b>43</b>	<b>3.90</b>	<b>47</b>	<b>13.19</b>	<b>45</b>	<b>10.62</b>	<b>42</b>	<b>13.24</b>
<i>Russell 1000</i>			1.42		20.53		3.87		13.19		10.62		13.23
<i>eA US Large Cap Core Equity</i>			1.71		19.95		3.52		12.86		10.30		13.08
<b>US Small/Mid Cap Equity</b>	<b>154,235</b>	<b>5.94</b>											
<b>Boston Partners (01/98)</b>	<b>77,025</b>	<b>2.96</b>	<b>1.60</b>	<b>51 / 20</b>	<b>21.33</b>	<b>36 / 10</b>	<b>-2.29</b>	<b>72 / 19</b>	<b>7.59</b>	<b>68 / 39</b>	<b>7.55</b>	<b>54 / 49</b>	<b>11.63</b>
<i>Russell 2500 Value</i>			0.13		15.41		-4.35		6.87		6.98		11.00
<i>eA US Mid Cap Value Equity</i>			1.66		20.57		0.84		8.85		8.07		12.13
<i>eA US Small Cap Value Equity</i>			-0.20		15.32		-6.25		7.13		7.50		11.71
<b>Silvercrest (02/14)</b>	<b>77,210</b>	<b>2.97</b>	<b>-5.38</b>	<b>67</b>	<b>9.97</b>	<b>87</b>	<b>-12.60</b>	<b>84</b>	<b>12.55</b>	<b>60</b>	<b>10.90</b>	<b>56</b>	<b>--</b>
<i>Russell 2000 Growth</i>			-4.17		15.34		-9.63		9.79		9.08		12.25
<i>eA US Small Cap Growth Equity</i>			-4.30		18.64		-6.39		13.56		11.33		14.11
<b>Long/Short Equity</b>	<b>370,595</b>	<b>14.26</b>											
<b>Grosvenor Long/Short Equity (11/03)</b>	<b>370,595</b>	<b>14.26</b>	<b>-0.88</b>		<b>9.86</b>		<b>0.50</b>		<b>5.79</b>		<b>4.86</b>		<b>5.74</b>
<i>MSCI ACWI</i>			0.10		16.71		1.95		10.30		7.23		8.93
<i>HFRI FOF: Strategic</i>			-1.74		5.72		-1.12		3.23		1.95		2.80

FYTD: Fiscal year ending June.

\* Net of fee return data.

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## Rates of Return Summary &amp; Universe Rankings

For the Periods Ending September 30, 2019

	Market Value (\$000s)	Actual Allocation (%)	FYTD (%)	Rank	YTD (%)	Rank	1 Year (%)	Rank	3 Years (%)	Rank	5 Years (%)	Rank	10 Years (%)
<b>International Developed Market</b>	<b>257,580</b>	<b>9.91</b>											
<b>Mondrian International (05/04)</b>	<b>137,979</b>	<b>5.31</b>	<b>-2.00</b>	<b>65</b>	<b>8.25</b>	<b>68</b>	<b>-2.34</b>	<b>35</b>	<b>5.39</b>	<b>50</b>	<b>2.54</b>	<b>55</b>	<b>4.95</b>
<i>MSCI EAFE Value</i>			-1.64		8.31		-4.31		5.73		1.57		3.82
<i>eA EAFE All Cap Value Equity</i>			-1.41		9.46		-4.97		5.30		2.74		6.20
<b>Barings Focused EAFE Plus Equity (03/12)</b>	<b>119,600</b>	<b>4.60</b>	<b>-0.81</b>	<b>41</b>	<b>13.87</b>	<b>46</b>	<b>-3.76</b>	<b>67</b>	<b>6.92</b>	<b>42</b>	<b>5.96</b>	<b>19</b>	<b>--</b>
<i>MSCI EAFE NetDiv</i>			-1.07		12.80		-1.34		6.48		3.27		4.90
<i>eA EAFE All Cap Equity</i>			-1.24		12.95		-2.15		6.54		4.50		6.36
<b>Emerging Markets Equity</b>	<b>115,062</b>	<b>4.43</b>											
<b>Wasatch Emerging Markets (09/12)</b>	<b>36,538</b>	<b>1.41</b>	<b>1.40</b>	<b>2</b>	<b>16.29</b>	<b>5</b>	<b>9.03</b>	<b>5</b>	<b>5.66</b>	<b>64</b>	<b>3.30</b>	<b>47</b>	<b>--</b>
<i>MSCI EM SC</i>			-4.42		2.11		-5.13		1.66		0.17		3.52
<i>eA Global Emerging Mkts Equity</i>			-3.77		7.84		0.02		6.10		3.19		4.84
<b>AB EM Strategic Core Equity Fund (11/16)</b>	<b>78,524</b>	<b>3.02</b>	<b>-2.17</b>	<b>20</b>	<b>7.75</b>	<b>51</b>	<b>-3.10</b>	<b>80</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
<i>MSCI Emerging Markets</i>			-4.11		6.22		-1.63		6.37		2.71		3.73
<i>eA Global Emerging Mkts Equity</i>			-3.77		7.84		0.02		6.10		3.19		4.84
<b>Private Equity (07/03)</b>	<b>229,442</b>	<b>8.83</b>	<b>4.09</b>		<b>9.14</b>		<b>11.74</b>		<b>12.09</b>		<b>10.85</b>		<b>12.38</b>
<b>Fixed Income (01/98)</b>	<b>666,560</b>	<b>25.65</b>	<b>1.07</b>		<b>6.69</b>		<b>5.88</b>		<b>3.60</b>		<b>3.06</b>		<b>4.59</b>
<i>BloomBar Universal</i>			2.12		8.80		10.07		3.23		3.62		4.14
<b>Core Bonds</b>	<b>240,915</b>	<b>9.27</b>											
<b>Agincourt Core Fixed Income (10/99)</b>	<b>240,915</b>	<b>9.27</b>	<b>2.34</b>	<b>51</b>	<b>9.23</b>	<b>37</b>	<b>10.81</b>	<b>29</b>	<b>3.47</b>	<b>37</b>	<b>3.82</b>	<b>39</b>	<b>4.45</b>
<i>BloomBar US Aggregate</i>			2.27		8.52		10.30		2.92		3.38		3.75
<i>eA US Core Fixed Income</i>			2.34		9.00		10.46		3.33		3.73		4.32

## Rates of Return Summary &amp; Universe Rankings

For the Periods Ending September 30, 2019

	Market Value (\$000s)	Actual Allocation (%)	FYTD (%)	Rank	YTD (%)	Rank	1 Year (%)	Rank	3 Years (%)	Rank	5 Years (%)	Rank	10 Years (%)
<b>Multi Sector Fixed Income</b>	<b>259,198</b>	<b>9.98</b>											
<b>Multi Sector Fixed Income</b>													
<b>Oaktree Global Credit Fund (02/98)</b>	<b>128,150</b>	<b>4.93</b>	<b>-0.62</b>		<b>6.52</b>		<b>1.99</b>		<b>4.45</b>		<b>4.35</b>		<b>6.78</b>
<i>Custom Blended Index <sup>4</sup></i>			<i>0.67</i>		<i>8.19</i>		<i>4.54</i>		<i>1.10</i>		<i>2.28</i>		<i>3.19</i>
<b>Loomis Sayles (06/08)</b>	<b>82,072</b>	<b>3.16</b>	<b>0.72</b>	<b>58</b>	<b>7.37</b>	<b>51</b>	<b>8.12</b>	<b>36</b>	<b>2.21</b>	<b>67</b>	<b>2.52</b>	<b>57</b>	<b>3.19</b>
<i>FTSE World Govt Bond</i>			<i>0.85</i>		<i>6.27</i>		<i>8.13</i>		<i>1.19</i>		<i>1.80</i>		<i>1.69</i>
<i>eA All Global Fixed Income</i>			<i>1.02</i>		<i>7.42</i>		<i>6.68</i>		<i>3.66</i>		<i>2.93</i>		<i>3.92</i>
<b>Private Credit (10/16)</b>	<b>48,976</b>	<b>1.88</b>	<b>2.39</b>		<b>6.13</b>		<b>5.76</b>		<b>8.05</b>		<b>--</b>		<b>--</b>
<b>Absolute Return</b>	<b>166,447</b>	<b>6.41</b>											
<b>PAAMCO (10/02)</b>	<b>89,388</b>	<b>3.44</b>	<b>-0.16</b>		<b>3.45</b>		<b>-0.12</b>		<b>2.75</b>		<b>1.23</b>		<b>3.74</b>
<i>BloomBar US Aggregate</i>			<i>2.27</i>		<i>8.52</i>		<i>10.30</i>		<i>2.92</i>		<i>3.38</i>		<i>3.75</i>
<i>HFRI FOF: Conservative</i>			<i>-0.26</i>		<i>4.38</i>		<i>1.00</i>		<i>3.07</i>		<i>2.00</i>		<i>2.71</i>
<b>Wellington Global Total Return (12/16)</b>	<b>77,059</b>	<b>2.97</b>	<b>0.95</b>	<b>47</b>	<b>3.48</b>	<b>69</b>	<b>5.53</b>	<b>43</b>	<b>--</b>		<b>--</b>		<b>--</b>
<i>US T-Bills 90 Day + 4%</i>			<i>1.56</i>		<i>4.84</i>		<i>6.48</i>		<i>5.60</i>		<i>5.02</i>		<i>4.56</i>
<i>eA Global Unconstrained Fixed Income</i>			<i>0.67</i>		<i>5.93</i>		<i>4.48</i>		<i>3.46</i>		<i>2.65</i>		<i>3.53</i>
<b>Real Assets (01/98)</b>	<b>292,048</b>	<b>11.24</b>	<b>0.01</b>		<b>2.16</b>		<b>1.01</b>		<b>5.50</b>		<b>4.70</b>		<b>5.46</b>
<i>Real Assets Blended Index <sup>5</sup></i>			<i>0.11</i>		<i>3.16</i>		<i>0.95</i>		<i>3.78</i>		<i>1.19</i>		<i>5.60</i>
<b>Core Real Estate</b>	<b>213,686</b>	<b>8.22</b>											
<b>JP Morgan Strategic Property (12/07)</b>	<b>129,712</b>	<b>4.99</b>	<b>0.45</b>		<b>2.06</b>		<b>3.92</b>		<b>6.49</b>		<b>8.69</b>		<b>10.62</b>
<i>NFI ODCE Net</i>			<i>1.08</i>		<i>3.08</i>		<i>4.65</i>		<i>6.34</i>		<i>8.35</i>		<i>9.84</i>
<i>NCREIF Property</i>			<i>1.41</i>		<i>4.80</i>		<i>6.24</i>		<i>6.77</i>		<i>8.57</i>		<i>9.77</i>
<b>Blackstone Property Partners (01/15)</b>	<b>83,974</b>	<b>3.23</b>	<b>1.34</b>		<b>5.09</b>		<b>8.27</b>		<b>10.13</b>		<b>--</b>		<b>--</b>
<i>NFI ODCE Net</i>			<i>1.08</i>		<i>3.08</i>		<i>4.65</i>		<i>6.34</i>		<i>8.35</i>		<i>9.84</i>
<i>NCREIF Property</i>			<i>1.41</i>		<i>4.80</i>		<i>6.24</i>		<i>6.77</i>		<i>8.57</i>		<i>9.77</i>



## Rates of Return Summary & Universe Rankings

For the Periods Ending September 30, 2019

	Market Value (\$000s)	Actual Allocation (%)	FYTD (%)	Rank	YTD (%)	Rank	1 Year (%)	Rank	3 Years (%)	Rank	5 Years (%)	Rank	10 Years (%)
<b>Opportunistic Real Estate</b>	<b>52,470</b>	<b>2.02</b>											
<b>Private Real Estate (08/11)</b>	<b>47,644</b>	<b>1.83</b>	<b>3.25</b>		<b>7.53</b>		<b>14.07</b>		<b>10.32</b>		<b>11.28</b>		<b>--</b>
<b>Private Real Estate Direct</b>													
<b>Columbus Square (01/98)</b>	<b>4,826</b>	<b>0.19</b>	<b>1.08</b>		<b>3.98</b>		<b>5.69</b>		<b>7.61</b>		<b>8.17</b>		<b>11.27</b>
NCREIF Property			1.41		4.80		6.24		6.77		8.57		9.77
NFI ODCE Net			1.08		3.08		4.65		6.34		8.35		9.84
<b>Other</b>	<b>25,891</b>	<b>1.00</b>											
<b>Mount Lucas Peak Partners (01/98)</b>	<b>25,891</b>	<b>1.00</b>	<b>-3.02</b>		<b>-8.78</b>		<b>-19.32</b>		<b>-1.88</b>		<b>-0.89</b>		<b>-0.33</b>
CS Hedge - Global Macro			2.12		9.56		7.66		5.35		3.11		4.88
<b>Cash and Equivalents</b>	<b>40,632</b>	<b>1.56</b>											

**Notes:**

- <sup>1</sup> Total Fund Policy Index history available in appendix.
- <sup>2</sup> Total Fund Policy: Effective September 2019, the index consists of 60.0% MSCI ACWI, 25.0% BloomBar Universal, 15.0% NFI ODCE Net.
- <sup>3</sup> Performance data prior to October 31, 2014 is reflective of the Mellon Capital Passive Index fund. Due to contributions and withdrawals in this account, the returns may differ from the performance of the fund.
- <sup>4</sup> Custom Blended Index: Effective November 2018, the index consists of 50.0% ICE BofA ML Global HY Const, 50.0% CSFB Leveraged Loan.
- <sup>5</sup> Real Assets Blended Index: Effective January 2016, the index consists of 67.0% NFI ODCE Net, 33.0% Bloomberg Commodity.

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**Equity Manager Performance**

## Northern Trust Russell 1000 Index

For the Periods Ending September 30, 2019

### Account Description

- **Strategy** US Large Cap Core
- **Vehicle** Non-Mutual Commingled
- **Benchmark** Russell 1000
- **Performance Inception Date** August 1998
- **Fees** 1 bps

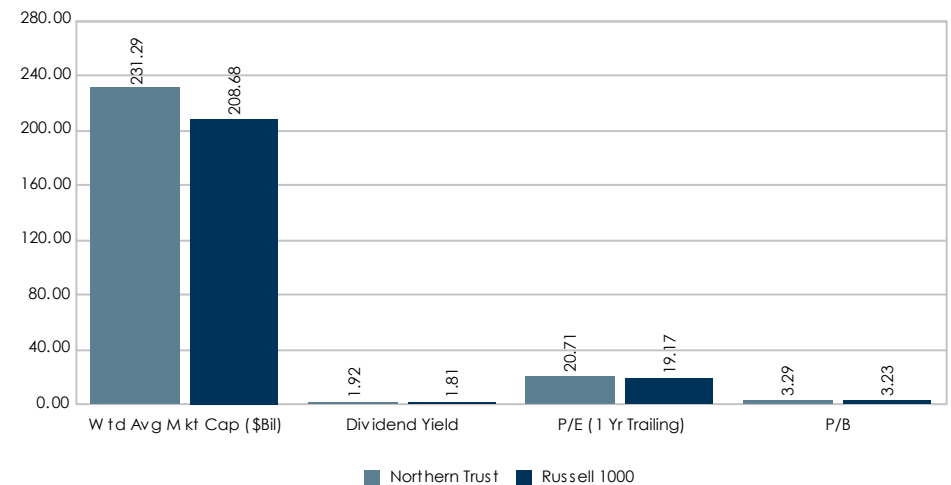
### Performance Goals

- Mirror the risk/return profile of the Russell 1000.
- Over rolling three year periods, rank above the median in the eA US Large Cap Core Equity universe.

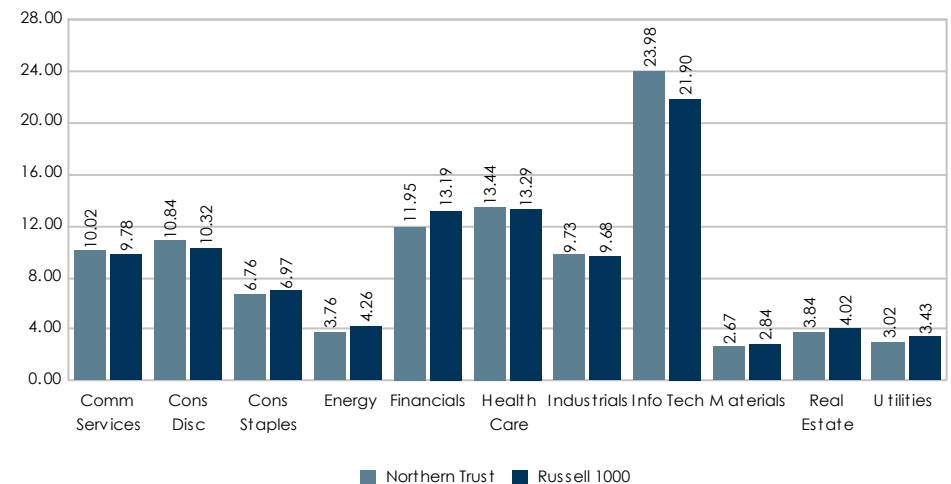
### Dollar Growth Summary (\$000s)

	FYTD	YTD
<b>Beginning Market Value</b>	<b>465,476</b>	<b>391,678</b>
Net Additions	-23	-45
Return on Investment	6,626	80,446
<b>Ending Market Value</b>	<b>472,080</b>	<b>472,080</b>

### Characteristics



### Sector Allocation



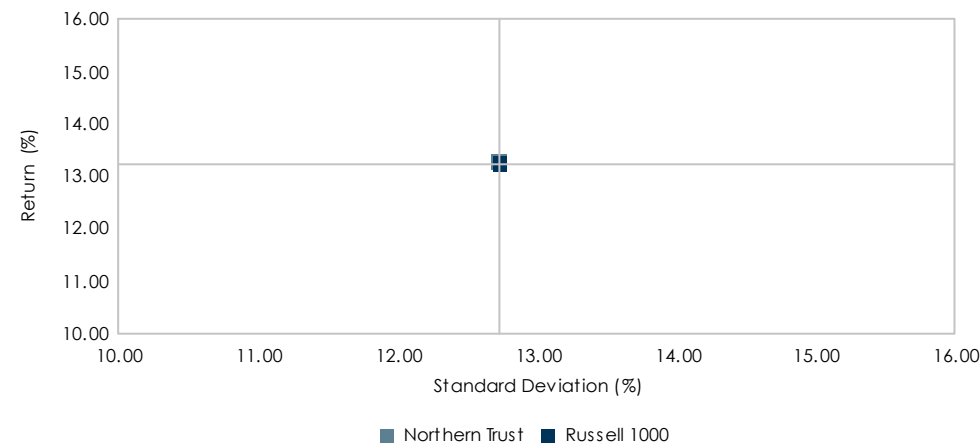
Characteristic and allocation charts represents data of the EB Daily Valued Large Cap Stock Index Fund (Non-Mutual Commingled).

Sector weights may not add to 100% due to securities that are not assigned to a Global Industry Classification Standard (GICS) sector.

Northern Trust Russell 1000 Index

For the Periods Ending September 30, 2019

10 Year Risk / Return



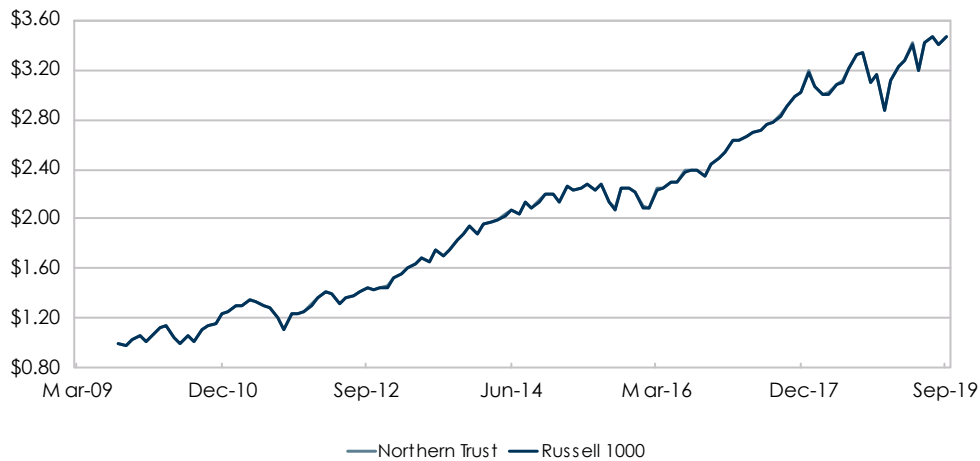
10 Year Portfolio Statistics

	Northern Trust	Russell 1000
Return (%)	13.24	13.23
Standard Deviation (%)	12.73	12.74
Sharpe Ratio	1.00	1.00

Benchmark Relative Statistics

Beta	1.00
R Squared (%)	100.00
Alpha (%)	0.01
Tracking Error (%)	0.04
Batting Average (%)	61.67
Up Capture (%)	99.99
Down Capture (%)	99.92

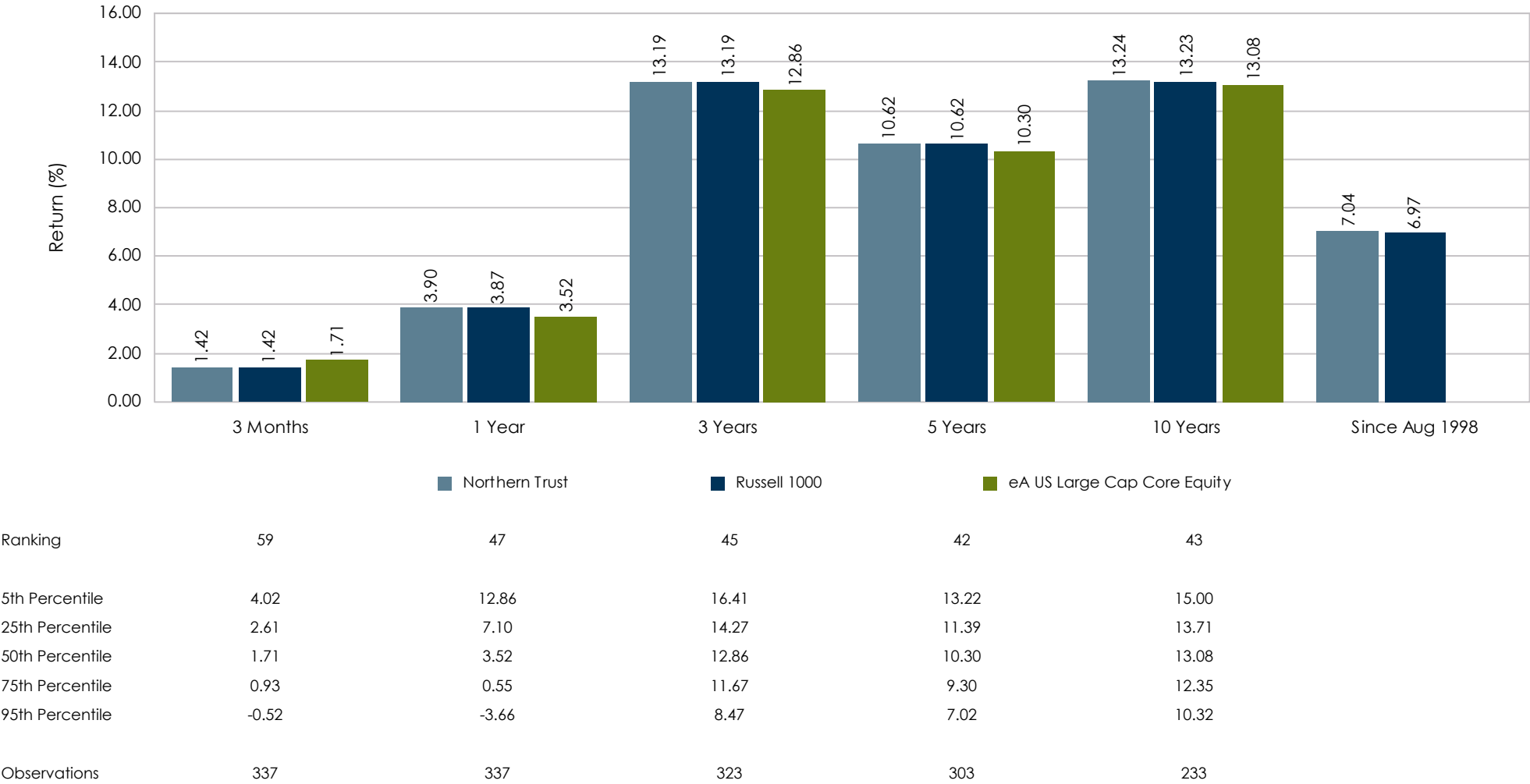
10 Year Growth of a Dollar



10 Year Return Analysis

	Northern Trust	Russell 1000
Number of Months	120	120
Highest Monthly Return (%)	11.20	11.21
Lowest Monthly Return (%)	-9.09	-9.11
Number of Positive Months	85	85
Number of Negative Months	35	35
% of Positive Months	70.83	70.83

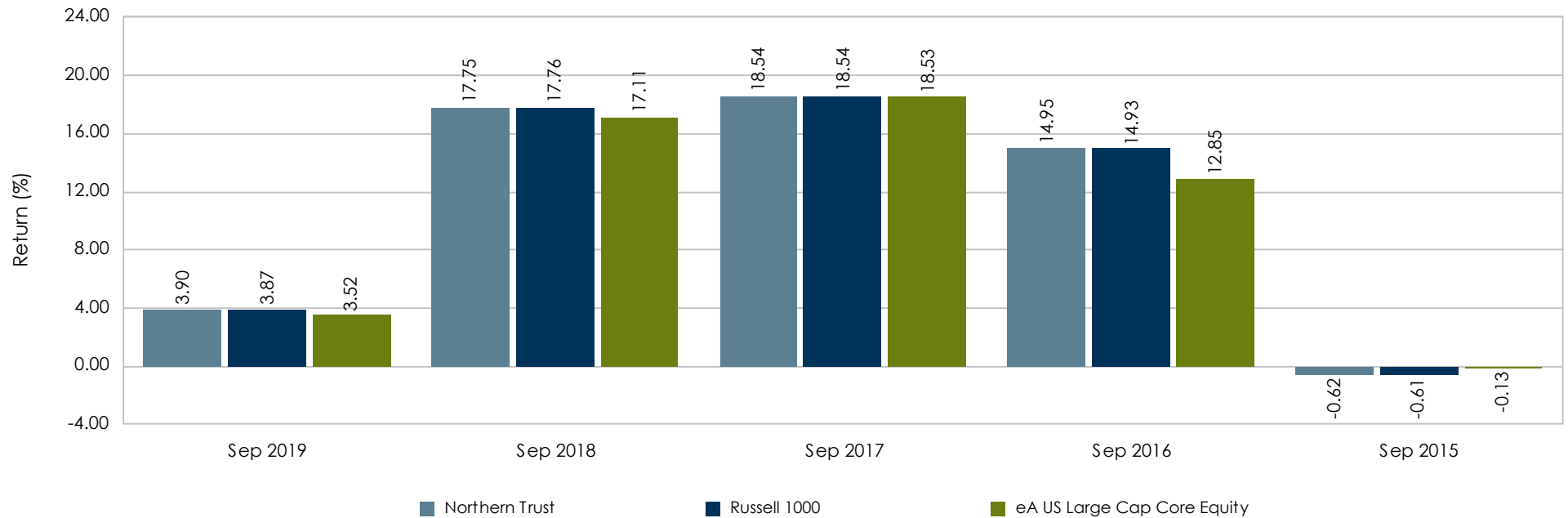
Northern Trust Russell 1000 Index  
For the Periods Ending September 30, 2019



The rankings represent the portfolio's returns versus a peer universe. The rankings are on a scale of 1 to 100 with 1 being the best.

### Northern Trust Russell 1000 Index

For the One Year Periods Ending September



Ranking	47	43	50	25	57
5th Percentile	12.86	24.50	23.62	19.07	6.37
25th Percentile	7.10	19.50	20.56	14.89	2.11
50th Percentile	3.52	17.11	18.53	12.85	-0.13
75th Percentile	0.55	14.54	16.22	10.66	-1.98
95th Percentile	-3.66	9.74	12.05	5.87	-6.45
Observations	337	385	388	384	372

The rankings represent the portfolio's returns versus a peer universe. The rankings are on a scale of 1 to 100 with 1 being the best.

## Boston Partners

For the Periods Ending September 30, 2019

### Account Description

- **Strategy** US Small/Mid Cap Value
- **Vehicle** Separately Managed Account
- **Benchmarks** Russell 2500 Value and Russell 2000 Value
- **Performance Inception Date** January 1998
- **Fees** 60 bps base fee with annual performance fee

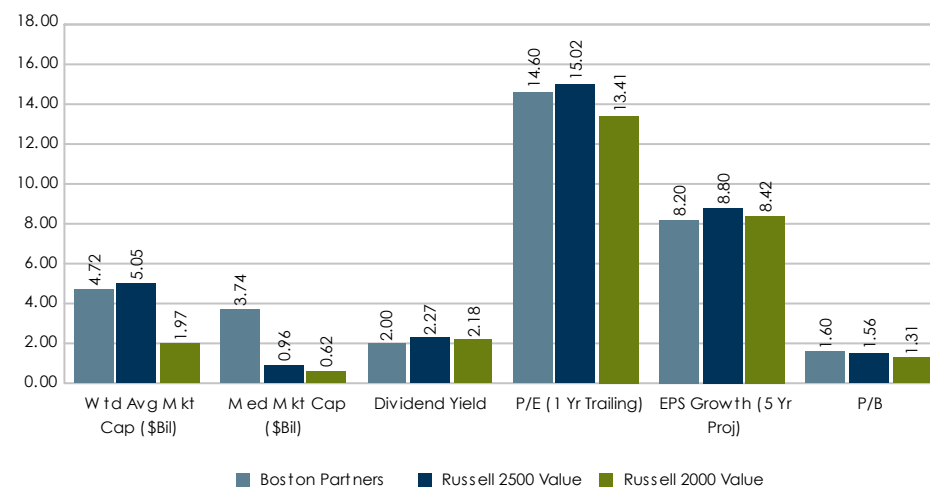
### Performance Goals

- Outperform the Russell 2500 Value and Russell 2000 Value.
- Over rolling three year periods, rank above the median in the eA US Mid Cap Value Equity universe.

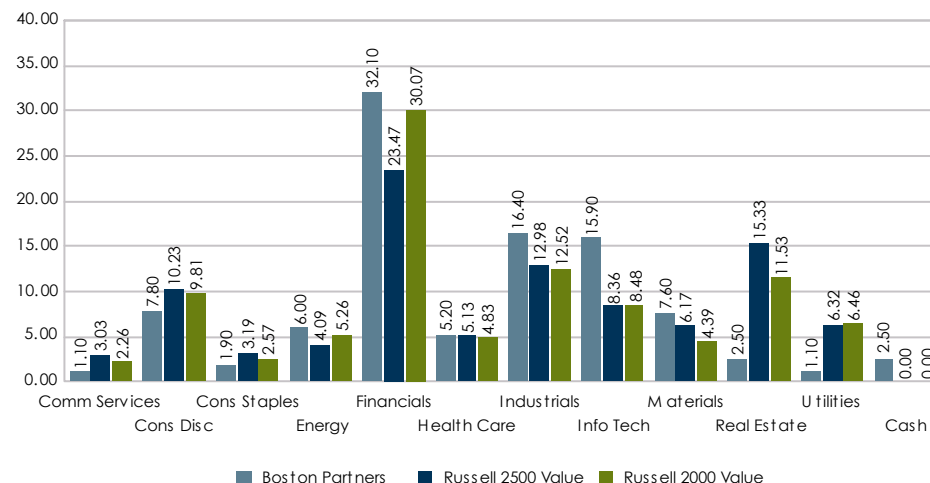
### Dollar Growth Summary (\$000s)

	FYTD	YTD
<b>Beginning Market Value</b>	<b>88,741</b>	<b>74,519</b>
Net Additions	-12,615	-12,852
Return on Investment	899	15,358
Income	390	1,300
Gain/Loss	509	14,058
<b>Ending Market Value</b>	<b>77,025</b>	<b>77,025</b>

### Characteristics



### Sector Allocation



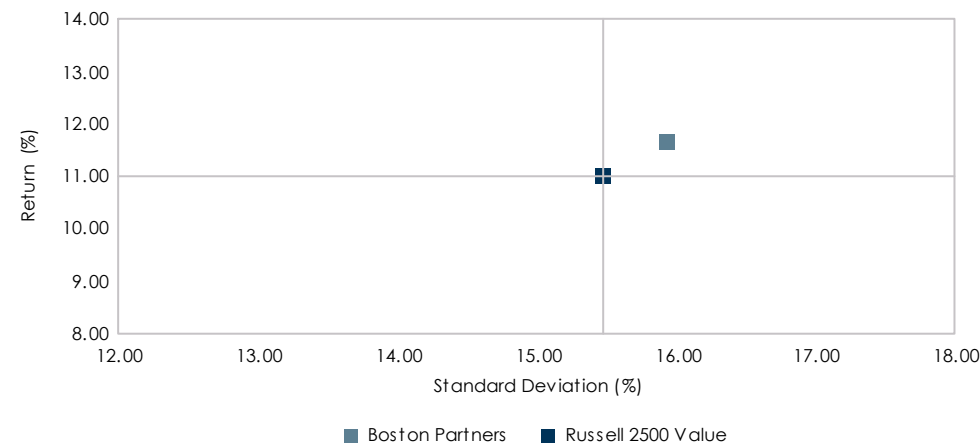
Sector weights may not add to 100% due to securities that are not assigned to a Global Industry Classification Standard (GICS) sector.



Boston Partners

For the Periods Ending September 30, 2019

10 Year Risk / Return



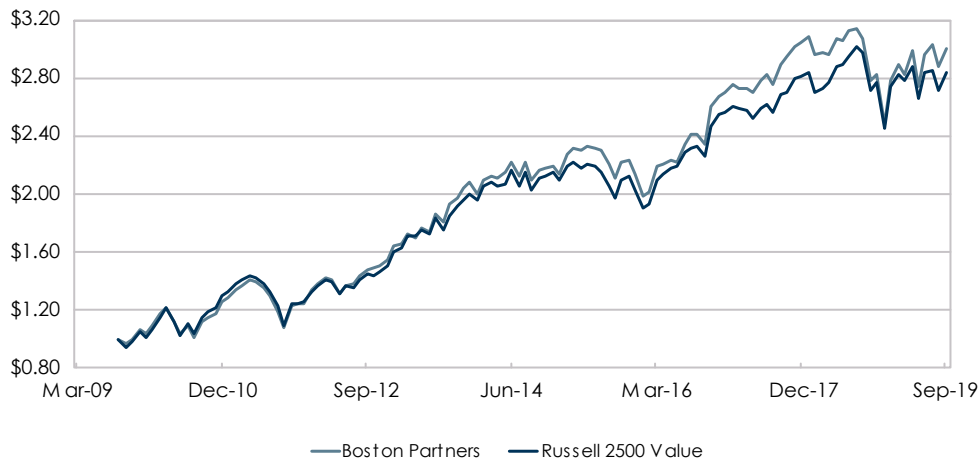
10 Year Portfolio Statistics

	Boston Partners	Russell 2500 Value
Return (%)	11.63	11.00
Standard Deviation (%)	15.94	15.47
Sharpe Ratio	0.70	0.68

Benchmark Relative Statistics

Beta	1.01
R Squared (%)	95.74
Alpha (%)	0.56
Tracking Error (%)	3.29
Batting Average (%)	53.33
Up Capture (%)	101.28
Down Capture (%)	98.58

10 Year Growth of a Dollar

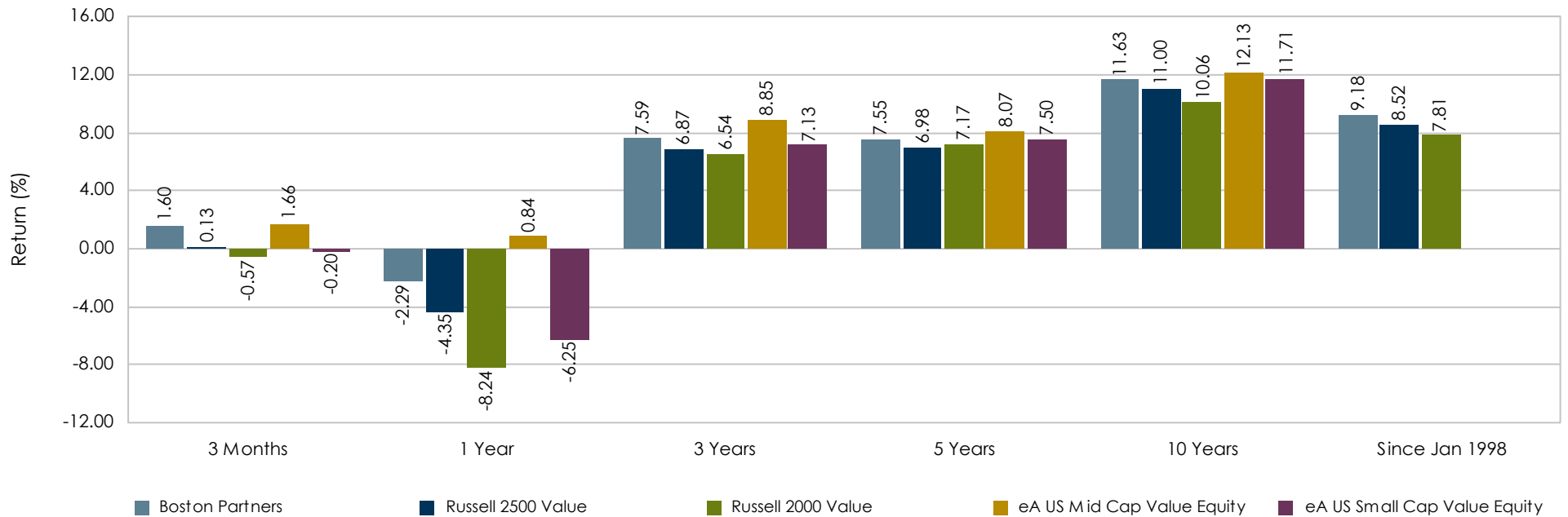


10 Year Return Analysis

	Boston Partners	Russell 2500 Value
Number of Months	120	120
Highest Monthly Return (%)	14.23	13.92
Lowest Monthly Return (%)	-12.07	-11.05
Number of Positive Months	78	79
Number of Negative Months	42	41
% of Positive Months	65.00	65.83

## Boston Partners

For the Periods Ending September 30, 2019

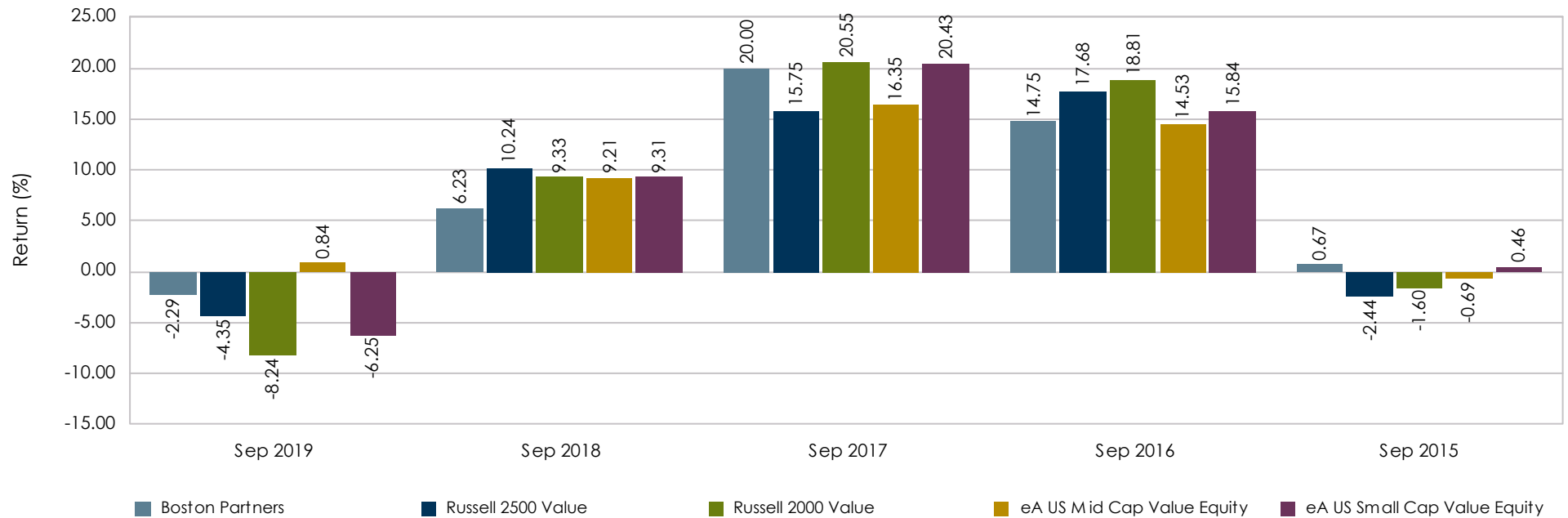


Ranking	51 / 20	72 / 19	68 / 39	54 / 49	69 / 55
5th Percentile	3.50 / 3.14	9.02 / 3.19	12.71 / 12.81	11.37 / 11.34	13.99 / 13.92
25th Percentile	2.45 / 1.12	3.96 / -2.95	10.45 / 8.98	9.58 / 8.86	13.15 / 12.36
50th Percentile	1.66 / -0.20	0.84 / -6.25	8.85 / 7.13	8.07 / 7.50	12.13 / 11.71
75th Percentile	0.06 / -1.50	-2.87 / -9.99	7.03 / 5.88	6.40 / 5.97	11.40 / 10.81
95th Percentile	-2.27 / -4.46	-8.57 / -15.76	4.69 / 2.88	4.09 / 2.69	10.16 / 9.38
Observations	93 / 230	93 / 230	92 / 225	91 / 214	80 / 189

The rankings represent the portfolio's returns versus a peer universe. The rankings are on a scale of 1 to 100 with 1 being the best.

## Boston Partners

For the One Year Periods Ending September



Ranking	72 / 19	78 / 82	24 / 54	49 / 60	31 / 48
5th Percentile	9.02 / 3.19	15.79 / 18.93	25.87 / 28.28	20.61 / 25.32	5.49 / 6.68
25th Percentile	3.96 / -2.95	11.85 / 12.77	19.55 / 22.89	17.71 / 18.95	1.35 / 3.53
50th Percentile	0.84 / -6.25	9.21 / 9.31	16.35 / 20.43	14.53 / 15.84	-0.69 / 0.46
75th Percentile	-2.87 / -9.99	6.88 / 6.99	14.77 / 17.37	11.40 / 12.69	-3.58 / -3.91
95th Percentile	-8.57 / -15.76	3.24 / 3.59	10.14 / 11.46	7.33 / 7.10	-9.89 / -13.28
Observations	93 / 230	107 / 248	112 / 248	109 / 246	110 / 250

The rankings represent the portfolio's returns versus a peer universe. The rankings are on a scale of 1 to 100 with 1 being the best.

## Silvercrest

For the Periods Ending September 30, 2019

### Account Description

- **Strategy** US Small/Mid Cap Growth
- **Vehicle** Separately Managed Account
- **Benchmark** Russell 2000 Growth
- **Performance Inception Date** February 2014
- **Fees** First \$25M at 100 bps, next \$25M at 90 bps, balance at 80 bps

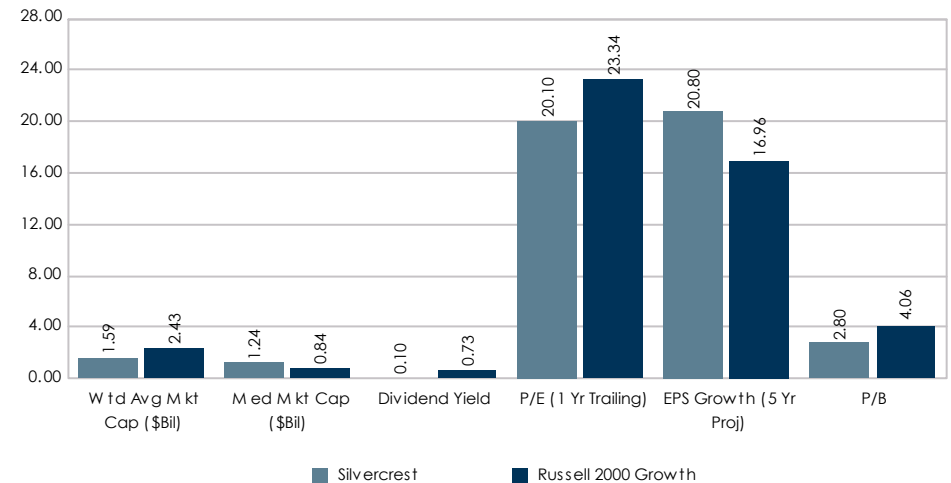
### Performance Goals

- Outperform the Russell 2000 Growth.
- Over rolling three year periods, rank above median in the eA US Small Cap Growth Equity universe.

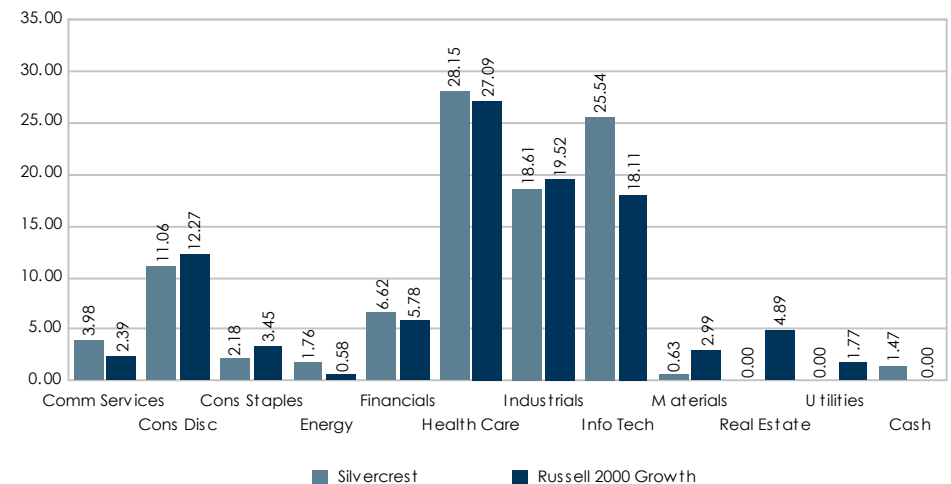
### Dollar Growth Summary (\$000s)

	FYTD	YTD
<b>Beginning Market Value</b>	<b>95,035</b>	<b>82,109</b>
Net Additions	-12,663	-13,054
Return on Investment	-5,162	8,155
Income	39	229
Gain/Loss	-5,201	7,927
<b>Ending Market Value</b>	<b>77,210</b>	<b>77,210</b>

### Characteristics



### Sector Allocation

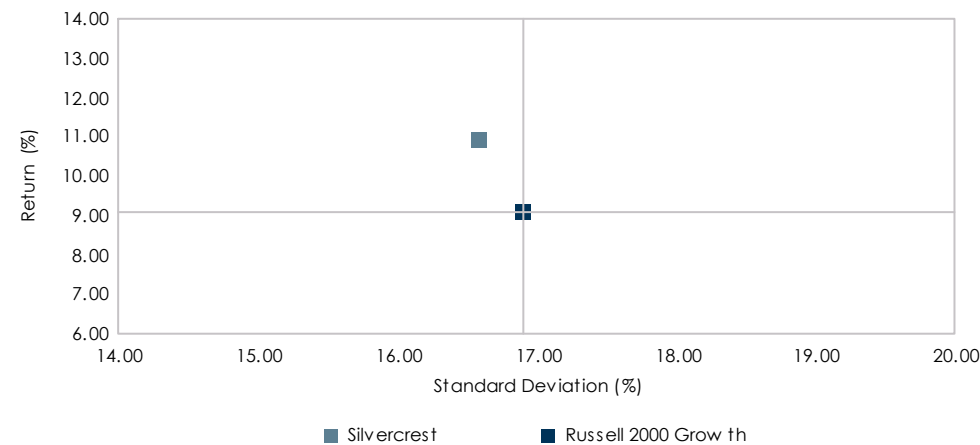


Sector weights may not add to 100% due to securities that are not assigned to a Global Industry Classification Standard (GICS) sector.

Silvercrest

For the Periods Ending September 30, 2019

5 Year Risk / Return



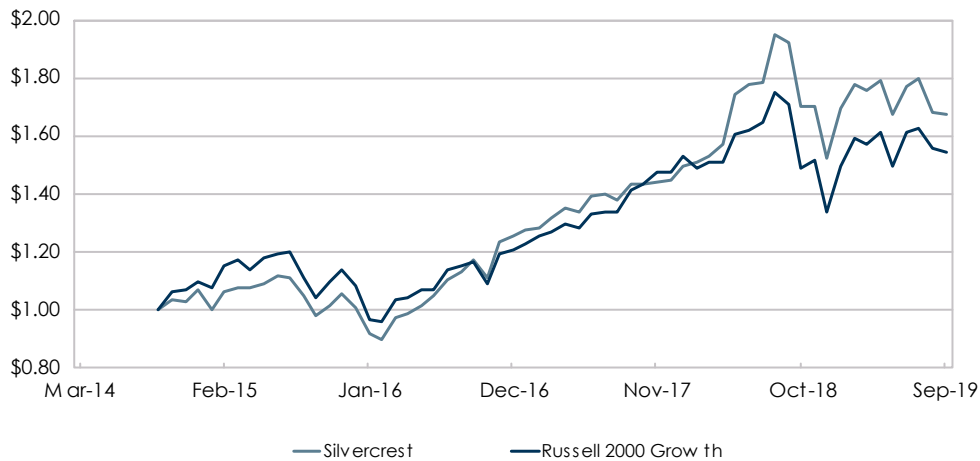
5 Year Portfolio Statistics

	Silvercrest	Russell 2000 Growth
Return (%)	10.90	9.08
Standard Deviation (%)	16.58	16.91
Sharpe Ratio	0.60	0.48

Benchmark Relative Statistics

Beta	0.92
R Squared (%)	88.09
Alpha (%)	2.44
Tracking Error (%)	5.88
Batting Average (%)	58.33
Up Capture (%)	96.91
Down Capture (%)	89.97

5 Year Growth of a Dollar

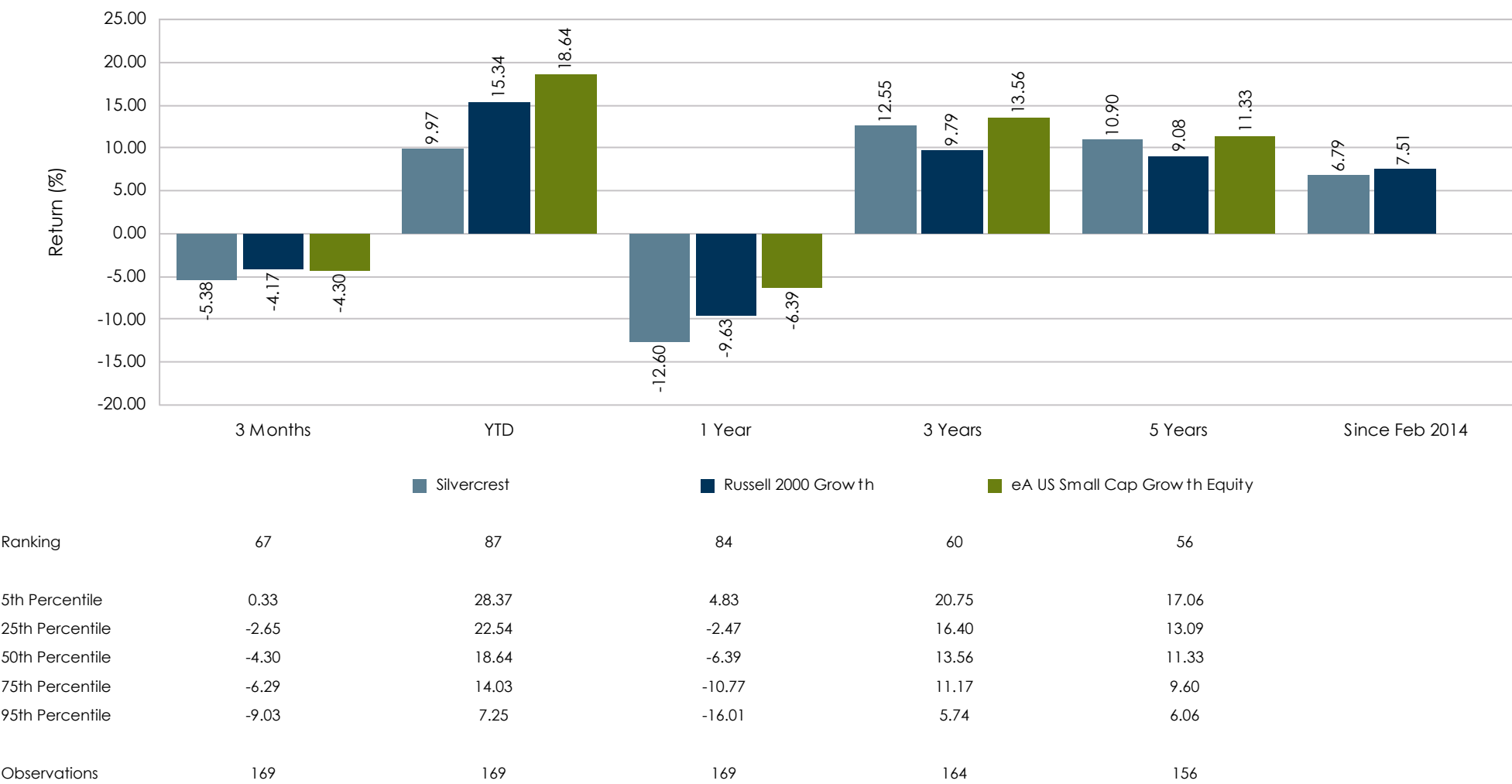


5 Year Return Analysis

	Silvercrest	Russell 2000 Growth
Number of Months	60	60
Highest Monthly Return (%)	11.26	11.55
Lowest Monthly Return (%)	-11.40	-12.65
Number of Positive Months	41	41
Number of Negative Months	19	19
% of Positive Months	68.33	68.33

Silvercrest

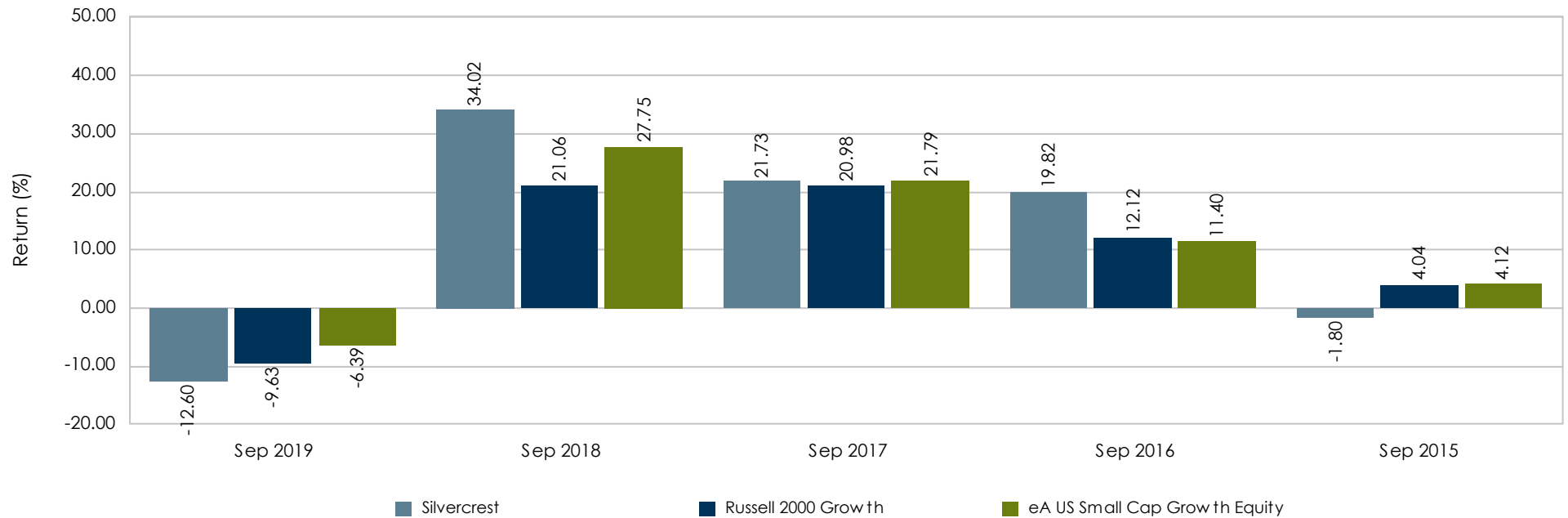
For the Periods Ending September 30, 2019



The rankings represent the portfolio's returns versus a peer universe. The rankings are on a scale of 1 to 100 with 1 being the best.

## Silvercrest

For the One Year Periods Ending September



Ranking	84	25	52	11	84
5th Percentile	4.83	45.98	32.40	22.70	13.63
25th Percentile	-2.47	33.93	24.44	15.16	7.40
50th Percentile	-6.39	27.75	21.79	11.40	4.12
75th Percentile	-10.77	21.99	19.09	6.88	0.08
95th Percentile	-16.01	13.86	11.32	1.40	-3.76
Observations	169	181	185	190	198

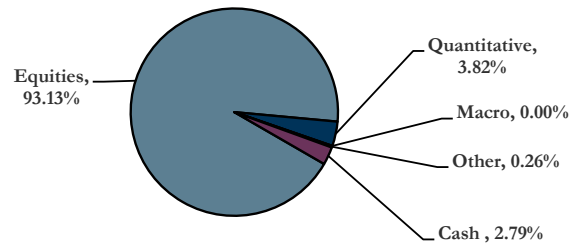
The rankings represent the portfolio's returns versus a peer universe. The rankings are on a scale of 1 to 100 with 1 being the best.

## Grosvenor Long/Short Equity

For the Periods Ending September 30, 2019

### Strategy Allocation

Market Value: \$370,595,403



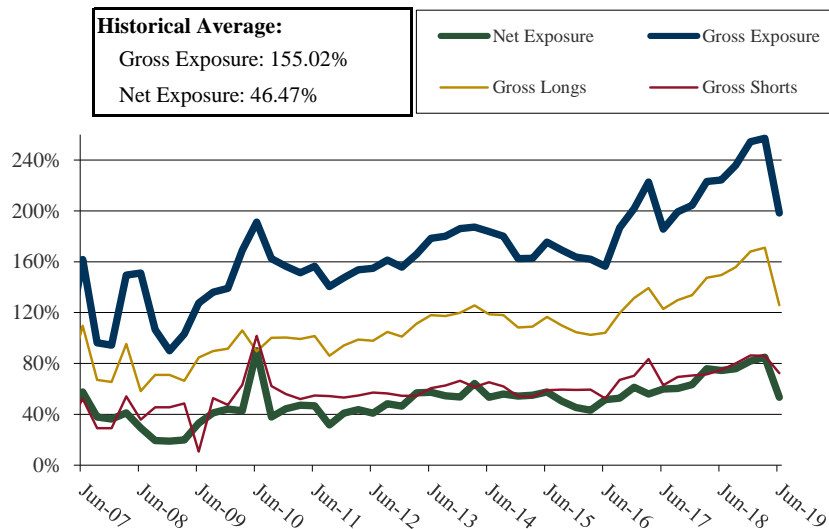
### Strategy

- Equity Long/Short Hedge Fund of Funds
- Performance Inception Date: November 2003

### Exposure

- Net Exposure: 53.59%
- Gross Exposure: 214.41%

### Historical Net & Gross Exposure



### Performance Goals

- Meet or exceed the return of the MSCI All Country World, over extended time periods (5 to 10 years).
- The volatility (standard deviation) of the portfolio should be less than two-thirds the volatility of the MSCI All Country World.
- The Beta of the portfolio relative to the MSCI All Country World Index should be < 0.7.

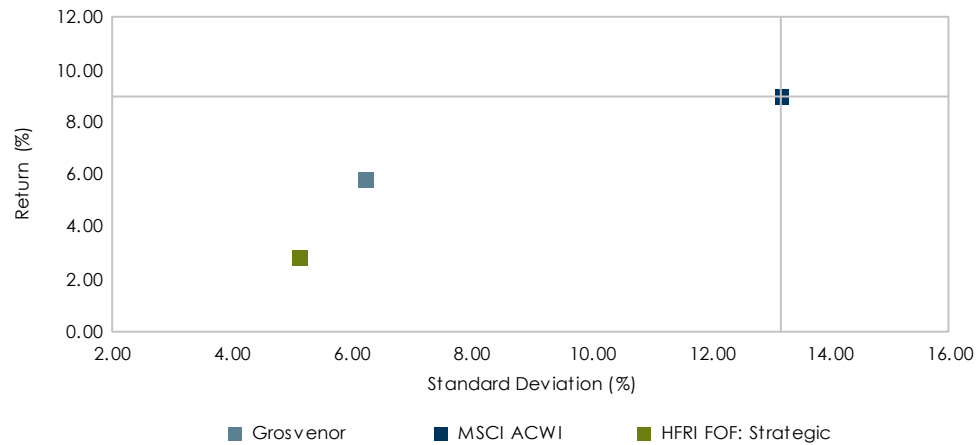
Characteristics provided by manager are the weighted average of GLSEF and GLSEF-B data.



## Grosvenor Long/Short Equity

For the Periods Ending September 30, 2019

### 10 Year Risk / Return



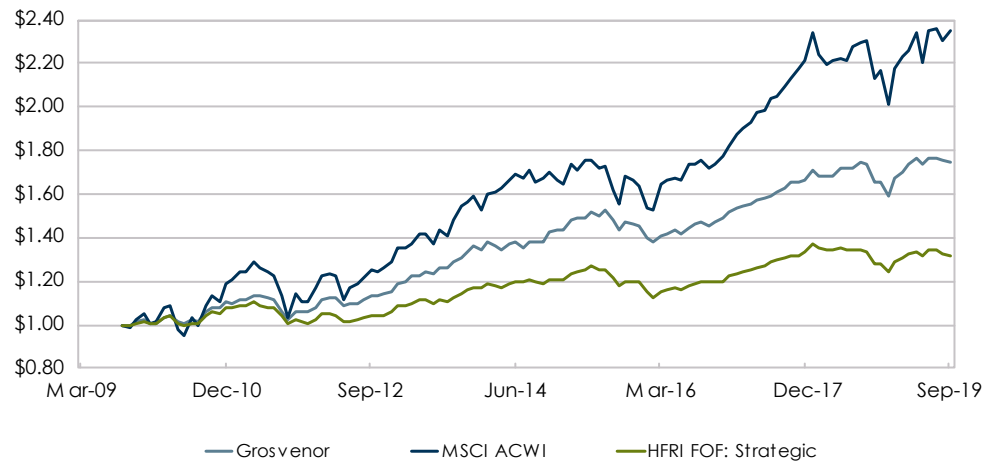
### 10 Year Portfolio Statistics

	Grosvenor	MSCI ACWI	HFRI FOF: Strategic
Return (%)	5.74	8.93	2.80
Standard Deviation (%)	6.25	13.20	5.14
Sharpe Ratio	0.84	0.64	0.45

### Benchmark Relative Statistics

Beta	0.40	1.11
R Squared (%)	73.01	83.68
Alpha (%)	1.99	2.61
Tracking Error (%)	8.50	2.59
Batting Average (%)	46.67	65.83
Up Capture (%)	43.76	130.33
Down Capture (%)	41.57	91.93

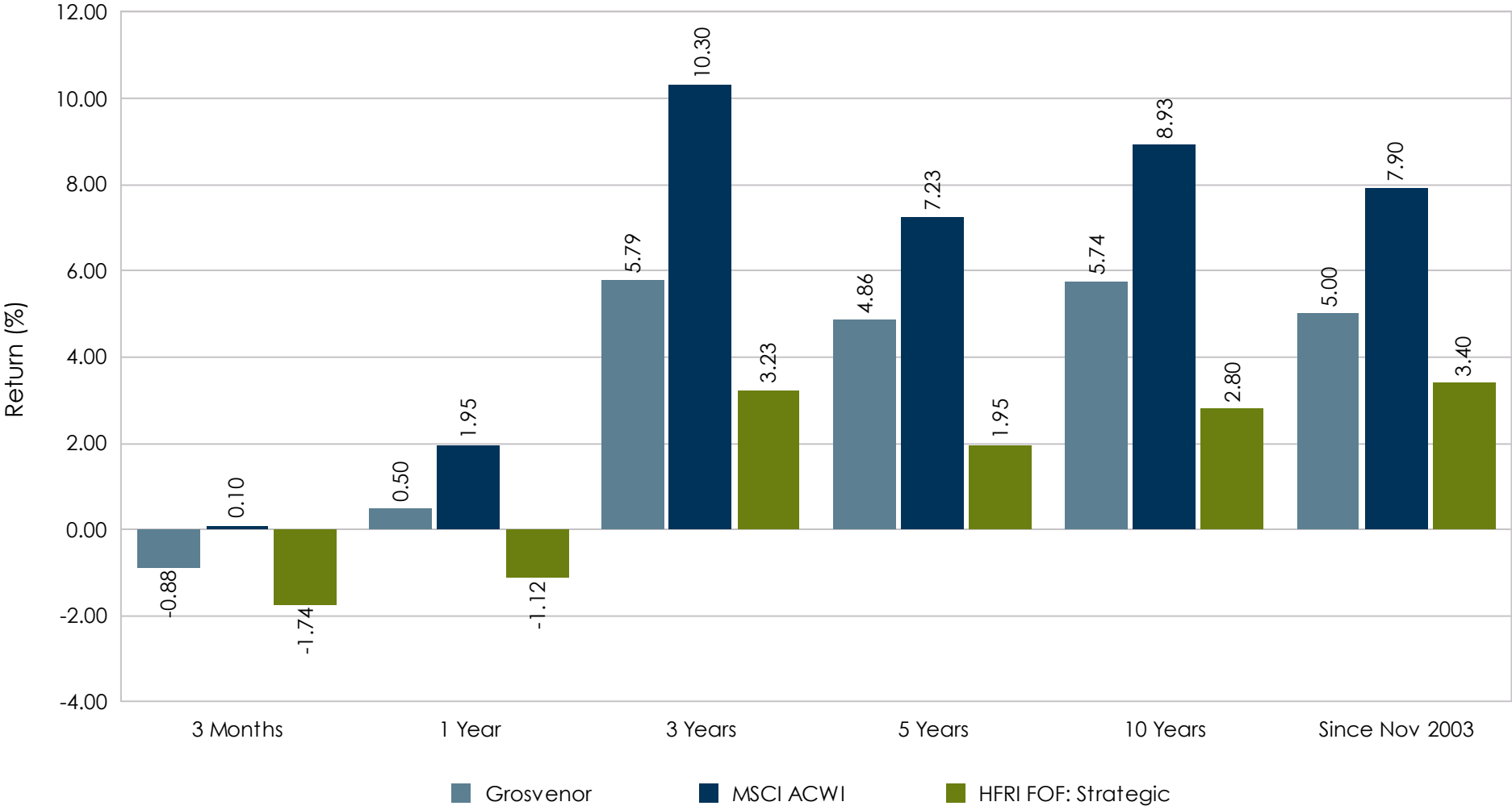
### 10 Year Growth of a Dollar



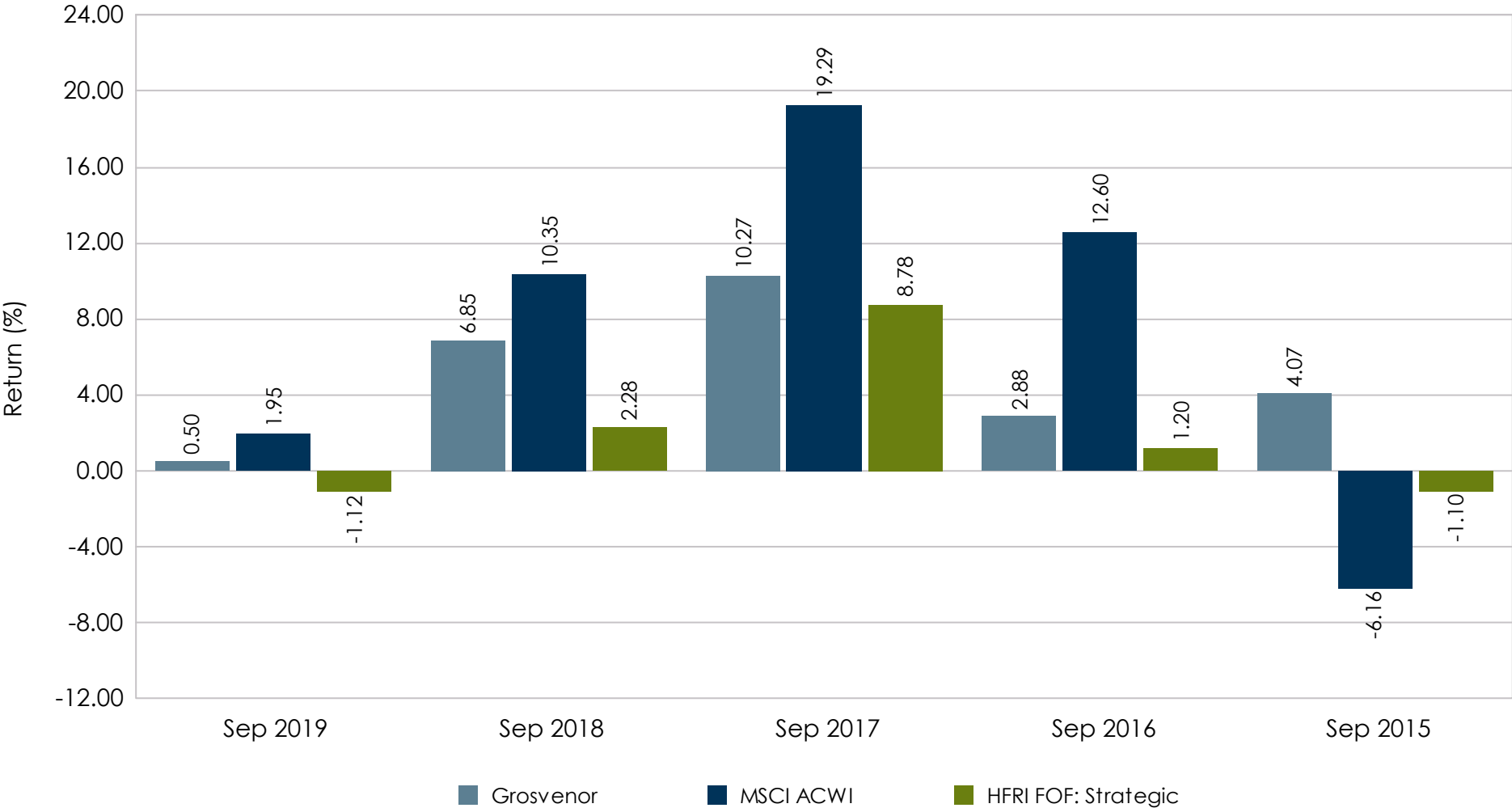
### 10 Year Return Analysis

	Grosvenor	MSCI ACWI	HFRI FOF: Strategic
Number of Months	120	120	120
Highest Monthly Return (%)	5.18	10.74	3.33
Lowest Monthly Return (%)	-4.90	-9.40	-4.49
Number of Positive Months	78	77	72
Number of Negative Months	42	43	48
% of Positive Months	65.00	64.17	60.00

**Grosvenor Long/Short Equity**  
*For the Periods Ending September 30, 2019*



**Grosvenor Long/Short Equity**  
*For the One Year Periods Ending September*



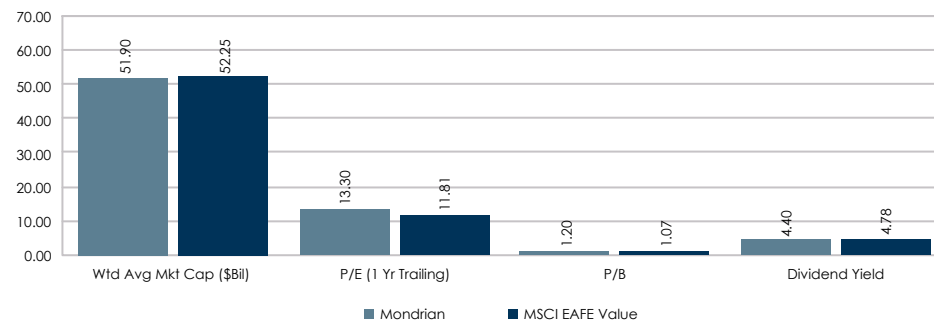
## Mondrian International

For the Periods Ending September 30, 2019

### Account Description

- **Strategy** Int'l Developed Markets Equity
- **Vehicle** Limited Partnership
- **Benchmark** MSCI EAFE Value
- **Performance Inception Date** May 2004
- **Fees** 70 bps on the first \$20 million, 50 bps on the next \$30 million, 40 bps on the next \$50 million, 30 bps thereafter

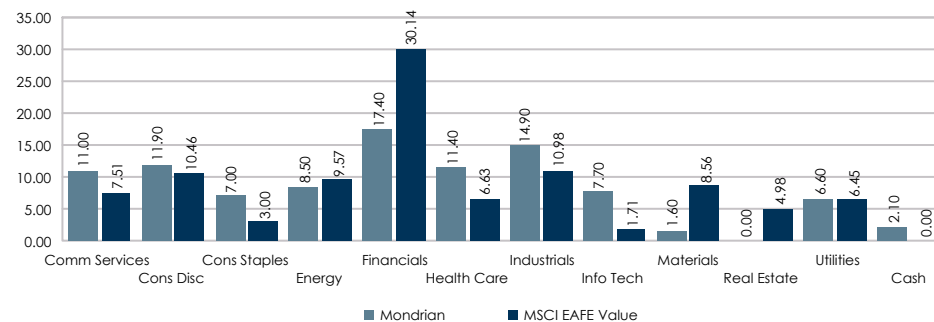
### Characteristics



### Performance Goals

- Outperform the MSCI EAFE Value.
- Over rolling three year periods, rank above the median in the eA EAFE All Cap Value Equity universe.

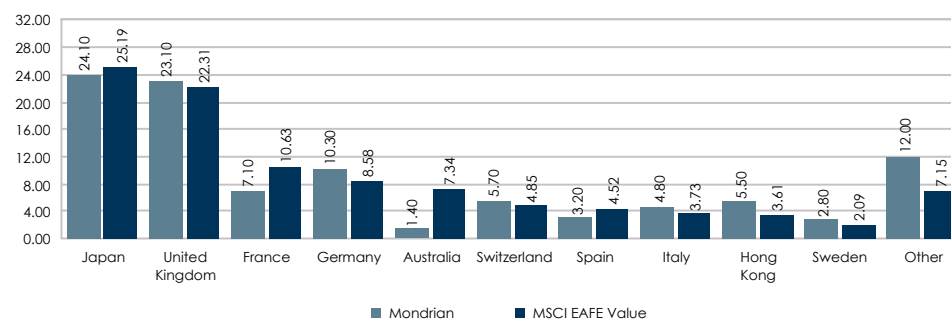
### Sector Allocation



### Dollar Growth Summary (\$000s)

	FYTD	YTD
<b>Beginning Market Value</b>	<b>140,801</b>	<b>127,462</b>
Net Additions	0	0
Return on Investment	-2,821	10,518
<b>Ending Market Value</b>	<b>137,979</b>	<b>137,979</b>

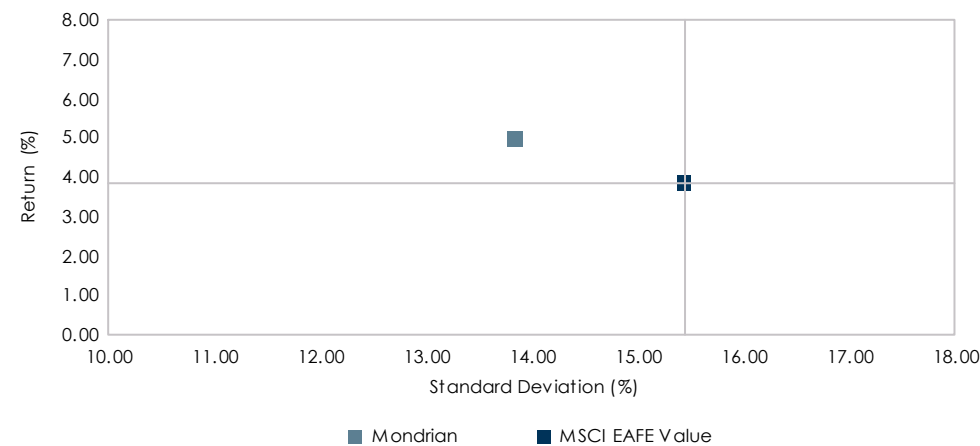
### Country Allocation



Mondrian International

For the Periods Ending September 30, 2019

10 Year Risk / Return



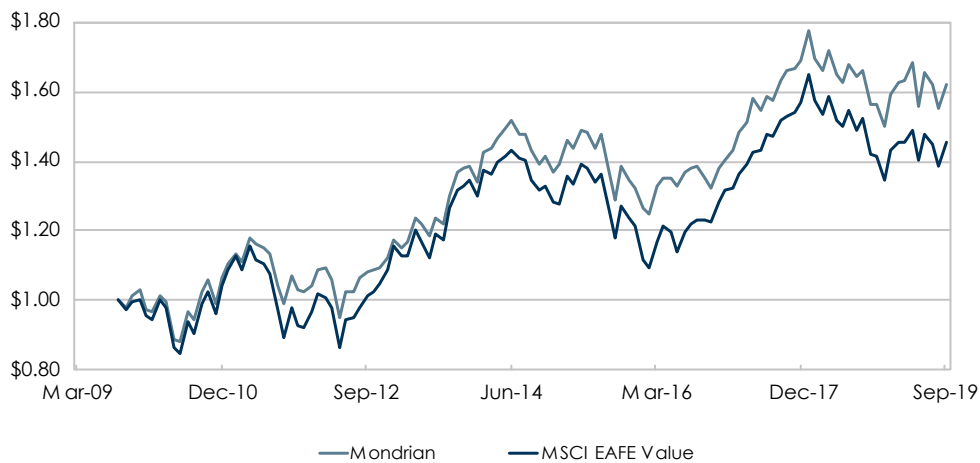
10 Year Portfolio Statistics

	Mondrian	MSCI EAFE Value
Return (%)	4.95	3.82
Standard Deviation (%)	13.85	15.44
Sharpe Ratio	0.32	0.22

Benchmark Relative Statistics

Beta	0.87
R Squared (%)	93.17
Alpha (%)	1.53
Tracking Error (%)	4.17
Batting Average (%)	52.50
Up Capture (%)	87.59
Down Capture (%)	85.17

10 Year Growth of a Dollar

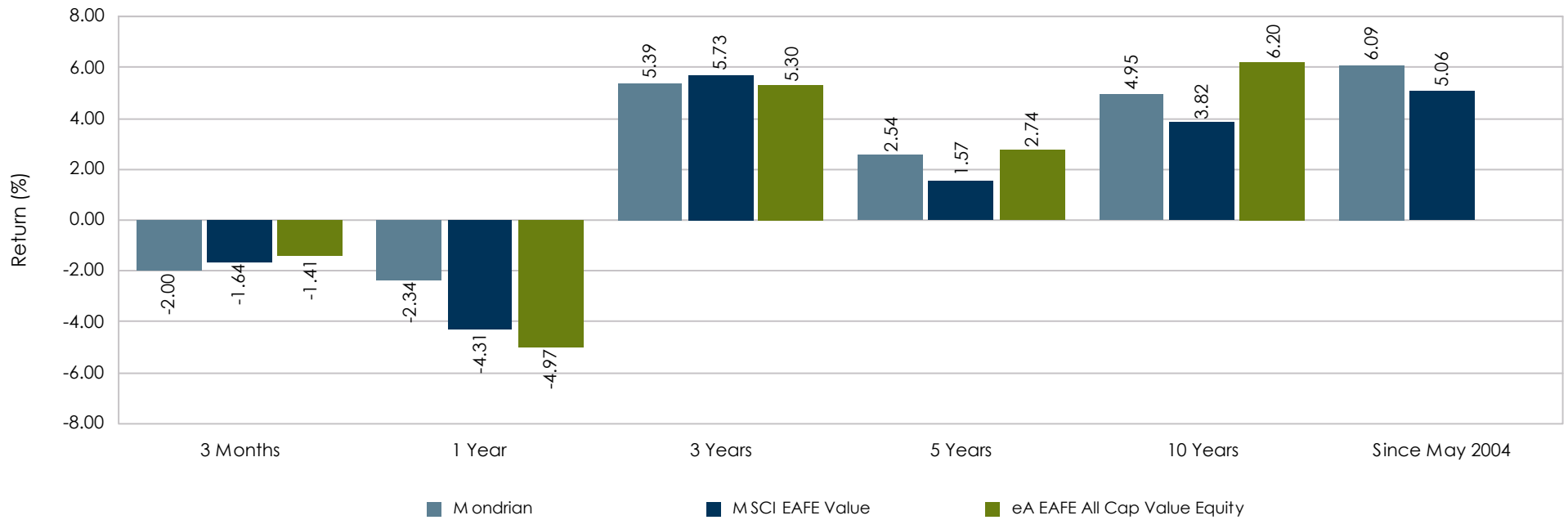


10 Year Return Analysis

	Mondrian	MSCI EAFE Value
Number of Months	120	120
Highest Monthly Return (%)	9.30	10.70
Lowest Monthly Return (%)	-10.81	-11.86
Number of Positive Months	66	64
Number of Negative Months	54	56
% of Positive Months	55.00	53.33

## Mondrian International

For the Periods Ending September 30, 2019

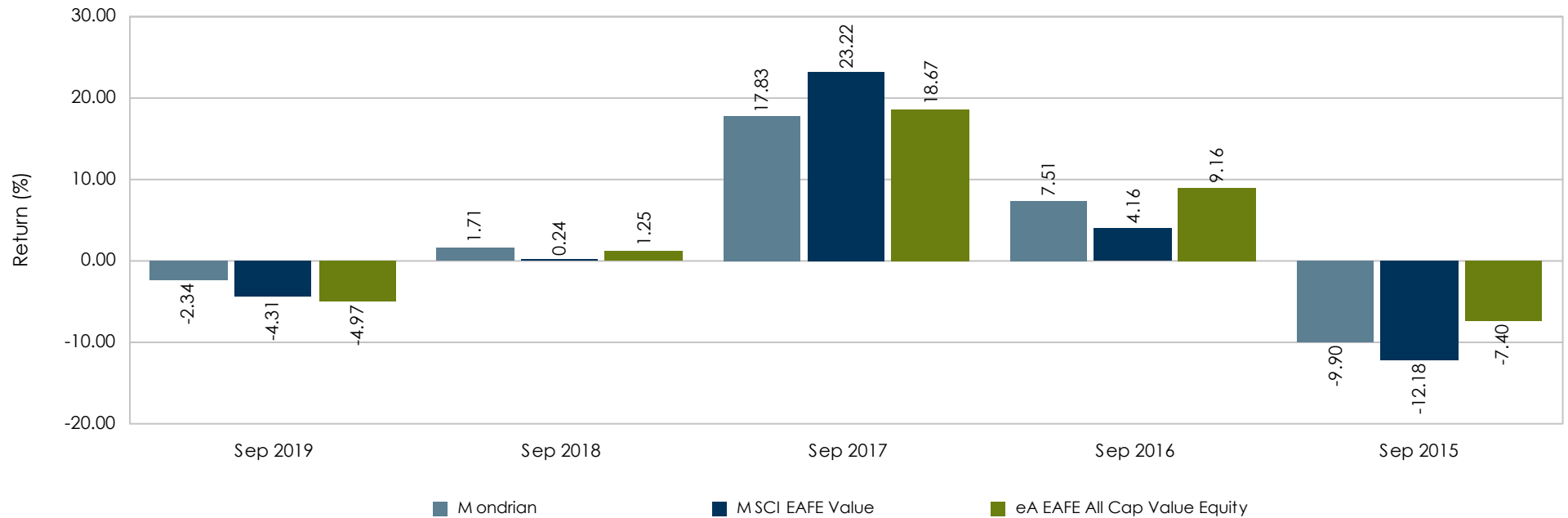


Ranking	65	35	50	55	65
5th Percentile	1.06	4.09	8.35	6.04	9.55
25th Percentile	-0.63	-1.54	6.84	5.20	7.94
50th Percentile	-1.41	-4.97	5.30	2.74	6.20
75th Percentile	-2.35	-6.86	3.43	1.74	4.46
95th Percentile	-2.99	-9.62	1.66	0.76	3.01
Observations	31	31	29	28	26

The rankings represent the portfolio's returns versus a peer universe. The rankings are on a scale of 1 to 100 with 1 being the best.

## Mondrian International

For the One Year Periods Ending September



Ranking	35	34	61	60	72
5th Percentile	4.09	6.72	25.72	15.57	-0.05
25th Percentile	-1.54	2.63	21.78	11.42	-4.46
50th Percentile	-4.97	1.25	18.67	9.16	-7.40
75th Percentile	-6.86	-0.31	16.67	5.98	-10.65
95th Percentile	-9.62	-2.64	12.55	3.16	-13.66
Observations	31	33	32	35	37

The rankings represent the portfolio's returns versus a peer universe. The rankings are on a scale of 1 to 100 with 1 being the best.

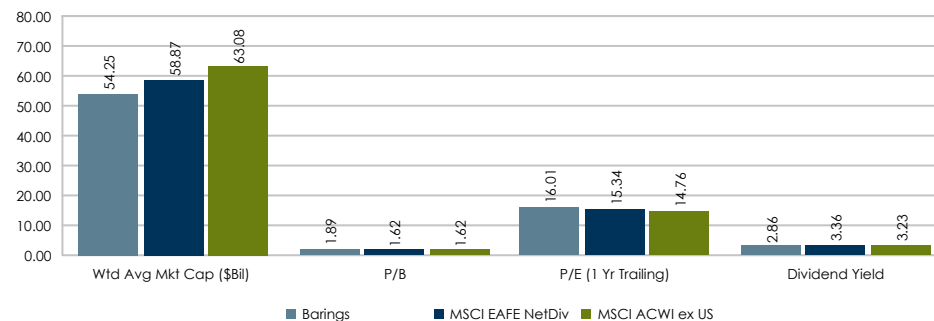
## Barings Focused EAFE Plus Equity

For the Periods Ending September 30, 2019

### Account Description

- **Strategy** Int'l Developed Markets Equity
- **Vehicle** Non-Mutual Commingled
- **Benchmarks** MSCI EAFE NetDiv and MSCI ACWI ex US
- **Performance Inception Date** March 2012
- **Fees** 40 bps base fee plus performance based fee

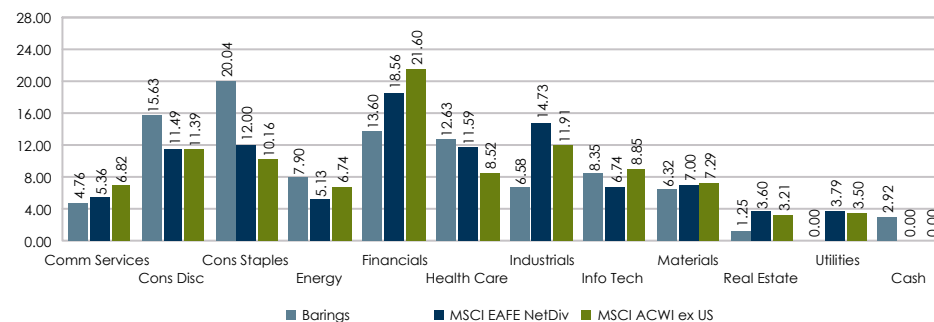
### Characteristics



### Performance Goals

- Outperform the MSCI EAFE NetDiv and MSCI ACWI ex US.
- Over rolling three year periods, rank above the median in the eA EAFE All Cap Equity universe.

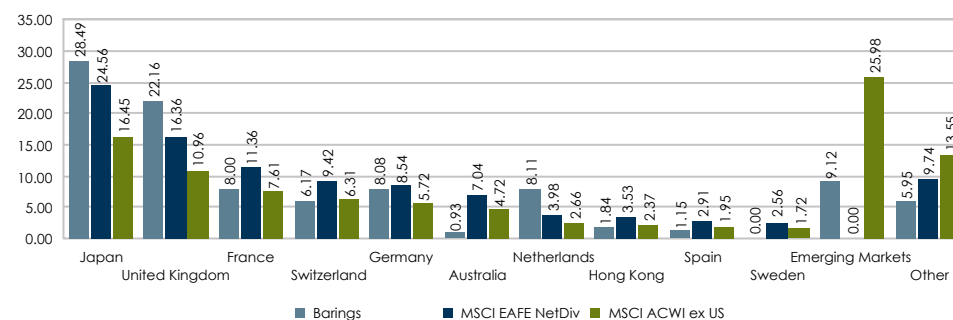
### Sector Allocation



### Dollar Growth Summary (\$000s)

	FYTD	YTD
<b>Beginning Market Value</b>	<b>120,844</b>	<b>105,466</b>
Net Additions	-257	-482
Return on Investment	-987	14,617
<b>Ending Market Value</b>	<b>119,600</b>	<b>119,600</b>

### Country Allocation



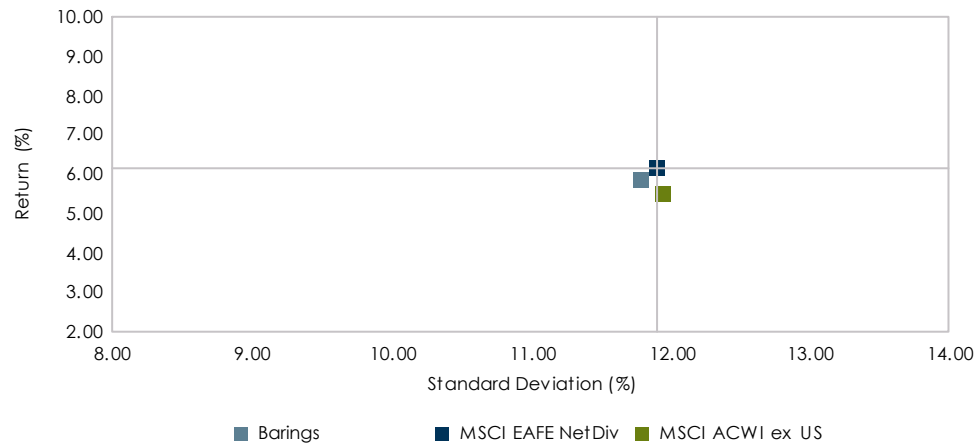
Characteristic and allocation charts represents data of the Baring Focused Int'l Equity (Non-Mutual Commingled).



## Barings Focused EAFE Plus Equity

For the Periods Ending September 30, 2019

### 7 Year Risk / Return



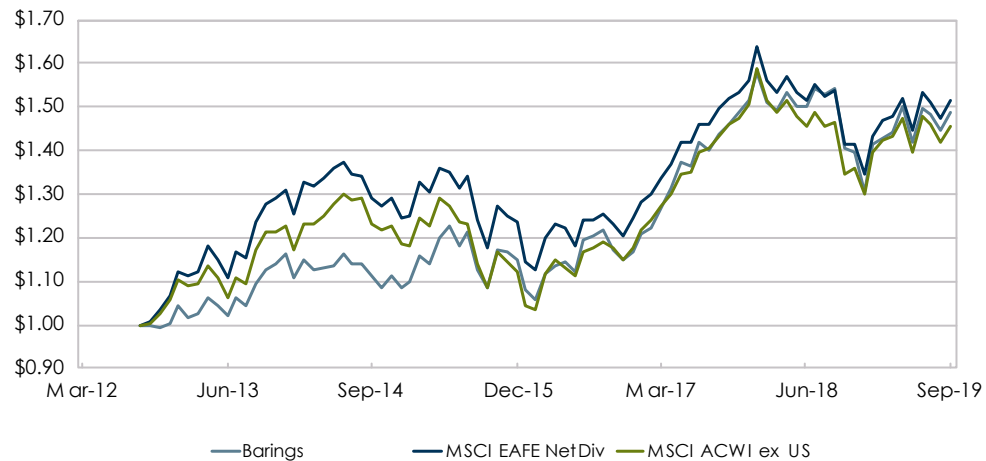
### 7 Year Portfolio Statistics

	Barings	MSCI EAFE NetDiv	MSCI ACWI ex US
Return (%)	5.82	6.12	5.50
Standard Deviation (%)	11.79	11.90	11.94
Sharpe Ratio	0.44	0.46	0.40

### Benchmark Relative Statistics

Beta	0.94	0.92
R Squared (%)	89.65	86.14
Alpha (%)	0.12	0.80
Tracking Error (%)	3.86	4.50
Batting Average (%)	54.76	52.38
Up Capture (%)	94.98	89.88
Down Capture (%)	96.53	87.67

### 7 Year Growth of a Dollar

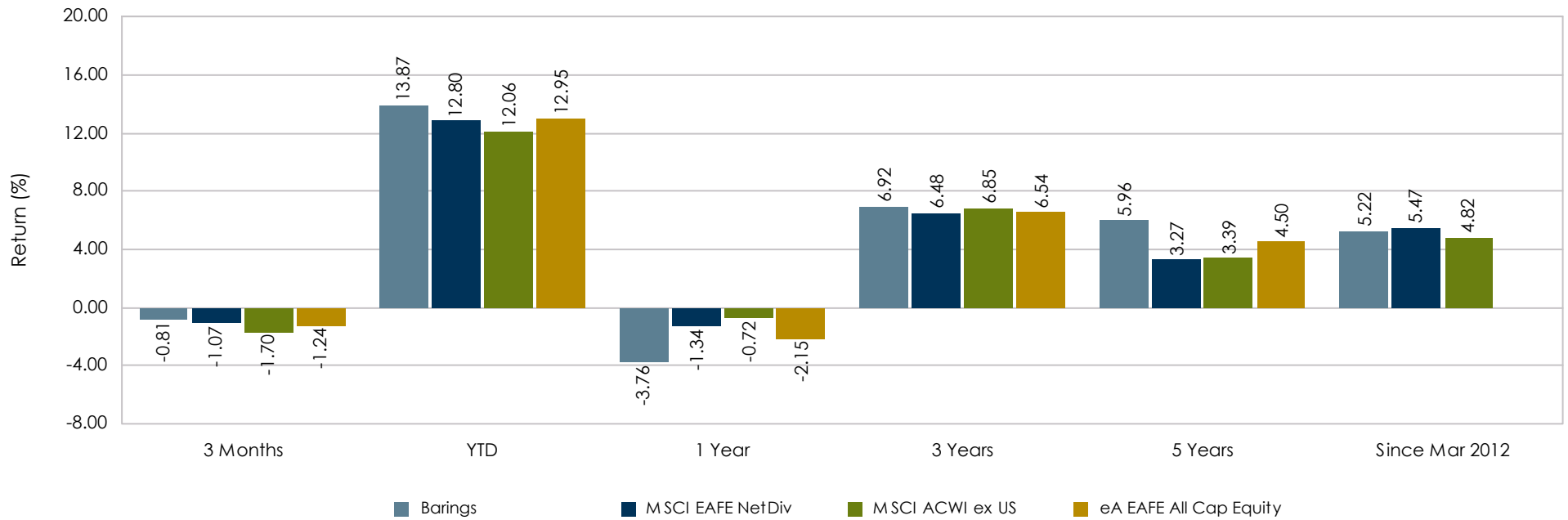


### 7 Year Return Analysis

	Barings	MSCI EAFE NetDiv	MSCI ACWI ex US
Number of Months	84	84	84
Highest Monthly Return (%)	8.31	7.82	8.21
Lowest Monthly Return (%)	-8.97	-7.96	-8.12
Number of Positive Months	47	47	50
Number of Negative Months	37	37	34
% of Positive Months	55.95	55.95	59.52

## Barings Focused EAFE Plus Equity

For the Periods Ending September 30, 2019

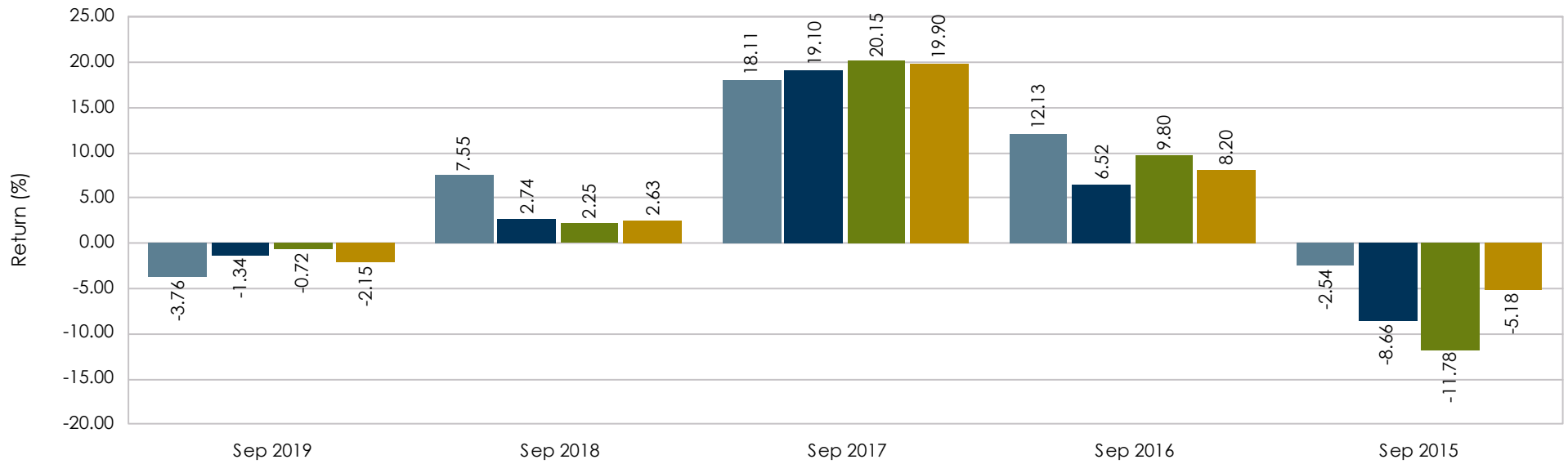


Ranking	41	46	67	42	19
5th Percentile	0.96	20.99	5.55	11.26	7.99
25th Percentile	-0.28	15.67	0.66	7.65	5.55
50th Percentile	-1.24	12.95	-2.15	6.54	4.50
75th Percentile	-1.94	9.97	-5.00	5.16	2.90
95th Percentile	-2.94	7.04	-9.04	2.66	1.23
Observations	126	126	126	120	108

The rankings represent the portfolio's returns versus a peer universe. The rankings are on a scale of 1 to 100 with 1 being the best.

### Barings Focused EAFE Plus Equity

For the One Year Periods Ending September



	Sep 2019	Sep 2018	Sep 2017	Sep 2016	Sep 2015
Ranking	67	12	66	19	19
5th Percentile	5.55	10.14	28.36	16.41	-0.32
25th Percentile	0.66	5.54	21.84	10.99	-3.28
50th Percentile	-2.15	2.63	19.90	8.20	-5.18
75th Percentile	-5.00	0.77	17.06	5.60	-7.79
95th Percentile	-9.04	-1.67	12.88	3.35	-12.48
Observations	126	135	125	123	130

The rankings represent the portfolio's returns versus a peer universe. The rankings are on a scale of 1 to 100 with 1 being the best.

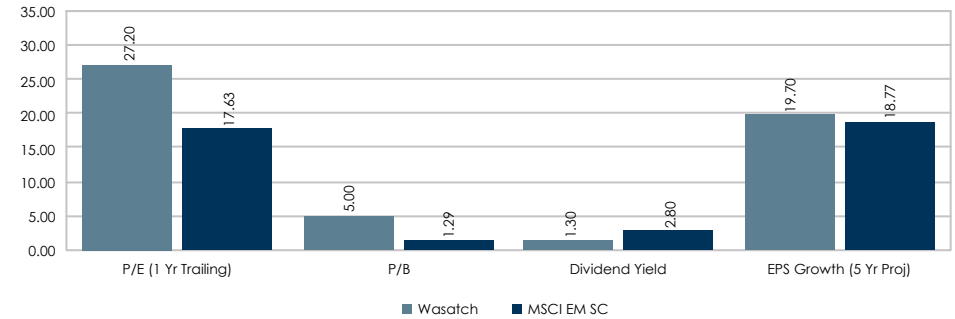
## Wasatch Emerging Markets

For the Periods Ending September 30, 2019

### Account Description

- **Strategy** Emerging Markets Equity
- **Vehicle** Non-Mutual Commingled
- **Benchmark** MSCI EM SC
- **Performance Inception Date** September 2012
- **Fees** 150 bps

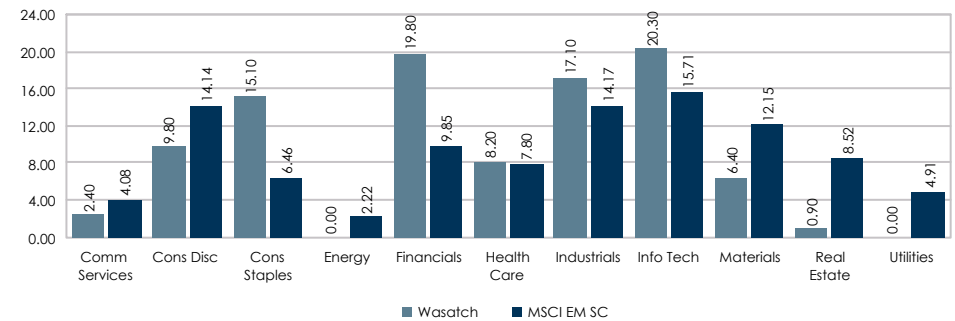
### Characteristics



### Performance Goals

- Outperform the MSCI EM SC over a market cycle.
- Rank above median in the eA Global Emerging Mkts Equity universe over a market cycle.

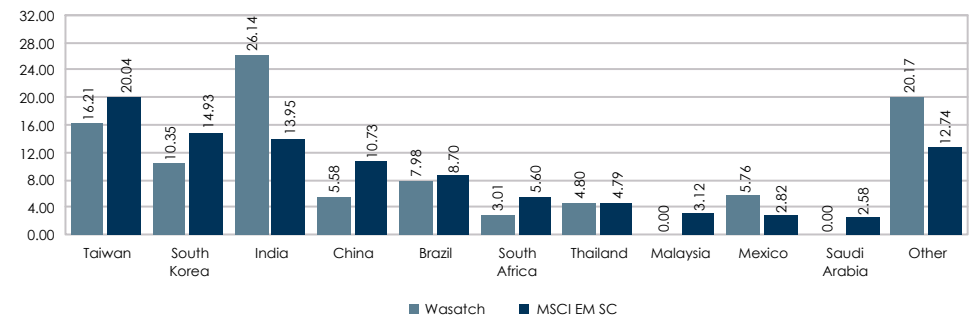
### Sector Allocation



### Dollar Growth Summary (\$000s)

	FYTD	YTD
<b>Beginning Market Value</b>	<b>36,169</b>	<b>31,775</b>
Net Additions	-135	-396
Return on Investment	504	5,159
<b>Ending Market Value</b>	<b>36,538</b>	<b>36,538</b>

### Country Allocation

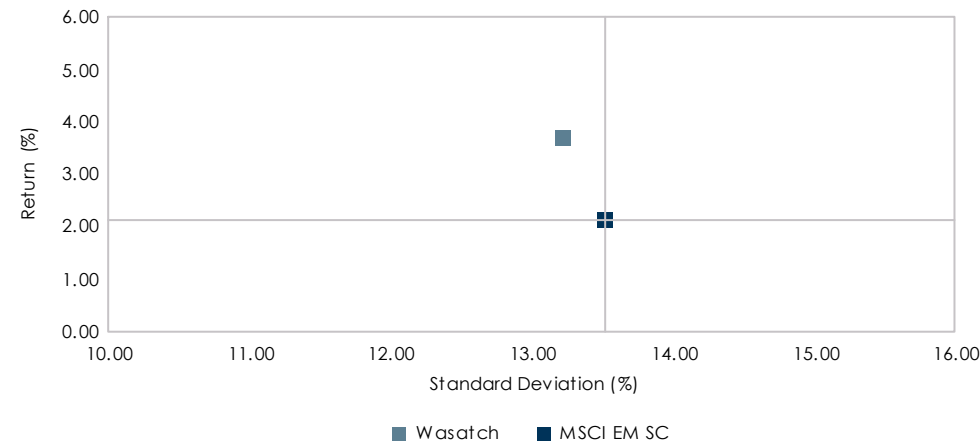


Characteristic and allocation charts represents data of the Wasatch Emerging Markets Small Cap CIT (Non-Mutual Commingled).

Wasatch Emerging Markets

For the Periods Ending September 30, 2019

7 Year Risk / Return



7 Year Portfolio Statistics

	Wasatch	MSCI EM SC
Return (%)	3.67	2.12
Standard Deviation (%)	13.22	13.52
Sharpe Ratio	0.23	0.11

Benchmark Relative Statistics

Beta	0.87
R Squared (%)	78.72
Alpha (%)	1.89
Tracking Error (%)	6.36
Batting Average (%)	50.00
Up Capture (%)	98.89
Down Capture (%)	91.78

7 Year Growth of a Dollar

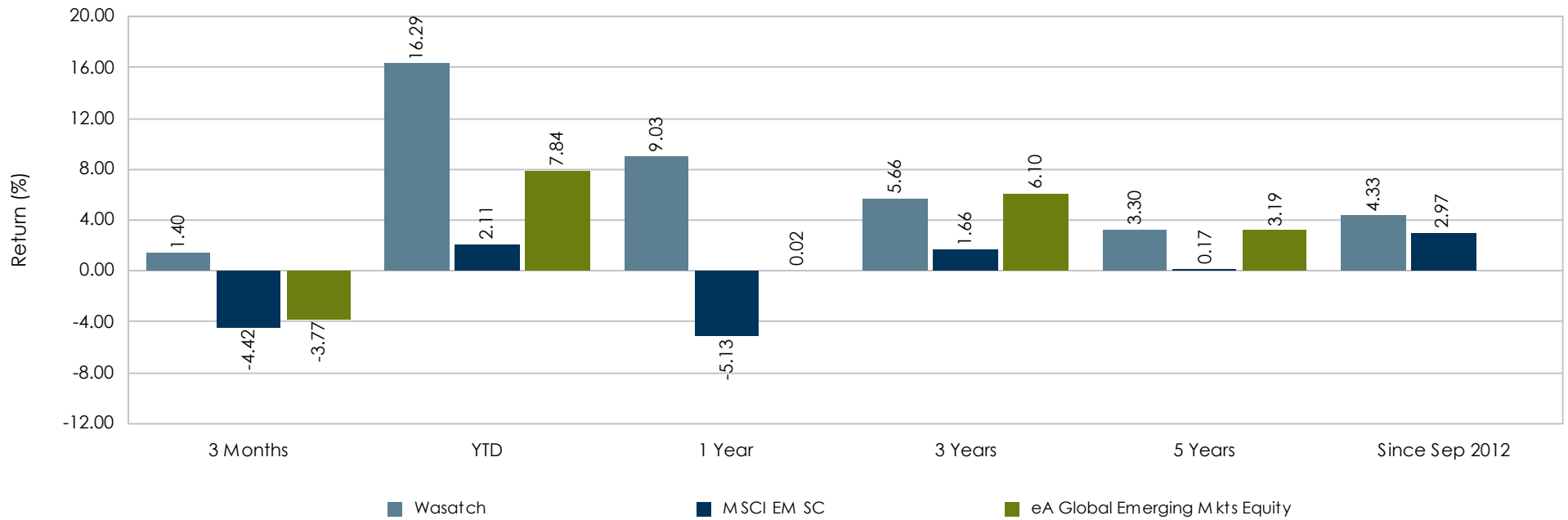


7 Year Return Analysis

	Wasatch	MSCI EM SC
Number of Months	84	84
Highest Monthly Return (%)	8.10	10.01
Lowest Monthly Return (%)	-12.45	-10.53
Number of Positive Months	48	50
Number of Negative Months	36	34
% of Positive Months	57.14	59.52

## Wasatch Emerging Markets

For the Periods Ending September 30, 2019

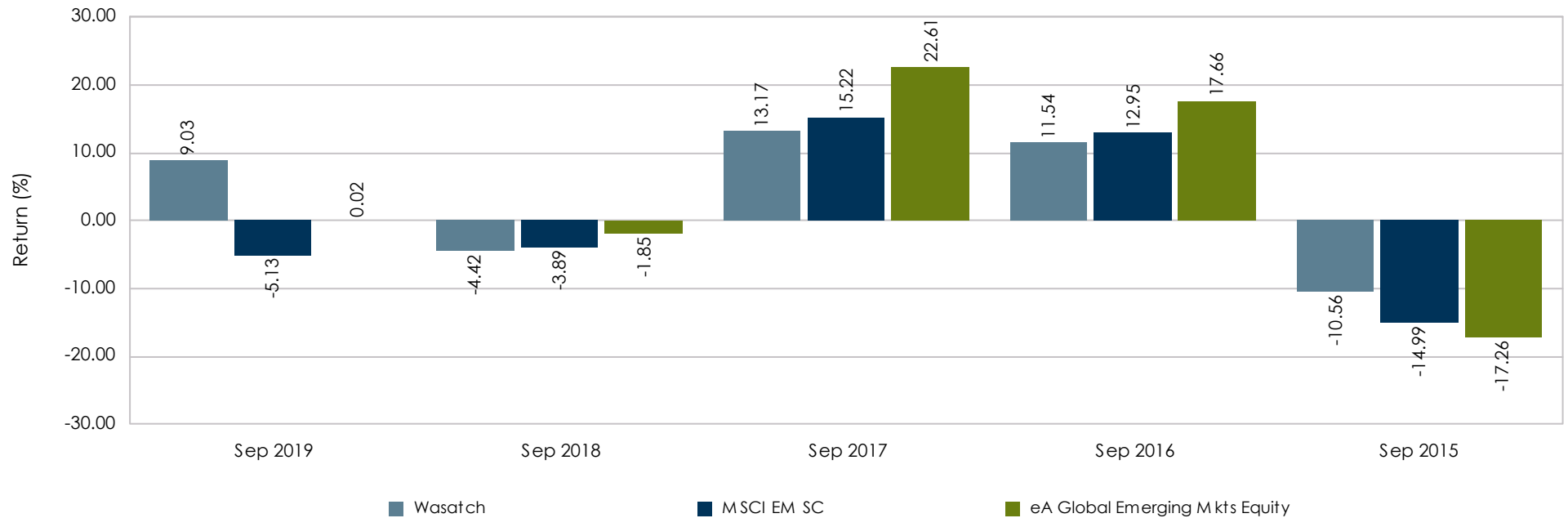


Ranking	2	5	5	64	47
5th Percentile	-1.00	16.25	8.98	10.27	6.84
25th Percentile	-2.54	11.32	3.32	7.78	4.48
50th Percentile	-3.77	7.84	0.02	6.10	3.19
75th Percentile	-4.58	5.11	-2.62	4.74	2.17
95th Percentile	-6.25	1.61	-5.84	2.21	0.62
Observations	470	470	468	434	382

The rankings represent the portfolio's returns versus a peer universe. The rankings are on a scale of 1 to 100 with 1 being the best.

## Wasatch Emerging Markets

For the One Year Periods Ending September



Ranking	5	74	94	91	9
5th Percentile	8.98	4.54	31.47	26.96	-8.75
25th Percentile	3.32	0.24	26.11	21.10	-14.36
50th Percentile	0.02	-1.85	22.61	17.66	-17.26
75th Percentile	-2.62	-4.55	18.46	15.24	-19.67
95th Percentile	-5.84	-9.73	12.65	9.87	-24.88
Observations	468	518	498	480	441

The rankings represent the portfolio's returns versus a peer universe. The rankings are on a scale of 1 to 100 with 1 being the best.

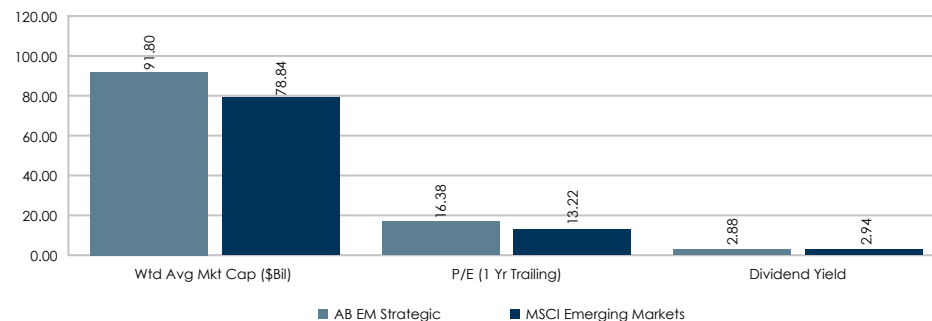
## AB EM Strategic Core Equity Fund

For the Periods Ending September 30, 2019

### Account Description

- **Strategy** Emerging Markets Equity
- **Vehicle** Non-Mutual Commingled
- **Benchmark** MSCI Emerging Markets
- **Performance Inception Date** November 2016
- **Fees** 65 bps (preferred fee)

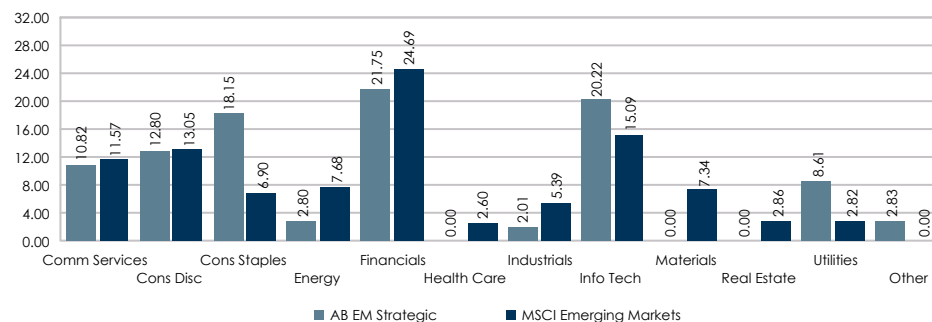
### Characteristics



### Performance Goals

- Outperform the MSCI Emerging Markets.
- Over rolling three year periods, rank above the median in the eA Global Emerging Mkts Equity universe.

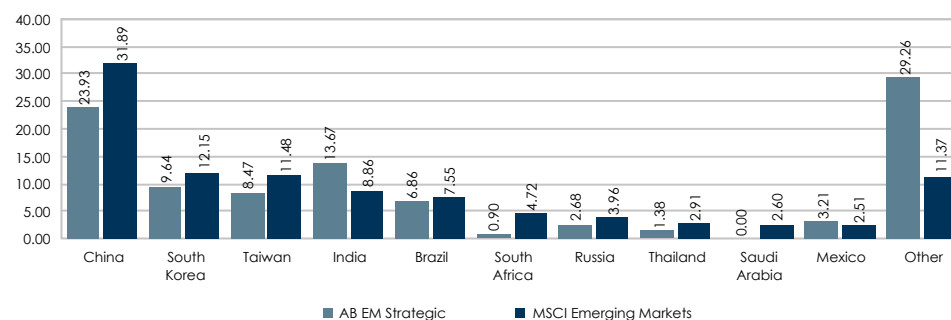
### Sector Allocation



### Dollar Growth Summary (\$000s)

	FYTD	YTD
<b>Beginning Market Value</b>	<b>80,267</b>	<b>72,875</b>
Net Additions	0	0
Return on Investment	-1,743	5,649
<b>Ending Market Value</b>	<b>78,524</b>	<b>78,524</b>

### Country Allocation

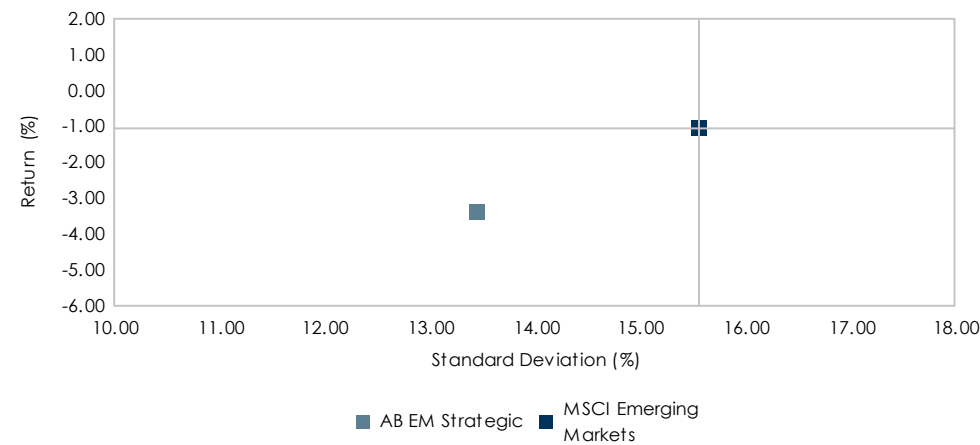




AB EM Strategic Core Equity Fund

For the Periods Ending September 30, 2019

2 Year Risk / Return



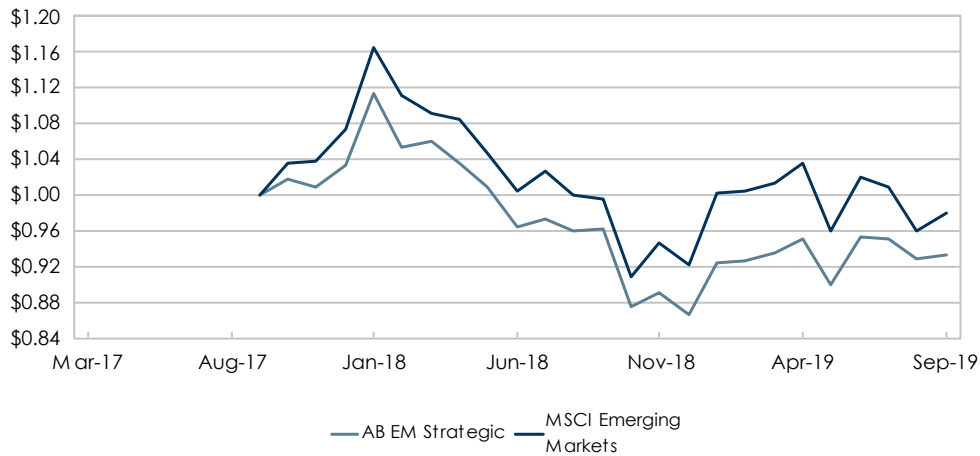
2 Year Portfolio Statistics

	AB EM Strategic	MSCI Emerging Markets
Return (%)	-3.37	-1.04
Standard Deviation (%)	13.45	15.56
Sharpe Ratio	-0.39	-0.19

Benchmark Relative Statistics

Beta	0.83
R Squared (%)	91.60
Alpha (%)	-2.62
Tracking Error (%)	4.73
Batting Average (%)	37.50
Up Capture (%)	66.63
Down Capture (%)	86.25

2 Year Growth of a Dollar

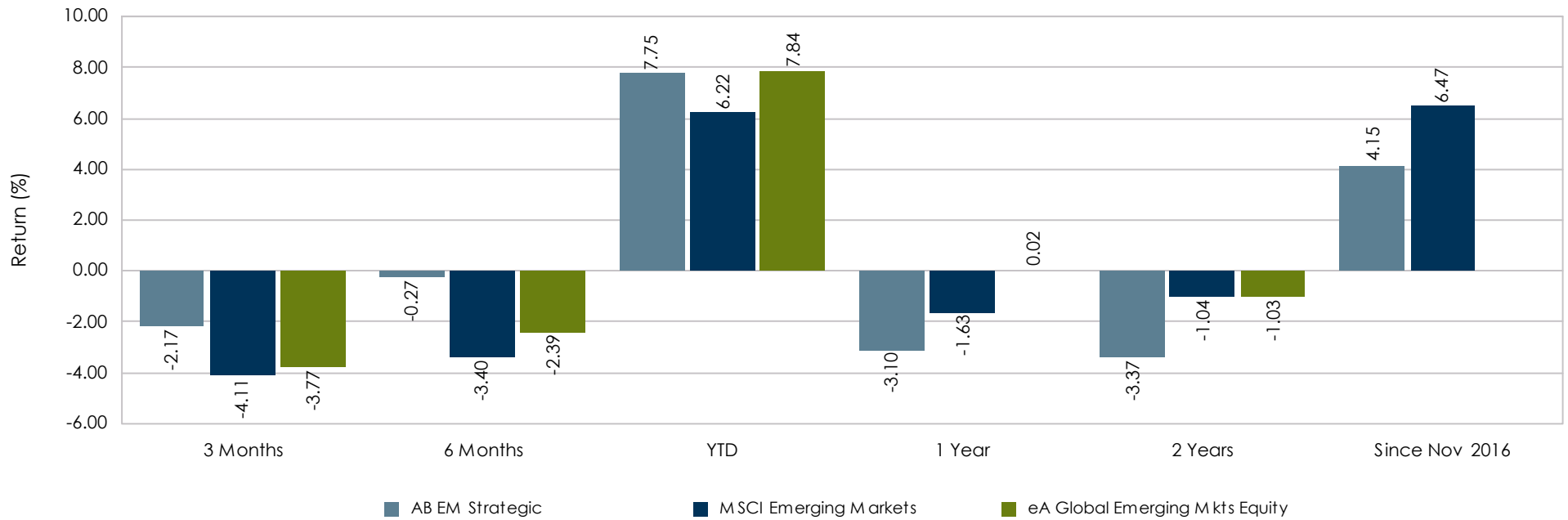


2 Year Return Analysis

	AB EM Strategic	MSCI Emerging Markets
Number of Months	24	24
Highest Monthly Return (%)	7.70	8.76
Lowest Monthly Return (%)	-9.21	-8.70
Number of Positive Months	13	12
Number of Negative Months	11	12
% of Positive Months	54.17	50.00

### AB EM Strategic Core Equity Fund

For the Periods Ending September 30, 2019

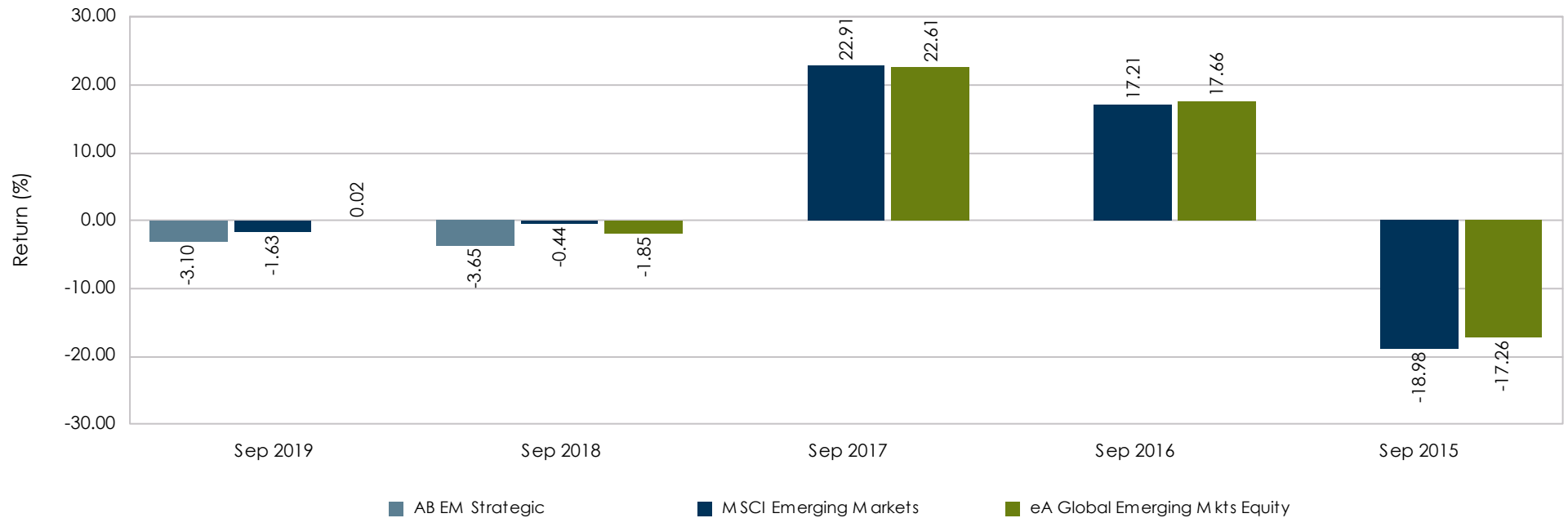


Ranking	20	22	51	80	84
5th Percentile	-1.00	2.23	16.25	8.98	3.76
25th Percentile	-2.54	-0.54	11.32	3.32	0.73
50th Percentile	-3.77	-2.39	7.84	0.02	-1.03
75th Percentile	-4.58	-3.67	5.11	-2.62	-2.54
95th Percentile	-6.25	-5.82	1.61	-5.84	-4.80
Observations	470	470	470	468	454

The rankings represent the portfolio's returns versus a peer universe. The rankings are on a scale of 1 to 100 with 1 being the best.

### AB EM Strategic Core Equity Fund

For the One Year Periods Ending September



Ranking	80	67			
5th Percentile	8.98	4.54	31.47	26.96	-8.75
25th Percentile	3.32	0.24	26.11	21.10	-14.36
50th Percentile	0.02	-1.85	22.61	17.66	-17.26
75th Percentile	-2.62	-4.55	18.46	15.24	-19.67
95th Percentile	-5.84	-9.73	12.65	9.87	-24.88
Observations	468	518	498	480	441

The rankings represent the portfolio's returns versus a peer universe. The rankings are on a scale of 1 to 100 with 1 being the best.

## Private Equity - Active Funds

For the Period Ending September 30, 2019

## Summary of Cash Flows for 6 Months

Cash Outflows	Cash Inflows	Net Cash Flows
-22,792,432	15,495,839	-7,296,593

## Summary of Portfolio Inception to Date (Category totals include active and closed funds)

	Inception Date	Committed	Drawn to Date	Remaining Commitment	Distributions to Date	Adjusted Ending Value	Total Value	Total Value to Paid-in
<b>Total</b>	<b>Feb-98</b>	<b>725,700,000</b>	<b>571,999,269</b>	<b>175,967,401</b>	<b>641,816,001</b>	<b>224,441,668</b>	<b>866,257,669</b>	<b>1.51x</b>
<b>Buyout</b>	<b>Apr-99</b>	<b>253,200,000</b>	<b>200,311,881</b>	<b>64,400,166</b>	<b>252,038,918</b>	<b>62,565,738</b>	<b>314,604,656</b>	<b>1.57x</b>
Levine Leichtman	Feb-03	10,000,000	10,612,096	-	18,254,382	74,621	18,329,003	1.73x
Thompson Street C.P. II	Dec-06	10,000,000	10,020,777	655,026	19,113,247	1,976,325	21,089,572	2.10x
Arsenal Capital Partners II	Dec-06	15,000,000	14,991,977	668,860	29,926,943	5,068,515	34,995,458	2.33x
Sun Capital Partners V	May-07	12,500,000	12,500,000	-	11,216,347	3,050,127	14,266,474	1.14x
Calera Capital Fund IV	Apr-08	10,000,000	8,835,037	1,236,975	13,709,533	-	13,709,533	1.55x
Levine Leichtman IV	Sep-08	10,000,000	9,284,222	1,065,574	15,354,090	1,055,220	16,409,310	1.77x
Thompson Street Capital III	Oct-11	7,500,000	7,519,515	499,214	7,632,084	4,270,777	11,902,861	1.58x
Arsenal Capital Partners III	Apr-12	7,500,000	7,625,862	1,270,818	14,425,141	2,637,893	17,063,034	2.24x
Apollo Investment Fund VIII	Feb-14	7,500,000	7,469,849	1,210,605	2,924,606	6,809,508	9,734,114	1.30x
Francisco Partners Fund IV	Apr-15	8,000,000	7,796,000	204,000	4,220,000	10,369,398	14,589,398	1.87x
CenterOak Equity Fund I	Dec-15	7,500,000	6,216,138	1,724,070	1,957,465	5,853,032	7,810,497	1.26x
Thompson Street Capital Partners IV	Jan-16	7,500,000	7,079,042	992,305	1,546,342	7,478,093	9,024,435	1.27x
Leonard Green Equity Investors VII	May-17	7,500,000	5,264,244	2,265,455	29,699	5,994,732	6,024,431	1.14x
Francisco Partners Fund V	Jul-18	10,000,000	5,125,000	4,875,000	-	5,453,397	5,453,397	1.06x
Thompson Street Capital V	Aug-18	12,700,000	1,723,330	10,976,670	-	1,482,771	1,482,771	0.86x
Apollo Investment Fund IX	Mar-19	13,000,000	1,244,406	11,755,594	135	991,329	991,464	0.80x
Leonard Green VIII		15,000,000	-	15,000,000	-	-	-	-
Leonard Green Jade		10,000,000	-	10,000,000	-	-	-	-

## Private Equity - Active Funds

For the Period Ending September 30, 2019

## Summary of Portfolio Inception to Date (Category totals include active and closed funds)

	Inception Date	Committed	Drawn to Date	Remaining Commitment	Distributions to Date	Adjusted Ending Value	Total Value	Total Value to Paid-in
<b>Distressed</b>	Feb-98	<b>143,500,000</b>	<b>126,712,509</b>	<b>17,602,815</b>	<b>163,766,045</b>	<b>22,273,223</b>	<b>186,039,268</b>	<b>1.47x</b>
Oaktree Opportunities Fund V	Jun-04	4,000,000	4,000,000	-	6,608,433	<b>2,236</b>	6,610,669	1.65x
Oaktree Opportunities Fund VI	Aug-05	4,000,000	4,000,000	-	6,326,002	<b>641</b>	6,326,643	1.58x
Siguler Guff Dist Opp II	Sep-05	20,000,000	20,000,000	-	27,923,699	<b>310,120</b>	28,233,819	1.41x
Oaktree Opportunities VII A	Mar-07	7,500,000	7,500,000	-	10,045,026	<b>367,426</b>	10,412,452	1.39x
Oaktree Opportunities VII B	Jun-08	7,500,000	6,750,000	750,000	11,529,006	<b>162,843</b>	11,691,849	1.73x
Siguler Guff Dist Opp III	Sep-08	15,000,000	14,550,000	450,000	21,006,293	<b>2,315,203</b>	23,321,496	1.60x
Oaktree Opportunities VIII	Dec-09	7,500,000	7,500,000	-	10,515,897	<b>386,082</b>	10,901,979	1.45x
Oaktree Opportunities IX	Mar-13	7,500,000	7,500,000	-	3,217,158	<b>5,756,232</b>	8,973,390	1.20x
Oaktree European Dislocation Fund	Nov-13	7,500,000	4,293,000	3,207,000	4,570,399	<b>283,801</b>	4,854,200	1.13x
Oaktree Opportunities Fund X	Jul-15	7,500,000	6,975,000	1,275,000	1,667,949	<b>7,048,738</b>	8,716,687	1.25x
Apollo EPF III	Jan-18	10,000,000	5,138,593	5,358,315	498,631	<b>4,755,071</b>	5,253,702	1.02x
Oaktree Opportunities Fund Xb	Jun-18	7,500,000	937,500	6,562,500	-	<b>884,830</b>	884,830	0.94x
<b>Emerging Markets Focused</b>	Mar-12	<b>7,500,000</b>	<b>7,934,303</b>	<b>1,022,792</b>	<b>3,316,702</b>	<b>6,664,107</b>	<b>9,980,809</b>	<b>1.26x</b>
Actis EM IV	Mar-12	7,500,000	7,934,303	1,022,792	3,316,702	<b>6,664,107</b>	9,980,809	1.26x
<b>Mezzanine</b>	Mar-99	<b>49,500,000</b>	<b>51,446,479</b>	<b>4,726,007</b>	<b>72,644,713</b>	<b>1,443,362</b>	<b>74,088,075</b>	<b>1.44x</b>
TCW Crescent IV	Jun-06	10,000,000	9,873,180	1,921,076	11,226,828	<b>21,910</b>	11,248,738	1.14x
Newstone Capital Partners	Nov-06	5,000,000	7,114,989	-	9,069,321	-	9,069,321	1.27x
TCW Mezzanine Fund V	Mar-08	10,000,000	7,507,009	2,492,991	10,456,648	<b>258,860</b>	10,715,508	1.43x
Newstone Capital Partners II	Dec-10	7,500,000	10,036,257	311,940	11,237,742	<b>1,162,592</b>	12,400,334	1.24x
<b>Other</b>	Feb-13	<b>46,500,000</b>	<b>23,736,400</b>	<b>25,826,313</b>	<b>8,990,534</b>	<b>19,861,439</b>	<b>28,851,973</b>	<b>1.22x</b>
EnCap Energy Fund IX	Feb-13	6,500,000	7,295,677	440,259	5,009,668	<b>4,381,748</b>	9,391,416	1.29x
EnCap Energy Fund X	Apr-15	7,500,000	6,592,074	1,384,348	1,217,051	<b>6,680,904</b>	7,897,955	1.20x
ArcLight Energy Partners VI	Aug-15	7,500,000	7,807,282	1,043,073	2,763,815	<b>7,061,363</b>	9,825,178	1.26x
EnCap Energy Fund XI	Jul-17	10,000,000	2,041,367	7,958,633	-	<b>1,737,424</b>	1,737,424	0.85x
ArcLight Energy Partners Fund VII, L.P		15,000,000	-	15,000,000	-	-	-	-
<b>Secondary Fund of Funds</b>	Dec-05	<b>20,000,000</b>	<b>21,226,531</b>	-	<b>27,903,793</b>	<b>1,675,703</b>	<b>29,579,496</b>	<b>1.39x</b>
Lexington VI	Dec-05	20,000,000	21,226,531	-	27,903,793	<b>1,675,703</b>	29,579,496	1.39x

## Private Equity - Active Funds

For the Period Ending September 30, 2019

## Summary of Portfolio Inception to Date (Category totals include active and closed funds)

	Inception Date	Committed	Drawn to Date	Remaining Commitment	Distributions to Date	Adjusted Ending Value	Total Value	Total Value to Paid-in
<b>Venture Capital</b>	Jul-99	<b>205,500,000</b>	<b>140,631,166</b>	<b>62,389,308</b>	<b>113,155,296</b>	<b>109,958,096</b>	<b>223,113,392</b>	<b>1.59x</b>
Lightspeed Venture Partners VI (WPG)	Oct-00	12,000,000	11,010,270	-	10,478,573	-	10,478,573	0.95x
Accel Europe	May-01	10,000,000	10,000,000	-	12,403,731	<b>897,787</b>	13,301,518	1.33x
Knightsbridge Fund VI	Dec-04	12,000,000	10,960,000	1,040,000	11,256,368	<b>6,212,403</b>	17,468,771	1.59x
Firstmark I (Pequot, Firstmark IV)	Nov-05	5,000,000	4,950,000	50,000	15,380,412	<b>22,753,384</b>	38,133,796	7.70x
Weathergage Venture Capital	Mar-07	7,500,000	6,862,500	637,500	9,198,343	<b>5,051,185</b>	14,249,528	2.08x
Warburg Pincus	Oct-07	15,000,000	15,000,000	-	19,185,958	<b>6,319,424</b>	25,505,382	1.70x
Weathergage Venture Cap II	Apr-11	7,500,000	6,975,000	525,000	4,342,401	<b>11,406,173</b>	15,748,574	2.26x
Firstmark II (Firstmark V)	Aug-11	5,000,000	5,122,365	-	497,531	<b>9,575,158</b>	10,072,689	1.97x
Warburg Pincus XI	Nov-12	7,500,000	7,500,000	-	5,856,442	<b>6,263,801</b>	12,120,243	1.62x
Firstmark Capital Fund III	Feb-14	5,000,000	4,900,000	100,000	141,977	<b>7,233,625</b>	7,375,602	1.51x
Firstmark Capital Opportunity Fund I	Jun-14	5,000,000	5,075,000	186,808	1,059,216	<b>6,524,157</b>	7,583,373	1.49x
Warburg Pincus XII	Dec-15	10,000,000	9,015,000	985,000	788,230	<b>9,924,665</b>	10,712,895	1.19x
Weathergage Venture Capital IV	Dec-16	10,000,000	6,000,000	4,000,000	-	<b>7,127,695</b>	7,127,695	1.19x
FirstMark Capital Fund IV	Apr-17	7,500,000	3,412,500	4,087,500	-	<b>3,781,472</b>	3,781,472	1.11x
FirstMark Capital Opportunity Fund II	Jan-18	7,500,000	5,512,500	1,987,500	-	<b>5,828,316</b>	5,828,316	1.06x
Warburg Pincus Global Growth	Mar-19	40,000,000	1,210,000	38,790,000	-	<b>1,058,851</b>	1,058,851	0.88x
TA XIII		10,000,000	-	10,000,000	-	-	-	-

## **Fixed Income Manager Performance**

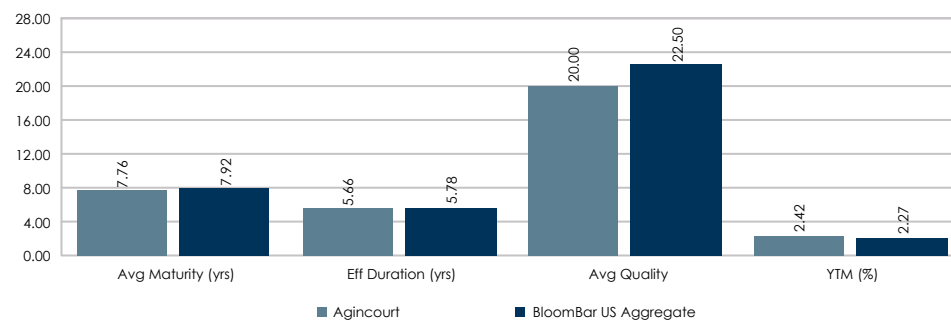
## Agincourt Core Fixed Income

For the Periods Ending September 30, 2019

## Account Description

- **Strategy** Core Bonds
- **Vehicle** Separately Managed Account
- **Benchmark** BloomBar US Aggregate
- **Performance Inception Date** October 1999
- **Fees** 25 bps on the first \$25 million, 20 bps on the next \$75 million, 15 bps on the next \$50 million, and 10 bps on the next \$50 million

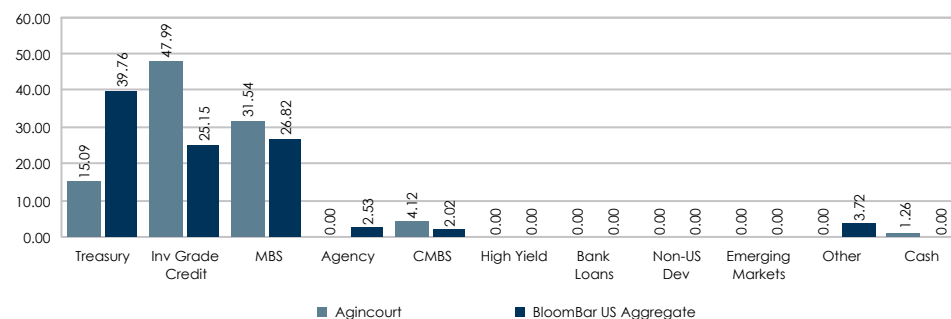
## Characteristics



## Performance Goals

- Outperform the BloomBar US Aggregate.
- Over rolling three year periods, rank above the median in the eA US Core Fixed Income universe.

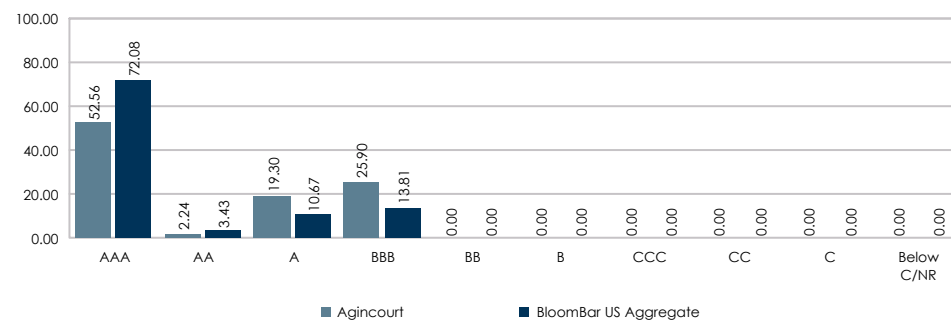
## Sector Allocation



## Dollar Growth Summary (\$000s)

	FYTD	YTD
<b>Beginning Market Value</b>	<b>220,459</b>	<b>172,421</b>
Net Additions	14,917	49,790
Return on Investment	5,539	18,703
Income	2,164	5,412
Gain/Loss	3,375	13,292
<b>Ending Market Value</b>	<b>240,915</b>	<b>240,915</b>

## Quality Allocation



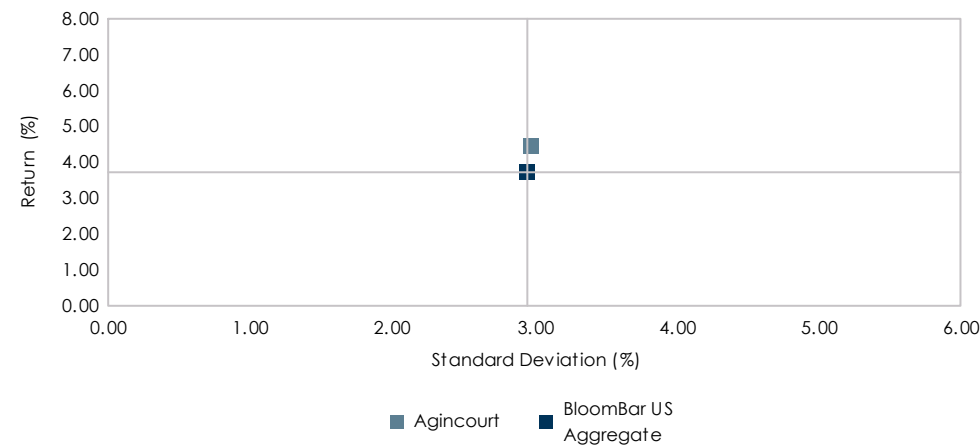
The Other sector consists of ABS, CMO, Convertibles, Municipals, Private Placements/144As and TIPS.



Agincourt Core Fixed Income

For the Periods Ending September 30, 2019

10 Year Risk / Return



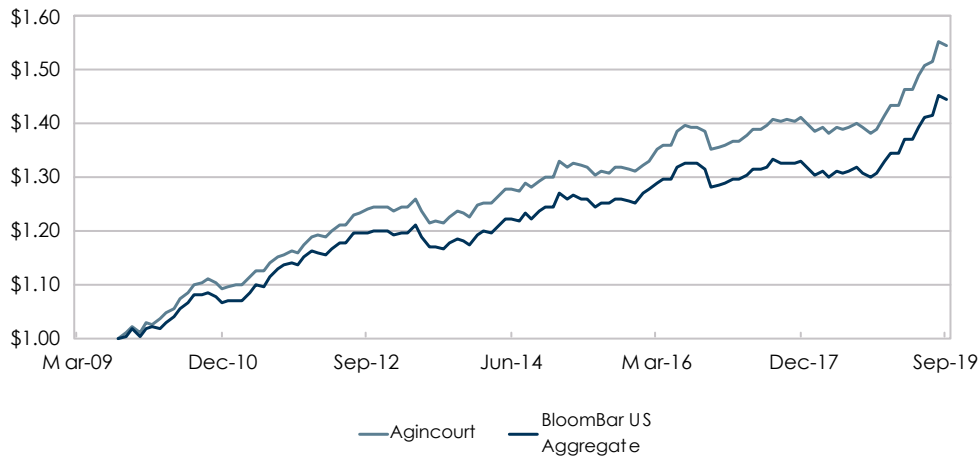
10 Year Portfolio Statistics

	Agincourt	BloomBar US Aggregate
Return (%)	4.45	3.75
Standard Deviation (%)	2.97	2.95
Sharpe Ratio	1.33	1.11

Benchmark Relative Statistics

Beta	0.97
R Squared (%)	93.26
Alpha (%)	0.78
Tracking Error (%)	0.78
Batting Average (%)	64.17
Up Capture (%)	106.71
Down Capture (%)	88.30

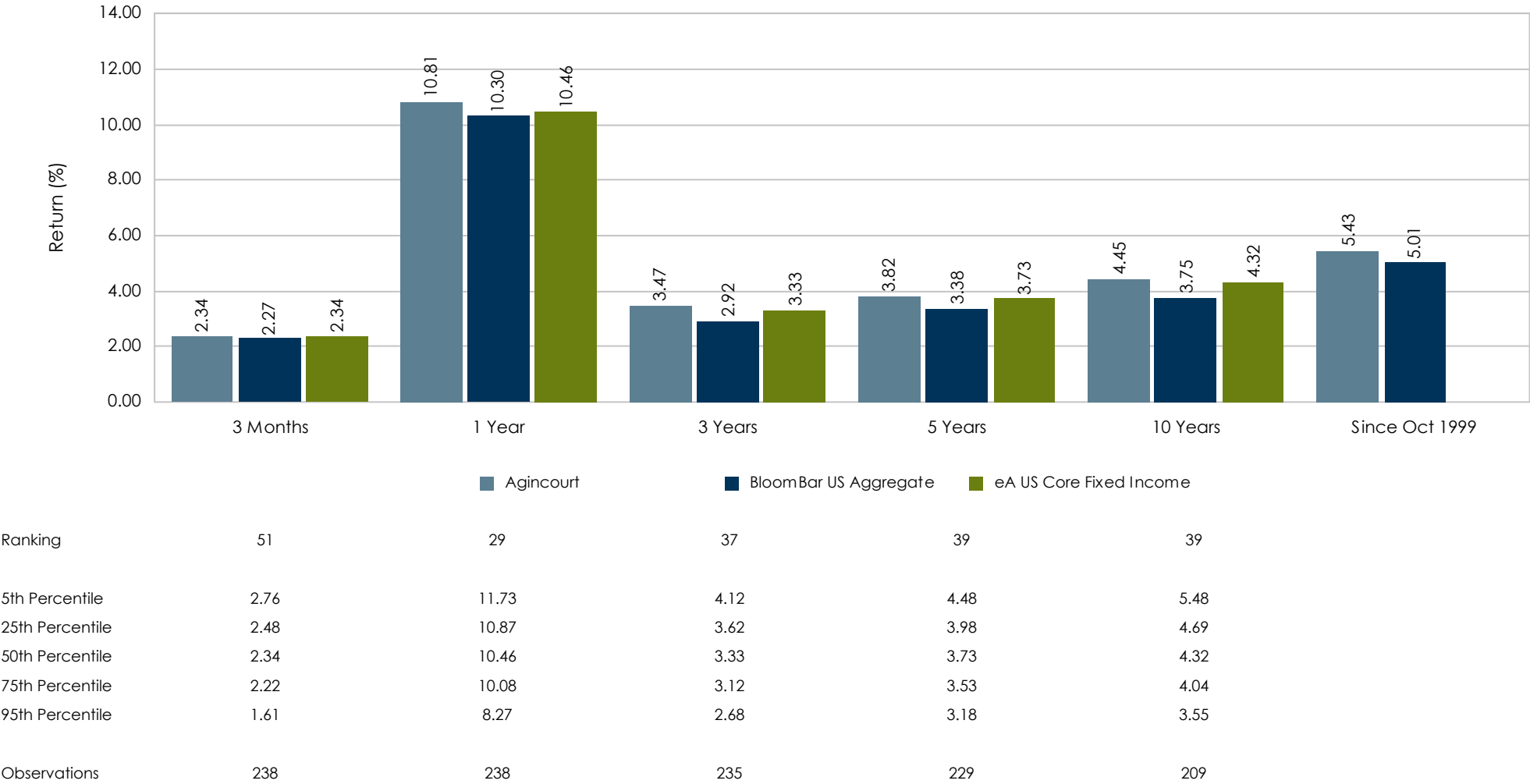
10 Year Growth of a Dollar



10 Year Return Analysis

	Agincourt	BloomBar US Aggregate
Number of Months	120	120
Highest Monthly Return (%)	2.43	2.59
Lowest Monthly Return (%)	-2.37	-2.37
Number of Positive Months	80	79
Number of Negative Months	40	41
% of Positive Months	66.67	65.83

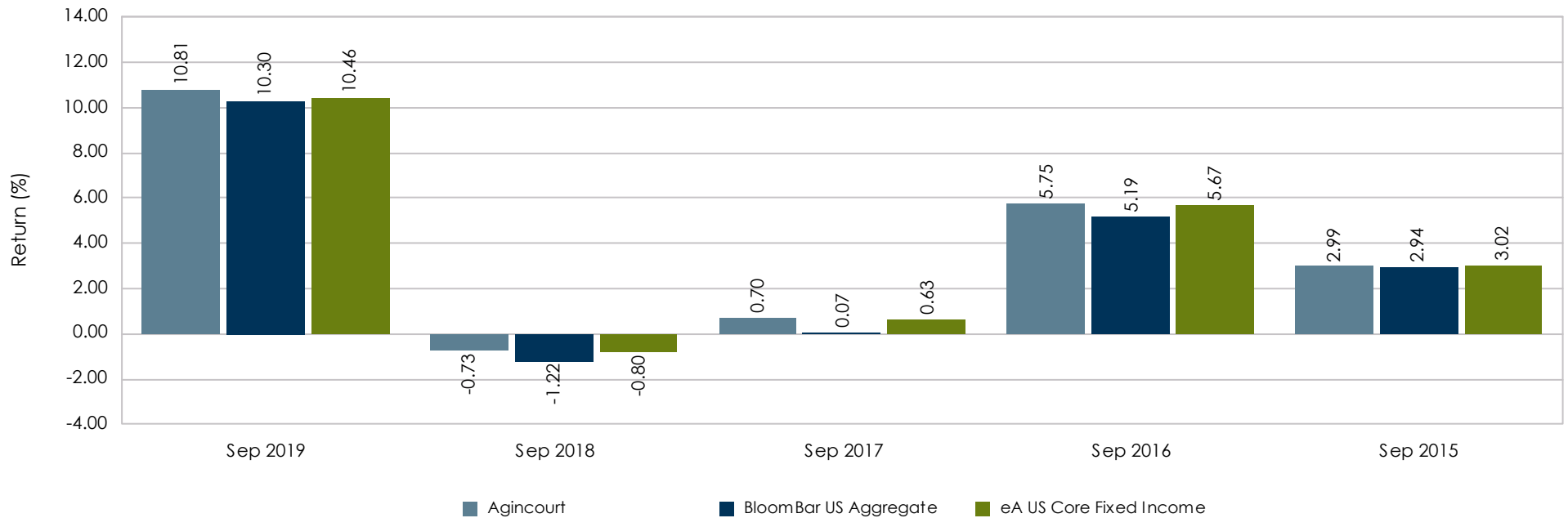
**Agincourt Core Fixed Income**  
For the Periods Ending September 30, 2019



The rankings represent the portfolio's returns versus a peer universe. The rankings are on a scale of 1 to 100 with 1 being the best.

## Agincourt Core Fixed Income

For the One Year Periods Ending September



Ranking	29	46	45	46	54
5th Percentile	11.73	0.33	2.32	7.34	3.99
25th Percentile	10.87	-0.49	1.17	6.20	3.37
50th Percentile	10.46	-0.80	0.63	5.67	3.02
75th Percentile	10.08	-1.00	0.30	5.19	2.62
95th Percentile	8.27	-1.36	-0.23	4.11	1.81
Observations	238	269	268	256	259

The rankings represent the portfolio's returns versus a peer universe. The rankings are on a scale of 1 to 100 with 1 being the best.

## Oaktree Global Credit Fund

For the Periods Ending September 30, 2019

### Account Description

- **Strategy** Multi-Sector Fixed Income
- **Vehicle** Limited Partnership
- **Benchmark** Custom Blended Index
- **Performance Inception Date** February 1998
- **Fees** 50 bps plus operating expenses

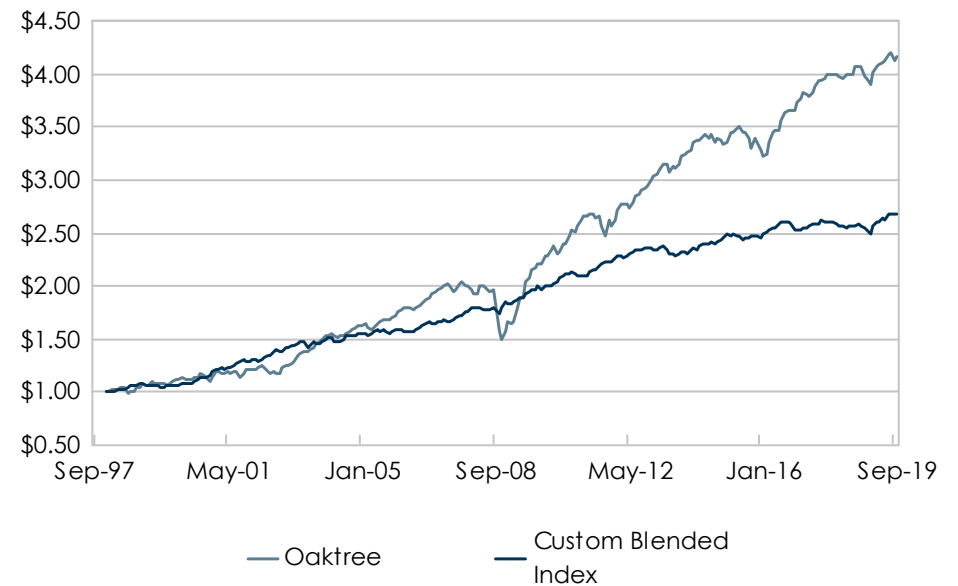
### Performance Goals

- Outperform the Custom Blended Index.

### Dollar Growth Summary (\$000s)

	FYTD	YTD
<b>Beginning Market Value</b>	<b>129,151</b>	<b>120,339</b>
Net Additions	-203	-38
Return on Investment	-798	7,849
<b>Ending Market Value</b>	<b>128,150</b>	<b>128,150</b>

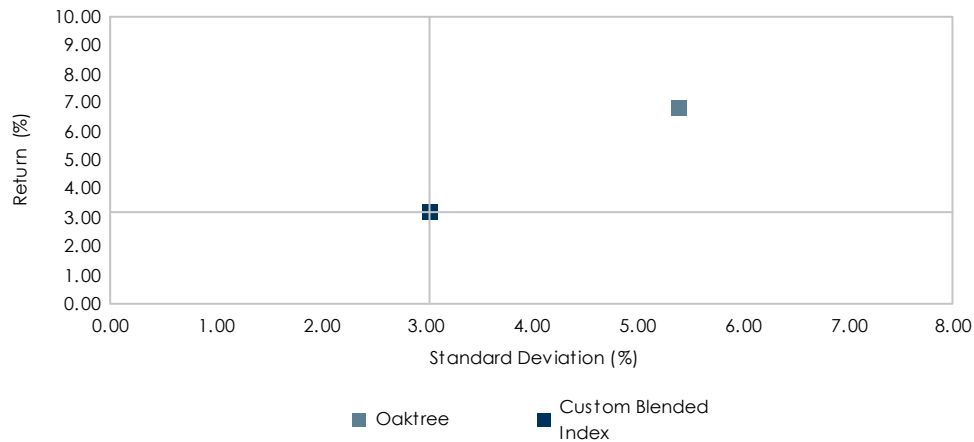
### Growth of a Dollar



## Oaktree Global Credit Fund

For the Periods Ending September 30, 2019

### 10 Year Risk / Return



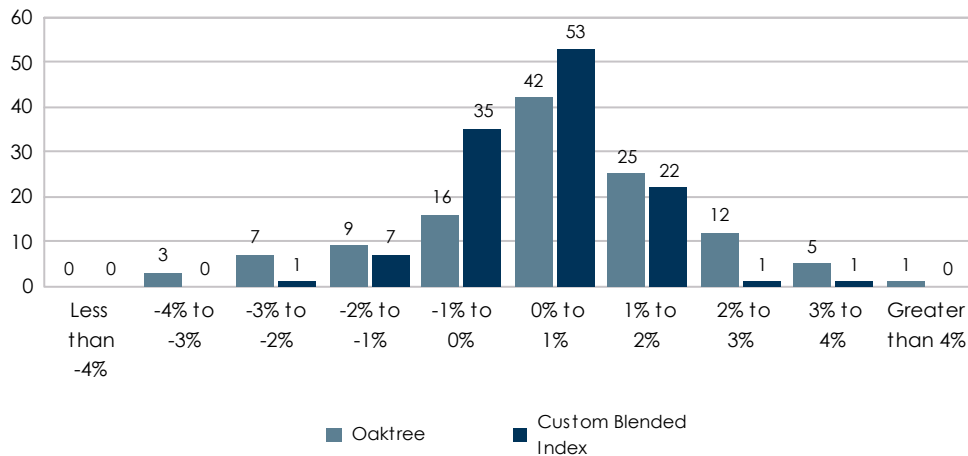
### 10 Year Portfolio Statistics

	Oaktree	Custom Blended Index
Return (%)	6.78	3.19
Standard Deviation (%)	5.39	3.03
Sharpe Ratio	1.17	0.89

### Benchmark Relative Statistics

Beta	0.36
R Squared (%)	4.15
Alpha (%)	5.70
Tracking Error (%)	5.62
Batting Average (%)	60.00
Up Capture (%)	117.14
Down Capture (%)	7.22

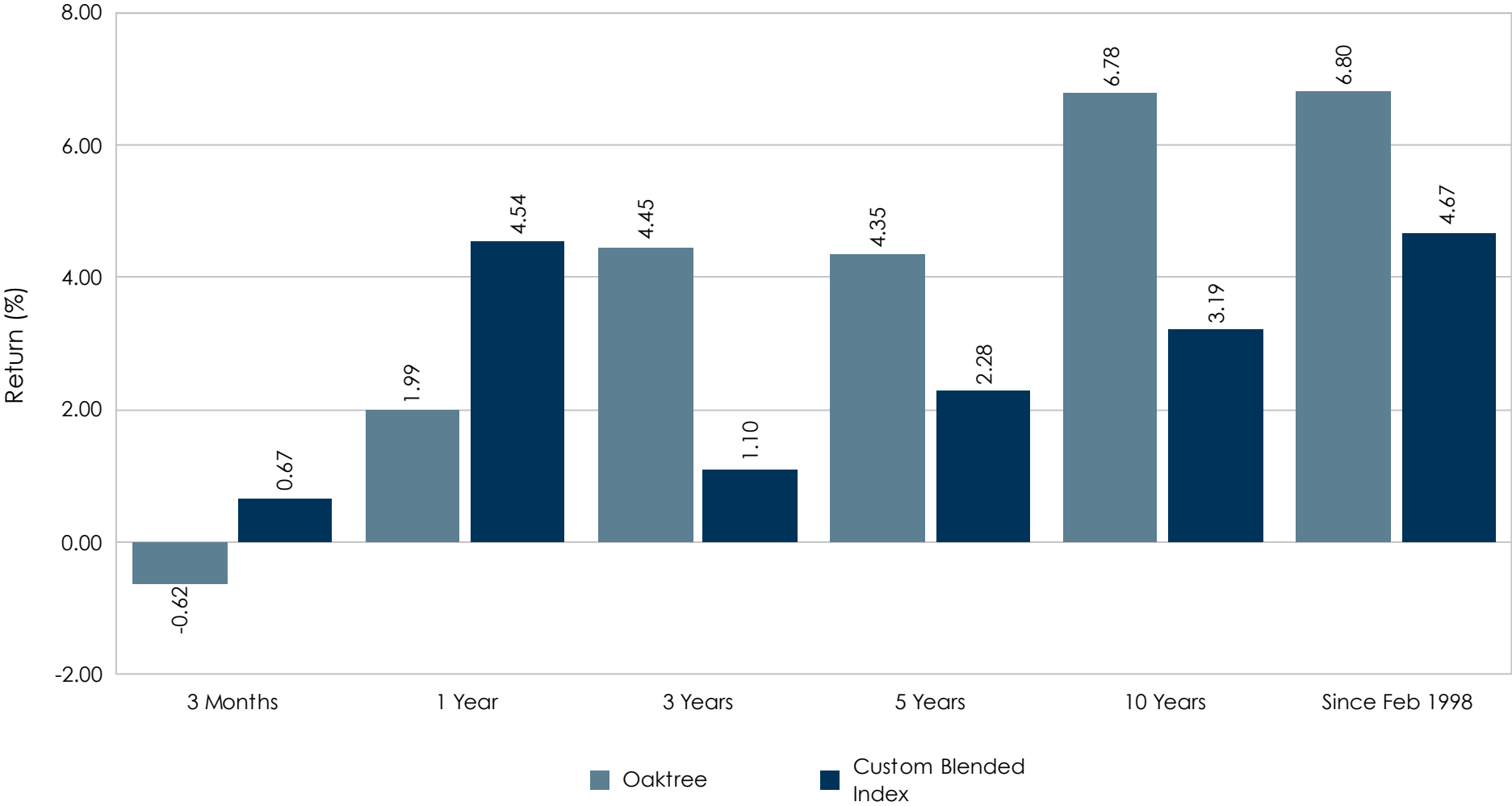
### 10 Year Return Histogram



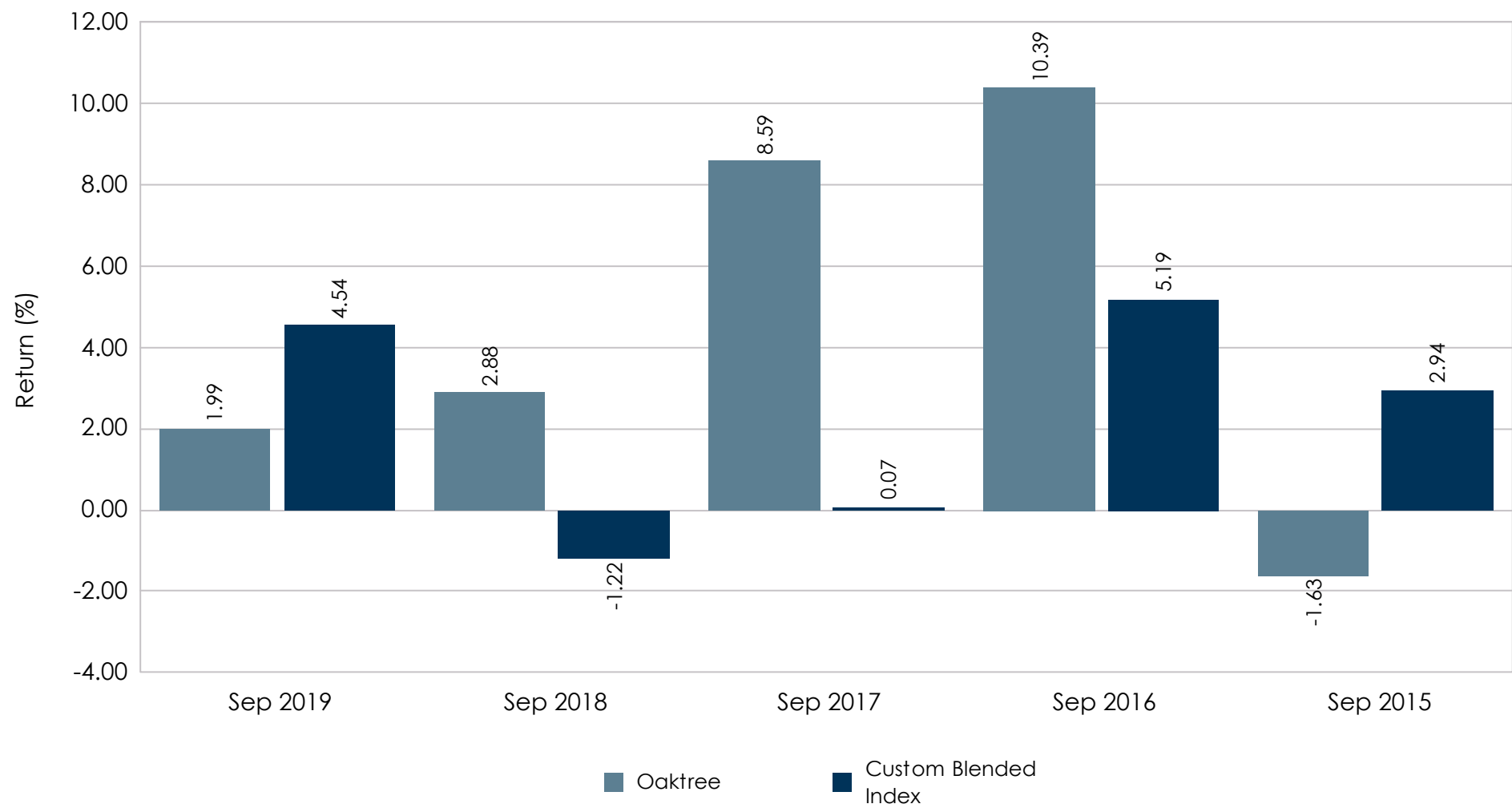
### 10 Year Return Analysis

	Oaktree	Custom Blended Index
Number of Months	120	120
Highest Monthly Return (%)	5.85	3.21
Lowest Monthly Return (%)	-3.96	-2.37
Number of Positive Months	85	77
Number of Negative Months	35	43
% of Positive Months	70.83	64.17

**Oaktree Global Credit Fund**  
*For the Periods Ending September 30, 2019*



**Oaktree Global Credit Fund**  
*For the One Year Periods Ending September*



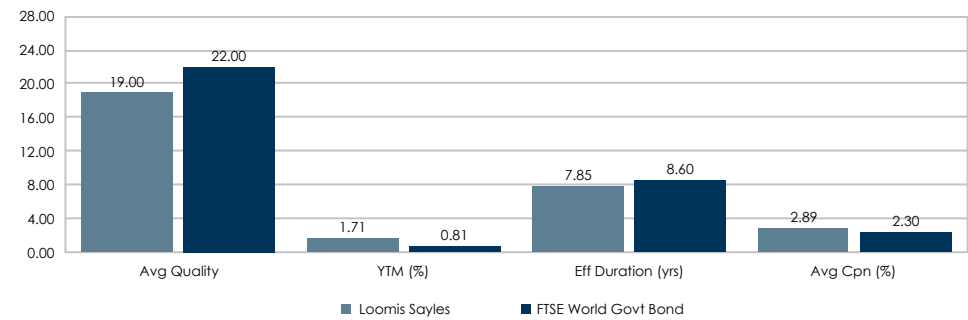
## Loomis Sayles

For the Periods Ending September 30, 2019

### Account Description

- **Strategy** Multi-Sector Fixed Income
- **Vehicle** Non-Mutual Commingled
- **Benchmark** FTSE World Govt Bond
- **Performance Inception Date** June 2008
- **Fees** First \$75M at 35 bps, balance at 25 bps

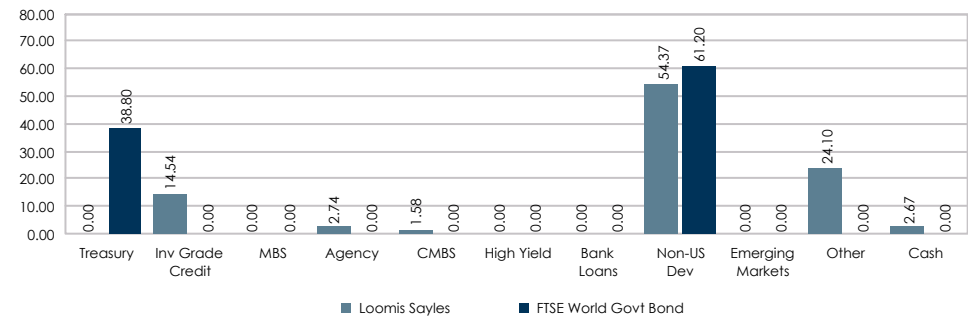
### Characteristics



### Performance Goals

- Outperform the FTSE World Govt Bond.
- Over rolling three year periods, rank above the median in the eA All Global Fixed Income universe.

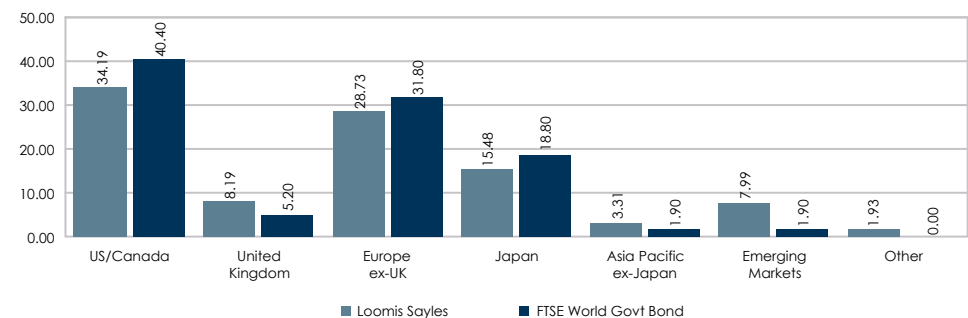
### Sector Allocation



### Dollar Growth Summary (\$000s)

	FYTD	YTD
<b>Beginning Market Value</b>	<b>81,552</b>	<b>96,319</b>
Net Additions	-68	-20,221
Return on Investment	588	5,974
<b>Ending Market Value</b>	<b>82,072</b>	<b>82,072</b>

### Regional Allocation



Characteristic and allocation charts represents data of the Loomis World Bond NH Trust (Non-Mutual Commingled).

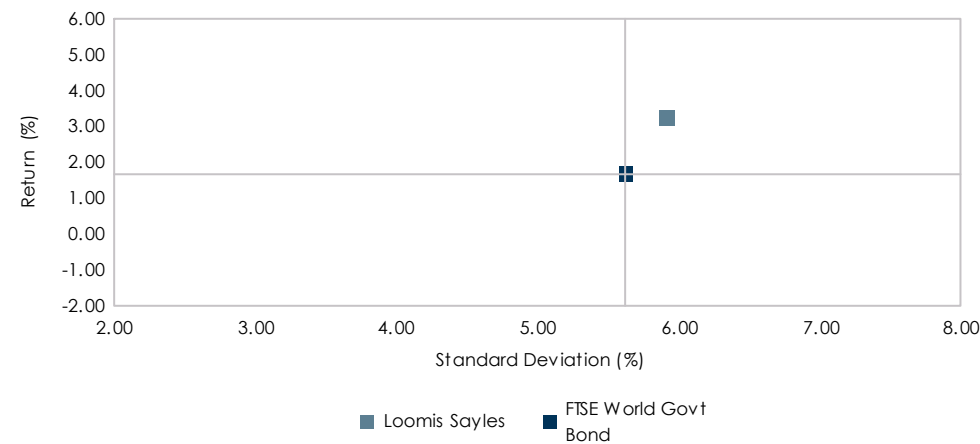
The Other sector consists of ABS, CMO, Convertibles, Municipals, Private Placements/144As and TIPS.



Loomis Sayles

For the Periods Ending September 30, 2019

10 Year Risk / Return



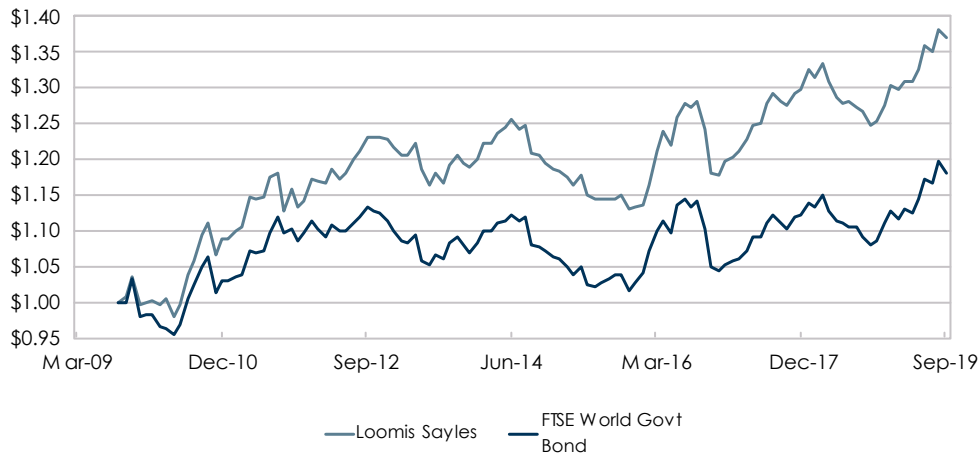
10 Year Portfolio Statistics

	Loomis Sayles	FTSE World Govt Bond
Return (%)	3.19	1.69
Standard Deviation (%)	5.92	5.63
Sharpe Ratio	0.46	0.21

Benchmark Relative Statistics

Beta	0.98
R Squared (%)	87.20
Alpha (%)	1.53
Tracking Error (%)	2.12
Batting Average (%)	63.33
Up Capture (%)	112.28
Down Capture (%)	92.62

10 Year Growth of a Dollar

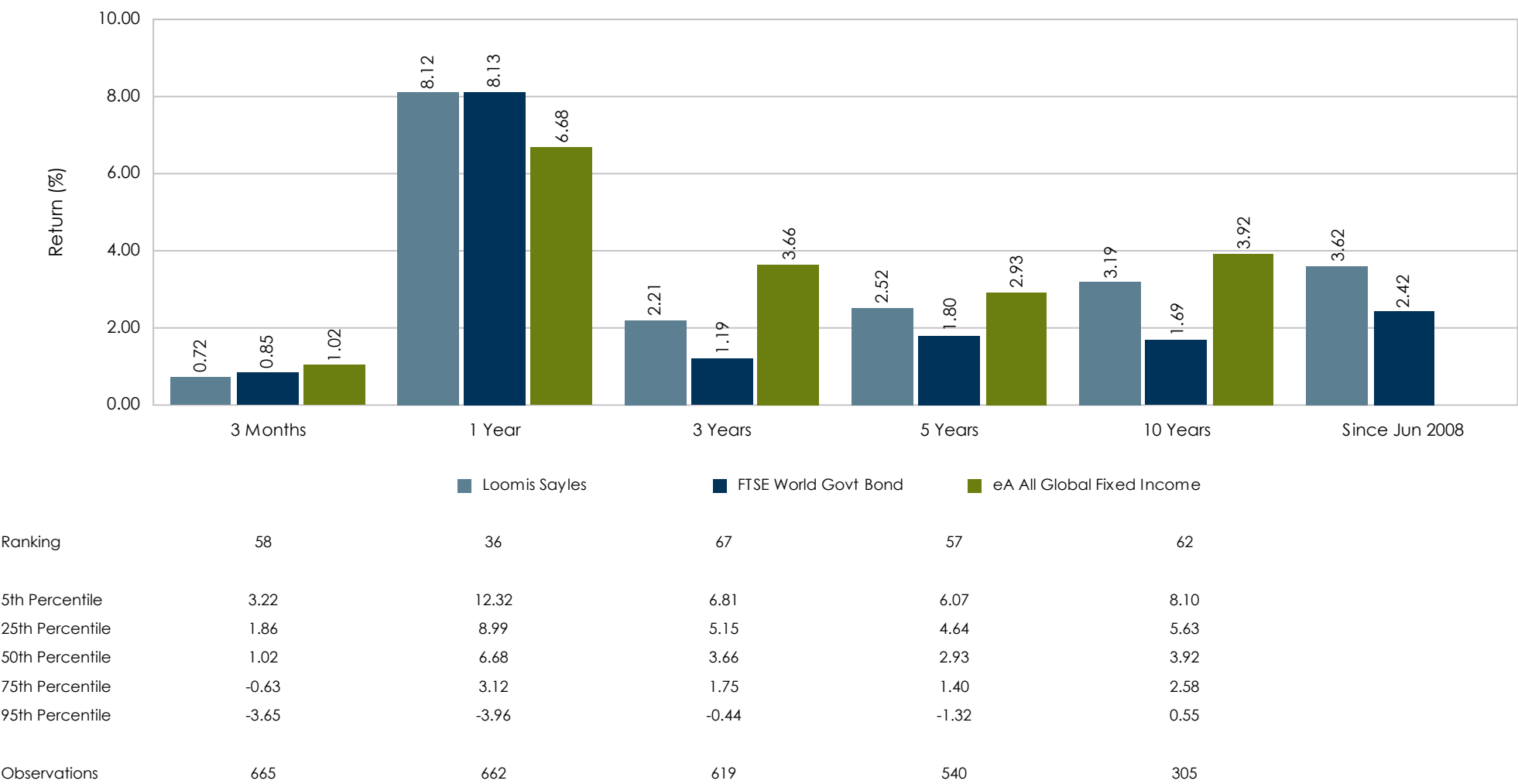


10 Year Return Analysis

	Loomis Sayles	FTSE World Govt Bond
Number of Months	120	120
Highest Monthly Return (%)	4.20	3.69
Lowest Monthly Return (%)	-4.95	-5.03
Number of Positive Months	72	64
Number of Negative Months	48	56
% of Positive Months	60.00	53.33

Loomis Sayles

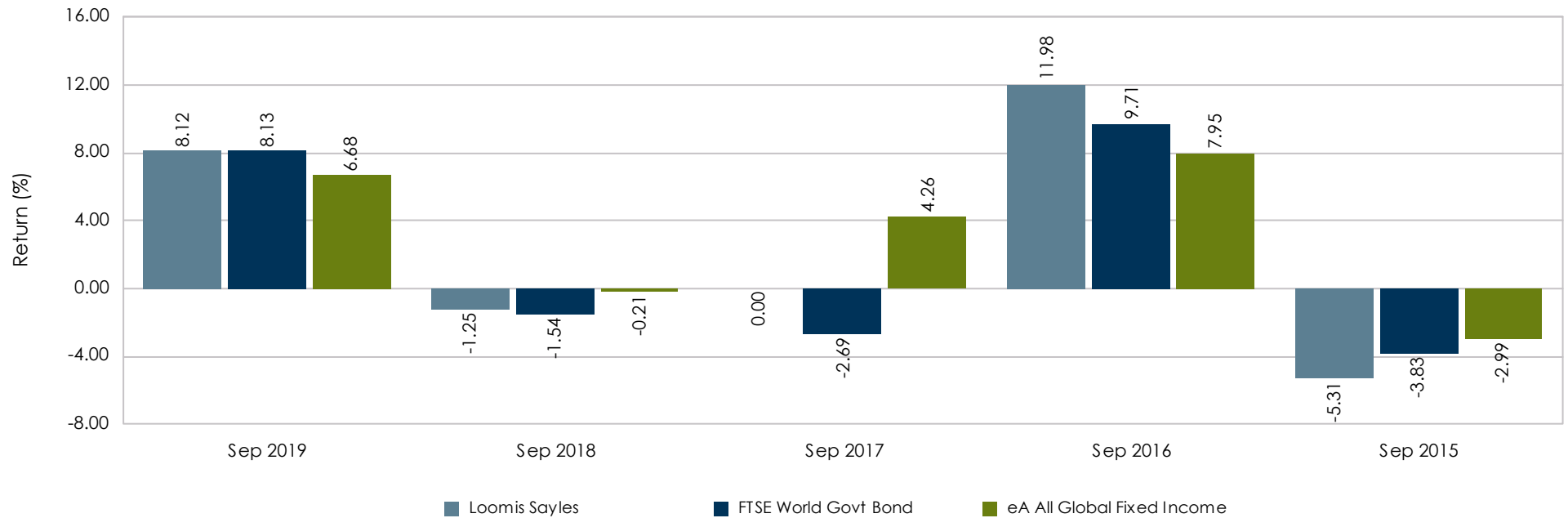
For the Periods Ending September 30, 2019



The rankings represent the portfolio's returns versus a peer universe. The rankings are on a scale of 1 to 100 with 1 being the best.

## Loomis Sayles

For the One Year Periods Ending September



Ranking	36	65	86	13	68
5th Percentile	12.32	4.89	12.05	15.31	3.23
25th Percentile	8.99	1.85	7.75	10.15	0.28
50th Percentile	6.68	-0.21	4.26	7.95	-2.99
75th Percentile	3.12	-1.77	1.33	4.94	-7.07
95th Percentile	-3.96	-4.91	-2.28	-1.67	-15.37
Observations	662	761	700	688	672

The rankings represent the portfolio's returns versus a peer universe. The rankings are on a scale of 1 to 100 with 1 being the best.

**Private Credit - Active Funds***For the Period Ending September 30, 2019***Summary of Cash Flows for 6 Months**

Cash Outflows	Cash Inflows	Net Cash Flows
-7,119,055	8,190,125	1,071,070

**Summary of Portfolio Inception to Date (Category totals include active and closed funds)**

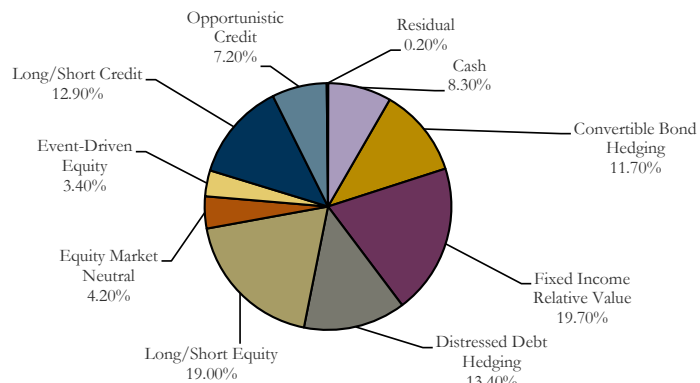
	Inception Date	Committed	Drawn to Date	Remaining Commitment	Distributions to Date	Adjusted Ending Value	Total Value	Total Value to Paid-in
<b>Total</b>	<b>Sep-16</b>	<b>71,400,000</b>	<b>62,773,110</b>	<b>18,912,971</b>	<b>21,486,704</b>	<b>48,976,226</b>	<b>70,462,930</b>	<b>1.12x</b>
<b>Mezzanine</b>	Jan-17	20,000,000	18,273,110	3,186,744	6,204,683	15,384,444	21,589,127	1.18x
Newstone Capital Partners III	Jan-17	20,000,000	18,273,110	3,186,744	6,204,683	15,384,444	21,589,127	1.18x
<b>Other</b>	Sep-16	51,400,000	44,500,000	15,726,227	15,282,021	33,591,782	48,873,803	1.10x
LBC Credit Partners Fund IV	Sep-16	40,000,000	34,000,000	14,826,227	13,169,541	24,438,462	37,608,003	1.11x
Apollo Accord II	Oct-18	11,400,000	10,500,000	900,000	2,112,480	9,153,320	11,265,800	1.07x

## PAAMCO

For the Periods Ending September 30, 2019

### Sector Allocation

Market Value: \$89,388,419



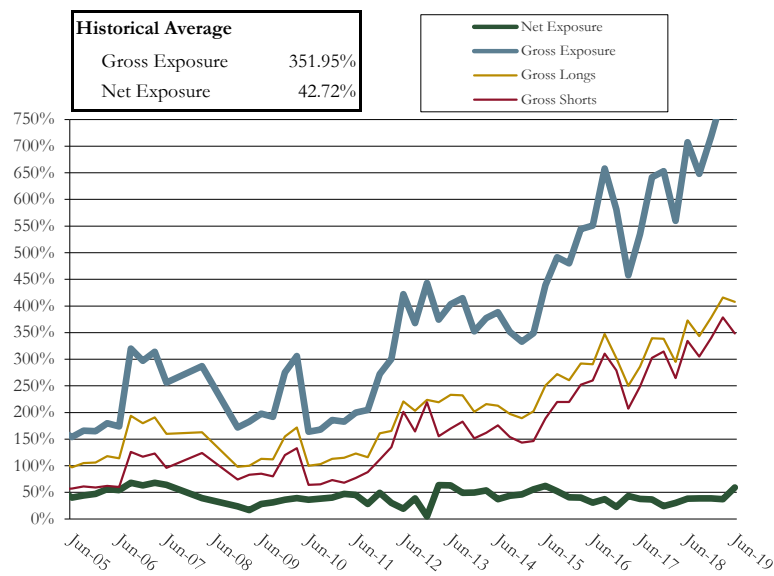
### Strategy

- Low Volatility Hedge Fund of Funds
- Performance Inception Date: October 2002
- Redemption: Quarterly with 60 days written notice

### Objectives and Constraints

- Target annualized return: 10-12%
- Target annualized standard deviation: approximate the standard deviation of the Barclays Capital Aggregate
- Maximum number of managers: 55
- Allocation to any manager: not to exceed 5% at cost or 7% at market value
- Allocation to Convertible Bond Hedging: 20-40%
- Allocation to Sovereign Debt & Mortgage Hedging: 0-10%
- Allocation to Credit Hedging & Distressed Debt Hedging: 0-25%
- Allocation to Merger Arbitrage: 0-20%
- Allocation to Equity Market Neutral & Long/Short Equity: 20-45%
- Allocation to Short Biased: 0-5%
- Allocation to Cash: 0-5%

### Historical Net & Gross Exposure



### Exposure

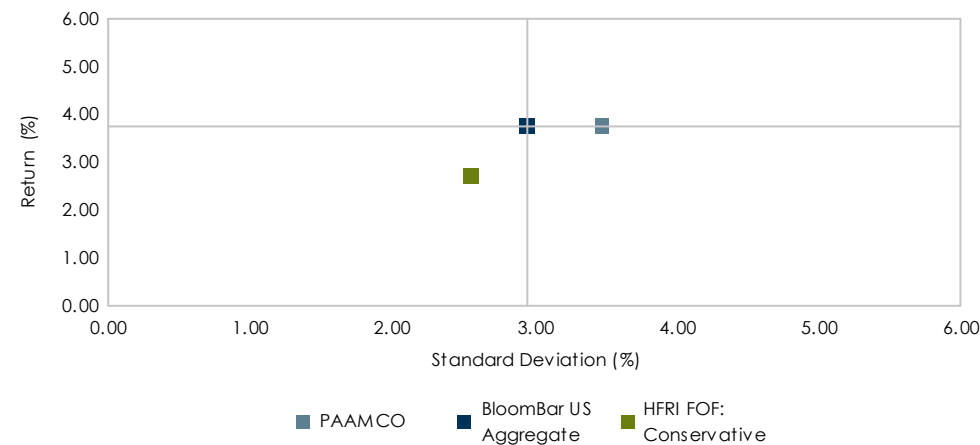
- Net Exposure: 51.30%
- Gross Exposure: 874.90%

Characteristic data provided by manager.

PAAMCO

For the Periods Ending September 30, 2019

10 Year Risk / Return



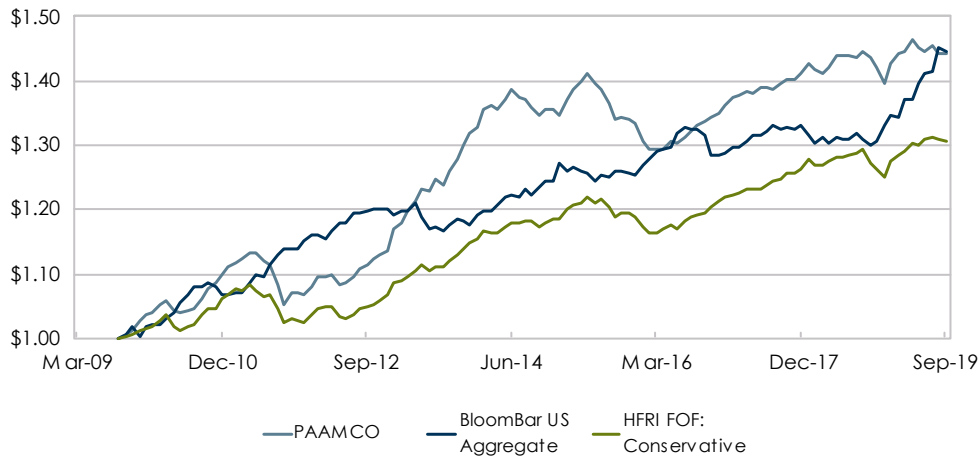
10 Year Portfolio Statistics

	PAAMCO	BloomBar US Aggregate	HFRI FOF: Conservative
Return (%)	3.74	3.75	2.71
Standard Deviation (%)	3.47	2.95	2.55
Sharpe Ratio	0.94	1.11	0.87

Benchmark Relative Statistics

Beta	-0.31	1.19
R Squared (%)	7.09	76.39
Alpha (%)	5.02	0.52
Tracking Error (%)	5.12	1.76
Batting Average (%)	59.17	58.33
Up Capture (%)	33.46	124.04
Down Capture (%)	-71.56	106.84

10 Year Growth of a Dollar

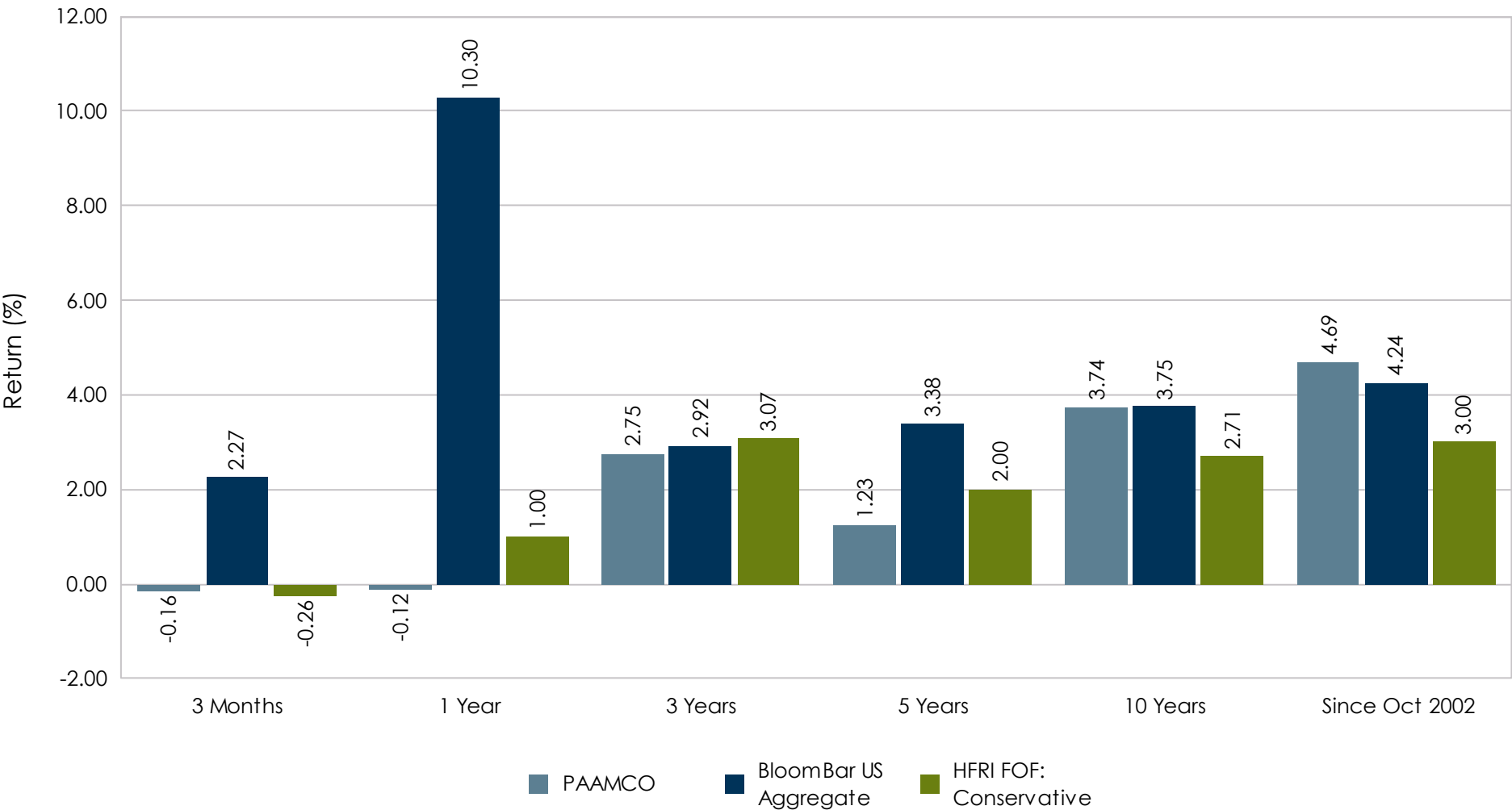


10 Year Return Analysis

	PAAMCO	BloomBar US Aggregate	HFRI FOF: Conservative
Number of Months	120	120	120
Highest Monthly Return (%)	2.84	2.59	1.84
Lowest Monthly Return (%)	-2.99	-2.37	-2.13
Number of Positive Months	80	79	85
Number of Negative Months	40	41	35
% of Positive Months	66.67	65.83	70.83

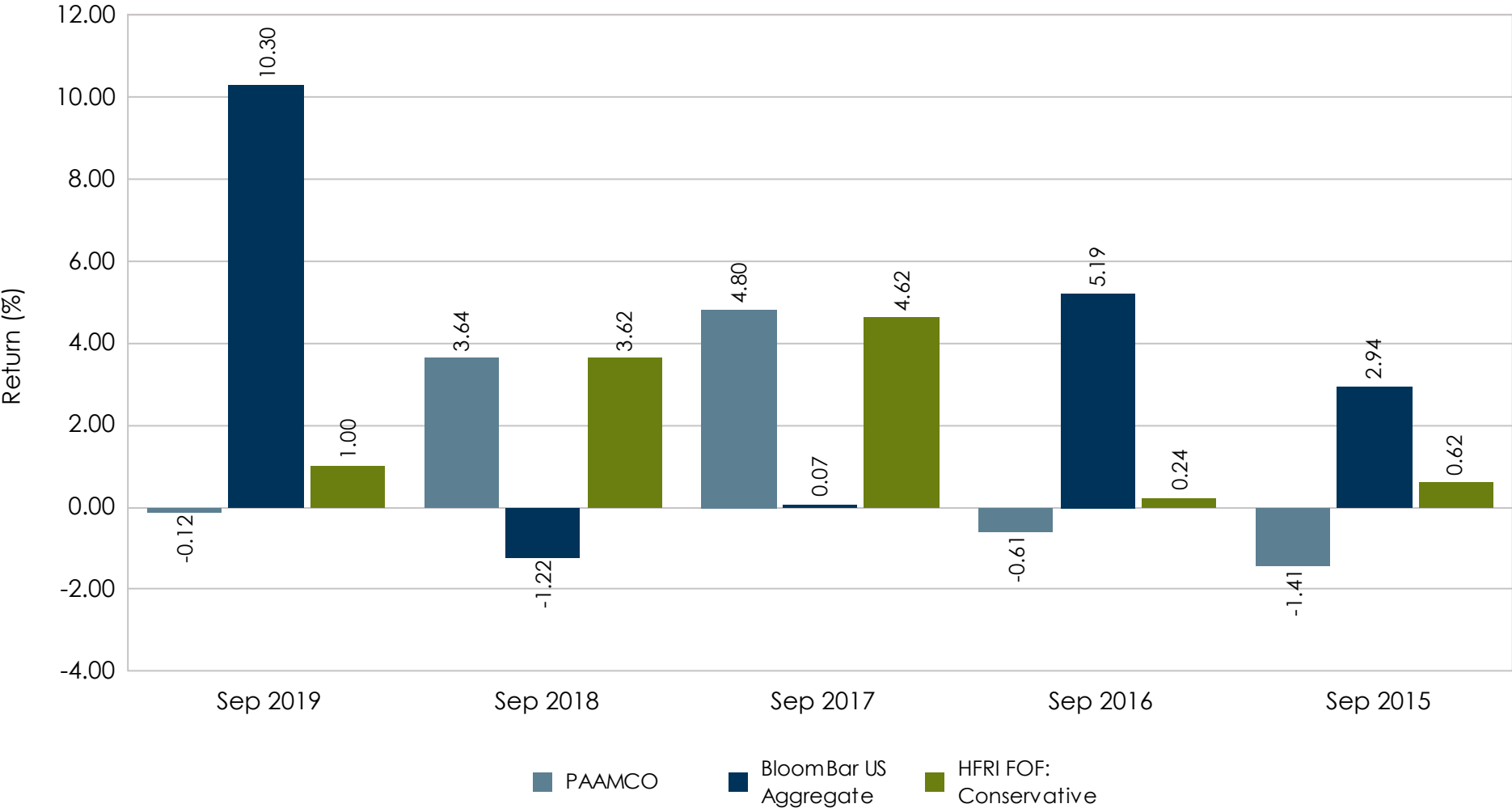
PAAMCO

For the Periods Ending September 30, 2019



PAAMCO

For the One Year Periods Ending September





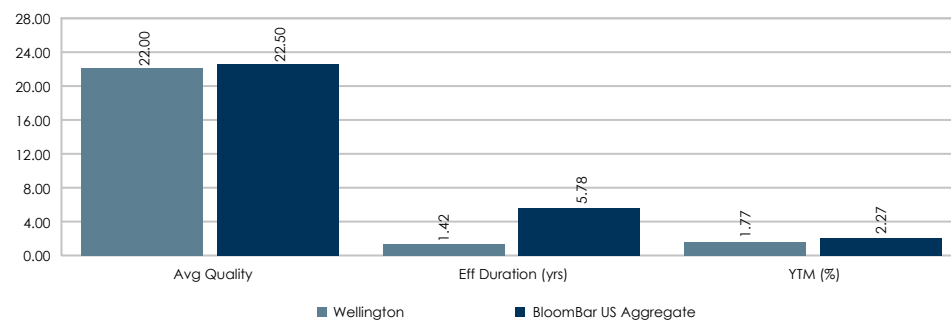
## Wellington Global Total Return

For the Periods Ending September 30, 2019

### Account Description

- **Strategy** Absolute Return
- **Vehicle** Non-Mutual Commingled
- **Benchmarks** US T-Bills 90 Day + 4% and BloomBar US Aggregate
- **Performance Inception Date** December 2016
- **Fees** 25 bps, plus 20% of excess return beyond cash + 1%

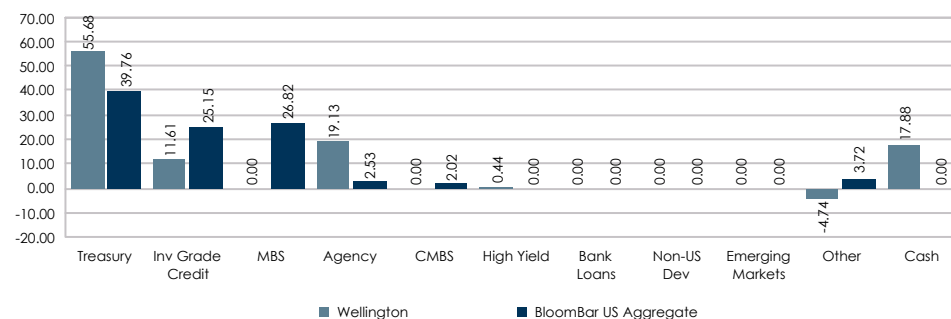
### Characteristics



### Performance Goals

- Outperform the US T-Bills 90 Day + 4%.
- Over rolling three year periods, rank above the median in the eA Global Unconstrained Fixed Income universe.

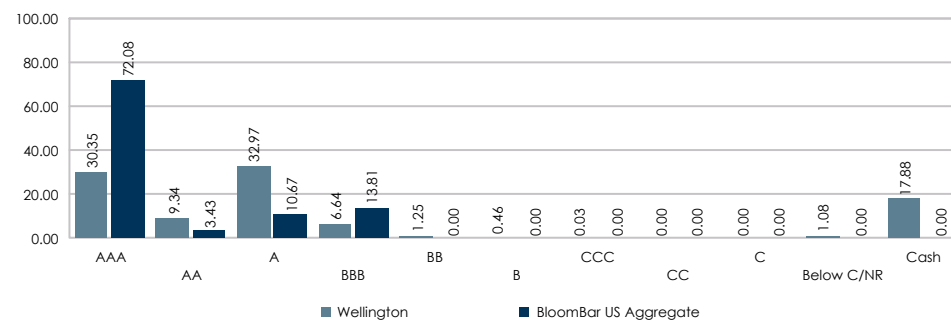
### Sector Allocation



### Dollar Growth Summary (\$000s)

	FYTD	YTD
<b>Beginning Market Value</b>	<b>66,411</b>	<b>65,342</b>
Net Additions	9,959	9,399
Return on Investment	690	2,318
<b>Ending Market Value</b>	<b>77,059</b>	<b>77,059</b>

### Quality Allocation

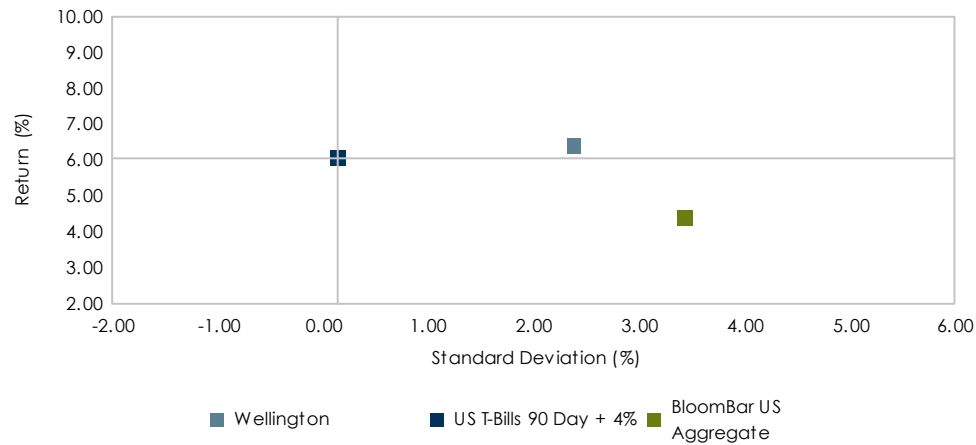


The Other sector consists of ABS, CMO, Convertibles, Municipals, Private Placements/144As and TIPS.

## Wellington Global Total Return

For the Periods Ending September 30, 2019

### 2 Year Risk / Return



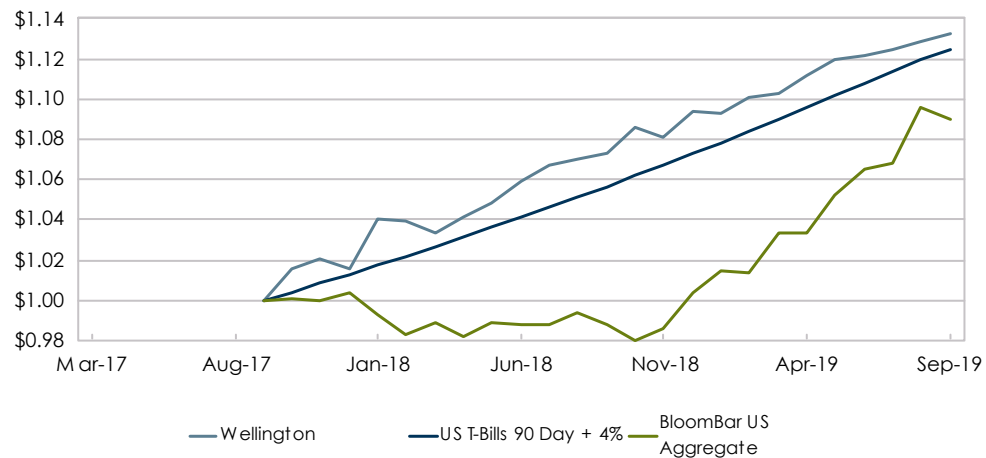
### 2 Year Portfolio Statistics

	Wellington	US T-Bills 90 Day + 4%	BloomBar US Aggregate
Return (%)	6.40	6.06	4.38
Standard Deviation (%)	2.38	0.15	3.43
Sharpe Ratio	1.88	28.50	0.72

### Benchmark Relative Statistics

Beta	-2.23	-0.20
R Squared (%)	1.84	8.10
Alpha (%)	21.23	7.34
Tracking Error (%)	2.41	4.70
Batting Average (%)	50.00	54.17
Up Capture (%)	105.62	38.39
Down Capture (%)		-143.90

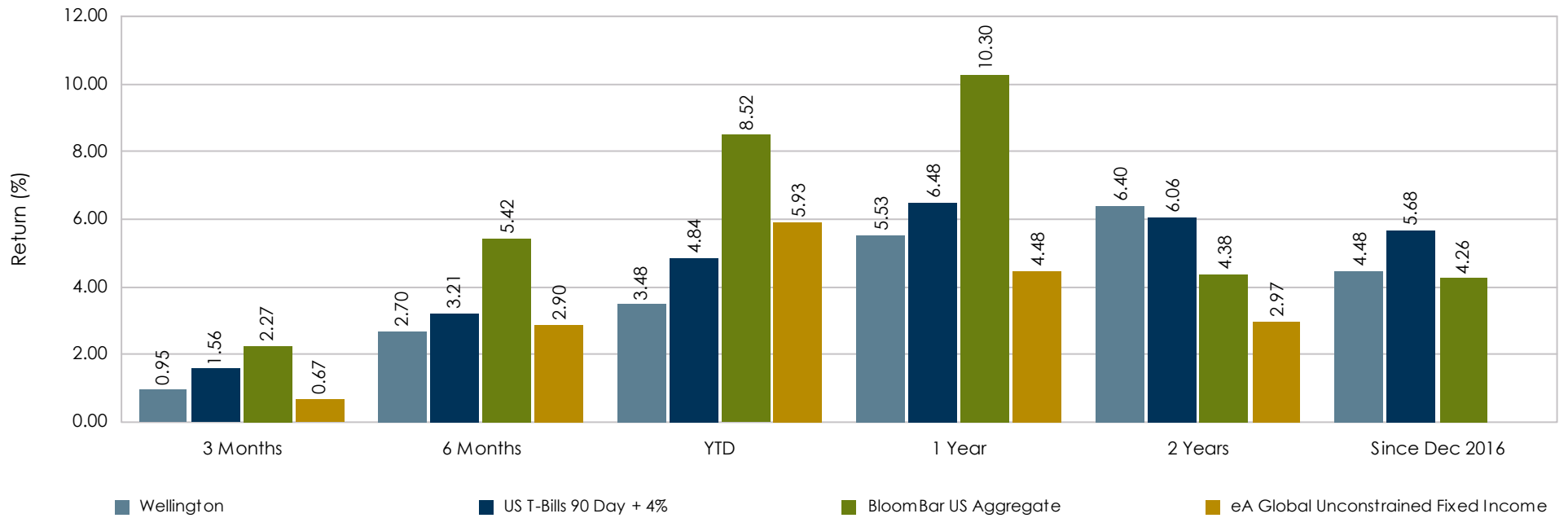
### 2 Year Growth of a Dollar



### 2 Year Return Analysis

	Wellington	US T-Bills 90 Day + 4%	BloomBar US Aggregate
Number of Months	24	24	24
Highest Monthly Return (%)	2.45	0.56	2.59
Lowest Monthly Return (%)	-0.54	0.41	-1.15
Number of Positive Months	19	24	15
Number of Negative Months	5	0	9
% of Positive Months	79.17	100.00	62.50

**Wellington Global Total Return**  
For the Periods Ending September 30, 2019

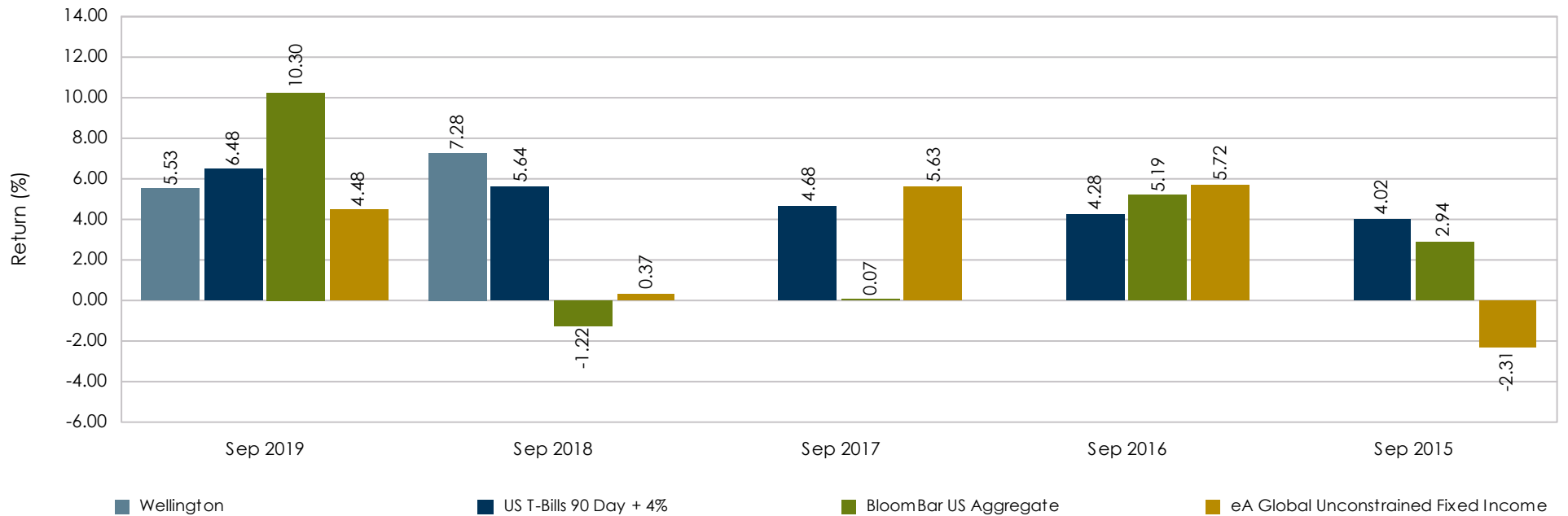


Ranking	47	53	69	43	4
5th Percentile	2.74	6.67	11.83	11.09	6.04
25th Percentile	1.64	4.38	8.20	7.38	4.57
50th Percentile	0.67	2.90	5.93	4.48	2.97
75th Percentile	-1.95	0.03	2.39	0.63	-1.05
95th Percentile	-3.68	-3.21	-2.30	-5.00	-4.19
Observations	144	144	144	144	140

The rankings represent the portfolio's returns versus a peer universe. The rankings are on a scale of 1 to 100 with 1 being the best.

## Wellington Global Total Return

For the One Year Periods Ending September



Ranking	43	2			
5th Percentile	11.09	4.87	11.00	13.47	2.36
25th Percentile	7.38	2.30	7.73	8.33	0.42
50th Percentile	4.48	0.37	5.63	5.72	-2.31
75th Percentile	0.63	-2.12	3.57	2.86	-6.37
95th Percentile	-5.00	-5.13	1.17	-8.83	-16.16
Observations	144	171	154	184	170

The rankings represent the portfolio's returns versus a peer universe. The rankings are on a scale of 1 to 100 with 1 being the best.

## **Real Assets Manager Performance**

## JP Morgan Strategic Property

For the Periods Ending September 30, 2019

### Account Description

- **Strategy** Core Real Estate
- **Vehicle** Non-Mutual Commingled
- **Benchmarks** NFI ODCE Net and NCREIF Property
- **Performance Inception Date** December 2007
- **Fees** First \$100M at 92 bps, next \$150M at 85 bps, next \$250M at 80 bps, balance at 75 bps

### Performance Goals

- Outperform the NFI ODCE Net.

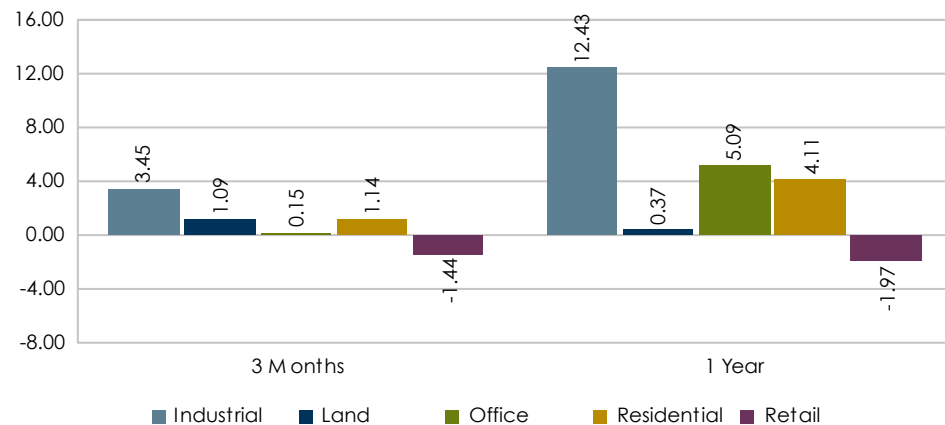
### Account Information

- **Ending Market Value** \$129,712,490

### Fund Information

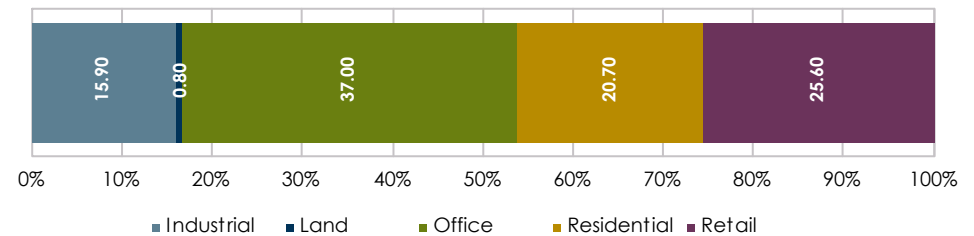
- **Gross Market Value** \$41,781,401,248
- **Net Market Value** \$31,375,907,841
- **Cash Balance of Fund** \$424,439,396
- **# of Properties** 166
- **# of Participants** 424

### Returns by Property Type (%)

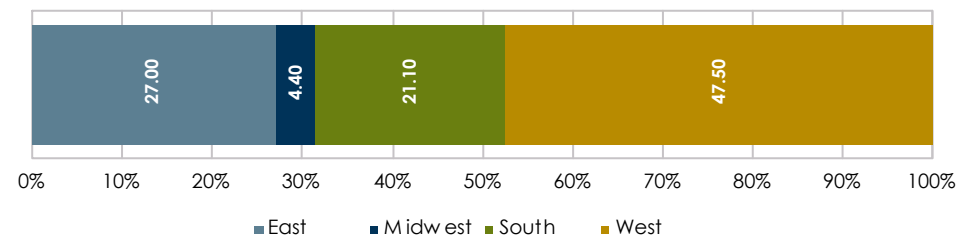


### Allocations

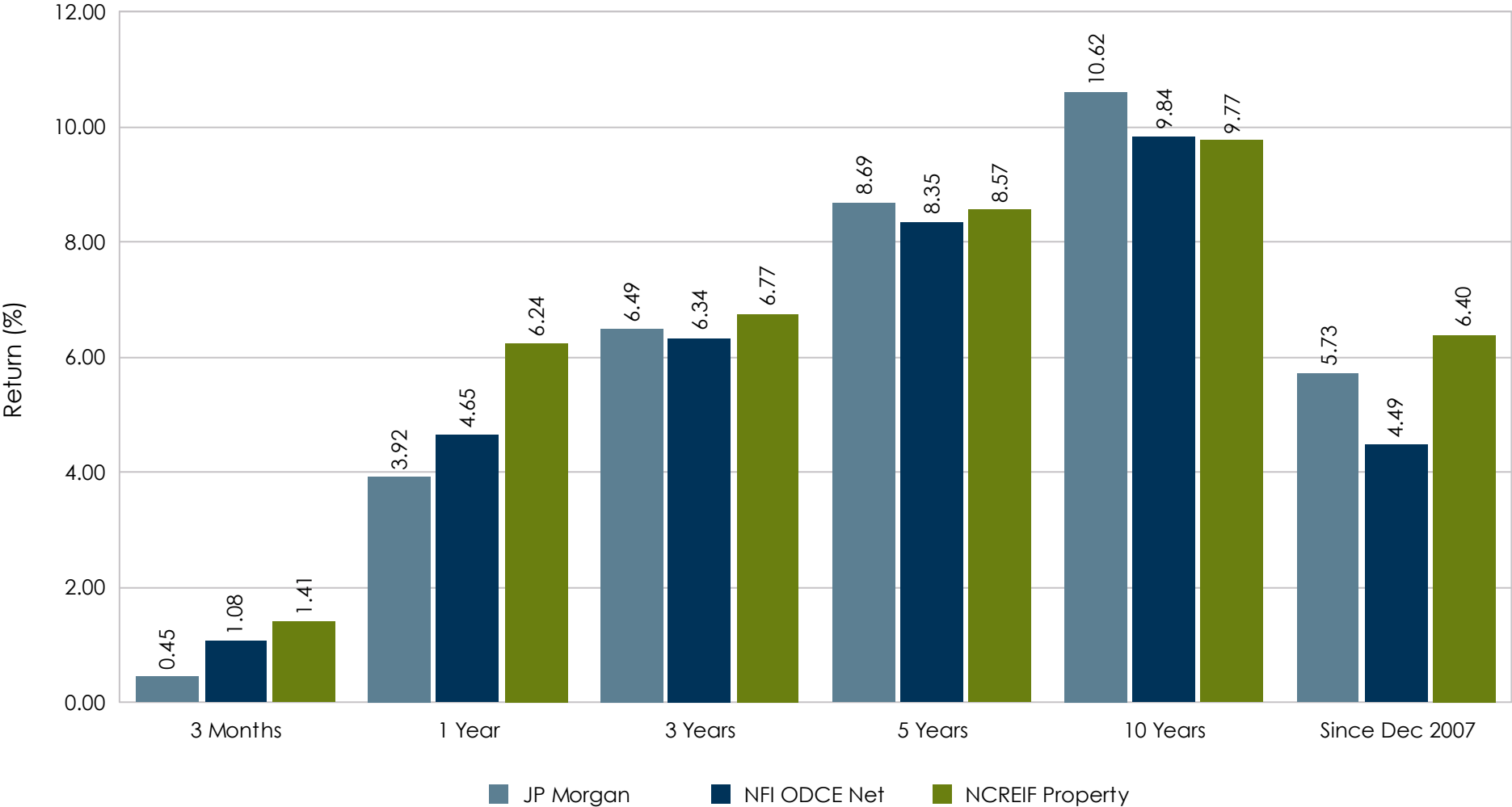
#### Property Type



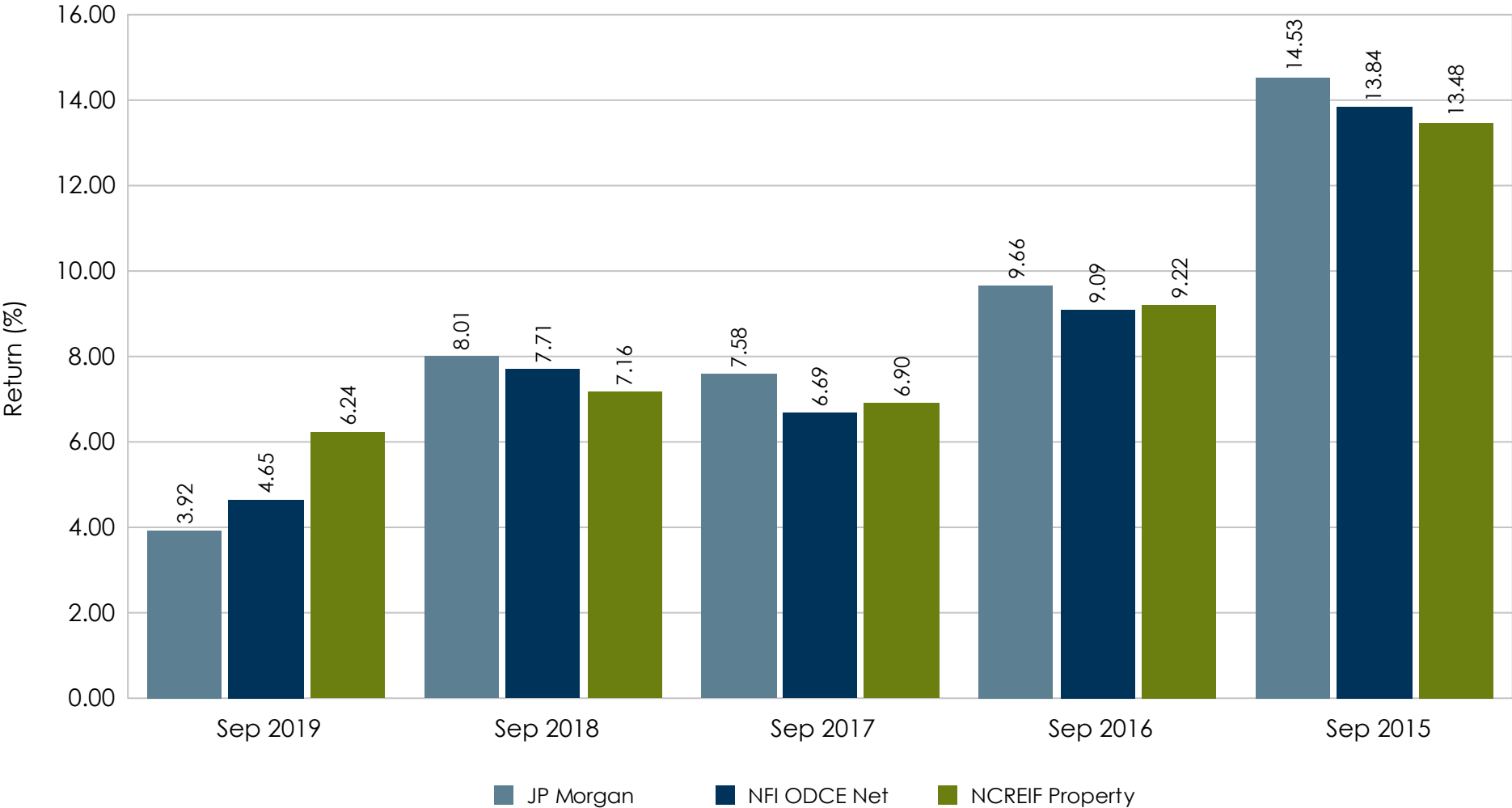
#### Geographic Region



**JP Morgan Strategic Property**  
*For the Periods Ending September 30, 2019*



**JP Morgan Strategic Property**  
*For the One Year Periods Ending September*





## Blackstone Property Partners

For the Periods Ending September 30, 2019

### Account Description

- **Strategy** Core Real Estate
- **Vehicle** Limited Partnership
- **Benchmarks** NFI ODCE Net and NCREIF Property
- **Performance Inception Date** January 2015

### Account Information

- **Ending Market Value** \$83,973,502

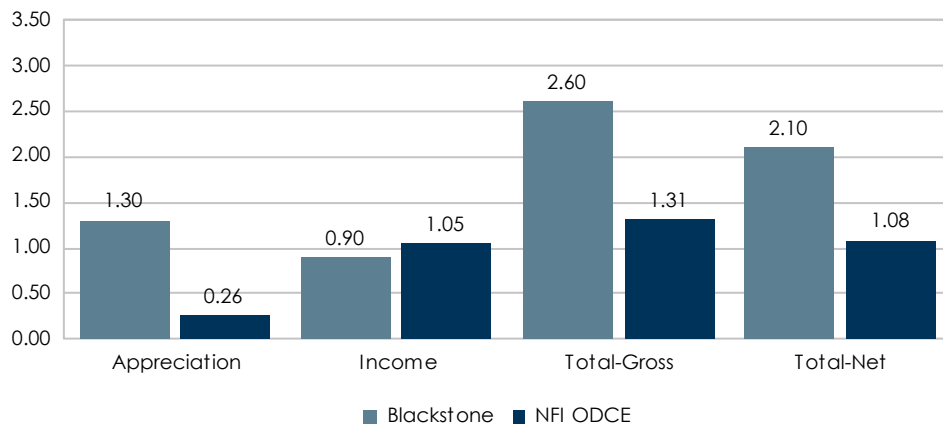
### Fund Information

- **Net Market Value** \$10,800,000,000
- **# of Properties** 39

### Performance Goals

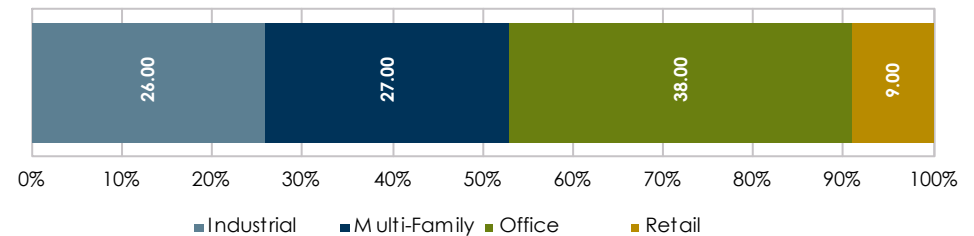
- Outperform the NFI ODCE Net and NCREIF Property.

### Current Quarter Returns (%)

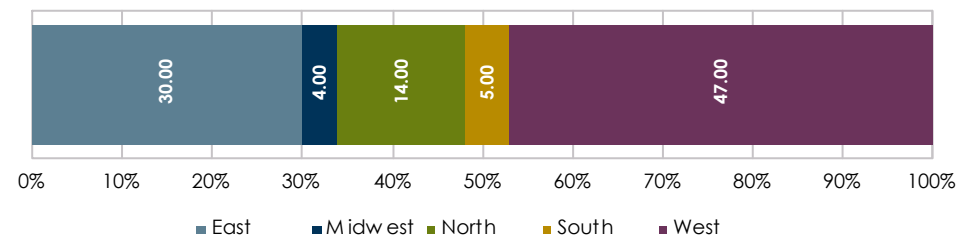


### Allocations

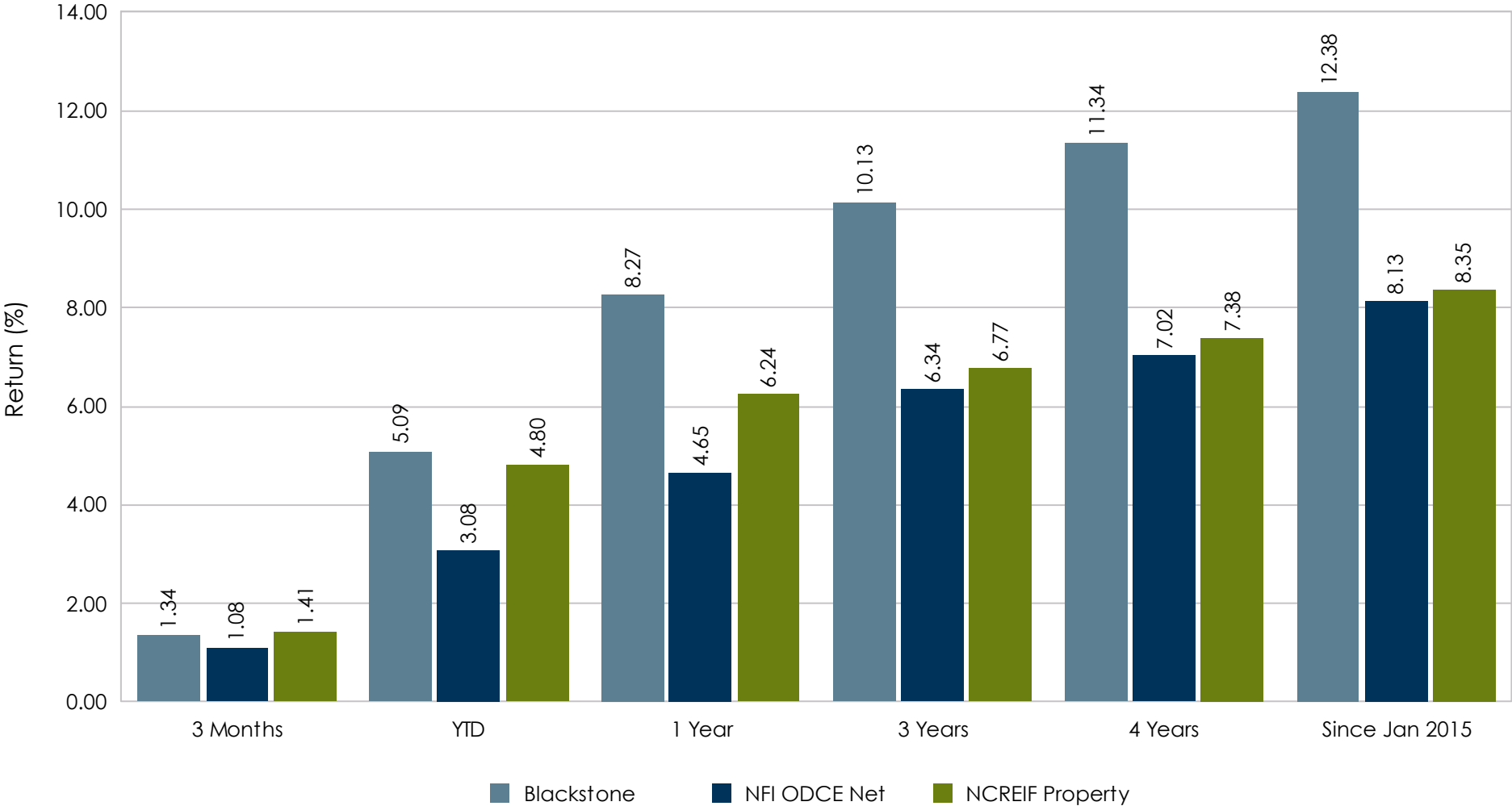
#### Property Type



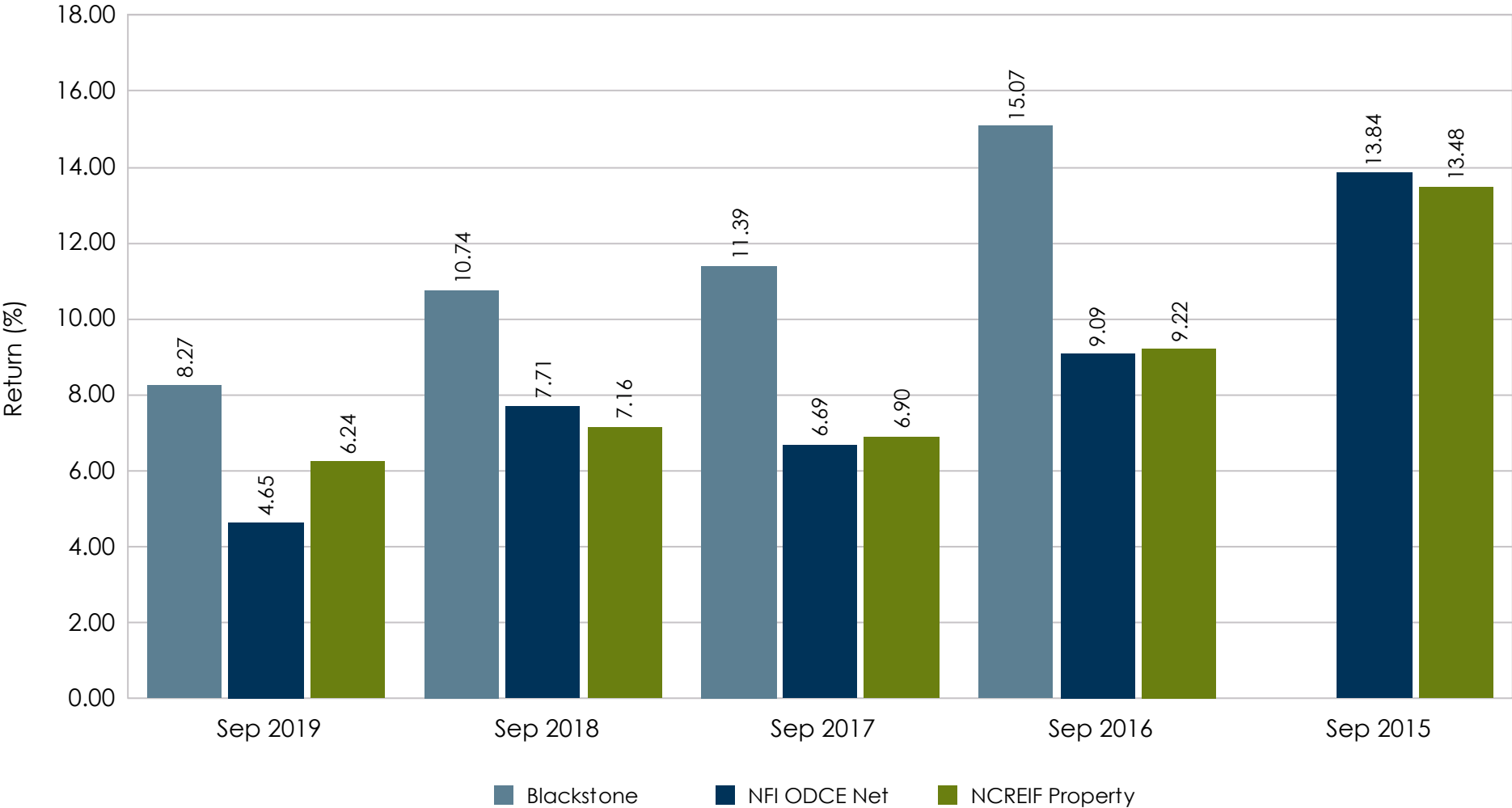
#### Geographic Region



**Blackstone Property Partners**  
*For the Periods Ending September 30, 2019*



**Blackstone Property Partners**  
*For the One Year Periods Ending September*



**Private Real Estate - Active Funds***For the Period Ending September 30, 2019***Summary of Cash Flows for 6 Months**

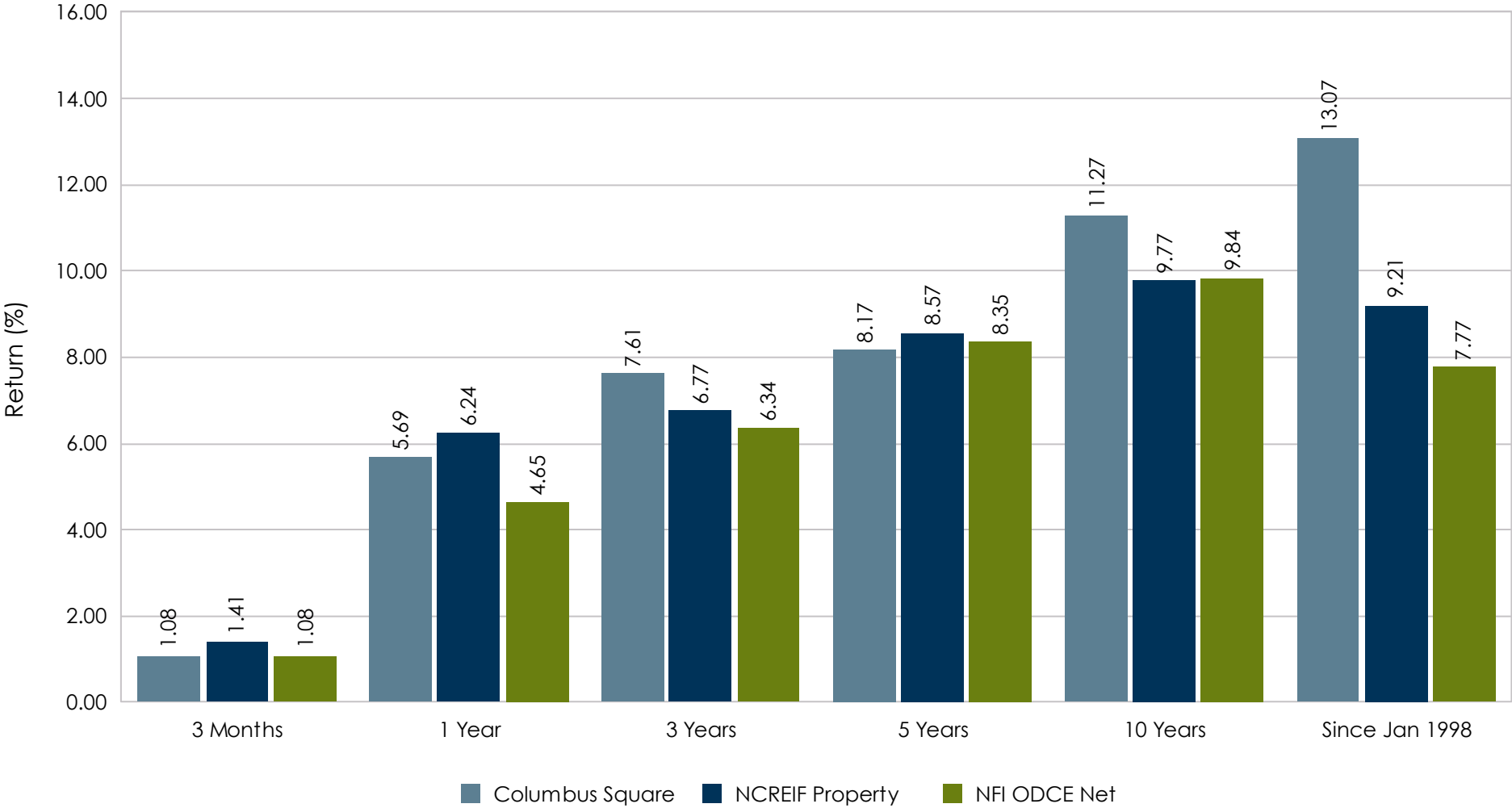
Cash Outflows	Cash Inflows	Net Cash Flows
-6,451,388	13,226,741	6,775,353

**Summary of Portfolio Inception to Date (Category totals include active and closed funds)**

	Inception Date	Committed	Drawn to Date	Remaining Commitment	Distributions to Date	Adjusted Ending Value	Total Value	Total Value to Paid-in
<b>Total</b>	<b>Aug-11</b>	<b>130,500,000</b>	<b>87,888,129</b>	<b>53,738,577</b>	<b>75,085,010</b>	<b>47,643,779</b>	<b>122,728,789</b>	<b>1.40x</b>
<b>Real Estate</b>	<b>Aug-11</b>	<b>130,500,000</b>	<b>87,888,129</b>	<b>53,738,577</b>	<b>75,085,010</b>	<b>47,643,779</b>	<b>122,728,789</b>	<b>1.40x</b>
Siguler Guff Dist. Real Estate Opp.	Aug-11	10,000,000	9,250,000	750,000	11,837,234	<b>4,383,255</b>	16,220,489	1.75x
TA Associates Realty X	Jan-13	20,000,000	20,000,000	-	28,814,635	<b>3,565,505</b>	32,380,140	1.62x
Cerberus Real Estate Fund III	Jul-13	20,000,000	25,185,319	4,871,659	25,756,432	<b>9,502,784</b>	35,259,216	1.40x
Hall Capital Fund III	Nov-14	7,500,000	7,016,483	483,517	2,716,798	<b>5,468,925</b>	8,185,723	1.17x
Siguler Guff Dist. Real Estate Opp. II	Dec-14	10,000,000	8,715,000	1,285,000	4,890,073	<b>6,900,877</b>	11,790,950	1.35x
Cerberus Institutional Real Estate Partners 4	Jun-16	15,000,000	10,512,179	5,557,549	1,069,838	<b>10,538,674</b>	11,608,512	1.10x
Siguler Guff Dist. Real Estate Opp. II B	Dec-17	10,000,000	4,450,000	5,550,000	-	<b>4,771,685</b>	4,771,685	1.07x
Angelo Gordon Realty Value Fund X	Jun-19	20,000,000	1,500,000	18,500,000	-	<b>1,252,926</b>	1,252,926	0.84x
Blackstone Real Estate Partners Fund IX, L.P	Sep-19	18,000,000	1,259,148	16,740,852	-	<b>1,259,148</b>	1,259,148	1.00x

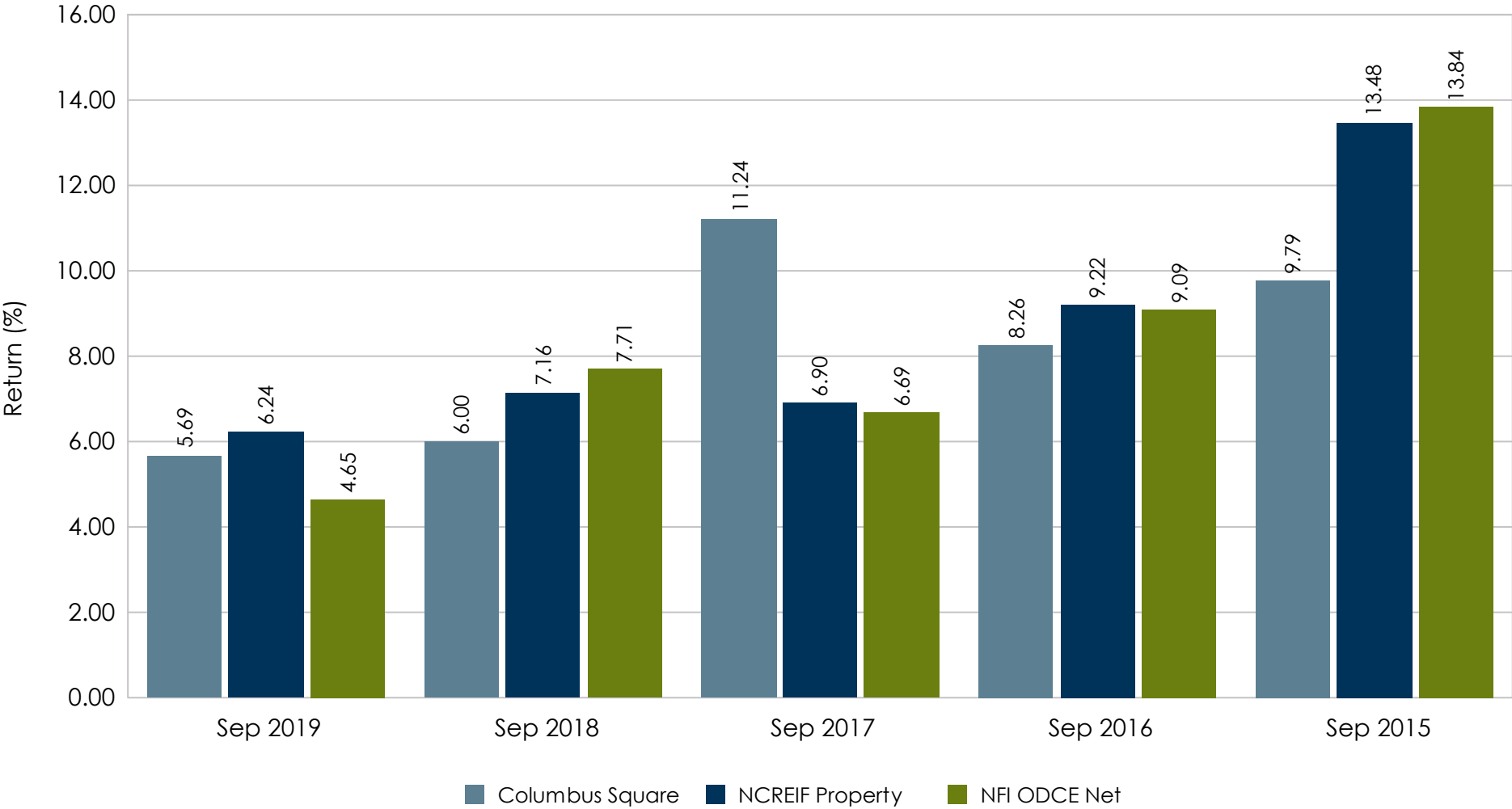
Columbus Square

For the Periods Ending September 30, 2019



Columbus Square

For the One Year Periods Ending September



## Mount Lucas Peak Partners

For the Periods Ending September 30, 2019

### Account Description

- **Strategy** Other
- **Vehicle** Non-Mutual Commingled
- **Benchmark** CS Hedge - Global Macro
- **Performance Inception Date** January 1998
- **Fees** 100 bps and an annual incentive fee

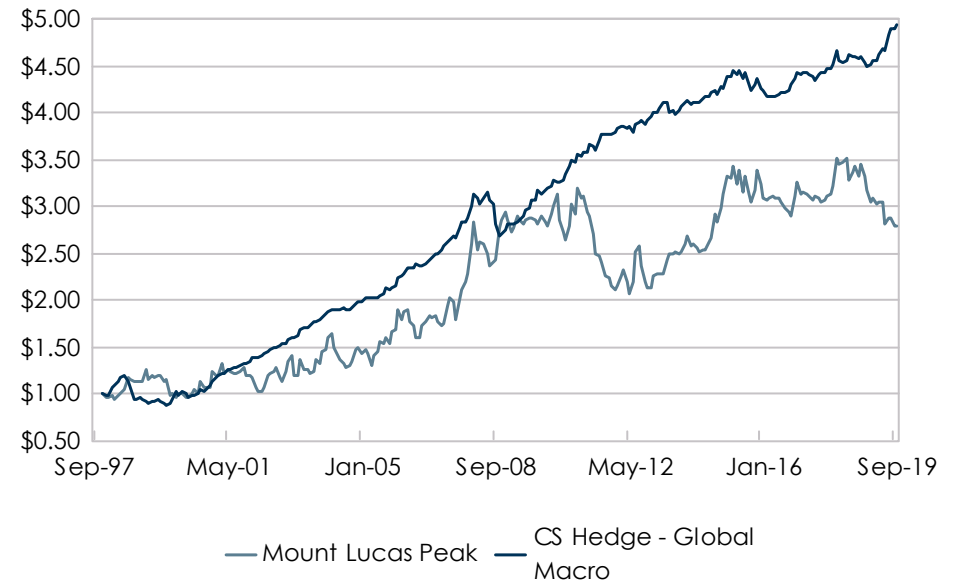
### Performance Goals

- Outperform the CS Hedge - Global Macro.

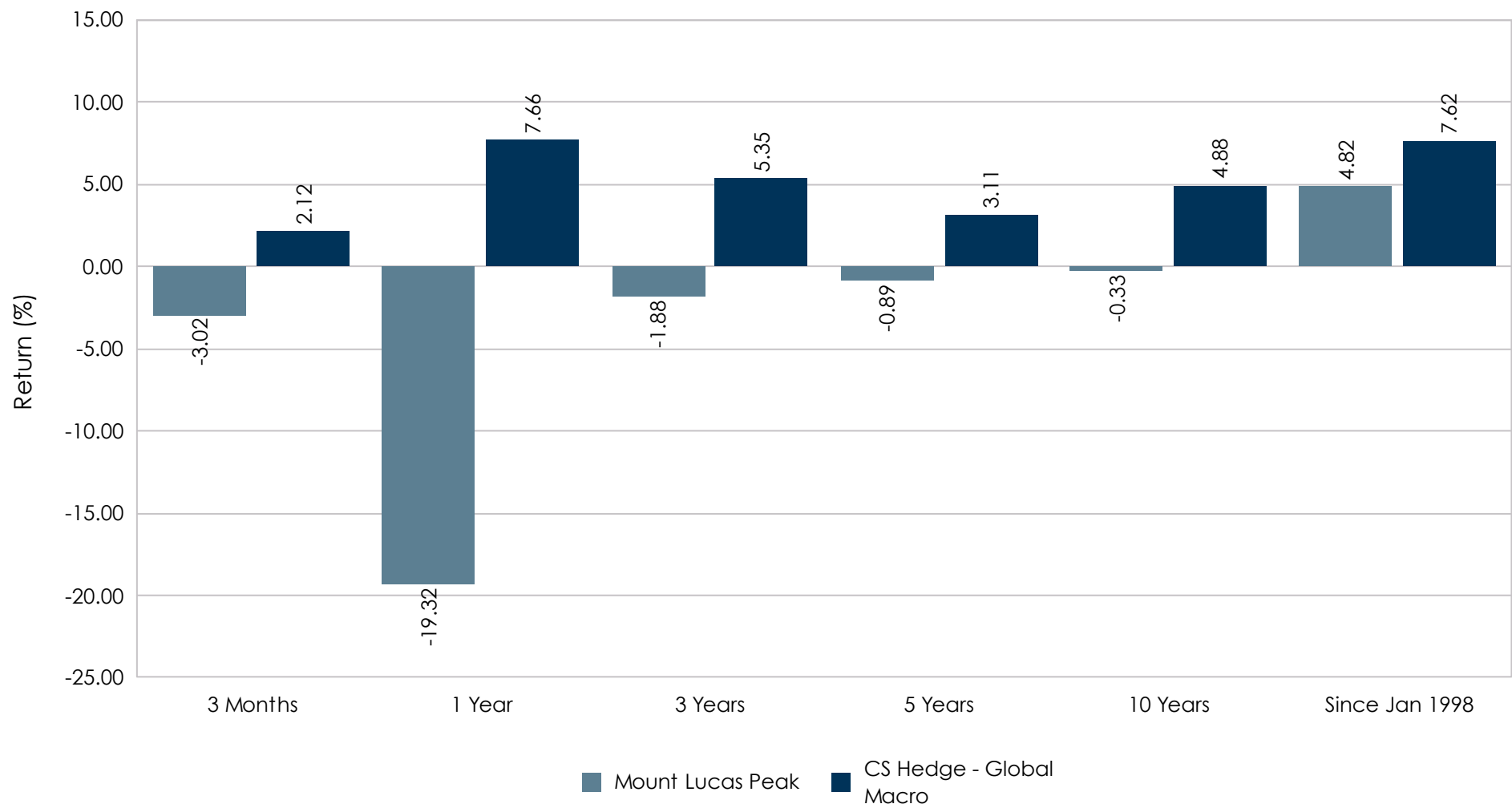
### Dollar Growth Summary (\$000s)

	FYTD	YTD
<b>Beginning Market Value</b>	<b>26,764</b>	<b>28,601</b>
Net Additions	-66	-209
Return on Investment	-807	-2,500
<b>Ending Market Value</b>	<b>25,891</b>	<b>25,891</b>

### Growth of a Dollar

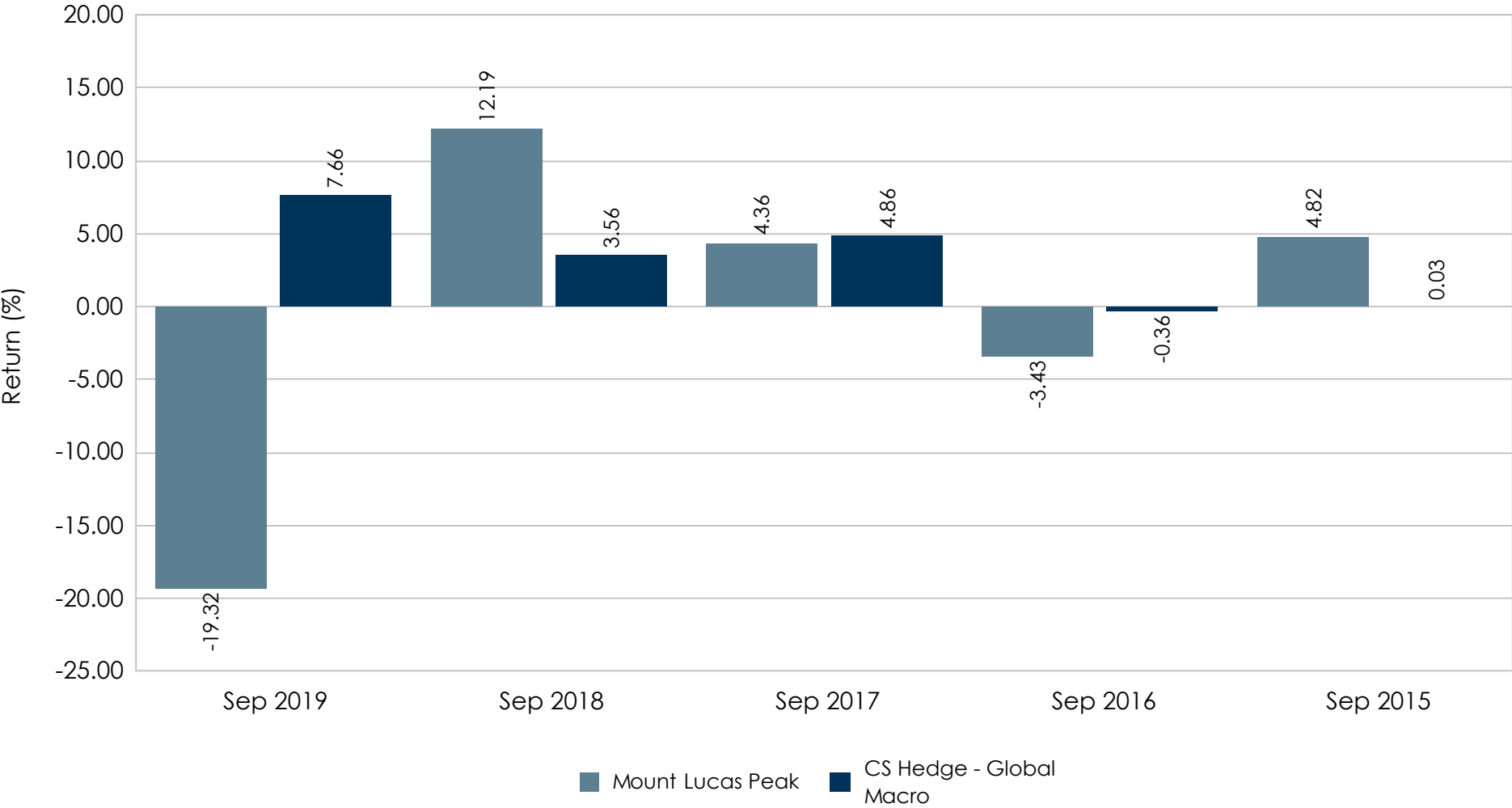


**Mount Lucas Peak Partners**  
*For the Periods Ending September 30, 2019*





**Mount Lucas Peak Partners**  
*For the One Year Periods Ending September*



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**Appendix**

### Securities Lending Income

	<u>Domestic Equity</u>	<u>Fixed Income</u>	<u>Total</u>
2019			
Q1	\$0	\$0	\$0
Q2	\$0	\$0	\$0
Q3	\$12,071	\$1,047	\$13,117
Q4			
2019 Total	<u>\$12,071</u>	<u>\$1,047</u>	<u>\$13,117</u>

## Definitions of Statistical Measures

**Alpha** - the annualized difference between the manager's actual return and the manager's expected return given its relative risk vs. the benchmark (which is represented by beta, a measure that tracks volatility to an index).

**Batting Average** - a measure used to quantify a manager's ability to meet or beat a benchmark. A manager who outperforms the benchmark 20 out of a possible 40 times has a batting average of 50.

**Beta** - measures the portfolio's sensitivity of returns to market movements represented by the primary benchmark.

**Down Capture** - demonstrates the ratio of the portfolio's average returns relative to the benchmark in periods in which the benchmark had a negative return. For instance, a down-capture of 96% indicates that, on average, the portfolio is down 96% when the benchmark is down 100%. Lower portfolio down-capture is preferred.

**R Squared** - the amount of the manager's return that can be explained by the benchmark. A R Squared of 100 indicates a perfect correlation, while a R Squared of 0 indicates no correlation at all.

**Sharpe Ratio** - a measure of return per unit of risk. Higher sharpe ratios are preferred while negative ratios are generally meaningless and cannot be used for comparison purposes.

**Standard Deviation** - a measure of the portfolio's volatility. A large standard deviation relative to the benchmark represents volatile portfolio returns.

**Tracking Error** - a measure that reports the difference between the return of a manager that is received and that of a benchmark that the manager is attempting to track.

**Up Capture** - demonstrates the ratio of the portfolio's average returns relative to the benchmark in periods in which the benchmark had a positive return. For instance, an up-capture of 96% indicates that, on average, the portfolio is up 96% when the benchmark is up 100%. Higher portfolio up-capture is preferred.

## Quality Rating Scale

Moody's Rating	S&P Rating	Prior to 1Q09	Beginning 1Q09	Beginning 3Q11	Moody's Rating	S&P Rating	Prior to 1Q09	Beginning 1Q09	Beginning 3Q11
TSY	TSY	10	26	24	Ba2	BB	6	13	13
AGY	AGY	10	25	24	Ba	BB		13	13
Aaa	AAA	10	24	24	MIG4		6	13	13
Aa1	AA+	9.3	23	23	Ba3	BB-	5.7	12	12
Aa2	AA		22	22	B1	B+	5.3	11	11
Aa	AA	9	22	22	B2	B	5	10	10
MIG1		9	22	22	B	B		10	10
Aa3	AA-	8.7	21	21	B3	B-	4.7	9	9
A1	A+	8.3	20	20	Caa1	CCC+	4.3	8	8
A-1			20	20	Caa2	CCC	4	7	7
A2	A	8	19	19	Caa	CCC		7	7
A	A		19	19	Caa3	CCC-	3.7	6	6
MIG2		8	19	19	Ca	CC	3	5	5
A3	A-		18	18	C	C	2	4	4
Baa1	BBB+	7.7	17	17		DDD	1	3	3
Baa2	BBB	7.3	16	16		DD		2	2
Baa	BBB	7	16	16		D		1	1
MIG3			16	16	NR	NR	N/A	-1	-1
Baa3	BBB-	7	15	15	NA	NA	N/A		
Ba1	BB+	6.7	14	14	N/A	N/A			

Historical Benchmark Composition

Total Fund Policy

10/31/1990	The index consists of 55.0% Russell 3000, 35.0% BloomBar US Aggregate, 10.0% MSCI EAFE.
06/30/2007	The index consists of 55.0% Russell 3000, 35.0% BloomBar Universal, 10.0% MSCI EAFE.
11/30/2007	The index consists of 55.0% Russell 3000, 10.0% MSCI EAFE, 30.0% BloomBar Universal, 5.0% NFI ODCE Net.
08/31/2012	The index consists of 65.0% MSCI ACWI, 30.0% BloomBar Universal, 5.0% NFI ODCE Net.
08/31/2014	The index consists of 60.0% MSCI ACWI, 30.0% BloomBar Universal, 5.0% NFI ODCE Net, 5.0% Bloomberg Commodity.
04/30/2016	The index consists of 60.0% MSCI ACWI, 25.0% BloomBar Universal, 10.0% NFI ODCE Net, 5.0% Bloomberg Commodity.
09/30/2019	The index consists of 60.0% MSCI ACWI, 25.0% BloomBar Universal, 15.0% NFI ODCE Net.

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