

# FOURTH FISCAL QUARTER 2019 INVESTMENT PERFORMANCE REPORT

## VERMONT STATE TEACHERS RETIREMENT SYSTEM



September 24, 2019

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# MARKET SUMMARY

NEPC, LLC

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# PERFORMANCE OVERVIEW

## Q2 Market Summary

Macro			Equity			Credit			Real Assets		
US Dollar	VIX	US 10-Yr	S&P 500	MSCI EAFE	MSCI EM	US Agg.	High Yield	Dollar EMD	Oil	Gold	REITS
											
-1.2%	1.4	-42 bps	4.3%	3.7%	0.6%	3.1%	2.5%	4.1%	-3.3%	9.0%	1.7%

**Global equities broadly increased during the quarter as the market perceived a more dovish policy stance from the Fed**

**Market expectations for several rate cuts from the Fed reached a fever pitch as investors assessed low inflation data, a weaker global growth outlook, and uncertainties of US-China trade tensions**

**The spread between the 10-year Treasury Note and 3-month Treasury Bill remained negative through the end of the quarter as yields for longer duration bonds shifted materially lower**

Market segment (index representation) as follows: US Dollar (DXY Index), VIX (CBOE Volatility Index), US 10-Year (US 10-Year Treasury Yield), S&P 500 (US Equity), MSCI EAFE Index (International Developed Equity), MSCI Emerging Markets (Emerging Markets Equity), US Agg (Barclays US Aggregate Bond Index), High Yield (Barclays US High Yield Index), Dollar EMD (JPM EMBI Global Diversified Index), Crude Oil (WTI Crude Oil Spot), Gold (Gold Price Spot), and REITs (NAREIT Composite Index). Source: FactSet



# RETURNS FOR KEY INDICES RANKED IN ORDER OF PERFORMANCE

2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
MSCI EMERGING MARKETS 32.17	MSCI EMERGING MARKETS 39.39	BC AGGREGATE 5.24	MSCI EMERGING MARKETS 78.51	RUSSELL 2000 GROWTH 29.09	BC AGGREGATE 7.84	MSCI EMERGING MARKETS 18.22	RUSSELL 2000 GROWTH 43.30	S&P 500 13.69	RUSSELL 1000 GROWTH 5.67	RUSSELL 2000 VALUE 31.74	MSCI EMERGING MARKETS 37.28	BC AGGREGATE 0.01
MSCI EAFE 26.34	RUSSELL 1000 GROWTH 11.81	RUSSELL 2000 VALUE -28.92	RUSSELL 1000 GROWTH 37.21	RUSSELL 2000 26.85	RUSSELL 1000 GROWTH 2.64	RUSSELL 2000 VALUE 18.05	RUSSELL 2000 38.82	RUSSELL 1000 VALUE 13.45	S&P 500 1.38	RUSSELL 2000 21.31	RUSSELL 1000 GROWTH 30.21	RUSSELL 1000 GROWTH -1.51
RUSSELL 1000 VALUE 22.25	MSCI EAFE 11.17	RUSSELL 2000 -33.79	RUSSELL 2000 GROWTH 34.47	RUSSELL 2000 VALUE 24.5	S&P 500 2.11	RUSSELL 1000 VALUE 17.51	RUSSELL 2000 VALUE 34.52	RUSSELL 1000 13.24	RUSSELL 1000 0.92	RUSSELL 1000 VALUE 17.34	MSCI EAFE 25.03	S&P 500 -4.38
RUSSELL 2000 VALUE 23.48	RUSSELL 2000 GROWTH 7.06	RUSSELL 1000 VALUE -36.85	MSCI EAFE 31.78	MSCI EMERGING MARKETS 18.88	RUSSELL 1000 1.50	MSCI EAFE 17.32	RUSSELL 1000 GROWTH 33.48	RUSSELL 1000 GROWTH 13.05	BC AGGREGATE 0.55	RUSSELL 1000 12.05	RUSSELL 2000 GROWTH 22.17	RUSSELL 1000 -4.78
RUSSELL 2000 18.37	BC AGGREGATE 6.97	S&P 500 -37.0	RUSSELL 1000 28.43	RUSSELL 1000 GROWTH 16.71	RUSSELL 1000 VALUE 0.39	RUSSELL 1000 16.42	RUSSELL 1000 33.11	BC AGGREGATE 5.97	MSCI EAFE -0.81	S&P 500 11.96	S&P 500 21.83	RUSSELL 1000 VALUE -8.27
S&P 500 15.8	RUSSELL 1000 5.77	RUSSELL 1000 -37.6	RUSSELL 2000 27.16	RUSSELL 1000 16.10	RUSSELL 2000 GROWTH -2.91	RUSSELL 2000 16.35	RUSSELL 1000 VALUE 32.53	RUSSELL 2000 GROWTH 5.60	RUSSELL 2000 GROWTH -1.38	RUSSELL 2000 GROWTH 11.32	RUSSELL 1000 21.69	RUSSELL 2000 GROWTH -9.31
RUSSELL 1000 15.46	S&P 500 5.49	RUSSELL 1000 GROWTH -38.44	S&P 500 26.46	RUSSELL 1000 VALUE 15.51	RUSSELL 2000 -4.18	S&P 500 16.00	S&P 500 32.39	RUSSELL 2000 4.89	RUSSELL 1000 VALUE -3.83	MSCI EMERGING MARKETS 11.19	RUSSELL 2000 14.65	RUSSELL 2000 -11.01
RUSSELL 2000 GROWTH 13.35	RUSSELL 1000 VALUE -0.17	RUSSELL 2000 GROWTH -38.54	RUSSELL 2000 VALUE 20.58	S&P 500 15.06	RUSSELL 2000 VALUE -5.50	RUSSELL 1000 GROWTH 15.26	MSCI EAFE 22.78	RUSSELL 2000 VALUE 4.22	RUSSELL 2000 -4.41	RUSSELL 1000 GROWTH 7.08	RUSSELL 1000 VALUE 13.66	RUSSELL 2000 VALUE -12.86
RUSSELL 1000 GROWTH 9.07	RUSSELL 2000 -1.56	MSCI EAFE -43.38	RUSSELL 1000 VALUE 19.69	MSCI EAFE 7.75	MSCI EAFE -12.14	RUSSELL 2000 GROWTH 14.59	BC AGGREGATE -2.02	MSCI EMERGING MARKETS -2.19	RUSSELL 2000 VALUE -7.46	BC AGGREGATE 2.65	RUSSELL 2000 VALUE 7.84	MSCI EAFE -13.79
BC AGGREGATE 4.33	RUSSELL 2000 VALUE -9.78	MSCI EMERGING MARKETS -53.33	BC AGGREGATE 5.93	BC AGGREGATE 6.54	MSCI EMERGING MARKETS -18.42	BC AGGREGATE 4.21	MSCI EMERGING MARKETS -2.60	MSCI EAFE -4.90	MSCI EMERGING MARKETS -14.93	MSCI EAFE 1.00	BC AGGREGATE 3.54	MSCI EMERGING MARKETS -14.58

QTD	1 Year	3 year	5 Year	10 Year
RUSSELL 1000 GROWTH 4.64	RUSSELL 1000 GROWTH 11.56	RUSSELL 1000 GROWTH 18.07	RUSSELL 1000 GROWTH 13.39	RUSSELL 1000 GROWTH 16.28
S&P 500 4.30	S&P 500 10.42	RUSSELL 2000 GROWTH 14.69	S&P 500 10.71	RUSSELL 1000 14.77
RUSSELL 1000 4.25	RUSSELL 1000 10.02	S&P 500 14.19	RUSSELL 1000 10.45	S&P 500 14.70
RUSSELL 1000 VALUE 3.84	RUSSELL 1000 VALUE 8.46	RUSSELL 1000 14.15	RUSSELL 2000 GROWTH 8.63	RUSSELL 2000 GROWTH 14.41
MSCI EAFE 3.68	BC AGGREGATE 7.87	RUSSELL 2000 12.30	RUSSELL 1000 VALUE 7.46	RUSSELL 2000 13.45
BC AGGREGATE 3.08	MSCI EAFE 1.08	MSCI EMERGING MARKETS 10.66	RUSSELL 2000 7.06	RUSSELL 1000 VALUE 13.19
RUSSELL 2000 GROWTH 2.75	MSCI EMERGING MARKETS 1.21	RUSSELL 1000 VALUE 10.19	RUSSELL 2000 VALUE 5.39	RUSSELL 2000 VALUE 12.40
RUSSELL 2000 2.10	RUSSELL 2000 GROWTH -0.49	RUSSELL 2000 VALUE 9.81	BC AGGREGATE 2.95	MSCI EAFE 6.90
RUSSELL 2000 VALUE 1.37	RUSSELL 2000 -3.31	MSCI EAFE 9.11	MSCI EMERGING MARKETS 2.49	MSCI EMERGING MARKETS 5.81
MSCI EMERGING MARKETS 0.61	RUSSELL 2000 VALUE -6.24	BC AGGREGATE 2.31	MSCI EAFE 2.25	BC AGGREGATE 3.90



# TOTAL FUND PERFORMANCE

NEPC, LLC

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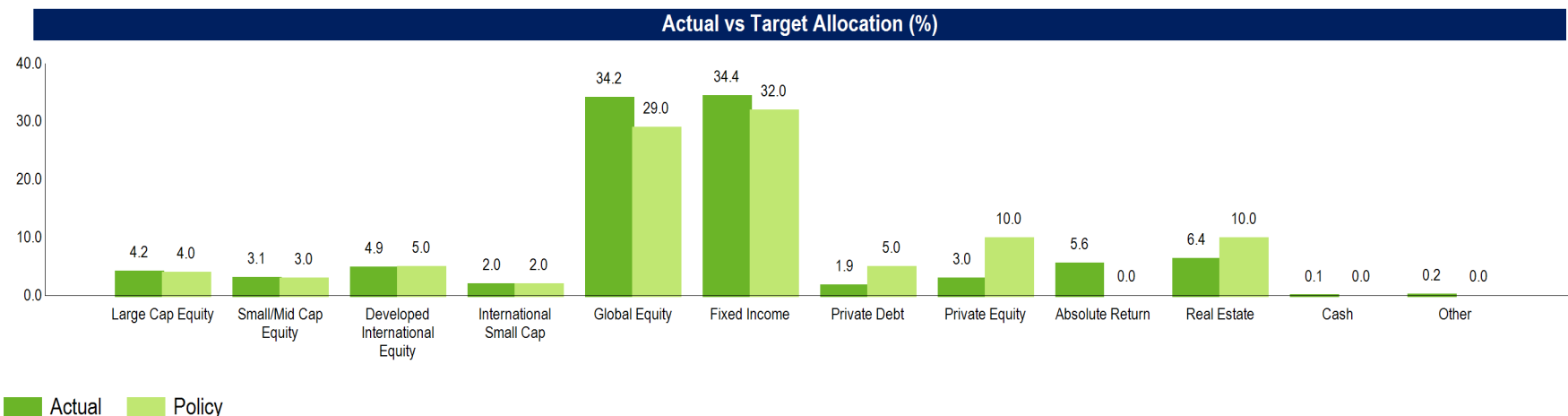
## Vermont State Teachers

# TOTAL FUND PERFORMANCE SUMMARY - NET

	Market Value	3 Mo	Rank	YTD	Rank	Fiscal YTD	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank	7 Yrs	Rank	10 Yrs	Rank
<b>Total Teachers Composite</b>	<b>\$1,891,763,464</b>	<b>2.9%</b>	<b>80</b>	<b>10.8%</b>	<b>81</b>	<b>6.1%</b>	<b>58</b>	<b>6.1%</b>	<b>58</b>	<b>8.1%</b>	<b>74</b>	<b>5.0%</b>	<b>85</b>	<b>6.7%</b>	<b>95</b>	<b>8.5%</b>	<b>70</b>
Allocation Index		3.0%	70	11.1%	78	5.8%	64	5.8%	64	7.8%	85	4.8%	90	6.4%	97	7.7%	92
Policy Index		3.3%	49	10.9%	80	6.7%	36	6.7%	36	7.9%	82	5.0%	87	6.6%	96	7.6%	93
InvMetrics Public DB < \$5 Billion Net Median		3.2%		12.3%		6.2%		6.2%		8.7%		5.8%		8.2%		9.0%	

3 Years Ending June 30, 2019									
	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Sharpe Ratio	Rank	Sortino Ratio	Rank	
Total Teachers Composite	8.12%	74	6.21%	16	1.08	25	1.48	24	
Allocation Index	7.76%	85	6.44%	19	0.99	61	1.37	43	
Policy Index	7.86%	82	5.64%	5	1.15	13	1.61	12	

5 Years Ending June 30, 2019									
	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Sharpe Ratio	Rank	Sortino Ratio	Rank	
Total Teachers Composite	5.01%	85	6.26%	14	0.66	58	1.18	29	
Allocation Index	4.77%	90	6.34%	15	0.61	76	1.08	51	
Policy Index	4.97%	87	5.79%	5	0.71	44	1.28	17	

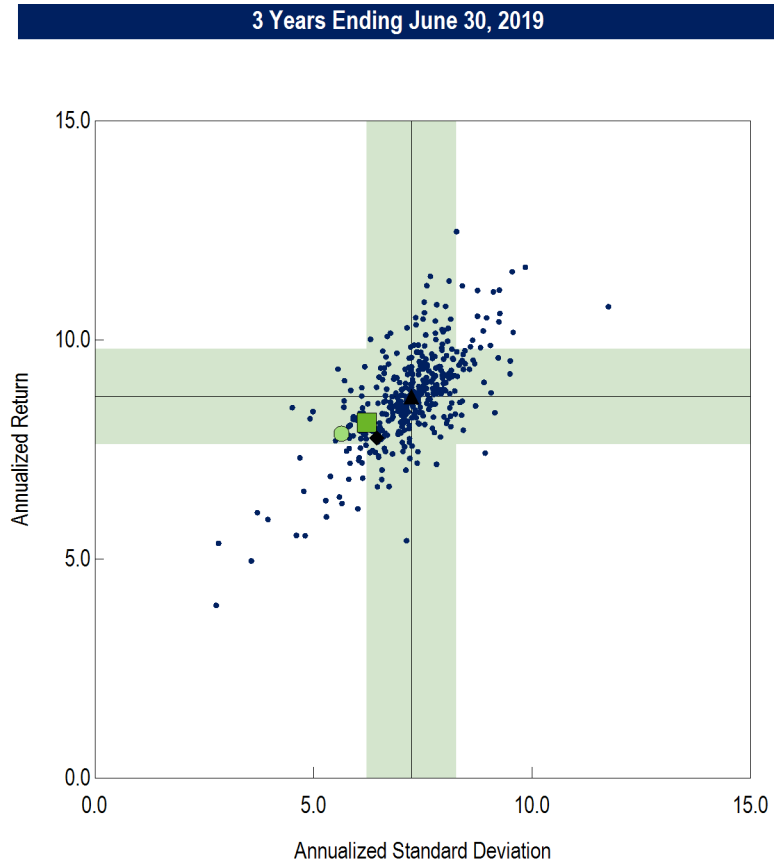


Asset class weights may not add up to 100% due to rounding



## Vermont State Teachers

# TOTAL FUND RISK/RETURN - NET



3 Years Ending June 30, 2019

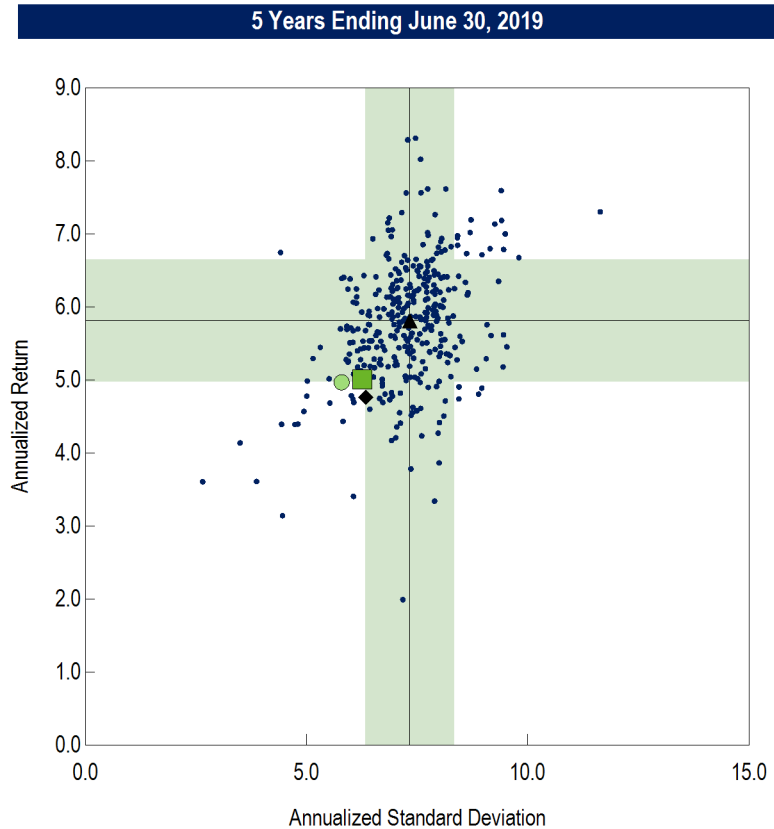
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank
Total Teachers Composite	8.1%	74	6.2%	16	1.1	25
Allocation Index	7.8%	85	6.4%	19	1.0	61
S&P 500	14.2%	1	12.2%	99	1.0	36
FTSE WGBI TR	1.0%	99	5.3%	4	-0.1	99
MSCI ACWI	11.6%	1	11.3%	99	0.9	87
MSCI ACWI ex USA	9.4%	23	11.4%	99	0.7	99
InvMetrics Public DB < \$5 Billion Net Median	8.7%	--	7.2%	--	1.0	--





## Vermont State Teachers

# TOTAL FUND RISK/RETURN - NET



- Total Teachers Composite
- ◆ Allocation Index
- Policy Index
- ▲ Universe Median
- 68% Confidence Interval
- InvMetrics Public DB < \$5 Billion Net

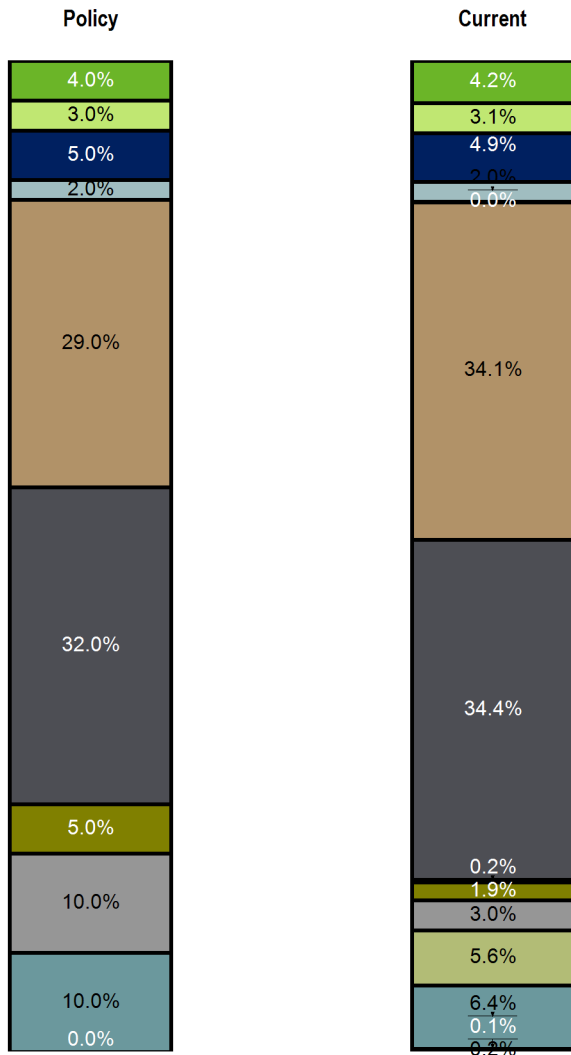
5 Years Ending June 30, 2019

	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank
Total Teachers Composite	5.0%	85	6.3%	14	0.7	58
Allocation Index	4.8%	90	6.3%	15	0.6	76
S&P 500	10.7%	1	12.0%	99	0.8	10
FTSE WGBI TR	0.8%	99	5.4%	4	0.0	99
MSCI ACWI	6.2%	35	11.8%	99	0.4	98
MSCI ACWI ex USA	2.2%	99	12.5%	99	0.1	99
InvMetrics Public DB < \$5 Billion Net Median	5.8%	--	7.3%	--	0.7	--



Vermont State Teachers

# TOTAL FUND ASSET ALLOCATION VS. POLICY TARGETS



Asset Allocation vs. Target				
	Current	Policy	Current	Difference*
Large Cap Equity	\$79,502,980	4.0%	4.2%	0.2%
Small/Mid Cap Equity	\$58,181,214	3.0%	3.1%	0.1%
Developed International Equity	\$92,331,708	5.0%	4.9%	-0.1%
International Small Cap	\$38,305,414	2.0%	2.0%	0.0%
Emerging Markets Equity	\$5,423	--	0.0%	0.0%
Global Equity	\$644,856,712	29.0%	34.1%	5.1%
Fixed Income	\$650,302,265	32.0%	34.4%	2.4%
High Yield	\$3,820,478	--	0.2%	0.2%
Private Debt	\$35,093,672	5.0%	1.9%	-3.1%
Private Equity	\$57,562,954	10.0%	3.0%	-7.0%
Absolute Return	\$105,085,109	--	5.6%	5.6%
Real Estate	\$121,263,915	10.0%	6.4%	-3.6%
Cash	\$1,116,508	0.0%	0.1%	0.1%
Other	\$4,335,113	--	0.2%	0.2%
<b>Total</b>	<b>\$1,891,763,464</b>	<b>100.0%</b>	<b>100.0%</b>	

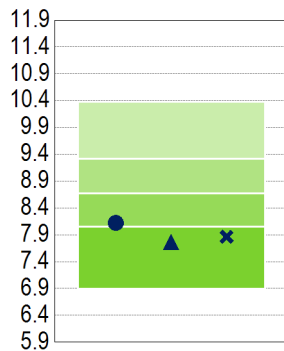
\*Difference between Policy and Current Allocation



# TOTAL FUND RISK STATISTICS VS. PEER UNIVERSE - NET

## Teachers Composite vs. InvMetrics Public DB < \$5 Billion Net 3 Years

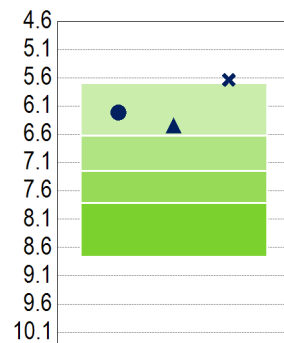
### Anlzd Return



● Total Teachers Composite	
Value	8.12
Rank	74
▲ Allocation Index	
Value	7.76
Rank	85
✕ Policy Index	
Value	7.86
Rank	82

Universe	
5th %tile	10.38
25th %tile	9.33
Median	8.69
75th %tile	8.06
95th %tile	6.91

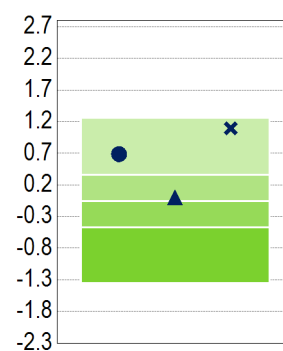
### Anlzd Standard Deviation



● Total Teachers Composite	
Value	6.21
Rank	16
▲ Allocation Index	
Value	6.44
Rank	19
✕ Policy Index	
Value	5.64
Rank	5

Universe	
5th %tile	5.70
25th %tile	6.61
Median	7.24
75th %tile	7.80
95th %tile	8.75

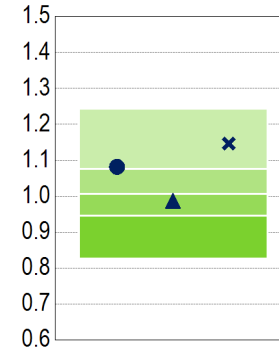
### Anlzd Alpha



● Total Teachers Composite	
Value	0.69
Rank	15
▲ Allocation Index	
Value	0.00
Rank	47
✕ Policy Index	
Value	1.09
Rank	9

Universe	
5th %tile	1.26
25th %tile	0.37
Median	-0.04
75th %tile	-0.46
95th %tile	-1.35

### Sharpe Ratio



● Total Teachers Composite	
Value	1.08
Rank	25
▲ Allocation Index	
Value	0.99
Rank	61
✕ Policy Index	
Value	1.15
Rank	13

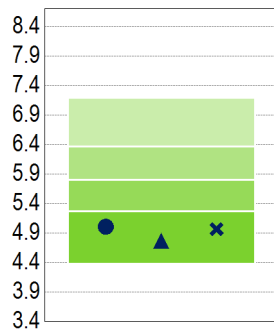
Universe	
5th %tile	1.24
25th %tile	1.08
Median	1.01
75th %tile	0.95
95th %tile	0.83



# TOTAL FUND RISK STATISTICS VS. PEER UNIVERSE - NET

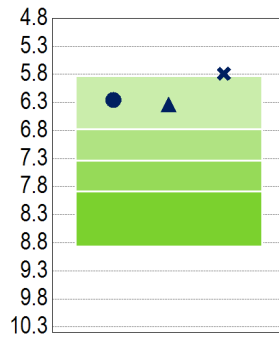
## Teachers Composite vs. InvMetrics Public DB < \$5 Billion Net 5 Years

### Anlzd Return



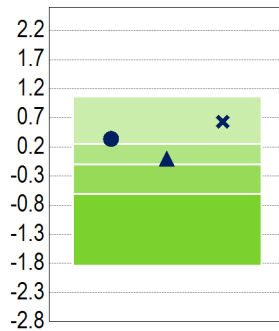
● Total Teachers Composite	Value	5.01
	Rank	85
▲ Allocation Index	Value	4.77
	Rank	90
× Policy Index	Value	4.97
	Rank	87
Universe	5th %tile	7.19
	25th %tile	6.37
	Median	5.81
	75th %tile	5.28
	95th %tile	4.39

### Anlzd Standard Deviation



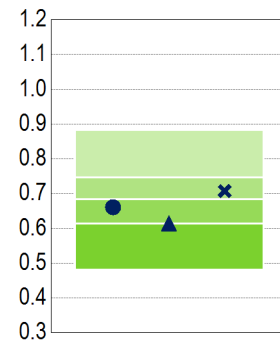
● Total Teachers Composite	Value	6.26
	Rank	14
▲ Allocation Index	Value	6.34
	Rank	15
× Policy Index	Value	5.79
	Rank	5
Universe	5th %tile	5.83
	25th %tile	6.77
	Median	7.33
	75th %tile	7.88
	95th %tile	8.86

### Anlzd Alpha



● Total Teachers Composite	Value	0.34
	Rank	21
▲ Allocation Index	Value	0.00
	Rank	45
× Policy Index	Value	0.63
	Rank	11
Universe	5th %tile	1.07
	25th %tile	0.26
	Median	-0.09
	75th %tile	-0.60
	95th %tile	-1.83

### Sharpe Ratio



● Total Teachers Composite	Value	0.66
	Rank	58
▲ Allocation Index	Value	0.61
	Rank	76
× Policy Index	Value	0.71
	Rank	44
Universe	5th %tile	0.88
	25th %tile	0.75
	Median	0.69
	75th %tile	0.62
	95th %tile	0.48



## Vermont State Teachers

# TOTAL FUND PERFORMANCE DETAIL - NET

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Rank	YTD (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception Date
<b>Total Teachers Composite</b>	<b>1,891,763,464</b>	<b>100.0</b>	<b>100.0</b>	<b>2.9</b>	<b>80</b>	<b>10.8</b>	<b>81</b>	<b>6.1</b>	<b>58</b>	<b>6.1</b>	<b>58</b>	<b>8.1</b>	<b>74</b>	<b>5.0</b>	<b>85</b>	<b>8.5</b>	<b>70</b>	<b>Mar-92</b>
Allocation Index				3.0	70	11.1	78	5.8	64	5.8	64	7.8	85	4.8	90	7.7	92	Mar-92
Policy Index				3.3	49	10.9	80	6.7	36	6.7	36	7.9	82	5.0	87	7.6	93	Mar-92
InvMetrics Public DB < \$5 Billion Net Median				3.2		12.3		6.2		6.2		8.7		5.8		9.0		Mar-92
<b>Total Global Equity</b>	<b>644,856,712</b>	<b>34.1</b>	<b>29.0</b>	<b>1.8</b>	<b>74</b>	<b>16.0</b>	<b>51</b>	<b>1.3</b>	<b>74</b>	<b>1.3</b>	<b>74</b>	--	--	--	--	--	--	<b>Feb-18</b>
MSCI ACWI Partial Return Benchmark***				0.8	86	13.1	77	2.9	66	2.9	66	--	--	--	--	--	--	Feb-18
eV All Global Equity Net Median				3.4		16.1		5.2		5.2		10.4		6.1		10.7		Feb-18
BlackRock MSCI ACWI IMI**	484,530,263	25.6		--	--	--	--	--	--	--	--	--	--	--	--	--	--	Jul-19
Artisan Global Opportunities	86,709,307	4.6		6.2	12	23.7	8	8.4	28	8.4	28	--	--	--	--	--	--	Jul-18
Hosking Global Equity	73,617,141	3.9		3.3	53	14.9	62	-0.1	79	-0.1	79	--	--	--	--	--	--	Feb-18
MSCI ACWI				3.6	48	16.2	49	5.7	47	5.7	47	11.6	38	6.2	50	10.1	59	Feb-18
eV All Global Equity Net Median				3.4		16.1		5.2		5.2		10.4		6.1		10.7		Feb-18
<b>Total Domestic Equity</b>	<b>137,684,194</b>	<b>7.3</b>	<b>7.0</b>	<b>1.3</b>	<b>87</b>	<b>15.7</b>	<b>70</b>	<b>6.7</b>	<b>45</b>	<b>6.7</b>	<b>45</b>	<b>12.8</b>	<b>45</b>	<b>9.7</b>	<b>33</b>	--	--	<b>Dec-10</b>
Russell 3000 Partial Return Benchmark***				1.6	84	15.9	68	6.4	47	6.4	47	13.1	42	9.7	34	14.4	39	Dec-10
eV All US Equity Net Median				3.8		18.0		5.8		5.8		12.2		8.3		13.9		Dec-10
<b>Total U.S Large Cap Equities</b>	<b>79,502,980</b>	<b>4.2</b>	<b>4.0</b>	<b>-0.7</b>	<b>99</b>	<b>13.0</b>	<b>90</b>	<b>4.7</b>	<b>77</b>	<b>4.7</b>	<b>77</b>	<b>12.0</b>	<b>59</b>	<b>9.2</b>	<b>48</b>	<b>14.7</b>	<b>28</b>	<b>Apr-01</b>
S&P 500 Partial Return Benchmark***				-0.6	99	13.0	91	5.2	73	5.2	73	12.4	54	9.7	42	14.2	41	Apr-01
eV US Large Cap Equity Net Median				4.1		17.5		8.2		8.2		12.7		9.1		13.8		Apr-01
BlackRock S&P 500 Equal Weight**	79,420,658	4.2		--	--	--	--	--	--	--	--	--	--	--	--	--	--	Jul-19
SSgA S&P 500 Cap-Wgt Partial Return*	31	0.0		-0.7	99	12.8	92	5.1	74	5.1	74	12.3	55	9.6	43	--	--	Sep-10
S&P 500 Partial Return				-0.7	99	12.8	92	5.1	74	5.1	74	12.3	55	9.6	43	14.1	41	Sep-10
SSgA S&P 500 Equal-Wgt Partial Return*	82,292	0.0		-0.6	99	14.1	83	3.5	84	3.5	84	10.9	73	8.2	65	15.1	21	Dec-05
S&P 500 Equal Weighted Partial Return				-0.8	99	14.0	85	3.5	84	3.5	84	10.8	74	8.2	65	15.0	21	Dec-05
<b>Total U.S Small/Mid Cap Equities</b>	<b>58,181,214</b>	<b>3.1</b>	<b>3.0</b>	<b>3.6</b>	<b>57</b>	<b>20.1</b>	<b>50</b>	<b>8.6</b>	<b>22</b>	<b>8.6</b>	<b>22</b>	<b>14.5</b>	<b>32</b>	<b>10.7</b>	<b>18</b>	<b>15.7</b>	<b>16</b>	<b>Apr-01</b>
Russell 2500				3.0	65	19.2	52	1.8	52	1.8	52	12.3	46	7.7	44	14.4	38	Apr-01
eV US Small-Mid Cap Equity Net Median				4.0		20.1		2.3		2.3		11.9		7.2		13.8		Apr-01
Champlain	58,181,214	3.1		3.6	57	20.1	50	8.6	22	8.6	22	15.8	23	12.0	15	--	--	Oct-09
Custom SMID Cap Equity Index				2.5	70	18.1	60	-0.8	68	-0.8	68	12.5	45	7.5	46	14.3	39	Oct-09

\*Partial performance is calculated from 06/01/2019-06/04/2019

\*\*Partial Performance is calculated from 06/13/2019-06/30/2019

\*\*\*Composite benchmarks include partial returns for June 2019 and full monthly performance historically

Blackrock MSCI ACWI IMI and Blackrock S&P 500 Equal Weight were funded in June 2019, therefore three month performance is unavailable

Custom SMID Cap Equity Index is 50% Russell 2500 and 50% Russell 2000 starting 10/1/2017, and 100% Russell 2500 prior, corresponding to the change in strategy



## Vermont State Teachers

# TOTAL FUND PERFORMANCE DETAIL - NET

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Rank	YTD (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception Date
<b>Total Non US Equity</b>	<b>130,642,545</b>	<b>6.9</b>	<b>7.0</b>	<b>1.0</b>	<b>86</b>	<b>11.1</b>	<b>83</b>	<b>0.2</b>	<b>42</b>	<b>0.2</b>	<b>42</b>	<b>8.5</b>	<b>66</b>	<b>2.4</b>	<b>67</b>	--	--	<b>Apr-01</b>
MSCI ACWI ex USA Partial Return Benchmark***				1.7	76	12.2	76	0.1	43	0.1	43	8.9	60	1.9	71	6.4	84	Apr-01
eV All ACWI ex-US Equity Net Median				3.5		15.1		-0.6		-0.6		9.4		3.3		8.3		Apr-01
<b>Total International Developed Equities</b>	<b>92,331,708</b>	<b>4.9</b>	<b>5.0</b>	<b>1.2</b>	<b>82</b>	<b>11.1</b>	<b>81</b>	<b>-0.9</b>	<b>46</b>	<b>-0.9</b>	<b>46</b>	<b>9.1</b>	<b>39</b>	<b>2.8</b>	<b>54</b>	<b>7.5</b>	<b>66</b>	<b>Apr-01</b>
MSCI EAFE Partial Return Benchmark***				3.6	38	13.9	43	1.0	31	1.0	31	9.1	41	2.2	66	6.9	80	Apr-01
eV All EAFE Equity Net Median				2.8		13.1		-1.8		-1.8		8.7		3.1		8.1		Apr-01
SSgA ACWI Ex US Partial Return*	269	0.0		-1.8	99	8.4	94	-3.3	83	-3.3	83	7.9	76	1.4	78	--	--	Sep-10
MSCI ACWI ex USA Partial Return				-1.9	99	8.2	95	-3.5	84	-3.5	84	7.6	80	1.2	79	6.0	85	Sep-10
Acadian	46,281,125	2.4		1.9	70	11.2	79	-3.9	67	-3.9	67	11.2	13	4.7	24	9.0	34	Nov-05
Mondrian	46,050,313	2.4		1.5	78	10.4	86	1.6	27	1.6	27	7.2	75	1.5	81	6.7	81	Jan-93
MSCI EAFE				3.7	37	14.0	42	1.1	31	1.1	31	9.1	40	2.2	65	6.9	80	Jan-93
eV All EAFE Equity Net Median				2.8		13.1		-1.8		-1.8		8.7		3.1		8.1		Jan-93
<b>Total International Small Cap Equity</b>	<b>38,305,414</b>	<b>2.0</b>	<b>2.0</b>	<b>0.7</b>	<b>80</b>	<b>12.0</b>	<b>67</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>Oct-18</b>
MSCI EAFE Small Cap				1.7	64	12.5	55	-6.3	33	-6.3	33	9.1	49	4.4	53	9.7	69	Oct-18
eV EAFE Small Cap Equity Net Median				2.5		12.6		-7.2		-7.2		8.9		4.7		10.5		Oct-18
SGA International Small Cap Equity	38,305,414	2.0		0.7	80	12.0	67	--	--	--	--	--	--	--	--	--	--	Nov-18
MSCI EAFE Small Cap				1.7	64	12.5	55	-6.3	33	-6.3	33	9.1	49	4.4	53	9.7	69	Nov-18
<b>Total Emerging Market Equity</b>	<b>5,423</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>85</b>	<b>10.7</b>	<b>60</b>	<b>6.4</b>	<b>9</b>	<b>6.4</b>	<b>9</b>	<b>7.3</b>	<b>83</b>	<b>1.8</b>	<b>70</b>	<b>7.5</b>	<b>27</b>	<b>Feb-08</b>
MSCI Emerging Markets Partial Return				-2.6	98	7.1	94	-2.0	78	-2.0	78	9.5	53	1.8	69	5.5	91	Feb-08
eV Emg Mkts Equity Net Median				1.4		12.0		0.9		0.9		9.9		2.5		6.7		Feb-08
Aberdeen Partial Return****	5,423	0.0		0.0	85	10.7	60	6.4	9	6.4	9	7.3	83	1.8	70	7.5	28	Feb-08
MSCI Emerging Markets Partial Return				-2.6	98	7.1	94	-2.0	78	-2.0	78	9.5	53	1.8	69	5.5	91	Feb-08

\*Partial performance is calculated from 06/01/2019-06/04/2019

\*\*\*Composite benchmarks include partial returns for June 2019 and full monthly performance historically

\*\*\*\*Partial performance is calculated from 06/01/2019-06/18/2019



## Vermont State Teachers

# TOTAL FUND PERFORMANCE DETAIL - NET

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Rank	YTD (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception Date
<b>Total Fixed Income</b>	<b>654,122,743</b>	<b>34.6</b>	<b>32.0</b>	<b>2.9</b>	<b>36</b>	<b>6.5</b>	<b>38</b>	<b>6.9</b>	<b>43</b>	<b>6.9</b>	<b>43</b>	<b>4.0</b>	<b>33</b>	<b>3.6</b>	<b>32</b>	--	--	<b>Dec-10</b>
<i>BBgBarc US Aggregate TR Partial Return Benchmark***</i>				3.2	25	6.2	44	8.0	28	8.0	28	2.3	59	3.0	51	--	--	<i>Dec-10</i>
<i>eV All US Fixed Inc Net Median</i>				2.4		5.7		6.5		6.5		2.7		3.0		4.4		<i>Dec-10</i>
<b>Total Traditional Fixed Income</b>	<b>452,247,672</b>	<b>23.9</b>	<b>22.0</b>	<b>2.6</b>	<b>44</b>	<b>5.6</b>	<b>51</b>	<b>6.1</b>	<b>58</b>	<b>6.1</b>	<b>58</b>	<b>3.1</b>	<b>44</b>	<b>3.4</b>	<b>38</b>	<b>5.1</b>	<b>42</b>	<b>Jul-03</b>
<i>BBgBarc US Aggregate TR Partial Return Benchmark***</i>				2.8	39	5.8	49	7.6	35	7.6	35	2.2	63	2.9	53	3.9	60	<i>Jul-03</i>
<i>eV All US Fixed Inc Net Median</i>				2.4		5.7		6.5		6.5		2.7		3.0		4.4		<i>Jul-03</i>
BlackRock U.S Aggregate Index**	385,440,715	20.4		--	--	--	--	--	--	--	--	--	--	--	--	--	--	Jun-19
SSgA Barclays Aggregate Index Partial Return*	120	0.0		1.9	99	4.9	94	6.7	92	6.7	92	1.9	91	--	--	--	--	Feb-15
<i>BBgBarc US Aggregate TR Partial Return</i>				1.9	99	4.9	94	6.7	92	6.7	92	1.9	89	2.7	83	3.8	84	<i>Feb-15</i>
BlackRock TIPS	58,750,746	3.1		2.8	42	6.1	65	4.7	41	4.7	41	2.0	58	1.7	29	--	--	Dec-09
<i>BBgBarc US TIPS TR</i>				2.9	39	6.2	58	4.8	27	4.8	27	2.1	51	1.8	19	3.6	46	<i>Dec-09</i>
Short Quality Credit Manager	0	0.0	5.0															
GAM Unconstrained Bond	7,580,902	0.4		2.5	33	3.8	71	4.5	49	4.5	49	4.7	56	--	--	--	--	Jun-15
PIMCO Unconstrained	475,189	0.0		0.9	92	3.0	85	4.2	50	4.2	50	4.5	57	2.4	70	--	--	Jul-11
<i>PIMCO Unconstrained Custom Index</i>				3.1	21	8.2	16	8.7	5	8.7	5	4.2	60	--	--	--	--	<i>Jul-11</i>
<i>3-Month Libor Total Return USD</i>				0.6	93	1.3	95	2.6	84	2.6	84	1.8	91	1.2	89	0.8	99	<i>Jul-11</i>
<i>eV Global Unconstrained Fixed Inc Net Median</i>				1.9		5.2		4.2		4.2		5.0		2.8		4.7		<i>Jul-11</i>
<b>Total Non-Traditinoal Fixed Income</b>	<b>198,054,593</b>	<b>10.5</b>	<b>10.0</b>	<b>3.4</b>	<b>84</b>	<b>8.1</b>	<b>88</b>	<b>8.7</b>	<b>72</b>	<b>8.7</b>	<b>72</b>	<b>4.3</b>	<b>77</b>	<b>4.0</b>	<b>39</b>	--	--	<b>Nov-09</b>
<i>BBgBarc US Aggregate TR</i>				3.1	92	6.1	96	7.9	86	7.9	86	2.3	98	2.9	53	3.9	76	<i>Nov-09</i>
<i>eV All Emg Mkts Fixed Inc Net Median</i>				4.2		10.0		10.1		10.1		5.2		3.1		6.8		<i>Nov-09</i>
Wellington Opportunistic EMD	83,207,148	4.4		4.2	51	11.4	15	10.8	35	10.8	35	5.8	31	4.7	16	--	--	Jan-10
<i>JP Morgan EMBI Global Index</i>				3.8	71	10.6	38	11.3	23	11.3	23	4.6	71	4.5	24	7.4	32	<i>Jan-10</i>
<i>eV All Emg Mkts Fixed Inc Net Median</i>				4.2		10.0		10.1		10.1		5.2		3.1		6.8		<i>Jan-10</i>
PIMCO Core Plus	114,847,445	6.1		2.8	85	5.9	92	7.4	81	7.4	81	2.8	77	3.0	71	--	--	Nov-09
<i>BBgBarc US Aggregate TR</i>				3.1	60	6.1	88	7.9	62	7.9	62	2.3	96	2.9	79	3.9	99	<i>Nov-09</i>
<i>eV US Core Plus Fixed Inc Net Median</i>				3.2		6.8		8.0		8.0		3.3		3.2		5.4		<i>Nov-09</i>

\*Partial performance is calculated from 06/01/2019-06/04/2019

\*\*Partial Performance is calculated from 06/13/2019-06/30/2019

\*\*\*Composite benchmarks include partial returns for June 2019 and full monthly performance historically

PIMCO Unconstrained Custom Index is 25% HY, 25% EMD, 50% BC Agg



## Vermont State Teachers

# TOTAL FUND PERFORMANCE DETAIL - NET

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Rank	YTD (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception Date
<b>Total High Yield Bonds</b>	<b>3,820,478</b>	<b>0.2</b>	<b>0.0</b>	<b>1.0</b>	<b>98</b>	<b>6.0</b>	<b>90</b>	<b>1.5</b>	<b>99</b>	<b>1.5</b>	<b>99</b>	<b>5.1</b>	<b>95</b>	<b>3.4</b>	<b>81</b>	<b>7.6</b>	<b>85</b>	<b>May-06</b>
BBgBarc US High Yield TR				2.5	47	9.9	37	7.5	35	7.5	35	7.5	22	4.7	24	9.2	19	May-06
eV US High Yield Fixed Inc Net Median				2.5		9.4		6.7		6.7		6.8		4.1		8.5		May-06
PIMCO High Yield	3,820,478	0.2		1.0	98	6.0	90	--	--	--	--	--	--	--	--	--	--	Aug-18
BBgBarc US High Yield TR				2.5	47	9.9	37	7.5	35	7.5	35	7.5	22	4.7	24	9.2	19	Aug-18
<b>Total Private Debt</b>	<b>35,093,672</b>	<b>1.9</b>	<b>5.0</b>	<b>2.1</b>	<b>--</b>	<b>5.6</b>	<b>--</b>	<b>6.0</b>	<b>--</b>	<b>6.0</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>Jan-18</b>
S&P/LSTA Leveraged Loan TR				1.7	--	5.7	--	4.0	--	4.0	--	5.2	--	3.7	--	6.2	--	Jan-18
BlueBay Direct Lending Fund III	6,927,490	0.4		2.3	--	4.7	--	8.2	--	8.2	--	--	--	--	--	--	--	Jun-18
Benefit Street Partners	28,166,181	1.5		2.1	--	5.7	--	5.3	--	5.3	--	--	--	--	--	--	--	Jan-18
S&P/LSTA Leveraged Loan TR				1.7	--	5.7	--	4.0	--	4.0	--	5.2	--	3.7	--	6.2	--	Jan-18
<b>Total Real Estate</b>	<b>121,263,915</b>	<b>6.4</b>	<b>10.0</b>	<b>-3.1</b>	<b>--</b>	<b>-2.7</b>	<b>--</b>	<b>0.5</b>	<b>--</b>	<b>0.5</b>	<b>--</b>	<b>5.1</b>	<b>--</b>	<b>7.9</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>Dec-10</b>
NCREIF Property Index				1.5	--	3.3	--	6.5	--	6.5	--	6.9	--	8.8	--	9.2	--	Dec-10
<b>Total Real Estate Core</b>	<b>92,883,701</b>	<b>4.9</b>	<b>4.5</b>	<b>-3.9</b>	<b>--</b>	<b>-3.4</b>	<b>--</b>	<b>-0.7</b>	<b>--</b>	<b>-0.7</b>	<b>--</b>	<b>3.9</b>	<b>--</b>	<b>7.2</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>May-12</b>
NCREIF ODCE Net				0.8	--	2.0	--	5.5	--	5.5	--	6.6	--	8.8	--	8.9	--	May-12
UBS Trumbull	92,755,255	4.9		-3.9	--	-3.4	--	-0.7	--	-0.7	--	3.5	--	6.6	--	7.6	--	Oct-96
<b>Total Real Estate Non-Core</b>	<b>28,380,214</b>	<b>1.5</b>	<b>3.5</b>	<b>-0.7</b>	<b>--</b>	<b>-0.4</b>	<b>--</b>	<b>5.3</b>	<b>--</b>	<b>5.3</b>	<b>--</b>	<b>11.8</b>	<b>--</b>	<b>11.3</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>May-12</b>
NCREIF Property Index				1.5	--	3.3	--	6.5	--	6.5	--	6.9	--	8.8	--	9.2	--	May-12
Siguler Guff DREOF II	12,613,013	0.7		1.0	--	1.6	--	4.0	--	4.0	--	12.7	--	11.9	--	--	--	Jun-14
Siguler Guff DREOF II Co-Investment	6,689,404	0.4		0.7	--	0.3	--	13.2	--	13.2	--	--	--	--	--	--	--	Nov-16
Brookfield Strategic Real Estate Partners III	9,077,798	0.5		-3.7	--	-3.7	--	-3.7	--	-3.7	--	--	--	--	--	--	--	Jun-18
NCREIF Property Index				1.5	--	3.3	--	6.5	--	6.5	--	6.9	--	8.8	--	9.2	--	Jun-18
<b>Total Private Infrastructure/Land</b>	<b>--</b>	<b>--</b>	<b>2.0</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>May-19</b>

Market values are final as of Q2 2019 capital statements for Benefit Street Partners, BlueBay Direct Lending Fund III, Brookfield Strategic Real Estate Partners III, Siguler Guff DREOF II, Siguler Guff DREOF II Co-Investment and UBS Trumbull

Transwestern/Aslan III residual market value of \$128,447 is included in the Total Real Estate composite





## Vermont State Teachers

# TOTAL FUND PERFORMANCE DETAIL - NET

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Rank	YTD (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception Date
<b>Total Absolute Return</b>	<b>105,085,109</b>	<b>5.6</b>	<b>0.0</b>	<b>3.2</b>	<b>18</b>	<b>6.0</b>	<b>51</b>	<b>2.7</b>	<b>43</b>	<b>2.7</b>	<b>43</b>	<b>5.1</b>	<b>55</b>	<b>2.2</b>	<b>72</b>	--	--	<b>Dec-10</b>
<i>HFRI Fund of Funds Composite Index</i>				1.5	59	6.2	51	1.2	66	1.2	66	4.2	71	2.2	73	3.2	87	Dec-10
<i>eV Alt Fund of Funds - Multi-Strategy Median</i>				1.9		6.2		2.1		2.1		5.3		3.1		5.3		Dec-10
Pinnacle Natural Resources, L.P.	49,474,223	2.6		5.7	2	8.1	68	4.9	16	4.9	16	2.4	49	--	--	--	--	Jul-16
<i>Bloomberg Commodity Index</i>				-1.2	95	5.1	76	-6.8	79	-6.8	79	-2.2	95	-9.1	73	-3.7	99	Jul-16
<i>InvMetrics All E&amp;F Real Assets/Commodities Net Median</i>				1.1		10.3		-1.0		-1.0		2.3		-3.9		2.5		Jul-16
Grosvenor	55,606,187	2.9		1.0	78	3.6	83	-0.9	85	-0.9	85	4.6	67	2.3	69	--	--	Dec-10
<i>HFRI Fund of Funds Composite Index</i>				1.5	59	6.2	51	1.2	66	1.2	66	4.2	71	2.2	73	3.2	87	Dec-10
<i>eV Alt Fund of Funds - Multi-Strategy Median</i>				1.9		6.2		2.1		2.1		5.3		3.1		5.3		Dec-10
<b>Total Private Equity</b>	<b>57,562,954</b>	<b>3.0</b>	<b>10.0</b>	<b>5.7</b>	--	<b>11.1</b>	--	<b>18.0</b>	--	<b>18.0</b>	--	<b>18.7</b>	--	<b>18.1</b>	--	--	--	<b>Dec-12</b>
<i>Cambridge Associates US All PE</i>				4.6	--	9.7	--	11.9	--	11.9	--	15.6	--	11.7	--	14.7	--	Dec-12
<b>Total Cash</b>	<b>1,116,508</b>	<b>0.1</b>	<b>0.0</b>															
<b>BlackRock Transition</b>	<b>4,335,113</b>	<b>0.2</b>	<b>--</b>	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<b>May-19</b>

Market values are final as of Q2 2019 capital statements for Harbourvest Funds

As of 04/01/2016, Absolute Return includes Allianz Structured Alpha and was formerly included in the Diversified Fixed Income composite

Policy Index consists of: 4% S&P 500 / 3% Russell 2500 / 5% MSCI EAFE / 29% MSCI ACWI / 2% MSCI EAFE Small Cap / 20% BBgBarc US Aggregate TR / 3% BBgBarc US TIPS TR / 5% BBgBarc US Treasury 1-3 Yr TR / 4% JP Morgan EMBI Global Index / 5% S&P/LSTA Leveraged Loan TR / 10 % Cambridge Associates US All PE / 10% NCREIF Property Index

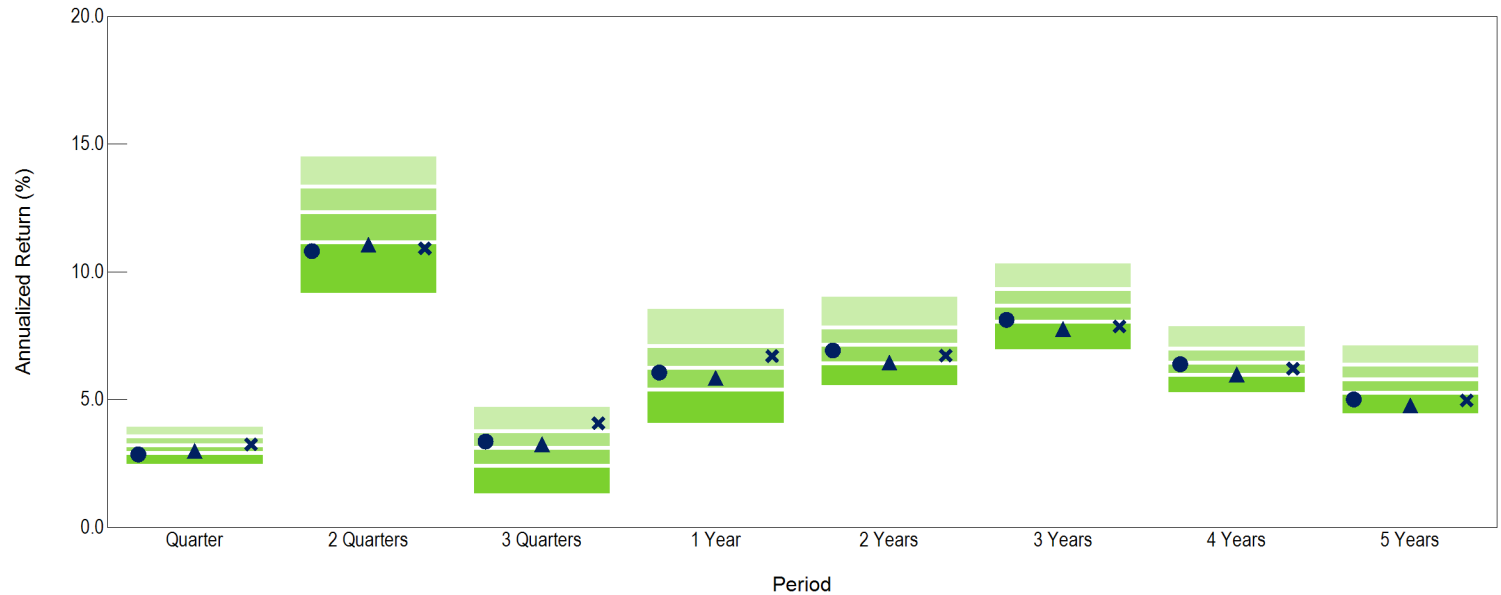
The Total Fund return is based on a Modified Dietz calculation

Fiscal Year End is 6/30



# TOTAL FUND RETURN SUMMARY VS. PEER UNIVERSE - NET

Total Teachers Composite vs. InvMetrics Public DB < \$5 Billion Net



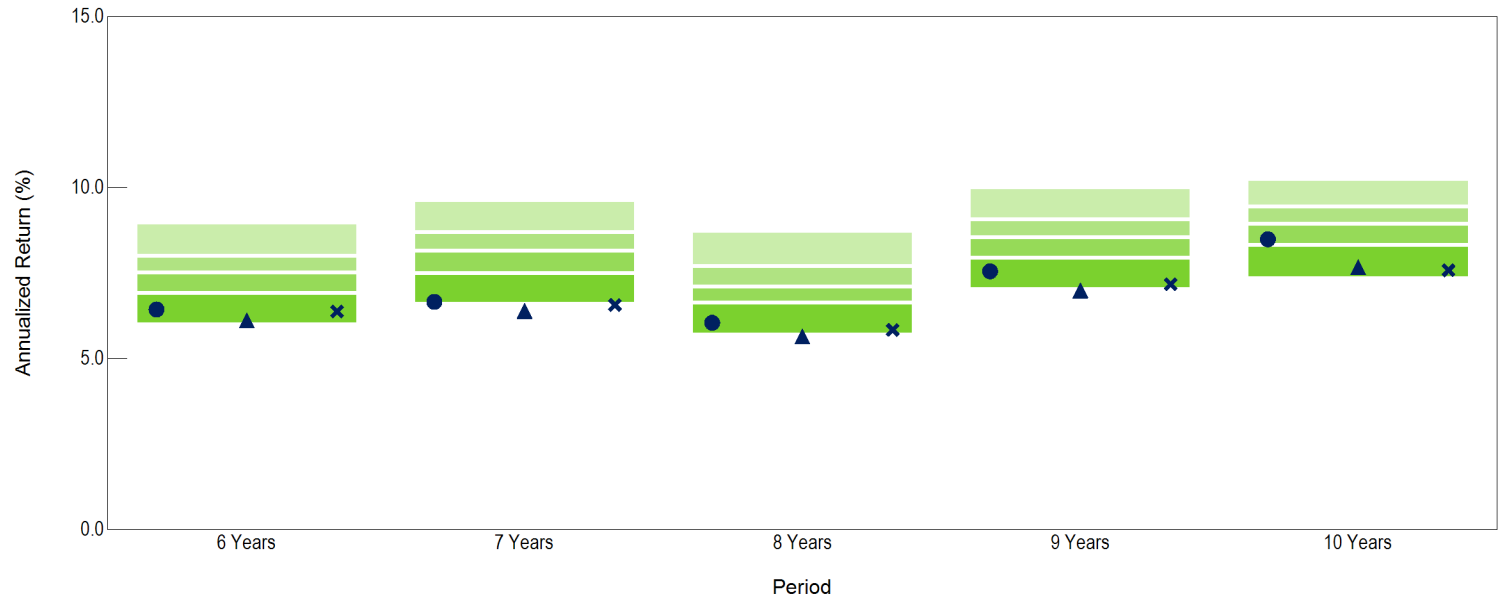
	Return (Rank)							
	Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	4 Years	5 Years
5th Percentile	4.0	14.6	4.8	8.6	9.1	10.4	7.9	7.2
25th Percentile	3.6	13.3	3.8	7.1	7.8	9.3	7.0	6.4
Median	3.2	12.3	3.1	6.2	7.2	8.7	6.5	5.8
75th Percentile	2.9	11.2	2.4	5.4	6.4	8.1	6.0	5.3
95th Percentile	2.4	9.1	1.3	4.0	5.5	6.9	5.2	4.4
# of Portfolios	504	503	497	497	489	484	461	445
● Total Teachers Composite	2.9 (80)	10.8 (81)	3.4 (39)	6.1 (58)	6.9 (61)	8.1 (74)	6.4 (56)	5.0 (85)
▲ Allocation Index	3.0 (70)	11.1 (78)	3.3 (43)	5.8 (64)	6.5 (75)	7.8 (85)	6.0 (75)	4.8 (90)
× Policy Index	3.3 (49)	10.9 (80)	4.1 (17)	6.7 (36)	6.7 (66)	7.9 (82)	6.2 (64)	5.0 (87)



Vermont State Teachers

# TOTAL FUND RETURN SUMMARY VS. PEER UNIVERSE - NET

Total Teachers Composite vs. InvMetrics Public DB < \$5 Billion Net



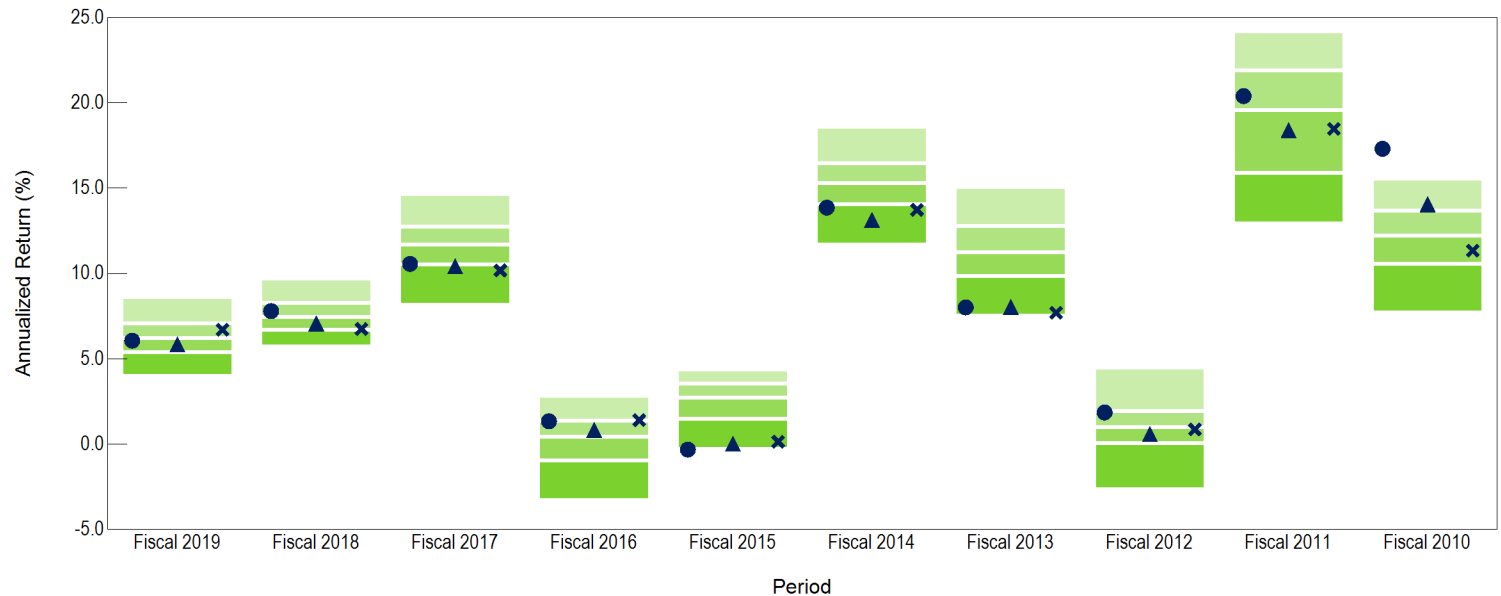
	Return (Rank)									
5th Percentile	9.0		9.6		8.7		10.0		10.3	
25th Percentile	8.0		8.7		7.7		9.1		9.4	
Median	7.5		8.2		7.1		8.6		9.0	
75th Percentile	6.9		7.5		6.6		8.0		8.3	
95th Percentile	6.0		6.6		5.7		7.0		7.4	
# of Portfolios	434		418		399		382		371	
● Total Teachers Composite	6.4	(91)	6.7	(95)	6.0	(92)	7.6	(89)	8.5	(70)
▲ Allocation Index	6.1	(95)	6.4	(97)	5.6	(96)	7.0	(96)	7.7	(92)
× Policy Index	6.4	(93)	6.6	(96)	5.8	(95)	7.2	(94)	7.6	(93)



## Vermont State Teachers

# TOTAL FUND RETURN SUMMARY VS. PEER UNIVERSE - NET

Total Teachers Composite vs. InvMetrics Public DB < \$5 Billion Net



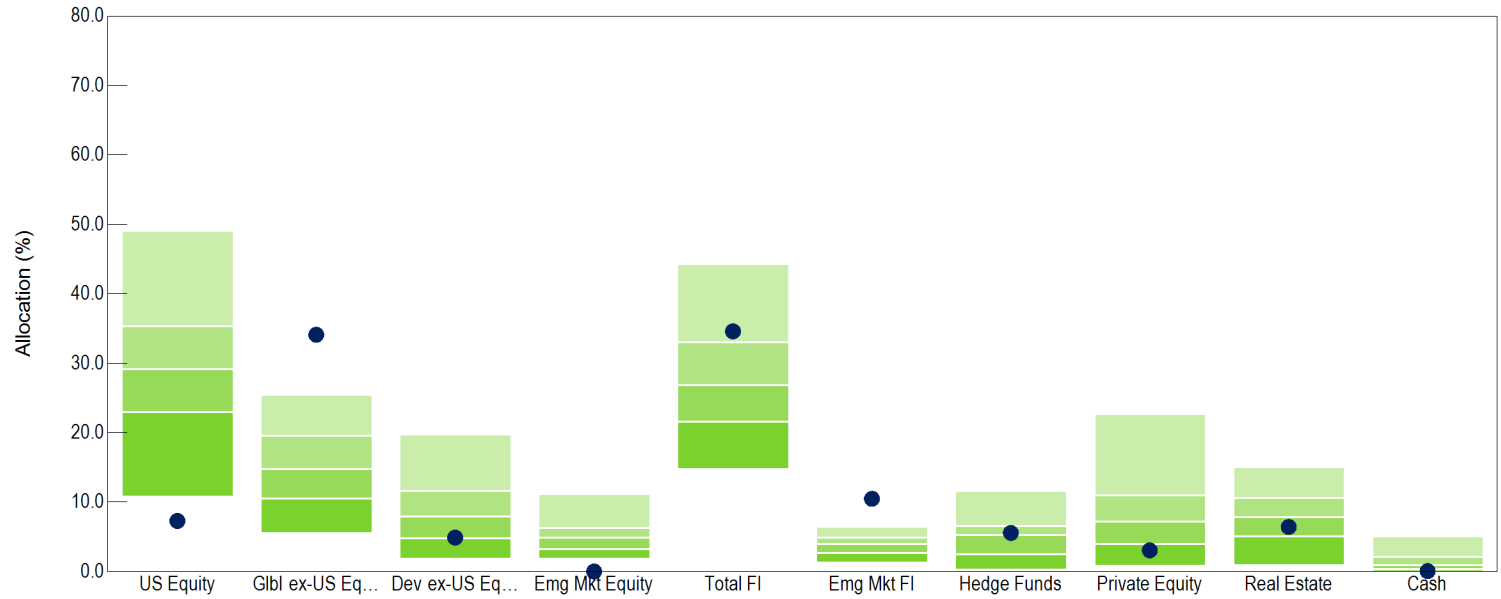
	Return (Rank)									
	Fiscal 2019	Fiscal 2018	Fiscal 2017	Fiscal 2016	Fiscal 2015	Fiscal 2014	Fiscal 2013	Fiscal 2012	Fiscal 2011	Fiscal 2010
5th Percentile	8.6	9.7	14.7	2.8	4.4	18.6	15.1	4.5	24.2	15.5
25th Percentile	7.1	8.3	12.8	1.4	3.6	16.5	12.8	2.0	21.9	13.7
Median	6.2	7.5	11.7	0.5	2.7	15.3	11.2	1.0	19.6	12.3
75th Percentile	5.4	6.7	10.6	-0.9	1.5	14.1	9.9	0.1	15.9	10.6
95th Percentile	4.0	5.7	8.2	-3.3	-0.2	11.7	7.5	-2.6	13.0	7.7
# of Portfolios	497	186	259	239	212	156	139	132	124	116
● Total Teachers Composite	6.1 (58)	7.8 (40)	10.6 (75)	1.3 (27)	-0.3 (96)	13.9 (82)	8.0 (95)	1.9 (29)	20.4 (39)	17.3 (1)
▲ Allocation Index	5.8 (64)	7.1 (67)	10.4 (78)	0.8 (38)	0.0 (95)	13.1 (91)	8.0 (95)	0.6 (62)	18.4 (62)	14.0 (18)
× Policy Index	6.7 (36)	6.8 (75)	10.2 (81)	1.4 (25)	0.1 (94)	13.7 (83)	7.7 (95)	0.9 (55)	18.5 (60)	11.3 (65)



## Vermont State Teachers

# TOTAL FUND ALLOCATION VS. PEER UNIVERSE - NET

Total Teachers Composite vs. InvMetrics Public DB < \$5 Billion Net  
As of June 30, 2019



	Allocation (Rank)																			
5th Percentile	49.1	25.5	19.8	11.1	44.3	6.4	11.6	22.7	15.0	5.1	-	-	-	-	-	-				
25th Percentile	35.4	19.6	11.7	6.4	33.1	5.0	6.6	11.0	10.7	2.2	-	-	-	-	-	-				
Median	29.2	14.8	8.1	5.0	26.9	4.1	5.4	7.3	8.0	1.0	-	-	-	-	-	-				
75th Percentile	23.0	10.6	4.9	3.3	21.7	2.8	2.6	4.0	5.2	0.4	-	-	-	-	-	-				
95th Percentile	10.8	5.6	1.9	1.9	14.9	1.4	0.4	0.9	1.0	0.1	-	-	-	-	-	-				
# of Portfolios	137	174	82	98	216	28	60	100	137	205	-	-	-	-	-	-				
• Total Teachers Composite	7.3	(99)	34.1	(1)	4.9	(76)	0.0	(99)	34.6	(14)	10.5	(1)	5.6	(44)	3.0	(83)	6.4	(65)	0.1	(95)



# ACTIVE MANAGER RELATIVE PERFORMANCE

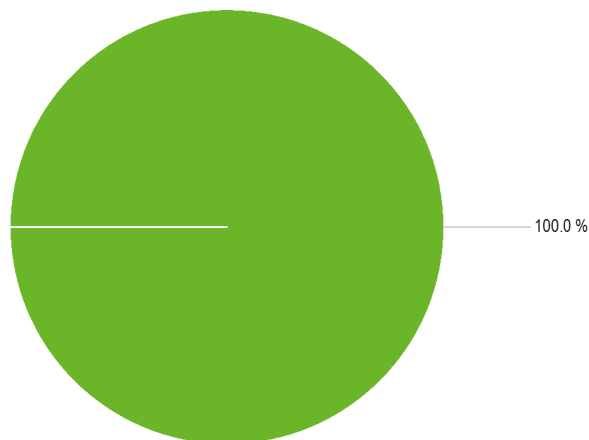
	Positive	Negative
QUARTER	<p><b><u>Global Equity</u></b></p> <ul style="list-style-type: none"> <li>Artisan (+240 bps)</li> </ul> <p><b><u>U.S. Equity</u></b></p> <ul style="list-style-type: none"> <li>Champlain (+110 bps)</li> </ul> <p><b><u>Fixed Income</u></b></p> <ul style="list-style-type: none"> <li>Wellington (+40 bps)</li> </ul> <p><b><u>Absolute Return</u></b></p> <ul style="list-style-type: none"> <li>Pinnacle (+690 bps)</li> </ul>	<p><b><u>Global Equity</u></b></p> <ul style="list-style-type: none"> <li>Hosking (-40 bps)</li> </ul> <p><b><u>International Equity</u></b></p> <ul style="list-style-type: none"> <li>Acadian (-180 bps)</li> <li>Mondrian (-220 bps)</li> <li>SGA (-100 bps)</li> </ul> <p><b><u>Fixed Income</u></b></p> <ul style="list-style-type: none"> <li>PIMCO Unconstrained (-220 bps)</li> <li>PIMCO Core (-30 bps)</li> </ul> <p><b><u>Absolute Return</u></b></p> <ul style="list-style-type: none"> <li>Grosvenor (-50 bps)</li> </ul>
1 YEAR	<p><b><u>Global Equity</u></b></p> <ul style="list-style-type: none"> <li>Artisan (+210 bps)</li> </ul> <p><b><u>US Equity</u></b></p> <ul style="list-style-type: none"> <li>Champlain (+940 bps)</li> </ul> <p><b><u>International Equity</u></b></p> <ul style="list-style-type: none"> <li>Mondrian (+50 bps)</li> </ul> <p><b><u>Absolute Return</u></b></p> <ul style="list-style-type: none"> <li>Pinnacle (+1,170 bps)</li> </ul>	<p><b><u>Global Equity</u></b></p> <ul style="list-style-type: none"> <li>Hosking (-500 bps)</li> </ul> <p><b><u>International Equity</u></b></p> <ul style="list-style-type: none"> <li>Acadian (-490 bps)</li> </ul> <p><b><u>Fixed Income</u></b></p> <ul style="list-style-type: none"> <li>PIMCO Unconstrained (-450 bps)</li> <li>Wellington EMD (-50 bps)</li> <li>PIMCO Core (-50 bps)</li> </ul> <p><b><u>Absolute Return</u></b></p> <ul style="list-style-type: none"> <li>Grosvenor (-210 bps)</li> </ul>

Reflects public markets and active management only  
**GREEN** indicates the managers had outperformed their respective benchmarks  
**RED** indicates the managers had underperformed their respective benchmarks  
**(+)** is the over/under performance relative to respective benchmarks in basis points



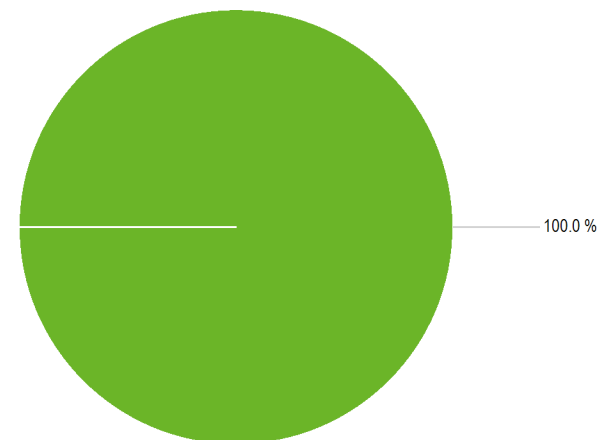
# ANALYSIS BY STRATEGY - DIRECT LENDING

Private Markets Valuation by Strategy



Direct Lending

Private Markets Fund Exposure by Strategy



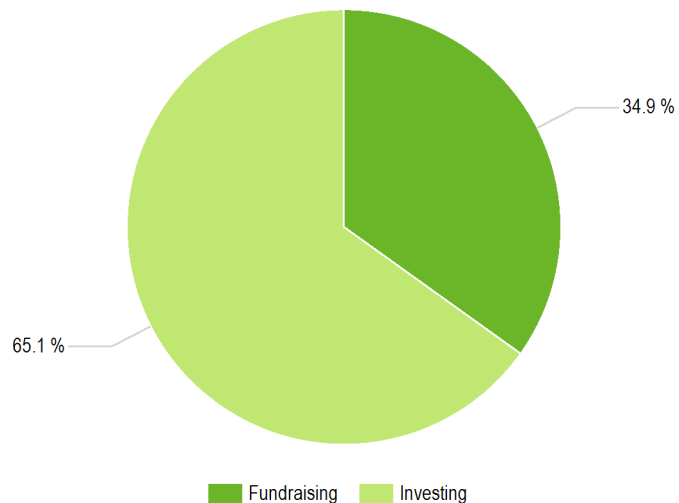
Direct Lending

Investments	Commitments			Contributions & Distributions			Valuations				Performance		
Investment Strategy	Commitment	Unfunded Commitment	Call Ratio	Cumulative Contributions	Additional Fees	Cumulative Distributions	Valuation	Total Value	Net Benefit	Fund Exposure	DPI	TVPI	IRR
<b>Total Direct Lending</b>	<b>\$215,000,000</b>	<b>\$133,704,879</b>	<b>0.38</b>	<b>\$81,295,121</b>	<b>\$1,155,016</b>	<b>\$5,992,450</b>	<b>\$82,302,970</b>	<b>\$88,295,420</b>	<b>\$5,845,282</b>	<b>\$216,007,849</b>	<b>0.07</b>	<b>1.07</b>	<b>6.67%</b>
<b>Total</b>	<b>\$215,000,000</b>	<b>\$133,704,879</b>	<b>0.38</b>	<b>\$81,295,121</b>	<b>\$1,155,016</b>	<b>\$5,992,450</b>	<b>\$82,302,970</b>	<b>\$88,295,420</b>	<b>\$5,845,282</b>	<b>\$216,007,849</b>	<b>0.07</b>	<b>1.07</b>	<b>6.67%</b>

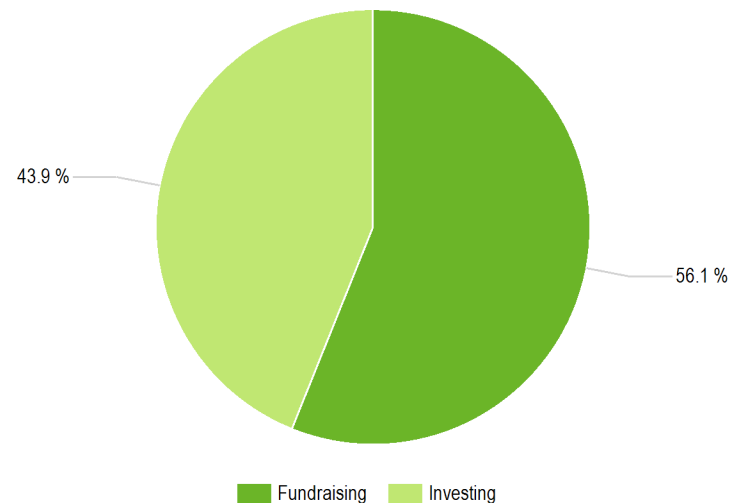


# ANALYSIS BY LIFECYCLE - DIRECT LENDING

Commitment by Lifecycle



Unfunded Commitment by Lifecycle



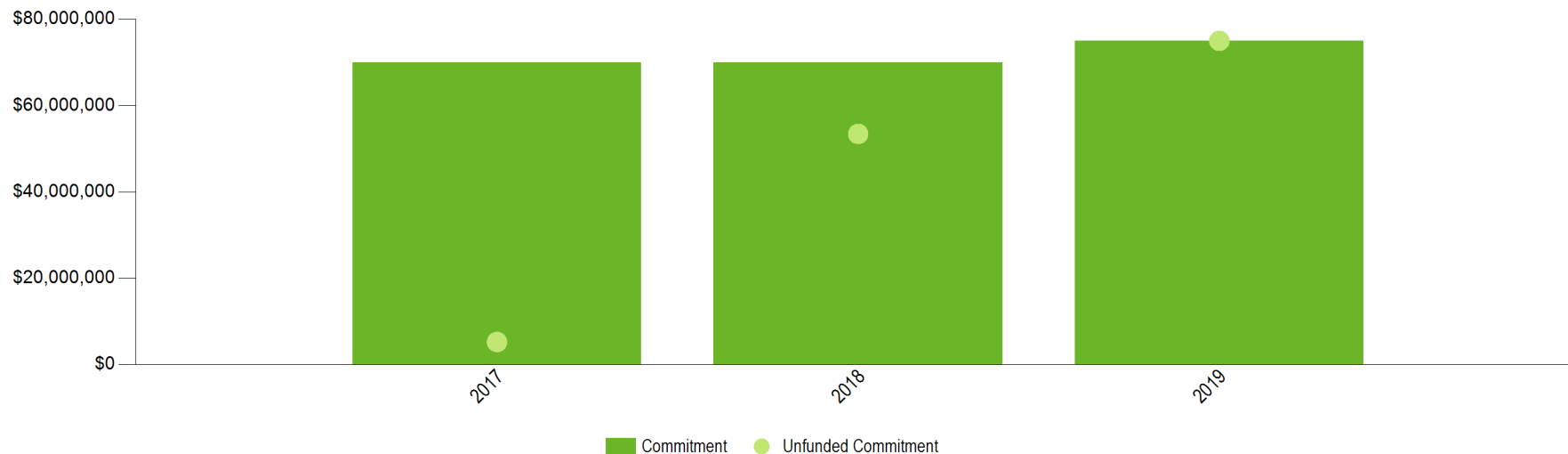
Investments	Commitments			Contributions & Distributions			Valuations			Performance		
	Commitment	Unfunded Commitment	Call Ratio	Cumulative Contributions	Additional Fees	Cumulative Distributions	Valuation	Total Value	Net Benefit	DPI	TVPI	IRR
Total Fundraising	\$75,000,000	\$75,000,000		\$0	\$0	\$0	\$0	\$0	\$0			
Total Investing	\$140,000,000	\$58,704,879	0.58	\$81,295,121	\$1,155,016	\$5,992,450	\$82,302,970	\$88,295,420	\$5,845,282	0.07	1.07	6.67%
Total	\$215,000,000	\$133,704,879	0.38	\$81,295,121	\$1,155,016	\$5,992,450	\$82,302,970	\$88,295,420	\$5,845,282	0.07	1.07	6.67%





# ANALYSIS BY VINTAGE YEAR - DIRECT LENDING

Commitments By Vintage Year



Vintage Year	Commitments			Contributions & Distributions			Valuations			Performance		
	Commitment	Unfunded Commitment	Call Ratio	Cumulative Contributions	Additional Fees	Cumulative Distributions	Valuation	Total Value	Net Benefit	DPI	TVPI	IRR
Total 2017	\$70,000,000	\$5,262,697	0.92	\$64,737,303	\$1,333,567	\$5,122,046	\$65,758,224	\$70,880,270	\$4,809,400	0.08	1.07	6.36%
Total 2018	\$70,000,000	\$53,442,182	0.24	\$16,557,818	-\$178,551	\$870,404	\$16,544,746	\$17,415,150	\$1,035,882	0.05	1.06	8.60%
Total 2019	\$75,000,000	\$75,000,000		\$0	\$0	\$0	\$0	\$0	\$0			
<b>Total</b>	<b>\$215,000,000</b>	<b>\$133,704,879</b>	<b>0.38</b>	<b>\$81,295,121</b>	<b>\$1,155,016</b>	<b>\$5,992,450</b>	<b>\$82,302,970</b>	<b>\$88,295,420</b>	<b>\$5,845,282</b>	<b>0.07</b>	<b>1.07</b>	<b>6.67%</b>



# RETURN SUMMARY - DIRECT LENDING

Investments			Trailing Period Returns (IRR) %						
Investment Name	Vintage Year	Commitment	(Qtr)	(YTD)	(1 Yr)	(3 Yrs)	(5 Yrs)	(10 Yrs)	SI IRR
Benefit Street Partners Senior Secured Debt Fund, L.P.	2017	\$70,000,000	2.16%	5.79%	5.41%				6.36%
Benefit Street Partners Senior Secured Opportunities Fund II, L.P.	2019	\$75,000,000							
BlueBay Direct Lending Fund III (USD-L), SLP	2018	\$70,000,000	2.80%	4.98%	9.01%				8.60%
<b>Total</b>		<b>\$215,000,000</b>	<b>2.28%</b>	<b>5.64%</b>	<b>6.04%</b>				<b>6.67%</b>



# PME ANALYSIS - DIRECT LENDING

Private Market Investments Overview								
Investments		Commitments		Public Market Equivalent (Valuation ICM)		Public Market Equivalent (Kplan Shoar)		Performance
Investment Name	Vintage Year	Commitment	Paid In Capital	Valuation	BBgBarc US Agency	TVPI	BBgBarc US Agency	IRR Primary PME (BBgBarc US Agency)
Benefit Street Partners Senior Secured Debt Fund, L.P.	2017	\$70,000,000	\$64,737,303	\$65,758,224	64,556,734	1.09	1.02	4.79%
Benefit Street Partners Senior Secured Opportunities Fund II, L.P.	2019	\$75,000,000	\$0	\$0				
BlueBay Direct Lending Fund III (USD-L), SLP	2018	\$70,000,000	\$16,557,818	\$16,544,746	16,370,295	1.05	1.01	7.15%
<b>Total</b>		<b>\$215,000,000</b>	<b>\$81,295,121</b>	<b>\$82,302,970</b>	<b>80,927,029</b>	<b>1.09</b>	<b>1.01</b>	<b>5.11%</b>



# ANALYSIS BY FUND - DIRECT LENDING

Investments		Commitments		Contributions & Distributions			Valuations			Performance		
Investment Name	Vintage Year	Commitment	Unfunded Commitment	Paid In Capital	Additional Fees	Cumulative Distributions	Valuation	Total Value	Net Benefit	DPI	TVPI	IRR
Benefit Street Partners Senior Secured Debt Fund, L.P.	2017	\$70,000,000	\$5,262,697	\$64,737,303	\$1,333,567	\$5,122,046	\$65,758,224	\$70,880,270	\$4,809,400	0.08	1.07	6.36%
Benefit Street Partners Senior Secured Opportunities Fund II, L.P.	2019	\$75,000,000	\$75,000,000	\$0	\$0	\$0	\$0	\$0	\$0			
BlueBay Direct Lending Fund III (USD-L), SLP	2018	\$70,000,000	\$53,442,182	\$16,557,818	-\$178,551	\$870,404	\$16,544,746	\$17,415,150	\$1,035,882	0.05	1.06	8.60%
<b>Total</b>		<b>\$215,000,000</b>	<b>\$133,704,879</b>	<b>\$81,295,121</b>	<b>\$1,155,016</b>	<b>\$5,992,450</b>	<b>\$82,302,970</b>	<b>\$88,295,420</b>	<b>\$5,845,282</b>	<b>0.07</b>	<b>1.07</b>	<b>6.67%</b>



# ANALYSIS BY LIFECYCLE - DIRECT LENDING

Investments		Commitments		Contributions & Distributions			Valuations			Performance		
Investment Name	Vintage Year	Commitment	Unfunded Commitment	Paid In Capital	Additional Fees	Cumulative Distributions	Valuation	Total Value	Net Benefit	DPI	TVPI	IRR
<b>Fundraising</b>												
Benefit Street Partners Senior Secured Opportunities Fund II, L.P.	2019	\$75,000,000	\$75,000,000	\$0	\$0	\$0	\$0	\$0	\$0			
<b>Total Fundraising</b>		<b>\$75,000,000</b>	<b>\$75,000,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>			
<b>Investing</b>												
Benefit Street Partners Senior Secured Debt Fund, L.P.	2017	\$70,000,000	\$5,262,697	\$64,737,303	\$1,333,567	\$5,122,046	\$65,758,224	\$70,880,270	\$4,809,400	0.08	1.07	6.36%
BlueBay Direct Lending Fund III (USD-L), SLP	2018	\$70,000,000	\$53,442,182	\$16,557,818	-\$178,551	\$870,404	\$16,544,746	\$17,415,150	\$1,035,882	0.05	1.06	8.60%
<b>Total Investing</b>		<b>\$140,000,000</b>	<b>\$58,704,879</b>	<b>\$81,295,121</b>	<b>\$1,155,016</b>	<b>\$5,992,450</b>	<b>\$82,302,970</b>	<b>\$88,295,420</b>	<b>\$5,845,282</b>	<b>0.07</b>	<b>1.07</b>	<b>6.67%</b>
<b>Total</b>		<b>\$215,000,000</b>	<b>\$133,704,879</b>	<b>\$81,295,121</b>	<b>\$1,155,016</b>	<b>\$5,992,450</b>	<b>\$82,302,970</b>	<b>\$88,295,420</b>	<b>\$5,845,282</b>	<b>0.07</b>	<b>1.07</b>	<b>6.67%</b>



# ANALYSIS BY VINTAGE YEAR - DIRECT LENDING

Investments		Commitments		Contributions & Distributions			Valuations			Performance		
Investment Name	Vintage Year	Commitment	Unfunded Commitment	Paid In Capital	Additional Fees	Cumulative Distributions	Valuation	Total Value	Net Benefit	DPI	TVPI	IRR
<b>2017</b>												
Benefit Street Partners Senior Secured Debt Fund, L.P.	2017	\$70,000,000	\$5,262,697	\$64,737,303	\$1,333,567	\$5,122,046	\$65,758,224	\$70,880,270	\$4,809,400	0.08	1.07	6.36%
<b>Total 2017</b>		<b>\$70,000,000</b>	<b>\$5,262,697</b>	<b>\$64,737,303</b>	<b>\$1,333,567</b>	<b>\$5,122,046</b>	<b>\$65,758,224</b>	<b>\$70,880,270</b>	<b>\$4,809,400</b>	<b>0.08</b>	<b>1.07</b>	<b>6.36%</b>
<b>2018</b>												
BlueBay Direct Lending Fund III (USD-L), SLP	2018	\$70,000,000	\$53,442,182	\$16,557,818	-\$178,551	\$870,404	\$16,544,746	\$17,415,150	\$1,035,882	0.05	1.06	8.60%
<b>Total 2018</b>		<b>\$70,000,000</b>	<b>\$53,442,182</b>	<b>\$16,557,818</b>	<b>-\$178,551</b>	<b>\$870,404</b>	<b>\$16,544,746</b>	<b>\$17,415,150</b>	<b>\$1,035,882</b>	<b>0.05</b>	<b>1.06</b>	<b>8.60%</b>
<b>2019</b>												
Benefit Street Partners Senior Secured Opportunities Fund II, L.P.	2019	\$75,000,000	\$75,000,000	\$0	\$0	\$0	\$0	\$0	\$0			
<b>Total 2019</b>		<b>\$75,000,000</b>	<b>\$75,000,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>			
<b>Total</b>		<b>\$215,000,000</b>	<b>\$133,704,879</b>	<b>\$81,295,121</b>	<b>\$1,155,016</b>	<b>\$5,992,450</b>	<b>\$82,302,970</b>	<b>\$88,295,420</b>	<b>\$5,845,282</b>	<b>0.07</b>	<b>1.07</b>	<b>6.67%</b>



# ANALYSIS BY INVESTMENT STRATEGY - DIRECT LENDING

Investments		Commitments		Contributions & Distributions			Valuations			Performance		
Investment Name	Vintage Year	Commitment	Unfunded Commitment	Paid In Capital	Additional Fees	Cumulative Distributions	Valuation	Total Value	Net Benefit	DPI	TVPI	IRR
<b>Direct Lending</b>												
Benefit Street Partners Senior Secured Debt Fund, L.P.	2017	\$70,000,000	\$5,262,697	\$64,737,303	\$1,333,567	\$5,122,046	\$65,758,224	\$70,880,270	\$4,809,400	0.08	1.07	6.36%
Benefit Street Partners Senior Secured Opportunities Fund II, L.P.	2019	\$75,000,000	\$75,000,000	\$0	\$0	\$0	\$0	\$0	\$0			
BlueBay Direct Lending Fund III (USD-L), SLP	2018	\$70,000,000	\$53,442,182	\$16,557,818	-\$178,551	\$870,404	\$16,544,746	\$17,415,150	\$1,035,882	0.05	1.06	8.60%
<b>Total Direct Lending</b>		<b>\$215,000,000</b>	<b>\$133,704,879</b>	<b>\$81,295,121</b>	<b>\$1,155,016</b>	<b>\$5,992,450</b>	<b>\$82,302,970</b>	<b>\$88,295,420</b>	<b>\$5,845,282</b>	<b>0.07</b>	<b>1.07</b>	<b>6.67%</b>
<b>Total</b>		<b>\$215,000,000</b>	<b>\$133,704,879</b>	<b>\$81,295,121</b>	<b>\$1,155,016</b>	<b>\$5,992,450</b>	<b>\$82,302,970</b>	<b>\$88,295,420</b>	<b>\$5,845,282</b>	<b>0.07</b>	<b>1.07</b>	<b>6.67%</b>



# QUARTERLY TRANSACTION SUMMARY - DIRECT LENDING

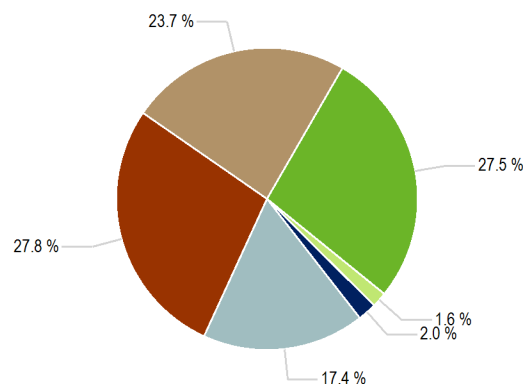
Fund Name	Month Ended	Capital Call	Additional Fee	Temp Return of Capital	Distribution	Net Cash Flow
Benefit Street Partners Senior Secured Debt Fund, L.P.	4/30/2019			-252,542	-1,029,708	-1,282,250
	5/31/2019	4,468,274				4,468,274
	6/30/2019	2,978,850				2,978,850
<b>Total: Benefit Street Partners Senior Secured Debt Fund, L.P.</b>		<b>7,447,124</b>		<b>-252,542</b>	<b>-1,029,708</b>	<b>6,164,874</b>
Benefit Street Partners Senior Secured Opportunities Fund II, L.P.	6/30/2019					0
<b>Total: Benefit Street Partners Senior Secured Opportunities Fund II, L.P.</b>						<b>0</b>
BlueBay Direct Lending Fund III (USD-L), SLP	5/31/2019	3,241,445			-521,512	2,719,933
	6/30/2019	2,654,094				2,654,094
<b>Total: BlueBay Direct Lending Fund III (USD-L), SLP</b>		<b>5,895,538</b>			<b>-521,512</b>	<b>5,374,027</b>
<b>Grand Total</b>		<b>13,342,662</b>		<b>-252,542</b>	<b>-1,551,220</b>	<b>11,538,901</b>





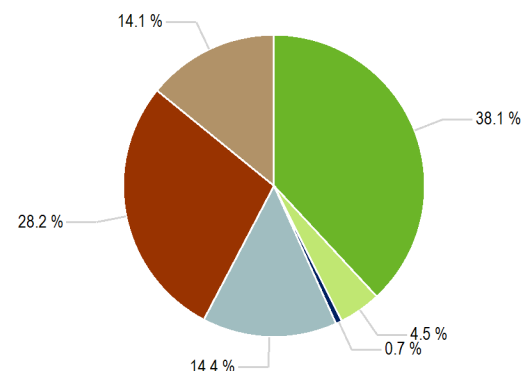
# ANALYSIS BY STRATEGY - PRIVATE EQUITY

Private Markets Valuation by Strategy



Buyout    Distressed    Fund of Funds    Secondaries    Venture Capital  
Co-Investments

Private Markets Fund Exposure by Strategy



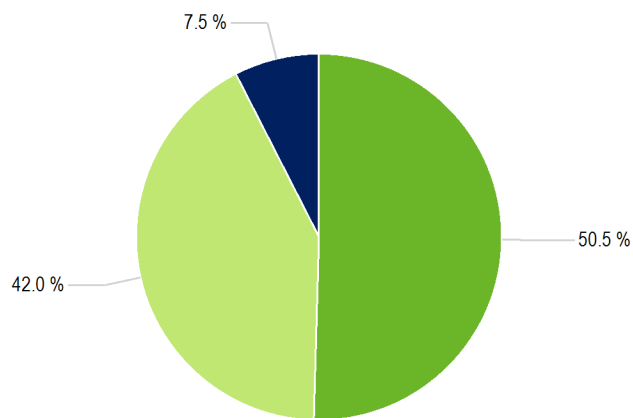
Buyout    Distressed    Fund of Funds    Secondaries    Venture Capital  
Co-Investments

Investment Strategy	Investments			Commitments			Contributions & Distributions			Valuations				Performance		
	Commitment	Unfunded Commitment	Call Ratio	Cumulative Contributions	Additional Fees	Cumulative Distributions	Valuation	Total Value	Net Benefit	Fund Exposure	DPI	TVPI	IRR			
Total Buyout	\$207,000,000	\$171,670,000	0.17	\$35,330,000	\$49,975	\$17,946,209	\$35,771,210	\$53,717,419	\$18,337,444	\$207,441,210	0.51	1.52	18.93%			
Total Co-Investments	\$25,000,000	\$22,500,000	0.10	\$2,500,000	\$0	\$0	\$2,107,779	\$2,107,779	-\$392,221	\$24,607,779	0.00	0.84	-37.54%			
Total Distressed	\$4,000,000	\$1,000,000	0.75	\$3,000,000	\$10,265	\$1,770,931	\$2,619,590	\$4,390,521	\$1,380,256	\$3,619,590	0.59	1.46	13.85%			
Total Fund of Funds	\$75,000,000	\$56,062,500	0.25	\$18,937,500	\$0	\$1,909,683	\$22,650,731	\$24,560,414	\$5,622,914	\$78,713,231	0.10	1.30	17.33%			
Total Secondaries	\$165,000,000	\$117,300,000	0.29	\$47,700,000	\$0	\$33,609,267	\$36,145,045	\$69,754,312	\$22,054,312	\$153,445,045	0.70	1.46	23.88%			
Total Venture Capital	\$69,000,000	\$46,143,750	0.33	\$22,856,250	\$39,343	\$7,944,184	\$30,856,617	\$38,800,801	\$15,905,208	\$77,000,367	0.35	1.69	20.97%			
<b>Total</b>	<b>\$545,000,000</b>	<b>\$414,676,250</b>	<b>0.24</b>	<b>\$130,323,750</b>	<b>\$99,583</b>	<b>\$63,180,274</b>	<b>\$130,150,972</b>	<b>\$193,331,246</b>	<b>\$62,907,913</b>	<b>\$544,827,222</b>	<b>0.48</b>	<b>1.48</b>	<b>20.54%</b>			



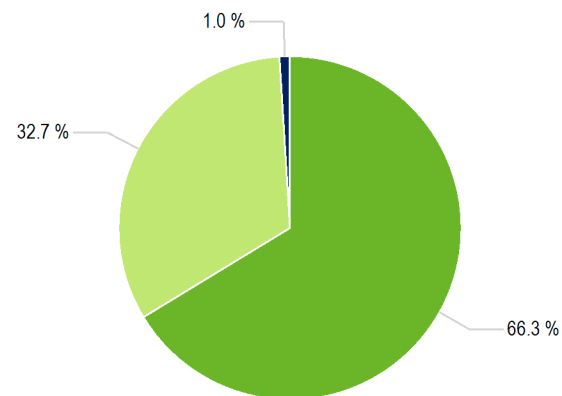
# ANALYSIS BY LIFECYCLE - PRIVATE EQUITY

Commitment by Lifecycle



Fundraising Investing Harvesting

Unfunded Commitment by Lifecycle



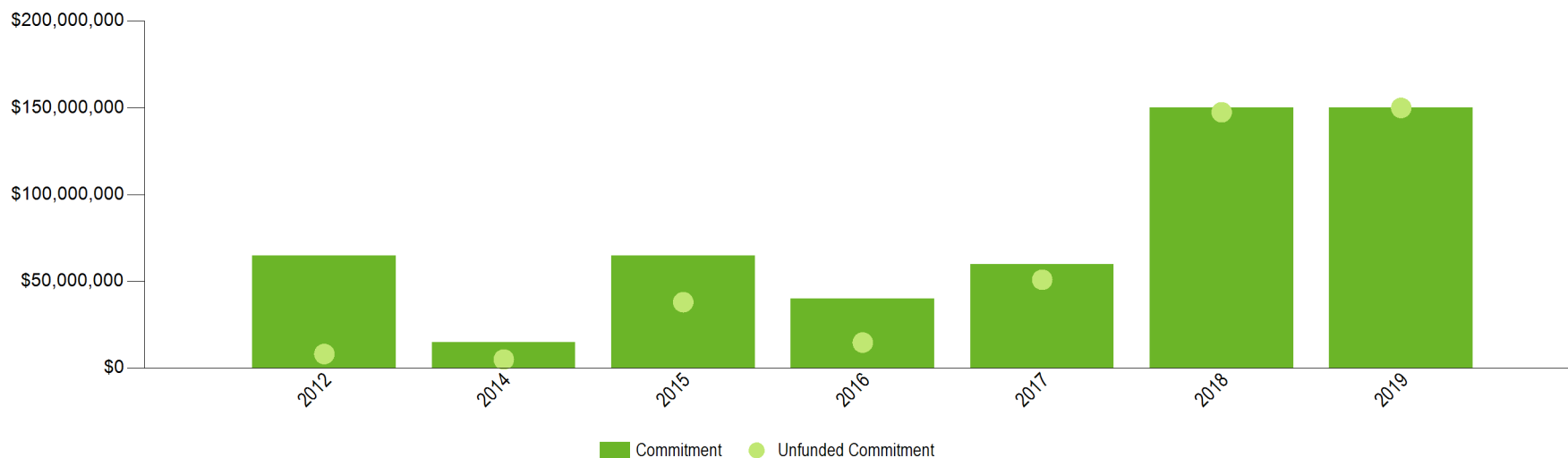
Fundraising Investing Harvesting

Investments	Commitments			Contributions & Distributions			Valuations			Performance		
	Commitment	Unfunded Commitment	Call Ratio	Cumulative Contributions	Additional Fees	Cumulative Distributions	Valuation	Total Value	Net Benefit	DPI	TVPI	IRR
Total Fundraising	\$275,000,000	\$275,000,000		\$0	\$0	\$0	\$0	\$0	\$0			
Total Investing	\$229,000,000	\$135,576,250	0.41	\$93,423,750	\$51,647	\$29,158,976	\$102,219,625	\$131,378,601	\$37,903,204	0.31	1.41	21.50%
Total Harvesting	\$41,000,000	\$4,100,000	0.90	\$36,900,000	\$47,936	\$34,021,298	\$27,931,347	\$61,952,645	\$25,004,709	0.92	1.68	19.44%
<b>Total</b>	<b>\$545,000,000</b>	<b>\$414,676,250</b>	<b>0.24</b>	<b>\$130,323,750</b>	<b>\$99,583</b>	<b>\$63,180,274</b>	<b>\$130,150,972</b>	<b>\$193,331,246</b>	<b>\$62,907,913</b>	<b>0.48</b>	<b>1.48</b>	<b>20.54%</b>



# ANALYSIS BY VINTAGE YEAR- PRIVATE EQUITY

Commitments By Vintage Year



Vintage Year	Commitments			Contributions & Distributions			Valuations			Performance		
	Commitment	Unfunded Commitment	Call Ratio	Cumulative Contributions	Additional Fees	Cumulative Distributions	Valuation	Total Value	Net Benefit	DPI	TVPI	IRR
Total 2012	\$65,000,000	\$8,240,000	0.87	\$56,760,000	\$95,124	\$47,862,318	\$46,361,020	\$94,223,338	\$37,368,214	0.84	1.66	18.74%
Total 2014	\$15,000,000	\$5,062,500	0.66	\$9,937,500	\$0	\$1,574,073	\$12,009,750	\$13,583,823	\$3,646,323	0.16	1.37	15.63%
Total 2015	\$65,000,000	\$38,073,750	0.41	\$26,926,250	\$4,459	\$5,413,551	\$33,078,697	\$38,492,248	\$11,561,539	0.20	1.43	26.88%
Total 2016	\$40,000,000	\$14,800,000	0.63	\$25,200,000	\$0	\$7,994,722	\$25,952,745	\$33,947,467	\$8,747,467	0.32	1.35	36.22%
Total 2017	\$60,000,000	\$51,000,000	0.15	\$9,000,000	\$0	\$335,610	\$10,640,981	\$10,976,591	\$1,976,591	0.04	1.22	22.64%
Total 2018	\$150,000,000	\$147,500,000	0.02	\$2,500,000	\$0	\$0	\$2,107,779	\$2,107,779	-\$392,221	0.00	0.84	-37.54%
Total 2019	\$150,000,000	\$150,000,000		\$0	\$0	\$0	\$0	\$0	\$0			
<b>Total</b>	<b>\$545,000,000</b>	<b>\$414,676,250</b>	<b>0.24</b>	<b>\$130,323,750</b>	<b>\$99,583</b>	<b>\$63,180,274</b>	<b>\$130,150,972</b>	<b>\$193,331,246</b>	<b>\$62,907,913</b>	<b>0.48</b>	<b>1.48</b>	<b>20.54%</b>



# RETURN SUMMARY - PRIVATE EQUITY

Investments			Trailing Period Returns (IRR) %						
Investment Name	Vintage Year	Commitment	(Qtr)	(YTD)	(1 Yr)	(3 Yrs)	(5 Yrs)	(10 Yrs)	SI IRR
Dover Street IX, L.P.	2016	\$40,000,000	6.12%	10.63%	19.55%				36.22%
Dover Street VIII, L.P.	2012	\$25,000,000	3.25%	8.30%	9.99%	15.22%	15.61%		20.91%
Dover Street X Feeder Fund, L.P.	2019	\$100,000,000							
HarbourVest IX Venture Fund, L.P.	2012	\$12,000,000	10.85%	16.74%	29.75%	19.30%	18.03%		18.67%
HarbourVest Partners Co-Investment V Feeder Fund, L.P.	2018	\$25,000,000							-37.54%
HarbourVest Partners IX-Buyout Fund, L.P.	2012	\$24,000,000	3.29%	10.95%	16.88%	20.57%	17.88%		17.47%
HarbourVest Partners IX-Credit Opportunities Fund, L.P.	2012	\$4,000,000	2.29%	6.72%	8.63%	13.90%	12.00%		13.85%
HarbourVest Partners X Buyout Fund, L.P.	2015	\$45,500,000	4.51%	9.50%	15.60%	24.16%			24.43%
HarbourVest Partners X Venture Fund, L.P.	2015	\$19,500,000	9.31%	16.11%	32.91%	31.09%			30.22%
HarbourVest Partners XI Buyout Fund, L.P.	2018	\$75,000,000							
HarbourVest Partners XI Micro Buyout Fund, L.P.	2018	\$12,500,000							
HarbourVest Partners XI Venture Fund, L.P.	2018	\$37,500,000							
HIPEP VII Partnership Fund, L.P.	2014	\$15,000,000	3.69%	6.96%	13.48%	17.70%			15.63%
HIPEP VIII Partnership Fund, L.P.	2017	\$60,000,000	4.42%	9.29%	4.80%				22.64%
Siguler Guff Small Buyout Opportunities Fund IV, L.P.	2019	\$50,000,000							
<b>Total</b>		<b>\$545,000,000</b>	<b>5.33%</b>	<b>10.73%</b>	<b>17.78%</b>	<b>21.44%</b>	<b>19.33%</b>		<b>20.54%</b>



# PME ANALYSIS - PRIVATE EQUITY

Private Market Investments Overview											
Investments		Commitments		Public Market Equivalent (Valuation ICM)			Public Market Equivalent (Kaplan Shoar)			Performance	
Investment Name	Vintage Year	Commitment	Paid In Capital	Valuation	S&P 500	MSCI ACWI	TVPI	S&P 500	MSCI ACWI	IRR Primary PME (S&P 500)	IRR Secondary PME (MSCI ACWI)
HIPEP VII Partnership Fund, L.P.	2014	\$15,000,000	\$9,937,500	\$12,009,750	11,174,098	10,323,983	1.37	1.06	1.14	12.45%	9.00%
HIPEP VIII Partnership Fund, L.P.	2017	\$60,000,000	\$9,000,000	\$10,640,981	9,772,028	9,314,841	1.22	1.09	1.14	12.75%	7.51%
HarbourVest Partners Co-Investment V Feeder Fund, L.P.	2018	\$25,000,000	\$2,500,000	\$2,107,779	2,629,078	2,624,381	0.84	0.80	0.80	14.89%	14.33%
Dover Street IX, L.P.	2016	\$40,000,000	\$25,200,000	\$25,952,745	19,952,749	19,105,271	1.35	1.21	1.25	12.28%	8.60%
Dover Street VIII, L.P.	2012	\$25,000,000	\$22,500,000	\$10,192,300	3,545,626	872,147	1.59	1.18	1.29	13.09%	8.88%
HarbourVest Partners IX-Buyout Fund, L.P.	2012	\$24,000,000	\$19,860,000	\$18,429,673	14,130,764	10,779,258	1.62	1.14	1.28	12.77%	8.31%
HarbourVest Partners IX-Credit Opportunities Fund, L.P.	2012	\$4,000,000	\$3,000,000	\$2,619,590	2,489,969	2,006,870	1.46	1.03	1.15	12.85%	8.69%
HarbourVest IX Venture Fund, L.P.	2012	\$12,000,000	\$11,400,000	\$15,119,457	10,763,559	8,280,886	1.90	1.23	1.42	12.45%	8.04%
HarbourVest Partners X Buyout Fund, L.P.	2015	\$45,500,000	\$15,470,000	\$17,341,537	14,336,215	13,549,624	1.39	1.16	1.21	13.08%	9.82%
HarbourVest Partners X Venture Fund, L.P.	2015	\$19,500,000	\$11,456,250	\$15,737,160	12,225,279	11,528,835	1.49	1.26	1.33	12.35%	8.38%
HarbourVest Partners XI Buyout Fund, L.P.	2018	\$75,000,000	\$0	\$0							
HarbourVest Partners XI Micro Buyout Fund, L.P.	2018	\$12,500,000	\$0	\$0							
HarbourVest Partners XI Venture Fund, L.P.	2018	\$37,500,000	\$0	\$0							
Dover Street X Feeder Fund, L.P.	2019	\$100,000,000	\$0	\$0							
Siguler Guff Small Buyout Opportunities Fund IV, L.P.	2019	\$50,000,000	\$0	\$0							
<b>Total</b>		<b>\$545,000,000</b>	<b>\$130,323,750</b>	<b>\$130,150,972</b>	<b>101,019,366</b>	<b>88,386,095</b>	<b>1.48</b>	<b>1.16</b>	<b>1.26</b>	<b>12.75%</b>	<b>8.61%</b>



# ANALYSIS BY FUND - PRIVATE EQUITY

Investments		Commitments		Contributions & Distributions			Valuations			Performance		
Investment Name	Vintage Year	Commitment	Unfunded Commitment	Paid In Capital	Additional Fees	Cumulative Distributions	Valuation	Total Value	Net Benefit	DPI	TVPI	IRR
Dover Street IX, L.P.	2016	\$40,000,000	\$14,800,000	\$25,200,000	\$0	\$7,994,722	\$25,952,745	\$33,947,467	\$8,747,467	0.32	1.35	36.22%
Dover Street VIII, L.P.	2012	\$25,000,000	\$2,500,000	\$22,500,000	\$0	\$25,614,545	\$10,192,300	\$35,806,845	\$13,306,845	1.14	1.59	20.91%
Dover Street X Feeder Fund, L.P.	2019	\$100,000,000	\$100,000,000	\$0	\$0	\$0	\$0	\$0	\$0			
HarbourVest IX Venture Fund, L.P.	2012	\$12,000,000	\$600,000	\$11,400,000	\$37,671	\$6,635,822	\$15,119,457	\$21,755,279	\$10,317,608	0.58	1.90	18.67%
HarbourVest Partners Co-Investment V Feeder Fund, L.P.	2018	\$25,000,000	\$22,500,000	\$2,500,000	\$0	\$0	\$2,107,779	\$2,107,779	-\$392,221	0.00	0.84	-37.54%
HarbourVest Partners IX-Buyout Fund, L.P.	2012	\$24,000,000	\$4,140,000	\$19,860,000	\$47,188	\$13,841,020	\$18,429,673	\$32,270,693	\$12,363,505	0.70	1.62	17.47%
HarbourVest Partners IX-Credit Opportunities Fund, L.P.	2012	\$4,000,000	\$1,000,000	\$3,000,000	\$10,265	\$1,770,931	\$2,619,590	\$4,390,521	\$1,380,256	0.59	1.46	13.85%
HarbourVest Partners X Buyout Fund, L.P.	2015	\$45,500,000	\$30,030,000	\$15,470,000	\$2,787	\$4,105,189	\$17,341,537	\$21,446,726	\$5,973,939	0.27	1.39	24.43%
HarbourVest Partners X Venture Fund, L.P.	2015	\$19,500,000	\$8,043,750	\$11,456,250	\$1,672	\$1,308,362	\$15,737,160	\$17,045,522	\$5,587,600	0.11	1.49	30.22%
HarbourVest Partners XI Buyout Fund, L.P.	2018	\$75,000,000	\$75,000,000	\$0	\$0	\$0	\$0	\$0	\$0			
HarbourVest Partners XI Micro Buyout Fund, L.P.	2018	\$12,500,000	\$12,500,000	\$0	\$0	\$0	\$0	\$0	\$0			
HarbourVest Partners XI Venture Fund, L.P.	2018	\$37,500,000	\$37,500,000	\$0	\$0	\$0	\$0	\$0	\$0			
HIPEP VII Partnership Fund, L.P.	2014	\$15,000,000	\$5,062,500	\$9,937,500	\$0	\$1,574,073	\$12,009,750	\$13,583,823	\$3,646,323	0.16	1.37	15.63%
HIPEP VIII Partnership Fund, L.P.	2017	\$60,000,000	\$51,000,000	\$9,000,000	\$0	\$335,610	\$10,640,981	\$10,976,591	\$1,976,591	0.04	1.22	22.64%
Siguler Guff Small Buyout Opportunities Fund IV, L.P.	2019	\$50,000,000	\$50,000,000	\$0	\$0	\$0	\$0	\$0	\$0			
<b>Total</b>		<b>\$545,000,000</b>	<b>\$414,676,250</b>	<b>\$130,323,750</b>	<b>\$99,583</b>	<b>\$63,180,274</b>	<b>\$130,150,972</b>	<b>\$193,331,246</b>	<b>\$62,907,913</b>	<b>0.48</b>	<b>1.48</b>	<b>20.54%</b>



# ANALYSIS BY LIFECYCLE - PRIVATE EQUITY

Investments		Commitments		Contributions & Distributions			Valuations			Performance		
Investment Name	Vintage Year	Commitment	Unfunded Commitment	Paid In Capital	Additional Fees	Cumulative Distributions	Valuation	Total Value	Net Benefit	DPI	TVPI	IRR
<b>Fundraising</b>												
Dover Street X Feeder Fund, L.P.	2019	\$100,000,000	\$100,000,000	\$0	\$0	\$0	\$0	\$0	\$0			
HarbourVest Partners XI Buyout Fund, L.P.	2018	\$75,000,000	\$75,000,000	\$0	\$0	\$0	\$0	\$0	\$0			
HarbourVest Partners XI Micro Buyout Fund, L.P.	2018	\$12,500,000	\$12,500,000	\$0	\$0	\$0	\$0	\$0	\$0			
HarbourVest Partners XI Venture Fund, L.P.	2018	\$37,500,000	\$37,500,000	\$0	\$0	\$0	\$0	\$0	\$0			
Siguler Guff Small Buyout Opportunities Fund IV, L.P.	2019	\$50,000,000	\$50,000,000	\$0	\$0	\$0	\$0	\$0	\$0			
<b>Total Fundraising</b>		<b>\$275,000,000</b>	<b>\$275,000,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>			
<b>Investing</b>												
Dover Street IX, L.P.	2016	\$40,000,000	\$14,800,000	\$25,200,000	\$0	\$7,994,722	\$25,952,745	\$33,947,467	\$8,747,467	0.32	1.35	36.22%
HarbourVest Partners Co-Investment V Feeder Fund, L.P.	2018	\$25,000,000	\$22,500,000	\$2,500,000	\$0	\$0	\$2,107,779	\$2,107,779	-\$392,221	0.00	0.84	-37.54%
HarbourVest Partners IX-Buyout Fund, L.P.	2012	\$24,000,000	\$4,140,000	\$19,860,000	\$47,188	\$13,841,020	\$18,429,673	\$32,270,693	\$12,363,505	0.70	1.62	17.47%
HarbourVest Partners X Buyout Fund, L.P.	2015	\$45,500,000	\$30,030,000	\$15,470,000	\$2,787	\$4,105,189	\$17,341,537	\$21,446,726	\$5,973,939	0.27	1.39	24.43%
HarbourVest Partners X Venture Fund, L.P.	2015	\$19,500,000	\$8,043,750	\$11,456,250	\$1,672	\$1,308,362	\$15,737,160	\$17,045,522	\$5,587,600	0.11	1.49	30.22%
HIPEP VII Partnership Fund, L.P.	2014	\$15,000,000	\$5,062,500	\$9,937,500	\$0	\$1,574,073	\$12,009,750	\$13,583,823	\$3,646,323	0.16	1.37	15.63%
HIPEP VIII Partnership Fund, L.P.	2017	\$60,000,000	\$51,000,000	\$9,000,000	\$0	\$335,610	\$10,640,981	\$10,976,591	\$1,976,591	0.04	1.22	22.64%
<b>Total Investing</b>		<b>\$229,000,000</b>	<b>\$135,576,250</b>	<b>\$93,423,750</b>	<b>\$51,647</b>	<b>\$29,158,976</b>	<b>\$102,219,625</b>	<b>\$131,378,601</b>	<b>\$37,903,204</b>	<b>0.31</b>	<b>1.41</b>	<b>21.50%</b>
<b>Harvesting</b>												
Dover Street VIII, L.P.	2012	\$25,000,000	\$2,500,000	\$22,500,000	\$0	\$25,614,545	\$10,192,300	\$35,806,845	\$13,306,845	1.14	1.59	20.91%
HarbourVest IX Venture Fund, L.P.	2012	\$12,000,000	\$600,000	\$11,400,000	\$37,671	\$6,635,822	\$15,119,457	\$21,755,279	\$10,317,608	0.58	1.90	18.67%
HarbourVest Partners IX-Credit Opportunities Fund, L.P.	2012	\$4,000,000	\$1,000,000	\$3,000,000	\$10,265	\$1,770,931	\$2,619,590	\$4,390,521	\$1,380,256	0.59	1.46	13.85%
<b>Total Harvesting</b>		<b>\$41,000,000</b>	<b>\$4,100,000</b>	<b>\$36,900,000</b>	<b>\$47,936</b>	<b>\$34,021,298</b>	<b>\$27,931,347</b>	<b>\$61,952,645</b>	<b>\$25,004,709</b>	<b>0.92</b>	<b>1.68</b>	<b>19.44%</b>
<b>Total</b>		<b>\$545,000,000</b>	<b>\$414,676,250</b>	<b>\$130,323,750</b>	<b>\$99,583</b>	<b>\$63,180,274</b>	<b>\$130,150,972</b>	<b>\$193,331,246</b>	<b>\$62,907,913</b>	<b>0.48</b>	<b>1.48</b>	<b>20.54%</b>



# ANALYSIS BY VINTAGE YEAR - PRIVATE EQUITY

Investments		Commitments		Contributions & Distributions			Valuations			Performance		
Investment Name	Vintage Year	Commitment	Unfunded Commitment	Paid In Capital	Additional Fees	Cumulative Distributions	Valuation	Total Value	Net Benefit	DPI	TVPI	IRR
<b>2012</b>												
Dover Street VIII, L.P.	2012	\$25,000,000	\$2,500,000	\$22,500,000	\$0	\$25,614,545	\$10,192,300	\$35,806,845	\$13,306,845	1.14	1.59	20.91%
HarbourVest IX Venture Fund, L.P.	2012	\$12,000,000	\$600,000	\$11,400,000	\$37,671	\$6,635,822	\$15,119,457	\$21,755,279	\$10,317,608	0.58	1.90	18.67%
HarbourVest Partners IX-Buyout Fund, L.P.	2012	\$24,000,000	\$4,140,000	\$19,860,000	\$47,188	\$13,841,020	\$18,429,673	\$32,270,693	\$12,363,505	0.70	1.62	17.47%
HarbourVest Partners IX-Credit Opportunities Fund, L.P.	2012	\$4,000,000	\$1,000,000	\$3,000,000	\$10,265	\$1,770,931	\$2,619,590	\$4,390,521	\$1,380,256	0.59	1.46	13.85%
<b>Total 2012</b>		<b>\$65,000,000</b>	<b>\$8,240,000</b>	<b>\$56,760,000</b>	<b>\$95,124</b>	<b>\$47,862,318</b>	<b>\$46,361,020</b>	<b>\$94,223,338</b>	<b>\$37,368,214</b>	<b>0.84</b>	<b>1.66</b>	<b>18.74%</b>
<b>2014</b>												
HIPEP VII Partnership Fund, L.P.	2014	\$15,000,000	\$5,062,500	\$9,937,500	\$0	\$1,574,073	\$12,009,750	\$13,583,823	\$3,646,323	0.16	1.37	15.63%
<b>Total 2014</b>		<b>\$15,000,000</b>	<b>\$5,062,500</b>	<b>\$9,937,500</b>	<b>\$0</b>	<b>\$1,574,073</b>	<b>\$12,009,750</b>	<b>\$13,583,823</b>	<b>\$3,646,323</b>	<b>0.16</b>	<b>1.37</b>	<b>15.63%</b>
<b>2015</b>												
HarbourVest Partners X Buyout Fund, L.P.	2015	\$45,500,000	\$30,030,000	\$15,470,000	\$2,787	\$4,105,189	\$17,341,537	\$21,446,726	\$5,973,939	0.27	1.39	24.43%
HarbourVest Partners X Venture Fund, L.P.	2015	\$19,500,000	\$8,043,750	\$11,456,250	\$1,672	\$1,308,362	\$15,737,160	\$17,045,522	\$5,587,600	0.11	1.49	30.22%
<b>Total 2015</b>		<b>\$65,000,000</b>	<b>\$38,073,750</b>	<b>\$26,926,250</b>	<b>\$4,459</b>	<b>\$5,413,551</b>	<b>\$33,078,697</b>	<b>\$38,492,248</b>	<b>\$11,561,539</b>	<b>0.20</b>	<b>1.43</b>	<b>26.88%</b>
<b>2016</b>												
Dover Street IX, L.P.	2016	\$40,000,000	\$14,800,000	\$25,200,000	\$0	\$7,994,722	\$25,952,745	\$33,947,467	\$8,747,467	0.32	1.35	36.22%
<b>Total 2016</b>		<b>\$40,000,000</b>	<b>\$14,800,000</b>	<b>\$25,200,000</b>	<b>\$0</b>	<b>\$7,994,722</b>	<b>\$25,952,745</b>	<b>\$33,947,467</b>	<b>\$8,747,467</b>	<b>0.32</b>	<b>1.35</b>	<b>36.22%</b>
<b>2017</b>												
HIPEP VIII Partnership Fund, L.P.	2017	\$60,000,000	\$51,000,000	\$9,000,000	\$0	\$335,610	\$10,640,981	\$10,976,591	\$1,976,591	0.04	1.22	22.64%
<b>Total 2017</b>		<b>\$60,000,000</b>	<b>\$51,000,000</b>	<b>\$9,000,000</b>	<b>\$0</b>	<b>\$335,610</b>	<b>\$10,640,981</b>	<b>\$10,976,591</b>	<b>\$1,976,591</b>	<b>0.04</b>	<b>1.22</b>	<b>22.64%</b>
<b>2018</b>												
HarbourVest Partners Co-Investment V Feeder Fund, L.P.	2018	\$25,000,000	\$22,500,000	\$2,500,000	\$0	\$0	\$2,107,779	\$2,107,779	-\$392,221	0.00	0.84	-37.54%
HarbourVest Partners XI Buyout Fund, L.P.	2018	\$75,000,000	\$75,000,000	\$0	\$0	\$0	\$0	\$0	\$0			
HarbourVest Partners XI Micro Buyout Fund, L.P.	2018	\$12,500,000	\$12,500,000	\$0	\$0	\$0	\$0	\$0	\$0			
HarbourVest Partners XI Venture Fund, L.P.	2018	\$37,500,000	\$37,500,000	\$0	\$0	\$0	\$0	\$0	\$0			
<b>Total 2018</b>		<b>\$150,000,000</b>	<b>\$147,500,000</b>	<b>\$2,500,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$2,107,779</b>	<b>\$2,107,779</b>	<b>-\$392,221</b>	<b>0.00</b>	<b>0.84</b>	<b>-37.54%</b>
<b>2019</b>												
Dover Street X Feeder Fund, L.P.	2019	\$100,000,000	\$100,000,000	\$0	\$0	\$0	\$0	\$0	\$0			
Siguler Guff Small Buyout Opportunities Fund IV, L.P.	2019	\$50,000,000	\$50,000,000	\$0	\$0	\$0	\$0	\$0	\$0			
<b>Total 2019</b>		<b>\$150,000,000</b>	<b>\$150,000,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>			
<b>Total</b>		<b>\$545,000,000</b>	<b>\$414,676,250</b>	<b>\$130,323,750</b>	<b>\$99,583</b>	<b>\$63,180,274</b>	<b>\$130,150,972</b>	<b>\$193,331,246</b>	<b>\$62,907,913</b>	<b>0.48</b>	<b>1.48</b>	<b>20.54%</b>





# ANALYSIS BY INVESTMENT STRATEGY - PRIVATE EQUITY

Investments		Commitments		Contributions & Distributions			Valuations			Performance		
Investment Name	Vintage Year	Commitment	Unfunded Commitment	Paid In Capital	Additional Fees	Cumulative Distributions	Valuation	Total Value	Net Benefit	DPI	TVPI	IRR
<b>Buyout</b>												
HarbourVest Partners IX-Buyout Fund, L.P.	2012	\$24,000,000	\$4,140,000	\$19,860,000	\$47,188	\$13,841,020	\$18,429,673	\$32,270,693	\$12,363,505	0.70	1.62	17.47%
HarbourVest Partners X Buyout Fund, L.P.	2015	\$45,500,000	\$30,030,000	\$15,470,000	\$2,787	\$4,105,189	\$17,341,537	\$21,446,726	\$5,973,939	0.27	1.39	24.43%
HarbourVest Partners XI Buyout Fund, L.P.	2018	\$75,000,000	\$75,000,000	\$0	\$0	\$0	\$0	\$0	\$0			
HarbourVest Partners XI Micro Buyout Fund, L.P.	2018	\$12,500,000	\$12,500,000	\$0	\$0	\$0	\$0	\$0	\$0			
Siguler Guff Small Buyout Opportunities Fund IV, L.P.	2019	\$50,000,000	\$50,000,000	\$0	\$0	\$0	\$0	\$0	\$0			
<b>Total Buyout</b>		<b>\$207,000,000</b>	<b>\$171,670,000</b>	<b>\$35,330,000</b>	<b>\$49,975</b>	<b>\$17,946,209</b>	<b>\$35,771,210</b>	<b>\$53,717,419</b>	<b>\$18,337,444</b>	<b>0.51</b>	<b>1.52</b>	<b>18.93%</b>
<b>Co-Investments</b>												
HarbourVest Partners Co-Investment V Feeder Fund, L.P.	2018	\$25,000,000	\$22,500,000	\$2,500,000	\$0	\$0	\$2,107,779	\$2,107,779	-\$392,221	0.00	0.84	-37.54%
<b>Total Co-Investments</b>		<b>\$25,000,000</b>	<b>\$22,500,000</b>	<b>\$2,500,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$2,107,779</b>	<b>\$2,107,779</b>	<b>-\$392,221</b>	<b>0.00</b>	<b>0.84</b>	<b>-37.54%</b>
<b>Distressed</b>												
HarbourVest Partners IX-Credit Opportunities Fund, L.P.	2012	\$4,000,000	\$1,000,000	\$3,000,000	\$10,265	\$1,770,931	\$2,619,590	\$4,390,521	\$1,380,256	0.59	1.46	13.85%
<b>Total Distressed</b>		<b>\$4,000,000</b>	<b>\$1,000,000</b>	<b>\$3,000,000</b>	<b>\$10,265</b>	<b>\$1,770,931</b>	<b>\$2,619,590</b>	<b>\$4,390,521</b>	<b>\$1,380,256</b>	<b>0.59</b>	<b>1.46</b>	<b>13.85%</b>
<b>Fund of Funds</b>												
HIPEP VII Partnership Fund, L.P.	2014	\$15,000,000	\$5,062,500	\$9,937,500	\$0	\$1,574,073	\$12,009,750	\$13,583,823	\$3,646,323	0.16	1.37	15.63%
HIPEP VIII Partnership Fund, L.P.	2017	\$60,000,000	\$51,000,000	\$9,000,000	\$0	\$335,610	\$10,640,981	\$10,976,591	\$1,976,591	0.04	1.22	22.64%
<b>Total Fund of Funds</b>		<b>\$75,000,000</b>	<b>\$56,062,500</b>	<b>\$18,937,500</b>	<b>\$0</b>	<b>\$1,909,683</b>	<b>\$22,650,731</b>	<b>\$24,560,414</b>	<b>\$5,622,914</b>	<b>0.10</b>	<b>1.30</b>	<b>17.33%</b>
<b>Secondaries</b>												
Dover Street IX, L.P.	2016	\$40,000,000	\$14,800,000	\$25,200,000	\$0	\$7,994,722	\$25,952,745	\$33,947,467	\$8,747,467	0.32	1.35	36.22%
Dover Street VIII, L.P.	2012	\$25,000,000	\$2,500,000	\$22,500,000	\$0	\$25,614,545	\$10,192,300	\$35,806,845	\$13,306,845	1.14	1.59	20.91%
Dover Street X Feeder Fund, L.P.	2019	\$100,000,000	\$100,000,000	\$0	\$0	\$0	\$0	\$0	\$0			
<b>Total Secondaries</b>		<b>\$165,000,000</b>	<b>\$117,300,000</b>	<b>\$47,700,000</b>	<b>\$0</b>	<b>\$33,609,267</b>	<b>\$36,145,045</b>	<b>\$69,754,312</b>	<b>\$22,054,312</b>	<b>0.70</b>	<b>1.46</b>	<b>23.88%</b>
<b>Venture Capital</b>												
HarbourVest IX Venture Fund, L.P.	2012	\$12,000,000	\$600,000	\$11,400,000	\$37,671	\$6,635,822	\$15,119,457	\$21,755,279	\$10,317,608	0.58	1.90	18.67%
HarbourVest Partners X Venture Fund, L.P.	2015	\$19,500,000	\$8,043,750	\$11,456,250	\$1,672	\$1,308,362	\$15,737,160	\$17,045,522	\$5,587,600	0.11	1.49	30.22%
HarbourVest Partners XI Venture Fund, L.P.	2018	\$37,500,000	\$37,500,000	\$0	\$0	\$0	\$0	\$0	\$0			
<b>Total Venture Capital</b>		<b>\$69,000,000</b>	<b>\$46,143,750</b>	<b>\$22,856,250</b>	<b>\$39,343</b>	<b>\$7,944,184</b>	<b>\$30,856,617</b>	<b>\$38,800,801</b>	<b>\$15,905,208</b>	<b>0.35</b>	<b>1.69</b>	<b>20.97%</b>
<b>Total</b>		<b>\$545,000,000</b>	<b>\$414,676,250</b>	<b>\$130,323,750</b>	<b>\$99,583</b>	<b>\$63,180,274</b>	<b>\$130,150,972</b>	<b>\$193,331,246</b>	<b>\$62,907,913</b>	<b>0.48</b>	<b>1.48</b>	<b>20.54%</b>



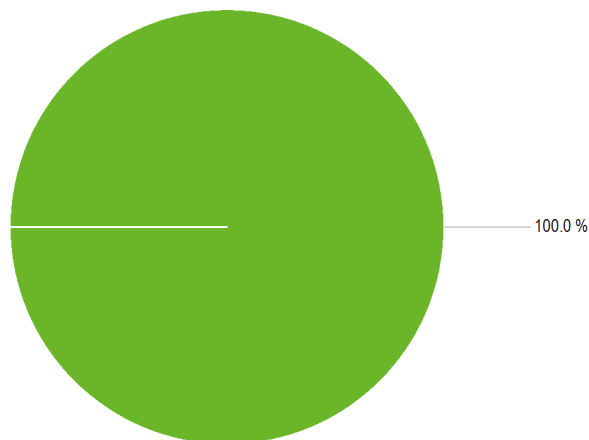
# QUARTERLY TRANSACTION SUMMARY - PRIVATE EQUITY

Fund Name	Month Ended	Capital Call	Additional Fee	Temp Return of Capital	Distribution	Net Cash Flow
Dover Street IX, L.P.	6/30/2019	2,000,000			-1,130,416	869,584
<b>Total: Dover Street IX, L.P.</b>		<b>2,000,000</b>			<b>-1,130,416</b>	<b>869,584</b>
Dover Street VIII, L.P.	6/30/2019				-522,071	-522,071
<b>Total: Dover Street VIII, L.P.</b>					<b>-522,071</b>	<b>-522,071</b>
HarbourVest IX Venture Fund, L.P.	6/30/2019				-678,722	-678,722
<b>Total: HarbourVest IX Venture Fund, L.P.</b>					<b>-678,722</b>	<b>-678,722</b>
HarbourVest Partners Co-Investment V Feeder Fund, L.P.	5/31/2019	2,500,000				2,500,000
<b>Total: HarbourVest Partners Co-Investment V Feeder Fund, L.P.</b>		<b>2,500,000</b>				<b>2,500,000</b>
HarbourVest Partners IX-Buyout Fund, L.P.	5/31/2019	600,000				600,000
	6/30/2019				-427,773	-427,773
<b>Total: HarbourVest Partners IX-Buyout Fund, L.P.</b>		<b>600,000</b>			<b>-427,773</b>	<b>172,227</b>
HarbourVest Partners IX-Credit Opportunities Fund, L.P.	5/31/2019	100,000				100,000
	6/30/2019				-32,524	-32,524
<b>Total: HarbourVest Partners IX-Credit Opportunities Fund, L.P.</b>		<b>100,000</b>			<b>-32,524</b>	<b>67,476</b>
HarbourVest Partners X Buyout Fund, L.P.	5/31/2019				-517,591	-517,591
<b>Total: HarbourVest Partners X Buyout Fund, L.P.</b>					<b>-517,591</b>	<b>-517,591</b>
HarbourVest Partners X Venture Fund, L.P.	6/30/2019	780,000				780,000
<b>Total: HarbourVest Partners X Venture Fund, L.P.</b>		<b>780,000</b>				<b>780,000</b>
<b>Grand Total</b>		<b>5,980,000</b>			<b>-3,309,097</b>	<b>2,670,903</b>



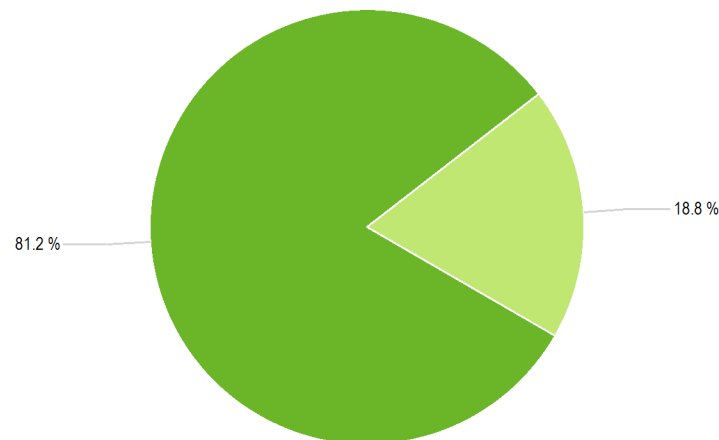
# ANALYSIS BY STRATEGY - PRIVATE REAL ESTATE

Private Markets Valuation by Strategy



Opportunistic

Private Markets Fund Exposure by Strategy



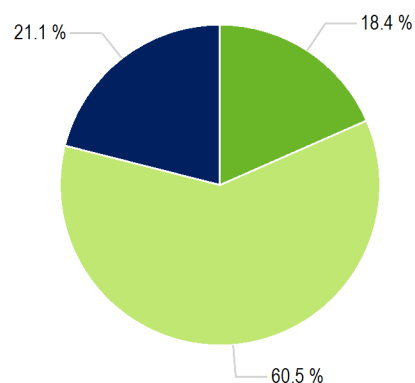
Opportunistic Value Add

Investments	Commitments			Contributions & Distributions			Valuations				Performance		
	Investment Strategy	Commitment	Unfunded Commitment	Call Ratio	Cumulative Contributions	Additional Fees	Cumulative Distributions	Valuation	Total Value	Net Benefit	Fund Exposure	DPI	TVPI
Total Opportunistic	\$155,000,000	\$85,953,208	0.45	\$69,046,792	\$0	\$20,251,948	\$65,111,705	\$85,363,653	\$16,316,861	\$151,064,913	0.29	1.24	9.99%
Total Value Add	\$35,000,000	\$35,000,000		\$0	\$0	\$0				\$35,000,000			
<b>Total</b>	<b>\$190,000,000</b>	<b>\$120,953,208</b>	<b>0.36</b>	<b>\$69,046,792</b>	<b>\$0</b>	<b>\$20,251,948</b>	<b>\$65,111,705</b>	<b>\$85,363,653</b>	<b>\$16,316,861</b>	<b>\$186,064,913</b>	<b>0.29</b>	<b>1.24</b>	<b>9.99%</b>



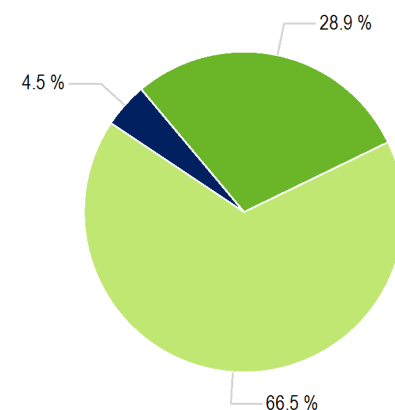
# ANALYSIS BY LIFECYCLE - PRIVATE REAL ESTATE

## Commitment by Lifecycle



Fundraising Investing Harvesting

## Unfunded Commitment by Lifecycle



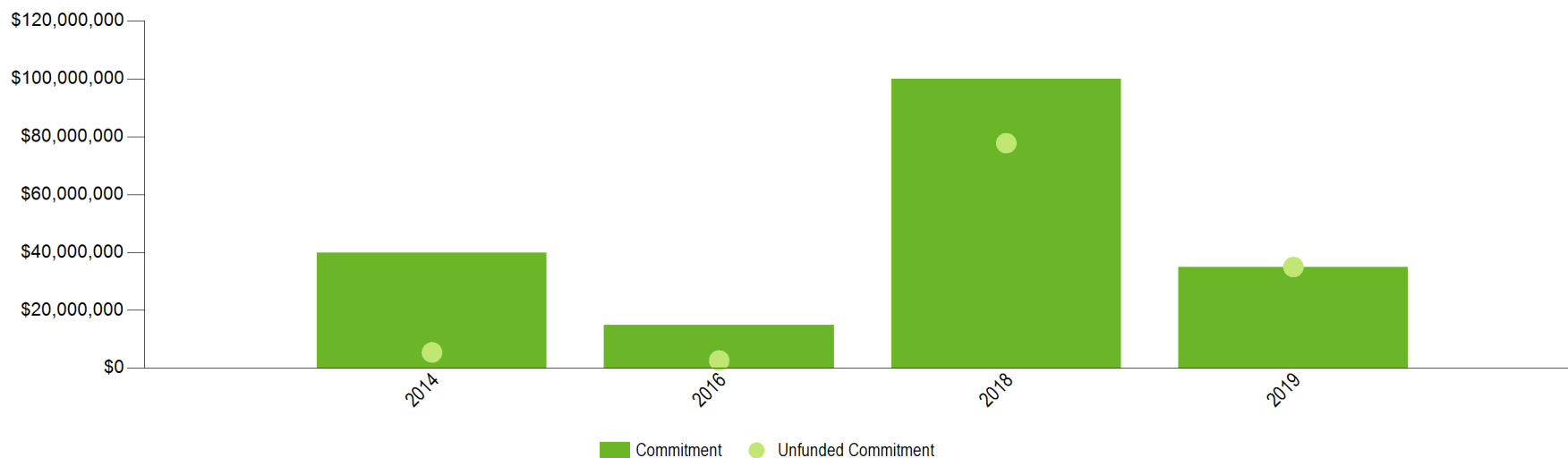
Fundraising Investing Harvesting

Investments	Commitments			Contributions & Distributions			Valuations			Performance		
	Commitment	Unfunded Commitment	Call Ratio	Cumulative Contributions	Additional Fees	Cumulative Distributions	Valuation	Total Value	Net Benefit	DPI	TVPI	IRR
Total Fundraising	\$35,000,000	\$35,000,000		\$0	\$0	\$0						
Total Investing	\$115,000,000	\$80,473,208	0.30	\$34,526,792	\$0	\$980,881	\$36,612,351	\$37,593,232	\$3,066,440	0.03	1.09	9.11%
Total Harvesting	\$40,000,000	\$5,480,000	0.86	\$34,520,000	\$0	\$19,271,067	\$28,499,354	\$47,770,421	\$13,250,421	0.56	1.38	10.19%
<b>Total</b>	<b>\$190,000,000</b>	<b>\$120,953,208</b>	<b>0.36</b>	<b>\$69,046,792</b>	<b>\$0</b>	<b>\$20,251,948</b>	<b>\$65,111,705</b>	<b>\$85,363,653</b>	<b>\$16,316,861</b>	<b>0.29</b>	<b>1.24</b>	<b>9.99%</b>



# ANALYSIS BY VINTAGE YEAR - PRIVATE REAL ESTATE

Commitments By Vintage Year



Vintage Year	Commitments			Contributions & Distributions			Valuations			Performance		
	Commitment	Unfunded Commitment	Call Ratio	Cumulative Contributions	Additional Fees	Cumulative Distributions	Valuation	Total Value	Net Benefit	DPI	TVPI	IRR
Total 2014	\$40,000,000	\$5,480,000	0.86	\$34,520,000	\$0	\$19,271,067	\$28,499,354	\$47,770,421	\$13,250,421	0.56	1.38	10.19%
Total 2016	\$15,000,000	\$2,677,283	0.82	\$12,322,717	\$0	\$980,881	\$15,234,351	\$16,215,232	\$3,892,515	0.08	1.32	13.06%
Total 2018	\$100,000,000	\$77,795,925	0.22	\$22,204,075	\$0	\$0	\$21,378,000	\$21,378,000	-\$826,075	0.00	0.96	-3.72%
Total 2019	\$35,000,000	\$35,000,000		\$0	\$0	\$0						
<b>Total</b>	<b>\$190,000,000</b>	<b>\$120,953,208</b>	<b>0.36</b>	<b>\$69,046,792</b>	<b>\$0</b>	<b>\$20,251,948</b>	<b>\$65,111,705</b>	<b>\$85,363,653</b>	<b>\$16,316,861</b>	<b>0.29</b>	<b>1.24</b>	<b>9.99%</b>



# RETURN SUMMARY - PRIVATE REAL ESTATE

Investments			Trailing Period Returns (IRR) %						
Investment Name	Vintage Year	Commitment	(Qtr)	(YTD)	(1 Yr)	(3 Yrs)	(5 Yrs)	(10 Yrs)	SI IRR
Blue Vista Real Estate Partners V, L.P.	2019	\$35,000,000							
Brookfield Strategic Real Estate Partners III-A, L.P.	2018	\$100,000,000							-3.72%
Siguler Guff Distressed Real Estate Opportunities Fund II, L.P.	2014	\$40,000,000	0.94%	1.55%	4.14%	12.50%	9.72%		10.19%
Siguler Guff DREOF II Co-Investment Fund (T), L.P.	2016	\$15,000,000	0.67%	0.25%	13.15%				13.06%
<b>Total</b>		<b>\$190,000,000</b>	<b>-0.72%</b>	<b>-0.64%</b>	<b>4.60%</b>	<b>11.60%</b>	<b>9.60%</b>		<b>9.99%</b>



# PME ANALYSIS - PRIVATE REAL ESTATE

Private Market Investments Overview								
Investments		Commitments		Private Market Equivalent (Valuation ICM)		Public Market Equivalent (Kaplan Shoar)		Performance
Investment Name	Vintage Year	Commitment	Paid In Capital	Valuation	FTSE NAREIT All REIT	TVPI	FTSE NAREIT All REIT	IRR PME (FTSE NAREIT All REIT)
Blue Vista Real Estate Partners V, L.P.	2019	\$35,000,000	\$0					
Brookfield Strategic Real Estate Partners III-A, L.P.	2018	\$100,000,000	\$22,204,075	\$21,378,000	22,309,990	0.96	0.96	0.48%
Siguler Guff Distressed Real Estate Opportunities Fund II, L.P.	2014	\$40,000,000	\$34,520,000	\$28,499,354	25,793,929	1.38	1.06	8.39%
Siguler Guff DREOF II Co-Investment Fund (T), L.P.	2016	\$15,000,000	\$12,322,717	\$15,234,351	14,605,536	1.32	1.04	11.10%
<b>Total</b>		<b>\$190,000,000</b>	<b>\$69,046,792</b>	<b>\$65,111,705</b>	<b>62,709,455</b>	<b>1.24</b>	<b>1.03</b>	<b>8.69%</b>



# ANALYSIS BY FUND - PRIVATE REAL ESTATE

Investments		Commitments		Contributions & Distributions			Valuations			Performance		
Investment Name	Vintage Year	Commitment	Unfunded Commitment	Paid In Capital	Additional Fees	Cumulative Distributions	Valuation	Total Value	Net Benefit	DPI	TVPI	IRR
Blue Vista Real Estate Partners V, L.P.	2019	\$35,000,000	\$35,000,000	\$0	\$0	\$0						
Brookfield Strategic Real Estate Partners III-A, L.P.	2018	\$100,000,000	\$77,795,925	\$22,204,075	\$0	\$0	\$21,378,000	\$21,378,000	-\$826,075	0.00	0.96	-3.72%
Siguler Guff Distressed Real Estate Opportunities Fund II, L.P.	2014	\$40,000,000	\$5,480,000	\$34,520,000	\$0	\$19,271,067	\$28,499,354	\$47,770,421	\$13,250,421	0.56	1.38	10.19%
Siguler Guff DREOF II Co-Investment Fund (T), L.P.	2016	\$15,000,000	\$2,677,283	\$12,322,717	\$0	\$980,881	\$15,234,351	\$16,215,232	\$3,892,515	0.08	1.32	13.06%
<b>Total</b>		<b>\$190,000,000</b>	<b>\$120,953,208</b>	<b>\$69,046,792</b>	<b>\$0</b>	<b>\$20,251,948</b>	<b>\$65,111,705</b>	<b>\$85,363,653</b>	<b>\$16,316,861</b>	<b>0.29</b>	<b>1.24</b>	<b>9.99%</b>





# ANALYSIS BY LIFECYCLE - PRIVATE REAL ESTATE

Investments		Commitments		Contributions & Distributions			Valuations			Performance		
Investment Name	Vintage Year	Commitment	Unfunded Commitment	Paid In Capital	Additional Fees	Cumulative Distributions	Valuation	Total Value	Net Benefit	DPI	TVPI	IRR
<b>Fundraising</b>												
Blue Vista Real Estate Partners V, L.P.	2019	\$35,000,000	\$35,000,000	\$0	\$0	\$0						
<b>Total Fundraising</b>		<b>\$35,000,000</b>	<b>\$35,000,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>						
<b>Investing</b>												
Brookfield Strategic Real Estate Partners III-A, L.P.	2018	\$100,000,000	\$77,795,925	\$22,204,075	\$0	\$0	\$21,378,000	\$21,378,000	-\$826,075	0.00	0.96	-3.72%
Siguler Guff DREOF II Co-Investment Fund (T), L.P.	2016	\$15,000,000	\$2,677,283	\$12,322,717	\$0	\$980,881	\$15,234,351	\$16,215,232	\$3,892,515	0.08	1.32	13.06%
<b>Total Investing</b>		<b>\$115,000,000</b>	<b>\$80,473,208</b>	<b>\$34,526,792</b>	<b>\$0</b>	<b>\$980,881</b>	<b>\$36,612,351</b>	<b>\$37,593,232</b>	<b>\$3,066,440</b>	<b>0.03</b>	<b>1.09</b>	<b>9.11%</b>
<b>Harvesting</b>												
Siguler Guff Distressed Real Estate Opportunities Fund II, L.P.	2014	\$40,000,000	\$5,480,000	\$34,520,000	\$0	\$19,271,067	\$28,499,354	\$47,770,421	\$13,250,421	0.56	1.38	10.19%
<b>Total Harvesting</b>		<b>\$40,000,000</b>	<b>\$5,480,000</b>	<b>\$34,520,000</b>	<b>\$0</b>	<b>\$19,271,067</b>	<b>\$28,499,354</b>	<b>\$47,770,421</b>	<b>\$13,250,421</b>	<b>0.56</b>	<b>1.38</b>	<b>10.19%</b>
<b>Total</b>		<b>\$190,000,000</b>	<b>\$120,953,208</b>	<b>\$69,046,792</b>	<b>\$0</b>	<b>\$20,251,948</b>	<b>\$65,111,705</b>	<b>\$85,363,653</b>	<b>\$16,316,861</b>	<b>0.29</b>	<b>1.24</b>	<b>9.99%</b>



# ANALYSIS BY VINTAGE YEAR - PRIVATE REAL ESTATE

Investments		Commitments		Contributions & Distributions			Valuations			Performance		
Investment Name	Vintage Year	Commitment	Unfunded Commitment	Paid In Capital	Additional Fees	Cumulative Distributions	Valuation	Total Value	Net Benefit	DPI	TVPI	IRR
<b>2014</b>												
Siguler Guff Distressed Real Estate Opportunities Fund II, L.P.	2014	\$40,000,000	\$5,480,000	\$34,520,000	\$0	\$19,271,067	\$28,499,354	\$47,770,421	\$13,250,421	0.56	1.38	10.19%
<b>Total 2014</b>		<b>\$40,000,000</b>	<b>\$5,480,000</b>	<b>\$34,520,000</b>	<b>\$0</b>	<b>\$19,271,067</b>	<b>\$28,499,354</b>	<b>\$47,770,421</b>	<b>\$13,250,421</b>	<b>0.56</b>	<b>1.38</b>	<b>10.19%</b>
<b>2016</b>												
Siguler Guff DREOF II Co-Investment Fund (T), L.P.	2016	\$15,000,000	\$2,677,283	\$12,322,717	\$0	\$980,881	\$15,234,351	\$16,215,232	\$3,892,515	0.08	1.32	13.06%
<b>Total 2016</b>		<b>\$15,000,000</b>	<b>\$2,677,283</b>	<b>\$12,322,717</b>	<b>\$0</b>	<b>\$980,881</b>	<b>\$15,234,351</b>	<b>\$16,215,232</b>	<b>\$3,892,515</b>	<b>0.08</b>	<b>1.32</b>	<b>13.06%</b>
<b>2018</b>												
Brookfield Strategic Real Estate Partners III-A, L.P.	2018	\$100,000,000	\$77,795,925	\$22,204,075	\$0	\$0	\$21,378,000	\$21,378,000	-\$826,075	0.00	0.96	-3.72%
<b>Total 2018</b>		<b>\$100,000,000</b>	<b>\$77,795,925</b>	<b>\$22,204,075</b>	<b>\$0</b>	<b>\$0</b>	<b>\$21,378,000</b>	<b>\$21,378,000</b>	<b>-\$826,075</b>	<b>0.00</b>	<b>0.96</b>	<b>-3.72%</b>
<b>2019</b>												
Blue Vista Real Estate Partners V, L.P.	2019	\$35,000,000	\$35,000,000	\$0	\$0	\$0						
<b>Total 2019</b>		<b>\$35,000,000</b>	<b>\$35,000,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>						
<b>Total</b>		<b>\$190,000,000</b>	<b>\$120,953,208</b>	<b>\$69,046,792</b>	<b>\$0</b>	<b>\$20,251,948</b>	<b>\$65,111,705</b>	<b>\$85,363,653</b>	<b>\$16,316,861</b>	<b>0.29</b>	<b>1.24</b>	<b>9.99%</b>



# ANALYSIS BY INVESTMENT STRATEGY - PRIVATE REAL ESTATE

Investments		Commitments		Contributions & Distributions			Valuations			Performance		
Investment Name	Vintage Year	Commitment	Unfunded Commitment	Paid In Capital	Additional Fees	Cumulative Distributions	Valuation	Total Value	Net Benefit	DPI	TVPI	IRR
<b>Opportunistic</b>												
Brookfield Strategic Real Estate Partners III-A, L.P.	2018	\$100,000,000	\$77,795,925	\$22,204,075	\$0	\$0	\$21,378,000	\$21,378,000	-\$826,075	0.00	0.96	-3.72%
Siguler Guff Distressed Real Estate Opportunities Fund II, L.P.	2014	\$40,000,000	\$5,480,000	\$34,520,000	\$0	\$19,271,067	\$28,499,354	\$47,770,421	\$13,250,421	0.56	1.38	10.19%
Siguler Guff DREOF II Co-Investment Fund (T), L.P.	2016	\$15,000,000	\$2,677,283	\$12,322,717	\$0	\$980,881	\$15,234,351	\$16,215,232	\$3,892,515	0.08	1.32	13.06%
<b>Total Opportunistic</b>		<b>\$155,000,000</b>	<b>\$85,953,208</b>	<b>\$69,046,792</b>	<b>\$0</b>	<b>\$20,251,948</b>	<b>\$65,111,705</b>	<b>\$85,363,653</b>	<b>\$16,316,861</b>	<b>0.29</b>	<b>1.24</b>	<b>9.99%</b>
<b>Value Add</b>												
Blue Vista Real Estate Partners V, L.P.	2019	\$35,000,000	\$35,000,000	\$0	\$0	\$0						
<b>Total Value Add</b>		<b>\$35,000,000</b>	<b>\$35,000,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>						
<b>Total</b>		<b>\$190,000,000</b>	<b>\$120,953,208</b>	<b>\$69,046,792</b>	<b>\$0</b>	<b>\$20,251,948</b>	<b>\$65,111,705</b>	<b>\$85,363,653</b>	<b>\$16,316,861</b>	<b>0.29</b>	<b>1.24</b>	<b>9.99%</b>

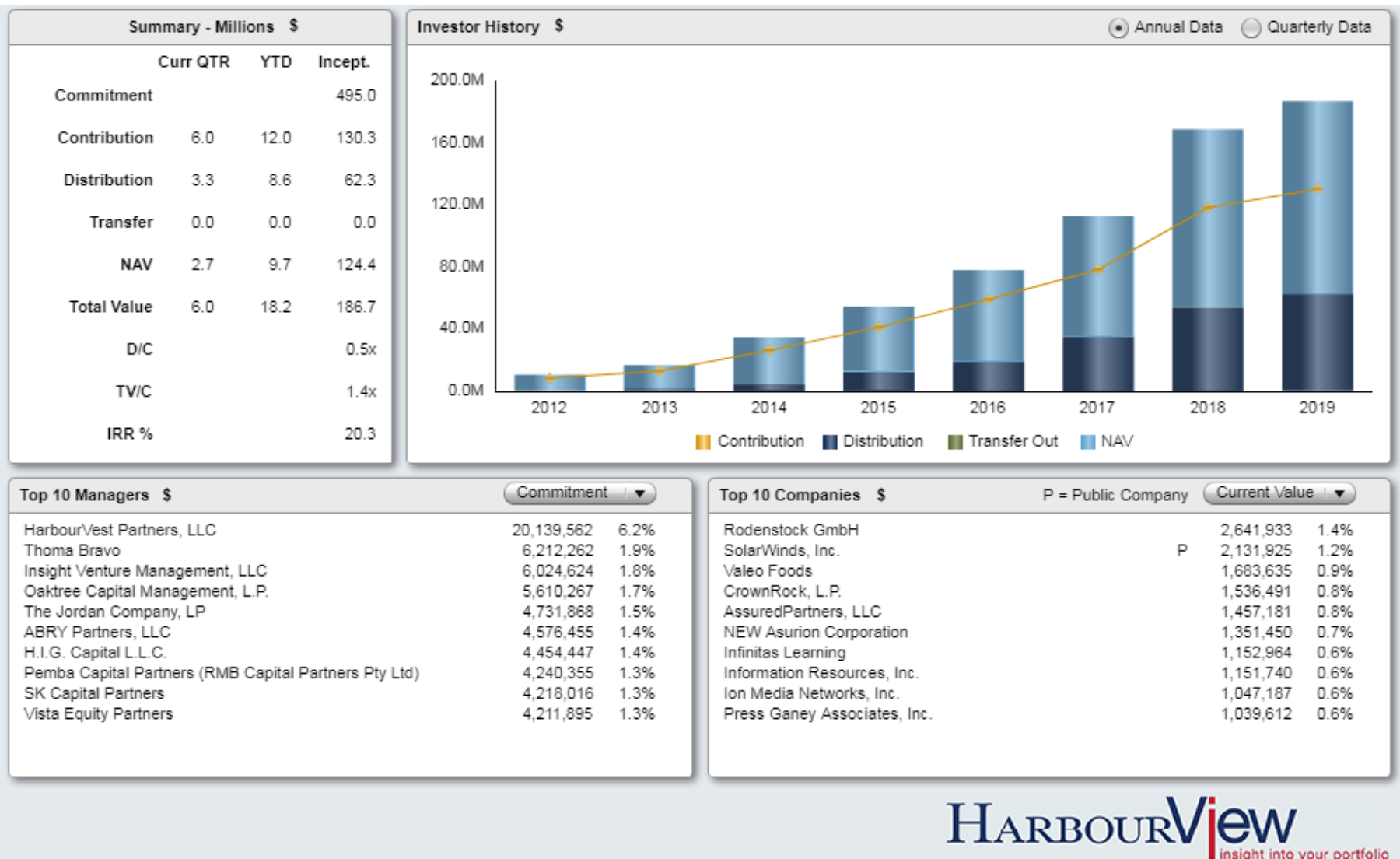


# QUARTERLY TRANSACTION SUMMARY - PRIVATE REAL ESTATE

Fund Name	Month Ended	Capital Call	Additional Fee	Temp Return of Capital	Distribution	Net Cash Flow
Brookfield Strategic Real Estate Partners III-A, L.P.	4/30/2019	22,212,076		-8,001		22,204,075
<b>Total: Brookfield Strategic Real Estate Partners III-A, L.P.</b>		<b>22,212,076</b>		<b>-8,001</b>		<b>22,204,075</b>
Siguler Guff Distressed Real Estate Opportunities Fund II, L.P.	4/30/2019				-860,000	-860,000
	5/31/2019				-440,000	-440,000
	6/30/2019				-20,125	-20,125
<b>Total: Siguler Guff Distressed Real Estate Opportunities Fund II, L.P.</b>					<b>-1,320,125</b>	<b>-1,320,125</b>
Siguler Guff DREOF II Co-Investment Fund (T), L.P.	4/30/2019				-397,500	-397,500
<b>Total: Siguler Guff DREOF II Co-Investment Fund (T), L.P.</b>					<b>-397,500</b>	<b>-397,500</b>
<b>Grand Total</b>		<b>22,212,076</b>		<b>-8,001</b>	<b>-1,717,625</b>	<b>20,486,450</b>



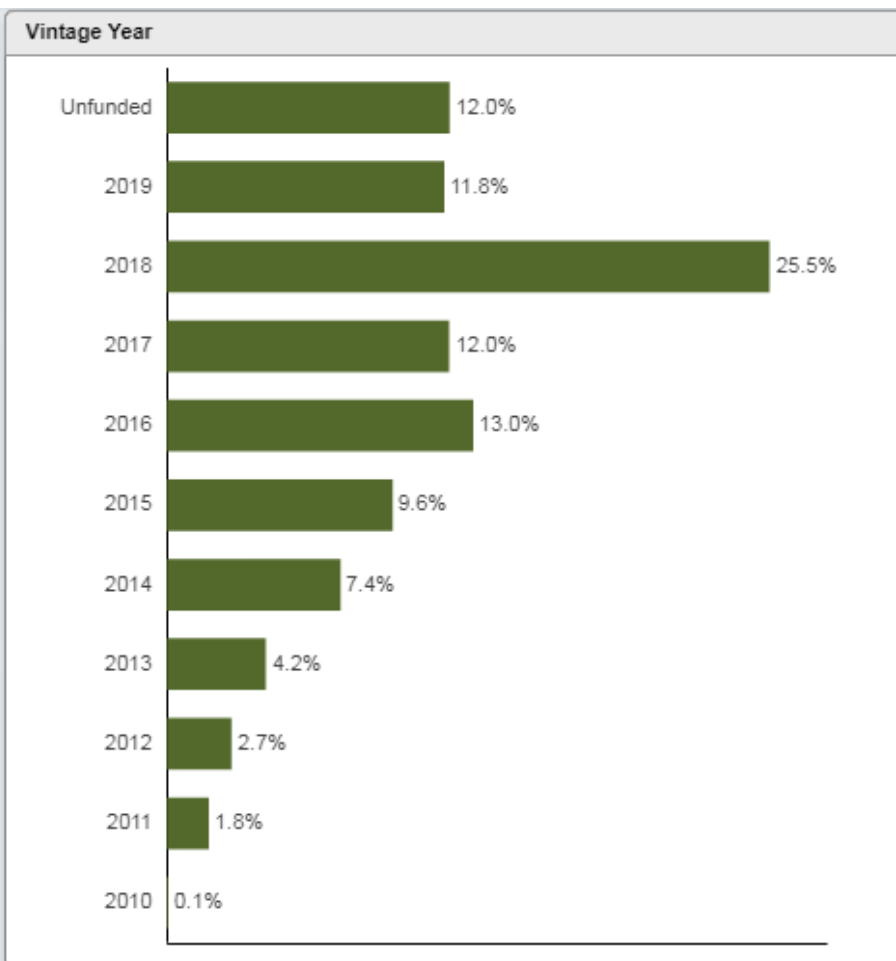
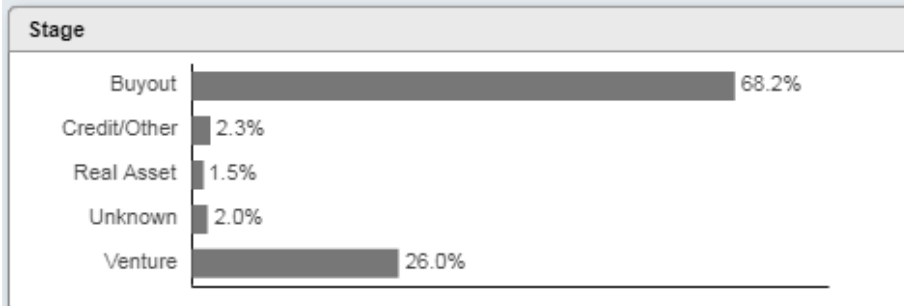
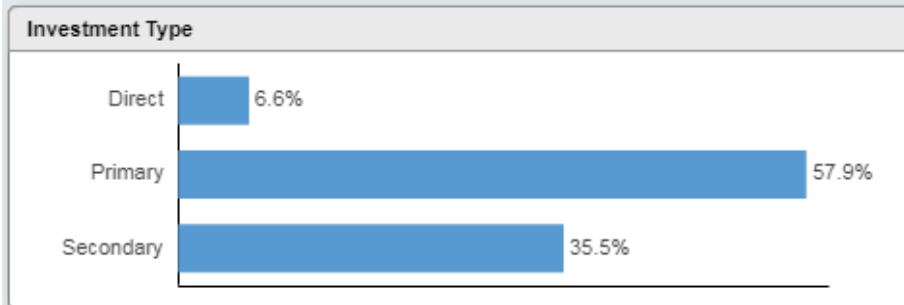
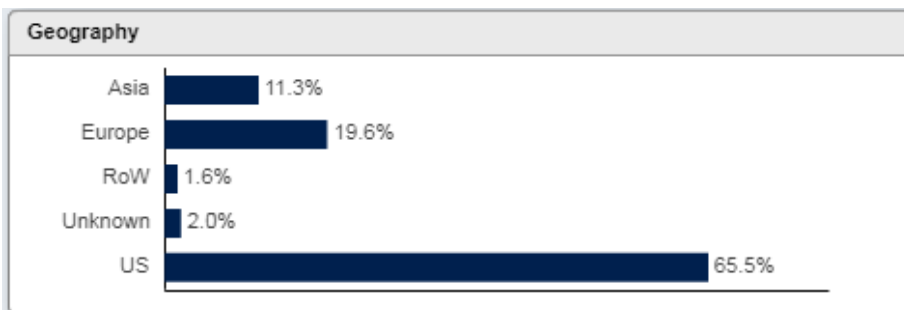
# PRIVATE EQUITY INVESTMENT PORTFOLIO SUMMARY AS OF 6/30/2019



Note:  
Data provided by HarbourVest and has not been independently verified by NEPC



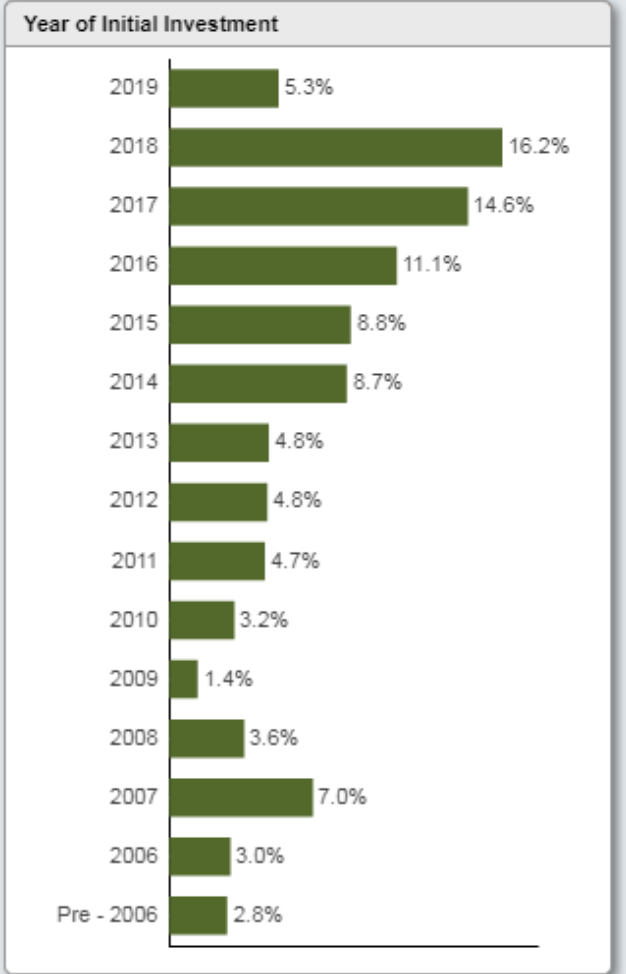
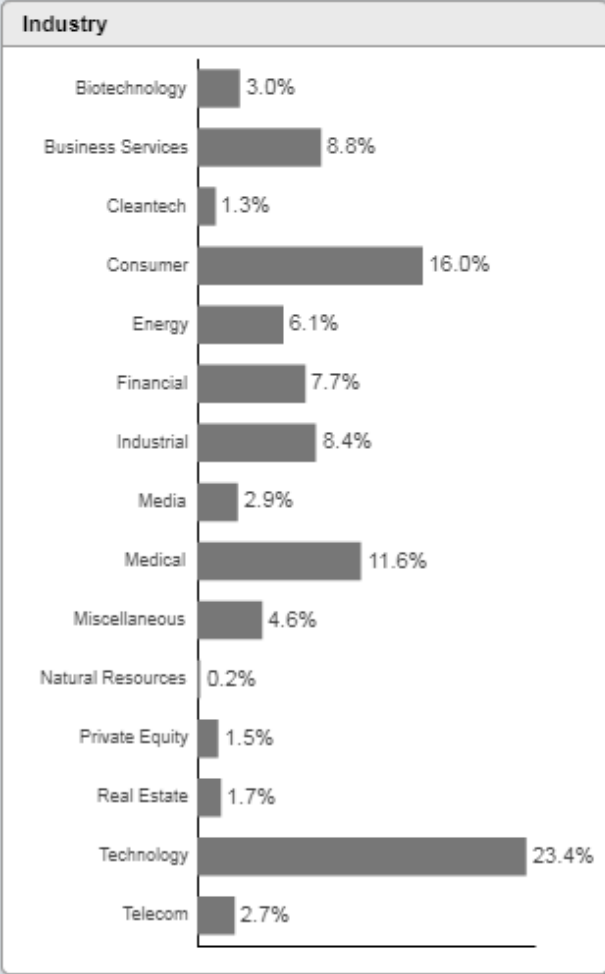
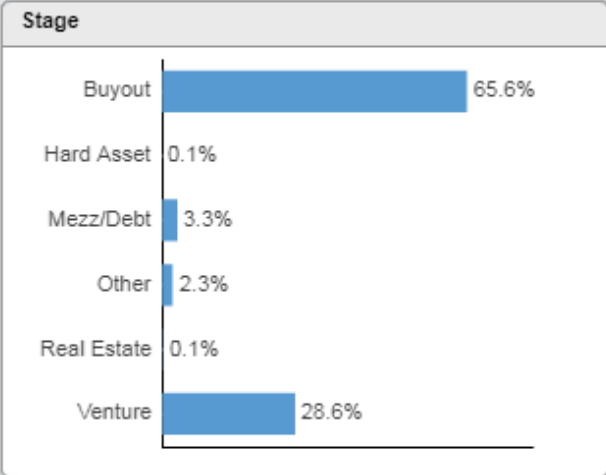
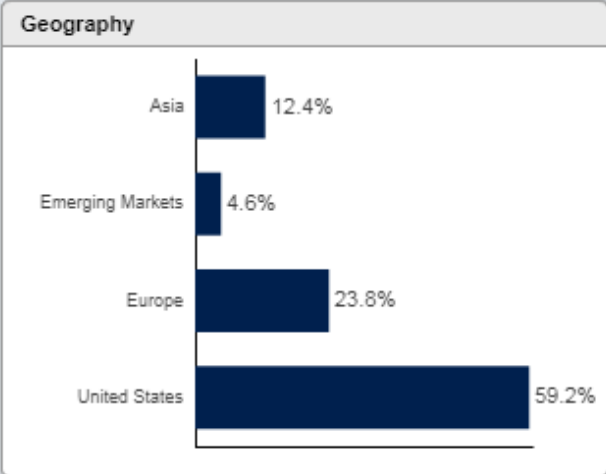
# PRIVATE EQUITY INVESTMENT DIVERSIFICATION AS OF 06/30/2019



Note:  
Data provided by HarbourVest and has not been independently verified by NEPC



# PRIVATE EQUITY COMPANY DIVERSIFICATION AS OF 6/30/2019



Note:  
Data provided by HarbourVest and has not been independently verified by NEPC



# **MANAGER COMMENTARY & REVIEW**

NEPC, LLC

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# INVESTMENT MANAGER – Q4 FISCAL 2019 COMMENTARY

## CONTRIBUTORS

	Commentary	Due Diligence Rating
<b>Artisan Global Opportunity</b> <i>Global Equity</i>	<p><u>Contributors:</u> The portfolio's technology holdings were a noteworthy source of strength in Q2 especially several of the portfolio's holdings benefiting from the secular trend toward digital payments, including Visa, Pagueuro and Worldpay.</p> <p><u>Detractors:</u> Consumer staples, materials and communication services holdings were slight detractors for the quarter. Fevertree, Umicore and Lowe's were the weaker performers for the quarter. Fevertree, a UK-based manufacturer of premium carbonated mixers, as it has capitalized on the combination of first mover advantages, brand authority and low premium-mixer penetration rates to drive compelling growth across channels and geographies. Umicore has unfortunately been a casualty of ongoing China-related pressures—including a major customer's decision to postpone purchases from Umicore in favor of possibly insourcing production instead. Lowe's is a leading US homebuilding and repairs supplier. Shares were pressured in Q2 against the backdrop of rising retail prices related to ongoing US-China trade tensions.</p> <p><u>Positioning:</u> Strong earnings growth has been a nice contributor to the portfolio's attractive YTD returns. But multiple expansion has clearly played an important role as well. The team believes that valuations in the portfolio were quite attractive—hence, some multiple recovery was to be expected. Beyond that dynamic, they believe valuations have been boosted in recent quarters by falling interest-rate expectations and global macro concerns that have created a scarcity premium for many of our holdings (businesses whose profit growth is driven by innovation, internal initiatives and secular trends, more than by global economic expansion).</p>	1
<b>Champlain</b> <i>Domestic Equity</i>	<p><u>Contributors:</u> The portfolio benefited from its exposure to mid cap names for the quarter. The portfolio's health care holdings were additive during the second quarter due to stock selection. The small cap exposure of the portfolio was also additive for the portfolio, led by strong performance in industrials, materials and healthcare. The portfolio also benefited from an underweight to REITs.</p> <p><u>Detractors:</u> The portfolio's mid cap financials names underperformed as weakness in several of the bank holdings was only partially offset by strong gains from insurance holdings, Arthur J. Gallagher and Everest RE. The portfolio's mid cap technology holdings also detracted in the quarter due to a combination of an overweight of software and weak stock selection.</p> <p><u>Positioning:</u> The portfolio management team believes that there are economic indicators pointing to a market slow down and a global hunt for yield. Given this the team is reducing the risk free rate in their DCF model from 4% to 3.25% if the Fed reduces rates. They are also moving the portfolio more defensively by selling some of the more opportunistic positions in the portfolio and replacing them with more defensive positions.</p>	1
<b>Wellington</b> <i>Fixed Income</i>	<p><u>Contributors:</u> Emerging markets debt (EMD) markets generated positive total returns across sectors, including EM local sovereign (5.6%), EM USD- denominated sovereign (4.1%), and EM corporate (3.5%) as both EM currency appreciation and falling yields contributed to positive performance. A more dovish US Federal Reserve and broad stability in EM fundamentals have supported the asset class year to date in 2019. Global investment grade corporate bond spreads tightened during the quarter, generating positive returns within the credit exposure.</p> <p><u>Detractors:</u> External EMD, traded very tight levels and was a detractor for the quarter well as trade tensions reignited.</p> <p><u>Positioning:</u> Despite their more cautions outlook for the global corporate bond market, they favor bank loan exposures over high yield credit. For the remainder of 2019, they expect more return delivered by credit to come from carry rather than price appreciation across fixed income markets. They favor a short USD position, given expected cuts by the Fed should reduce dollar attractiveness. They have been reducing their credit and duration risk substantially and taking risk in areas they find highly attractive such as bank loans and EM Local debt.</p>	1
<b>Pinnacle</b> <i>Absolute Return</i>	<p><u>Contributors:</u> The portfolio had positive attribution from natural gas/ power, precious metals, softs and base metal exposures. Relative value trading strategies in the energy complex contributed the most to performance.</p> <p><u>Detractors:</u> Exposures to crude oil and agricultural/meat were detractors for the quarter.</p>	1



# INVESTMENT MANAGER – Q4 FISCAL 2019 COMMENTARY

## DETRACTORS

	Commentary	Due Diligence Rating
<b>PIMCO Core Fixed Income</b>	<p><u>Detractors:</u> Short duration exposure, security selection in agency MBS and inflation linked securities were the largest detractors for the quarter.</p> <p><u>Contributors:</u> US rates, including duration, curve positioning and security selection were additive for the quarter. Country selection within corporate credit, particularly in financials were also additive.</p> <p><u>Positioning:</u> The portfolio continues to overweight US duration and have a preference for intermediate portion of the curve (5-10yrs) over long term issues. The team is also reducing exposures to Agency MBS while increasing TIPS exposures.</p>	<b>1</b>
<b>Hosking Global Equity</b>	<p><u>Detractors:</u> The portfolio was hurt by underweights in communications services, utilities and healthcare. Weaker stock selection in utilities and communications was also a detractor for the quarter. The largest detractors for the quarter were UK motor retailer, Pendragon and UK based real estate company, Countrywide. From a geographic standpoint, the emerging market overweight was a detractors.</p> <p><u>Contributors:</u> The portfolio's overweight in energy and consumer discretionary were positive contributors for the quarter, as was strong stock selection in energy and financials. American International Group, Citigroup and Paypal were the strongest performing names for the quarter. Geographically, stock selection in US and emerging markets (particularly in Russia) was also additive for the quarter.</p> <p><u>Positioning:</u> The team believes that we are entering the end of a market cycle and have concerns with rising interest rates, so they are positioning the portfolio defensively. Lots of names (like airlines, banks, tobacco, food retail) have been beaten down and are good places to invest.</p>	<b>1</b>
<b>Grosvenor Absolute Return</b>	<p><u>Detractors:</u> Credit hedge funds lagged during April and June of the quarter, but rebounded during the May sell off, distressed credit was one of the largest detractors within credit. Asian focused funds were also detractors for the quarter, regional equity markets saw significant headwinds driven by continued trade uncertainty and global growth concerns.</p> <p><u>Contributors:</u> Specialist credit was one of the top performing strategies for the quarter. Relative value funds generated positive returns during the broad gains across strategies. Traditional convertibles arbitrage strategies led the positive returns as they benefited from the structural tailwinds from tax savings and growth financing becoming cheaper.</p> <p><u>Positioning:</u> GIP has been defensively positioned for a significant period, in preparation for a change in the market cycle. The Fund's beta to public markets is carefully monitored and hedged when needed to maintain low market risk at the aggregate portfolio level.</p>	<b>1</b>

# INVESTMENT MANAGER – Q4 FISCAL 2019 COMMENTARY

## DETRACTORS

	Commentary	Due Diligence Rating
<b>SGA</b> <i>International Equity</i>	<p><u>Detractors:</u> Within a market that delivered broad gains, Japan, the U.K., and Hong Kong delivered positive returns but underperformed the benchmark.</p> <p><u>Contributors:</u> Positive returns were distributed across all sectors except energy, which was the only sector to deliver negative returns for the quarter. Oil prices declined as crude oil production in the U.S. more than offset heightened geopolitical tensions in the Middle East. From a global perspective, the ten largest developed countries extended their positive performance in the second quarter, with Switzerland, Australia, and Germany among the top performers.</p> <p><u>Positioning:</u> SGA is increasingly confident that stable growth is achievable as inflation levels, global labor trends, and consumer sentiment levels remain constructive.</p>	1
<b>Mondrian</b> <i>International Equity</i>	<p><u>Detractors:</u> Although the portfolio benefitted from the underweight position in the relatively weak consumer staples sector, this was more than offset by the impact of the underweight position in the strong materials sector and the overweight position in the relatively weak communication services sector. Stock selection within sectors, however, added to relative returns, driven by strong stock selection in the communication services, utilities and consumer staples sectors. The underweight position in the strong Swiss franc slightly held back relative returns.</p> <p><u>Contributors:</u> Stock selection in Spain added to relative returns, driven by the strong performance of Iberdrola, the integrated utility. This was more than offset by stock selection in the UK and in Japan. In the UK, portfolio returns were held back by more domestically-oriented UK holdings, including Lloyds Bank and SSE, as ongoing political uncertainty following Prime Minister Theresa May's resignation weighed again on sentiment, resulting in a partial reversal of strong first quarter gains. The team continues to believe that a 'no deal' Brexit is unlikely given the lack of support in the UK Parliament and that the skew of outcomes looks positive for a number of UK stocks now trading at depressed valuations. Stock selection in Japan was mainly held back by the performance of Takeda Pharmaceutical. Takeda Pharmaceutical's share price fell during the quarter.</p> <p><u>Positioning:</u> Mondrian's bottom-up fundamental research process utilizes a long-term dividend discount model to isolate value at the individual security level, in an approach that makes valuations comparable across differing markets and sectors. The following positioning is a consequence of this investment philosophy (1) Overweight select European markets and Singapore, (2) Overweight communication services, utilities and energy sectors and (3) Underweight materials and consumer staples sectors</p>	1
<b>Acadian</b> <i>International Equity</i>	<p><u>Detractors:</u> The portfolio was hurt by weakened stock selection in Germany and France, an underweight in both of these countries also hurt performance. Stock selection in industrials, consumer staples and financials were lag on performance.</p> <p><u>Contributors:</u> The portfolio benefitted from strong stock selection in Israel and Italy. Australia was also additive for performance posting strong returns benefiting from positive stock selection and an overweight. The portfolio was also helped by overweights in financials, IT and telecoms.</p> <p><u>Positioning:</u> The portfolio management team is underweight to the UK, France and Japan and holding opportunistic exposures to Canada and China.</p>	1



# NEPC'S DUE DILIGENCE MONITOR

Firm Investment Product	Manager Changes/ Announcements (Recent Quarter)	NEPC Due Diligence Committee Recommendations
Wellington	Wellington informed NEPC Research that they have formally named Kevin Murphy co-PM with Jim Valone (platform head, lead PM) for EMD and Opp EMD. Kevin Murphy has been a named (back up) PM on these strategies since joining Wellington in early 2016. This is a formalization and recognition for Mr. Murphy's contribution since then, and likely a step forward in succession planning for Mr. Valone. NEPC Research is comfortable with this announcement and sees no concern here.	<b>No Action</b>



# NEPC DUE DILIGENCE LEGEND KEY

## Due Diligence Ratings (Investment Product only)

1	A high conviction investment product with a clear and economically-grounded investment thesis, and is managed by an investment team that is sufficiently resourced and incented to execute on the thesis. A 1 rating represents NEPC Research's best ideas. Not all 1 rated products are suitable for all clients.
2	NEPC has a positive view of the strategy. Strategy has a compelling and sound investment thesis. The manager is sufficiently resourced and incented to execute on the thesis. Strengths outweigh the weaknesses, but the strategy does not meet all requirements for a 1 rating.
3	A satisfactory investment product. The strategy lacks a compelling investment thesis, however there are no significant concerns around the manager's viability.
4	The strategy may have an unclear or ambiguous investment thesis or the manager may lack the ability to execute on the stated thesis. The strategy likely has strengths and weaknesses and the weaknesses may outweigh the strengths.
5	A strategy that lacks an investment thesis or NEPC has no confidence in the manager's ability to execute on the thesis, and/or the investment firm may not be viable. Serious issues have been identified with an investment manager or product. This rating aligns with a Due Diligence status of Terminate for client-owned products.
Not Rated	Due diligence has not been sufficiently completed on the product or manager.

## Due Diligence Status (Firm and Product)

No Action	Informational items have surfaced; no action is recommended.
Watch	Issues have surfaced which may require increased monitoring, but which are not considered serious in the near-term. Close monitoring is appropriate until the issues are resolved.
Hold	Serious issues have surfaced which require increased monitoring. These issues could have long-term implications on the investment team's ability to effectively execute the investment strategy.
Client Review	Very serious issues have surfaced with an investment manager. For products that have been fully vetted, the issues may be significant enough to violate the original investment thesis. Clients are advised to review their relationship with the manager.
Terminate	We have lost all confidence in the product; manager would not be recommended for searches and clients would be discouraged from using. The manager cannot be in future searches unless a client specifically requests. Current clients must be advised to replace the manager.



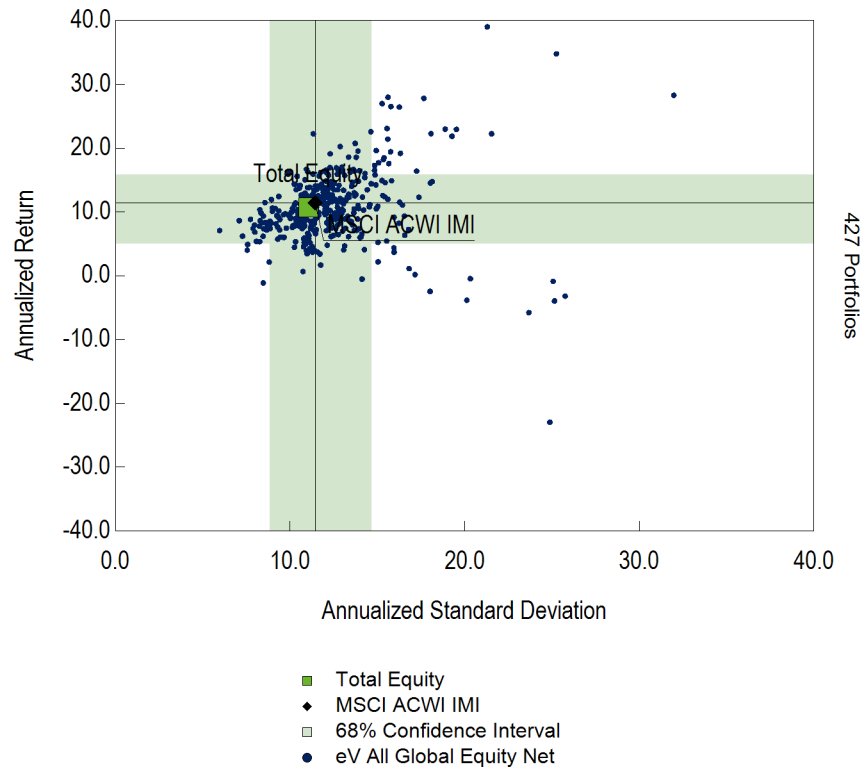
# MANAGER PAGES

NEPC, LLC

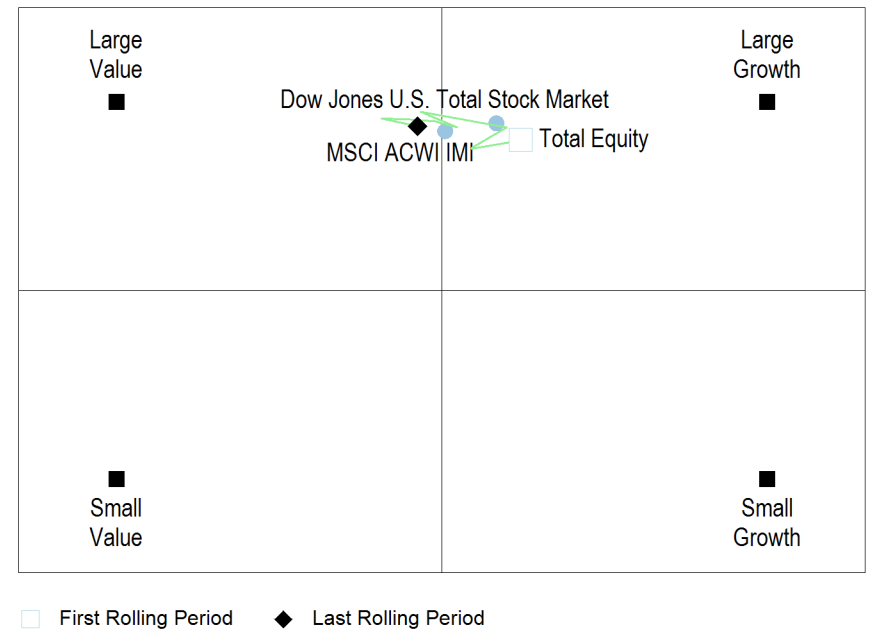
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# TOTAL EQUITY COMPOSITE

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



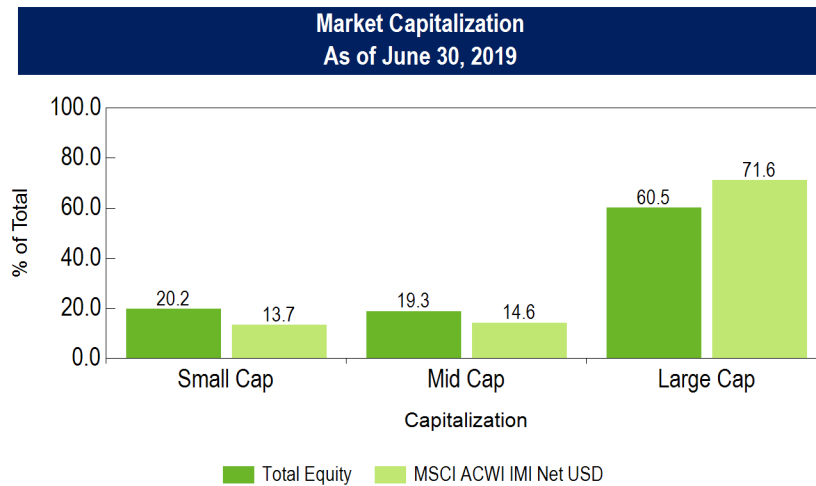
U.S. Effective Style Map  
3 Years Ending June 30, 2019



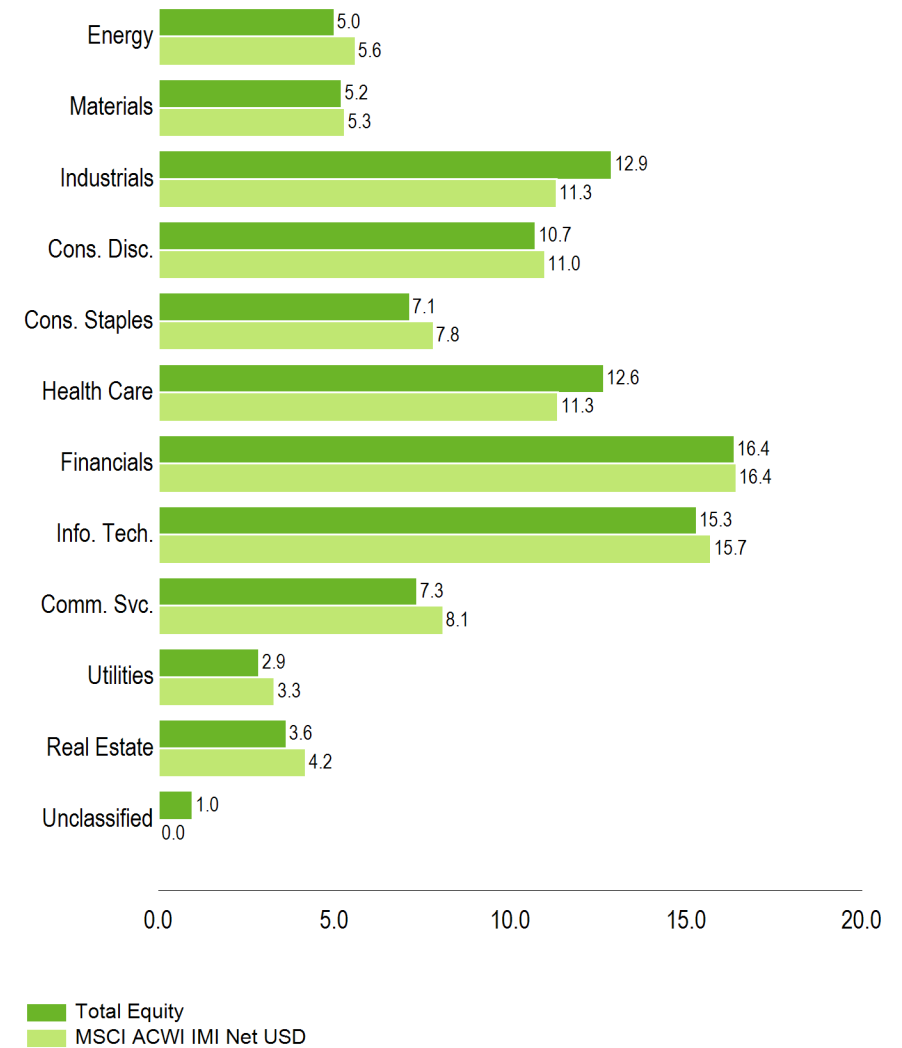
# TOTAL EQUITY COMPOSITE

Characteristics		
	Portfolio	MSCI ACWI IMI Net USD
Number of Holdings	9,349	8,834
Weighted Avg. Market Cap. (\$B)	96.99	129.83
Median Market Cap. (\$B)	3.21	1.77
Price To Earnings	17.18	17.51
Price To Book	2.77	2.85
Price To Sales	1.34	1.44
Return on Equity (%)	17.99	18.37
Yield (%)	2.32	2.45
Beta	0.96	1.00
R-Squared	0.98	1.00

	Portfolio Q2-19	Index Q2-19
Region Weighting		
Americas	57.51	59.49
Europe	22.21	19.44
Asia/Pacific	18.97	19.73
Other	1.31	1.34

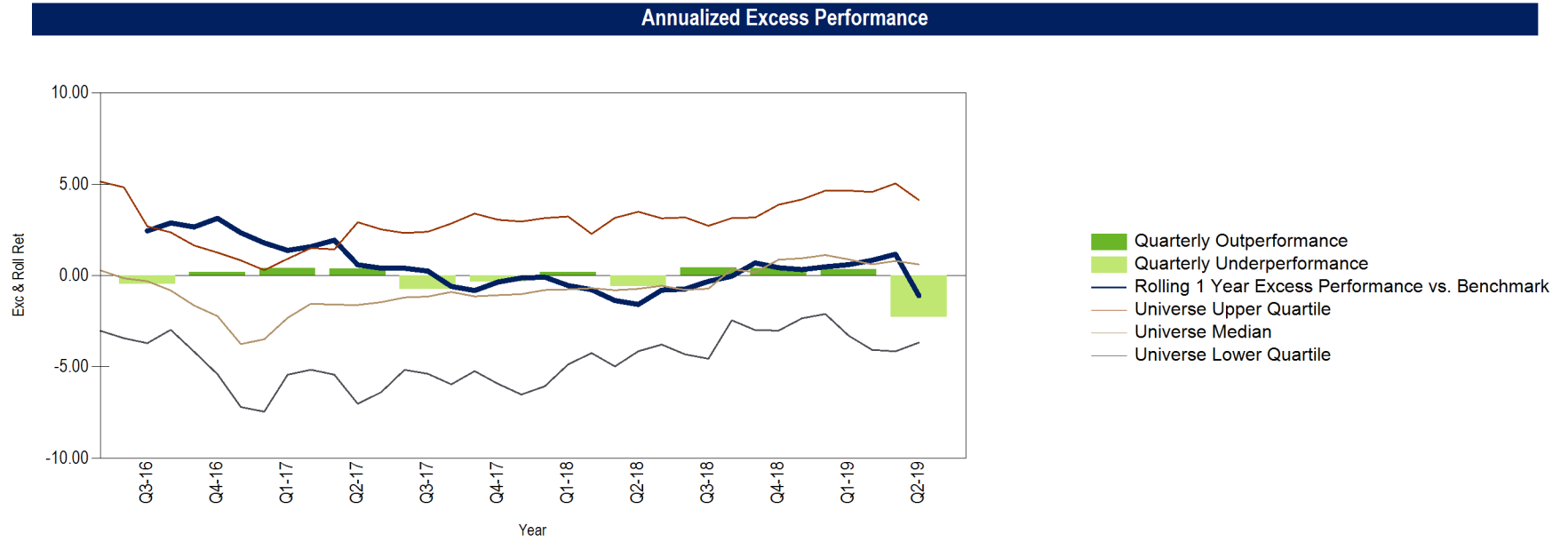


## Sector Allocation (%) vs MSCI ACWI IMI Net USD



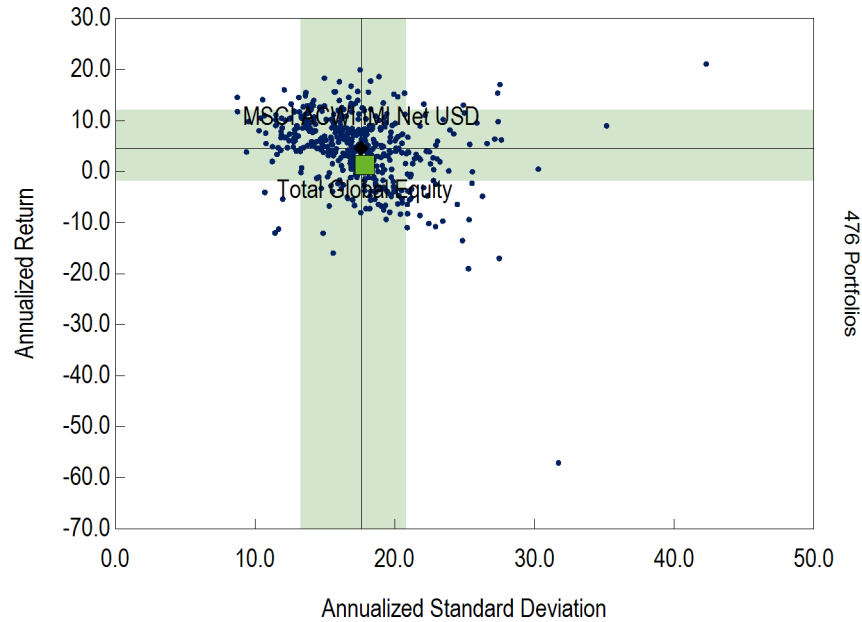


# TOTAL EQUITY COMPOSITE



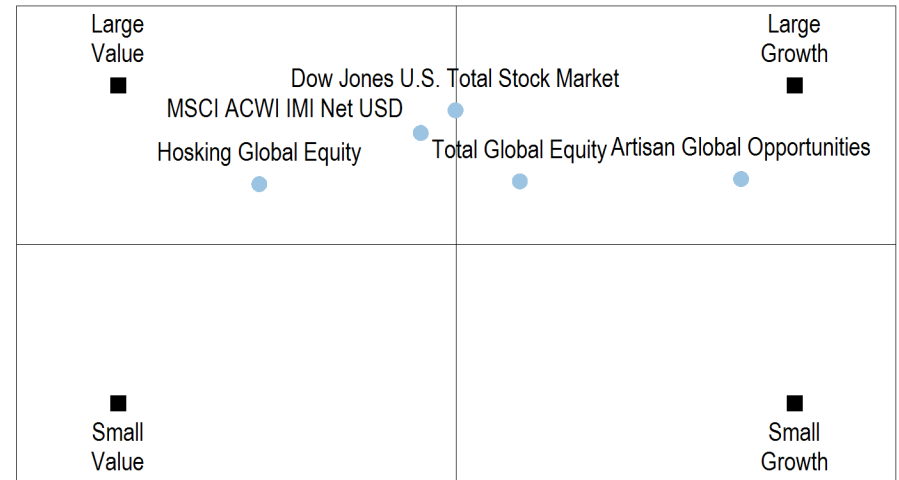
# TOTAL GLOBAL EQUITY

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



- Total Global Equity
- ◆ MSCI ACWI IMI Net USD
- 68% Confidence Interval
- eV All Global Equity Net

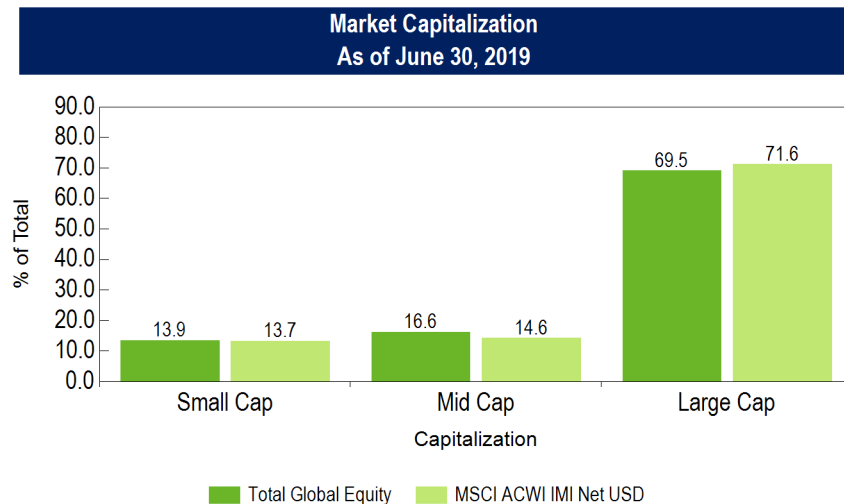
U.S. Effective Style Map  
1 Year Ending June 30, 2019



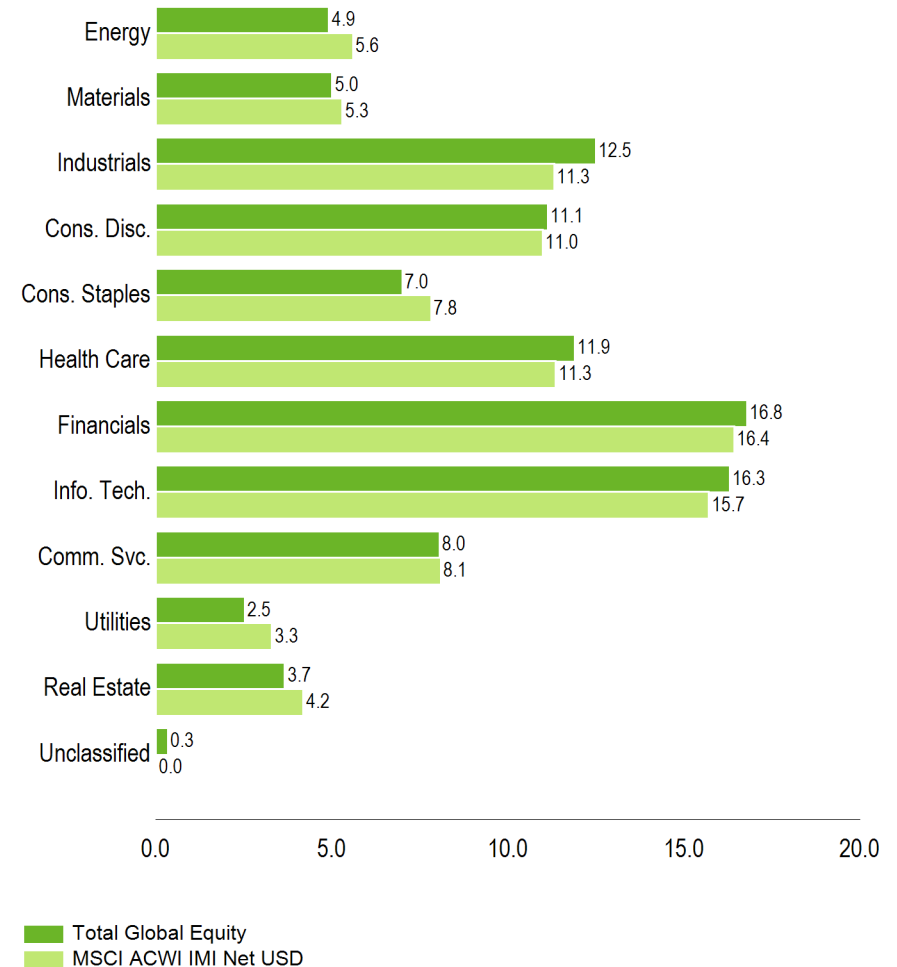
# TOTAL GLOBAL EQUITY

Characteristics		
	Portfolio	MSCI ACWI IMI Net USD
Number of Holdings	8,871	8,834
Weighted Avg. Market Cap. (\$B)	123.84	129.83
Median Market Cap. (\$B)	1.85	1.77
Price To Earnings	18.08	17.51
Price To Book	2.96	2.85
Price To Sales	1.47	1.44
Return on Equity (%)	18.51	18.37
Yield (%)	2.21	2.45
Beta		1.00
R-Squared		1.00

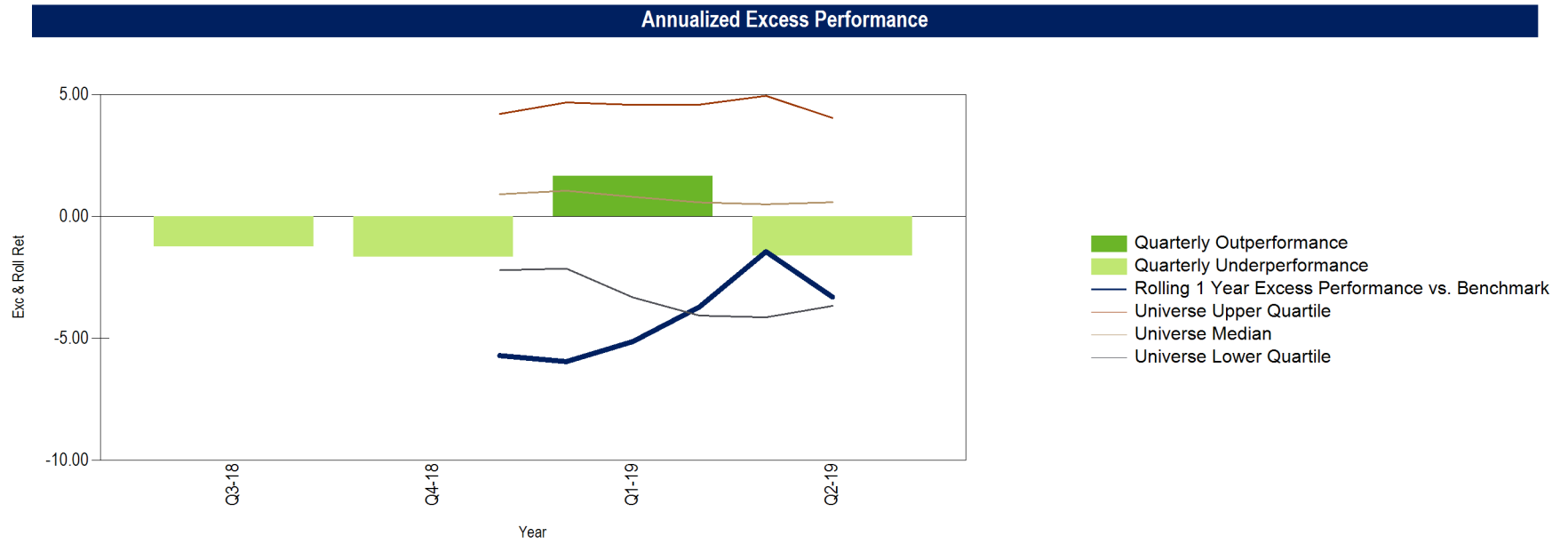
	Portfolio Q2-19	Index Q2-19
Region Weighting		
Americas	58.90	59.49
Europe	20.71	19.44
Asia/Pacific	18.99	19.73
Other	1.40	1.34



## Sector Allocation (%) vs MSCI ACWI IMI Net USD



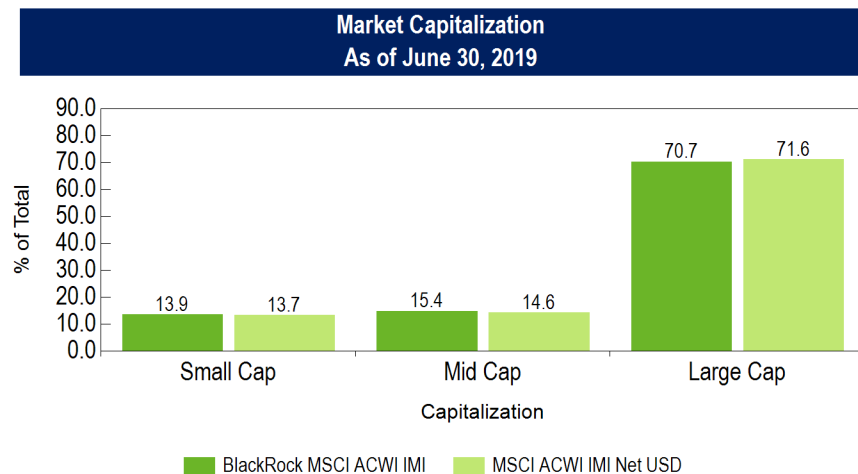
# TOTAL GLOBAL EQUITY



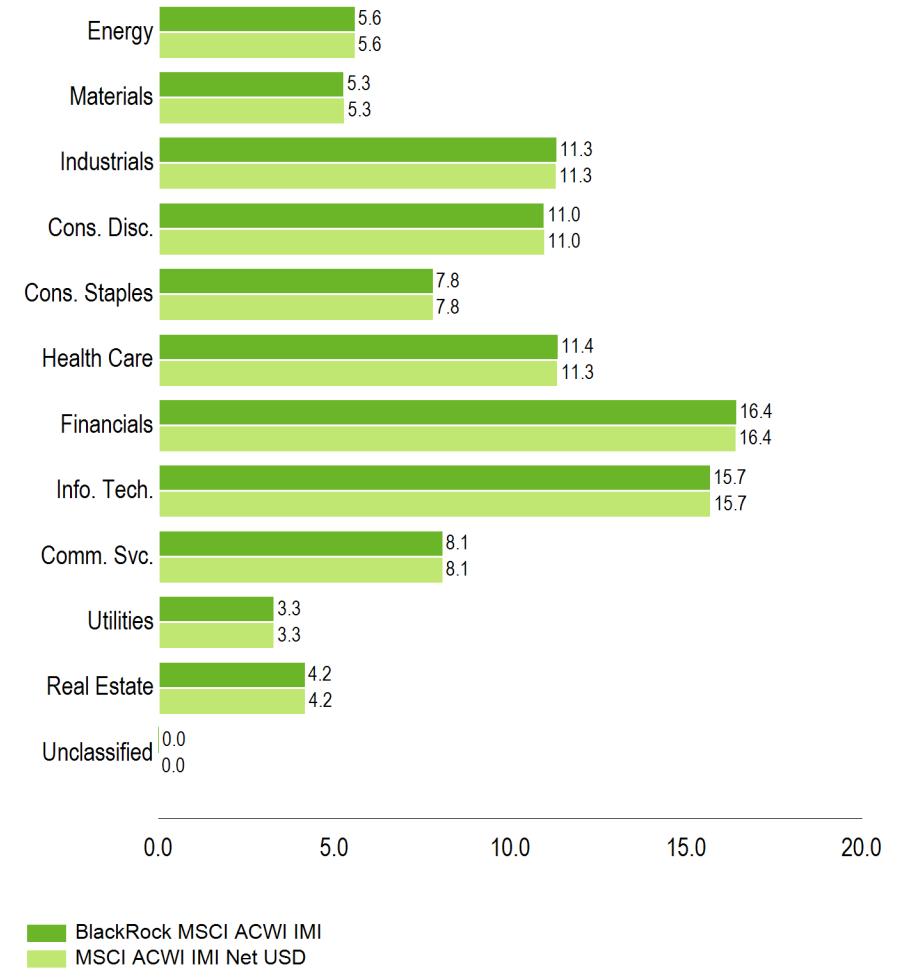
# BLACKROCK MSCI ACWI IMI

Characteristics		
	Portfolio	MSCI ACWI IMI Net USD
Number of Holdings	8,754	8,834
Weighted Avg. Market Cap. (\$B)	129.62	129.83
Median Market Cap. (\$B)	1.73	1.77
Price To Earnings	17.51	17.51
Price To Book	2.84	2.85
Price To Sales	1.44	1.44
Return on Equity (%)	18.34	18.37
Yield (%)	2.44	2.45
Beta		1.00
R-Squared		1.00

	Portfolio Q2-19	Index Q2-19
Region Weighting		
Americas	59.70	59.49
Europe	19.12	19.44
Asia/Pacific	19.85	19.73
Other	1.33	1.34

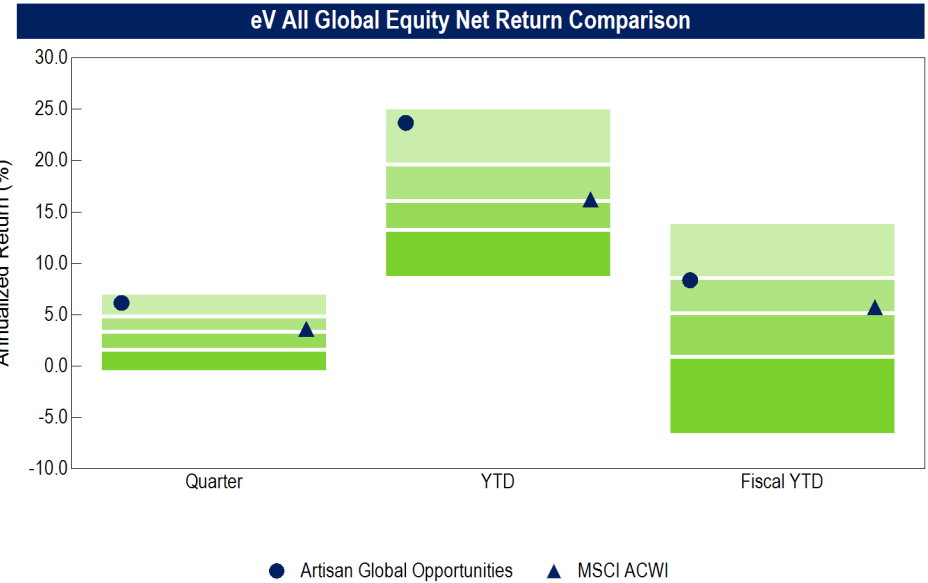


## Sector Allocation (%) vs MSCI ACWI IMI Net USD

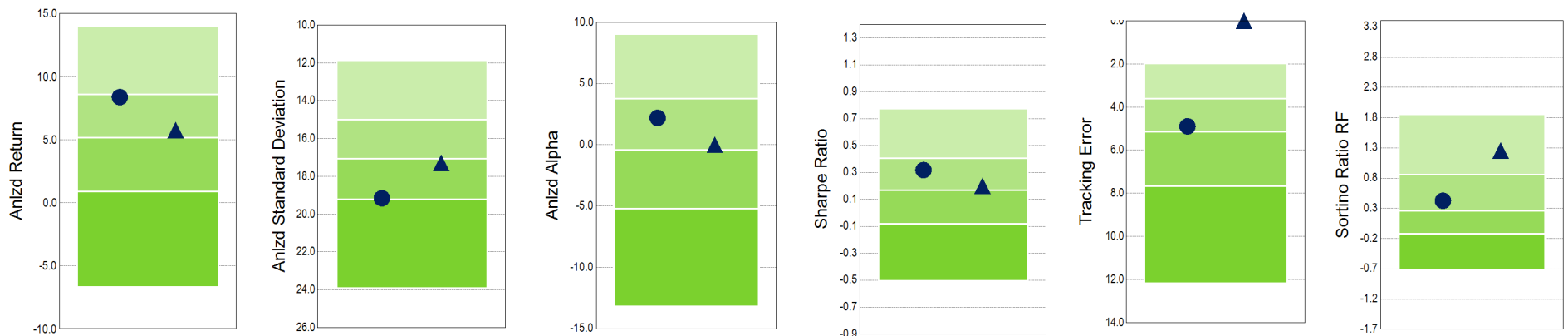


# ARTISAN GLOBAL OPPORTUNITIES

Artisan's Global Opportunities strategy employs a fundamental investment process to construct a diversified global equity portfolio of companies across a broad capitalization range. The team attempts to identify companies that possess franchise characteristics that are selling at attractive valuations and benefiting from an accelerating profit cycle. Artisan's Growth investment team attempts to identify companies that possess franchise characteristics that are selling at attractive valuations, and benefiting from an accelerating profit cycle. The team believes selecting stocks exhibiting franchise characteristics, attractive valuations and accelerating profit cycles, and allowing stocks to progress through the three stages of capital allocation (Garden, Crop, Harvest® investing), increases the likelihood of delivering upside participation with downside protection.

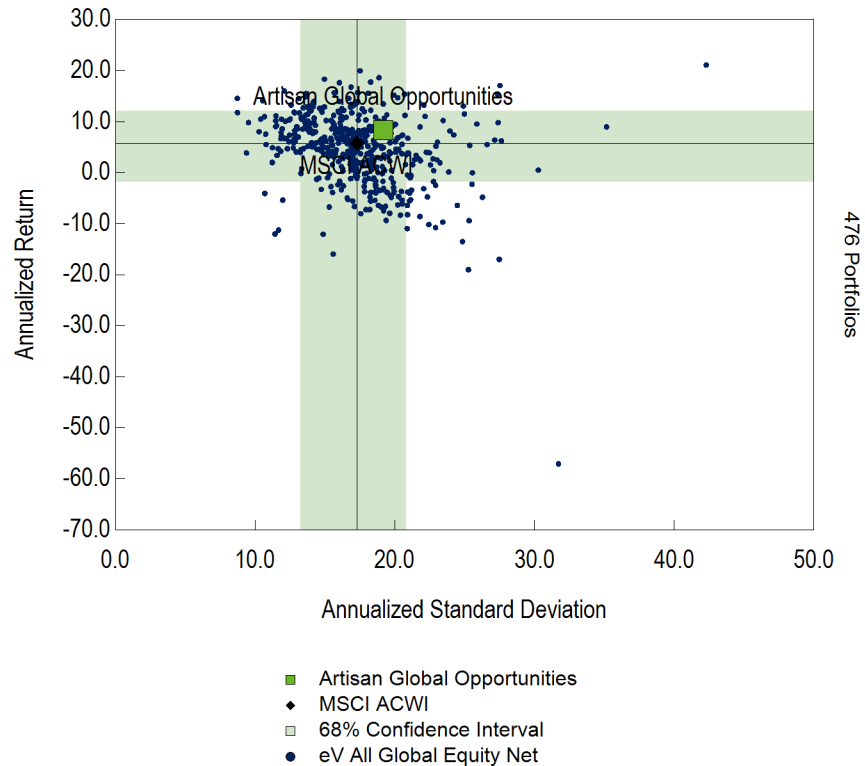


## 1-Year Risk Statistics

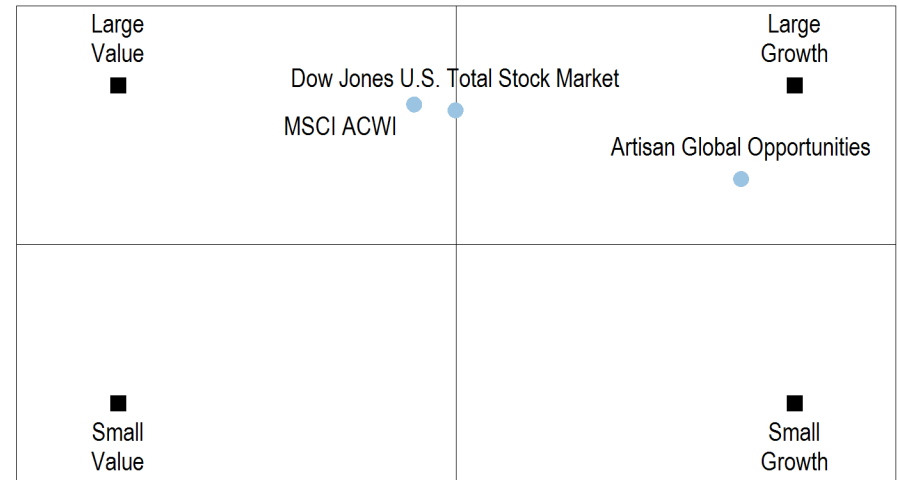


# ARTISAN GLOBAL OPPORTUNITIES

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



U.S. Effective Style Map  
1 Year Ending June 30, 2019

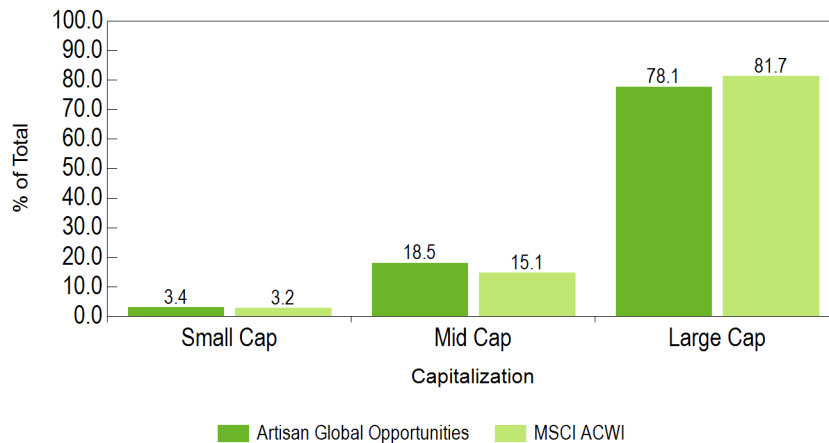


# ARTISAN GLOBAL OPPORTUNITIES

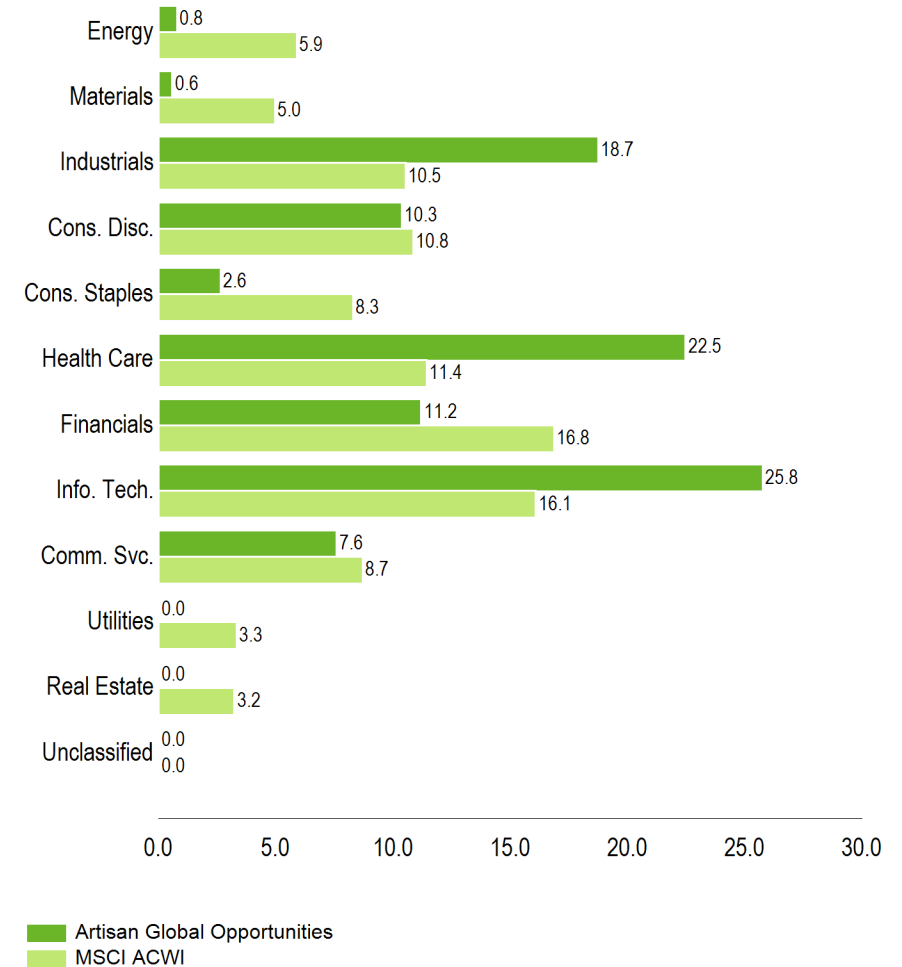
Characteristics		
	Portfolio	MSCI ACWI
Number of Holdings	45	2,847
Weighted Avg. Market Cap. (\$B)	120.09	147.74
Median Market Cap. (\$B)	27.32	9.38
Price To Earnings	32.51	17.63
Price To Book	5.12	2.93
Price To Sales	3.09	1.53
Return on Equity (%)	21.86	19.99
Yield (%)	0.83	2.49
Beta		1.00
R-Squared		1.00

	Portfolio Q2-19	Index Q2-19
<b>Region Weighting</b>		
Americas	61.42	59.94
Europe	25.34	19.43
Asia/Pacific	13.25	19.36
Other	--	1.27

## Market Capitalization As of June 30, 2019

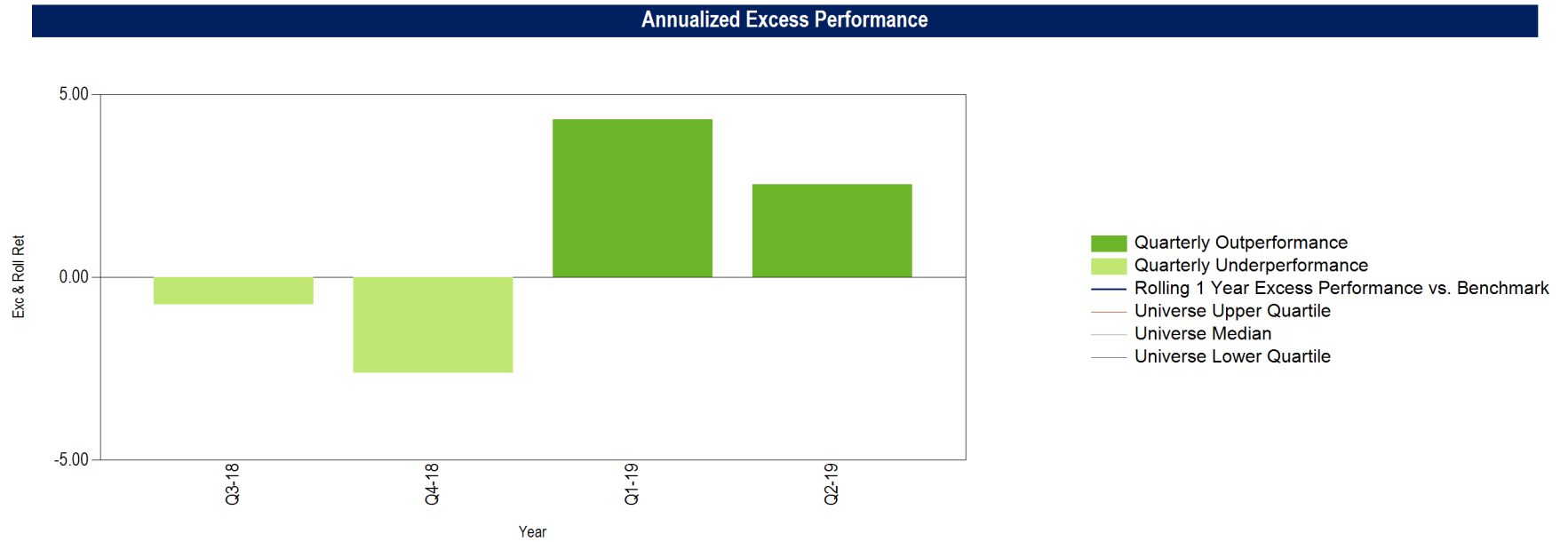


## Sector Allocation (%) vs MSCI ACWI



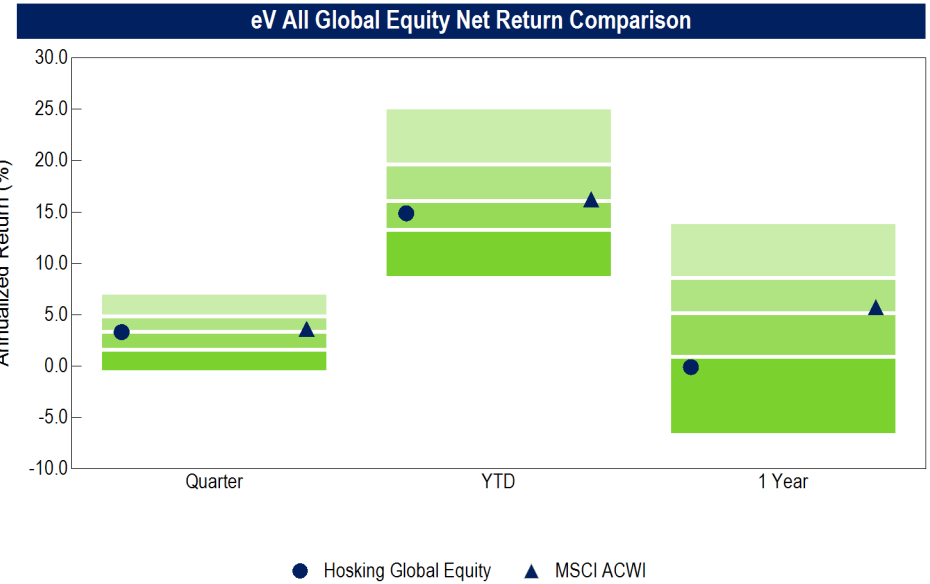


# ARTISAN GLOBAL OPPORTUNITIES

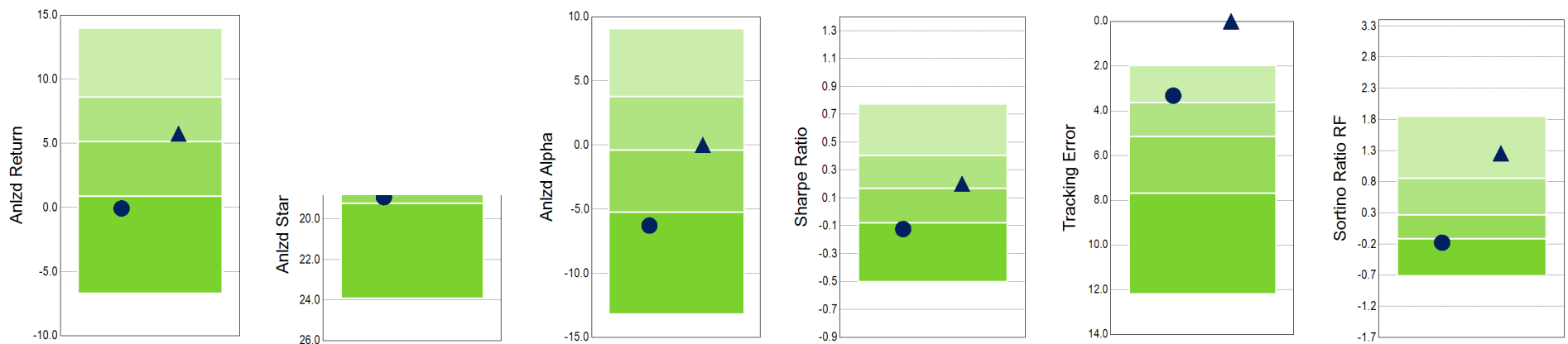


# HOSKING GLOBAL EQUITY

Hosking Partners' investment philosophy is an evolved variant of the 'Capital Cycle' approach. Each of portfolio managers constructs their own global portfolio, with the firm's portfolio being the aggregate of these sub-portfolios. Just as the 'Capital Cycle' drew them towards industries which were consolidating and, in consequence, improving profitability, so the more recently adopted 'filters' reinforce the selection of companies with latent profit and valuation improvement potential. For instance in addition to industrial consolidation, they favor firms with inside ownership (and attendant less liquid capital structures), and those that are suppressing profits or which are for whatever reason out of favor. They use the filters alone or in combinations. Many of the picks are contrarian and often impute to the portfolio a value-bias. However growth companies can also qualify for inclusion thus diluting the value orientation.

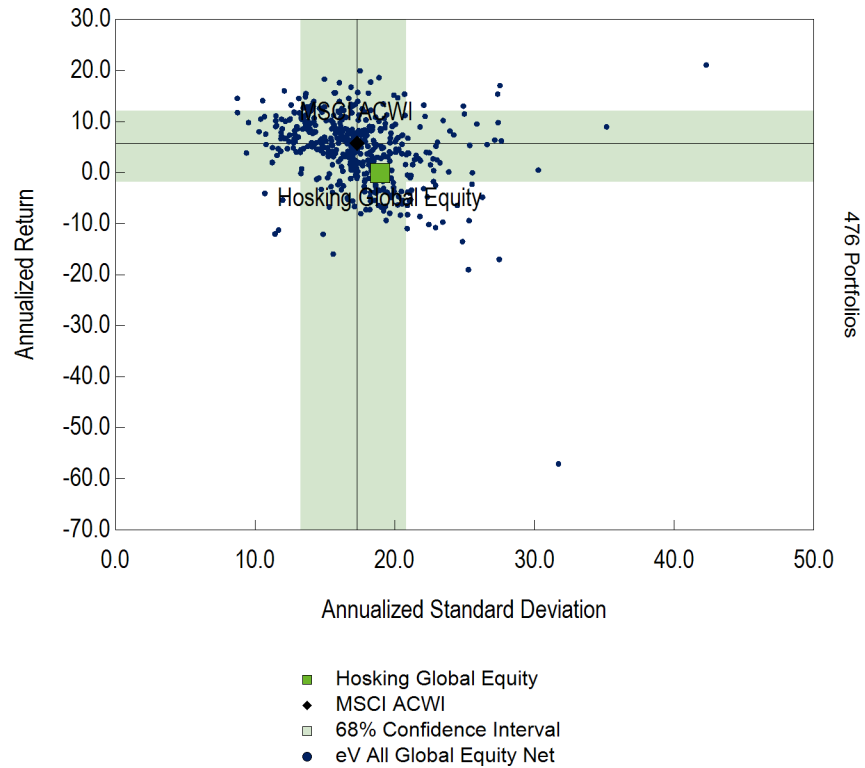


## Risk Statistics

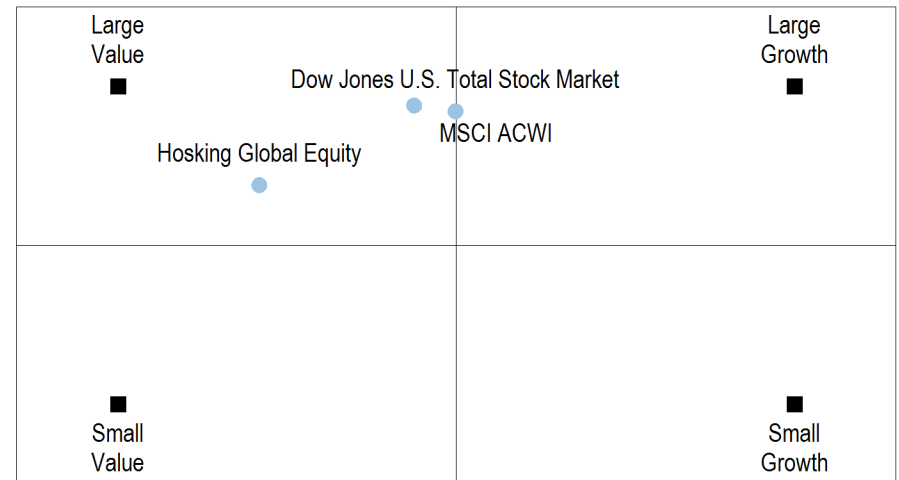


# HOSKING GLOBAL EQUITY

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



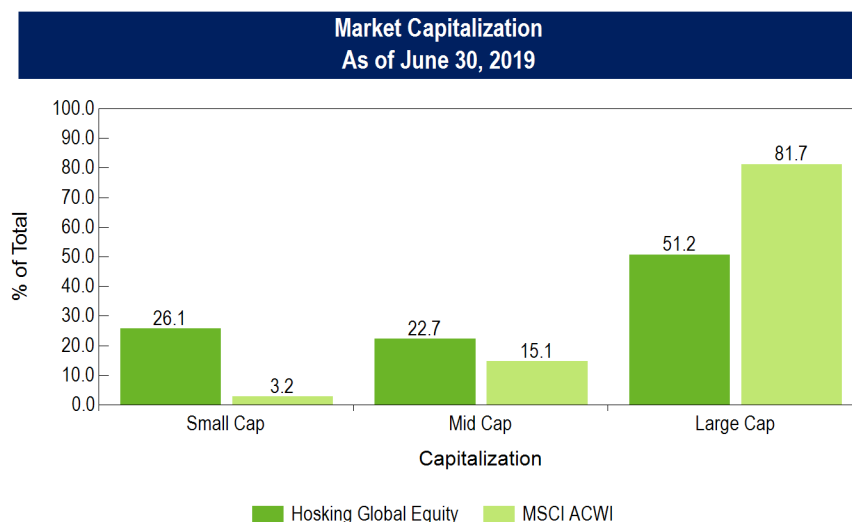
U.S. Effective Style Map  
1 Year Ending June 30, 2019



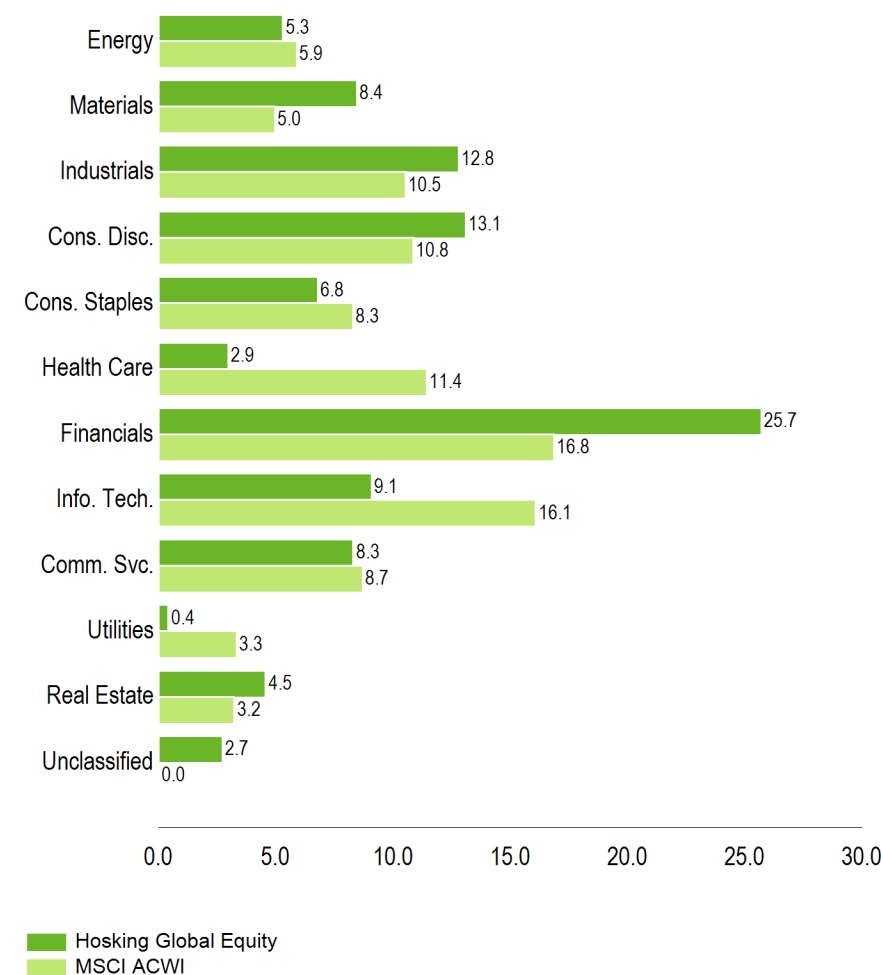
# HOSKING GLOBAL EQUITY

Characteristics		
	Portfolio	MSCI ACWI
Number of Holdings	494	2,847
Weighted Avg. Market Cap. (\$B)	89.42	147.74
Median Market Cap. (\$B)	7.73	9.38
Price To Earnings	13.60	17.63
Price To Book	2.35	2.93
Price To Sales	0.97	1.53
Return on Equity (%)	16.66	19.99
Yield (%)	2.35	2.49
Beta		1.00
R-Squared		1.00

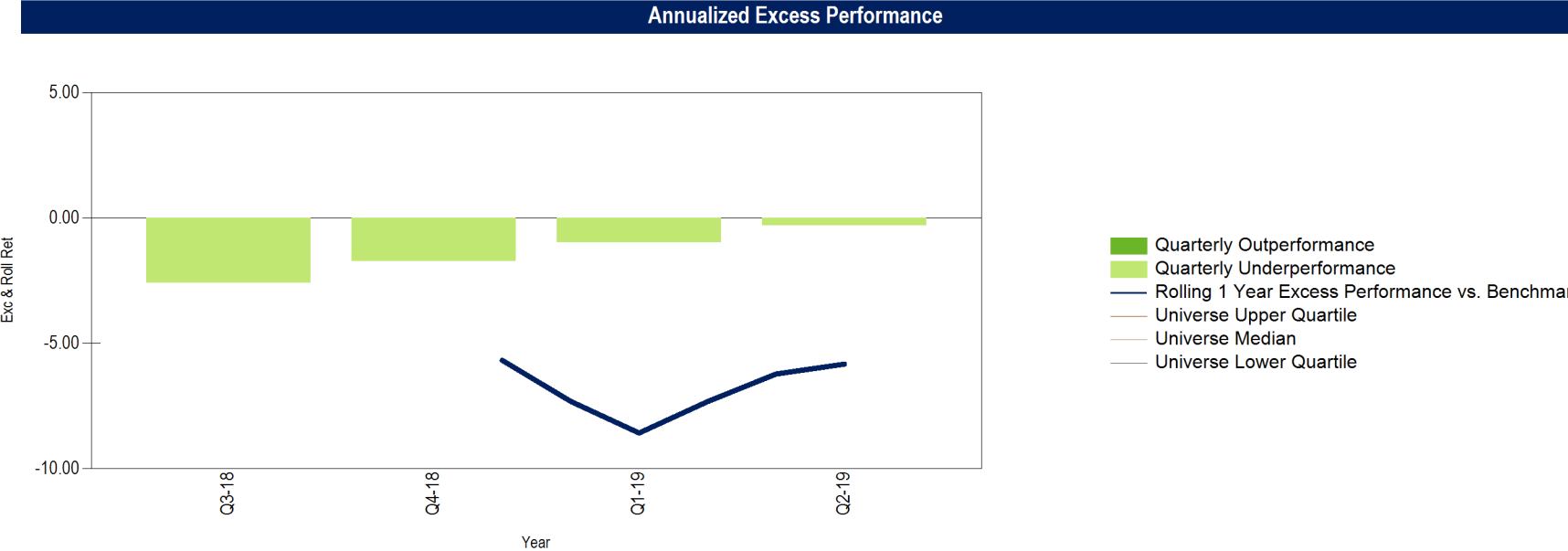
	Portfolio Q2-19	Index Q2-19
Region Weighting		
Americas	58.90	59.49
Europe	20.71	19.44
Asia/Pacific	18.99	19.73
Other	1.40	1.34



## Sector Allocation (%) vs MSCI ACWI

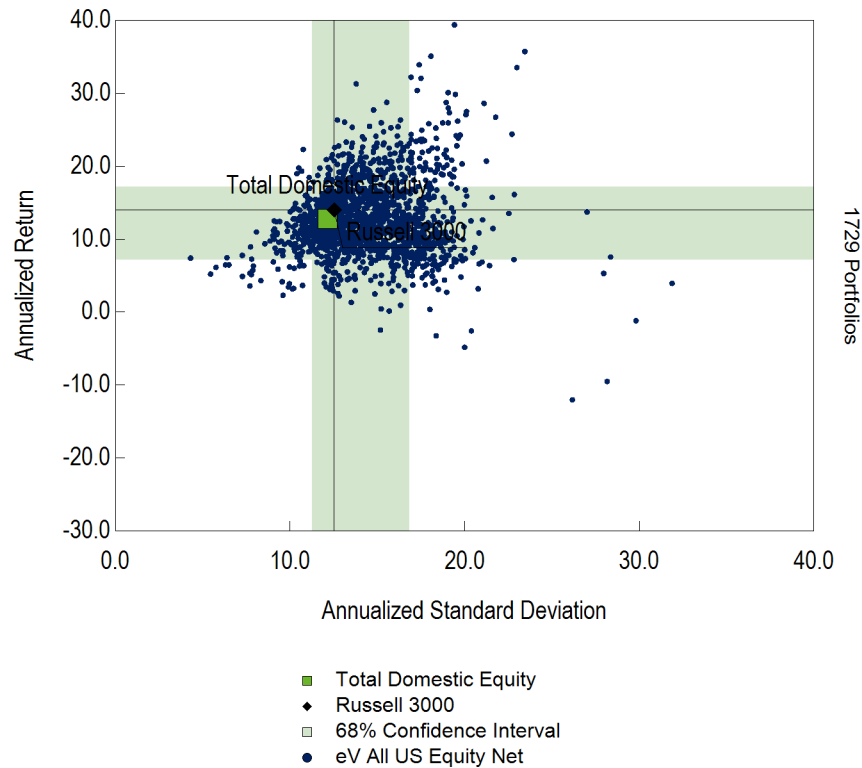


# HOSKING GLOBAL EQUITY

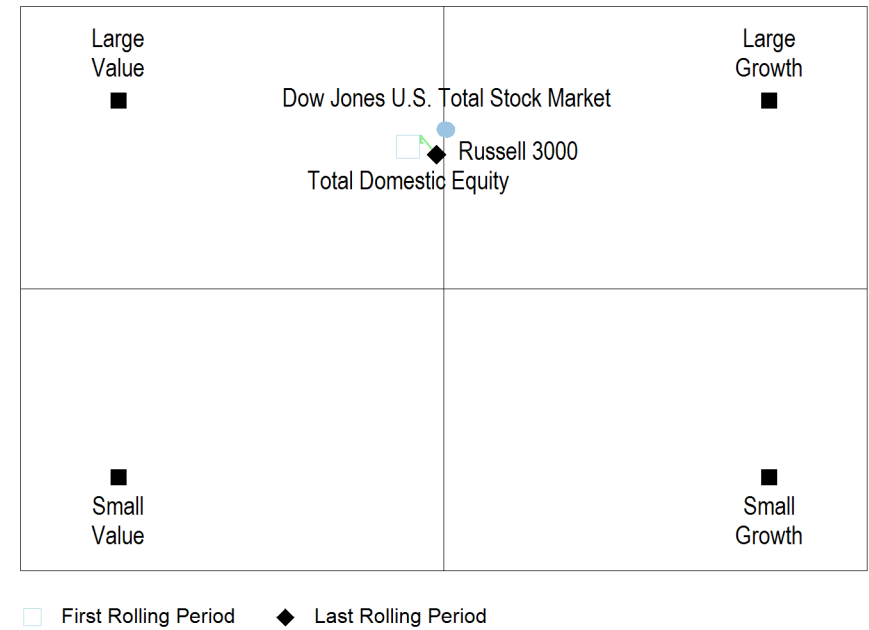


# TOTAL DOMESTIC EQUITY

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



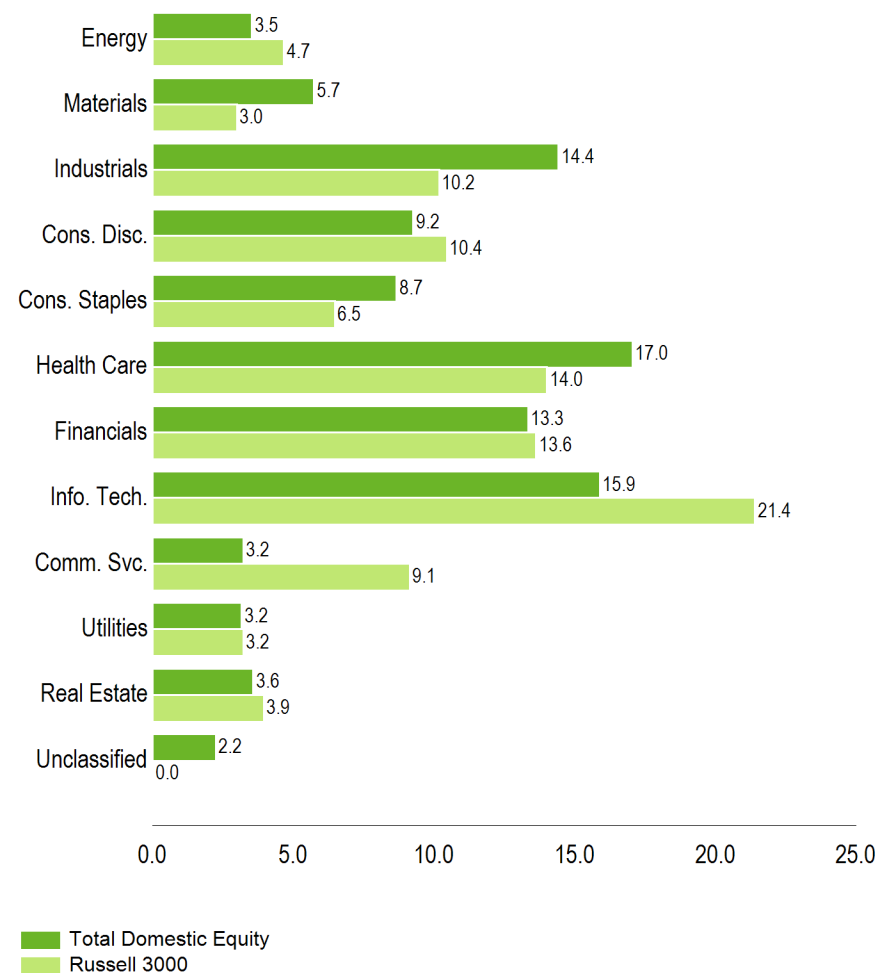
U.S. Effective Style Map  
3 Years Ending June 30, 2019



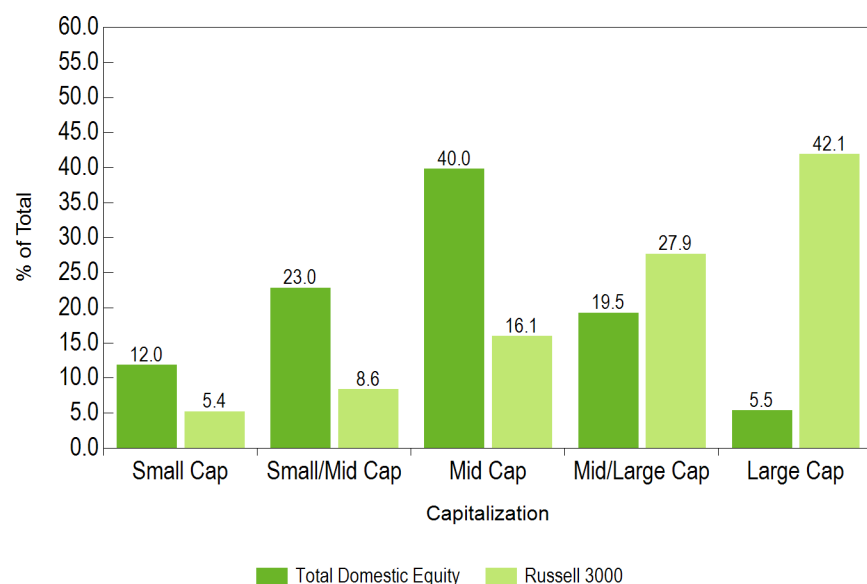
# TOTAL DOMESTIC EQUITY

Characteristics		
	Portfolio	Russell 3000
Number of Holdings	602	2,954
Weighted Avg. Market Cap. (\$B)	32.70	190.66
Median Market Cap. (\$B)	19.86	1.65
Price To Earnings	21.26	20.48
Price To Book	3.18	3.43
Price To Sales	1.80	1.89
Return on Equity (%)	17.87	21.81
Yield (%)	1.58	1.87
Beta	0.96	1.00
R-Squared	0.98	1.00

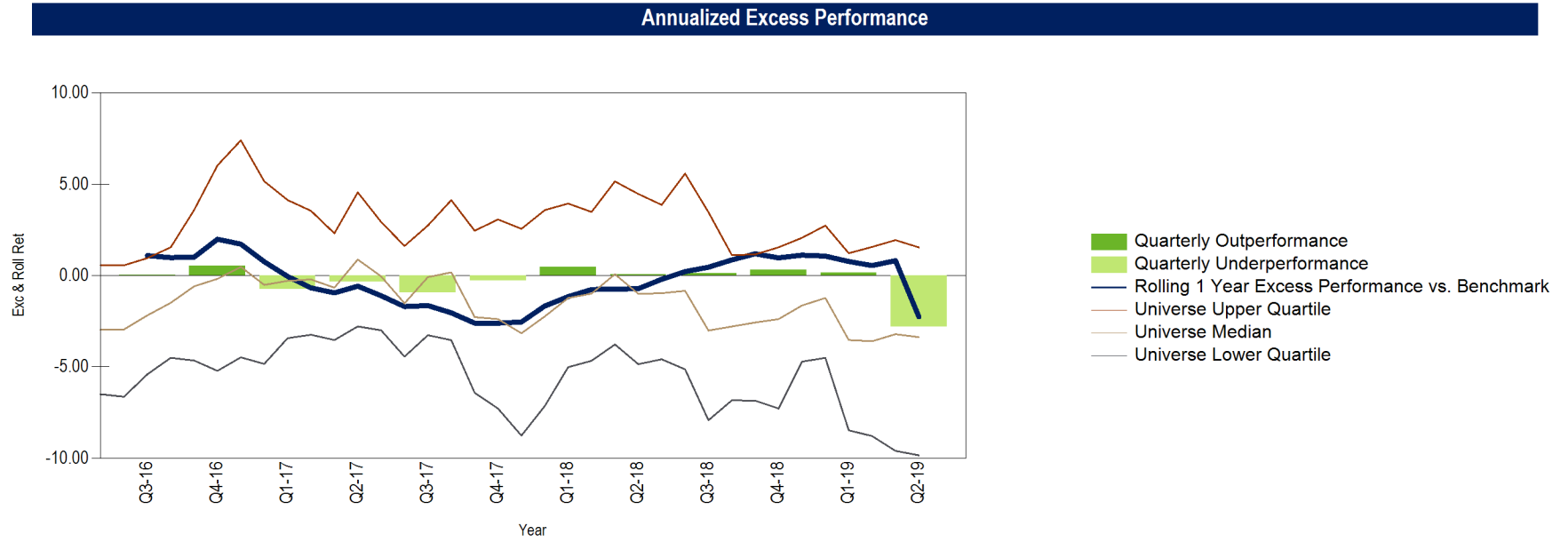
## Sector Allocation (%) vs Russell 3000



## Market Capitalization As of June 30, 2019



# TOTAL DOMESTIC EQUITY

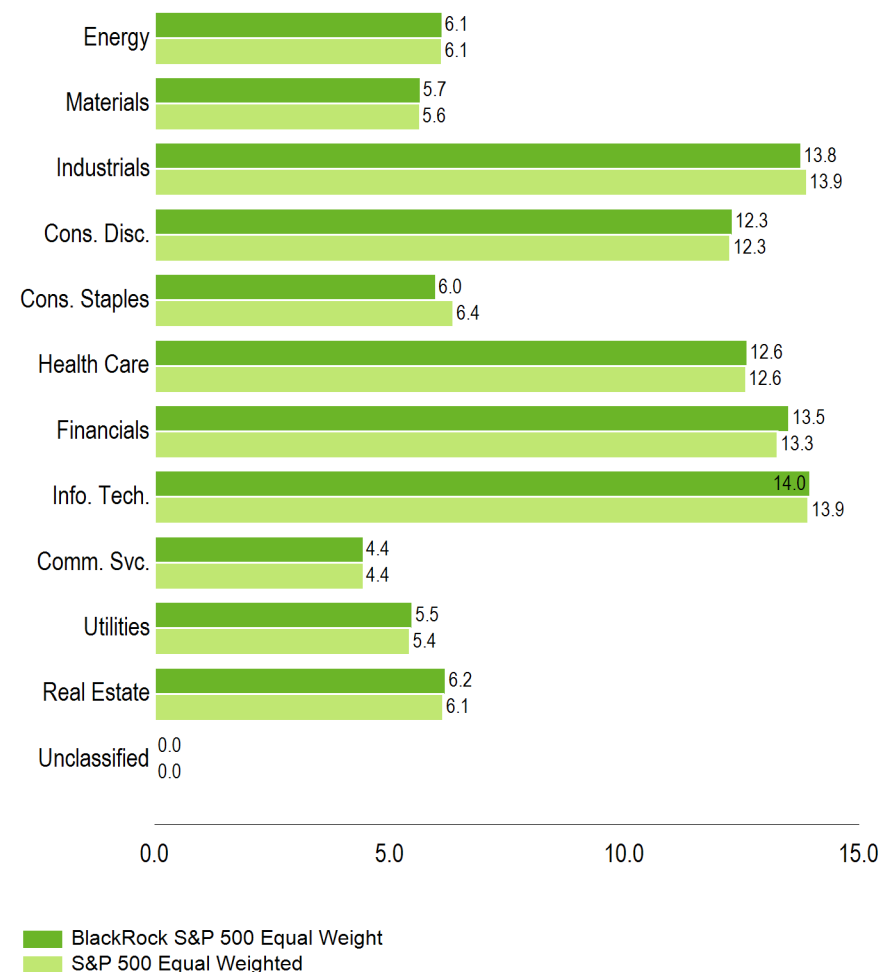




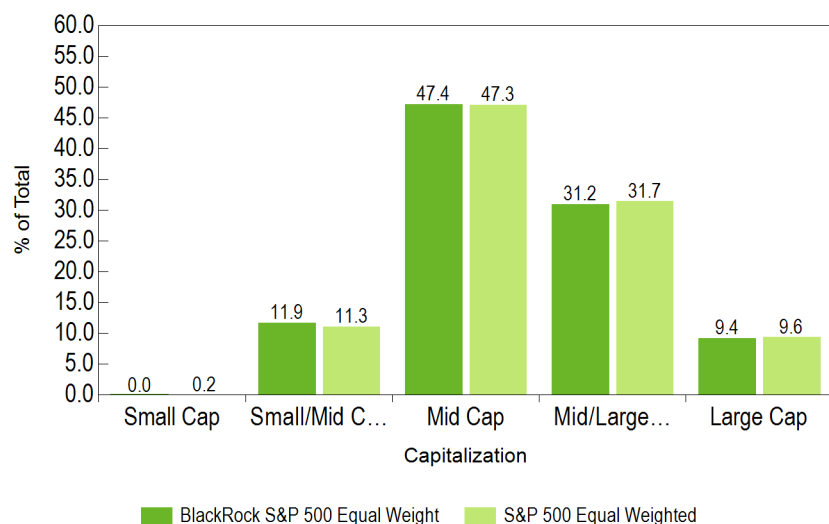
# BLACKROCK S&P 500 EQUAL-WGT

Characteristics		
	Portfolio	S&P 500 Equal Weighted
Number of Holdings	503	505
Weighted Avg. Market Cap. (\$B)	49.68	49.91
Median Market Cap. (\$B)	21.96	22.14
Price To Earnings	19.16	19.11
Price To Book	2.99	2.96
Price To Sales	1.59	1.59
Return on Equity (%)	22.07	22.10
Yield (%)	2.04	2.06
Beta		1.00
R-Squared		1.00

## Sector Allocation (%) vs S&P 500 Equal Weighted

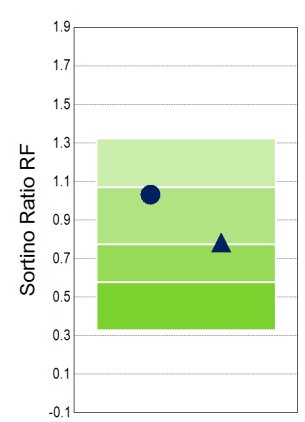
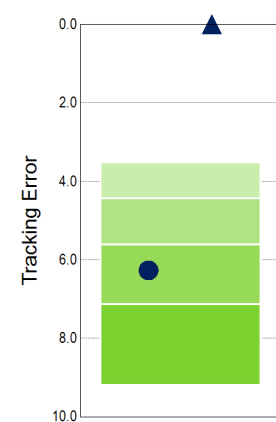
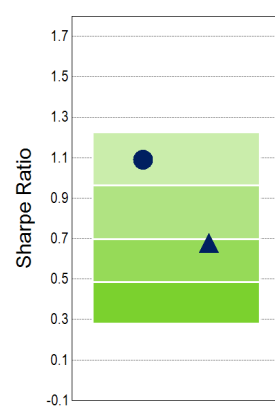
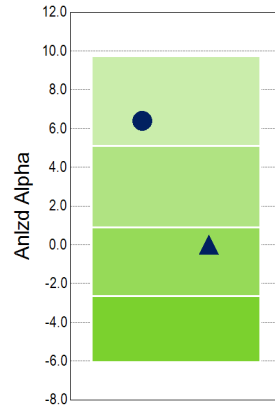
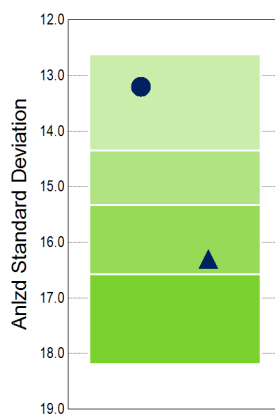
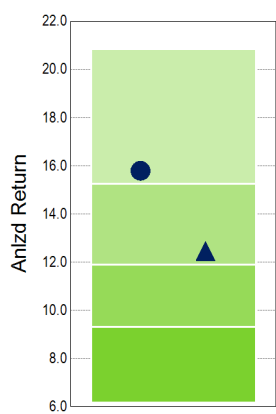
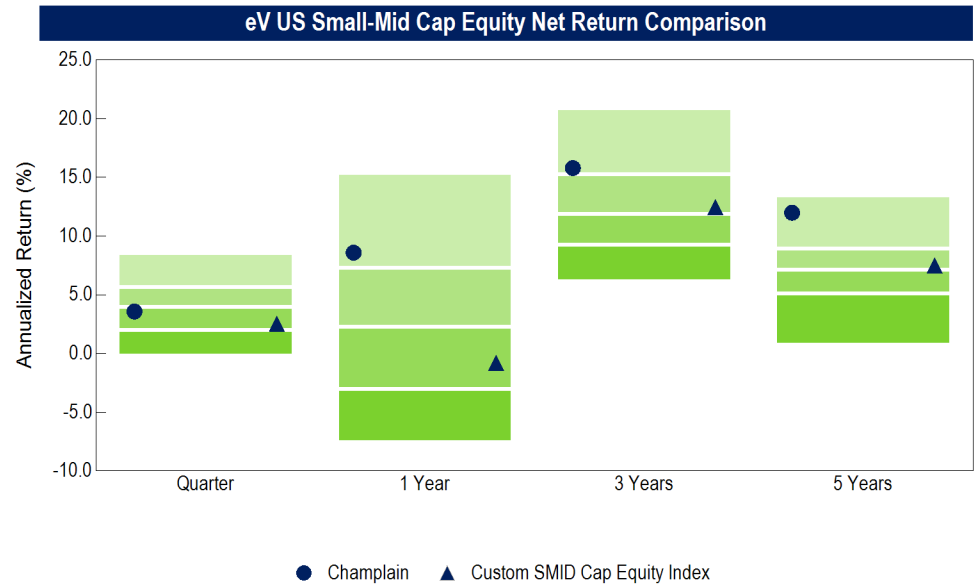


## Market Capitalization As of June 30, 2019



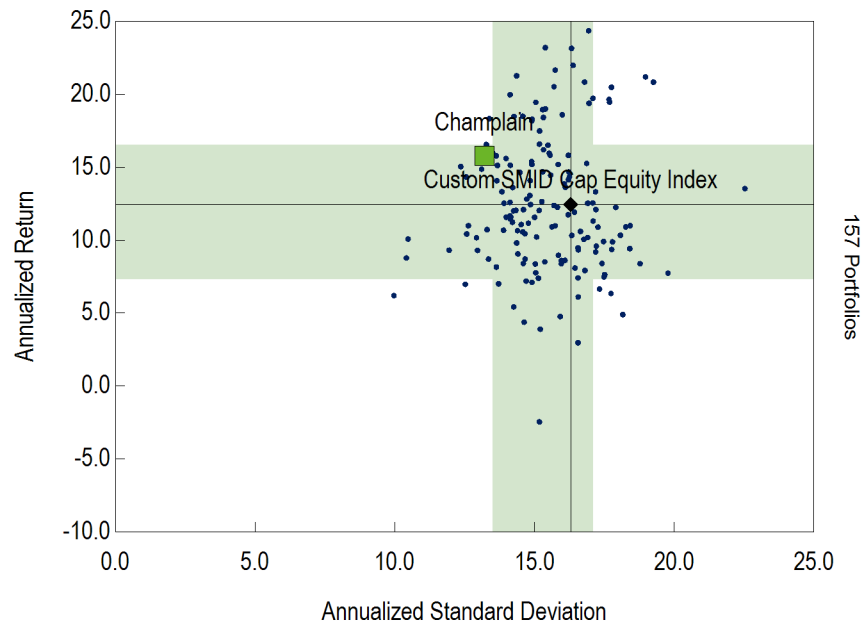
# CHAMPLAIN

Champlain employs a fundamental, bottom-up approach to investing in equity assets. They believe that superior companies purchased at attractive valuations have the highest probability to wealth creation. Champlain seeks strong businesses with credible and sincere management and aims to buy shares of their stock at discounts to fair or intrinsic value. Portfolio construction applies sector weight guidelines and position size rules to manage risk. The portfolio will have some exposure to at least seven out of the eight largest sectors of the S&P 400, with a maximum weighting on 25% in any one sector. Individual positions will not represent more than 2% of the respective companies' outstanding shares and are limited to no more than 5% of assets under management. The portfolio typically holds 50-75 securities with average position sizes of 2%. The strategy's minimum market cap is \$1.5 billion at purchase and a maximum market cap of \$15 billion. In general, no more than 10% of portfolio in stocks with a market cap below \$2B and no more than 5% of portfolio in companies with market cap above \$20B.



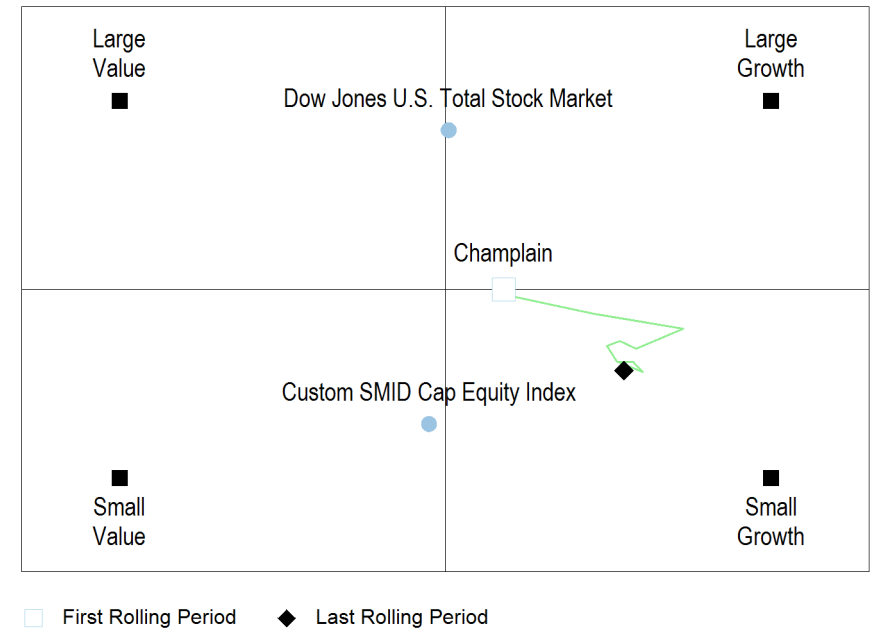
# CHAMPLAIN

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



- Champlaine
- ◆ Custom SMID Cap Equity Index
- 68% Confidence Interval
- eV US Small-Mid Cap Equity Net

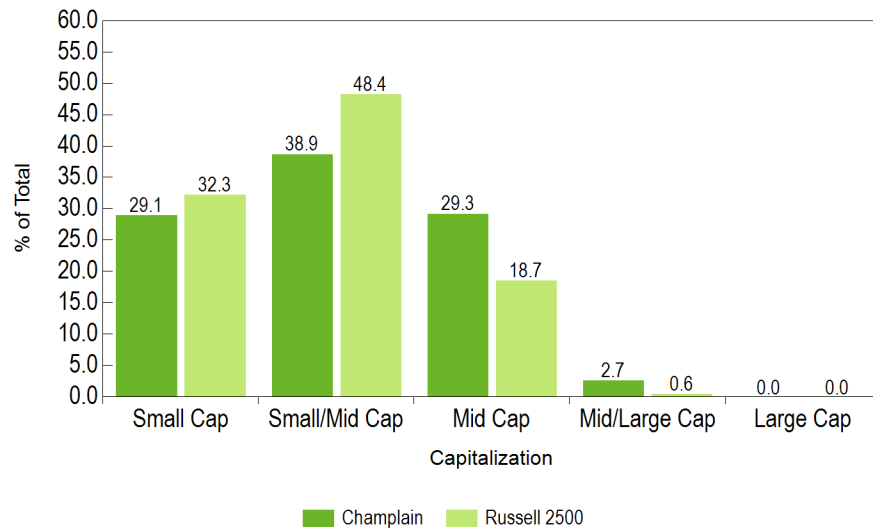
U.S. Effective Style Map  
3 Years Ending June 30, 2019



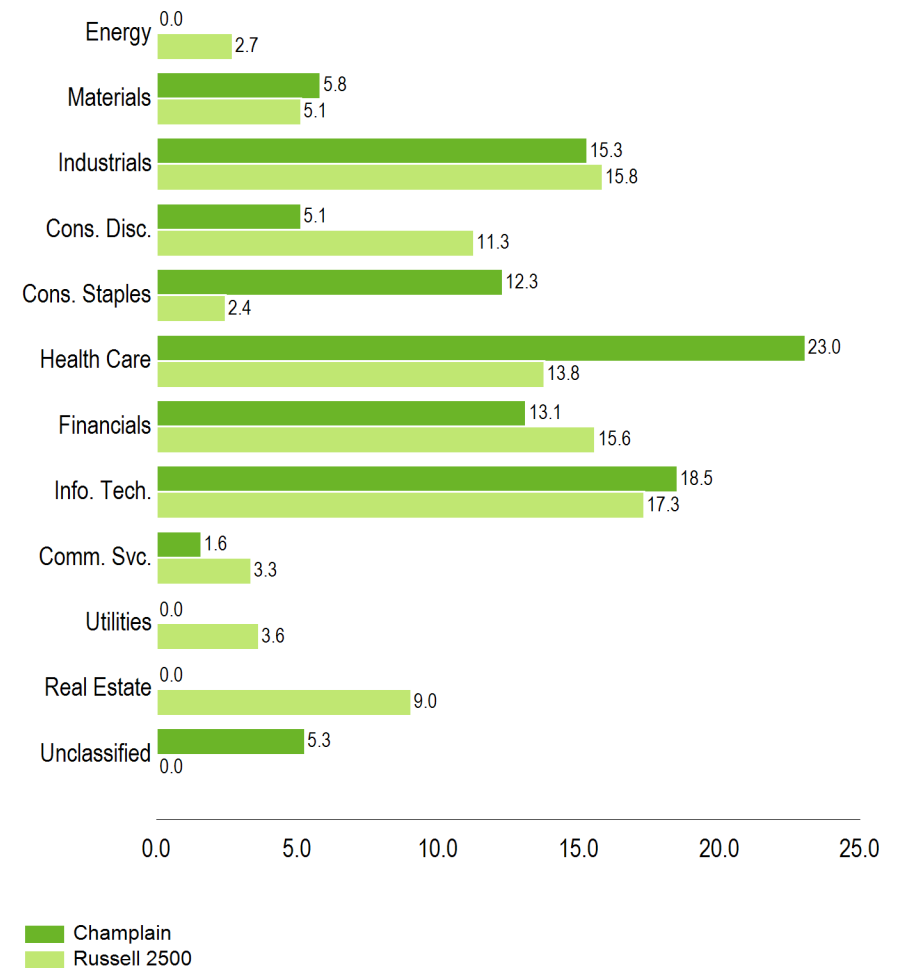
# CHAMPLAIN

Characteristics		
	Portfolio	Russell 2500
Number of Holdings	113	2,448
Weighted Avg. Market Cap. (\$B)	8.45	5.70
Median Market Cap. (\$B)	4.08	1.12
Price To Earnings	26.74	20.27
Price To Book	3.53	2.73
Price To Sales	2.31	1.34
Return on Equity (%)	8.83	8.80
Yield (%)	0.92	1.57
Beta	0.81	1.00
R-Squared	0.90	1.00

## Market Capitalization As of June 30, 2019

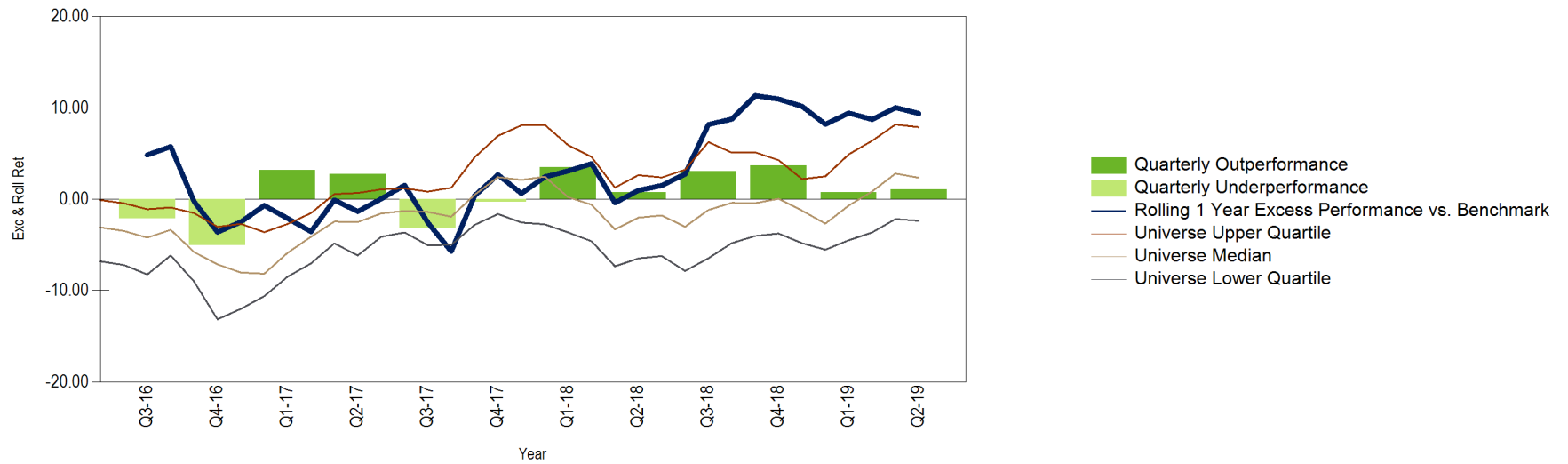


## Sector Allocation (%) vs Russell 2500



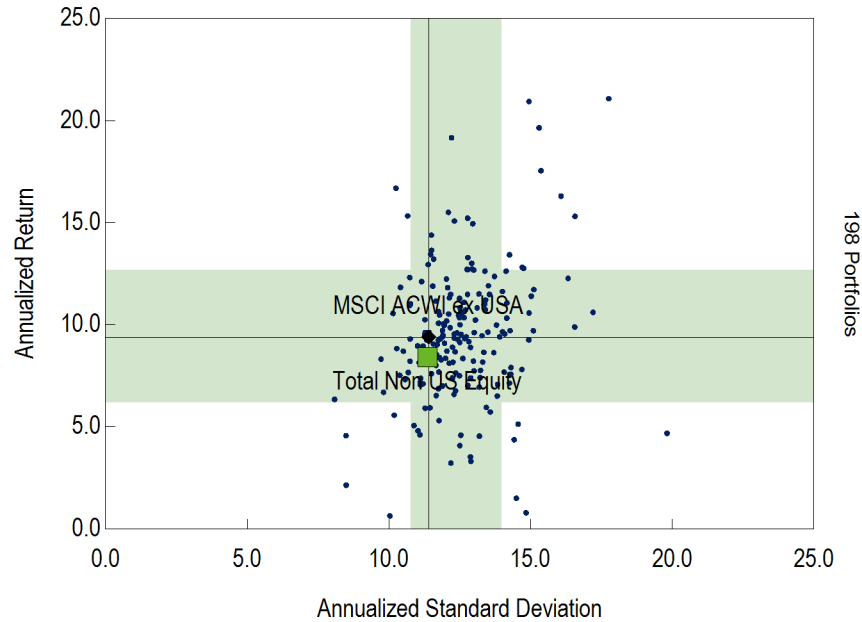
# CHAMPLAIN

Annualized Excess Performance



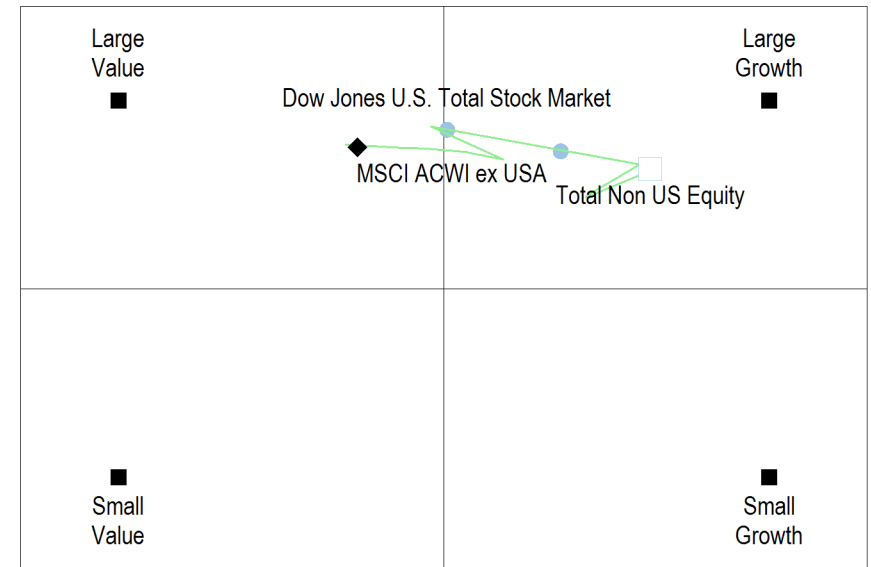
# TOTAL NON US EQUITY

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



- Total Non US Equity
- ◆ MSCI ACWI ex USA
- 68% Confidence Interval
- eV All ACWI ex-US Equity Net

U.S. Effective Style Map  
3 Years Ending June 30, 2019



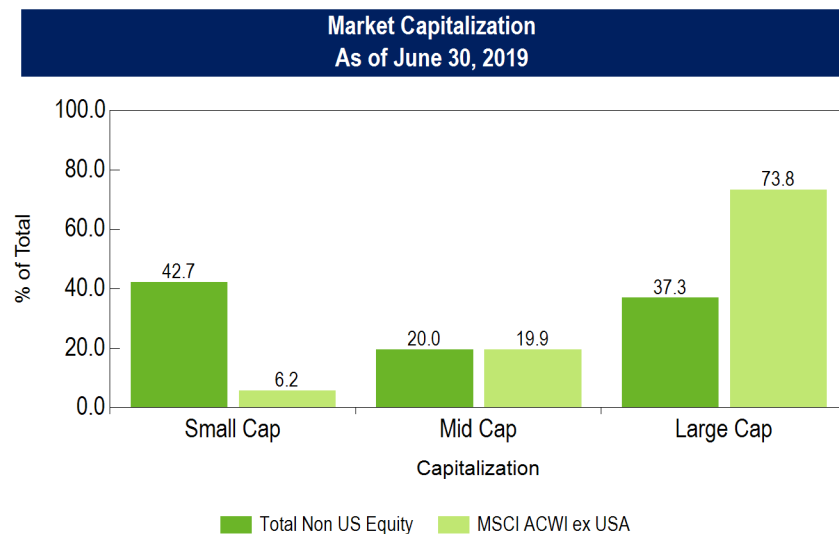
- First Rolling Period
- ◆ Last Rolling Period



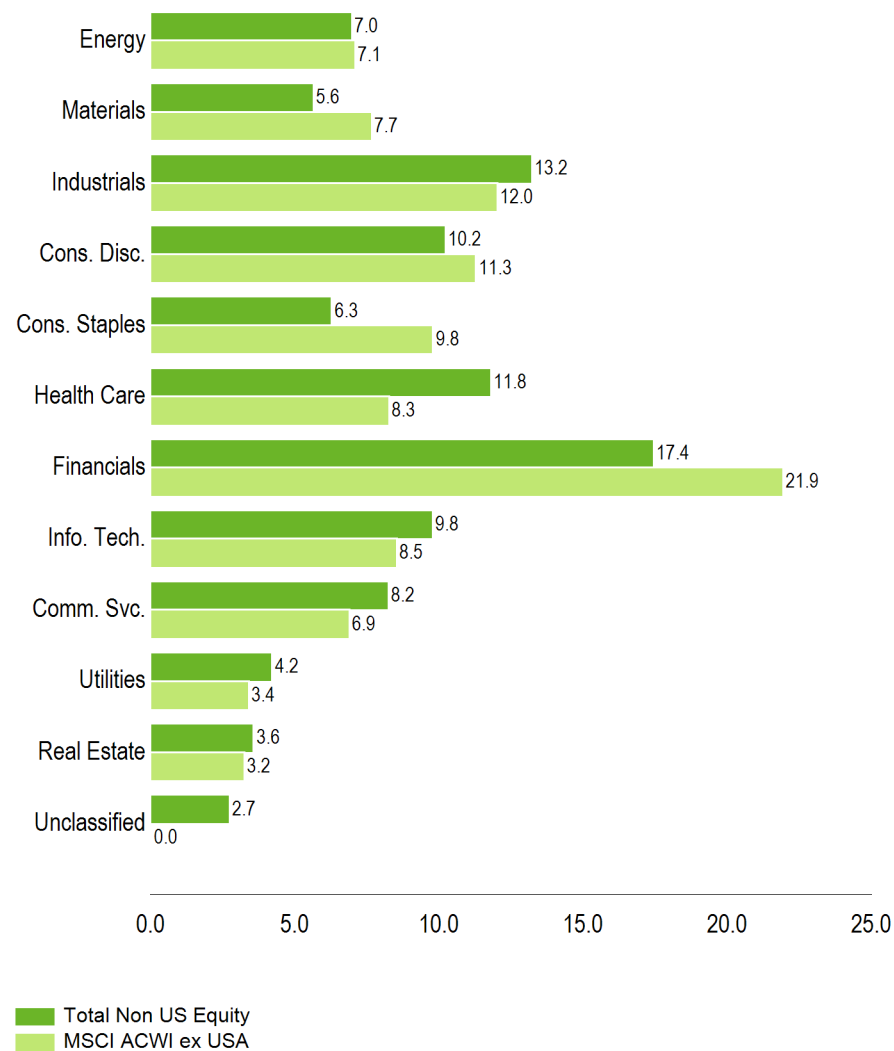
# TOTAL NON US EQUITY

Characteristics		
	Portfolio	MSCI ACWI ex USA
Number of Holdings	2,512	2,204
Weighted Avg. Market Cap. (\$B)	29.21	65.43
Median Market Cap. (\$B)	6.48	7.58
Price To Earnings	12.13	15.00
Price To Book	1.85	2.31
Price To Sales	0.78	1.17
Return on Equity (%)	15.63	15.32
Yield (%)	3.69	3.20
Beta	0.98	1.00
R-Squared	0.97	1.00

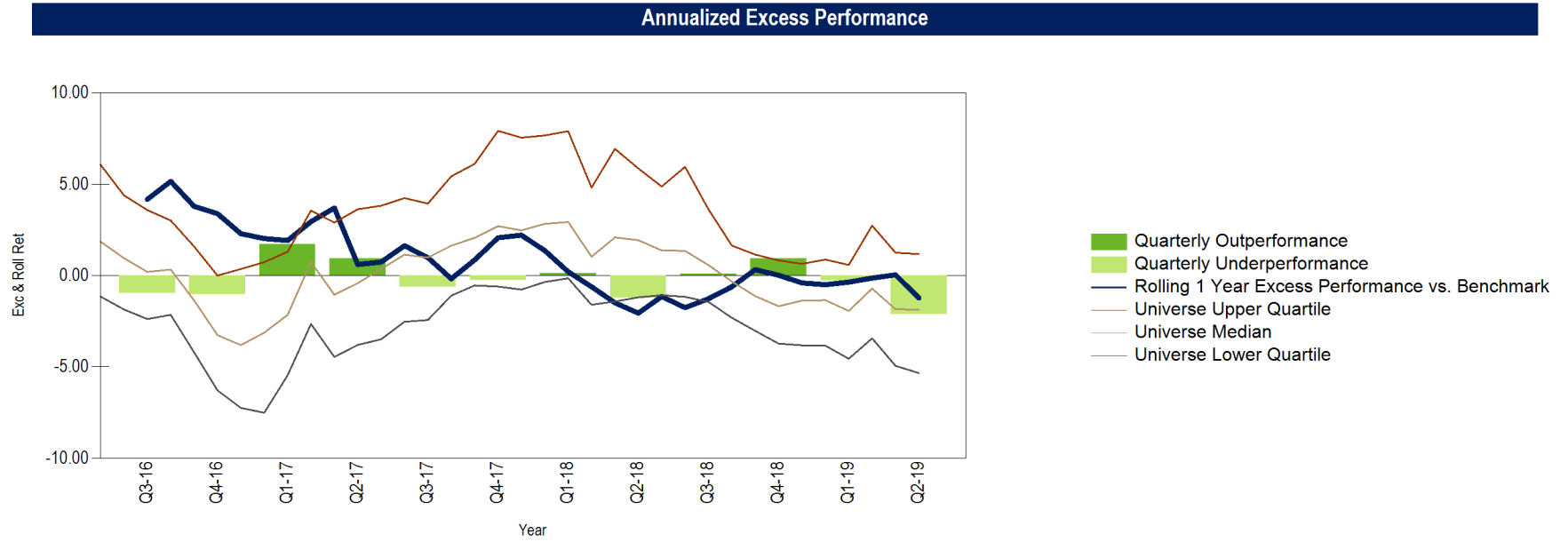
	Portfolio Q2-19	Index Q2-19
Region Weighting		
Americas	6.47	10.59
Europe	52.54	43.33
Asia/Pacific	38.74	43.24
Other	2.24	2.84



## Sector Allocation (%) vs MSCI ACWI ex USA



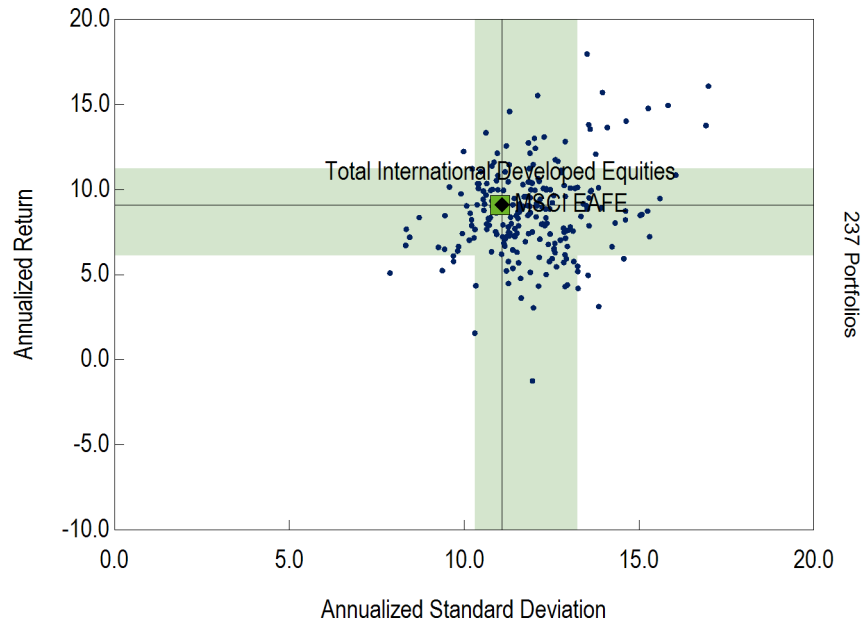
# TOTAL NON US EQUITY





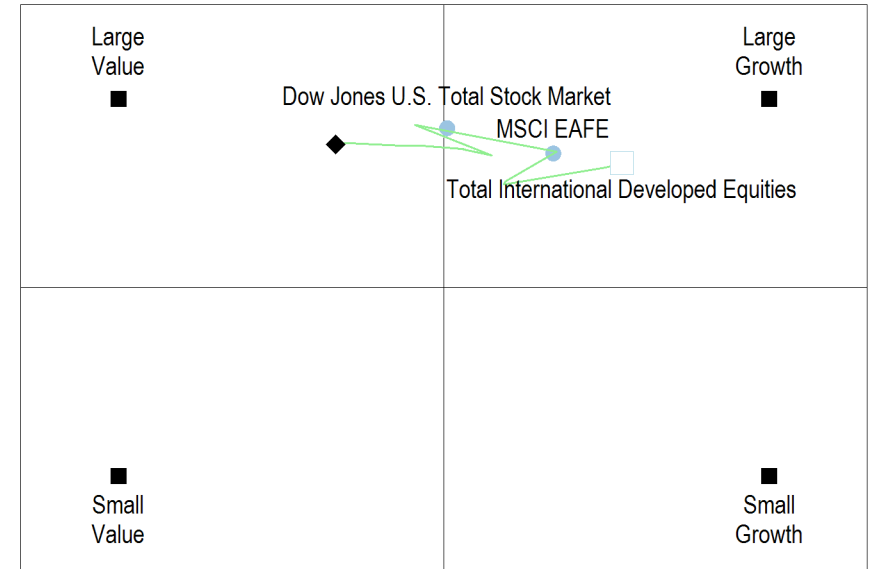
# TOTAL INTERNATIONAL DEVELOPED EQUITIES

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



- Total International Developed Equities
- ◆ MSCI EAFE
- 68% Confidence Interval
- eV All EAFE Equity Net

U.S. Effective Style Map  
3 Years Ending June 30, 2019



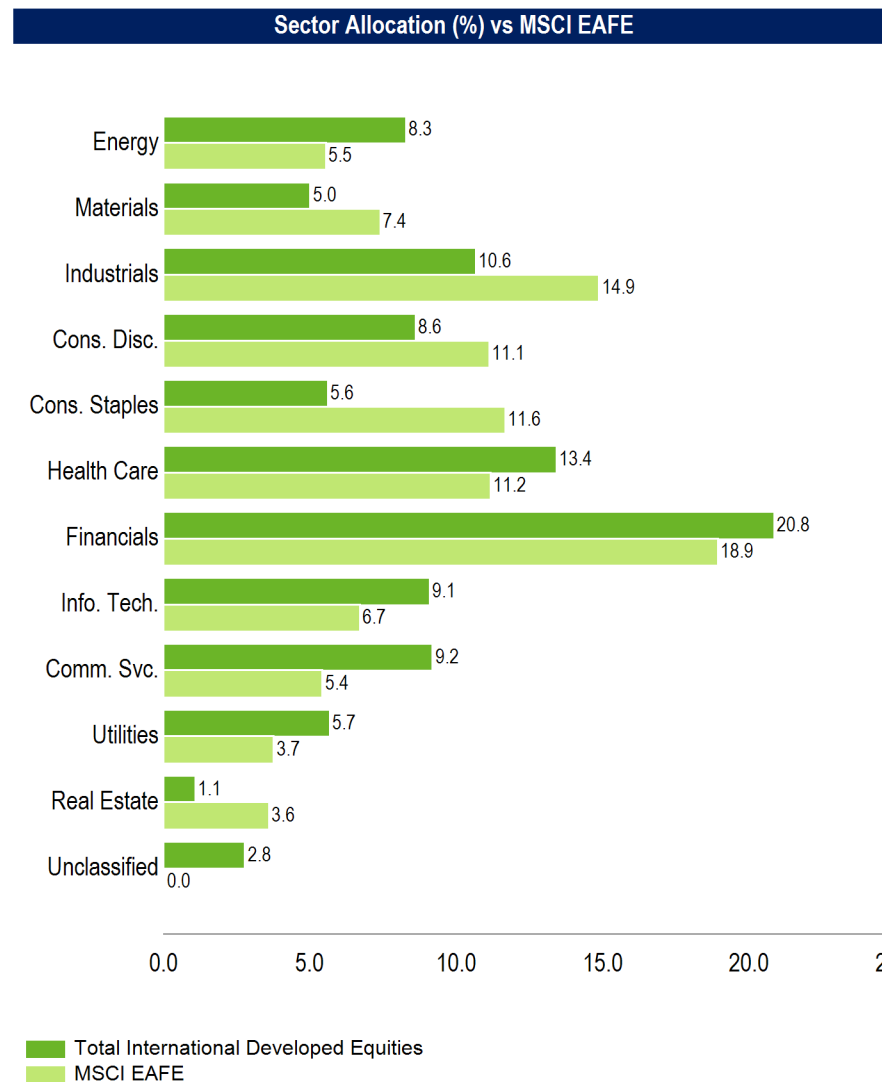
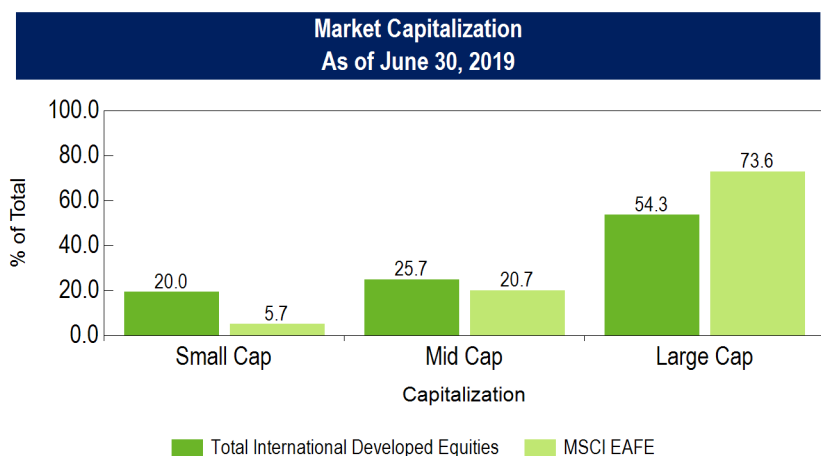
- First Rolling Period
- ◆ Last Rolling Period



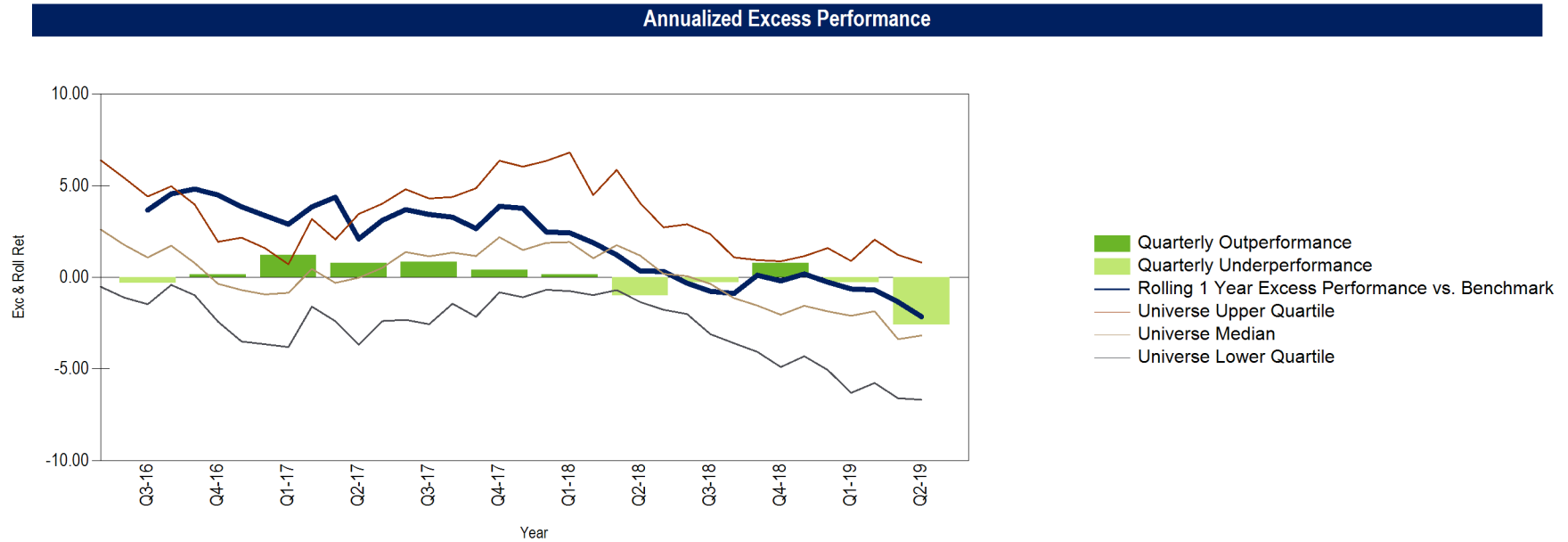
# TOTAL INTERNATIONAL DEVELOPED EQUITIES

Characteristics		
	Portfolio	MSCI EAFE
Number of Holdings	2,351	922
Weighted Avg. Market Cap. (\$B)	40.24	61.15
Median Market Cap. (\$B)	7.01	10.08
Price To Earnings	13.09	15.48
Price To Book	1.73	2.32
Price To Sales	0.74	1.12
Return on Equity (%)	13.17	14.60
Yield (%)	3.82	3.35
Beta	0.98	1.00
R-Squared	0.98	1.00

	Portfolio Q2-19	Index Q2-19
<b>Region Weighting</b>		
Americas	4.12	0.55
Europe	54.80	62.50
Asia/Pacific	38.56	36.52
Other	2.51	0.42

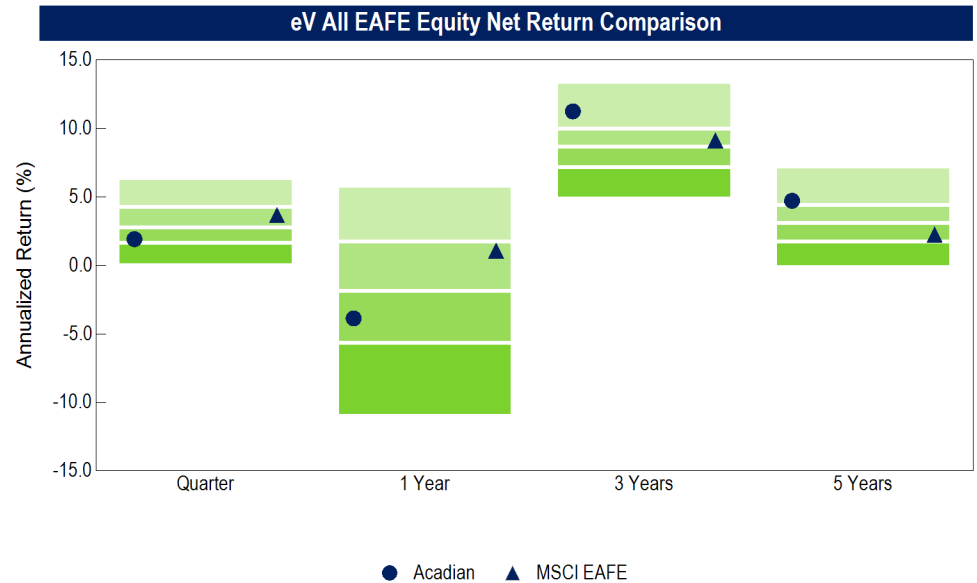


# TOTAL INTERNATIONAL DEVELOPED EQUITIES

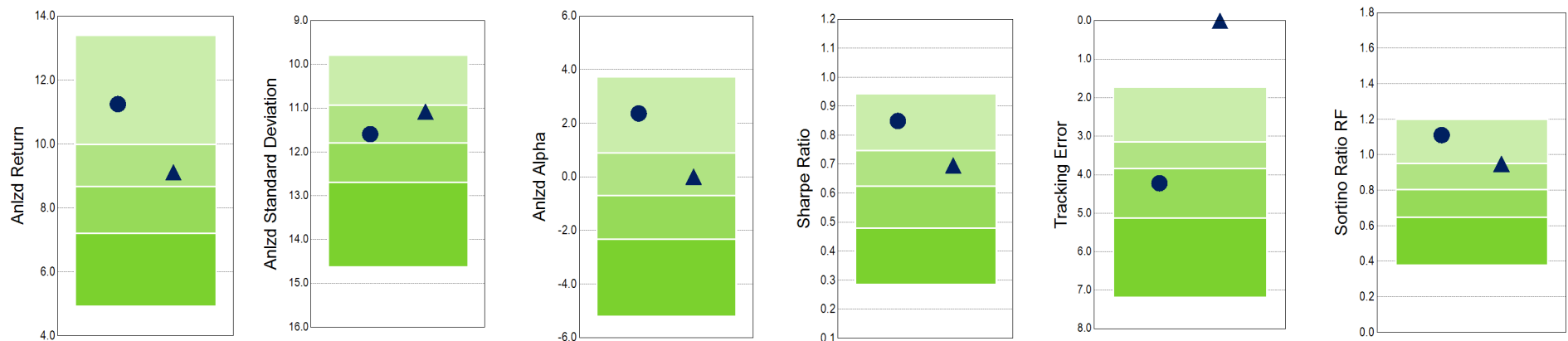


# ACADIAN

Acadian believes that the larger the pool of potential investments, the greater the potential opportunity an active manager has to add value. They believe that stocks and markets have many attributes that are related to potential outperformance, and that a successful investment approach must be multi-faceted and highly adaptable. They believe that objectivity is crucial to investment success. Acadian's quantitative process and extensive database allows them to apply their valuation techniques to over 40,000 stocks worldwide. They do not limit the universe other than to employ screens based on invest-ability and availability of data. For example, they only evaluate stocks that have sufficient daily trading volume to be appropriate for institutional investment. Other than these practical considerations, they consider our investment universe to encompass all institutionally investable stocks in the world.

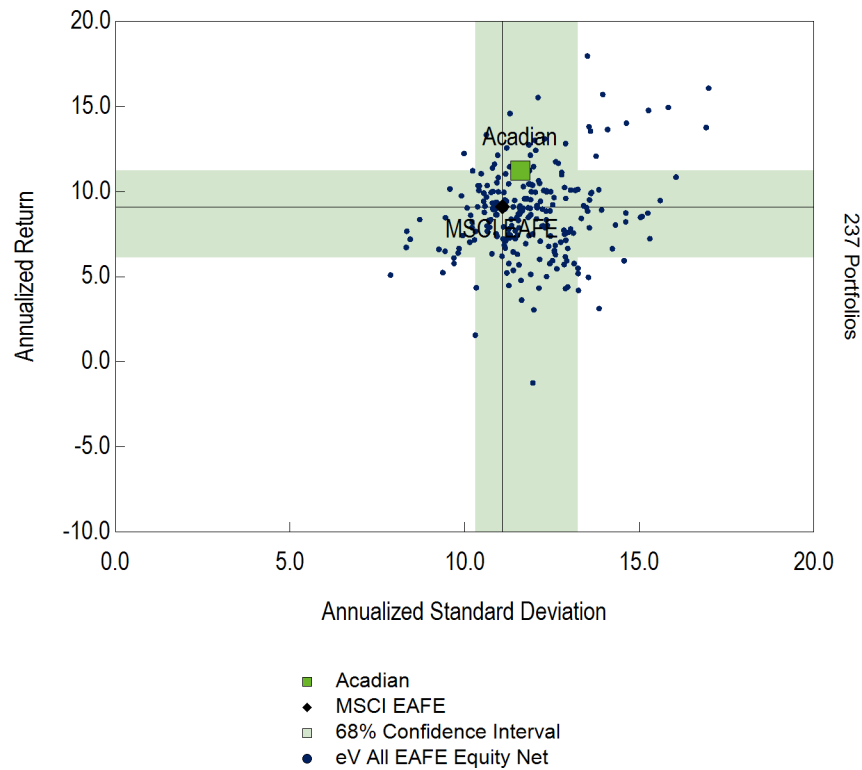


### 3 Year Risk Statistics

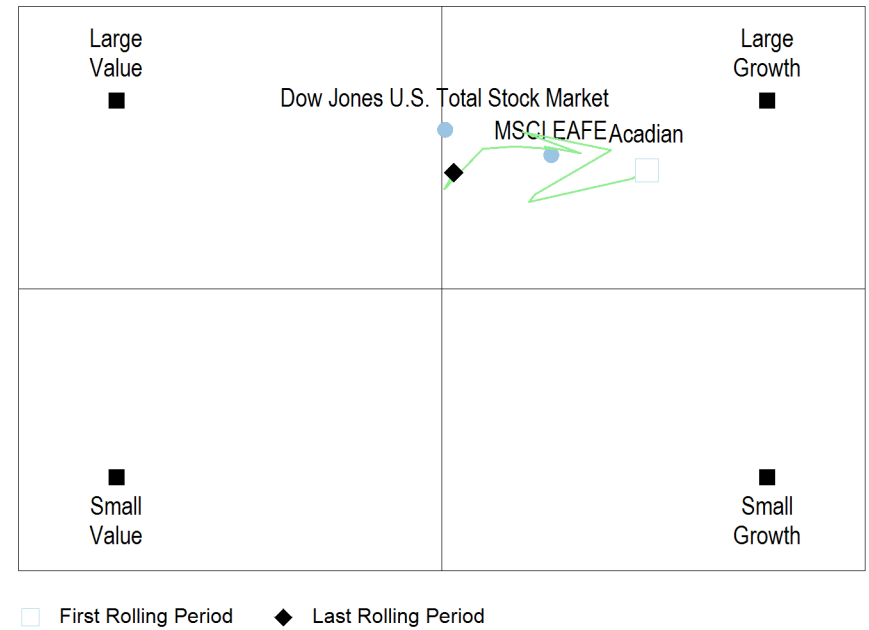


# ACADIAN

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



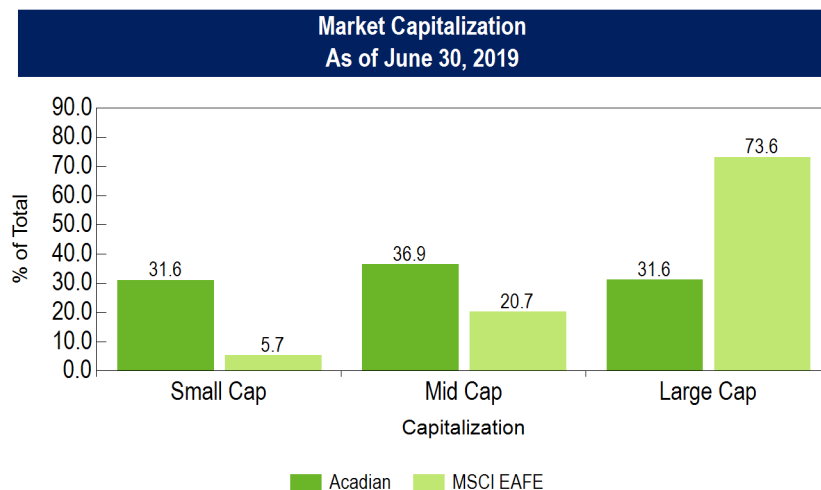
U.S. Effective Style Map  
3 Years Ending June 30, 2019



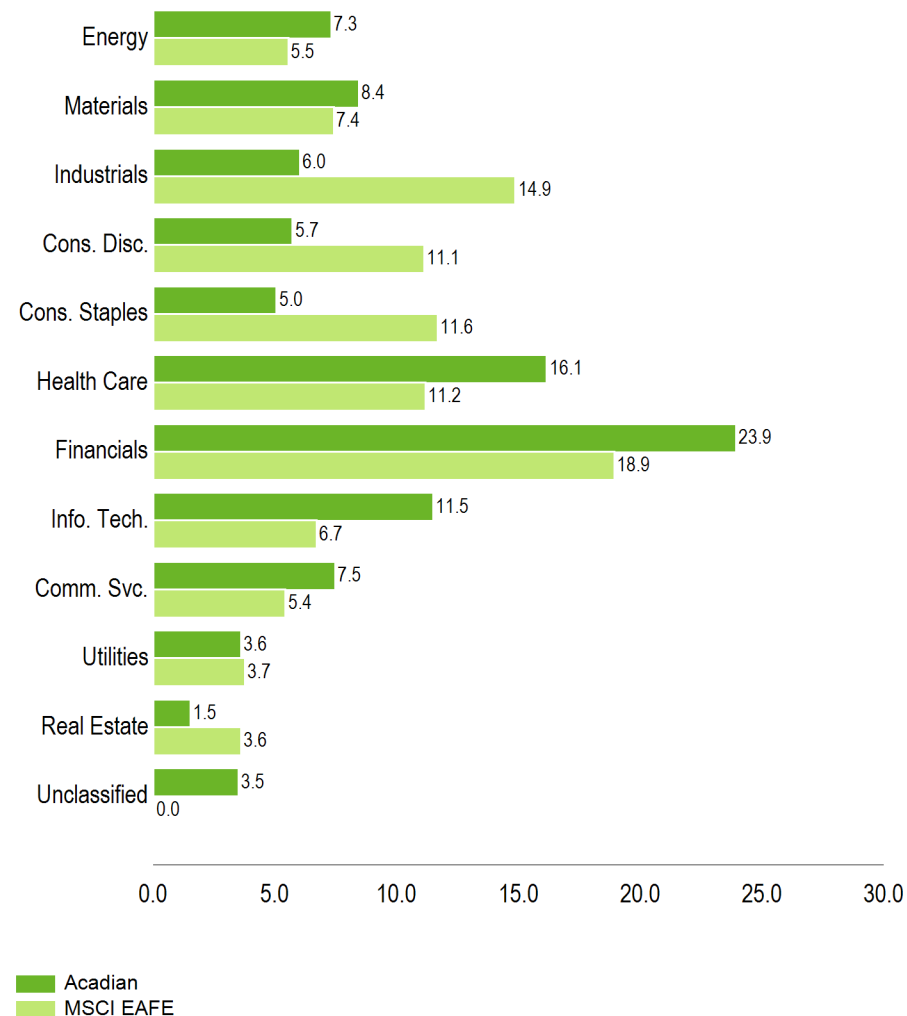
# ACADIAN

Characteristics		
	Portfolio	MSCI EAFE
Number of Holdings	353	922
Weighted Avg. Market Cap. (\$B)	26.45	61.15
Median Market Cap. (\$B)	1.02	10.08
Price To Earnings	12.06	15.48
Price To Book	1.93	2.32
Price To Sales	0.69	1.12
Return on Equity (%)	15.96	14.60
Yield (%)	3.17	3.35
Beta	0.98	1.00
R-Squared	0.87	1.00

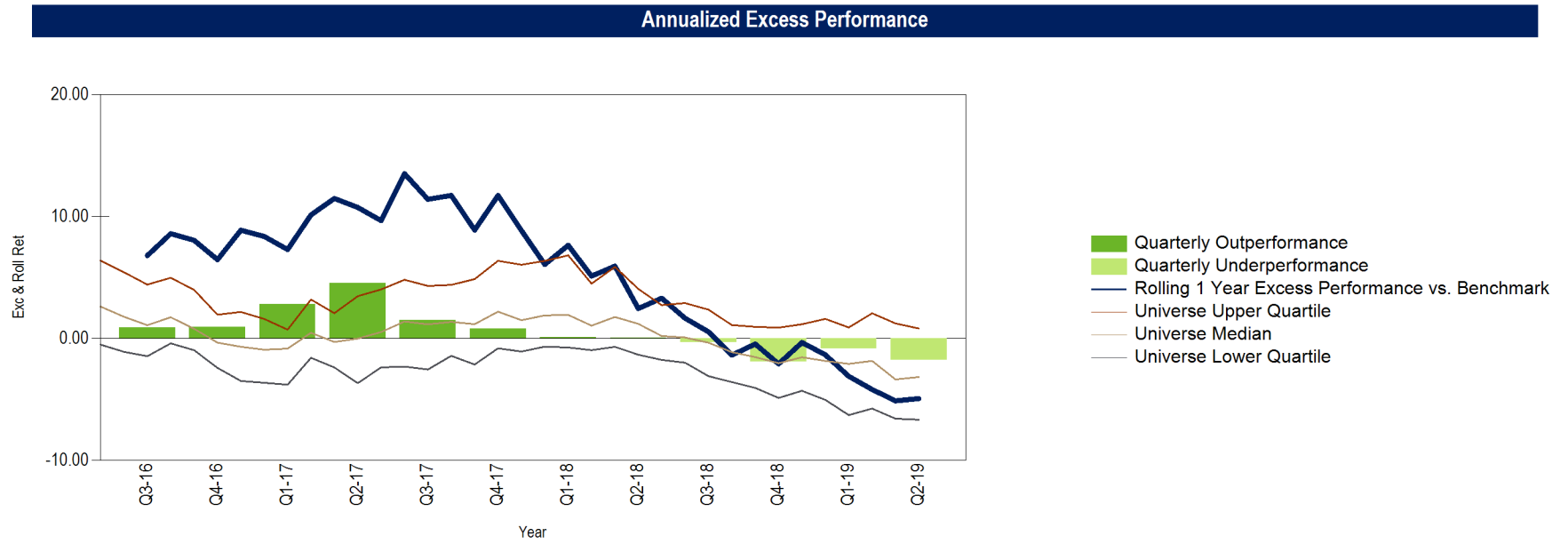
	Portfolio Q2-19	Index Q2-19
Region Weighting		
Americas	7.17	0.55
Europe	47.79	62.50
Asia/Pacific	40.03	36.52
Other	5.01	0.42



## Sector Allocation (%) vs MSCI EAFE

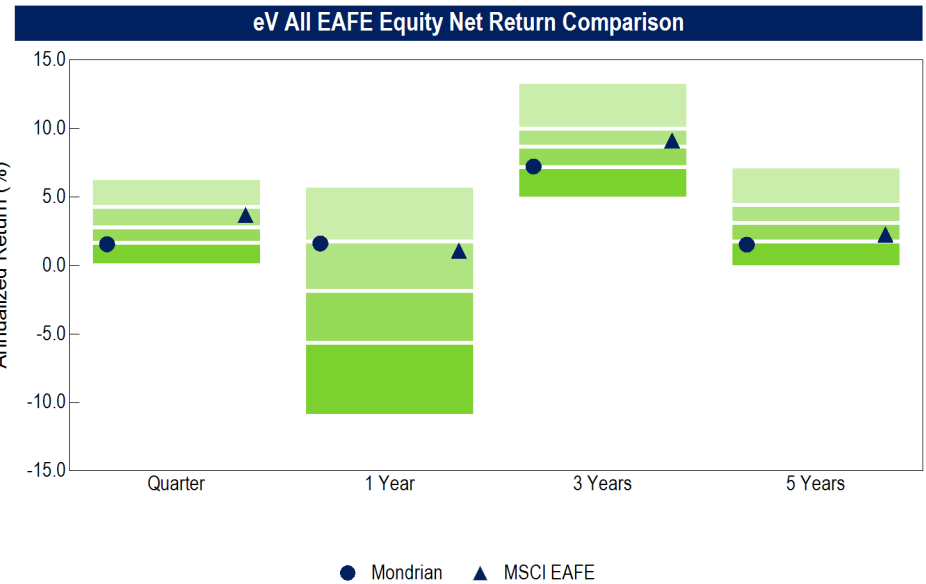


# ACADIAN

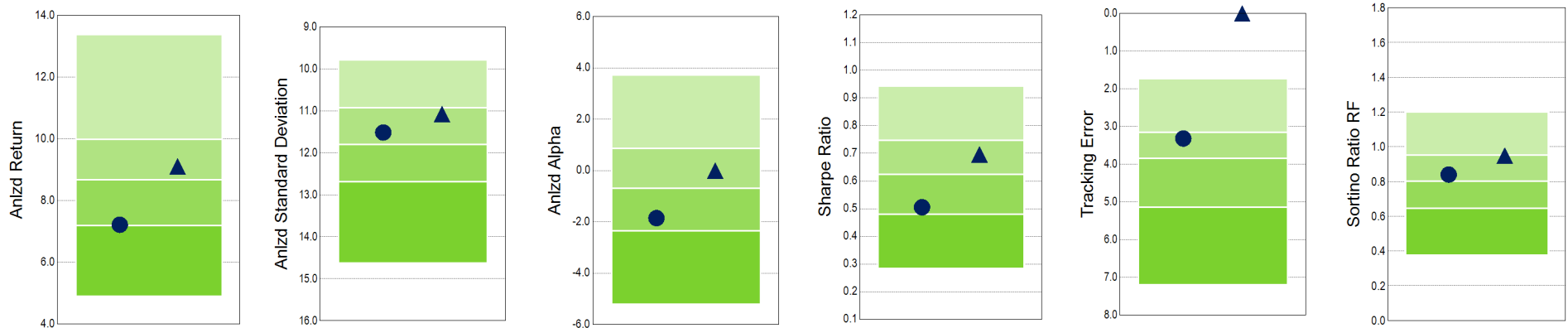


# MONDRIAN

The firm is an active value-oriented defensive manager. The firm's value driven investment philosophy is based on the belief that investments need to be evaluated in terms of their fundamental long-term value. The firm believes that the value of a company lies in its future income stream as dividends represent the most direct form of cash flow to a shareholder. The firm uses an inflation adjusted dividend discount model to derive the underlying value of a company. This methodology is applied consistently to individual securities across all markets and industries. The universe spans markets covered in the MSCI Indices and those developing markets with adequate investor protection and good repatriation procedures. The firm will then narrow the universe to a list of more than 1000 securities on the basis of value criteria, and then further reduce this to a shorter list of approximately 250 securities annually, for detailed fundamental analysis. The screens include basic value characteristics such as price to book, price to cash flow ratio, price to earnings ratio, and yield, as well as liquidity considerations. A focus list of approximately 80 securities is then created from that list of approximately 250 through fundamental research and deliberations of the Equity Strategy Committee. It is this list of securities on which more detailed fundamental analysis and financial modeling is carried out utilizing the dividend discount model, which is based on an evaluation of a company's future income stream, which is then discounted in real terms.



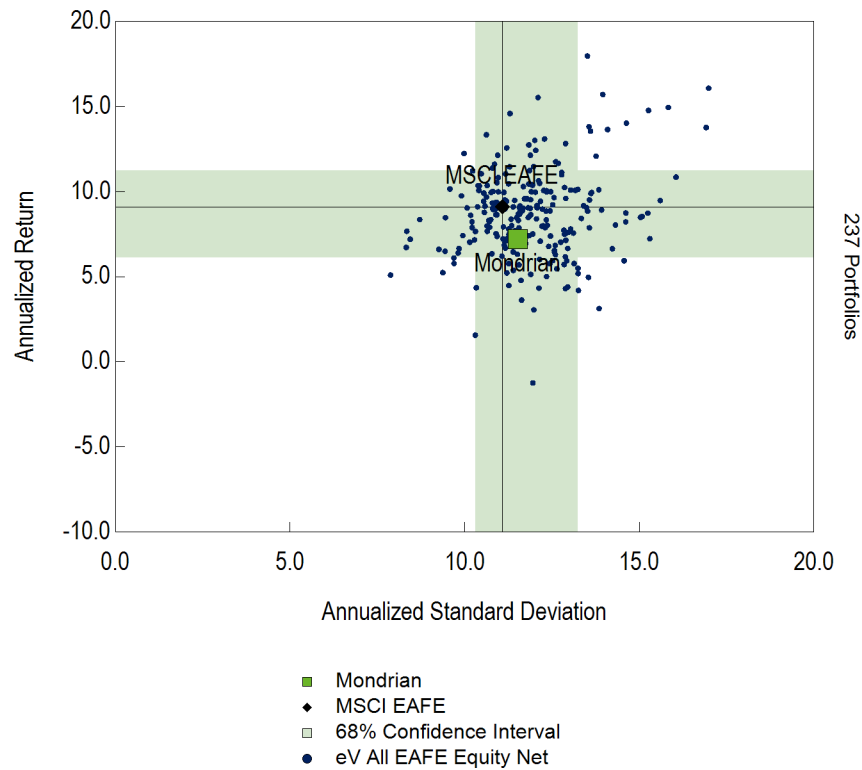
## 3 Year Risk Statistics



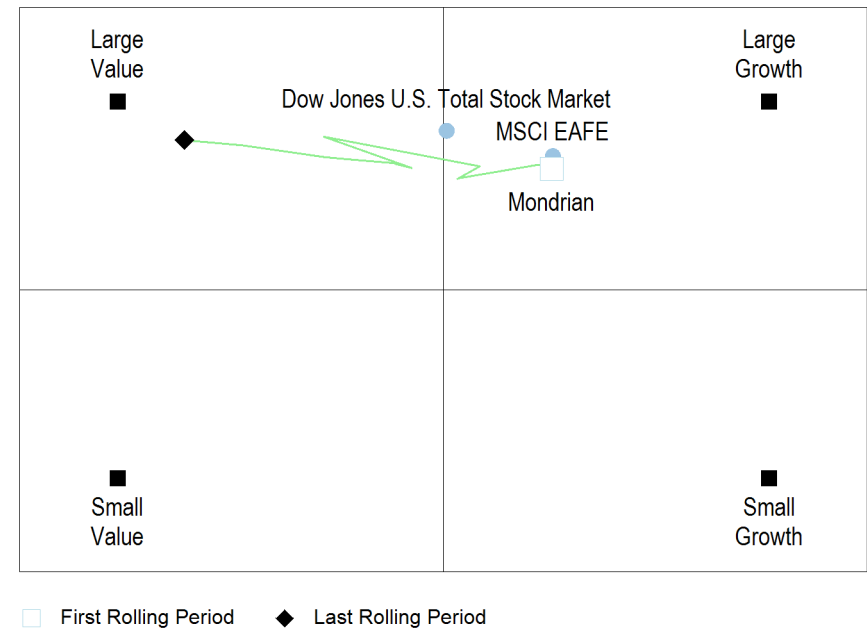


# MONDRIAN

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



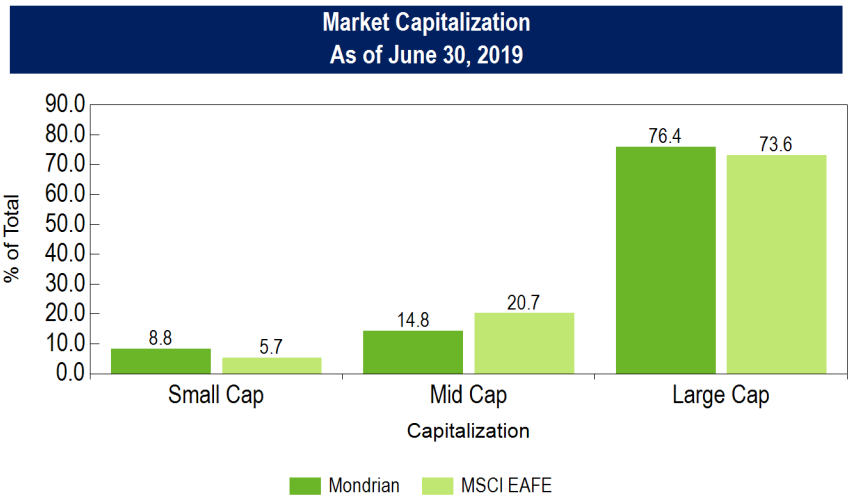
U.S. Effective Style Map  
3 Years Ending June 30, 2019



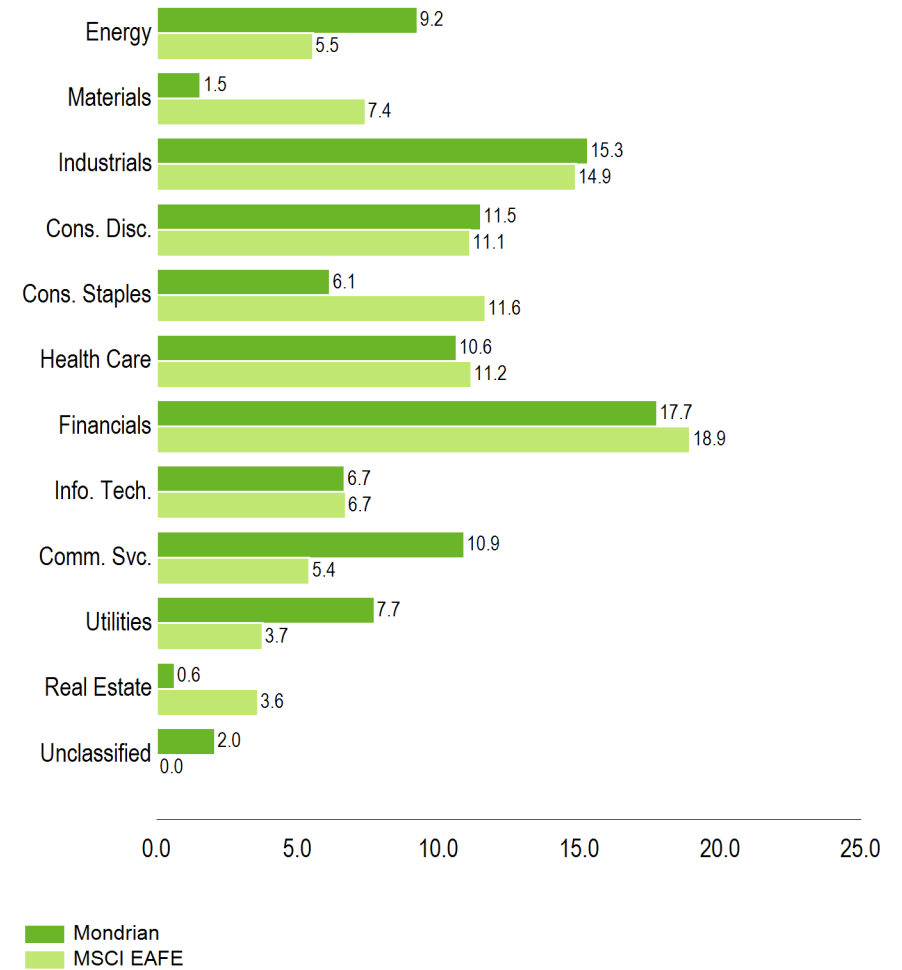
# MONDRIAN

Characteristics		
	Portfolio	MSCI EAFE
Number of Holdings	65	922
Weighted Avg. Market Cap. (\$B)	53.62	61.15
Median Market Cap. (\$B)	28.75	10.08
Price To Earnings	13.60	15.48
Price To Book	1.56	2.32
Price To Sales	0.73	1.12
Return on Equity (%)	10.14	14.60
Yield (%)	4.44	3.35
Beta	1.00	1.00
R-Squared	0.92	1.00

	Portfolio Q2-19	Index Q2-19
Region Weighting		
Americas	1.06	0.55
Europe	61.85	62.50
Asia/Pacific	37.09	36.52
Other	--	0.42

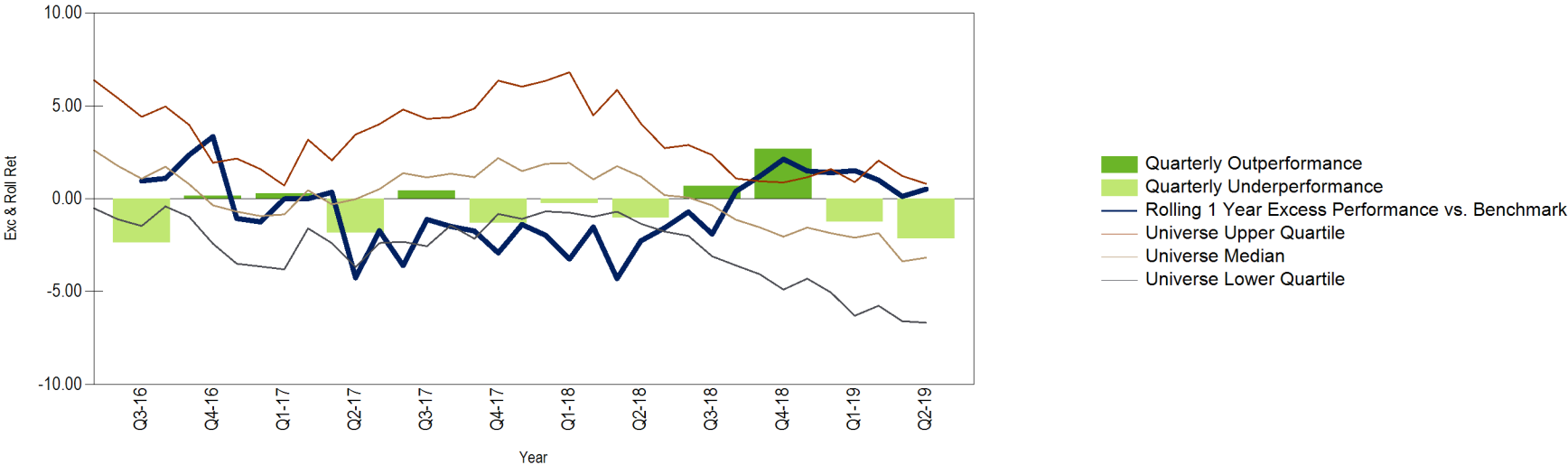


## Sector Allocation (%) vs MSCI EAFE



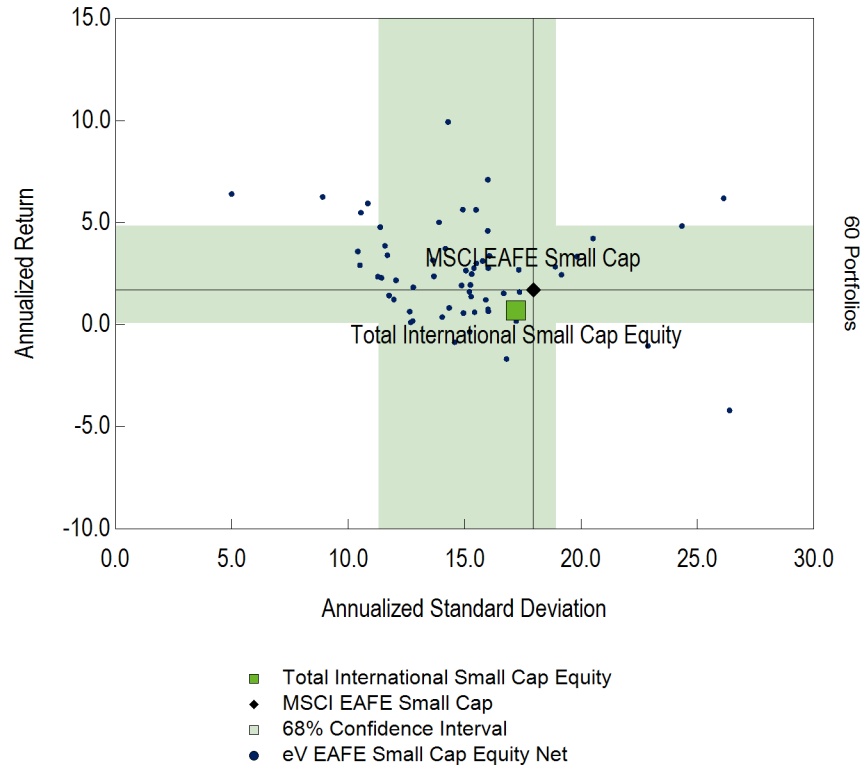
# MONDRIAN

Annualized Excess Performance



# TOTAL INTERNATIONAL SMALL CAP

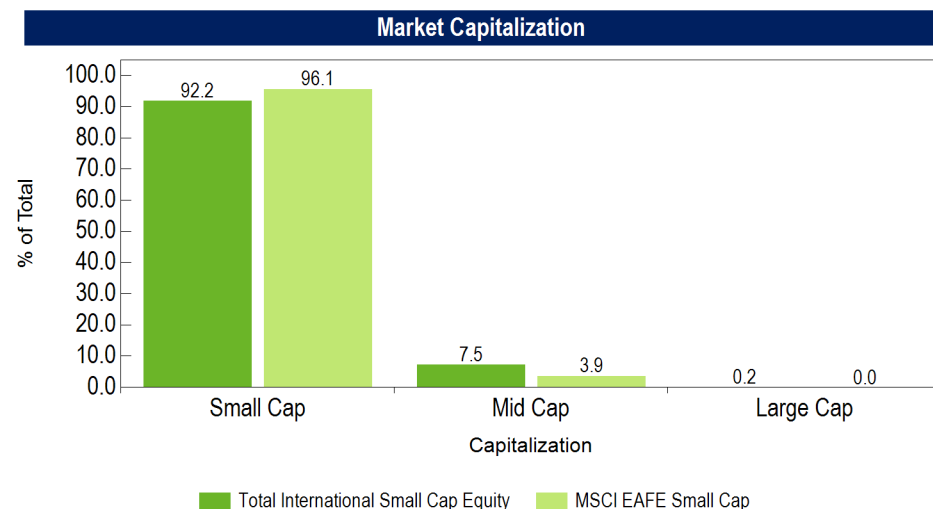
Annualized Return vs. Annualized Standard Deviation  
3 Months Ending June 30, 2019



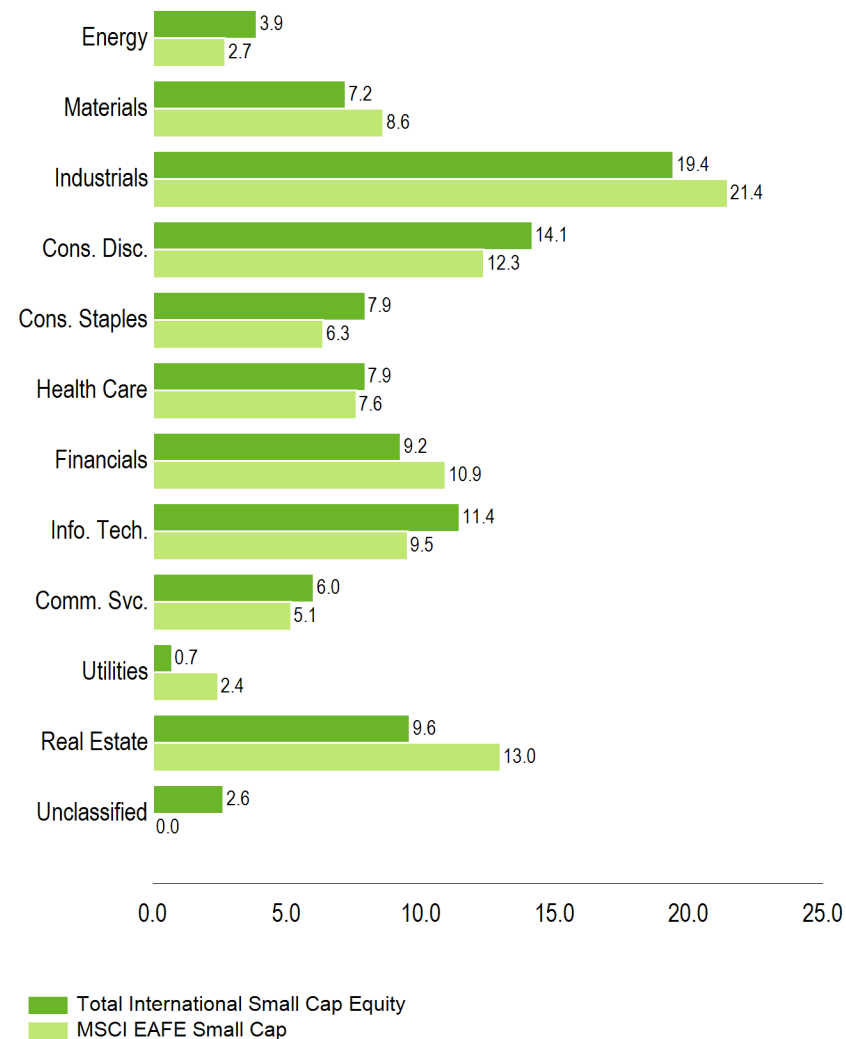
# TOTAL INTERNATIONAL SMALL CAP

Characteristics		
	Portfolio	MSCI EAFE Small Cap
Number of Holdings	168	2,340
Weighted Avg. Market Cap. (\$B)	2.92	2.53
Median Market Cap. (\$B)	1.83	1.02
Price To Earnings	10.14	15.10
Price To Book	2.16	2.12
Price To Sales	0.92	0.92
Return on Equity (%)	24.07	12.67
Yield (%)	3.38	2.76
Beta		1.00
R-Squared		1.00

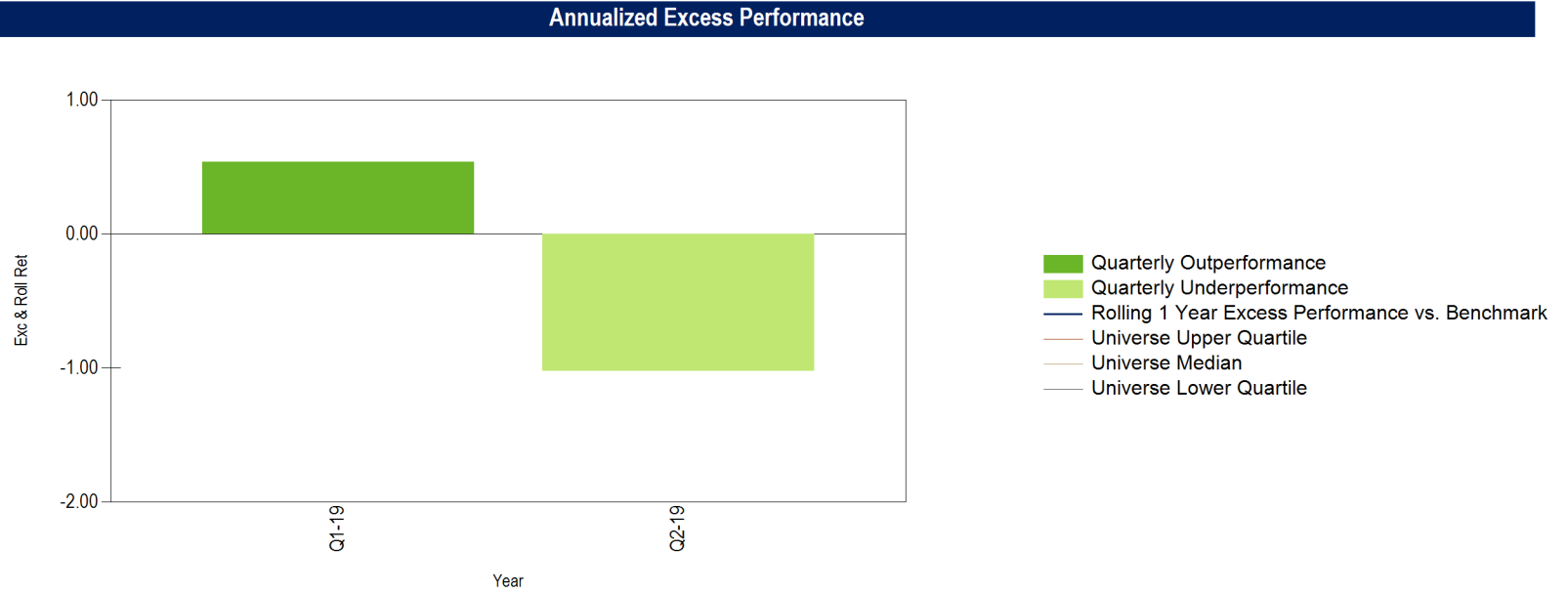
	Portfolio Q2-19	Index Q2-19
Region Weighting		
Americas	12.12	0.60
Europe	47.11	54.87
Asia/Pacific	39.18	42.75
Other	1.59	1.78



## Sector Allocation (%) vs MSCI EAFE Small Cap

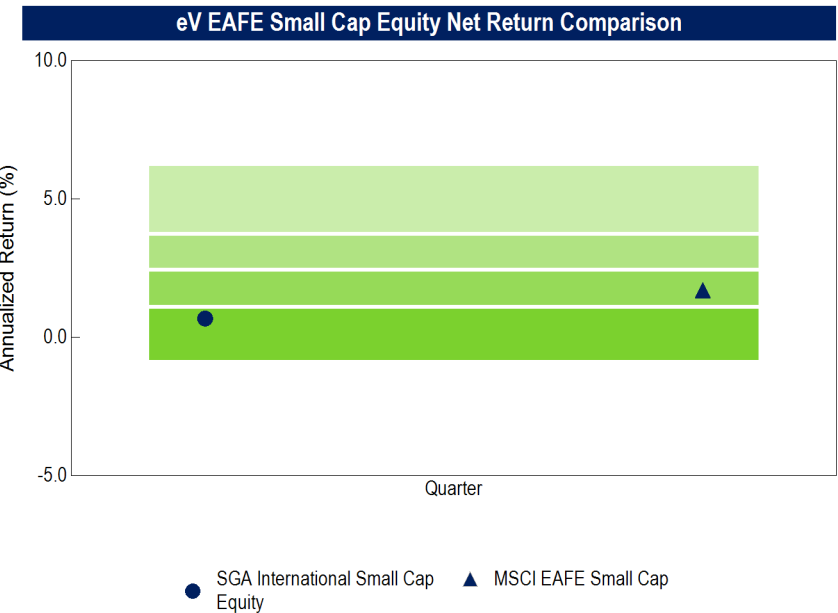


# TOTAL INTERNATIONAL SMALL CAP

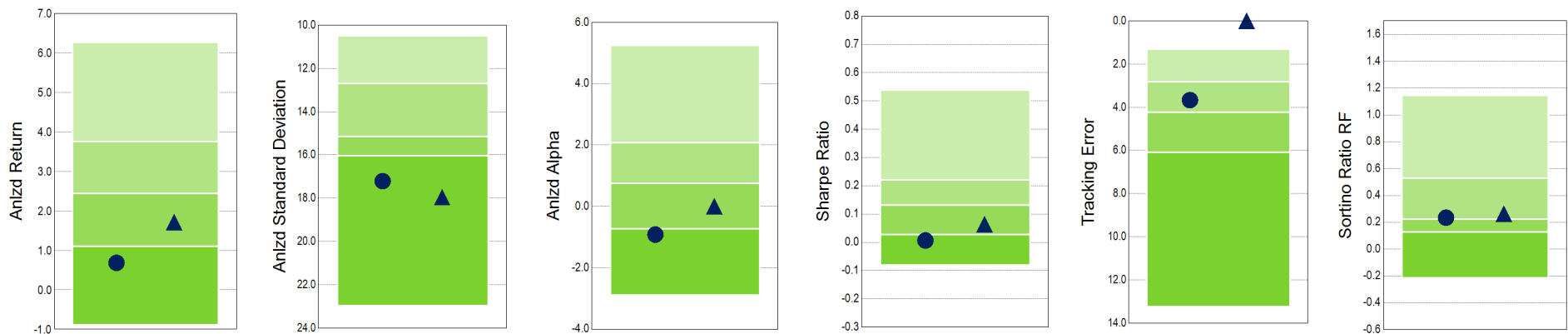


# SGA INTERNATIONAL SMALL CAP EQUITY

SGA utilizes a bottom-up stock selection process. The firm's proprietary quantitative models estimate expected performance and stock specific risk across multiple dimensions for each stock in the appropriate universe. The firm's proprietary stock selection model includes a blend of Growth, Value, Sentiment, and Quality factors to capture market mispricings due to anomalies or inefficiencies created by human behavioral mistakes. SGA expects these inefficiencies to persist as long as humans continue to participate in equity markets. The stock selection and risk model outputs are combined daily by a proprietary optimization model. This process produces potential trades relative to the current portfolio. In this way, a fully built systematic investment process is used as a screen for new ideas and to prioritize the work of our fundamental analysis team. Fundamental analysis is focused on information that is outside of the model and can be used to approve a stock and make it eligible for inclusion in the portfolio or to preclude a stock from inclusion in the final optimization at the time of portfolio rebalancing (typically once every six to eight weeks or as deemed appropriate by the portfolio management team). This approach ensures a continual flow of best ideas.



## 3 Month Risk Statistics

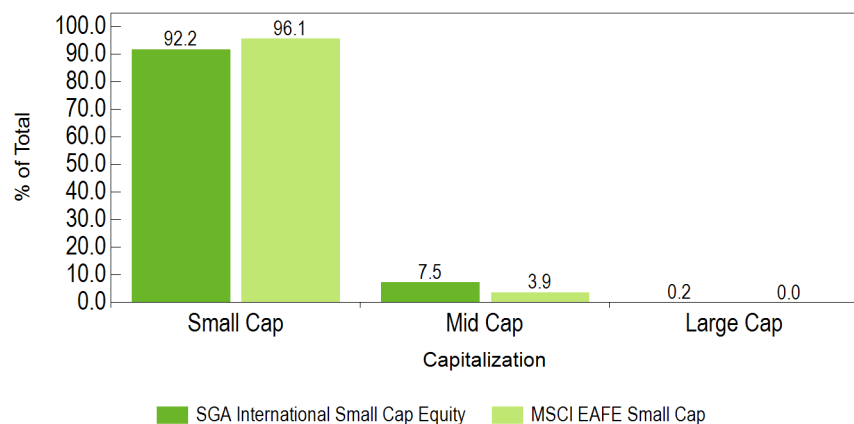


# SGA INTERNATIONAL SMALL CAP EQUITY

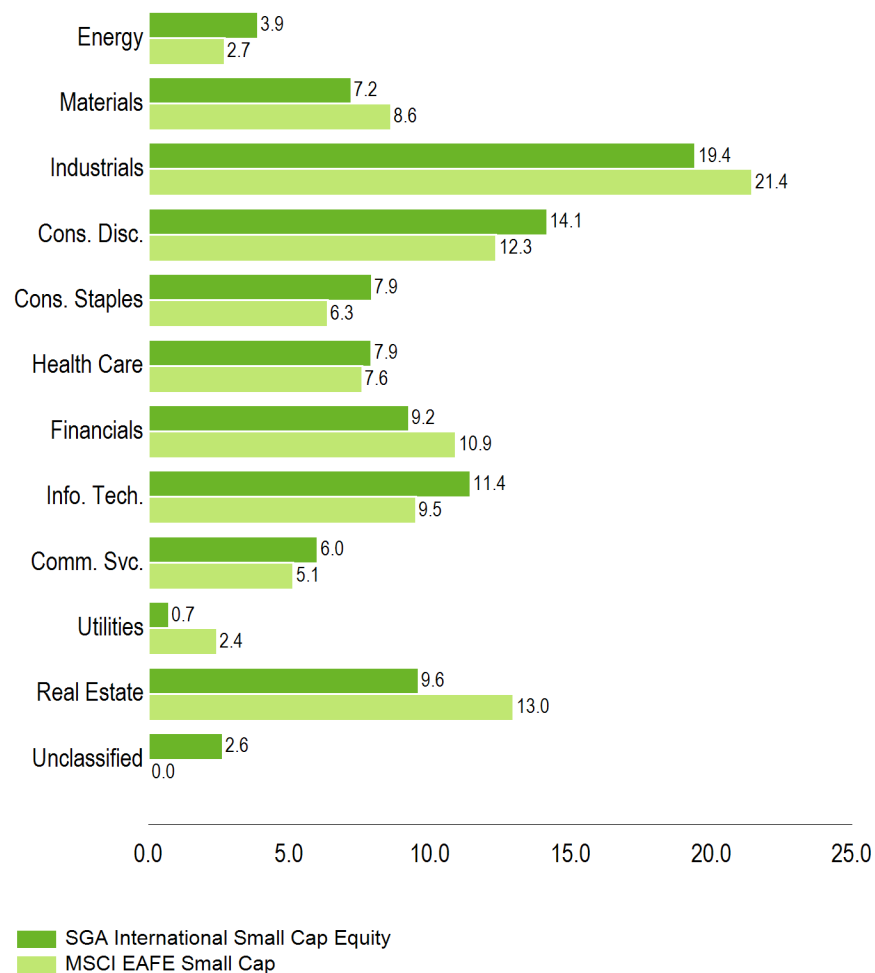
Characteristics		
	Portfolio	MSCI EAFE Small Cap
Number of Holdings	168	2,340
Weighted Avg. Market Cap. (\$B)	2.92	2.53
Median Market Cap. (\$B)	1.83	1.02
Price To Earnings	10.14	15.10
Price To Book	2.16	2.12
Price To Sales	0.92	0.92
Return on Equity (%)	24.07	12.67
Yield (%)	3.38	2.76
Beta		1.00
R-Squared		1.00

Region Weighting		
	Portfolio Q2-19	Index Q2-19
Americas	12.12	0.60
Europe	47.11	54.87
Asia/Pacific	39.18	42.75
Other	1.59	1.78

## Market Capitalization As of June 30, 2019



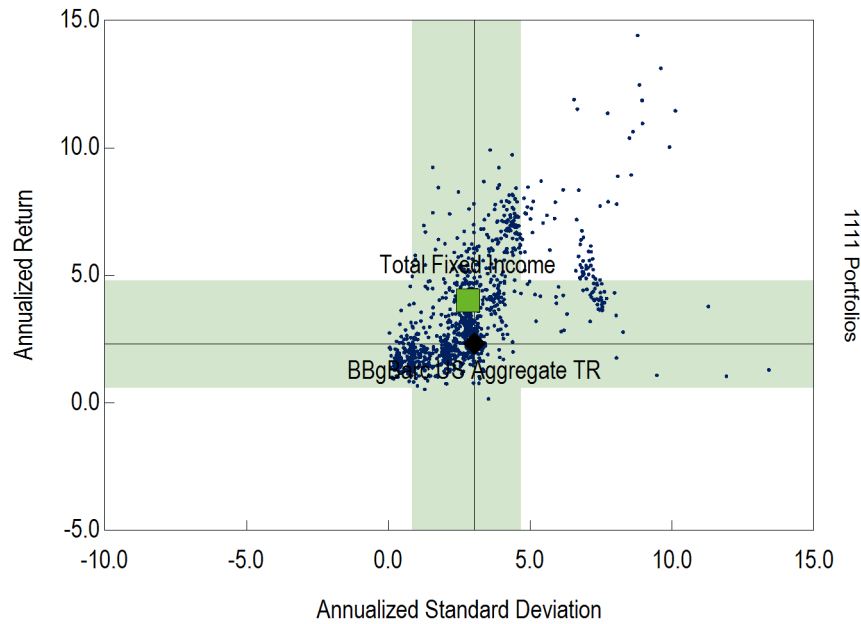
## Sector Allocation (%) vs MSCI EAFE Small Cap





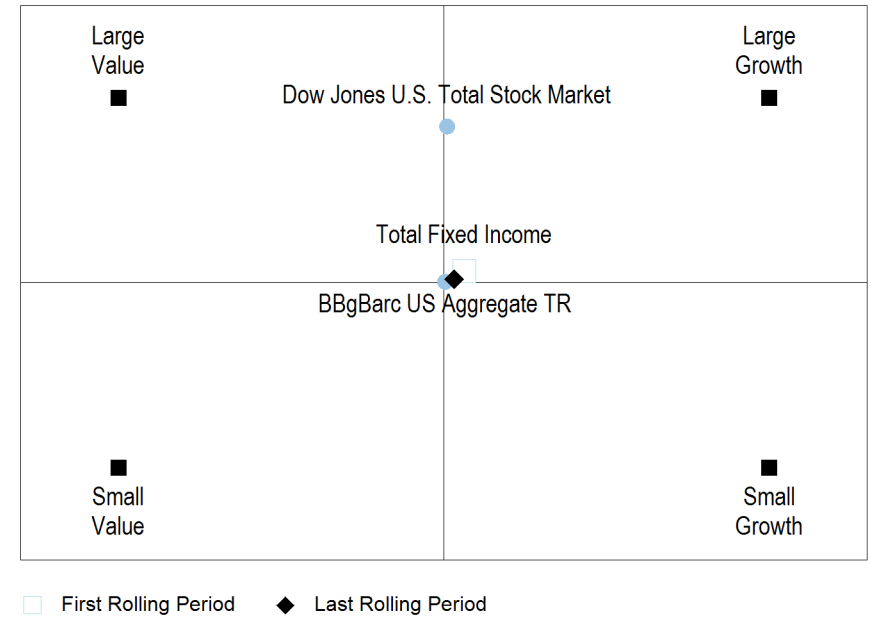
# TOTAL FIXED INCOME COMPOSITE

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



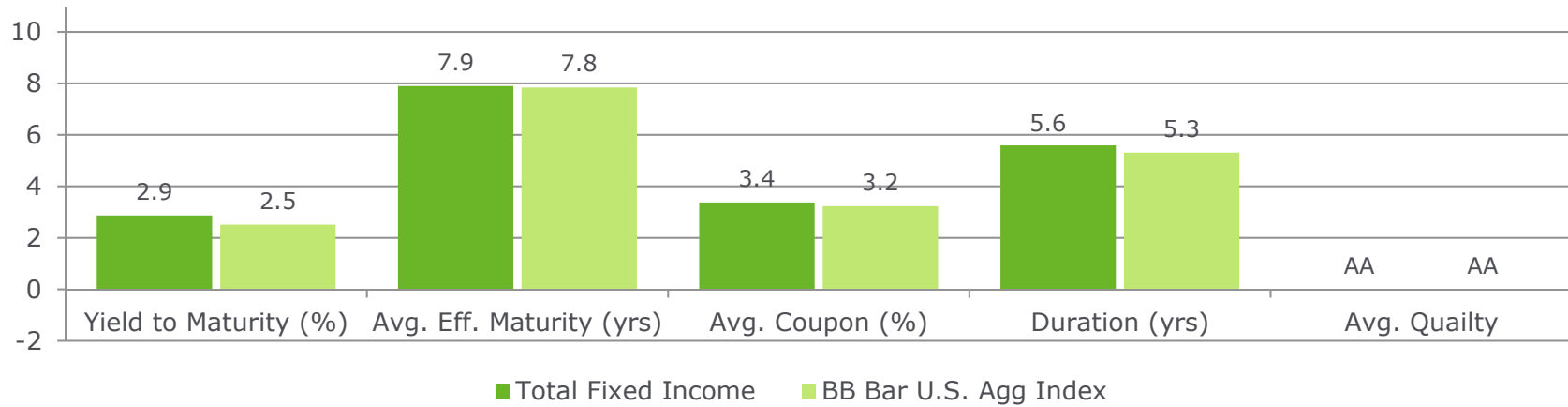
- Total Fixed Income
- ◆ BBgBarc US Aggregate TR
- 68% Confidence Interval
- eV All US Fixed Inc Net

U.S. Effective Style Map  
3 Years Ending June 30, 2019

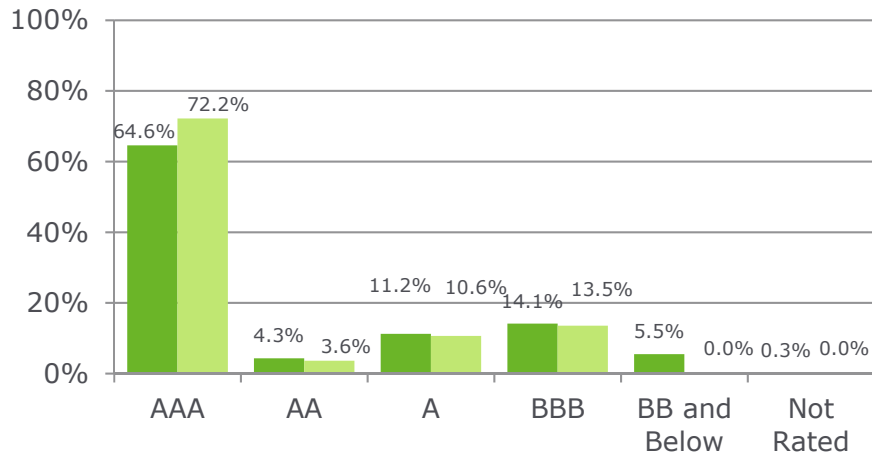


# TOTAL FIXED INCOME

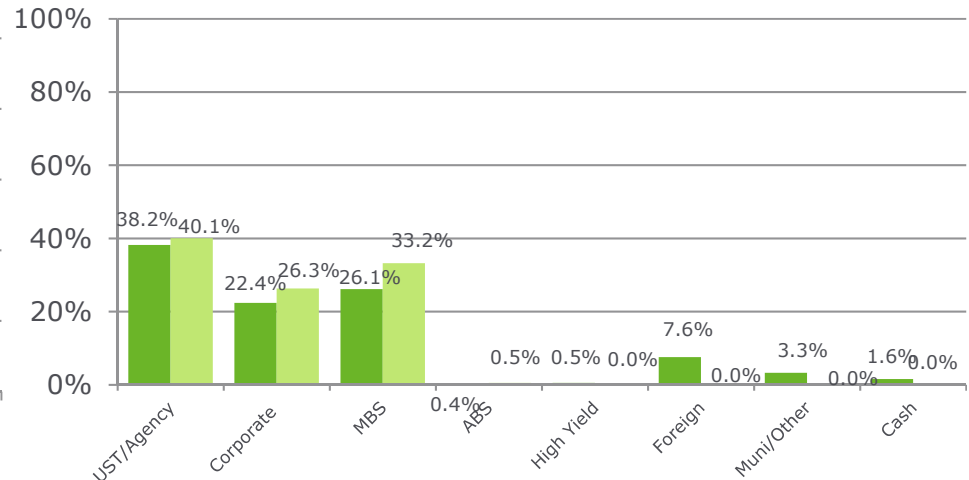
## Characteristics



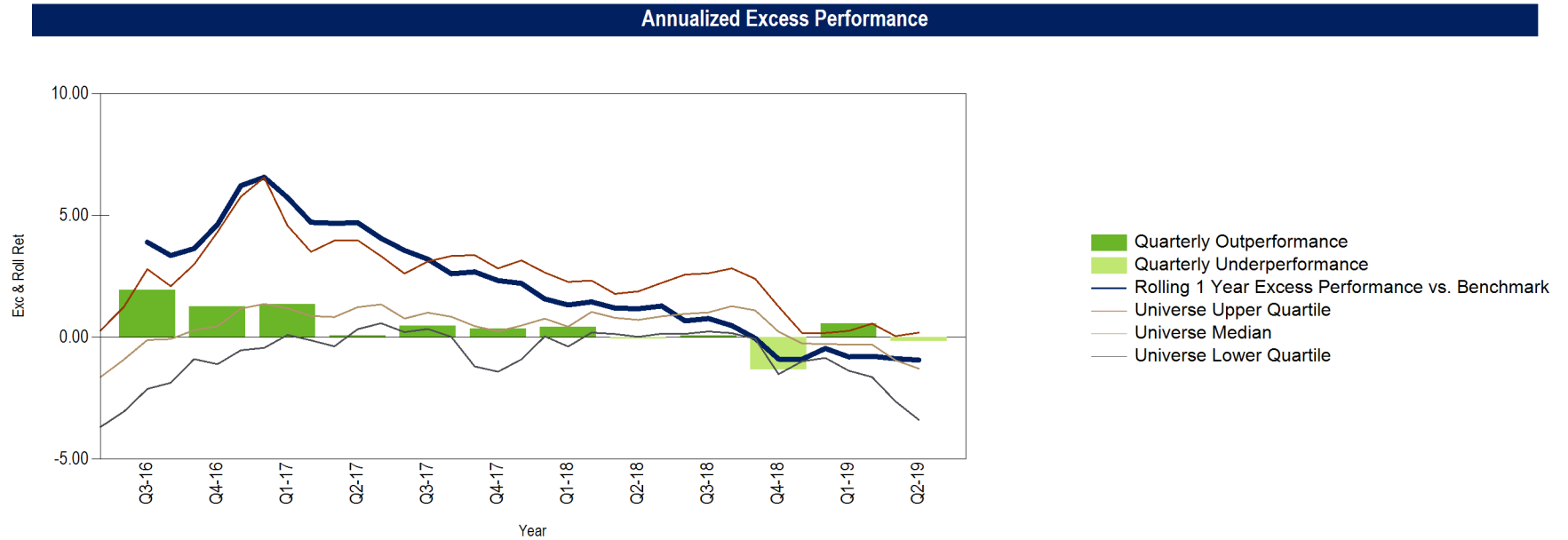
## Quality Rating



## Sectors

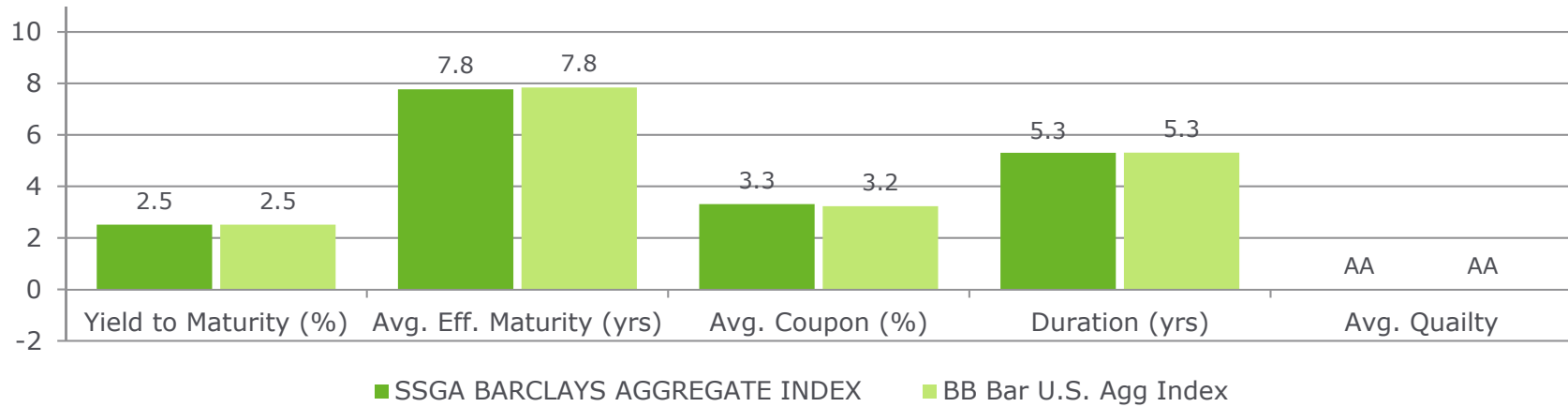


# TOTAL FIXED INCOME COMPOSITE

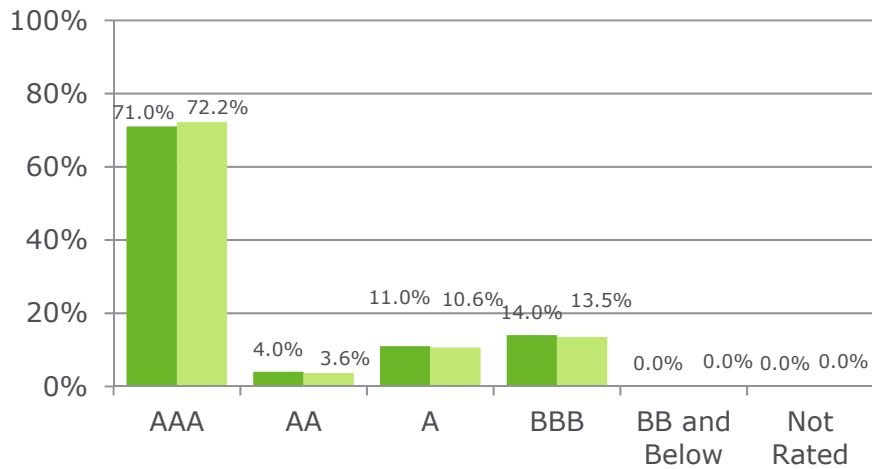


# BLACKROCK US AGGREGATE INDEX

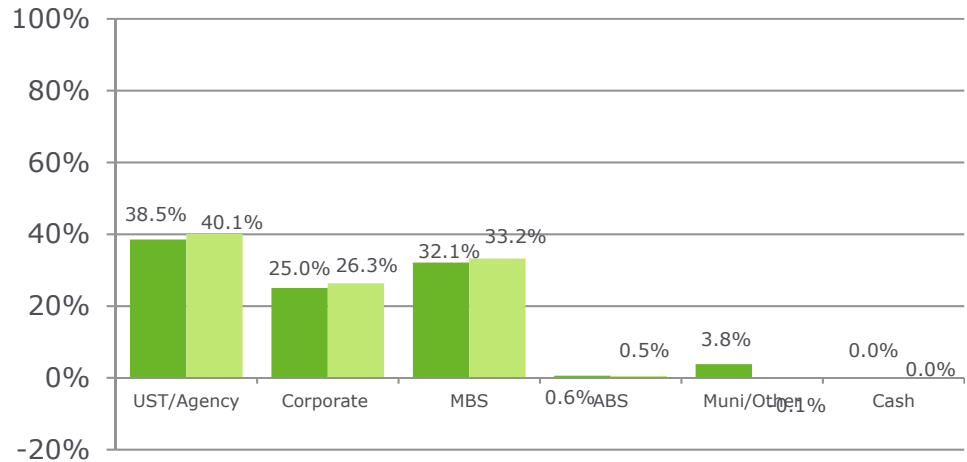
## Characteristics



## Quality Rating

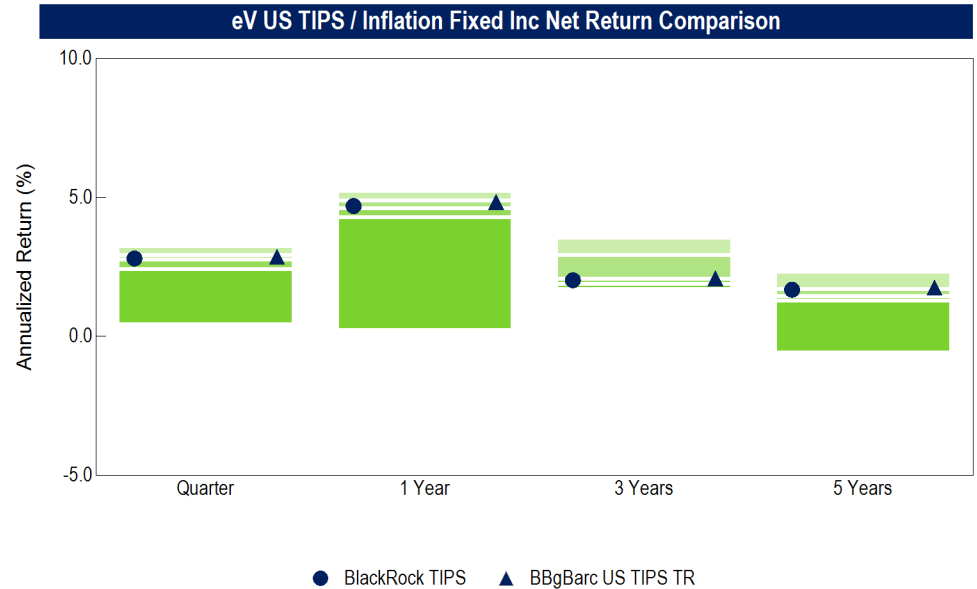


## Sectors

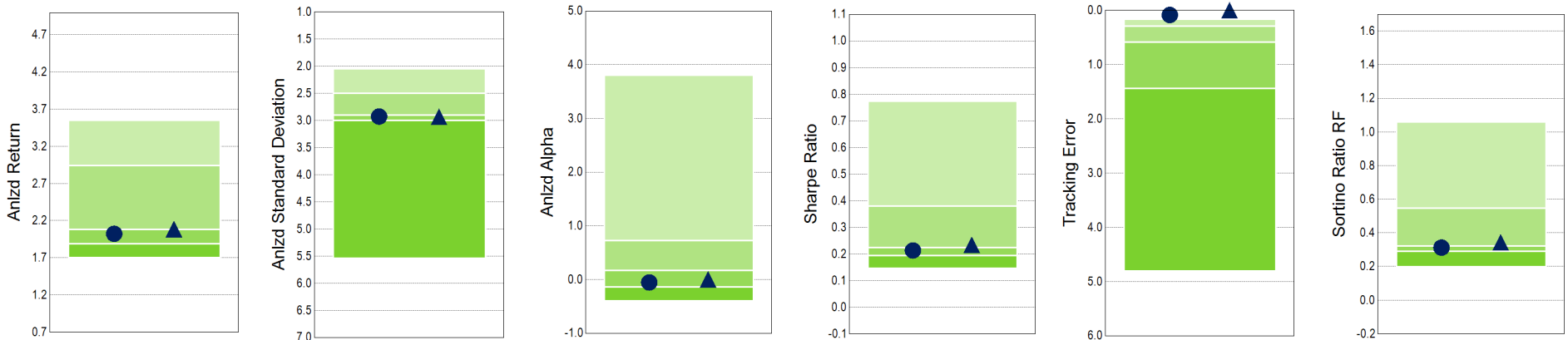


# BLACKROCK TIPS

In the management of an inflation-linked bond portfolio, BlackRock will utilize multiple strategies to outperform the index. These include: duration and yield curve positioning, technical supply/demand anomalies related primarily to the ILB auction cycle, seasonal factors related to non-seasonally adjusted inflation-linked indices, break-even spread between ILBs and nominal securities, and, if applicable, sector and country allocation. The team compares nominal yields with real yields and factor in their views on inflation. If the yield spread is less than the inflation rate, then ILBs are considered to trade cheaply to nominal bonds and have greater relative value. The portfolio currently holds about 31 positions, out of 27-29 issues in the benchmark. Turnover is moderate, at around 100-150%.

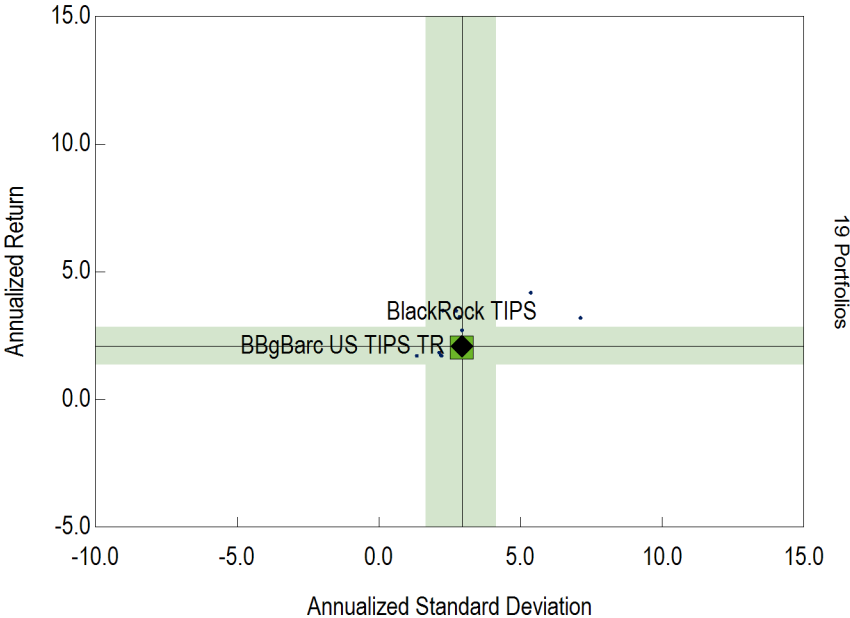


## 3 Year Risk Statistics



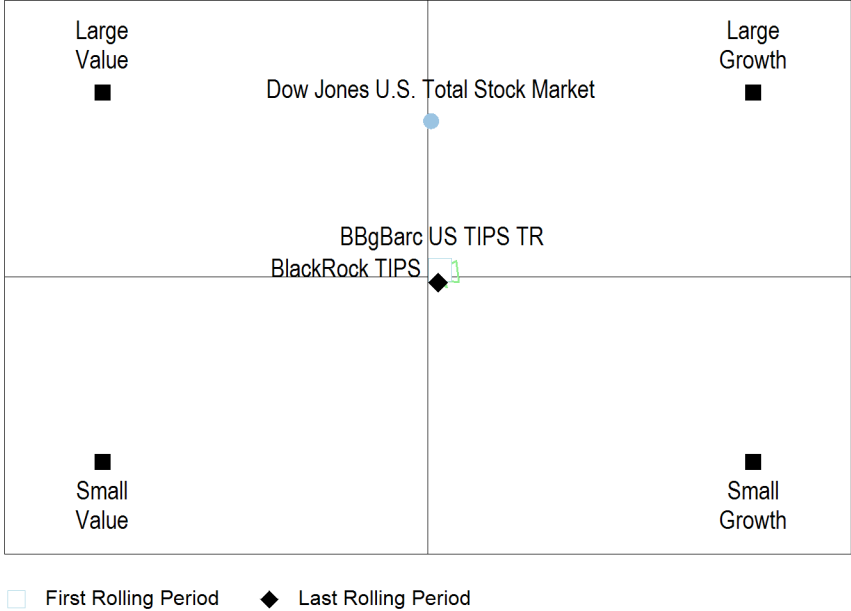
# BLACKROCK TIPS

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



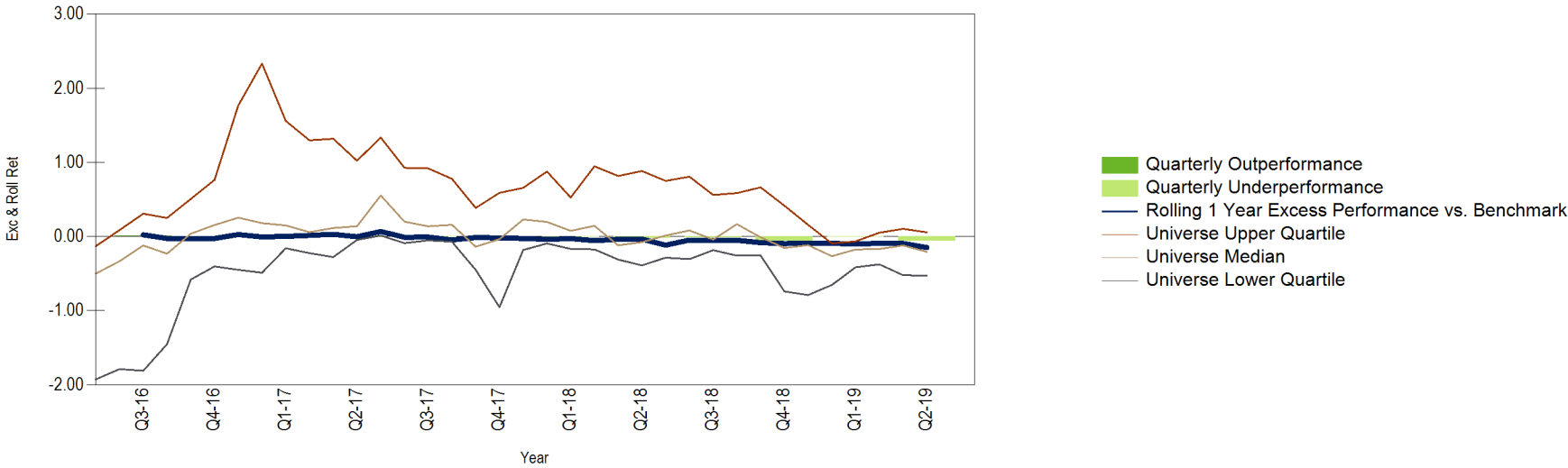
- BlackRock TIPS
- ◆ BBgBarc US TIPS TR
- 68% Confidence Interval
- eV US TIPS / Inflation Fixed Inc Net

**U.S. Effective Style Map  
3 Years Ending June 30, 2019**



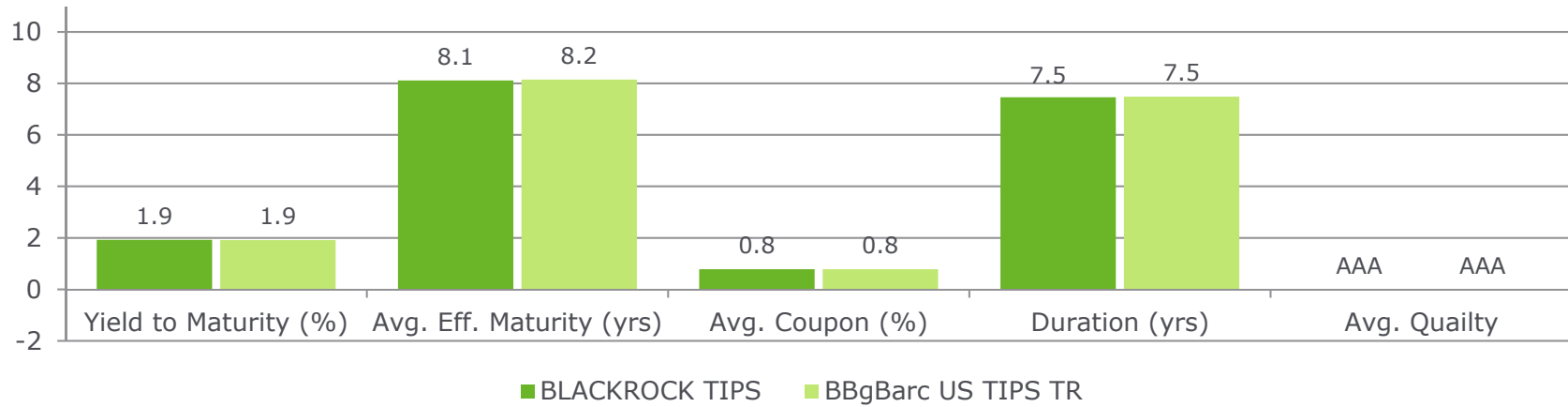
# BLACKROCK TIPS

## Annualized Excess Performance



# BLACKROCK TIPS

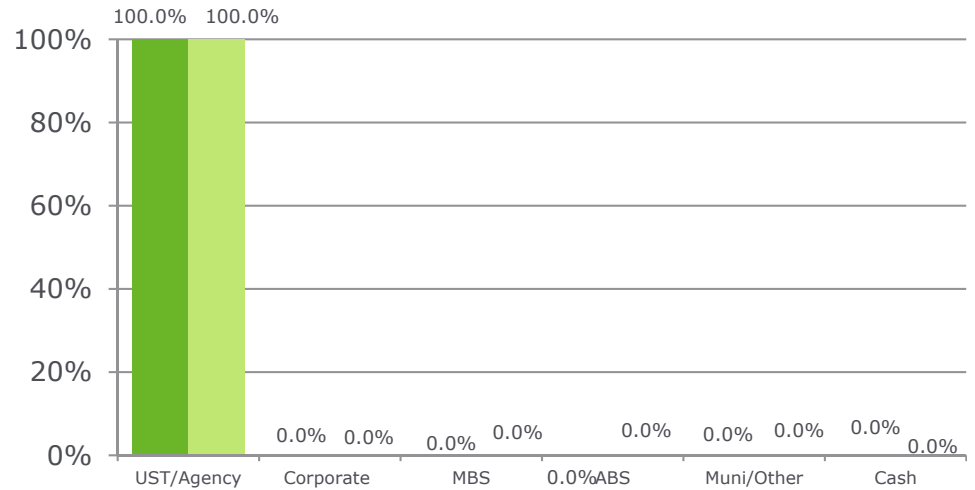
## Characteristics



## Quality Rating



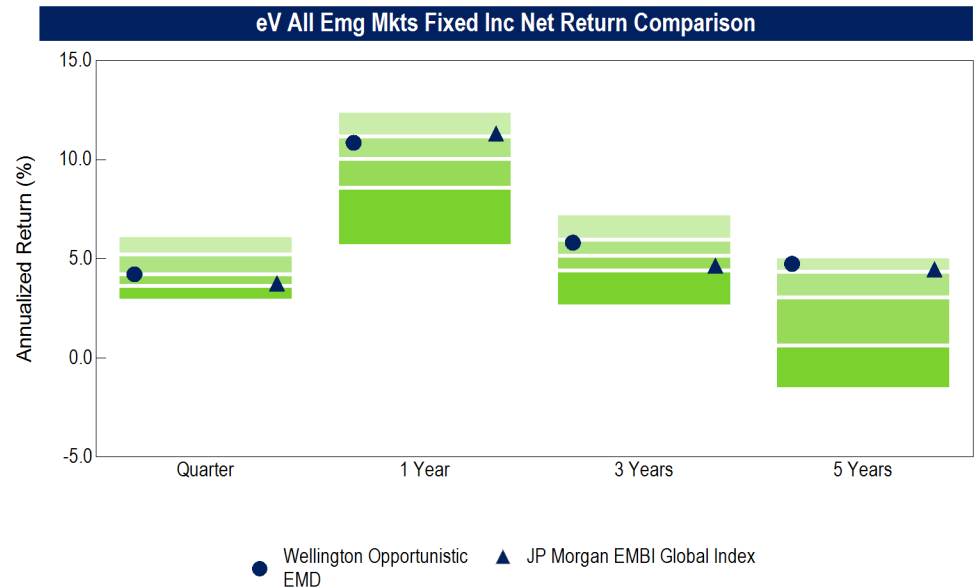
## Sectors



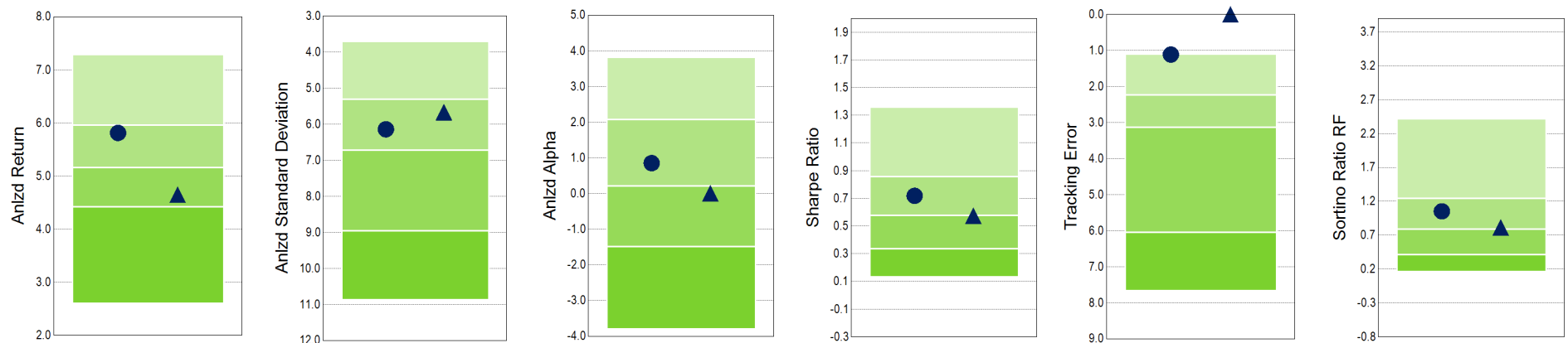


# WELLINGTON OPPORTUNISTIC EMD

Wellington Opportunistic Emerging Markets Debt is a “best ideas” investment approach that seeks to generate attractive returns relative to an emerging markets debt benchmark, independent of traditional benchmark constraints. Blended Opportunistic Emerging Markets Debt approach will seek to take advantage of investment opportunities across the emerging markets fixed income spectrum, including hard and local currency-denominated sovereign, quasi-sovereign, and corporate debt, and their derivatives. Currencies will be used to both manage risk and enhance return. The portfolio is managed in a benchmark aware style; while the team is mindful of benchmark exposures, we may deviate considerably from the benchmark if we believe it to be justified by fundamental, valuation, and/or technical considerations.

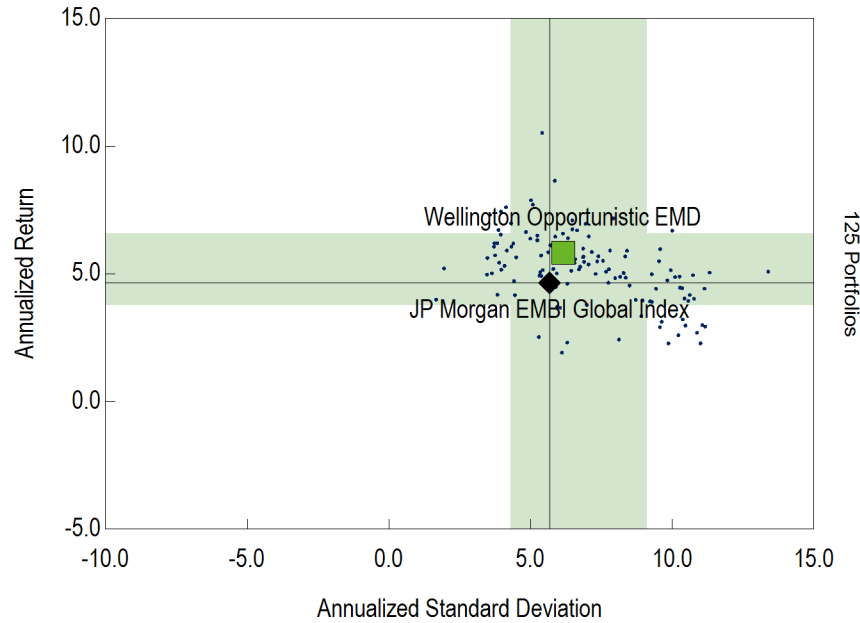


## 3 Year Risk Statistics



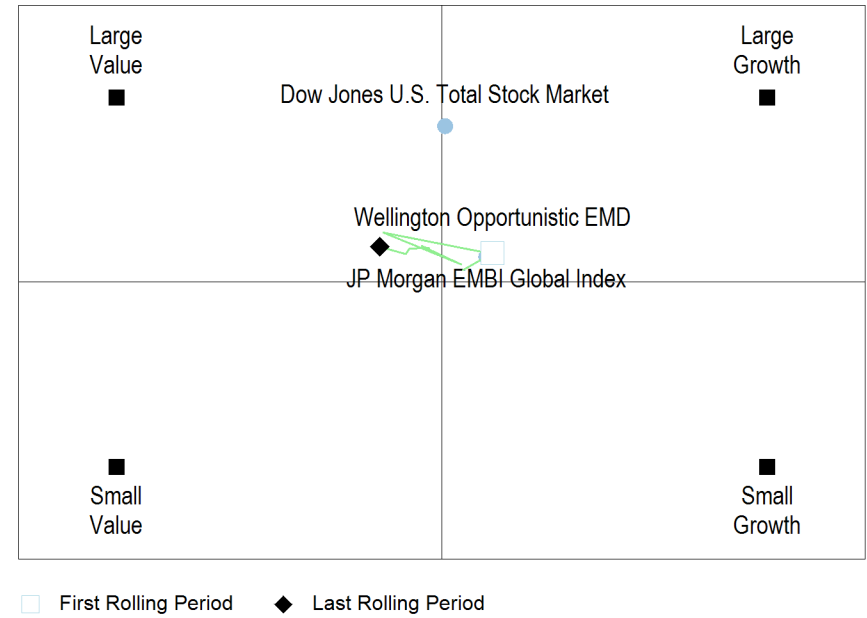
# WELLINGTON OPPORTUNISTIC EMD

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



- Wellington Opportunistic EMD
- ◆ JP Morgan EMBI Global Index
- 68% Confidence Interval
- eV All Emg Mkts Fixed Inc Net

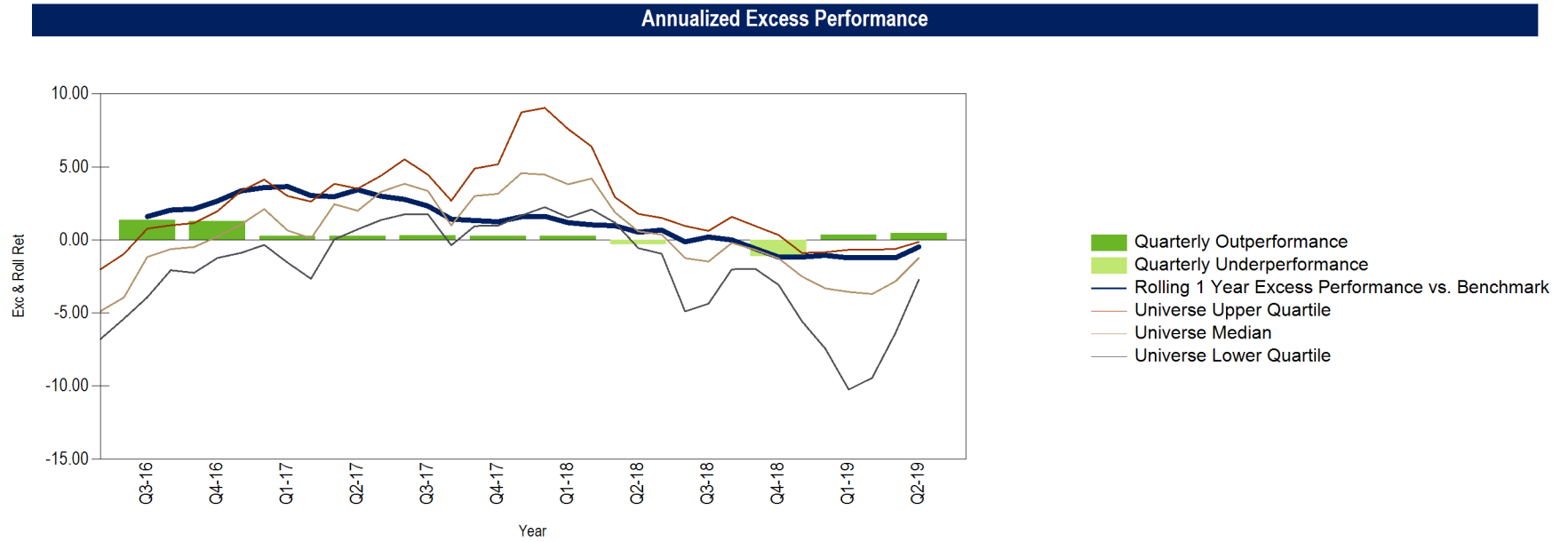
U.S. Effective Style Map  
3 Years Ending June 30, 2019



- First Rolling Period
- ◆ Last Rolling Period

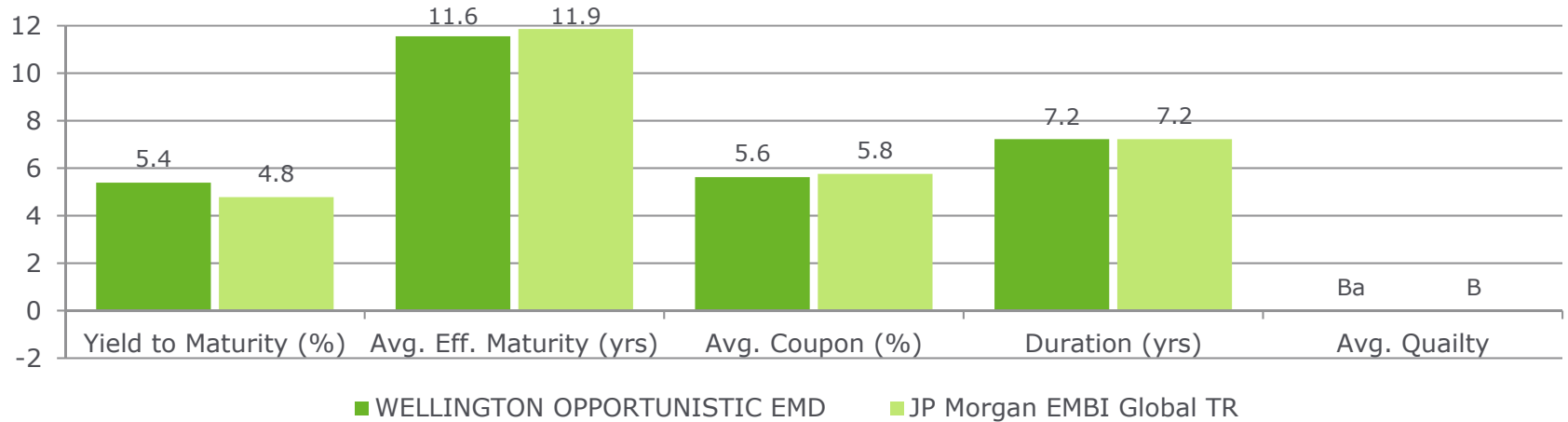


# WELLINGTON OPPORTUNISTIC EMD

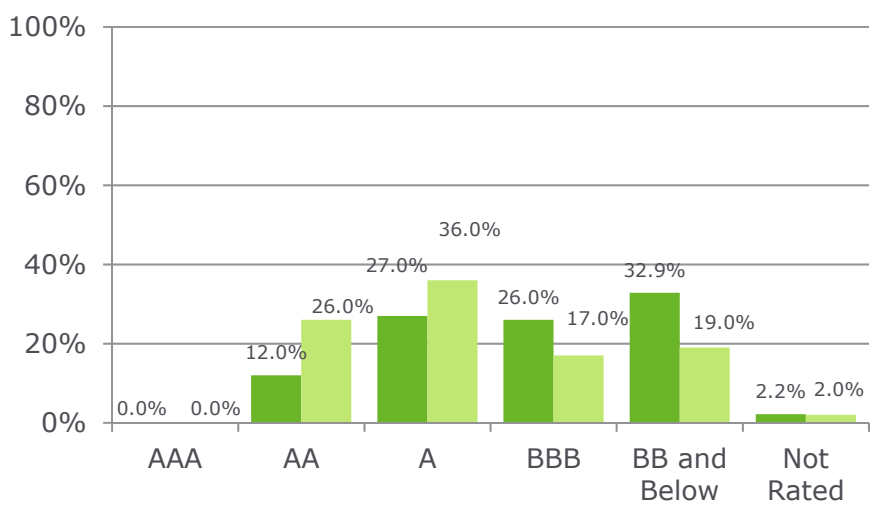


# WELLINGTON OPPORTUNISTIC EMD

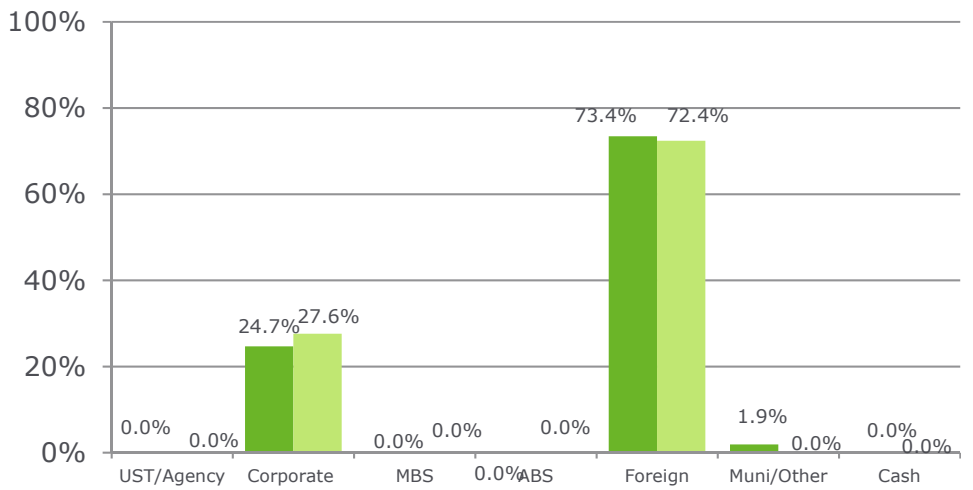
## Characteristics



## Quality Rating

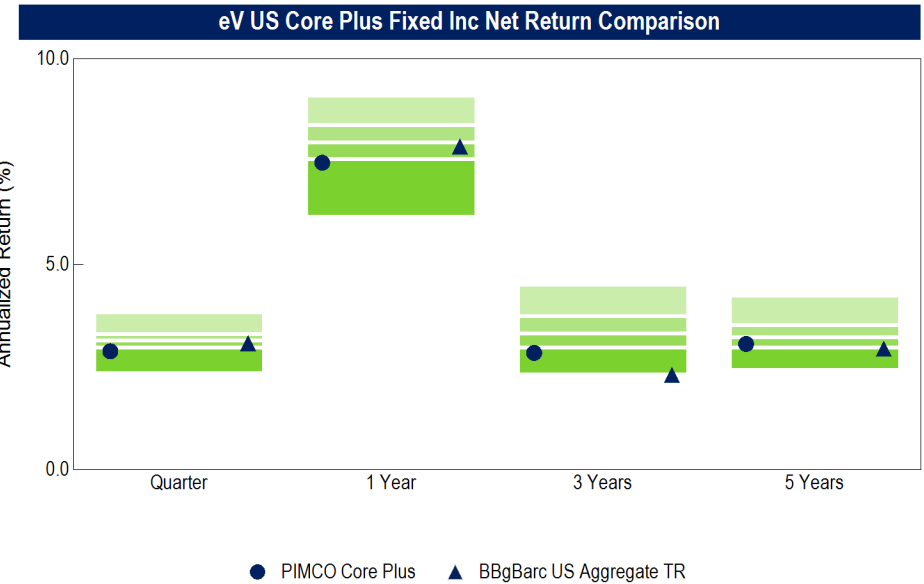


## Sectors

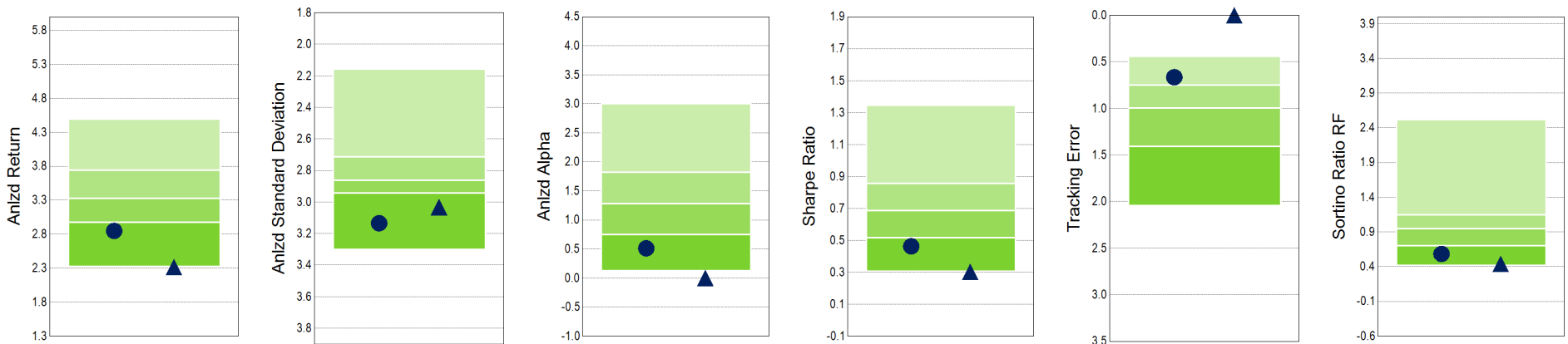


# PIMCO CORE PLUS

PIMCO's investment process expects to generate above-benchmark returns by building diversified, risk-averse portfolios based upon their long-term secular outlook. This is achieved by analyzing fundamental global trends in such areas as political factors, inflation, volatility, growth, and currency, amongst others. The three to five-year secular outlook is the core element of their decision-making process, and serves as a framework for portfolio implementation. In applying the secular outlook to the portfolio, such tools as duration position, yield curve posture and sector allocation are expressed to best represent the firm's view on the macro-economic environment. Bottom-up analysis of specific securities is also an important part of the firm's philosophy. Bonds are evaluated on a rich/cheap basis and fundamental research determines strong portfolio candidates.

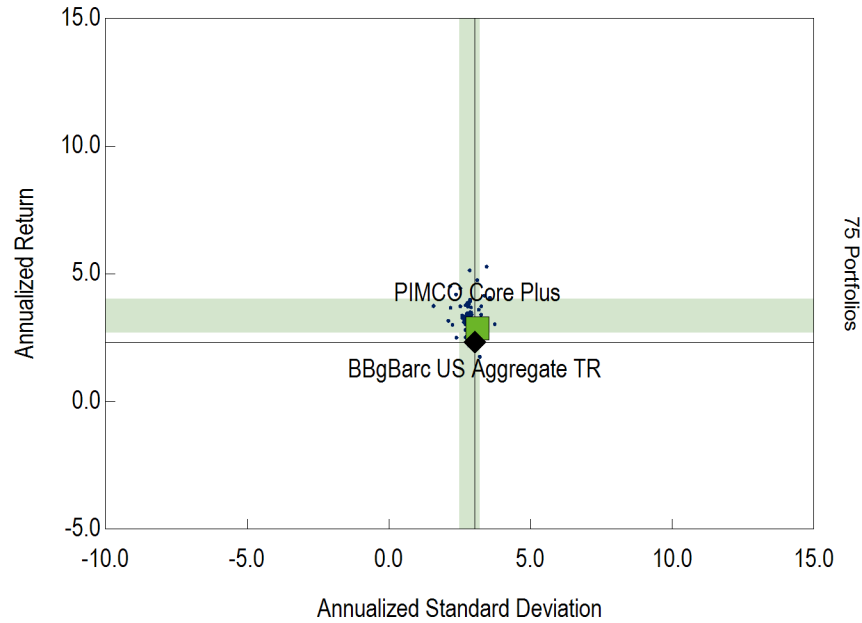


## 3 Year Risk Statistics



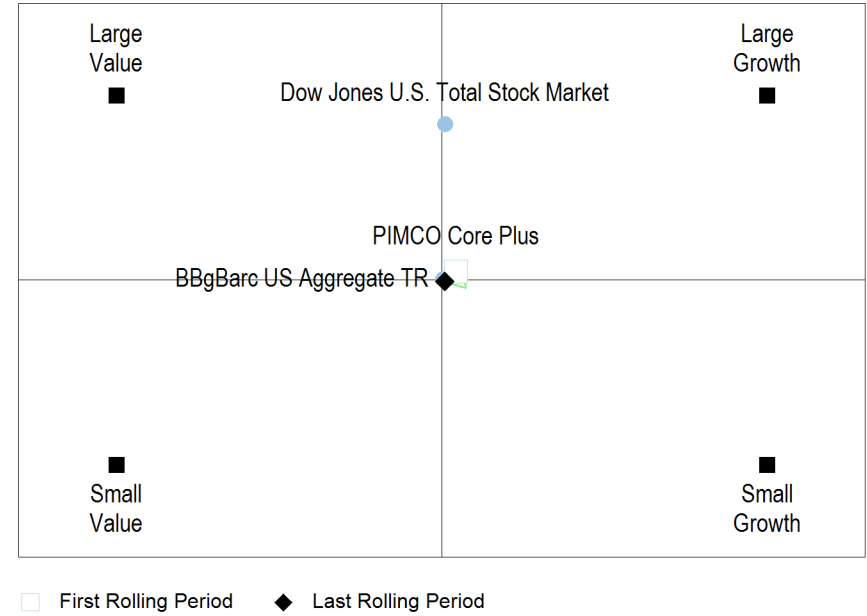
# PIMCO CORE PLUS

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

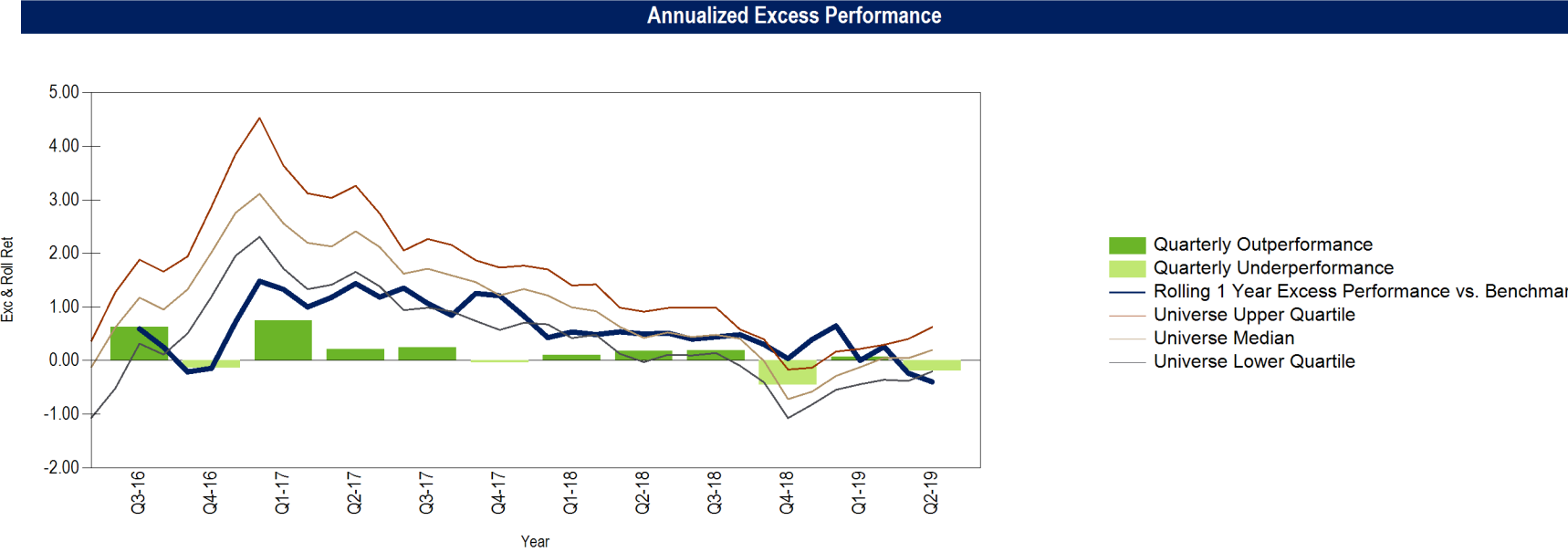


- PIMCO Core Plus
- ◆ BbgBarc US Aggregate TR
- 68% Confidence Interval
- eV US Core Plus Fixed Inc Net

U.S. Effective Style Map  
3 Years Ending June 30, 2019

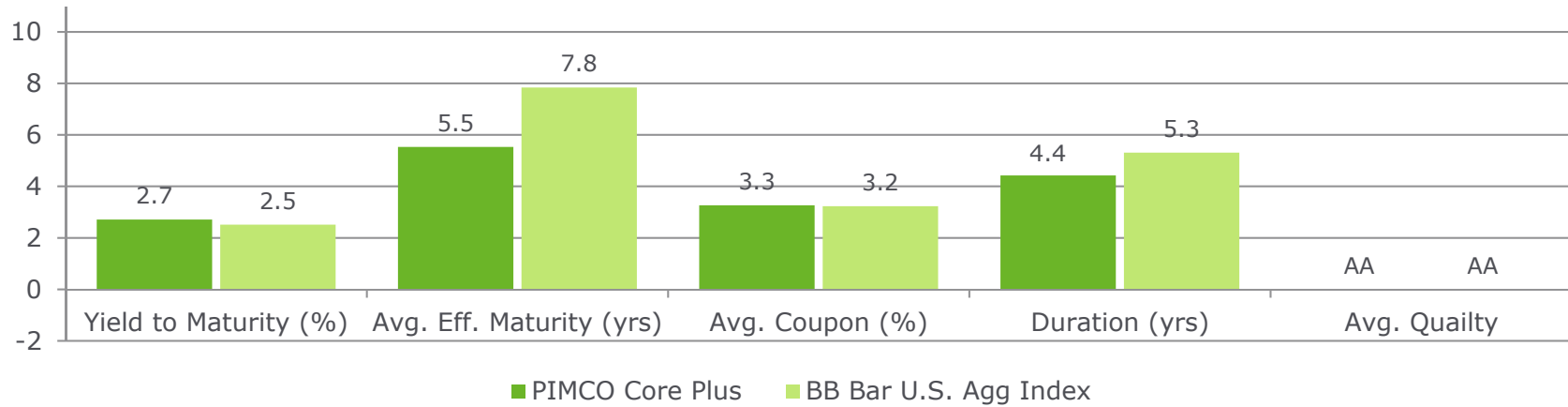


# PIMCO CORE PLUS

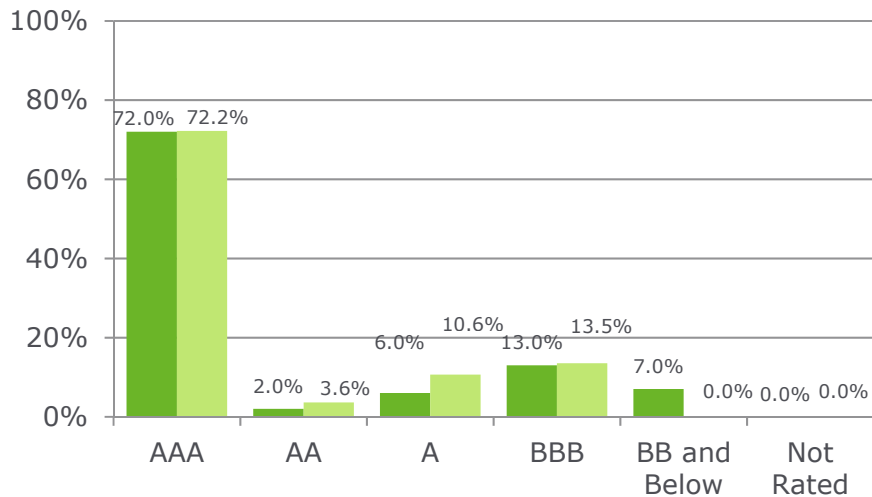


# PIMCO CORE PLUS

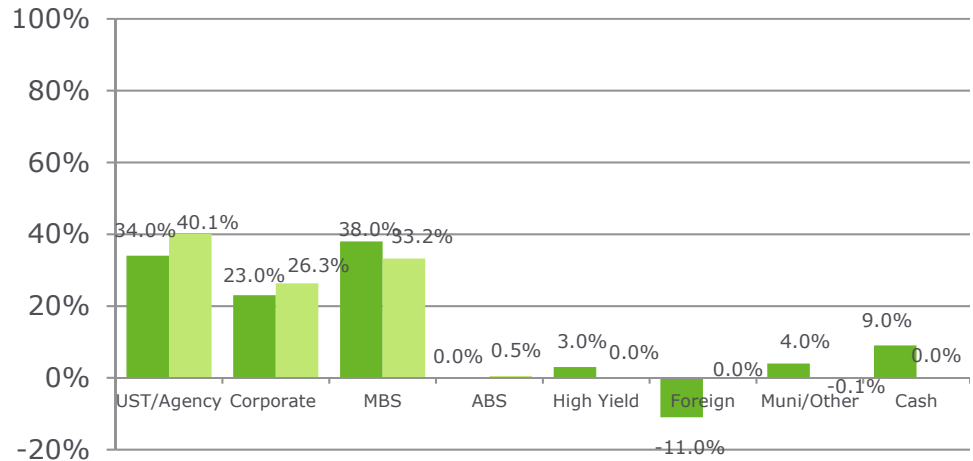
## Characteristics



## Quality Rating



## Sectors





# APPENDIX

NEPC, LLC

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# GLOSSARY OF TERMS

- **Commitment Amount** – The amount an investor has committed to invest with the General Partner
- **Paid In Capital** – The amount an investor has contributed for investments and management fees
- **Capital to be Funded** – The remaining amount an investor contractually has left to fund its commitments
- **Additional Fees** – Fees that are outside the capital commitment, also includes interest paid/received due from subsequent closings of the fund
- **Cumulative Distributions** – The amount an investor has received from realized and partially realized investments
- **Valuation** – Sum of the fair market value of all investments plus cash
- **Call Ratio** – Calculated by dividing Amount Funded by Capital Committed
- **DPI Ratio** - Calculated by dividing Amount Distributed by Amount Funded
- **Market Exposure** – Calculated by adding Reported Value plus Unfunded Commitments
- **Total Value** – Calculated by adding Amount Distributed and Reported Value. Represents the total amount an investor should expect to receive from their investments
- **Net Benefit** – Calculated by subtracting Total Value by Capital to be Funded plus Additional Fees
- **Total Value to Paid In Capital Ratio** – Calculated by dividing Total Value by Amount Funded. Represents the multiple of the overall cash invested that an investor is expected to receive
- **IRR** - The calculation of the IRR (Internal Rate of Return) takes into consideration the timing of cash contributions and distributions to and from the partnerships, the length of time the investments have been held and the sum of the Reported Value
- **Index Comparison Method (ICM)** – represents the hypothetical IRR of a private investment program that is computed by assuming the fund flows were invested in and out of a publicly traded index. The resulting hypothetical market value of the program is then used with the program’s actual cash flows to compute a hypothetical IRR. This hypothetical IRR can be compared with the actual IRR to determine whether the private investment program outperformed the publicly traded index
- **Valuation ICM** – The valuation equivalent that ICM calculates for the public market is called valuation ICM
- **KS PME** – The Kaplan Schoar Public Markets Equivalent is a ratio of the future value of all distributions divided by the future value of all contributions using the index return as the discount rate. The ending valuation is treated as a distribution in this method
- **IRR ICM** – The IRR equivalent that ICM calculates for the public market is called IRR ICM



# INFORMATION DISCLOSURE AND REPORTING METHODOLOGY

## Information Disclaimer

- Past performance is no guarantee of future results.
- All investments carry some level of risk. Diversification and other asset allocation techniques are not guaranteed to ensure profit or protect against losses.
- NEPC's source for portfolio pricing, calculation of accruals, and transaction information is the plan's custodian bank.
- Information on market indices and security characteristics is received from other sources external to NEPC. While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within.
- Some index returns displayed in this report or used in calculation of a policy, allocation or custom benchmark may be preliminary and subject to change.
- This report is provided as a management aid for the client's internal use only. Information contained in this report does not constitute a recommendation by NEPC.
- This report may contain confidential or proprietary information and may not be copied or redistributed to any party not legally entitled to receive it.

## Reporting Methodology

- The client's custodian bank is NEPC's preferred data source unless otherwise directed. NEPC generally reconciles custodian data to manager data. If the custodian cannot provide accurate data, manager data may be used.
- Trailing time period returns are determined by geometrically linking the holding period returns, from the first full month after inception to the report date. Rates of return are annualized when the time period is longer than a year. Performance is presented gross and/or net of manager fees as indicated on each page.
- For managers funded in the middle of a month, the "since inception" return will start with the first full month, although actual inception dates and cash flows are taken into account in all Composite calculations.
- This report may contain forward-looking statements that are based on NEPC's estimates, opinions and beliefs, but NEPC cannot guarantee that any plan will achieve its targeted return or meet other goals.

