## Callan

September 30, 2018

Mendocino County Employees'
Retirement Association

Investment Measurement Service Quarterly Review

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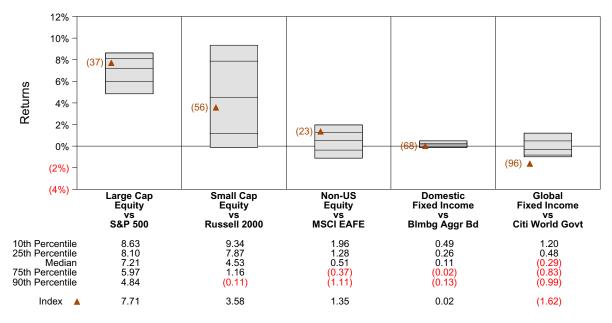
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## Market Overview Active Management vs Index Returns

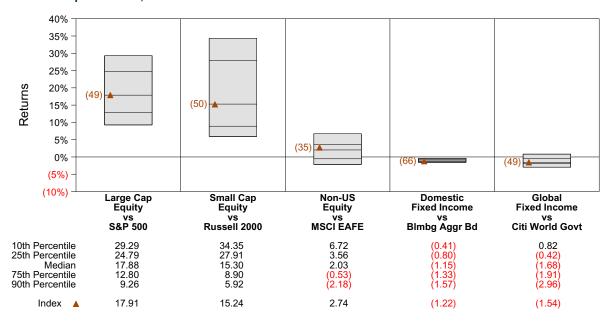
#### **Market Overview**

The charts below illustrate the range of returns across managers in Callan's Mutual Fund database over the most recent one quarter and one year time periods. The database is broken down by asset class to illustrate the difference in returns across those asset classes. An appropriate index is also shown for each asset class for comparison purposes. As an example, the first bar in the upper chart illustrates the range of returns for domestic equity managers over the last quarter. The triangle represents the S&P 500 return. The number next to the triangle represents the ranking of the S&P 500 in the Large Cap Equity manager database.

#### Range of Mutual Fund Returns by Asset Class One Quarter Ended September 30, 2018



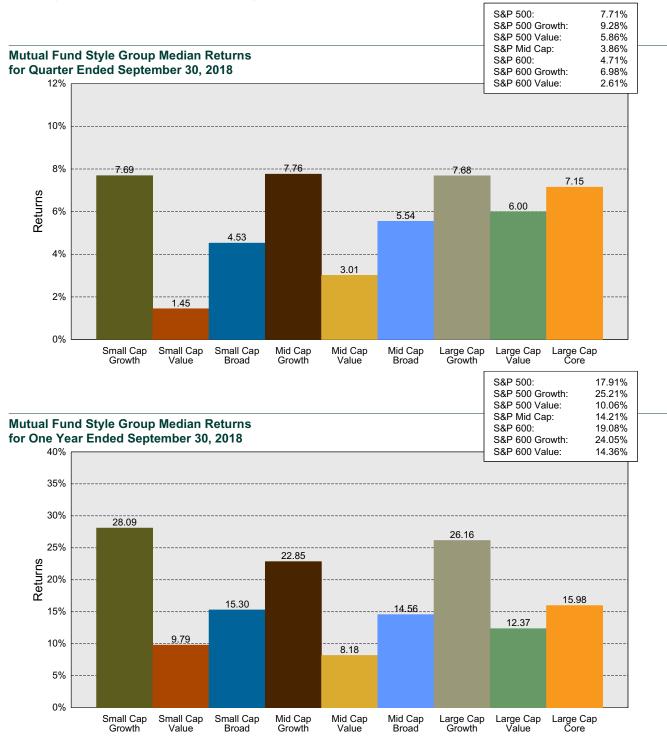
### Range of Mutual Fund Returns by Asset Class One Year Ended September 30, 2018





# Domestic Equity Active Management Overview

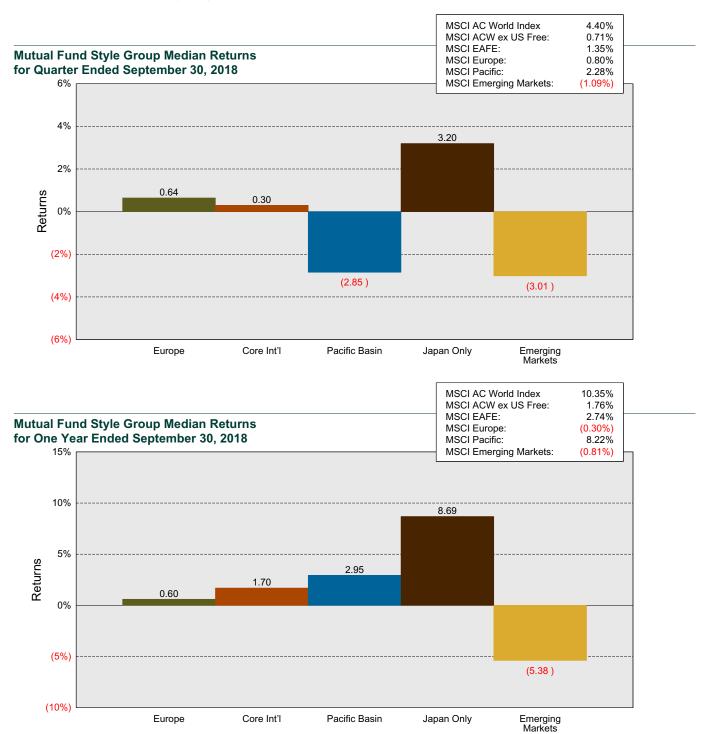
The U.S. equity market posted broad gains in the third quarter, fueled by strong economic growth, soaring corporate profits, and record levels of stock buybacks. Several major indices hit record levels during the quarter, and the S&P's 7.7% gain was its biggest since the fourth quarter of 2013. Volatility was muted in spite of persistent headlines around tariff threats. Large growth stocks were the top performers (R1000G: +9.2%) while small value (R2000V: +1.6%) occupied the bottom slot. All sectors posted positive returns within the S&P 500, but the differences were stark. Health Care (+14.5), Industrials (+10.0%), Technology (+8.8%) and the new Communication Services (+9.9%) sectors were the top performers, bookmarked by Materials, Energy, and Real Estate all of which returned less than 1% for the quarter. Of note, effective September 28, 2018, "Communications Services" replaced "Telecommunications," which only held three stocks. The new sector adopted names from Technology and Consumer Discretionary, including Facebook, Alphabet, Netflix, Twitter, and The Walt Disney Company and it now includes over 20 holdings.





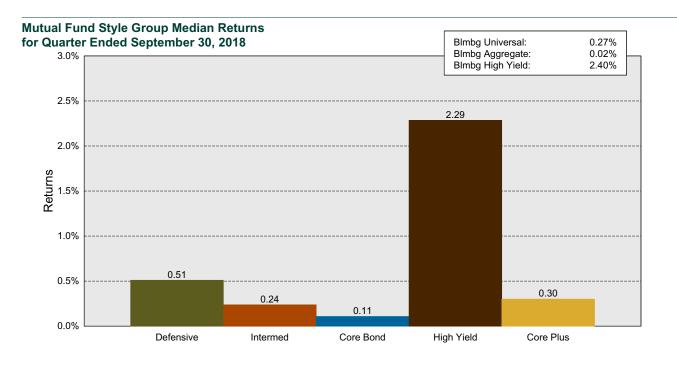
# International Equity Active Management Overview

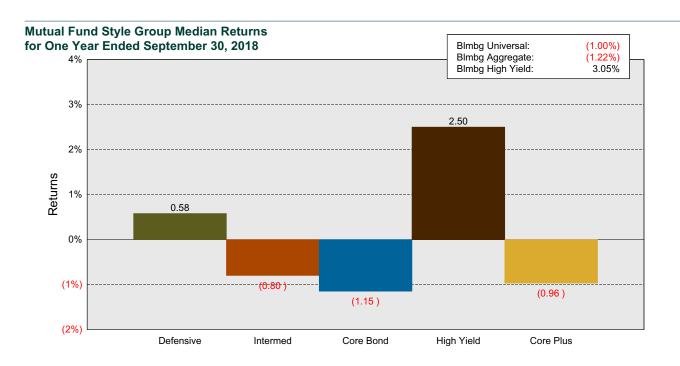
Non-U.S. developed markets underperformed the U.S. in the third quarter. The MSCI ACWI ex-U.S. Index posted a meager +0.7% result. Japan was a top performer (+3.7%) as Prime Minister Abe won his inter-party leadership battle and retained his role as President of the Liberal Democratic Party. The U.K. dropped 1.7% as uncertainty around Brexit continued to weigh on investors' minds. Italy (-4.5%) sank on political turmoil and financial woes while Europe ex-UK was up 1.8%. As in the U.S., Health Care (+4.3%) was a top performing sector while Real Estate (-2.8%) was among the worst. Emerging market equities declined (MSCI: EM -1.1%), but returns were highly divergent. Turkey (-21%) and Greece (-18%) fell the most due to macro-economic concerns. As a region, Latin America gained 5% with Mexico (+7%) and Brazil (+6%) up the most. Elsewhere, Russia (+6%) rebounded, largely due to the surge in its Energy sector (+16%). Conversely, China (-8%) dropped given a large sell-off in Chinese technology companies (-14%). India (-2%) posted a modest loss due to a significant decline in its Financial sector (-12%).



## Domestic Fixed Income Active Management Overview

Yields rose during the quarter; the 2-year U.S. Treasury Note climbed nearly 30 bps to close at a multi-year high of 2.81% while the 10- and 30-year Treasury yields rose roughly 20 bps The yield curve continued to flatten with the spread between the 2-year Treasury yield and the 10-year Treasury yield falling to 24 bps as of quarter-end. As expected, the Fed hiked short rates by 25 bps in September and one more hike in December 2018 appears likely. Markets expect two more hikes in 2019 while the median Fed projection is for three. The 10-year breakeven inflation rate rose modestly to 2.14% (9/30) from 2.11% (6/30). The Bloomberg Barclays TIPS Index fell 0.8% as rates rose. The Bloomberg Barclays Aggregate Index was flat (+0.0%) for the quarter with the U.S. Treasury sector (-0.6%) underperforming the Corporate bond sector (+1.0%). High yield (Bloomberg Barclays High Yield Index: +2.4%) outperformed and leveraged loans rose 1.8% (S&P: LSTA Leveraged Loan).







#### **ASSET ALLOCATION AND PERFORMANCE**

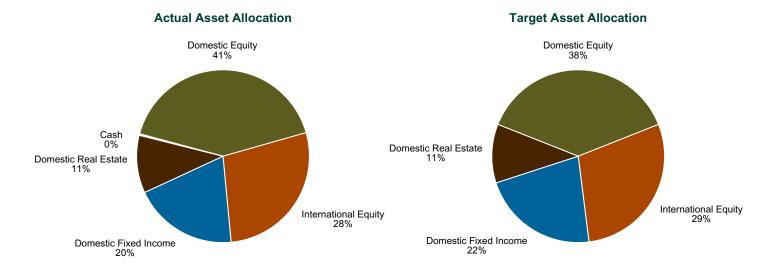
#### **Asset Allocation and Performance**

This section begins with an overview of the fund's asset allocation at the broad asset class level. This is followed by a top down performance attribution analysis which analyzes the fund's performance relative to the performance of the fund's policy target asset allocation. The fund's historical performance is then examined relative to funds with similar objectives. Performance of each asset class is then shown relative to the asset class performance of other funds. Finally, a summary is presented of the holdings of the fund's investment managers, and the returns of those managers over various recent periods.



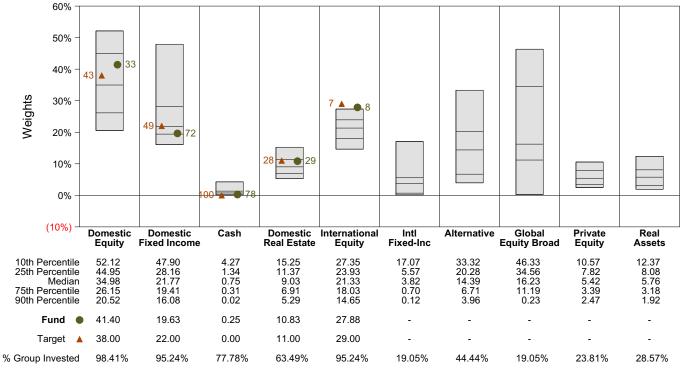
## Actual vs Target Asset Allocation As of September 30, 2018

The top left chart shows the Fund's asset allocation as of September 30, 2018. The top right chart shows the Fund's target asset allocation as outlined in the investment policy statement. The bottom chart ranks the fund's asset allocation and the target allocation versus the Callan Public Fund Sponsor Database.



	\$000s	Weight		Percent	\$000s
Asset Class	Actual	Actual	Target	Difference	Difference
Domestic Equity	219,629	41.4%	38.0%	3.4%	18,055
International Equity	147,891	27.9%	29.0%	(1.1%)	(5,942)
Domestic Fixed Income	104,148	19.6%	22.0%	(2.4%)	(12,552) (878)
Domestic Real Estate	57,473	10.8%	11.0%	(0.2%)	` (878)
Cash	1,316	0.2%	0.0%	0.2%	1,316′
Total	530 458	100.0%	100.0%		

#### Asset Class Weights vs Callan Public Fund Sponsor Database



<sup>\*</sup> Current Quarter Target = 38.0% Russell 3000 Index, 29.0% MSCI ACWIxUS Gross, 22.0% Blmbg Aggregate and 11.0% NCREIF NFI-ODCE Eq Wt Net.



## **Investment Manager Asset Allocation**

The table below contrasts the distribution of assets across the Fund's investment managers as of September 30, 2018, with the distribution as of June 30, 2018. The change in asset distribution is broken down into the dollar change due to Net New Investment and the dollar change due to Investment Return.

#### **Asset Distribution Across Investment Managers**

	September 3	0, 2018			June 30, 2018			
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight		
Domestic Equities	\$219,629,210	41.40%	\$(1,000,000)	\$12,954,999	\$207,674,212	39.91%		
Large Cap Equities	\$152,746,364	28.80%	\$0	\$9,849,022	\$142,897,342	27.46%		
Vanguard S&P 500 Index	39,517,064	7.45%	0	2,825,809	36,691,255	7.05%		
SSGA S&P Equal Weighted NL CTF	37,269,149	7.03%	0	1,915,462	35,353,687	6.79%		
Boston Partners	37,764,171	7.12%	0	2,701,339	35,062,832	6.74%		
Harbor Cap Appreciation	38,195,980	7.20%	0	2,406,412	35,789,568	6.88%		
Mid Cap Equities	\$33,410,099	6.30%	\$0	\$1,523,013	\$31,887,086	6.13%		
Fidelity Low Priced Stock	15,834,152	2.98%	0	358,856	15,475,295	2.97%		
Janus Enterprise	17,575,947	3.31%	0	1,164,157	16,411,791	3.15%		
Small Cap Equities	\$33,472,747	6.31%	\$(1,000,000)	\$1,582,964	\$32,889,783	6.32%		
Prudential Small Cap Value	14,177,912	2.67%	Ó	(75,855)	14,253,767	2.74%		
AB US Small Growth	19,294,834	3.64%	(1,000,000)	1,658,819	18,636,016	3.58%		
International Equities	\$147,890,970	27.88%	\$0	\$(2,559,232)	\$150,450,203	28.91%		
EuroPacific	26,275,982	4.95%	0	(222,844)	26,498,826	5.09%		
Harbor International	29,457,479	5.55%	0	(1,163,037)	30,620,516	5.88%		
Oakmark International	28,697,691	5.41%	0	(420,552)	29,118,244	5.60%		
Mondrian International	26,247,373	4.95%	0	387,531	25,859,842	4.97%		
T. Rowe Price Intl Small Cap	22,416,742	4.23%	0	(1,028,846)	23,445,588	4.51%		
Investec	14,795,702	2.79%	0	(111,484)	14,907,187	2.86%		
Domestic Fixed Income	\$104,148,494	19.63%	\$0	\$374,602	\$103,773,892	19.94%		
Dodge & Cox Income	52,428,596	9.88%	0	332,037	52,096,559	10.01%		
PIMCO	51,719,898	9.75%	0	42,565	51,677,332	9.93%		
Real Estate	\$57,472,781	10.83%	\$(21,432)	\$1,023,813	\$56,470,400	10.85%		
RREEF Private Fund	29,566,479	5.57%	Ó	651,354	28,915,125	5.56%		
Barings Core Property Fund	26,756,302	5.04%	0	351,027	26,405,275	5.07%		
625 Kings Court	1,150,000	0.22%	(21,432)	21,432	1,150,000	0.22%		
Cash	\$1,316,500	0.25%	\$(673,720)	\$0	\$1,990,220	0.38%		
Total Fund	\$530,457,955	100.0%	\$(1,695,152)	\$11,794,182	\$520,358,925	100.0%		



The table below details the rates of return for the Fund's investment managers over various time periods ended September 30, 2018. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

#### Returns for Periods Ended September 30, 2018

	Last	Last	Last 3	Last 5	Last 7
	Quarter	Year	Years	Years	Years
Domestic Equties	6.25%	18.38%	17.01%	12.99%	16.93%
Russell 3000 Index	7.12%	17.58%	17.07%	13.46%	16.86%
Large Cap Equities					
Vanguard S&P 500 Index	7.70%	17.86%	17.27%	13.92%	-
S&P 500 Index	7.71%	17.91%	17.31%	13.95%	16.91%
SSGA S&P Eq Weighted NL CTF	5.42%	-	-	-	-
S&P 500 Eq Weighted	5.42%	13.95%	15.43%	12.49%	16.73%
Boston Partners	7.70%	12.96%	14.43%	10.82%	15.94%
S&P 500 Index	7.71%	17.91%	17.31%	13.95%	16.91%
Russell 1000 Value Index	5.70%	9.45%	13.55%	10.72%	15.02%
Harbor Cap Appreciation (1)	6.72%	27.03%	20.09%	16.96%	18.78%
S&P 500 Index	7.71%	17.91%	17.31%	13.95%	16.91%
Russell 1000 Growth Index	9.17%	26.30%	20.55%	16.58%	18.69%
Mid Cap Equities					
Fidelity Low Priced Stock	2.32%	10.07%	11.25%	9.36%	14.15%
Russell MidCap Value Idx	3.30%	8.81%	13.09%	10.72%	15.54%
Janus Enterprise (2)	7.09%	21.18%	19.58%	15.37%	18.15%
Russell MidCap Growth Idx	7.57%	21.10%	16.65%	13.00%	16.86%
Small Cap Equities					
Prudential Small Cap Value (3)	(0.53%)	5.24%	14.51%	9.20%	14.22%
US Small Cap Value Idx	2.12%	9.39%	15.19%	10.48%	15.62%
Russell 2000 Value Index	1.60%	9.33%	16.12%	9.91%	15.26%
AB US Small Growth (4)	9.16%	37.72%	24.87%	14.58%	20.10%
Russell 2000 Growth Index	5.52%	21.06%	17.98%	12.14%	17.52%

<sup>(4)</sup> Switched to a mutual fund in September 2015.



<sup>(1)</sup> Switched share class in June 2016.

<sup>(2)</sup> Switched share class in July 2016.

<sup>(3)</sup> Switched share class in September 2015.

The table below details the rates of return for the Fund's investment managers over various time periods ended September 30, 2018. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

Returns for Periods Ended September 30, 2018

	Last	Last	Last 3	Last 5	Last 7
	Quarter	Year	Years	Years	Years
International Equities	(1.80%)	(1.32%)	8.92%	3.59%	7.46%
MSCI ACWI ex-US Index	0.80%	2.25%	10.49%	4.60%	7.74%
EuroPacific	(0.84%)	1.47%	9.93%	6.20%	9.54%
Harbor International (1)	(3.80%)	(2.95%)	6.40%	1.92%	6.86%
Oakmark International (2)	(1.44%)	(6.30%)	10.72%	4.18%	10.64%
Mondrian International	1.29%	(0.34%)	7.76%	3.53%	6.21%
MSCI EAFE Index	1.35%	2.74%	9.23%	4.42%	8.30%
MSCI ACWI ex-US Index	0.80%	2.25%	10.49%	4.60%	7.74%
T. Rowe Price Intl Small Cap	(4.64%)	3.32%	-	_	-
MSCI ACWI ex US Small Cap	(1.51%)	1.86%	11.24%	6.14%	9.05%
Investec	(0.95%)	(0.50%)	-	_	-
MSCI Emerging Markets Index	(1.09%)	(0.81%)	12.36%	3.61%	5.03%
Domestic Fixed Income	0.36%	(0.82%)	2.64%	2.66%	3.26%
Blmbg Aggregate Index	0.02%	(1.22%)	1.31%	2.16%	2.02%
Dodge & Cox Income	0.64%	(0.12%)	3.14%	3.05%	3.42%
PIMCO	0.08%	(1.52%)	2.15%	2.26%	3.10%
Blmbg Aggregate Index	0.02%	(1.22%)	1.31%	2.16%	2.02%
Real Estate	1.81%	7.50%	7.99%	9.49%	10.78%
Real Estate Custom Benchmark (3)	1.89%	7.90%	8.53%	10.01%	11.25%
RREEF Private	2.25%	8.59%	8.17%	10.07%	10.80%
Barings Core Property Fund	1.33%	6.41%	7.76%	8.73%	10.60%
NFI-ODCE Equal Weight Net	1.89%	7.90%	8.17%	9.93%	- 10.26%
625 Kings Court	1.86%	7.16%	14.51%	13.42%	14.02%
Total Fund	2.24%	7.16%	10.53%	7.70%	10.38%
Total Fund Benchmark*	3.15%	7.77%	10.60%	8.05%	10.13%

<sup>(3)</sup> Real Estate Custom Benchmark is 50% NAREIT Composite Index and 50% NFI-ODCE Equal Wt Net through 12/31/2011; 20% NAREIT Composite Index and 80% NFI-ODCE Equal Wt Net through 12/31/2016 and NFI-ODCE Equal Wt Net thereafter.



<sup>\*</sup> Current Quarter Target = 38.0% Russell 3000 Index, 29.0% MSCI ACWIxUS Gross, 22.0% Blmbg Aggregate and 11.0% NCREIF NFI-ODCE Eq Wt Net.

<sup>(1)</sup> Switched share class in June 2016.

<sup>(2)</sup> Switched to CIT in November 2015.

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	12/2017- 9/2018	2017	2016	2015	2014
Domestic Equties	11.05%	23.74%	10.90%	(0.15%)	9.59%
Russell 3000 Index	10.57%	21.13%	12.74%	0.48%	12.56%
Large Cap Equities					
Vanguard S&P 500 Index	10.53%	21.79%	11.93%	1.37%	13.65%
S&P 500 Index	10.56%	21.83%	11.96%	1.38%	13.69%
SSGA S&P Eq Weighted NL CTF	7.31%	-	-	-	-
S&P 500 Eq Weighted	7.28%	18.90%	14.80%	(2.20%)	14.49%
Boston Partners	5.67%	19.23%	13.76%	(4.99%)	10.87%
S&P 500 Index	10.56%	21.83%	11.96%	1.38%	13.69%
Russell 1000 Value Index	3.92%	13.66%	17.34%	(3.83%)	13.45%
Harbor Cap Appreciation (1)	18.46%	36.68%	(1.04%)	10.99%	9.93%
S&P 500 Index	10.56%	21.83%	11.96%	1.38%	13.69%
Russell 1000 Growth Index	17.09%	30.21%	7.08%	5.67%	13.05%
Mid Cap Equities					
Fidelity Low Priced Stock	3.22%	20.67%	8.79%	(0.56%)	7.65%
Russell MidCap Value Idx	3.13%	13.34%	20.00%	(4.78%)	14.75%
Janus Enterprise (2)	14.83%	26.65%	12.13%	3.49%	12.01%
Russell MidCap Growth Idx	13.38%	25.27%	7.33%	(0.20%)	11.90%
Small Cap Equities					
Prudential Small Cap Value (3)	1.63%	6.43%	33.99%	(7.00%)	5.89%
US Small Cap Value Idx	6.21%	9.22%	27.64%	(5.14%)	7.44%
Russell 2000 Value Index	7.14%	7.84%	31.74%	(7.47%)	4.22%
AB US Small Growth (4)	27.99%	35.03%	6.91%	(0.66%)	(1.24%)
Russell 2000 Growth Index	15.76%	22.17%	11.32%	(1.38%)	5.60%

<sup>(4)</sup> Switched to a mutual fund in September 2015.



<sup>(1)</sup> Switched share class in June 2016.

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The table below details the rates of return for the Fund's investment managers over various time periods. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

	12/2017- 9/2018	2017	2016	2015	2014
International Equities	(4.95%)	27.94%	2.84%	(4.62%)	(5.73%)
MSCI ACWI ex-US Index	(2.67%)	27.77%	5.01%	(5.25%)	(3.44%)
EuroPacific	(2.65%)	31.18%	1.01%	(0.48%)	(2.29%)
Harbor International (1)	(5.04%)	22.98%	0.27%	(3.82%)	(6.81%)
Oakmark International (2)	(8.43%)	30.47%	8.19%	(3.99%)	(5.41%)
Mondrian International	(4.02%)	22.29%	4.50%	(6.33%)	(2.06%)
MSCI EAFE Index	(1.43%)	25.03%	1.00%	(0.81%)	(4.90%)
MSCI ACWI ex-US Index	(2.67%)	27.77%	5.01%	(5.25%)	(3.44%)
T. Rowe Price Intl Small Cap	(2.72%)	-	-	-	-
MSCI ACWI ex US Small Cap	(4.41%)	31.65%	3.91%	2.60%	(4.03%)
Investec	(6.41%)	-	-	-	-
MSCI Emerging Markets Index	(7.68%)	37.28%	11.19%	(14.92%)	(2.19%)
Domestic Fixed Income	(1.11%)	4.74%	4.10%	0.07%	5.09%
Blmbg Aggregate Index	(1.60%)	3.54%	2.65%	0.55%	5.97%
Dodge & Cox Income	(0.60%)	4.36%	5.61%	(0.59%)	5.49%
PIMCO	(1.62%)	5.12%	2.59%	0.73%	4.69%
Blmbg Aggregate Index	(1.60%)	3.54%	2.65%	0.55%	5.97%
Real Estate	5.68%	6.88%	7.02%	12.14%	14.50%
Real Estate Custom Benchmark (3)	5.85%	6.92%	8.62%	11.81%	14.57%
RREEF Private	6.44%	6.43%	7.95%	15.63%	11.95%
Barings Core Property Fund	4.89%	6.59%	8.62%	12.99%	8.64%
NFI-ODCE Equal Weight Net	5.85%	6.92%	8.36%	14.18%	11.42%
625 Kings Court	5.41%	26.09%	10.01%	9.85%	12.15%
Total Fund	3.16%	18.89%	6.67%	0.01%	4.72%
Total Fund Benchmark*	3.16% 3.45%	17.34%	<b>6.67%</b> 7.78%	0.01% 0.21%	<b>4.72%</b> 6.80%
TOTAL FULL DELICITIALK	3.45%	17.34%	1.1070	U.Z I 70	0.00%

<sup>(3)</sup> Real Estate Custom Benchmark is 50% NAREIT Composite Index and 50% NFI-ODCE Equal Wt Net through 12/31/2011; 20% NAREIT Composite Index and 80% NFI-ODCE Equal Wt Net through 12/31/2016 and NFI-ODCE Equal Wt Net thereafter.



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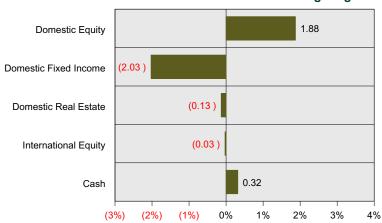
<sup>(1)</sup> Switched share class in June 2016.

<sup>(2)</sup> Switched to CIT in November 2015.

## Quarterly Total Fund Relative Attribution - September 30, 2018

The following analysis approaches Total Fund Attribution from the perspective of relative return. Relative return attribution separates and quantifies the sources of total fund excess return relative to its target. This excess return is separated into two relative attribution effects: Asset Allocation Effect and Manager Selection Effect. The Asset Allocation Effect represents the excess return due to the actual total fund asset allocation differing from the target asset allocation. Manager Selection Effect represents the total fund impact of the individual managers excess returns relative to their benchmarks.

#### **Asset Class Under or Overweighting**

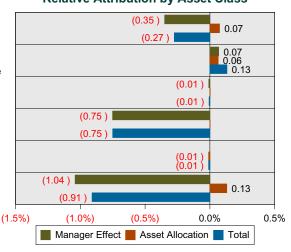


## **Actual vs Target Returns**

Actual Target

#### 7.12 Domestic Equity 0.36 0.02 Domestic Fixed Income 1.81 1.89 Domestic Real Estate (1.80)0.80 International Equity Cash 2.24 3.15 Total 2% (4%)(2%)0% 4% 6% 8% 10%

### **Relative Attribution by Asset Class**



#### Relative Attribution Effects for Quarter ended September 30, 2018

Asset Class  Domestic Equity  Domestic Fixed Income  Domestic Real Estate  International Equity  Cash	Effective Actual Weight 40% 20% 11% 29% 0%	Effective Target Weight 38% 22% 11% 29% 0%	Actual Return 6.25% 0.36% 1.81% (1.80%) 0.00%	Target Return 7.12% 0.02% 1.89% 0.80% 0.00%	Manager Effect (0.35%) 0.07% (0.01%) (0.75%) 0.00%	Asset Allocation 0.07% 0.06% 0.00% (0.01%)	Total Relative Return (0.27%) 0.13% (0.01%) (0.75%) (0.01%)
Total	0 70	0 70	2.24% =		+ (1.04%) +	0.13%	(0.91%)

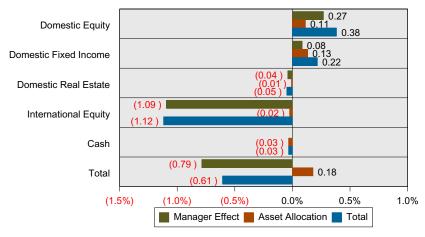
<sup>\*</sup> Current Quarter Target = 38.0% Russell 3000 Index, 29.0% MSCI ACWIXUS Gross, 22.0% Blmbg Aggregate and 11.0% NCREIF NFI-ODCE Eq Wt Net.



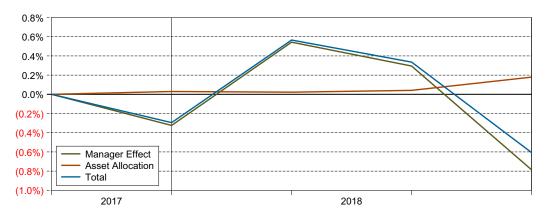
## **Cumulative Total Fund Relative Attribution - September 30, 2018**

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

#### **One Year Relative Attribution Effects**



#### **Cumulative Relative Attribution Effects**



#### One Year Relative Attribution Effects

Asset Class  Domestic Equity  Domestic Fixed Income  Domestic Real Estate  International Equity  Cash	Effective Actual Weight 39% = 20% 10% 30% 0%	Effective Target Weight 38% 22% 11% 29% 0%	Actual Return 18.38% (0.82%) 7.50% (1.32%) 0.00%	Target Return 17.58% (1.22%) 7.90% 2.25% 0.00%		Manager Effect 0.27% 0.08% (0.04%) (1.09%) 0.00%	Asset Allocation 0.11% 0.13% (0.01%) (0.02%) (0.03%)	Total Relative Return 0.38% 0.22% (0.05%) (1.12%) (0.03%)
Total			7.16% =	7.77%	+	(0.79%) +	0.18%	(0.61%)

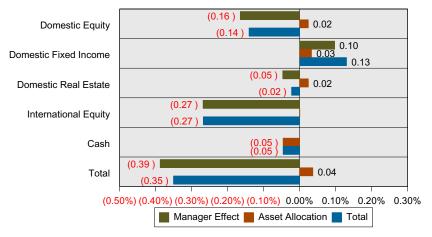
<sup>\*</sup> Current Quarter Target = 38.0% Russell 3000 Index, 29.0% MSCI ACWIXUS Gross, 22.0% Blmbg Aggregate and 11.0% NCREIF NFI-ODCE Eq Wt Net.



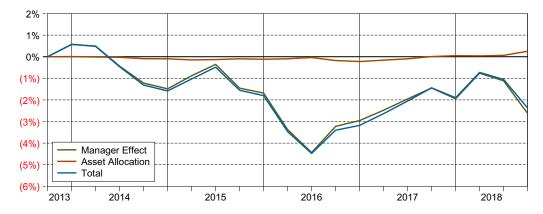
## **Cumulative Total Fund Relative Attribution - September 30, 2018**

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

#### **Five Year Annualized Relative Attribution Effects**



#### **Cumulative Relative Attribution Effects**



## **Five Year Annualized Relative Attribution Effects**

Asset Class Domestic Equity Domestic Fixed Income Domestic Real Estate International Equity Cash	Effective Actual Weight 39% 25% 10% 26% 1%	Effective Target Weight 38% 26% 10% 27% 0%	Actual Return 12.99% 2.66% 9.49% 3.59% 0.00%	Target Return 13.46% 2.16% 10.01% 4.60% 0.00%	Et (0 0 (0 (0	nager ffect 0.16%) 0.10% 0.05%) 0.27%)	Asset Allocation 0.02% 0.03% 0.02% 0.00% (0.05%)	Total Relative Return (0.14%) 0.13% (0.02%) (0.27%) (0.05%)
Total			7.70% =	8.05%	+ (0.	39%) +	0.04%	(0.35%)

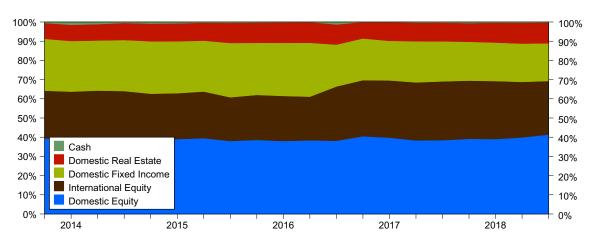
<sup>\*</sup> Current Quarter Target = 38.0% Russell 3000 Index, 29.0% MSCI ACWIXUS Gross, 22.0% Blmbg Aggregate and 11.0% NCREIF NFI-ODCE Eq Wt Net.



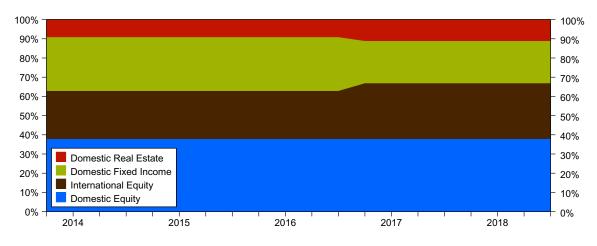
### **Actual vs Target Historical Asset Allocation**

The Historical asset allocation for a fund is by far the largest factor explaining its performance. The charts below show the fund's historical actual asset allocation, the fund's historical target asset allocation, and the historical asset allocation of the average fund in the Callan Public Fund Sponsor Database.

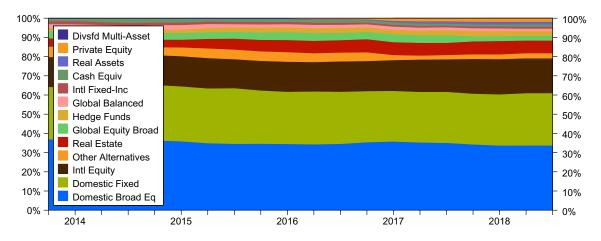
#### **Actual Historical Asset Allocation**



#### **Target Historical Asset Allocation**



#### Average Callan Public Fund Sponsor Database Historical Asset Allocation



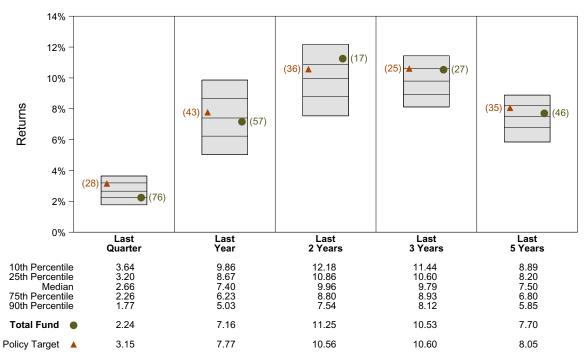
<sup>\*</sup> Current Quarter Target = 38.0% Russell 3000 Index, 29.0% MSCI ACWIXUS Gross, 22.0% Blmbg Aggregate and 11.0% NCREIF NFI-ODCE Eq Wt Net.



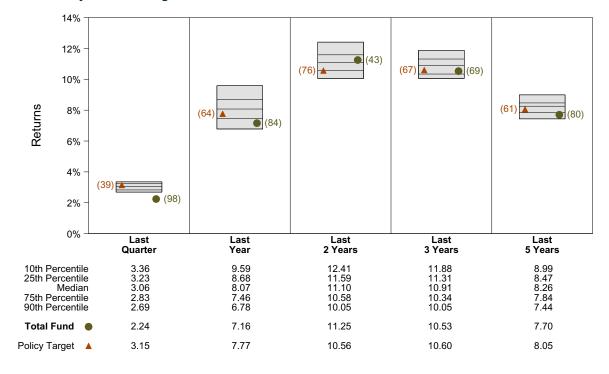
## **Total Fund Ranking**

The first two charts show the ranking of the Total Fund's performance relative to that of the Callan Public Fund Sponsor Database for periods ended September 30, 2018. The first chart is a standard unadjusted ranking. In the second chart each fund in the database is adjusted to have the same historical asset allocation as that of the Total Fund.

#### **Callan Public Fund Sponsor Database**



#### **Asset Allocation Adjusted Ranking**



<sup>\*</sup> Current Quarter Target = 38.0% Russell 3000 Index, 29.0% MSCI ACWIXUS Gross, 22.0% Blmbg Aggregate and 11.0% NCREIF NFI-ODCE Eq Wt Net.



## Total Fund Period Ended September 30, 2018

#### **Investment Philosophy**

The Public Fund Sponsor Database consists of public employee pension total funds including both Callan LLC client and surveyed non-client funds.

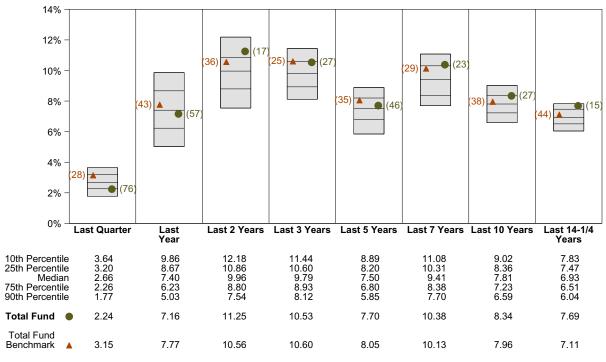
#### **Quarterly Summary and Highlights**

- Total Fund's portfolio posted a 2.24% return for the quarter placing it in the 76 percentile of the Callan Public Fund Sponsor Database group for the quarter and in the 57 percentile for the last year.
- Total Fund's portfolio underperformed the Total Fund Benchmark by 0.91% for the quarter and underperformed the Total Fund Benchmark for the year by 0.61%.

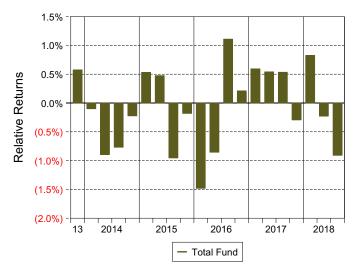
#### **Quarterly Asset Growth**

Beginning Market Value	\$520,358,925
Net New Investment	\$-1,695,152
Investment Gains/(Losses)	\$11,794,182
Ending Market Value	\$530,457,955

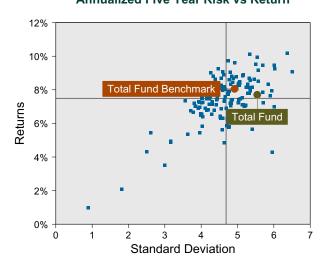
## Performance vs Callan Public Fund Sponsor Database (Gross)



#### Relative Return vs Total Fund Benchmark



## Callan Public Fund Sponsor Database (Gross) Annualized Five Year Risk vs Return



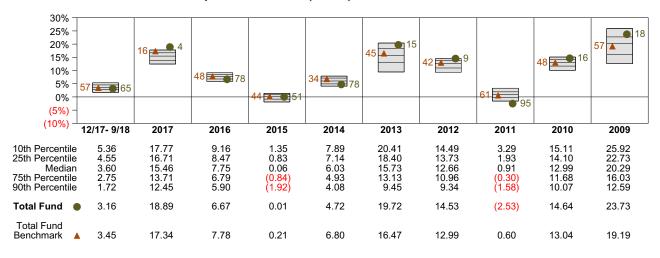


## Total Fund Return Analysis Summary

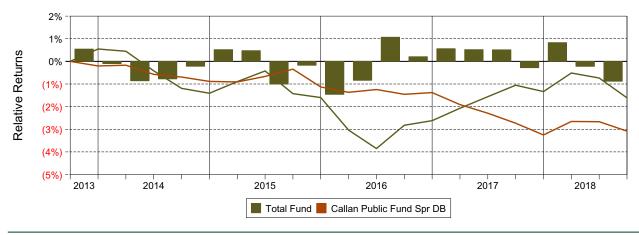
#### **Return Analysis**

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

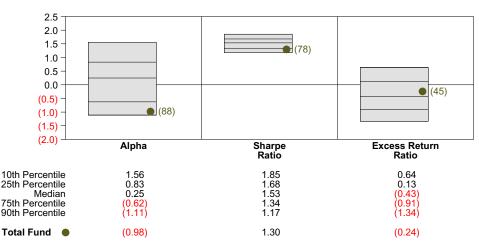
#### Performance vs Callan Public Fund Sponsor Database (Gross)



#### **Cumulative and Quarterly Relative Return vs Total Fund Benchmark**



Risk Adjusted Return Measures vs Total Fund Benchmark Rankings Against Callan Public Fund Sponsor Database (Gross) Five Years Ended September 30, 2018

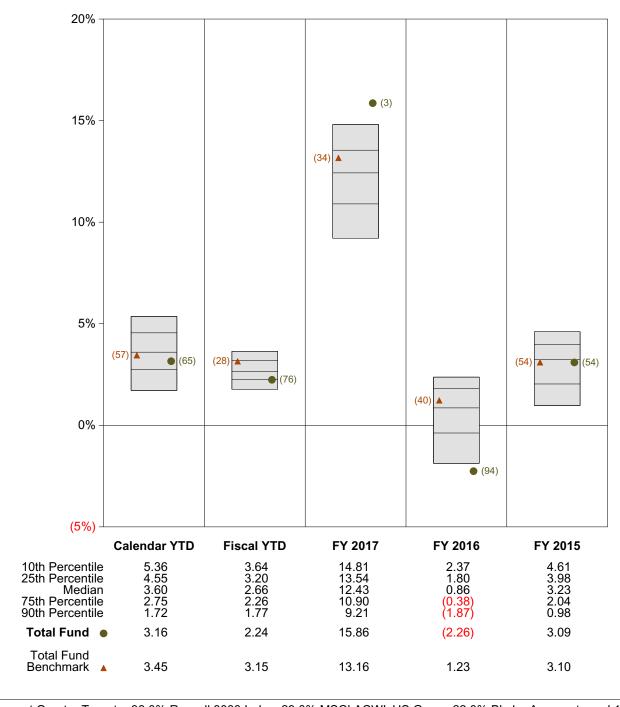




## Mendocino County Employees' Retirement Association Performance vs Callan Public Fund Sponsor Database Periods Ended September 30, 2018

#### **Return Ranking**

The chart below illustrates fund rankings over various periods versus the Callan Public Fund Sponsor Database. The bars represent the range of returns from the 10th percentile to the 90th percentile for each period for all funds in the Callan Public Fund Sponsor Database. The numbers to the right of the bar represent the percentile rankings of the fund being analyzed. The table below the chart details the rates of return plotted in the graph above.



<sup>\*</sup> Current Quarter Target = 38.0% Russell 3000 Index, 29.0% MSCI ACWIxUS Gross, 22.0% Blmbg Aggregate and 11.0% NCREIF NFI-ODCE Eq Wt Net.



## Domestic Equity Composite Period Ended September 30, 2018

#### **Quarterly Summary and Highlights**

- Domestic Equity Composite's portfolio posted a 6.25% return for the quarter placing it in the 71 percentile of the Public Fund - Domestic Equity group for the quarter and in the 25 percentile for the last year.
- Domestic Equity Composite's portfolio underperformed the Russell 3000 Index by 0.88% for the quarter and outperformed the Russell 3000 Index for the year by 0.80%.

#### **Quarterly Asset Growth**

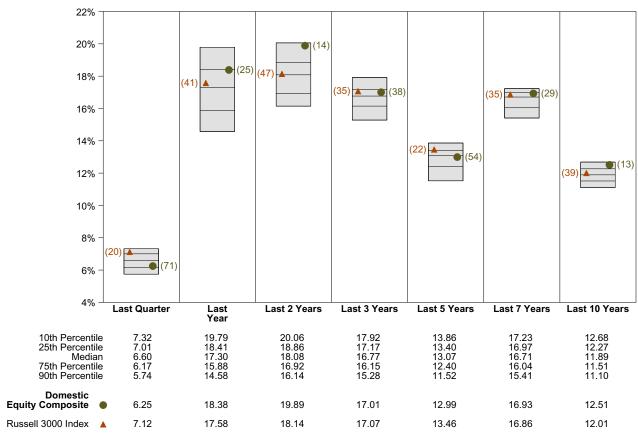
 Beginning Market Value
 \$207,674,212

 Net New Investment
 \$-1,000,000

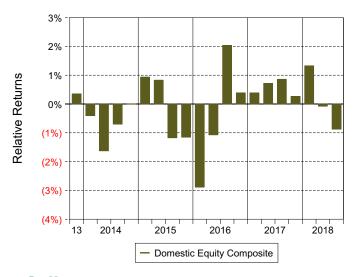
 Investment Gains/(Losses)
 \$12,954,999

 Ending Market Value
 \$219,629,210

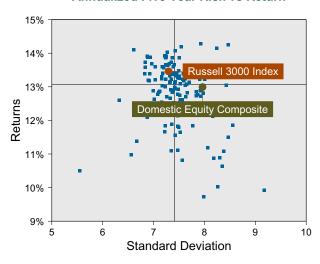
### Performance vs Public Fund - Domestic Equity (Gross)



#### Relative Return vs Russell 3000 Index



## Public Fund - Domestic Equity (Gross) Annualized Five Year Risk vs Return



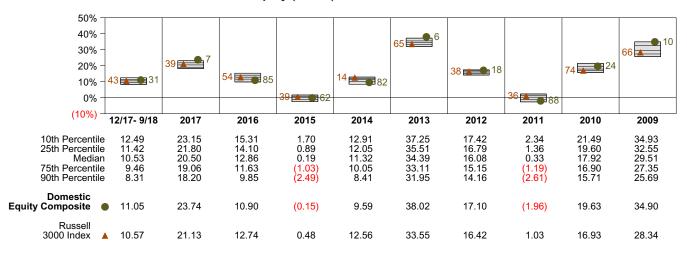


# Domestic Equity Composite Return Analysis Summary

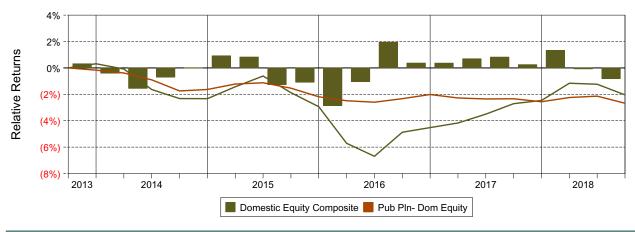
#### **Return Analysis**

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

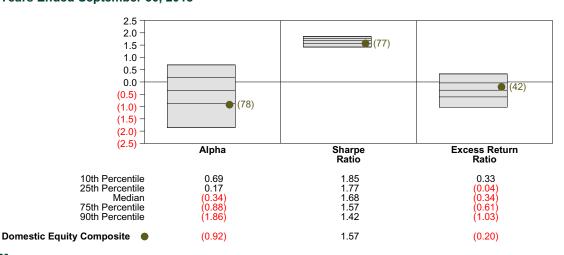
#### Performance vs Public Fund - Domestic Equity (Gross)



#### **Cumulative and Quarterly Relative Return vs Russell 3000 Index**



Risk Adjusted Return Measures vs Russell 3000 Index Rankings Against Public Fund - Domestic Equity (Gross) Five Years Ended September 30, 2018





## Domestic Equity Composite Equity Characteristics Analysis Summary

#### **Portfolio Characteristics**

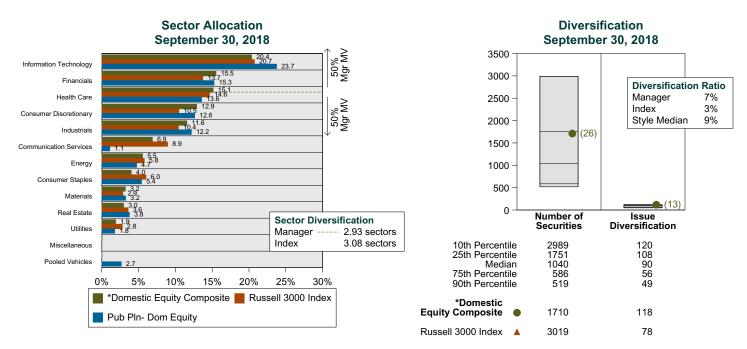
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

#### Portfolio Characteristics Percentile Rankings Rankings Against Public Fund - Domestic Equity as of September 30, 2018



#### **Sector Weights**

The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. Diversification by number and concentration of holdings are also compared to the benchmark and peer group. Issue Diversification represents by count, and Diversification Ratio by percent, the number of holdings that account for half of the portfolio's market value.



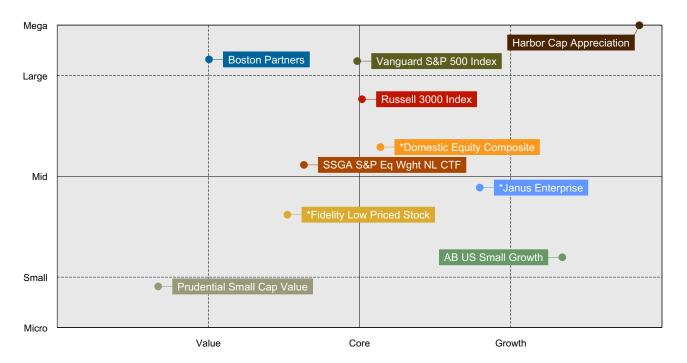
<sup>\*9/30/18</sup> portfolio characteristics generated using most recently available holdings (6/30/18) modified based on a "buy-and-hold" assumption (repriced and adjusted for corporate actions). Analysis is then done using current market and company financial data.



## Holdings Based Style Analysis For One Quarter Ended September 30, 2018

This page analyzes and compares the investment styles of multiple portfolios using a detailed holdings-based style analysis methodology. The size component of style is measured by the weighted median market capitalization of the holdings. The value/core/growth style dimension is captured by the "Combined Z-Score" of the portfolio. This score is based on eight fundamental factors used in the MSCI stock style scoring system. The table below gives a more detailed breakdown of several relevant style metrics on the portfolios.

Style Map Holdings for One Quarter Ended September 30, 2018



	Weight	Wtd Median	Combined	Growth	Value	Number of	Security
	%	Mkt Cap	Z-Score	Z-Score	Z-Score	Securities D	Diversification
Vanguard S&P 500 Index	17.99%	114.07	(0.04)	(0.01)	0.02	508	49.67
SSGA S&P Eq Wght NL CTF	16.97%	21.56	(0.30)	(0.13)	0.17	505	242.73
Boston Partners	17.19%	116.57	(0.77)	(0.22)	0.55	77	17.42
Harbor Cap Appreciation	17.39%	166.68	1.36	0.59	(0.78)	57	13.96
*Fidelity Low Priced Stock	7.21%	8.54	(0.38)	(0.10)	0.29	887	27.67
*Janus Enterprise	8.00%	11.30	0.57	0.16	(0.41)	84	26.28
Prudential Small Cap Value	6.46%	1.87	(1.03)	(0.15)	0.88	315	65.38
AB US Small Growth	8.79%	4.20	0.98	0.34	(0.64)	100	34.93
*Domestic Equity Composite	100.00%	35.80	0.08	0.06	(0.01)	1710	117.73
Russell 3000 Index	-	74.01	(0.01)	(0.00)	0.01	3019	78.28

<sup>\*9/30/18</sup> portfolio characteristics generated using most recently available holdings (6/30/18) modified based on a "buy-and-hold" assumption (repriced and adjusted for corporate actions). Analysis is then done using current market and company financial data.



## Vanguard S&P 500 Index Period Ended September 30, 2018

#### **Investment Philosophy**

Vanguard's Institutional Index Fund is passively administered using a "full replication" approach. Under this method, the fund holds all of the 500 underlying securities in proportion to their weighting in the index. The fund remains fully invested in equities at all times and does not make judgement calls on the direction of the S&P 500 Index. Portfolio was funded September 2013. Historical returns are that of the manager's composite.

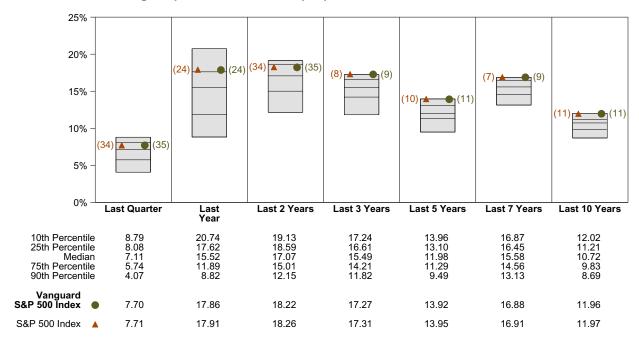
#### **Quarterly Summary and Highlights**

- Vanguard S&P 500 Index's portfolio posted a 7.70% return for the quarter placing it in the 35 percentile of the Callan Large Cap Core Mutual Funds group for the quarter and in the 24 percentile for the last year.
- Vanguard S&P 500 Index's portfolio underperformed the S&P 500 Index by 0.01% for the quarter and underperformed the S&P 500 Index for the year by 0.05%.

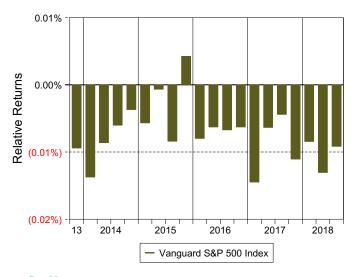
Quarterly	y Asset Growth	
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Beginning Market Value	\$36,691,255
Net New Investment	\$0
Investment Gains/(Losses)	\$2,825,809
Ending Market Value	\$39,517,064

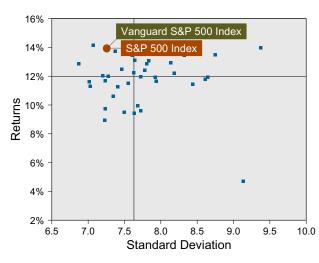
#### Performance vs Callan Large Cap Core Mutual Funds (Net)



#### Relative Return vs S&P 500 Index



## Callan Large Cap Core Mutual Funds (Net) Annualized Five Year Risk vs Return



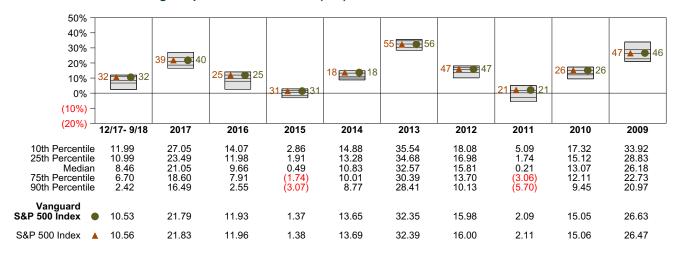


# Vanguard S&P 500 Index Return Analysis Summary

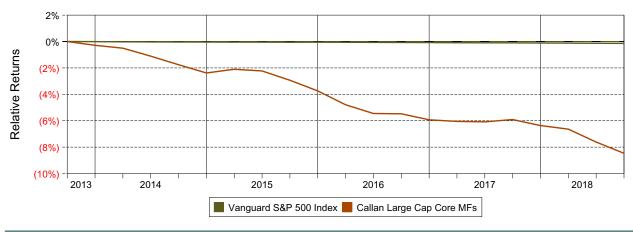
#### **Return Analysis**

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

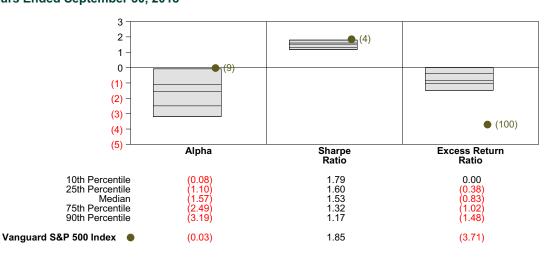
#### Performance vs Callan Large Cap Core Mutual Funds (Net)



#### Cumulative and Quarterly Relative Return vs S&P 500 Index



Risk Adjusted Return Measures vs S&P 500 Index Rankings Against Callan Large Cap Core Mutual Funds (Net) Five Years Ended September 30, 2018



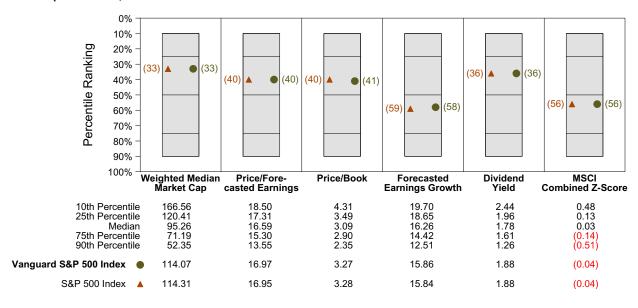


## Vanguard S&P 500 Index Equity Characteristics Analysis Summary

#### **Portfolio Characteristics**

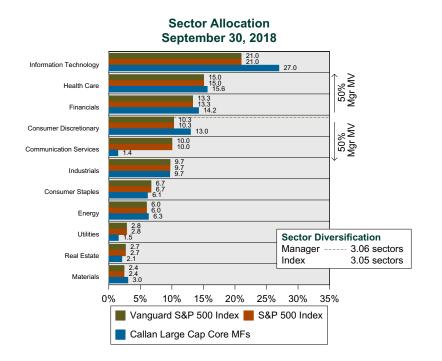
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

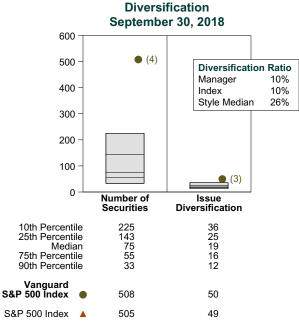
#### Portfolio Characteristics Percentile Rankings Rankings Against Callan Large Cap Core Mutual Funds as of September 30, 2018



#### **Sector Weights**

The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. Diversification by number and concentration of holdings are also compared to the benchmark and peer group. Issue Diversification represents by count, and Diversification Ratio by percent, the number of holdings that account for half of the portfolio's market value.







## SSGA S&P Eq Weighted NL CTF Period Ended September 30, 2018

#### **Investment Philosophy**

SSGA believes that their passive investment strategy can provide market-like returns with minimal transaction costs. Portfolio was funded December 2017. Historical returns are that of the manager's composite.

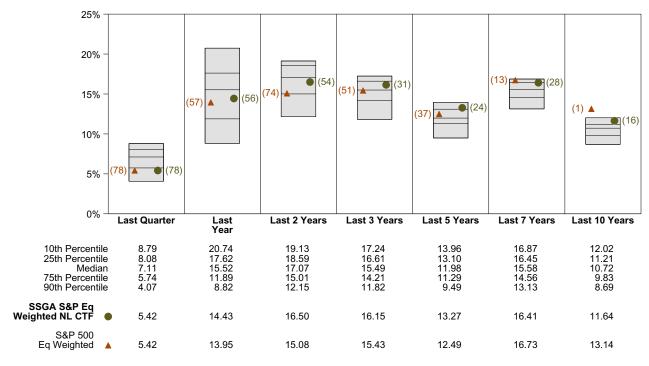
#### **Quarterly Summary and Highlights**

- SSGA S&P Eq Weighted NL CTF's portfolio posted a 5.42% return for the quarter placing it in the 78 percentile of the Callan Large Cap Core Mutual Funds group for the quarter and in the 56 percentile for the last year.
- SSGA S&P Eq Weighted NL CTF's portfolio underperformed the S&P 500 Eq Weighted by 0.00% for the quarter and outperformed the S&P 500 Eq Weighted for the year by 0.49%.

Quarterly	Asset	Growth
-----------	-------	--------

Beginning Market Value	\$35,353,687
Net New Investment	\$0
Investment Gains/(Losses)	\$1,915,462
Ending Market Value	\$37,269,149

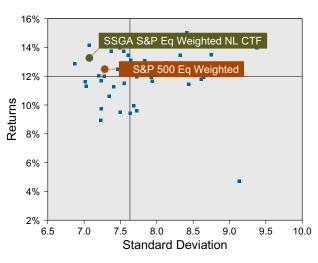
#### Performance vs Callan Large Cap Core Mutual Funds (Net)



#### Relative Return vs S&P 500 Eq Weighted



## Callan Large Cap Core Mutual Funds (Net) Annualized Five Year Risk vs Return



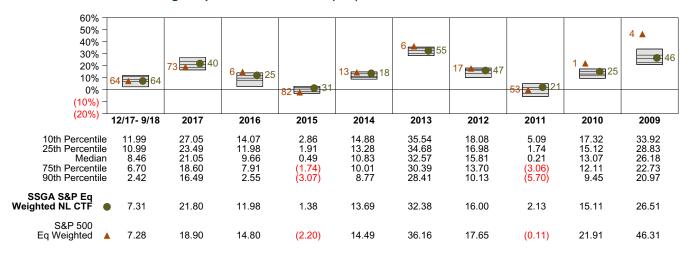


## SSGA S&P Eq Weighted NL CTF Return Analysis Summary

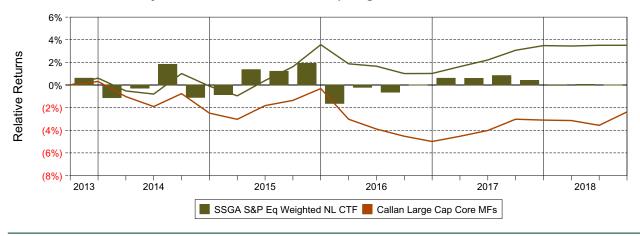
#### **Return Analysis**

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

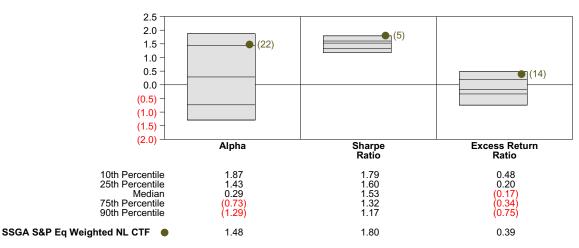
#### Performance vs Callan Large Cap Core Mutual Funds (Net)



#### Cumulative and Quarterly Relative Return vs S&P 500 Eq Weighted



Risk Adjusted Return Measures vs S&P 500 Eq Weighted Rankings Against Callan Large Cap Core Mutual Funds (Net) Five Years Ended September 30, 2018



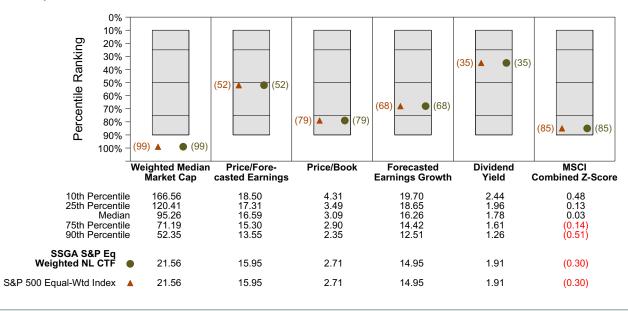


## SSGA S&P Eq Weighted NL CTF Equity Characteristics Analysis Summary

#### **Portfolio Characteristics**

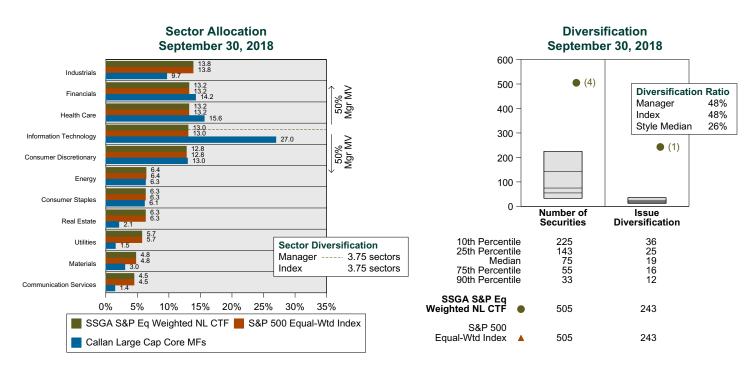
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

#### Portfolio Characteristics Percentile Rankings Rankings Against Callan Large Cap Core Mutual Funds as of September 30, 2018



#### **Sector Weights**

The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. Diversification by number and concentration of holdings are also compared to the benchmark and peer group. Issue Diversification represents by count, and Diversification Ratio by percent, the number of holdings that account for half of the portfolio's market value.





## Boston Partners Period Ended September 30, 2018

#### **Investment Philosophy**

Boston Partners' investment philosophy is grounded in certain "fundamental truths" to investing, namely that low valuation stocks outperform high valuation stocks, companies with strong fundamentals, e.g. high and sustainable returns on invested capital, outperform companies with weak fundamentals, and stocks with positive business momentum, e.g. rising earnings estimates, outperform stocks with negative business momentum. The firm seeks to construct well-diversified portfolios that consistently possess these three characteristics, attempting to limit downside risk, preserve capital, and maximize the power of compounding. Boston Partner's management fee is 50 bps on all assets.

#### **Quarterly Summary and Highlights**

- Boston Partners's portfolio posted a 7.70% return for the quarter placing it in the 21 percentile of the Callan Large Cap Value Mutual Funds group for the quarter and in the 43 percentile for the last year.
- Boston Partners's portfolio outperformed the Russell 1000 Value Index by 2.00% for the quarter and outperformed the Russell 1000 Value Index for the year by 3.51%.

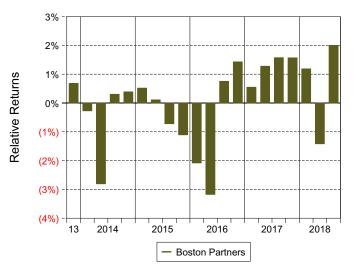
Quarterly	/ Asset	Growth

Beginning Market Value	\$35,062,832
Net New Investment	\$0
Investment Gains/(Losses)	\$2,701,339
Ending Market Value	\$37,764,171

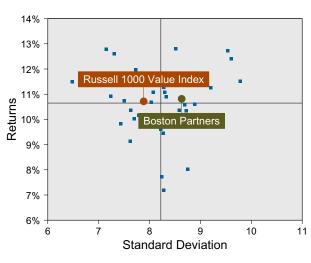
#### Performance vs Callan Large Cap Value Mutual Funds (Net)



### Relative Return vs Russell 1000 Value Index



## Callan Large Cap Value Mutual Funds (Net) Annualized Five Year Risk vs Return



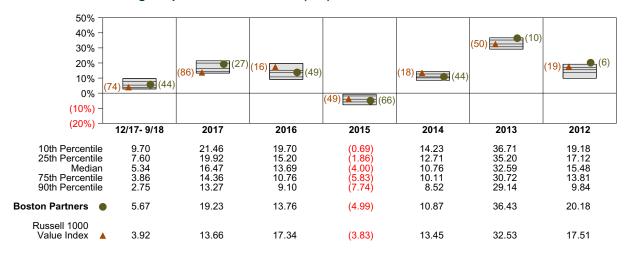


# **Boston Partners Return Analysis Summary**

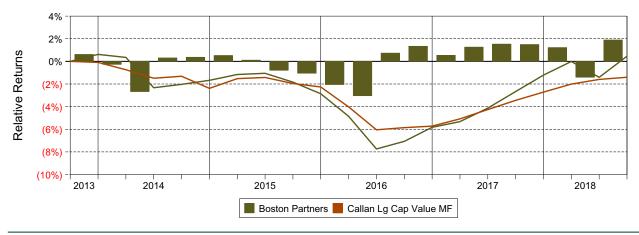
### **Return Analysis**

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

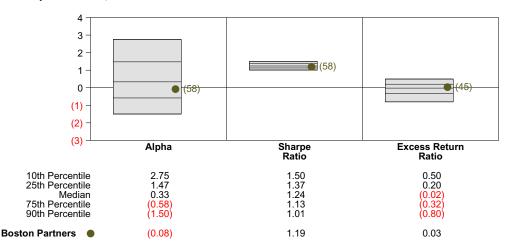
## Performance vs Callan Large Cap Value Mutual Funds (Net)



## Cumulative and Quarterly Relative Return vs Russell 1000 Value Index



Risk Adjusted Return Measures vs Russell 1000 Value Index Rankings Against Callan Large Cap Value Mutual Funds (Net) Five Years Ended September 30, 2018



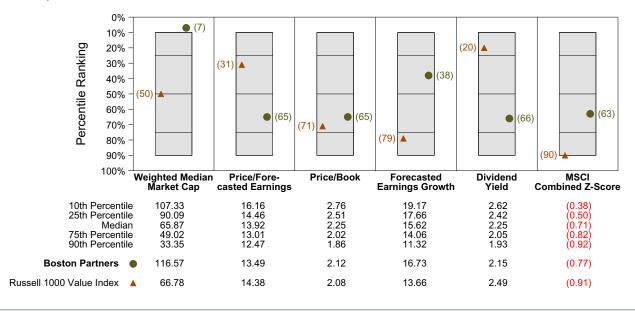


# Boston Partners Equity Characteristics Analysis Summary

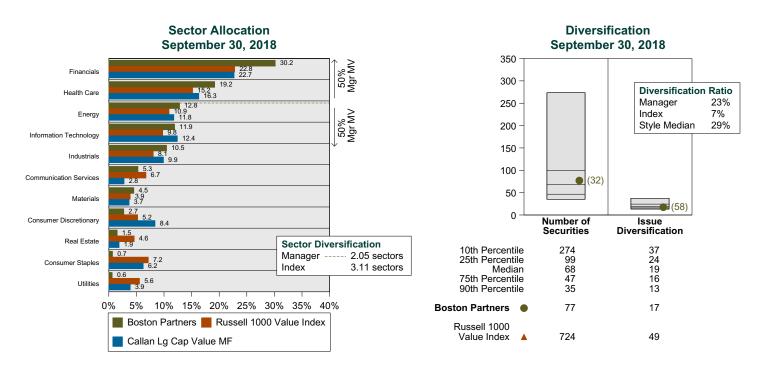
### **Portfolio Characteristics**

This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

# Portfolio Characteristics Percentile Rankings Rankings Against Callan Large Cap Value Mutual Funds as of September 30, 2018



### **Sector Weights**





# Harbor Cap Appreciation Period Ended September 30, 2018

### **Investment Philosophy**

Key elements of Jennison's investment philosophy include a bottom-up stock selection approach and internal fundamental research. These elements are critical to successful stock selection. Jennison believes that carefully selected, reasonably priced growth stocks should generate investment results superior to the stock market over an intermediate to long-term period.

## **Quarterly Summary and Highlights**

- Harbor Cap Appreciation's portfolio posted a 6.72% return for the quarter placing it in the 75 percentile of the Callan Large Cap Growth Mutual Funds group for the quarter and in the 32 percentile for the last year.
- Harbor Cap Appreciation's portfolio underperformed the Russell 1000 Growth Index by 2.45% for the quarter and outperformed the Russell 1000 Growth Index for the year by 0.73%.

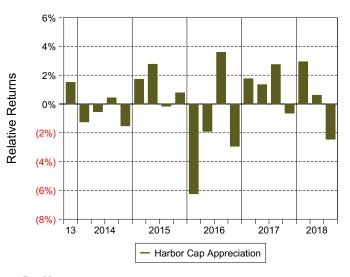
Quarterly	y Asset Growth	ı
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Beginning Market Value	\$35,789,568
Net New Investment	\$0
Investment Gains/(Losses)	\$2,406,412
Ending Market Value	\$38,195,980

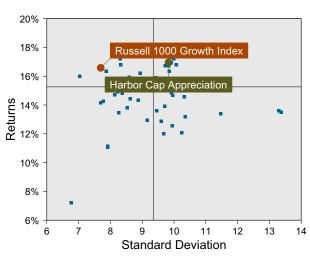
## Performance vs Callan Large Cap Growth Mutual Funds (Net)



# Relative Return vs Russell 1000 Growth Index



# Callan Large Cap Growth Mutual Funds (Net) Annualized Five Year Risk vs Return



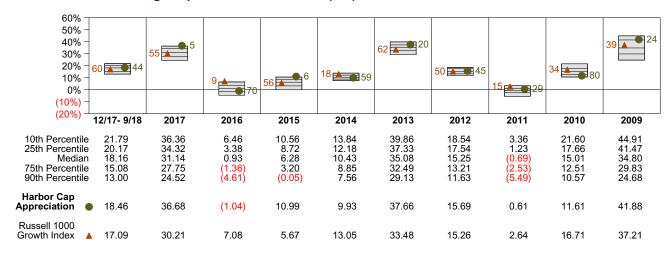


# Harbor Cap Appreciation Return Analysis Summary

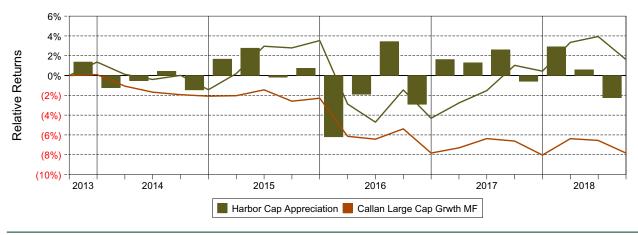
### **Return Analysis**

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

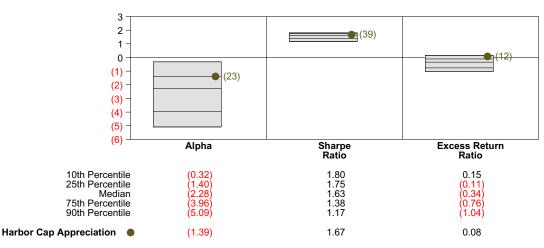
## Performance vs Callan Large Cap Growth Mutual Funds (Net)



## Cumulative and Quarterly Relative Return vs Russell 1000 Growth Index



Risk Adjusted Return Measures vs Russell 1000 Growth Index Rankings Against Callan Large Cap Growth Mutual Funds (Net) Five Years Ended September 30, 2018



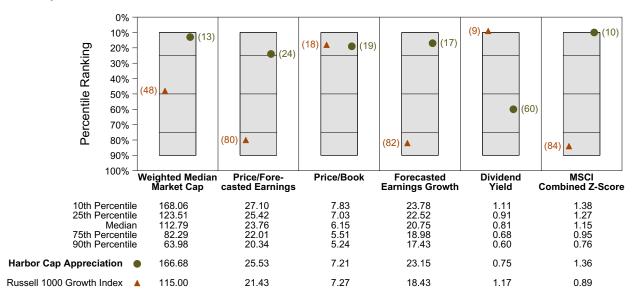


# Harbor Cap Appreciation Equity Characteristics Analysis Summary

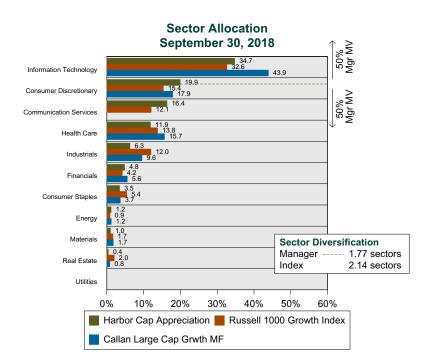
### **Portfolio Characteristics**

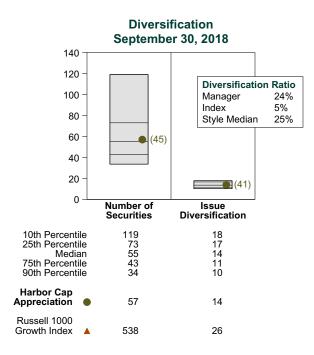
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

# Portfolio Characteristics Percentile Rankings Rankings Against Callan Large Cap Growth Mutual Funds as of September 30, 2018



### **Sector Weights**







# Fidelity Low Priced Stock Period Ended September 30, 2018

### **Investment Philosophy**

The Low Priced Stock team believes that many low priced, non-glamour, small companies are mispriced, providing opportunities, and seeks capital appreciation by investing mostly in common and preferred domestic stocks, but also international equities, convertible securities, and other fixed income securities.

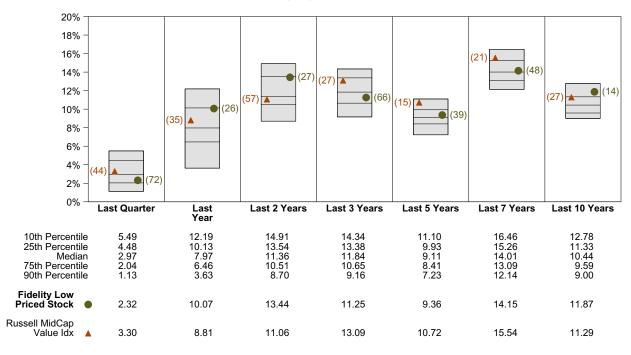
### **Quarterly Summary and Highlights**

- Fidelity Low Priced Stock's portfolio posted a 2.32% return for the quarter placing it in the 72 percentile of the Callan Mid Cap Value Mutual Funds group for the quarter and in the 26 percentile for the last year.
- Fidelity Low Priced Stock's portfolio underperformed the Russell MidCap Value Idx by 0.98% for the quarter and outperformed the Russell MidCap Value Idx for the year by 1.26%.

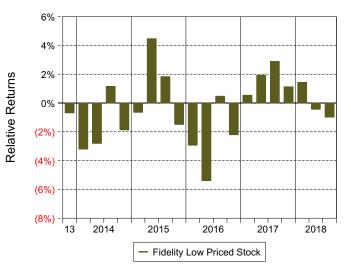
### **Quarterly Asset Growth**

Beginning Market Value	\$15,475,295
Net New Investment	\$0
Investment Gains/(Losses)	\$358,856
Ending Market Value	\$15 834 152

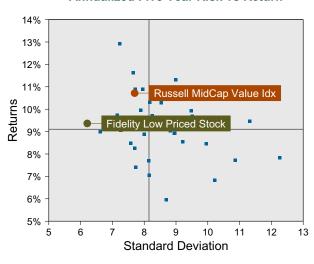
### Performance vs Callan Mid Cap Value Mutual Funds (Net)



### Relative Return vs Russell MidCap Value Idx



# Callan Mid Cap Value Mutual Funds (Net) Annualized Five Year Risk vs Return



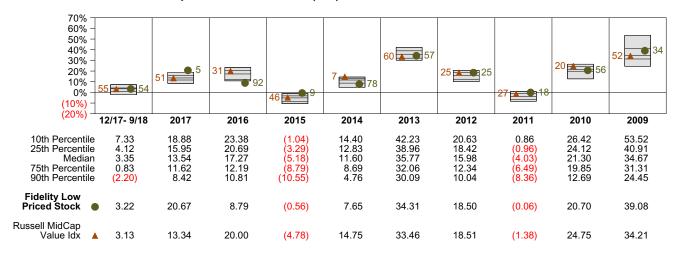


# Fidelity Low Priced Stock Return Analysis Summary

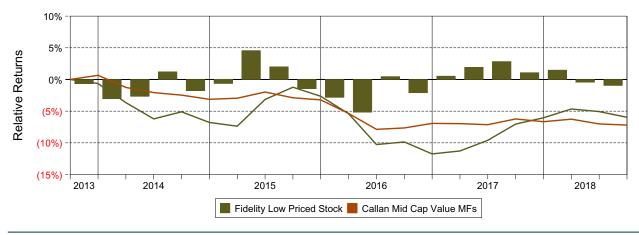
### **Return Analysis**

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

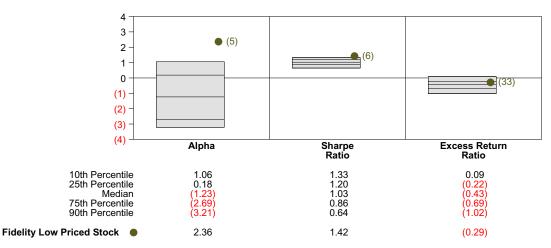
## Performance vs Callan Mid Cap Value Mutual Funds (Net)



# Cumulative and Quarterly Relative Return vs Russell MidCap Value Idx



Risk Adjusted Return Measures vs Russell MidCap Value Idx Rankings Against Callan Mid Cap Value Mutual Funds (Net) Five Years Ended September 30, 2018



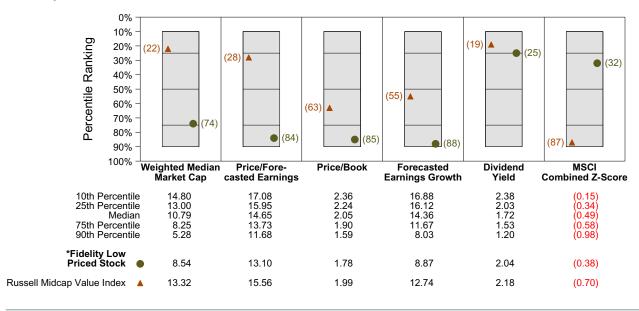


# Fidelity Low Priced Stock Equity Characteristics Analysis Summary

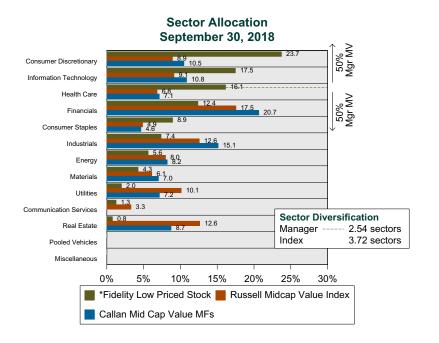
### **Portfolio Characteristics**

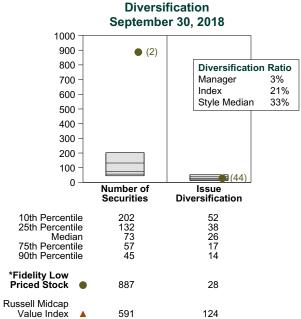
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

# Portfolio Characteristics Percentile Rankings Rankings Against Callan Mid Cap Value Mutual Funds as of September 30, 2018



### **Sector Weights**





<sup>\*9/30/18</sup> portfolio characteristics generated using most recently available holdings (7/31/18) modified based on a "buy-and-hold" assumption (repriced and adjusted for corporate actions). Analysis is then done using current market and company financial data.



# Janus Enterprise Period Ended September 30, 2018

### **Investment Philosophy**

Janus believes that investing in companies with sustainable growth and high return on invested capital can drive consistent returns with moderate risk. The team seeks to identify mid cap companies with high quality management teams that wisely allocate capital to drive growth over time. Switched from Class T Shares to Class I Shares in December 2009 and Class N Shares in July 2016.

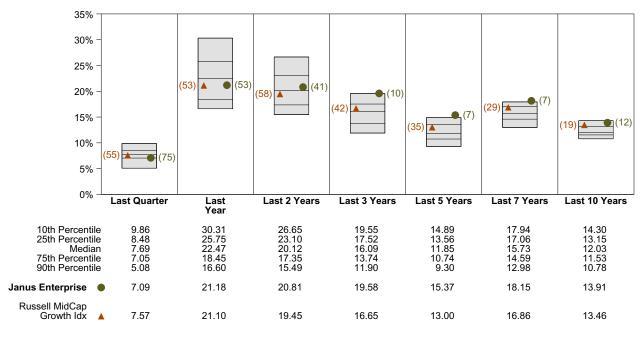
## **Quarterly Summary and Highlights**

- Janus Enterprise's portfolio posted a 7.09% return for the quarter placing it in the 75 percentile of the Callan Mid Cap Growth Mutual Funds group for the quarter and in the 53 percentile for the last year.
- Janus Enterprise's portfolio underperformed the Russell MidCap Growth Idx by 0.48% for the quarter and outperformed the Russell MidCap Growth Idx for the year by 0.07%.

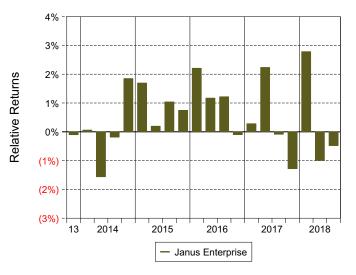
Quarterly	/ Asset	Growth
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Beginning Market Value	\$16,411,791
Net New Investment	\$0
Investment Gains/(Losses)	\$1,164,157
Ending Market Value	\$17,575,947

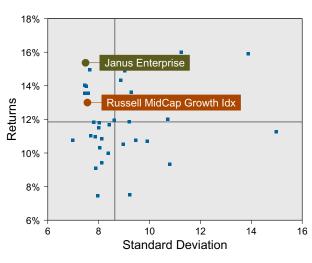
## Performance vs Callan Mid Cap Growth Mutual Funds (Net)



### Relative Return vs Russell MidCap Growth Idx



# Callan Mid Cap Growth Mutual Funds (Net) Annualized Five Year Risk vs Return



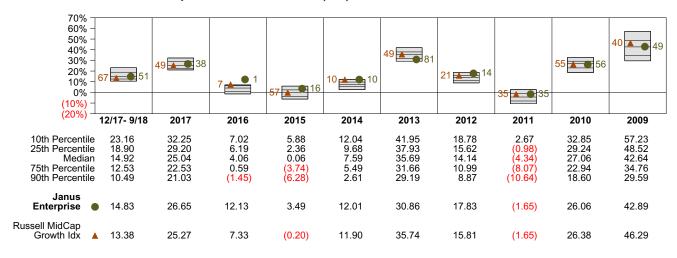


# Janus Enterprise Return Analysis Summary

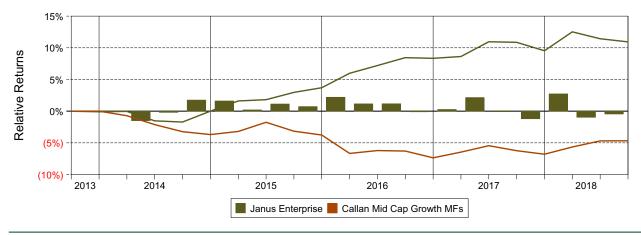
### **Return Analysis**

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

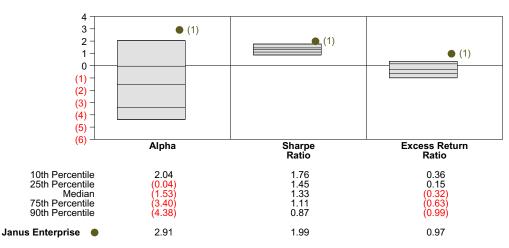
### Performance vs Callan Mid Cap Growth Mutual Funds (Net)



## Cumulative and Quarterly Relative Return vs Russell MidCap Growth Idx



Risk Adjusted Return Measures vs Russell MidCap Growth Idx Rankings Against Callan Mid Cap Growth Mutual Funds (Net) Five Years Ended September 30, 2018



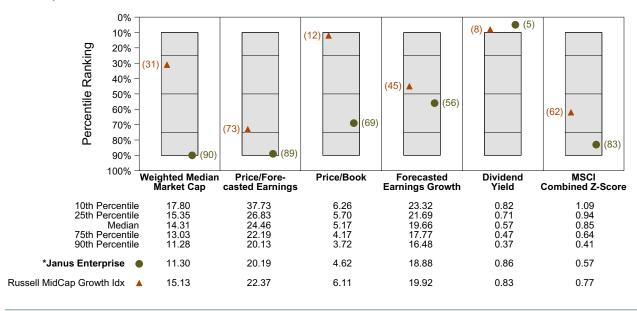


# Janus Enterprise Equity Characteristics Analysis Summary

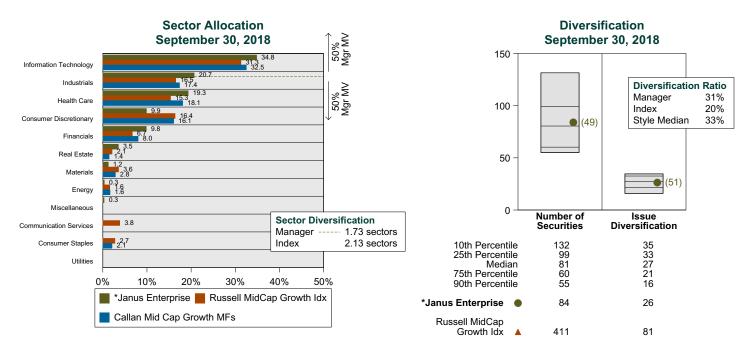
### **Portfolio Characteristics**

This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

# Portfolio Characteristics Percentile Rankings Rankings Against Callan Mid Cap Growth Mutual Funds as of September 30, 2018



### **Sector Weights**



<sup>\*9/30/18</sup> portfolio characteristics generated using most recently available holdings (6/30/18) modified based on a "buy-and-hold" assumption (repriced and adjusted for corporate actions). Analysis is then done using current market and company financial data.



# Prudential Small Cap Value Period Ended September 30, 2018

### **Investment Philosophy**

QMA believes a systematic approach that focuses on stocks with low valuations and confirming signals of attractiveness can outperform a small cap value benchmark. Its research shows that adapting to changing market conditions by dynamically shifting the weight on specific factors, while simultaneously maintaining a focus on value stocks, leads to better performance than using static factor exposures. Switched share class in Septemeber 2015.

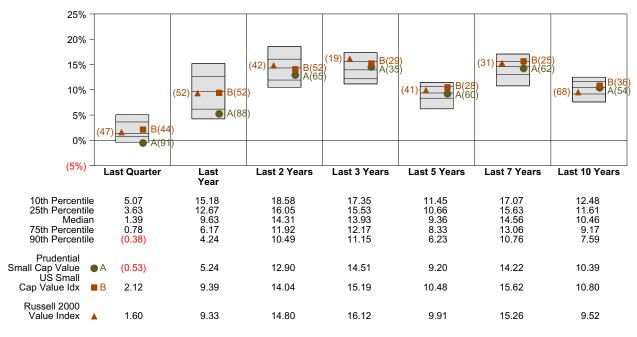
## **Quarterly Summary and Highlights**

- Prudential Small Cap Value's portfolio posted a (0.53)% return for the quarter placing it in the 91 percentile of the Callan Small Cap Value Mutual Funds group for the quarter and in the 88 percentile for the last year.
- Prudential Small Cap Value's portfolio underperformed the Russell 2000 Value Index by 2.14% for the quarter and underperformed the Russell 2000 Value Index for the year by 4.09%.

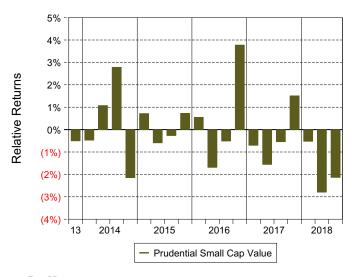
# **Quarterly Asset Growth**

Beginning Market Value	\$14,253,767
Net New Investment	\$0
Investment Gains/(Losses)	\$-75,855
Ending Market Value	\$14,177,912

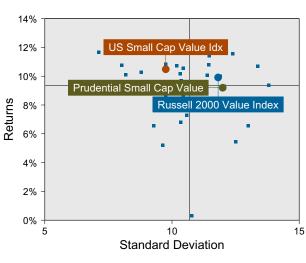
## Performance vs Callan Small Cap Value Mutual Funds (Net)



### Relative Return vs Russell 2000 Value Index



# Callan Small Cap Value Mutual Funds (Net) Annualized Five Year Risk vs Return



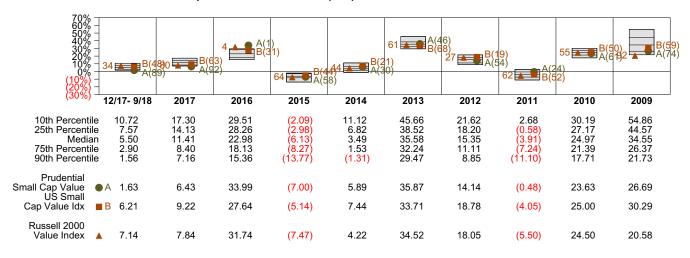


# Prudential Small Cap Value Return Analysis Summary

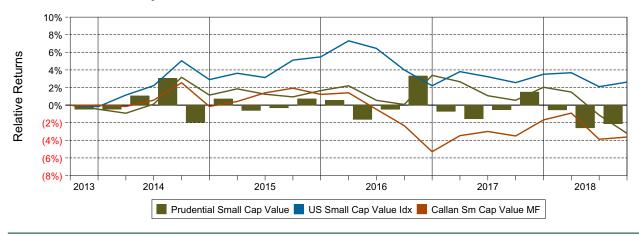
### **Return Analysis**

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

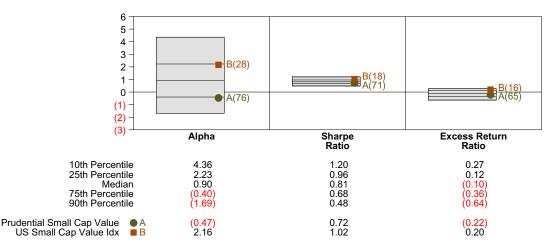
### Performance vs Callan Small Cap Value Mutual Funds (Net)



## Cumulative and Quarterly Relative Return vs Russell 2000 Value Index



Risk Adjusted Return Measures vs Russell 2000 Value Index Rankings Against Callan Small Cap Value Mutual Funds (Net) Five Years Ended September 30, 2018



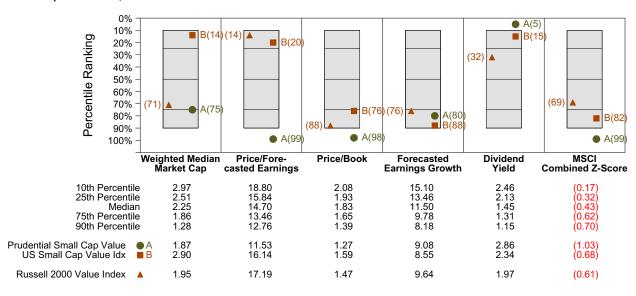


# Prudential Small Cap Value Equity Characteristics Analysis Summary

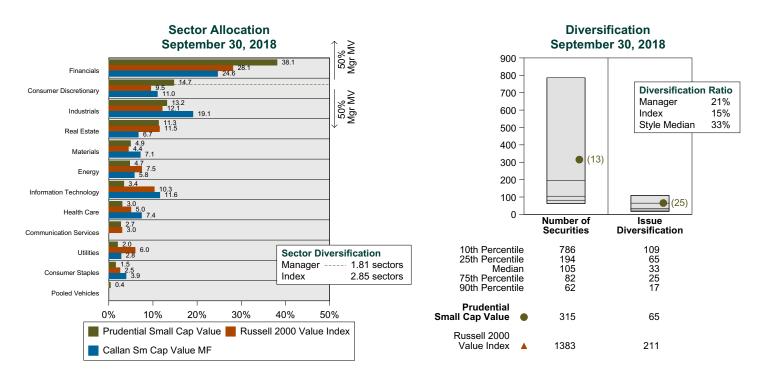
### **Portfolio Characteristics**

This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

# Portfolio Characteristics Percentile Rankings Rankings Against Callan Small Cap Value Mutual Funds as of September 30, 2018



# **Sector Weights**





# AB US Small Growth Period Ended September 30, 2018

### **Investment Philosophy**

AB's small cap growth investment process emphasizes in-house fundamental research and direct management contact in order to identify rapidly growing companies with accelerating earnings power and reasonable valuations.

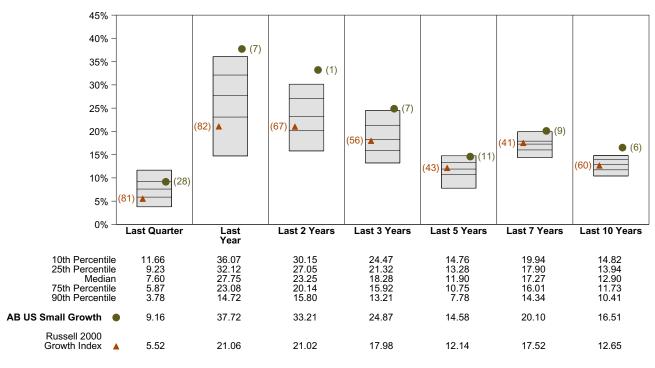
# **Quarterly Summary and Highlights**

- AB US Small Growth's portfolio posted a 9.16% return for the quarter placing it in the 28 percentile of the Callan Small Cap Growth Mutual Funds group for the quarter and in the 7 percentile for the last year.
- AB US Small Growth's portfolio outperformed the Russell 2000 Growth Index by 3.64% for the quarter and outperformed the Russell 2000 Growth Index for the year by 16.66%.

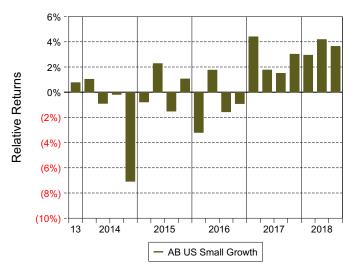
Quarterly	Asset	Growth
-----------	-------	--------

Beginning Market Value	\$18,636,016
Net New Investment	\$-1,000,000
Investment Gains/(Losses)	\$1,658,819
Ending Market Value	\$19,294,834

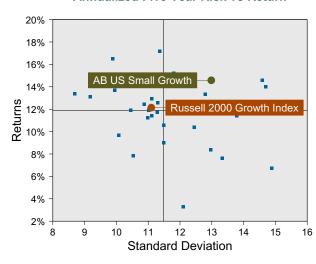
# Performance vs Callan Small Cap Growth Mutual Funds (Net)



### Relative Return vs Russell 2000 Growth Index



# Callan Small Cap Growth Mutual Funds (Net) Annualized Five Year Risk vs Return



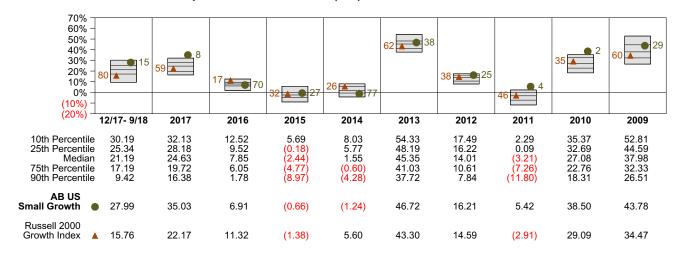


# AB US Small Growth Return Analysis Summary

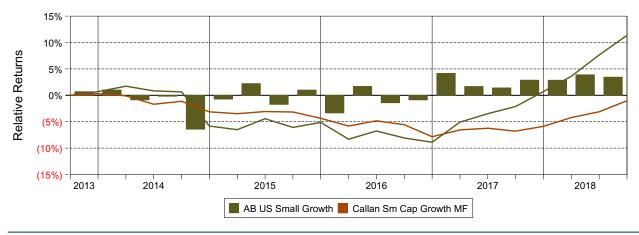
### **Return Analysis**

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

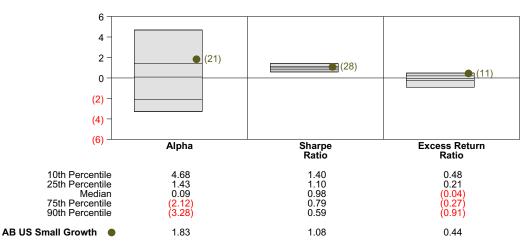
# Performance vs Callan Small Cap Growth Mutual Funds (Net)



## Cumulative and Quarterly Relative Return vs Russell 2000 Growth Index



Risk Adjusted Return Measures vs Russell 2000 Growth Index Rankings Against Callan Small Cap Growth Mutual Funds (Net) Five Years Ended September 30, 2018



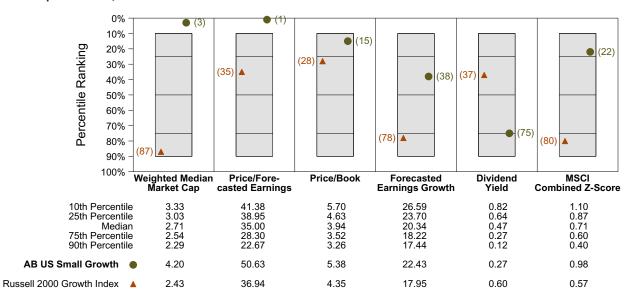


# AB US Small Growth Equity Characteristics Analysis Summary

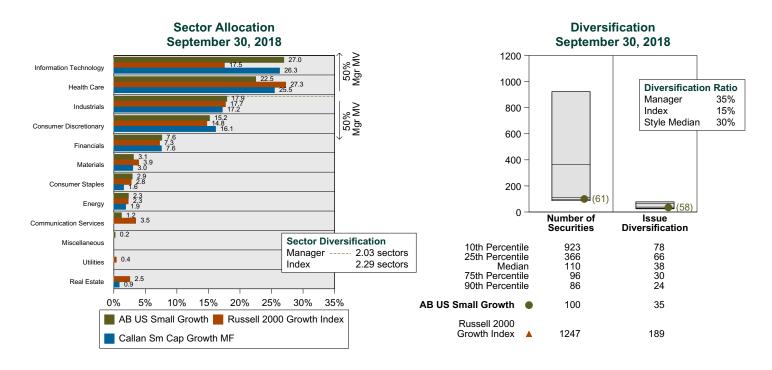
### **Portfolio Characteristics**

This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

# Portfolio Characteristics Percentile Rankings Rankings Against Callan Small Cap Growth Mutual Funds as of September 30, 2018



### **Sector Weights**





# International Equity Composite Period Ended September 30, 2018

## **Quarterly Summary and Highlights**

- International Equity Composite's portfolio posted a (1.80)% return for the quarter placing it in the 100 percentile of the Public Fund - International Equity group for the quarter and in the 93 percentile for the last year.
- International Equity Composite's portfolio underperformed the MSCI ACWIXUS Gross by 2.59% for the quarter and underperformed the MSCI ACWIXUS Gross for the year by 3.58%.

### **Quarterly Asset Growth**

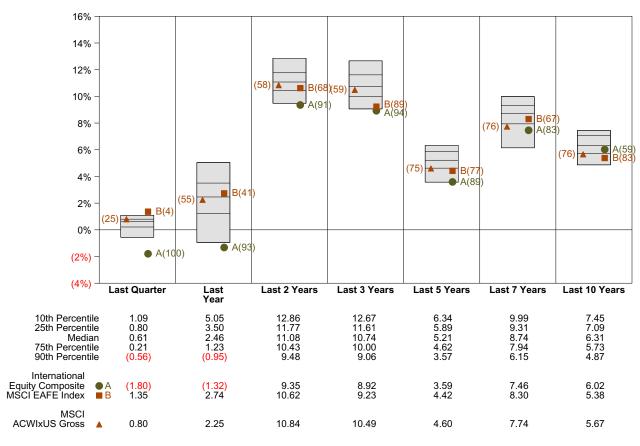
Beginning Market Value \$150,450,203

Net New Investment \$0

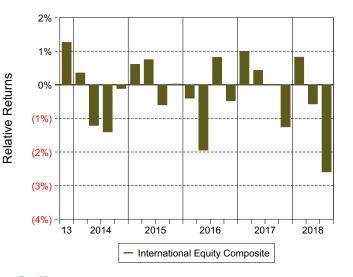
Investment Gains/(Losses) \$-2,559,232

Ending Market Value \$147,890,970

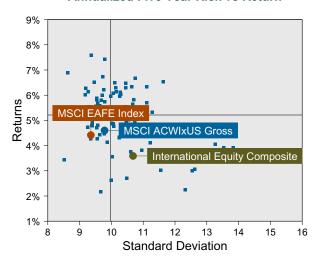
# Performance vs Public Fund - International Equity (Gross)



# Relative Return vs MSCI ACWIxUS Gross



# Public Fund - International Equity (Gross) Annualized Five Year Risk vs Return



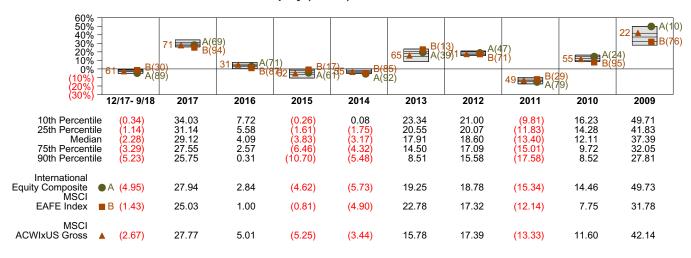


# International Equity Composite Return Analysis Summary

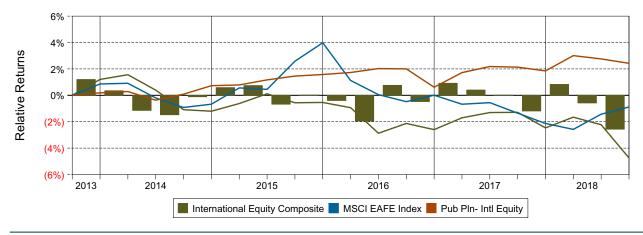
### **Return Analysis**

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

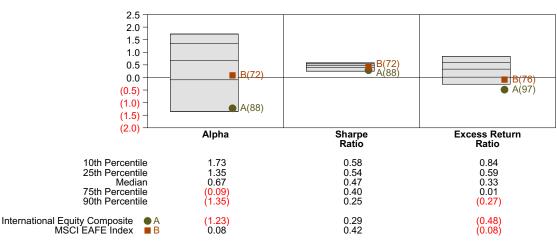
## Performance vs Public Fund - International Equity (Gross)



## Cumulative and Quarterly Relative Return vs MSCI ACWIxUS Gross



Risk Adjusted Return Measures vs MSCI ACWIxUS Gross Rankings Against Public Fund - International Equity (Gross) Five Years Ended September 30, 2018



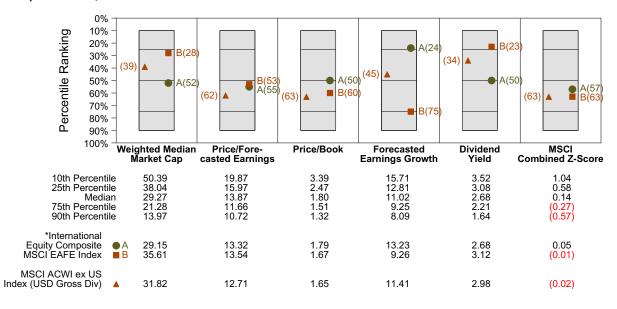


# International Equity Composite Equity Characteristics Analysis Summary

### **Portfolio Characteristics**

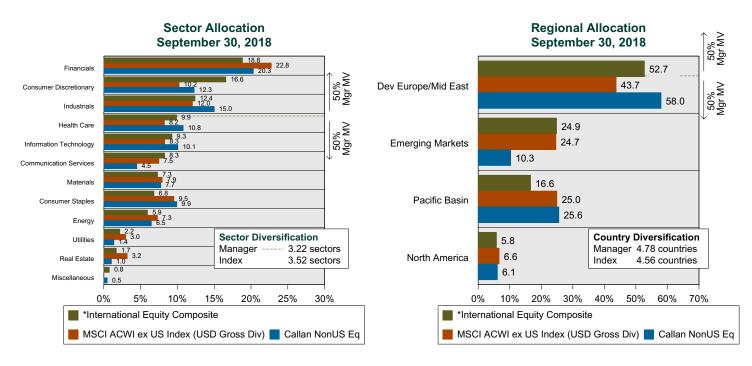
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

# Portfolio Characteristics Percentile Rankings Rankings Against Callan Non-US Equity as of September 30, 2018



### **Sector Weights**

The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. The regional allocation chart compares the manager's geographical region weights with those of the benchmark as well as the median region weights of the peer group.



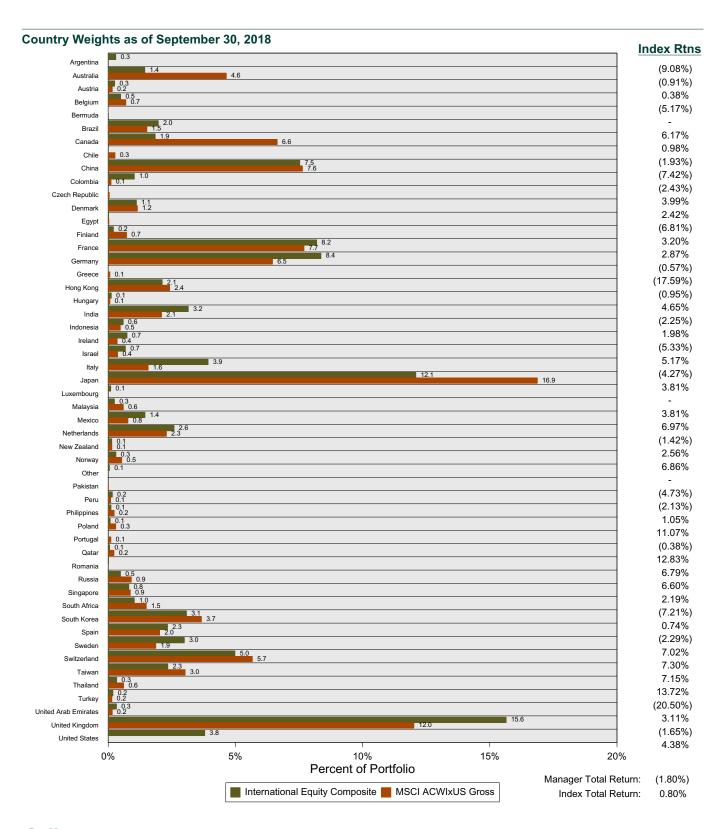
<sup>\*9/30/18</sup> portfolio characteristics generated using most recently available holdings (6/30/18) modified based on a "buy-and-hold" assumption (repriced and adjusted for corporate actions). Analysis is then done using current market and company financial data.



# Country Allocation International Equity Composite VS MSCI ACWI ex US Index (USD Gross Div)

### **Country Allocation**

The chart below contrasts the portfolio's country allocation with that of the index as of September 30, 2018. This chart is useful because large deviations in country allocation relative to the index are often good predictors of tracking error in the subsequent quarter. To the extent that the portfolio allocation is similar to the index, the portfolio should experience more "index-like" performance. In order to illustrate the performance effect on the portfolio and index of these country allocations, the individual index country returns are also shown.

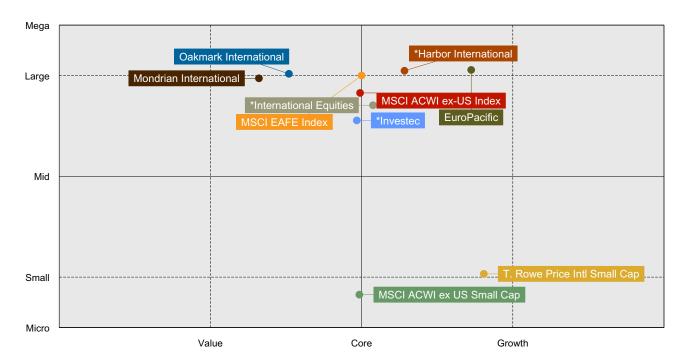




# International Holdings Based Style Analysis For One Quarter Ended September 30, 2018

This page analyzes and compares the investment styles of multiple portfolios using a detailed holdings-based style analysis methodology. The size component of style is measured by the weighted median market capitalization of the holdings. The value/core/growth style dimension is captured by the "Combined Z-Score" of the portfolio. This score is based on eight fundamental factors used in the MSCI stock style scoring system. The table below gives a more detailed breakdown of several relevant style metrics on the portfolios.

Style Map Holdings for One Quarter Ended September 30, 2018



	Weight	Wtd Median	Combined	Growth	Value	Number of	Security
	%	Mkt Cap	Z-Score	Z-Score	Z-Score	Securities I	Diversification
EuroPacific	17.77%	44.35	0.63	0.26	(0.37)	272	39.08
*Harbor International	19.92%	43.06	0.24	(0.02)	(0.26)	69	18.77
Oakmark International	19.40%	38.30	(0.46)	(0.12)	0.34	58	14.20
Mondrian International	17.75%	35.00	(0.65)	(0.17)	0.48	114	24.27
T. Rowe Price Intl Small Cap	15.16%	2.65	0.70	0.32	(0.38)	218	63.43
*Investec	10.00%	25.84	(0.04)	0.06	0.10	88	20.01
*International Equities	100.00%	29.15	0.05	0.04	(0.01)	697	81.02
MSCI ACWI ex US Small Cap	-	1.88	(0.03)	(0.01)	0.02	4274	722.13
MSCI EAFE Index	-	35.61	(0.01)	(0.02)	(0.00)	924	116.75
MSCI ACWI ex-US Index	-	31.82	(0.02)	(0.01)	0.01	2156	201.37

<sup>\*9/30/18</sup> portfolio characteristics generated using most recently available holdings (6/30/18) modified based on a "buy-and-hold" assumption (repriced and adjusted for corporate actions). Analysis is then done using current market and company financial data.



# EuroPacific Period Ended September 30, 2018

### **Investment Philosophy**

Capital Group has a research-driven approach to non-U.S. investing. Their bottom-up fundamental approach is blended with macroeconomic and political judgments on the outlook of economies, industries, currencies, and markets. The fund uses a "multiple manager" approach where individual portfolio managers, each with different styles, manage separate sleeves of the strategy independently. Sleeves are combined to form the fund. Individual managers are selected so that the aggregate fund adheres to its stated objective of capital appreciation. Switched from Class R-5 Shares to Class R-6 Shares in December 2009.

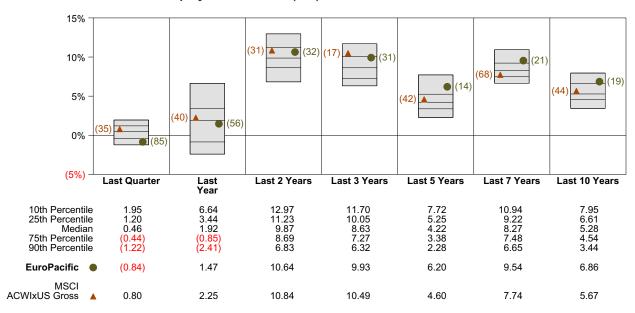
### **Quarterly Summary and Highlights**

- EuroPacific's portfolio posted a (0.84)% return for the quarter placing it in the 85 percentile of the Callan Non US Equity Mutual Funds group for the quarter and in the 56 percentile for the last year.
- EuroPacific's portfolio underperformed the MSCI ACWIxUS Gross by 1.64% for the quarter and underperformed the MSCI ACWIxUS Gross for the year by 0.79%.

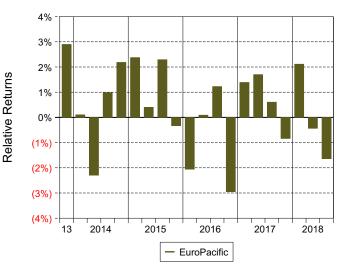
## **Quarterly Asset Growth**

Beginning Market Value	\$26,498,826
Net New Investment	\$0
Investment Gains/(Losses)	\$-222,844
Ending Market Value	\$26,275,982

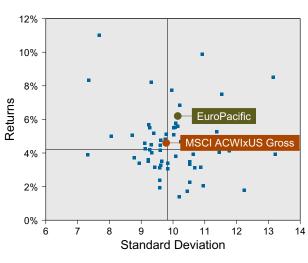
## Performance vs Callan Non US Equity Mutual Funds (Net)



# Relative Return vs MSCI ACWIxUS Gross



# Callan Non US Equity Mutual Funds (Net) Annualized Five Year Risk vs Return



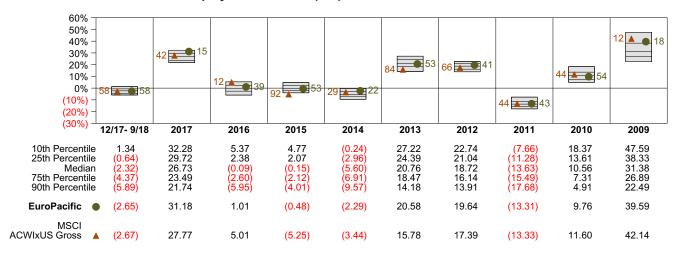


# EuroPacific Return Analysis Summary

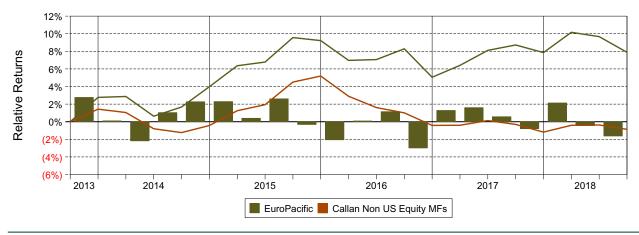
### **Return Analysis**

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

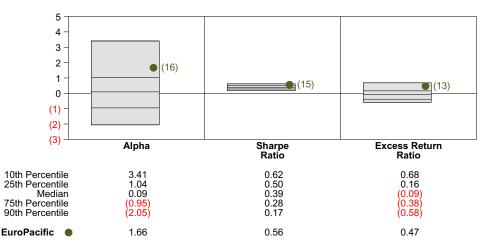
## Performance vs Callan Non US Equity Mutual Funds (Net)



## Cumulative and Quarterly Relative Return vs MSCI ACWIxUS Gross



Risk Adjusted Return Measures vs MSCI ACWIxUS Gross Rankings Against Callan Non US Equity Mutual Funds (Net) Five Years Ended September 30, 2018





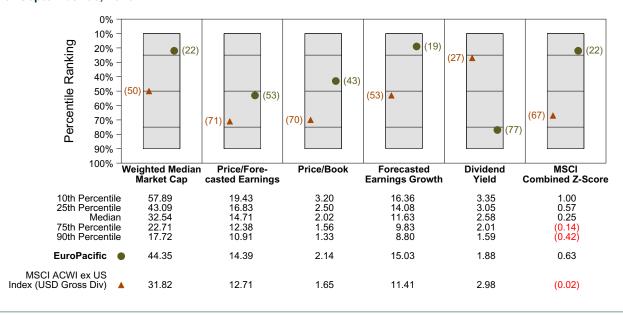
## **EuroPacific**

## **Equity Characteristics Analysis Summary**

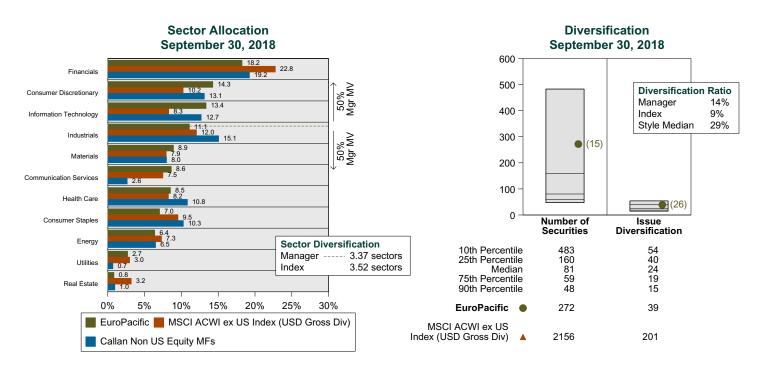
### **Portfolio Characteristics**

This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

# Portfolio Characteristics Percentile Rankings Rankings Against Callan Non US Equity Mutual Funds as of September 30, 2018



### **Sector Weights**

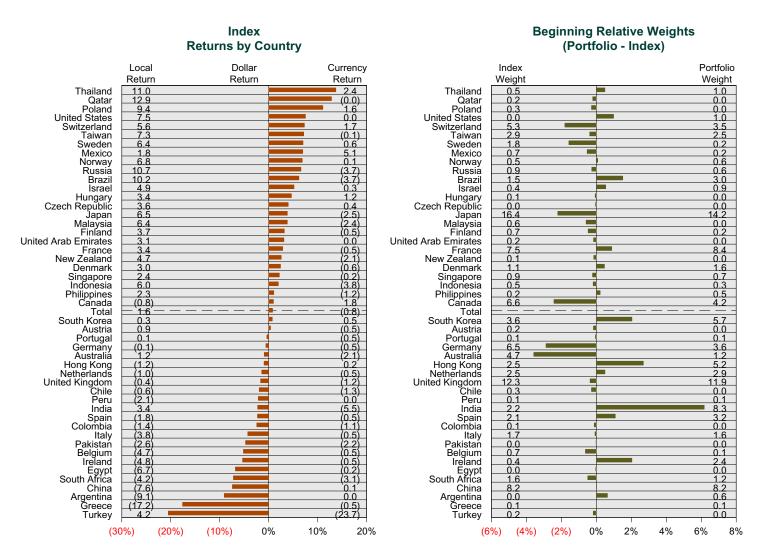


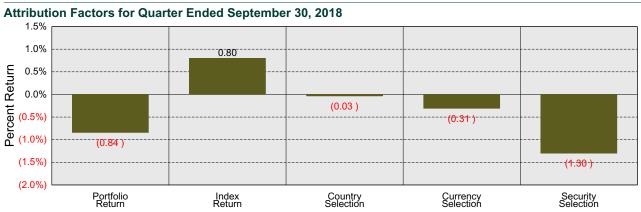


# EuroPacific vs MSCI ACWIxUS Gross Attribution for Quarter Ended September 30, 2018

#### **International Attribution**

The first chart below illustrates the return for each country in the index sorted from high to low. The total return for the index is highlighted with a dotted line. The second chart (countries presented in the same order) illustrates the manager's country allocation decisions relative to the index. To the extent that the manager over-weighted a country that had a higher return than the total return for the index (above the dotted line) it contributes positively to the manager's country (or currency) selection effect. The last chart details the manager return, the index return, and the attribution factors for the quarter.







# Harbor International Period Ended September 30, 2018

## **Investment Philosophy**

The Harbor International Fund is sub-advised by Marathon-London. At the heart of Marathon's investment philosophy is the "capital cycle" approach to investment. This is based on the idea that the prospect of high returns will attract excessive capital (and hence competition), and vice versa. In addition, the assessment of how management responds to the forces of the capital cycle - particularly whether they curtail investment when returns have been poor - and how they are incentivized are critical to the investment outcome. Given the contrarian and long-term nature of the capital cycle, the investment philosophy results in strong views versus the market and long holding periods (5 years plus). The attractiveness of an individual security, therefore, should be evaluated within this timeframe.

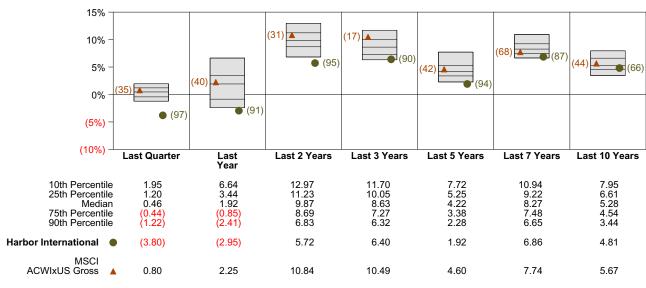
### **Quarterly Summary and Highlights**

- Harbor International's portfolio posted a (3.80)% return for the quarter placing it in the 97 percentile of the Callan Non US Equity Mutual Funds group for the quarter and in the 91 percentile for the last year.
- Harbor International's portfolio underperformed the MSCI ACWIxUS Gross by 4.60% for the quarter and underperformed the MSCI ACWIxUS Gross for the year by 5.20%.

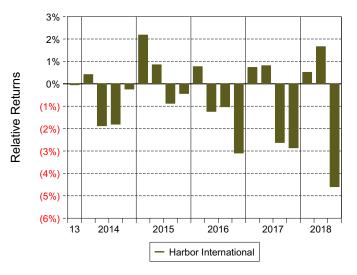
# Quarterly Asset Growth

Beginning Market Value	\$30,620,516
Net New Investment	\$0
Investment Gains/(Losses)	\$-1,163,037
Ending Market Value	\$29,457,479

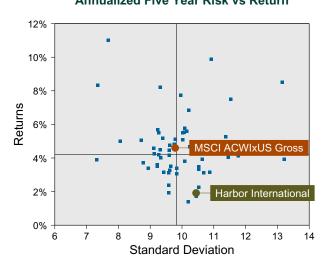
# Performance vs Callan Non US Equity Mutual Funds (Net)



# Relative Return vs MSCI ACWIxUS Gross



# Callan Non US Equity Mutual Funds (Net) Annualized Five Year Risk vs Return



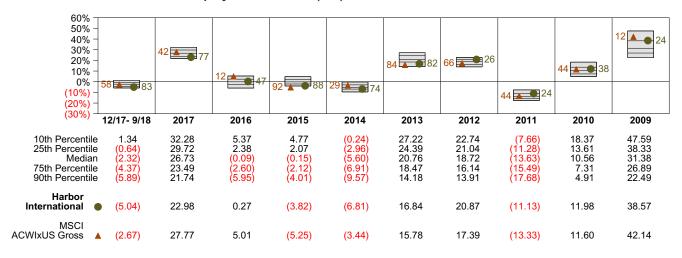


# Harbor International Return Analysis Summary

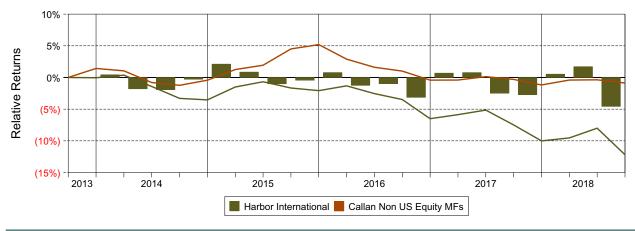
### **Return Analysis**

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

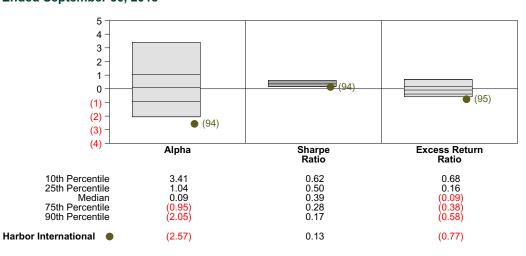
# Performance vs Callan Non US Equity Mutual Funds (Net)



## Cumulative and Quarterly Relative Return vs MSCI ACWIxUS Gross



Risk Adjusted Return Measures vs MSCI ACWIxUS Gross Rankings Against Callan Non US Equity Mutual Funds (Net) Five Years Ended September 30, 2018



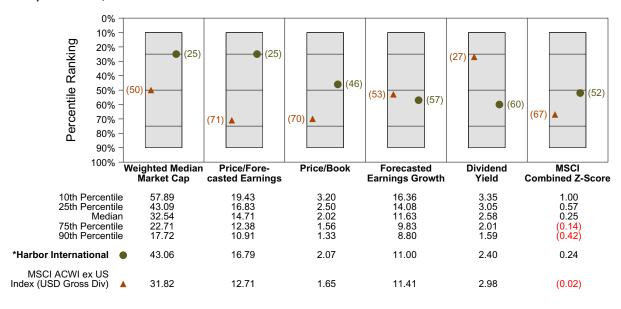


# Harbor International Equity Characteristics Analysis Summary

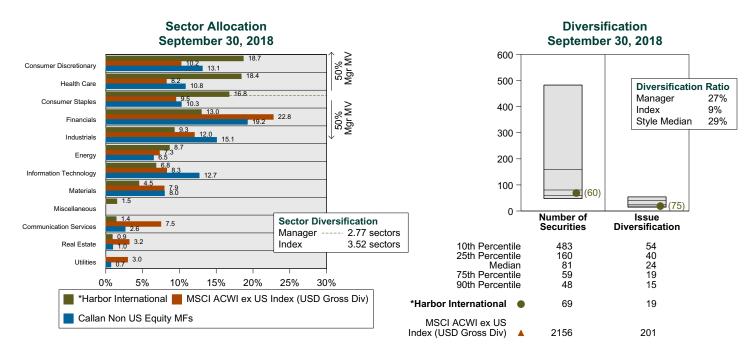
### **Portfolio Characteristics**

This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

# Portfolio Characteristics Percentile Rankings Rankings Against Callan Non US Equity Mutual Funds as of September 30, 2018



### **Sector Weights**



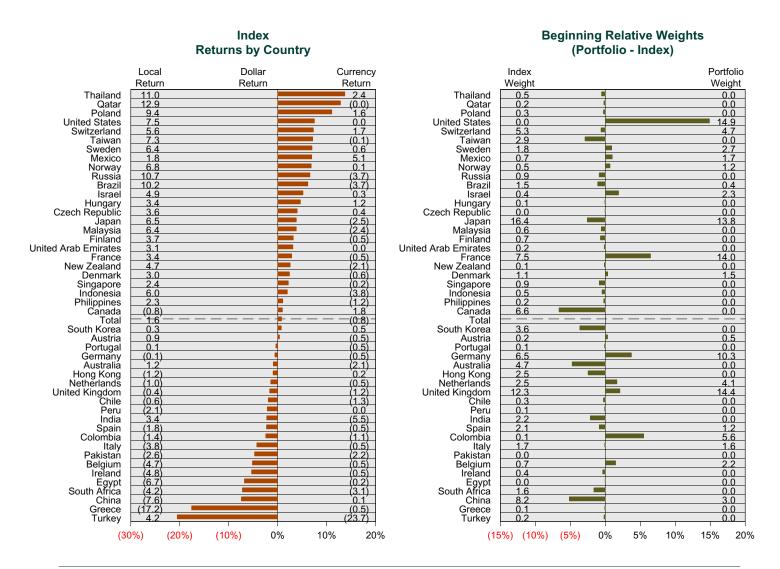
<sup>\*9/30/18</sup> portfolio characteristics generated using most recently available holdings (6/30/18) modified based on a "buy-and-hold" assumption (repriced and adjusted for corporate actions). Analysis is then done using current market and company financial data.

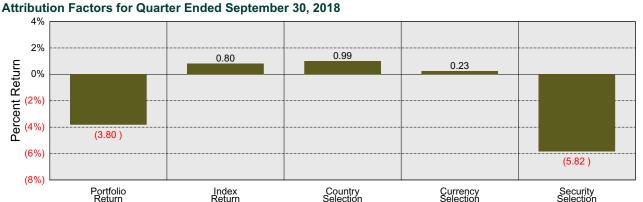


# Harbor International vs MSCI ACWIxUS Gross Attribution for Quarter Ended September 30, 2018

#### **International Attribution**

The first chart below illustrates the return for each country in the index sorted from high to low. The total return for the index is highlighted with a dotted line. The second chart (countries presented in the same order) illustrates the manager's country allocation decisions relative to the index. To the extent that the manager over-weighted a country that had a higher return than the total return for the index (above the dotted line) it contributes positively to the manager's country (or currency) selection effect. The last chart details the manager return, the index return, and the attribution factors for the quarter.







# Oakmark International Period Ended September 30, 2018

### **Investment Philosophy**

Harris Associates are value investors. They seek to invest in companies that trade at a substantial discount to their underlying business values and run by managers who think and act as owners. They believe that purchasing a quality business at a discount to its underlying value minimizes risk while providing substantial profit potential. Over time, they believe the price of a stock will rise to reflect the company's underlying business value; in practice, their investment time horizon is generally three to five years. They are concentrated investors, building focused portfolios that provide diversification but are concentrated enough so that their best ideas can make a meaningful impact on investment performance. They believe they can add value through their stock selection capabilities and low correlation to international indices and peers. Harris believes their greatest competitive advantage is their long-term investment horizon, exploiting the mispricing of securities caused by what they believe is the short-term focus of many market participants. \*This fund was converted into a CIT in November 2015.

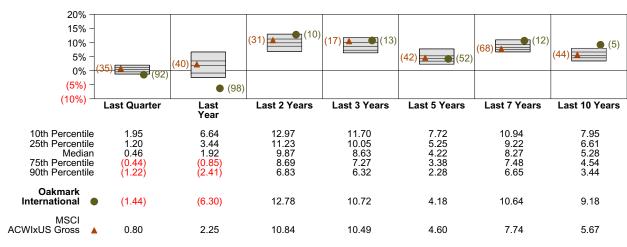
# **Quarterly Summary and Highlights**

- Oakmark International's portfolio posted a (1.44)% return for the quarter placing it in the 92 percentile of the Callan Non US Equity Mutual Funds group for the quarter and in the 98 percentile for the last year.
- Oakmark International's portfolio underperformed the MSCI ACWIxUS Gross by 2.24% for the quarter and underperformed the MSCI ACWIxUS Gross for the year by 8.55%.

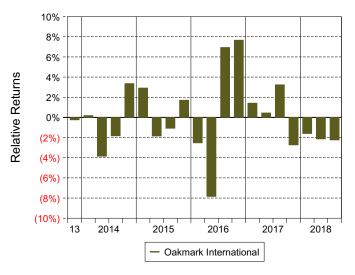
## **Quarterly Asset Growth**

Beginning Market Value	\$29,118,244
Net New Investment	\$0
Investment Gains/(Losses)	\$-420,552
Ending Market Value	\$28,697,691

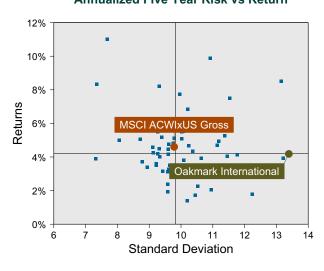
# Performance vs Callan Non US Equity Mutual Funds (Net)



# Relative Return vs MSCI ACWIxUS Gross



# Callan Non US Equity Mutual Funds (Net) Annualized Five Year Risk vs Return



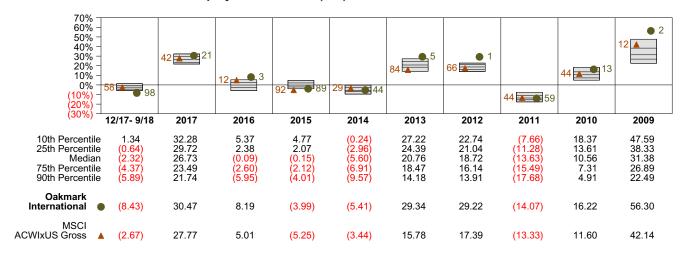


# Oakmark International Return Analysis Summary

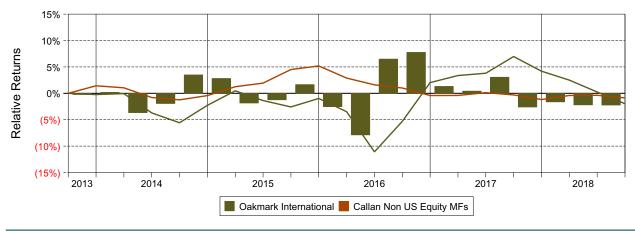
### **Return Analysis**

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

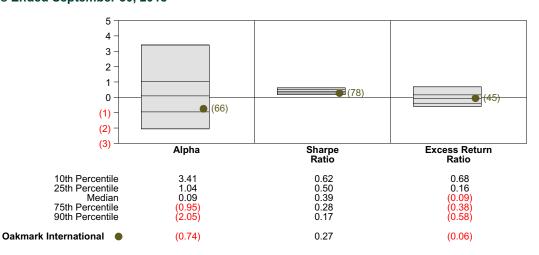
# Performance vs Callan Non US Equity Mutual Funds (Net)



# Cumulative and Quarterly Relative Return vs MSCI ACWIxUS Gross



Risk Adjusted Return Measures vs MSCI ACWIxUS Gross Rankings Against Callan Non US Equity Mutual Funds (Net) Five Years Ended September 30, 2018



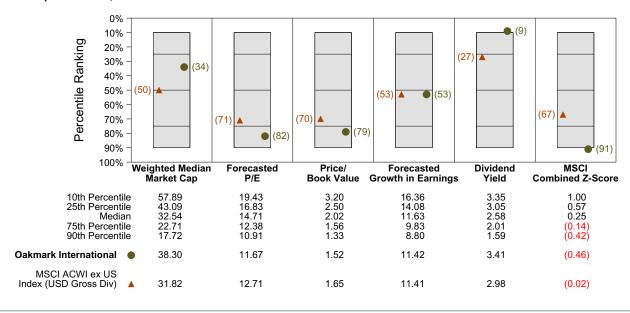


# Oakmark International Equity Characteristics Analysis Summary

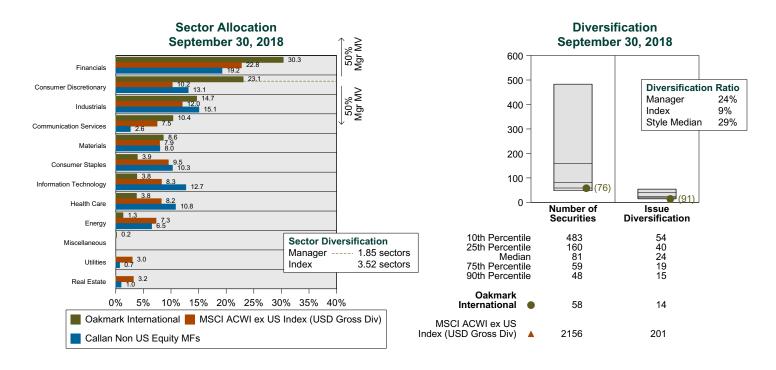
### **Portfolio Characteristics**

This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

# Portfolio Characteristics Percentile Rankings Rankings Against Callan Non US Equity Mutual Funds as of September 30, 2018



### **Sector Weights**

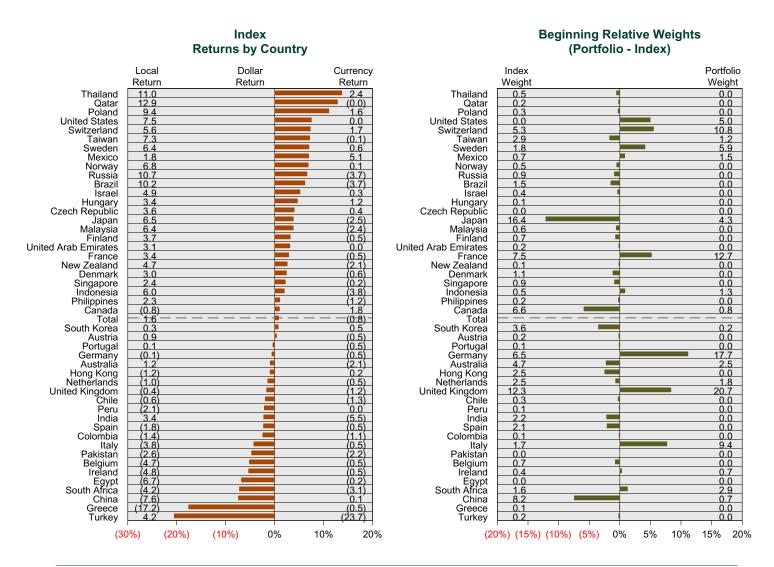




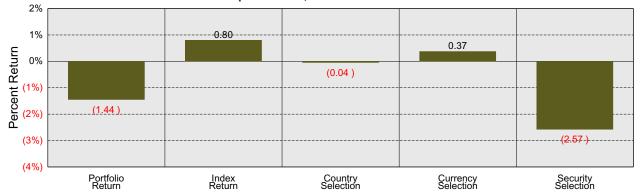
# Oakmark International vs MSCI ACWIxUS Gross Attribution for Quarter Ended September 30, 2018

#### **International Attribution**

The first chart below illustrates the return for each country in the index sorted from high to low. The total return for the index is highlighted with a dotted line. The second chart (countries presented in the same order) illustrates the manager's country allocation decisions relative to the index. To the extent that the manager over-weighted a country that had a higher return than the total return for the index (above the dotted line) it contributes positively to the manager's country (or currency) selection effect. The last chart details the manager return, the index return, and the attribution factors for the quarter.









# Mondrian International Period Ended September 30, 2018

### **Investment Philosophy**

Mondrian's value driven investment philosophy is based on the belief that investments need to be evaluated in terms of their fundamental long-term value. In the management of international equity assets, they invest in securities where rigorous dividend discount analysis identifies value in terms of the long term flow of income. Mondrian's management fee is 80 bps on all assets.

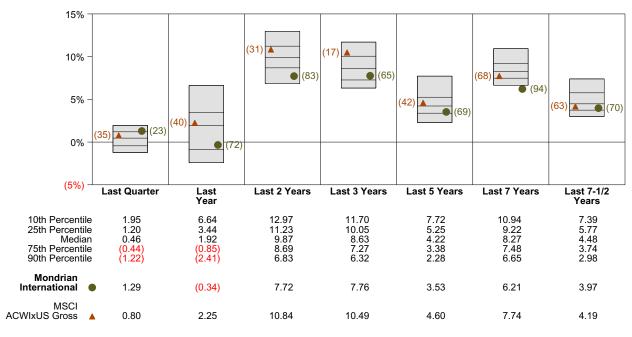
## **Quarterly Summary and Highlights**

- Mondrian International's portfolio posted a 1.29% return for the quarter placing it in the 23 percentile of the Callan Non US Equity Mutual Funds group for the quarter and in the 72 percentile for the last year.
- Mondrian International's portfolio outperformed the MSCI ACWIxUS Gross by 0.50% for the quarter and underperformed the MSCI ACWIxUS Gross for the year by 2.59%.

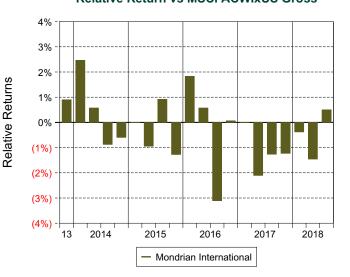
# **Quarterly Asset Growth**

Beginning Market Value	\$25,859,842
Net New Investment	\$0
Investment Gains/(Losses)	\$387,531
Ending Market Value	\$26,247,373

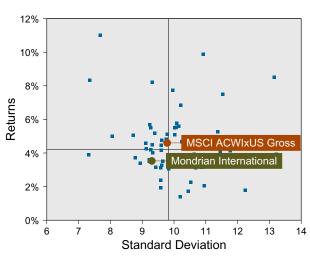
## Performance vs Callan Non US Equity Mutual Funds (Net)



# Relative Return vs MSCI ACWIxUS Gross



# Callan Non US Equity Mutual Funds (Net) Annualized Five Year Risk vs Return



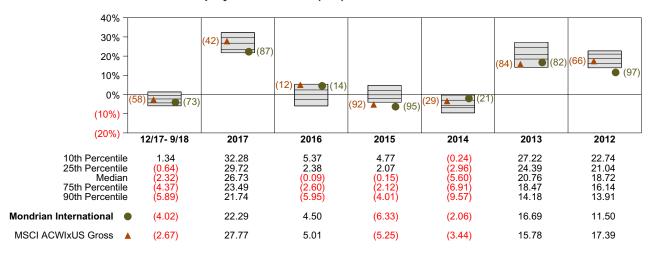


# Mondrian International Return Analysis Summary

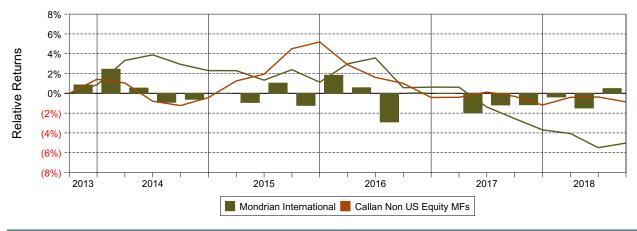
#### **Return Analysis**

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

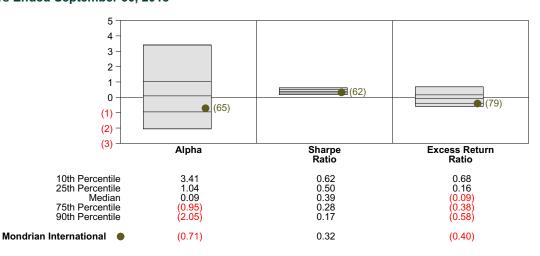
# Performance vs Callan Non US Equity Mutual Funds (Net)



# Cumulative and Quarterly Relative Return vs MSCI ACWIxUS Gross



Risk Adjusted Return Measures vs MSCI ACWIxUS Gross Rankings Against Callan Non US Equity Mutual Funds (Net) Five Years Ended September 30, 2018



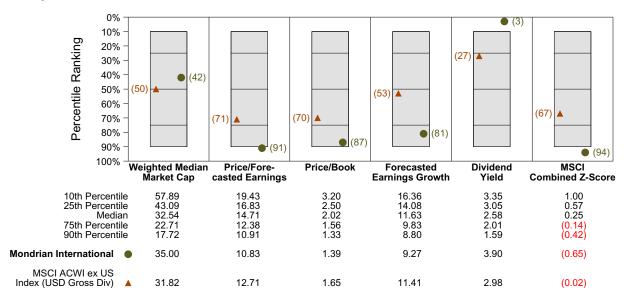


# Mondrian International Equity Characteristics Analysis Summary

#### **Portfolio Characteristics**

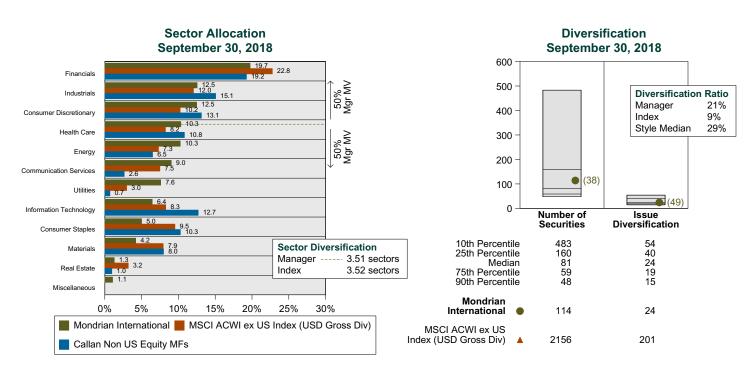
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Non US Equity Mutual Funds as of September 30, 2018



#### **Sector Weights**

The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. Diversification by number and concentration of holdings are also compared to the benchmark and peer group. Issue Diversification represents by count, and Diversification Ratio by percent, the number of holdings that account for half of the portfolio's market value.

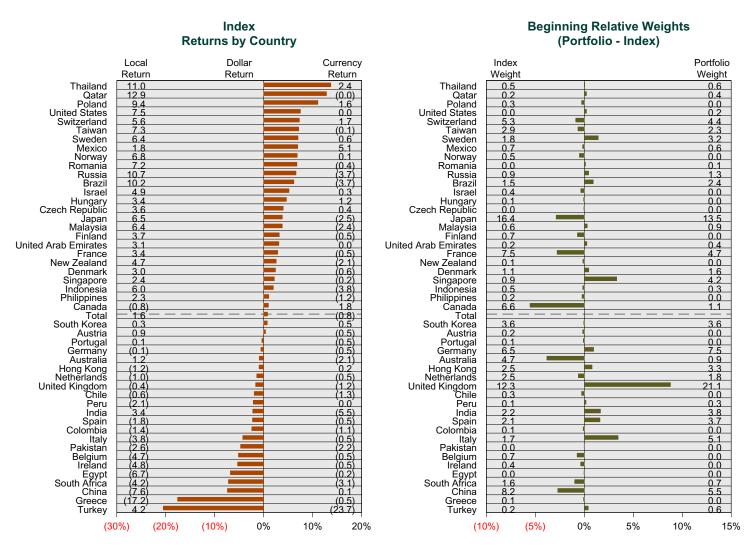


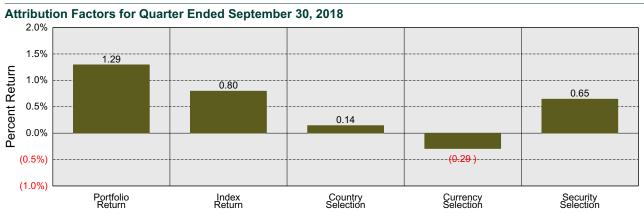


# Mondrian International vs MSCI ACWIxUS Gross Attribution for Quarter Ended September 30, 2018

#### **International Attribution**

The first chart below illustrates the return for each country in the index sorted from high to low. The total return for the index is highlighted with a dotted line. The second chart (countries presented in the same order) illustrates the manager's country allocation decisions relative to the index. To the extent that the manager over-weighted a country that had a higher return than the total return for the index (above the dotted line) it contributes positively to the manager's country (or currency) selection effect. The last chart details the manager return, the index return, and the attribution factors for the quarter.







# T. Rowe Price Intl Small Cap Period Ended September 30, 2018

#### **Investment Philosophy**

Central to T. Rowe's investment philosophy is the belief that the market for international small-cap equities has significant pricing inefficiencies. These inefficiencies stem from the fact that global investors tend to be underexposed to international small-cap equities and that these equities are under researched given the sheer size and scope of the opportunity set. Further, they believe that a disciplined decision-making process nourished by superior research information is the best way to take advantage of market inefficiencies. The team's approach emphasizes reasonably priced growth stocks that they believe can grow their earnings faster than the overall market, which should result in a portfolio of stocks that outperforms the broad market over time. Portfolio was funded September 2017. Historical returns are that of the manager's composite.

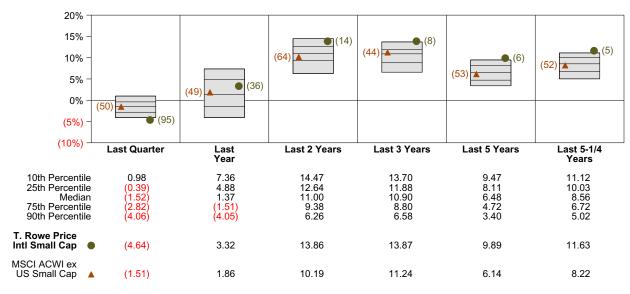
#### **Quarterly Summary and Highlights**

- T. Rowe Price Intl Small Cap's portfolio posted a (4.64)% return for the quarter placing it in the 95 percentile of the Callan International Small Cap Mut Funds group for the quarter and in the 36 percentile for the last year.
- T. Rowe Price Intl Small Cap's portfolio underperformed the MSCI ACWI ex US Small Cap by 3.13% for the quarter and outperformed the MSCI ACWI ex US Small Cap for the year by 1.46%.

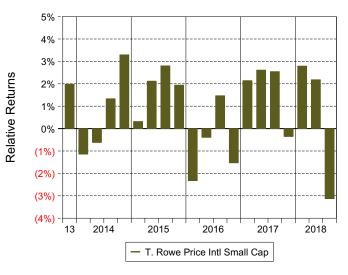
#### **Quarterly Asset Growth**

Beginning Market Value	\$23,445,588
Net New Investment	\$0
Investment Gains/(Losses)	\$-1,028,846
Ending Market Value	\$22,416,742

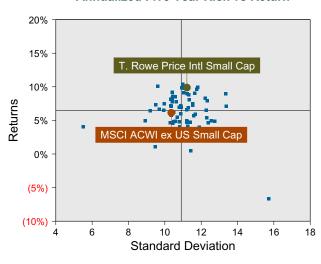
#### Performance vs Callan International Small Cap Mut Funds (Net)



### Relative Returns vs MSCI ACWI ex US Small Cap



# Callan International Small Cap Mut Funds (Net) Annualized Five Year Risk vs Return



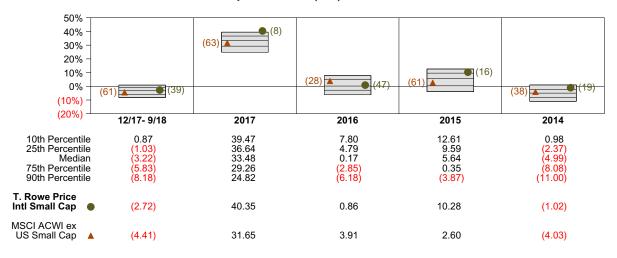


# T. Rowe Price Intl Small Cap Return Analysis Summary

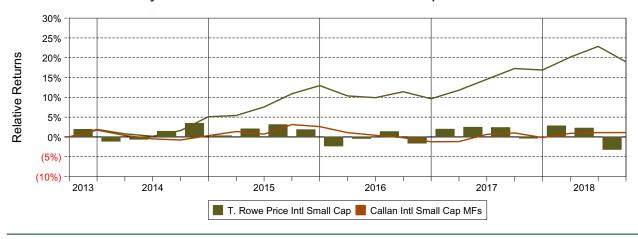
#### **Return Analysis**

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

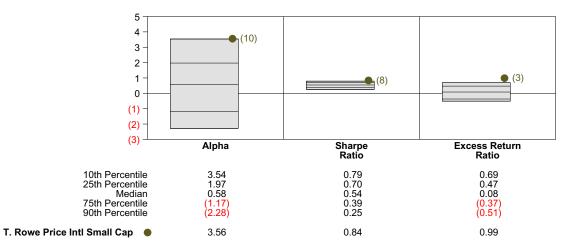
#### Performance vs Callan International Small Cap Mut Funds (Net)



#### Cumulative and Quarterly Relative Return vs MSCI ACWI ex US Small Cap



Risk Adjusted Return Measures vs MSCI ACWI ex US Small Cap Rankings Against Callan International Small Cap Mut Funds (Net) Five Years Ended September 30, 2018





# T. Rowe Price Intl Small Cap Equity Characteristics Analysis Summary

#### **Portfolio Characteristics**

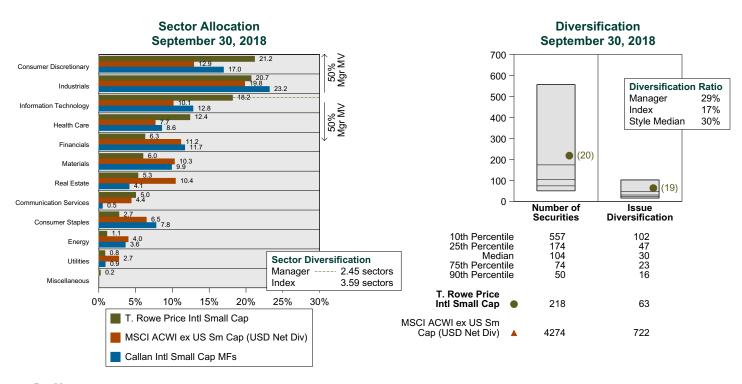
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan International Small Cap Mut Funds as of September 30, 2018



#### **Sector Weights**

The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. Diversification by number and concentration of holdings are also compared to the benchmark and peer group. Issue Diversification represents by count, and Diversification Ratio by percent, the number of holdings that account for half of the portfolio's market value.

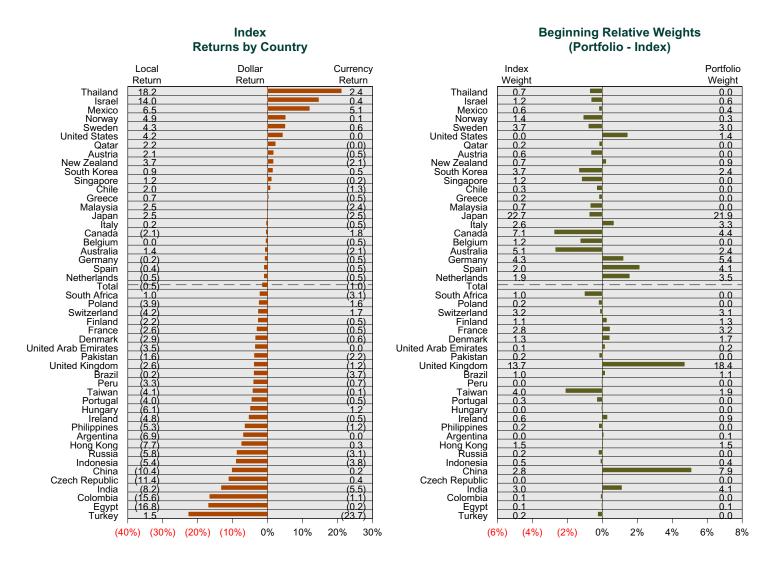


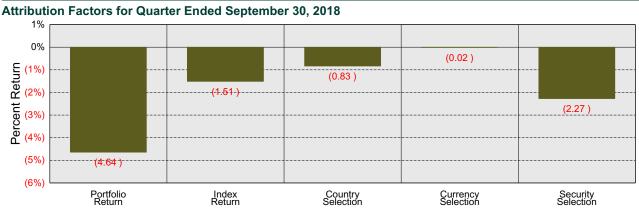


# T. Rowe Price Intl Small Cap vs MSCI ACWI ex US Small Cap Attribution for Quarter Ended September 30, 2018

#### **International Attribution**

The first chart below illustrates the return for each country in the index sorted from high to low. The total return for the index is highlighted with a dotted line. The second chart (countries presented in the same order) illustrates the manager's country allocation decisions relative to the index. To the extent that the manager over-weighted a country that had a higher return than the total return for the index (above the dotted line) it contributes positively to the manager's country (or currency) selection effect. The last chart details the manager return, the index return, and the attribution factors for the quarter.







#### Investec

# Period Ended September 30, 2018

#### **Investment Philosophy**

Investec's 4Factor Equity team believes that share prices are driven by four key attributes over time and investing in companies that display these characteristics will drive long-term performance. They look to invest in high quality, attractively valued companies, which are improving operating performance and receiving increasing investor attention. These four factors (i.e., Strategy, Value, Earnings, and Technicals) are confirmed as performance drivers by academic research, empirical testing and intuitive reasoning. They believe that each factor can be a source of outperformance but in combination they are intended to produce more stable returns over the market cycle. Investec's management fee is 80 bps on all assets. The portfolio was funded June 2017. Historical returns are that of the manager's composite.

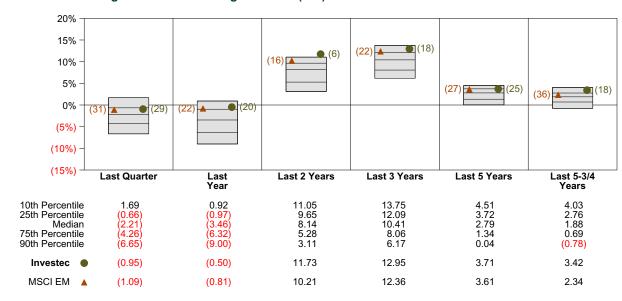
#### **Quarterly Summary and Highlights**

- Investec's portfolio posted a (0.95)% return for the quarter placing it in the 29 percentile of the Morningstar Diversified Emg Mkts Fds group for the quarter and in the 20 percentile for the last year.
- Investec's portfolio outperformed the MSCI EM by 0.15% for the quarter and outperformed the MSCI EM for the year by 0.32%.

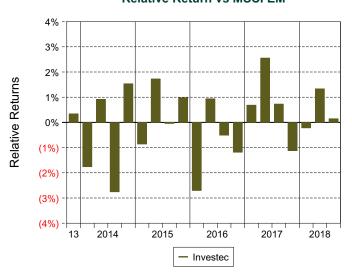
#### **Quarterly Asset Growth**

Beginning Market Value	\$14,907,187
Net New Investment	\$0
Investment Gains/(Losses)	\$-111,484
Ending Market Value	\$14,795,702

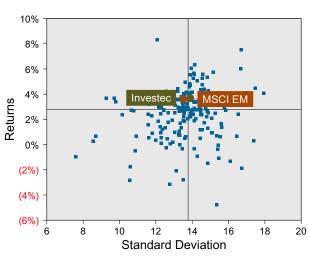
#### Performance vs Morningstar Diversified Emg Mkts Fds (Net)



# Relative Return vs MSCI EM



#### Morningstar Diversified Emg Mkts Fds (Net) Annualized Five Year Risk vs Return



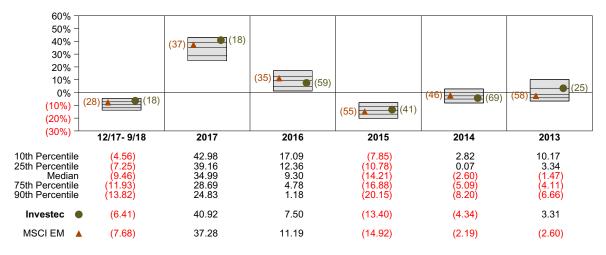


# Investec Return Analysis Summary

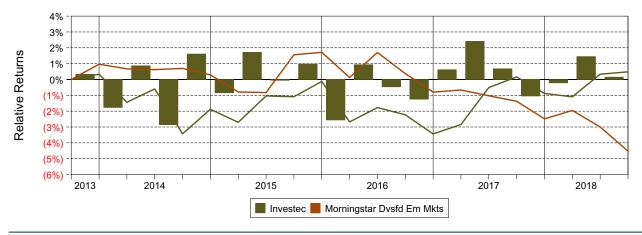
#### **Return Analysis**

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

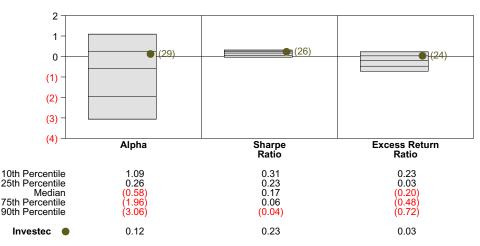
#### Performance vs Morningstar Diversified Emg Mkts Fds (Net)



# **Cumulative and Quarterly Relative Return vs MSCI EM**



Risk Adjusted Return Measures vs MSCI EM Rankings Against Morningstar Diversified Emg Mkts Fds (Net) Five Years Ended September 30, 2018





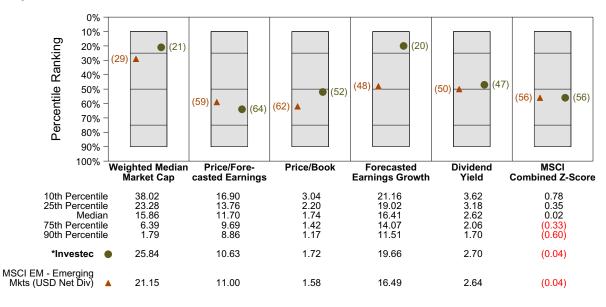
#### Investec

### **Equity Characteristics Analysis Summary**

#### **Portfolio Characteristics**

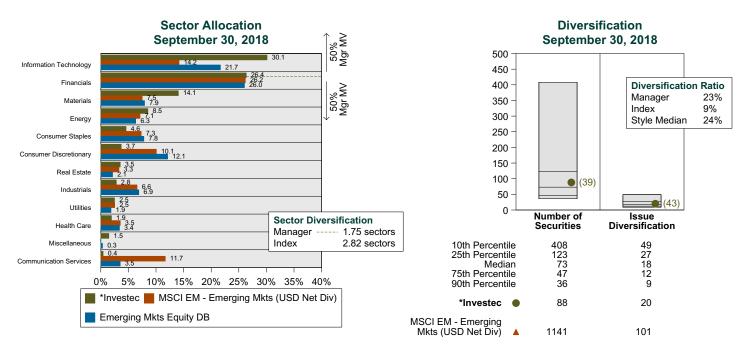
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Emerging Markets Equity DB as of September 30, 2018



#### **Sector Weights**

The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. Diversification by number and concentration of holdings are also compared to the benchmark and peer group. Issue Diversification represents by count, and Diversification Ratio by percent, the number of holdings that account for half of the portfolio's market value.



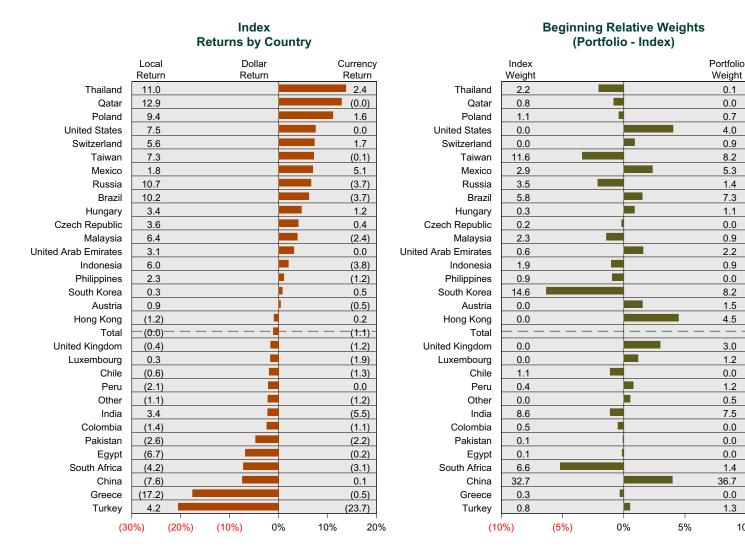
<sup>\*9/30/18</sup> portfolio characteristics generated using most recently available holdings (6/30/18) modified based on a "buy-and-hold" assumption (repriced and adjusted for corporate actions). Analysis is then done using current market and company financial data.

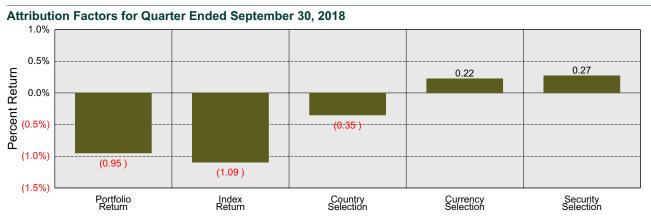


# Investec vs MSCI EM Attribution for Quarter Ended September 30, 2018

#### **International Attribution**

The first chart below illustrates the return for each country in the index sorted from high to low. The total return for the index is highlighted with a dotted line. The second chart (countries presented in the same order) illustrates the manager's country allocation decisions relative to the index. To the extent that the manager over-weighted a country that had a higher return than the total return for the index (above the dotted line) it contributes positively to the manager's country (or currency) selection effect. The last chart details the manager return, the index return, and the attribution factors for the quarter.







10%

# Domestic Fixed Income Composite Period Ended September 30, 2018

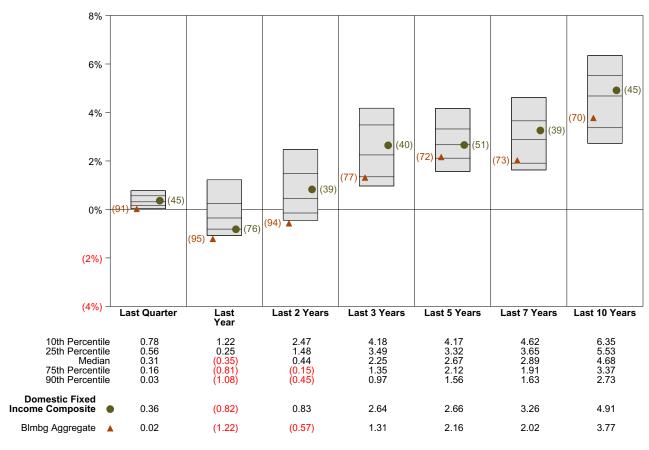
#### **Quarterly Summary and Highlights**

- Domestic Fixed Income Composite's portfolio posted a 0.36% return for the quarter placing it in the 45 percentile of the Public Fund - Domestic Fixed group for the quarter and in the 76 percentile for the last year.
- Domestic Fixed Income Composite's portfolio outperformed the Blmbg Aggregate by 0.34% for the quarter and outperformed the Blmbg Aggregate for the year by 0.40%.

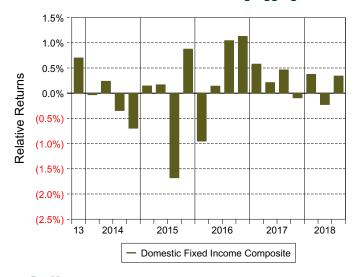
#### **Quarterly Asset Growth**

Beginning Market Value \$103,773,892
Net New Investment \$-0
Investment Gains/(Losses) \$374,602
Ending Market Value \$104,148,494

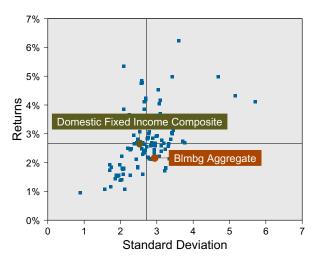
### Performance vs Public Fund - Domestic Fixed (Gross)



#### Relative Return vs Blmbg Aggregate



# Public Fund - Domestic Fixed (Gross) Annualized Five Year Risk vs Return



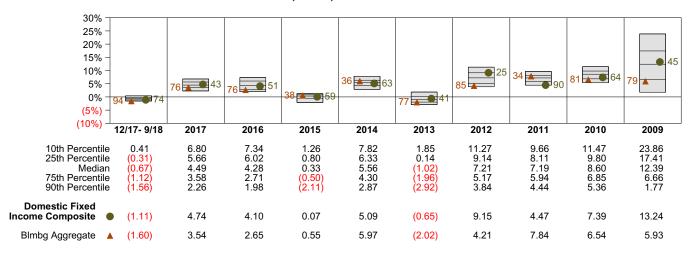


# **Domestic Fixed Income Composite Return Analysis Summary**

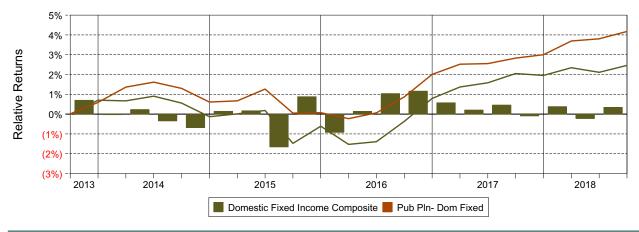
#### **Return Analysis**

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

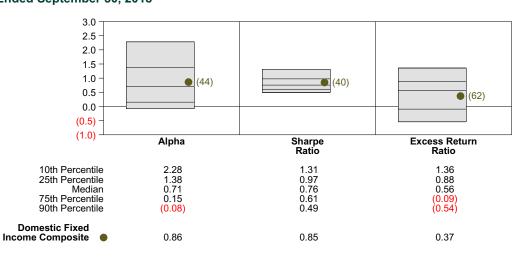
# Performance vs Public Fund - Domestic Fixed (Gross)



### **Cumulative and Quarterly Relative Return vs Blmbg Aggregate**



Risk Adjusted Return Measures vs Blmbg Aggregate Rankings Against Public Fund - Domestic Fixed (Gross) Five Years Ended September 30, 2018



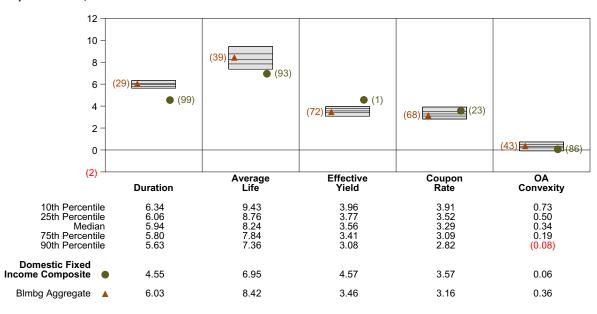


# Domestic Fixed Income Composite Bond Characteristics Analysis Summary

#### **Portfolio Characteristics**

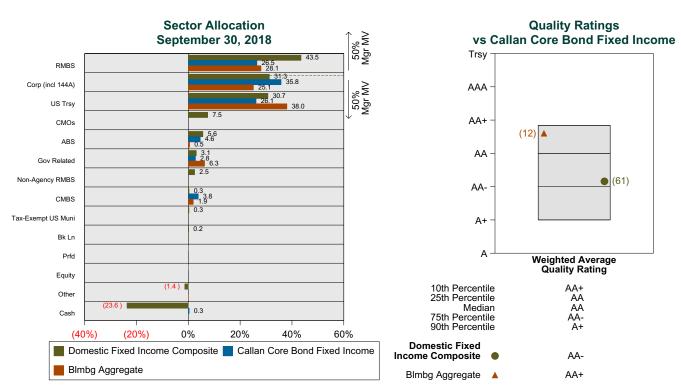
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

### Fixed Income Portfolio Characteristics Rankings Against Callan Core Bond Fixed Income as of September 30, 2018



#### **Sector Allocation and Quality Ratings**

The first graph compares the manager's sector allocation with the average allocation across all the members of the manager's style. The second graph compares the manager's weighted average quality rating with the range of quality ratings for the style.





# Dodge & Cox Income Period Ended September 30, 2018

#### **Investment Philosophy**

Dodge & Cox's Fixed Income philosophy is to construct and manage a high-quality and diversified portfolio of securities that is selected through bottom-up, fundamental analysis. They believe that by combining fundamental research with a long-term investment horizon, it is possible to uncover and act upon inefficiencies in the valuation of market sectors and individual securities. In their efforts to seek attractive returns, the team: 1) emphasizes market sector and individual security selection; 2) strives to build portfolios which have a higher yield than the composite yield of the broad bond market; and 3) analyzes portfolio and individual security risk. Their credit research focuses on analysis of the fundamental factors that impact an individual issuer's or market sector's credit risk. They also consider economic trends and special circumstances which may affect an industry or a specific issue or issuer.

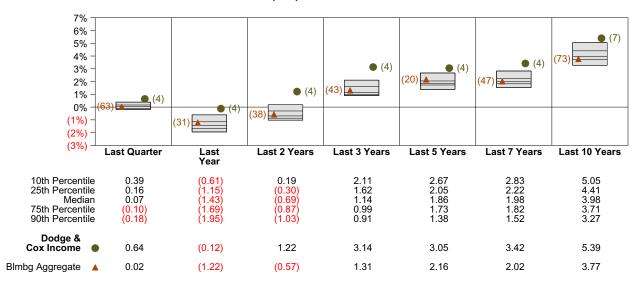
#### **Quarterly Summary and Highlights**

- Dodge & Cox Income's portfolio posted a 0.64% return for the quarter placing it in the 4 percentile of the Callan Core Bond Mutual Funds group for the quarter and in the 4 percentile for the last year.
- Dodge & Cox Income's portfolio outperformed the Blmbg Aggregate by 0.62% for the quarter and outperformed the Blmbg Aggregate for the year by 1.10%.

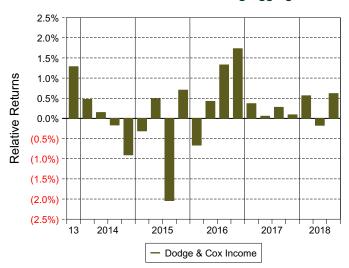
### **Quarterly Asset Growth**

Beginning Market Value	\$52,096,559
Net New Investment	\$0
Investment Gains/(Losses)	\$332,037
Ending Market Value	\$52,428,596

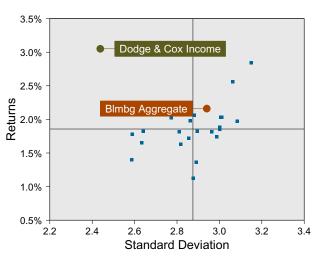
#### Performance vs Callan Core Bond Mutual Funds (Net)



#### Relative Return vs Blmbg Aggregate



# Callan Core Bond Mutual Funds (Net) Annualized Five Year Risk vs Return



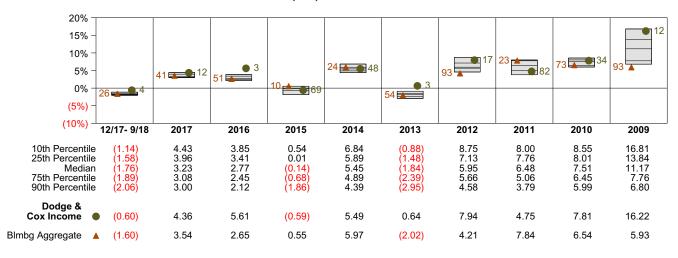


# Dodge & Cox Income Return Analysis Summary

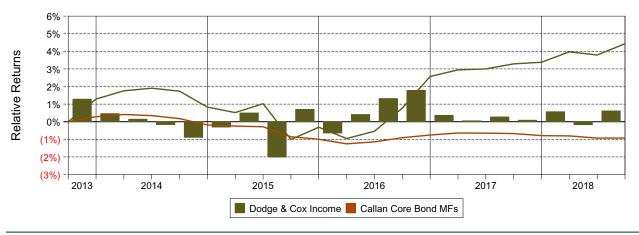
#### **Return Analysis**

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

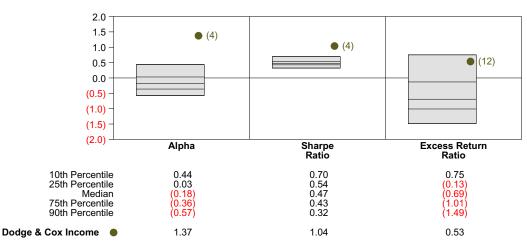
#### Performance vs Callan Core Bond Mutual Funds (Net)



### **Cumulative and Quarterly Relative Return vs Blmbg Aggregate**



Risk Adjusted Return Measures vs Blmbg Aggregate Rankings Against Callan Core Bond Mutual Funds (Net) Five Years Ended September 30, 2018



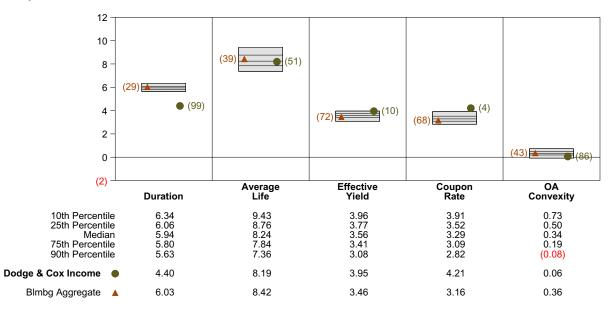


# Dodge & Cox Income Bond Characteristics Analysis Summary

#### **Portfolio Characteristics**

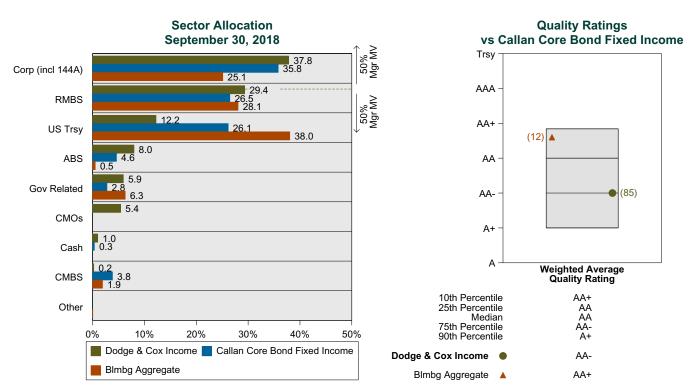
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Fixed Income Portfolio Characteristics Rankings Against Callan Core Bond Fixed Income as of September 30, 2018



#### **Sector Allocation and Quality Ratings**

The first graph compares the manager's sector allocation with the average allocation across all the members of the manager's style. The second graph compares the manager's weighted average quality rating with the range of quality ratings for the style.





### **PIMCO**

# Period Ended September 30, 2018

#### **Investment Philosophy**

PIMCO emphasizes adding value by rotating through the major sectors of the domestic and international bond markets. They also seek to enhance returns through duration management.

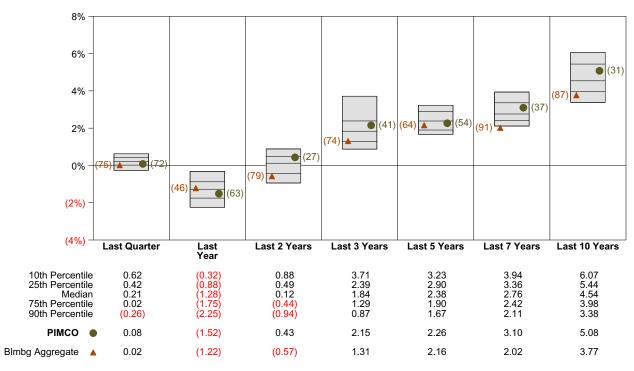
#### **Quarterly Summary and Highlights**

- PIMCO's portfolio posted a 0.08% return for the quarter placing it in the 72 percentile of the Callan Core Plus Mutual Funds group for the quarter and in the 63 percentile for the last year.
- PIMCO's portfolio outperformed the Blmbg Aggregate by 0.06% for the quarter and underperformed the Blmbg Aggregate for the year by 0.30%.

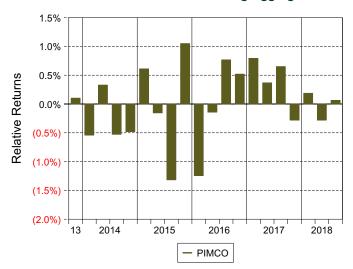
Quarterly A	set Growth	
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Beginning Market Value	\$51,677,332
Net New Investment	\$0
Investment Gains/(Losses)	\$42,565
Ending Market Value	\$51,719,898

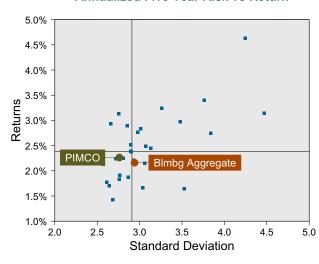
# Performance vs Callan Core Plus Mutual Funds (Net)



#### Relative Return vs Blmbg Aggregate



# Callan Core Plus Mutual Funds (Net) Annualized Five Year Risk vs Return



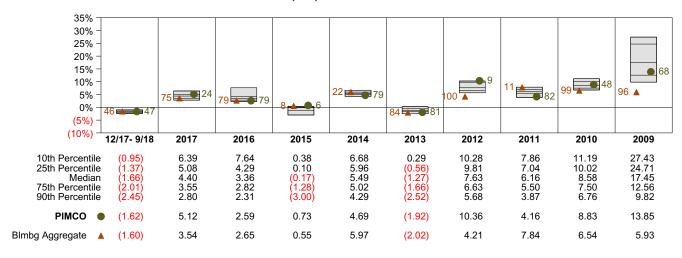


# PIMCO Return Analysis Summary

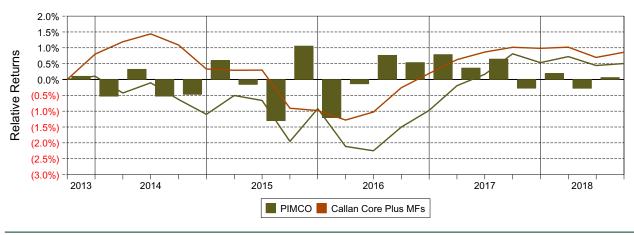
#### **Return Analysis**

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

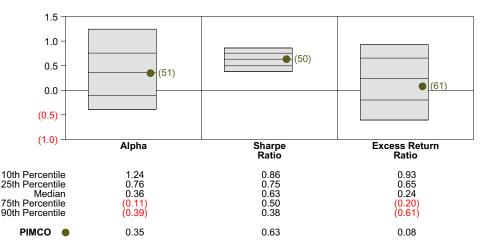
# Performance vs Callan Core Plus Mutual Funds (Net)



# **Cumulative and Quarterly Relative Return vs Blmbg Aggregate**



Risk Adjusted Return Measures vs Blmbg Aggregate Rankings Against Callan Core Plus Mutual Funds (Net) Five Years Ended September 30, 2018





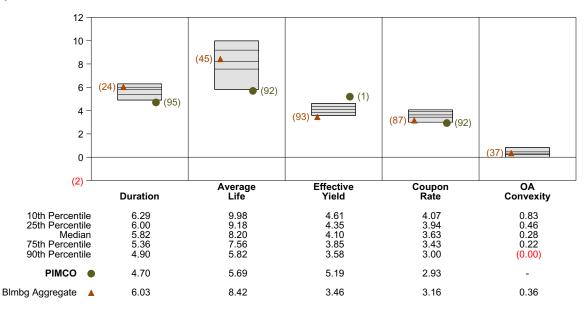
## **PIMCO**

# **Bond Characteristics Analysis Summary**

#### **Portfolio Characteristics**

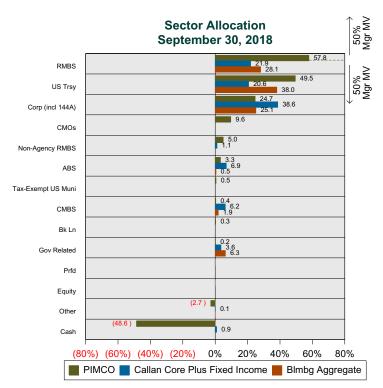
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

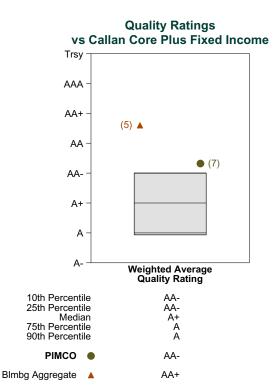
## Fixed Income Portfolio Characteristics Rankings Against Callan Core Plus Fixed Income as of September 30, 2018



#### **Sector Allocation and Quality Ratings**

The first graph compares the manager's sector allocation with the average allocation across all the members of the manager's style. The second graph compares the manager's weighted average quality rating with the range of quality ratings for the style.







# RREEF Private Period Ended September 30, 2018

#### **Investment Philosophy**

RREEF America II acquires 100 percent equity interests in small- to medium-sized (\$10 million to \$70 million) apartment, industrial, retail and office properties in targeted metropolitan areas within the continental United States. The fund capitalizes on RREEF's national research capabilities and market presence to identify superior investment opportunities in major metropolitan areas across the United States.

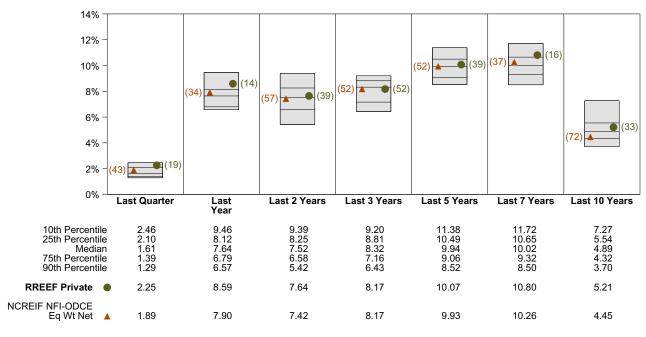
#### **Quarterly Summary and Highlights**

- RREEF Private's portfolio posted a 2.25% return for the quarter placing it in the 19 percentile of the Callan Open End Core Cmmingled Real Est group for the quarter and in the 14 percentile for the last year.
- RREEF Private's portfolio outperformed the NCREIF NFI-ODCE Eq Wt Net by 0.36% for the quarter and outperformed the NCREIF NFI-ODCE Eq Wt Net for the year by 0.68%.

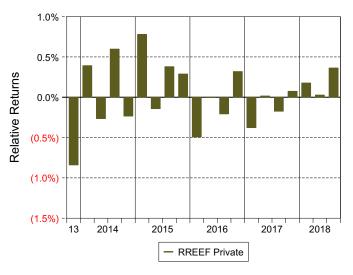
## **Quarterly Asset Growth**

Beginning Market Value	\$28,915,125
Net New Investment	\$0
Investment Gains/(Losses)	\$651,354
Ending Market Value	\$29.566.479

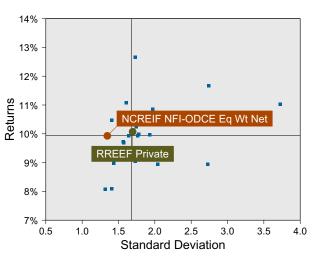
#### Performance vs Callan Open End Core Cmmingled Real Est (Net)



#### Relative Returns vs NCREIF NFI-ODCE Eq Wt Net



# Callan Open End Core Cmmingled Real Est (Net) Annualized Five Year Risk vs Return





# Barings Core Property Fund Period Ended September 30, 2018

#### **Investment Philosophy**

Barings believes that the investment strategy for the Core Property Fund is unique with the goal of achieving returns in excess of the benchmark index, the NFI-ODCE Index, with a level of risk associated with a core fund. The construct of the Fund relies heavily on input from Barings Research, which provided the fundamentals for the investment strategy. Strategic targets and fund exposure which differentiate the Fund from its competitors with respect to both its geographic and property type weightings, and we believe will result in performance in excess of industry benchmarks over the long-term.

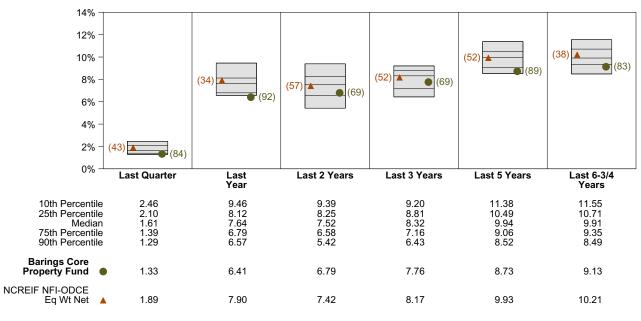
### **Quarterly Summary and Highlights**

- Barings Core Property Fund's portfolio posted a 1.33% return for the quarter placing it in the 84 percentile of the Callan Open End Core Cmmingled Real Est group for the quarter and in the 92 percentile for the last year.
- Barings Core Property Fund's portfolio underperformed the NCREIF NFI-ODCE Eq Wt Net by 0.56% for the quarter and underperformed the NCREIF NFI-ODCE Eq Wt Net for the year by 1.50%.

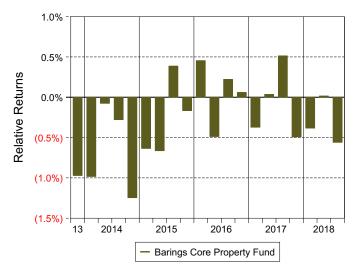
### **Quarterly Asset Growth**

Beginning Market Value	\$26,405,275
Net New Investment	\$0
Investment Gains/(Losses)	\$351,027
Ending Market Value	\$26,756,302

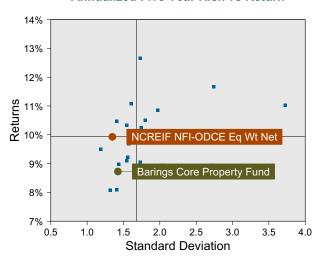
### Performance vs Callan Open End Core Cmmingled Real Est (Net)



#### Relative Returns vs NCREIF NFI-ODCE Eq Wt Net



# Callan Open End Core Cmmingled Real Est (Net) Annualized Five Year Risk vs Return





#### **U.S. EQUITY**

The U.S. equity market posted broad-based gains in the third quarter fueled by strong economic growth, robust corporate earnings, and heightened stock buybacks. Several major indices hit record levels during the quarter, and the 7.7% gain for the S&P 500 was its biggest since the fourth quarter of 2013. Volatility was muted in spite of persistent headlines around trade war threats and the ever-changing negotiations.

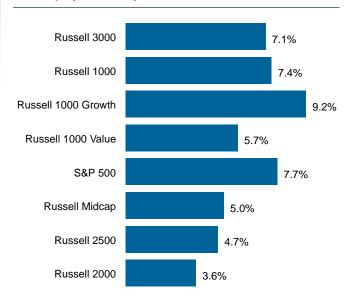
# Large Cap Outpaced Small Cap (Russell 1000: +7.4%; Russell 2000: +3.6%)

- Tax reform and domestic prosperity contributed to an acceleration in corporate earnings growth, and valuations remained elevated as strong sentiment persisted given positive economic data.
- Amazon (+17.8%), Apple (+22.4%), and Microsoft (+16.4%)
   were strong contributors to large cap outperformance.
- FAANG stocks plus Microsoft had a more muted impact than in previous quarters, but still contributed nearly 25% of the S&P 500's quarterly return.
- All sectors landed in positive territory with Health Care (+14.5%), Industrials (+10%), and Communication Services (+9.9%) as the strongest performers.
- The new Communication Services sector represents 10% of the S&P 500 and includes several FAANG stocks such as Alphabet, Facebook, and Netflix; Tech and Consumer Discretionary now represent lower weightings in the index.

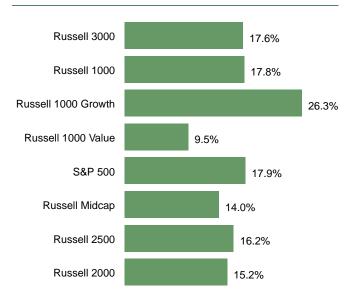
# **Growth Continued to Outperform Value** (Russell 1000 Growth: +9.2%; Russell 1000 Value: +5.7%)

- Divergence between Growth and Value approaching historical high; Growth outpacing Value this year by the widest margin in 15 years within large cap (Russell 1000 Growth YTD: +17.1% vs. Russell 1000 Value YTD: +3.9%) due largely to ongoing euphoria of the FAANG stocks.
- Momentum continued as the leading factor for the quarter and year-to-date; value has been the worst-performing style for the last 18 months.

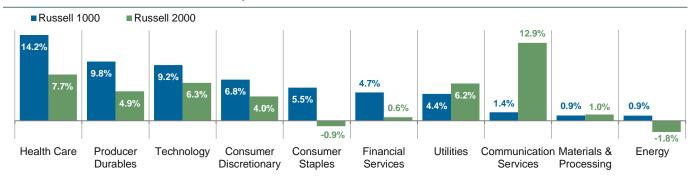
#### **U.S. Equity: Quarterly Returns**



# U.S. Equity: One-Year Returns



#### Russell Sector Returns, Quarter ended September 30, 2018



Sources: FTSE Russell, Standard & Poor's



#### **NON-U.S./GLOBAL EQUITY**

Market divergence has emerged after synchronized growth in 2017. The U.S. continues to post positive returns while non-U.S. developed and emerging markets have rolled over year-to-date, dragged down by geopolitical and economic uncertainties.

**Global/Non-US Developed** (MSCI EAFE: +1.4%; MSCI Europe: +0.8%; MSCI Japan: +3.7%; MSCI World ex USA: +1.3%)

- The dollar rallied against the euro and yen given the fundamentals of the U.S. economy and Fed's contractionary monetary policy; other central banks maintained status quo
- Global trade tensions coupled with Brexit negotiation and Italy's populism concerns tempered the European market despite solid earnings growth; re-election of Prime Minister Shinzo Abe and GDP growth sparked the Japanese market
- Top sector performers were Health Care, Telecommunication Services, and Energy
- Real Estate, Financials, and Consumer Staples were hurt by rising interest rates and a flattening yield curve
- Style had a de minimis impact; however, Growth moderately outperformed Value. Volatility and small cap factors were out of favor given market uncertainties

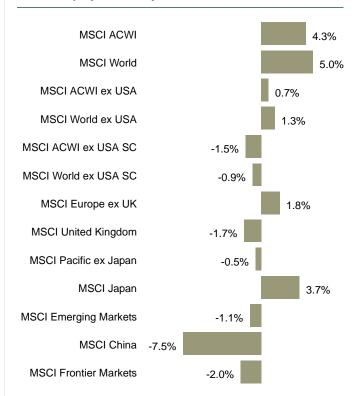
#### Emerging Markets (MSCI EM: -1.1%)

- Emerging markets were under pressure from a rising dollar, U.S. interest rates, and U.S.-China trade frictions
- Turkey was the worst-performing country within emerging markets as the lira and local currency bonds crashed due to the twin deficit, high level of dollar debt, and inflation
- The economic slowdown in China and trade tensions with the U.S. weakened the market
- Brazil and Russia were among the best performers due to climbing oil prices
- Energy was the best performer supported by rising oil prices;
   Consumer Discretionary was the worst sector performer weighed down by China and India
- Value and large cap factors were in favor as Energy gained traction with rising oil prices and momentum struggled as market leadership rotated away from Asian tech companies

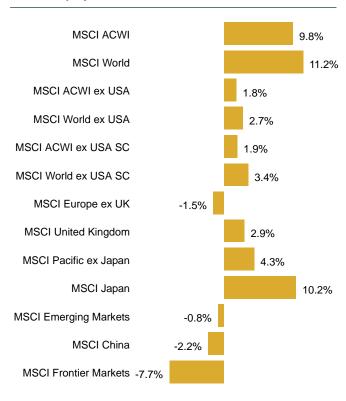
# International Small Cap (MSCI World ex USA Small Cap: +0.9%; MSCI EM Small Cap: -4.2%)

- Both non-U.S. developed and emerging market small cap underperformed large cap as appetite for risk waned due to rising interest rates/dollar, global trade tensions, and geopolitical conflicts
- Value was favored in both non-U.S. developed and emerging market small cap as the value-oriented Energy sector thrived with rising oil prices

#### **Global Equity: Quarterly Returns**



#### **Global Equity: One-Year Returns**



Source: MSCI



#### **U.S. FIXED INCOME**

Fixed income performance was flat for the third quarter. The U.S. Treasury yield curve rose across the maturity spectrum on better-than-expected corporate earnings and solid U.S. economic data despite increased headline risks from U.S. trade tensions and European political uncertainties. Investors searching for shorter duration spreads helped both the commercial mortgage-backed securities (CMBS) and assetbacked securities (ABS) markets as well, but higher interest rates slowed prepayments and extended the duration of agency MBS, resulting in its underperformance.

In other markets, U.S. below-investment grade debt and bank loans also provided strong results this quarter as a lack of new high yield issuance and demand for bank loans from collateralized loan obligation (CLO) formation provided strong support.

# Bloomberg Barclays US Aggregate Bond Index: +0.02% in 3Q; -1.6% YTD

- 10-year U.S. Treasury yield rose steadily, reaching a high of 3.10%, before settling at 3.06% as strong economic data repriced investors' inflation expectations and increased the probability of a December rate hike by the Federal Reserve
- The yield curve flattened with short-term interest rates rising quicker than the longer-term rate. The spread between the 2year and 10-year key rates narrowed 9 bps to 24 bps from last quarter, the tightest in 10 years

#### Investment Grade Corporates: +1.0% in 3Q; -2.3% YTD

- New issuance remained strong with an average of 2-3x oversubscribed demand throughout the quarter
- Spreads continued to narrow this quarter despite leverages increasing within the sector
- Higher rates and weaker overall fundamentals caused this sector to post negative results year to date

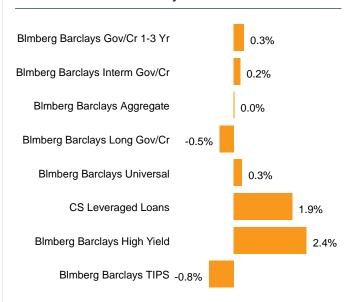
#### High Yield: +2.4% in 3Q; +2.6% YTD

- Low new issuance volume and stable fundamentals compressed spreads
- Bond issuance was \$41 billion, 33% lower than 3Q17

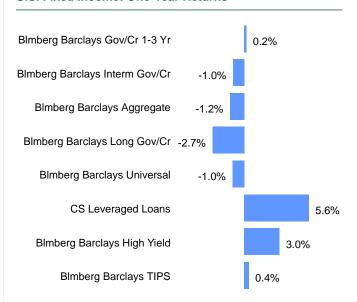
#### Bank Loans: +1.8% in 3Q; +4.0% YTD

- Demand continues for floating rate securities despite covenant-lite structures and higher spread duration
- Heavy issuance continued through the quarter; YTD leveraged loan issuance is above \$900 billion, driven by leveraged buyout and mergers-and-acquisitions activities
- CLO formation also increased demand in the third quarter

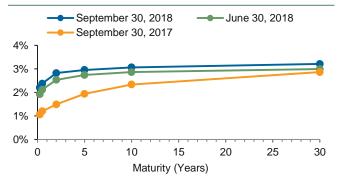
#### U.S. Fixed Income: Quarterly Returns



#### U.S. Fixed Income: One-Year Returns



# U.S. Treasury Yield Curves



Sources: Bloomberg, Bloomberg Barclays, Credit Suisse

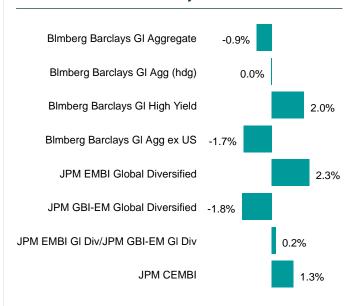


#### **NON-U.S. FIXED INCOME**

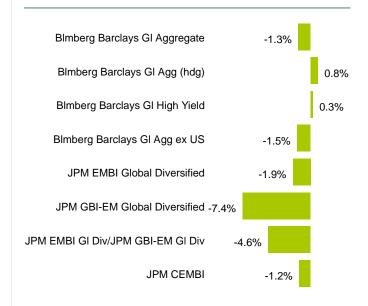
#### **Volatility Hinders Local EM Debt**

- The quarterly return for the JPM EMBI Global Diversified Index (USD denominated) was +2.3% with all sub-regions delivering positive results. Local currency emerging markets, however, fared more poorly. The JPM GBI-EM Global Diversified Index fell 1.8% for the quarter, but also endured significant intra-quarter volatility including a 6.1% drop in August.
- Further, return dispersion among countries was significant. Argentina (-35%) has seen its peso fall more than 50% this year to a record low as investors were spooked by previous currency debacles and worries over the economic picture. In addition to securing support from the International Monetary Fund, the country's central bank hiked short-term interest rates 15 percentage points to a global high of 60%. Turkey (-27%) endured a similar currency rout, though for different reasons. U.S.-imposed sanctions and concerns over central bank policy were the twin drivers of the lira's weakness. Turkey hiked short rates by 6.25 percentage points to 24% to stem its currency slide.
- Elsewhere, returns were far more modest (positive or negative) with only Russia (-6%) and Mexico (+6%) being noteworthy.
- Issuers in Europe faced a different challenge as political uncertainties surrounding Italy caused that market to weaken.

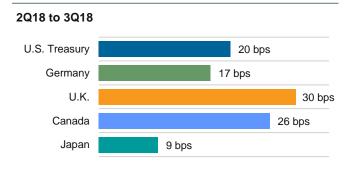
#### Global Fixed Income: Quarterly Returns



#### Global Fixed Income: One-Year Returns



# Change in 10-Year Global Government Bond Yields



Sources: Bloomberg, Bloomberg Barclays, JP Morgan





# **Research and Educational Programs**

The Callan Institute provides research to update clients on the latest industry trends and carefully structured educational programs to enhance the knowledge of industry professionals. Visit www.callan.com/library to see all of our publications, and www.callan.com/blog to view our blog "Perspectives." For more information contact Corry Walsh at 312.346.3536 / institute@callan.com.

# **New Research from Callan's Experts**



An Investor Framework for Addressing Climate Change | Callan's Anna West lays out the top issues for investors about this issue. We also identify solutions and areas of progress for those seeking to address

climate-related risks as well as benefit from emerging opportunities.

Promoting Gender Diversity in the Investment Industry | Callan Executive Chairman Ron Peyton offers his observations on what has worked for gender inclusion at the firm over the last 45 years and what we have learned in the hope that it will inform others on how to progress toward equality in senior roles industry-wide.



Helping DC Plan Participants in the "Distribution" Phase | Callan's Tom Shingler and James Veneruso discuss our research on the "distribution phase" of defined contribution plans, when participants are drawing down assets, and the issues that plan sponsors should address.

Picking Through the Alpha Graveyard: Correcting for Survivorship Bias in Investment Product Universes | In this paper from the *Journal of Investment Management*, Callan's Greg Allen, Ivan Cliff, and Wally Meerschaert propose a technique to correct for survivorship bias in investment product universes. It uses all available data for survivors and non-survivors, corrects for bias across the full distribution (from 1st to 99th percentile), and can be applied to other return-based statistics such as the Sharpe ratio.

**Infrastructure:** No Longer a Niche Option | Callan's Jan Mende discusses investing in infrastructure. Institutional investors are increasing allocations, managers are creating more investment options, and benchmarks are being refined.

The Shape of Risk: Making Cents of the Irrational With Options | In the third quarter's *Hedge Fund Monitor*, Jim McKee discusses the use of options as insurance for institutional portfolios.

**2018 ESG Survey** | Callan's sixth annual survey on the status of environmental, social, and governance (ESG) investing in the U.S. institutional investment market reveals more than 40% of investors are incorporating ESG factors into investment decisions.

Your Plan Will Face a Cyberattack; Here's How to Prepare | The third quarter's edition of the *DC Observer* is designed to assist plan sponsors with formulating and executing their cybersecurity strategy to protect their information and their assets.

#### **Quarterly Periodicals**

**Private Equity Trends** | This newsletter offers the latest data on private equity fundraising, buyouts, venture capital, and returns.

Market Pulse Flipbook | A quarterly market reference guide covering investment and fund sponsor trends in the U.S. economy, U.S. and non-U.S. equities and fixed income, alternatives, and defined contribution.

**Capital Market Review |** This quarterly publication provides analysis and a broad overview of the economy and public and private market activity across a wide range of asset classes.

Real Estate Indicators: Too Hot to Touch or Cool Enough to Handle? | Callan's Real Assets Consulting group identifies seven indicators—based on spreads in real estate and fixed income markets—that, combined with an understanding of prevailing market dynamics, have helped signal when the institutional real estate market is overheated or cooled.

#### **Events**

Miss out on a Callan conference or workshop? Event summaries and speakers' presentations are available on our website: www.callan.com/library/

Callan's **2019 National Conference** will be held January 28-30, 2019. Mark your calendars for this upcoming event! And please visit the Events page on our website (www.callan.com/events/) for additional information as it becomes available.

For more information about events, please contact Barb Gerraty: 415.274.3093 / gerraty@callan.com

# The Center for Investment Training Educational Sessions

The Center for Investment Training, better known as the "Callan College," provides a foundation of knowledge for industry professionals who are involved in the investment decision-making process. It was founded in 1994 to provide clients and non-clients alike with basic- to intermediate-level instruction. Our next sessions are:

#### Introduction to Investments

San Francisco, April 16-17, 2019 San Francisco, July 16-17, 2019 Chicago, October 22-23, 2019

This program familiarizes fund sponsor trustees, staff, and asset management advisers with basic investment theory, terminology, and practices. It lasts one-and-a-half days and is designed for individuals who have less than two years of experience with asset-management oversight and/or support responsibilities. Tuition for the Introductory "Callan College" session is \$2,350 per person. Tuition includes instruction, all materials, breakfast and lunch on each day, and dinner on the first evening with the instructors.

#### **Customized Sessions**

The "Callan College" is equipped to customize a curriculum to meet the training and educational needs of a specific organization. These tailored sessions range from basic to advanced and can take place anywhere—even at your office.

Learn more at www.callan.com/events/callan-college-intro or contact Kathleen Cunnie: 415.274.3029 / cunnie@callan.com

**Education: By the Numbers** 

**525** 

Attendees (on average) of the Institute's annual National Conference

50+

Unique pieces of research the Institute generates each year

3,700

Total attendees of the "Callan College" since 1994

1980

Year the Callan Institute was founded



"Research is the foundation of all we do at Callan, and sharing our best thinking with the investment community is our way of helping to foster dialog to raise the bar across the industry."

Greg Allen, Chief Executive Officer and Chief Research Officer

# **Equity Market Indicators**

The market indicators included in this report are regarded as measures of equity or fixed income performance results. The returns shown reflect both income and capital appreciation.

Russell 1000 Growth measures the performance of those Russell 1000 companies with higher price-to-book ratios and higher forecasted growth values.

Russell 1000 Value measures the performance of those Russell 1000 companies with lower price-to-book ratios and lower forecasted growth values.

Russell 2000 Growth contains those Russell 2000 securities with a greater than average growth orientation. Securities in this index tend to exhibit higher price-to-book and price-earning ratios, lower dividend yields and higher forecasted growth values than the Value universe.

Russell 2000 Value contains those Russell 2000 securities with a less than average growth orientation. Securities in this index tend to exhibit lower price-to-book and price-earning ratios, higher dividend yields and lower forecasted growth values than the Growth universe.

**Russell 3000 Index** is a composite of 3,000 of the largest U.S. companies by market capitalization. The smallest company's market capitalization is roughly \$20 million and the largest is \$72.5 billion. The index is capitalization-weighted.

**Russell Mid Cap Growth** measures the performance of those Russell Mid Cap Companies with higher price-to-book ratios and higher forecasted growth values. The stocks are also members of the Russell 1000 Growth Index.

Russell MidCap Value Index The Russell MidCap Value index contains those Russell MidCap securities with a less than average growth orientation. Securities in this index tend to exhibit lower price-to-book and price-earnings ratio, higher dividend yields and lower forecasted growth values than the Growth universe.

**Standard & Poor's 500 Equal-Weighted Index** is designed to measure performance of the broad domestic economy through changes in the aggregate market value of 500 stocks representing all major industires. The stocks are weighted equally within the index.

**Standard & Poor's 500 Index** is designed to measure performance of the broad domestic economy through changes in the aggregate market value of 500 stocks representing all major industries. The index is capitalization-weighted, with each stock weighted by its proportion of the total market value of all 500 issues. Thus, larger companies have a greater effect on the index.



# **Fixed Income Market Indicators**

**Bloomberg Barclays Aggregate Bond Index** is a combination of the Mortgage Backed Securities Index and the intermediate and long-term components of the Government/Credit Bond Index.



# **International Equity Market Indicators**

MSCI ACWI ex US Index The MSCI ACWI ex US(All Country World Index) Index is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed and emerging markets, excluding the US. As of May 27, 2010 the MSCI ACWI consisted of 45 country indices comprising 24 developed and 21 emerging market country indices. The developed market country indices included are: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Hong Kong, Ireland, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, and the United Kingdom. The emerging market country indices included are: Brazil, Chile, China, Colombia, Czech Republic, Egypt, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Morocco, Peru, Philippines, Poland, Russia, South Africa, Taiwan, Thailand, and Turkey.

**Morgan Stanley Capital International (MSCI) EAFE Index** is composed of approximately 1000 equity securities representing the stock exchanges of Europe, Australia, New Zealand and the Far East. The index is capitalization-weighted and is expressed in terms of U.S. dollars.



#### **Real Estate Market Indicators**

NCREIF Open Ended Diversified Core Equity The NFI-ODCE is an equally-weighted, net of fee, time-weighted return index with an inception date of December 31, 1977. Equally-weighting the funds shows what the results would be if all funds were treated equally, regardless of size. Open-end Funds are generally defined as infinite-life vehicles consisting of multiple investors who have the ability to enter or exit the fund on a periodic basis, subject to contribution and/or redemption requests, thereby providing a degree of potential investment liquidity. The term Diversified Core Equity style typically reflects lower risk investment strategies utilizing low leverage and generally represented by equity ownership positions in stable U.S. operating properties.



#### **Callan Databases**

In order to provide comparative investment results for use in evaluating a fund's performance, Callan gathers rate of return data from investment managers. These data are then grouped by type of assets managed and by the type of investment manager. Except for mutual funds, the results are for tax-exempt fund assets. The databases, excluding mutual funds, represent investment managers who handle over 80% of all tax-exempt fund assets.

#### **Equity Funds**

Equity funds concentrate their investments in common stocks and convertible securities. The funds included maintain well-diversified portfolios.

**Core Equity** - Mutual funds whose portfolio holdings and characteristics are similar to that of the broader market as represented by the Standard & Poor's 500 Index, with the objective of adding value over and above the index, typically from sector or issue selection. The core portfolio exhibits similar risk characteristics to the broad market as measured by low residual risk with Beta and R-Squared close to 1.00.

**International Emerging Markets Equity** - The International Emerging Market Equity Database consists of all separate account international equity products that concentrate on newly emerging second and third world countries in the regions of the Far East, Africa, Europe, and Central and South America.

Large Cap Growth - Mutual Funds that invest mainly in large companies that are expected to have above average prospects for long-term growth in earnings and profitability. Future growth prospects take precedence over valuation levels in the stock selection process. Invests in companies with P/E ratios, Price-to-Book values, Return-on-Assets values, Growth-in-Earnings values above the broader market. The companies typically have zero dividends or dividend yields below the broader market. Invests in securities which exhibit greater volatility than the broader market as measured by the securities' Beta and Standard Deviation.

Large Cap Value - Mutual funds that invest in predominantly large capitalization companies believed to be currently undervalued in the general market. The companies are expected to have a near-term earnings rebound and eventual realization of expected value. Valuation issues take precedence over near-term earnings prospects in the stock selection process. Invests in companies with P/E rations and Price-to-Book values below the broader market. Usually exhibits lower risk than the broader market as measured by the Beta and Standard Deviation.

**Non-U.S. Equity** A broad array of active managers who employ various strategies to invest assets in a well-diversified portfolio of non-U.S. equity securities. This group consists of all Core, Core Plus, Growth, and Value international products, as well as products using various mixtures of these strategies. Region-specific, index, emerging market, or small cap products are excluded.

**Non-U.S. Equity Style Mutual Funds** - Mutual funds that invest their assets only in non-U.S. equity securities but exclude regional and index funds.

Small Capitalization (Growth) - Mutual funds that invest in small capitalization companies that are expected to have above average prospects for long-term growth in earnings and profitability. Future growth prospects take precedence over valuation levels in the stock selection process. Invests in companies with P/E ratios, Price-to-Book values, and Growth-in-Earnings values above the broader market as well as the small capitalization market segment. The companies typically have zero dividends or dividend yields below the broader market. The securities exhibit greater volatility than the broader market as well as the small capitalization market segment as measured by the risk statistics beta and standard deviation.



### **Callan Databases**

**Small Capitalization (Value)** - Mutual funds that invest in small capitalization companies that are believed to be currently undervalued in the general market. Valuation issues take precedence over near-term earnings prospects in the stock selection process. The companies are expected to have a near-term earnings rebound and eventual realization of expected value. Invests in companies with P/E ratios, Return-on-Equity values, and Price-to-Book values below the broader market as well as the small capitalization market segment. The companies typically have dividend yields in the high range for the small capitalization market. Invests in securities with risk/reward profiles in the lower risk range of the small capitalization market.

#### **Fixed Income Funds**

Fixed Income funds concentrate their investments in bonds, preferred stocks, and money market securities. The funds included maintain well-diversified portfolios.

**Core Bond** - Mutual Funds that construct portfolios to approximate the investment results of the Bloomberg Barclays Capital Government/Credit Bond Index or the Bloomberg Barclays Capital Aggregate Bond Index with a modest amount of variability in duration around the index. The objective is to achieve value added from sector and/or issue selection.

**Core Bond** - Managers who construct portfolios to approximate the investment results of the Bloomberg Barclays Capital Government/Credit Bond Index or the Bloomberg Barclays Capital Aggregate Bond Index with a modest amount of variability in duration around the index. The objective is to achieve value added from sector and/or issue selection.

**Core Plus Bond** - Active managers whose objective is to add value by tactically allocating significant portions of their portfolios among non-benchmark sectors (e.g. high yield corporate, non-US\$ bonds, etc.) while maintaining majority exposure similar to the broad market.

#### **Real Estate Funds**

Real estate funds consist of open or closed-end commingled funds. The returns are net of fees and represent the overall performance of commingled institutional capital invested in real estate properties.

**Real Estate Open-End Commingled Funds** - The Open-End Funds Database consists of all open-end commingled real estate funds.

## Other Funds

**Public - Total -** consists of return and asset allocation information for public pension funds at the city, county and state level. The database is made up of Callan clients and non-clients.



# **List of Callan's Investment Manager Clients**

Confidential - For Callan Client Use Only

Callan takes its fiduciary and disclosure responsibilities to clients very seriously. We recognize that there are numerous potential conflicts of interest encountered in the investment consulting industry and that it is our responsibility to manage those conflicts effectively and in the best interest of our clients. At Callan, we employ a robust process to identify, manage, monitor and disclose potential conflicts on an on-going basis.

The list below is an important component of our conflicts management and disclosure process. It identifies those investment managers that pay Callan fees for educational, consulting, software, database or reporting products and services. We update the list quarterly because we believe that our fund sponsor clients should know the investment managers that do business with Callan, particularly those investment manager clients that the fund sponsor clients may be using or considering using. Please note that if an investment manager receives a product or service on a complimentary basis (e.g. attending and educational event), they are not included in the list below. Callan is committed to ensuring that we do not consider an investment manager's business relationship with Callan, or lack thereof, in performing evaluations for or making suggestions or recommendations to its other clients. Please refer to Callan's ADV Part 2A for a more detailed description of the services and products that Callan makes available to investment manager clients through our Institutional Consulting Group, Independent Adviser Group and Fund Sponsor Consulting Group. Due to the complex corporate and organizational ownership structures of many investment management firms, parent and affiliate firm relationships are not indicated on our

Fund sponsor clients may request a copy of the most currently available list at any time. Fund sponsor clients may also request specific information regarding the fees paid to Callan by particular fund manager clients. Per company policy, information requests regarding fees are handled exclusively by Callan's Compliance Department.

Manager Name
Acadian Asset Management LLC
AEGON USA Investment Management
Aether Investment Partners
AEW Capital Management
Affiliated Managers Group, Inc.
Alcentra
AllianceBernstein
Allianz Global Investors
Allianz Life Insurance Company of North America
American Century Investments
Amundi Pioneer Asset Management
Apollo Global Management
AQR Capital Management
Ares Management LLC
Ariel Investments, LLC
Atlanta Capital Management Co., LLC
Aviva Investors Americas
AXA Investment Managers
Baillie Gifford International, LLC
Baird Advisors
Baron Capital Management, Inc.
Barrow, Hanley, Mewhinney & Strauss, LLC
Black Creek Investment Management, Inc.
BlackRock
BMO Global Asset Management
BNP Paribas Asset Management
BNY Mellon Asset Management
Boston Partners
Brandes Investment Partners, L.P.
Brandywine Global Investment Management, LLC
Breckinridge Capital Advisors, Inc.
BrightSphere Investment Group (FKA Old Mutual Asset)
Brown Brothers Harriman & Company
Cambiar Investors, LLC

Manager Name
Capital Group
Carillon Tower Advisers
CastleArk Management, LLC
Causeway Capital Management
CenterSquare Investment Management
Chartwell Investment Partners
Christian Brothers Investment Services
CIM Group
ClearBridge Investments, LLC
Cohen & Steers Capital Management, Inc.
Columbia Threadneedle Investments
Columbus Circle Investors
Credit Suisse Asset Management
CS McKee, L.P.
DePrince, Race & Zollo, Inc.
D.E. Shaw Investment Management, L.L.C.
Diamond Hill Capital Management, Inc.
Dimensional Fund Advisors LP
Doubleline
Duff & Phelps Investment Management Co.
DWS (Formerly Deutsche Asset Management)
EARNEST Partners, LLC
Eaton Vance Management
Epoch Investment Partners, Inc.
Fayez Sarofim & Company
Federated Investors
Fidelity Institutional Asset Management
Fiera Capital Corporation
First Eagle Investment Management, LLC
First Hawaiian Bank Wealth Management Division
Fisher Investments
Franklin Templeton
Fred Alger Management, Inc.
GAM (USA) Inc.

Manager Name Manager Name Gerdina Edlen Pacific Investment Management Company GlobeFlex Capital, L.P. Pathway Capital Management **GMO LLC** Peregrine Capital Management, Inc. Goldman Sachs Asset Management Perkins Investment Management Green Square Capital LLC PGIM **PGIM Fixed Income** Greenwich Investment Management, Inc. Guggenheim Investments PineBridge Investments **GW&K Investment Management** Pictet Asset Management Ltd. Harbor Capital Group Trust PNC Capital Advisors, LLC Harding Loevner L.P. **Principal Global Investors** Hartford Funds Private Advisors, LLC Hartford Investment Management Co. Putnam Investments, LLC Heitman LLC QMA Hotchkis & Wiley Capital Management, LLC **RBC Global Asset Management HSBC Global Asset Management** Reaves Asset Management Income Research + Management, Inc. **Regions Financial Corporation** Insight Investment Management Limited Riverbridge Partners LLC Intech Investment Management, LLC Robeco Institutional Asset Management, US Inc. Invesco Rockefeller & Co., Inc. Investec Asset Management Rothschild Asset Management Inc. Ivy Investments Russell Investments J.P. Morgan Santander Global Facilities **Janus** Schroder Investment Management North America Inc. Jennison Associates LLC Smith Graham & Co. Investment Advisors, L.P. Jensen Investment Management Smith Group Asset Management Jobs Peak Advisors South Texas Money Management, Ltd. KeyCorp Sprucegrove Investment Management Ltd. Lazard Asset Management Standard Life Investments Limited Legal & General Investment Management America State Street Global Advisors **Lincoln National Corporation** Stone Harbor Investment Partners, L.P. LMCG Investments, LLC Sun Life Investment Management Longview Partners T. Rowe Price Associates, Inc. Loomis, Sayles & Company, L.P. The Boston Company Asset Management, LLC Lord Abbett & Company The London Company Los Angeles Capital Management The TCW Group, Inc. LSV Asset Management Thompson, Siegel & Walmsley LLC MacKay Shields LLC Thornburg Investment Management, Inc. Macquarie Investment Management (MIM) Tri-Star Trust Bank Manulife Asset Management **UBS Asset Management** McKinley Capital Management, LLC VanEck MFS Investment Management Velanne Asset Management Ltd. MidFirst Bank Versus Capital Group Mondrian Investment Partners Limited Victory Capital Management Inc. Montag & Caldwell, LLC Virtus Investment Partners, Inc. Morgan Stanley Investment Management Vontobel Asset Management, Inc. Mountain Lake Investment Management LLC Voya MUFG Union Bank, N.A. WCM Investment Management **Natixis Investment Managers** WEDGE Capital Management Neuberger Berman Wedgewood Partners. Inc. **Newton Investment Management** Wellington Management Company, LLP Nikko Asset Management Co., Ltd. Wells Capital Management Northern Trust Asset Management Western Asset Management Company LLC Nuveen Investments, Inc. Westfield Capital Management Company, LP OFI Global Asset Management William Blair & Company LLC O'Shaughnessy Asset Management, LLC

P/E Investments