## Callan

**December 31, 2017** 

Mendocino County Employees'
Retirement Association

Investment Measurement Service Quarterly Review

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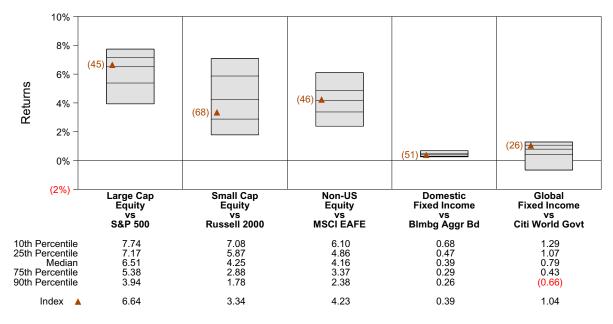
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# Market Overview Active Management vs Index Returns

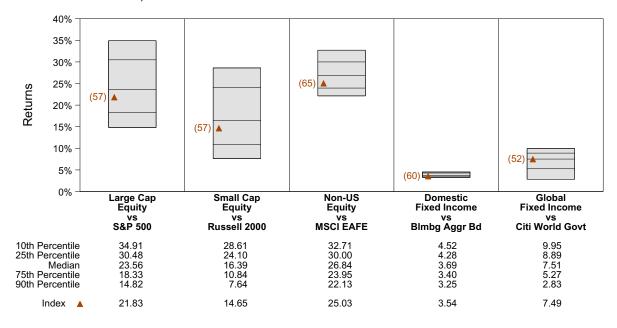
#### **Market Overview**

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 December 31, 2017



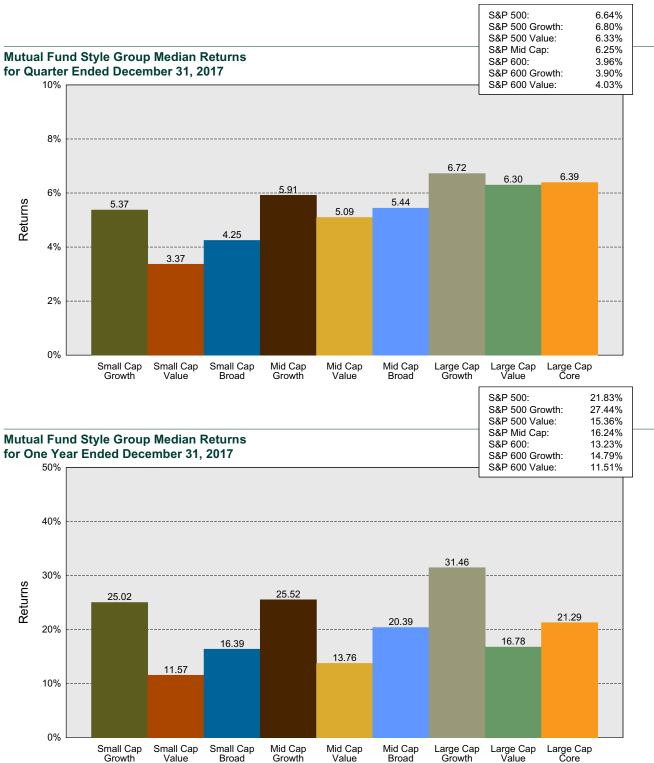
## Range of Mutual Fund Returns by Asset Class One Year Ended December 31, 2017





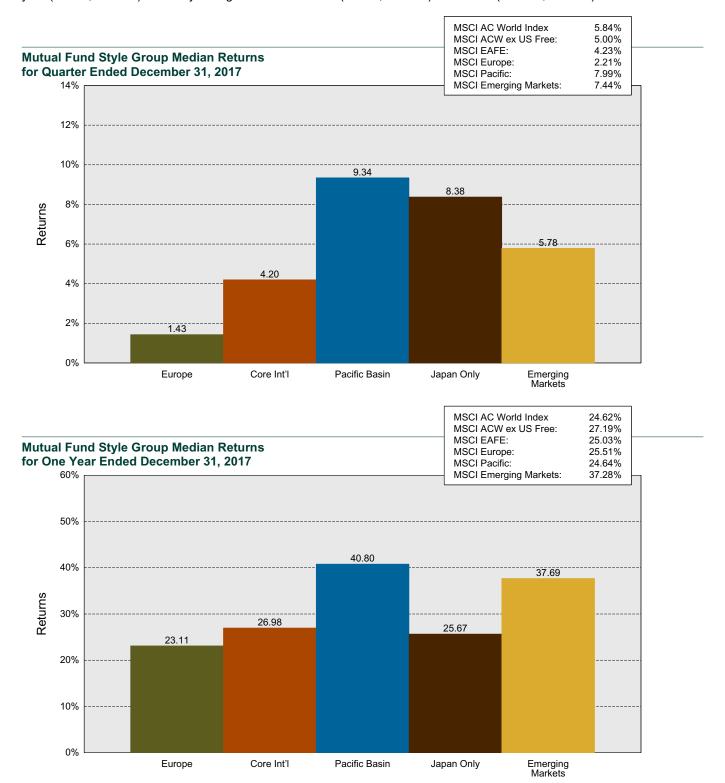
# Domestic Equity Active Management Overview

The S&P 500 Index gained 6.6% in the fourth quarter and its 21.8% gain for the year was its best since 2013. Valuations are stretched by most measures, but estimates for future earnings are also strong. Markets were fanned by strong corporate earnings, expectations for tax cuts and deregulation, and share buybacks. Large growth stocks were the winners for the quarter and the year (R1000G: +7.9%, +30.2%) and small cap value pegged the lower end (R2000V: +2.0%, +7.8%). For both periods, value underperformed growth across the capitalization stack and small underperformed large across the style spectrum. Among the S&P 500 sectors, Technology was the clear leader for the year (+38.8%) but its 9.0% quarterly return was bested by Consumer Discretionary (+9.9%). All sectors posted positive results for the quarter, with Utilities eking out a 0.2% result.



# International Equity Active Management Overview

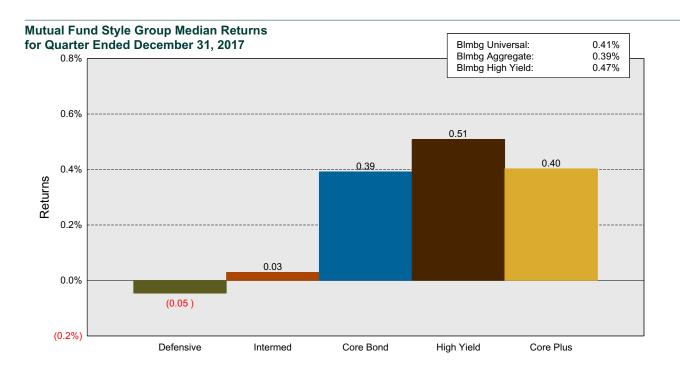
The MSCI EAFE Index returned 4.2% for the quarter and 25.0% for the year. Annual gains were broad-based and further bolstered by a weakening U.S. dollar. Within the MSCI EAFE, the U.K. notched a record high in the fourth quarter. Europe ex-UK posted a modest +0.9% result and Japan returned +8.5%. From a sector perspective for the quarter, Energy (+7%) and Materials (+8%) did the best while Health Care and Telecommunications were laggards with results of just over 1%. Emerging market equities outperformed developed in the quarter (MSCI EM USD: +7.4%). Latin America was the only weak spot in the quarter (-2.3%) but was up a robust 23.7% for the year. Emerging Asia performed the best for the quarter and the year (+8.4%; +42.8%) driven by strong results from China (+7.6%, +54.1%) and Korea (+11.4%, +47.3%).

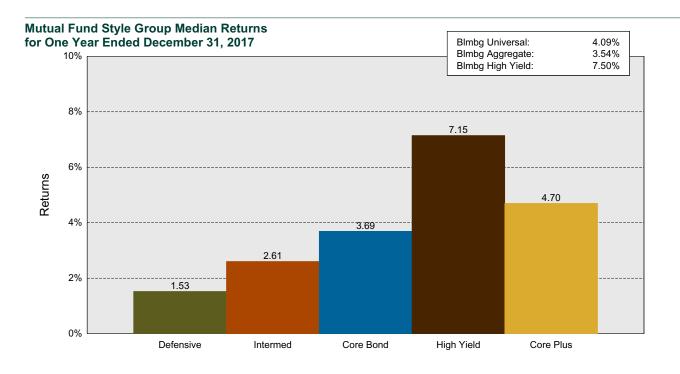




## Domestic Fixed Income Active Management Overview

The U.S. yield curve continued its flattening trend in the fourth quarter. The 2-year U.S. Treasury yield climbed 42 bps to close at 1.89%. At the long end of the yield curve, the 30-year U.S. Treasury yield fell 12 bps during the quarter, ending the year at 2.74%. This trend reflects the Fed's tightening bias as well as benign inflation. As a result, longer-term bonds sharply outperformed short-term and intermediate-maturity bonds. The Bloomberg Barclays U.S. Aggregate Bond Index was roughly flat (+0.4%) for the quarter. Corporate bonds outperformed other sectors within the Aggregate for the quarter and the year, and high yield corporates underperformed investment grade for the quarter. The sector was hurt by outflows and a few negative headlines on specific credits.







## **ASSET ALLOCATION AND PERFORMANCE**

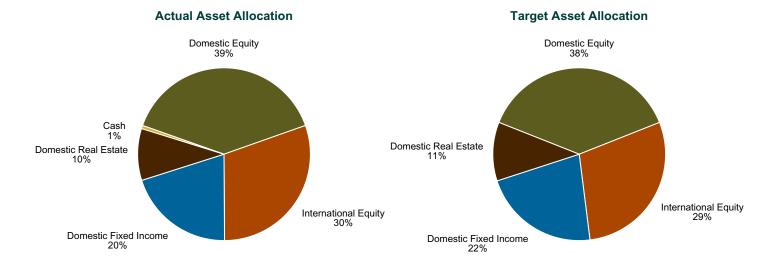
## **Asset Allocation and Performance**

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.



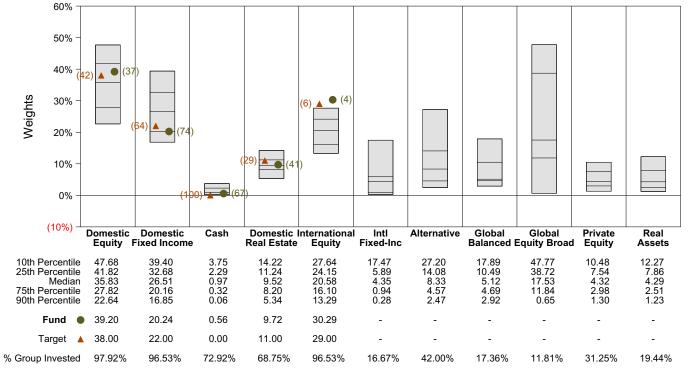
## Actual vs Target Asset Allocation As of December 31, 2017

The top left chart shows the Fund's asset allocation as of December 31, 2017. 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.



Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
Domestic Equity	203,987	39.2%	38.0%	1.2%	6,224
International Equity	157,628	30.3%	29.0%	1.3%	6,704
Domestic Fixed Income	105,317	20.2%	22.0%	(1.8%)	(9,177)
Domestic Real Estate	50,568	9.7%	11.0%	(1.3%)	(6,679)
Cash	2,928	0.6%	0.0%	(1. <mark>3%)</mark> 0.6%	( <mark>6,679)</mark> 2,928
Total	520 428	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 December 31, 2017, with the distribution as of September 30, 2017. 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**

	December 31, 2017				September 30, 2017		
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight	
Domestic Equities	\$203,986,718	39.20%	\$(2,221,326)	\$12,527,940	\$193,680,104	38.46%	
Large Cap Equities	\$143,054,043	27.49%	\$(2,221,326)	\$9,139,746	\$136,135,623	27.03%	
Vanguard S&P 500 Index	35,752,049	6.87%	0	2,224,154	33,527,895	6.66%	
SSGA S&P Equal Weighted NL CTF	34,726,374	6.67%	34,500,000	226,374	-	-	
Dodge & Cox Stock	0	0.00%	(17,746,978)	653,000	17,093,978	3.39%	
Boston Partners	35,736,822	6.87%	0	2,305,489	33,431,333	6.64%	
Harbor Cap Appreciation	36,838,797	7.08%	(1,200,000)	2,573,992	35,464,805	7.04%	
Janus Research	0	0.00%	(17,774,348)	1,156,736	16,617,612	3.30%	
Mid Cap Equities	\$30,645,949	5.89%	\$0	\$1,755,517	\$28,890,432	5.74%	
Fidelity Low Priced Stock	15,340,238	2.95%	0	954,263	14,385,976	2.86%	
Janus Enterprise	15,305,710	2.94%	0	801,254	14,504,456	2.88%	
Small Cap Equities	\$30,286,727	5.82%	\$0	\$1,632,678	\$28,654,049	5.69%	
Prudential Small Cap Value	13,950,349	2.68%	0	478,498	13,471,851	2.68%	
AB US Small Growth	16,336,378	3.14%	0	1,154,180	15,182,198	3.02%	
International Equities	\$157,627,952	30.29%	\$(2,600,000)	\$5,983,877	\$154,244,075	30.63%	
EuroPacific	27,979,027	5.38%	Ó	1,134,694	26,844,333	5.33%	
Harbor International	31,020,454	5.96%	(400,000)	664,052	30,756,402	6.11%	
Oakmark International	32,866,942	6.32%	(2,200,000)	773,649	34,293,293	6.81%	
Mondrian International	27,183,128	5.22%	0	1,056,596	26,126,532	5.19%	
T. Rowe Price Intl Small Cap	22,864,593	4.39%	0	1,391,968	21,472,624	4.26%	
Investec	15,713,808	3.02%	0	962,917	14,750,890	2.93%	
Domestic Fixed Income	\$105,317,448	20.24%	\$0	\$309,602	\$105,007,846	20.85%	
Dodge & Cox Income	52,743,263	10.13%	0	251,827	52,491,436	10.42%	
PIMCO	52,574,185	10.10%	0	57,775	52,516,410	10.43%	
Real Estate	\$50,568,056	9.72%	\$580,948	\$855,521	\$49,131,587	9.76%	
RREEF Private Fund	23.908.782	4.59%	600.000	472.280	22.836.501	4.54%	
Barings Core Property Fund	25,509,274	4.90%	0	364,189	25,145,085	4.99%	
625 Kings Court	1,150,000	0.22%	(19,052)	19,052	1,150,000	0.23%	
Cash	\$2,928,233	0.56%	\$1,436,570	\$0	\$1,491,663	0.30%	
Total Fund	\$520,428,407	100.0%	\$(2,803,809)	\$19,676,942	\$503,555,274	100.0%	



The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2017. 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 December 31, 2017

	1 4	14	Last	Last	Last
	Last Quarter	Last Year	3 Years	5 Years	7 Years
Domestic Equties	6.60%	23.74%	11.07%	15.69%	13.18%
Russell 3000 Index	6.34%	21.13%	11.12%	15.58%	13.50%
Large Cap Equities					
Vanguard S&P 500 Index	6.63%	21.79%	11.38%	-	-
S&P 500 Index	6.64%	21.83%	11.41%	15.79%	13.76%
Boston Partners	6.90%	19.23%	8.82%	14.28%	-
S&P 500 Index	6.64%	21.83%	11.41%	15.79%	13.76%
Russell 1000 Value Index	5.33%	13.66%	8.65%	14.04%	12.46%
Harbor Cap Appreciation (1)	7.24%	36.68%	14.50%	17.84%	14.90%
S&P 500 Index	6.64%	21.83%	11.41%	15.79%	13.76%
Russell 1000 Growth Index	7.86%	30.21%	13.79%	17.33%	14.81%
Mid Cap Equities					
Fidelity Low Priced Stock	6.63%	20.67%	9.29%	13.55%	12.18%
Russell MidCap Value Idx	5.50%	13.34%	9.00%	14.68%	12.76%
Janus Enterprise (2)	5.52%	26.65%	13.69%	16.59%	13.96%
Russell MidCap Growth Idx	6.81%	25.27%	10.30%	15.30%	12.78%
Small Cap Equities					
Prudential Small Cap Value (3)	3.55%	6.43%	9.87%	13.79%	-
US Small Cap Value Idx	3.00%	9.22%	9.76%	13.69%	11.67%
Russell 2000 Value Index	2.05%	7.84%	9.55%	13.01%	10.84%
AB US Small Growth (4)	7.60%	35.03%	12.77%	15.75%	14.28%
Russell 2000 Growth Index	4.59%	22.17%	10.28%	15.21%	12.34%

<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 December 31, 2017. 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 December 31, 2017

	Last	Last	Last 3	Last 5	Last 7
	Quarter	Year	Years	Years	Years
International Equities	3.81%	27.94%	7.87%	7.13%	5.12%
MSCI ACWI ex-US Index	5.06%	27.77%	8.33%	7.28%	5.41%
EuroPacific	4.23%	31.18%	9.66%	9.21%	7.05%
Harbor International (1)	2.20%	22.98%	5.85%	5.25%	4.79%
Oakmark International (2)	2.33%	30.47%	10.67%	10.64%	9.11%
Mondrian International	3.84%	22.29%	6.17%	6.47%	-
MSCI EAFE Index	4.23%	25.03%	7.80%	7.90%	6.04%
MSCI ACWI ex-US Index	5.06%	27.77%	8.33%	7.28%	5.41%
T. Rowe Price Intl Small Cap	6.21%	-	-	_	_
MSCI ACWI ex US Small Cap	6.56%	31.65%	11.96%	10.03%	6.54%
Investec	6.32%	-	_	_	_
MSCI Emerging Markets Index	7.44%	37.28%	9.10%	4.35%	2.56%
Domestic Fixed Income	0.29%	4.74%	2.95%	2.64%	3.81%
Blmbg Aggregate Index	0.39%	3.54%	2.24%	2.10%	3.20%
Dodge & Cox Income	0.48%	4.36%	3.09%	3.07%	3.99%
PIMCO	0.11%	5.12%	2.80%	2.21%	3.62%
Blmbg Aggregate Index	0.39%	3.54%	2.24%	2.10%	3.20%
Real Estate	1.72%	6.88%	8.65%	10.11%	10.35%
Real Estate Custom Benchmark (3)	1.94%	6.92%	9.10%	10.43%	10.82%
RREEF Private	2.02%	6.43%	9.93%	11.23%	11.45%
Barings Core Property Fund	1.45%	6.59%	9.37%	9.31%	11. <del>4</del> 0/0
NFI-ODCE Equal Weight Net	1.94%	6.92%	9.77%	10.62%	- 11.13%
625 Kings Court	1.94%	26.09%	9.77% 15.07%	17.93%	11.13%
Total Fund	3.88%	18.89%	8.25%	9.72%	8.54%
Total Fund Benchmark*	4.18%	17.34%	8.22%	9.53%	8.69%

<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.

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.

	2017	2016	2015	2014	2013
Domestic Equties	23.74%	10.90%	(0.15%)	9.59%	38.02%
Russell 3000 Index	21.13%	12.74%	0.48%	12.56%	33.55%
Large Cap Equities					
Vanguard S&P 500 Index	21.79%	11.93%	1.37%	13.65%	-
S&P 500 Index	21.83%	11.96%	1.38%	13.69%	32.39%
Boston Partners	19.23%	13.76%	(4.99%)	10.87%	36.43%
S&P 500 Index	21.83%	11.96%	1.38%	13.69%	32.39%
Russell 1000 Value Index	13.66%	17.34%	(3.83%)	13.45%	32.53%
Harbor Cap Appreciation (1)	36.68%	(1.04%)	10.99%	9.93%	37.66%
S&P 500 Index	21.83%	11.96%	1.38%	13.69%	32.39%
Russell 1000 Growth Index	30.21%	7.08%	5.67%	13.05%	33.48%
Mid Cap Equities					
Fidelity Low Priced Stock	20.67%	8.79%	(0.56%)	7.65%	34.31%
Russell MidCap Value Idx	13.34%	20.00%	(4.78%)	14.75%	33.46%
Janus Enterprise (2)	26.65%	12.13%	3.49%	12.01%	30.86%
Russell MidCap Growth Idx	25.27%	7.33%	(0.20%)	11.90%	35.74%
Small Cap Equities					
Prudential Small Cap Value (3)	6.43%	33.99%	(7.00%)	5.89%	35.87%
US Small Cap Value Idx	9.22%	27.64%	(5.14%)	7.44%	33.71%
Russell 2000 Value Index	7.84%	31.74%	(7.47%)	4.22%	34.52%
AB US Small Growth (2)	35.03%	6.91%	(0.66%)	(1.24%)	46.72%
Russell 2000 Growth Index	22.17%	11.32%	(1.38%)	5.60%	43.30%

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



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

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	2017	2016	2015	2014	2013
International Equities	27.94%	2.84%	(4.62%)	(5.73%)	19.25%
MSCI ACWI ex-US Index	27.77%	5.01%	(5.25%)	(3.44%)	15.78%
EuroPacific	31.18%	1.01%	(0.48%)	(2.29%)	20.58%
Harbor International (1)	22.98%	0.27%	(3.82%)	(6.81%)	16.84%
Oakmark International (2)	30.47%	8.19%	(3.99%)	(5.41%)	29.34%
Mondrian International	22.29%	4.50%	(6.33%)	(2.06%)	16.69%
MSCI EAFE Index	25.03%	1.00%	(0.81%)	(4.90%)	22.78%
MSCI ACWI ex-US Index	27.77%	5.01%	(5.25%)	(3.44%)	15.78%
Domestic Fixed Income	4.74%	4.10%	0.07%	5.09%	(0.65%)
Blmbg Aggregate Index	3.54%	2.65%	0.55%	5.97%	(2.02%)
Dodge & Cox Income	4.36%	5.61%	(0.59%)	5.49%	0.64%
PIMCO	5.12%	2.59%	0.73%	4.69%	(1.92%)
Blmbg Aggregate Index	3.54%	2.65%	0.55%	5.97%	(2.02%)
Real Estate	6.88%	7.02%	12.14%	14.50%	10.21%
Real Estate Custom Benchmark (3)	6.92%	8.62%	11.81%	14.57%	10.40%
RREEF Private	6.43%	7.95%	15.63%	11.95%	14.50%
Barings Core Property Fund	6.59%	8.62%	12.99%	8.64%	9.82%
NFI-ODCE Equal Weight Net	6.92%	8.36%	14.18%	11.42%	12.36%
625 Kings Court	26.09%	10.01%	9.85%	12.15%	33.50%
Total Fund	18.89%	6.67%	0.01%	4.72%	19.72%
Total Fund Benchmark*	17.34%	7.78%	0.01%	6.80%	16.47%
Total Fully Deficilitians	17.57/0	1.1070	0.21/0	0.00 /0	10.77 /0

<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.

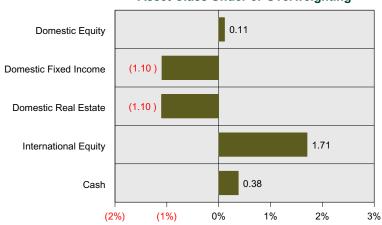
<sup>(1)</sup> Switched share class in June 2016.

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

## **Quarterly Total Fund Relative Attribution - December 31, 2017**

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**

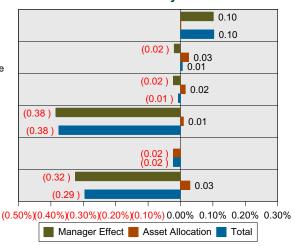


## **Actual vs Target Returns**

Actual Target

#### 6.60 6.34 Domestic Equity 0.29 0.39 Domestic Fixed Income 1.72 1.94 Domestic Real Estate 3.81 5.06 International Equity Cash 3.88 4.18 Total 2% 0% 4% 6% 8%

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



#### Relative Attribution Effects for Quarter ended December 31, 2017

10%

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equity	38%	38%	6.60%	6.34%	0.10%	0.00%	0.10%
Domestic Fixed Income	e 21%	22%	0.29%	0.39%	(0.02%)	0.03%	0.01%
Domestic Real Estate	10%	11%	1.72%	1.94%	(0.02%)	0.02%	(0.01%)
International Equity	31%	29%	3.81%	5.06%	(0.38%)	0.01%	(0.38%)
Cash	0%	0%	0.00%	0.00%	`0.00%´	(0.02%)	(0.02%)
Total			3.88% =	4.18%	+ (0.32%) +	0.03%	(0.29%)

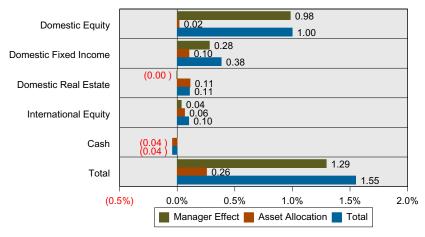
<sup>\*</sup> Current Quarter Target = 38.0% Russell 3000 Index, 29.0% MSCI ACWIXUS Gross, 22.0% Blmbg Aggregate and 11.0% NCREIF NFI-ODCE Eq Wt Net.



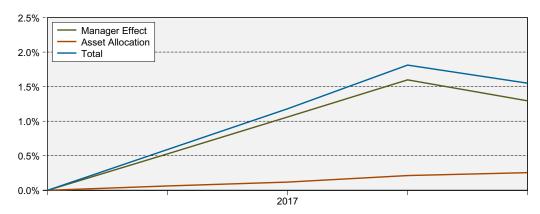
## Cumulative Total Fund Relative Attribution - December 31, 2017

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% 21% 10% 30% 0%	Effective Target Weight 38% 22% 11% 29% 0%	Actual Return 23.74% 4.74% 6.88% 27.94% 0.00%	Target Return 21.13% 3.54% 6.92% 27.77% 0.00%	Manager Effect 0.98% 0.28% (0.00%) 0.04% 0.00%	Asset Allocation 0.02% 0.10% 0.11% 0.06% (0.04%)	Total Relative Return 1.00% 0.38% 0.11% 0.10% (0.04%)
Total			18.89% =	= 17.34%	+ 1.29% +	0.26%	1.55%

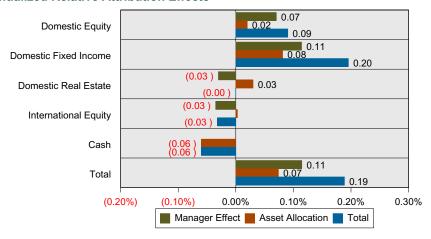
<sup>\*</sup> Current Quarter Target = 38.0% Russell 3000 Index, 29.0% MSCI ACWIXUS Gross, 22.0% Blmbg Aggregate and 11.0% NCREIF NFI-ODCE Eq Wt Net.



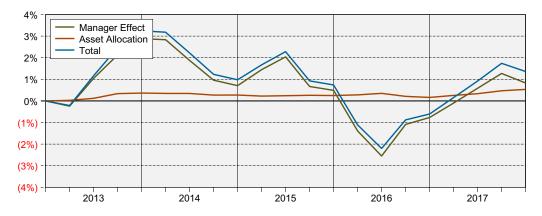
## Cumulative Total Fund Relative Attribution - December 31, 2017

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	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equity	39%	38%	15.69%	15.58%	0.07%	0.02%	0.09%
Domestic Fixed Income		26%	2.64%	2.10%	0.11%	0.08%	0.20%
Domestic Real Estate	9%	10%	10.11%	10.43%	(0.03%)	0.03%	(0.00%) (0.03%)
International Equity Cash	26% 1%	26% 0%	7.13% 0.00%	7.28% 0.00%	( <mark>0.03%)</mark> 0.00%	0.00% (0.06%)	(0.03%)
Casii	1 /0	0 70	0.0076	0.00 /6	0.00 /0	(0.0070)	(0.0070)
Total			9.72% =	9.53%	+ 0.11% +	0.07%	0.19%

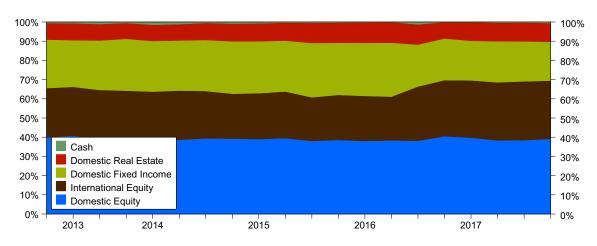
<sup>\*</sup> Current Quarter Target = 38.0% Russell 3000 Index, 29.0% MSCI ACWIXUS Gross, 22.0% Blmbg Aggregate and 11.0% NCREIF NFI-ODCE Eq Wt Net.



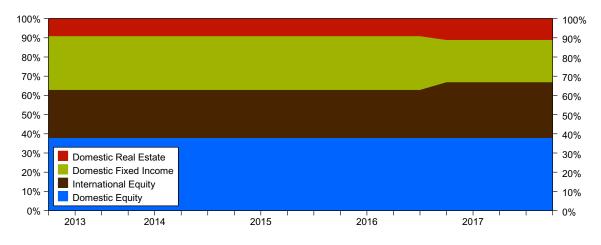
## **Actual vs Target Historical Asset Allocation**

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.

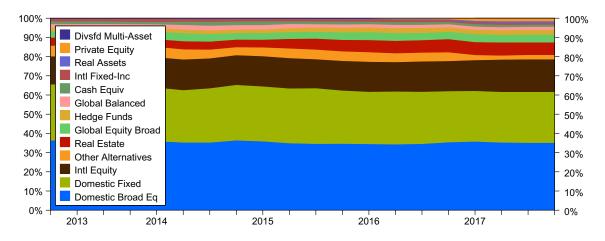
#### **Actual Historical Asset Allocation**



## **Target Historical Asset Allocation**



## Average Callan Public Fund Sponsor Database Historical Asset Allocation



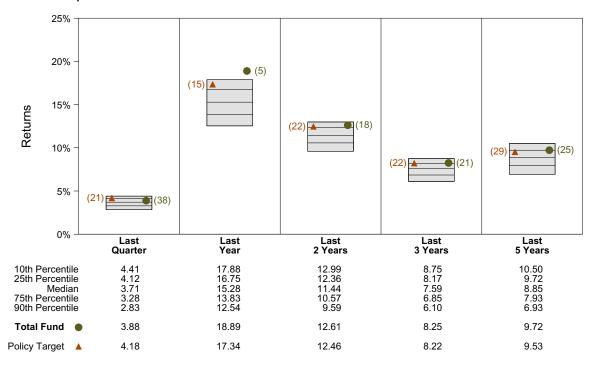
<sup>\*</sup> Current Quarter Target = 38.0% Russell 3000 Index, 29.0% MSCI ACWIXUS Gross, 22.0% Blmbg Aggregate and 11.0% NCREIF NFI-ODCE Eq Wt Net.



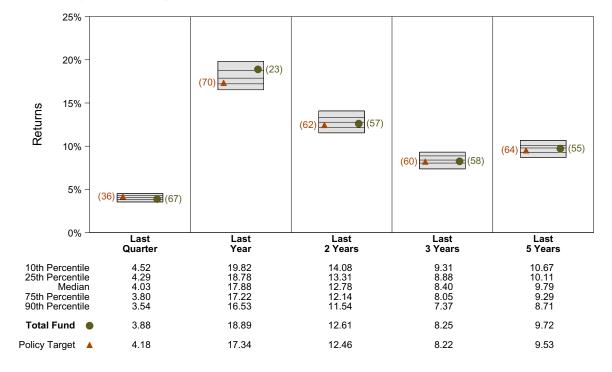
## **Total Fund Ranking**

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 December 31, 2017. 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 December 31, 2017

#### **Investment Philosophy**

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

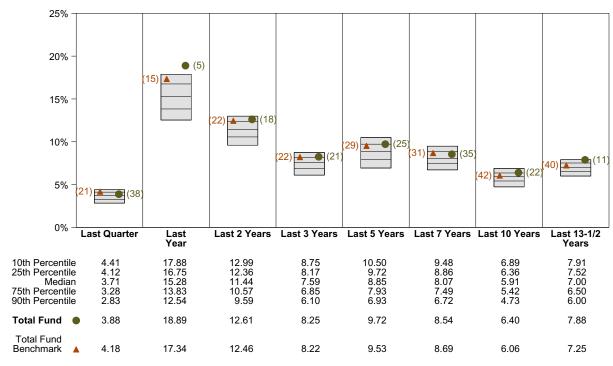
## **Quarterly Summary and Highlights**

- Total Fund's portfolio posted a 3.88% return for the quarter placing it in the 38 percentile of the Callan Public Fund Sponsor Database group for the quarter and in the 5 percentile for the last year.
- Total Fund's portfolio underperformed the Total Fund Benchmark by 0.29% for the quarter and outperformed the Total Fund Benchmark for the year by 1.55%.

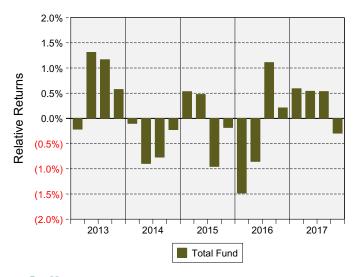
Quarterly	Asset	Growth
-----------	-------	--------

Beginning Market Value	\$503,555,274
Net New Investment	\$-2,803,809
Investment Gains/(Losses)	\$19,676,942
Ending Market Value	\$520,428,407

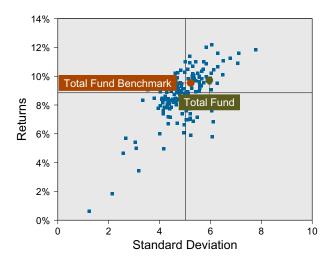
## Performance vs Callan Public Fund Sponsor Database (Gross)



## Relative Return vs Total Fund Benchmark



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



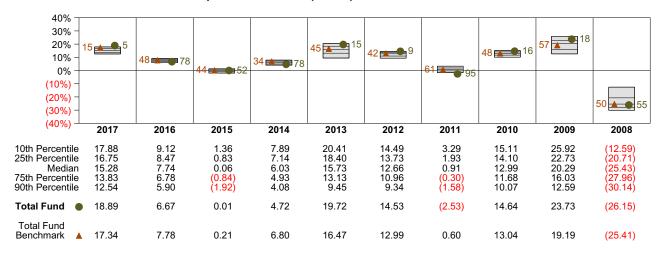


## Total Fund Return Analysis Summary

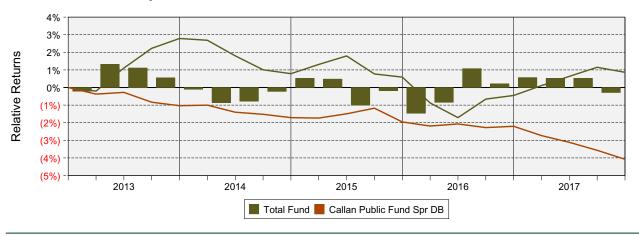
### **Return Analysis**

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.

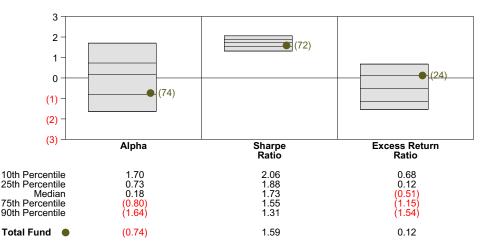
### Performance vs Callan Public Fund Sponsor Database (Gross)



### **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 December 31, 2017

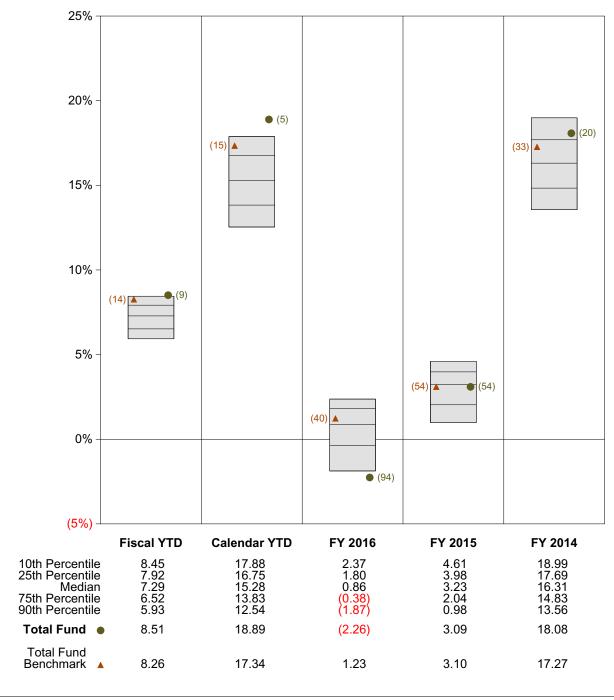




## Mendocino County Employees' Retirement Association Performance vs Callan Public Fund Sponsor Database Periods Ended December 31, 2017

#### **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 December 31, 2017

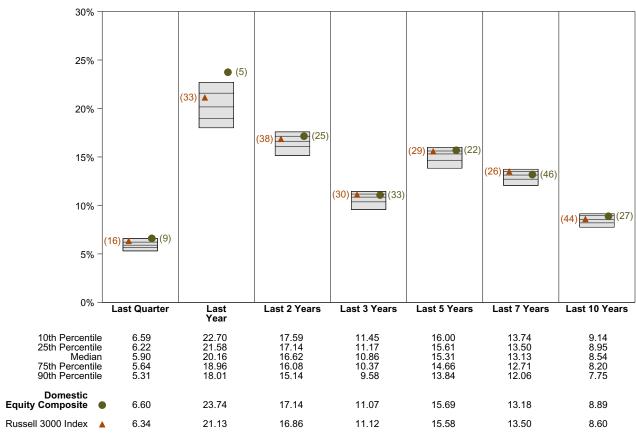
### **Quarterly Summary and Highlights**

- Domestic Equity Composite's portfolio posted a 6.60% return for the quarter placing it in the 9 percentile of the Public Fund - Domestic Equity group for the quarter and in the 5 percentile for the last year.
- Domestic Equity Composite's portfolio outperformed the Russell 3000 Index by 0.27% for the quarter and outperformed the Russell 3000 Index for the year by 2.61%.

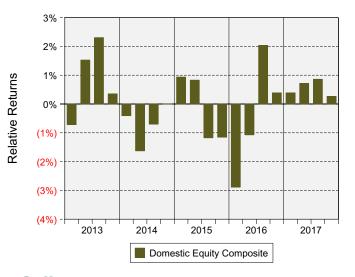
#### **Quarterly Asset Growth**

Beginning Market Value	\$193,680,104
Net New Investment	\$-2,221,326
Investment Gains/(Losses)	\$12,527,940
Ending Market Value	\$203,986,718

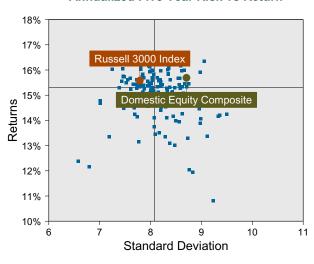
## Performance vs Public Fund - Domestic Equity (Gross)



## Relative Return vs Russell 3000 Index



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



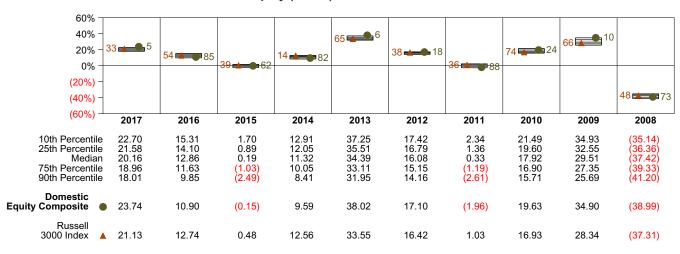


# **Domestic Equity Composite Return Analysis Summary**

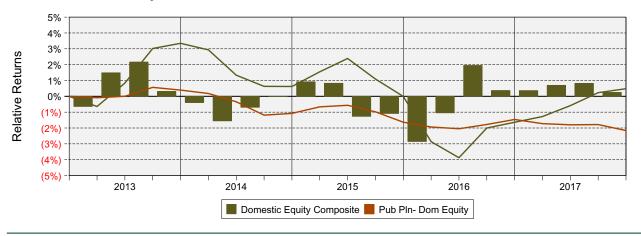
### **Return Analysis**

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.

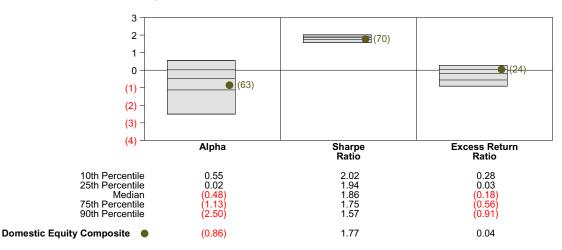
### Performance vs Public Fund - Domestic Equity (Gross)



### **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 December 31, 2017



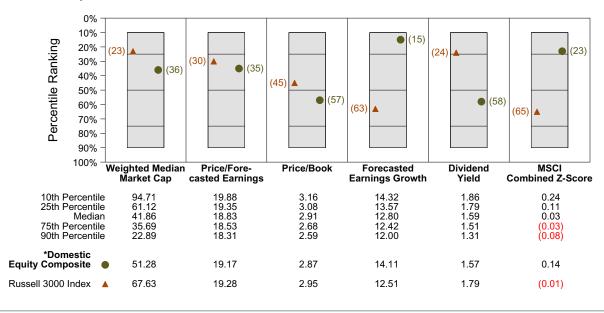


# Domestic Equity Composite Equity Characteristics Analysis Summary

#### **Portfolio Characteristics**

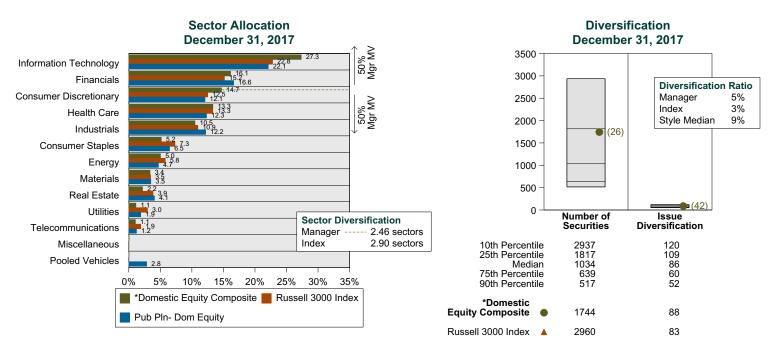
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Public Fund - Domestic Equity as of December 31, 2017



#### **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.



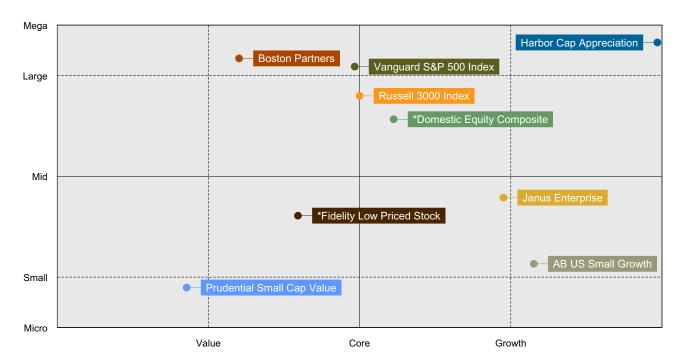
<sup>\*12/31/17</sup> portfolio characteristics generated using most recently available holdings (10/31/17) modified based on a "buy-and-hold" assumption (repriced and adjusted for corporate actions). Analysis is then done using current market and company financial data.



## Holdings Based Style Analysis For One Quarter Ended December 31, 2017

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 December 31, 2017



	Weight %	Wtd Median Mkt Cap	Combined Z-Score	Growth Z-Score	Value Z-Score	Number of Securities I	Security Diversification
Vanguard S&P 500 Index	17.53%	94.66	(0.03)	(0.01)	0.03	505	52.63
Boston Partners	17.52%	106.47	(0.54)	(0.09)	0.45	82	19.13
Harbor Cap Appreciation	18.06%	129.40	`1.30 <sup>′</sup>	0.58	(0.72)	52	15.08
*Fidelity Low Priced Stock	7.52%	7.79	(0.28)	(0.05)	0.23	895	28.78
Janus Enterprise	7.50%	9.47	0.62	0.20	(0.42)	86	27.40
Prudential Small Cap Value	6.84%	1.77	(0.78)	(80.0)	0.70	303	65.94
AB US Small Growth	8.01%	3.34	0.76	0.13	(0.63)	97	35.12
*Domestic Equity Composite	100.00%	51.28	0.14	0.10	(0.05)	1744	88.01
Russell 3000 Index	-	67.63	(0.01)	0.00	0.01	2960	83.02

<sup>\*12/31/17</sup> portfolio characteristics generated using most recently available holdings (10/31/17) 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 December 31, 2017

#### **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.

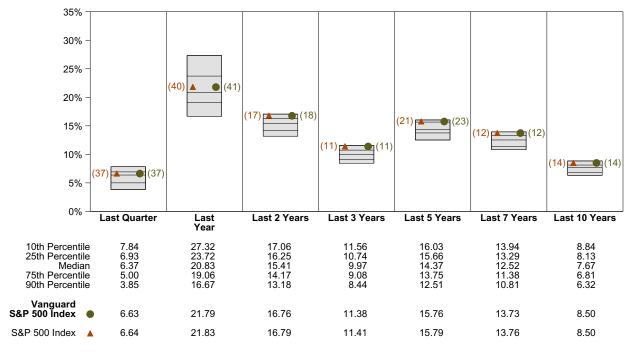
### **Quarterly Summary and Highlights**

- Vanguard S&P 500 Index's portfolio posted a 6.63% return for the quarter placing it in the 37 percentile of the Callan Large Cap Core Mutual Funds group for the quarter and in the 41 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 0.04%.

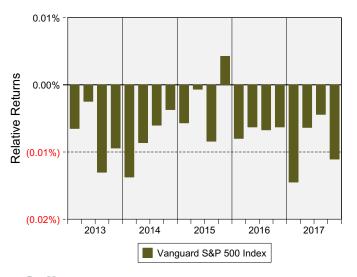
### **Quarterly Asset Growth**

Beginning Market Value	\$33,527,895
Net New Investment	\$0
Investment Gains/(Losses)	\$2,224,154
Ending Market Value	\$35,752,049

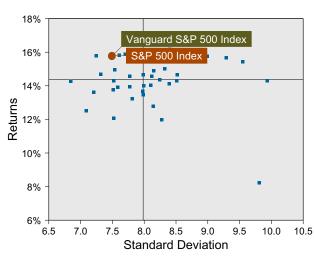
## Performance vs Callan Large Cap Core Mutual Funds (Net)



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



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



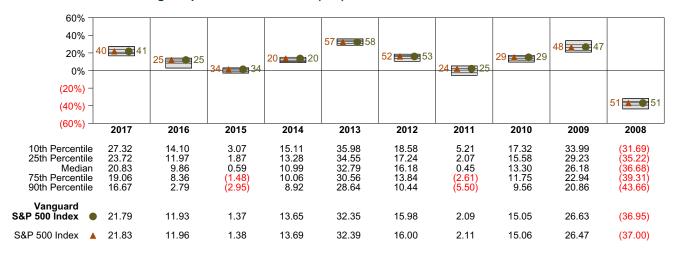


# Vanguard S&P 500 Index Return Analysis Summary

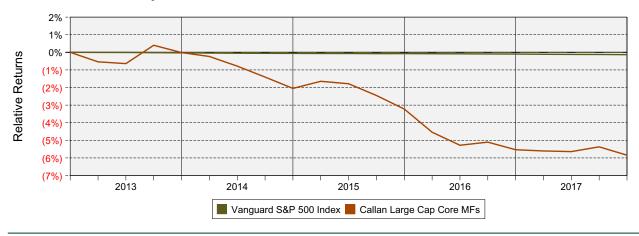
### **Return Analysis**

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.

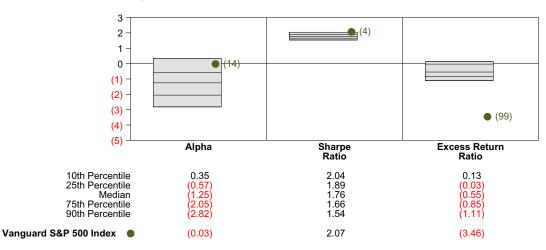
### Performance vs Callan Large Cap Core Mutual Funds (Net)



### 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 December 31, 2017



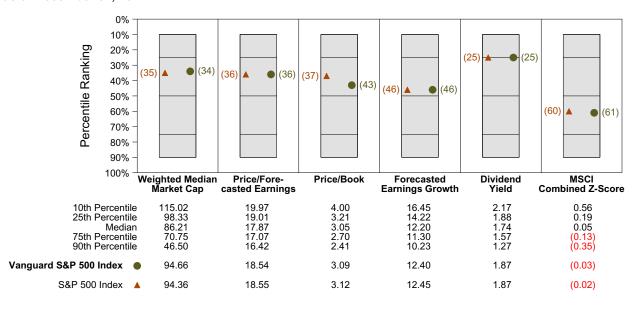


# Vanguard S&P 500 Index Equity Characteristics Analysis Summary

#### **Portfolio Characteristics**

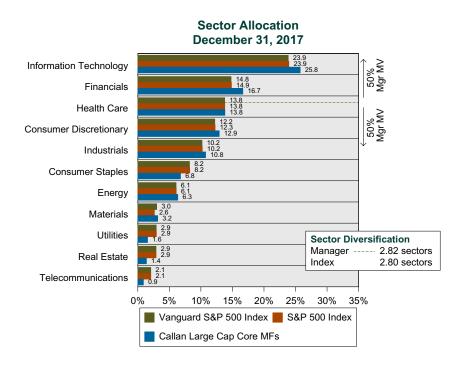
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

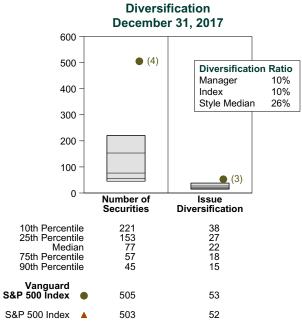
## Portfolio Characteristics Percentile Rankings Rankings Against Callan Large Cap Core Mutual Funds as of December 31, 2017



#### **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 December 31, 2017

#### **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.

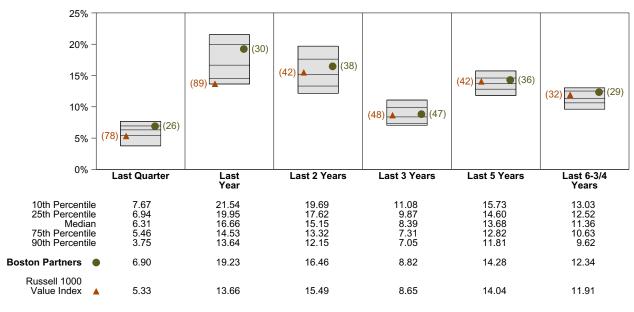
#### **Quarterly Summary and Highlights**

- Boston Partners's portfolio posted a 6.90% return for the quarter placing it in the 26 percentile of the Callan Large Cap Value Mutual Funds group for the quarter and in the 30 percentile for the last year.
- Boston Partners's portfolio outperformed the Russell 1000 Value Index by 1.57% for the quarter and outperformed the Russell 1000 Value Index for the year by 5.57%.

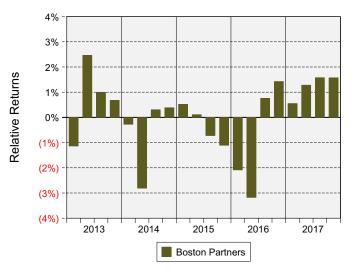
Quarterl	v Asset	Growth
Qual terr	y Asset	CIOWLII

Beginning Market Value	\$33,431,333
Net New Investment	\$0
Investment Gains/(Losses)	\$2,305,489
Ending Market Value	\$35,736,822

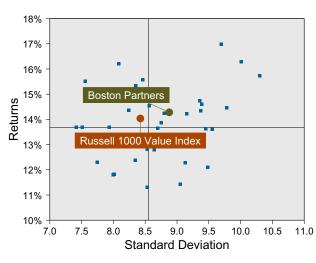
#### Performance vs Callan Large Cap Value Mutual Funds (Net)



## Relative Return vs Russell 1000 Value Index



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



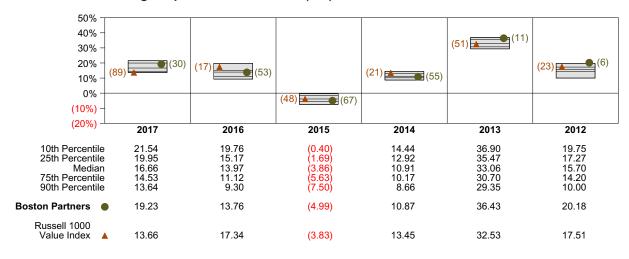


# **Boston Partners Return Analysis Summary**

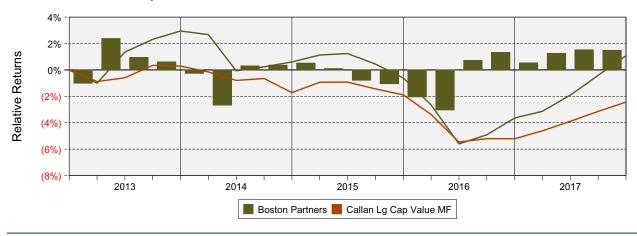
### **Return Analysis**

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.

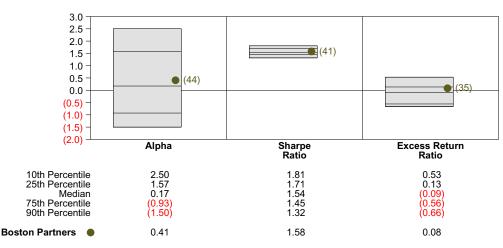
### Performance vs Callan Large Cap Value Mutual Funds (Net)



### 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 December 31, 2017



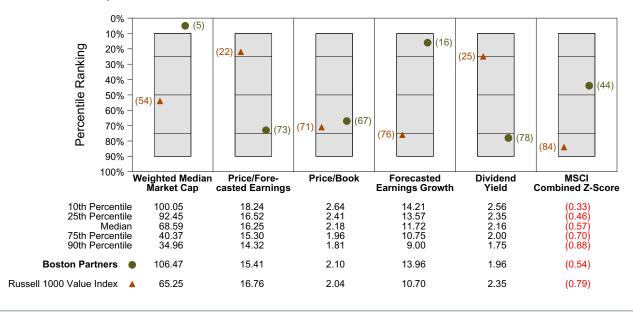


# Boston Partners Equity Characteristics Analysis Summary

#### **Portfolio Characteristics**

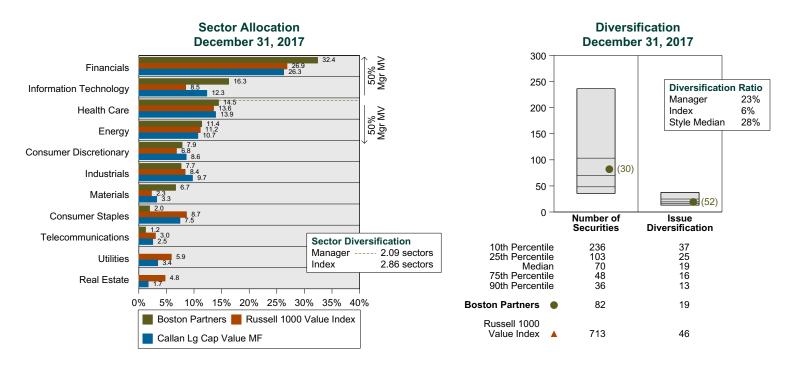
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Large Cap Value Mutual Funds as of December 31, 2017



#### **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.





# Harbor Cap Appreciation Period Ended December 31, 2017

#### **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.

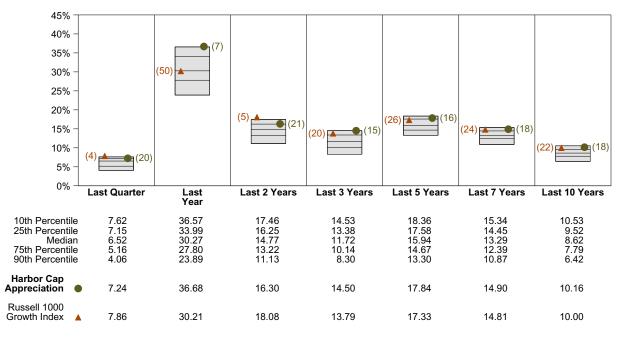
## **Quarterly Summary and Highlights**

- Harbor Cap Appreciation's portfolio posted a 7.24% return for the quarter placing it in the 20 percentile of the Callan Large Cap Growth Mutual Funds group for the quarter and in the 7 percentile for the last year.
- Harbor Cap Appreciation's portfolio underperformed the Russell 1000 Growth Index by 0.63% for the quarter and outperformed the Russell 1000 Growth Index for the year by 6.47%.

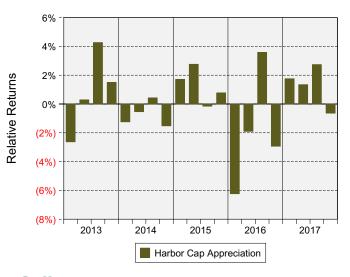
## **Quarterly Asset Growth**

Beginning Market Value	\$35,464,805
Net New Investment	\$-5,170,270
Investment Gains/(Losses)	\$2,616,994
Ending Market Value	\$32,911,529

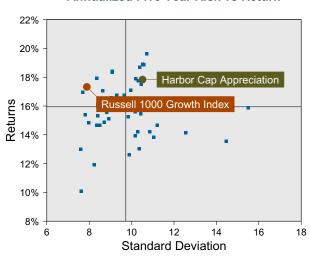
### Performance vs Callan Large Cap Growth Mutual Funds (Net)



## Relative Return vs Russell 1000 Growth Index



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



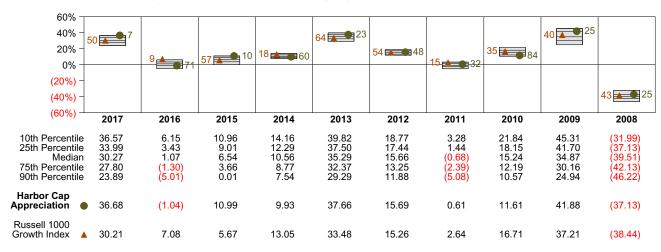


# Harbor Cap Appreciation Return Analysis Summary

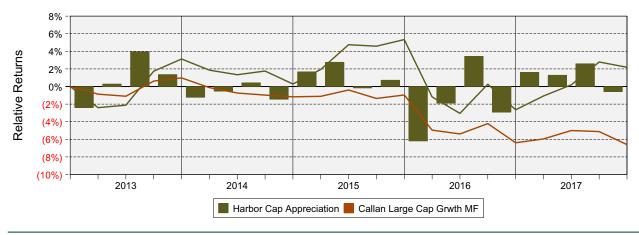
### **Return Analysis**

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.

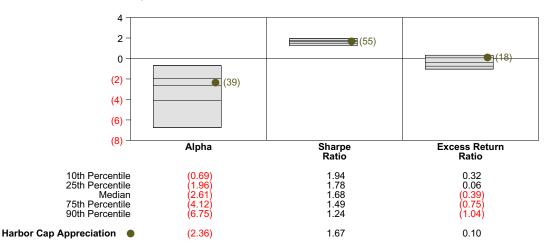
## Performance vs Callan Large Cap Growth Mutual Funds (Net)



## 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 December 31, 2017



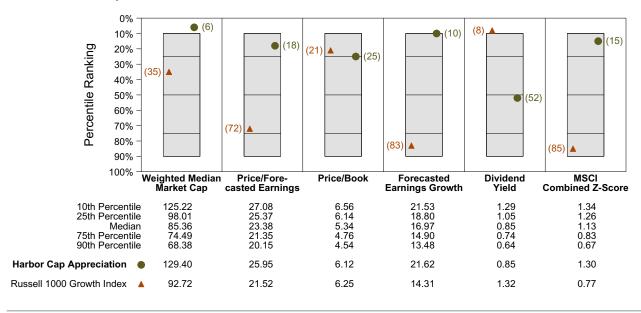


# Harbor Cap Appreciation Equity Characteristics Analysis Summary

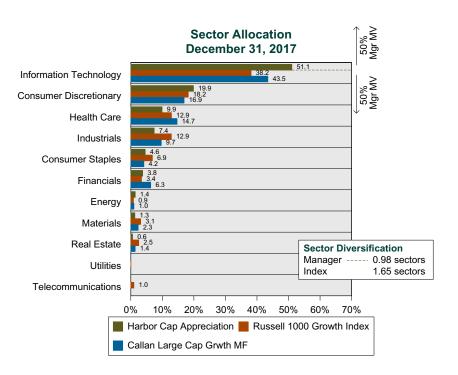
#### **Portfolio Characteristics**

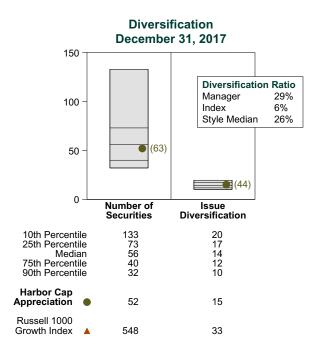
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Large Cap Growth Mutual Funds as of December 31, 2017



#### **Sector Weights**







## Fidelity Low Priced Stock Period Ended December 31, 2017

#### **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.

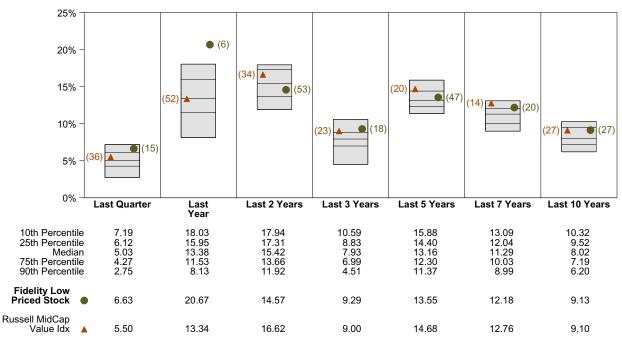
### **Quarterly Summary and Highlights**

- Fidelity Low Priced Stock's portfolio posted a 6.63% return for the quarter placing it in the 15 percentile of the Callan Mid Cap Value Mutual Funds group for the quarter and in the 6 percentile for the last year.
- Fidelity Low Priced Stock's portfolio outperformed the Russell MidCap Value Idx by 1.13% for the quarter and outperformed the Russell MidCap Value Idx for the year by 7.32%.

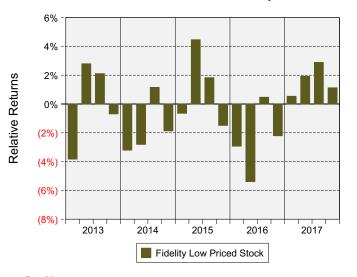
#### **Quarterly Asset Growth**

Beginning Market Value	\$14,385,976
Net New Investment	\$0
Investment Gains/(Losses)	\$954,263
Ending Market Value	\$15,340,238

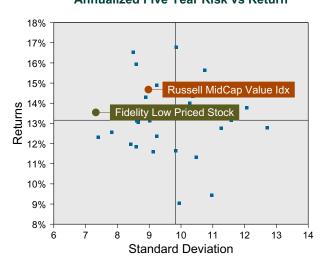
### Performance vs Callan Mid Cap Value Mutual Funds (Net)



#### Relative Return vs Russell MidCap Value Idx



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



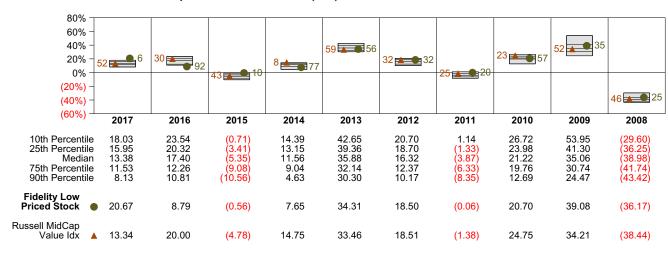


# Fidelity Low Priced Stock Return Analysis Summary

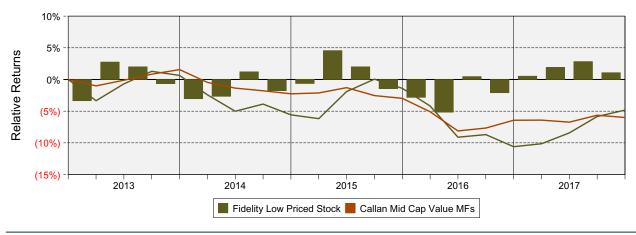
### **Return Analysis**

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.

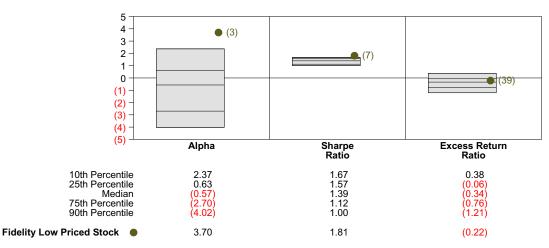
### Performance vs Callan Mid Cap Value Mutual Funds (Net)



## 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 December 31, 2017



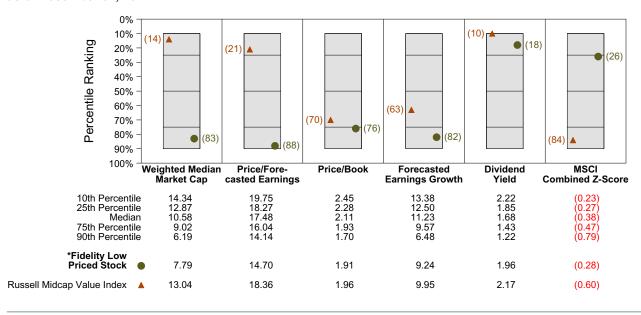


# Fidelity Low Priced Stock Equity Characteristics Analysis Summary

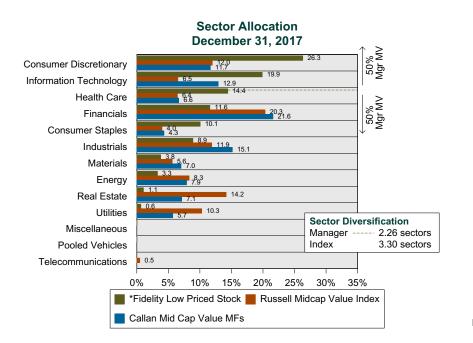
#### **Portfolio Characteristics**

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 December 31, 2017



#### **Sector Weights**





<sup>\*12/31/17</sup> portfolio characteristics generated using most recently available holdings (10/31/17) 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 December 31, 2017

#### **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.

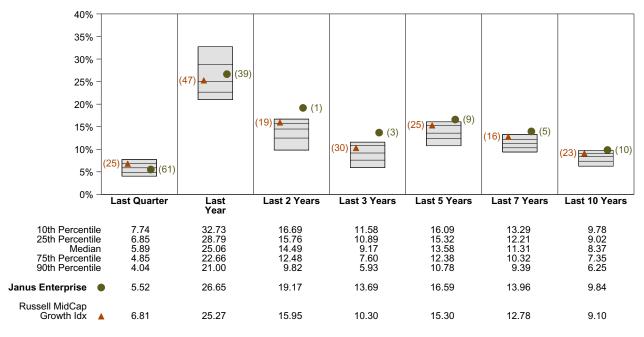
## **Quarterly Summary and Highlights**

- Janus Enterprise's portfolio posted a 5.52% return for the quarter placing it in the 61 percentile of the Callan Mid Cap Growth Mutual Funds group for the quarter and in the 39 percentile for the last year.
- Janus Enterprise's portfolio underperformed the Russell MidCap Growth Idx by 1.28% for the quarter and outperformed the Russell MidCap Growth Idx for the year by 1.38%.

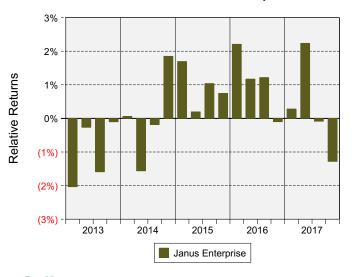
## **Quarterly Asset Growth**

Beginning Market Value	\$14,504,456
Net New Investment	\$0
Investment Gains/(Losses)	\$801,254
Ending Market Value	\$15 305 710

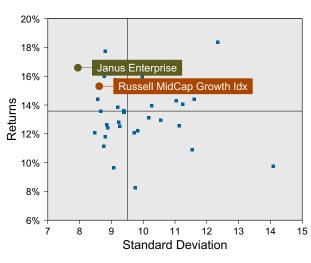
### Performance vs Callan Mid Cap Growth Mutual Funds (Net)



#### Relative Return vs Russell MidCap Growth Idx



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



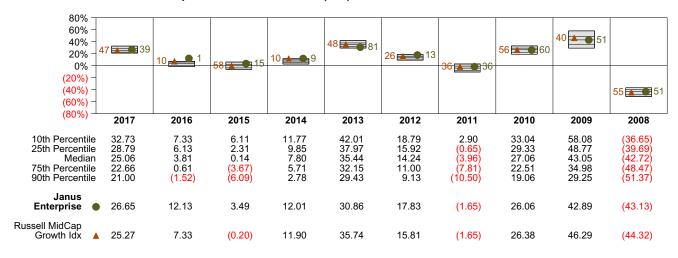


## Janus Enterprise Return Analysis Summary

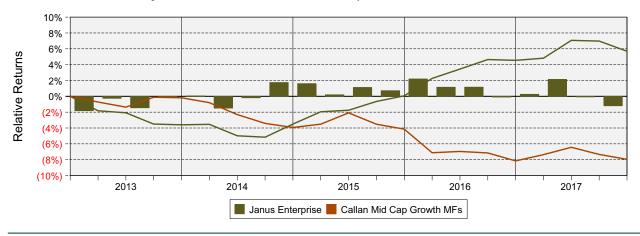
### **Return Analysis**

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.

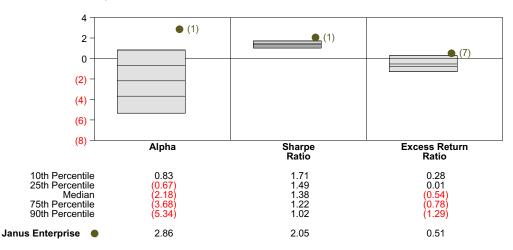
### Performance vs Callan Mid Cap Growth Mutual Funds (Net)



### 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 December 31, 2017



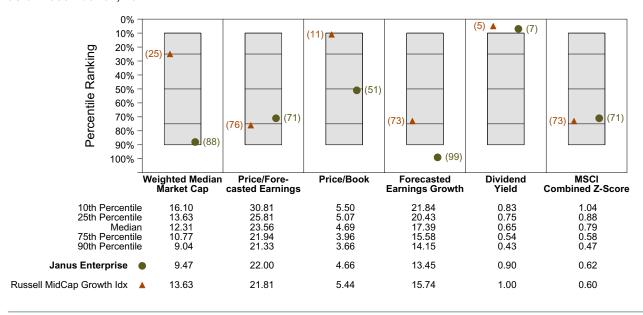


# Janus Enterprise Equity Characteristics Analysis Summary

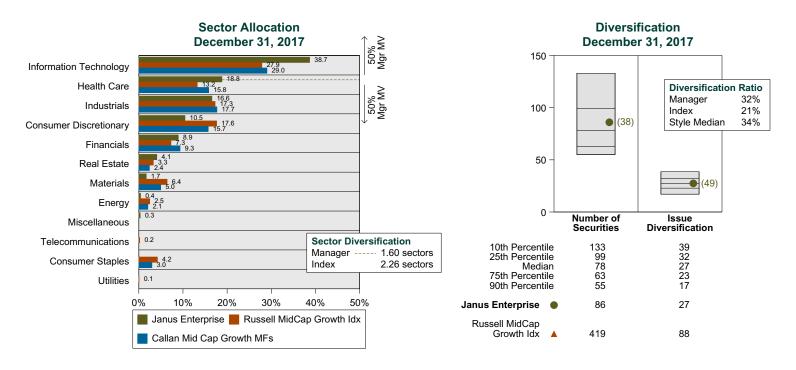
#### **Portfolio Characteristics**

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 December 31, 2017



#### **Sector Weights**





## Prudential Small Cap Value Period Ended December 31, 2017

#### **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.

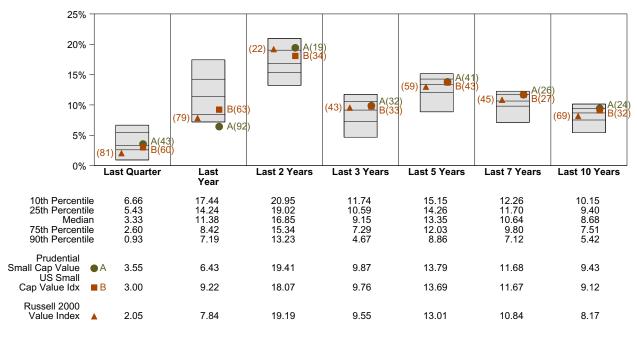
## **Quarterly Summary and Highlights**

- Prudential Small Cap Value's portfolio posted a 3.55% return for the quarter placing it in the 43 percentile of the Callan Small Cap Value Mutual Funds group for the quarter and in the 92 percentile for the last year.
- Prudential Small Cap Value's portfolio outperformed the Russell 2000 Value Index by 1.51% for the quarter and underperformed the Russell 2000 Value Index for the year by 1.41%.

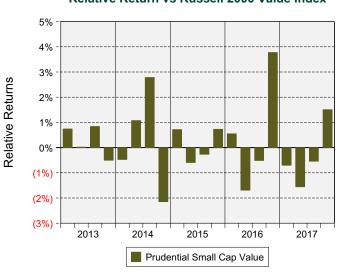
## **Quarterly Asset Growth**

Beginning Market Value	\$13,471,851
Net New Investment	\$0
Investment Gains/(Losses)	\$478,498
Ending Market Value	\$13.950.349

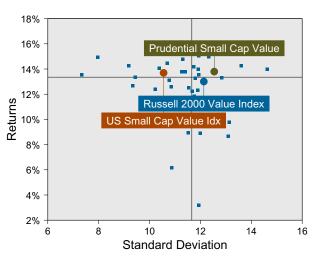
### Performance vs Callan Small Cap Value Mutual Funds (Net)



## Relative Return vs Russell 2000 Value Index



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



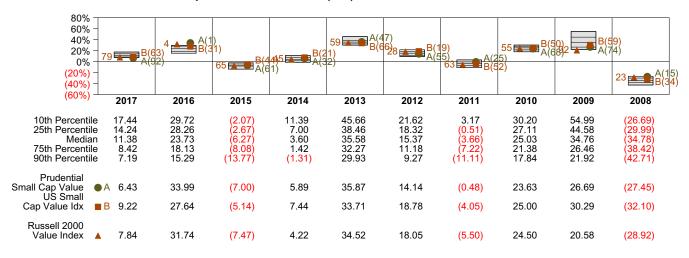


# Prudential Small Cap Value Return Analysis Summary

### **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.

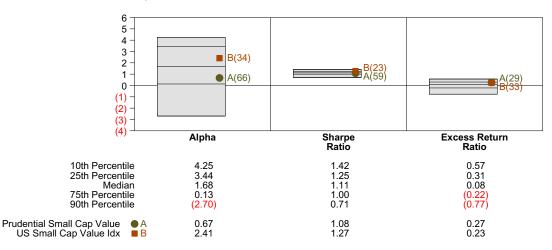
### Performance vs Callan Small Cap Value Mutual Funds (Net)



## 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 December 31, 2017



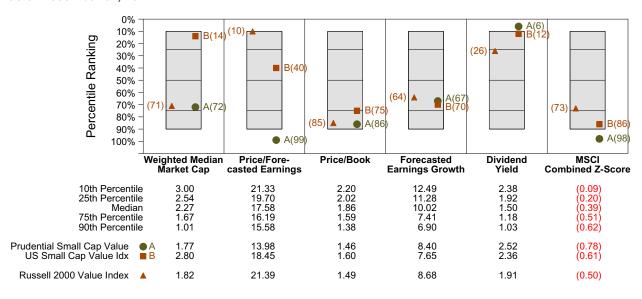


# Prudential Small Cap Value Equity Characteristics Analysis Summary

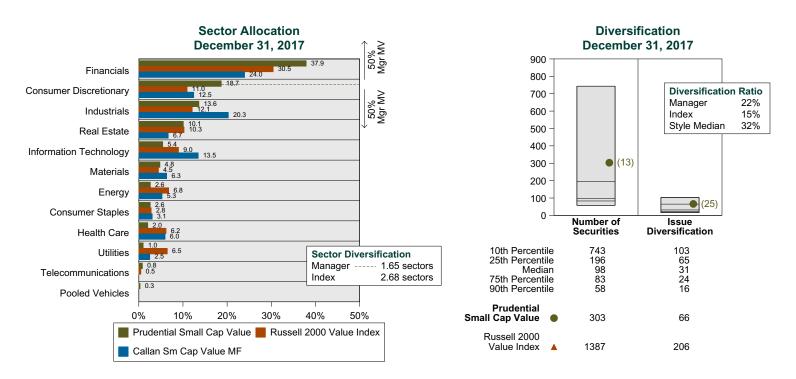
#### **Portfolio Characteristics**

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 December 31, 2017



## **Sector Weights**





## AB US Small Growth Period Ended December 31, 2017

### **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.

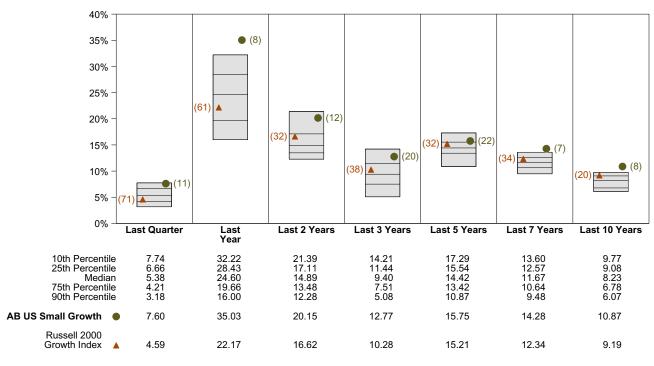
## **Quarterly Summary and Highlights**

- AB US Small Growth's portfolio posted a 7.60% return for the quarter placing it in the 11 percentile of the Callan Small Cap Growth Mutual Funds group for the quarter and in the 8 percentile for the last year.
- AB US Small Growth's portfolio outperformed the Russell 2000 Growth Index by 3.02% for the quarter and outperformed the Russell 2000 Growth Index for the year by 12.87%.

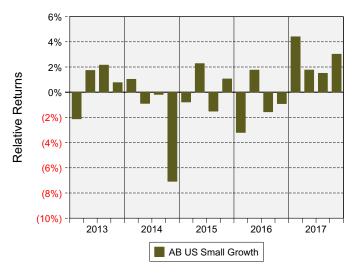
Quarterly	/ Asset	Growth
-----------	---------	--------

Beginning Market Value	\$15,182,198
Net New Investment	\$0
Investment Gains/(Losses)	\$1,154,180
Ending Market Value	\$16,336,378

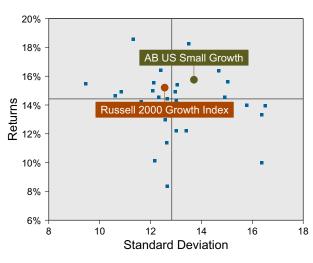
## Performance vs Callan Small Cap Growth Mutual Funds (Net)



### Relative Return vs Russell 2000 Growth Index



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



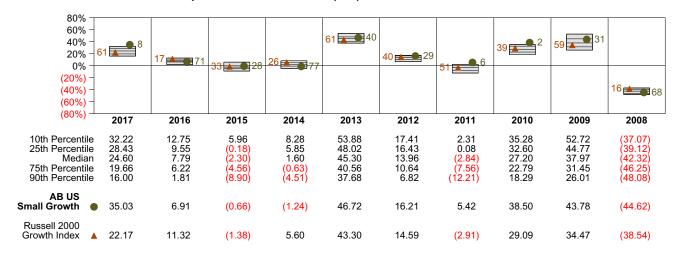


# AB US Small Growth Return Analysis Summary

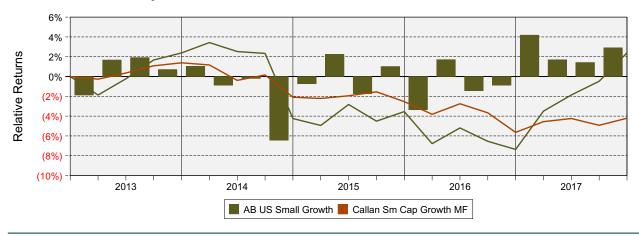
### **Return Analysis**

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.

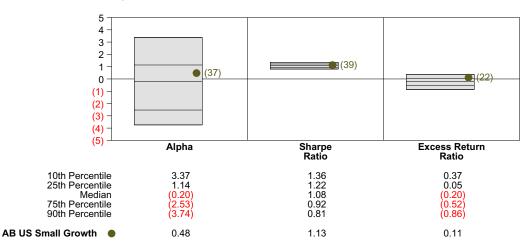
## Performance vs Callan Small Cap Growth Mutual Funds (Net)



### 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 December 31, 2017



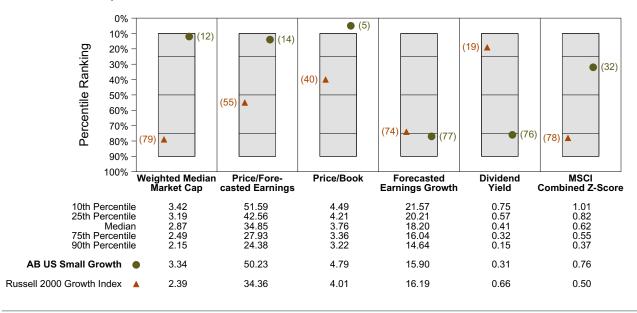


# AB US Small Growth Equity Characteristics Analysis Summary

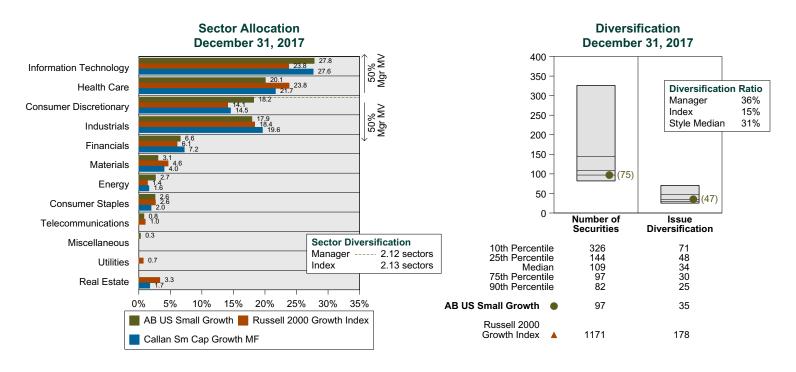
#### **Portfolio Characteristics**

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 December 31, 2017



#### **Sector Weights**





## International Equity Composite Period Ended December 31, 2017

### **Quarterly Summary and Highlights**

- International Equity Composite's portfolio posted a 3.81% return for the quarter placing it in the 94 percentile of the Public Fund - International Equity group for the quarter and in the 69 percentile for the last year.
- International Equity Composite's portfolio underperformed the MSCI ACWIxUS Gross by 1.25% for the quarter and outperformed the MSCI ACWIxUS Gross for the year by 0.17%.

#### **Quarterly Asset Growth**

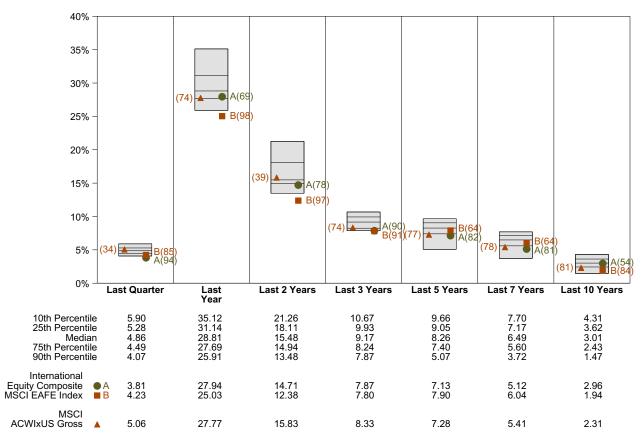
Beginning Market Value \$154,244,075

Net New Investment \$-2,600,000

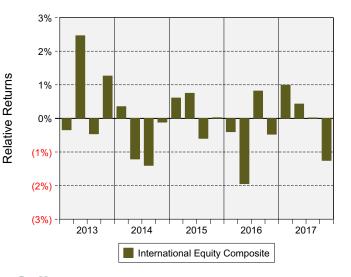
Investment Gains/(Losses) \$5,983,877

Ending Market Value \$157,627,952

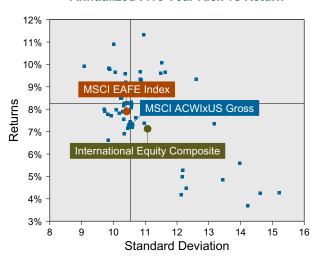
## Performance vs Public Fund - International Equity (Gross)



## Relative Return vs MSCI ACWIxUS Gross



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



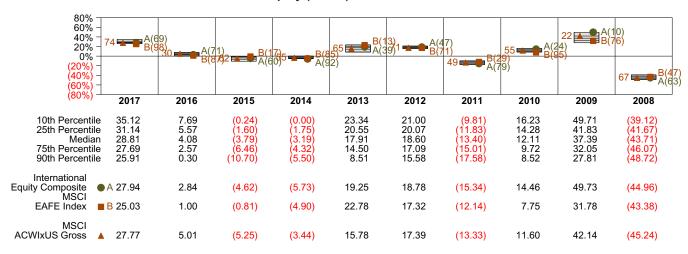


# International Equity Composite Return Analysis Summary

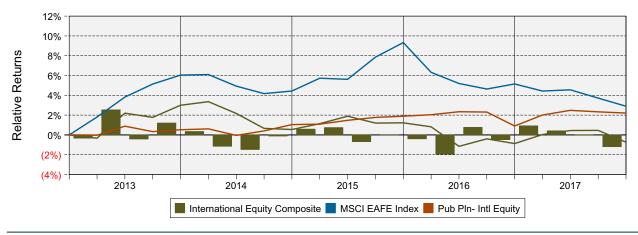
### **Return Analysis**

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.

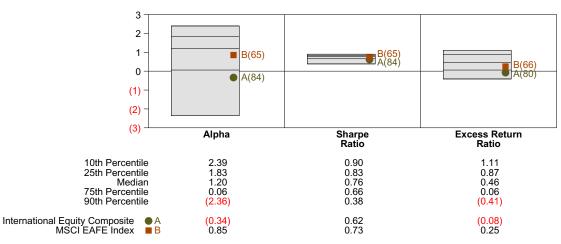
## Performance vs Public Fund - International Equity (Gross)



## 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 December 31, 2017



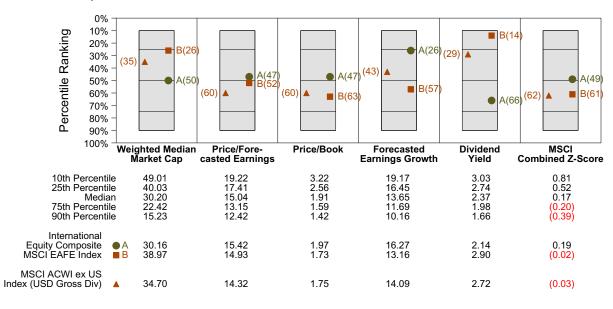


# International Equity Composite Equity Characteristics Analysis Summary

#### **Portfolio Characteristics**

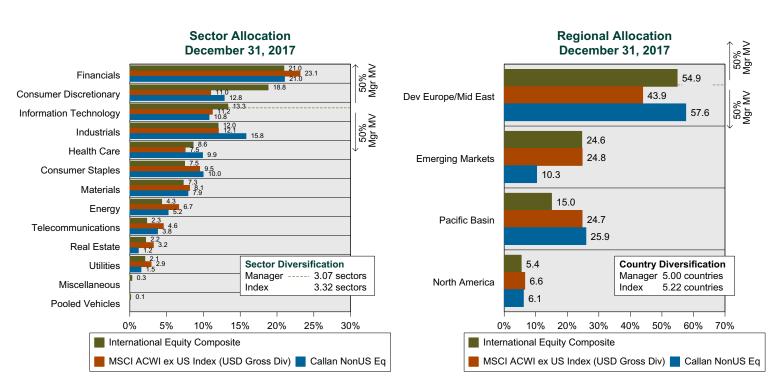
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Non-US Equity as of December 31, 2017



#### **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.

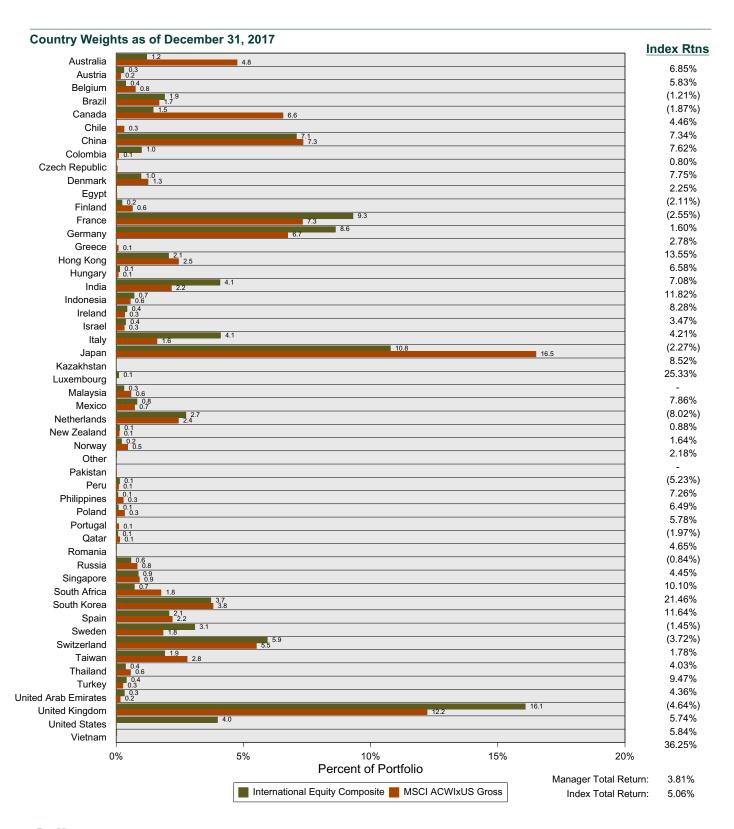




## Country Allocation International Equity Composite VS MSCI ACWI ex US Index (USD Gross Div)

### **Country Allocation**

The chart below contrasts the portfolio's country allocation with that of the index as of December 31, 2017. 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.

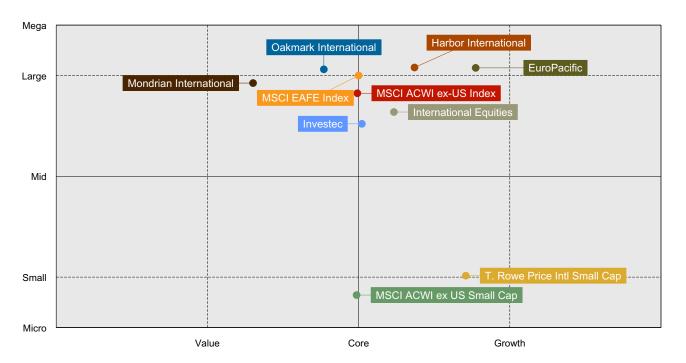




## **International Holdings Based Style Analysis** For One Quarter Ended December 31, 2017

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 December 31, 2017



	Weight	Wtd Median	Combined	Growth	Value	Number of	Security
	%	Mkt Cap	Z-Score	Z-Score	Z-Score	Securities I	<b>Diversification</b>
EuroPacific	17.75%	47.37	0.69	0.31	(0.37)	246	33.56
Harbor International	19.68%	47.79	0.32	0.05	(0.26)	74	18.05
Oakmark International	20.85%	45.79	(0.23)	0.04	0.28	50	10.36
Mondrian International	17.25%	37.15	(0.66)	(0.20)	0.47	121	23.27
T. Rowe Price Intl Small Cap	14.51%	2.62	0.63	0.23	(0.39)	231	72.73
Investec	9.97%	27.31	(0.00)	0.03	0.03	81	18.47
International Equities	100.00%	30.16	0.19	0.08	(0.11)	673	86.40
MSCI ACWI ex US Small Cap	-	2.01	(0.03)	(0.02)	0.02	4335	774.36
MSCI EAFE Index	-	38.97	(0.02)	(0.02)	0.01	928	114.77
MSCI ACWI ex-US Index	-	34.70	(0.03)	(0.02)	0.01	1858	182.06



## EuroPacific Period Ended December 31, 2017

#### **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.

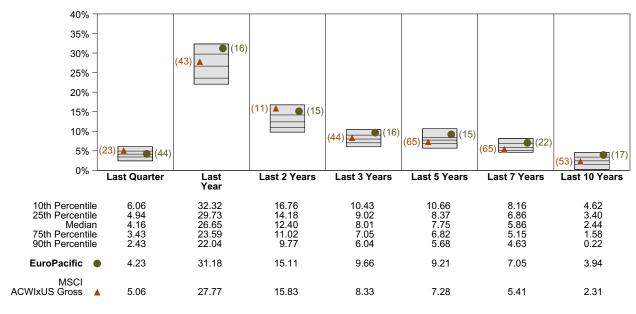
## **Quarterly Summary and Highlights**

- EuroPacific's portfolio posted a 4.23% return for the quarter placing it in the 44 percentile of the Callan Non US Equity Mutual Funds group for the quarter and in the 16 percentile for the last year.
- EuroPacific's portfolio underperformed the MSCI ACWIxUS Gross by 0.84% for the quarter and outperformed the MSCI ACWIxUS Gross for the year by 3.41%.

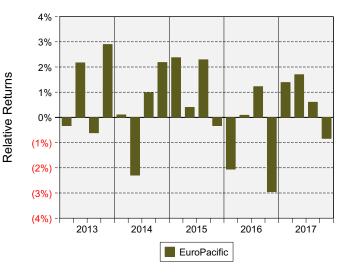
## **Quarterly Asset Growth**

Beginning Market Value	\$26,844,333
Net New Investment	\$0
Investment Gains/(Losses)	\$1,134,694
Ending Market Value	\$27,979,027

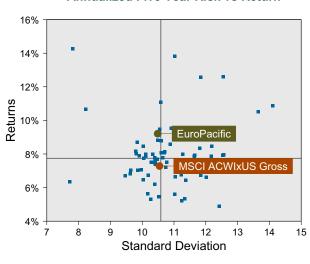
## Performance vs Callan Non US Equity Mutual Funds (Net)



## Relative Return vs MSCI ACWIxUS Gross



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



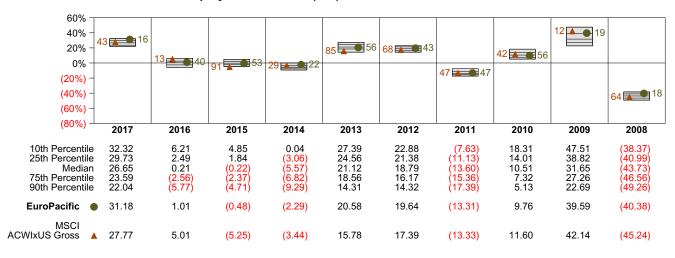


## EuroPacific Return Analysis Summary

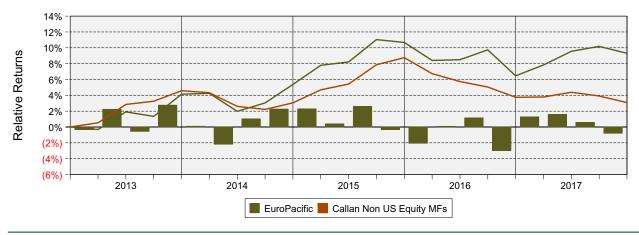
### **Return Analysis**

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.

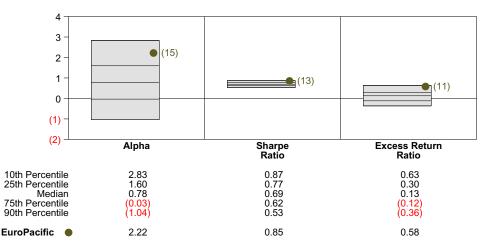
## Performance vs Callan Non US Equity Mutual Funds (Net)



## 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 December 31, 2017





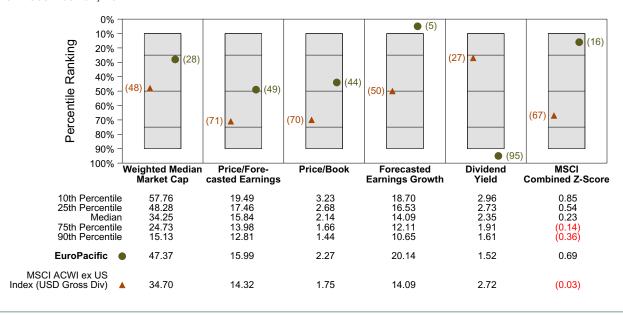
### **EuroPacific**

## **Equity Characteristics Analysis Summary**

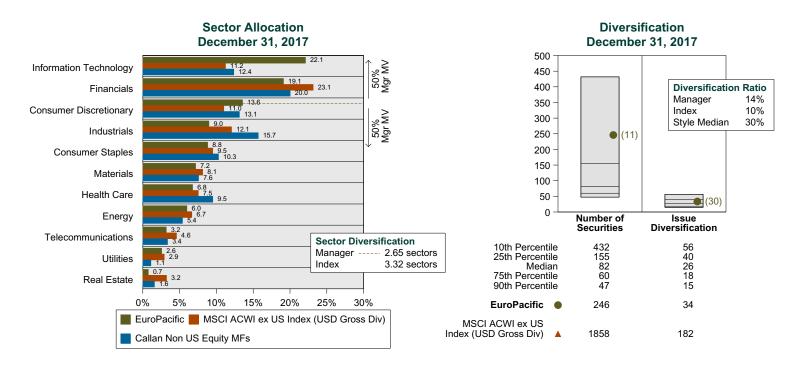
#### **Portfolio Characteristics**

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 December 31, 2017



#### **Sector Weights**

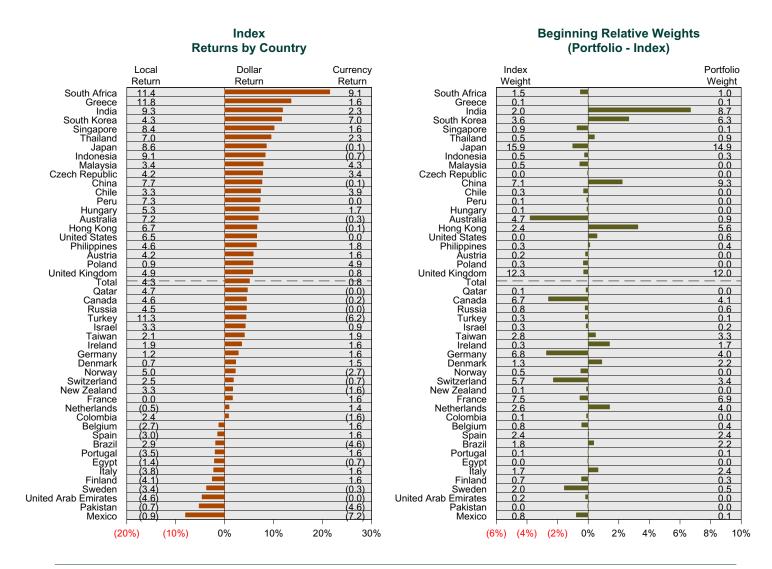


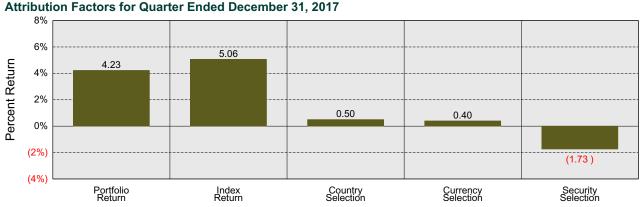


## EuroPacific vs MSCI ACWIxUS Gross Attribution for Quarter Ended December 31, 2017

#### **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 December 31, 2017

#### **Investment Philosophy**

The Harbor International Fund is sub-advised by Northern Cross, LLC. The investment philosophy focuses on companies with prospects of margin expansion and those that have strong franchise value or asset value. The fund takes a long-term view, expecting to hold a security for 7-10 years. Patient due diligence of companies, countries, and regions are of the utmost importance to the investment process. The team believes this due diligence, in combination with a top down investment theme, provides the best opportunity to invest in truly undervalued companies. The strategy has remained consistent in this philosophy over the past decades of international investment.

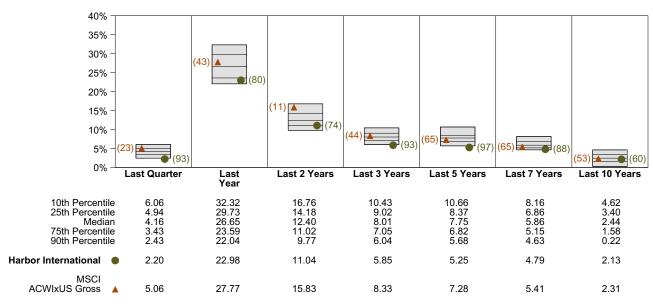
#### **Quarterly Summary and Highlights**

- Harbor International's portfolio posted a 2.20% return for the quarter placing it in the 93 percentile of the Callan Non US Equity Mutual Funds group for the quarter and in the 80 percentile for the last year.
- Harbor International's portfolio underperformed the MSCI ACWIxUS Gross by 2.86% for the quarter and underperformed the MSCI ACWIxUS Gross for the year by 4.79%.

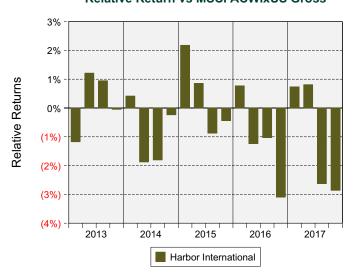
## **Quarterly Asset Growth**

Beginning Market Value	\$30,756,402
Net New Investment	\$-400,000
Investment Gains/(Losses)	\$664,052
Ending Market Value	\$31,020,454

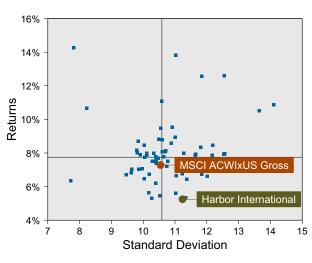
## Performance vs Callan Non US Equity Mutual Funds (Net)



## Relative Return vs MSCI ACWIxUS Gross



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



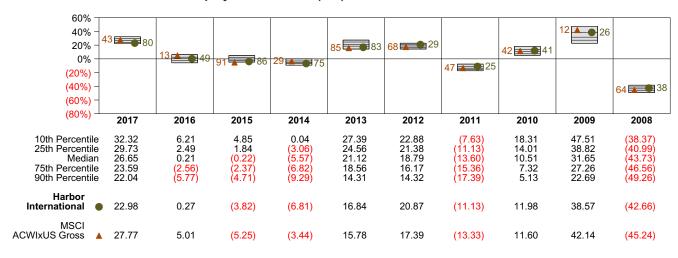


# Harbor International Return Analysis Summary

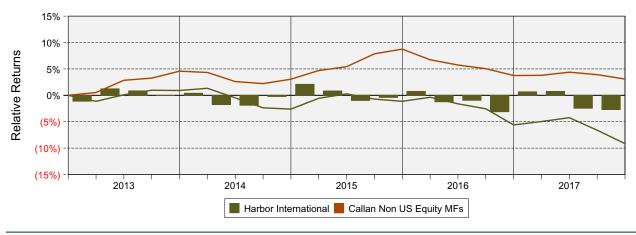
### **Return Analysis**

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.

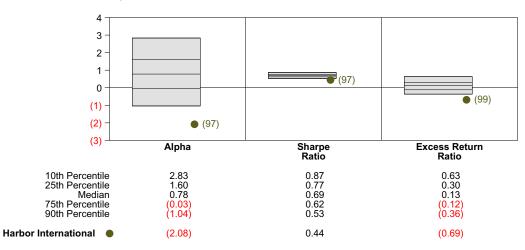
## Performance vs Callan Non US Equity Mutual Funds (Net)



## 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 December 31, 2017



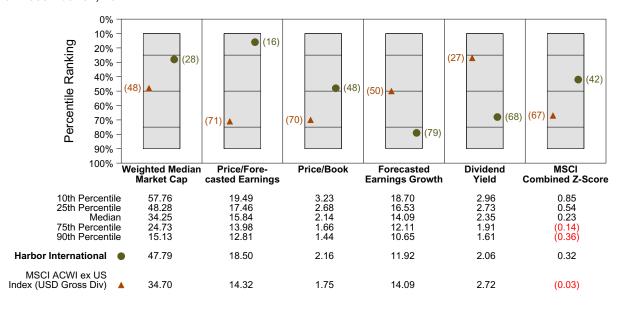


# Harbor International Equity Characteristics Analysis Summary

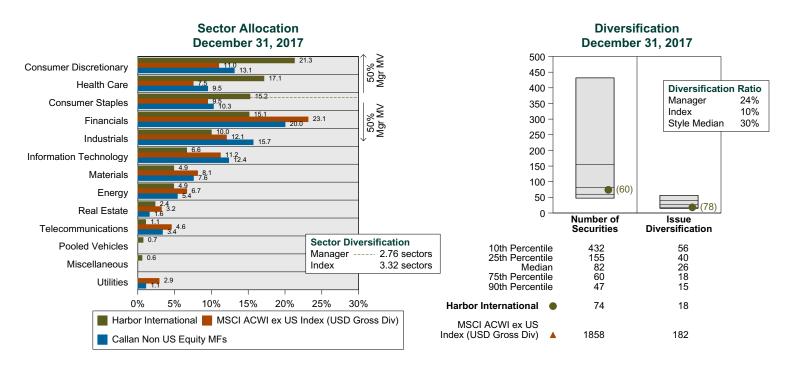
#### **Portfolio Characteristics**

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 December 31, 2017



#### **Sector Weights**

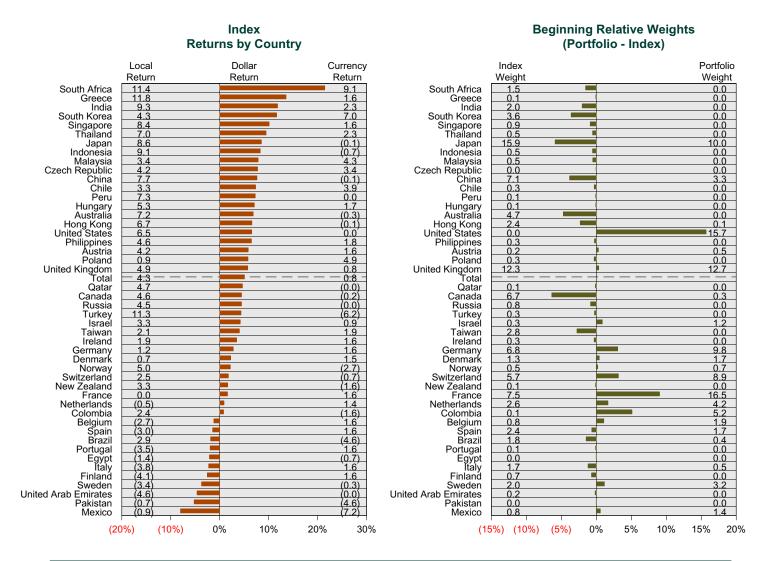


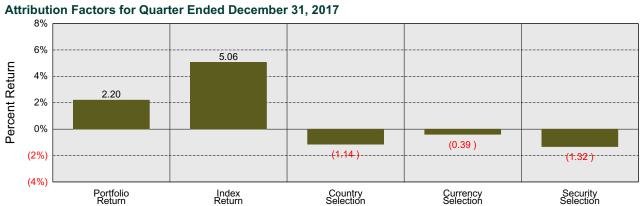


## Harbor International vs MSCI ACWIXUS Gross Attribution for Quarter Ended December 31, 2017

#### **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 December 31, 2017

#### **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.

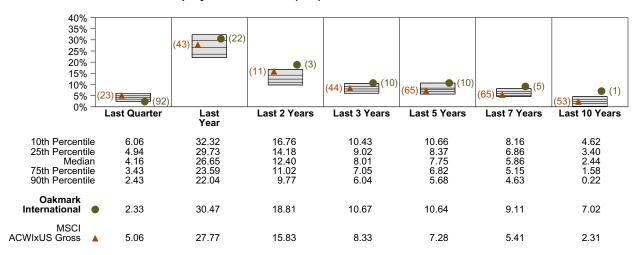
## **Quarterly Summary and Highlights**

- Oakmark International's portfolio posted a 2.33% 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 22 percentile for the last year.
- Oakmark International's portfolio underperformed the MSCI ACWIXUS Gross by 2.73% for the quarter and outperformed the MSCI ACWIXUS Gross for the year by 2.71%.

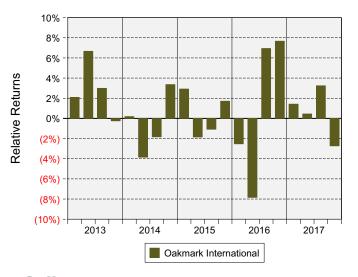
## **Quarterly Asset Growth**

Beginning Market Value	\$34,293,293
Net New Investment	\$-2,200,000
Investment Gains/(Losses)	\$773,649
Ending Market Value	\$32,866,942

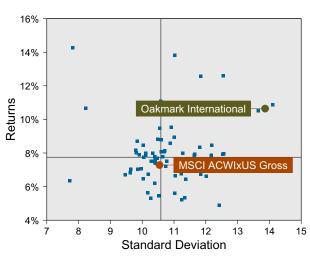
### Performance vs Callan Non US Equity Mutual Funds (Net)



## Relative Return vs MSCI ACWIxUS Gross



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



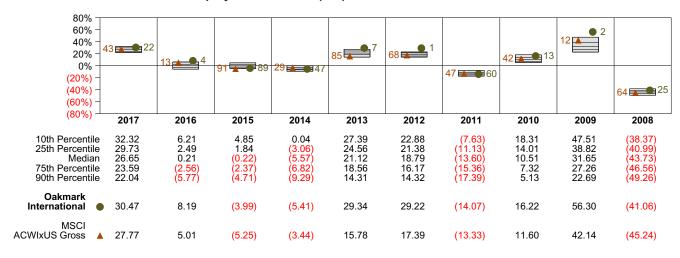


# Oakmark International Return Analysis Summary

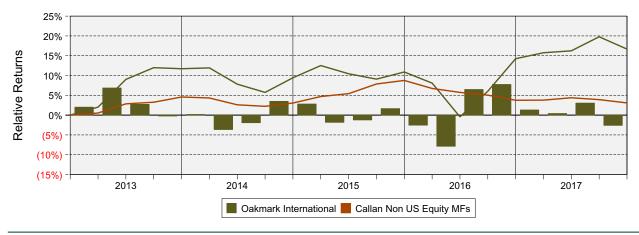
### **Return Analysis**

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.

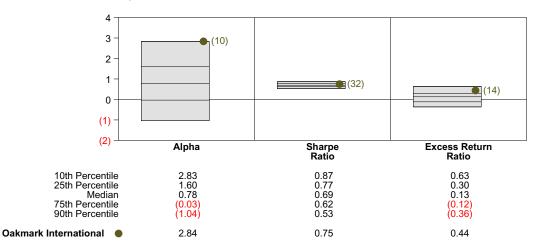
## Performance vs Callan Non US Equity Mutual Funds (Net)



## 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 December 31, 2017



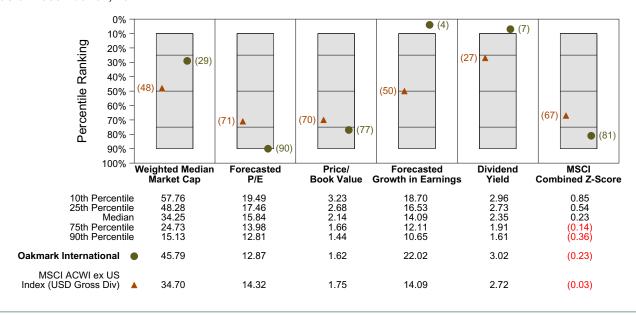


# Oakmark International Equity Characteristics Analysis Summary

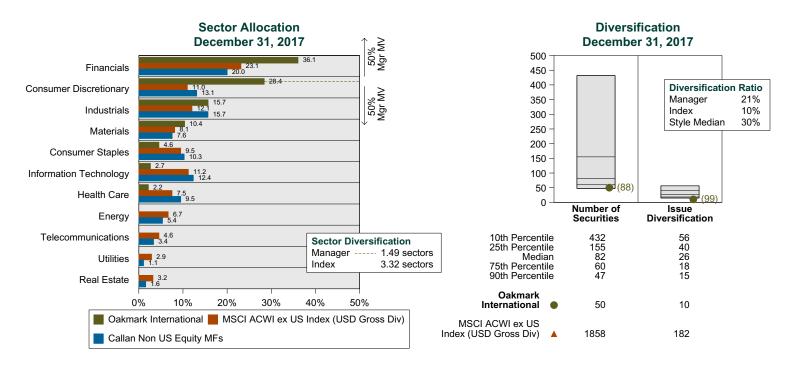
#### **Portfolio Characteristics**

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 December 31, 2017



#### **Sector Weights**

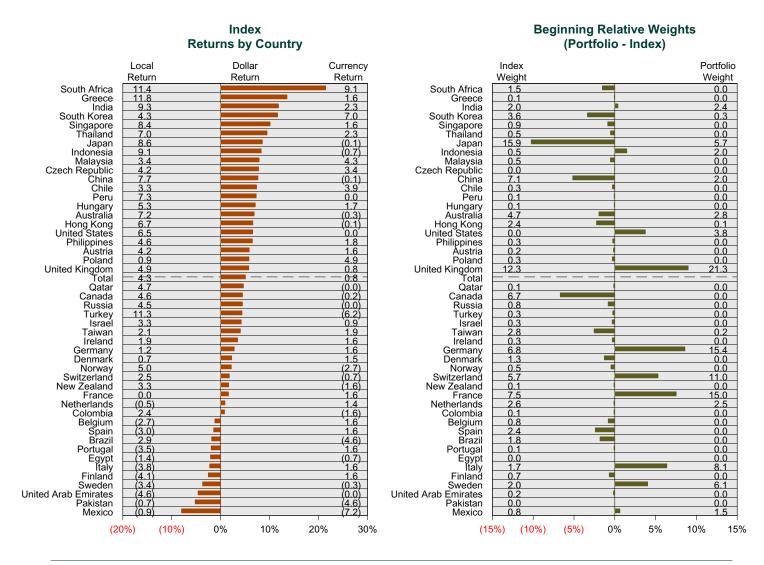


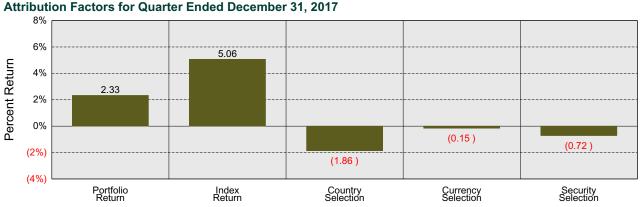


# Oakmark International vs MSCI ACWIXUS Gross Attribution for Quarter Ended December 31, 2017

#### **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 December 31, 2017

#### **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.

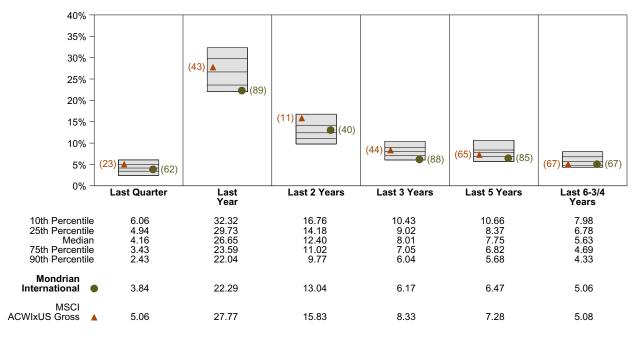
## **Quarterly Summary and Highlights**

- Mondrian International's portfolio posted a 3.84% return for the quarter placing it in the 62 percentile of the Callan Non US Equity Mutual Funds group for the quarter and in the 89 percentile for the last year.
- Mondrian International's portfolio underperformed the MSCI ACWIXUS Gross by 1.23% for the quarter and underperformed the MSCI ACWIXUS Gross for the year by 5.48%.

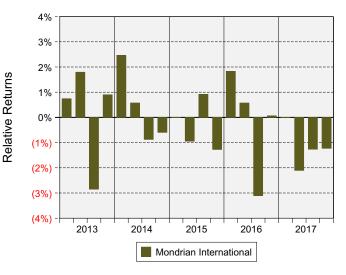
Quarterly	Asset	Growth
-----------	-------	--------

Beginning Market Value	\$26,126,532
Net New Investment	\$0
Investment Gains/(Losses)	\$1,056,596
Ending Market Value	\$27,183,128

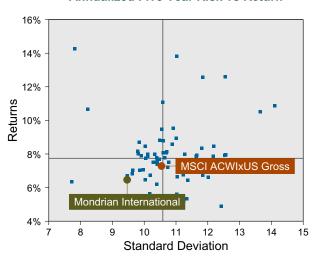
### Performance vs Callan Non US Equity Mutual Funds (Net)



## Relative Return vs MSCI ACWIxUS Gross



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



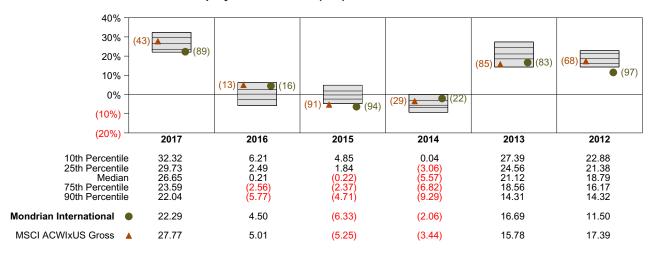


# Mondrian International Return Analysis Summary

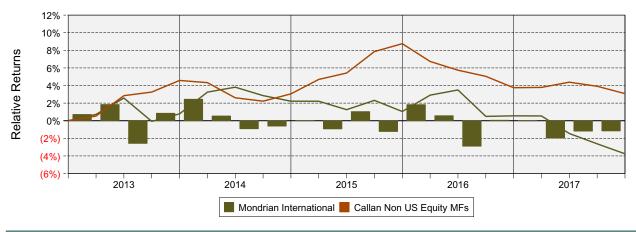
### **Return Analysis**

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.

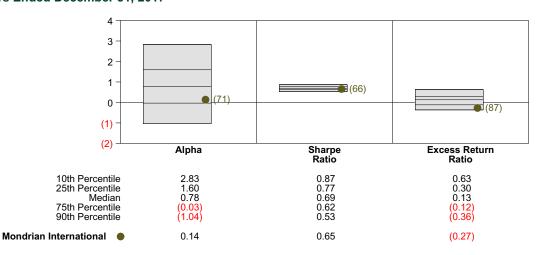
## Performance vs Callan Non US Equity Mutual Funds (Net)



## 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 December 31, 2017



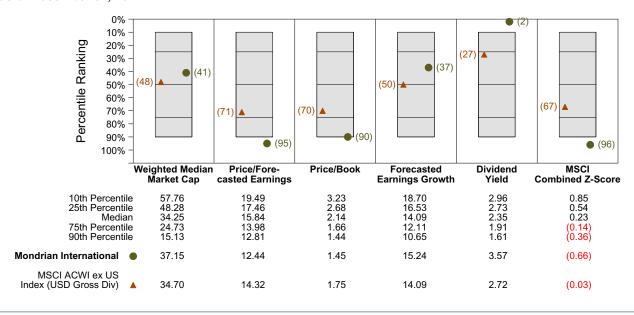


# Mondrian International Equity Characteristics Analysis Summary

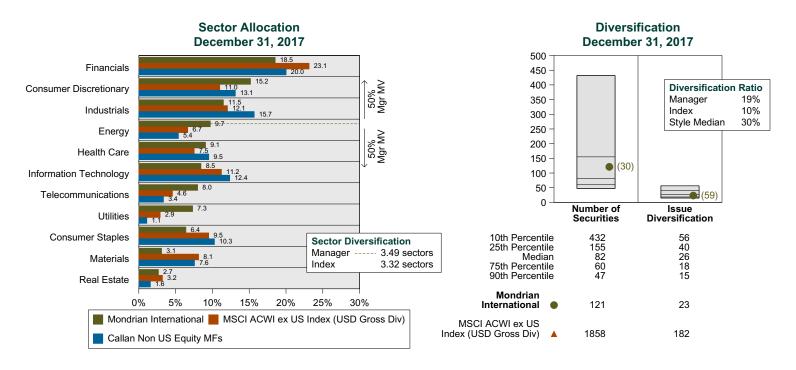
#### **Portfolio Characteristics**

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 December 31, 2017



#### **Sector Weights**

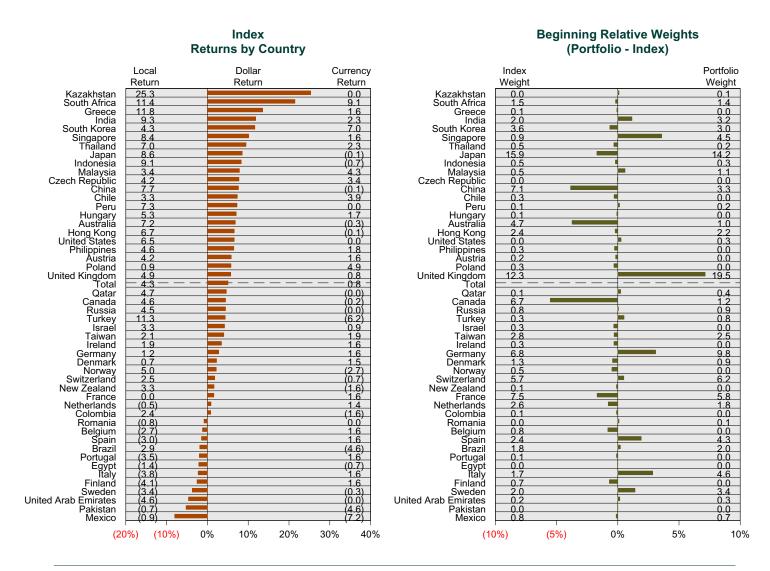


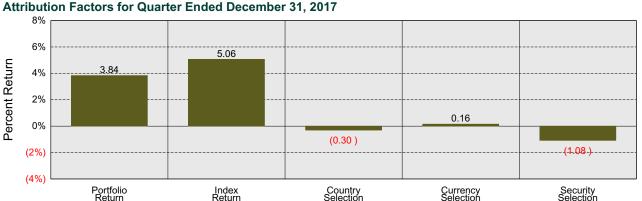


# Mondrian International vs MSCI ACWIXUS Gross Attribution for Quarter Ended December 31, 2017

#### **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 December 31, 2017

#### **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.

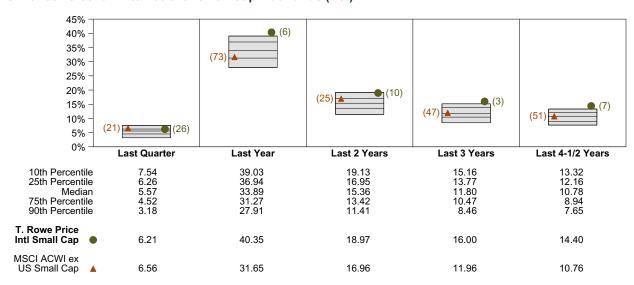
#### **Quarterly Summary and Highlights**

- T. Rowe Price Intl Small Cap's portfolio posted a 6.21% return for the quarter placing it in the 26 percentile of the Callan International Small Cap Mut Funds group for the quarter and in the 6 percentile for the last year.
- T. Rowe Price Intl Small Cap's portfolio underperformed the MSCI ACWI ex US Small Cap by 0.36% for the quarter and outperformed the MSCI ACWI ex US Small Cap for the year by 8.70%.

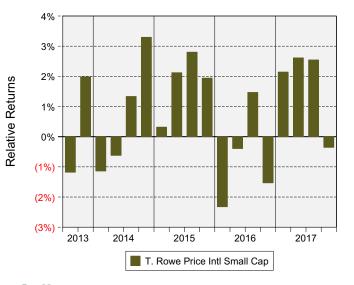
Quarterly	/ Asset	Growth
- Qualitorij	, , ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	0.0111.

Beginning Market Value	\$21,472,624
Net New Investment	\$0
Investment Gains/(Losses)	\$1,391,968
Ending Market Value	\$22,864,593

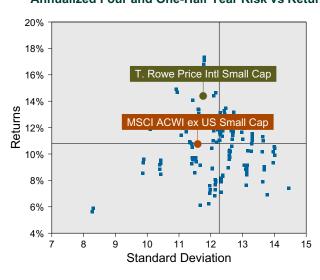
#### Performance vs Callan International Small Cap Mut Funds (Net)



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



# Callan International Small Cap Mut Funds (Net) Annualized Four and One-Half Year Risk vs Return



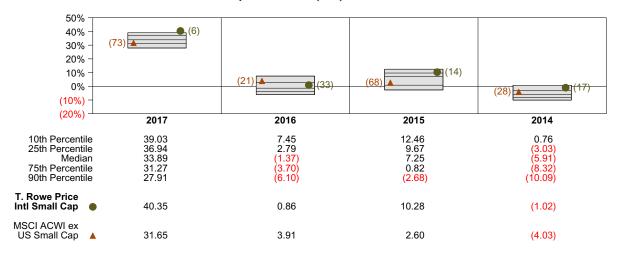


# T. Rowe Price Intl Small Cap Return Analysis Summary

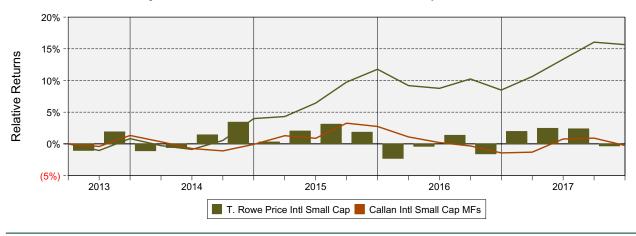
#### **Return Analysis**

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.

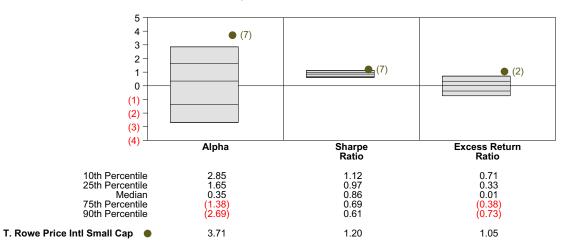
#### Performance vs Callan International Small Cap Mut Funds (Net)



## 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) Four and One-Half Years Ended December 31, 2017



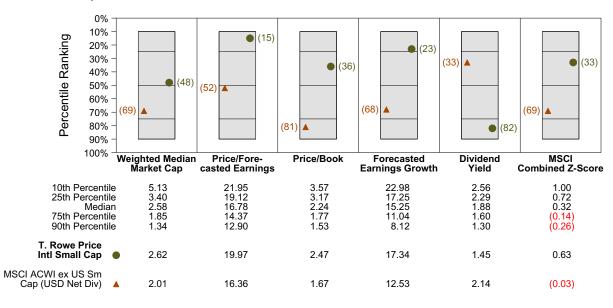


# T. Rowe Price Intl Small Cap Equity Characteristics Analysis Summary

#### **Portfolio Characteristics**

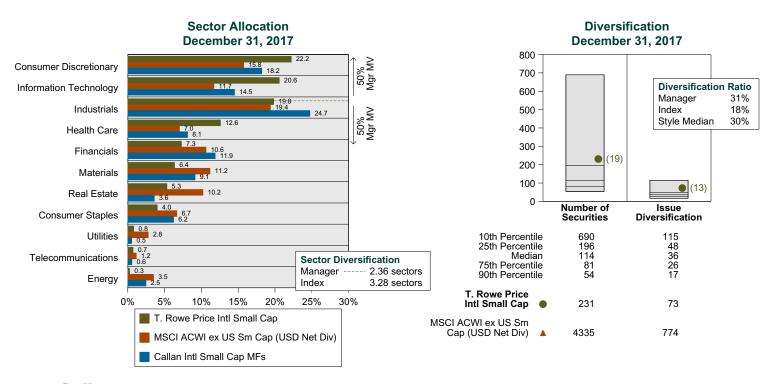
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan International Small Cap Mut Funds as of December 31, 2017



#### **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.

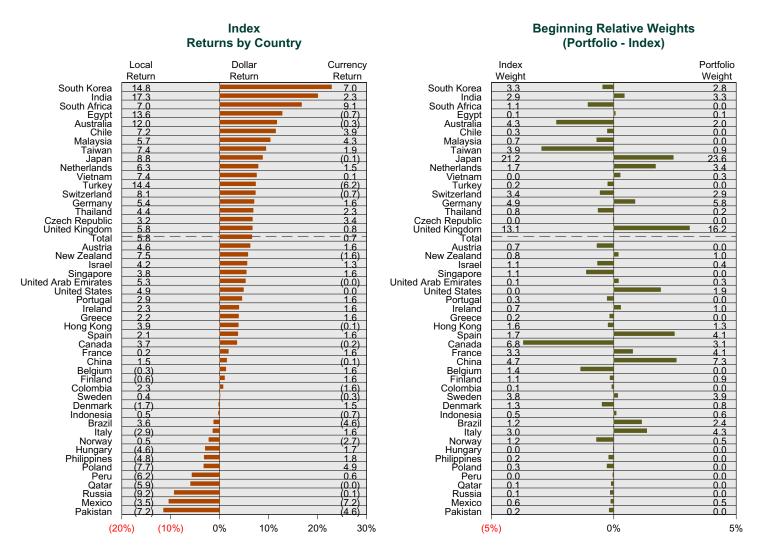




# T. Rowe Price Intl Small Cap vs MSCI ACWI ex US Small Cap Attribution for Quarter Ended December 31, 2017

#### **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.



#### Attribution Factors for Quarter Ended December 31, 2017 8% 6.56 6.21 6% Percent Return 4% 2% 0.22 0% (0.14)(0.16)(2%)Portfolio Return Index Return Country Selection Currency Selection Security Selection



#### Investec

## Period Ended December 31, 2017

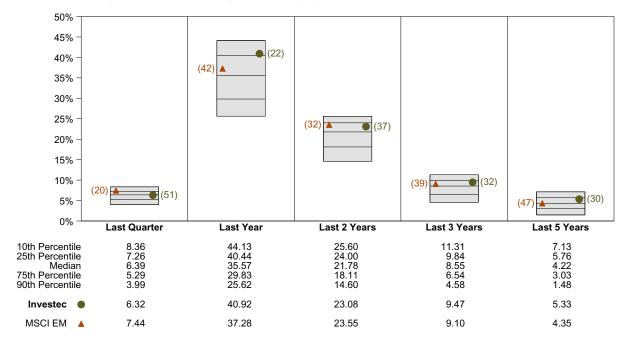
#### **Investment Philosophy**

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.

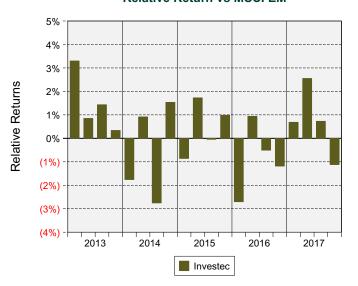
#### **Quarterly Summary and Highlights**

- Investec's portfolio posted a 6.32% return for the quarter placing it in the 51 percentile of the Morningstar Diversified Emg Mkts Fds group for the quarter and in the 22 percentile for the last year.
- Investec's portfolio underperformed the MSCI EM by 1.12% for the quarter and outperformed the MSCI EM for the year by 3.63%.

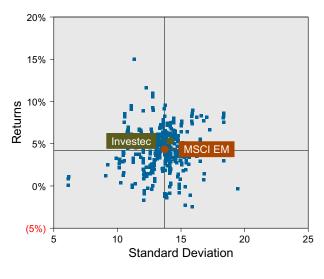
#### Performance vs Morningstar Diversified Emg Mkts Fds (Net)



## **Relative Return vs MSCI EM**



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



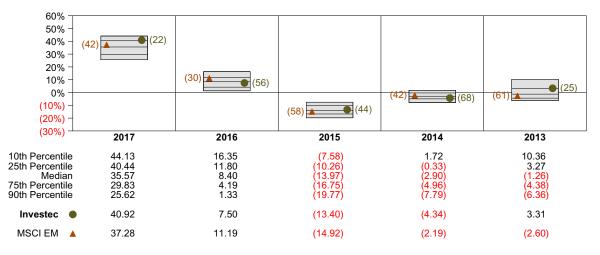


# Investec Return Analysis Summary

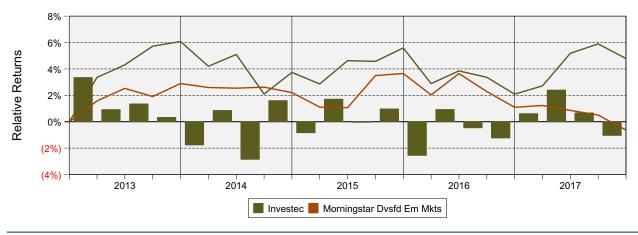
#### **Return Analysis**

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.

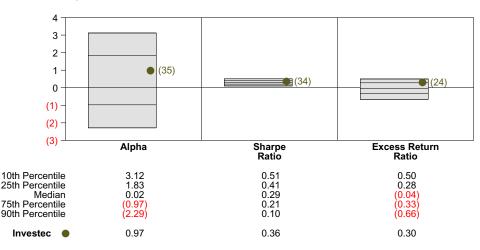
#### Performance vs Morningstar Diversified Emg Mkts Fds (Net)



# **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 December 31, 2017





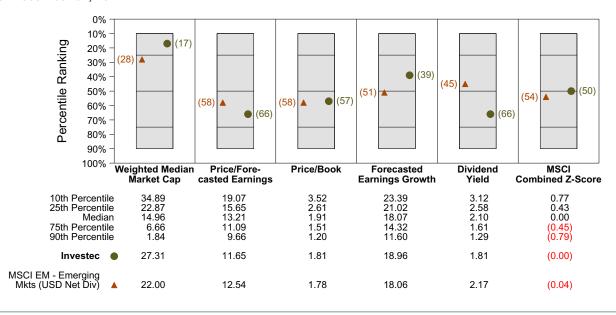
#### Investec

### **Equity Characteristics Analysis Summary**

#### **Portfolio Characteristics**

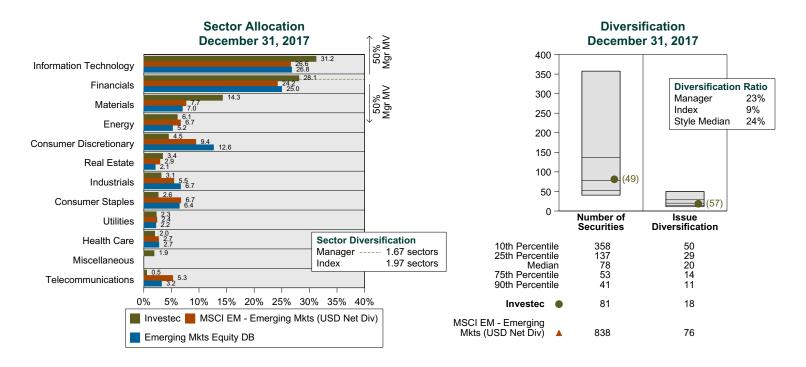
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Emerging Markets Equity DB as of December 31, 2017



#### **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.





# Investec vs MSCI EM Attribution for Quarter Ended December 31, 2017

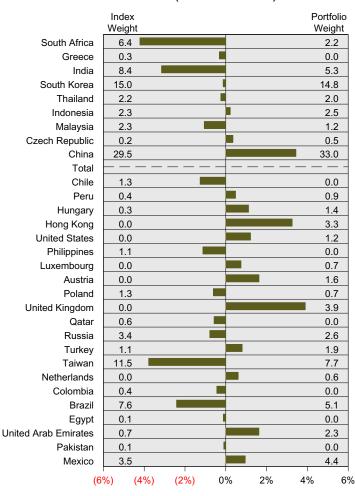
#### International Attribution

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.

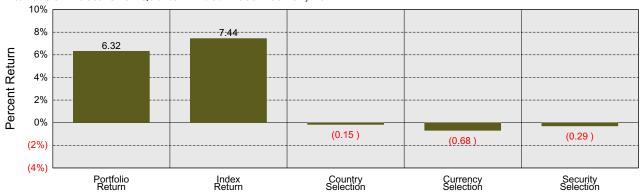


#### Dollar Local Currency Return Return Return South Africa 11.4 9.1 Greece 11.8 1.6 India 9.3 2.3 South Korea 4.3 7.0 Thailand 7.0 2.3 Indonesia 9.1 (0.7)Malaysia 3.4 4.3 Czech Republic 4.2 3.4 China (0.1)Total 5.7 1.7 Chile 3.3 3.9 Peru 7.3 0.0 Hungary 5.3 1.7 Hong Kong 6.7 (0.1)**United States** 6.5 0.0 Philippines 4.6 1.8 Luxembourg 4.9 1.1 Austria 4.2 1.6 Poland 0.949 United Kingdom 0.8 4.9 Qatar 4.7 (0.0)Russia 4.5 (0.0)Turkey 11.3 (6.2)Taiwan 2.1 1.9 Netherlands (0.5)1.4 Colombia (1.6)2.4 Brazil 2.9 (4.6)Egypt (1.4)(0.7)United Arab Emirates (4.6)(0.0)Pakistan (0.7)(4.6)Mexico (0.9)(7.2)(20%)(10%)0% 10% 20% 30%

# Beginning Relative Weights (Portfolio - Index)



# Attribution Factors for Quarter Ended December 31, 2017





# Domestic Fixed Income Composite Period Ended December 31, 2017

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

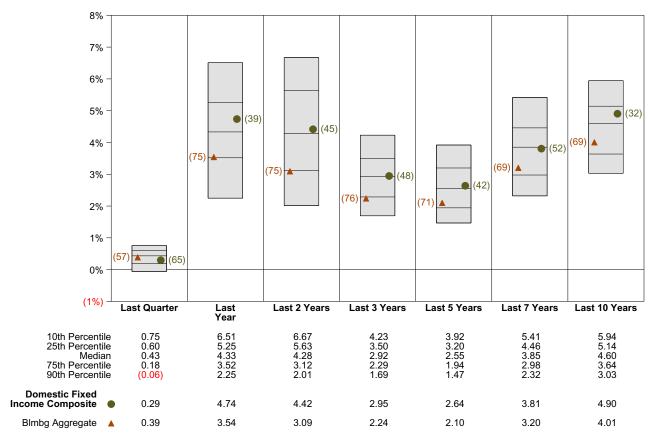
- Domestic Fixed Income Composite's portfolio posted a 0.29% return for the quarter placing it in the 65 percentile of the Public Fund - Domestic Fixed group for the quarter and in the 39 percentile for the last year.
- Domestic Fixed Income Composite's portfolio underperformed the Blmbg Aggregate by 0.09% for the quarter and outperformed the Blmbg Aggregate for the year by 1.19%.

#### **Quarterly Asset Growth**

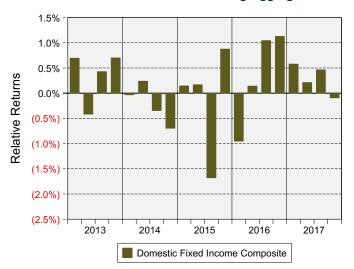
Beginning Market Value\$105,007,846Net New Investment\$0Investment Gains/(Losses)\$309,602

Ending Market Value \$105,317,448

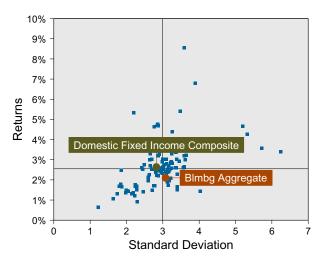
## Performance vs Public Fund - Domestic Fixed (Gross)



#### Relative Return vs Blmbg Aggregate



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



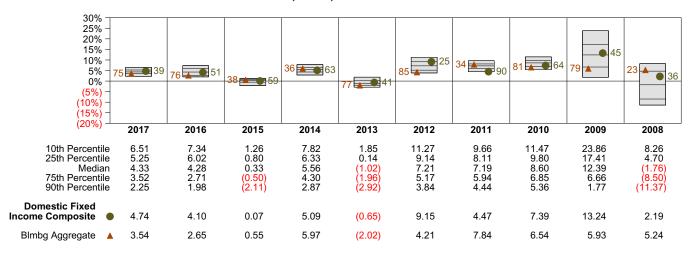


# **Domestic Fixed Income Composite Return Analysis Summary**

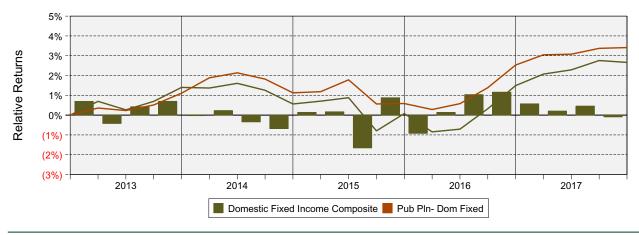
#### **Return Analysis**

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.

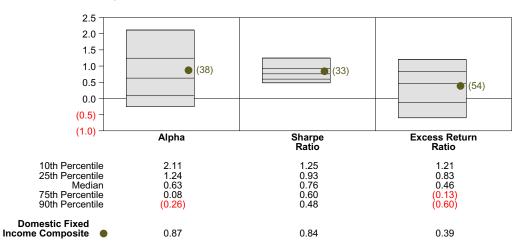
# Performance vs Public Fund - Domestic Fixed (Gross)



## **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 December 31, 2017



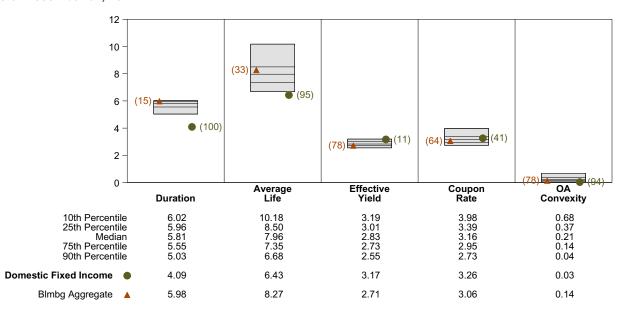


# Domestic Fixed Income Bond Characteristics Analysis Summary

#### **Portfolio Characteristics**

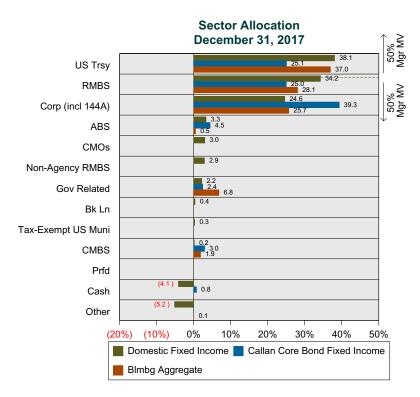
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

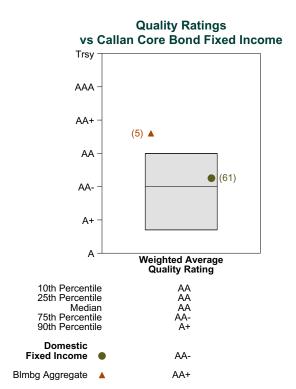
## Fixed Income Portfolio Characteristics Rankings Against Callan Core Bond Fixed Income as of December 31, 2017



# **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 December 31, 2017

#### **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.

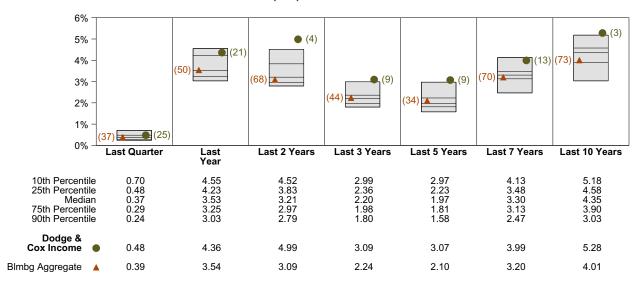
#### **Quarterly Summary and Highlights**

- Dodge & Cox Income's portfolio posted a 0.48% return for the quarter placing it in the 25 percentile of the Callan Core Bond Mutual Funds group for the quarter and in the 21 percentile for the last year.
- Dodge & Cox Income's portfolio outperformed the Blmbg Aggregate by 0.09% for the quarter and outperformed the Blmbg Aggregate for the year by 0.82%.

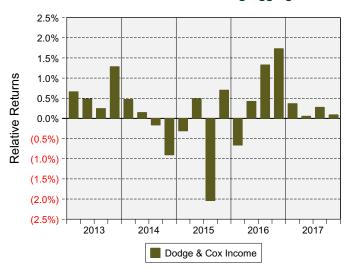
### **Quarterly Asset Growth**

Beginning Market Value	\$52,491,436
Net New Investment	\$0
Investment Gains/(Losses)	\$251,827
Ending Market Value	\$52,743,263

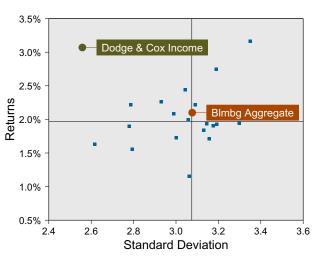
#### Performance vs Callan Core Bond Mutual Funds (Net)



#### Relative Return vs Blmbg Aggregate



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



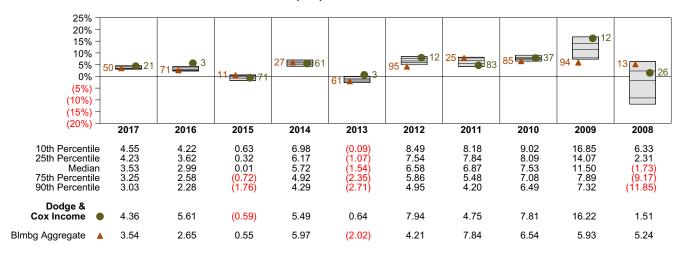


# Dodge & Cox Income Return Analysis Summary

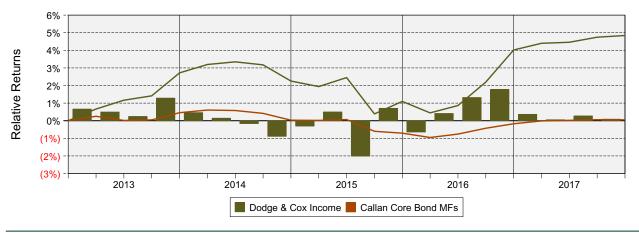
#### **Return Analysis**

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.

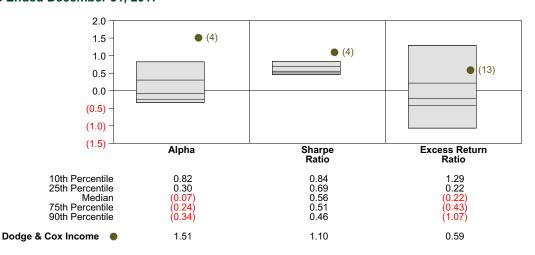
#### Performance vs Callan Core Bond Mutual Funds (Net)



## 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 December 31, 2017



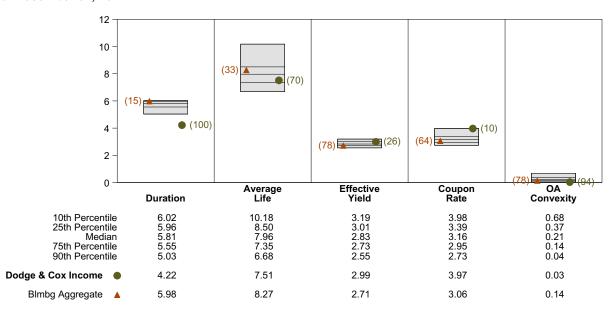


# Dodge & Cox Income Bond Characteristics Analysis Summary

#### **Portfolio Characteristics**

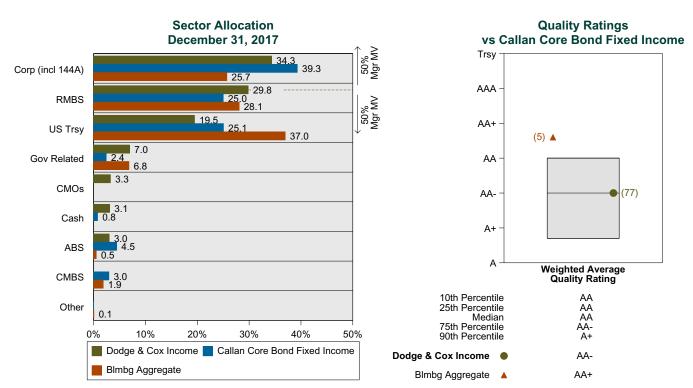
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Fixed Income Portfolio Characteristics Rankings Against Callan Core Bond Fixed Income as of December 31, 2017



#### **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 December 31, 2017

## **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.

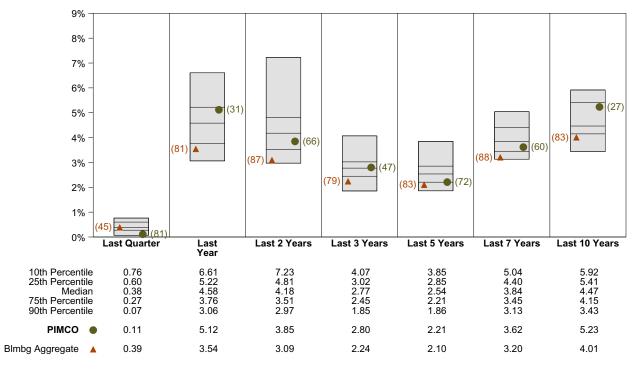
# **Quarterly Summary and Highlights**

- PIMCO's portfolio posted a 0.11% return for the quarter placing it in the 81 percentile of the Callan Core Plus Mutual Funds group for the quarter and in the 31 percentile for the last year.
- PIMCO's portfolio underperformed the Blmbg Aggregate by 0.28% for the quarter and outperformed the Blmbg Aggregate for the year by 1.58%.

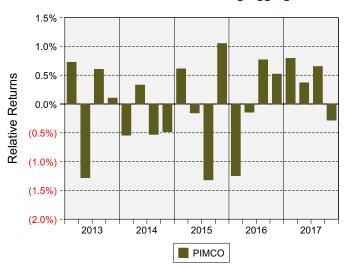
Quarterly	Asset	Growth
-----------	-------	--------

Beginning Market Value	\$52,516,410
Net New Investment	\$0
Investment Gains/(Losses)	\$57,775
Ending Market Value	\$52 574 185

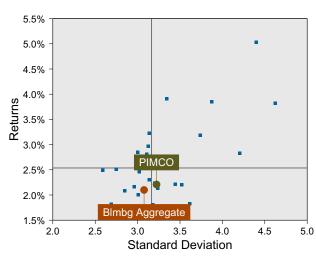
# Performance vs Callan Core Plus Mutual Funds (Net)



#### Relative Return vs Blmbg Aggregate



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



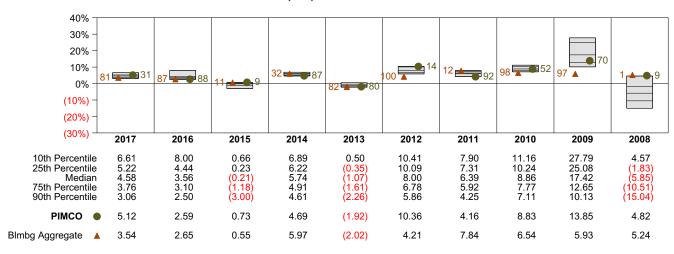


# PIMCO Return Analysis Summary

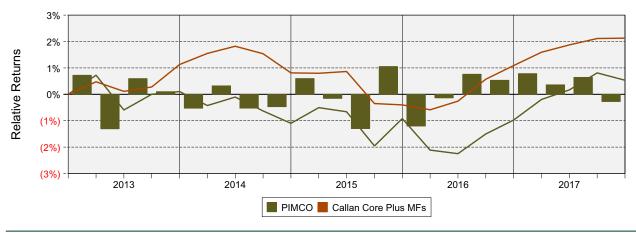
#### **Return Analysis**

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.

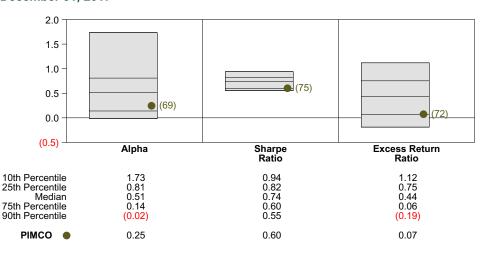
## Performance vs Callan Core Plus Mutual Funds (Net)



# **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 December 31, 2017





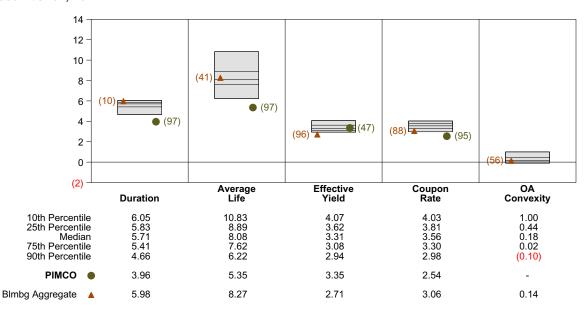
## **PIMCO**

# **Bond Characteristics Analysis Summary**

#### **Portfolio Characteristics**

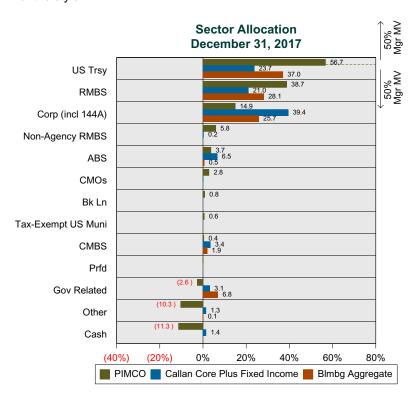
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

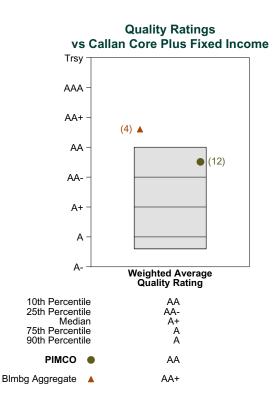
## Fixed Income Portfolio Characteristics Rankings Against Callan Core Plus Fixed Income as of December 31, 2017



#### **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 December 31, 2017

#### **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.

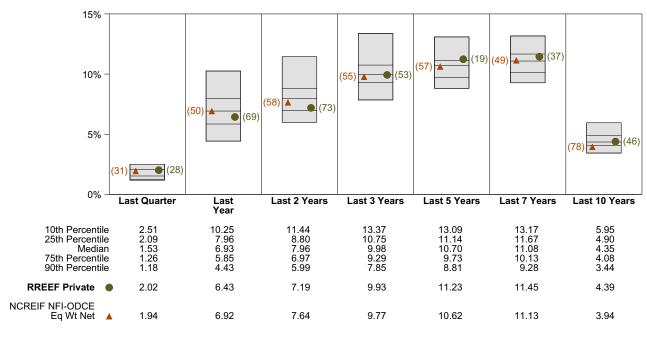
#### **Quarterly Summary and Highlights**

- RREEF Private's portfolio posted a 2.02% return for the quarter placing it in the 28 percentile of the Callan Open End Core Cmmingled Real Est group for the quarter and in the 69 percentile for the last year.
- RREEF Private's portfolio outperformed the NCREIF NFI-ODCE Eq Wt Net by 0.07% for the quarter and underperformed the NCREIF NFI-ODCE Eq Wt Net for the year by 0.49%.

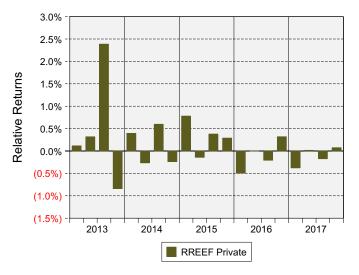
## **Quarterly Asset Growth**

Beginning Market Value	\$22,836,501
Net New Investment	\$600,000
Investment Gains/(Losses)	\$472,280
Ending Market Value	\$23,908,782

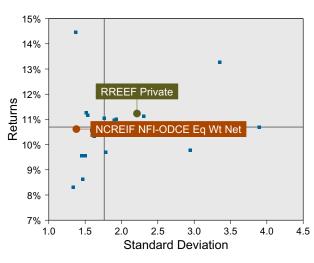
#### Performance vs Callan Open End Core Cmmingled Real Est (Net)



### 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 December 31, 2017

#### **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.

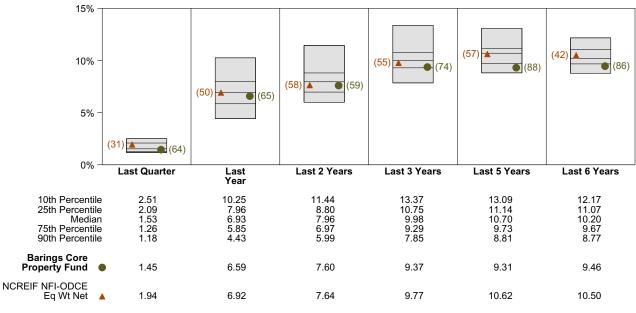
## **Quarterly Summary and Highlights**

- Barings Core Property Fund's portfolio posted a 1.45% return for the quarter placing it in the 64 percentile of the Callan Open End Core Cmmingled Real Est group for the quarter and in the 65 percentile for the last year.
- Barings Core Property Fund's portfolio underperformed the NCREIF NFI-ODCE Eq Wt Net by 0.49% for the quarter and underperformed the NCREIF NFI-ODCE Eq Wt Net for the year by 0.33%.

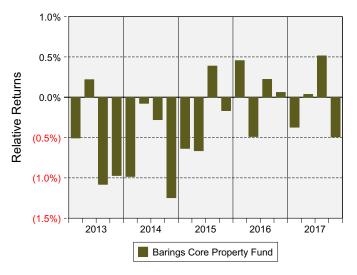
## **Quarterly Asset Growth**

Beginning Market Value	\$25,145,085
Net New Investment	\$0
Investment Gains/(Losses)	\$364,189
Ending Market Value	\$25,509,274

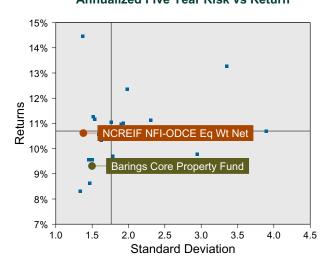
### Performance vs Callan Open End Core Cmmingled Real Est (Net)



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



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





# Callan





Fourth Quarter 2017

# Sentiment Restored. Is It Time to Worry?

**ECONOMY** 

The U.S. economy ended 2017 with a 2.6% gain in GDP in the fourth quarter, averaging 2.3% for the year, up from 1.5% in 2016. That is especially impressive given the damage from severe hurricanes in the third quarter. Enthusiasm for growth is apparent, but is now the time to worry?

# Non-U.S. Bias Rewarded Plans

**FUND SPONSOR** 

Endowments and foundations (+3.8%) performed best last quarter, followed by public plans (+3.7%), Taft-Hartley plans (+3.6%), and corporate plans (+3.5%). By fund size, plans with assets under \$100 million performed best, thanks to larger allocations to non-U.S. equity.

# Synchronicity Powers Global Markets

**EQUITY** 

A strong quarter closed out a strong year for marPAGE kets around the world,
powered by synchronized global
economic growth, a new tax law in
the U.S., and low interest rates and
inflation. Emerging markets outpaced developed markets for the
fourth straight quarter.

# Tight Spreads in U.S.; Developed Returns Flat

FIXED INCOME

In the U.S., longer-term bonds topped short-term and intermediate-maturity bonds. Investment-grade corporate debt was the best-performing fixed income sector. Returns were mostly flat in developed markets; emerging market debt delivered more muted returns than in earlier quarters.

# **Europe Best Region** for REITs

REAL ESTATE

The NCREIF Property Index notched its 36th straight quarter of positive returns, rising 1.8%, while the NCREIF Open End Diversified Core Equity Index was up 2.1%. European REITs were the best performers; U.S. REITs generated positive returns.

# 2017 Fundraising Sets New Record

PRIVATE EQUITY

Investor enthusiasm abounds for private equity as evidenced by record fundraising. However, rising valuations, increasing borrowing costs, and the yet-to-be-determined impact of tax reform on borrowing levels and valuations bear vigilance moving forward.

# Risk Takers See Less as More

HEDGE FUNDS/MACs

The Credit Suisse
Hedge Fund Index rose
2.3%, while the Callan
Hedge Fund-of-Funds Database

advanced 1.8%. The Callan Multi-Asset Class Database was up 3.6%. In general, hedge funds experienced positive but more modest results than market indices.

# DC Plans on Track to Win Big in 2017

DEFINED CONTRIBUTION

The Callan DC Index™ recorded a solid 3.8% gain during the third quarter its eighth straight quarter of pos-

ter, its eighth straight quarter of positive performance. And the Index is up 11.9% year to date, which marks its best showing for the first three quarters of a year since 2013.

# **Broad Market Quarterly Returns**

U.S. Equity Russell 3000



Non-U.S. Equity
MSCI ACWI ex USA



**U.S. Fixed Income**Bloomberg Barclays Agg



Non-U.S. Fixed Income Bloomberg Barclays Gbl ex US



Sources: Bloomberg Barclays, MSCI, Russell Investment Group

# Sentiment Restored. Is It Time to Worry?

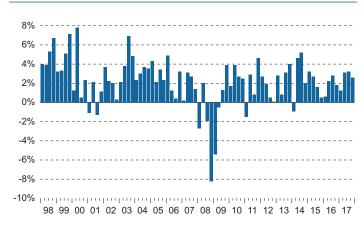
#### **ECONOMY** | Jay Kloepfer

The U.S. economy closed out 2017 with decent momentum, recording a solid 2.6% gain in GDP in the fourth quarter after growth above 3% in each of the prior two quarters. Investor sentiment felt disconnected as the year unfolded; the underlying global economy appeared to be steadily improving and capital markets reported robust results, while unease around geopolitics and the impact of multiple natural disasters stoked anxiety about the future. By midyear, 2017 felt like the culmination of the unhappiest bull market we'd ever seen. Stock markets then proceeded to hit a number of record highs as the year concluded, the job market continued to improve, unemployment reached a generational low in the U.S., and retail sales rose. A historic revision to the tax code became law at the end of the year, which included a substantial corporate tax cut. After perhaps jumping the gun in the first part of the year, then held back by frustration after not getting expected tax and regulatory changes enacted during the middle quarters, the "animal spirits" of the economy and the capital markets appear to have been unleashed once again. Enthusiasm for growth and risk-taking seem apparent. Is now the time to worry, as phrases like a market "melt-up" enter the popular lexicon?

GDP growth averaged 2.3% for the year, up from 1.5% in 2016. The result for 2017 was impressive given the damage caused by severe hurricanes in the third quarter. Since the Global Financial Crisis (GFC), GDP has increased at a very modest 2.2% annual average, far below the growth typically seen following a recession and below the 3% long-term average since the early 1960s. While gains have been slow and steady, they have gone on now for a sustained period of time, one of the longest expansions on record, and as a result the unemployment rate has been pushed to a generational low of 4.1%. The job market keeps chugging along, creating over 2.1 million new jobs in 2017, or 183,000 per month. The peak years of job creation in the current cycle were 2014 (3 million) and 2015 (2.7 million). While the monthly rate of 183,000 is still robust, and well in excess of the 100,000 needed to keep the market at

# **Quarterly Real GDP Growth**

(20 Years)



Source: Bureau of Economic Analysis

#### Inflation Year-Over-Year



Source: Bureau of Labor Statistics

a steady state, the rate of job creation is tailing off, suggesting we might be reaching the limits of full employment. Despite this tight labor market, wage gains remain remarkably subdued, with annual gains in hourly earnings in the 2%-2.5% range for each of the last four years. The rate of growth in total compensation has begun to rise; the employment cost index has inched up from 2% growth to hit 3% in several quarters during 2017.

Confidence in the sustainability of the current spate of growth rose with the release of the aforementioned animal spirits. The impact of the tax cut is expected to be modest, perhaps adding 0.2 to 0.3 percentage points to GDP growth in 2018, and most if not all of the investment gains are already built into the stock market. The wild card is how corporations plan to "spend" the tax cut. The optimistic outcome is that the extra money goes into capital expansion and job growth. Other outcomes include returning the capital to owners through dividends and share buybacks, to existing workers through wage gains, or to consumers in the form of price cuts. Longer term, the \$1.5 trillion increase in the deficit is viewed as a potential drag on growth.

One other potential stimulus still to take shape is the proposed program of substantial infrastructure spending. This spending could spur further growth when the economy is already running hot, and therefore stimulate inflation beyond the current benign levels. The tight labor market suggests we might already be facing limitations on growth from the existing set of labor and capital inputs available in the U.S. economy.

Inflation remains remarkably benign, clipping along at 2.1% in December (year-over-year). Oil prices have recovered from the sharp decline of several years ago, which spurred top-line inflation, but core inflation (net of food and energy) remains below the Fed's target of 2%. The tight labor market, the impact of the corporate tax cut, and the potential for substantial infrastructure spending all suggest that inflation could finally be poised to move. Another potential impetus for inflation is the improving outlook for the global economy, which appears to be moving into synchronized growth across disparate regions.

#### The Long-Term View

	2017	Periods			*
Index	4th Qtr	Year	5 Yrs	10 Yrs	25 Yrs
U.S. Equity					
Russell 3000	6.34	21.13	15.58	8.60	9.72
S&P 500	6.64	21.83	15.79	8.50	9.69
Russell 2000	3.34	14.65	14.12	8.71	9.54
Non-U.S. Equity					
MSCI ACWI ex USA	5.00	27.19	6.80	1.84	
MSCI Emerging Markets	7.44	37.28	4.35	1.68	7.76
MSCI ACWI ex USA Small Cap	6.56	31.65	10.03	4.69	
Fixed Income					
Bloomberg Barclays Agg	0.39	3.54	2.10	4.01	5.48
90-Day T-Bill	0.28	0.86	0.27	0.39	2.60
Bloomberg Barclays Long G/C	2.84	10.71	4.43	7.26	7.67
Bloomberg Barclays GI Agg ex US	1.63	10.51	-0.20	2.40	5.02
Real Estate					
NCREIF Property	1.70	6.85	10.16	6.07	9.11
FTSE NAREIT Equity	1.51	5.23	9.46	7.44	10.76
Alternatives					
CS Hedge Fund	2.30	7.12	4.23	3.24	
Cambridge PE*		9.25	12.76	9.39	15.38
Bloomberg Commodity	4.71	1.70	-8.45	-6.83	2.47
Gold Spot Price	1.91	13.68	-4.82	4.56	5.63
Inflation – CPI-U	-0.12	2.11	1.43	1.61	2.23

\*Most recent quarterly data not available, annual returns as of 9/30/2017 Sources: Bloomberg Barclays, Bloomberg, Credit Suisse, FTSE, MSCI, NCREIF, Russell Investment Group, Standard & Poor's, Thomson Reuters/Cambridge, Bureau of Economic Analysis

#### **Recent Quarterly Economic Indicators**

	4Q17	3Q17	2Q17	1Q17	4Q16	3Q16	2Q16	1Q16
Employment Cost–Total Compensation Growth	2.6%	2.5%	2.4%	2.4%	2.2%	2.3%	2.3%	1.9%
Nonfarm Business–Productivity Growth	-0.1%	2.7%	1.5%	0.1%	1.3%	2.5%	0.8%	-1.2%
GDP Growth	2.6%	3.2%	3.1%	1.2%	1.8%	2.8%	2.2%	0.6%
Manufacturing Capacity Utilization	76.4%	75.2%	75.7%	75.4%	75.1%	74.9%	75.1%	75.4%
Consumer Sentiment Index (1966=100)	98.4	95.1	96.4	97.2	93.2	90.3	92.4	91.5

Sources: Bureau of Economic Analysis, Bureau of Labor Statistics, Federal Reserve, IHS Economics, Reuters/University of Michigan

# Non-U.S. Bias Rewarded Plans in 2017

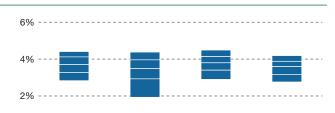
#### **FUND SPONSOR**

Endowments/foundations (+3.8%) performed best last quarter, followed by public plans (+3.7%), Taft-Hartley plans (+3.6%), and corporate plans (+3.5%). For all funds, the return was +3.7%, according to Callan's database. Plans with assets below \$100 million performed best by fund size, up 3.7%, compared to 3.6% for both medium plans (\$100 million-\$1 billion) and large plans. A quarterly rebalanced 60% S&P 500/40% Bloomberg Barclays U.S. Aggregate Bond Index portfolio rose 4.1% during the quarter.

Marking a turn of events, the **MSCI ACWI ex USA Index** outperformed U.S. equity markets over the past year, rewarding funds that have taken steps to diversify away from a home-country bias. Over longer periods of time, Taft-Hartley plans did best over the last five years, up 9.3% annualized. Corporate plans (+5.9%) did best over the last 10 years.

Plans continue to focus on an environment marked by low interest rates, low return expectations, and frustration with the seemingly high cost of diversification while the public equity market has enjoyed such a strong run. Many fund sponsors feel compelled to take on substantial market risk to reach

## **Callan Fund Sponsor Returns for the Quarter**



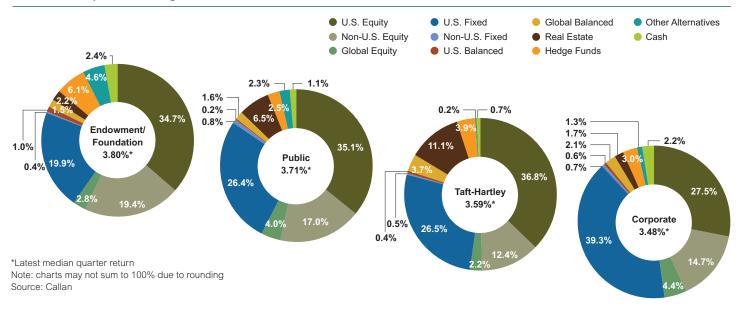
0% —					
070 —	Public Database	Corporate Database	Endow/Fndn Database	Taft-Hartley Database	
10th Percentile	4.41	4.38	4.49	4.19	
25th Percentile	4.12	3.96	4.14	3.88	
Median	3.71	3.48	3.80	3.59	
75th Percentile	3.28	2.93	3.40	3.17	
90th Percentile	2.83	1.93	2.90	2.76	

Source: Callan

return targets, and are now focusing on finding sources of diversification within the growth bucket of their asset allocation. Sponsors are examining if there is anything more they can do to tamp down the risk within the growth allocation, short of actually reducing the allocation to growth assets.

Asset owners continue to be skeptical of the value of active management, particularly in U.S. large cap equity. Pressure

#### Callan Fund Sponsor Average Asset Allocation



to reduce fees or show the ability to generate consistent alpha has been building for quite some time. Some fund sponsors have undertaken structure work to consider the amount of active versus passive management and to see if there is a way to simplify their manager rosters to gain economies of scale in an effort to reduce costs.

As in past quarters, funds have adjusted their allocations in these ways over the last five years:

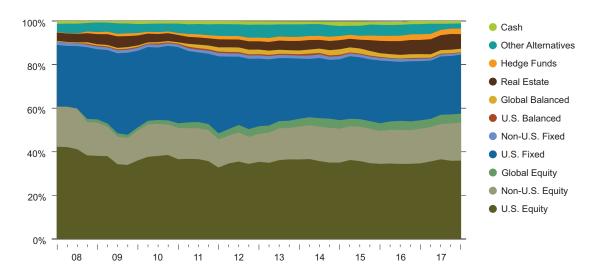
- Corporate plans have widened their range of U.S. fixed income allocations, as they are in different stages of efforts to de-risk plan assets.
- Many public funds have increased their allocation to non-U.S. equity and real estate at the expense of fixed income.
   Simultaneously, some of the fixed income exposure has become more equity-like in nature.
- Endowments and foundations continue to shift from fixed income to asset classes with higher return expectations, such as global equity, non-U.S. equity, and real estate.

The regulatory environment continues to drive the decision-making process for defined contribution (DC) plan sponsors. Heightened fee sensitivity and litigation have resulted in little traction for non-traditional asset classes such as liquid alternatives. DC plans are also focused on the best ways to reduce/eliminate revenue sharing, as well as obtaining even lower fees from investment managers. They are also looking for opportunities to continue streamlining investment fund lineups to achieve sufficient diversification while minimizing participant confusion—including white label options.

Public plans continue to seek return enhancement and further diversification. Reduced capital market return expectations and funding challenges have created a difficult situation for many public DB plans, and some plans are simply constrained by their circumstances. Alternative beta, MACs, and other liquid strategies are being used in a wide range of capacities and are experiencing increased interest.

# **Callan Public Fund Database Average Asset Allocation**

(10 Years)



Source: Callan. Callan's database includes the following groups: public defined benefit, corporate defined benefit, endowments/foundations, and Taft-Hartley plans. Approximately 10% to 15% of the database constituents are Callan's clients. All database group returns presented gross of fees. Past performance is no guarantee of future results. Reference to or inclusion in this report of any product, service, or entity should not be construed as a recommendation, approval, affiliation, or endorsement of such product, service, or entity by Callan.

# **Global Equity**

# **U.S. Stocks: Accelerating Growth Spurs Equities**

+6.3%
RUSSELL 3000

The U.S. equity market continued its upward trajectory in the fourth quarter, closing out a very strong year marked by continued low volatility despite a

turbulent U.S. political landscape and a record year in terms of global catastrophes. Investors embraced accelerating global economic growth as well as low interest rates and inflation. Corporate earnings registered double-digit growth for the quarter, receiving a boost from the U.S. tax overhaul bill, which was signed into law in late December.

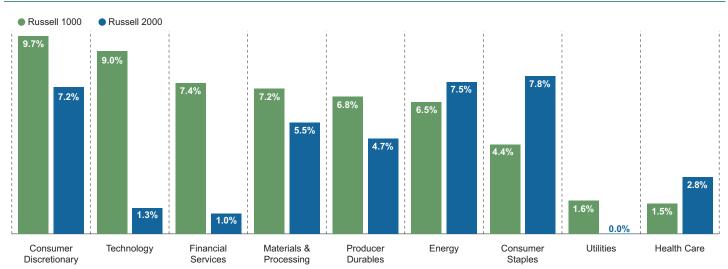
The **S&P 500 Index** rose 6.6% in the fourth quarter, and its 21.8% gain for the year was its best since 2013. The Index hit 62 record highs during the year and had only eight days of 1% or more fluctuations, the lowest number since 1964. The **S&P 500 Price Index** has nearly tripled (+295%) since its low in March 2009. Valuations are stretched by most measures, but estimates for future earnings are also strong. Large cap stocks (**Russell 1000:** +6.6%) outperformed small cap (**Russell 2000:** +3.3%) across styles for the quarter.

Riskier assets continued to lead the equity market. Consumer Discretionary (+9.9%) and Technology (+9.0%) were the strongest performers, with Apple, Amazon, and Microsoft posting 10%-20% returns due to ongoing exceptional cash flow generation and growth in global markets. The Tech sector now accounts for 24% of the S&P 500 and 38% of the **Russell 1000 Growth Index**; returns for the FAAMG stocks (Facebook, Apple, Amazon, Microsoft, Google) ranged from 36% to 56% for 2017.

Consumer Discretionary benefited from strong year-end retail sales as well as positive tax reform expectations as the retail industry carries the highest industry effective tax rate at 35%. The "Amazon Effect," however, continues to threaten the sector as many large retailers have been forced to close stores or lower prices to unsustainable levels.

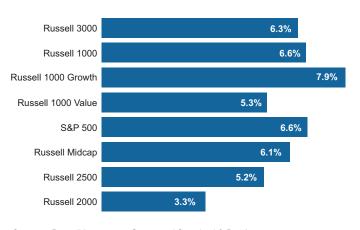
The Energy sector (+6.0%) continued to improve in the fourth quarter although it closed out the year among the worst performers (-1.0%). A combination of optimism and improvements in the global economy has spurred demand in recent months. More near-term volatility is anticipated in the price of oil as U.S.

#### **Quarterly Performance of Select Sectors**



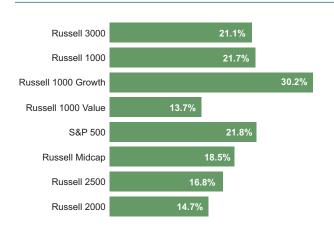
Source: Russell Investment Group

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



Sources: Russell Investment Group and Standard & Poor's

#### U.S. Equity: One-Year Returns



Sources: Russell Investment Group and Standard & Poor's

output is expected to surpass production out of Saudi Arabia for the first time since the early 1990s.

Growth outperformed value during the quarter across the market cap range (Russell 1000 Growth: +7.9% vs. Russell 1000 Value: +5.3%; Russell 2000 Growth: +4.6% vs. Russell 2000 Value: +2.0%). The overweight to Tech and Consumer Discretionary in the growth indices drove the outperformance. Investors favored the stronger earnings and top-line growth outlook in the Tech sector, which also benefited from positive investor sentiment following tax reform.

Momentum-oriented stocks (MSCI Momentum Index: +37.8%) posted their biggest annual gain since 1999, leaving valuations

stretched; the MSCI Defensive Index rose 12.3% for 2017. Anecdotally, some momentum-oriented managers are finding their bench of ideas shrinking as they take profits on winners while defensively oriented managers continue to sit on cash waiting for more favorable opportunities.

#### Global Stocks: Markets in Sync Around the World

+5.0% MSCI ACWI EX USA Major non-U.S. markets performed largely in line with each other during the quarter, which saw a bit of an inflection point as investors were

more willing to capitalize on synchronized global growth and began to rotate out of momentum winners into more cyclical areas such as Financials, Energy, and Materials. Cyclicals led as tax reform, improving commodity prices, and growth projections overcame Brexit fears and election uncertainty in Germany in a risk-on quarter.

Non-U.S. developed (MSCI EAFE and MSCI World ex USA: +4.2%) trailed U.S. (MSCI USA: +6.4%) after beating it in the previous three quarters. Within MSCI EAFE, the U.K. notched a record high in the fourth quarter and was up 22.3% for the year.

Europe, which led markets in the third quarter on earnings growth and political stability, reverted and trailed other developed regions (MSCI Europe: +2.2%) on Brexit negotiation concerns and political uncertainty following German elections. The European Central Bank also announced plans to curb quantitative easing in January 2018. Japan (MSCI **Japan:** +8.6%) was the best performer on its election results and improved inflation expectations.

Markets favored economically sensitive sectors: IT (+8.3%), Materials (+7.8%), and Discretionary (+7.6%). Energy was also positive (6.8%) as commodity prices were supported by distribution disruptions and high liquid natural gas usage with winter's arrival. Defensive sectors lagged as markets continued to rise: Utilities (-0.4%), Health Care (+0.9%), and Telecom (+1.7%).

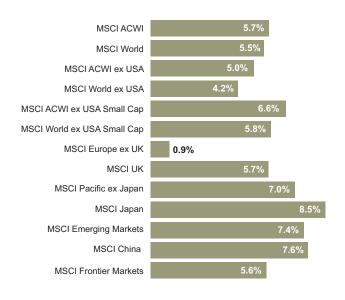
It was another difficult quarter for value; factor performance favored strong growth (forecasted), earnings and price momentum, high quality, and beta (MSCI World Value: +4.6% vs.

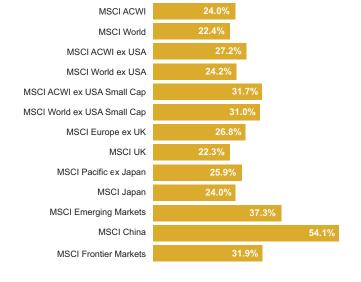
Non-U.S. Equity: Quarterly Returns



#### Non-U.S. Equity: One-Year Returns

(U.S. Dollar)





Source: MSCI

Source: MSCI

**MSCI World Growth**: +6.4%). Valuation factors were mixed with price-to-book ratios and yield detracting from performance, while earnings-based multiples contributed.

# Emerging Markets: Asian Stocks Power Strong Quarter, Driven by China and Korea

+7.4% MSCI EM Emerging market equities outperformed developed in the quarter and for the year (MSCI Emerging Markets (USD): +7.4%; +37.3%). Latin America

was the only weak spot in the quarter (-2.3%) but was up a robust 23.7% for the year. Emerging Asia performed the best for the quarter and the year (+8.4%; +42.8%) driven by strong results from China (+7.6%; +54.1%) and Korea (+11.4%; +47.3%).

Local China A shares did even better (MSCI China A 50 Index: +13.7%). October's 19th National Congress of the Communist Party solidified power around Xi Jinping, reconfirming key policy objectives. Chinese technology continued to perform well but was less of a performance outlier than in previous quarters. China's increasing and less-visible debt is a growing concern, while expectations for stronger growth are buoying the market.

South Africa (MSCI South Africa: +21.4%) was the best performer as commodity prices firmed and investors cheered a leadership change. Mexico (MSCI Mexico: -8.0%) was the worst-performing emerging market country as the peso sold off on NAFTA negotiation concerns.

Economically sensitive sectors sold off (Discretionary: -23.6%, Financials: -21.2%). Emerging market Health Care (+16.6%) saw very good performance with outsized contribution from China and South Korea as changing demographics continued to drive demand. Value factors struggled in emerging markets while growth, earnings momentum, price momentum, volatility, and beta were positive.

#### Non-U.S. Small Cap: Health Care Powers EM Gains

+6.6%
MSCI ACWI EX USA SC

Developed non-U.S. small cap (MSCI World ex USA Small Cap: +5.8%) outperformed its large/mid counterpart modestly, led by Asia. Australia

(+11.6%) and Japan (+8.7%) led the segment.

Emerging market small cap (**MSCI Emerging Market Small Cap:** +9.2%) was the best-performing segment of the equity markets in the fourth quarter, led by Health Care (+28%); Real Estate (-0.1%) was the laggard.

# Global Fixed Income

# **U.S. Bonds: Strong Fundamentals Tighten Spreads**

**+0.4%**BB AGGREGATE

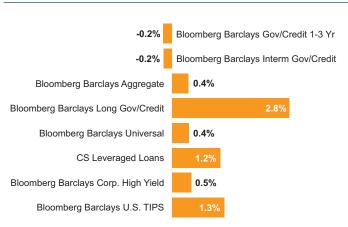
The U.S. yield curve continued its flattening trend in the fourth quarter. The 2-year U.S. Treasury yield climbed 42 basis points to close at 1.89%, up 69

bps from the end of 2016. At the long end of the yield curve, the 30-year U.S. Treasury yield fell 12 bps during the quarter, ending the year at 2.74%, 32 bps lower than its close in 2016. This trend reflects the Fed's bias to be less accommodative through monetary policy, as well as benign inflation in the face of a strong labor market. As a result, longer-term bonds sharply outperformed short-term and intermediate-maturity bonds for the quarter and the year.

Volatility in fixed income as well as equity markets sits near historical lows. The overall risk appetite remains elevated, driven in part by globally strong growth and loose monetary policy from central banks, as well as business and consumer confidence. The market is pricing in three Fed rate hikes for 2018, not far from the Fed's own expectation of where rates will end up in the longer run. Yields on 10-year Treasuries rose modestly from 2.33% at the end of the third quarter to 2.41%.

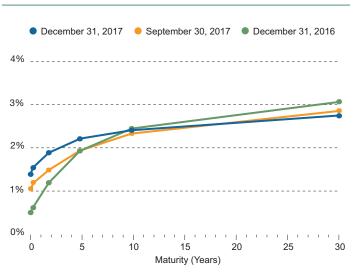
The Bloomberg Barclays Long U.S. Treasury Index gained 2.4% in the quarter and 8.5% in 2017 versus a -0.4% quarterly and

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



Sources: Bloomberg Barclays and Credit Suisse

#### **U.S. Treasury Yield Curves**

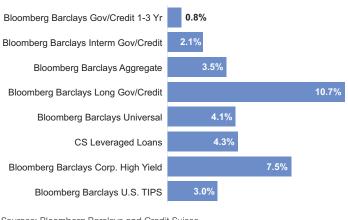


Source: Bloomberg

+1.1% annual return for the **Bloomberg Barclays Intermediate Treasury Index.** Consistent with the low volatility theme evident in the equity markets, the U.S. Treasury 10-year traded in a narrow 60 bps band for the year, the lowest since 2000.

The **Bloomberg Barclays U.S. Aggregate Bond Index** rose 0.4% during the quarter. Corporate bonds outperformed for the quarter and the year, and yield spreads were the tightest since the Global Financial Crisis, hitting 93 bps over Treasuries.

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



Sources: Bloomberg Barclays and Credit Suisse

#### GLOBAL FIXED INCOME (Continued)

Investment-grade corporate credit was the strongest-performing fixed income sector; tax reform may boost the sector by improving profitability and reducing issuance.

High yield corporates also did well, with the Bloomberg Barclays U.S. Corporate High Yield Index up 0.5% for the quarter and 7.5% for the year. The annual default rate was the lowest since 2013. Issuance was robust in the fourth quarter at \$68 billion, but tax reform could negatively impact issuance.

TIPS outperformed nominal U.S. Treasuries as expectations for inflation rose. The Bloomberg Barclays U.S. TIPS Index rose 1.3% for the guarter and 3.0% for the year, and the 10-year breakeven spread (the difference between nominal and real yields) rose to 1.96%.

The municipal bond market performed well in 2017 as rates were steady and demand remained strong. The tax overhaul package is expected to have mixed effects. The change in personal income rates is too small to have a meaningful impact, while the decrease in corporate tax rates is expected to reduce demand for munis from certain corporations. Limiting state and local tax deductions could increase demand for in-state munis in high tax states. Issuance spiked in anticipation of changing regulations, setting a record \$62.5 billion for December supply, but the market absorbed it well. The Bloomberg Barclays Municipal **Bond Index** returned 0.7% for the quarter and 5.4% for the year.

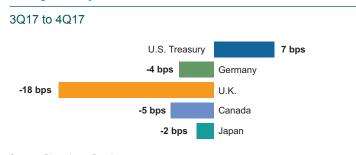
# Global Bonds: Flat Returns in Developed Markets; **EM Returns Muted**

BB GBL AGG EX US

Quarterly returns were mostly flat in developed markets. The Bloomberg **Barclays Global Aggregate Bond** Index rose +1.1% (unhedged) and 0.8% (hedged).

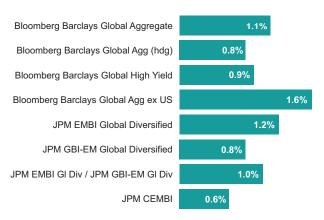
Emerging market debt delivered more muted returns than in earlier quarters. Higher commodity prices and global growth supported the asset class broadly. The JPM EMBI Global Diversified Index (\$ denominated) gained 1.2% in the quarter and 10.3% for the year. Returns were mixed, but beleaguered Venezuela was the outlier for the quarter (-29%) and the year (-34%). The local currency JPM GBI-EM Global Diversified **Index** increased +0.8% in the guarter and +15.2% for the year. In the quarter, Asian countries (+5%) performed best while Latin America sank nearly 5%.

### Change in 10-year Global Government Bond Yields



Source: Bloomberg Barclays

Non-U.S. Fixed Income: Quarterly Returns



Sources: Bloomberg Barclays and JP Morgan

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



Sources: Bloomberg Barclays and JP Morgan

# Steady Returns in U.S.; Europe Best Region for REITs

### REAL ESTATE | Kevin Nagy

The NCREIF Property Index advanced 1.8% during the fourth quarter (1.2% from income and 0.6% from appreciation). This marked the 36th consecutive quarter of positive returns for the Index.

Industrial (+3.3%) was the best-performing sector for the seventh consecutive quarter. Office (+1.7%) and Apartments (+1.6%) also did well. Hotels (+1.0%) were the worst performer and the only property type to experience a negative appreciation return. Hotels only had one quarter of positive appreciation during 2017. The West region was the strongest performer for the fifth quarter in a row, returning 2.3%, and the Midwest lagged with a 1.3% return. The West also had the strongest appreciation return at 1.2%; all other regions had appreciation below 0.5%. Transaction volume fell slightly to \$11.5 billion, a 3% decrease from the third guarter and an 18% decline from the fourth guarter of 2016. Appraisal capitalization rates rose 16 basis points to 4.55%. Transaction capitalization increased even more, rising 59 bps to 5.85%. The spread between appraisal and transactional rates increased to 130 bps.

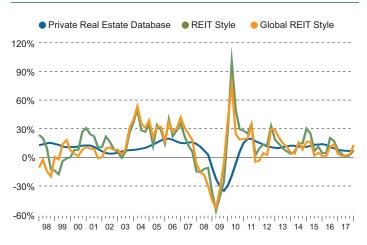
Occupancy rates increased to 93.6%, up 20 bps from the third quarter and 37 bps from the fourth quarter of 2016. Industrial and Retail occupancy rates increased slightly while Apartment and Office rates decreased.

The NCREIF Open End Diversified Core Equity Index rose 2.1% (1.1% from income and 1.0% from appreciation), a 20 bps increase from the third quarter. The appreciation return increased for the second quarter in a row. Leverage ticked up 1 basis point to 21.4%.

Global real estate investment trusts (REITs) tracked by the FTSE EPRA/NAREIT Developed REIT Index (USD) outperformed U.S. REITs and posted a 3.8% return. The median active global REIT manager, as measured by the Callan Global REIT Style Group, gained 4.6%, beating the Index. U.S. REITs, as measured by the FTSE NAREIT Equity REITs Index, advanced 1.5% for the quarter. The median active U.S. REIT manager, as measured by Callan's U.S. REIT Style Group, returned 2.4%, also beating the Index.

In the U.S., a strong November helped REITs overcome negative performance in October and December. Infrastructure (+8.8%), Hotels (+5.4%), and Timber (+4.9%) made solid gains, while Health Care (-5.3%), Diversified (-2.0%), Specialty (-1.9%), and Residential (-0.2%) were the worst performers. Retail (+6.8%) bounced back from a dismal second and third quarter on the back of high M&A activity and a strong holiday shopping season.

## **Rolling One-Year Returns**



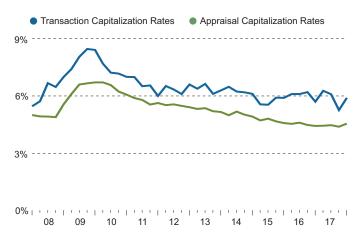
Source: Callan

## **REAL ESTATE** (Continued)

Europe, as represented by the FTSE EPRA/NAREIT Europe Index, was the strongest-performing region for the third consecutive quarter, returning 7.6% in U.S. dollar terms. U.K. REITs outperformed their continental counterparts due to optimism over a "soft Brexit" and better than expected earnings from Londoncentric real estate proxies. Continental Europe continued to benefit from robust economic growth that was not fazed by the Catalonian election results, among other political surprises.

The Asia-Pacific region, represented by the FTSE EPRA/ NAREIT Asia Index, jumped 5.5% in U.S. dollar terms, besting the U.S. but lagging Europe. Singapore was the strongest performer, helped by a rally in the broader Singaporean stock market. Hong Kong and Australia also had good quarters. Japan lagged behind, but was still positive.

#### **NCREIF Transaction and Appraisal Capitalization Rates**



Source: NCREIF

Note: Transaction capitalization rate is equal weighted.

#### **NCREIF Capitalization Rates by Property Type**



Source: NCREIF

Note: Capitalization rates are appraisal-based

# 2017 Fundraising Sets New Record

# PRIVATE EQUITY | Harshal Shah

The preliminary fundraising total and number of funds formed in 2017 set a record, according to Private Equity Analyst, up 20% and 32%, respectively, to \$376 billion and 1,150. In the fourth guarter, new commitments hit \$126 billion and 311 new partnerships were formed. Dollar volume rose by 51% over the third guarter; the number of new funds formed grew 37%.

According to Buyouts newsletter, there were 1,649 disclosed deals in 2017, an increase of 25% from 2016. The year's disclosed dollar volume was \$184.2 billion, up 8% from \$170.1 billion in 2016 and hitting a nine-year high. While the disclosed dollar volume has recovered from 2009's low of \$37.3 billion, it is still well shy of the 2007 record high of \$597.4 billion. However, while general partners may be more discerning in putting capital to work, according to Standard & Poor's LCD data, the median purchase and net debt multiples in 2017 remained elevated at 10.6x and 5.8x, respectively.

Regarding exits, Buyouts reports that 2017's 607 private M&A exits of buyout-backed companies is up 9% from the 557 in 2016. The year's aggregate disclosed M&A exit values of \$106.7 billion is up 12.7% from 2016's \$94.6 billion. In the fourth guarter, there were 124 M&A exits, and announced value totaled \$38.1 billion. Ten M&A exits had values over \$1 billion compared to only four in the fourth quarter of 2016. There were

Funds Closed January 1 to December 31, 2017

Strategy	No. of Funds	Amt (\$mm)	Percent
Venture Capital	510	35,945	10%
Buyouts	392	249,747	67%
Subordinated Debt	77	34,174	9%
Distressed Debt	42	29,332	8%
Secondary and Other	35	13,075	3%
Fund-of-funds	94	13,244	4%
Totals	1,150	375,516	100%

Source: Private Equity Analyst Figures may not total due to rounding

only four buyout-backed IPOs in the fourth quarter last year, with a total value of \$860 million. However for the full year, there were 18 buyout-backed IPOs with a total value of \$6.5 billion, an increase of 125% and 60%, respectively, over 2016.

Venture-backed M&A exits for the year totaled 711 with announced values totaling \$41.2 billion, down from 816 exits and \$50.0 billion in announced value in 2016. The fourth quarter had 144 exits with announced values totaling \$6.7 billion, down from 173 exits and \$11.5 billion of announced value in the third guarter. The year produced 58 venture-backed IPOs raising \$9.9 billion, up from 41 IPOs in 2016 raising \$2.9 billion. The fourth quarter had 23 IPOs, raising \$3.1 billion, up significantly from the third quarter's nine IPOs raising \$730 million.

Private Equity Performance Database (%) (Pooled Horizon IRRs through September 30, 2017\*)

Strategy	3 Months	Year	3 Years	5 Years	10 Years	15 Years	20 Years
All Venture	3.52	8.82	12.30	15.51	9.47	9.00	17.94
Growth Equity	4.90	15.83	10.68	13.21	10.06	12.60	13.13
All Buyouts	4.63	19.33	12.61	14.35	8.78	14.39	12.53
Mezzanine	4.16	13.07	9.43	10.15	9.02	9.47	8.64
Distressed	2.39	14.92	9.03	11.35	9.13	11.33	11.34
All Private Equity	4.31	16.19	11.93	14.08	9.06	12.75	13.01
S&P 500	4.48	18.61	10.81	14.22	7.44	10.04	7.00

Private equity returns are net of fees.

Sources: Standard & Poor's and Thomson Reuters/Cambridge

\*Most recent data available at time of publication

Note: Transaction count and dollar volume figures across all private equity measures are preliminary figures and are subject to update in subsequent versions of Capital Market Review and other Callan publications.

# Risk Takers See Less as More

#### HEDGE FUNDS/MACs | Jim McKee

Given the quarter's surge of raw equity beta, alpha-seeking hedge funds saw positive but more modest results. Representing a paper portfolio of hedge fund interests without implementation costs, the **Credit Suisse Hedge Fund Index** (CS HFI) rose 2.3% in the fourth quarter. Actual hedge fund portfolios represented by the median manager in the **Callan Hedge Fund-of-Funds Database** advanced 1.5%, net of all fees and expenses.

Within CS HFI, the best-performing strategy was *Managed Futures* (+6.6%), followed by *Emerging Markets* (+3.4%) and *Long/Short Equity* (+3.3%). Less fortunate was *Risk Arb* (+0.1%); some major pending deals met regulatory resistance, causing those deal spreads to widen significantly. Within Callan's Hedge FOF Database, market exposures marginally affected performance in the fourth quarter. With the added momentum from equity markets, the median *Callan Long/Short Equity FOF* (+1.8%) beat the *Callan Absolute Return FOF* (+1.5%). The *Core Diversified FOF* gained 1.5%.

The Credit Suisse Neuberger Multi-Asset Risk Premia Index, a proxy for liquid alternative beta, slipped 0.6% based upon a 5% volatility target. Within the Index's underlying styles, winners were Equity Momentum (+7.6%) and Commodity Momentum (+4.8%). The Callan Multi-Asset Class Database group's median manager rose 3.6%, gross of fees. Within this group, the median Callan Risk Premia MAC gained 4.0%, aided by equity and commodity momentum. Typically targeting equal risk-weighted allocations to major asset classes with leverage, the Callan Risk Parity MAC gained 4.7%, beating a 60% stock/40% bond benchmark (+4.1%). The Callan Long-Biased MAC (+3.4%) performed well, given its dynamic asset allocation mandate with a typically long equity bias, but trailed the 60/40 benchmark. Focused on non-directional strategies of long and short asset class exposures, the Callan Absolute Return MAC added 0.9%.

# Callan Database Median and Index Returns\* for Periods ended December 31, 2017

Hedge Fund Universe	Quarter	Year	3 Years	5 Years	10 Years	15 Years
Callan Fund-of-Funds Database	1.53	6.98	2.90	5.01	3.04	5.22
Callan Absolute Return FOF Style	1.47	5.11	3.20	4.59	3.00	4.90
Callan Core Diversified FOF Style	1.51	6.42	2.36	4.79	2.77	5.18
Callan Long/Short Equity FOF Style	1.81	11.25	3.76	6.00	3.20	5.84
Credit Suisse Hedge Fund Index	2.30	7.12	2.50	4.23	3.24	6.01
HFRI Asset Wtd Composite	1.99	6.52	3.06	4.60	3.34	
HFRI Fund Wtd Comp	2.65	8.68	4.25	4.95	3.23	6.10
HFRI Equity Hedge (Total)	3.51	13.46	5.82	6.63	3.19	6.09
HFRI Event-Driven (Total)	2.04	7.73	4.73	5.49	4.17	7.26
HFRI Macro (Total) Index	2.42	2.21	0.65	1.40	1.95	4.65
HFRI Relative Value (Total)	1.05	5.11	4.11	4.68	4.81	6.02
90-Day T-Bill + 5%	1.50	5.86	5.41	5.27	5.39	6.28
Liquid Alternative Universe	Quarter	Year	3 Years	5 Years	10 Years	15 Years
Callan Absolute Return MAC	0.90	5.07	3.27	4.46	5.16	
Callan Risk Premia MAC	3.95	5.51	2.04	3.57	7.16	
Callan Long-Biased MAC	3.35	13.87	5.46	6.39	5.76	8.70
Callan Risk Parity MAC	4.66	11.88	6.47	5.81	6.75	
60% S&P 500/40% BB Agg	4.14	14.26	7.76	10.25	7.09	7.90
CS NB MARP Index (5%v)	-0.63	-1.61	2.05	3.55	7.15	
SG Trend Index	7.70	2.19	-1.36	3.35	3.15	4.21

<sup>\*</sup>Gross of fees. Sources: Bloomberg Barclays, Callan, Credit Suisse, Hedge Fund Research, Societe Generale, and Standard and Poor's

# DC Plans on Track to Win Big in 2017

## **DEFINED CONTRIBUTION | Tom Szkwarla**

The Callan DC Index™ recorded a solid 3.8% gain during the third quarter, its eighth straight quarter of positive performance. And the Index is up 11.9% year to date—its best showing for the first three quarters of a year since 2013.

The Index benefited from strong U.S. equity performance, but a lack of diversification to non-U.S. equity markets continued to hinder DC plan performance. The typical DC participant has less than 6% in non-U.S. equity exposure, compared to 20.1% for the typical Age 45 target date fund (TDF).

Accordingly, the Age 45 TDF outpaced the DC Index by about 50 basis points for the third quarter and 200 bps year to date. Plan balances rose 3.78%, driven by return growth (3.76%) rather than inflows (plan sponsor and participant contributions), which contributed a meager 0.02%.

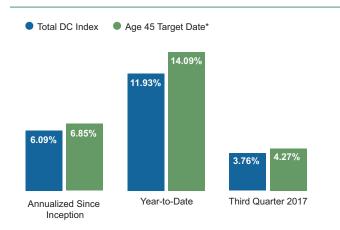
U.S. large cap and small/mid cap equities experienced significant outflows during the quarter. Non-U.S. and emerging market stocks represented the only equity asset classes to witness inflows. As usual, TDFs accounted for the majority of inflow activity during the third quarter, capturing 72 cents of every dollar moving within DC plans.

Turnover within the Index (i.e., net transfer activity) ticked up from last guarter to 0.58%, but remained below the historical average of 0.63%.

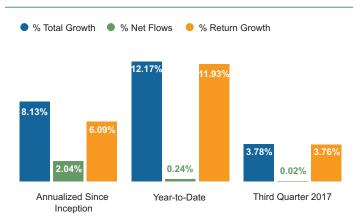
The DC Index's overall equity allocation increased to over 70% in the most recent period, but it remains below its 2007 peak of 73%. TDFs grew to their largest allocation yet, holding 30.8% of total DC assets in the third quarter. U.S. large cap equity commands the second-largest portion of participant assets (22.7%).

The Callan DC Index is an equally weighted index tracking the cash flows and performance of nearly 90 plans, representing more than one million DC participants and over \$135 billion in assets. The Index is updated quarterly and is available on Callan's website, as is the quarterly DC Observer newsletter.

#### **Investment Performance**



#### **Growth Sources**



# **Net Cash Flow Analysis (Third Quarter 2017)**

(Top Two and Bottom Two Asset Gatherers)

Asset Class	Flows as % of Total Net Flows
Target Date Funds	71.56%
Non-U.S. Equity	12.99%
U.S. Small/Mid Cap	-28.25%
U.S. Large Cap	-40.72%
Total Turnover**	0.58%

Data provided here is the most recent available at time of publication. Source: Callan DC Index

Note: DC Index inception date is January 2006.

- \* The Age 45 Fund transitioned from the average 2030 TDF to the 2035 TDF in June 2013.
- \*\* Total Index "turnover" measures the percentage of total invested assets (transfers only, excluding contributions and withdrawals) that moved between asset classes.



# **Research and Educational Programs**

The Callan Institute provides both 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 Anna West at 415.974.5060 / institute@callan.com.

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



The 401(k) Plan Turns 40 | In 1978, a section of the Internal Revenue Code was enacted into law that made 401(k) plans possible. For the most part, plan sponsors have taken advantage of DC plan improvements that have transpired since 1978. Yet some aspects of plan management may still be stuck in the era of bell bottom

pants. Lori Lucas, Callan's DC practice leader, offers lessons sponsors can apply to their DC plans in 2018.

The Cost of Returns | This paper summarizes Callan's October 2017 Workshop, "The Cost of Returns: An In-Depth Look at Institutional Investment Fees."

2017 ESG Survey | Callan's fifth annual survey on the status of environmental, social, and governance (ESG) investing in the U.S. institutional investment market reveals more than a third of inves-



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

2017 Investment Management Fee Survey | This survey—the seventh we have produced in 30 years-reports on institutional investment management fee payment practices and trends. The data in this report were gleaned from electronic questionnaires sent to a broad sample of U.S.-based institutional fund sponsors and investment management organizations, as well as from information in Callan's proprietary database.

TDFs, FYI I Jimmy Veneruso, CFA, CAIA, a DC consultant in our Fund Sponsor Consulting Group, discusses target date funds (TDFs) and considerations for fund sponsors in this video.

#### **Periodicals**

Active vs. Passive Charts, 3rd Quarter 2017 | This series of charts maps active managers alongside relevant benchmarks.

Market Pulse Flipbook, 3rd Quarter 2017 | 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, 3rd Quarter 2017 | The Review provides analysis and an overview of the economy and public and private market activity each quarter across a wide range of asset classes.

Real Assets Reporter, Summer/Fall 2017 | In this edition, Jan Mende of Callan's Real Assets Consulting Group discusses the merits of infrastructure debt for institutional investors' portfolios.

DC Observer, 3rd Quarter 2017 | This edition highlights our "DC Plan Governance Survey," which helps sponsors better understand good governance practices, including how their peers are structuring oversight committees. With: DC Plan Governance Survey Key Findings | This infographic displays the survey's highlights.

Hedge Fund Monitor, 3rd Quarter 2017 | Callan's Jim McKee analyzes four major secular forces that may alter our perception of the financial market's now-healthy glow and explores how investors can prepare for today's uncertainty surrounding risk assets and the divergent paths that they may take when the next financial eclipse occurs.

# **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 **National Conference** will be held January 29–31, 2018, at the Palace Hotel in San Francisco.

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

Boise, April 4-5, 2018 San Francisco, April 10-11, 2018 San Francisco, July 24-25, 2018 Chicago, October 2-3, 2018

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



"We think the best way to learn something is to teach it.

Entrusting client education to our consultants and specialists ensures that they have a total command of their subject matter. This is one reason why education and research have been cornerstones of our firm for more than 40 years."

Ron Peyton, Executive Chairman

@CallanLLC



# **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 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 complimentary basis (e.g. attending an educational event), they are not included in the list below. Callan is committed to ensuring that we do not consider an investment manager's usiness 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 list.

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.

by Callait's Compilance Department.
Manager Name
1607 Capital Partners, LLC
Aberdeen Asset Management PLC
Acadian Asset Management LLC
AEGON USA Investment Management
AEW Capital Management
Affiliated Managers Group, Inc.
Alcentra
AllianceBernstein
Allianz Global Investors
Allianz Life Insurance Company of North America
American Century Investments
Amundi Smith Breeden LLC
Angelo, Gordon & Co.
Apollo Global Management
AQR Capital Management
Ares Management LLC
Ariel Investments, LLC
Aristotle Capital Management, LLC
Artisan Holdings
Atlanta Capital Management Co., LLC
Aviva Investors Americas
AXA Investment Managers
Baillie Gifford Overseas Limited
Baird Advisors
Bank of America
Barings LLC
Baron Capital Management, Inc.
Barrow, Hanley, Mewhinney & Strauss, LLC
BlackRock
BMO Global Asset Management
BNP Paribas Investment Partners
BNY Mellon Asset Management
Boston Partners
Brandes Investment Partners, L.P.
Brandywine Global Investment Management, LLC
Brown Brothers Harriman & Company

Manager Name
Cambiar Investors, LLC
Capital Group
CastleArk Management, LLC
Causeway Capital Management
Chartwell Investment Partners
Citi US Pension Investments
ClearBridge Investments, LLC
Cohen & Steers Capital Management, Inc.
Columbia Management Investment Advisers, LLC
Columbus Circle Investors
Corbin Capital Partners, L.P.
Cornerstone Capital Management
Cramer Rosenthal McGlynn, LLC
Credit Suisse Asset Management
Crestline Investors, Inc.
D.E. Shaw Investment Management, L.L.C.
DePrince, Race & Zollo, Inc.
Deutsche Asset Management
Diamond Hill Capital Management, Inc.
Dimensional Fund Advisors LP
Doubleline
Duff & Phelps Investment Mgmt. Co.
Eagle Asset Management, Inc.
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
Franklin Templeton Institutional
Fred Alger Management, Inc.

Manager Name Manager Name Fuller & Thaler Asset Management, Inc. Pacific Investment Management Company GAM (USA) Inc. Pax World Management LLC GlobeFlex Capital, L.P. Peregrine Capital Management, Inc. **GMO PGIM** Goldman Sachs Asset Management **PGIM Fixed Income** Guggenheim Investments **PGIM Real Estate** PineBridge Investments Guggenheim Partners Asset Management **GW&K Investment Management** Pioneer Investments PNC Capital Advisors, LLC Harbor Capital Group Trust Hartford Funds PPM America Hartford Investment Management Co. Principal Global Investors Heitman LLC Private Advisors, LLC Henderson Global Investors Putnam Investments, LLC Hotchkis & Wiley Capital Management, LLC Pzena Investment Management, LLC **HSBC Global Asset Management** QMA (Quantitative Management Associates) **IMCA** Retirement Corporation **RBC Global Asset Management** Income Research + Management, Inc. Regions Financial Corporation Insight Investment Management Limited RidgeWorth Capital Management, Inc. INTECH Investment Management, LLC Rockefeller & Co., Inc. Invesco Rothschild Asset Management, Inc. Investec Asset Management Russell Investments Ivy Investments S&P Global, Inc. Janus Capital Management, LLC Santander Global Facilities Janus Henderson Investors Schroder Investment Management North America Inc. Jensen Investment Management Sit Investment Associates, Inc. Jobs Peak Advisors Smith, Graham & Co. Investment Advisors, L.P. J.P. Morgan Asset Management Smith Group Asset Management J.P. Morgan Chase & Company South Texas Money Management Ltd. KeyCorp Standard Life Investments Limited Lazard Asset Management Standish Legal & General Investment Management America State Street Global Advisors **Lincoln National Corporation** Stone Harbor Investment Partners, L.P. LMCG Investments, LLC T. Rowe Price Associates. Inc. **Longview Partners** Taplin, Canida & Habacht Loomis, Sayles & Company, L.P. Teachers Insurance & Annuity Association of America Lord Abbett & Company The Boston Company Asset Management, LLC Los Angeles Capital Management The Guardian Life Insurance Company of America LSV Asset Management The Hartford MacKay Shields LLC The London Company Macquarie Investment Management (fka Delaware Investments) The TCW Group, Inc. Man Investments Inc. Thompson, Siegel & Walmsley LLC Manulife Asset Management Thornburg Investment Management, Inc. McKinley Capital Management, LLC Tri-Star Trust Bank MFS Investment Management **UBS** Asset Management MidFirst Bank Van Eck Global Mondrian Investment Partners Limited Versus Capital Group Montag & Caldwell, LLC Victory Capital Management Inc. Morgan Stanley Investment Management Vontobel Asset Management, Inc. Mountain Lake Investment Management LLC Voya Financial MUFG Union Bank, N.A. Voya Investment Management (fka ING) Neuberger Berman WCM Investment Management Newton Investment Management (fka Newton Capital Mgmt) WEDGE Capital Management Nikko Asset Management Co., Ltd. Wellington Management Company, LLP Northern Trust Asset Management Wells Capital Management Nuveen Investments, Inc. Western Asset Management Company OFI Global Asset Management William Blair & Company Old Mutual Asset Management

O'Shaughnessy Asset Management, LLC