



**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**



**PERIOD ENDING: JUNE 30, 2018**

Investment Performance Review for

**Alameda County Employees' Retirement Association**

# 2<sup>nd</sup> quarter summary

## THE ECONOMIC CLIMATE

- U.S. economic data generally surprised to the upside in Q2, leading to a strong quarterly GDP growth estimate of 3.4%. Economic growth in the second and third quarters will likely see the biggest boost from fiscal stimulus. The U.S. is currently outshining other developed economies.
- The synchronized global growth story of the past year has shifted somewhat as economies have displayed more disparate performance. The change has not been too dramatic – growth continues to be positive, but at a more moderate pace.

## PORTFOLIO IMPACTS

- Emerging market equity and local debt delivered losses of 8.0% and 10.4% in Q2 (MSCI Emerging Markets Index, JPM GBI-EM Global Diversified). Much of the losses were due to currency movement. We believe emerging market assets offer attractive value – recent movements appear to have been driven by a shift in short-term sentiment and currency depreciation.
- The U.S. implemented a first round of tariffs on Chinese imports on July 6<sup>th</sup>, which impacted \$34 billion worth of goods. So far, only a small portion of the discussed tariffs have been enacted.

## THE INVESTMENT CLIMATE

- Strong corporate earnings growth is expected again in the second quarter. According to FactSet, the bottom-up analyst forecast for the S&P 500 is 20.0% YoY.
- Short-term U.S. Treasury yields rose, resulting in a flatter yield curve. The spread between the 10- and 2-year yield was 27 bps, a new cycle low.
- Fears were raised over Italy's role in the European Union after a coalition of the anti-establishment Five Star Movement and League Party formed a new government. Italian sovereign bond yields spiked severely during the move, but have since moderated somewhat.

## ASSET ALLOCATION ISSUES

- Following the February selloff equity markets have been range bound. As corporate earnings rise further equity valuations have been pushed down to more attractive levels closer to the long-term historical average.
- While we believe trade negotiations and geopolitical uncertainty are potential causes for concern, the backdrop of positive global growth and strong corporate earnings may allow for healthy risk-asset performance.

A neutral to mild risk overweight may be warranted in today's environment

# U.S. economics summary

- GDP growth was 2.8% year-over-year in the first quarter (2.0% quarterly annualized rate). The slightly slower pace of expansion was influenced by more conservative consumer spending than in previous quarters.
- The rate of inflation picked up moderately throughout the quarter. Core CPI rose 2.3% over the past year, reaching the upper end of its range during the current cycle. The year-over-year rate was impacted by a low base effect – the 3-month annualized core inflation rate was only 1.7%.
- Job gains during the quarter were strong, despite traditional employment measures indicating a tight labor market. Additions to nonfarm payrolls averaged 211,000 per month and the U-3 unemployment rate fell slightly from 4.1% to 4.0%.
- The broadest measure of labor market health, the ratio of employed individuals to the total population, indicates there may still be room for further improvement. More narrow indicators, such as the U-3 unemployment rate, may be overstating labor market tightness.
- The back and forth on trade between the U.S. and much of the rest of the world intensified. The White House has threatened to enact tariffs on up to \$550 billion of Chinese goods over unfair trade practices and intellectual property theft. To this point, tariffs have only been implemented on around \$40 billion of Chinese goods.
- The Fed raised interest rates for a second time this year in June to a target rate of 1.8% to 2.0%. Two more rate hikes are expected by the end of the year based on the Fed dot plot.

	Most Recent	12 Months Prior
GDP (YoY)	2.8% 3/31/18	2.0% 3/31/17
Inflation (CPI YoY, Core)	2.3% 6/30/18	1.7% 6/30/17
Expected Inflation (5yr-5yr forward)	2.2% 6/30/18	1.8% 6/30/17
Fed Funds Target Range	1.75 – 2.00% 6/30/18	1.00 – 1.25% 6/30/17
10 Year Rate	2.9% 6/30/18	2.3% 6/30/17
U-3 Unemployment	4.0% 6/30/18	4.3% 6/30/17
U-6 Unemployment	7.8% 6/30/18	8.5% 6/30/17

# International economics summary

- The synchronized global growth story of the past year has shifted somewhat as greater performance disparity is visible across global economies. Growth continues to be positive but is more moderate in places.
- Developed market economies are expected to grow less quickly in the coming years while emerging economy growth rates are expected to rise.
- The U.S. implemented a first round of tariffs on Chinese imports on July 6th, which impacted \$34 billion of goods. So far, only a small portion of the discussed tariffs have been enacted.
- In June, Mario Draghi officially announced the end of Europe’s bond buying program. Asset purchases are scheduled to end in December, and it was promised that interest rates will remain unchanged through the summer of

2019. This message was seen by markets as more dovish than expected.

- Fears were raised over Italy’s uncertain role in the EU, following a new coalition of the anti-establishment Five Star Movement and League Party taking over the government. Italian bond yields spiked severely during the move, but have since moderated.
- The Eurozone Composite PMI rose for the first time in five months to 54.8 in June. PMIs in most developed and emerging markets remain above 50, indicating expansion.
- The U.S. dollar appreciated 5% during the quarter. Certain emerging market currencies have devalued sharply, such as the Argentine peso, which is down more than 35% against the USD on the year.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	2.8% <i>3/31/18</i>	2.8% <i>5/31/18</i>	4.0% <i>6/30/18</i>
Eurozone	2.5% <i>3/31/18</i>	2.0% <i>6/30/18</i>	8.6% <i>3/31/18</i>
Japan	1.1% <i>3/31/18</i>	0.7% <i>5/31/18</i>	2.2% <i>5/31/18</i>
BRICS Nations	5.8% <i>3/31/18</i>	2.5% <i>6/30/18</i>	5.6% <i>3/31/18</i>
Brazil	1.2% <i>3/31/18</i>	4.4% <i>6/30/18</i>	12.8% <i>6/30/18</i>
Russia	1.3% <i>3/31/18</i>	2.3% <i>6/30/18</i>	4.7% <i>5/31/18</i>
India	7.7% <i>3/31/18</i>	5.0% <i>6/30/18</i>	8.8% <i>12/31/17</i>
China	6.8% <i>3/31/18</i>	1.9% <i>6/30/18</i>	3.9% <i>3/31/18</i>

- The composite fund returned 0.28% for the second quarter of 2018 and ranked in the 79<sup>th</sup> percentile among public funds greater than \$1 billion (median of 1.00%). The fund lagged its policy index return of 0.98% during this time period. Longer term, the five (8.98%), seven (8.57%), and ten-year (7.47%) returns ranked in the top quarter of large public plans.
- Second quarter results were enhanced by the following factors:
  1. Next Century Growth rose 10.25% beating the Russell 2000 Growth + 2.50% (7.40%). Stock selection in healthcare and technology sectors contributed to performance.
  2. TCW beat the Russell 1000 Growth +2.00% (7.79% vs 6.23%). The primary driver of relative outperformance was positive security selection in the information technology, industrials and healthcare sectors.
- Second quarter results were hindered by the following factors:
  1. Brandywine lost -6.71%, lagging the Citi WGBI by 3.36% and ranked in the bottom decile of its peers. The strengthening US dollar contributed to 80% of the quarter's underperformance.
  2. Kennedy lagged the Russell 2000 Value + 2.50% (5.29% vs 8.62%). There were two primary drivers that provided headwinds in Q2; first, an inversion in expected response to the risking interest rate environment, and second, a reversed signal from valuations.
  3. AQR International Equity lost -5.03% trailing the MSCI ACWI ex US (-2.39%). Overweights to Hong Kong and Japan detracted from performance. Stock selection also contributed negative performance in all core regions.
  4. Pzena ranked in the bottom of its peer group losing -0.85% vs the Russell 1000 Value + 2.00% (1.36%). The largest detracting sectors were financials, technology and durables.

Total Fund  
 Manager Allocation Analysis (One Quarter)

Period Ending: June 30, 2018

	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Absolute Return <sup>1</sup>	\$349,754,630	\$257,370,119	-\$9,748,745	\$597,376,004
Alta	\$13,572,140	\$0	\$496,275	\$14,068,415
AQR	\$498,904,298	-\$49,272,668	-\$23,900,093	\$425,731,537
Baird Advisors	\$663,746,512	-\$133,730	-\$998,924	\$662,613,858
Bivium Cash	\$3	\$0	\$199	\$201
BlackRock Russell 1000 Index Fund	\$0	\$1,775,311,116	\$48,818,577	\$1,824,129,693
Brandywine	\$352,081,970	-\$239,886	-\$23,622,105	\$328,219,978
Capital Group	\$1,000,586,870	-\$128,813,724	-\$10,995,872	\$860,777,274
Cash Account	\$24,621,782	\$116,512,308	\$111,351	\$141,245,441
Huber	\$9,593,564	\$0	\$84,300	\$9,677,864
Kennedy	\$135,861,165	-\$18,500,000	\$7,126,525	\$124,487,689
Loomis Sayles	\$334,073,610	-\$264,746	-\$2,519,802	\$331,289,062
Matarin	\$10,417,200	-\$11,126,795	\$720,458	\$10,863
Mondrian	\$696,303,125	-\$22,614,797	-\$23,834,520	\$649,853,808
Next Century-SCG	\$135,233,140	-\$27,933,794	\$13,932,640	\$121,231,986
Next Century-USCG	\$27	\$0	\$0	\$27
OakBrook	\$14,652,368	-\$3,500,000	\$561,875	\$11,714,243
Private Equity	\$458,770,496	-\$2,312,438	\$11,011,203	\$467,469,261
Pzena	\$255,502,657	-\$37,006,655	-\$506,604	\$217,989,398
Quest	\$14,466,843	-\$873,205	\$717,875	\$14,311,513
Real Assets	\$306,599,405	\$2,107,521	\$10,226,495	\$318,933,421
Real Estate	\$523,552,701	\$82,147	\$11,430,975	\$535,065,820
Sec. Lending	\$0	-\$642,675	\$642,675	\$0
TCW	\$265,430,392	-\$70,000,000	\$19,764,493	\$215,194,885
Templeton	\$269,917,462	-\$48,000,000	-\$7,784,098	\$214,133,364
Transition Account	\$1,774,920,976	-\$1,776,419,299	\$2,085,556	\$587,233
Vulcan Value	\$17,203,764	\$0	\$498,140	\$17,701,904
<b>Total</b>	<b>\$8,125,767,100</b>	<b>-\$46,271,201</b>	<b>\$24,318,849</b>	<b>\$8,103,814,742</b>

<sup>1</sup> Preliminary ending market value.

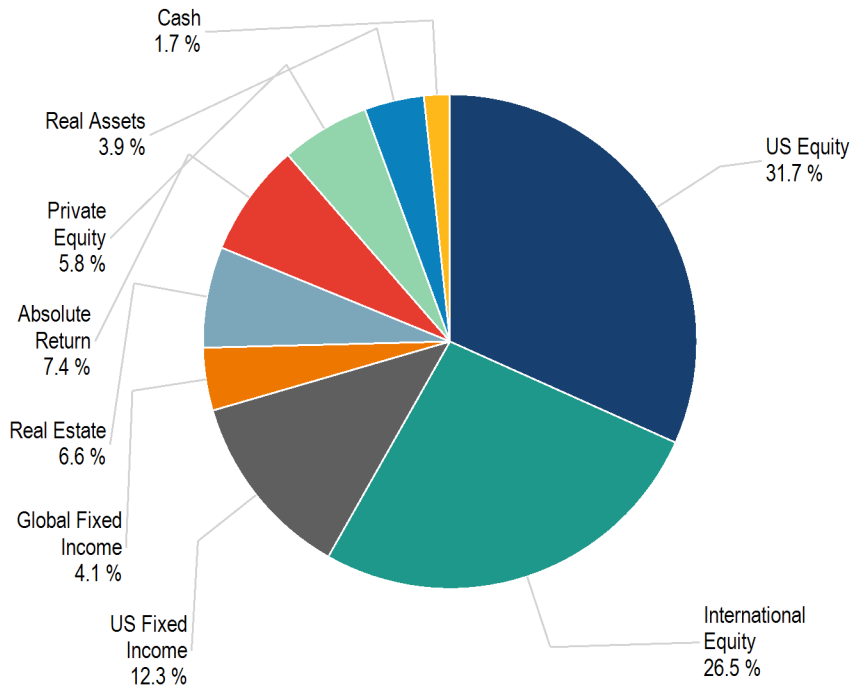
Bivium  
 Manager Allocation Analysis (One Quarter)

Period Ending: June 30, 2018

	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Alta	\$13,572,140	\$0	\$496,275	\$14,068,415
Bivium Cash	\$3	\$0	\$199	\$201
Huber	\$9,593,564	\$0	\$84,300	\$9,677,864
Matarin	\$10,417,200	-\$11,126,795	\$720,458	\$10,863
OakBrook	\$14,652,368	-\$3,500,000	\$561,875	\$11,714,243
Quest	\$14,466,843	-\$873,205	\$717,875	\$14,311,513
Vulcan Value	\$17,203,764	\$0	\$498,140	\$17,701,904
<b>Total</b>	<b>\$79,905,881</b>	<b>-\$15,500,000</b>	<b>\$3,079,123</b>	<b>\$67,485,003</b>

Total Fund  
Asset Allocation Analysis

Period Ending: June 30, 2018



	Current Balance	Current Allocation
US Equity	\$2,571,105,915	31.7%
International Equity	\$2,150,495,983	26.5%
US Fixed Income	\$993,902,920	12.3%
Global Fixed Income	\$328,219,978	4.1%
Real Estate	\$535,065,821	6.6%
Absolute Return	\$597,376,003	7.4%
Private Equity	\$467,469,261	5.8%
Real Assets	\$318,933,421	3.9%
Cash	\$141,245,441	1.7%
<b>Total</b>	<b>\$8,103,814,742</b>	<b>100.0%</b>

	Policy	Current Allocation	Difference
US Equity	28.0%	31.7%	3.7%
International Equity	26.0%	26.5%	0.5%
US Fixed Income	12.8%	12.3%	-0.5%
Global Fixed Income	2.3%	4.1%	1.8%
Real Estate	8.0%	6.6%	-1.4%
Absolute Return	9.0%	7.4%	-1.6%
Private Equity	9.0%	5.8%	-3.2%
Real Assets	5.0%	3.9%	-1.1%
Cash	--	1.7%	1.7%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	



# Total Fund Performance Summary

Period Ending: June 30, 2018

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date*
<b>Total Fund (Gross)</b>	<b>0.28</b>	<b>79</b>	<b>1.19</b>	<b>42</b>	<b>10.07</b>	<b>8</b>	<b>7.98</b>	<b>15</b>	<b>8.98</b>	<b>20</b>	<b>8.57</b>	<b>16</b>	<b>7.47</b>	<b>9</b>	<b>9.72</b>	<b>Sep-85</b>
<b>Total Fund (Net)</b>	<b>0.23</b>	<b>81</b>	<b>1.10</b>	<b>46</b>	<b>9.84</b>	<b>12</b>	<b>7.69</b>	<b>21</b>	<b>8.66</b>	<b>32</b>	<b>8.23</b>	<b>28</b>	<b>7.14</b>	<b>21</b>	<b>9.52</b>	
<i>Policy Index<sup>1</sup></i>	0.98	53	0.97	51	9.90	11	8.44	5	9.56	5	8.91	8	7.78	6	10.02	Sep-85
<i>Allocation Index</i>	0.85	56	0.57	64	9.67	13	8.20	9	9.25	16	8.57	16	7.24	14	--	Sep-85
<i>InvestorForce Public DB &gt; \$1B Gross Median</i>	1.00		1.00		8.65		7.18		8.26		7.79		6.63		8.73	Sep-85
<b>US Equity (Gross)</b>	<b>3.55</b>	<b>65</b>	<b>4.97</b>	<b>15</b>	<b>17.39</b>	<b>13</b>	<b>11.58</b>	<b>39</b>	<b>13.27</b>	<b>41</b>	<b>13.04</b>	<b>26</b>	<b>10.77</b>	<b>15</b>	<b>11.75</b>	<b>Sep-85</b>
<b>US Equity (Net)</b>	<b>3.50</b>	<b>67</b>	<b>4.86</b>	<b>17</b>	<b>17.09</b>	<b>15</b>	<b>11.25</b>	<b>53</b>	<b>12.92</b>	<b>62</b>	<b>12.68</b>	<b>48</b>	<b>10.44</b>	<b>30</b>	<b>--</b>	
<i>Russell 3000</i>	3.89	49	3.22	57	14.78	54	11.58	39	13.29	39	13.01	28	10.23	43	11.23	Sep-85
<i>InvestorForce All DB US Eq Gross Median</i>	3.88		3.33		14.85		11.32		13.09		12.66		10.08		11.00	Sep-85
BlackRock Russell 1000 Index Fund (Gross)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.22	Apr-18
BlackRock Russell 1000 Index Fund (Net)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.22	
<i>Russell 1000</i>	3.57	30	2.85	33	14.54	42	11.64	34	13.37	42	13.12	41	10.20	49	3.22	Apr-18
<i>eV US Large Cap Core Equity Gross Median</i>	2.80		1.98		13.88		10.91		13.09		12.88		10.18		2.42	Apr-18
<b>Large Cap Active Equity (Gross)</b>	<b>3.55</b>	<b>65</b>	<b>4.94</b>	<b>15</b>	<b>17.47</b>	<b>12</b>	<b>12.04</b>	<b>17</b>	<b>13.56</b>	<b>20</b>	<b>13.28</b>	<b>15</b>	<b>11.47</b>	<b>5</b>	<b>7.97</b>	<b>Mar-00</b>
<b>Large Cap Active Equity (Net)</b>	<b>3.43</b>	<b>69</b>	<b>4.73</b>	<b>18</b>	<b>17.04</b>	<b>16</b>	<b>11.62</b>	<b>37</b>	<b>13.16</b>	<b>46</b>	<b>12.85</b>	<b>37</b>	<b>11.05</b>	<b>8</b>	<b>7.55</b>	
<i>Russell 1000</i>	3.57	64	2.85	70	14.54	59	11.64	35	13.37	32	13.12	22	10.20	44	5.53	Mar-00
<i>InvestorForce All DB US Eq Gross Median</i>	3.88		3.33		14.85		11.32		13.09		12.66		10.08		6.19	Mar-00

Total Fund and asset class composites are ranked against InvestorForce universes. Managers are ranked against eVestment Alliance style universes.

Ranking of 1 is a top ranking and a ranking of 100 is a bottom ranking. The InvestorForce Public DB > \$1B Gross universe consists of 63 members with a total market value of \$723 Billion.

Effective 1/1/2017, only traditional asset class (public equity, public fixed income, public real estate) investment management fees will be included in the gross of fee return calculation.

\* Effective Q1 2014, inception to date returns are as of the managers first full month. Prior was managers first full quarter.

<sup>1</sup> See Policy Index and Benchmark History.

# Total Fund Performance Summary

Period Ending: June 30, 2018

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Bivium (Gross)	3.83	36	4.44	23	15.15	31	9.61	59	12.07	54	12.22	42	--	--	10.01	Jul-08
Bivium (Net)	3.71	39	4.22	24	14.70	38	9.14	66	11.60	63	11.75	50	--	--	9.58	
<i>Russell 3000 +1%<sup>1</sup></i>	4.09	26	3.77	29	15.78	26	12.59	17	14.30	21	14.30	15	--	--	--	Jul-08
<i>Russell 3000</i>	3.89	34	3.22	37	14.78	38	11.58	27	13.29	33	13.01	30	10.23	41	10.41	Jul-08
Pzena (Gross)	-0.85	99	-2.33	86	10.00	51	10.26	30	11.72	38	11.85	49	9.95	38	6.05	Jan-06
Pzena (Net)	-1.07	99	-2.65	92	9.42	58	9.75	42	11.24	51	11.34	63	9.48	51	5.61	
<i>Russell 1000 Value +2%</i>	1.36	61	-0.70	53	8.77	67	10.26	30	12.36	22	13.28	14	10.53	24	8.95	Jan-06
<i>Russell 1000 Value</i>	1.18	66	-1.69	71	6.77	86	8.26	73	10.34	72	11.27	65	8.49	79	6.92	Jan-06
TCW (Gross)	7.79	9	12.55	14	25.75	25	14.14	44	15.68	55	14.13	52	12.48	21	7.34	Jun-99
TCW (Net)	7.79	9	12.47	15	25.49	26	13.83	47	15.37	61	13.80	59	12.12	32	--	
<i>Russell 1000 Growth +2%<sup>1</sup></i>	6.23	32	8.37	46	24.51	31	16.98	8	18.36	12	17.03	5	14.12	4	7.68	Jun-99
<i>Russell 1000 Growth</i>	5.76	43	7.25	55	22.51	46	14.98	29	16.36	44	14.88	33	11.83	40	5.25	Jun-99
<b>Small Cap Equity (Gross)</b>	<b>7.76</b>	<b>1</b>	<b>9.13</b>	<b>1</b>	<b>22.79</b>	<b>1</b>	<b>10.74</b>	<b>70</b>	<b>12.71</b>	<b>69</b>	<b>12.07</b>	<b>73</b>	<b>10.19</b>	<b>44</b>	<b>13.83</b>	<b>Jul-85</b>
<b>Small Cap Equity (Net)</b>	<b>7.57</b>	<b>1</b>	<b>8.72</b>	<b>1</b>	<b>21.83</b>	<b>1</b>	<b>9.84</b>	<b>89</b>	<b>11.78</b>	<b>91</b>	<b>11.14</b>	<b>95</b>	<b>9.35</b>	<b>84</b>	<b>--</b>	
<i>Russell 2000</i>	7.75	1	7.66	2	17.57	11	10.96	63	12.46	77	11.83	80	10.60	21	9.87	Jul-85
<i>InvestorForce All DB US Eq Gross Median</i>	3.88		3.33		14.85		11.32		13.09		12.66		10.08		10.80	Jul-85
Kennedy (Gross)	5.29	58	2.55	67	13.39	45	10.65	49	12.75	32	12.84	30	--	--	14.57	Sep-10
Kennedy (Net)	5.29	58	2.33	70	12.73	51	9.84	65	11.91	56	11.94	56	--	--	13.72	
<i>Russell 2000 Value +2.5%</i>	8.62	16	6.42	19	15.60	29	13.73	11	13.69	20	13.61	17	--	--	15.08	Sep-10
<i>Russell 2000 Value</i>	8.30	19	5.44	29	13.10	47	11.22	42	11.18	69	11.10	77	9.88	84	12.56	Sep-10

<sup>1</sup> See Policy Index and Benchmark History.

# Total Fund Performance Summary

Period Ending: June 30, 2018

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Next Century-SCG (Gross)	10.25	34	17.49	18	35.91	14	10.33	75	11.90	89	9.92	96	8.39	97	12.17	Oct-02
Next Century-SCG (Net)	9.85	39	16.84	22	34.64	17	9.36	85	10.91	92	8.99	96	7.43	98	11.19	
<i>Russell 2000 Growth +2.5%</i>	7.40	73	10.59	62	24.36	55	13.13	41	16.17	25	15.02	22	13.78	31	14.42	Oct-02
<i>Russell 2000 Growth</i>	7.23	75	9.70	71	21.86	70	10.60	72	13.65	69	12.50	70	11.24	72	11.88	Oct-02
<b>International Equity (Gross)</b>	<b>-2.82</b>	<b>46</b>	<b>-2.89</b>	<b>39</b>	<b>9.11</b>	<b>24</b>	<b>7.04</b>	<b>20</b>	<b>7.44</b>	<b>33</b>	<b>5.71</b>	<b>31</b>	<b>4.19</b>	<b>29</b>	<b>8.40</b>	<b>Dec-90</b>
<b>International Equity (Net)</b>	<b>-2.93</b>	<b>50</b>	<b>-3.03</b>	<b>42</b>	<b>8.79</b>	<b>27</b>	<b>6.65</b>	<b>30</b>	<b>7.03</b>	<b>46</b>	<b>5.30</b>	<b>43</b>	<b>3.78</b>	<b>41</b>	<b>--</b>	
<i>MSCI ACWI ex USA IMI Gross<sup>1</sup></i>	-2.40	36	-3.34	50	8.24	36	5.94	47	6.86	52	4.54	66	3.18	60	6.46	Dec-90
<i>InvestorForce All DB ex-US Eq Gross Median</i>	-2.96		-3.38		7.35		5.76		6.92		5.02		3.54		6.91	Dec-90
AQR (Gross)	-5.03	90	-4.96	76	6.32	71	6.47	27	7.30	42	5.17	58	3.93	70	2.34	Oct-07
AQR (Net)	-5.28	94	-5.22	79	5.78	76	5.94	48	6.76	55	4.66	76	3.41	85	1.85	
<i>MSCI ACWI ex USA Gross</i>	-2.39	35	-3.44	48	7.79	46	5.56	53	6.48	67	4.28	84	3.01	91	1.25	Oct-07
Capital Group (Gross)	-1.18	31	-1.02	31	13.52	23	8.95	29	8.24	48	6.21	52	4.14	66	8.70	Dec-90
Capital Group (Net)	-1.21	32	-1.05	31	13.42	24	8.71	30	7.94	53	5.86	57	3.78	75	--	
<i>MSCI ACWI ex USA Gross</i>	-2.39	49	-3.44	63	7.79	63	5.56	69	6.48	80	4.28	85	3.01	86	6.42	Dec-90
<i>MSCI ACWI ex USA Growth Gross</i>	-1.23	32	-2.02	39	10.30	40	6.95	44	7.56	61	5.20	69	3.36	80	--	Dec-90
Mondrian (Gross)	-3.43	42	-4.62	38	4.30	63	4.30	65	5.76	69	4.44	63	3.43	52	7.35	Nov-03
Mondrian (Net)	-3.52	51	-4.79	46	3.95	69	3.93	71	5.39	83	4.09	75	3.10	59	7.04	
<i>MSCI ACWI ex USA Gross</i>	-2.39	19	-3.44	20	7.79	17	5.56	38	6.48	62	4.28	70	3.01	62	7.22	Nov-03
<i>MSCI ACWI ex USA Value Gross</i>	-3.59	53	-4.90	49	5.26	39	4.12	67	5.33	83	3.32	96	2.61	66	6.98	Nov-03

<sup>1</sup> See Policy Index and Benchmark History.

# Total Fund Performance Summary

Period Ending: June 30, 2018

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Templeton (Gross)	-3.27	72	-1.53	59	10.55	71	8.06	76	9.09	73	8.04	77	--	--	7.59	Apr-11
Templeton (Net)	-3.43	75	-1.85	62	9.88	80	7.37	81	8.35	91	7.29	86	--	--	6.86	
<i>MSCI ACWI ex US Small Cap Gross</i>	-2.44	59	-2.71	69	10.96	66	8.33	71	9.37	62	6.24	99	6.14	90	5.35	Apr-11
<b>Total Fixed Income (Gross)</b>	<b>-2.01</b>	<b>95</b>	<b>-1.74</b>	<b>78</b>	<b>0.57</b>	<b>51</b>	<b>3.43</b>	<b>33</b>	<b>3.85</b>	<b>28</b>	<b>4.61</b>	<b>21</b>	<b>6.06</b>	<b>20</b>	<b>7.34</b>	<b>Sep-86</b>
<b>Total Fixed Income (Net)</b>	<b>-2.06</b>	<b>96</b>	<b>-1.84</b>	<b>78</b>	<b>0.38</b>	<b>60</b>	<b>3.24</b>	<b>37</b>	<b>3.65</b>	<b>31</b>	<b>4.40</b>	<b>26</b>	<b>5.84</b>	<b>22</b>	<b>--</b>	
<i>Fixed Income Blend<sup>1</sup></i>	-0.79	68	-1.31	67	0.47	57	2.44	64	2.44	72	2.58	90	3.94	82	6.42	Sep-86
<i>InvestorForce All DB Total Fix Inc Gross Median</i>	-0.18		-0.93		0.58		2.84		3.00		3.58		4.88		6.93	Sep-86
<b>US Fixed Income (Gross)</b>	<b>-0.35</b>	<b>70</b>	<b>-1.34</b>	<b>65</b>	<b>0.71</b>	<b>33</b>	<b>3.18</b>	<b>37</b>	<b>4.15</b>	<b>28</b>	<b>4.79</b>	<b>24</b>	<b>6.20</b>	<b>21</b>	<b>7.22</b>	<b>Sep-86</b>
<b>US Fixed Income (Net)</b>	<b>-0.39</b>	<b>71</b>	<b>-1.42</b>	<b>67</b>	<b>0.55</b>	<b>38</b>	<b>3.01</b>	<b>41</b>	<b>3.98</b>	<b>29</b>	<b>4.62</b>	<b>26</b>	<b>6.02</b>	<b>25</b>	<b>--</b>	
<i>BBgBarc US Aggregate TR</i>	-0.16	59	-1.62	72	-0.40	81	1.72	78	2.27	76	2.57	81	3.72	79	6.15	Sep-86
<i>InvestorForce All DB US Fix Inc Gross Median</i>	-0.05		-1.00		0.20		2.61		3.08		3.55		4.77		6.83	Sep-86
Baird Advisors (Gross)	-0.15	62	-1.50	56	0.07	37	2.72	14	3.47	9	4.07	7	5.18	11	4.98	Oct-01
Baird Advisors (Net)	-0.17	68	-1.54	59	-0.01	46	2.64	16	3.38	11	3.98	9	5.09	12	4.89	
<i>BBgBarc US Aggregate TR</i>	-0.16	63	-1.62	70	-0.40	82	1.72	88	2.27	89	2.57	93	3.72	92	4.10	Oct-01
Loomis Sayles (Gross)	-0.75	99	-1.03	15	1.97	2	4.01	3	5.44	1	6.07	1	7.86	1	8.28	Dec-00
Loomis Sayles (Net)	-0.83	99	-1.19	22	1.65	4	3.68	3	5.11	1	5.72	2	7.50	1	7.93	
<i>BBgBarc US Credit BAA TR</i>	-1.22	99	-3.35	99	-0.57	91	3.25	5	3.81	5	4.42	4	6.16	2	6.14	Dec-00
<b>Global Fixed Income (Gross)</b>	<b>-6.71</b>	<b>88</b>	<b>-2.93</b>	<b>81</b>	<b>0.02</b>	<b>60</b>	<b>4.05</b>	<b>30</b>	<b>2.92</b>	<b>57</b>	<b>3.98</b>	<b>50</b>	<b>5.42</b>	<b>29</b>	<b>7.51</b>	<b>Nov-01</b>
<b>Global Fixed Income (Net)</b>	<b>-6.78</b>	<b>88</b>	<b>-3.06</b>	<b>81</b>	<b>-0.26</b>	<b>63</b>	<b>3.76</b>	<b>40</b>	<b>2.63</b>	<b>64</b>	<b>3.66</b>	<b>59</b>	<b>5.09</b>	<b>40</b>	<b>7.20</b>	
<i>Citi WGBl</i>	-3.35	61	-0.94	33	1.90	18	2.81	71	1.11	93	0.51	99	2.07	99	4.53	Nov-01
<i>InvestorForce All DB Gbl Fix Inc Gross Median</i>	-2.05		-1.89		0.57		3.38		3.41		3.97		5.00		6.55	Nov-01

<sup>1</sup> See Policy Index and Benchmark History.

# Total Fund Performance Summary

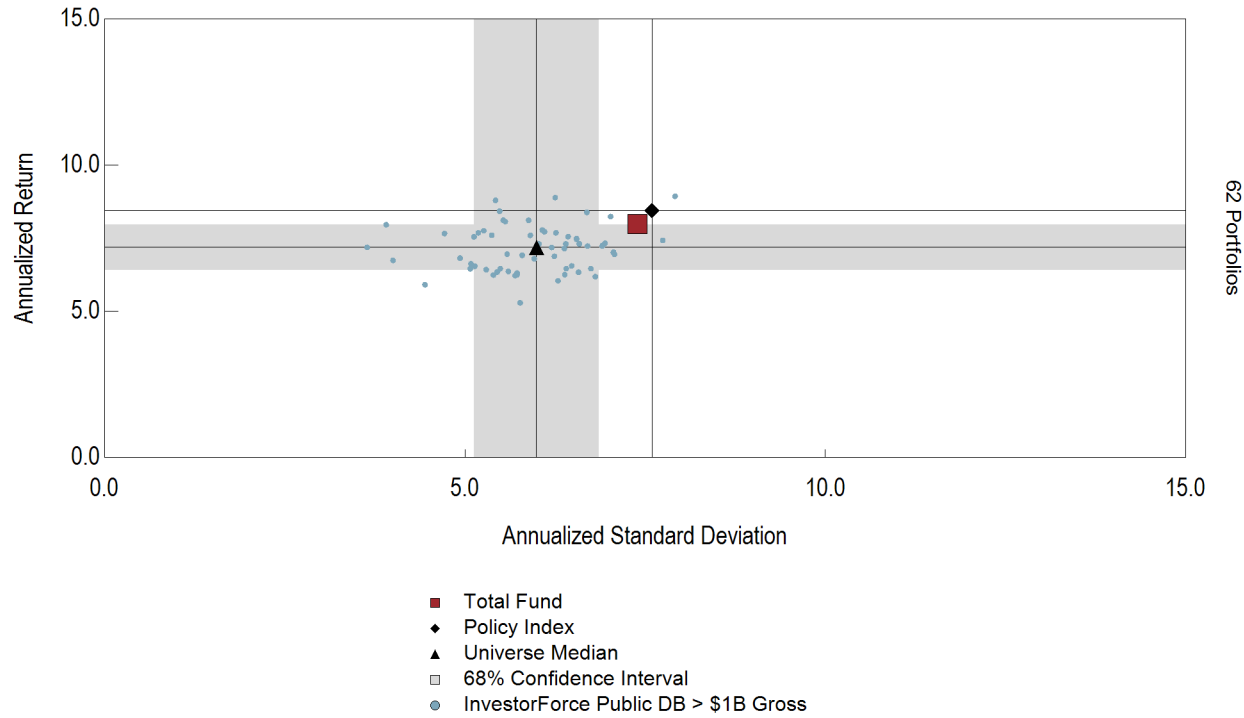
Period Ending: June 30, 2018

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Brandywine (Gross)	-6.71	96	-2.93	81	0.02	87	4.05	30	2.92	52	3.98	34	5.42	27	7.51	Nov-01
Brandywine (Net)	-6.78	97	-3.06	82	-0.26	89	3.76	36	2.63	59	3.66	39	5.09	31	7.20	
<i>Citi WGBI</i>	-3.35	74	-0.94	42	1.90	40	2.81	65	1.11	85	0.51	90	2.07	90	4.53	Nov-01
<b>Absolute Return (Gross)</b>	<b>-1.34</b>	<b>94</b>	<b>0.18</b>	<b>78</b>	<b>2.14</b>	<b>80</b>	<b>2.38</b>	<b>56</b>	<b>3.90</b>	<b>56</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>3.88</b>	<b>Sep-11</b>
<b>Absolute Return (Net)</b>	<b>-1.34</b>	<b>94</b>	<b>0.18</b>	<b>78</b>	<b>2.14</b>	<b>80</b>	<b>2.38</b>	<b>56</b>	<b>3.90</b>	<b>56</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>3.88</b>	
<i>HFRI Fund of Funds Composite Index</i>	0.41	74	0.68	71	5.13	57	1.93	66	3.45	69	2.81	76	1.40	87	3.69	Sep-11
<i>InvestorForce All DB Hedge Funds Gross Median</i>	1.46		1.65		5.73		2.70		4.20		4.18		2.95		5.11	Sep-11
<b>Private Equity (Gross)</b>	<b>2.40</b>	<b>--</b>	<b>6.66</b>	<b>--</b>	<b>11.42</b>	<b>--</b>	<b>12.54</b>	<b>--</b>	<b>15.72</b>	<b>--</b>	<b>13.97</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>2.69</b>	<b>Nov-08</b>
<b>Private Equity (Net)</b>	<b>2.40</b>	<b>--</b>	<b>6.66</b>	<b>--</b>	<b>11.42</b>	<b>--</b>	<b>12.54</b>	<b>--</b>	<b>15.72</b>	<b>--</b>	<b>13.97</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>2.69</b>	
<i>Thomson Reuters C A Global All PE 1 Qtr Lag</i>	2.79	--	7.22	--	16.20	--	11.36	--	12.47	--	11.47	--	8.84	--	9.25	Nov-08
<b>Real Assets (Gross)</b>	<b>3.33</b>	<b>--</b>	<b>4.40</b>	<b>--</b>	<b>10.45</b>	<b>--</b>	<b>-0.54</b>	<b>--</b>	<b>-4.08</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>-4.16</b>	<b>Sep-11</b>
<b>Real Assets (Net)</b>	<b>3.33</b>	<b>--</b>	<b>4.40</b>	<b>--</b>	<b>10.45</b>	<b>--</b>	<b>-0.54</b>	<b>--</b>	<b>-4.08</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>-4.16</b>	
<i>Real Asset Blend<sup>1</sup></i>	3.71	--	0.80	--	13.78	--	9.99	--	7.56	--	--	--	--	--	6.88	Sep-11
<b>Cash (Gross)</b>	<b>0.40</b>	<b>--</b>	<b>0.59</b>	<b>--</b>	<b>1.05</b>	<b>--</b>	<b>0.76</b>	<b>--</b>	<b>0.47</b>	<b>--</b>	<b>0.37</b>	<b>--</b>	<b>0.42</b>	<b>--</b>	<b>3.20</b>	<b>Sep-85</b>
<b>Cash (Net)</b>	<b>0.40</b>	<b>--</b>	<b>0.59</b>	<b>--</b>	<b>1.05</b>	<b>--</b>	<b>0.76</b>	<b>--</b>	<b>0.47</b>	<b>--</b>	<b>0.37</b>	<b>--</b>	<b>0.42</b>	<b>--</b>	<b>3.20</b>	
<i>91 Day T-Bills</i>	0.46	--	0.84	--	1.40	--	0.70	--	0.43	--	0.32	--	0.30	--	3.29	Sep-85
<b>Real Estate (Gross)</b>	<b>2.18</b>	<b>36</b>	<b>4.17</b>	<b>31</b>	<b>8.44</b>	<b>29</b>	<b>10.29</b>	<b>15</b>	<b>12.03</b>	<b>11</b>	<b>12.25</b>	<b>12</b>	<b>5.66</b>	<b>30</b>	<b>7.11</b>	<b>Mar-86</b>
<b>Real Estate (Net)</b>	<b>2.18</b>	<b>36</b>	<b>4.17</b>	<b>31</b>	<b>8.44</b>	<b>29</b>	<b>9.80</b>	<b>24</b>	<b>11.31</b>	<b>31</b>	<b>11.43</b>	<b>32</b>	<b>4.83</b>	<b>54</b>	<b>6.02</b>	
<i>NCREIF-ODCE</i>	2.05	44	4.30	22	8.44	29	9.36	38	11.03	37	11.39	33	5.29	37	7.32	Mar-86
<i>InvestorForce All DB Real Estate Pub+Priv Gross Median</i>	1.95		3.84		7.73		9.02		10.67		10.99		4.96		7.33	Mar-86

<sup>1</sup> See Policy Index and Benchmark History.

Total Fund  
Risk vs. Return (3 Years)

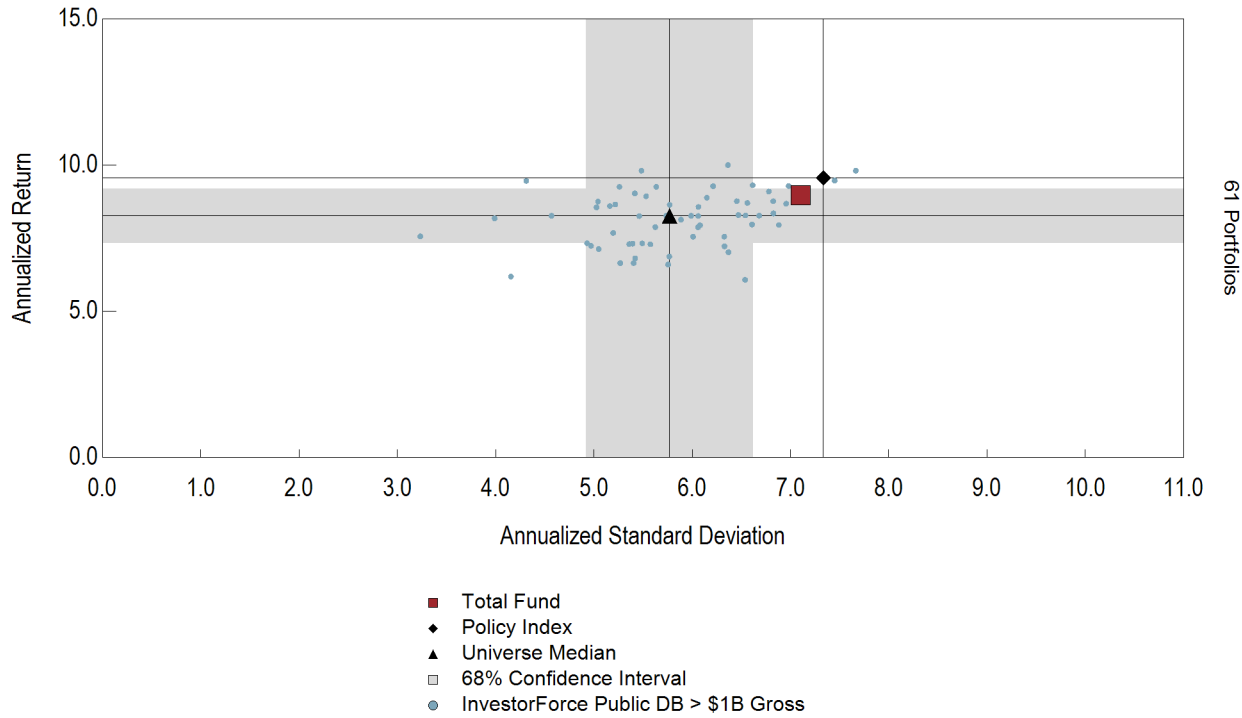
Period Ending: June 30, 2018



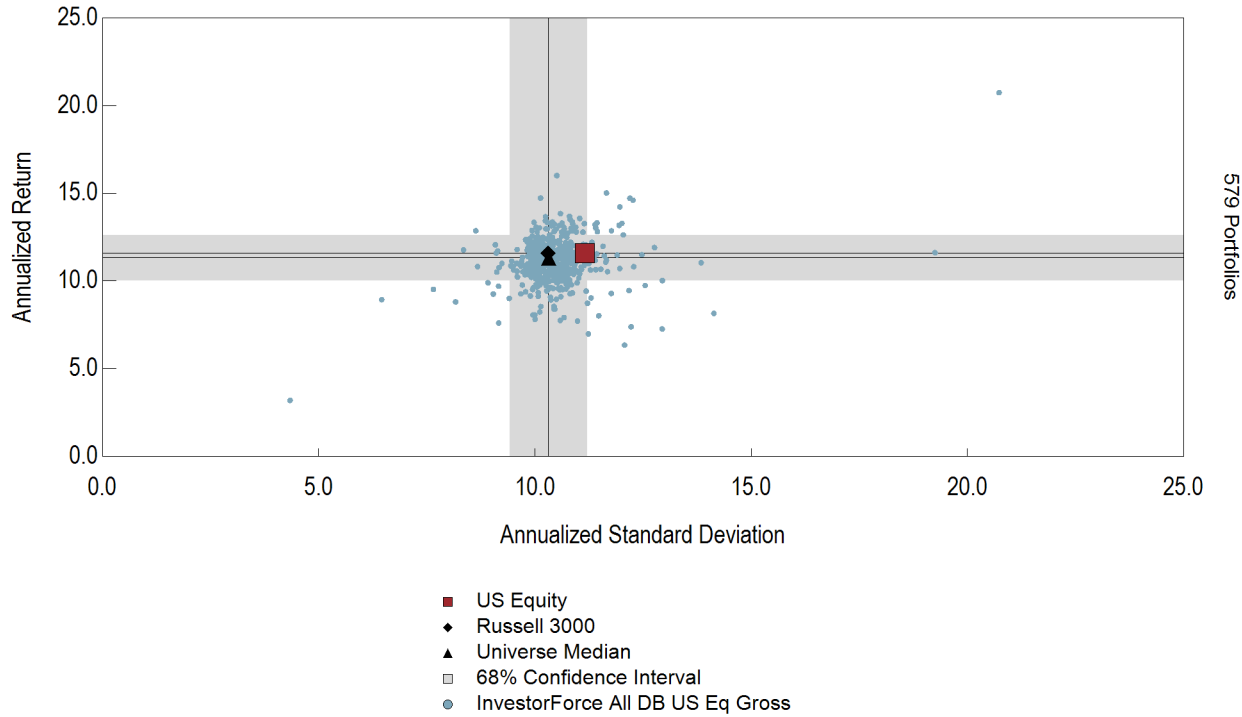
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fund	7.98%	15	7.39%	98	0.98	70	-0.36	91	1.29%	79
Policy Index	8.44%	5	7.60%	98	1.02	63	--	--	0.00%	1
Allocation Index	8.20%	9	7.62%	99	0.98	70	-0.57	98	0.43%	4
InvestorForce Public DB > \$1B Gross Median	7.18%	--	5.99%	--	1.05	--	0.29	--	1.12%	--

Total Fund  
Risk vs. Return (5 Years)

Period Ending: June 30, 2018

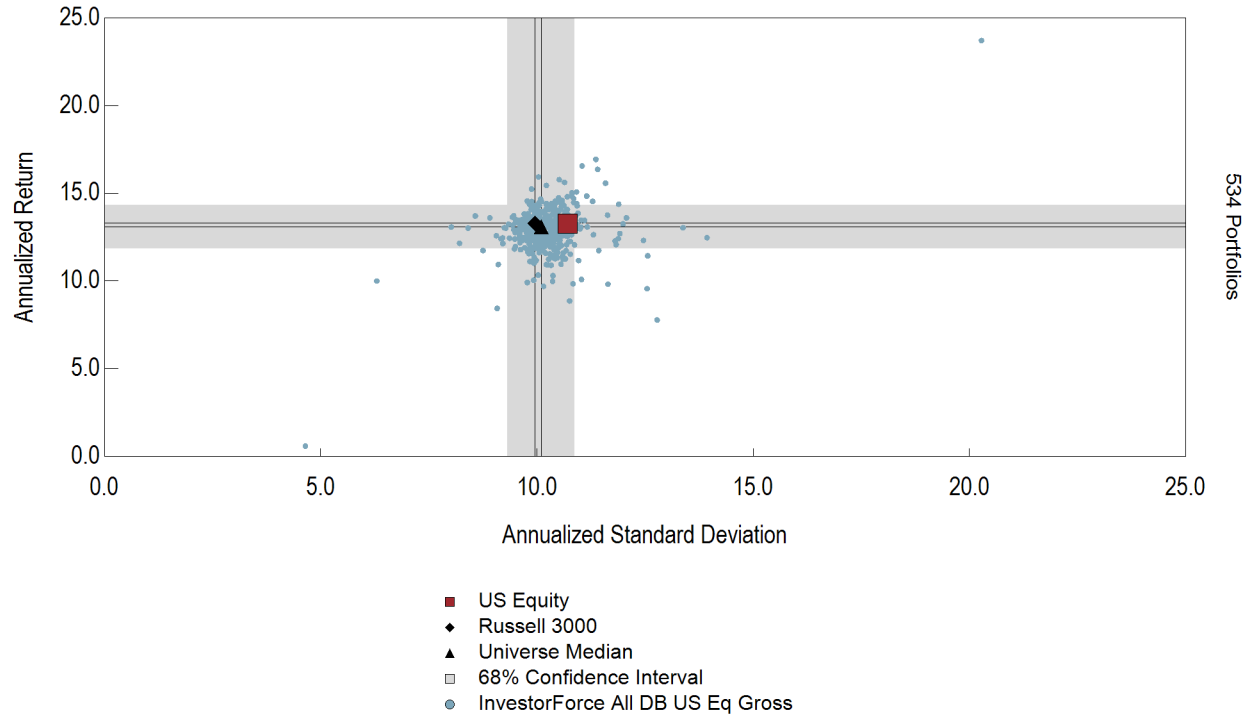


	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fund	8.98%	20	7.10%	98	1.20	73	-0.48	98	1.21%	66
Policy Index	9.56%	5	7.33%	98	1.25	61	--	--	0.00%	1
Allocation Index	9.25%	16	7.34%	98	1.20	74	-0.86	99	0.36%	3
InvestorForce Public DB > \$1B Gross Median	8.26%	--	5.77%	--	1.29	--	0.37	--	1.10%	--

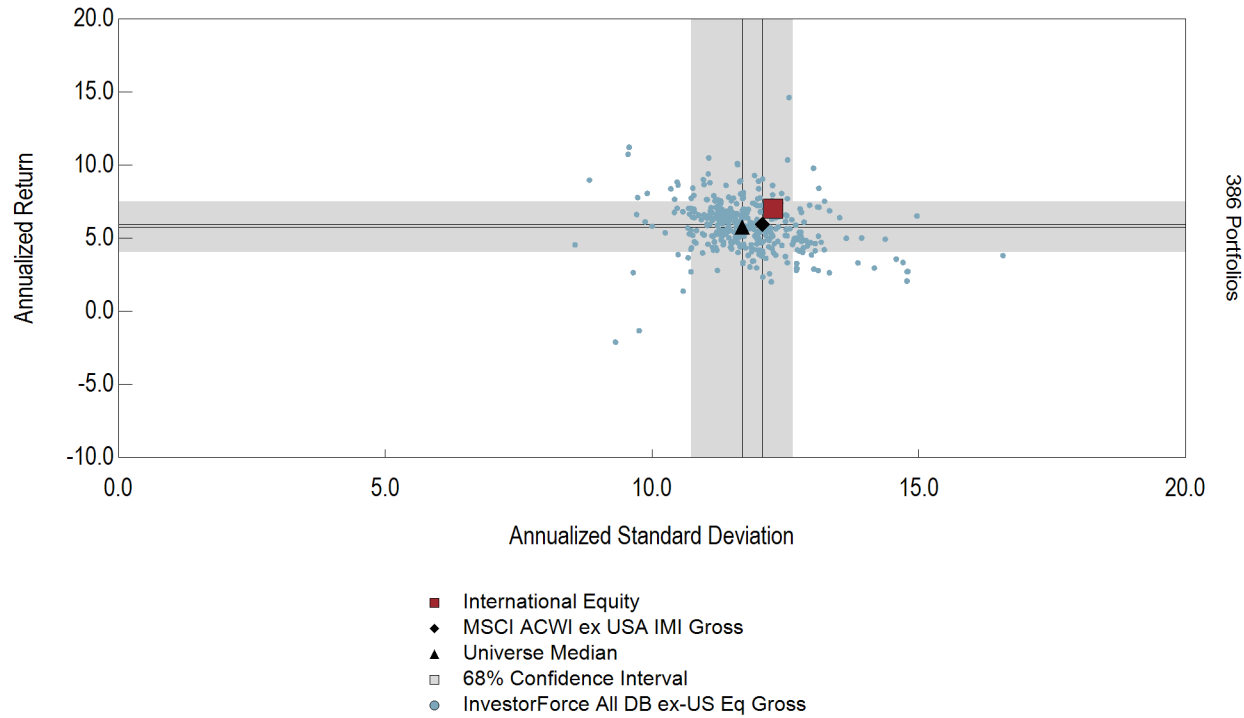


	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
US Equity	11.58%	39	11.15%	92	0.98	65	0.00	37	2.23%	64
Russell 3000	11.58%	39	10.30%	49	1.06	39	--	--	0.00%	1
InvestorForce All DB US Eq Gross Median	11.32%	--	10.32%	--	1.03	--	-0.23	--	1.92%	--

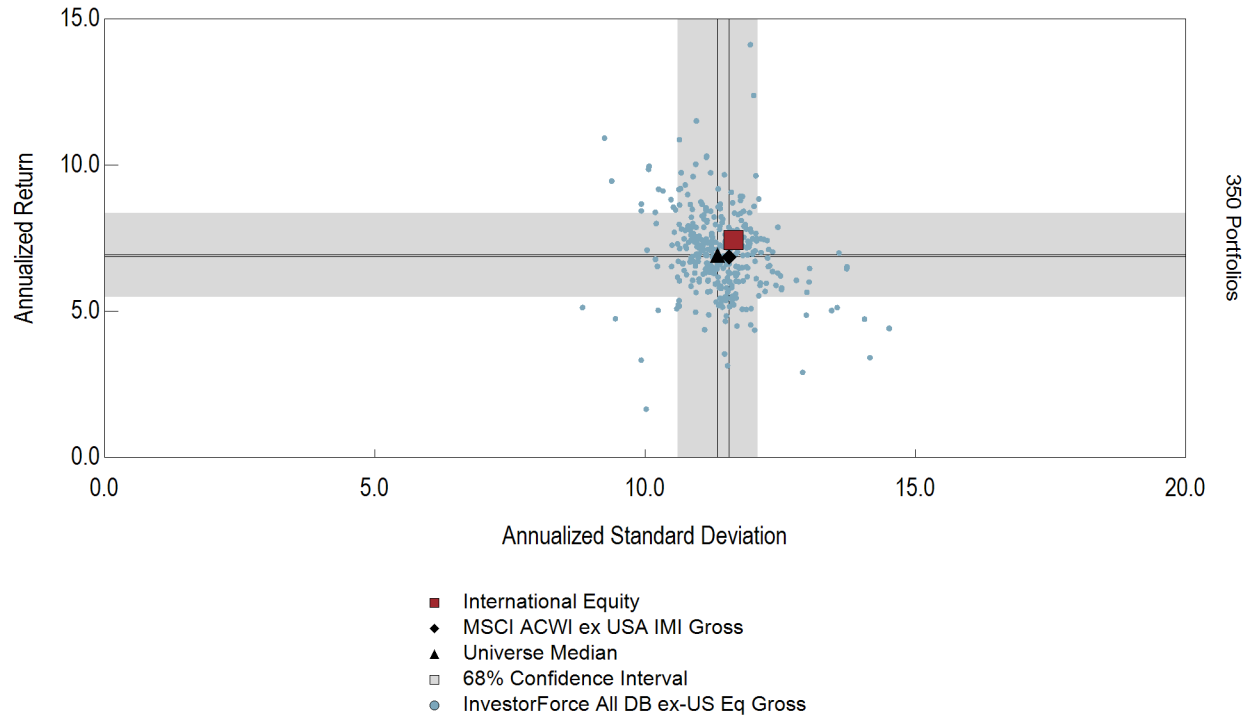




	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
US Equity	13.27%	41	10.71%	88	1.20	70	-0.01	41	2.35%	66
Russell 3000	13.29%	39	9.96%	35	1.29	33	--	--	0.00%	1
InvestorForce All DB US Eq Gross Median	13.09%	--	10.10%	--	1.25	--	-0.13	--	1.94%	--



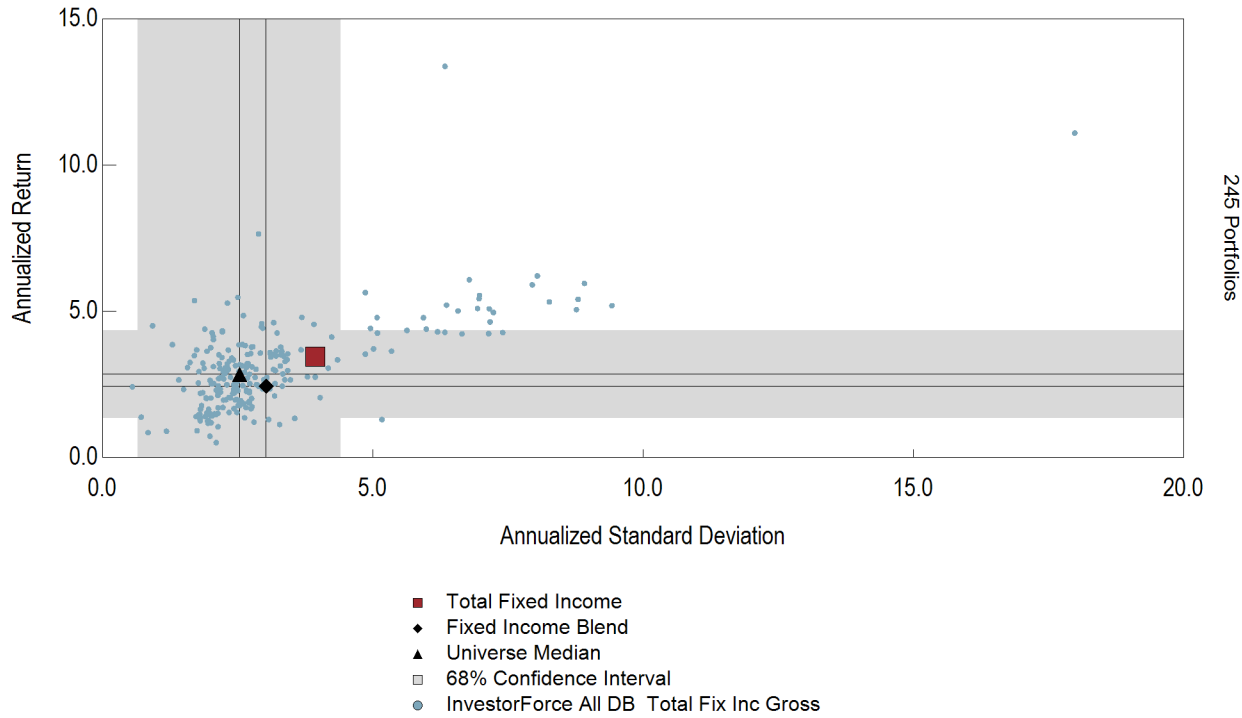
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
International Equity	7.04%	20	12.27%	78	0.52	29	0.80	15	1.37%	7
MSCI ACWI ex USA IMI Gross	5.94%	47	12.06%	70	0.43	50	--	--	0.00%	1
InvestorForce All DB ex-US Eq Gross Median	5.76%	--	11.69%	--	0.43	--	0.21	--	2.93%	--



	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
International Equity	7.44%	33	11.63%	72	0.60	37	0.42	36	1.37%	6
MSCI ACWI ex USA IMI Gross	6.86%	52	11.55%	66	0.56	54	--	--	0.00%	1
InvestorForce All DB ex-US Eq Gross Median	6.92%	--	11.34%	--	0.57	--	0.25	--	2.85%	--

Total Fixed Income  
Risk vs. Return (3 Years)

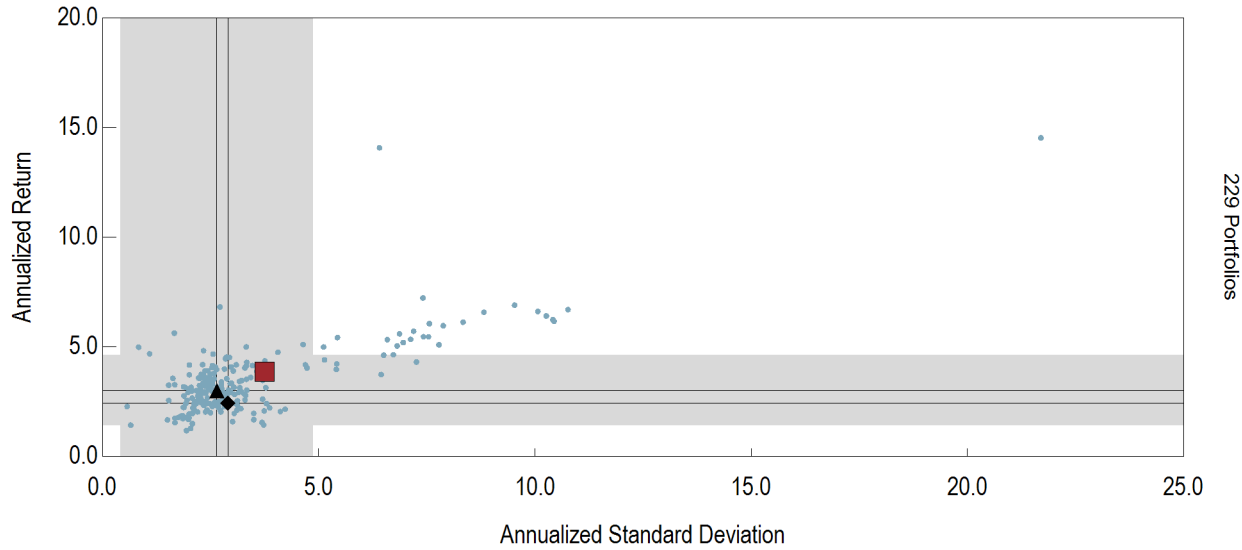
Period Ending: June 30, 2018



	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fixed Income	3.43%	33	3.93%	84	0.70	49	0.52	58	1.93%	59
Fixed Income Blend	2.44%	64	3.02%	69	0.57	68	--	--	0.00%	1
InvestorForce All DB Total Fix Inc Gross Median	2.84%	--	2.54%	--	0.69	--	0.60	--	1.51%	--

Total Fixed Income  
Risk vs. Return (5 Years)

Period Ending: June 30, 2018



- Total Fixed Income
- ◆ Fixed Income Blend
- ▲ Universe Median
- 68% Confidence Interval
- InvestorForce All DB Total Fix Inc Gross

	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fixed Income	3.85%	28	3.75%	83	0.91	49	0.80	16	1.77%	58
Fixed Income Blend	2.44%	72	2.90%	63	0.69	77	--	--	0.00%	1
InvestorForce All DB Total Fix Inc Gross Median	3.00%	--	2.64%	--	0.89	--	0.45	--	1.44%	--

# Equity environment

- We maintain an overweight position to equities through a positive tilt to emerging markets. We do not believe recent price swings reflect any major fundamental change to the trajectory of emerging markets. Equity bull runs in these markets have typically incurred a 10% or larger drawdown sometime during the rally.
- Outside of emerging markets, equities have remained fairly range bound following the February selloff. As corporate earnings rise and prices stay flat, equity valuations have been pushed down to more attractive levels closer in line with the historical average.
- Concerns over global trade contributed to a choppy month for equities, although no major breakthroughs or setbacks occurred. Global equities were up +2.9% on a hedged basis but currency depreciation acted as a drag (+0.5% unhedged).
- The value premium has delivered anomalously poor performance – the worst 10-year return on record (since 1926). However, because performance differences were due to earnings growth disparity rather than moves in valuation, the price difference between value and growth stocks has remained fairly normal. A tactical opportunity to overweight value is not yet apparent - we believe investors should stay the course.
- Equity volatility moved to below-average levels once again, following February's spike. The VIX averaged 15.3 during Q2.
- Currency volatility has frequently been greater than equity market volatility in recent years, causing return disparity for investors with unhedged international assets. A hedging program could allow investors to significantly reduce or eliminate this uncompensated risk.

	QTD TOTAL RETURN		YTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)	(unhedged)	(hedged)
US Large Cap (Russell 1000)	3.6%		2.9%		14.5%	
US Small Cap (Russell 2000)	7.8%		7.7%		17.6%	
US Large Value (Russell 1000 Value)	1.0%		-2.0%		6.0%	
US Large Growth (Russell 1000 Growth)	5.8%		7.3%		22.5%	
International Large (MSCI EAFE)	(1.2%)	3.9%	(2.7%)	0.0%	6.8%	7.9%
Eurozone (Euro Stoxx 50)	(2.3%)	3.6%	(3.7%)	0.5%	3.7%	3.7%
U.K. (FTSE 100)	(3.1%)	9.8%	(0.9%)	2.2%	10.2%	9.9%
Japan (NIKKEI 225)	0.2%	4.4%	0.5%	(1.1%)	15.1%	13.2%
Emerging Markets (MSCI Emerging Markets)	(8.0%)	(3.6%)	(6.7%)	(3.0%)	8.2%	9.5%

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 6/30/18

# Domestic equity

U.S. equities were range bound over the quarter – the S&P 500 Index posted a positive return of 3.4% and traded within a tight range between 2600 and 2800. The ups and downs of trade negotiations, particularly those between the U.S. and China, impacted equity markets during the quarter. However, considerable uncertainty surrounding the outcome of these negotiations likely helped keep equities from breaking out of their range in either direction.

Strong year-over-year earnings growth is expected to continue for the second quarter. According to FactSet, the bottom-up analyst earnings growth forecast for the S&P 500 is 19.9%. Forward 12-month earnings growth expectations were revised higher throughout the quarter while equity prices leveled out. Given that prices tend to follow earnings, there may be potential upside to prices if the expected high growth is realized. Alternatively, higher discount rates from Fed tightening may offset the impact of strong earnings growth.

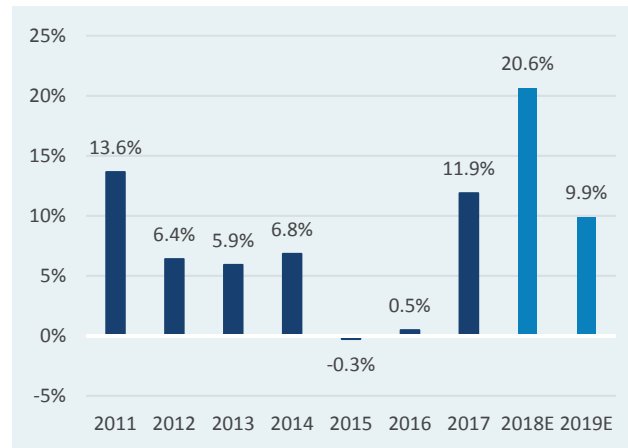
Fundamentals appear unchanged despite falling prices

## U.S. EQUITIES



Source: Russell Investments, as of 6/30/18

## CALENDAR YEAR EARNINGS GROWTH



Source: FactSet, as of 7/6/18

## S&P 500 PRICE & EARNINGS



Source: Bloomberg, as of 6/30/18

# Domestic equity size & style

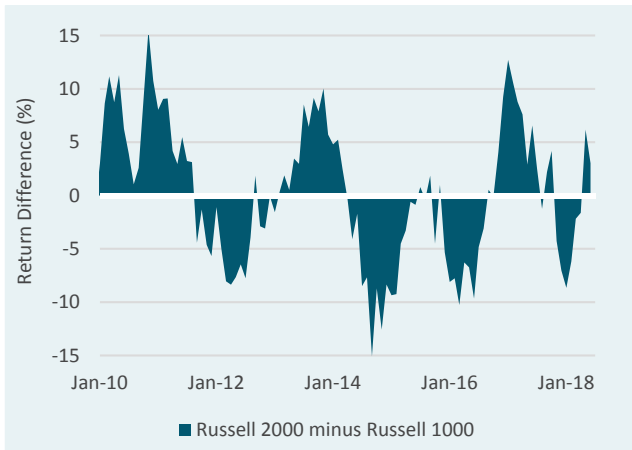
Large cap equities (Russell 1000 3.6%) underperformed small cap (Russell 2000 7.8%) during the quarter. Value stocks continued to lag growth (Russell 1000 Value 1.2% vs. Russell 1000 Growth 5.8%).

Value has delivered anomalously negative returns – the worst 10-year run on record (since 1926). Because performance differences were due to earnings growth disparity rather than moves in valuation, the price difference between value and growth stocks has remained normal. Earnings trends can be somewhat attributed to the global financial crisis where financials lagged considerably, followed by a bull market for

technology stocks (value is concentrated in financials while growth is concentrated in tech). In other words, much of value's underperformance was macroeconomic in nature.

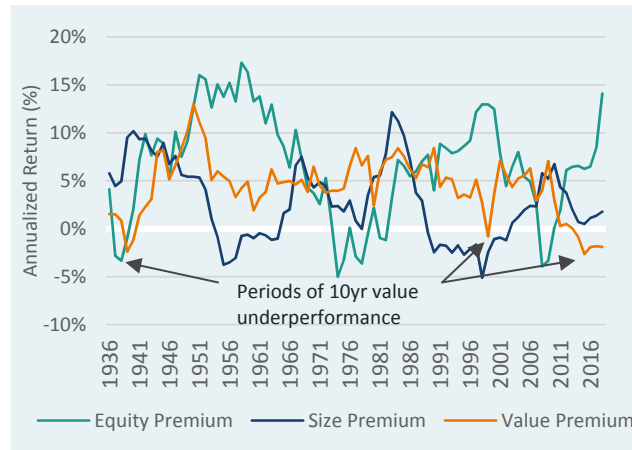
We do not yet see a catalyst for a value comeback, and it is possible that when value bounces back there will not be obvious signals beforehand. Poor recent performance is not always a solid standalone indicator of future reversal. Relative valuations are fairly in line with history, and the economic environment is positive (growth often performs well during later stages of economic cycles). We recommend that value investors stay the course.

**SMALL CAP VS LARGE CAP (YOY)**



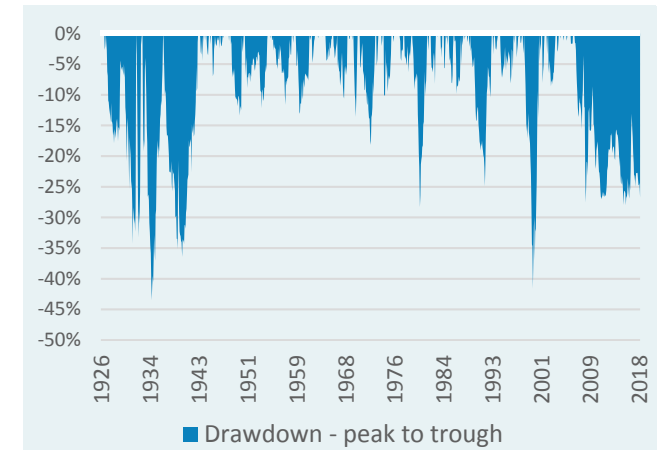
Source: FTSE, as of 6/30/18

**FACTOR PERFORMANCE (10YR ROLLING)**



Source: Kenneth French Library, as of 5/30/18

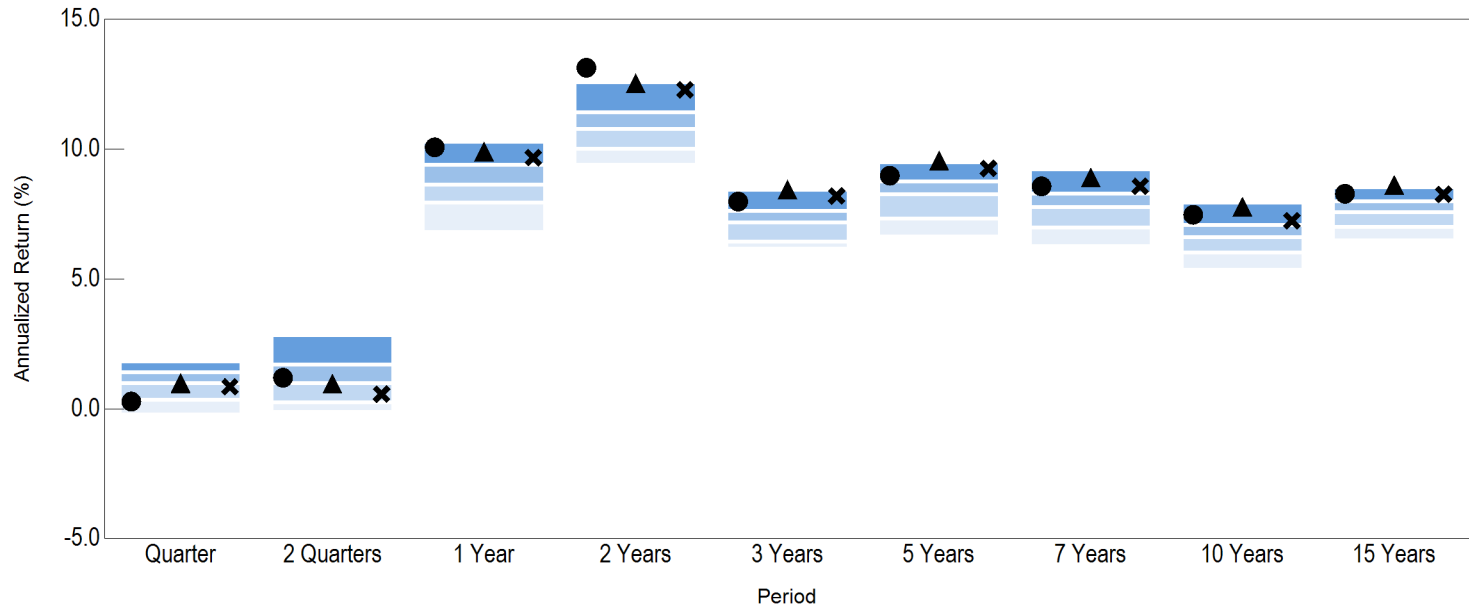
**VALUE - PEAK TO TROUGH**



Source: Kenneth French Library, as of 5/30/18



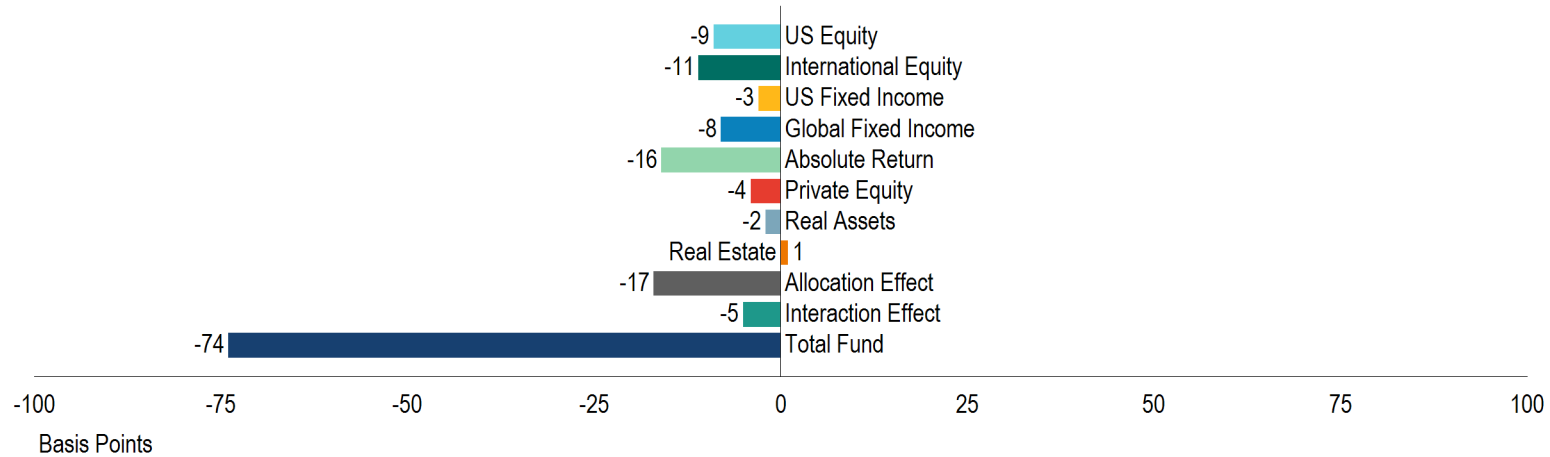
InvestorForce Public DB > \$1B Gross Return Comparison



	Return (Rank)								
	Quarter	2 Quarters	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years	15 Years
5th Percentile	1.82	2.83	10.27	12.56	8.42	9.47	9.22	7.93	8.52
25th Percentile	1.43	1.72	9.40	11.43	7.64	8.76	8.31	7.08	8.00
Median	1.00	1.00	8.65	10.80	7.18	8.26	7.79	6.63	7.59
75th Percentile	0.36	0.25	7.96	10.02	6.46	7.33	7.00	6.02	7.02
95th Percentile	-0.22	-0.11	6.82	9.40	6.18	6.65	6.28	5.37	6.51
# of Portfolios	63	62	62	62	62	61	61	58	54
● Total Fund	0.28 (79)	1.19 (42)	10.07 (8)	13.13 (2)	7.98 (15)	8.98 (20)	8.57 (16)	7.47 (9)	8.28 (11)
▲ Policy Index	0.98 (53)	0.97 (51)	9.90 (11)	12.54 (6)	8.44 (5)	9.56 (5)	8.91 (8)	7.78 (6)	8.61 (3)
✕ Allocation Index	0.85 (56)	0.57 (64)	9.67 (13)	12.28 (8)	8.20 (9)	9.25 (16)	8.57 (16)	7.24 (14)	8.26 (11)

Total Fund  
Performance Attribution (One Quarter)

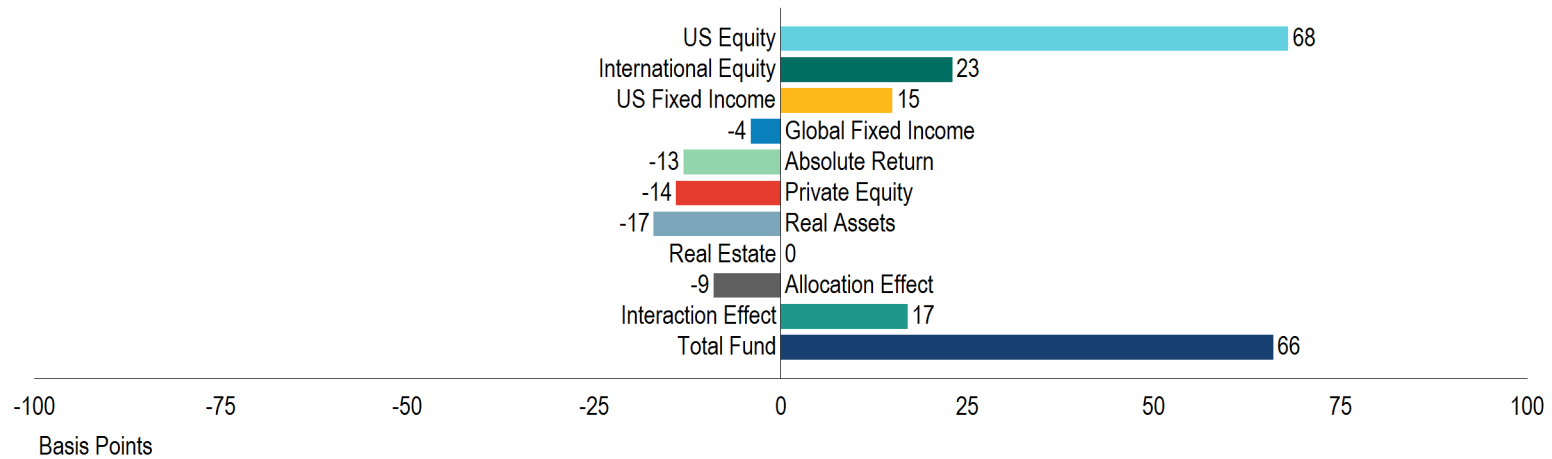
Period Ending: June 30, 2018



	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	3.55%	3.89%	-0.34%	-0.09%	0.13%	-0.01%	0.02%
International Equity	-2.82%	-2.40%	-0.42%	-0.11%	-0.12%	-0.02%	-0.25%
US Fixed Income	-0.35%	-0.16%	-0.19%	-0.03%	0.00%	0.00%	-0.02%
Global Fixed Income	-6.71%	-3.35%	-3.36%	-0.08%	-0.09%	-0.07%	-0.24%
Absolute Return	-1.34%	0.41%	-1.74%	-0.16%	0.02%	0.03%	-0.11%
Private Equity	2.40%	2.79%	-0.39%	-0.04%	-0.06%	0.01%	-0.08%
Real Assets	3.33%	3.71%	-0.38%	-0.02%	-0.03%	0.00%	-0.05%
Real Estate	2.18%	2.05%	0.13%	0.01%	-0.02%	0.00%	-0.01%
<b>Total</b>	<b>0.27%</b>	<b>1.01%</b>	<b>-0.74%</b>	<b>-0.51%</b>	<b>-0.17%</b>	<b>-0.05%</b>	<b>-0.74%</b>

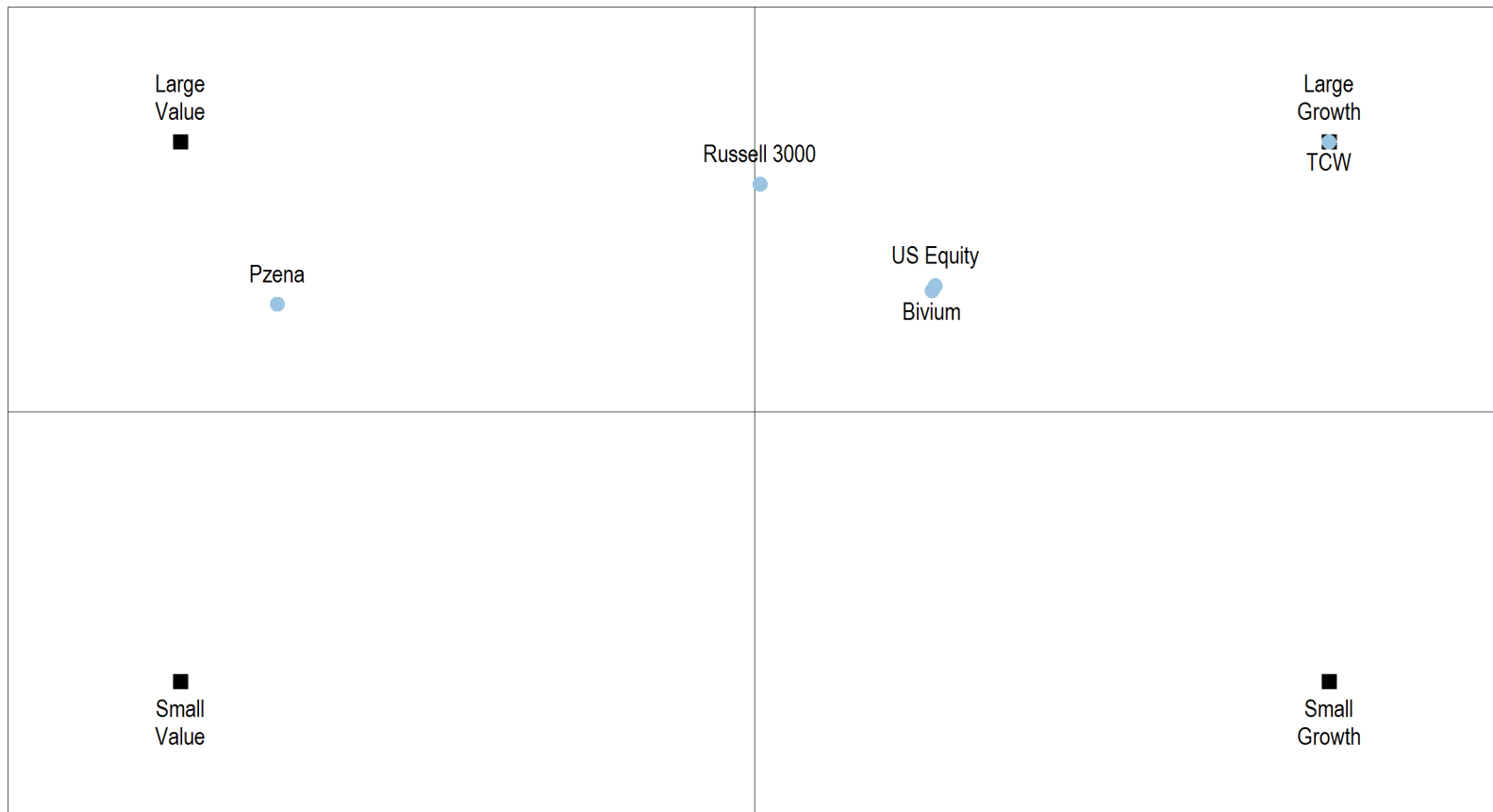
Total Fund  
Performance Attribution (One Year)

Period Ending: June 30, 2018



	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	17.39%	14.78%	2.61%	0.68%	0.24%	0.13%	1.05%
International Equity	9.11%	8.24%	0.87%	0.23%	-0.03%	0.05%	0.25%
US Fixed Income	0.71%	-0.40%	1.10%	0.15%	0.04%	-0.01%	0.18%
Global Fixed Income	0.02%	1.90%	-1.89%	-0.04%	-0.14%	-0.04%	-0.23%
Absolute Return	2.14%	5.13%	-2.99%	-0.13%	0.10%	-0.06%	-0.09%
Private Equity	11.42%	16.20%	-4.78%	-0.14%	-0.21%	0.04%	-0.30%
Real Assets	10.45%	13.78%	-3.33%	-0.17%	-0.07%	0.05%	-0.19%
Real Estate	8.44%	8.44%	-0.01%	0.00%	-0.01%	0.00%	-0.01%
<b>Total</b>	<b>10.01%</b>	<b>8.94%</b>	<b>1.07%</b>	<b>0.57%</b>	<b>-0.09%</b>	<b>0.17%</b>	<b>0.66%</b>

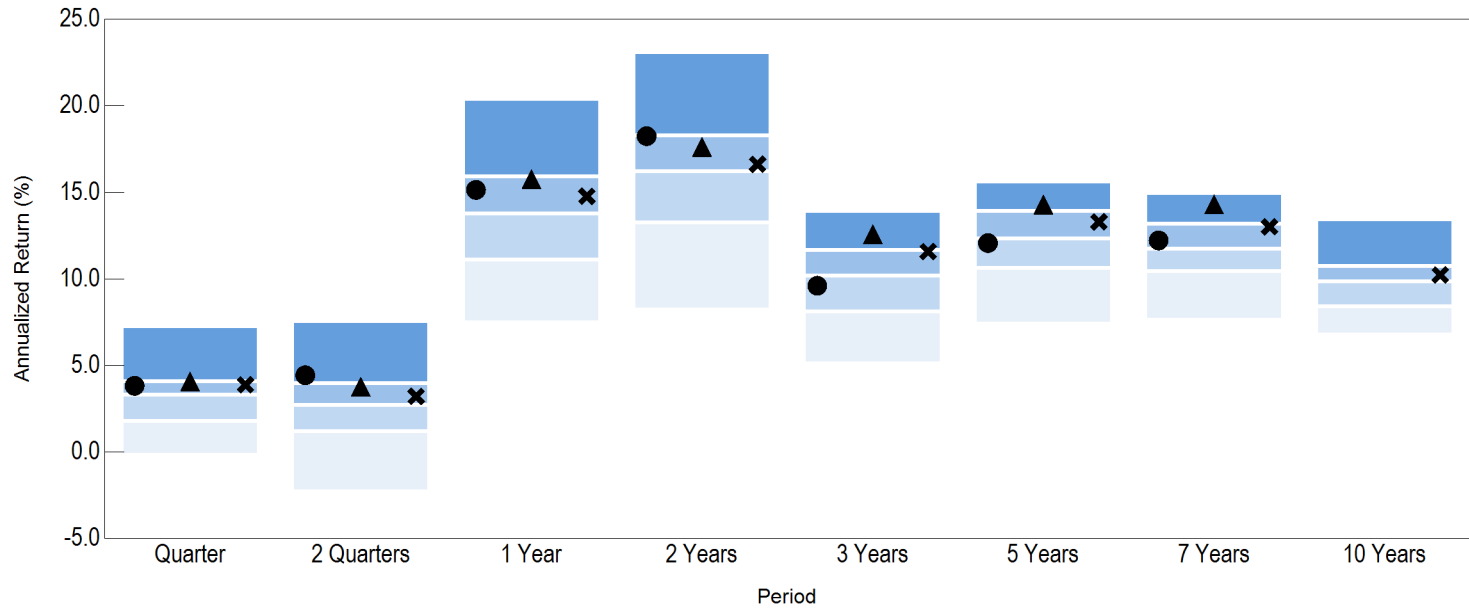
US Effective Style Map



US Effective Style Map



eV US All Cap Core Equity Gross Return Comparison



	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
<b>5th Percentile</b>	7.26		7.57		20.39		23.08		13.92		15.63		14.95		13.42	
<b>25th Percentile</b>	4.10		3.99		15.96		18.30		11.70		13.95		13.20		10.78	
<b>Median</b>	3.34		2.74		13.80		16.25		10.21		12.38		11.75		9.87	
<b>75th Percentile</b>	1.83		1.23		11.15		13.30		8.16		10.64		10.46		8.45	
<b>95th Percentile</b>	-0.15		-2.26		7.51		8.25		5.16		7.44		7.68		6.83	
<b># of Portfolios</b>	121		121		120		119		118		108		102		88	
<b>● Bivium</b>	3.83	(36)	4.44	(23)	15.15	(31)	18.25	(27)	9.61	(59)	12.07	(54)	12.22	(42)	--	(--)
<b>▲ Russell 3000 +1%</b>	4.09	(26)	3.77	(29)	15.78	(26)	17.63	(33)	12.59	(17)	14.30	(21)	14.30	(15)	--	(--)
<b>✕ Russell 3000</b>	3.89	(34)	3.22	(37)	14.78	(38)	16.63	(45)	11.58	(27)	13.29	(33)	13.01	(30)	10.23	(41)

Characteristics

	Portfolio	Russell 3000
Number of Holdings	146	3,008
Weighted Avg. Market Cap. (\$B)	155.2	164.7
Median Market Cap. (\$B)	59.1	1.8
Price To Earnings	35.6	22.8
Price To Book	6.2	4.6
Price To Sales	4.3	4.0
Return on Equity (%)	20.2	19.4
Yield (%)	1.7	1.8
Beta (holdings; domestic)	1.0	1.0

Top Holdings

ORACLE	5.7%
NATIONAL OILWELL VARCO	4.7%
SKYWORKS SOLUTIONS	3.3%
QORVO	3.2%
MASTERCARD	3.2%
FACEBOOK CLASS A	2.6%
VISA 'A'	2.6%
CVS HEALTH	2.6%
SWISS RE SPN.ADR 1:4	2.6%
ALPHABET 'C'	2.6%

Best Performers

	Return %
NETFLIX (NFLX)	32.5%
OCCIDENTAL PTL. (OXY)	30.0%
FACEBOOK CLASS A (FB)	21.6%
VALERO ENERGY (VLO)	20.3%
NIKE 'B' (NKE)	20.3%
BOSTON SCIENTIFIC (BSX)	19.7%
BAKER HUGHES A (BHGE)	19.5%
KROGER (KR)	19.4%
AUTOMATIC DATA PROC. (ADP)	18.8%
KINDER MORGAN (KMI)	18.8%

Worst Performers

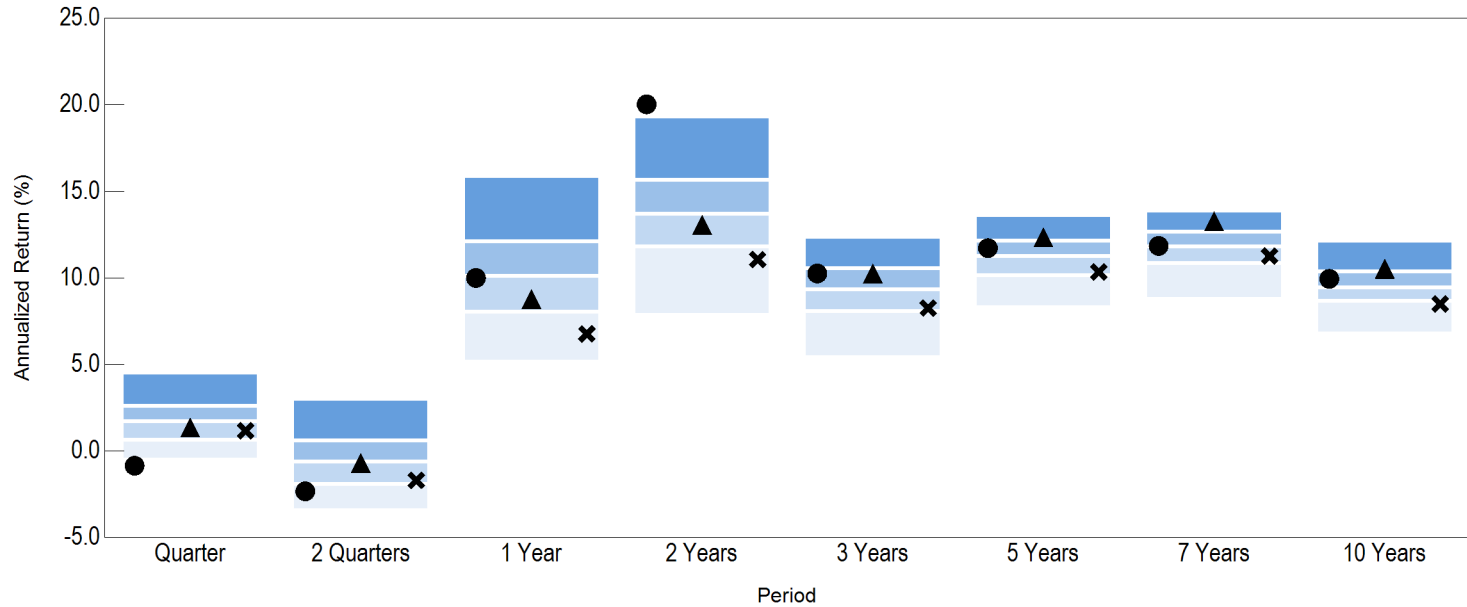
	Return %
BRIGHTHOUSE FINANCIAL (BHF)	-22.0%
CARDINAL HEALTH (CAH)	-21.3%
APPLIED MATS. (AMAT)	-16.6%
TERADYNE (TER)	-16.5%
HEWLETT PACKARD ENTER. (HPE)	-16.1%
GENERAL DYNAMICS (GD)	-15.3%
STARBUCKS (SBUX)	-15.2%
GOLDMAN SACHS GP. (GS)	-12.1%
LOCKHEED MARTIN (LMT)	-12.0%
BRISTOL MYERS SQUIBB (BMY)	-11.9%

**Bivium Performance Attribution vs. Russell 3000**

	Total Effects	Attribution Effects			Returns		Sector Weights				
		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	-0.03%	0.10%	-0.11%	-0.02%	16.37%	14.46%	4.43%	5.48%			
Materials	0.02%	-0.03%	0.03%	0.02%	1.40%	2.34%	1.27%	3.13%			
Industrials	0.15%	0.02%	0.14%	0.00%	-1.93%	-2.09%	8.64%	10.93%			
Consumer Discretionary	-0.25%	-0.14%	-0.16%	0.04%	7.10%	8.17%	8.98%	12.62%			
Consumer Staples	0.34%	0.33%	0.12%	-0.11%	3.52%	-1.52%	4.43%	6.63%			
Health Care	-0.53%	-0.49%	0.01%	-0.05%	0.79%	4.38%	15.05%	13.64%			
Financials	-0.45%	-0.10%	-0.32%	-0.03%	-3.09%	-2.41%	20.26%	15.24%			
Information Technology	0.14%	-0.04%	0.18%	-0.01%	6.74%	6.89%	30.02%	24.00%			
Telecommunication Services	0.03%	0.03%	0.00%	0.00%	0.94%	-0.52%	1.68%	1.79%			
Utilities	-0.02%	-0.03%	-0.01%	0.02%	3.57%	4.54%	0.78%	2.86%			
Real Estate	-0.16%	-0.18%	-0.11%	0.12%	3.12%	8.08%	1.18%	3.69%			
Cash	-0.11%	0.00%	-0.11%	0.00%	0.46%	--	3.27%	0.00%			
<b>Portfolio</b>	<b>-0.89%</b>	<b>=</b>	<b>-0.52%</b>	<b>+</b>	<b>-0.34%</b>	<b>+</b>	<b>-0.03%</b>	<b>2.98%</b>	<b>3.87%</b>	<b>100.00%</b>	<b>100.00%</b>



eV US Large Cap Value Equity Gross Return Comparison



	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
<b>5th Percentile</b>	4.52	3.00	15.87	19.31	12.36	13.61	13.86	12.14								
<b>25th Percentile</b>	2.65	0.63	12.14	15.70	10.57	12.16	12.68	10.41								
<b>Median</b>	1.74	-0.60	10.15	13.73	9.38	11.29	11.83	9.49								
<b>75th Percentile</b>	0.69	-1.86	8.07	11.84	8.12	10.18	10.89	8.69								
<b>95th Percentile</b>	-0.47	-3.39	5.18	7.89	5.46	8.34	8.81	6.82								
<b># of Portfolios</b>	336	336	336	335	333	323	297	268								
<b>● Pzena</b>	-0.85 (99)	-2.33 (86)	10.00 (51)	20.03 (4)	10.26 (30)	11.72 (38)	11.85 (49)	9.95 (38)								
<b>▲ Russell 1000 Value +2%</b>	1.36 (61)	-0.70 (53)	8.77 (67)	13.07 (61)	10.26 (30)	12.36 (22)	13.28 (14)	10.53 (24)								
<b>✕ Russell 1000 Value</b>	1.18 (66)	-1.69 (71)	6.77 (86)	11.06 (84)	8.26 (73)	10.34 (72)	11.27 (65)	8.49 (79)								

Characteristics

	Portfolio	Russell 1000 Value
Number of Holdings	43	729
Weighted Avg. Market Cap. (\$B)	88.8	110.7
Median Market Cap. (\$B)	41.4	9.6
Price To Earnings	16.1	20.1
Price To Book	1.9	2.6
Price To Sales	1.8	3.0
Return on Equity (%)	10.3	12.3
Yield (%)	2.6	2.5
Beta (holdings; domestic)	1.2	1.0

Top Holdings

FORD MOTOR	4.3%
ROYAL DUTCH SHELL A ADR 1:2	3.6%
ORACLE	3.5%
CITIGROUP	3.5%
EDISON INTL.	3.4%
COGNIZANT TECH.SLTN.'A'	3.3%
AMERICAN INTL.GP.	3.3%
CAPITAL ONE FINL.	3.2%
WELLS FARGO & CO	3.2%
INTERPUBLIC GROUP	3.2%

Best Performers

	Return %
MURPHY OIL (MUR)	31.8%
MICRO FOCUS INTL.SPN.ADR 1:1 (MFGP)	23.0%
CENOVUS ENERGY (NYS) (CVE)	22.0%
NATIONAL OILWELL VARCO (NOV)	18.0%
BP SPN.ADR 1:6 (BP)	14.1%
MERCK & COMPANY (MRK)	12.3%
EXXON MOBIL (XOM)	12.0%
EXPRESS SCRIPTS HOLDING (ESRX)	11.8%
ROYAL DUTCH SHELL A ADR 1:2 (RDS.A)	9.9%
AMGEN (AMGN)	9.1%

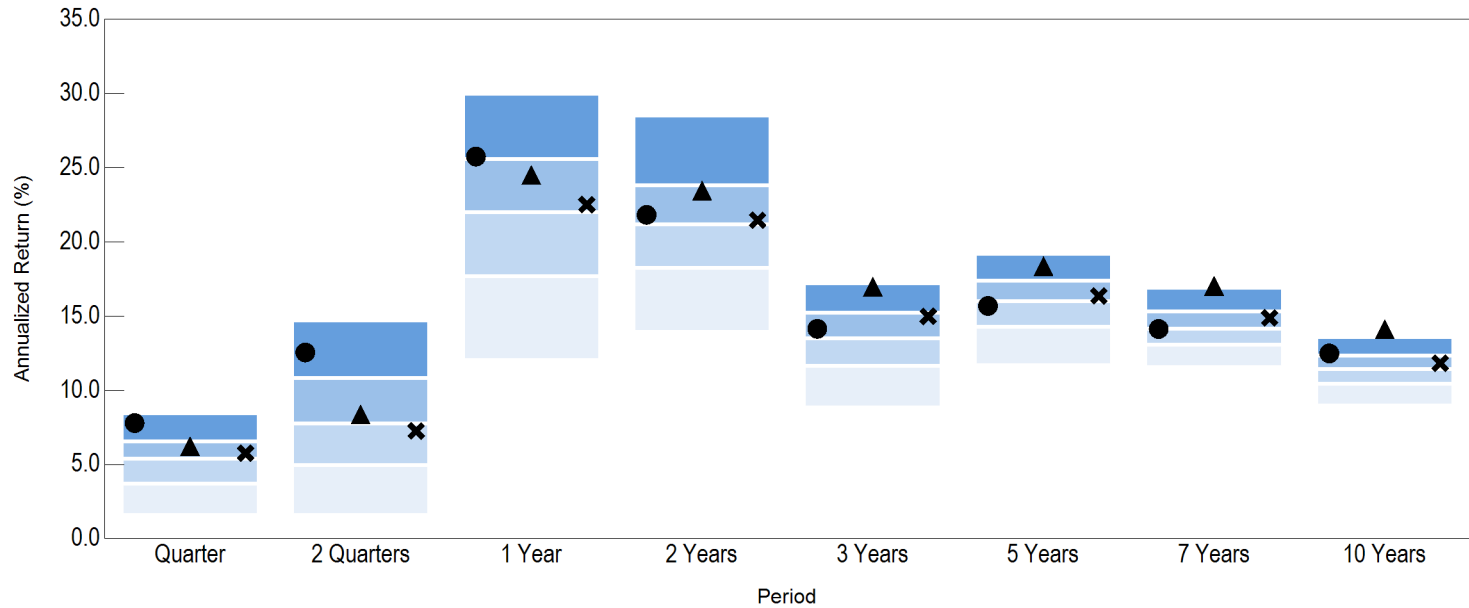
Worst Performers

	Return %
BRIGHTHOUSE FINANCIAL (BHF)	-22.0%
CARDINAL HEALTH (CAH)	-21.3%
HEWLETT PACKARD ENTER. (HPE)	-16.1%
MYLAN (MYL)	-12.2%
GOLDMAN SACHS GP. (GS)	-12.1%
MORGAN STANLEY (MS)	-11.7%
UBS GROUP (NYS) (UBS)	-9.6%
DOVER (DOV)	-7.1%
FRANKLIN RESOURCES (BEN)	-6.9%
VOYA FINANCIAL (VOYA)	-6.9%

**Pzena Performance Attribution vs. Russell 1000 Value**

	Total Effects	Attribution Effects			Returns		Sector Weights				
		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.26%	-0.20%	0.54%	-0.08%	12.56%	14.46%	14.86%	10.80%			
Materials	-0.02%	--	-0.02%	--	--	1.95%	0.00%	2.95%			
Industrials	0.09%	-0.35%	0.21%	0.22%	-7.12%	-2.92%	2.98%	8.23%			
Consumer Discretionary	-0.02%	-0.10%	0.17%	-0.10%	2.43%	4.05%	12.20%	6.17%			
Consumer Staples	0.33%	0.07%	0.31%	-0.06%	-3.13%	-4.05%	1.62%	7.62%			
Health Care	-0.64%	-0.66%	-0.01%	0.03%	-2.22%	2.40%	13.58%	14.27%			
Financials	-1.23%	-0.40%	-0.63%	-0.20%	-4.94%	-3.45%	40.86%	27.31%			
Information Technology	-0.46%	-0.35%	-0.04%	-0.07%	-4.83%	-1.11%	11.23%	9.29%			
Telecommunication Services	0.12%	--	0.12%	--	--	-2.98%	0.00%	2.92%			
Utilities	-0.19%	-0.22%	-0.11%	0.14%	0.34%	4.19%	2.10%	5.84%			
Real Estate	-0.33%	--	-0.33%	--	--	8.40%	0.00%	4.61%			
Cash	0.00%	0.00%	0.00%	0.00%	0.46%	--	0.57%	0.00%			
<b>Portfolio</b>	<b>-2.11%</b>	<b>=</b>	<b>-2.22%</b>	<b>+</b>	<b>0.21%</b>	<b>+</b>	<b>-0.11%</b>	<b>-0.95%</b>	<b>1.16%</b>	<b>100.00%</b>	<b>100.00%</b>

eV US Large Cap Growth Equity Gross Return Comparison



	Return (Rank)							
	Quarter	2 Quarters	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	8.44	14.68	29.95	28.48	17.19	19.18	16.88	13.56
25th Percentile	6.60	10.85	25.60	23.82	15.24	17.39	15.32	12.35
Median	5.43	7.79	22.03	21.20	13.51	16.02	14.15	11.44
75th Percentile	3.72	4.97	17.72	18.25	11.67	14.31	13.08	10.45
95th Percentile	1.60	1.60	12.06	13.95	8.85	11.70	11.60	9.01
# of Portfolios	256	256	256	253	250	246	229	219
● TCW	7.79 (9)	12.55 (14)	25.75 (25)	21.82 (46)	14.14 (44)	15.68 (55)	14.13 (52)	12.48 (21)
▲ Russell 1000 Growth +2%	6.23 (32)	8.37 (46)	24.51 (31)	23.46 (28)	16.98 (8)	18.36 (12)	17.03 (5)	14.12 (4)
✕ Russell 1000 Growth	5.76 (43)	7.25 (55)	22.51 (46)	21.46 (48)	14.98 (29)	16.36 (44)	14.88 (33)	11.83 (40)

Characteristics

	Portfolio	Russell 1000 Growth
Number of Holdings	34	542
Weighted Avg. Market Cap. (\$B)	178.6	247.3
Median Market Cap. (\$B)	57.6	12.0
Price To Earnings	59.8	27.4
Price To Book	12.0	8.1
Price To Sales	8.2	5.5
Return on Equity (%)	26.2	30.4
Yield (%)	0.5	1.2
Beta (holdings; domestic)	1.1	1.1

Top Holdings

AMAZON.COM	7.0%
VISA 'A'	6.3%
FACEBOOK CLASS A	6.2%
ALPHABET 'C'	6.1%
ADOBE SYSTEMS	5.6%
SALESFORCE.COM	5.1%
AMERICAN TOWER	4.3%
SERVICENOW	4.1%
PAYPAL HOLDINGS	3.7%
HOME DEPOT	3.1%

Best Performers

	Return %
ALIGN TECHNOLOGY (ALGN)	36.2%
TRANSUNION (TRU)	26.3%
FACEBOOK CLASS A (FB)	21.6%
ILLUMINA (ILMN)	18.1%
AMAZON.COM (AMZN)	17.4%
SALESFORCE.COM (CRM)	17.3%
BIOMARIN PHARM. (BMRN)	16.2%
ULTA BEAUTY (ULTA)	14.3%
ADOBE SYSTEMS (ADBE)	12.8%
WEST PHARM.SVS. (WST)	12.6%

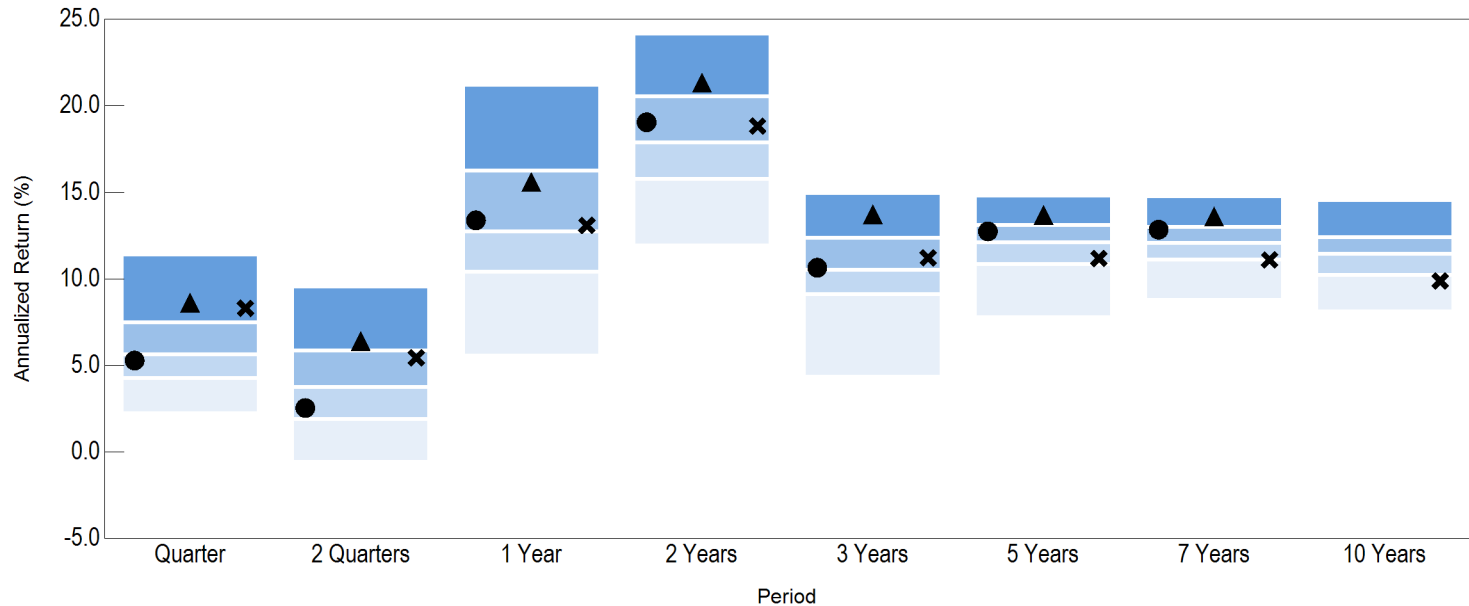
Worst Performers

	Return %
STARBUCKS (SBUX)	-15.2%
FASTENAL (FAST)	-11.2%
CELGENE (CELG)	-11.0%
CONCHO RESOURCES (CXO)	-8.0%
CHUBB (CB)	-6.6%
BOOKING HOLDINGS (BKNG)	-2.6%
CHARLES SCHWAB (SCHW)	-2.0%
AIR PRDS.& CHEMS. (APD)	-1.4%
MONSTER BEVERAGE (MNST)	0.2%
AMERICAN TOWER (AMT)	0.3%

TCW Performance Attribution vs. Russell 1000 Growth

	Total Effects	Attribution Effects			Returns		Sector Weights				
		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	-0.24%	-0.15%	0.03%	-0.11%	-7.97%	9.97%	1.46%	0.83%			
Materials	0.01%	-0.12%	0.06%	0.07%	-1.38%	2.40%	1.36%	3.10%			
Industrials	1.15%	1.24%	0.56%	-0.64%	7.11%	-2.59%	6.15%	12.77%			
Consumer Discretionary	-0.49%	-0.47%	-0.08%	0.06%	6.80%	9.30%	16.46%	18.71%			
Consumer Staples	0.31%	0.30%	0.08%	-0.07%	5.23%	0.49%	4.95%	6.37%			
Health Care	0.42%	0.42%	0.00%	-0.01%	8.82%	5.45%	12.29%	12.58%			
Financials	-0.36%	-0.05%	-0.24%	-0.06%	-1.70%	-0.17%	7.53%	3.51%			
Information Technology	1.25%	1.13%	0.06%	0.06%	11.54%	8.63%	40.86%	38.78%			
Telecommunication Services	0.00%	--	0.00%	--	--	5.56%	0.00%	0.92%			
Utilities	0.00%	--	0.00%	--	--	0.65%	0.00%	0.01%			
Real Estate	-0.31%	-0.09%	-0.02%	-0.19%	1.50%	5.34%	7.48%	2.41%			
Cash	-0.08%	0.00%	-0.08%	0.00%	0.46%	--	1.46%	0.00%			
<b>Portfolio</b>	<b>1.67%</b>	<b>=</b>	<b>2.21%</b>	<b>+</b>	<b>0.36%</b>	<b>+</b>	<b>-0.90%</b>	<b>7.47%</b>	<b>5.80%</b>	<b>100.00%</b>	<b>100.00%</b>

eV US Small Cap Value Equity Gross Return Comparison



	Return (Rank)							
	Quarter	2 Quarters	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	11.38	9.56	21.20	24.18	14.94	14.79	14.77	14.54
25th Percentile	7.50	5.89	16.28	20.55	12.39	13.12	13.01	12.45
Median	5.66	3.79	12.76	17.92	10.54	12.13	12.10	11.49
75th Percentile	4.28	1.93	10.44	15.78	9.16	10.87	11.13	10.24
95th Percentile	2.27	-0.53	5.58	11.96	4.38	7.80	8.81	8.16
# of Portfolios	223	223	223	221	215	207	199	178
● Kennedy	5.29 (58)	2.55 (67)	13.39 (45)	19.05 (36)	10.65 (49)	12.75 (32)	12.84 (30)	-- (--)
▲ Russell 2000 Value +2.5%	8.62 (16)	6.42 (19)	15.60 (29)	21.34 (20)	13.73 (11)	13.69 (20)	13.61 (17)	-- (--)
✕ Russell 2000 Value	8.30 (19)	5.44 (29)	13.10 (47)	18.83 (40)	11.22 (42)	11.18 (69)	11.10 (77)	9.88 (84)

Characteristics

	Portfolio	Russell 2000 Value
Number of Holdings	310	1,364
Weighted Avg. Market Cap. (\$B)	2.8	2.1
Median Market Cap. (\$B)	1.5	0.8
Price To Earnings	18.5	15.6
Price To Book	2.6	1.7
Price To Sales	2.9	2.6
Return on Equity (%)	7.7	7.2
Yield (%)	1.4	1.8
Beta (holdings; domestic)	1.2	1.1

Top Holdings

IBERIABANK	0.9%
VERITEX HOLDINGS	0.8%
G-III APPAREL GROUP	0.8%
ALLEGHENY TECHS.	0.8%
LIVANOVA	0.8%
FNB	0.8%
AMERIS BANCORP	0.8%
OCEANFIRST FINL.	0.8%
STERLING BANCORP	0.7%
BRINK'S	0.7%

Best Performers

	Return %
TANDEM DIABETES CARE (TNDM)	344.0%
VERASTEM (VSTM)	130.9%
REATA PHARMS.CL.A (RETA)	70.5%
DMC GLOBAL (BOOM)	67.9%
AVID BIOSERVICES (CDMO)	62.3%
OASIS PETROLEUM (OAS)	60.1%
NUVECTRA (NVTR)	57.7%
FRANCESCA'S HOLDINGS (FRAN)	57.3%
EVOLENT HEALTH CL.A (EVH)	47.7%
SM ENERGY (SM)	42.8%

Worst Performers

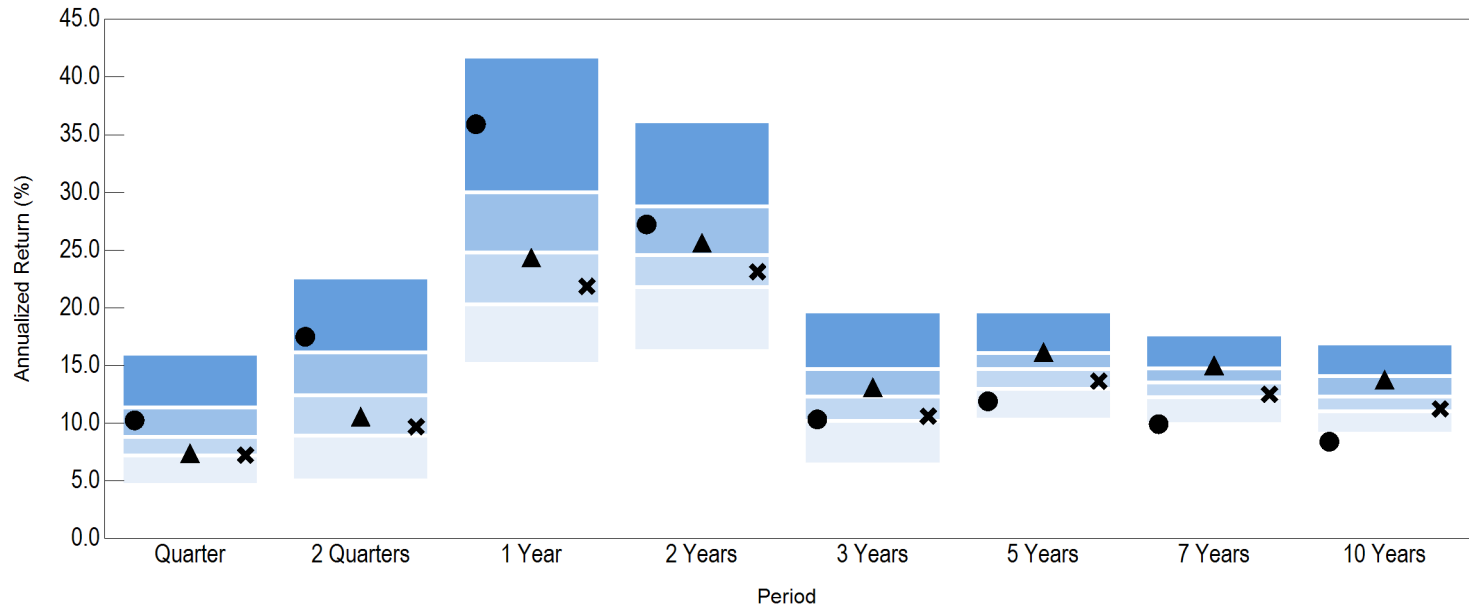
	Return %
PETROQUEST ENERGY (PQUE)	-60.7%
RECRO PHARMA (REPH)	-54.4%
UNIVERSAL ELECTRONICS (UEIC)	-36.5%
MDC PARTNERS 'A' (NAS) (MDCA)	-36.1%
SMART GLOBAL HOLDINGS (SGH)	-36.1%
R R DONNELLEY & SONS (RRD)	-32.6%
ANAPTYSBIO (ANAB)	-31.7%
MAXLINEAR (MXL)	-31.5%
HORIZON GLOBAL (HZN)	-27.7%
TRIUMPH GROUP NEW (TGI)	-22.1%



**Kennedy Performance Attribution vs. Russell 2000 Value**

	Total Effects	Attribution Effects			Returns		Sector Weights				
		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	-1.02%	-1.09%	-0.34%	0.41%	4.86%	22.89%	3.77%	6.04%			
Materials	-0.39%	-0.15%	-0.09%	-0.15%	2.71%	6.11%	8.81%	4.33%			
Industrials	-0.75%	-0.44%	-0.12%	-0.19%	2.07%	5.66%	17.44%	12.27%			
Consumer Discretionary	-0.44%	-0.50%	0.00%	0.05%	3.52%	8.05%	9.80%	10.94%			
Consumer Staples	-0.12%	-0.20%	0.01%	0.07%	-2.25%	6.71%	1.45%	2.25%			
Health Care	0.47%	0.62%	-0.03%	-0.12%	19.36%	10.15%	5.45%	6.75%			
Financials	0.29%	0.01%	0.28%	0.00%	4.26%	4.23%	24.50%	31.74%			
Information Technology	-0.43%	-0.32%	-0.04%	-0.07%	2.65%	6.25%	11.01%	8.99%			
Telecommunication Services	-0.05%	-0.07%	-0.01%	0.02%	0.23%	14.53%	0.30%	0.46%			
Utilities	0.07%	0.09%	-0.01%	-0.01%	10.05%	8.61%	5.31%	6.20%			
Real Estate	-0.20%	-0.11%	-0.11%	0.02%	13.69%	14.76%	8.45%	10.05%			
Cash	-0.28%	0.00%	-0.28%	0.00%	0.46%	--	3.67%	0.00%			
Unclassified	0.00%	0.00%	0.00%	0.00%	2.17%	--	0.03%	0.00%			
<b>Portfolio</b>	<b>-2.85%</b>	<b>=</b>	<b>-2.15%</b>	<b>+</b>	<b>-0.73%</b>	<b>+</b>	<b>0.03%</b>	<b>5.20%</b>	<b>8.04%</b>	<b>100.00%</b>	<b>100.00%</b>

eV US Small Cap Growth Equity Gross Return Comparison



	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
<b>5th Percentile</b>	16.02		22.62		41.76		36.16		19.65		19.68		17.65		16.91	
<b>25th Percentile</b>	11.38		16.14		30.04		28.81		14.75		16.14		14.80		14.09	
<b>Median</b>	8.84		12.45		24.84		24.60		12.33		14.73		13.53		12.34	
<b>75th Percentile</b>	7.22		8.97		20.30		21.83		10.25		13.01		12.27		11.07	
<b>95th Percentile</b>	4.71		5.06		15.18		16.26		6.45		10.36		9.97		9.11	
<b># of Portfolios</b>	168		168		168		165		163		156		150		138	
<b>● Next Century-SCG</b>	10.25	(34)	17.49	(18)	35.91	(14)	27.23	(34)	10.33	(75)	11.90	(89)	9.92	(96)	8.39	(97)
<b>▲ Russell 2000 Growth +2.5%</b>	7.40	(73)	10.59	(62)	24.36	(55)	25.63	(45)	13.13	(41)	16.17	(25)	15.02	(22)	13.78	(31)
<b>✕ Russell 2000 Growth</b>	7.23	(75)	9.70	(71)	21.86	(70)	23.13	(65)	10.60	(72)	13.65	(69)	12.50	(70)	11.24	(72)

**Characteristics**

	Portfolio	Russell 2000 Growth
Number of Holdings	61	1,225
Weighted Avg. Market Cap. (\$B)	3.1	2.4
Median Market Cap. (\$B)	2.4	1.0
Price To Earnings	9.3	19.2
Price To Book	9.1	5.3
Price To Sales	5.7	3.6
Return on Equity (%)	3.9	5.6
Yield (%)	0.1	0.5
Beta (holdings; domestic)	1.1	1.3

**Top Holdings**

KINSALE CAPITAL GROUP	4.0%
DYCOM INDS.	3.2%
AT HOME GROUP	3.0%
RBC BEARINGS	2.9%
USA TECHNOLOGIES	2.9%
IRHYTHM TECHNOLOGIES	2.8%
HEALTHEQUITY	2.7%
TECHTARGET	2.5%
OLD DOMINION FGT.LINES	2.4%
GRANITE CON.	2.4%

**Best Performers**

	Return %
STAAR SURGICAL (STAA)	109.5%
TACTILE SYSTEMS TECH. (TCMD)	63.5%
USA TECHNOLOGIES (USAT)	55.6%
CAREDX (CDNA)	53.6%
INOGEN (INGN)	51.7%
EXACT SCIS. (EXAS)	48.3%
TECHTARGET (TTGT)	42.9%
ABIOMED (ABMD)	40.6%
AXOGEN (AXGN)	37.7%
NEW RELIC (NEWR)	35.7%

**Worst Performers**

	Return %
CUTERA (CUTR)	-19.8%
LGI HOMES (LGIH)	-18.2%
KNIGHT-SWIFT TRSP.HDG. 'A' (KNX)	-16.8%
COHERENT (COHR)	-16.5%
SUMMIT MATERIALS 'A' (SUM)	-13.3%
US CONCRETE (USCR)	-13.1%
DYCOM INDS. (DY)	-12.2%
CARGURUS (CARG)	-9.7%
MARKETAXESS HOLDINGS (MKTX)	-8.8%
BOINGO WIRELESS (WIFI)	-8.8%

Next Century-SCG Performance Attribution vs. Russell 2000 Growth

	Total Effects	Attribution Effects			Returns		Sector Weights				
		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	-0.09%	--	-0.09%	--	--	14.72%	0.00%	1.15%			
Materials	-0.63%	-0.39%	-0.09%	-0.15%	-7.32%	1.49%	6.06%	4.40%			
Industrials	-0.58%	-0.07%	-0.48%	-0.03%	1.21%	1.62%	26.43%	17.89%			
Consumer Discretionary	-0.06%	0.40%	-0.24%	-0.22%	13.50%	10.50%	6.00%	13.26%			
Consumer Staples	-0.23%	--	-0.23%	--	--	16.44%	0.00%	2.48%			
Health Care	4.39%	5.06%	-0.06%	-0.61%	29.19%	9.11%	22.14%	25.20%			
Financials	-1.06%	-0.31%	-0.32%	-0.44%	-1.53%	3.52%	14.79%	6.17%			
Information Technology	1.17%	1.49%	-0.03%	-0.28%	13.90%	7.92%	20.11%	24.86%			
Telecommunication Services	-0.37%	-0.13%	0.03%	-0.27%	-8.80%	9.31%	2.21%	0.74%			
Utilities	0.00%	--	0.00%	--	--	6.47%	0.00%	0.63%			
Real Estate	-0.05%	--	-0.05%	--	--	8.84%	0.00%	3.23%			
Cash	-0.15%	0.00%	-0.15%	0.00%	0.46%	--	2.26%	0.00%			
Unclassified	0.00%	--	--	--	--	--	0.00%	0.00%			
<b>Portfolio</b>	<b>2.33%</b>	<b>=</b>	<b>6.04%</b>	<b>+</b>	<b>-1.71%</b>	<b>+</b>	<b>-2.00%</b>	<b>9.53%</b>	<b>7.20%</b>	<b>100.00%</b>	<b>100.00%</b>

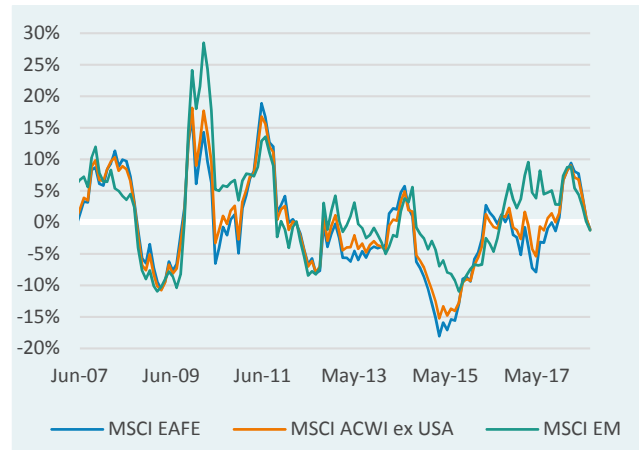
# International developed equity

Unhedged international equities underperformed U.S. equities during Q1 (MSCI EAFE -1.2% vs. S&P 500 +3.4%). On a hedged basis, international equities delivered returns of 3.9%, outpacing the U.S. market. Currency volatility has frequently been greater than equity market volatility in recent years, causing considerable return disparity for investors with unhedged investments in international assets. Equity returns in most markets have been positive year-to-date on an ex-currency basis.

Earnings growth remains strong and will likely be supportive of equity prices going forward. The U.S. has taken back the lead in year-over-year earnings growth, alongside a large boost from U.S. tax reform and a relatively strong economy.

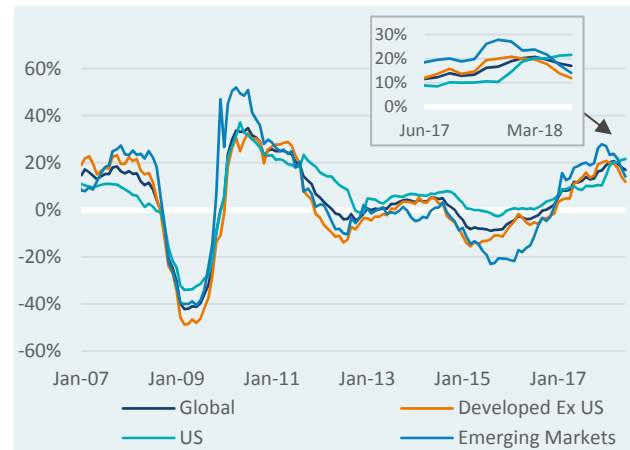
P/E multiples have moved lower as equity prices remain range bound and earnings grow at a brisk pace. Equity valuations are now closer to the longer-term average – a notable change from recent years.

**EFFECT OF CURRENCY (1-YEAR ROLLING)**



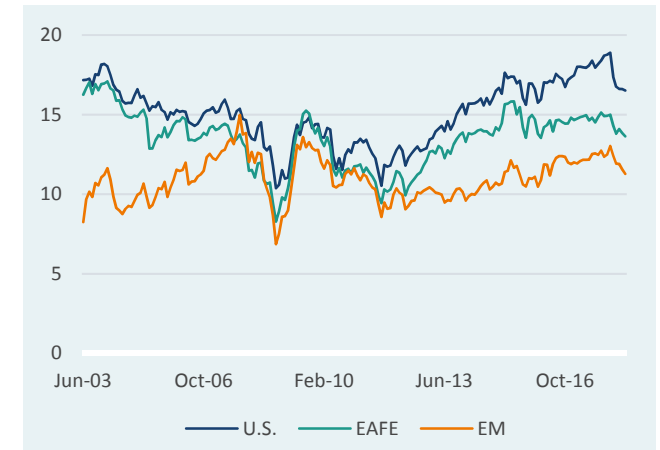
Source: MSCI, as of 6/30/18

**EARNINGS GROWTH (YOY)**



Source: MSCI, as of 6/30/18 – YoY growth in forward earnings

**FORWARD P/E**



Source: MSCI, as of 6/30/18

# Emerging market equity

Emerging market equities delivered losses of -8.0% in Q2, but remain up +8.2% on a year-over-year basis. Currency movement caused -4.4% of losses during the quarter.

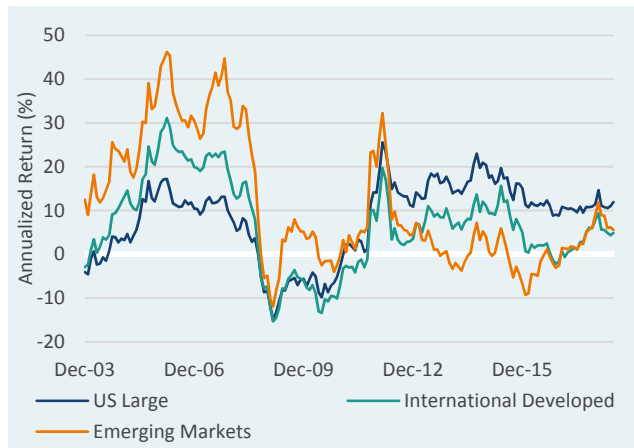
We maintain an overweight position to equities through a positive tilt to emerging markets. Equity bull runs in these markets through history typically incur at least a 10% drawdown sometime during the rally (see next page). Recent price swings were driven by valuation changes rather than by a fundamental change in earnings.

Developed markets are expected to grow less quickly in the coming years while emerging economic growth is expected to rise. A positive growth premium of emerging economies relative to developed economies has historically acted as a tailwind for EM outperformance.

We believe positive emerging economy growth trends, attractive valuations, a strong earnings environment, and depressed currencies should provide an environment of strong equity performance across these markets.

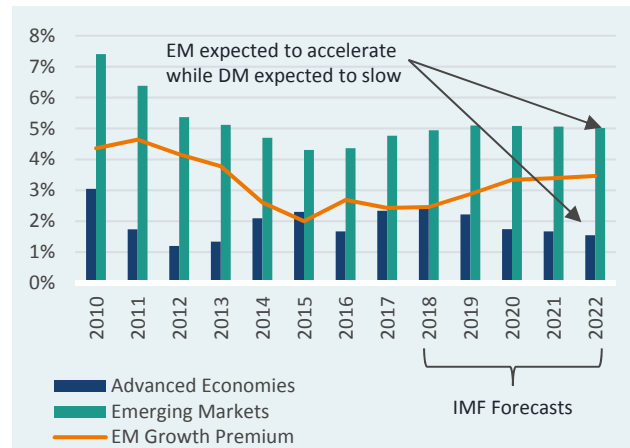
Conditions remain positive for EM equity

**EQUITY PERFORMANCE (3YR ROLLING)**



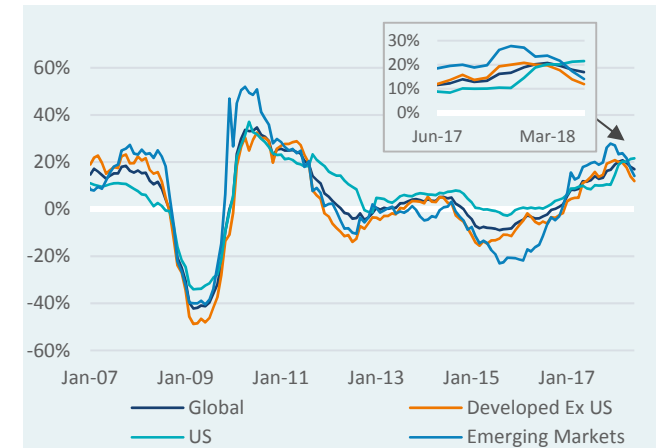
Source: Standard & Poor's, MSCI, as of 6/30/18

**EM GROWTH PREMIUM**



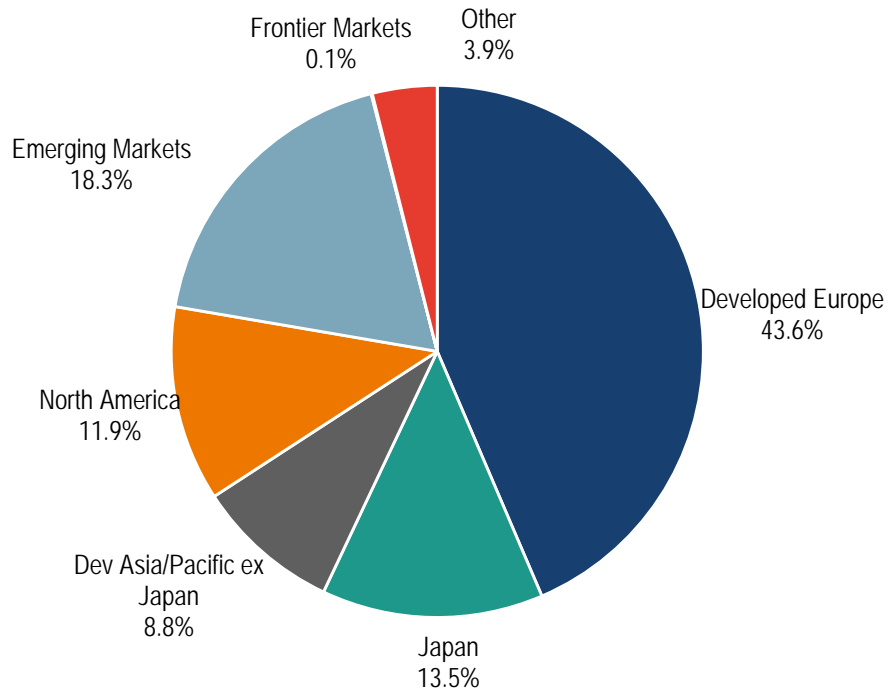
Source: IMF

**EARNINGS GROWTH (YOY)**

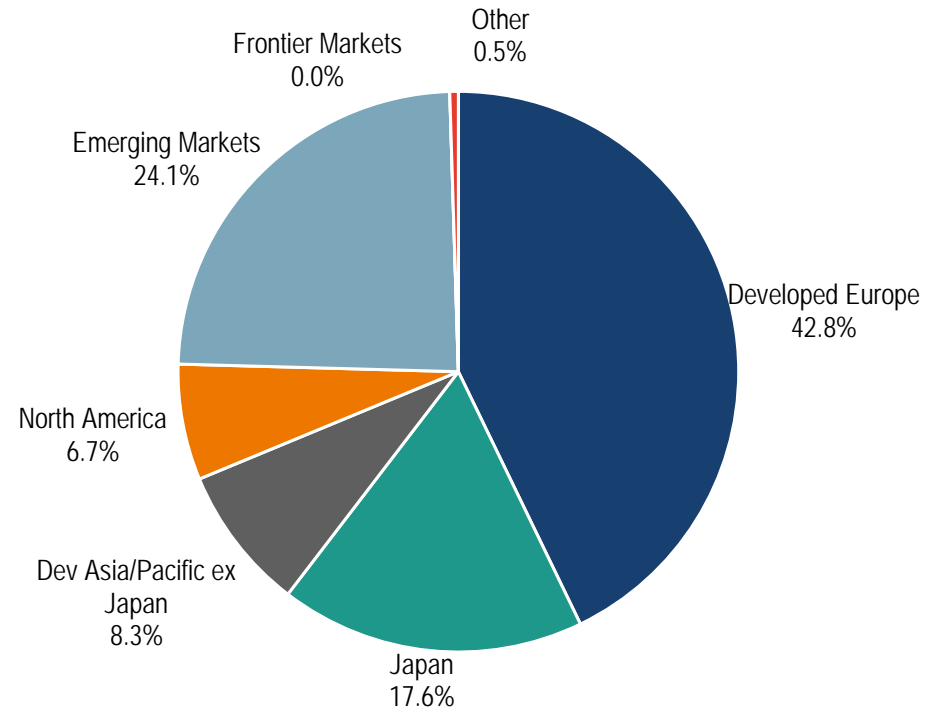


Source: MSCI, as of 6/30/18

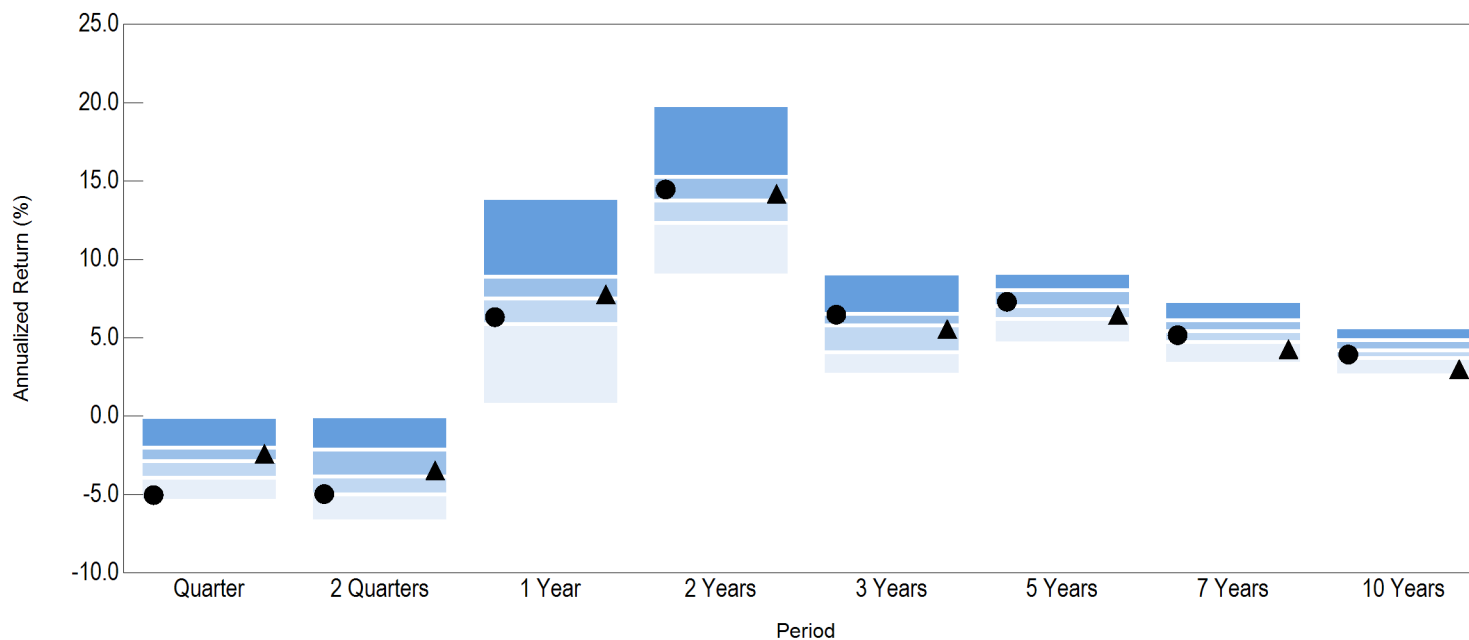
International Equity



MSCI ACWI ex US IMI



eV ACWI ex-US Large Cap Core Eq Gross Return Comparison



	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
<b>5th Percentile</b>	-0.08		-0.02		13.88		19.84		9.09		9.12		7.31		5.65	
<b>25th Percentile</b>	-2.00		-2.10		8.92		15.28		6.55		8.08		6.14		4.86	
<b>Median</b>	-2.82		-3.83		7.52		13.79		5.80		7.05		5.44		4.21	
<b>75th Percentile</b>	-3.90		-4.96		5.89		12.35		4.12		6.21		4.74		3.74	
<b>95th Percentile</b>	-5.35		-6.69		0.74		8.98		2.69		4.66		3.36		2.62	
<b># of Portfolios</b>	61		61		61		60		59		51		44		37	
<b>● AQR</b>	-5.03	(90)	-4.96	(76)	6.32	(71)	14.46	(37)	6.47	(27)	7.30	(42)	5.17	(58)	3.93	(70)
<b>▲ MSCI ACWI ex USA Gross</b>	-2.39	(35)	-3.44	(48)	7.79	(46)	14.20	(40)	5.56	(53)	6.48	(67)	4.28	(84)	3.01	(91)



Characteristics

	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	766	2,154
Weighted Avg. Market Cap. (\$B)	49.1	63.2
Median Market Cap. (\$B)	15.8	7.9
Price To Earnings	17.8	19.0
Price To Book	2.8	2.5
Price To Sales	2.2	2.4
Return on Equity (%)	18.1	15.4
Yield (%)	3.0	3.0
Beta (holdings; global)	1.1	1.0

Top Holdings

NESTLE 'R'	2.6%
NOVO NORDISK 'B'	2.1%
ROCHE HOLDING	1.9%
TOTAL	1.9%
RIO TINTO	1.8%
COVESTRO (XET)	1.7%
BARCLAYS	1.5%
LLOYDS BANKING GROUP	1.3%
ROYAL DUTCH SHELL A(LON)	1.2%
THALES	1.2%

Best Performers

	Return %
BAUSCH HEALTH COMPANIES (C:BHC)	46.2%
BOMBARDIER 'B' (C:BBD.B)	35.9%
START TODAY (J:STRT)	35.6%
KAKAKU.COM (J:KAKA)	29.0%
KERING (F:KER)	28.1%
SUMITOMO DAINIPPON PHA. (J:DPPH)	26.1%
BANDAI NAMCO HDG. (J:N@MB)	25.5%
ARISTOCRAT LEISURE (A:ALLX)	24.5%
SHISEIDO (J:SHDO)	24.2%
ERICSSON 'B' (W:SL@G)	22.5%

Worst Performers

	Return %
OSRAM LICHT (D:OSR)	-44.5%
MIXI (J:MIXI)	-31.5%
THK (J:THAK)	-30.7%
SHIMAMURA (J:SHIM)	-29.7%
DAIFUKU (J:DFUK)	-26.8%
RENAULT (F:RENU)	-26.6%
ELECTROLUX 'B' (W:SE@G)	-26.1%
COMMERZBANK (D:CBK)	-26.0%
NINTENDO (J:NNDO)	-25.8%
YUE YUEN INDL.HDG. (K:YUEN)	-25.5%

**AQR Performance Attribution vs. MSCI ACWI ex USA Gross**

	Total Effects	Attribution Effects			Returns		Sector Weights				
		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.21%	0.29%	-0.10%	0.01%	12.40%	7.52%	4.88%	6.69%			
Materials	0.16%	0.14%	0.08%	-0.07%	2.15%	-0.14%	11.14%	7.99%			
Industrials	-0.88%	-0.52%	0.00%	-0.36%	-6.85%	-2.54%	16.52%	11.76%			
Consumer Discretionary	-0.71%	-0.46%	0.00%	-0.25%	-6.74%	-3.15%	15.51%	11.35%			
Consumer Staples	0.28%	0.29%	-0.08%	0.06%	2.95%	-0.41%	6.72%	9.43%			
Health Care	-0.13%	-0.11%	-0.01%	-0.02%	0.16%	1.66%	8.14%	7.71%			
Financials	0.65%	0.31%	0.22%	0.11%	-5.88%	-6.99%	18.60%	23.20%			
Information Technology	-0.15%	-0.09%	0.02%	-0.07%	-4.64%	-2.85%	9.73%	11.79%			
Telecommunication Services	0.14%	0.07%	0.03%	0.04%	-4.23%	-5.81%	2.86%	3.92%			
Utilities	0.00%	-0.02%	-0.02%	0.04%	-2.22%	-1.13%	1.23%	3.00%			
Real Estate	0.07%	0.05%	-0.02%	0.04%	0.45%	-2.51%	4.69%	3.17%			
Cash	0.00%	--	--	--	--	--	0.00%	0.00%			
<b>Portfolio</b>	<b>-0.36%</b>	<b>=</b>	<b>-0.02%</b>	<b>+</b>	<b>0.13%</b>	<b>+</b>	<b>-0.46%</b>	<b>-2.72%</b>	<b>-2.36%</b>	<b>100.00%</b>	<b>100.00%</b>

AQR Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
<b>Europe</b>									
Austria	--	-10.33%	0.00%	0.19%	--	0.01%	0.01%	--	0.02%
Belgium	-2.53%	-5.94%	1.40%	0.78%	0.03%	-0.02%	-0.03%	0.02%	0.00%
Czech Republic*	--	-3.14%	0.00%	0.05%	--	0.00%	0.00%	--	0.00%
Denmark	-6.65%	-6.89%	1.50%	1.22%	0.00%	-0.01%	-0.01%	0.00%	-0.02%
Finland	6.18%	2.18%	1.28%	0.70%	0.03%	0.03%	-0.03%	0.02%	0.05%
France	-1.70%	0.36%	9.13%	7.48%	-0.16%	0.06%	-0.08%	-0.04%	-0.22%
Germany	-6.00%	-3.59%	8.38%	6.58%	-0.17%	-0.01%	-0.08%	-0.05%	-0.31%
Greece*	--	-2.03%	0.00%	0.08%	--	0.00%	0.00%	--	0.00%
Hungary*	--	-14.37%	0.00%	0.08%	--	0.01%	0.01%	--	0.01%
Ireland	--	1.90%	0.00%	0.32%	--	-0.02%	0.02%	--	0.00%
Italy	-9.62%	-6.76%	2.29%	1.73%	-0.05%	-0.02%	-0.02%	-0.02%	-0.12%
Netherlands	3.47%	-0.31%	3.99%	2.52%	0.12%	0.03%	-0.11%	0.07%	0.11%
Norway	--	3.00%	0.00%	0.48%	--	-0.02%	0.02%	--	0.00%
Poland*	--	-11.56%	0.00%	0.31%	--	0.02%	0.03%	--	0.04%
Portugal	--	2.32%	0.00%	0.11%	--	-0.01%	0.01%	--	0.00%
Russia*	--	-5.67%	0.00%	0.91%	--	0.00%	0.07%	--	0.07%
Spain	-2.58%	-4.13%	3.12%	2.22%	0.04%	-0.01%	-0.05%	0.01%	-0.01%
Sweden	-9.97%	-3.31%	2.69%	1.81%	-0.13%	0.01%	-0.05%	-0.06%	-0.23%
Switzerland	-1.99%	-2.23%	6.94%	5.38%	0.01%	-0.01%	-0.06%	0.00%	-0.05%
United Kingdom	-0.77%	2.92%	13.10%	11.86%	-0.46%	0.09%	-0.05%	-0.05%	-0.47%

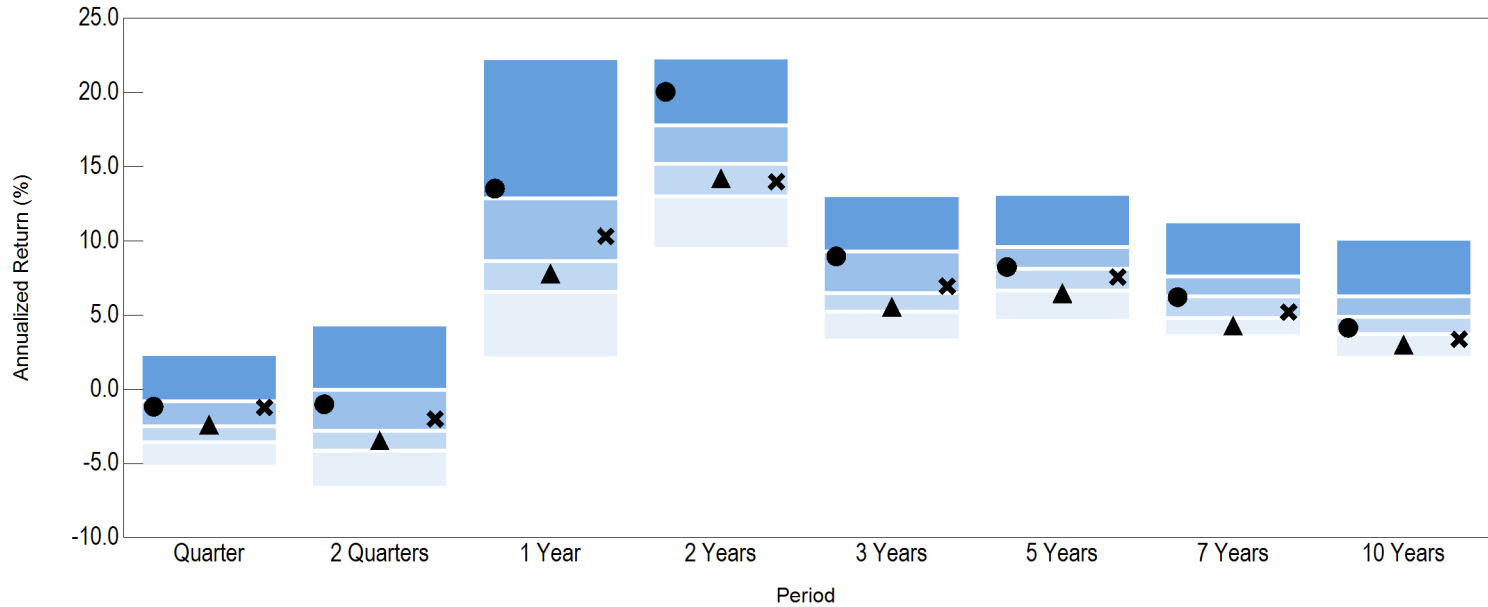
**AQR Performance Attribution vs. MSCI ACWI ex USA Gross**

	Returns and Weights				Attribution Effects				Total Effects	
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect		
<b>AsiaPacific</b>										
Australia	3.32%	5.31%	4.79%	4.47%	-0.09%	0.02%	-0.01%	-0.01%	-0.09%	
China*	--	-3.24%	0.00%	7.65%	--	0.41%	0.00%	--	0.41%	
Hong Kong	-1.64%	-1.29%	3.03%	2.46%	-0.01%	-0.02%	0.00%	0.00%	-0.03%	
India*	--	-0.35%	0.00%	2.08%	--	-0.05%	0.10%	--	0.05%	
Indonesia*	--	-12.20%	0.00%	0.52%	--	0.06%	0.02%	--	0.07%	
Japan	-5.27%	-2.95%	20.05%	16.77%	-0.40%	-0.04%	-0.11%	-0.08%	-0.63%	
Korea*	--	-9.35%	0.00%	3.83%	--	0.28%	0.16%	--	0.44%	
Malaysia*	--	-11.60%	0.00%	0.64%	--	0.06%	0.03%	--	0.09%	
New Zealand	--	5.76%	0.00%	0.12%	--	-0.01%	0.01%	--	0.00%	
Pakistan*	--	-20.54%	0.00%	0.02%	--	0.00%	0.00%	--	0.00%	
Philippines*	--	-11.08%	0.00%	0.25%	--	0.03%	0.01%	--	0.03%	
Singapore	-3.44%	-7.23%	0.80%	0.92%	0.04%	0.01%	0.00%	0.00%	0.04%	
Taiwan*	--	-5.96%	0.00%	2.95%	--	0.11%	0.13%	--	0.24%	
Thailand*	--	-14.86%	0.00%	0.63%	--	0.07%	0.03%	--	0.11%	
<b>Americas</b>										
Brazil*	--	-26.50%	0.00%	1.88%	--	0.32%	0.22%	--	0.54%	
Canada	3.21%	4.84%	7.08%	6.11%	-0.10%	0.05%	-0.02%	-0.02%	-0.09%	
Chile*	--	-10.84%	0.00%	0.31%	--	0.02%	0.02%	--	0.04%	
Colombia*	--	6.83%	0.00%	0.11%	--	-0.01%	0.01%	--	-0.01%	
Mexico*	--	-3.41%	0.00%	0.75%	--	-0.01%	0.06%	--	0.04%	
Peru*	--	-3.19%	0.00%	0.10%	--	0.01%	0.00%	--	0.01%	

**AQR Performance Attribution vs. MSCI ACWI ex USA Gross**

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
<b>Other</b>									
Egypt*	--	-7.46%	0.00%	0.03%	--	0.00%	0.00%	--	0.00%
Israel	--	10.75%	0.00%	0.31%	--	-0.03%	0.01%	--	-0.03%
Qatar*	--	4.38%	0.00%	0.14%	--	0.00%	0.00%	--	0.00%
South Africa*	--	-11.27%	0.00%	1.73%	--	-0.01%	0.24%	--	0.23%
Turkey*	--	-25.86%	0.00%	0.25%	--	0.04%	0.03%	--	0.07%
United Arab Emirates*	--	-3.00%	0.00%	0.15%	--	0.01%	0.00%	--	0.01%
<b>Totals</b>									
Americas	3.21%	-2.78%	7.08%	9.26%	0.32%	0.01%	0.28%	-0.07%	0.53%
Europe	-2.57%	-1.06%	53.85%	44.82%	-0.74%	0.20%	-0.42%	-0.15%	-1.10%
Asia/Pacific	-3.40%	-3.24%	28.67%	43.30%	0.09%	0.33%	0.36%	-0.03%	0.74%
Other	--	-8.69%	0.00%	2.62%	--	0.01%	0.28%	--	0.28%
Cash	0.46%	--	10.41%	0.00%	0.00%	-0.18%	0.00%	0.00%	-0.18%
<b>Total</b>	<b>-2.08%</b>	<b>-2.36%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>-0.34%</b>	<b>0.36%</b>	<b>0.50%</b>	<b>-0.25%</b>	<b>0.28%</b>
<b>Totals</b>									
Developed	-2.38%	-0.52%	89.59%	74.54%	-1.41%	0.28%	-0.65%	-0.28%	-2.06%
Emerging*	--	-7.73%	0.00%	25.46%	--	1.37%	1.15%	--	2.52%
Cash	0.46%	--	10.41%	0.00%	0.00%	-0.18%	0.00%	0.00%	-0.18%

eV All ACWI ex-US Equity Gross Return Comparison



	Return (Rank)							
	Quarter	2 Quarters	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	2.34	4.33	22.29	22.32	13.05	13.17	11.27	10.12
25th Percentile	-0.79	-0.03	12.87	17.80	9.30	9.59	7.63	6.29
Median	-2.49	-2.77	8.67	15.20	6.50	8.14	6.29	4.90
75th Percentile	-3.54	-4.10	6.57	13.01	5.25	6.69	4.83	3.72
95th Percentile	-5.18	-6.60	2.09	9.49	3.31	4.64	3.60	2.13
# of Portfolios	279	279	279	278	265	229	195	161
● Capital Group	-1.18 (31)	-1.02 (31)	13.52 (23)	20.04 (12)	8.95 (29)	8.24 (48)	6.21 (52)	4.14 (66)
▲ MSCI ACWI ex USA Gross	-2.39 (49)	-3.44 (63)	7.79 (63)	14.20 (60)	5.56 (69)	6.48 (80)	4.28 (85)	3.01 (86)
✕ MSCI ACWI ex USA Growth Gross	-1.23 (32)	-2.02 (39)	10.30 (40)	13.99 (65)	6.95 (44)	7.56 (61)	5.20 (69)	3.36 (80)

Characteristics

	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	218	2,154
Weighted Avg. Market Cap. (\$B)	52.9	63.2
Median Market Cap. (\$B)	17.1	7.9
Price To Earnings	25.2	19.0
Price To Book	4.1	2.5
Price To Sales	3.8	2.4
Return on Equity (%)	18.1	15.4
Yield (%)	2.2	3.0
Beta (holdings; global)	1.1	1.0

Top Holdings

AIRBUS	2.4%
OCADO GROUP	2.3%
VALE ON ADR 1:1	2.3%
AIA GROUP	2.1%
SAMSUNG ELECTRONICS	1.8%
ASTRAZENECA	1.7%
TAIWAN SEMICON.MNFG.	1.7%
ENEL	1.7%
CTRIP.COM INTL.ADR 8:1	1.6%
SAP	1.4%

Best Performers

	Return %
ALTICE EUROPE (H:ATC)	92.6%
OCADO GROUP (UKIR:OCDO)	82.2%
CAPITA (UKIR:CPI)	71.2%
ENSCO CLASS A (ESV)	65.6%
AA (UKIR:AA.)	46.7%
INMARSAT (UKIR:ISAT)	46.3%
SES FDR (PAR) (F:SESG)	43.5%
UBISOFT ENTM. (F:UBI)	30.2%
KERING (F:KER)	28.1%
BCA MARKETPLACE (UKIR:BCA)	27.8%

Worst Performers

	Return %
HYPERMARCAS ON (BR:HYP)	-33.7%
ITAU UNIBANCO BANCO HLDG.ADR 1:1 (ITUB)	-33.4%
SEMEN INDONESIA (PERSERO) (ID:GSK)	-32.9%
AKBANK (TK:AKB)	-31.9%
CIELO ON (BR:VIS)	-31.0%
MR PRICE GROUP (R:MRPJ)	-30.1%
GENMAB (DK:GEN)	-27.9%
SURYA CITRA MEDIA (ID:SCM)	-27.0%
NINTENDO (J:NNDO)	-25.8%
DISCOVERY (R:DSYJ)	-25.2%

Capital Group Performance Attribution vs. MSCI ACWI ex USA Gross

	Total Effects	Attribution Effects			Returns		Sector Weights				
		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	-0.05%	0.63%	-0.51%	-0.17%	17.96%	7.47%	1.95%	6.71%			
Materials	-0.04%	-0.46%	-0.10%	0.51%	-2.79%	-0.26%	4.73%	8.00%			
Industrials	0.21%	0.21%	0.00%	-0.01%	-0.89%	-2.48%	11.05%	11.77%			
Consumer Discretionary	1.72%	1.46%	-0.01%	0.27%	8.97%	-2.96%	16.68%	11.33%			
Consumer Staples	0.10%	0.05%	-0.05%	0.10%	0.25%	-0.42%	7.42%	9.44%			
Health Care	-0.42%	-0.50%	-0.07%	0.15%	-5.33%	1.59%	6.13%	7.72%			
Financials	0.41%	0.16%	0.06%	0.19%	-5.62%	-6.98%	22.03%	23.25%			
Information Technology	-0.27%	-0.01%	-0.08%	-0.18%	-3.08%	-2.84%	16.35%	11.75%			
Telecommunication Services	0.17%	0.15%	0.01%	0.01%	-1.79%	-5.79%	3.65%	3.90%			
Utilities	-0.10%	-0.08%	0.00%	-0.02%	-4.67%	-1.15%	2.90%	3.01%			
Real Estate	-0.07%	-0.01%	-0.04%	-0.03%	-1.78%	-2.62%	5.56%	3.12%			
Cash	-0.03%	0.00%	-0.03%	0.00%	0.46%	--	1.53%	0.00%			
<b>Portfolio</b>	<b>1.64%</b>	<b>=</b>	<b>1.63%</b>	<b>+</b>	<b>-0.81%</b>	<b>+</b>	<b>0.82%</b>	<b>-0.73%</b>	<b>-2.36%</b>	<b>100.00%</b>	<b>100.00%</b>



Capital Group Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
<b>Europe</b>									
Austria	--	-10.33%	0.00%	0.19%	--	0.01%	0.01%	--	0.02%
Belgium	-9.46%	-5.94%	0.40%	0.78%	-0.03%	0.01%	0.02%	0.01%	0.02%
Czech Republic*	--	-3.14%	0.00%	0.05%	--	0.00%	0.00%	--	0.00%
Denmark	-6.49%	-6.89%	3.40%	1.22%	0.01%	-0.09%	-0.11%	0.01%	-0.18%
Finland	--	2.18%	0.00%	0.70%	--	-0.04%	0.04%	--	0.00%
France	6.08%	0.36%	9.15%	7.48%	0.45%	0.06%	-0.12%	0.10%	0.49%
Germany	-2.29%	-3.59%	6.69%	6.58%	0.09%	0.00%	-0.01%	0.00%	0.08%
Greece*	--	-2.03%	0.00%	0.08%	--	0.00%	0.00%	--	0.00%
Hungary*	--	-14.37%	0.00%	0.08%	--	0.01%	0.01%	--	0.01%
Ireland	-8.39%	1.90%	0.86%	0.32%	-0.04%	0.03%	0.00%	-0.07%	-0.09%
Italy	-9.13%	-6.76%	1.70%	1.73%	-0.04%	0.00%	0.00%	0.00%	-0.04%
Luxembourg	43.49%	-2.36%	0.28%	0.00%	0.00%	0.00%	-0.02%	0.14%	0.12%
Netherlands	26.14%	-0.31%	2.49%	2.52%	0.71%	0.00%	-0.05%	-0.01%	0.66%
Norway	3.36%	3.00%	0.49%	0.48%	0.00%	0.00%	0.00%	0.00%	0.00%
Poland*	--	-11.56%	0.00%	0.31%	--	0.02%	0.03%	--	0.04%
Portugal	--	2.32%	0.00%	0.11%	--	-0.01%	0.01%	--	0.00%
Russia*	--	-5.67%	0.00%	0.91%	--	0.00%	0.07%	--	0.07%
Spain	-1.66%	-4.13%	1.34%	2.22%	0.06%	0.01%	0.04%	-0.02%	0.09%
Sweden	-0.75%	-3.31%	0.67%	1.81%	0.05%	-0.01%	0.07%	-0.03%	0.08%
Switzerland	-3.09%	-2.23%	2.83%	5.38%	-0.05%	0.02%	0.09%	0.02%	0.09%
United Kingdom	11.24%	2.92%	13.46%	11.86%	1.03%	0.12%	-0.15%	0.14%	1.13%

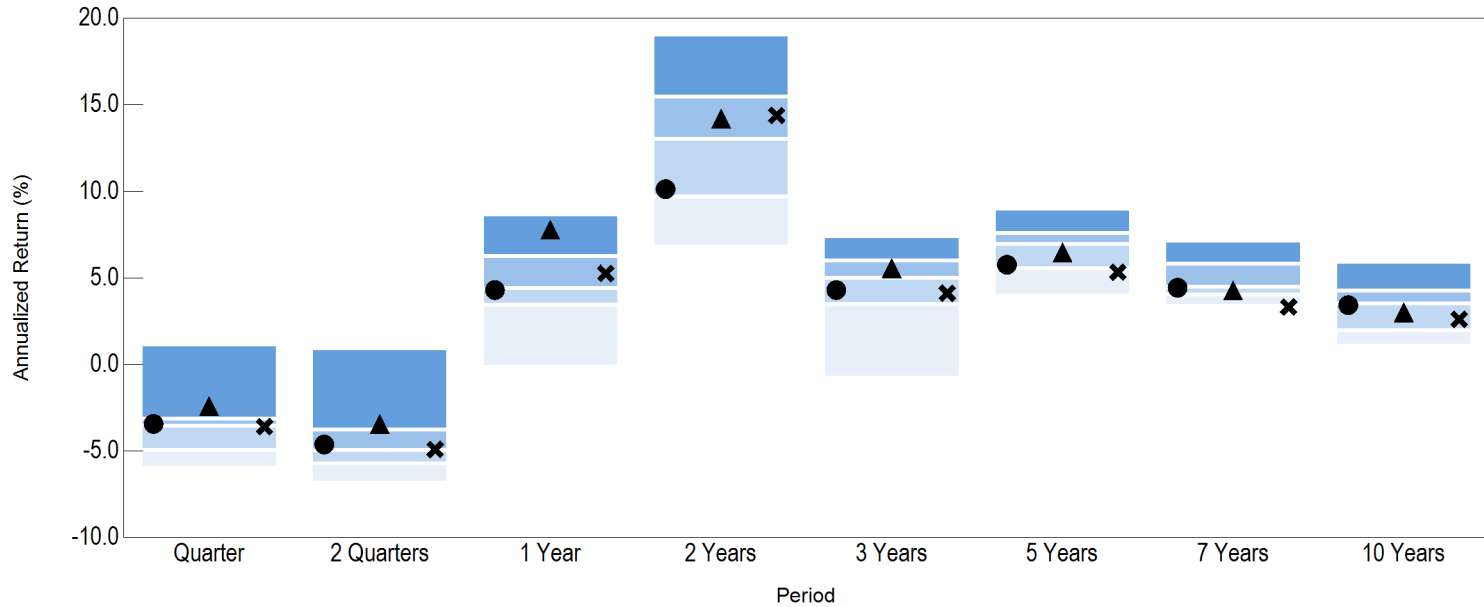
Capital Group Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
<b>AsiaPacific</b>									
Australia	8.35%	5.31%	0.58%	4.47%	0.14%	-0.28%	0.16%	-0.12%	-0.11%
China*	-4.66%	-3.24%	6.88%	7.65%	-0.11%	0.04%	0.00%	0.01%	-0.06%
Hong Kong	-3.35%	-1.29%	8.43%	2.46%	-0.04%	-0.21%	-0.03%	-0.10%	-0.38%
India*	-0.21%	-0.35%	6.84%	2.08%	-0.01%	0.12%	-0.20%	-0.02%	-0.11%
Indonesia*	-16.31%	-12.20%	2.49%	0.52%	-0.02%	-0.21%	-0.07%	-0.08%	-0.38%
Japan	-2.23%	-2.95%	11.14%	16.77%	0.13%	0.06%	0.22%	-0.04%	0.37%
Korea*	-10.38%	-9.35%	2.30%	3.83%	-0.04%	0.11%	0.06%	0.02%	0.15%
Malaysia*	--	-11.60%	0.00%	0.64%	--	0.06%	0.03%	--	0.09%
New Zealand	6.25%	5.76%	0.07%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%
Pakistan*	--	-20.54%	0.00%	0.02%	--	0.00%	0.00%	--	0.00%
Philippines*	-23.18%	-11.08%	0.18%	0.25%	-0.03%	0.01%	0.00%	0.01%	-0.01%
Singapore	-5.99%	-7.23%	0.92%	0.92%	0.00%	0.00%	0.01%	0.00%	0.01%
Taiwan*	-9.69%	-5.96%	3.49%	2.95%	-0.15%	-0.02%	0.02%	-0.03%	-0.17%
Thailand*	-7.12%	-14.86%	0.27%	0.63%	0.05%	0.04%	0.02%	-0.03%	0.08%
<b>Americas</b>									
Brazil*	-10.73%	-26.50%	3.89%	1.88%	0.14%	-0.34%	0.09%	0.15%	0.04%
Canada	14.71%	4.84%	0.61%	6.11%	0.62%	-0.27%	0.12%	-0.55%	-0.09%
Chile*	--	-10.84%	0.00%	0.31%	--	0.02%	0.02%	--	0.04%
Colombia*	--	6.83%	0.00%	0.11%	--	-0.01%	0.01%	--	-0.01%
Mexico*	-12.75%	-3.41%	0.73%	0.75%	-0.11%	0.00%	0.04%	0.00%	-0.07%
Peru*	--	-3.19%	0.00%	0.10%	--	0.01%	0.00%	--	0.01%
United States	-13.42%	3.40%	2.47%	0.00%	0.00%	0.03%	0.00%	-0.42%	-0.38%

Capital Group Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
<b>Other</b>									
Egypt*	--	-7.46%	0.00%	0.03%	--	0.00%	0.00%	--	0.00%
Israel	0.01%	10.75%	0.90%	0.31%	-0.03%	0.07%	-0.03%	-0.05%	-0.05%
Qatar*	--	4.38%	0.00%	0.14%	--	0.00%	0.00%	--	0.00%
South Africa*	-7.90%	-11.27%	2.33%	1.73%	0.07%	0.00%	-0.10%	0.02%	0.00%
Turkey*	--	-25.86%	0.00%	0.25%	--	0.04%	0.03%	--	0.07%
United Arab Emirates*	5.55%	-3.00%	0.19%	0.15%	0.01%	0.00%	0.00%	0.00%	0.01%
<b>Totals</b>									
Americas	-9.78%	-2.78%	7.70%	9.26%	-0.89%	0.00%	0.28%	0.15%	-0.46%
Europe	4.81%	-1.06%	43.75%	44.82%	2.75%	-0.02%	-0.06%	-0.07%	2.60%
Asia/Pacific	-4.38%	-3.24%	43.60%	43.30%	-0.72%	-0.01%	0.22%	0.00%	-0.52%
Other	-5.06%	-8.69%	3.42%	2.62%	0.10%	0.00%	-0.10%	0.03%	0.04%
Cash	0.46%	--	1.53%	0.00%	0.00%	-0.03%	0.00%	0.00%	-0.03%
Unclassified	--	--	0.00%	0.00%	--	0.00%	0.00%	--	0.00%
<b>Total</b>	<b>-0.73%</b>	<b>-2.36%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>1.24%</b>	<b>-0.05%</b>	<b>0.33%</b>	<b>0.11%</b>	<b>1.64%</b>
<b>Totals</b>									
Developed	1.93%	-0.52%	68.88%	74.54%	1.81%	-0.10%	0.27%	-0.14%	1.84%
Emerging*	-6.97%	-7.73%	29.59%	25.46%	-0.02%	-0.22%	0.06%	0.00%	-0.18%
Cash	0.46%	--	1.53%	0.00%	0.00%	-0.03%	0.00%	0.00%	-0.03%

eV ACWI ex-US Large Cap Value Eq Gross Return Comparison



	Return (Rank)							
	Quarter	2 Quarters	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	1.15	0.92	8.67	19.04	7.40	9.00	7.14	5.92
25th Percentile	-3.10	-3.75	6.29	15.49	6.04	7.61	5.83	4.28
Median	-3.51	-4.93	4.44	13.06	5.03	6.97	4.52	3.54
75th Percentile	-4.91	-5.69	3.47	9.74	3.53	5.59	4.06	2.00
95th Percentile	-5.94	-6.80	-0.11	6.83	-0.74	4.00	3.39	1.09
# of Portfolios	22	22	22	22	22	18	17	14
● Mondrian	-3.43 (42)	-4.62 (38)	4.30 (63)	10.13 (71)	4.30 (65)	5.76 (69)	4.44 (63)	3.43 (52)
▲ MSCI ACWI ex USA Gross	-2.39 (19)	-3.44 (20)	7.79 (17)	14.20 (42)	5.56 (38)	6.48 (62)	4.28 (70)	3.01 (62)
✕ MSCI ACWI ex USA Value Gross	-3.59 (53)	-4.90 (49)	5.26 (39)	14.39 (40)	4.12 (67)	5.33 (83)	3.32 (96)	2.61 (66)

Characteristics

	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	28	2,154
Weighted Avg. Market Cap. (\$B)	67.0	63.2
Median Market Cap. (\$B)	46.1	7.9
Price To Earnings	14.7	19.0
Price To Book	1.8	2.5
Price To Sales	1.3	2.4
Return on Equity (%)	14.0	15.4
Yield (%)	4.8	3.0
Beta (holdings; global)	1.1	1.0

Top Holdings

DAIMLER	13.5%
ALLIANZ	12.6%
ZURICH INSURANCE GROUP	10.5%
WPP	9.4%
ABB LTD N	9.3%
NOVARTIS 'R'	7.6%
NATIONAL GRID	7.2%
GLAXOSMITHKLINE	5.2%
ISS AS	4.6%
HONDA MOTOR	3.4%

Best Performers

	Return %
ERICSSON 'B' (W:SL@G)	22.5%
TESCO (UKIR:TSCO)	18.3%
BP (UKIR:BP.)	15.1%
ROYAL DUTCH SHELL B (UKIR:RDSB)	13.6%
WOOD GROUP (JOHN) (UKIR:WG.)	12.6%
ROYAL DUTCH SHELL A(LON) (UKIR:RDSA)	12.2%
SAP (D:SAP)	12.0%
ROYAL DUTCH SHELL A (H:RDSA)	11.1%
ENI (I:ENI)	8.3%
IBERDROLA (E:IBE)	5.3%

Worst Performers

	Return %
DAIMLER (D:DAI)	-19.7%
SOCIETE GENERALE (F:SGE)	-17.8%
MITSUBISHI ELECTRIC (J:UM@N)	-16.8%
HONDA MOTOR (J:HO@N)	-13.9%
ISUZU MOTORS (J:IM@N)	-13.4%
TAKEDA PHARMACEUTICAL (J:TA@N)	-13.3%
SINGAPORE TELECOM 10 (T:ST10)	-12.6%
SAINT GOBAIN (F:SGO)	-12.6%
BMW (D:BMW)	-12.3%
SINGAPORE TELECOM (T:TELC)	-12.1%

**Mondrian Performance Attribution vs. MSCI ACWI ex USA Gross**

	Total Effects	Attribution Effects			Returns		Sector Weights				
		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.72%	0.38%	0.45%	-0.11%	11.96%	7.47%	10.92%	6.71%			
Materials	0.17%	0.08%	-0.20%	0.29%	0.69%	-0.26%	1.34%	8.00%			
Industrials	-0.55%	-0.53%	0.00%	-0.02%	-6.05%	-2.48%	13.36%	11.77%			
Consumer Discretionary	-1.10%	-0.72%	-0.01%	-0.37%	-9.05%	-2.96%	14.96%	11.33%			
Consumer Staples	0.83%	1.20%	-0.07%	-0.29%	11.13%	-0.42%	6.58%	9.44%			
Health Care	-0.44%	-0.27%	0.16%	-0.33%	-2.01%	1.59%	11.63%	7.72%			
Financials	1.09%	0.64%	0.38%	0.06%	-4.52%	-6.98%	15.43%	23.25%			
Information Technology	0.93%	1.64%	0.11%	-0.82%	8.53%	-2.84%	5.43%	11.75%			
Telecommunication Services	-0.30%	0.07%	-0.16%	-0.20%	-4.94%	-5.79%	8.57%	3.90%			
Utilities	-0.22%	0.02%	0.07%	-0.31%	-1.61%	-1.15%	8.55%	3.01%			
Real Estate	0.02%	-0.02%	0.01%	0.03%	-2.78%	-2.62%	2.65%	3.12%			
Cash	-0.01%	0.00%	-0.01%	0.00%	0.46%	--	0.59%	0.00%			
<b>Portfolio</b>	<b>1.15%</b>	<b>=</b>	<b>2.49%</b>	<b>+</b>	<b>0.74%</b>	<b>+</b>	<b>-2.09%</b>	<b>-1.21%</b>	<b>-2.36%</b>	<b>100.00%</b>	<b>100.00%</b>

Mondrian Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
<b>Europe</b>									
Austria	--	-10.33%	0.00%	0.19%	--	0.01%	0.01%	--	0.02%
Belgium	--	-5.94%	0.00%	0.78%	--	0.02%	0.04%	--	0.06%
Czech Republic*	--	-3.14%	0.00%	0.05%	--	0.00%	0.00%	--	0.00%
Denmark	-3.43%	-6.89%	1.36%	1.22%	0.04%	-0.01%	-0.01%	0.00%	0.03%
Finland	--	2.18%	0.00%	0.70%	--	-0.04%	0.04%	--	0.00%
France	-4.92%	0.36%	6.70%	7.48%	-0.42%	-0.03%	0.06%	0.04%	-0.34%
Germany	-5.67%	-3.59%	11.85%	6.58%	-0.14%	-0.03%	-0.26%	-0.12%	-0.55%
Greece*	--	-2.03%	0.00%	0.08%	--	0.00%	0.00%	--	0.00%
Hungary*	--	-14.37%	0.00%	0.08%	--	0.01%	0.01%	--	0.01%
Ireland	--	1.90%	0.00%	0.32%	--	-0.02%	0.02%	--	0.00%
Italy	-0.82%	-6.76%	6.41%	1.73%	0.11%	-0.18%	-0.25%	0.29%	-0.04%
Netherlands	7.53%	-0.31%	4.45%	2.52%	0.22%	0.05%	-0.14%	0.17%	0.30%
Norway	--	3.00%	0.00%	0.48%	--	-0.02%	0.02%	--	0.00%
Poland*	--	-11.56%	0.00%	0.31%	--	0.02%	0.03%	--	0.04%
Portugal	--	2.32%	0.00%	0.11%	--	-0.01%	0.01%	--	0.00%
Russia*	--	-5.67%	0.00%	0.91%	--	0.00%	0.07%	--	0.07%
Spain	-2.28%	-4.13%	4.78%	2.22%	0.04%	-0.03%	-0.14%	0.05%	-0.07%
Sweden	8.38%	-3.31%	4.54%	1.81%	0.23%	0.03%	-0.22%	0.34%	0.38%
Switzerland	-4.87%	-2.23%	6.60%	5.38%	-0.15%	-0.01%	-0.04%	-0.03%	-0.23%
United Kingdom	6.42%	2.92%	23.51%	11.86%	0.44%	0.84%	-0.80%	0.43%	0.91%

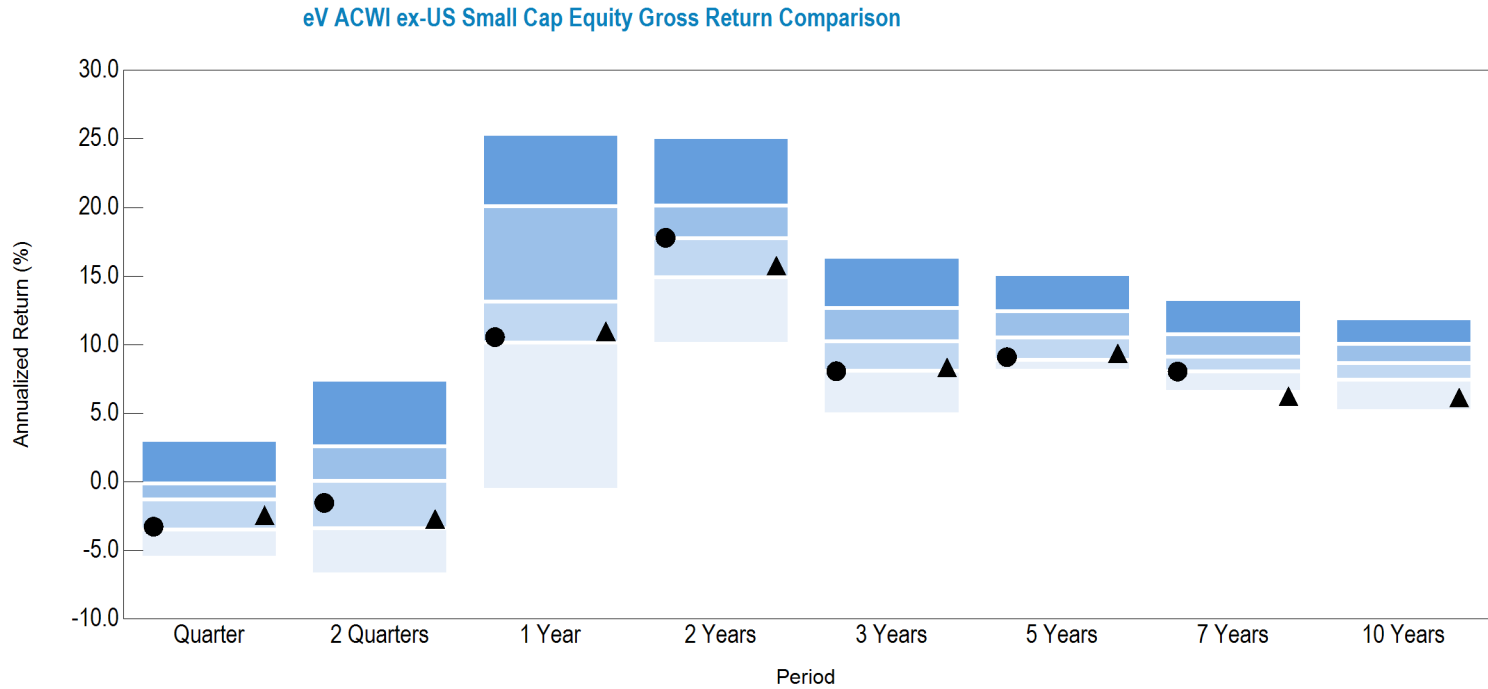
Mondrian Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
<b>AsiaPacific</b>									
Australia	-2.58%	5.31%	1.20%	4.47%	-0.37%	-0.23%	0.14%	0.27%	-0.20%
China*	--	-3.24%	0.00%	7.65%	--	0.41%	0.00%	--	0.41%
Hong Kong	-9.32%	-1.29%	2.67%	2.46%	-0.20%	-0.01%	0.00%	-0.02%	-0.22%
India*	--	-0.35%	0.00%	2.08%	--	-0.05%	0.10%	--	0.05%
Indonesia*	--	-12.20%	0.00%	0.52%	--	0.06%	0.02%	--	0.07%
Japan	-6.88%	-2.95%	17.84%	16.77%	-0.69%	-0.01%	-0.01%	-0.04%	-0.76%
Korea*	--	-9.35%	0.00%	3.83%	--	0.28%	0.16%	--	0.44%
Malaysia*	--	-11.60%	0.00%	0.64%	--	0.06%	0.03%	--	0.09%
New Zealand	--	5.76%	0.00%	0.12%	--	-0.01%	0.01%	--	0.00%
Pakistan*	--	-20.54%	0.00%	0.02%	--	0.00%	0.00%	--	0.00%
Philippines*	--	-11.08%	0.00%	0.25%	--	0.03%	0.01%	--	0.03%
Singapore	-5.55%	-7.23%	6.05%	0.92%	0.02%	-0.29%	-0.19%	0.09%	-0.38%
Taiwan*	--	-5.96%	0.00%	2.95%	--	0.11%	0.13%	--	0.24%
Thailand*	--	-14.86%	0.00%	0.63%	--	0.07%	0.03%	--	0.11%
<b>Americas</b>									
Brazil*	--	-26.50%	0.00%	1.88%	--	0.32%	0.22%	--	0.54%
Canada	-4.63%	4.84%	1.44%	6.11%	-0.59%	-0.23%	0.10%	0.45%	-0.26%
Chile*	--	-10.84%	0.00%	0.31%	--	0.02%	0.02%	--	0.04%
Colombia*	--	6.83%	0.00%	0.11%	--	-0.01%	0.01%	--	-0.01%
Mexico*	--	-3.41%	0.00%	0.75%	--	-0.01%	0.06%	--	0.04%
Peru*	--	-3.19%	0.00%	0.10%	--	0.01%	0.00%	--	0.01%



Mondrian Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
<b>Other</b>									
Egypt*	--	-7.46%	0.00%	0.03%	--	0.00%	0.00%	--	0.00%
Israel	--	10.75%	0.00%	0.31%	--	-0.03%	0.01%	--	-0.03%
Qatar*	--	4.38%	0.00%	0.14%	--	0.00%	0.00%	--	0.00%
South Africa*	--	-11.27%	0.00%	1.73%	--	-0.01%	0.24%	--	0.23%
Turkey*	--	-25.86%	0.00%	0.25%	--	0.04%	0.03%	--	0.07%
United Arab Emirates*	--	-3.00%	0.00%	0.15%	--	0.01%	0.00%	--	0.01%
<b>Totals</b>									
Americas	-4.63%	-2.78%	1.44%	9.26%	-0.42%	0.02%	0.40%	0.36%	0.36%
Europe	0.99%	-1.06%	70.21%	44.82%	1.03%	0.56%	-1.55%	0.58%	0.62%
Asia/Pacific	-6.64%	-3.24%	27.76%	43.30%	-1.34%	0.35%	0.40%	0.48%	-0.11%
Other	--	-8.69%	0.00%	2.62%	--	0.01%	0.28%	--	0.28%
Cash	0.46%	--	0.59%	0.00%	0.00%	-0.01%	0.00%	0.00%	-0.01%
<b>Total</b>	<b>-1.21%</b>	<b>-2.36%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>-0.74%</b>	<b>0.93%</b>	<b>-0.46%</b>	<b>1.42%</b>	<b>1.15%</b>
<b>Totals</b>									
Developed	-1.22%	-0.52%	99.41%	74.54%	-0.15%	0.46%	-1.61%	-0.05%	-1.36%
Emerging*	--	-7.73%	0.00%	25.46%	--	1.37%	1.15%	--	2.52%
Cash	0.46%	--	0.59%	0.00%	0.00%	-0.01%	0.00%	0.00%	-0.01%



	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
<b>Return (Rank)</b>																
5th Percentile	3.04		7.43		25.34		25.11		16.38		15.13		13.29		11.91	
25th Percentile	-0.09		2.59		20.10		20.18		12.69		12.48		10.80		10.10	
Median	-1.26		0.12		13.16		17.77		10.27		10.55		9.15		8.67	
75th Percentile	-3.44		-3.36		10.16		14.93		8.12		8.90		8.06		7.49	
95th Percentile	-5.50		-6.71		-0.58		10.07		4.94		8.13		6.59		5.17	
# of Portfolios	54		54		54		54		49		37		30		26	
● Templeton	-3.27	(72)	-1.53	(59)	10.55	(71)	17.79	(50)	8.06	(76)	9.09	(73)	8.04	(77)	--	(--)
▲ MSCI ACWI ex US Small Cap Gross	-2.44	(59)	-2.71	(69)	10.96	(66)	15.76	(68)	8.33	(71)	9.37	(62)	6.24	(99)	6.14	(90)

Characteristics

	Portfolio	MSCI ACWI ex US Small Cap Gross
Number of Holdings	99	4,318
Weighted Avg. Market Cap. (\$B)	2.4	2.4
Median Market Cap. (\$B)	1.6	0.9
Price To Earnings	23.3	19.0
Price To Book	3.4	2.6
Price To Sales	1.8	2.5
Return on Equity (%)	15.4	12.9
Yield (%)	2.2	2.3
Beta (holdings; global)	0.9	0.9

Top Holdings

TECHNOGYM	2.2%
AMER SPORTS	2.1%
TSUMURA	2.1%
THULE GROUP	2.0%
HUHTAMAKI	2.0%
INTERPUMP GROUP	1.9%
BUCHER INDUSTRIES	1.9%
ANICOM HOLDINGS	1.9%
DEWAN HOUSING FINANCE	1.8%
GERRESHEIMER	1.8%

Best Performers

	Return %
CANADA GOOSE HOLDINGS	75.8%
SBNTD.VTG.SH.S. (C:GOOS)	
TETHYS OIL (W:TETY)	50.5%
OXFORD INSTRUMENTS (UKIR:OXIG)	27.0%
XTEP INTERNATIONAL HDG. (K:XREP)	26.9%
GRAN TIERRA ENERGY (TSE) (C:GTE)	24.6%
BADGER DAYLIGHTING (C:BAD)	21.0%
KOBAYASHI PHARMACEUTICAL (J:KOB)	20.0%
LOGITECH INTL. (NAS) (LOGI)	19.5%
DEWAN HOUSING FINANCE (IN:DWH)	19.5%
FUJI OIL HOLDINGS (J:ZF@N)	19.0%

Worst Performers

	Return %
SAO PAULO ALPARGATAS PN (BR:AL4)	-39.2%
MAVI GIYIM SANAYI VE TICARET (TK:MGV)	-36.8%
M DIAS BRANCO INDUSTRIA ON (BR:MDB)	-36.7%
BETER BED HOLDING (H:BET)	-29.2%
CAMIL ALIMENTOS (BR:CML)	-23.5%
GRENDENE ON (BR:GRN)	-22.6%
GREGGS (UKIR:GRG)	-22.4%
IDOM (J:GULL)	-21.7%
GIANT MNFG. (TW:GMC)	-19.9%
AZIMUT HOLDING (I:AZM)	-18.9%

Templeton Performance Attribution vs. MSCI ACWI ex US Small Cap Gross

	Total Effects	Attribution Effects			Returns		Sector Weights				
		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.20%	0.31%	-0.08%	-0.03%	19.68%	10.35%	2.73%	3.35%			
Materials	-0.01%	-0.64%	0.03%	0.60%	-7.98%	-3.13%	5.77%	10.93%			
Industrials	-0.04%	0.04%	-0.04%	-0.04%	-4.08%	-4.51%	21.38%	19.36%			
Consumer Discretionary	-0.76%	-0.07%	-0.04%	-0.64%	-3.40%	-3.02%	28.24%	15.40%			
Consumer Staples	-0.29%	-0.16%	0.00%	-0.13%	-4.72%	-0.53%	6.81%	6.71%			
Health Care	0.03%	-0.08%	-0.02%	0.13%	-1.47%	-1.32%	6.41%	7.67%			
Financials	0.10%	0.13%	-0.07%	0.03%	-3.50%	-5.57%	12.97%	10.70%			
Information Technology	0.26%	0.20%	0.00%	0.06%	0.79%	-1.39%	12.46%	12.09%			
Telecommunication Services	0.03%	--	-0.02%	--	--	-0.88%	0.00%	1.13%			
Utilities	0.14%	--	0.01%	--	--	-3.22%	0.00%	2.75%			
Real Estate	0.30%	0.11%	-0.02%	0.21%	-1.25%	-2.06%	3.22%	9.92%			
Cash	0.00%	--	--	--	--	--	0.00%	0.00%			
Unclassified	0.00%	--	--	--	--	--	0.00%	0.00%			
<b>Portfolio</b>	<b>-0.03%</b>	<b>=</b>	<b>-0.17%</b>	<b>+</b>	<b>-0.23%</b>	<b>+</b>	<b>0.37%</b>	<b>-2.57%</b>	<b>-2.54%</b>	<b>100.00%</b>	<b>100.00%</b>

Templeton Performance Attribution vs. MSCI ACWI ex US Small Cap Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
<b>Europe</b>									
Austria	--	-5.06%	0.00%	0.63%	--	0.01%	0.03%	--	0.04%
Belgium	-6.28%	-5.78%	2.68%	1.19%	-0.01%	-0.04%	-0.07%	-0.01%	-0.13%
Czech Republic*	--	-7.65%	0.00%	0.02%	--	0.00%	0.00%	--	0.00%
Denmark	4.36%	10.75%	0.67%	1.16%	-0.08%	-0.07%	0.03%	0.03%	-0.09%
Finland	-6.17%	-2.16%	4.69%	1.09%	-0.05%	0.04%	-0.18%	-0.15%	-0.34%
France	--	-4.69%	0.00%	2.69%	--	0.04%	0.14%	--	0.18%
Germany	3.87%	-4.43%	7.83%	4.37%	0.38%	-0.05%	-0.21%	0.30%	0.43%
Greece*	--	-6.41%	0.00%	0.18%	--	0.01%	0.01%	--	0.02%
Hungary*	--	-15.45%	0.00%	0.02%	--	0.00%	0.00%	--	0.00%
Ireland	--	6.08%	0.00%	0.75%	--	-0.07%	0.04%	--	-0.03%
Italy	-6.33%	-4.66%	5.62%	2.94%	-0.05%	-0.04%	-0.13%	-0.05%	-0.27%
Luxembourg	11.49%	-2.54%	1.24%	0.00%	0.00%	0.00%	-0.07%	0.19%	0.12%
Netherlands	-8.23%	-3.79%	2.78%	1.83%	-0.08%	-0.01%	-0.05%	-0.04%	-0.18%
Norway	-5.53%	12.32%	1.90%	1.28%	-0.24%	0.09%	-0.01%	-0.11%	-0.28%
Poland*	-18.79%	-14.72%	0.79%	0.21%	-0.01%	-0.05%	-0.04%	-0.03%	-0.13%
Portugal	--	-0.45%	0.00%	0.28%	--	-0.01%	0.01%	--	0.01%
Russia*	--	-15.59%	0.00%	0.16%	--	0.02%	0.01%	--	0.03%
Spain	-5.88%	-3.03%	1.78%	1.88%	-0.06%	0.00%	0.01%	0.00%	-0.05%
Sweden	13.14%	0.72%	4.84%	3.55%	0.47%	0.07%	-0.13%	0.17%	0.58%
Switzerland	-3.22%	-2.10%	3.24%	3.45%	-0.07%	0.00%	0.04%	0.00%	-0.03%
United Kingdom	-4.14%	1.99%	5.40%	12.85%	-0.84%	-0.47%	0.49%	0.48%	-0.33%

Templeton Performance Attribution vs. MSCI ACWI ex US Small Cap Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
<b>AsiaPacific</b>									
Australia	--	2.75%	0.00%	4.63%	--	-0.22%	0.18%	--	-0.03%
China*	1.13%	-2.33%	0.67%	4.49%	0.15%	0.17%	0.00%	-0.13%	0.19%
Hong Kong	-1.37%	-6.49%	8.25%	1.41%	0.07%	-0.58%	0.00%	0.35%	-0.16%
India*	19.45%	-8.80%	1.82%	3.02%	0.90%	0.07%	0.03%	-0.36%	0.64%
Indonesia*	--	-11.04%	0.00%	0.53%	--	0.05%	0.02%	--	0.07%
Japan	-2.75%	-3.06%	22.30%	22.25%	0.07%	0.00%	-0.01%	0.00%	0.07%
Korea*	-14.31%	-9.50%	3.97%	3.77%	-0.19%	-0.01%	0.00%	-0.01%	-0.21%
Malaysia*	--	-6.03%	0.00%	0.74%	--	0.03%	0.03%	--	0.06%
New Zealand	--	-2.37%	0.00%	0.72%	--	-0.01%	0.05%	--	0.03%
Pakistan*	--	-10.11%	0.00%	0.18%	--	0.01%	0.01%	--	0.02%
Philippines*	-7.64%	-17.21%	0.55%	0.19%	0.02%	-0.06%	-0.01%	0.03%	-0.02%
Singapore	--	-11.22%	0.00%	1.21%	--	0.12%	0.04%	--	0.16%
Taiwan*	-11.29%	-2.64%	5.79%	3.99%	-0.36%	0.00%	-0.06%	-0.16%	-0.58%
Thailand*	-5.61%	-17.81%	0.53%	0.83%	0.11%	0.05%	0.01%	-0.04%	0.13%
<b>Americas</b>									
Brazil*	-29.62%	-23.68%	3.43%	1.24%	-0.09%	-0.30%	-0.23%	-0.15%	-0.77%
Canada	11.84%	6.00%	6.35%	6.32%	0.36%	0.00%	0.00%	0.00%	0.37%
Chile*	--	-13.28%	0.00%	0.28%	--	0.02%	0.02%	--	0.04%
Colombia*	--	-6.33%	0.00%	0.08%	--	0.00%	0.00%	--	0.01%
Mexico*	--	-6.97%	0.00%	0.63%	--	0.01%	0.05%	--	0.06%
Peru*	--	-33.48%	0.00%	0.03%	--	0.01%	0.00%	--	0.01%
United States	5.71%	3.40%	2.35%	0.00%	0.00%	0.03%	-0.02%	0.07%	0.09%

Templeton Performance Attribution vs. MSCI ACWI ex US Small Cap Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
<b>Other</b>									
Egypt*	--	-7.28%	0.00%	0.12%	--	0.01%	0.00%	--	0.01%
Israel	--	-1.09%	0.00%	1.09%	--	0.00%	0.03%	--	0.03%
Qatar*	--	-2.53%	0.00%	0.09%	--	0.00%	0.00%	--	0.00%
South Africa*	--	-20.17%	0.00%	1.23%	--	0.12%	0.15%	--	0.27%
Turkey*	-36.79%	-23.33%	0.54%	0.30%	-0.05%	-0.03%	-0.02%	-0.04%	-0.13%
United Arab Emirates*	--	-6.99%	0.00%	0.12%	--	0.01%	0.00%	--	0.01%
<b>Totals</b>									
Americas	-1.08%	-0.11%	12.13%	8.57%	-0.06%	0.07%	-0.18%	-0.03%	-0.19%
Europe	-1.42%	-0.60%	43.46%	40.53%	-0.41%	0.09%	-0.08%	-0.03%	-0.43%
Asia/Pacific	-3.78%	-4.03%	43.88%	47.97%	-0.05%	0.10%	0.30%	0.00%	0.36%
Other	-36.79%	-11.83%	0.54%	2.94%	-0.66%	0.15%	0.17%	0.54%	0.20%
<b>Total</b>	<b>-2.60%</b>	<b>-2.54%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>-1.18%</b>	<b>0.41%</b>	<b>0.21%</b>	<b>0.49%</b>	<b>-0.07%</b>
<b>Totals</b>									
Developed	-0.38%	-0.78%	81.92%	77.55%	-0.09%	0.08%	0.23%	-0.01%	0.20%
Emerging*	-12.69%	-8.61%	18.08%	22.45%	-0.65%	0.27%	-0.01%	0.13%	-0.27%

# Interest rate environment

- The Fed raised interest rates in June for the second time this year to a target range of 1.8-2.0%. The balance sheet unwind continued as planned with approximately \$18 billion in Treasuries and \$12 billion in MBS coming off each month during the quarter.
- According to the Fed dot plot, officials are expecting two additional rate hikes this year, while market pricing suggests only one more hike. Quicker than expected Fed tightening would represent a key risk to the economy and asset prices.
- The 10-year U.S. Treasury yield ticked up modestly during the quarter to 2.9% while the short-end of the curve rose further. The spread between the 2- and 10-year yields fell to a cycle low of 33 bps at quarter end. By another measure of curve shape, the 10-year yield minus 3-month yield, the curve remains at a level of steepness closer to the longer-term average (92 bps vs. 184 bps average).
- Historically, an inverted yield curve has preceded recessions, but the timing between inversion and recession has been anywhere from one to three years.
- In June, Mario Draghi officially announced the end of the Eurozone’s bond buying program. The ECB stated that purchases will end in December, and interest rates will remain unchanged through summer of 2019. The markets interpreted this as dovish and yields fell on the news.
- Italian sovereign yields spiked after it appeared the country was headed for new elections later in the year. The 2-year yield jumped 186 bps in one day to 2.8% as risk premiums rose. In the end, a coalition government was formed between the Five Star and League parties and the country avoided going back to the polls.
- Emerging market local and hard yields moved higher, influenced by a general risk-off sentiment towards EM as well as idiosyncratic risks in several vulnerable countries, such as Turkey and Argentina.

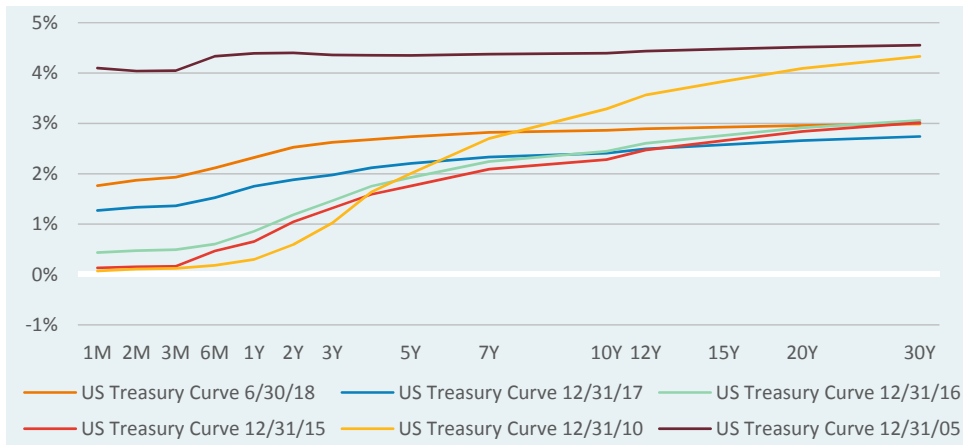
Area	Short Term (3M)	10 Year
United States	1.91%	2.86%
Germany	(0.59%)	0.30%
France	(0.63%)	0.67%
Spain	(0.42%)	1.32%
Italy	(0.12%)	2.68%
Greece	1.04%	3.96%
U.K.	0.61%	1.28%
Japan	(0.14%)	0.04%
Australia	1.92%	2.63%
China	3.01%	3.48%
Brazil	6.45%	11.68%
Russia	6.62%	7.81%

Source: Bloomberg, as of 6/30/18

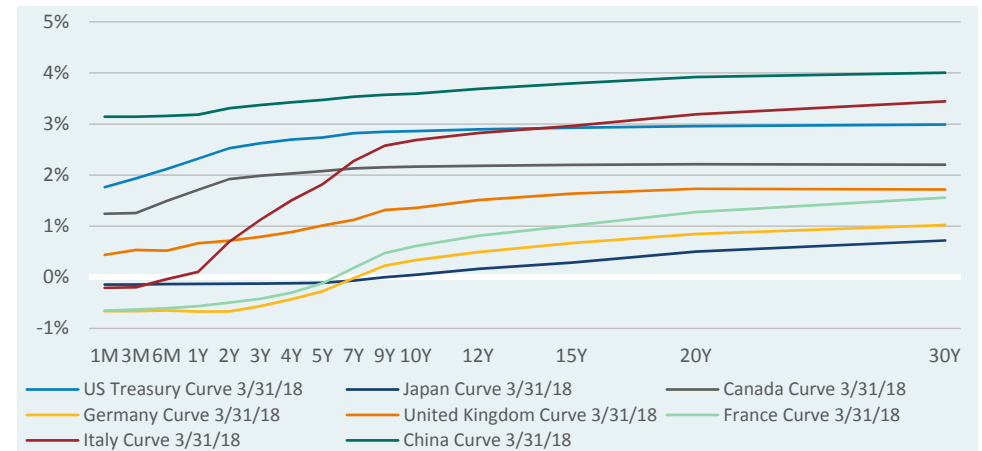


# Yield environment

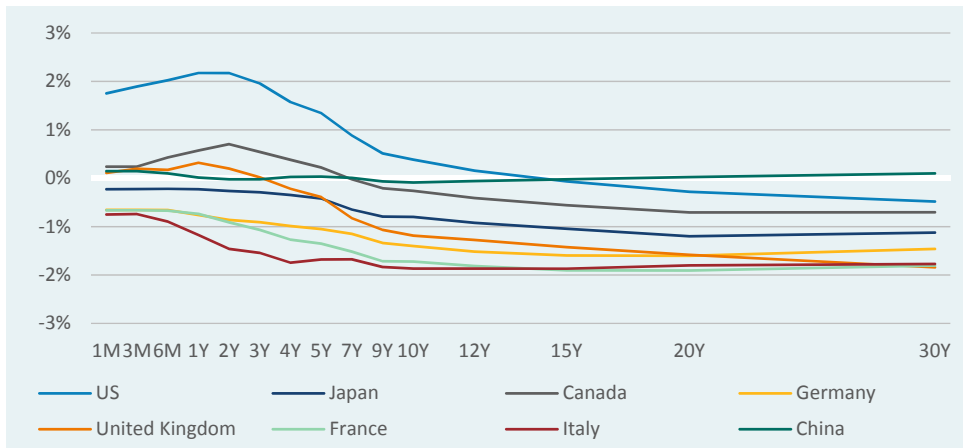
## U.S. YIELD CURVE



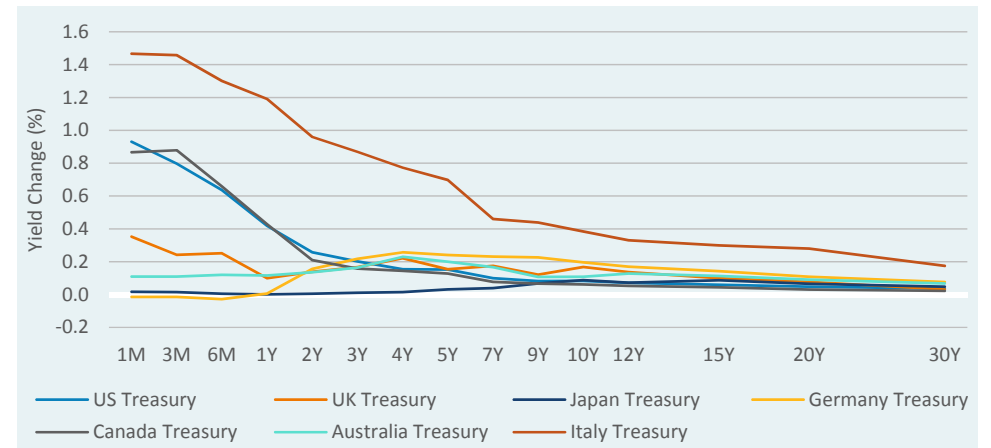
## GLOBAL GOVERNMENT YIELD CURVES



## YIELD CURVE CHANGES OVER LAST FIVE YEARS



## IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 6/30/18

# Currency

The U.S. dollar appreciated 5% during the quarter, which erased the positive equity returns of many international markets. Relative strength of the U.S. economy, paired with Federal Reserve tightening, likely helped lead the U.S. dollar higher.

Interest rate differentials between the U.S. and the rest of the developed world have been steadily widening over the past 10 months. The spread between the U.S. 10-year Treasury yield and the yield on a basket of developed sovereign debt rose approximately 80 bps to 2.3% during this

time. Higher relative interest rates has historically been a short-term driver of currencies.

Emerging market currencies fell 9.1% in Q2, based on the JPM EM Currency Index. The performance of most currencies were in line with expectations based on U.S. dollar appreciation against developed market currencies. Several countries with large current account deficits that are heavily reliant on dollar funding, such as Argentina and Turkey, saw their currencies fall sharply. As a whole, emerging market currencies are significantly undervalued based on purchasing power parity.

**The U.S. dollar materially appreciated, reversing a multi-year downtrend**

**U.S. DOLLAR TRADE WEIGHTED INDEX**



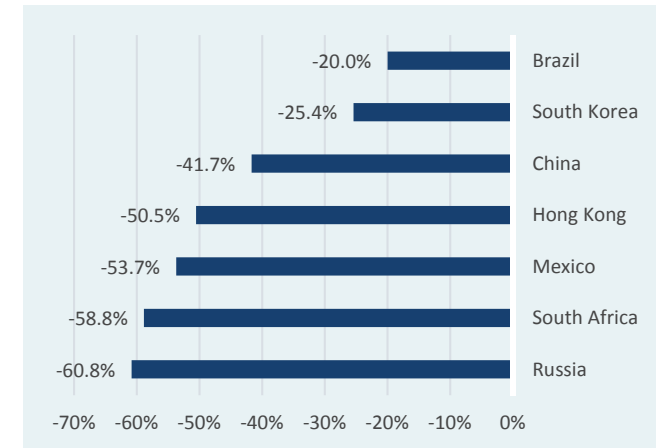
Source: Federal Reserve, as of 6/30/18

**U.S. VS. DEVELOPED INTEREST RATE SPREAD**

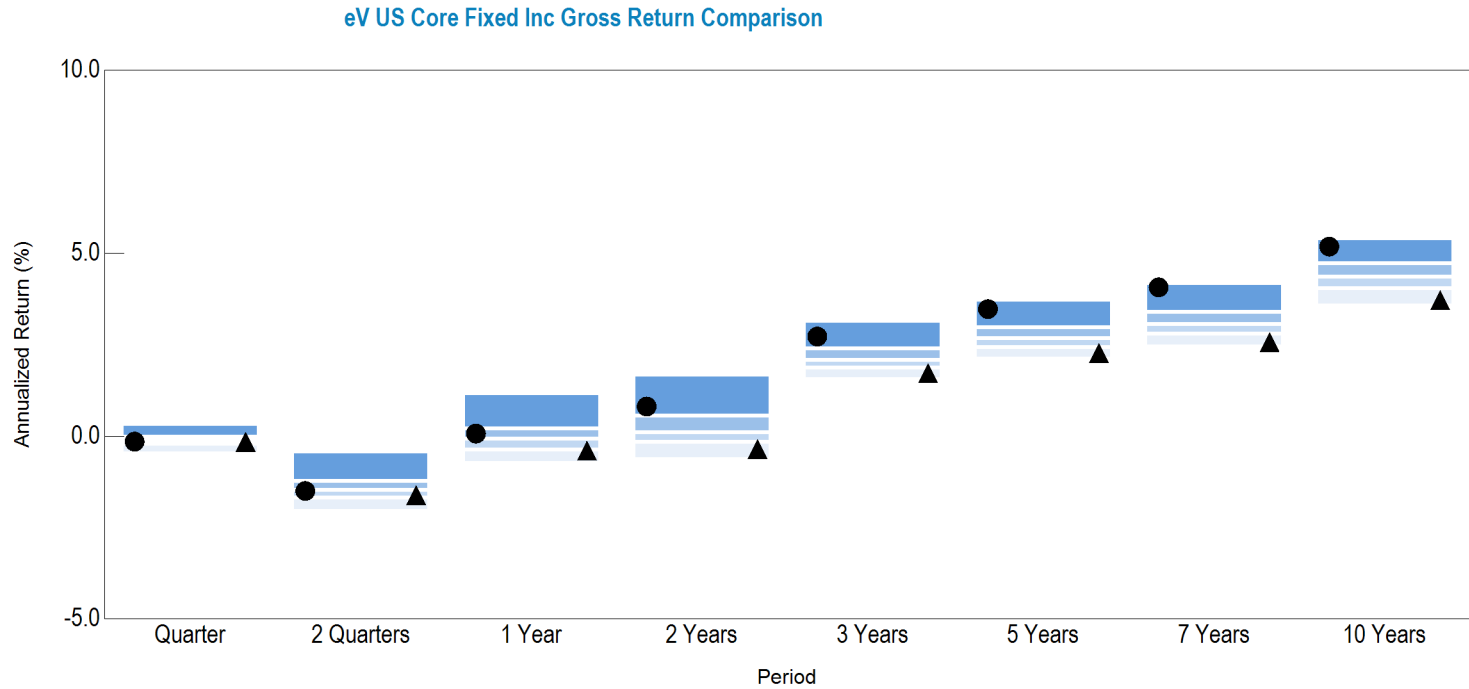


Source: Verus, Bloomberg, as of 6/30/18

**PURCHASING POWER PARITY VALUATIONS VS. U.S. DOLLAR (BIG MAC INDEX)**

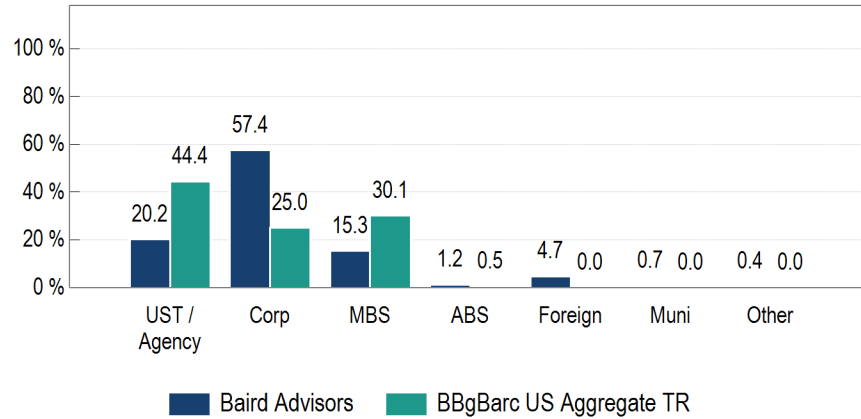


Source: Bloomberg, as of 6/30/18

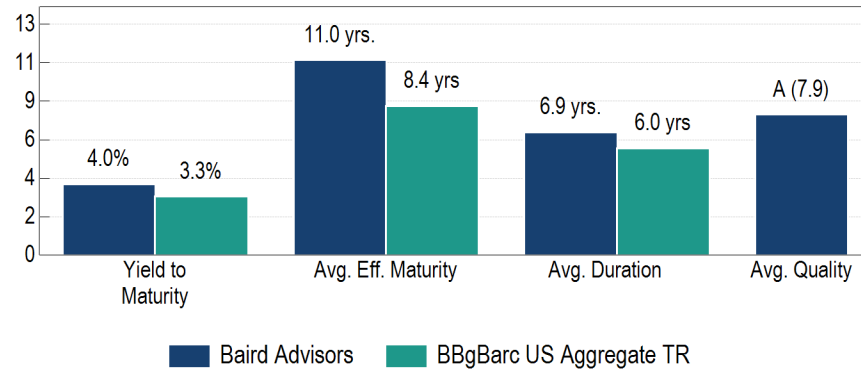


	Return (Rank)							
	Quarter	2 Quarters	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	0.32	-0.42	1.16	1.68	3.15	3.73	4.17	5.40
25th Percentile	0.00	-1.22	0.22	0.58	2.41	2.98	3.41	4.73
Median	-0.11	-1.46	-0.06	0.12	2.10	2.70	3.07	4.38
75th Percentile	-0.20	-1.67	-0.35	-0.14	1.88	2.45	2.81	4.06
95th Percentile	-0.45	-2.04	-0.72	-0.62	1.57	2.13	2.46	3.59
# of Portfolios	230	230	230	228	226	223	219	202
● Baird Advisors	-0.15 (62)	-1.50 (56)	0.07 (37)	0.81 (17)	2.72 (14)	3.47 (9)	4.07 (7)	5.18 (11)
▲ BBgBarc US Aggregate TR	-0.16 (63)	-1.62 (70)	-0.40 (82)	-0.36 (86)	1.72 (88)	2.27 (89)	2.57 (93)	3.72 (92)

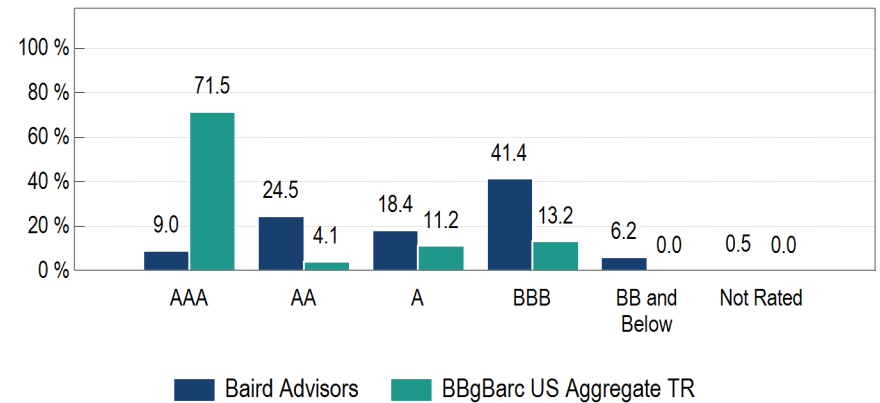
Sectors  
Baird Advisors



Characteristics  
Baird Advisors



Quality Ratings  
Baird Advisors



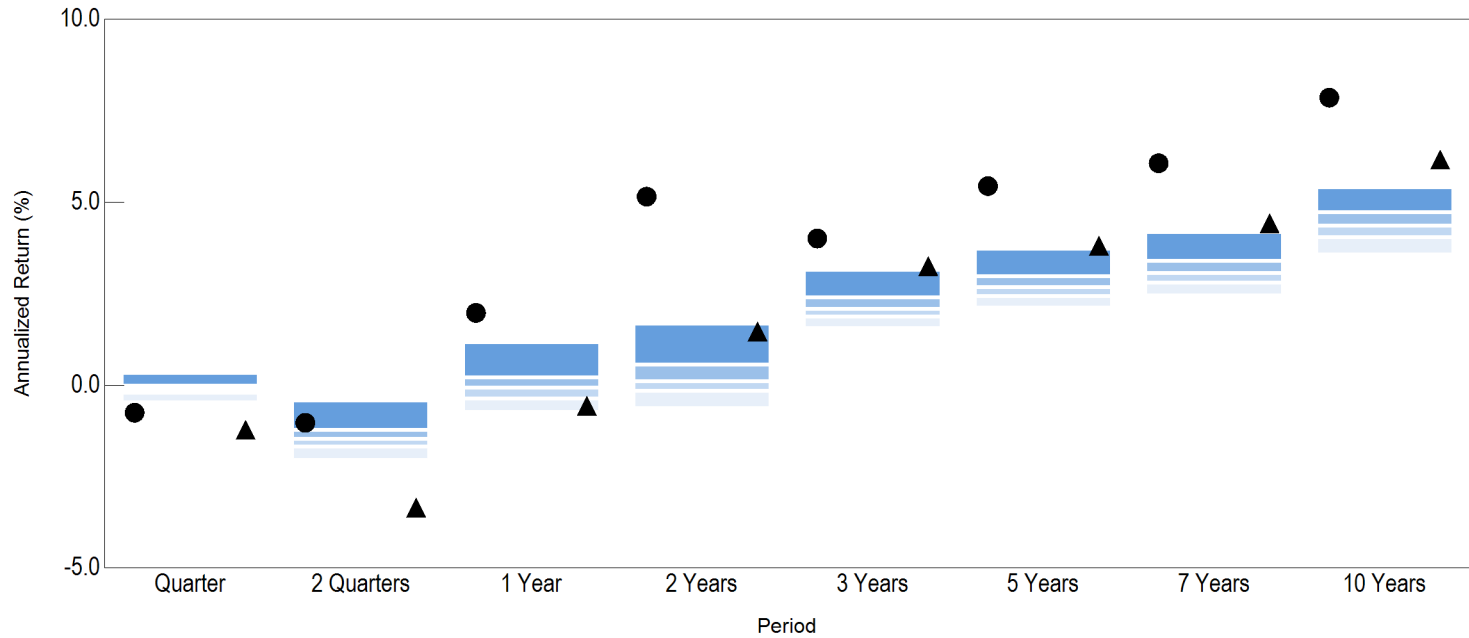
**PERFORMANCE BY QUALITY**

	<u>NUMBER OF ISSUES</u>	<u>FINAL MARKET VALUE (\$000)</u>	<u>FINAL MARKET VALUE %</u>	<u>QUARTERLY RETURN %</u>	<u>QUARTERLY CONTRIBUTION TO TOTAL RETURN %</u>
Cash & Equiv	1	5,964	0.9	0.47	0.00
Govt & Agency	99	335,283	50.6	0.13	0.07
AAA	22	60,960	9.2	0.09	0.01
AA	13	13,915	2.1	0.15	0.00
A	44	87,465	13.2	-0.18	-0.02
BAA	65	135,173	20.4	-0.93	-0.19
Below BAA	21	23,854	3.6	-0.50	-0.02
Other	0	-	0.0	0.00	0.00
<b>Total Account</b>	<b>265</b>	<b>\$662,614</b>	<b>100.0</b>	<b>-0.15</b>	<b>-0.15</b>

**PERFORMANCE BY DURATION**

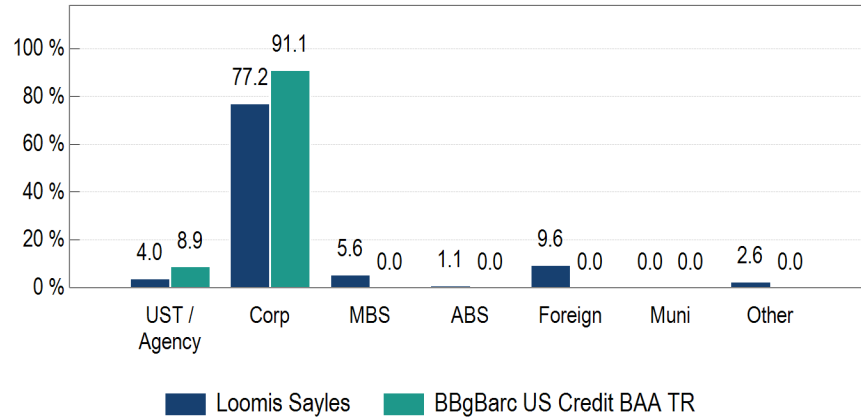
	<u>NUMBER OF ISSUES</u>	<u>FINAL MARKET VALUE (\$000)</u>	<u>FINAL MARKET VALUE %</u>	<u>QUARTERLY RETURN %</u>	<u>QUARTERLY CONTRIBUTION TO TOTAL RETURN %</u>
Under 1 Year	29	36,444	5.5	0.35	0.02
1 - 3 Years	51	94,091	14.2	0.40	0.06
3 - 6 Years	115	324,018	48.9	0.25	0.12
Over 6 Years	70	208,061	31.4	-1.10	-0.35
<b>Total Account</b>	<b>265</b>	<b>\$662,614</b>	<b>100.0</b>	<b>-0.15</b>	<b>-0.15</b>

eV US Core Fixed Inc Gross Return Comparison

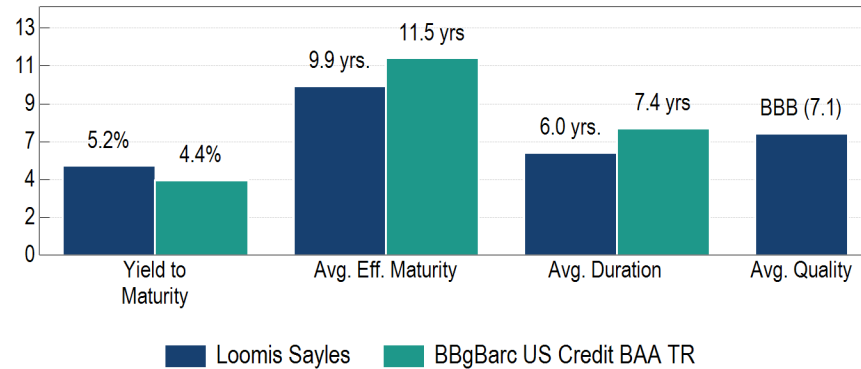


	Return (Rank)							
	Quarter	2 Quarters	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	0.32	-0.42	1.16	1.68	3.15	3.73	4.17	5.40
25th Percentile	0.00	-1.22	0.22	0.58	2.41	2.98	3.41	4.73
Median	-0.11	-1.46	-0.06	0.12	2.10	2.70	3.07	4.38
75th Percentile	-0.20	-1.67	-0.35	-0.14	1.88	2.45	2.81	4.06
95th Percentile	-0.45	-2.04	-0.72	-0.62	1.57	2.13	2.46	3.59
# of Portfolios	230	230	230	228	226	223	219	202
● Loomis Sayles	-0.75 (99)	-1.03 (15)	1.97 (2)	5.15 (1)	4.01 (3)	5.44 (1)	6.07 (1)	7.86 (1)
▲ BBgBarc US Credit BAA TR	-1.22 (99)	-3.35 (99)	-0.57 (91)	1.47 (7)	3.25 (5)	3.81 (5)	4.42 (4)	6.16 (2)

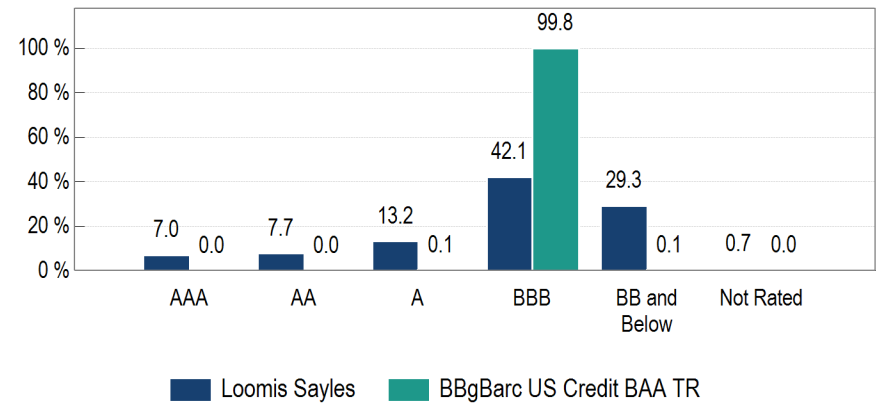
Sectors  
Loomis Sayles



Characteristics  
Loomis Sayles



Quality Ratings  
Loomis Sayles



*Attribution Summary*

<b>Returns</b>	
Account Return	-0.79
Benchmark Return	-1.22
Excess Return	0.43
<b>Excess Due To:</b>	
Sector Allocation	-0.03
Security Selection	0.47
Trading	-
Pricing Differences	-
Compounding	-

*Attribution Details*

Name	Acct Avg Weight	Acct Return	Acct Contrib	Bench Avg Weight	Bench Return	Bench Contrib	Quality Alloc	Security Selection	Total Effect
Quality	100.00	-0.79	-0.79	100.00	-1.22	-1.22	-0.03	0.47	0.44
CASH	2.04	-0.80	-0.01	-	-1.22	-	-	0.03	0.03
AAA	14.39	0.38	0.02	-	-1.22	-	-	0.24	0.24
AA	2.95	0.57	0.02	-	-1.22	-	-	0.05	0.05
A	10.15	-1.38	-0.09	0.12	-0.81	-	0.03	-0.05	-0.02
BAA	36.04	-1.65	-0.59	99.87	-1.22	-1.22	-	-0.15	-0.15
BA	18.08	-2.33	-0.43	0.01	-0.93	-	-0.07	-0.16	-0.22
B	6.28	-9.47	-0.56	-	-1.22	-	-	-0.47	-0.47
CAA	1.54	9.26	0.14	-	-1.22	-	-	0.15	0.15
CA	0.03	2.06	-	-	-1.22	-	-	-	-
C	0.10	0.52	-	-	-1.22	-	-	-	-
NR	8.39	6.66	0.72	-	-1.22	-	-	0.82	0.82



Attribution Summary

<b>Returns</b>	
Account Return	-0.79
Benchmark Return	-1.22
Excess Return	0.43
<b>Excess Due To:</b>	
Yield Curve Total	0.08
Parallel Shift	0.26
Nonparallel Shift	-0.18
Sector Allocation	0.62
Security Selection	-0.26
Trading	-
Pricing Differences	-
Compounding	-

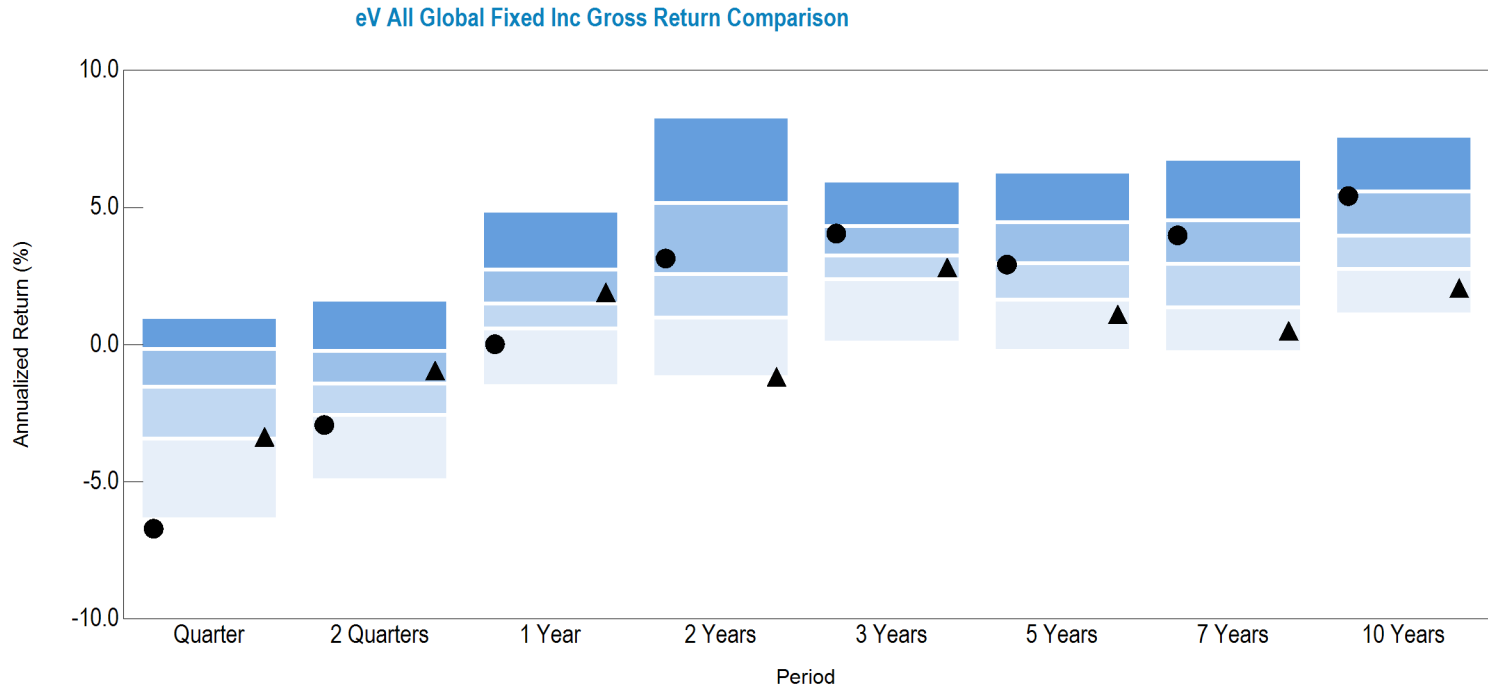
Attribution Details

Name	Acct Avg Duration	Acct Avg Weight	Acct Return	Acct Lcl Return	Acct Rtn Over TSY	Acct Contrib	Bench Avg Duration	Bench Avg Weight	Bench Return	Bench Lcl Return	Bench Rtn Over	Bench Contrib	Yield Curve Total	Parallel Shift	Nonparallel Shift	Sector Allocation	Security Selection	Total Effect
Duration	4.93	100.00	-0.79	-0.04	-0.79	-0.79	7.45	100.00	-1.22	-1.22	-1.22	-1.22	0.08	0.26	-0.18	0.62	-0.26	0.44
Less than 0.5	0.06	8.53	1.12	2.67	1.11	0.19	0.07	0.19	-0.56	-0.56	-0.56	-	0.11	0.14	-0.03	0.01	0.22	0.34
0.5 - 1.0	0.75	3.56	0.83	1.34	0.83	0.03	0.93	0.73	0.76	0.76	0.76	0.01	0.01	0.02	-0.01	0.04	-	0.05
1.0 - 1.5	1.27	6.92	0.17	1.19	0.17	0.01	1.25	3.32	0.66	0.66	0.66	0.02	0.02	0.03	-0.01	0.05	-0.03	0.04
1.5 - 2.0	1.78	4.34	1.72	1.81	1.72	0.07	1.74	4.16	0.53	0.53	0.53	0.02	0.02	0.02	-	-	0.05	0.07
2.0 - 2.5	2.25	5.62	0.29	0.49	0.29	0.01	2.26	4.75	0.48	0.48	0.48	0.02	-0.02	-0.02	-	0.02	-0.02	-0.02
2.5 - 3.0	2.71	5.90	2.06	2.07	2.05	0.12	2.73	4.85	0.25	0.25	0.25	0.01	-0.02	-0.01	-	0.02	0.10	0.11
3.0 - 3.5	3.25	5.43	0.01	0.01	0.01	0.02	3.25	4.60	0.17	0.17	0.17	0.01	-0.02	-0.01	-	0.01	-	-0.01
3.5 - 4.0	3.75	3.87	-2.19	0.13	-2.19	-0.09	3.74	5.11	0.03	0.03	0.03	-	-	-0.01	-	-0.01	-0.09	-0.10
4.0 - 4.5	4.32	4.35	0.20	0.20	0.20	-0.01	4.25	5.95	-0.15	-0.15	-0.15	-0.01	-0.02	-0.02	0.01	-0.01	-0.01	-0.04
4.5 - 5.0	4.76	5.13	0.47	0.94	0.47	0.01	4.74	4.23	-0.44	-0.44	-0.44	-0.02	0.01	0.01	-0.01	0.01	0.05	0.06
5.0 - 5.5	5.24	6.44	-0.72	-0.36	-0.72	-0.05	5.24	3.35	-0.53	-0.53	-0.53	-0.02	-0.01	-	-0.01	0.02	-0.03	-0.01
5.5 - 6.0	5.79	6.72	-0.44	-0.35	-0.44	-0.02	5.78	5.29	-0.55	-0.55	-0.55	-0.02	-	-	-	0.01	0.01	0.02
6.0 - 6.5	6.24	5.39	-2.51	-1.64	-2.51	-0.14	6.22	5.46	-0.82	-0.82	-0.82	-0.05	-	-	-	-	-0.09	-0.09
6.5 - 7.0	6.76	3.59	-1.16	-1.03	-1.16	-0.04	6.75	3.63	-0.94	-0.94	-0.94	-0.04	-	-	-	-	-0.01	-0.01
7.0 - 7.5	7.22	3.57	-2.33	-2.33	-2.33	-0.09	7.25	4.99	-1.04	-1.04	-1.04	-0.05	-	-	-	-	-0.04	-0.04
7.5 - 8.0	7.74	4.86	-1.70	-1.70	-1.70	-0.08	7.76	5.48	-1.09	-1.09	-1.09	-0.06	-	-	-	-	-0.03	-0.03
8.0 - 8.5	7.18	0.63	-6.91	-2.95	-6.90	-0.03	8.17	2.48	-1.64	-1.64	-1.64	-0.04	-	-	-	0.01	-0.02	-0.01
8.5 - 9.0	8.64	0.35	-4.58	-0.74	-4.56	-0.01	8.76	0.82	-2.57	-2.57	-2.57	-0.02	-	-	-	0.01	-	0.01
9.0 - 9.5	9.31	1.25	-9.44	-2.73	-9.43	-0.16	9.23	0.77	-1.25	-1.25	-1.25	-0.01	-	-	-	-	-0.15	-0.14
9.5 - 10.0	9.78	1.49	-6.27	-2.77	-6.27	-0.12	9.75	0.49	-2.85	-2.85	-2.85	-0.02	-	-	-	-0.02	-0.09	-0.10
10.0 - 10.5	10.23	0.84	-10.96	-3.48	-10.96	-0.12	10.27	0.56	-2.73	-2.73	-2.73	-0.01	-0.01	-0.01	-	-0.01	-0.06	-0.09

Loomis Sayles  
Performance Attribution Analysis

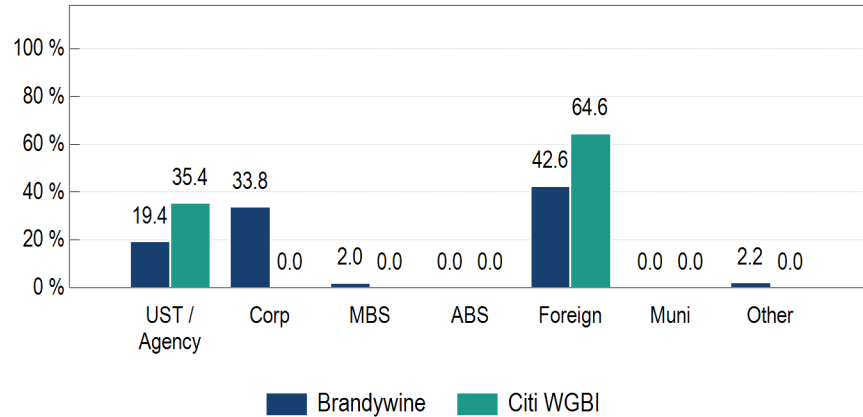
Period Ending: June 30, 2018

Name	Acct Avg Duration	Acct Avg Weight	Acct Return	Acct Lcl Return	Acct Rtn Over TSY	Acct Contrib	Bench Avg Duration	Bench Avg Weight	Bench Return	Bench Lcl Return	Bench Rtn Over	Bench Contrib	Yield Curve Total	Parallel Shift	Nonparallel Shift	Sector Allocation	Security Selection	Total Effect
10.5 - 11.0	10.73	0.64	-4.11	-3.82	-4.11	0.02	10.78	1.24	-2.86	-2.86	-2.85	-0.04	-	-	-	0.01	0.03	0.05
11.0 - 11.5	11.25	0.58	-1.80	-1.80	-1.79	-0.01	11.27	1.92	-3.06	-3.06	-3.06	-0.06	-	0.01	-	0.02	0.01	0.03
11.5 - 12.0	11.79	1.22	-3.69	-3.69	-3.69	-0.06	11.74	2.58	-2.51	-2.51	-2.51	-0.07	-	0.01	-0.01	0.02	-0.03	-0.01
12.0 - 12.5	12.21	1.82	-3.24	-3.24	-3.24	-0.07	12.23	2.24	-2.89	-2.89	-2.88	-0.06	-0.02	-0.02	-	0.02	0.01	0.01
12.5 - 13.0	12.72	0.58	-5.15	-5.15	-5.15	-0.02	12.74	1.90	-3.56	-3.56	-3.56	-0.07	0.01	0.01	-0.01	0.03	-0.01	0.03
13.0 - 13.5	13.22	0.71	-2.51	-2.51	-2.51	-0.02	13.24	1.68	-3.26	-3.26	-3.26	-0.06	0.01	0.01	-0.01	0.01	-	0.02
13.5 - 14.0	13.78	0.54	-8.79	-8.79	-8.79	-0.07	13.76	1.84	-3.04	-3.04	-3.04	-0.06	-	0.01	-0.01	0.03	-0.06	-0.03
14.0 - 14.5	14.24	0.86	-3.22	-3.22	-3.22	-0.05	14.26	2.88	-3.52	-3.52	-3.52	-0.11	-0.01	-	-0.01	0.05	-	0.05
14.5 - 15.0	14.63	1.03	0.10	0.10	0.10	0.01	14.75	3.58	-3.71	-3.71	-3.71	-0.13	-0.01	0.01	-0.02	0.08	0.03	0.10
15.0 - 15.5	12.48	0.25	-4.92	-4.92	-4.91	-0.02	15.25	3.37	-3.32	-3.32	-3.32	-0.13	0.01	0.04	-0.03	0.07	-0.01	0.07
15.5 - 16.0	5.70	0.14	-3.16	-3.16	-3.16	-0.01	15.73	2.74	-3.06	-3.06	-3.06	-0.09	-	0.03	-0.03	0.05	-0.01	0.04
16.0 - 16.5	1.70	0.04	0.82	0.82	0.82	-	16.23	1.38	-3.04	-3.04	-3.04	-0.04	-	0.01	-0.02	0.03	-	0.03
16.5 - 17.0	-	-	-	-	-	-	16.71	0.89	-1.40	-1.40	-1.40	-0.02	-	0.02	-0.02	0.01	-	0.01
17.0 - 17.5	-	-	-	-	-	-	17.22	0.30	-3.30	-3.30	-3.31	-0.01	-	0.01	-0.01	-	-	-
17.5 - 18.0	0.27	-	0.03	0.03	0.02	-	17.73	0.13	-3.02	-3.02	-3.02	-	-	-	-	-	-	-
18.0 - 18.5	-	-	-	-	-	-	15.75	0.04	-3.14	-3.14	-3.13	-	-	-	-	-	-	-
18.5 - 19.0	-	-	-	-	-	-	17.89	0.03	-4.04	-4.04	-4.05	-	-	-	-	-	-	-
19.0 - 19.5	9.13	1.31	-0.07	-0.07	-0.07	-	13.67	0.04	-3.21	-3.21	-3.19	-	-0.01	-0.01	-	-0.03	0.05	0.02
19.5 - 20.0	10.41	1.48	0.59	0.59	0.58	0.02	9.52	0.02	1.64	1.64	1.59	-	0.02	-0.03	0.06	0.06	-0.05	0.03
20.0 - 20.5	-	-	-	-	-	-	3.98	0.01	-1.30	-1.30	-1.29	-	-	-	-	-	-	-
Greater than 25.0	10.82	-	1.70	1.70	1.74	-	-	-	-1.22	-1.22	-1.22	-	-	-	-	-	-	-

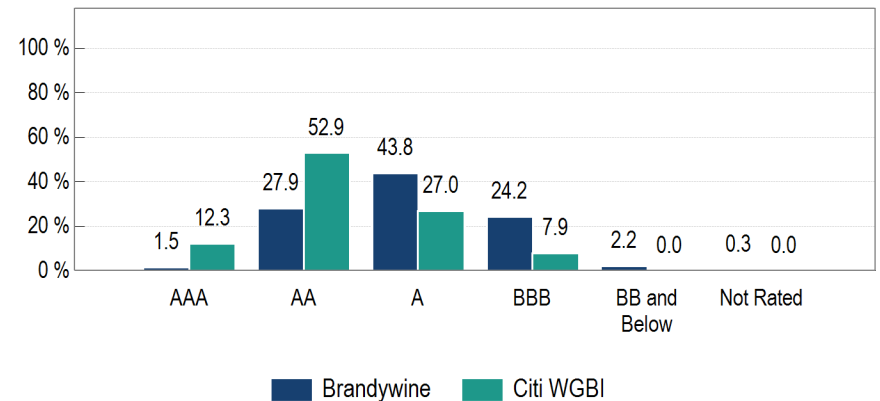


	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
<b>5th Percentile</b>	0.99	1.63	4.87	8.30	5.97	6.29	6.76	7.59								
<b>25th Percentile</b>	-0.14	-0.22	2.74	5.19	4.33	4.47	4.55	5.59								
<b>Median</b>	-1.53	-1.41	1.52	2.59	3.27	2.99	2.95	3.98								
<b>75th Percentile</b>	-3.40	-2.54	0.59	0.99	2.40	1.65	1.37	2.77								
<b>95th Percentile</b>	-6.35	-4.94	-1.50	-1.18	0.08	-0.22	-0.27	1.11								
<b># of Portfolios</b>	465	465	463	457	443	392	313	214								
<b>● Brandywine</b>	-6.71 (96)	-2.93 (81)	0.02 (87)	3.14 (44)	4.05 (30)	2.92 (52)	3.98 (34)	5.42 (27)								
<b>▲ Citi WGBI</b>	-3.35 (74)	-0.94 (42)	1.90 (40)	-1.16 (95)	2.81 (65)	1.11 (85)	0.51 (90)	2.07 (90)								

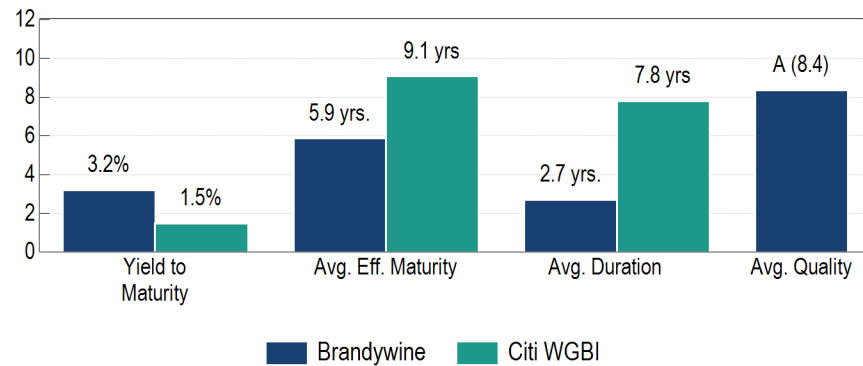
Sectors  
Brandywine



Quality Ratings  
Brandywine



Characteristics  
Brandywine



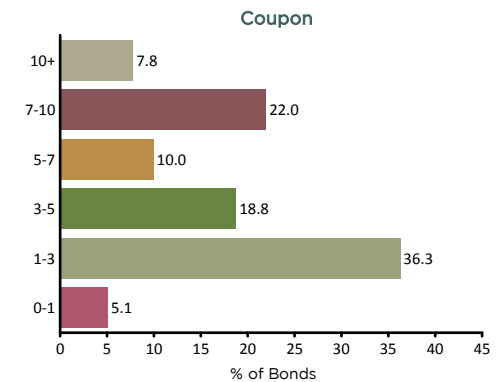
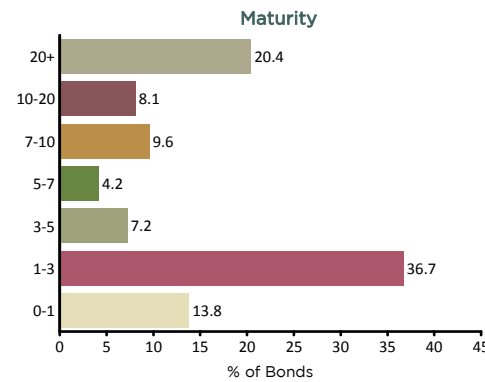
# Brandywine

## Portfolio Characteristics

Period Ending: June 30, 2018

### Portfolio Characteristics

	Portfolio	Primary Benchmark
Yield to Maturity (%)	4.86	1.50
Yield to Worst (%)	4.85	1.50
Modified Duration	3.88	7.83
Effective Duration	3.78	7.95
Average Maturity	8.41	9.13
Average Market Price	99.46	-
Average Coupon (%)	4.64	2.34
Current Yield (%)	4.58	-
# of Issues	124	1,035



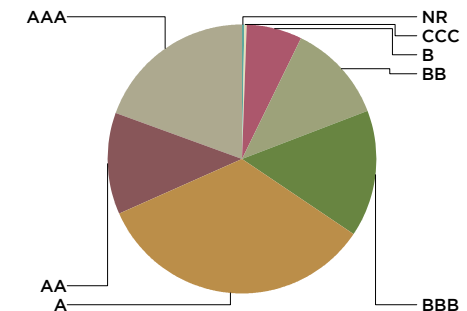
### Sector Breakdown

	Market Value (%)	Duration Contribution (in Years)
Government Sovereign	66.85	3.43
Corporate Bond - High Yield	4.49	0.19
Corporate Bond - Investment Grade	21.11	0.14
Mortgage Backed Securities	1.67	0.08
Government Regional Agencies	2.94	0.03
Supranational	0.66	0.01
Bank Loan	0.06	0.00
Cash	3.45	-
Derivatives	(1.24)	-
<b>Total:</b>	<b>100.00</b>	<b>3.88</b>

### Portfolio Credit Quality (Blended Weighted Average Rating)

Combined Rating	%	Cumulative %
AAA	19.4	19.4
AA	12.4	31.8
A	33.8	65.6
BBB	15.3	80.9
BB	12.0	92.8
B	6.7	99.6
CCC	0.3	99.9
NR	0.1	100.0

Average Quality: A-



PRIMARY BENCHMARK is FTSE WGBI (USD)

All Averages are US DOLLAR - weighted by the net market value. Average Market Price includes accrued interest. The "Blended Weighted Average Rating" is determined as follows: in line with the methodology used by Barclays Global indices, the middle rating from the three major NRSROs (S & P, Moody's, and Fitch) will be assigned to each security. In the event that ratings are provided by only two agencies, the lowest rating will be assigned. If only one agency assigns a rating, that rating will be applied. If the security is not rated by one of the three major agencies, U.S. treasuries and certain U.S. agencies are given the U.S. issuer rating. Sovereign treasuries are given the sovereign issuer rating. All other unrated securities are given a rating equivalent to a defaulted bond. The equivalent numerical rating is assigned to each security based on the Security Level scale. A Portfolio Level scale is applied on the weighted average calculation to round for fractional numerical ratings and then converted to an alpha weighted average rating. Cash is included and received the highest rating.

Data included on this page show the aggregate holdings of the Brandywine Emerging Markets Debt Fund ("EMD Fund"), in which the portfolio is invested. Holdings in the EMD Fund are not subject to ACERA's Investment Guidelines. Please note that ACERA owns units of the EMD Fund, not the underlying holdings. Data and characteristics shown are for illustrative purposes only.

Derivatives market value represents the unrealized profit/loss of all derivatives in the portfolio.

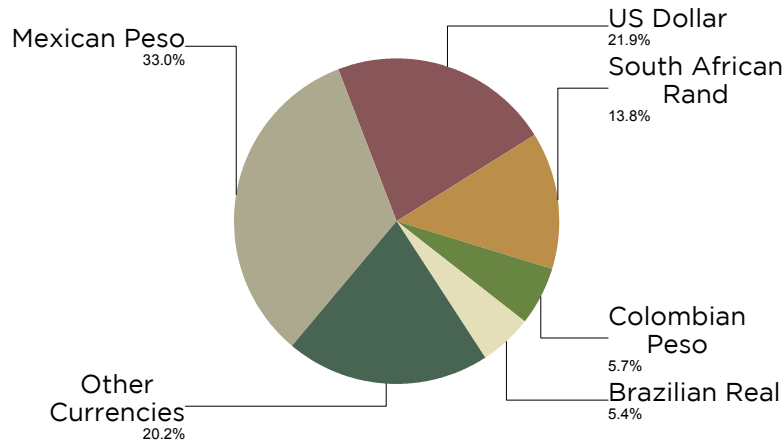
Brandywine  
Country & Currency Allocation

Period Ending: June 30, 2018

Country Allocation	6/30/2018			3/31/2018		Currency Allocation	6/30/2018			3/31/2018	
	Portfolio	Index	Active	Portfolio	Change		Portfolio	Index	Active	Portfolio	Change
Japan	-	19.67	(19.67)	-	-	Euro	0.60	32.66	(32.07)	1.31	(0.71)
Mexico	12.48	0.65	11.83	11.28	1.20	US Dollar	3.96	35.26	(31.30)	16.21	(12.25)
France	0.07	8.33	(8.26)	0.07	0.01	Japanese Yen	7.26	19.67	(12.42)	12.02	(4.77)
Italy	-	7.48	(7.48)	0.39	(0.39)	Mexican Peso	12.48	0.65	11.83	11.28	1.20
Australia	7.69	1.71	5.98	7.44	0.25	Swedish Krona	11.95	0.31	11.65	5.81	6.15
South Africa	5.62	0.47	5.15	6.42	(0.80)	Australian Dollar	8.28	1.71	6.57	3.14	5.14
Malaysia	5.19	0.39	4.80	6.66	(1.47)	Norwegian Krone	5.80	0.18	5.62	5.62	0.18
*Brazil	4.68	-	4.68	5.69	(1.01)	Malaysian Ringgit	5.62	0.39	5.23	6.66	(1.03)
Spain	0.81	4.85	(4.04)	0.83	(0.02)	British Pound Sterling	10.12	5.63	4.49	9.95	0.17
*Colombia	3.98	-	3.98	2.17	1.81	*Brazilian Real	4.25	-	4.25	5.05	(0.81)
Poland	4.44	0.51	3.92	5.87	(1.43)	*Colombian Peso	3.98	-	3.98	3.98	0.01
*Egypt	3.67	-	3.67	2.00	1.67	Polish Zloty	4.40	0.51	3.88	4.50	(0.10)
Germany	2.98	5.75	(2.76)	1.61	1.37	South African Rand	4.30	0.47	3.83	4.00	0.30
*Indonesia	2.60	-	2.60	2.85	(0.24)	Canadian Dollar	5.31	1.64	3.68	-	5.31
Peru	2.07	-	2.07	2.07	-	*Egyptian Pound	3.67	-	3.67	1.87	1.81
Belgium	-	2.07	(2.07)	-	-	*Indonesian Rupiah	2.60	-	2.60	2.85	(0.24)
United States	37.03	35.26	1.77	36.14	0.89	*New Turkish Lira	2.53	-	2.53	2.92	(0.39)
Netherlands	-	1.77	(1.77)	-	-	Peruvian Nuevo Sol	2.07	-	2.07	2.07	0.01
Canada	0.06	1.64	(1.58)	0.05	-	*Philippine Peso	0.82	-	0.82	0.78	0.04
Austria	-	1.24	(1.24)	-	-	Danish Krone	-	0.49	(0.49)	-	-
*Turkey	1.14	-	1.14	1.42	(0.28)	Singapore Dollar	-	0.31	(0.31)	-	-
Supranational	0.66	-	0.66	0.83	(0.16)	Swiss Franc	-	0.11	(0.11)	-	-
Ireland	-	0.65	(0.65)	-	-						
Finland	-	0.52	(0.52)	-	-	<b>Total:</b>	<b>100.00</b>	<b>100.00</b>	<b>-</b>	<b>100.00</b>	<b>-</b>
Denmark	-	0.49	(0.49)	-	-						
Singapore	-	0.31	(0.31)	-	-						
United Kingdom	5.94	5.63	0.30	5.86	0.08						
*Jamaica	0.13	-	0.13	0.13	-						
Other Countries	-	0.60	(0.60)	0.09	(0.09)						
Derivative P/L	(1.24)	-	(1.24)	0.15	(1.39)						
<b>Total:</b>	<b>100.00</b>	<b>100.00</b>	<b>-</b>	<b>100.00</b>	<b>-</b>						

\*Emerging Markets are defined as non-WGBI markets with local currency long-term debt rating below A- (or the equivalent) assigned by all NRSROs that provide such a rating. NRSRO means one of the following Nationally Recognized Statistical Rating Organizations: Standard & Poor's Ratings Services, Moody's Investors Service and Fitch, Inc.

**Source of Portfolio Duration by Currency Denomination**



**Duration Contribution by Currency  
(In Years)**

Currency	6/30/2018				3/31/2018	
	0-3	>3-10	>10-20	>20+	Total	Total Change
Mexican Peso	-	-	0.21	1.07	1.28	0.16
US Dollar	0.02	0.18	0.03	0.61	0.85	(0.05)
South African Rand	-	-	-	0.54	0.54	(0.13)
*Colombian Peso	-	0.22	-	-	0.22	0.12
*Brazilian Real	-	0.21	-	-	0.21	(0.07)
Malaysian Ringgit	0.06	0.13	-	-	0.19	(0.06)
Peruvian Nuevo Sol	-	-	0.19	-	0.19	(0.01)
*Indonesian Rupiah	-	-	0.18	-	0.18	(0.03)
Australian Dollar	0.06	-	-	-	0.06	(0.01)
Polish Zloty	0.06	-	-	-	0.06	(0.02)
*New Turkish Lira	-	0.05	-	-	0.05	(0.02)
Euro	-	-	-	0.04	0.04	0.03
*Egyptian Pound	0.01	-	-	-	0.01	0.00
British Pound Sterling	0.00	-	-	-	0.00	(0.01)
<b>Total</b>	<b>0.21</b>	<b>0.80</b>	<b>0.60</b>	<b>2.27</b>	<b>3.88</b>	<b>(0.11)</b>

**Duration Contribution by Country  
vs. FTSE WGBI (USD)**

**(In Years)**

Country	6/30/2018				3/31/2018		Active	Total Change
	0-3	>3-10	>10-20	>20+	Total	Index		
Japan	-	-	-	-	-	2.07	(2.07)	-
United States	0.01	0.15	0.03	0.61	0.81	2.13	(1.33)	(0.03)
Mexico	-	-	0.21	1.07	1.28	0.04	1.25	0.16
United Kingdom	0.00	0.01	-	-	0.01	0.71	(0.70)	(0.01)
France	-	0.00	-	-	0.00	0.68	(0.68)	(0.00)
South Africa	-	-	-	0.54	0.54	0.04	0.50	(0.13)
Italy	-	-	-	-	-	0.50	(0.50)	(0.00)
Germany	0.00	-	-	-	0.00	0.43	(0.43)	0.03
Spain	-	-	-	0.04	0.04	0.36	(0.31)	(0.00)
*Brazil	-	0.23	-	-	0.23	-	0.23	(0.08)
*Colombia	-	0.22	-	-	0.22	-	0.22	0.12
Belgium	-	-	-	-	-	0.19	(0.19)	-
Peru	-	-	0.19	-	0.19	-	0.19	(0.01)
*Indonesia	-	-	0.18	-	0.18	-	0.18	(0.03)
Malaysia	0.06	0.13	-	-	0.19	0.02	0.17	(0.06)
Netherlands	-	-	-	-	-	0.14	(0.14)	-
Austria	-	-	-	-	-	0.11	(0.11)	-
Canada	0.00	-	-	-	0.00	0.11	(0.11)	-
*Turkey	-	0.05	-	-	0.05	-	0.05	(0.02)
Ireland	-	-	-	-	-	0.05	(0.05)	-
Australia	0.06	-	-	-	0.06	0.11	(0.05)	(0.01)
Denmark	-	-	-	-	-	0.04	(0.04)	-
Poland	0.06	-	-	-	0.06	0.02	0.04	(0.02)
Finland	-	-	-	-	-	0.03	(0.03)	-
Singapore	-	-	-	-	-	0.02	(0.02)	-
Sweden	-	-	-	-	-	0.02	(0.02)	-
*Egypt	0.01	-	-	-	0.01	-	0.01	(0.00)
Supranational	0.01	-	-	-	0.01	-	0.01	(0.00)
*Jamaica	0.00	-	-	-	0.00	-	0.00	(0.00)
Other Countries	-	-	-	-	-	0.01	(0.01)	(0.00)
<b>Total</b>	<b>0.21</b>	<b>0.80</b>	<b>0.60</b>	<b>2.27</b>	<b>3.88</b>	<b>7.83</b>	<b>(3.95)</b>	<b>(0.11)</b>

\*Emerging Markets are defined as non-WGBI markets with local currency long-term debt rating below A- (or the equivalent) assigned by all NRSROs that provide such a rating. NRSRO means one of the following Nationally Recognized Statistical Rating Organizations: Standard & Poor's Ratings Services, Moody's Investors Service and Fitch, Inc.

Manager Compliance Checklist

Period Ending: June 30, 2018

MANAGER	INDEX OUTPERFORMANCE						DATABASE BENCHMARK		MANAGER TO BE PLACED ON WATCH LIST	MANAGER TO BE PLACED ON PROBATION
	AFTER FEE VS. INDEX		BEFORE FEE VS. INDEX		RISK ADJUSTED (SHARPE RATIO)		MEDIAN			
	3 YEAR	5 YEAR	3 YEAR	5 YEAR	3 YEAR	5 YEAR	3 YEAR	5 YEAR		
AQR (MSCI ACWI EX US GROSS)	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO
BAIRD ADVISORS (BBGBARC US AGGREGATE)	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO
BIVIUM (RUSSELL 3000 +1%) <sup>1</sup>	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES
BRANDYWINE FIXED INCOME (CITI WGBI)	YES	YES	YES	YES	YES	YES	YES	NO	NO	NO
CAPITAL GROUP (MSCI ACWI EX US GROSS)	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
KENNEDY (RUSSELL 2000 VALUE +2.5%)	NO	NO	NO	NO	NO	YES	YES	YES	NO	NO
LOOMIS SAYLES (BBGBARC US CREDIT BAA)	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO
MONDRIAN (MSCI ACWI EX US GROSS)	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES
NEXT CENTURY-SCG (RUSSELL 2000 GROWTH +2.5%)	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES
PZENA (RUSSELL 1000 VALUE +2%)	NO	NO	YES	NO	NO	NO	YES	YES	NO	NO
TCW (RUSSELL 1000 GROWTH +2%) <sup>2</sup>	NO	NO	NO	NO	NO	NO	YES	NO	YES	YES
TEMPLETON (MSCI ACWI EX US SMALL CAP GROSS)	NO	NO	NO	NO	NO	YES	NO	NO	YES	YES

1 Prior to 7/1/13, benchmark was linked to Russell 3000 +2%. 2 Prior to 7/1/13, benchmark was linked to Russell 1000 Growth +2.5%.



Policy Index and Benchmark History

Period Ending: March 31, 2018

Total Plan Policy Index	As of:													
	10/1/17	7/1/16	1/1/13	10/1/11	4/1/11	1/1/09	7/1/06	4/1/03	6/1/01	10/1/97	1/1/96	10/1/94	1/1/92	1/1/80
91-day UST Bill										1%	1%	1%	1%	2%
BBgBarc Aggregate	11.25%	11.25%	11.25%	15%	18%	18%	21%	23%	26%	33%	29%	32%	37%	30%
BBgBarc High Yield	1.50%	1.50%	1.50%	2.0%	2.4%	2%	3%	3%	3%					
Bloomberg Commodity	0.75%	0.75%												
Citigroup WGBI ex US	2.25%	2.25%	2.25%	3%	3.6%	3.6%	4%	4%	5%					
CPI-U +3% (RR)			5.00%	5%										
MSCI ACWI ex US						23%	22%	22%	22%					
MSCI ACWI ex US IMI	26.00%	26.00%	27.00%	25%	23%									
MSCI EAFE										10%	10%	10%	10%	
MSCI Emg Mkts Free ex Malaysia										3%				
MSCI World net														10%
NCREIF					6%	6%	9%	9%	9%					
NCREIF ODCE	8.00%	8.00%	6.00%	6%										
Russell 3000	28.00%	28.00%	32.00%	34%	37%	37%	41%	39%	35%	42%	49%	47%	40%	
HFRI FoFComposite	9.00%													
Thomson Reuters CJA Global All PE	9.00%													
Russell 3000 +1% (PE)		18.00%	15.00%	10%										
Russell 3000 +1.5% (PE)					10%	10%								
Russell 3000 +4% (AI)										2%				
S&P 500														55%
S&P Global Infrastructure	1.75%	1.75%												
S&P Global Natural Resources	2.50%	2.50%												
Wilshire RE										9%	11%	10%	12%	3%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

US Equity Benchmark	As of:	
	1/1/92	1/1/80
Russell 3000	100%	0%
S&P 500	0%	100%
	<b>100.0%</b>	<b>100.0%</b>

International Equity Benchmark	As of:				
	4/1/11	6/1/01	10/1/97	1/1/92	1/1/80
MSCI ACWI ex US		100%			
MSCI ACWI ex US IMI	100%				
MSCI EAFE			77%	100%	
MSCI Emg Mkts Free ex Malaysia			23%		
MSCI World net					100%
	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Fixed Income Benchmark	As of:	
	6/1/01	1/1/80
BBgBarc Aggregate	75%	100%
BBgBarc High Yield	10%	
Citigroup WGBl ex US	15%	
	<b>100.0%</b>	<b>100.0%</b>

Real Estate Benchmark	As of:	
	1/1/80	
NCREIF ODCE	100%	
	<b>100.0%</b>	

Real Assets Benchmark	As of:	
	7/1/16	10/1/11
CPI-U +3%		100%
Bloomberg Commodity	15%	
S&P Global Infrastructure	35%	
S&P Global Natural Resources	50%	
	<b>100.0%</b>	<b>100.0%</b>

<b>Bivium Benchmark</b>	<b>As of:</b>	
	7/1/13	8/1/08
Russell 3000 +1%	100%	
Russell 3000 +2%		100%
	<b>100.0%</b>	<b>100.0%</b>

<b>Pzena Benchmark</b>	<b>As of:</b>	
	2/1/06	
Russell 1000 Value +2%	100%	
	<b>100.0%</b>	

<b>TCW Benchmark</b>	<b>As of:</b>	
	7/1/13	7/1/99
Russell 1000 Growth +2%	100%	
Russell 1000 Growth +2.5%		100%
	<b>100.0%</b>	<b>100.0%</b>

<b>Kennedy Benchmark</b>	<b>As of:</b>	
	10/1/10	
Russell 2000 Value +2.5%	100%	
	<b>100.0%</b>	

<b>Next Century Benchmark</b>	<b>As of:</b>	
	11/1/02	
Russell 2000 Growth +2.5%	100%	
	<b>100.0%</b>	

# Glossary

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**Allocation Effect:** An attribution effect that describes the amount attributable to the managers' asset allocation decisions, relative to the benchmark.

**Alpha:** The excess return of a portfolio after adjusting for market risk. This excess return is attributable to the selection skill of the portfolio manager. Alpha is calculated as:  $\text{Portfolio Return} - [\text{Risk-free Rate} + \text{Portfolio Beta} \times (\text{Market Return} - \text{Risk-free Rate})]$ .

**Benchmark R-squared:** Measures how well the Benchmark return series fits the manager's return series. The higher the Benchmark R-squared, the more appropriate the benchmark is for the manager.

**Beta:** A measure of systematic, or market risk; the part of risk in a portfolio or security that is attributable to general market movements. Beta is calculated by dividing the covariance of a security by the variance of the market.

**Book-to-Market:** The ratio of book value per share to market price per share. Growth managers typically have low book-to-market ratios while value managers typically have high book-to-market ratios.

**Capture Ratio:** A statistical measure of an investment manager's overall performance in up or down markets. The capture ratio is used to evaluate how well an investment manager performed relative to an index during periods when that index has risen (up market) or fallen (down market). The capture ratio is calculated by dividing the manager's returns by the returns of the index during the up/down market, and multiplying that factor by 100.

**Correlation:** A measure of the relative movement of returns of one security or asset class relative to another over time. A correlation of 1 means the returns of two securities move in lock step, a correlation of -1 means the returns of two securities move in the exact opposite direction over time. Correlation is used as a measure to help maximize the benefits of diversification when constructing an investment portfolio.

**Excess Return:** A measure of the difference in appreciation or depreciation in the price of an investment compared to its benchmark, over a given time period. This is usually expressed as a percentage and may be annualized over a number of years or represent a single period.

**Information Ratio:** A measure of a manager's ability to earn excess return without incurring additional risk. Information ratio is calculated as: excess return divided by tracking error.

**Interaction Effect:** An attribution effect that describes the portion of active management that is contributable to the cross interaction between the allocation and selection effect. This can also be explained as an effect that cannot be easily traced to a source.

**Portfolio Turnover:** The percentage of a portfolio that is sold and replaced (turned over) during a given time period. Low portfolio turnover is indicative of a buy and hold strategy while high portfolio turnover implies a more active form of management.

**Price-to-Earnings Ratio (P/E):** Also called the earnings multiplier, it is calculated by dividing the price of a company's stock into earnings per share. Growth managers typically hold stocks with high price-to-earnings ratios whereas value managers hold stocks with low price-to-earnings ratios.

**R-Squared:** Also called the coefficient of determination, it measures the amount of variation in one variable explained by variations in another, i.e., the goodness of fit to a benchmark. In the case of investments, the term is used to explain the amount of variation in a security or portfolio explained by movements in the market or the portfolio's benchmark.

**Selection Effect:** An attribution effect that describes the amount attributable to the managers' stock selection decisions, relative to the benchmark.

**Sharpe Ratio:** A measure of portfolio efficiency. The Sharpe Ratio indicates excess portfolio return for each unit of risk associated with achieving the excess return. The higher the Sharpe Ratio, the more efficient the portfolio. Sharpe ratio is calculated as:  $\text{Portfolio Excess Return} / \text{Portfolio Standard Deviation}$ .

**Sortino Ratio:** Measures the risk-adjusted return of an investment, portfolio, or strategy. It is a modification of the Sharpe Ratio, but penalizes only those returns falling below a specified benchmark. The Sortino Ratio uses downside deviation in the denominator rather than standard deviation, like the Sharpe Ratio.

**Standard Deviation:** A measure of volatility, or risk, inherent in a security or portfolio. The standard deviation of a series is a measure of the extent to which observations in the series differ from the arithmetic mean of the series. For example, if a security has an average annual rate of return of 10% and a standard deviation of 5%, then two-thirds of the time, one would expect to receive an annual rate of return between 5% and 15%.

**Style Analysis:** A return based analysis designed to identify combinations of passive investments to closely replicate the performance of funds

**Style Map:** A specialized form or scatter plot chart typically used to show where a Manager lies in relation to a set of style indices on a two-dimensional plane. This is simply a way of viewing the asset loadings in a different context. The coordinates are calculated by rescaling the asset loadings to range from -1 to 1 on each axis and are dependent on the Style Indices comprising the Map.

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