



**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**



**PERIOD ENDING: DECEMBER 31, 2018**

Investment Performance Review for

**Alameda County Employees' Retirement Association**

# 4<sup>th</sup> quarter summary

## THE ECONOMIC CLIMATE

- U.S. real GDP growth reached 3.0% in Q3, supported by fiscal stimulus which is more or less expected to fade in 2019. Growth is forecast to moderate in the U.S., in-line with the rest of the developed world.
- The U.S. and China ended their most recent round of trade negotiations during the first week of January. China indicated willingness to purchase more American agricultural goods, energy, and other manufactured goods, but little progress is evident overall.

## PORTFOLIO IMPACTS

- The Federal Reserve raised the fed funds rate by 0.25% to a range of 2.25%-2.50%. Market expectations for future rate hikes changed dramatically in December. As of year-end, the fed funds futures market is pricing in zero hikes for 2019, and a rate cut for 2020.
- Emerging markets were the top equity performer in Q4, as these markets (MSCI EM -7.5%) experienced much less pain than developed markets (S&P 500 -13.5%, MSCI EAFE -12.5%) during the equity sell-off. Currencies stabilized in Q4 (JPMorgan EM Currency Index +0.2%) and emerging market crises concerns faded from the news headlines.

## THE INVESTMENT CLIMATE

- The U.S. equity market experienced a fairly significant peak-to-trough drawdown in Q4 (S&P 500 -19.8%, Russell 1000 -20.1%), along with global equity markets. Equity corrections of this size have historically occurred roughly once per cycle.
- After reaching a cyclical high of 3.2% in November, the 10-year U.S. Treasury yield fell sharply to end the year at 2.7%. Much of this drop was due to falling inflation expectations as energy prices trended down.
- The House of Commons in British Parliament overwhelmingly rejected Theresa May's Brexit deal that had been approved by the European Union. The details surrounding the terms of Great Britain's exit remain uncertain ahead of the March 30<sup>th</sup> deadline.

## ASSET ALLOCATION ISSUES

- Diversification has been particularly painful in recent years as most asset classes failed to keep up with a domestic 60/40 portfolio. U.S. performance exceptionalism reversed in Q4 as U.S. equities underperformed.
- Economic conditions around the world have weakened. This trend has been broad-based, from industrial production, to business sentiment, to corporate earnings expectations.

Economic conditions displayed a weaker trend in Q4

A neutral risk stance may be appropriate in today's environment

# U.S. economics summary

- Real GDP growth reached 3.0% YoY (3.4% quarterly annualized rate) in the third quarter, the fastest pace of growth in more than three years. Consumers drove growth after bouncing back from a spending slowdown in Q1.
- The U.S. and China ended the recent round of trade negotiations during the first week of January. The U.S. noted China’s willingness to purchase more American agricultural goods, energy, and other manufactured goods, but little progress is evident overall.
- U.S. inflation remained near the Federal Reserve’s 2.0% target. Headline U.S. inflation fell from 2.3% to 1.9% over the quarter, driven by lower oil prices. U.S. core CPI remained at 2.2%. Moderate inflation has likely contributed to the willingness of the Fed to keep on course with rate hikes.
- The labor market remained a bright spot in the U.S. economy. On average, nonfarm payrolls increased by 254,000 per month during the quarter, well above the expansion average of 201,000.
- The headline U-3 unemployment rate rose from 3.7% to 3.9%, in part due to an increase in labor force participation.
- Fiscal stimulus continued to support growth, although the impacts will likely subside in the first half of 2019. Stimulus may be masking a slowdown in the economy, which would be directionally in line with the rest of the developed world.
- The Federal Reserve hiked the target range for its benchmark interest rate by 25 basis points to a new range of 2.25% - 2.50%. Consistent with expectations for a “dovish hike”, central bank officials re-rated hike expectations in 2019 from three to two.

	Most Recent	12 Months Prior
GDP (YoY)	3.0% <i>9/30/18</i>	2.3% <i>9/30/17</i>
Inflation (CPI YoY, Core)	2.2% <i>12/31/18</i>	1.8% <i>12/31/17</i>
Expected Inflation (5yr-5yr forward)	1.8% <i>12/31/18</i>	2.0% <i>12/31/17</i>
Fed Funds Target Range	2.25 – 2.50% <i>12/31/18</i>	1.25 – 1.50% <i>12/31/17</i>
10 Year Rate	2.7% <i>12/31/18</i>	2.4% <i>12/31/17</i>
U-3 Unemployment	3.9% <i>12/31/18</i>	4.1% <i>12/31/17</i>
U-6 Unemployment	7.6% <i>12/31/18</i>	8.1% <i>12/31/17</i>

# International economics summary

- Outside of the U.S., economic growth has slowed in recent quarters, most notably in Europe and Japan. Developed real GDP growth is expected to slow from 2.2% in 2018 to 2.0% in 2019, according to the World Bank.
- The U.S. and China ended the recent round of trade negotiations during the first week of January. Officials continue to work towards an agreement, though little progress is been demonstrated thus far. On March 2<sup>nd</sup>, U.S. tariffs are scheduled to increase from 10% to 25% on \$200 billion of Chinese imports.
- China's Purchasing Managers' Index (PMI) fell to 49.7 in December. An index reading of 50 indicates economic expansion while a reading below 50 indicates contraction. This reading is in line with a string of weak economic data coming out of China.
- The House of Commons in British Parliament overwhelmingly rejected Theresa May's Brexit deal that had been approved by the European Union. The details surrounding the terms of Great Britain's exit remain uncertain ahead of the March 30<sup>th</sup> deadline. Potential resolutions include renegotiating a deal with the EU, leaving without a deal, or delaying the exit deadline.
- The U.S. dollar appreciated by 1.9% during the quarter on a trade-weighted basis. A slowing U.S. economy would likely put downside pressure on the dollar, which has been boosted recently by U.S. economic exceptionalism.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	3.0% <i>9/30/18</i>	2.2% <i>11/30/18</i>	3.9% <i>12/31/18</i>
Eurozone	1.6% <i>9/30/18</i>	1.8% <i>11/30/18</i>	8.1% <i>10/31/18</i>
Japan	0.0% <i>9/30/18</i>	0.8% <i>11/30/18</i>	2.5% <i>11/30/18</i>
BRICS Nations	5.6% <i>9/30/18</i>	2.4% <i>12/31/18</i>	5.4% <i>9/30/18</i>
Brazil	1.3% <i>9/30/18</i>	4.1% <i>11/30/18</i>	11.7% <i>12/31/18</i>
Russia	1.5% <i>9/30/18</i>	4.3% <i>12/31/18</i>	4.8% <i>11/30/18</i>
India	7.1% <i>9/30/18</i>	2.3% <i>11/30/18</i>	8.8% <i>12/31/17</i>
China	6.5% <i>9/30/18</i>	2.2% <i>11/30/18</i>	3.8% <i>9/30/18</i>

**ALAMEDA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION**  
**December 31, 2018**

- The composite fund returned -7.72% for the fourth quarter of 2018 and ranked in the 63<sup>rd</sup> percentile among public funds greater than \$1 billion (median of -6.92%). The fund lagged its policy index return of -7.57% during this time period. Longer term, the seven (8.67%), and ten year (9.96%) returns ranked in the top quartile of large public plans.
  
- Fourth quarter results were enhanced by the following factors:
  1. Capital Group lost -9.99% beating the MSCI ACWI ex US (-11.41%) and ranked in the top decile of its peers. Stock selection in financials contributed to the relative return particularly shares of Indonesia's Bank Central Asia and ICIC Banks both of which had strong earnings in Q4.
  2. Mondrian beat the MSCI ACWI ex US (-8.80% vs -11.41%). The portfolio benefited from stock selection in Spain, Italy, and Japan. The portfolio also benefited from weak equity markets where defensive sectors delivered stronger returns.
  
- Fourth quarter results were hindered by the following factors:
  1. Pzena ranked in the bottom of its peer group losing -16.35% vs the Russell 1000 Value + 2% (-10.91%). The underperformance was driven by the financials, energy, and producer durables sectors. Despite higher earnings and strong balance sheets in financials, they detracted due to fears of a slowing economy.
  2. Kennedy trailed the Russell 2000 Value +2.5% for the quarter losing -20.64% vs -17.52%. Stock selection in financials was the biggest detractor of performance accounting for -1.8% of relative underperformance.

Total Fund  
 Manager Allocation Analysis (One Quarter)

Period Ending: December 31, 2018

	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Absolute Return <sup>1</sup>	\$711,073,404	\$1,980,812	-\$7,812,547	\$705,241,668
Alta	\$15,207,737	-\$14,191,055	-\$1,013,191	\$3,491
Applied Research Investments	\$0	\$13,334,350	-\$762,505	\$12,571,846
AQR	\$427,481,313	-\$553,204	-\$58,973,134	\$367,954,976
Arga Investment Management	\$0	\$15,189,994	-\$1,063,983	\$14,126,010
Baird Advisors	\$663,436,868	-\$25,136,714	\$9,866,113	\$648,166,267
Bivium Cash	\$202	\$1,267,657	-\$1,268,444	-\$585
BlackRock Russell 1000 Index Fund	\$1,972,945,844	\$0	-\$272,242,851	\$1,700,702,992
Brandywine	\$326,294,623	-\$236,169	-\$2,588,882	\$323,469,572
Capital Group	\$854,277,257	\$0	-\$85,366,139	\$768,911,118
Cash Account	\$15,024,658	\$10,447,196	\$68,613	\$25,540,467
Denali Advisors	\$0	\$13,418,858	-\$145,474	\$13,273,384
Dundas Partners	\$0	\$15,090,958	-\$461,310	\$14,629,648
Global Alpha Capital Management	\$0	\$5,093,741	-\$385,069	\$4,708,672
Huber	\$10,474,013	-\$10,077,661	-\$394,414	\$1,938
Kennedy	\$123,810,563	-\$253,703	-\$25,554,055	\$98,002,805
Loomis Sayles	\$333,915,309	-\$269,923	-\$1,421,473	\$332,223,913
Matarin	\$10,920	-\$10,929	\$9	\$0
Mondrian	\$659,801,854	-\$579,376	-\$58,079,873	\$601,142,604
Next Century-SCG	\$133,188,323	-\$298,857	-\$30,888,584	\$102,000,882
Next Century-USCG	\$12	-\$7,981	\$8,418	\$449
OakBrook	\$12,734,884	-\$12,031,450	-\$703,077	\$357
Private Equity	\$501,759,291	\$6,308,065	\$18,898,929	\$526,966,285
Pzena	\$200,644,919	-\$22,254,853	-\$30,237,405	\$148,152,661
Quest	\$15,622,679	-\$14,607,381	-\$1,015,286	\$12
Radin Capital Partners	\$0	\$5,052,055	-\$300,383	\$4,751,673
Real Assets	\$317,496,550	\$11,438,301	-\$35,822,622	\$293,112,229
Real Estate	\$555,880,842	\$2,362,113	\$9,883,031	\$568,125,986
Sec. Lending	\$0	-\$619,555	\$619,555	\$0
TCW	\$204,623,008	-\$17,000,000	-\$30,939,482	\$156,683,525
Templeton	\$208,654,670	\$0	-\$29,807,810	\$178,846,860
Transition Account	\$768	-\$771	\$4	\$1
Vulcan Value	\$18,621,200	-\$17,524,350	-\$1,095,809	\$1,041
<b>Total</b>	<b>\$8,282,981,710</b>	<b>-\$34,669,833</b>	<b>-\$638,999,132</b>	<b>\$7,609,312,745</b>

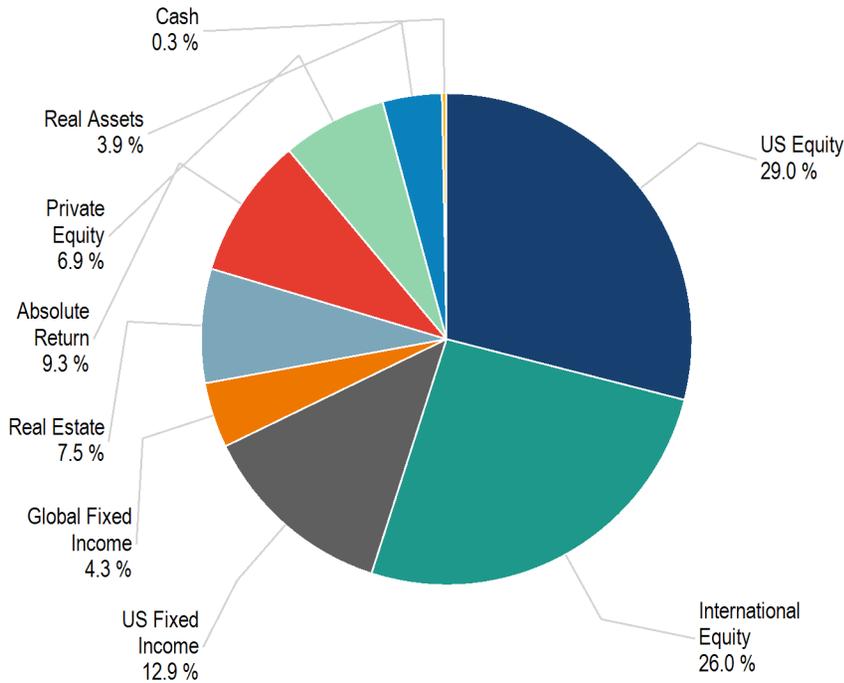
<sup>1</sup> Preliminary ending market value.

	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Alta	\$15,207,737	-\$14,191,055	-\$1,013,191	\$3,491
Bivium Cash	\$202	\$1,267,657	-\$1,268,444	-\$585
Huber	\$10,474,013	-\$10,077,661	-\$394,414	\$1,938
Matarin	\$10,920	-\$10,929	\$9	\$0
OakBrook	\$12,734,884	-\$12,031,450	-\$703,077	\$357
Quest	\$15,622,679	-\$14,607,381	-\$1,015,286	\$12
Vulcan Value	\$18,621,200	-\$17,524,350	-\$1,095,809	\$1,041
<b>Total</b>	<b>\$72,671,635</b>	<b>-\$67,175,169</b>	<b>-\$5,490,213</b>	<b>\$6,253</b>

Applied Research Investments	\$0	\$13,334,350	-\$762,505	\$12,571,846
Arga Investment Management	\$0	\$15,189,994	-\$1,063,983	\$14,126,010
Denali Advisors	\$0	\$13,418,858	-\$145,474	\$13,273,384
Dundas Partners	\$0	\$15,090,958	-\$461,310	\$14,629,648
Global Alpha Capital Management	\$0	\$5,093,741	-\$385,069	\$4,708,672
Radin Capital Partners	\$0	\$5,052,055	-\$300,383	\$4,751,673
<b>Total</b>	<b>\$0</b>	<b>\$67,179,956</b>	<b>-\$3,118,724</b>	<b>\$64,061,233</b>

Total Fund  
Asset Allocation Analysis

Period Ending: December 31, 2018



	Current Balance	Current Allocation
US Equity	\$2,205,549,568	29.0%
International Equity	\$1,980,916,791	26.0%
US Fixed Income	\$980,390,180	12.9%
Global Fixed Income	\$323,469,572	4.3%
Real Estate	\$568,125,986	7.5%
Absolute Return	\$705,241,668	9.3%
Private Equity	\$526,966,285	6.9%
Real Assets	\$293,112,228	3.9%
Cash	\$25,540,467	0.3%
<b>Total</b>	<b>\$7,609,312,745</b>	<b>100.0%</b>

	Policy	Current Allocation	Difference
US Equity	28.0%	29.0%	1.0%
International Equity	26.0%	26.0%	0.0%
US Fixed Income	12.8%	12.9%	0.1%
Global Fixed Income	2.3%	4.3%	2.0%
Real Estate	8.0%	7.5%	-0.5%
Absolute Return	9.0%	9.3%	0.3%
Private Equity	9.0%	6.9%	-2.1%
Real Assets	5.0%	3.9%	-1.1%
Cash	--	0.3%	0.3%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	

Bivium Portfolio liquidated U.S. Equities and invested in International Equities.

# Total Fund Performance Summary

Period Ending: December 31, 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>-7.72</b>	<b>63</b>	<b>-5.29</b>	<b>70</b>	<b>-4.05</b>	<b>61</b>	<b>7.20</b>	<b>15</b>	<b>5.30</b>	<b>31</b>	<b>8.67</b>	<b>14</b>	<b>9.96</b>	<b>5</b>	<b>9.39</b>	<b>Sep-85</b>
<b>Total Fund (Net)</b>	<b>-7.76</b>	<b>65</b>	<b>-5.37</b>	<b>71</b>	<b>-4.23</b>	<b>63</b>	<b>6.95</b>	<b>22</b>	<b>5.01</b>	<b>46</b>	<b>8.35</b>	<b>21</b>	<b>9.63</b>	<b>14</b>	<b>9.19</b>	
<i>Policy Index<sup>1</sup></i>	-7.57	62	-5.03	62	-4.10	62	7.47	9	5.83	12	8.94	6	9.96	5	9.69	Sep-85
<i>Allocation Index</i>	-8.07	77	-5.46	72	-4.92	73	7.11	19	5.46	26	8.54	17	9.45	18	--	Sep-85
<i>InvestorForce Public DB &gt; \$1B Gross Median</i>	-6.92		-4.62		-3.68		6.35		4.97		7.63		8.60		8.46	Sep-85
<b>US Equity (Gross)</b>	<b>-14.98</b>	<b>57</b>	<b>-9.15</b>	<b>51</b>	<b>-4.63</b>	<b>18</b>	<b>8.91</b>	<b>38</b>	<b>7.40</b>	<b>46</b>	<b>12.45</b>	<b>27</b>	<b>13.65</b>	<b>19</b>	<b>11.24</b>	<b>Sep-85</b>
<b>US Equity (Net)</b>	<b>-15.01</b>	<b>58</b>	<b>-9.25</b>	<b>53</b>	<b>-4.84</b>	<b>21</b>	<b>8.61</b>	<b>53</b>	<b>7.08</b>	<b>59</b>	<b>12.11</b>	<b>49</b>	<b>13.31</b>	<b>33</b>	<b>--</b>	
<i>Russell 3000</i>	-14.30	34	-8.20	26	-5.24	34	8.97	35	7.91	23	12.46	27	13.18	41	10.77	Sep-85
<i>InvestorForce All DB US Eq Gross Median</i>	-14.78		-9.13		-5.89		8.68		7.32		12.07		12.99		10.44	Sep-85
BlackRock Russell 1000 Index Fund (Gross)	-13.80	55	-7.39	51	--	--	--	--	--	--	--	--	--	--	-4.41	Apr-18
BlackRock Russell 1000 Index Fund (Net)	-13.80	55	-7.39	51	--	--	--	--	--	--	--	--	--	--	-4.41	
<i>Russell 1000</i>	-13.82	55	-7.42	52	-4.78	45	9.09	41	8.21	44	12.63	43	13.28	37	-4.45	Apr-18
<b>Large Cap Active Equity (Gross)</b>	<b>-16.25</b>	<b>--</b>	<b>-11.53</b>	<b>--</b>	<b>-7.16</b>	<b>--</b>	<b>7.61</b>	<b>--</b>	<b>7.05</b>	<b>--</b>	<b>12.09</b>	<b>--</b>	<b>13.97</b>	<b>--</b>	<b>7.05</b>	<b>Mar-00</b>
<b>Large Cap Active Equity (Net)</b>	<b>-16.33</b>	<b>--</b>	<b>-11.78</b>	<b>--</b>	<b>-7.61</b>	<b>--</b>	<b>7.18</b>	<b>--</b>	<b>6.64</b>	<b>--</b>	<b>11.66</b>	<b>--</b>	<b>13.54</b>	<b>--</b>	<b>6.62</b>	
<i>Russell 1000</i>	-13.82	--	-7.42	--	-4.78	--	9.09	--	8.21	--	12.63	--	13.28	--	4.94	Mar-00
Pzena (Gross)	-16.35	87	-14.49	95	-16.48	97	7.02	58	5.14	77	11.19	50	12.18	42	4.54	Jan-06
Pzena (Net)	-16.49	88	-14.75	96	-17.01	98	6.50	70	4.66	83	10.69	65	11.69	58	4.10	
<i>Russell 1000 Value +2%</i>	-10.91	22	-5.61	26	-6.27	29	8.97	21	7.97	16	13.04	7	13.19	16	8.10	Jan-06
<i>Russell 1000 Value</i>	-11.72	30	-6.69	36	-8.27	50	6.95	59	5.95	60	11.02	54	11.18	74	6.07	Jan-06

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 73 members with a total market value of \$773 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: December 31, 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
TCW (Gross)	-15.82	59	-8.72	59	2.73	19	8.14	85	9.08	63	12.93	73	15.39	34	6.64	Jun-99
TCW (Net)	-15.82	59	-8.96	62	2.39	21	7.80	89	8.75	72	12.57	80	15.01	46	--	
<i>Russell 1000 Growth +2%<sup>1</sup></i>	-15.20	48	-7.27	35	0.49	37	13.16	6	12.41	5	16.18	7	17.47	4	7.06	Jun-99
<i>Russell 1000 Growth</i>	-15.89	60	-8.17	46	-1.51	57	11.15	29	10.40	32	14.14	43	15.29	36	4.65	Jun-99
<b>Small Cap Equity (Gross)</b>	<b>-21.96</b>	<b>--</b>	<b>-18.03</b>	<b>--</b>	<b>-10.54</b>	<b>--</b>	<b>7.57</b>	<b>--</b>	<b>4.14</b>	<b>--</b>	<b>11.08</b>	<b>--</b>	<b>12.58</b>	<b>--</b>	<b>12.94</b>	<b>Jul-85</b>
<b>Small Cap Equity (Net)</b>	<b>-22.17</b>	<b>--</b>	<b>-18.60</b>	<b>--</b>	<b>-11.50</b>	<b>--</b>	<b>6.60</b>	<b>--</b>	<b>3.23</b>	<b>--</b>	<b>10.11</b>	<b>--</b>	<b>11.68</b>	<b>--</b>	<b>--</b>	
<i>Russell 2000</i>	-20.20	--	-17.35	--	-11.01	--	7.36	--	4.41	--	10.44	--	11.97	--	9.09	Jul-85
Kennedy (Gross)	-20.64	79	-20.58	85	-18.56	86	4.87	74	3.90	54	11.28	27	--	--	10.50	Sep-10
Kennedy (Net)	-20.84	81	-21.28	88	-19.44	93	3.94	89	3.02	73	10.33	56	--	--	9.61	
<i>Russell 2000 Value +2.5%</i>	-17.52	26	-15.77	33	-10.36	19	9.91	14	6.13	12	12.10	14	--	--	11.76	Sep-10
<i>Russell 2000 Value</i>	-18.67	45	-17.36	46	-12.86	39	7.37	36	3.61	63	9.57	75	10.40	94	9.20	Sep-10
Next Century-SCG (Gross)	-23.19	82	-15.42	60	-0.63	34	9.72	49	4.23	86	9.71	91	12.62	92	10.62	Oct-02
Next Century-SCG (Net)	-23.42	84	-15.86	65	-1.70	39	8.73	62	3.31	89	8.73	97	11.62	99	9.65	
<i>Russell 2000 Growth +2.5%</i>	-20.28	41	-15.73	64	-6.81	71	9.76	48	7.65	30	13.77	32	16.04	31	12.74	Oct-02
<i>Russell 2000 Growth</i>	-21.65	65	-17.33	85	-9.31	80	7.24	80	5.13	73	11.25	81	13.52	81	10.18	Oct-02
<b>International Equity (Gross)</b>	<b>-10.78</b>	<b>15</b>	<b>-10.76</b>	<b>23</b>	<b>-13.34</b>	<b>21</b>	<b>6.15</b>	<b>12</b>	<b>2.00</b>	<b>20</b>	<b>6.69</b>	<b>21</b>	<b>7.64</b>	<b>28</b>	<b>7.80</b>	<b>Dec-90</b>
<b>International Equity (Net)</b>	<b>-10.85</b>	<b>16</b>	<b>-10.88</b>	<b>26</b>	<b>-13.58</b>	<b>23</b>	<b>5.80</b>	<b>18</b>	<b>1.62</b>	<b>34</b>	<b>6.28</b>	<b>33</b>	<b>7.22</b>	<b>42</b>	<b>--</b>	
<i>MSCI ACWI ex USA IMI Gross</i>	-11.82	44	-11.40	38	-14.35	41	4.87	36	1.30	45	5.54	61	7.15	45	5.88	Dec-90
<i>InvestorForce All DB ex-US Eq Gross Median</i>	-12.17		-11.83		-14.78		4.52		1.16		5.86		7.00		6.34	Dec-90

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

Total Fund  
Performance Summary

Period Ending: December 31, 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 Intl Equity (Gross)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-5.24	Oct-18
Bivium Intl Equity (Net)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-5.24	
MSCI ACWI ex USA Gross	-11.41	22	-10.70	29	-13.78	37	4.98	46	1.14	74	5.33	79	7.06	85	-3.57	Oct-18
AQR (Gross)	-13.80	78	-13.32	77	-17.62	84	3.78	50	1.11	43	6.37	41	8.30	31	0.94	Oct-07
AQR (Net)	-13.92	80	-13.57	80	-18.08	86	3.26	65	0.59	66	5.83	61	7.77	42	0.45	
MSCI ACWI ex USA Gross	-11.41	27	-10.70	29	-13.78	31	4.98	26	1.14	43	5.33	78	7.06	64	0.17	Oct-07
Capital Group (Gross)	-9.99	8	-10.64	24	-11.55	15	8.91	6	2.54	34	7.63	34	7.83	63	8.10	Dec-90
Capital Group (Net)	-9.99	8	-10.67	24	-11.61	15	8.72	7	2.28	40	7.33	38	7.47	68	--	
MSCI ACWI ex USA Gross	-11.41	22	-10.70	25	-13.78	35	4.98	40	1.14	64	5.33	78	7.06	76	5.88	Dec-90
MSCI ACWI ex USA Growth Gross	-12.16	35	-12.34	47	-14.10	40	4.57	47	2.06	43	5.98	67	7.52	67	--	Dec-90
Mondrian (Gross)	-8.80	10	-7.40	12	-11.68	10	4.72	43	1.53	30	5.07	63	6.48	45	6.55	Nov-03
Mondrian (Net)	-8.89	10	-7.50	15	-11.93	18	4.38	55	1.18	39	4.73	86	6.15	55	6.25	
MSCI ACWI ex USA Gross	-11.41	49	-10.70	62	-13.78	38	4.98	41	1.14	40	5.33	56	7.06	43	6.17	Nov-03
MSCI ACWI ex USA Value Gross	-10.63	23	-8.98	21	-13.45	29	5.37	39	0.18	75	4.64	88	6.55	45	6.08	Nov-03
Templeton (Gross)	-14.28	26	-16.47	53	-17.76	50	3.41	70	2.35	62	7.96	77	--	--	4.59	Apr-11
Templeton (Net)	-14.44	28	-16.79	59	-18.33	56	2.75	76	1.65	78	7.22	87	--	--	3.88	
MSCI ACWI ex US Small Cap Gross	-14.38	27	-15.60	29	-17.89	52	4.20	55	2.33	62	6.98	91	10.41	95	2.70	Apr-11
<b>Total Fixed Income (Gross)</b>	<b>0.45</b>	<b>54</b>	<b>0.60</b>	<b>58</b>	<b>-1.15</b>	<b>75</b>	<b>4.34</b>	<b>20</b>	<b>3.65</b>	<b>25</b>	<b>4.42</b>	<b>15</b>	<b>7.23</b>	<b>10</b>	<b>7.24</b>	<b>Sep-86</b>
<b>Total Fixed Income (Net)</b>	<b>0.40</b>	<b>57</b>	<b>0.52</b>	<b>62</b>	<b>-1.32</b>	<b>80</b>	<b>4.15</b>	<b>28</b>	<b>3.45</b>	<b>28</b>	<b>4.20</b>	<b>17</b>	<b>7.01</b>	<b>13</b>	<b>--</b>	
Fixed Income Blend	0.96	33	0.88	46	-0.44	59	2.79	69	2.35	77	2.15	88	3.93	83	6.34	Sep-86
InvestorForce All DB Total Fix Inc Gross Median	0.58		0.83		-0.07		3.46		2.84		3.22		5.07		6.82	Sep-86

1 See Policy Index and Benchmark History.

Total Fund  
Performance Summary

Period Ending: December 31, 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>US Fixed Income (Gross)</b>	0.86	52	1.25	48	-0.11	58	4.00	29	3.94	25	4.78	7	7.35	8	7.14	Sep-86
<b>US Fixed Income (Net)</b>	0.82	54	1.17	53	-0.27	65	3.84	32	3.77	26	4.60	10	7.17	11	--	
<i>BBgBarc US Aggregate TR</i>	1.64	17	1.66	23	0.01	55	2.06	77	2.52	68	2.10	81	3.48	84	6.10	Sep-86
<i>InvestorForce All DB US Fix Inc Gross Median</i>	0.89		1.21		0.11		3.01		2.95		3.12		4.94		6.32	Sep-86
Baird Advisors (Gross)	1.51	32	1.66	36	0.13	43	3.06	10	3.59	7	3.63	9	5.67	10	4.93	Oct-01
Baird Advisors (Net)	1.49	35	1.62	42	0.05	50	2.97	13	3.51	7	3.54	10	5.58	11	4.84	
<i>BBgBarc US Aggregate TR</i>	1.64	19	1.66	37	0.01	54	2.06	84	2.52	84	2.10	94	3.48	93	4.08	Oct-01
Loomis Sayles (Gross)	-0.43	99	0.44	99	-0.59	90	5.78	1	4.59	2	6.92	1	10.59	1	8.06	Dec-00
Loomis Sayles (Net)	-0.51	99	0.28	99	-0.91	96	5.45	1	4.26	3	6.56	1	10.23	1	7.72	
<i>BBgBarc US Credit BAA TR</i>	-0.90	99	0.44	99	-2.92	99	4.01	3	3.47	8	3.74	8	7.08	2	6.00	Dec-00
<b>Global Fixed Income (Gross)</b>	-0.79	55	-1.37	82	-4.26	79	5.23	36	2.68	48	3.28	58	6.79	24	7.20	Nov-01
<b>Global Fixed Income (Net)</b>	-0.87	57	-1.45	84	-4.47	82	4.97	45	2.41	55	2.96	77	6.47	40	6.89	
<i>FTSE WGBI TR</i>	1.75	5	0.10	47	-0.84	35	2.69	99	0.77	94	0.20	99	1.52	99	4.40	Nov-01
<i>InvestorForce All DB Gbl Fix Inc Gross Median</i>	-0.73		0.00		-1.81		4.73		2.67		3.44		6.35		6.42	Nov-01
Brandywine (Gross)	-0.79	53	-1.37	70	-4.26	81	5.23	21	2.68	44	3.28	49	6.79	29	7.20	Nov-01
Brandywine (Net)	-0.87	53	-1.45	71	-4.47	83	4.97	23	2.41	48	2.96	54	6.47	31	6.89	
<i>FTSE WGBI TR</i>	1.75	7	0.10	40	-0.84	36	2.69	72	0.77	80	0.20	94	1.52	97	4.40	Nov-01
<b>Absolute Return (Gross)</b>	-1.11	16	-0.65	19	-1.23	43	2.44	53	2.93	36	4.58	43	--	--	3.40	Sep-11
<b>Absolute Return (Net)</b>	-1.11	16	-0.65	19	-1.23	43	2.44	53	2.93	36	4.58	43	--	--	3.40	
<i>HFRI Fund of Funds Composite Index</i>	-5.00	60	-4.78	74	-4.08	75	1.29	70	1.38	67	2.92	76	3.11	85	2.75	Sep-11
<i>InvestorForce All DB Hedge Funds Gross Median</i>	-4.47		-3.59		-1.72		2.52		2.28		4.37		4.72		4.37	Sep-11

Total Fund  
Performance Summary

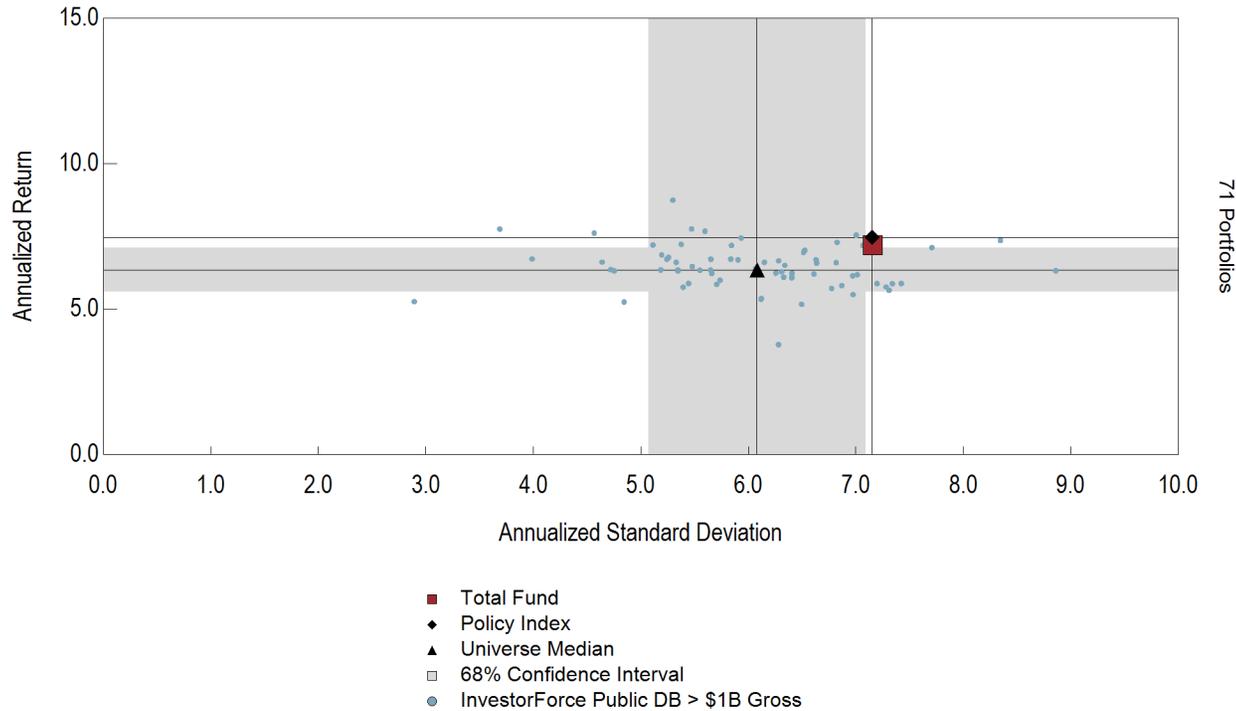
Period Ending: December 31, 2018

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Private Equity (Gross)	3.77	--	8.23	--	17.62	--	13.50	--	16.14	--	15.37	--	3.59	--	3.56	Nov-08
Private Equity (Net)	3.77	--	8.23	--	17.62	--	13.50	--	16.14	--	15.37	--	3.59	--	3.56	
<i>Thomson Reuters CJA Global All PE 1 Qtr Lag</i>	3.80	--	9.21	--	17.10	--	13.39	--	12.73	--	13.02	--	10.82	--	9.73	Nov-08
Real Assets (Gross)	-11.11	--	-11.44	--	-7.65	--	0.26	--	-6.53	--	-6.01	--	--	--	-5.49	Sep-11
Real Assets (Net)	-11.11	--	-11.44	--	-7.65	--	0.26	--	-6.53	--	-6.01	--	--	--	-5.49	
<i>Real Asset Blend<sup>1</sup></i>	-11.68	--	-11.85	--	-11.14	--	4.85	--	4.52	--	4.60	--	--	--	4.56	Sep-11
Cash (Gross)	0.47	--	0.91	--	1.50	--	1.04	--	0.65	--	0.49	--	0.41	--	3.18	Sep-85
Cash (Net)	0.47	--	0.91	--	1.50	--	1.04	--	0.65	--	0.49	--	0.41	--	3.18	
<i>91 Day T-Bills</i>	0.57	--	1.08	--	1.94	--	1.05	--	0.64	--	0.48	--	0.36	--	3.27	Sep-85
Real Estate (Gross)	1.78	32	3.61	56	7.94	47	8.45	32	11.32	16	11.64	21	7.25	28	7.12	Mar-86
Real Estate (Net)	1.78	32	3.61	56	7.94	47	8.14	44	10.71	29	10.89	43	6.44	53	6.04	
<i>NCREIF-ODCE</i>	1.76	33	3.89	30	8.35	29	8.24	39	10.41	37	10.98	39	6.99	33	7.33	Mar-86
<i>InvestorForce All DB Real Estate Pub+Priv Gross Median</i>	1.51		3.68		7.87		7.80		10.12		10.66		6.57		7.52	Mar-86

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

Total Fund  
Risk vs. Return (3 Years)

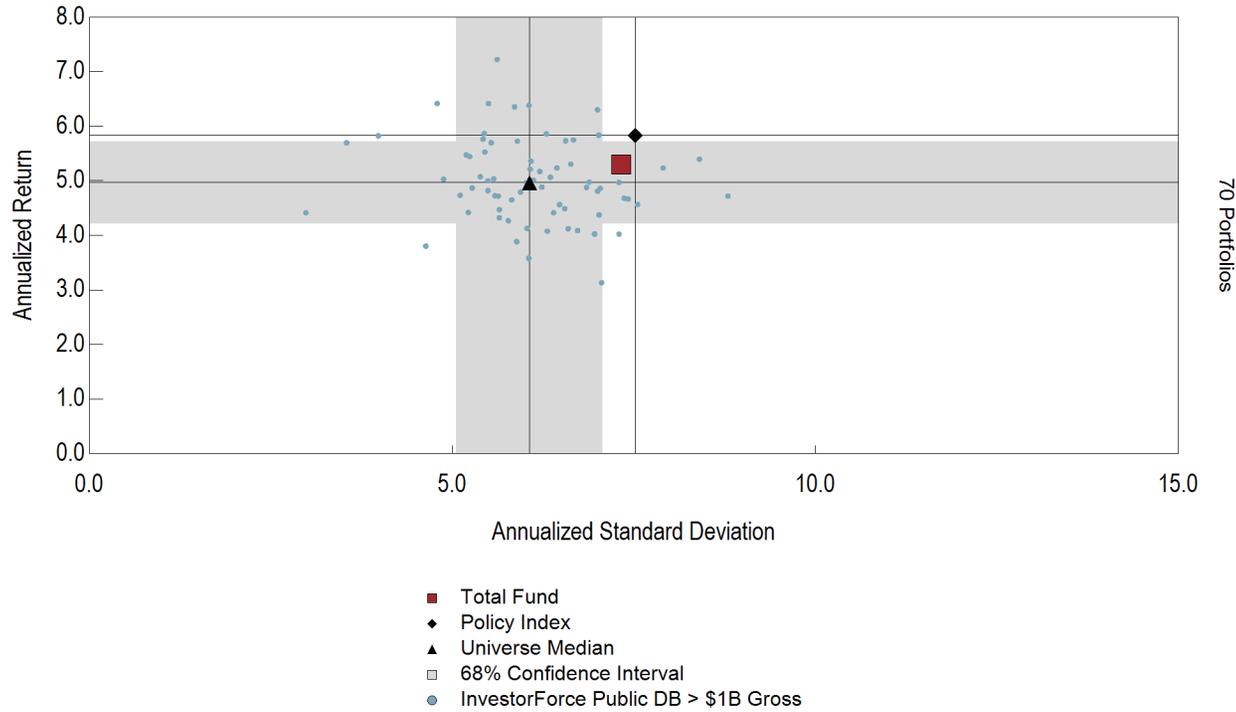
Period Ending: December 31, 2018



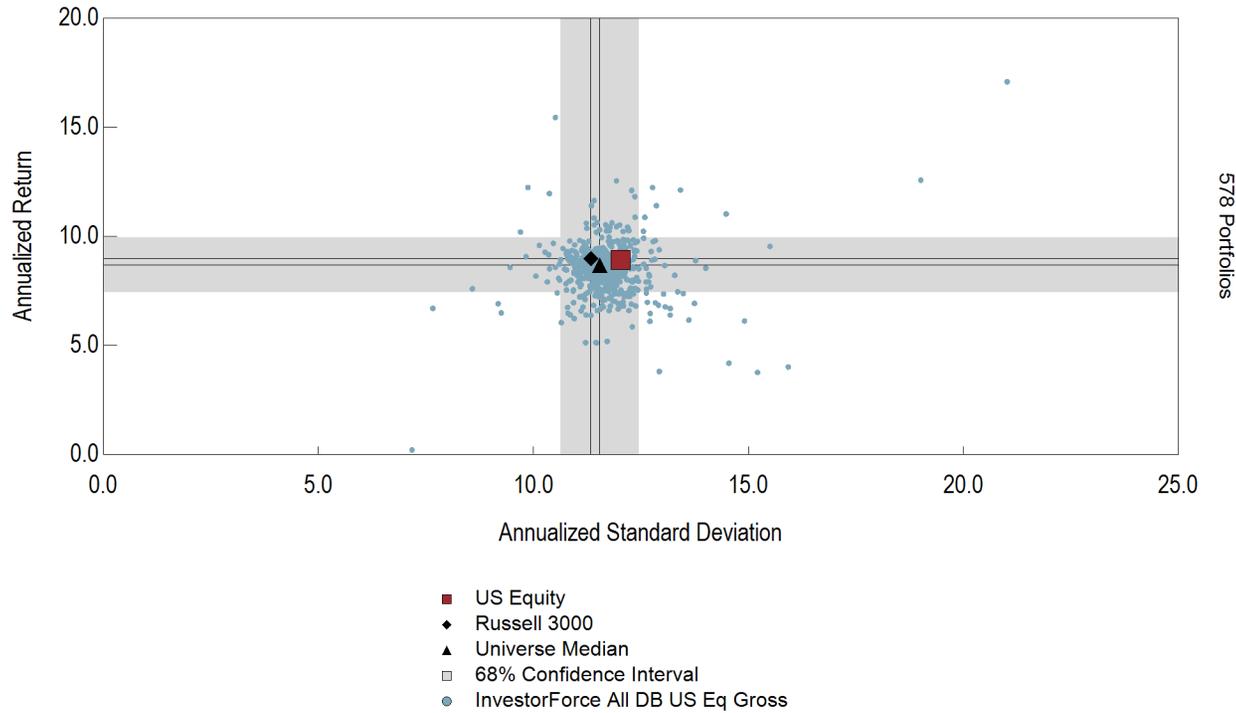
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fund	7.20%	15	7.15%	90	0.86	59	-0.22	81	1.20%	66
Policy Index	7.47%	9	7.15%	90	0.90	48	--	--	0.00%	1
Allocation Index	7.11%	19	7.36%	95	0.82	68	-0.70	98	0.51%	5
InvestorForce Public DB > \$1B Gross Median	6.35%	--	6.08%	--	0.89	--	0.25	--	1.02%	--

Total Fund  
Risk vs. Return (5 Years)

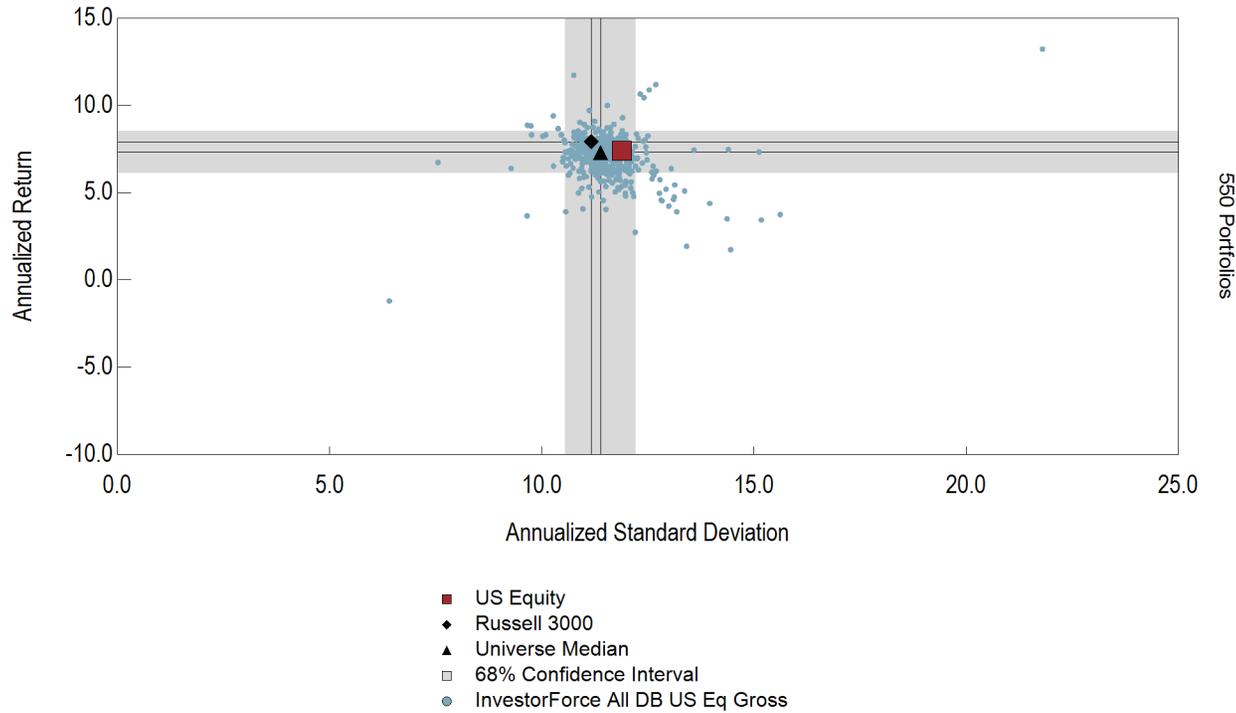
Period Ending: December 31, 2018



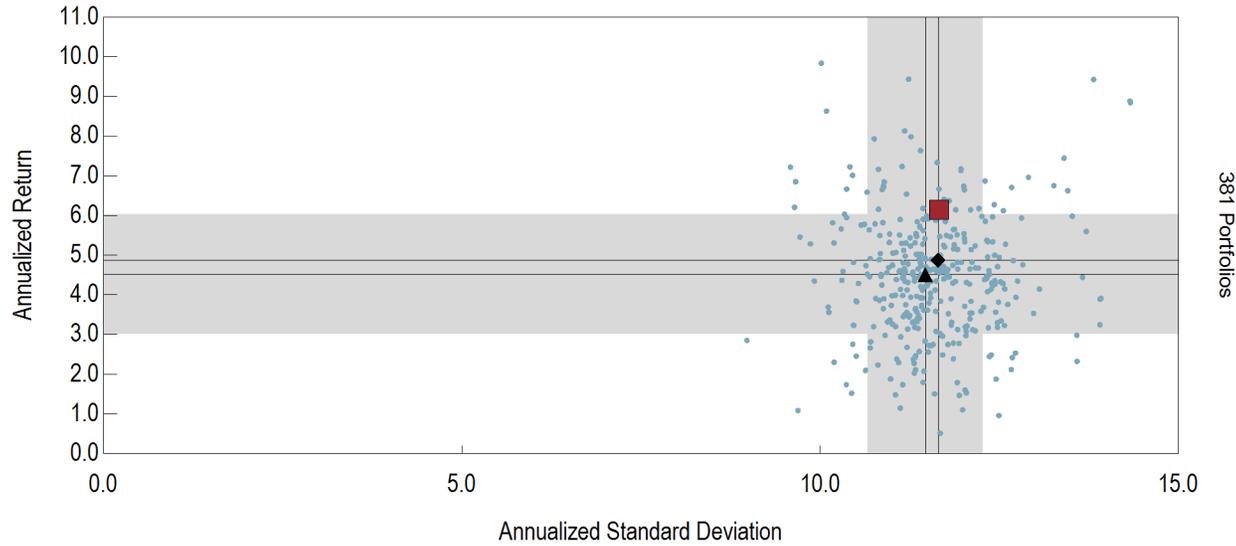
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fund	5.30%	31	7.32%	92	0.64	65	-0.43	91	1.24%	64
Policy Index	5.83%	12	7.52%	96	0.69	57	--	--	0.00%	1
Allocation Index	5.46%	26	7.59%	96	0.63	65	-0.89	99	0.42%	1
InvestorForce Public DB > \$1B Gross Median	4.97%	--	6.06%	--	0.71	--	0.14	--	1.17%	--



	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	8.91%	38	12.03%	78	0.65	52	-0.03	34	1.99%	57
Russell 3000	8.97%	35	11.34%	35	0.70	33	--	--	0.00%	1
InvestorForce All DB US Eq Gross Median	8.68%	--	11.54%	--	0.66	--	-0.25	--	1.87%	--

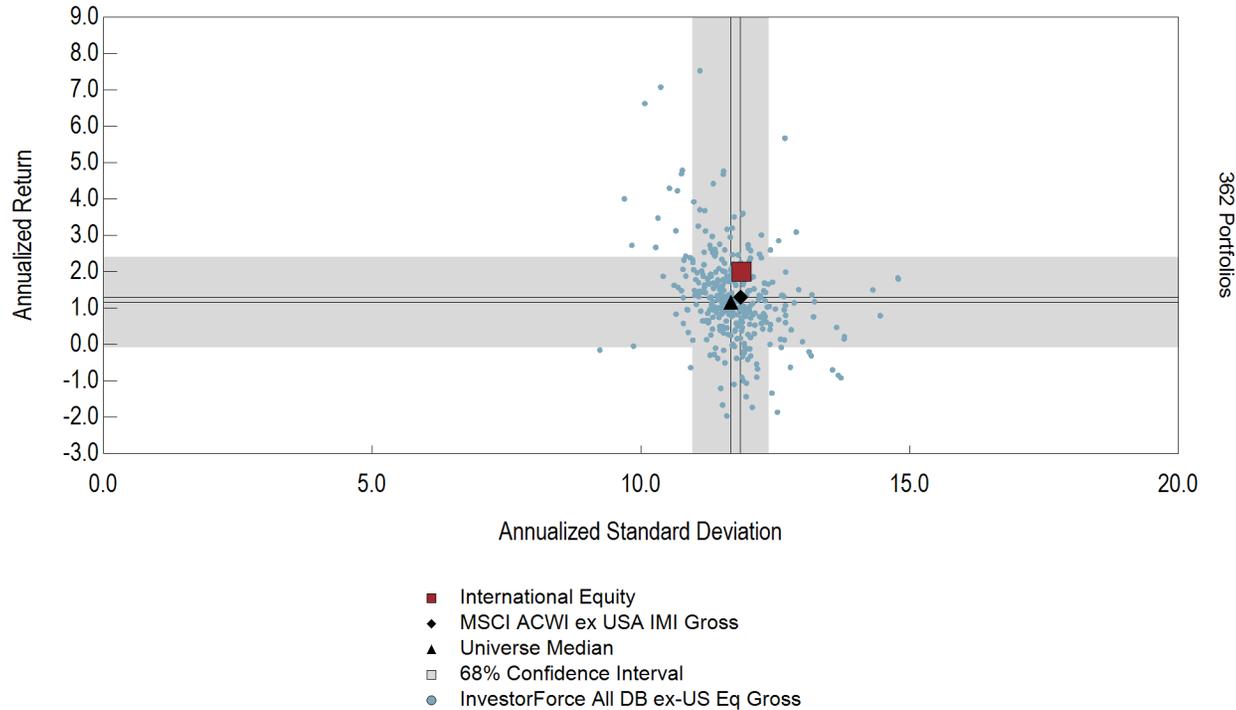


	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
US Equity	7.40%	46	11.88%	85	0.57	56	-0.22	36	2.32%	64
Russell 3000	7.91%	23	11.17%	33	0.65	20	--	--	0.00%	1
InvestorForce All DB US Eq Gross Median	7.32%	--	11.38%	--	0.58	--	-0.40	--	1.93%	--



- International Equity
- ◆ MSCI ACWI ex USA IMI Gross
- ▲ Universe Median
- 68% Confidence Interval
- InvestorForce All DB ex-US Eq Gross

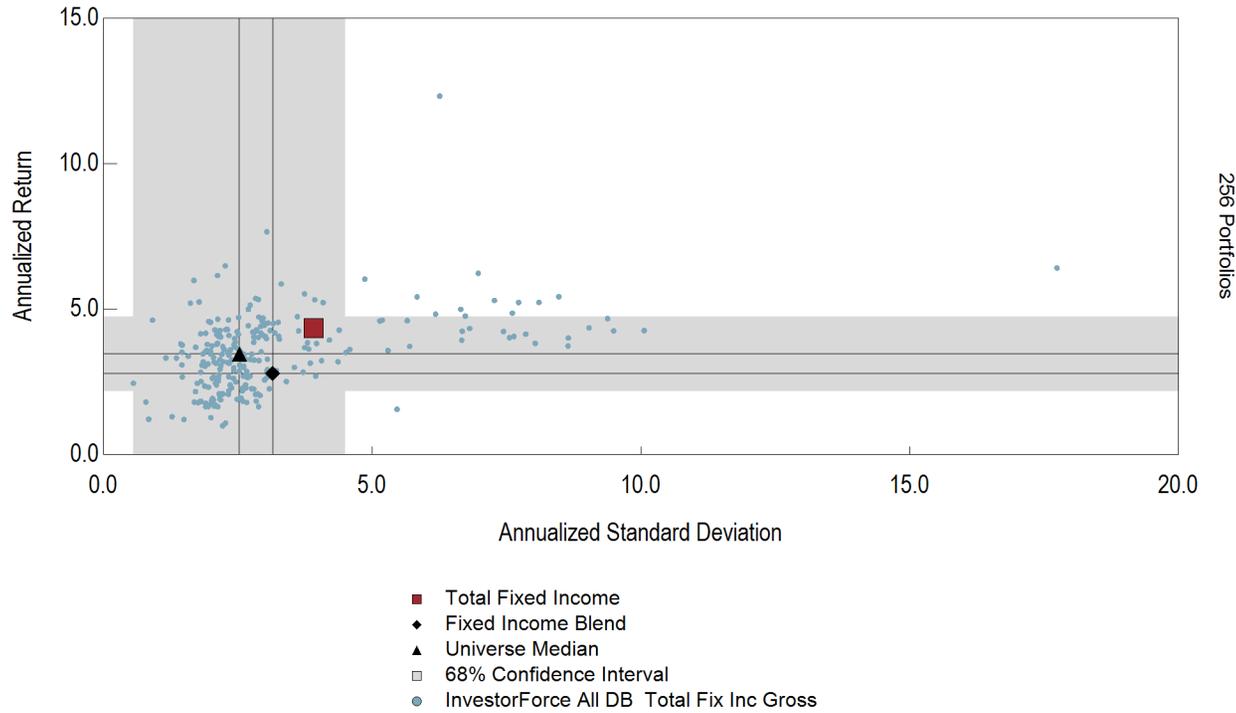
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
International Equity	6.15%	12	11.66%	60	0.44	13	0.91	8	1.39%	7
MSCI ACWI ex USA IMI Gross	4.87%	36	11.65%	59	0.33	38	--	--	0.00%	1
InvestorForce All DB ex-US Eq Gross Median	4.52%	--	11.47%	--	0.30	--	0.06	--	2.78%	--



	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	2.00%	20	11.88%	65	0.11	21	0.51	17	1.38%	6
MSCI ACWI ex USA IMI Gross	1.30%	45	11.85%	62	0.06	45	--	--	0.00%	1
InvestorForce All DB ex-US Eq Gross Median	1.16%	--	11.68%	--	0.04	--	0.14	--	2.83%	--

Total Fixed Income  
Risk vs. Return (3 Years)

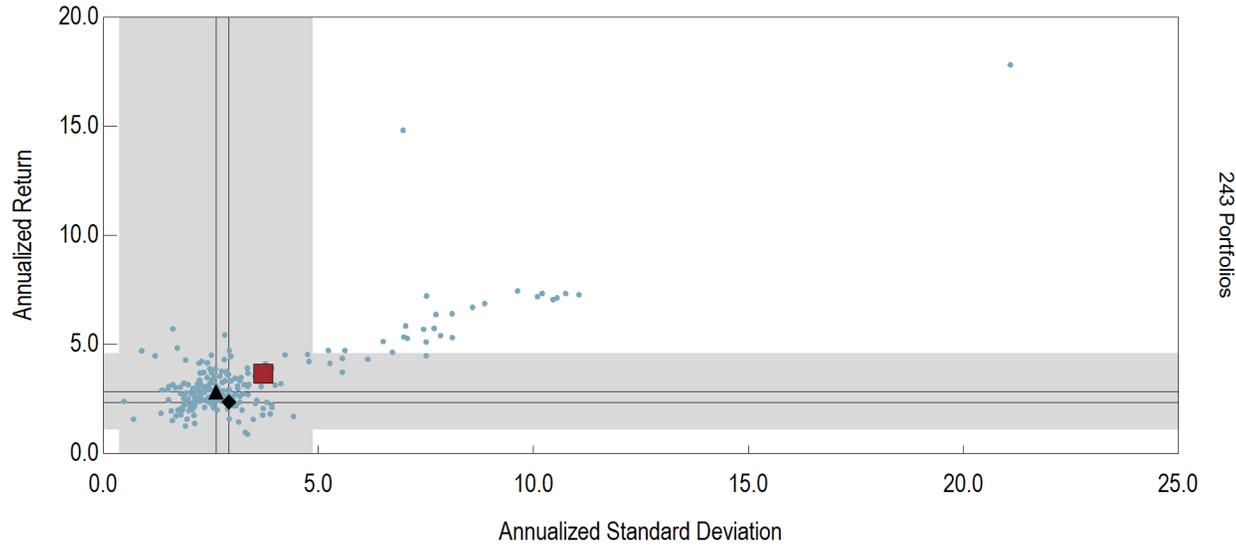
Period Ending: December 31, 2018



	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	4.34%	20	3.91%	84	0.84	47	0.87	31	1.78%	57
Fixed Income Blend	2.79%	69	3.15%	77	0.55	67	--	--	0.00%	1
InvestorForce All DB Total Fix Inc Gross Median	3.46%	--	2.53%	--	0.78	--	0.65	--	1.53%	--

Total Fixed Income  
Risk vs. Return (5 Years)

Period Ending: December 31, 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	3.65%	25	3.73%	83	0.81	45	0.73	13	1.78%	57
Fixed Income Blend	2.35%	77	2.92%	66	0.58	87	--	--	0.00%	1
InvestorForce All DB Total Fix Inc Gross Median	2.84%	--	2.62%	--	0.78	--	0.26	--	1.57%	--

# Equity environment

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
US Large Cap (Russell 1000)	(13.8%)		(4.8%)	
US Small Cap (Russell 2000)	(20.2%)		(11.0%)	
US Large Value (Russell 1000 Value)	(11.7%)		(8.3%)	
US Large Growth (Russell 1000 Growth)	(15.9%)		(1.5%)	
International Large (MSCI EAFE)	(12.5%)	(11.6%)	(13.8%)	(9.0%)
Eurozone (Euro Stoxx 50)	(14.1%)	(10.7%)	(16.2%)	(9.3%)
U.K. (FTSE 100)	(11.7%)	(9.1%)	(14.0%)	(7.3%)
Japan (NIKKEI 225)	(14.6%)	(16.6%)	(8.6%)	(9.6%)
Emerging Markets (MSCI Emerging Markets)	(7.5%)	(7.4%)	(14.6%)	(10.3%)

# Domestic equity

U.S. equities experienced their worst quarter since 2008 as the S&P 500 Index returned -13.5%. For much of 2018, strong realized and expected earnings growth more than offset rising risk premiums (i.e. February sell-off) and discount rates as shown below in the middle chart. However, when cracks appeared in the growth story, influenced by poor economic data as well as profit warnings from companies, this support quickly vanished. The sharp drawdown, particularly in December, was also influenced by pockets of illiquidity in the market that exacerbated the move lower.

The question for investors now becomes whether the recent drawdown was a healthy reset of the pricing of earnings and risk premia, or whether it was a more urgent warning signal of a deterioration in the growth and profit cycle. We believe it to be more of the former rather than the latter, and that the market priced in an overly pessimistic view of macro conditions. However, we also recognize the growing headwinds to equities, including slowing global growth, further potential monetary tightening, and high debt levels. These conditions will likely result in sustained higher volatility, consistent with previous late cycle experiences.

**U.S. EQUITIES**



**S&P 500 PRICE MOVEMENT ATTRIBUTION**



**CYCLICALS-DEFENSIVES RETURN SPREAD**



# Domestic equity size & style

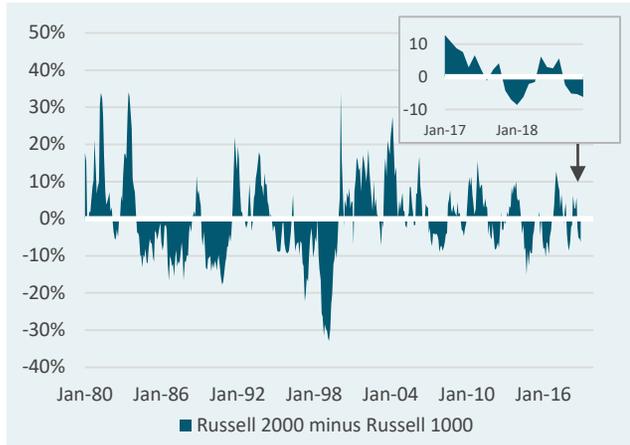
Large cap equities (Russell 1000 -13.8%) significantly outperformed small cap equities (Russell 2000 -20.2%) during the quarter. It may not be surprising that small cap equities underperformed, given the broad risk-off moves during this period. Growth stocks underperformed value stocks during the quarter (Russell 1000 Growth -15.9% vs. Russell 1000 Value -11.7%) for the first time since Q4 2016.

The sector weights in large-cap style benchmarks explain most of the recent value underperformance. Over the past

year, Energy, Materials, and Financials returned -18.1%, -14.7%, and -13.0%, respectively. These sectors are heavily weighted with value stocks, which resulted in a large drag to value. Information technology was an outperforming sector with a return of -0.3% during the period.

Long spans of style (size, value) underperformance is, and will always be, discouraging for investors. Similar to an investment in the broader equity market, we should expect to see rough patches of performance through time.

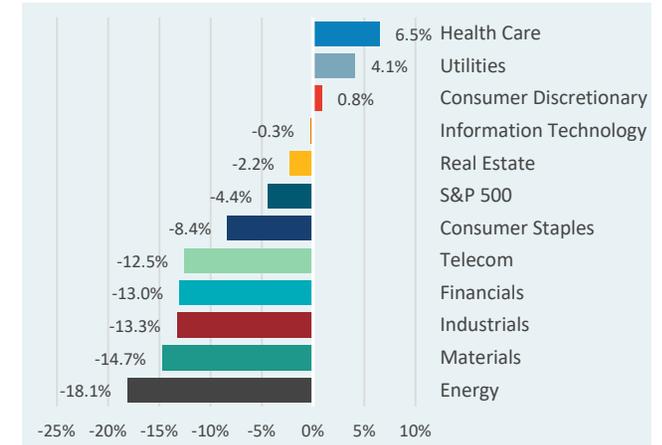
**SMALL CAP VS LARGE CAP (YOY)**



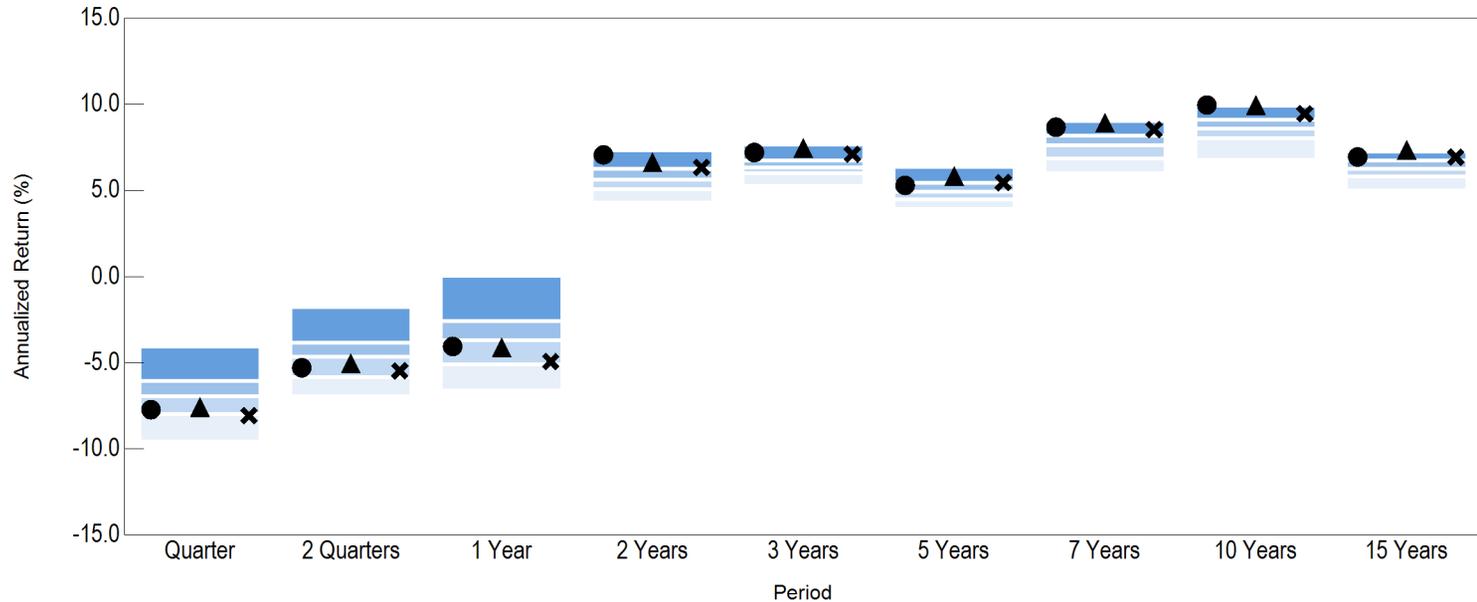
**VALUE VS GROWTH (YOY)**



**1-YEAR S&P 500 SECTOR RETURNS**



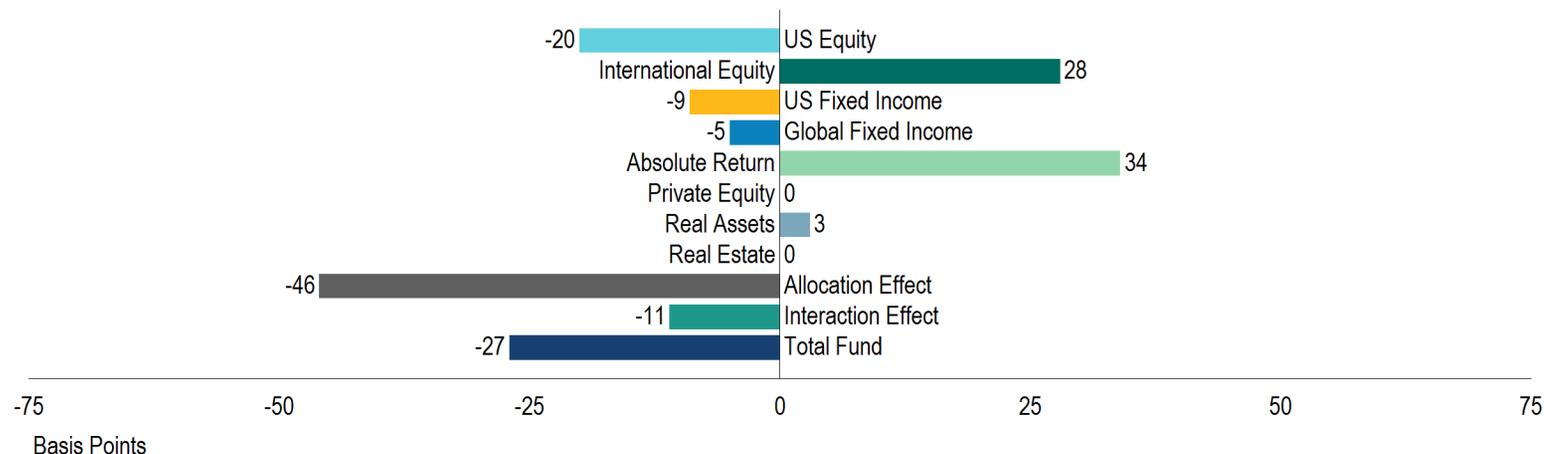
InvestorForce Public DB > \$1B Gross Return Comparison



	Quarter	2 Quarters	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years	15 Years
<b>5th Percentile</b>	-4.08	-1.78	0.02	7.31	7.64	6.37	9.00	9.91	7.23
<b>25th Percentile</b>	-6.03	-3.83	-2.55	6.30	6.75	5.47	8.19	9.15	6.74
<b>Median</b>	-6.92	-4.62	-3.68	5.67	6.35	4.97	7.63	8.60	6.27
<b>75th Percentile</b>	-7.97	-5.80	-5.07	5.10	6.03	4.51	6.89	8.07	5.82
<b>95th Percentile</b>	-9.55	-6.92	-6.59	4.33	5.29	3.94	6.04	6.81	5.01
<b># of Portfolios</b>	73	71	71	71	71	70	69	67	62
<b>● Total Fund</b>	-7.72 (63)	-5.29 (70)	-4.05 (61)	7.07 (7)	7.20 (15)	5.30 (31)	8.67 (14)	9.96 (5)	6.95 (10)
<b>▲ Policy Index</b>	-7.57 (62)	-5.03 (62)	-4.10 (62)	6.65 (14)	7.47 (9)	5.83 (12)	8.94 (6)	9.96 (5)	7.35 (3)
<b>✕ Allocation Index</b>	-8.07 (77)	-5.46 (72)	-4.92 (73)	6.34 (23)	7.11 (19)	5.46 (26)	8.54 (17)	9.45 (18)	6.94 (11)

Total Fund  
Performance Attribution (One Quarter)

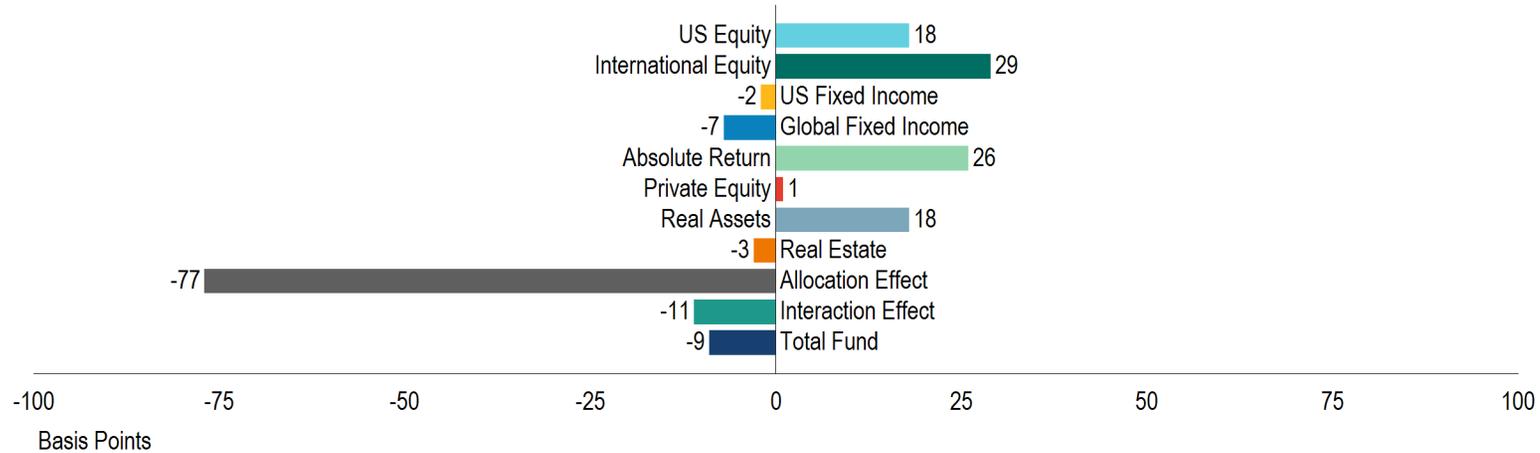
Period Ending: December 31, 2018



	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	-14.98%	-14.30%	-0.67%	-0.20%	-0.24%	-0.03%	-0.46%
International Equity	-10.78%	-11.82%	1.04%	0.28%	0.00%	0.00%	0.28%
US Fixed Income	0.86%	1.64%	-0.78%	-0.09%	-0.04%	0.00%	-0.13%
Global Fixed Income	-0.79%	1.75%	-2.54%	-0.05%	0.15%	-0.04%	0.06%
Absolute Return	-1.11%	-5.00%	3.89%	0.34%	-0.01%	-0.01%	0.32%
Private Equity	3.77%	3.80%	-0.04%	0.00%	-0.28%	-0.02%	-0.30%
Real Assets	-11.11%	-11.68%	0.57%	0.03%	0.05%	-0.01%	0.07%
Real Estate	1.78%	1.76%	0.02%	0.00%	-0.10%	0.00%	-0.10%
<b>Total</b>	<b>-7.75%</b>	<b>-7.48%</b>	<b>-0.27%</b>	<b>0.30%</b>	<b>-0.46%</b>	<b>-0.11%</b>	<b>-0.27%</b>

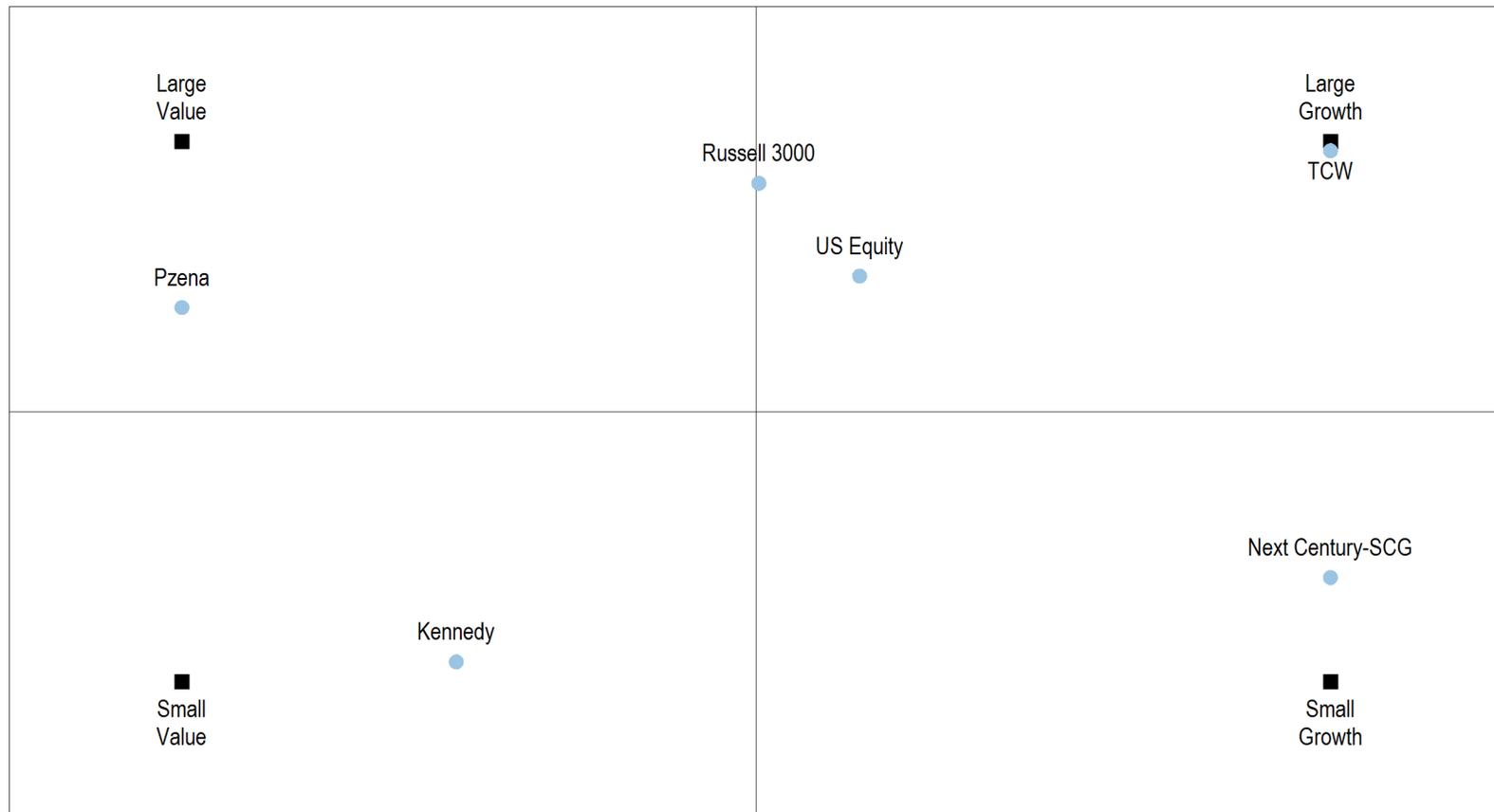
Total Fund  
Performance Attribution (One Year)

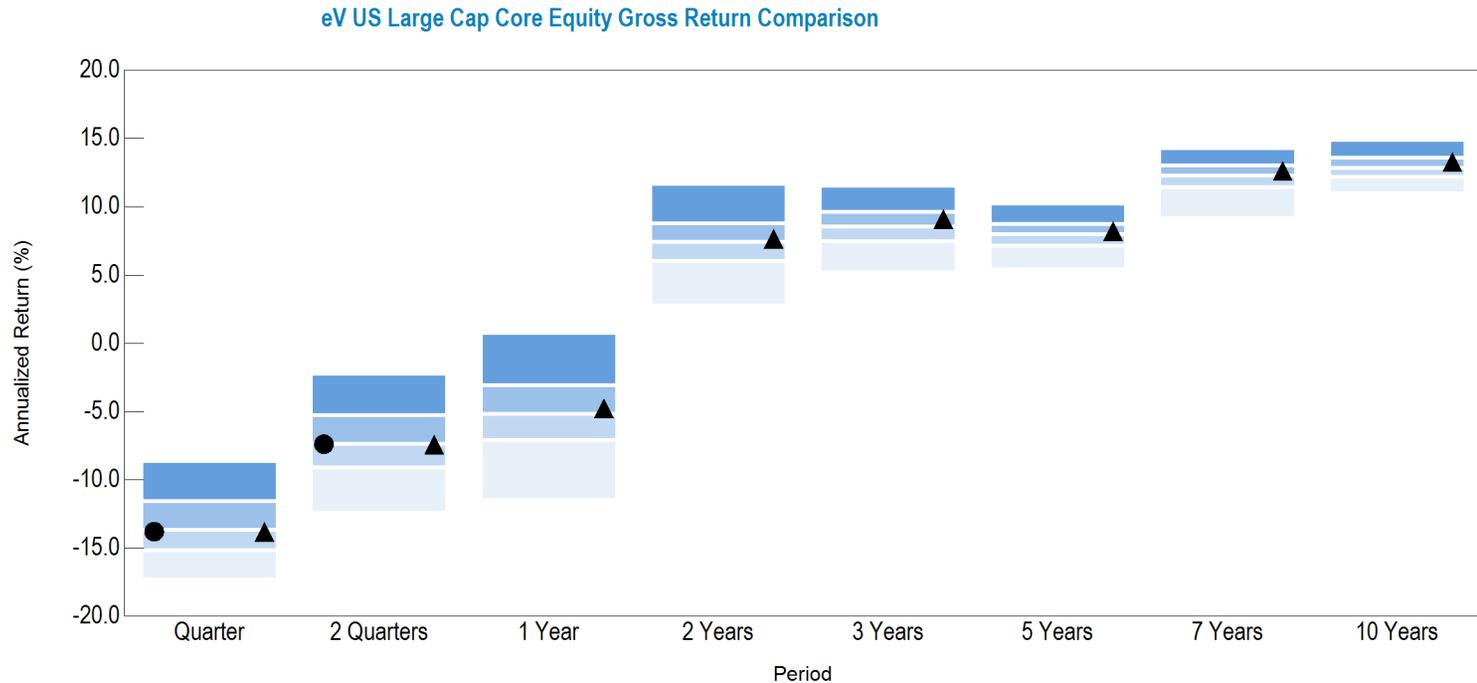
Period Ending: December 31, 2018



	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	-4.63%	-5.24%	0.61%	0.18%	0.02%	0.05%	0.25%
International Equity	-13.34%	-14.35%	1.02%	0.29%	-0.21%	0.03%	0.11%
US Fixed Income	-0.11%	0.01%	-0.12%	-0.02%	-0.02%	0.00%	-0.04%
Global Fixed Income	-4.26%	-0.84%	-3.42%	-0.07%	0.05%	-0.06%	-0.09%
Absolute Return	-1.23%	-4.08%	2.85%	0.26%	0.00%	-0.03%	0.23%
Private Equity	17.62%	17.10%	0.52%	0.01%	-0.54%	-0.05%	-0.58%
Real Assets	-7.65%	-11.14%	3.48%	0.18%	0.08%	-0.05%	0.20%
Real Estate	7.94%	8.35%	-0.41%	-0.03%	-0.14%	0.00%	-0.17%
<b>Total</b>	<b>-4.13%</b>	<b>-4.04%</b>	<b>-0.09%</b>	<b>0.78%</b>	<b>-0.77%</b>	<b>-0.11%</b>	<b>-0.09%</b>

US Effective Style Map





	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
<b>5th Percentile</b>	-8.65	-2.23	0.72	11.64	11.53	10.23	14.28	14.87								
<b>25th Percentile</b>	-11.56	-5.24	-3.03	8.82	9.66	8.76	13.05	13.63								
<b>Median</b>	-13.62	-7.34	-5.13	7.45	8.56	8.03	12.32	12.86								
<b>75th Percentile</b>	-15.15	-9.08	-7.06	6.08	7.48	7.20	11.48	12.21								
<b>95th Percentile</b>	-17.29	-12.40	-11.43	2.80	5.22	5.44	9.20	10.99								
<b># of Portfolios</b>	316	316	316	309	306	289	260	221								
<b>● BlackRock Russell 1000 Index Fund</b>	-13.80 (55)	-7.39 (51)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)								
<b>▲ Russell 1000</b>	-13.82 (55)	-7.42 (52)	-4.78 (45)	7.64 (45)	9.09 (41)	8.21 (44)	12.63 (43)	13.28 (37)								

Characteristics

	Portfolio	Russell 1000
Number of Holdings	982	983
Weighted Avg. Market Cap. (\$B)	166.6	166.3
Median Market Cap. (\$B)	8.8	8.8
Price To Earnings	22.6	20.7
Price To Book	5.8	4.6
Price To Sales	4.3	4.3
Return on Equity (%)	24.7	22.3
Yield (%)	2.2	2.1
Beta (holdings; domestic)	1.0	1.0

Top Holdings

MICROSOFT	3.3%
APPLE	3.2%
AMAZON.COM	2.6%
BERKSHIRE HATHAWAY 'B'	1.7%
JOHNSON & JOHNSON	1.5%
JP MORGAN CHASE & CO.	1.4%
ALPHABET 'C'	1.4%
ALPHABET A	1.3%
FACEBOOK CLASS A	1.3%
EXXON MOBIL	1.2%

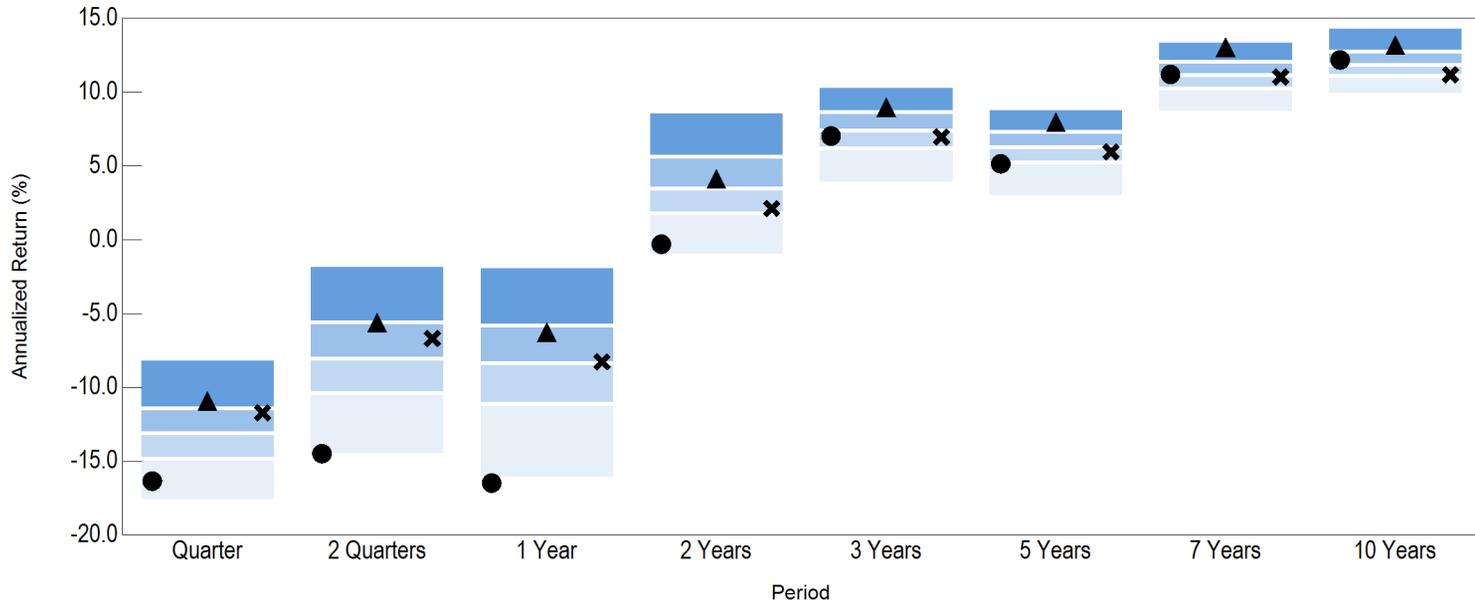
Best Performers

	Return %
TESARO (TSRO)	90.3%
RED HAT (RHT)	28.9%
VIRTU FINANCIAL CL.A (VIRT)	27.1%
TESLA (TSLA)	25.7%
SCANA (SCG)	23.2%
TRIBUNE MEDIA CL.A (TRCO)	18.9%
MARKETAXESS HOLDINGS (MKTX)	18.6%
ARRIS INTERNATIONAL (ARRS)	17.6%
UNITED STATES CELLULAR (USM)	16.1%
NEWMONT MINING (NEM)	15.2%

Worst Performers

	Return %
WEATHERFORD INTL. (WFT)	-79.4%
NABORS INDUSTRIES (NBR)	-66.8%
EXTRACTION OIL & GAS (XOG)	-62.0%
ADIANT (ADNT)	-61.4%
WHITING PETROLEUM (WLL)	-57.2%
KOSMOS ENERGY (KOS)	-56.5%
CHESAPEAKE ENERGY (CHK)	-53.2%
CONDUENT (CNDT)	-52.8%
NVIDIA (NVDA)	-52.4%
SM ENERGY (SM)	-50.8%

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>	-8.06	-1.75	-1.80	8.67	10.40	8.90	13.45	14.39								
<b>25th Percentile</b>	-11.41	-5.55	-5.78	5.66	8.69	7.34	12.06	12.77								
<b>Median</b>	-13.09	-8.02	-8.34	3.51	7.41	6.28	11.19	11.86								
<b>75th Percentile</b>	-14.81	-10.36	-11.11	1.83	6.22	5.24	10.28	11.11								
<b>95th Percentile</b>	-17.65	-14.56	-16.12	-1.03	3.84	2.95	8.64	9.82								
<b># of Portfolios</b>	336	336	336	335	333	326	305	272								
<b>● Pzena</b>	-16.35 (87)	-14.49 (95)	-16.48 (97)	-0.30 (92)	7.02 (58)	5.14 (77)	11.19 (50)	12.18 (42)								
<b>▲ Russell 1000 Value +2%</b>	-10.91 (22)	-5.61 (26)	-6.27 (29)	4.12 (41)	8.97 (21)	7.97 (16)	13.04 (7)	13.19 (16)								
<b>✕ Russell 1000 Value</b>	-11.72 (30)	-6.69 (36)	-8.27 (50)	2.11 (70)	6.95 (59)	5.95 (60)	11.02 (54)	11.18 (74)								

Characteristics

	Portfolio	Russell 1000 Value
Number of Holdings	43	725
Weighted Avg. Market Cap. (\$B)	69.2	111.5
Median Market Cap. (\$B)	23.3	8.2
Price To Earnings	8.5	18.1
Price To Book	1.9	2.6
Price To Sales	1.9	3.1
Return on Equity (%)	7.6	14.2
Yield (%)	3.0	2.8
Beta (holdings; domestic)	1.1	0.9

Top Holdings

AMERICAN INTL.GP.	3.8%
FORD MOTOR	3.7%
CAPITAL ONE FINL.	3.5%
CITIGROUP	3.5%
GENERAL ELECTRIC	3.4%
LEAR	3.2%
COGNIZANT TECH.SLTN.'A'	3.2%
METLIFE	3.2%
WELLS FARGO & CO	3.2%
INTERPUBLIC GROUP	3.1%

Best Performers

	Return %
OMNICOM GROUP (OMC)	8.6%
MERCK & COMPANY (MRK)	8.5%
EXPRESS SCRIPTS HOLDING (ESRX)	6.8%
GILDAN ACTIVEWEAR SBVTG. 'A' (NYS) (GIL)	0.1%
WALMART (WMT)	-0.3%
FRANKLIN RESOURCES (BEN)	-1.6%
AMGEN (AMGN)	-5.4%
NEWELL BRANDS (XSC) (NWL)	-7.5%
CIGNA (CI)	-8.8%
INTERPUBLIC GROUP (IPG)	-9.0%

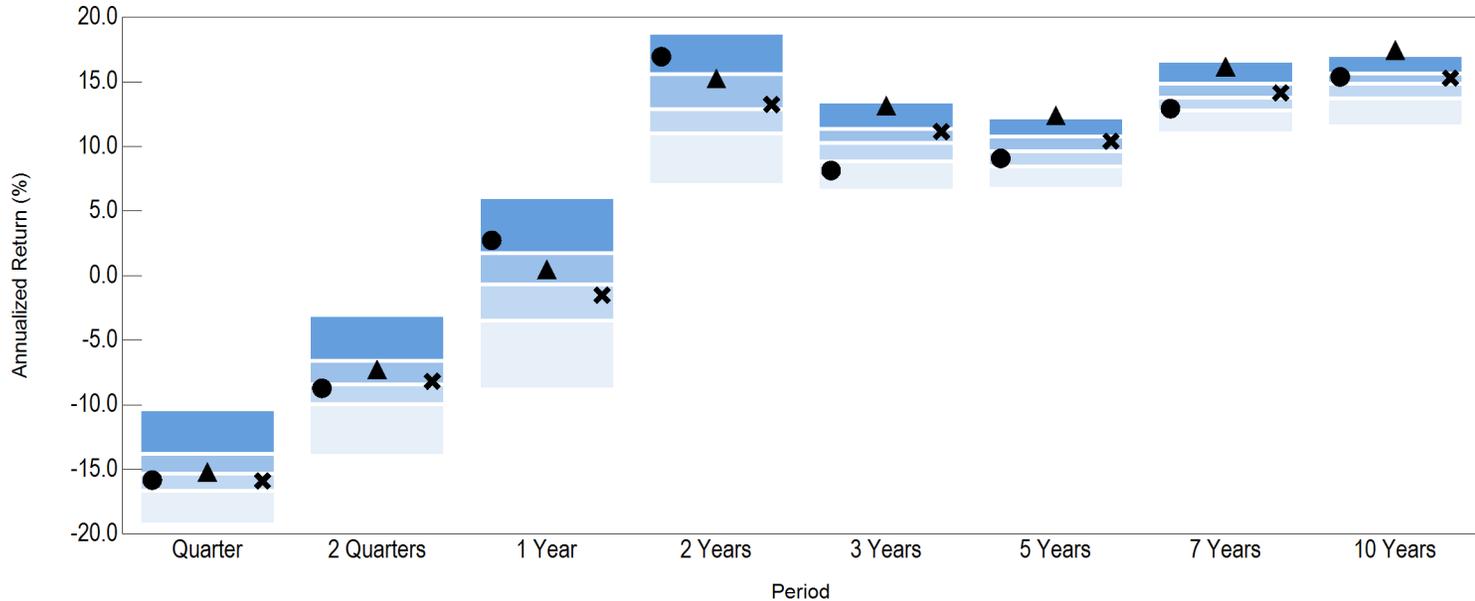
Worst Performers

	Return %
NATIONAL OILWELL VARCO (NOV)	-40.2%
HALLIBURTON (HAL)	-34.0%
GENERAL ELECTRIC (GE)	-32.9%
CENOVUS ENERGY (NYS) (CVE)	-29.6%
KKR AND A (KKR)	-27.6%
CITIGROUP (C)	-26.9%
AMERICAN INTL.GP. (AIG)	-25.3%
GOLDMAN SACHS GP. (GS)	-25.2%
MYLAN (MYL)	-25.1%
AXA EQUITABLE HOLDINGS (EQH)	-22.0%

**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	-0.42%	0.07%	-0.51%	0.03%	-23.80%	-24.45%	14.74%	10.71%			
Materials	0.10%	--	0.10%	--	--	-14.27%	0.00%	3.91%			
Industrials	-0.08%	-0.51%	0.24%	0.19%	-25.85%	-19.53%	5.01%	8.04%			
Consumer Discretionary	-0.02%	-0.01%	-0.01%	0.00%	-13.02%	-12.80%	5.84%	5.32%			
Consumer Staples	-0.41%	0.27%	-0.46%	-0.22%	-0.27%	-4.03%	1.31%	7.23%			
Health Care	-0.67%	-0.68%	-0.14%	0.14%	-11.83%	-7.23%	11.71%	14.71%			
Financials	-1.95%	-0.97%	-0.28%	-0.70%	-17.65%	-13.46%	39.74%	23.14%			
Information Technology	-0.43%	-0.39%	-0.01%	-0.03%	-16.40%	-12.39%	10.64%	9.80%			
Communication Services	0.07%	0.08%	-0.01%	0.00%	-4.55%	-5.66%	6.75%	6.84%			
Utilities	-0.84%	-0.92%	-0.27%	0.35%	-15.22%	1.08%	3.49%	5.64%			
Real Estate	-0.24%	--	-0.24%	--	--	-6.59%	0.00%	4.66%			
Cash	0.09%	0.00%	0.09%	0.00%	0.57%	--	0.76%	0.00%			
<b>Portfolio</b>	<b>-4.81%</b>	<b>=</b>	<b>-3.06%</b>	<b>+</b>	<b>-1.49%</b>	<b>+</b>	<b>-0.25%</b>	<b>-16.55%</b>	<b>-11.74%</b>	<b>100.00%</b>	<b>100.00%</b>

eV US Large 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>	-10.34	-3.05	6.05	18.76	13.47	12.23	16.63	17.04								
<b>25th Percentile</b>	-13.76	-6.57	1.74	15.64	11.36	10.77	14.86	15.67								
<b>Median</b>	-15.31	-8.40	-0.63	12.90	10.29	9.65	13.78	14.90								
<b>75th Percentile</b>	-16.63	-9.90	-3.46	11.04	8.84	8.48	12.83	13.75								
<b>95th Percentile</b>	-19.22	-13.89	-8.79	7.03	6.58	6.75	11.04	11.57								
<b># of Portfolios</b>	255	255	255	252	248	244	227	217								
<b>● TCW</b>	-15.82 (59)	-8.72 (59)	2.73 (19)	16.94 (16)	8.14 (85)	9.08 (63)	12.93 (73)	15.39 (34)								
<b>▲ Russell 1000 Growth +2%</b>	-15.20 (48)	-7.27 (35)	0.49 (37)	15.26 (27)	13.16 (6)	12.41 (5)	16.18 (7)	17.47 (4)								
<b>✕ Russell 1000 Growth</b>	-15.89 (60)	-8.17 (46)	-1.51 (57)	13.24 (46)	11.15 (29)	10.40 (32)	14.14 (43)	15.29 (36)								

Characteristics

	Portfolio	Russell 1000 Growth
Number of Holdings	34	546
Weighted Avg. Market Cap. (\$B)	149.5	222.1
Median Market Cap. (\$B)	44.1	10.3
Price To Earnings	40.6	23.3
Price To Book	10.9	8.6
Price To Sales	8.1	5.5
Return on Equity (%)	26.6	32.7
Yield (%)	0.6	1.5
Beta (holdings; domestic)	1.1	1.1

Top Holdings

VISA 'A'	6.7%
AMAZON.COM	6.6%
ALPHABET 'C'	6.1%
ADOBE (NAS)	5.7%
SALESFORCE.COM	5.5%
AMERICAN TOWER	5.1%
FACEBOOK CLASS A	4.5%
SERVICENOW	4.3%
PAYPAL HOLDINGS	4.0%
MASTERCARD	3.1%

Best Performers

	Return %
AMERICAN TOWER (AMT)	9.5%
CHUBB (CB)	-2.8%
PAYPAL HOLDINGS (PYPL)	-4.3%
ZOETIS (ZTS)	-6.4%
WASTE CONNECTIONS (NYS) (WCN)	-6.7%
SERVICENOW (NOW)	-9.0%
IHS MARKIT (INFO)	-11.1%
VISA 'A' (V)	-11.9%
BIOMARIN PHARM. (BMRN)	-12.2%
S&P GLOBAL (SPGI)	-12.8%

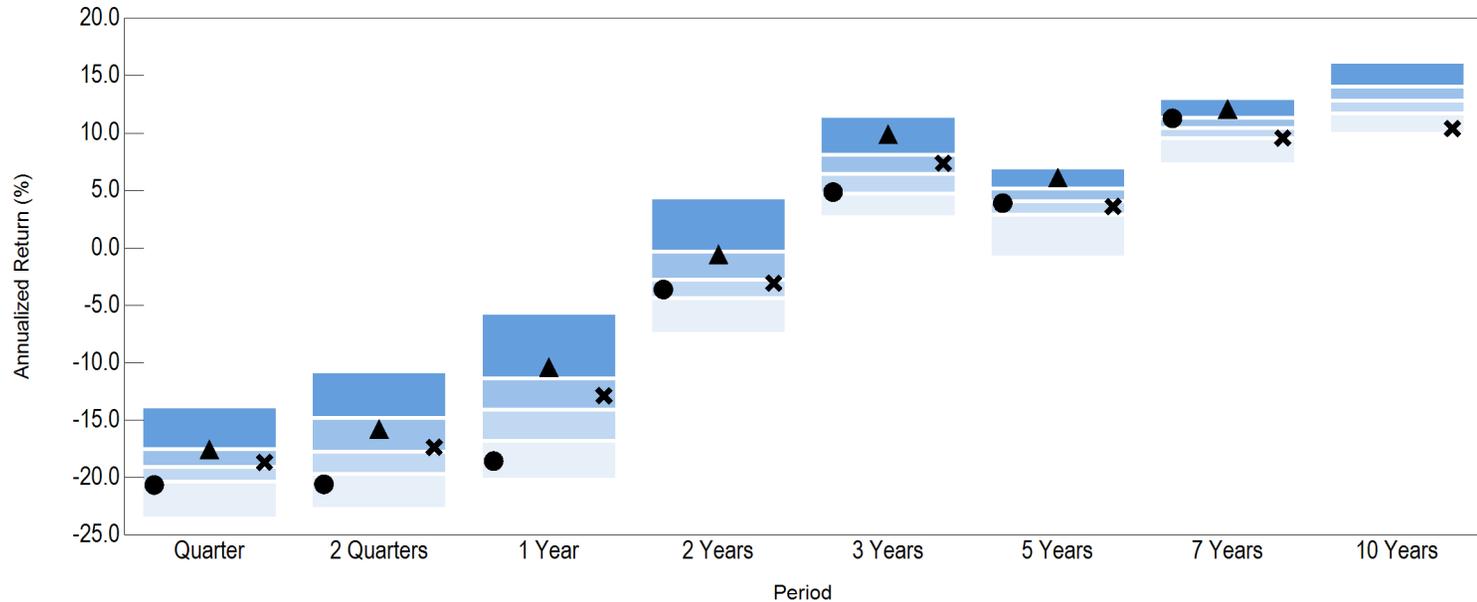
Worst Performers

	Return %
NVIDIA (NVDA)	-52.4%
ALIGN TECHNOLOGY (ALGN)	-46.5%
CONCHO RESOURCES (CXO)	-32.7%
ALEXION PHARMS. (ALXN)	-30.0%
CELGENE (CELG)	-28.4%
AMAZON.COM (AMZN)	-25.0%
TRANSUNION (TRU)	-22.7%
WEST PHARM.SVS. (WST)	-20.5%
FACEBOOK CLASS A (FB)	-20.3%
ILLUMINA (ILMN)	-18.3%

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	-0.09%	-0.03%	-0.05%	-0.01%	-32.71%	-28.84%	1.25%	0.90%			
Materials	-0.03%	--	-0.03%	--	--	-13.92%	0.00%	1.36%			
Industrials	0.13%	0.18%	0.03%	-0.08%	-15.12%	-16.59%	6.88%	12.04%			
Consumer Discretionary	-0.38%	-0.39%	0.00%	0.01%	-19.65%	-17.13%	15.23%	15.46%			
Consumer Staples	-0.42%	-0.41%	-0.08%	0.06%	-14.26%	-6.81%	4.62%	5.48%			
Health Care	-1.27%	-1.33%	-0.03%	0.09%	-21.96%	-12.24%	12.71%	13.66%			
Financials	0.23%	0.09%	0.09%	0.05%	-9.84%	-11.96%	6.54%	4.20%			
Information Technology	1.03%	1.03%	-0.02%	0.02%	-15.69%	-18.83%	33.37%	32.80%			
Communication Services	0.12%	0.11%	0.02%	-0.02%	-16.36%	-17.30%	10.51%	12.11%			
Utilities	0.00%	--	--	--	--	--	0.00%	0.00%			
Real Estate	0.66%	0.01%	0.63%	0.02%	-1.35%	-1.84%	6.43%	2.00%			
Cash	0.41%	0.00%	0.41%	0.00%	0.57%	--	2.45%	0.00%			
<b>Portfolio</b>	<b>0.38%</b>	<b>=</b>	<b>-0.74%</b>	<b>+</b>	<b>0.98%</b>	<b>+</b>	<b>0.15%</b>	<b>-15.57%</b>	<b>-15.95%</b>	<b>100.00%</b>	<b>100.00%</b>

eV US Small 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>	-13.83	-10.75	-5.69	4.39	11.45	6.98	13.03	16.19								
<b>25th Percentile</b>	-17.47	-14.75	-11.35	-0.31	8.16	5.20	11.34	14.09								
<b>Median</b>	-19.02	-17.69	-14.05	-2.73	6.50	4.06	10.46	12.88								
<b>75th Percentile</b>	-20.31	-19.67	-16.75	-4.33	4.77	2.92	9.56	11.73								
<b>95th Percentile</b>	-23.55	-22.70	-20.17	-7.43	2.68	-0.80	7.33	9.98								
<b># of Portfolios</b>	220	220	220	218	214	205	192	177								
<b>● Kennedy</b>	-20.64 (79)	-20.58 (85)	-18.56 (86)	-3.63 (67)	4.87 (74)	3.90 (54)	11.28 (27)	-- (--)								
<b>▲ Russell 2000 Value +2.5%</b>	-17.52 (26)	-15.77 (33)	-10.36 (19)	-0.55 (29)	9.91 (14)	6.13 (12)	12.10 (14)	-- (--)								
<b>✕ Russell 2000 Value</b>	-18.67 (45)	-17.36 (46)	-12.86 (39)	-3.06 (56)	7.37 (36)	3.61 (63)	9.57 (75)	10.40 (94)								

Characteristics

	Portfolio	Russell 2000 Value
Number of Holdings	312	1,387
Weighted Avg. Market Cap. (\$B)	2.4	1.8
Median Market Cap. (\$B)	1.2	0.6
Price To Earnings	13.6	13.2
Price To Book	2.0	1.5
Price To Sales	2.9	2.7
Return on Equity (%)	7.2	7.8
Yield (%)	1.8	2.2
Beta (holdings; domestic)	1.1	1.1

Top Holdings

ESTERLINE TECHS.	1.1%
PDL BIOPHARMA	0.9%
NEW JERSEY RES.	0.9%
SPIRE	0.8%
ALLEGHENY TECHS.	0.8%
FOOT LOCKER	0.8%
BRINK'S	0.8%
PINNACLE WEST CAP.	0.8%
HERITAGE INSURANCE HDG.	0.8%
INTEGRATED DEVICE TECH.	0.8%

Best Performers

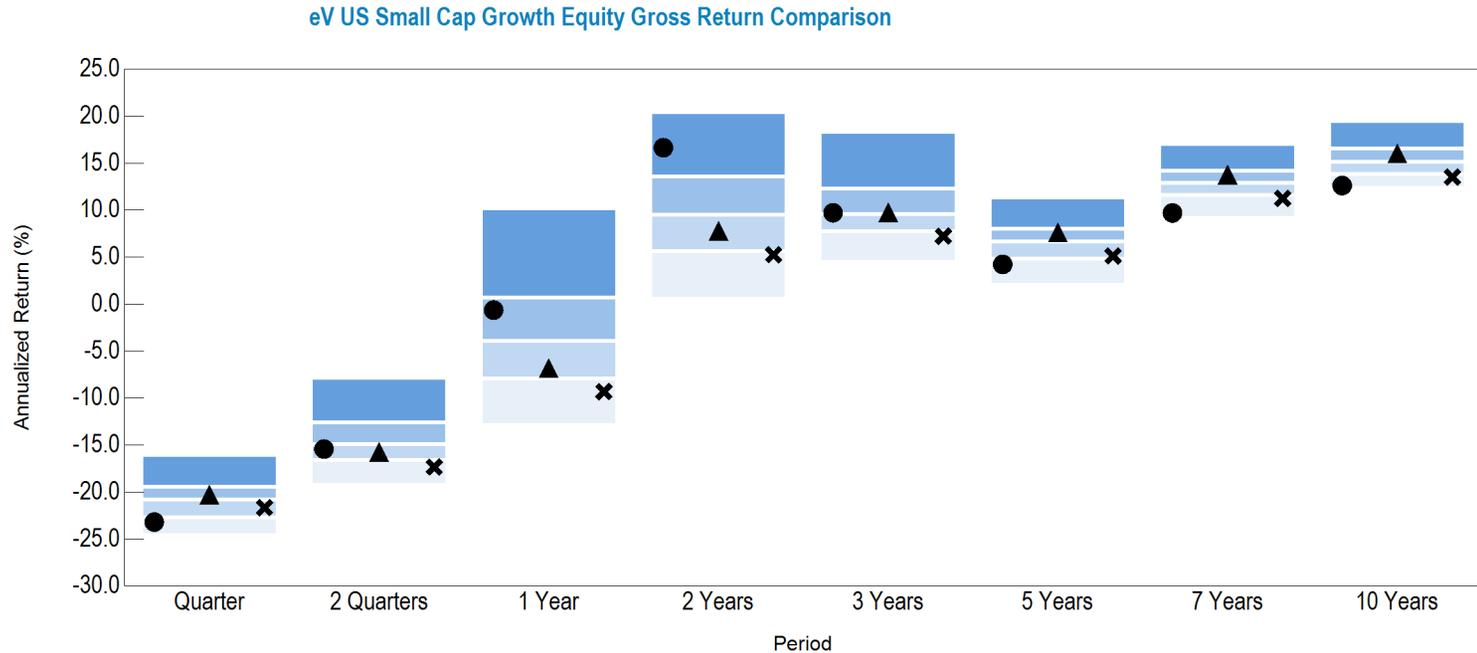
	Return %
AMERICAN RAILCAR INDS. (ARII)	52.4%
ESTERLINE TECHS. (ESL)	33.5%
HOUGHTON MIFFLIN HARCT. (HMHC)	26.6%
BARNES & NOBLE (BKS)	24.9%
NORTHWEST PIPE (NWPX)	17.9%
ARRIS INTERNATIONAL (ARRS)	17.6%
DORMAN PRODUCTS (DORM)	17.0%
FLUIDIGM (FLDM)	15.1%
COOPER TIRE & RUB. (CTB)	14.6%
TECH DATA (TECD)	14.3%

Worst Performers

	Return %
SELECTA BIOSCIENCES (SELB)	-82.9%
MELINTA THERAPEUTICS (MLNT)	-79.9%
AKORN (AKRX)	-73.9%
FRANCESCA'S HOLDINGS (FRAN)	-73.8%
INVACARE (IVC)	-70.4%
CELADON GROUP (CGIP)	-70.4%
NABORS INDUSTRIES (NBR)	-66.8%
CONFORMIS (CFMS)	-66.2%
SUPERIOR ENERGY SVS. (SPN)	-65.6%
YRC WORLDWIDE (YRCW)	-64.9%

**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	0.07%	-0.16%	0.21%	0.02%	-44.54%	-42.32%	6.34%	7.23%			
Materials	-0.57%	-0.18%	-0.27%	-0.12%	-31.25%	-27.32%	7.71%	4.56%			
Industrials	-0.80%	-0.53%	-0.06%	-0.21%	-24.29%	-19.90%	16.88%	12.04%			
Consumer Discretionary	-0.11%	-0.14%	0.01%	0.02%	-20.69%	-19.20%	8.07%	9.61%			
Consumer Staples	-0.06%	-0.04%	-0.03%	0.01%	-15.76%	-14.31%	1.79%	2.48%			
Health Care	0.07%	0.04%	0.03%	0.00%	-29.44%	-30.25%	4.68%	4.93%			
Financials	-1.59%	-1.84%	-0.22%	0.47%	-22.20%	-15.77%	21.27%	28.63%			
Information Technology	-0.22%	-0.26%	0.11%	-0.07%	-17.42%	-14.86%	12.92%	10.15%			
Communication Services	0.01%	0.03%	0.00%	-0.02%	-17.77%	-18.78%	1.09%	3.11%			
Utilities	-0.02%	0.11%	-0.12%	-0.01%	-0.40%	-2.27%	5.39%	6.12%			
Real Estate	0.44%	0.59%	-0.07%	-0.08%	-9.26%	-14.60%	9.54%	11.13%			
Cash	0.83%	0.00%	0.83%	0.00%	0.57%	--	4.31%	0.00%			
Unclassified	0.00%	--	--	--	--	--	0.00%	0.00%			
<b>Portfolio</b>	<b>-1.95%</b>	<b>=</b>	<b>-2.37%</b>	<b>+</b>	<b>0.42%</b>	<b>+</b>	<b>0.00%</b>	<b>-20.71%</b>	<b>-18.76%</b>	<b>100.00%</b>	<b>100.00%</b>



	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
<b>5th Percentile</b>	-16.05	-7.89	10.18	20.38	18.32	11.32	16.99	19.43								
<b>25th Percentile</b>	-19.40	-12.54	0.71	13.62	12.36	8.06	14.21	16.62								
<b>Median</b>	-20.77	-14.86	-3.90	9.54	9.63	6.68	12.94	15.17								
<b>75th Percentile</b>	-22.67	-16.58	-7.85	5.71	7.77	4.86	11.63	13.88								
<b>95th Percentile</b>	-24.57	-19.20	-12.83	0.63	4.56	2.09	9.21	12.39								
<b># of Portfolios</b>	164	164	164	163	160	155	147	140								
<b>● Next Century-SCG</b>	-23.19 (82)	-15.42 (60)	-0.63 (34)	16.65 (15)	9.72 (49)	4.23 (86)	9.71 (91)	12.62 (92)								
<b>▲ Russell 2000 Growth +2.5%</b>	-20.28 (41)	-15.73 (64)	-6.81 (71)	7.79 (59)	9.76 (48)	7.65 (30)	13.77 (32)	16.04 (31)								
<b>✕ Russell 2000 Growth</b>	-21.65 (65)	-17.33 (85)	-9.31 (80)	5.26 (78)	7.24 (80)	5.13 (73)	11.25 (81)	13.52 (81)								

Characteristics

	Portfolio	Russell 2000 Growth
Number of Holdings	62	1,257
Weighted Avg. Market Cap. (\$B)	2.6	2.2
Median Market Cap. (\$B)	2.0	0.8
Price To Earnings	16.2	14.6
Price To Book	10.8	4.9
Price To Sales	6.2	3.7
Return on Equity (%)	-3.7	7.0
Yield (%)	0.1	0.6
Beta (holdings; domestic)	1.3	1.3

Top Holdings

KINSALE CAPITAL GROUP	4.6%
CAREDX	4.3%
CHEGG	3.1%
PLANET FITNESS CL.A	3.0%
RBC BEARINGS	2.9%
HEALTHEQUITY	2.7%
INSULET	2.7%
QUANTA SERVICES	2.5%
INTERNATIONAL MONEY EXPRESS	2.4%
TACTILE SYSTEMS TECH.	2.4%

Best Performers

	Return %
EHEALTH (EHTH)	36.0%
VERICEL (VCEL)	23.0%
SENDGRID (SEND)	17.3%
INSPIRE MEDICAL SYSTEMS (INSP)	0.4%
FIVE9 (FIVN)	0.1%
CHEGG (CHGG)	0.0%
INTERNATIONAL MONEY EXPRESS (IMXI)	-0.5%
PLANET FITNESS CL.A (PLNT)	-0.8%
EVERBRIDGE (EVBG)	-1.5%
MONOLITHIC PWR.SYS. (MPWR)	-7.2%

Worst Performers

	Return %
LIGAND PHARMS.'B' (LGND)	-50.6%
ACCELERATE DIAGNOSTICS (AXDX)	-49.9%
INOGEN (INGN)	-49.1%
USA TECHNOLOGIES (USAT)	-46.0%
AXOGEN (AXGN)	-44.6%
NATERA (NTRA)	-41.7%
AERIE PHARMACEUTICALS (AERI)	-41.3%
BOINGO WIRELESS (WIFI)	-41.1%
AT HOME GROUP (HOME)	-40.8%
CARGURUS (CARG)	-39.4%

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	0.45%	--	0.45%	--	--	-41.13%	0.00%	2.31%			
Materials	0.06%	0.04%	0.03%	-0.01%	-25.73%	-26.74%	3.08%	3.65%			
Industrials	0.41%	0.39%	-0.01%	0.04%	-20.26%	-22.41%	19.74%	18.05%			
Consumer Discretionary	-0.02%	0.05%	-0.05%	-0.02%	-20.57%	-20.92%	8.70%	14.78%			
Consumer Staples	-0.29%	-0.31%	-0.12%	0.15%	-23.69%	-12.43%	1.46%	2.79%			
Health Care	-2.16%	-2.06%	-0.03%	-0.06%	-32.94%	-25.38%	28.15%	27.31%			
Financials	0.15%	0.07%	0.06%	0.02%	-18.06%	-19.02%	9.48%	7.33%			
Information Technology	0.38%	0.25%	0.10%	0.04%	-16.62%	-18.04%	19.90%	17.35%			
Communication Services	-1.23%	-0.66%	0.10%	-0.67%	-38.25%	-19.07%	6.92%	3.44%			
Utilities	-0.10%	--	-0.10%	--	--	1.74%	0.00%	0.41%			
Real Estate	-0.26%	--	-0.26%	--	--	-11.61%	0.00%	2.57%			
Cash	0.58%	0.00%	0.58%	0.00%	0.57%	--	2.58%	0.00%			
Unclassified	0.00%	--	--	--	--	--	0.00%	0.00%			
<b>Portfolio</b>	<b>-2.03%</b>	<b>=</b>	<b>-2.24%</b>	<b>+</b>	<b>0.72%</b>	<b>+</b>	<b>-0.52%</b>	<b>-23.85%</b>	<b>-21.82%</b>	<b>100.00%</b>	<b>100.00%</b>

# International developed equity

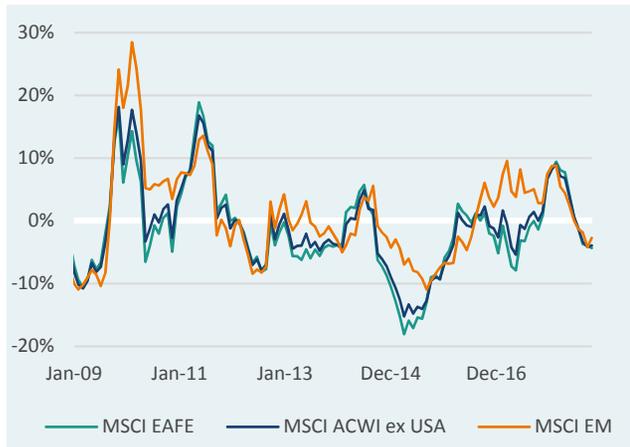
Unhedged international equities underperformed U.S. equities during Q3 (MSCI EAFE +1.4% vs. S&P 500 +7.7%). On a currency hedged basis, international equities delivered returns of 2.9%.

Currency movement continued to create losses for unhedged equity investors. U.S. investors that hedged their international equity exposure outperformed their unhedged peers by approximately 5% year-to-date (MSCI EAFE Index).

Regional divergence in earnings remained a story in Q3. Year-over-year growth in forward earnings reached 23% for U.S. equities, while estimates fell from 14% to 9% in emerging markets and from 12% to 10% in international developed markets, according to MSCI estimates.

Differences in forward P/E multiples between U.S. and non-U.S. equities remained high. At quarter-end, this valuation gap relative to international developed equity ranked in the 96<sup>th</sup> percentile since 2005. The U.S.-EM valuation gap ranked in the 89<sup>th</sup> percentile over the same period.

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



Source: MSCI, as of 9/30/18

**EARNINGS GROWTH (YOY)**



Source: MSCI, as of 9/30/18 – YoY growth in forward earnings

**FORWARD P/E SPREADS RELATIVE TO U.S.**



Source: MSCI, as of 9/30/18

# Emerging market equity

Emerging market equities were the top performer in Q4, as these markets (MSCI EM -7.5%) experienced much less pain than developed (S&P 500 -13.5%, MSCI EAFE -12.5%) during the equity sell-off. Currency depreciation stabilized in Q4 (JP Morgan EM Currency Index +0.2%) and emerging market crises concerns faded from the news headlines.

Valuations are near their long-term average, but remain much cheaper than developed market equities. Sentiment around emerging markets seems to be improving as the extreme negativity of 2018 dissipates, which creates possible

upside surprise if investors decide these fears were overblown. Very depressed currencies may also provide a performance tailwind in the event of mean reversion. Overall, we maintain our preference for the asset class.

Decelerating global growth and rising probability of recession do present unique risks to emerging markets, however, as these market typically exhibit a higher beta during market downside and upside moves. We will be watching global developments closely and will update our emerging market views as appropriate.

**EQUITY PERFORMANCE (3-YR ROLLING)**



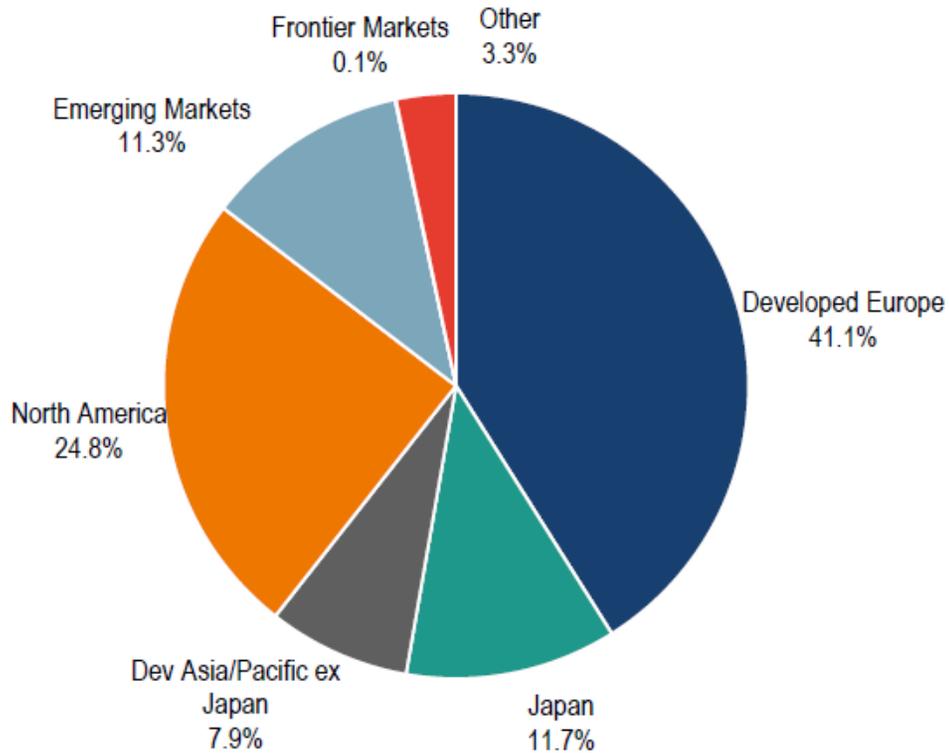
**EMERGING MARKET CURRENCY MOVEMENT**



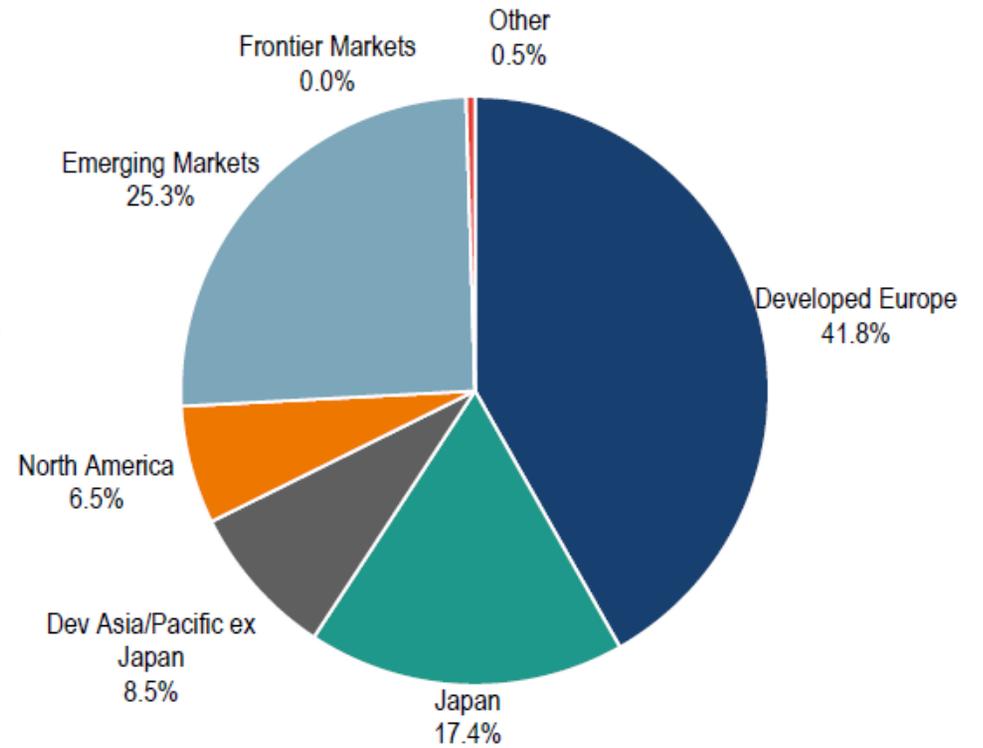
**Q4 CUMULATIVE PERFORMANCE**



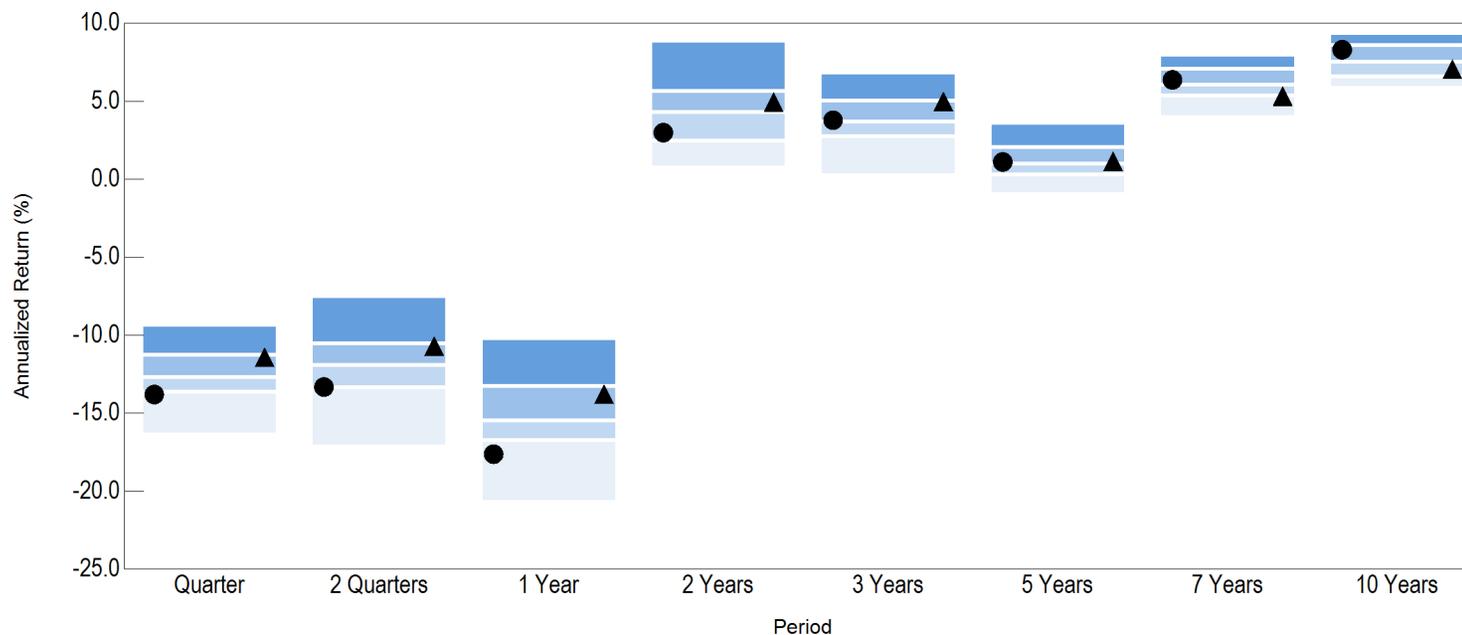
International Equity



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>Return (Rank)</b>																
5th Percentile	-9.33	-7.53	-10.21	8.87	6.81	3.58	7.97	9.34	-11.22	-10.49	-13.23	5.68	5.06	2.07	7.13	8.63
25th Percentile	-11.22	-10.49	-13.23	5.68	5.06	2.07	7.13	8.63	-12.67	-11.88	-15.41	4.34	3.73	1.01	6.10	7.54
Median	-13.60	-13.31	-16.72	2.49	2.77	0.34	5.38	6.61	-13.60	-13.31	-16.72	2.49	2.77	0.34	5.38	6.61
75th Percentile	-16.32	-17.13	-20.67	0.78	0.27	-0.94	4.03	5.88	-16.32	-17.13	-20.67	0.78	0.27	-0.94	4.03	5.88
95th Percentile	64	64	64	63	63	57	48	41	64	64	64	63	63	57	48	41
# of Portfolios	64	64	64	63	63	57	48	41	64	64	64	63	63	57	48	41
● AQR	-13.80	(78)	-13.32	(77)	-17.62	(84)	2.99	(74)	3.78	(50)	1.11	(43)	6.37	(41)	8.30	(31)
▲ MSCI ACWI ex USA Gross	-11.41	(27)	-10.70	(29)	-13.78	(31)	4.96	(40)	4.98	(26)	1.14	(43)	5.33	(78)	7.06	(64)

Characteristics

	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	772	2,136
Weighted Avg. Market Cap. (\$B)	50.1	56.1
Median Market Cap. (\$B)	14.5	7.0
Price To Earnings	15.7	16.4
Price To Book	3.0	2.4
Price To Sales	2.3	2.4
Return on Equity (%)	19.0	15.5
Yield (%)	3.6	3.4
Beta (holdings; global)	0.9	1.0

Top Holdings

ROCHE HOLDING	2.8%
NESTLE 'R'	2.5%
TOTAL	2.2%
NOVO NORDISK 'B'	2.1%
BP	1.8%
KONINKLIJKE AHOLD DELHAIZE	1.7%
ENI	1.7%
ALLIANZ	1.6%
NOVARTIS 'R'	1.6%
SAP	1.6%

Best Performers

	Return %
SUMITOMO DAINIPPON PHA. (J:DPPH)	38.7%
TOKYO ELECTRIC POWER CO. HDG. (J:TE@N)	21.2%
RANDGOLD RESOURCES SUSP - SUSP 31/12/18 (UKIR:RRS)	17.3%
EMPIRE 'A' (C:EMP.A)	16.5%
THOMSON REUTERS (C:TRI)	16.2%
BANDAI NAMCO HDG. (J:N@MB)	15.5%
YUE YUEN INDL.HDG. (K:YUEN)	15.1%
ENEL (I:ENEL)	12.5%
KONAMI HOLDINGS (J:KONA)	11.8%
KPN KON (H:KPN)	10.9%

Worst Performers

	Return %
BOMBARDIER 'B' (C:BBD.B)	-58.2%
CRESCENT POINT ENERGY (C:CPG)	-51.4%
AURORA CANNABIS (C:ACB)	-48.3%
ROYAL MAIL (UKIR:RMG)	-42.8%
LENLEASE GROUP STAPLED UNITS (A:LLCX)	-42.4%
HUSKY EN. (C:HSE)	-40.6%
COVESTRO (XET) (D:1COVX)	-39.2%
METHANEX (C:MX)	-38.7%
IDEMITSU KOSAN (J:IDKO)	-37.8%
FRESENIUS MED.CARE (D:FME)	-37.7%

**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	-0.60%	-0.27%	-0.15%	-0.19%	-19.16%	-16.12%	12.08%	7.62%			
Materials	-0.82%	-0.79%	0.00%	-0.03%	-23.99%	-13.37%	7.98%	8.12%			
Industrials	-0.28%	-0.24%	-0.02%	-0.02%	-15.38%	-13.58%	13.18%	11.90%			
Consumer Discretionary	-0.17%	-0.07%	0.02%	-0.13%	-15.41%	-13.79%	10.25%	10.41%			
Consumer Staples	0.10%	0.33%	-0.13%	-0.10%	-4.08%	-7.42%	6.10%	9.49%			
Health Care	0.33%	0.21%	-0.03%	0.14%	-8.53%	-10.82%	13.21%	8.44%			
Financials	-0.53%	-0.81%	-0.07%	0.35%	-13.89%	-10.65%	16.02%	22.11%			
Information Technology	-0.41%	-0.15%	-0.11%	-0.14%	-18.88%	-16.06%	11.59%	8.42%			
Communication Services	-0.13%	-0.15%	-0.14%	0.16%	-8.08%	-8.29%	2.29%	7.44%			
Utilities	0.08%	0.00%	0.08%	0.01%	-0.23%	0.49%	2.79%	2.97%			
Real Estate	0.13%	0.03%	0.09%	0.01%	-2.62%	-3.45%	4.28%	3.07%			
Cash	0.00%	--	--	--	--	--	0.00%	0.00%			
Unclassified	-0.03%	0.00%	-0.03%	0.00%	-21.45%	--	0.24%	0.00%			
<b>Portfolio</b>	<b>-2.34%</b>	<b>=</b>	<b>-1.91%</b>	<b>+</b>	<b>-0.49%</b>	<b>+</b>	<b>0.06%</b>	<b>-13.75%</b>	<b>-11.40%</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	--	-21.91%	0.00%	0.17%	--	0.02%	0.00%	--	0.02%
Belgium	-12.20%	-18.34%	1.38%	0.71%	0.04%	-0.04%	-0.01%	0.04%	0.03%
Czech Republic*	--	-8.55%	0.00%	0.05%	--	0.00%	0.00%	--	0.00%
Denmark	-5.65%	-9.73%	2.26%	1.16%	0.05%	0.03%	-0.02%	0.05%	0.10%
Finland	-20.58%	-14.63%	1.74%	0.74%	-0.04%	-0.02%	-0.01%	-0.06%	-0.14%
France	-17.57%	-14.88%	9.57%	7.67%	-0.21%	-0.05%	-0.02%	-0.05%	-0.33%
Germany	-19.40%	-16.00%	8.44%	6.34%	-0.22%	-0.08%	-0.02%	-0.07%	-0.39%
Greece*	--	-15.16%	0.00%	0.07%	--	0.00%	0.00%	--	0.00%
Hungary*	--	5.79%	0.00%	0.07%	--	-0.01%	0.00%	--	-0.01%
Ireland	--	-18.13%	0.00%	0.36%	--	0.02%	0.00%	--	0.03%
Italy	-15.38%	-11.62%	2.19%	1.64%	-0.06%	0.00%	-0.01%	-0.02%	-0.09%
Luxembourg	-12.98%	-11.46%	0.04%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Netherlands	-11.28%	-11.01%	4.63%	2.33%	0.00%	0.03%	-0.04%	0.00%	-0.02%
Norway	--	-17.84%	0.00%	0.54%	--	0.01%	0.03%	--	0.04%
Poland*	--	-2.73%	0.00%	0.31%	--	-0.03%	0.01%	--	-0.02%
Portugal	--	-14.16%	0.00%	0.11%	--	0.00%	0.00%	--	0.00%
Russia*	--	-9.18%	0.00%	0.89%	--	-0.06%	0.04%	--	-0.02%
Spain	-7.93%	-8.72%	1.89%	2.07%	0.02%	-0.01%	0.00%	0.00%	0.01%
Sweden	-17.33%	-14.09%	2.82%	1.91%	-0.06%	-0.03%	0.00%	-0.03%	-0.12%
Switzerland	-3.34%	-8.98%	7.74%	5.69%	0.32%	0.06%	-0.02%	0.12%	0.48%
United Kingdom	-14.38%	-11.80%	12.24%	12.04%	-0.32%	0.00%	0.00%	-0.01%	-0.32%

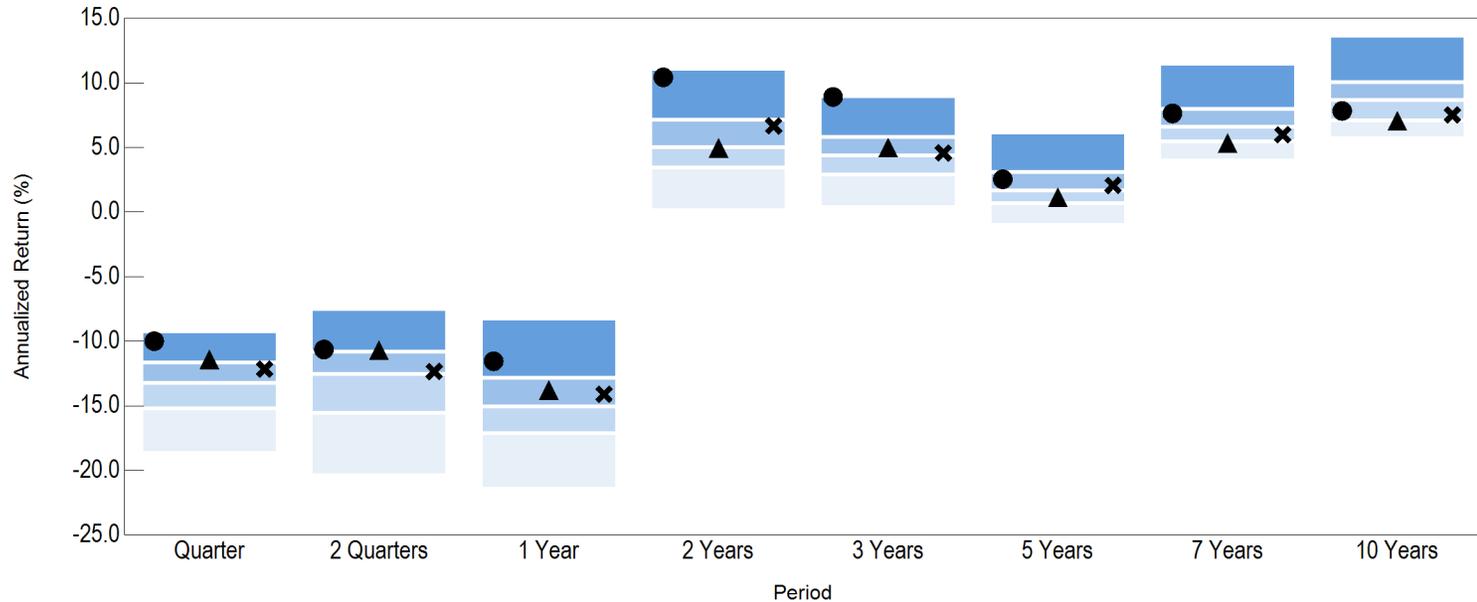
## AQR Performance Attribution vs. MSCI ACWI ex USA Gross

	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	-11.90%	-9.81%	4.19%	4.61%	-0.10%	-0.02%	0.01%	0.01%	-0.09%
China*	--	-10.56%	0.00%	7.64%	--	-0.03%	0.00%	--	-0.02%
Hong Kong	0.11%	-4.47%	2.79%	2.42%	0.11%	0.02%	0.00%	0.02%	0.15%
India*	--	2.54%	0.00%	2.11%	--	-0.20%	-0.08%	--	-0.28%
Indonesia*	--	9.85%	0.00%	0.48%	--	-0.08%	-0.02%	--	-0.10%
Japan	-14.34%	-14.22%	19.33%	16.75%	-0.02%	-0.16%	0.07%	0.00%	-0.11%
Korea*	--	-14.20%	0.00%	3.69%	--	0.10%	0.02%	--	0.12%
Malaysia*	--	-5.81%	0.00%	0.60%	--	-0.03%	0.00%	--	-0.03%
New Zealand	--	-6.43%	0.00%	0.15%	--	0.00%	0.00%	--	-0.01%
Pakistan*	--	-22.83%	0.00%	0.02%	--	0.00%	0.00%	--	0.00%
Philippines*	--	5.23%	0.00%	0.24%	--	-0.03%	-0.01%	--	-0.04%
Singapore	-7.20%	-6.73%	0.81%	0.87%	0.00%	0.00%	0.00%	0.00%	-0.01%
Taiwan*	--	-13.58%	0.00%	3.03%	--	0.06%	0.02%	--	0.08%
Thailand*	--	-10.32%	0.00%	0.61%	--	-0.01%	0.00%	--	0.00%
<b>Americas</b>									
Brazil*	--	13.63%	0.00%	1.54%	--	-0.33%	-0.05%	--	-0.38%
Canada	-22.88%	-14.87%	7.54%	6.64%	-0.56%	0.01%	-0.01%	-0.08%	-0.64%
Chile*	--	-8.29%	0.00%	0.27%	--	-0.02%	0.01%	--	-0.01%
Colombia*	--	-18.87%	0.00%	0.11%	--	0.00%	0.01%	--	0.01%
Mexico*	--	-18.65%	0.00%	0.78%	--	0.03%	0.03%	--	0.06%
Peru*	--	-2.89%	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*	--	-8.62%	0.00%	0.03%	--	0.00%	0.00%	--	0.00%
Israel	--	-14.78%	0.00%	0.36%	--	0.01%	0.00%	--	0.01%
Qatar*	--	8.55%	0.00%	0.23%	--	-0.04%	0.00%	--	-0.04%
South Africa*	--	-3.55%	0.00%	1.53%	--	-0.14%	0.02%	--	-0.11%
Turkey*	--	4.67%	0.00%	0.15%	--	-0.01%	-0.02%	--	-0.02%
United Arab Emirates*	--	-6.03%	0.00%	0.16%	--	-0.01%	0.00%	--	-0.01%
<b>Totals</b>									
Americas	-22.88%	-10.26%	7.54%	9.45%	-1.10%	-0.08%	-0.01%	0.22%	-0.96%
Europe	-13.64%	-12.59%	54.93%	44.87%	-0.54%	-0.02%	-0.06%	-0.12%	-0.75%
Asia/Pacific	-12.26%	-10.97%	27.12%	43.22%	-0.86%	0.18%	0.02%	0.32%	-0.33%
Other	--	-3.76%	0.00%	2.46%	--	-0.19%	0.01%	--	-0.17%
Cash	0.57%	--	10.41%	0.00%	0.00%	1.19%	0.00%	0.00%	1.19%
Unclassified	--	--	0.00%	0.00%	--	0.00%	0.00%	--	0.00%
<b>Total</b>	<b>-12.48%</b>	<b>-11.46%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>-2.50%</b>	<b>1.09%</b>	<b>-0.04%</b>	<b>0.42%</b>	<b>-1.03%</b>
<b>Totals</b>									
Developed	-14.00%	-12.75%	89.59%	75.28%	-1.01%	-0.16%	-0.03%	-0.19%	-1.39%
Emerging*	--	-7.50%	0.00%	24.72%	--	-0.83%	0.00%	--	-0.83%
Cash	0.57%	--	10.41%	0.00%	0.00%	1.19%	0.00%	0.00%	1.19%

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	-9.24	-7.50	-8.24	11.05	8.95	6.13	11.45	13.63
25th Percentile	-11.59	-10.76	-12.82	7.19	5.84	3.13	8.03	10.07
Median	-13.19	-12.50	-15.04	5.05	4.42	1.72	6.63	8.69
75th Percentile	-15.17	-15.53	-17.11	3.49	2.92	0.71	5.47	7.11
95th Percentile	-18.63	-20.33	-21.40	0.17	0.41	-0.94	4.01	5.73
# of Portfolios	287	287	287	284	282	245	208	169
● Capital Group	-9.99 (8)	-10.64 (24)	-11.55 (15)	10.43 (8)	8.91 (6)	2.54 (34)	7.63 (34)	7.83 (63)
▲ MSCI ACWI ex USA Gross	-11.41 (22)	-10.70 (25)	-13.78 (35)	4.96 (52)	4.98 (40)	1.14 (64)	5.33 (78)	7.06 (76)
✕ MSCI ACWI ex USA Growth Gross	-12.16 (35)	-12.34 (47)	-14.10 (40)	6.67 (30)	4.57 (47)	2.06 (43)	5.98 (67)	7.52 (67)

Characteristics

	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	225	2,136
Weighted Avg. Market Cap. (\$B)	50.0	56.1
Median Market Cap. (\$B)	14.4	7.0
Price To Earnings	19.4	16.4
Price To Book	3.8	2.4
Price To Sales	4.1	2.4
Return on Equity (%)	18.3	15.5
Yield (%)	2.4	3.4
Beta (holdings; global)	1.1	1.0

Top Holdings

AIRBUS	2.4%
AIA GROUP	2.3%
VALE ON ADR 1:1	2.3%
ASTRAZENECA	2.1%
ENEL	2.0%
TAIWAN SEMICON.MNFG.	2.0%
OCADO GROUP	1.9%
PING AN INSURANCE (GROUP) OF CHINA 'H'	1.7%
SAMSUNG ELECTRONICS	1.7%
BANK CENTRAL ASIA	1.6%

Best Performers

	Return %
CIA ENERGETICA DE MINAS GERAIS PN (BR:GP4)	101.6%
CYRELA BRAZIL REALTY ON (BR:3CY)	54.4%
CHINA TOWER 'H' (K:CHTW)	29.8%
LOJAS AMERICANAS ON (BR:LJ3)	29.6%
LOJAS AMERICANAS PN REP1 PN (BR:LM4)	27.9%
ITAU UNIBANCO BANCO HLDG.ADR 1:1 (ITUB)	25.0%
IDFC FIRST BANK (IN:ZIB)	24.0%
ICICI BANK (IN:ICG)	22.4%
MEIJI HOLDINGS (J:MEJH)	21.6%
ICICI BK.ADR 1:2 (IBN)	21.2%

Worst Performers

	Return %
ENSCO CLASS A (ESV)	-57.7%
THOMAS COOK GROUP (UKIR:TCG)	-48.1%
BORR DRILLING (N:BDRR)	-46.2%
AAC TECHNOLOGIES HDG. (K:AACA)	-44.1%
HOSHIZAKI ELECTRIC (J:HSZK)	-40.5%
COVESTRO (XET) (D:1COVX)	-39.2%
TDK (J:TD@N)	-35.5%
SOFTBANK GROUP (J:SFTB)	-34.1%
TULLOW OIL (UKIR:TLW)	-33.6%
CATCHER TECHNOLOGY (TW:CTH)	-33.5%

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	0.01%	-0.62%	0.16%	0.47%	-24.29%	-16.16%	2.96%	7.66%			
Materials	0.18%	0.00%	0.06%	0.11%	-12.26%	-13.94%	4.77%	7.92%			
Industrials	-0.39%	-0.39%	0.03%	-0.03%	-17.39%	-13.46%	10.80%	12.03%			
Consumer Discretionary	-0.01%	0.17%	-0.15%	-0.02%	-12.97%	-13.84%	15.43%	10.64%			
Consumer Staples	-0.04%	0.01%	-0.07%	0.02%	-7.04%	-7.29%	7.64%	9.34%			
Health Care	0.19%	0.29%	-0.02%	-0.08%	-7.53%	-10.78%	5.92%	8.48%			
Financials	1.39%	1.09%	-0.01%	0.31%	-4.27%	-10.77%	21.40%	22.16%			
Information Technology	-0.32%	-0.07%	-0.24%	-0.01%	-16.68%	-16.07%	13.05%	8.46%			
Communication Services	-0.54%	-0.56%	0.01%	0.01%	-15.59%	-8.31%	7.55%	7.36%			
Utilities	0.39%	0.44%	-0.02%	-0.03%	14.79%	0.52%	2.86%	2.99%			
Real Estate	0.62%	0.23%	0.21%	0.18%	4.29%	-2.84%	5.64%	2.95%			
Cash	0.23%	0.00%	0.23%	0.00%	0.57%	--	1.98%	0.00%			
<b>Portfolio</b>	<b>1.70%</b>	<b>=</b>	<b>0.58%</b>	<b>+</b>	<b>0.19%</b>	<b>+</b>	<b>0.92%</b>	<b>-9.76%</b>	<b>-11.46%</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	--	-21.91%	0.00%	0.17%	--	0.02%	0.00%	--	0.02%
Belgium	-11.97%	-18.34%	0.21%	0.71%	0.05%	0.03%	0.01%	-0.03%	0.05%
Czech Republic*	--	-8.55%	0.00%	0.05%	--	0.00%	0.00%	--	0.00%
Denmark	-8.73%	-9.73%	2.85%	1.16%	0.01%	0.04%	-0.03%	0.02%	0.05%
Finland	--	-14.63%	0.00%	0.74%	--	0.02%	0.01%	--	0.03%
France	-16.24%	-14.88%	10.62%	7.67%	-0.11%	-0.08%	-0.04%	-0.04%	-0.26%
Germany	-15.81%	-16.00%	6.90%	6.34%	0.01%	-0.02%	-0.01%	0.00%	-0.02%
Greece*	--	-15.16%	0.00%	0.07%	--	0.00%	0.00%	--	0.00%
Hungary*	--	5.79%	0.00%	0.07%	--	-0.01%	0.00%	--	-0.01%
Ireland	-22.31%	-18.13%	0.55%	0.36%	-0.02%	-0.01%	0.00%	-0.01%	-0.04%
Italy	12.52%	-11.62%	1.59%	1.64%	0.40%	0.00%	-0.01%	-0.01%	0.38%
Luxembourg	-12.98%	-11.46%	0.33%	0.00%	0.00%	0.00%	0.00%	0.00%	-0.01%
Netherlands	-13.23%	-11.01%	2.00%	2.33%	-0.05%	0.00%	0.00%	0.01%	-0.04%
Norway	-36.07%	-17.84%	0.32%	0.54%	-0.12%	0.00%	0.02%	0.05%	-0.04%
Poland*	--	-2.73%	0.00%	0.31%	--	-0.03%	0.01%	--	-0.02%
Portugal	--	-14.16%	0.00%	0.11%	--	0.00%	0.00%	--	0.00%
Russia*	-12.08%	-9.18%	0.64%	0.89%	-0.07%	-0.02%	0.04%	0.02%	-0.02%
Spain	-3.46%	-8.72%	1.44%	2.07%	0.11%	-0.02%	0.01%	-0.03%	0.06%
Sweden	-14.75%	-14.09%	0.99%	1.91%	-0.01%	0.03%	0.00%	0.01%	0.02%
Switzerland	-12.16%	-8.98%	2.54%	5.69%	-0.18%	-0.09%	0.03%	0.10%	-0.14%
United Kingdom	-14.20%	-11.80%	15.46%	12.04%	-0.30%	0.04%	-0.06%	-0.09%	-0.40%

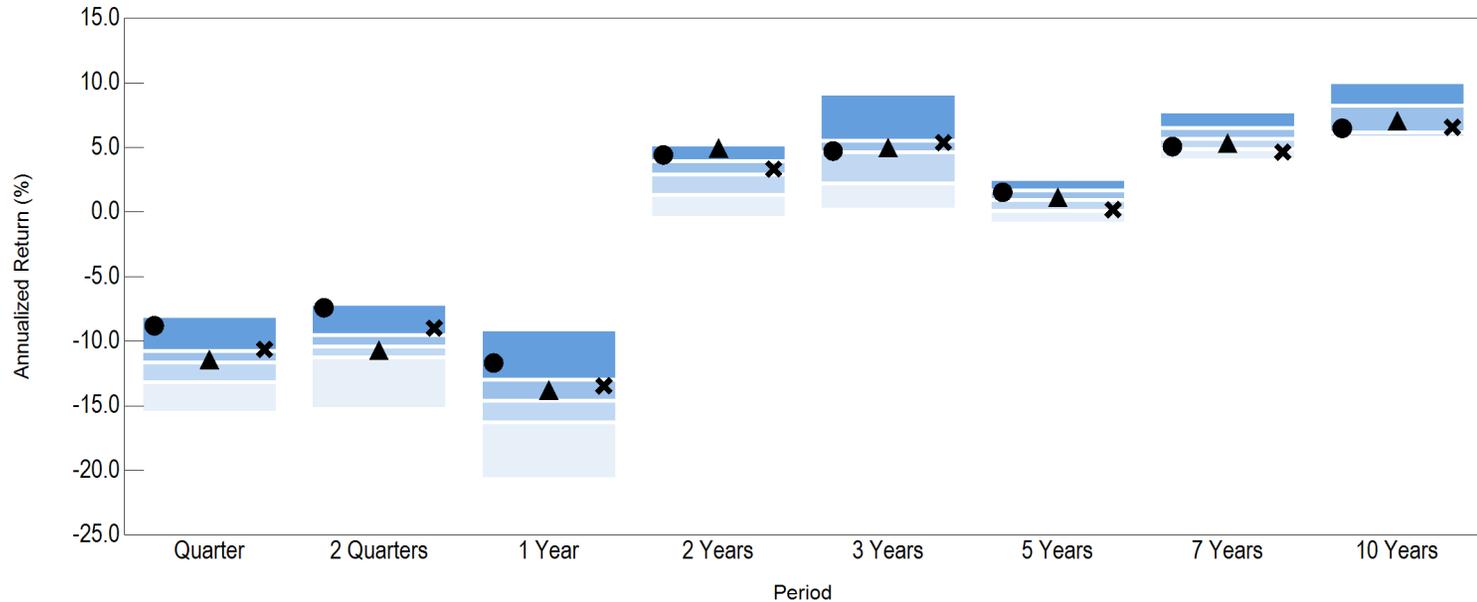
Capital Group Performance Attribution vs. MSCI ACWI ex USA Gross

	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	-5.07%	-9.81%	0.55%	4.61%	0.22%	-0.14%	0.10%	-0.20%	-0.02%
China*	-15.00%	-10.56%	6.11%	7.64%	-0.34%	-0.01%	0.00%	0.07%	-0.28%
Hong Kong	-3.83%	-4.47%	8.43%	2.42%	0.02%	0.39%	-0.01%	0.05%	0.44%
India*	9.29%	2.54%	5.86%	2.11%	0.16%	0.36%	0.10%	0.28%	0.90%
Indonesia*	12.81%	9.85%	2.37%	0.48%	0.01%	0.32%	0.08%	0.05%	0.46%
Japan	-16.28%	-14.22%	10.92%	16.75%	-0.33%	0.37%	-0.18%	0.12%	-0.03%
Korea*	-17.17%	-14.20%	1.82%	3.69%	-0.11%	0.05%	0.01%	0.06%	0.01%
Malaysia*	--	-5.81%	0.00%	0.60%	--	-0.03%	0.00%	--	-0.03%
New Zealand	5.61%	-6.43%	0.09%	0.15%	0.02%	0.00%	0.00%	-0.01%	0.01%
Pakistan*	--	-22.83%	0.00%	0.02%	--	0.00%	0.00%	--	0.00%
Philippines*	15.95%	5.23%	0.16%	0.24%	0.02%	-0.01%	0.00%	-0.01%	0.01%
Singapore	-4.13%	-6.73%	1.14%	0.87%	0.02%	0.01%	0.00%	0.01%	0.04%
Taiwan*	-14.58%	-13.58%	3.75%	3.03%	-0.04%	-0.02%	0.00%	-0.01%	-0.06%
Thailand*	5.43%	-10.32%	0.23%	0.61%	0.10%	0.00%	0.00%	-0.06%	0.03%
<b>Americas</b>									
Brazil*	2.22%	13.63%	3.46%	1.54%	-0.14%	0.41%	-0.02%	-0.17%	0.08%
Canada	-2.19%	-14.87%	0.51%	6.64%	0.89%	-0.05%	0.29%	-0.82%	0.31%
Chile*	--	-8.29%	0.00%	0.27%	--	-0.02%	0.01%	--	-0.01%
Colombia*	--	-18.87%	0.00%	0.11%	--	0.00%	0.01%	--	0.01%
Mexico*	-10.31%	-18.65%	0.55%	0.78%	0.03%	0.01%	0.03%	-0.01%	0.06%
Peru*	--	-2.89%	0.00%	0.10%	--	-0.01%	0.00%	--	-0.01%
United States	-14.97%	-13.81%	2.38%	0.00%	0.00%	-0.07%	0.00%	-0.03%	-0.10%

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*	--	-8.62%	0.00%	0.03%	--	0.00%	0.00%	--	0.00%
Israel	-7.39%	-14.78%	1.09%	0.36%	0.03%	-0.02%	-0.02%	0.06%	0.05%
Qatar*	--	8.55%	0.00%	0.23%	--	-0.04%	0.00%	--	-0.04%
South Africa*	-6.81%	-3.55%	1.58%	1.53%	-0.05%	0.01%	0.00%	0.00%	-0.05%
Turkey*	11.94%	4.67%	0.35%	0.15%	0.01%	0.01%	0.03%	0.01%	0.06%
United Arab Emirates*	-0.71%	-6.03%	0.22%	0.16%	0.01%	0.00%	0.00%	0.00%	0.01%
<b>Totals</b>									
Americas	-5.04%	-10.26%	6.91%	9.45%	0.16%	-0.10%	0.33%	-0.04%	0.35%
Europe	-13.38%	-12.59%	46.44%	44.87%	-0.36%	0.00%	-0.01%	-0.01%	-0.39%
Asia/Pacific	-7.39%	-10.97%	41.43%	43.22%	1.43%	0.02%	0.10%	-0.06%	1.49%
Other	-4.58%	-3.76%	3.25%	2.46%	-0.03%	0.06%	0.00%	-0.01%	0.03%
Cash	0.57%	--	1.98%	0.00%	0.00%	0.23%	0.00%	0.00%	0.23%
Unclassified	--	--	0.00%	0.00%	--	0.00%	0.00%	--	0.00%
<b>Total</b>	<b>-9.76%</b>	<b>-11.46%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>1.20%</b>	<b>0.20%</b>	<b>0.42%</b>	<b>-0.12%</b>	<b>1.70%</b>
<b>Totals</b>									
Developed	-12.35%	-12.75%	70.92%	75.28%	0.22%	0.05%	0.11%	-0.01%	0.37%
Emerging*	-3.74%	-7.50%	27.10%	24.72%	0.65%	0.08%	0.30%	0.06%	1.10%
Cash	0.57%	--	1.98%	0.00%	0.00%	0.23%	0.00%	0.00%	0.23%

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	-8.07	-7.11	-9.12	5.19	9.16	2.52	7.78	10.04
25th Percentile	-10.71	-9.49	-12.95	3.98	5.55	1.71	6.55	8.24
Median	-11.62	-10.37	-14.58	2.94	4.64	0.93	5.70	6.17
75th Percentile	-13.14	-11.23	-16.25	1.33	2.26	0.10	4.91	5.79
95th Percentile	-15.51	-15.23	-20.64	-0.41	0.20	-0.88	4.02	5.58
# of Portfolios	22	22	22	22	22	20	17	14
● Mondrian	-8.80 (10)	-7.40 (12)	-11.68 (10)	4.42 (10)	4.72 (43)	1.53 (30)	5.07 (63)	6.48 (45)
▲ MSCI ACWI ex USA Gross	-11.41 (49)	-10.70 (62)	-13.78 (38)	4.96 (7)	4.98 (41)	1.14 (40)	5.33 (56)	7.06 (43)
✕ MSCI ACWI ex USA Value Gross	-10.63 (23)	-8.98 (21)	-13.45 (29)	3.33 (42)	5.37 (39)	0.18 (75)	4.64 (88)	6.55 (45)

Characteristics

	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	65	2,136
Weighted Avg. Market Cap. (\$B)	46.9	56.1
Median Market Cap. (\$B)	29.9	7.0
Price To Earnings	12.3	16.4
Price To Book	1.4	2.4
Price To Sales	1.3	2.4
Return on Equity (%)	10.8	15.5
Yield (%)	4.7	3.4
Beta (holdings; global)	0.9	1.0

Top Holdings

ENEL	3.7%
TELIA COMPANY	3.3%
IBERDROLA	3.3%
UNITED OVERSEAS BANK	3.2%
ENI	3.1%
SANOFI	3.0%
GLAXOSMITHKLINE	2.9%
CK HUTCHISON HOLDINGS	2.9%
LLOYDS BANKING GROUP	2.9%
HONDA MOTOR	2.8%

Best Performers

	Return %
COCA-COLA BOTTLERS JAPAN HOLDINGS (J:KITK)	12.7%
ENEL (I:ENEL)	12.5%
KYUSHU RAILWAY (J:KRWC)	11.2%
KONINKLIJKE AHOLD DELHAIZE (H:AD)	10.0%
IBERDROLA (E:IBE)	9.0%
TELEFONICA (E:TEF)	8.2%
TELIA COMPANY (W:TEL)	6.1%
DEUTSCHE TELEKOM (D:DTE)	4.7%
SECOM (J:KP@N)	1.9%
H&R RLST.IT.STAPLE UNIT (C:HR.UN)	0.0%

Worst Performers

	Return %
WOOD GROUP (JOHN) (UKIR:WG.)	-35.9%
EVONIK INDUSTRIES (D:EVK)	-29.9%
SOCIETE GENERALE (F:SGE)	-25.9%
WPP (UKIR:WPP)	-25.0%
SAINT GOBAIN (F:SGO)	-22.7%
TESCO (UKIR:TSCO)	-22.0%
TAKEDA PHARMACEUTICAL (J:TA@N)	-21.1%
ISS (DK:ISS)	-20.8%
G4S (UKIR:GFS)	-20.5%
KINGFISHER (UKIR:KGF)	-20.4%

**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	-0.62%	-0.27%	-0.14%	-0.21%	-19.46%	-16.12%	12.26%	7.62%			
Materials	-0.04%	-1.36%	0.11%	1.21%	-29.86%	-13.37%	1.36%	8.12%			
Industrials	-0.48%	-0.28%	-0.10%	-0.10%	-15.99%	-13.58%	15.33%	11.90%			
Consumer Discretionary	-0.24%	-0.23%	-0.06%	0.05%	-15.35%	-13.79%	12.22%	10.41%			
Consumer Staples	-0.08%	0.18%	-0.17%	-0.09%	-6.14%	-7.42%	5.41%	9.49%			
Health Care	0.40%	0.25%	0.04%	0.11%	-7.79%	-10.82%	12.31%	8.44%			
Financials	0.00%	-0.06%	-0.06%	0.13%	-10.57%	-10.65%	17.03%	22.11%			
Information Technology	0.42%	0.08%	0.29%	0.05%	-12.33%	-16.06%	2.84%	8.42%			
Communication Services	0.71%	0.51%	0.11%	0.09%	-1.62%	-8.29%	9.89%	7.44%			
Utilities	1.07%	0.16%	0.72%	0.19%	5.21%	0.49%	8.91%	2.97%			
Real Estate	0.01%	0.16%	-0.05%	-0.10%	-0.96%	-3.45%	2.43%	3.07%			
Cash	0.00%	--	--	--	--	--	0.00%	0.00%			
<b>Portfolio</b>	<b>1.15%</b>	<b>=</b>	<b>-0.88%</b>	<b>+</b>	<b>0.68%</b>	<b>+</b>	<b>1.35%</b>	<b>-10.25%</b>	<b>-11.40%</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	--	-21.91%	0.00%	0.17%	--	0.02%	0.00%	--	0.02%
Belgium	--	-18.34%	0.00%	0.71%	--	0.04%	0.01%	--	0.05%
Czech Republic*	--	-8.55%	0.00%	0.05%	--	0.00%	0.00%	--	0.00%
Denmark	-20.77%	-9.73%	2.12%	1.16%	-0.13%	0.03%	-0.01%	-0.11%	-0.22%
Finland	--	-14.63%	0.00%	0.74%	--	0.02%	0.01%	--	0.03%
France	-11.87%	-14.88%	6.74%	7.67%	0.23%	0.02%	0.01%	-0.03%	0.24%
Germany	-11.70%	-16.00%	9.39%	6.34%	0.28%	-0.12%	-0.05%	0.13%	0.25%
Greece*	--	-15.16%	0.00%	0.07%	--	0.00%	0.00%	--	0.00%
Hungary*	--	5.79%	0.00%	0.07%	--	-0.01%	0.00%	--	-0.01%
Ireland	--	-18.13%	0.00%	0.36%	--	0.02%	0.00%	--	0.03%
Italy	-2.36%	-11.62%	6.45%	1.64%	0.15%	0.03%	-0.08%	0.45%	0.56%
Netherlands	-2.02%	-11.01%	4.37%	2.33%	0.22%	0.02%	-0.04%	0.19%	0.39%
Norway	--	-17.84%	0.00%	0.54%	--	0.01%	0.03%	--	0.04%
Poland*	--	-2.73%	0.00%	0.31%	--	-0.03%	0.01%	--	-0.02%
Portugal	--	-14.16%	0.00%	0.11%	--	0.00%	0.00%	--	0.00%
Russia*	--	-9.18%	0.00%	0.89%	--	-0.06%	0.04%	--	-0.02%
Spain	3.61%	-8.72%	6.29%	2.07%	0.26%	0.15%	-0.07%	0.53%	0.87%
Sweden	6.10%	-14.09%	2.86%	1.91%	0.38%	-0.03%	0.00%	0.19%	0.55%
Switzerland	-9.62%	-8.98%	6.55%	5.69%	-0.04%	0.02%	-0.01%	-0.01%	-0.03%
United Kingdom	-16.94%	-11.80%	23.69%	12.04%	-0.63%	0.14%	-0.22%	-0.61%	-1.33%

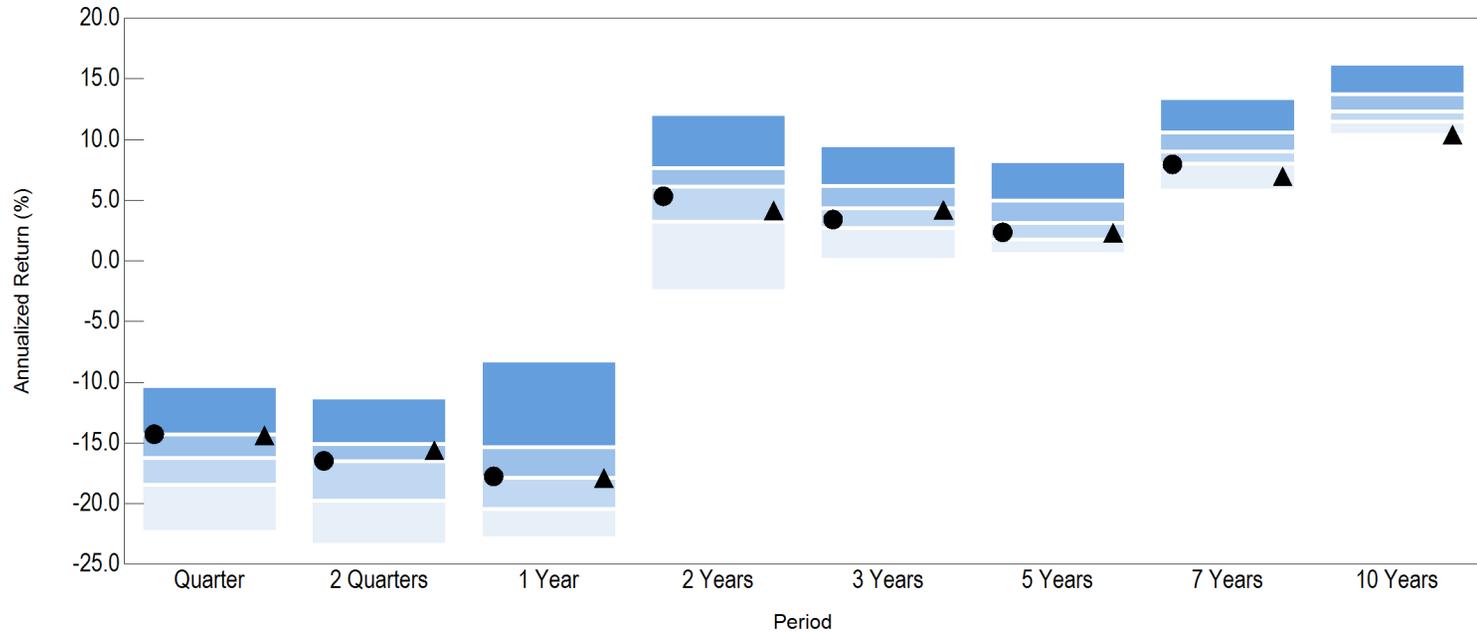
Mondrian Performance Attribution vs. MSCI ACWI ex USA Gross

	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	-11.63%	-9.81%	1.30%	4.61%	-0.09%	-0.12%	0.08%	0.06%	-0.06%
China*	--	-10.56%	0.00%	7.64%	--	-0.03%	0.00%	--	-0.02%
Hong Kong	-16.68%	-4.47%	3.14%	2.42%	-0.30%	0.05%	0.00%	-0.09%	-0.34%
India*	--	2.54%	0.00%	2.11%	--	-0.20%	-0.08%	--	-0.28%
Indonesia*	--	9.85%	0.00%	0.48%	--	-0.08%	-0.02%	--	-0.10%
Japan	-12.04%	-14.22%	18.95%	16.75%	0.35%	-0.14%	0.08%	0.05%	0.34%
Korea*	--	-14.20%	0.00%	3.69%	--	0.10%	0.02%	--	0.12%
Malaysia*	--	-5.81%	0.00%	0.60%	--	-0.03%	0.00%	--	-0.03%
New Zealand	--	-6.43%	0.00%	0.15%	--	0.00%	0.00%	--	-0.01%
Pakistan*	--	-22.83%	0.00%	0.02%	--	0.00%	0.00%	--	0.00%
Philippines*	--	5.23%	0.00%	0.24%	--	-0.03%	-0.01%	--	-0.04%
Singapore	-7.21%	-6.73%	5.55%	0.87%	0.00%	0.18%	0.01%	-0.02%	0.17%
Taiwan*	--	-13.58%	0.00%	3.03%	--	0.06%	0.02%	--	0.08%
Thailand*	--	-10.32%	0.00%	0.61%	--	-0.01%	0.00%	--	0.00%
<b>Americas</b>									
Brazil*	--	13.63%	0.00%	1.54%	--	-0.33%	-0.05%	--	-0.38%
Canada	0.03%	-14.87%	1.33%	6.64%	1.05%	-0.04%	0.24%	-0.84%	0.41%
Chile*	--	-8.29%	0.00%	0.27%	--	-0.02%	0.01%	--	-0.01%
Colombia*	--	-18.87%	0.00%	0.11%	--	0.00%	0.01%	--	0.01%
Mexico*	--	-18.65%	0.00%	0.78%	--	0.03%	0.03%	--	0.06%
Peru*	--	-2.89%	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*	--	-8.62%	0.00%	0.03%	--	0.00%	0.00%	--	0.00%
Israel	--	-14.78%	0.00%	0.36%	--	0.01%	0.00%	--	0.01%
Qatar*	--	8.55%	0.00%	0.23%	--	-0.04%	0.00%	--	-0.04%
South Africa*	--	-3.55%	0.00%	1.53%	--	-0.14%	0.02%	--	-0.11%
Turkey*	--	4.67%	0.00%	0.15%	--	-0.01%	-0.02%	--	-0.02%
United Arab Emirates*	--	-6.03%	0.00%	0.16%	--	-0.01%	0.00%	--	-0.01%
<b>Totals</b>									
Americas	0.03%	-10.26%	1.33%	9.45%	1.18%	-0.33%	0.25%	-1.02%	0.09%
Europe	-9.97%	-12.59%	68.45%	44.87%	1.17%	-0.04%	-0.35%	0.62%	1.39%
Asia/Pacific	-11.60%	-10.97%	28.94%	43.22%	-0.65%	0.16%	0.11%	0.21%	-0.16%
Other	--	-3.76%	0.00%	2.46%	--	-0.19%	0.01%	--	-0.17%
Cash	0.57%	--	1.28%	0.00%	0.00%	0.15%	0.00%	0.00%	0.15%
<b>Total</b>	<b>-10.17%</b>	<b>-11.46%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>1.71%</b>	<b>-0.25%</b>	<b>0.01%</b>	<b>-0.19%</b>	<b>1.29%</b>
<b>Totals</b>									
Developed	-10.31%	-12.75%	98.72%	75.28%	1.69%	-0.26%	0.02%	0.53%	1.97%
Emerging*	--	-7.50%	0.00%	24.72%	--	-0.83%	0.00%	--	-0.83%
Cash	0.57%	--	1.28%	0.00%	0.00%	0.15%	0.00%	0.00%	0.15%

eV ACWI ex-US Small Cap Equity Gross Return Comparison



	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
<b>Return (Rank)</b>																
5th Percentile	-10.33		-11.28		-8.24		12.08		9.53		8.22		13.41		16.26	
25th Percentile	-14.27		-15.09		-15.33		7.65		6.20		4.99		10.61		13.75	
Median	-16.20		-16.45		-17.82		6.13		4.35		3.16		9.05		12.37	
75th Percentile	-18.43		-19.73		-20.42		3.26		2.75		1.81		8.02		11.48	
95th Percentile	-22.29		-23.37		-22.81		-2.48		0.11		0.57		5.85		10.38	
# of Portfolios	53		53		53		52		51		40		31		26	
● Templeton	-14.28	(26)	-16.47	(53)	-17.76	(50)	5.33	(60)	3.41	(70)	2.35	(62)	7.96	(77)	--	(--)
▲ MSCI ACWI ex US Small Cap Gross	-14.38	(27)	-15.60	(29)	-17.89	(52)	4.16	(70)	4.20	(55)	2.33	(62)	6.98	(91)	10.41	(95)

Characteristics

	Portfolio	MSCI ACWI ex US Small Cap Gross
Number of Holdings	99	4,148
Weighted Avg. Market Cap. (\$B)	2.0	2.0
Median Market Cap. (\$B)	1.3	0.8
Price To Earnings	16.8	16.1
Price To Book	3.0	2.1
Price To Sales	1.7	2.5
Return on Equity (%)	15.1	12.7
Yield (%)	2.9	2.8
Beta (holdings; global)	1.0	0.9

Top Holdings

AMER SPORTS	2.9%
TECHNOGYM	2.1%
INTERPUMP GROUP	2.1%
TECHTRONIC INDS.	2.0%
FUJI OIL HOLDINGS	2.0%
TSUMURA	2.0%
THULE GROUP	1.9%
HUHTAMAKI	1.7%
MEITEC	1.6%
MAN GROUP	1.6%

Best Performers

	Return %
SAO PAULO ALPARGATAS PN (BR:AL4)	43.2%
STELLA INTL.HOLDINGS (K:STLI)	32.8%
GRENDENE ON (BR:GRN)	26.4%
DEVELOPMENT CREDIT BANK (IN:DVB)	18.7%
GREGGS (UKIR:GRG)	17.2%
HYUNDAI MIPO DOCKYARD (KO:HMO)	15.3%
KING YUAN ELTN. (TW:KYE)	13.2%
M DIAS BRANCO INDUSTRIA ON (BR:MDB)	13.0%
ACCELL GROUP (H:ACCE)	10.8%
GIANT MNFG. (TW:GMC)	9.6%

Worst Performers

	Return %
N FIELD (J:NFLD)	-49.6%
OUTOTEC (M:OTE1)	-46.3%
GRAN TIERRA ENERGY (TSE) (C:GTE)	-42.7%
XXL (N:XXL)	-41.5%
ZOJIRUSHI (J:ZOJR)	-37.0%
POSTNL (H:PNL)	-36.2%
SHAWCOR (C:SCL)	-36.0%
LUXOFT HOLDING (LXFT)	-35.8%
MAISONS DU MONDE (F:MDM)	-34.6%
SQUARE ENIX HOLDINGS (J:ENIX)	-34.2%

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

	Total Effects	Attribution Effects				Returns		Sector Weights					
		Selection Effect	Allocation Effect	Currency Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark				
Energy	0.23%	-0.07%	0.26%	0.01%	0.03%	-33.79%	-30.44%	2.13%	3.95%				
Materials	0.18%	0.21%	-0.05%	0.12%	-0.09%	-10.38%	-13.75%	5.88%	10.42%				
Industrials	0.22%	0.43%	-0.06%	-0.19%	0.04%	-16.09%	-17.37%	21.79%	20.06%				
Consumer Discretionary	1.57%	0.65%	0.10%	0.02%	0.81%	-8.33%	-13.38%	28.78%	12.86%				
Consumer Staples	0.71%	0.53%	0.01%	0.14%	0.03%	-0.68%	-10.73%	6.94%	6.59%				
Health Care	-0.57%	-0.75%	0.02%	0.05%	0.11%	-25.38%	-16.24%	6.54%	7.60%				
Financials	-0.14%	-0.16%	0.00%	0.06%	-0.03%	-15.78%	-14.90%	13.22%	10.99%				
Information Technology	0.51%	0.57%	-0.03%	-0.08%	0.05%	-13.38%	-18.21%	11.26%	10.40%				
Communication Services	-0.23%	-0.71%	-0.06%	0.06%	0.48%	-25.80%	-12.63%	1.43%	4.35%				
Utilities	-0.36%	--	-0.39%	0.03%	--	--	-0.97%	0.00%	2.76%				
Real Estate	-0.68%	-0.13%	-0.72%	0.07%	0.11%	-4.45%	-5.38%	2.02%	10.03%				
Cash	0.00%	--	--	--	--	--	--	0.00%	0.00%				
Unclassified	0.00%	--	--	--	--	--	--	0.00%	0.00%				
<b>Portfolio</b>	<b>1.43%</b>	<b>=</b>	<b>0.56%</b>	<b>+</b>	<b>-0.93%</b>	<b>+</b>	<b>0.29%</b>	<b>+</b>	<b>1.52%</b>	<b>-12.99%</b>	<b>-14.43%</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	--	-15.71%	0.00%	0.66%	--	0.00%	0.01%	--	0.01%
Belgium	-10.88%	-9.56%	2.73%	1.15%	-0.02%	0.09%	-0.02%	-0.02%	0.04%
Czech Republic*	--	-23.79%	0.00%	0.01%	--	0.00%	0.00%	--	0.00%
Denmark	-30.78%	-20.36%	0.69%	1.34%	-0.14%	0.03%	0.01%	0.07%	-0.03%
Finland	-4.11%	-14.46%	4.79%	1.11%	0.12%	0.04%	-0.06%	0.39%	0.48%
France	--	-22.77%	0.00%	2.78%	--	0.21%	0.03%	--	0.24%
Germany	-23.47%	-19.30%	7.98%	4.27%	-0.18%	-0.15%	-0.04%	-0.16%	-0.53%
Greece*	--	-10.27%	0.00%	0.13%	--	-0.01%	0.00%	--	0.00%
Hungary*	--	4.88%	0.00%	0.03%	--	-0.01%	0.00%	--	0.00%
Ireland	--	-9.31%	0.00%	0.58%	--	-0.04%	0.01%	--	-0.03%
Italy	-16.02%	-17.24%	5.72%	2.80%	0.03%	-0.05%	-0.04%	0.04%	-0.02%
Netherlands	-17.72%	-16.61%	2.83%	1.98%	-0.02%	-0.01%	-0.01%	-0.01%	-0.05%
Norway	-21.30%	-25.26%	1.93%	1.52%	0.06%	-0.03%	-0.02%	0.02%	0.03%
Poland*	-13.79%	-4.04%	0.80%	0.19%	-0.02%	0.07%	-0.01%	-0.06%	-0.02%
Portugal	--	-11.51%	0.00%	0.29%	--	-0.01%	0.00%	--	-0.01%
Russia*	--	-12.74%	0.00%	0.17%	--	-0.01%	0.01%	--	0.00%
Spain	-0.62%	-17.15%	1.82%	1.97%	0.33%	0.00%	0.00%	-0.03%	0.30%
Sweden	-19.94%	-13.96%	4.28%	4.00%	-0.24%	0.00%	0.00%	-0.02%	-0.26%
Switzerland	-20.18%	-20.62%	3.30%	3.29%	0.01%	0.00%	0.00%	0.00%	0.01%
United Kingdom	-10.88%	-17.65%	5.50%	13.29%	0.92%	0.12%	0.14%	-0.54%	0.65%

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	--	-14.46%	0.00%	5.03%	--	-0.10%	0.12%	--	0.02%
China*	-26.89%	-9.74%	0.68%	2.42%	-0.42%	-0.08%	0.00%	0.30%	-0.19%
Hong Kong	-14.39%	-9.52%	8.41%	1.40%	-0.07%	0.32%	0.00%	-0.34%	-0.09%
India*	-5.82%	6.55%	1.86%	2.72%	-0.32%	-0.14%	-0.04%	0.10%	-0.41%
Indonesia*	--	-2.48%	0.00%	0.43%	--	-0.04%	-0.01%	--	-0.05%
Japan	-14.84%	-14.70%	22.73%	23.14%	-0.03%	0.01%	-0.01%	0.00%	-0.03%
Korea*	-10.48%	-14.26%	4.05%	3.97%	0.15%	0.00%	0.00%	0.00%	0.15%
Malaysia*	--	-12.86%	0.00%	0.68%	--	-0.01%	0.00%	--	-0.01%
New Zealand	--	-0.98%	0.00%	0.67%	--	-0.08%	-0.01%	--	-0.09%
Pakistan*	--	-19.56%	0.00%	0.15%	--	-0.01%	0.01%	--	0.01%
Philippines*	-5.23%	7.46%	0.56%	0.17%	-0.02%	0.07%	0.01%	-0.05%	0.01%
Singapore	--	-4.09%	0.00%	1.14%	--	-0.11%	0.00%	--	-0.11%
Taiwan*	3.79%	-9.84%	5.90%	3.85%	0.53%	0.10%	-0.02%	0.28%	0.89%
Thailand*	-0.68%	-19.24%	0.54%	0.85%	0.16%	0.01%	0.00%	-0.06%	0.12%
<b>Americas</b>									
Brazil*	18.78%	23.33%	3.50%	0.94%	-0.04%	0.86%	0.09%	-0.11%	0.80%
Canada	-20.49%	-18.41%	6.47%	6.97%	-0.18%	0.00%	0.05%	0.01%	-0.11%
Chile*	--	-6.68%	0.00%	0.30%	--	-0.04%	0.01%	--	-0.02%
Colombia*	--	-28.12%	0.00%	0.06%	--	0.00%	0.00%	--	0.01%
Mexico*	--	-21.30%	0.00%	0.67%	--	0.02%	0.03%	--	0.05%
Peru*	--	-9.97%	0.00%	0.02%	--	0.00%	0.00%	--	0.00%
United States	-23.81%	-13.81%	2.39%	0.00%	0.00%	0.01%	-0.02%	-0.22%	-0.23%

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*	--	-10.02%	0.00%	0.12%	--	0.00%	0.00%	--	0.00%
Israel	--	-12.07%	0.00%	1.34%	--	-0.05%	0.02%	--	-0.03%
Qatar*	--	-1.13%	0.00%	0.17%	--	-0.02%	0.00%	--	-0.02%
South Africa*	--	-5.11%	0.00%	0.98%	--	-0.10%	0.02%	--	-0.09%
Turkey*	1.46%	-3.63%	0.55%	0.19%	0.01%	0.00%	0.04%	0.02%	0.07%
United Arab Emirates*	--	-5.08%	0.00%	0.09%	--	-0.01%	0.00%	--	-0.01%
<b>Totals</b>									
Americas	-10.02%	-13.90%	12.36%	8.96%	0.13%	0.13%	0.17%	0.05%	0.49%
Europe	-15.69%	-17.69%	42.37%	41.54%	0.81%	-0.02%	0.01%	0.02%	0.82%
Asia/Pacific	-11.42%	-12.00%	44.72%	46.62%	0.20%	-0.01%	0.04%	-0.01%	0.22%
Other	1.46%	-8.21%	0.55%	2.89%	-0.07%	-0.15%	0.08%	0.06%	-0.08%
<b>Total</b>	<b>-12.99%</b>	<b>-14.43%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>1.07%</b>	<b>-0.05%</b>	<b>0.30%</b>	<b>0.12%</b>	<b>1.44%</b>
<b>Totals</b>									
Developed	-15.96%	-16.19%	81.57%	80.71%	0.03%	-0.01%	0.16%	0.00%	0.17%
Emerging*	0.16%	-7.05%	18.43%	19.29%	1.24%	-0.06%	0.14%	-0.06%	1.27%

# Interest rate environment

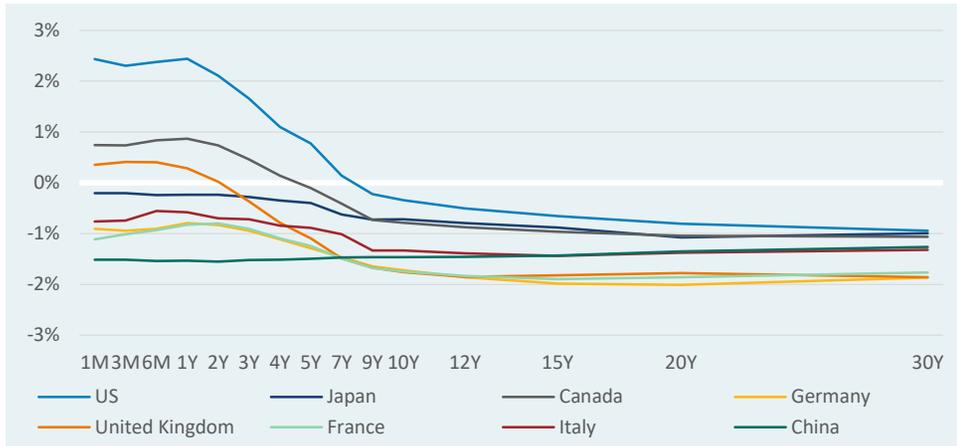
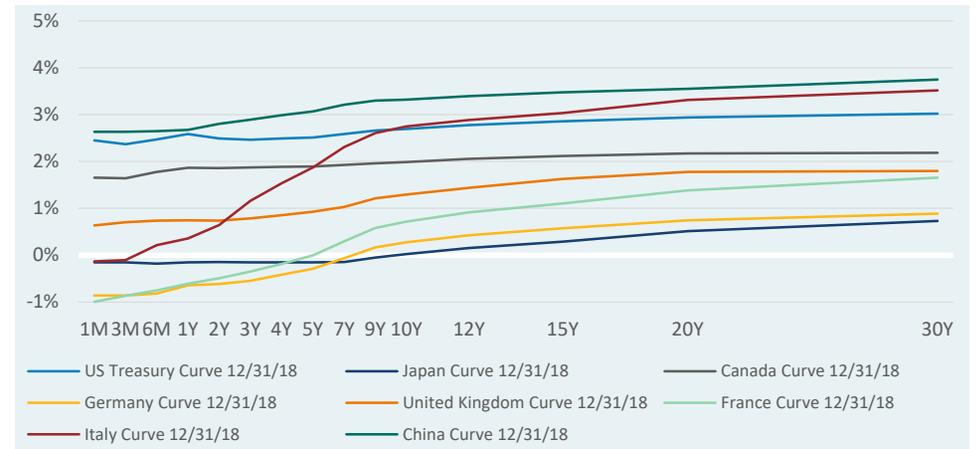
- The Federal Reserve raised the target for the fed funds rate by 0.25% in December, to a range of 2.25%-2.50%. Despite the hike, Fed officials indicated a more patient approach to future tightening, and lowered expectations for hikes in 2019 from three to two.
- The market's expectation for future rate hikes changed dramatically in December. As of year-end, the fed fund futures market is pricing zero hikes in 2019 and a rate cut priced in 2020.
- After reaching a cycle high of 3.2% in November, the 10-year Treasury yield fell sharply to end the year at 2.7%. Much of this drop was due to falling breakeven inflation as oil prices plunged. The 10-year breakeven inflation rate fell from 2.1% to 1.7% over the quarter.
- Although certain parts of the U.S. Treasury yield curve have inverted, there remains a 15 bps gap between the 10- and 2-year yields, which is the most widely cited measure of yield curve shape.
- Developed sovereign yields fell alongside U.S. Treasuries. The 10-year German bund yield was cut in half over the quarter to 0.24%.
- As expected, the European Central Bank officially announced the end of its asset purchase program. Beginning in January of 2019, monthly purchases will fall from €30 billion to €0. Central bank officials have said that they will fully reinvest maturing securities for the foreseeable future and keep interest rates unchanged until at least the second half of 2019.

Area	Short Term (3M)	10-Year
United States	2.36%	2.69%
Germany	(0.77%)	0.24%
France	(0.86%)	0.71%
Spain	(0.42%)	1.42%
Italy	(0.06%)	2.74%
Greece	1.30%	4.40%
U.K.	0.73%	1.28%
Japan	(0.15%)	0.00%
Australia	2.01%	2.32%
China	2.83%	3.31%
Brazil	6.48%	9.24%
Russia	7.12%	8.78%

# Yield environment



## GLOBAL GOVERNMENT YIELD CURVES



## IMPLIED CHANGES OVER NEXT YEAR



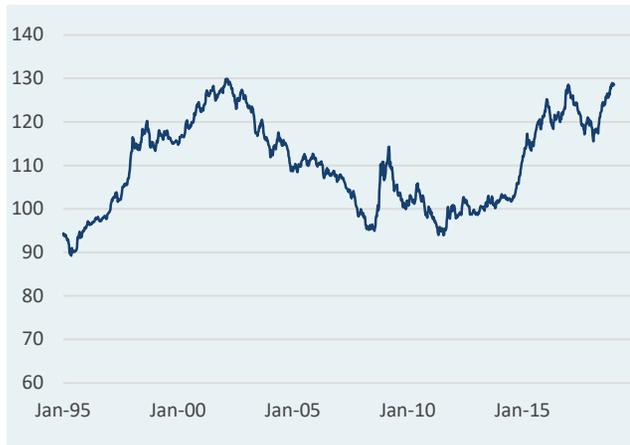
# Currency

The U.S. dollar appreciated by 1.8% during the quarter, and 7.2% in 2018 based on the Broad Trade Weighted Dollar Index. The strong appreciation of the dollar last year was influenced by a number of factors, including stronger relative U.S. economic growth, higher relative interest rates, and weakness in other currencies such as the euro and British pound. The recent dollar strength in Q4 was due in part to safe haven demand amid equity market turbulence as these moves came despite the market pricing considerably less tightening from the Fed.

Emerging market currencies stabilized over the quarter, and recovered slightly from the recent drawdown in Q3. The JPMorgan Emerging Market Currency Index appreciated by 0.2% in Q4.

From a value perspective (based on purchasing power parity), the U.S. dollar remains expensive, particularly versus the euro, yen, and British pound.

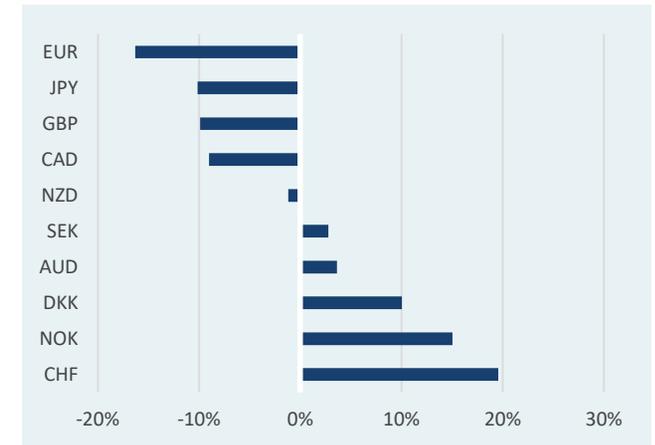
**U.S. DOLLAR TRADE WEIGHTED INDEX**



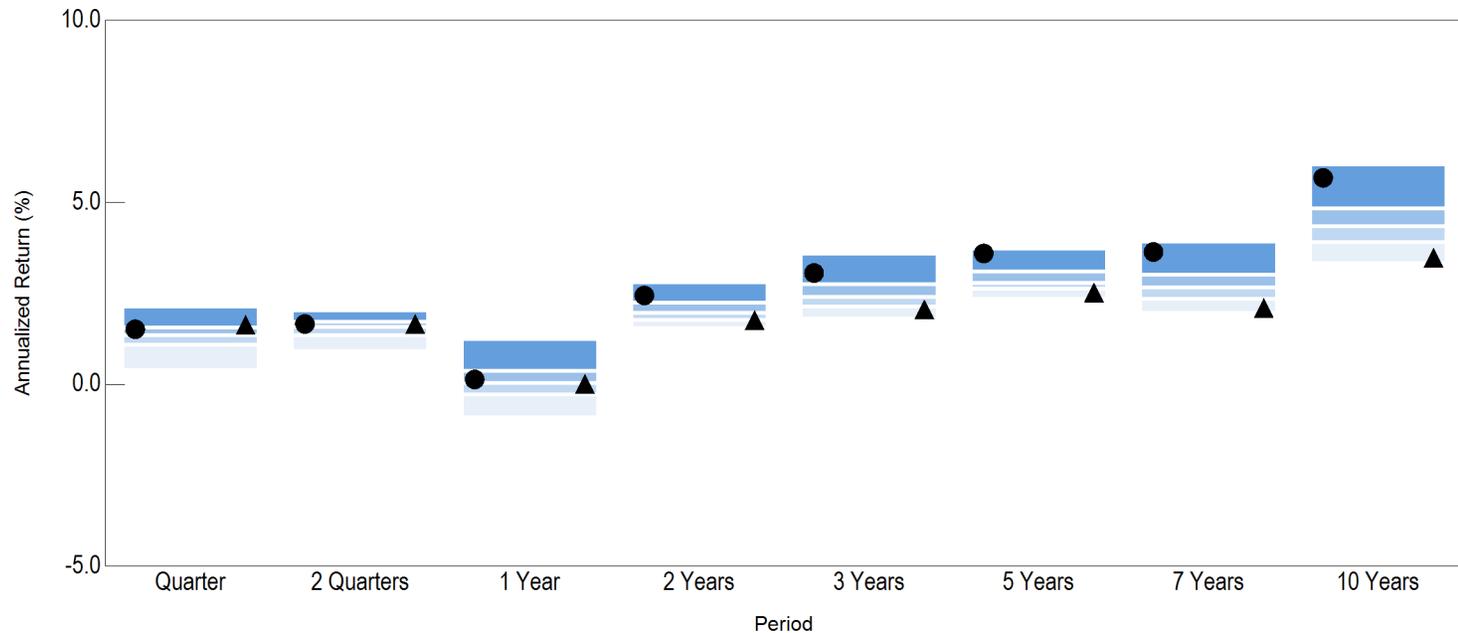
**JPM EMERGING MARKET CURRENCY INDEX**



**U.S. DOLLAR VALUE (PPP)**

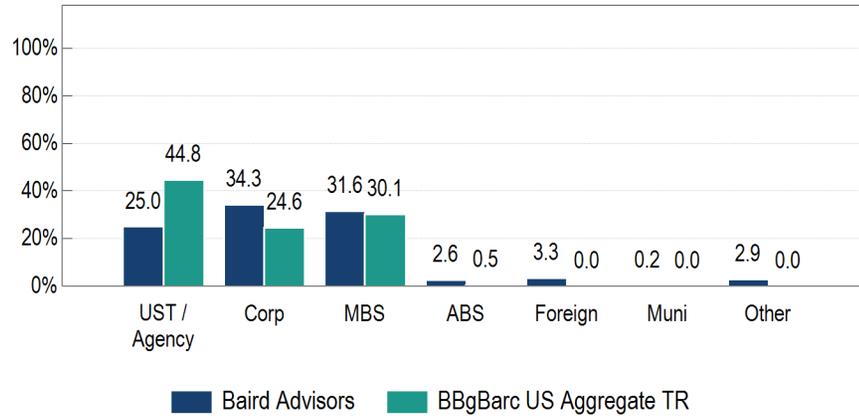


eV US Core Fixed Inc Gross Return Comparison

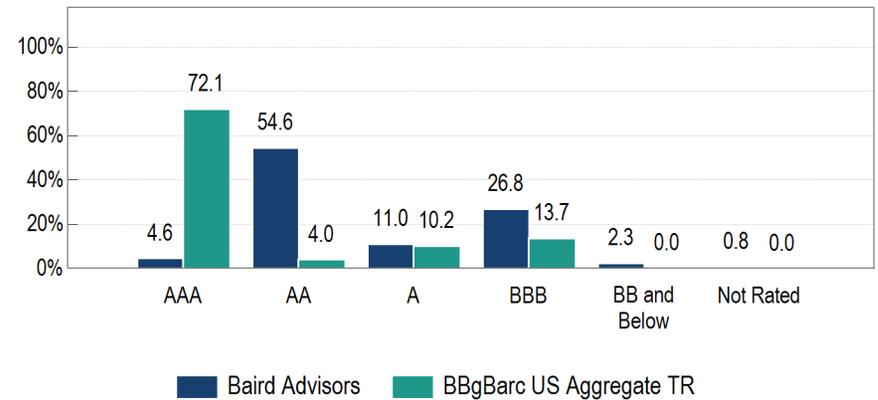


	Return (Rank)							
	Quarter	2 Quarters	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	2.12	2.03	1.24	2.79	3.57	3.73	3.92	6.03
25th Percentile	1.58	1.73	0.37	2.26	2.75	3.12	3.02	4.84
Median	1.37	1.59	0.05	1.97	2.41	2.79	2.66	4.34
75th Percentile	1.09	1.36	-0.28	1.78	2.14	2.64	2.35	3.92
95th Percentile	0.40	0.93	-0.89	1.55	1.81	2.35	1.98	3.34
# of Portfolios	240	240	240	239	237	232	228	210
● Baird Advisors	1.51 (32)	1.66 (36)	0.13 (43)	2.44 (13)	3.06 (10)	3.59 (7)	3.63 (9)	5.67 (10)
▲ BBgBarc US Aggregate TR	1.64 (19)	1.66 (37)	0.01 (54)	1.76 (78)	2.06 (84)	2.52 (84)	2.10 (94)	3.48 (93)

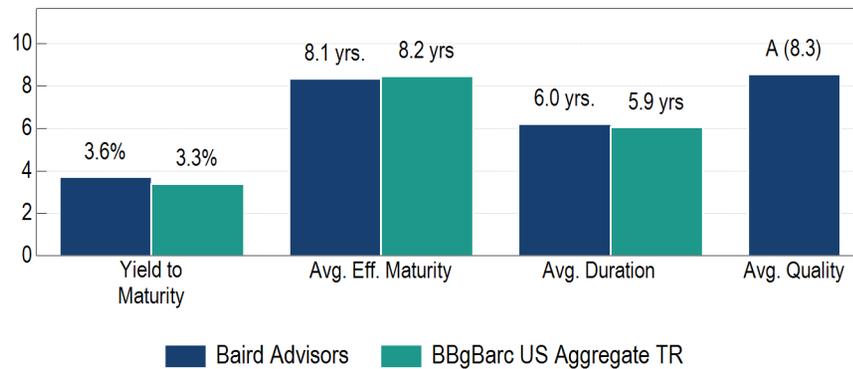
Sectors  
Baird Advisors



Quality Ratings  
Baird Advisors



Characteristics  
Baird Advisors



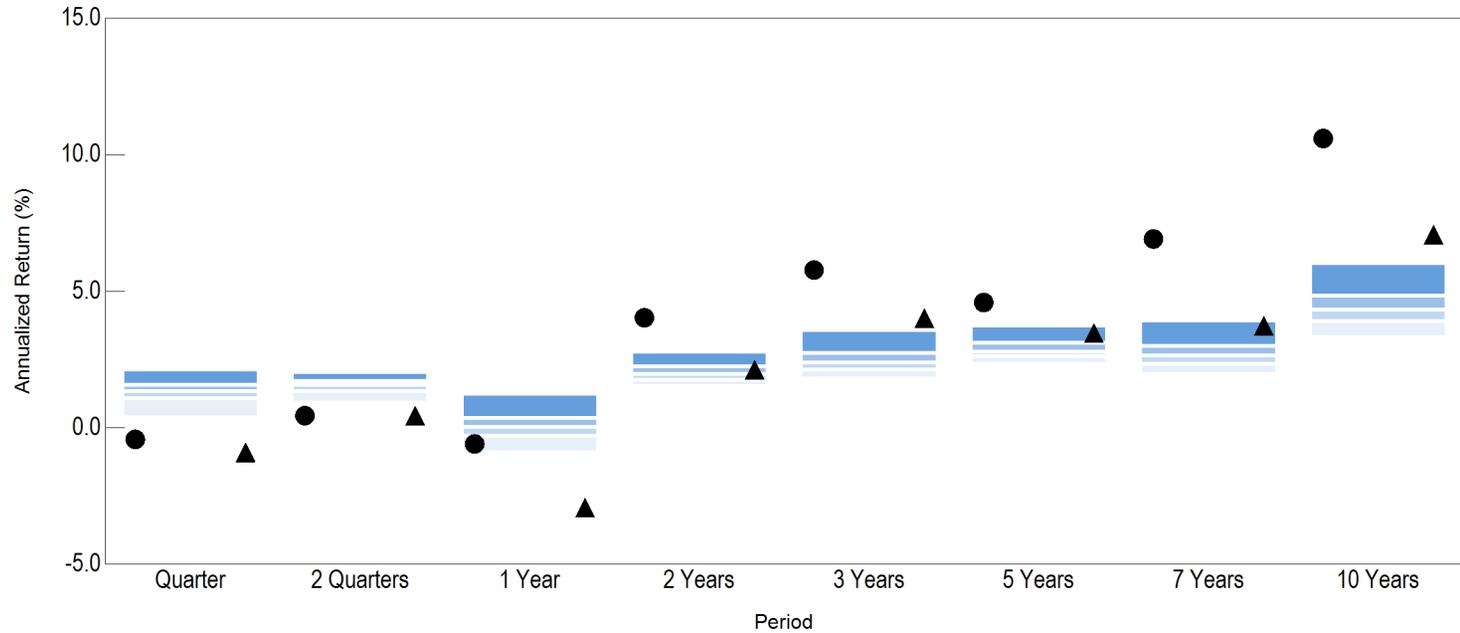
**PERFORMANCE BY QUALITY**

	<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	13,611	2.1	0.55	0.01
Govt & Agency	103	337,046	52.0	2.87	1.49
AAA	22	55,094	8.5	1.00	0.09
AA	11	13,611	2.1	1.50	0.03
A	37	71,298	11.0	0.70	0.08
BAA	66	136,115	21.0	-0.50	-0.11
Below BAA	20	21,389	3.3	-2.50	-0.08
Other	0	-	0.0	0.00	0.00
<b>Total Account</b>	<b>260</b>	<b>\$648,166</b>	<b>100.0</b>	<b>1.51</b>	<b>1.51</b>

**PERFORMANCE BY DURATION**

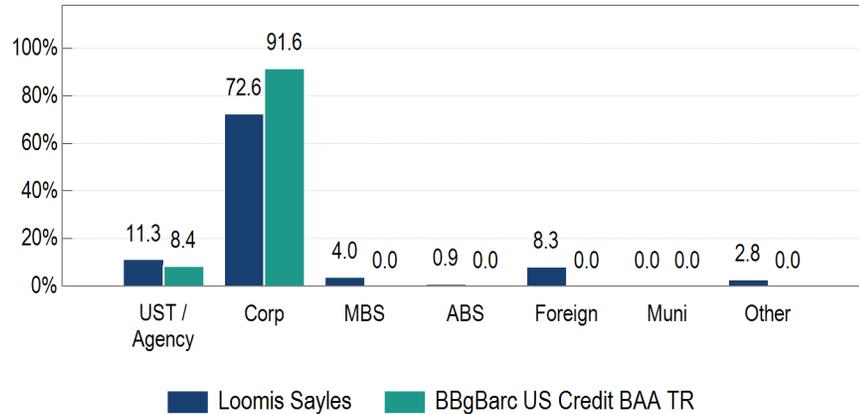
	<u>NUMBER OF ISSUES</u>	<u>FINAL MARKET VALUE (\$000)</u>	<u>FINAL MARKET VALUE %</u>	<u>QUARTERLY RETURN %</u>	<u>QUARTERLY CONTRIBUTION TO TOTAL RETURN %</u>
Under 1 Year	28	38,890	6.0	-0.50	-0.03
1 - 3 Years	43	78,428	12.1	0.70	0.08
3 - 6 Years	127	324,083	50.0	1.82	0.91
Over 6 Years	62	206,765	31.9	1.70	0.54
<b>Total Account</b>	<b>260</b>	<b>\$648,166</b>	<b>100.0</b>	<b>1.51</b>	<b>1.51</b>

eV US Core Fixed Inc Gross Return Comparison

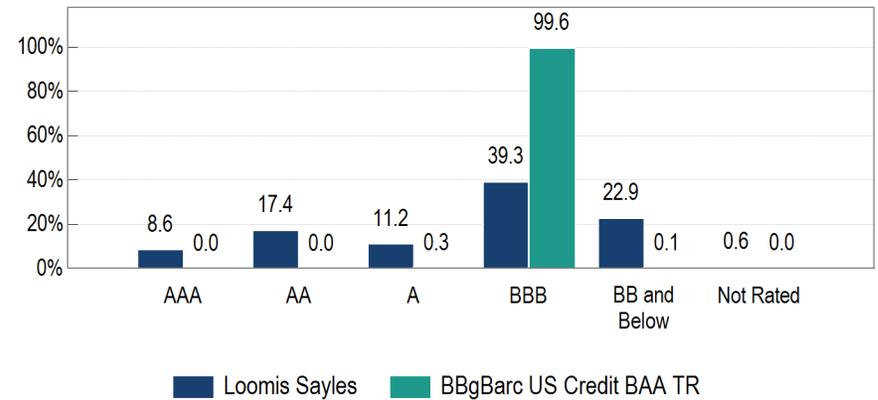


	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
<b>5th Percentile</b>	2.12		2.03		1.24		2.79		3.57		3.73		3.92		6.03	
<b>25th Percentile</b>	1.58		1.73		0.37		2.26		2.75		3.12		3.02		4.84	
<b>Median</b>	1.37		1.59		0.05		1.97		2.41		2.79		2.66		4.34	
<b>75th Percentile</b>	1.09		1.36		-0.28		1.78		2.14		2.64		2.35		3.92	
<b>95th Percentile</b>	0.40		0.93		-0.89		1.55		1.81		2.35		1.98		3.34	
<b># of Portfolios</b>	240		240		240		239		237		232		228		210	
<b>● Loomis Sayles</b>	-0.43	(99)	0.44	(99)	-0.59	(90)	4.03	(2)	5.78	(1)	4.59	(2)	6.92	(1)	10.59	(1)
<b>▲ BBgBarc US Credit BAA TR</b>	-0.90	(99)	0.44	(99)	-2.92	(99)	2.13	(34)	4.01	(3)	3.47	(8)	3.74	(8)	7.08	(2)

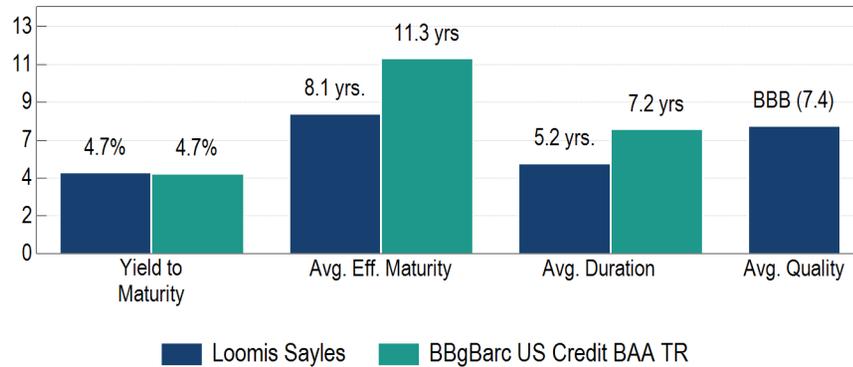
Sectors  
Loomis Sayles



Quality Ratings  
Loomis Sayles



Characteristics  
Loomis Sayles



Attribution Summary

<b>Returns</b>	
Account Return	-0.56
Benchmark Return	-0.90
Excess Return	0.33
<b>Excess Due To:</b>	
Sector Allocation	-
Security Selection	0.35
Trading	-0.02
Pricing Differences	0.01
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	-0.54	-0.54	100.00	-0.89	-0.89	-	0.35	0.35
CASH	3.33	1.07	0.04	-	-0.89	-	-	0.07	0.07
AAA	19.81	1.97	0.40	-	-0.89	-	-	0.56	0.56
AA	3.66	0.99	0.04	-	-0.89	-	-	0.07	0.07
A	11.09	0.89	0.10	-	-0.89	-	-	0.20	0.20
BAA	35.26	-0.55	-0.19	100.00	-0.89	-0.89	-	0.12	0.12
BA	15.85	-3.18	-0.51	-	-0.89	-	-	-0.37	-0.37
B	3.94	-0.49	-0.03	-	-0.89	-	-	-	-
CAA	1.08	-14.35	-0.16	-	-0.89	-	-	-0.14	-0.14
CA	0.03	1.65	-	-	-0.89	-	-	-	-
C	0.10	0.96	-	-	-0.89	-	-	-	-
NR	5.85	-2.36	-0.23	-	-0.89	-	-	-0.16	-0.16

Attribution Summary

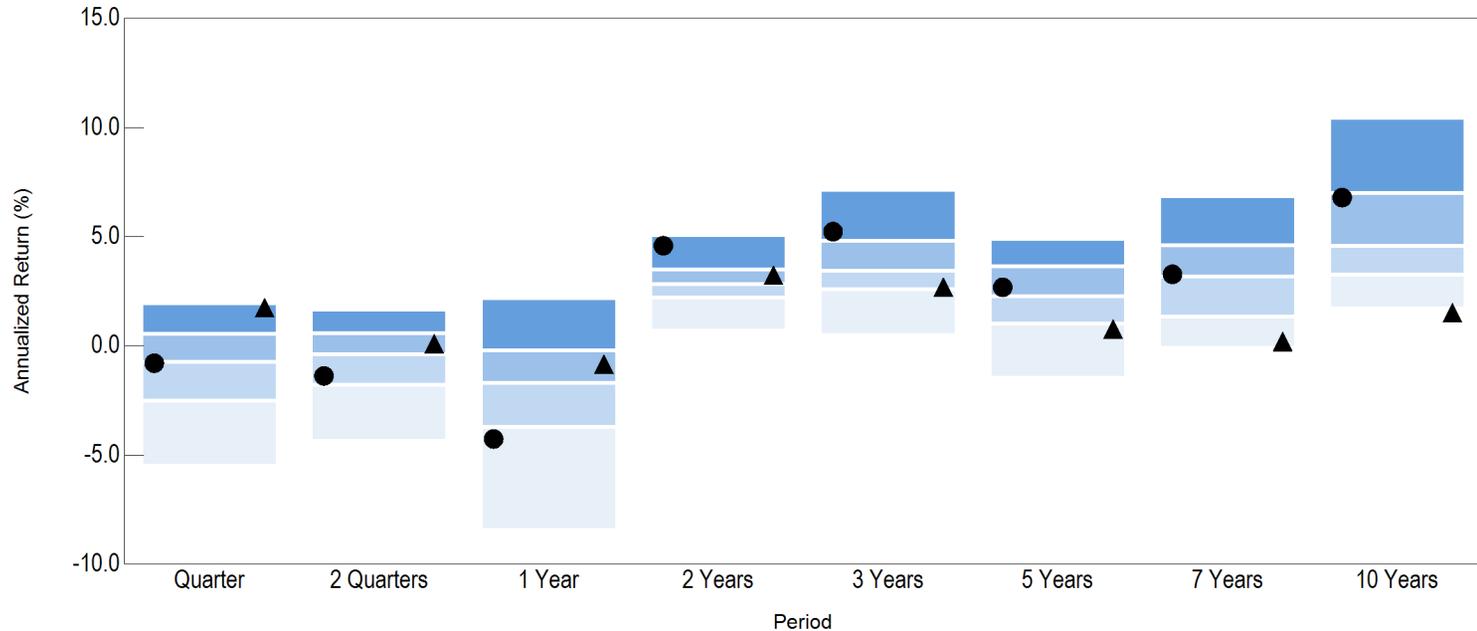
<b>Returns</b>	
Account Return	-0.56
Benchmark Return	-0.90
Excess Return	0.33
<b>Excess Due To:</b>	
Sector Allocation	0.84
Security Selection	-0.49
Trading	-0.02
Pricing Differences	0.01
Compounding	-

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	-	100.00	-0.54	-0.59	-	-0.54	-	100.00	-0.89	-0.89	-	-0.89	-	-	-	0.84	-0.49	0.35
Less than 0.5	-	8.05	-0.27	-1.09	-	-0.04	-	0.07	0.28	0.28	-	-	-	-	-	0.11	-0.06	0.04
0.5 - 1.0	-	3.03	1.20	1.20	-	0.04	-	0.53	0.61	0.61	-	-	-	-	-	0.04	0.02	0.06
1.0 - 1.5	-	4.54	0.95	0.95	-	0.04	-	3.99	0.64	0.64	-	0.03	-	-	-	0.01	0.01	0.02
1.5 - 2.0	-	9.29	1.12	1.10	-	0.11	-	4.64	0.66	0.66	-	0.03	-	-	-	0.06	0.05	0.11
2.0 - 2.5	-	11.19	0.40	0.36	-	0.05	-	5.11	0.52	0.52	-	0.02	-	-	-	0.07	-0.01	0.06
2.5 - 3.0	-	7.23	1.48	1.48	-	0.10	-	4.55	0.57	0.57	-	0.03	-	-	-	0.05	0.07	0.12
3.0 - 3.5	-	4.45	-3.77	-3.77	-	-0.17	-	4.98	0.47	0.47	-	0.02	-	-	-	-	-0.19	-0.19
3.5 - 4.0	-	3.75	-1.33	-1.33	-	-0.05	-	5.71	0.33	0.33	-	0.02	-	-	-	-0.02	-0.07	-0.08
4.0 - 4.5	-	5.14	-2.61	-2.61	-	-0.14	-	5.46	0.38	0.38	-	0.02	-	-	-	-0.01	-0.15	-0.16
4.5 - 5.0	-	6.48	-2.19	-2.19	-	-0.15	-	3.67	0.14	0.14	-	-	-	-	-	0.03	-0.16	-0.13
5.0 - 5.5	-	4.62	-3.66	-3.13	-	-0.17	-	4.01	0.02	0.02	-	0.01	-	-	-	-	-0.18	-0.19
5.5 - 6.0	-	5.98	-0.34	-0.39	-	-0.03	-	6.04	-0.35	-0.35	-	-0.03	-	-	-	-	-	0.01
6.0 - 6.5	-	2.39	-1.67	-1.67	-	-0.05	-	3.75	-0.42	-0.42	-	-0.02	-	-	-	-0.01	-0.03	-0.04
6.5 - 7.0	-	3.48	-2.61	-2.61	-	-0.09	-	4.47	-0.35	-0.35	-	-0.02	-	-	-	-0.01	-0.08	-0.09
7.0 - 7.5	-	4.66	-1.09	-1.09	-	-0.03	-	4.82	-0.85	-0.85	-	-0.04	-	-	-	-	-0.02	-0.02
7.5 - 8.0	-	2.97	1.40	1.39	-	0.01	-	5.76	-0.02	-0.02	-	-	-	-	-	-0.02	0.04	0.02
8.0 - 8.5	-	1.93	3.53	3.56	-	0.06	-	1.44	-0.26	-0.26	-	-0.01	-	-	-	-	0.07	0.07
8.5 - 9.0	-	0.31	-3.60	-2.25	-	-0.03	-	0.77	-1.30	-1.30	-	-0.01	-	-	-	-	-0.03	-0.02
9.0 - 9.5	-	1.93	-0.34	-0.27	-	-	-	0.49	-0.71	-0.71	-	-0.01	-	-	-	-	0.02	0.02
9.5 - 10.0	-	0.30	-4.48	-4.48	-	-0.01	-	0.62	-5.18	-5.18	-	-0.03	-	-	-	0.01	-	0.01
10.0 - 10.5	-	0.07	-6.01	-6.01	-	-0.01	-	0.80	-3.07	-3.07	-	-0.03	-	-	-	0.02	-	0.01
10.5 - 11.0	-	0.36	-2.57	-2.57	-	-0.01	-	1.82	-3.44	-3.44	-	-0.06	-	-	-	0.04	-	0.04

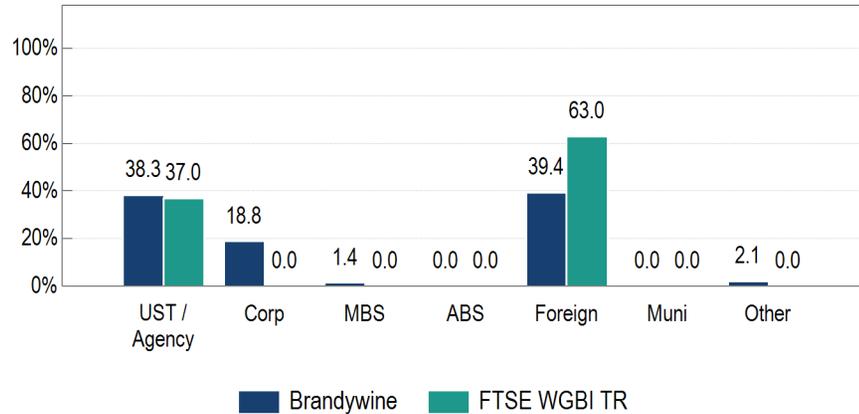
Name	Acct Avg Duration	Acct Avg Weight	Acct Return	Acct Lcl Return	Acct Rtn Over TSY	Acct Contrib	Bench Avg Duration	Bench Avg Weight	Bench Return	Bench Lcl Return	Bench Rtn Over	Bench Contrib	Yield Curve Total	Parallel Shift	Nonparallel Shift	Sector Allocation	Security Selection	Total Effect
11.0 - 11.5	-	0.52	-2.75	-2.75	-	-0.01	-	2.64	-3.22	-3.22	-	-0.07	-	-	-	0.05	-	0.05
11.5 - 12.0	-	1.05	-2.27	-2.27	-	-0.04	-	2.39	-3.36	-3.36	-	-0.08	-	-	-	0.03	0.01	0.04
12.0 - 12.5	-	0.78	-0.13	-0.13	-	-	-	1.93	-3.29	-3.29	-	-0.06	-	-	-	0.03	0.02	0.05
12.5 - 13.0	-	0.37	-6.61	-6.61	-	-0.06	-	1.66	-3.72	-3.72	-	-0.08	-	-	-	0.03	-0.02	0.01
13.0 - 13.5	-	0.73	-4.19	-4.19	-	-	-	1.89	-3.85	-3.85	-	-0.07	-	-	-	0.04	0.01	0.05
13.5 - 14.0	-	0.38	-2.58	-2.58	-	-0.02	-	2.48	-4.35	-4.35	-	-0.11	-	-	-	0.07	0.01	0.08
14.0 - 14.5	-	0.89	3.29	3.29	-	0.03	-	3.56	-3.61	-3.61	-	-0.14	-	-	-	0.08	0.06	0.14
14.5 - 15.0	-	0.14	2.54	2.54	-	-	-	3.25	-2.44	-2.44	-	-0.09	-	-	-	0.06	0.01	0.06
15.0 - 15.5	-	0.29	-0.33	-0.33	-	-	-	2.90	-2.18	-2.18	-	-0.07	-	-	-	0.04	-	0.04
15.5 - 16.0	-	-	-	-	-	-	-	1.86	-2.20	-2.20	-	-0.04	-	-	-	0.02	-	0.02
16.0 - 16.5	-	-	-	-	-	-	-	1.28	-1.10	-1.10	-	-0.01	-	-	-	-	-	-
16.5 - 17.0	-	-	-	-	-	-	-	0.30	-0.11	-0.11	-	-	-	-	-	-	-	-
17.0 - 17.5	-	-	-	-	-	-	-	0.14	-0.21	-0.21	-	-	-	-	-	-	-	-
17.5 - 18.0	-	-	-	-	-	-	-	0.08	-1.80	-1.80	-	-	-	-	-	-	-	-
18.0 - 18.5	-	-	-	-	-	-	-	0.07	0.02	0.02	-	-	-	-	-	-	-	-
18.5 - 19.0	-	0.24	-0.06	-0.06	-	-	-	0.06	-1.80	-1.80	-	-	-	-	-	0.01	-0.02	-0.01
Greater than 25.0	-	-	-13.93	-13.93	-	-	-	-	-0.89	-0.89	-	-	-	-	-	-	-	-
19.0 - 19.5	-	2.46	4.17	4.17	-	0.11	-	-	-0.71	-0.71	-	-	-	-	-	-	0.14	0.14

eV All Global Fixed Inc Gross Return Comparison

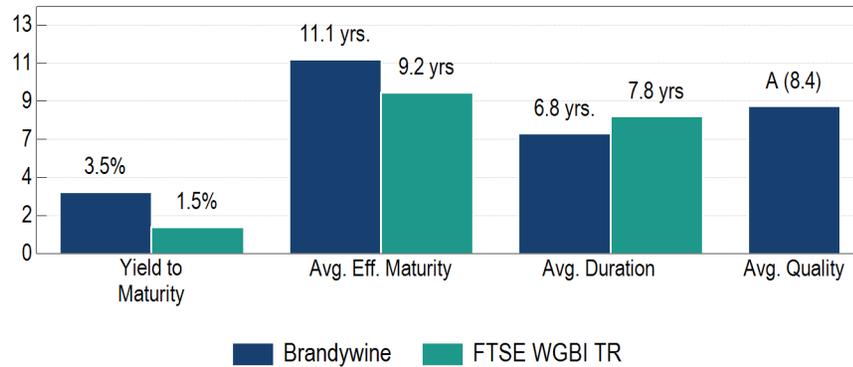


	Quarter	2 Quarters	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
<b>5th Percentile</b>	1.95	1.65	2.19	5.06	7.13	4.89	6.84	10.43
<b>25th Percentile</b>	0.56	0.59	-0.18	3.50	4.83	3.67	4.62	7.02
<b>Median</b>	-0.70	-0.35	-1.69	2.85	3.46	2.29	3.20	4.60
<b>75th Percentile</b>	-2.50	-1.78	-3.69	2.23	2.62	1.05	1.36	3.27
<b>95th Percentile</b>	-5.47	-4.33	-8.41	0.72	0.51	-1.44	-0.07	1.74
<b># of Portfolios</b>	459	459	458	453	444	402	328	224
<b>● Brandywine</b>	-0.79 (53)	-1.37 (70)	-4.26 (81)	4.58 (8)	5.23 (21)	2.68 (44)	3.28 (49)	6.79 (29)
<b>▲ FTSE WGBI TR</b>	1.75 (7)	0.10 (40)	-0.84 (36)	3.24 (33)	2.69 (72)	0.77 (80)	0.20 (94)	1.52 (97)

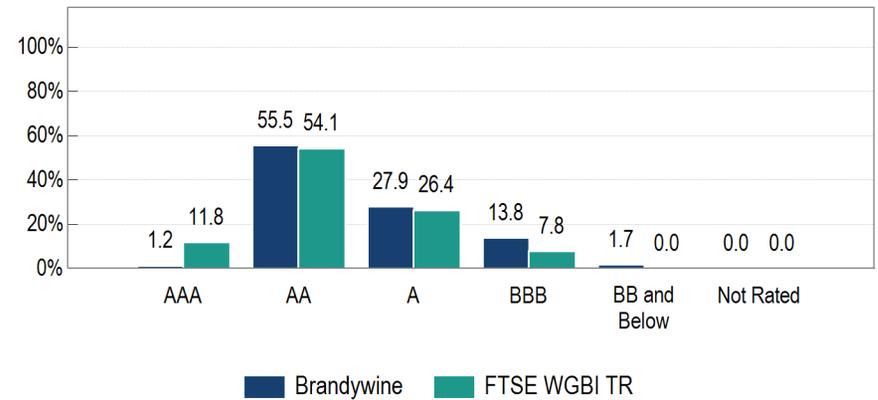
Sectors  
Brandywine



Characteristics  
Brandywine

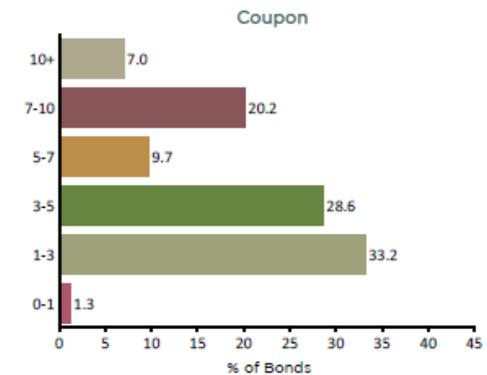
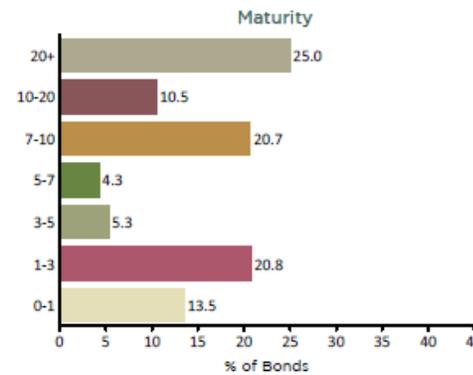


Quality Ratings  
Brandywine



**Portfolio Characteristics**

	Portfolio	Primary Benchmark
Yield to Maturity (%)	4.65	1.51
Yield to Worst (%)	4.65	1.51
Modified Duration	6.02	7.82
Effective Duration	5.88	7.95
Average Maturity	11.19	9.18
Average Market Price	99.13	-
Average Coupon (%)	4.77	2.35
Current Yield (%)	4.74	-
# of Issues	115	1,024



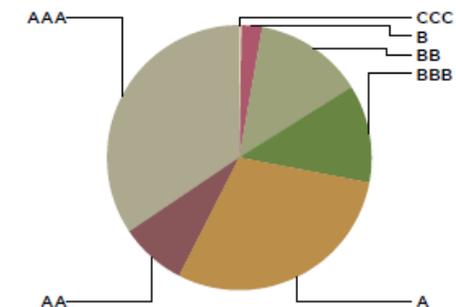
**Sector Breakdown**

	Market Value (%)	Duration Contribution (In Years)
Government Sovereign	77.38	5.61
Corporate Bond - High Yield	4.55	0.19
Corporate Bond - Investment Grade	11.03	0.13
Mortgage Backed Securities	2.07	0.08
Government Regional Agencies	2.80	0.02
Bank Loan	0.18	0.01
Cash	1.71	-
Derivatives	0.26	-
<b>Total:</b>	<b>100.00</b>	<b>6.02</b>

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

Combined Rating	%	Cumulative %
AAA	34.6	34.6
AA	8.0	42.6
A	29.5	72.1
BBB	11.8	83.9
BB	13.6	97.5
B	2.4	99.9
CCC	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.

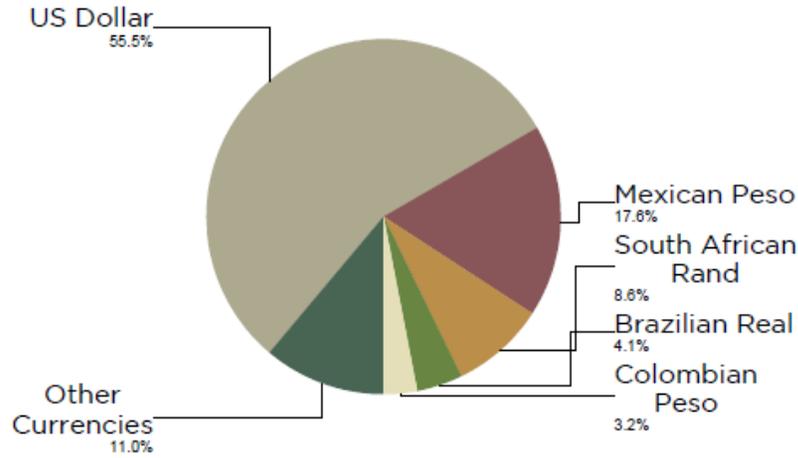
Brandywine  
Country & Currency Allocation

Period Ending: December 31, 2018

Country Allocation	12/31/2018			9/30/2018	
	Portfolio	Index	Active	Portfolio	Change
Japan	-	19.47	(19.47)	-	-
Mexico	11.23	0.61	10.62	12.94	(1.71)
United States	46.48	37.19	9.29	40.72	5.76
France	-	8.10	(8.10)	-	-
Italy	-	7.24	(7.24)	-	-
South Africa	5.54	0.47	5.07	5.28	0.26
*Brazil	4.97	-	4.97	4.37	0.60
Malaysia	5.18	0.37	4.81	5.15	0.03
Poland	4.49	0.51	3.98	4.51	(0.02)
Spain	0.71	4.69	(3.98)	0.73	(0.03)
Germany	1.73	5.56	(3.83)	3.00	(1.27)
Australia	5.28	1.67	3.62	6.59	(1.31)
*Colombia	3.60	-	3.60	3.82	(0.21)
*Indonesia	2.62	-	2.62	2.44	0.18
Peru	2.03	-	2.03	2.04	(0.01)
Belgium	-	1.97	(1.97)	-	-
Netherlands	-	1.69	(1.69)	-	-
Canada	0.06	1.58	(1.52)	0.06	-
Austria	-	1.18	(1.18)	-	-
Ireland	-	0.62	(0.62)	-	-
Finland	-	0.51	(0.51)	-	-
United Kingdom	5.79	5.32	0.47	5.87	(0.08)
Denmark	-	0.44	(0.44)	-	-
Singapore	-	0.32	(0.32)	-	-
Sweden	-	0.32	(0.32)	-	-
Norway	-	0.19	(0.19)	-	-
European Union	0.02	-	0.02	-	0.02
*Egypt	-	-	-	1.70	(1.70)
Supranational	-	-	-	0.67	(0.67)
Derivative P/L	0.26	-	0.26	0.10	0.16
<b>Total:</b>	<b>100.00</b>	<b>100.00</b>	<b>-</b>	<b>100.00</b>	<b>-</b>

Currency Allocation	12/31/2018			9/30/2018	
	Portfolio	Index	Active	Portfolio	Change
US Dollar	2.69	37.19	(34.49)	1.95	0.75
Euro	0.74	31.56	(30.82)	1.15	(0.40)
Swedish Krona	12.22	0.32	11.90	12.12	0.10
Mexican Peso	9.54	0.61	8.93	13.47	(3.94)
Japanese Yen	11.42	19.47	(8.06)	7.02	4.40
Australian Dollar	7.95	1.67	6.29	8.17	(0.22)
Norwegian Krone	5.54	0.19	5.35	5.84	(0.30)
Polish Zloty	5.85	0.51	5.34	6.19	(0.34)
Malaysian Ringgit	5.65	0.37	5.28	5.58	0.07
*Brazilian Real	4.90	-	4.90	4.24	0.65
British Pound Sterling	9.63	5.32	4.30	10.15	(0.52)
*Indonesian Rupiah	4.00	-	4.00	2.44	1.56
South African Rand	4.21	0.47	3.75	5.42	(1.21)
Canadian Dollar	5.19	1.58	3.62	5.44	(0.25)
*Colombian Peso	3.60	-	3.60	3.82	(0.21)
Peruvian Nuevo Sol	2.03	-	2.03	2.04	(0.01)
*Argentine Peso	2.01	-	2.01	-	2.01
*New Turkish Lira	1.73	-	1.73	1.35	0.38
Czech Koruna	1.10	-	1.10	1.11	(0.01)
Danish Krone	-	0.44	(0.44)	-	-
Singapore Dollar	-	0.32	(0.32)	-	-
*Egyptian Pound	-	-	-	1.70	(1.70)
*Philippine Peso	-	-	-	0.82	(0.82)
<b>Total:</b>	<b>100.00</b>	<b>100.00</b>	<b>-</b>	<b>100.00</b>	<b>-</b>

**Source of Portfolio Duration by Currency Denomination**



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

Currency	12/31/2018				Total	9/30/2018 Total Change
	0-3	>3-10	>10-20	>20+		
US Dollar	0.03	1.16	0.03	2.13	3.35	1.54
Mexican Peso	-	-	0.41	0.65	1.06	(0.20)
South African Rand	-	-	-	0.52	0.52	0.01
*Brazilian Real	-	0.25	-	-	0.25	0.04
*Colombian Peso	-	0.19	-	-	0.19	(0.02)
Peruvian Nuevo Sol	-	-	0.18	-	0.18	(0.01)
*Indonesian Rupiah	-	-	0.17	-	0.17	0.01
Malaysian Ringgit	0.04	0.12	-	-	0.17	(0.01)
Polish Zloty	0.04	-	-	-	0.04	(0.01)
Euro	-	-	-	0.04	0.04	(0.00)
Australian Dollar	0.03	-	-	-	0.03	(0.01)
British Pound Sterling	0.03	-	-	-	0.03	(0.02)
*Egyptian Pound	-	-	-	-	-	(0.00)
<b>Total</b>	<b>0.18</b>	<b>1.72</b>	<b>0.78</b>	<b>3.34</b>	<b>6.02</b>	<b>1.31</b>

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

(In Years)

Country	12/31/2018				Total	Index	9/30/2018	
	0-3	>3-10	>10-20	>20+			Active	Change
Japan	-	-	-	-	-	2.09	(2.09)	-
United States	0.03	1.15	0.03	2.13	3.33	2.24	1.09	1.55
Mexico	-	-	0.41	0.65	1.06	0.03	1.03	(0.20)
France	-	-	-	-	-	0.65	(0.65)	-
United Kingdom	0.03	0.00	-	-	0.04	0.68	(0.64)	(0.02)
South Africa	-	-	-	0.52	0.52	0.03	0.48	0.01
Italy	-	-	-	-	-	0.48	(0.48)	-
Germany	0.00	-	-	-	0.00	0.42	(0.42)	(0.00)
Spain	-	-	-	0.04	0.04	0.34	(0.31)	(0.00)
*Brazil	-	0.25	-	-	0.25	-	0.25	0.03
*Colombia	-	0.19	-	-	0.19	-	0.19	(0.02)
Belgium	-	-	-	-	-	0.18	(0.18)	-
Peru	-	-	0.18	-	0.18	-	0.18	(0.01)
*Indonesia	-	-	0.17	-	0.17	-	0.17	0.01
Malaysia	0.04	0.12	-	-	0.17	0.02	0.15	(0.01)
Netherlands	-	-	-	-	-	0.14	(0.14)	-
Austria	-	-	-	-	-	0.11	(0.11)	-
Canada	0.00	-	-	-	0.00	0.11	(0.10)	(0.00)
Australia	0.03	-	-	-	0.03	0.11	(0.08)	(0.02)
Ireland	-	-	-	-	-	0.05	(0.05)	-
Denmark	-	-	-	-	-	0.04	(0.04)	-
Finland	-	-	-	-	-	0.04	(0.04)	-
Singapore	-	-	-	-	-	0.02	(0.02)	-
Sweden	-	-	-	-	-	0.02	(0.02)	-
Poland	0.04	-	-	-	0.04	0.02	0.02	(0.01)
Norway	-	-	-	-	-	0.01	(0.01)	-
European Union	-	-	-	-	-	-	-	-
*Egypt	-	-	-	-	-	-	-	(0.00)
Supranational	-	-	-	-	-	-	-	(0.00)
<b>Total</b>	<b>0.18</b>	<b>1.72</b>	<b>0.78</b>	<b>3.34</b>	<b>6.02</b>	<b>7.83</b>	<b>(1.80)</b>	<b>1.31</b>

Manager Compliance Checklist

Period Ending: December 31, 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)	NO	NO	NO	NO	NO	NO	YES	YES	NO	NO
BAIRD ADVISORS (BBGBARC US AGGREGATE)	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO
BRANDYWINE FIXED INCOME (FTSE WGBI)	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO
CAPITAL GROUP (MSCI ACWI EX US GROSS)	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO
KENNEDY (RUSSELL 2000 VALUE +2.5%)	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES
LOOMIS SAYLES (BBGBARC US CREDIT BAA)	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO
MONDRIAN (MSCI ACWI EX US GROSS)	NO	YES	NO	YES	NO	YES	YES	YES	YES	YES
NEXT CENTURY-SCG (RUSSELL 2000 GROWTH +2.5%)	NO	NO	NO	NO	NO	NO	YES	NO	YES	YES
PZENA (RUSSELL 1000 VALUE +2%)	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES
TCW (RUSSELL 1000 GROWTH +2%) <sup>2</sup>	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES
TEMPLETON (MSCI ACWI EX US SMALL CAP GROSS)	NO	NO	NO	YES	NO	NO	NO	NO	YES	YES

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

# Policy Index and Benchmark History

Period Ending: September 30, 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 US T-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%												
FTSE WGBI	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 FoF Composite	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%	
FTSE WGBI	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>	
	<b>7/1/13</b>	<b>8/1/08</b>
Russell 3000 +1%	100%	
Russell 3000 +2%		100%
	<b>100.0%</b>	<b>100.0%</b>

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

<b>TCW Benchmark</b>	<b>As of:</b>	
	<b>7/1/13</b>	<b>7/1/99</b>
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>	
	<b>10/1/10</b>	
Russell 2000 Value +2.5%	100%	
	<b>100.0%</b>	

<b>Next Century Benchmark</b>	<b>As of:</b>	
	<b>11/1/02</b>	
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: Portfolio Return - [Risk-free Rate + Portfolio Beta x (Market Return - 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: Portfolio Excess Return / 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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