



**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**



**PERIOD ENDING: JUNE 30, 2016**

Executive Performance Summary Review for

**Tennessee Consolidated Retirement System**

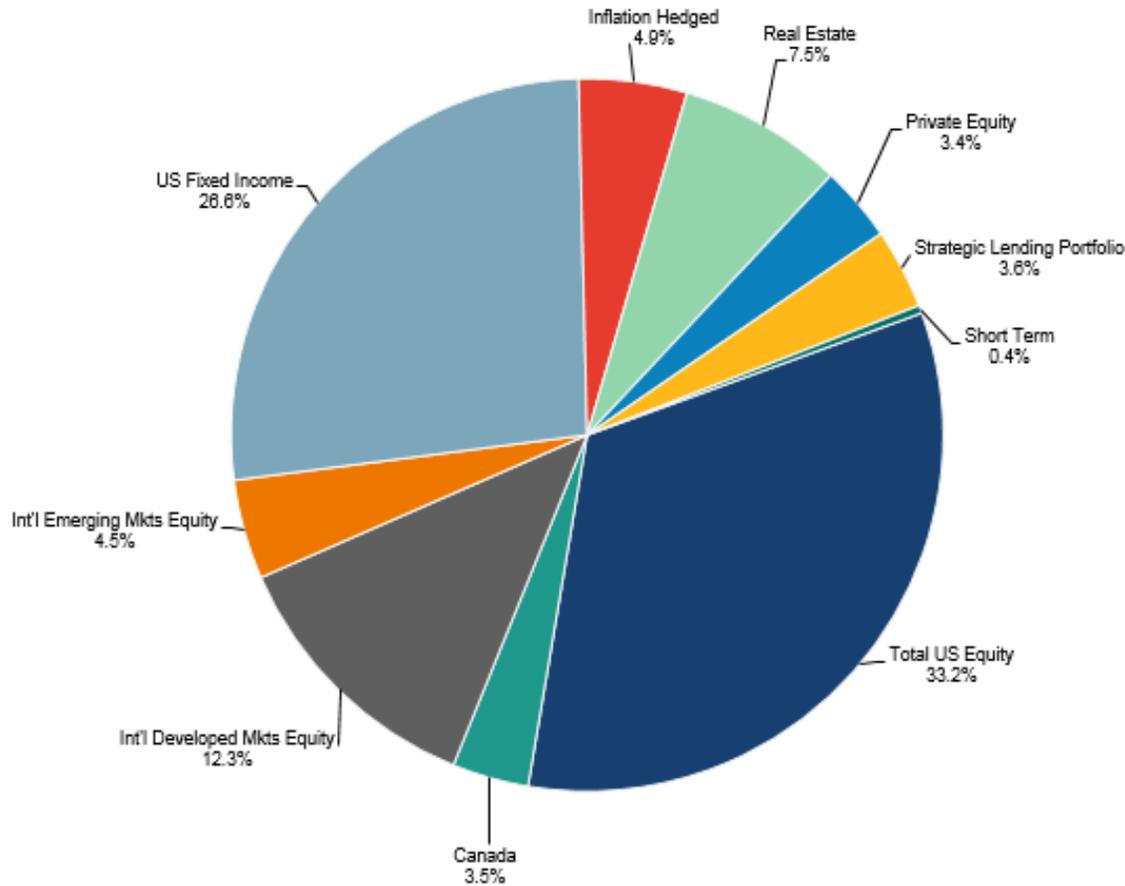
- U.S. equity markets have been in a “risk-on/risk-off” trading environment since the Fed ended its QE program a little over a year and a half ago. At the end of last month, the UK electorate’s vote to leave the EU triggered a bout of risk aversion across global financial markets. Although markets will likely remain volatile as they digest the economic impact of the vote, as well as the potential of a growing anti-EU sentiment among remaining members, it is encouraging to see the initial response of asset prices. MSCI ACWI ex-US equities recovered the bulk of their immediate post-Brexit drop and closed the quarter marginally negative. The S&P500 was up 2.5%, while EM equities were slightly up. There is no sign of stress in funding markets, and beyond the drop in sterling, currency moves have been quite modest.
- The political reverberations of Brexit are uncertain and ultimately could amplify the global shock by depressing risk appetites in financial markets—in addition to business and consumer confidence. Outside Europe, the contagion risk could be potentially magnified by the fact that businesses are already feeling cautious. Sensitivity may be particularly pronounced in the US, where a fall in corporate profits has led to a contraction in capex and a slowdown in hiring. Indeed, the US financial sector was among the worst performers in Q2.
- The first half of the year was characterized by a broad-based rally in government bonds, amid weaker economic data, financial market turmoil and the Brexit vote. The BoJ, BoE and ECB are all likely to ease further, and the Fed continues to ratchet down rate hike expectations. As the immediate shocks begin to subside, fundamental drivers are likely to take over. All US corporate bonds finished Q2 in positive territory, led by BAA-rated bonds, up 4.3% for the quarter. Treasury and Agency debt also rose and closed the quarter 2.1% and 1.2% higher, respectively.
- With the UK referendum finally in the rearview mirror, investor reaction was reflected in the sharp decline of the sterling. The currency lost 7% in Q2.
- The State Street Investor Confidence Index® (ICI) measures risk appetite by analyzing the buying and selling patterns of the institutional investors. The Global ICI declined marginally to 105.9, down 0.1 points from May’s revised reading of 106. The North American ICI declined further in June by 2.0 points to 105.9, while the Asian ICI rose from 112.3 to 113.4 and the European ICI increased by 3.5 points to 100.3.
- For the period ending 6/30/16, one quarter returns for the NAREIT Equity Index and the NCREIF Property Index (one quarter lag) were respectively 7.0% and 2.2%; one year 24.0% and 11.8%; three years 13.6% and 11.9%; and five years 12.6% and 11.9%.

- REITs have now outperformed both the S&P 500 and Russell 2000 in each of the last four quarters as real estate fundamentals have remained strong and interest rates have continued to decline, especially after the Brexit vote late in the second quarter. Sector dispersion within REITs have remained high as interest rate sensitive sectors performed well in 2Q. Industrial, Health Care and Manufactured Housing were all up over 12%, while Apartments, Hotels and Storage were all negative for the quarter. Industrial demand has been buoyed by the secular trend of increasing internet retailing and cloud computing.
- REIT dividend yields declined by 29 bps in the second quarter to 3.5%, while the ten-year U.S. Treasury yield also fell 30 bps to 1.5% during the quarter, keeping spreads at 200 bps, well above the historical average of 111 bps. NCREIF Property Index cap rates declined 5 bps in the 1st quarter to 4.5%.

Name	Last 3 Months	Last 6 Months	1 Yr	2 Yrs	3 Yrs	3 Yrs	5 Yrs	7 Yrs	10 Yrs
US Equity									
Russell 3000	2.6	3.6	2.1	4.7	11.1	11.1	11.6	14.9	7.4
S&P 500	2.5	3.8	4.0	5.7	11.7	11.7	12.1	14.9	7.4
Russell 1000	2.5	3.7	2.9	5.1	11.5	11.5	11.9	15.0	7.5
Russell 1000 Growth	0.6	1.4	3.0	6.7	13.1	13.1	12.3	15.5	8.8
Russell 1000 Value	4.6	6.3	2.9	3.5	9.9	9.9	11.4	14.5	6.1
Russell MidCap	3.2	5.5	0.6	3.6	10.8	10.8	10.9	16.5	8.1
Russell 2000	3.8	2.2	-6.7	-0.3	7.1	7.1	8.4	13.9	6.2
Russell 2000 Growth	3.2	-1.6	-10.8	0.1	7.7	7.7	8.5	14.3	7.1
Russell 2000 Value	4.3	6.1	-2.6	-0.9	6.4	6.4	8.1	13.5	5.2
International Equity									
MSCI ACWI	1.0	1.2	-3.7	-1.5	6.0	6.0	5.4	9.5	4.3
MSCI World ex USA	-1.1	-3.0	-9.8	-7.6	1.9	1.9	1.2	5.8	1.6
MSCI EAFE	-1.5	-4.4	-10.2	-7.2	2.1	2.1	1.7	6.0	1.6
MSCI Emerging Markets	0.7	6.4	-12.1	-8.7	-1.6	-1.6	-3.8	3.8	3.5
Fixed Income									
91 Day T-Bills	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.9
Barclays Aggregate	2.2	5.3	6.0	3.9	4.1	4.1	3.8	4.6	5.1
Barclays Govt/Credit	2.7	6.2	6.7	4.2	4.2	4.2	4.1	4.8	5.2
Barclays Municipal	2.6	4.3	7.7	5.3	5.6	5.6	5.3	5.7	5.1
Barclays High Yield	5.5	9.1	1.6	0.6	4.2	4.2	5.8	10.0	7.6
Citi WGBI	3.4	10.7	11.3	0.6	2.6	2.6	1.2	2.7	4.2
Citi WGBI ex US	4.0	13.5	13.8	-0.8	2.4	2.4	0.3	2.3	4.0
Real Estate									
FTSE NAREIT All REIT	7.4	13.7	22.7	12.8	13.1	13.1	12.3	19.9	7.0
NCREIF Property Index	2.0	4.3	10.6	11.8	11.6	11.6	11.5	10.3	7.4
Alternatives									
HFRI Fund of Funds Composite Index	0.5	-2.6	-5.5	-0.9	1.9	1.9	1.6	2.8	1.6
Inflation									
Consumer Price Index	1.2	1.9	1.0	0.6	1.1	1.1	1.3	1.6	1.7

Tennessee Consolidated Retirement System  
Asset Allocation Analysis

Period Ending: June 30, 2016



	Actual \$	Actual %
Total US Equity	14,360,128,517	33.2%
Canada	1,503,593,707	3.5%
Int'l Developed Mkts Equity	5,323,611,237	12.3%
Int'l Emerging Mkts Equity	1,956,068,507	4.5%
US Fixed Income	11,519,348,746	26.6%
Inflation Hedged	2,122,963,693	4.9%
Real Estate	3,233,554,972	7.5%
Private Equity	1,488,258,941	3.4%
Strategic Lending Portfolio	1,574,291,464	3.6%
Short Term	153,649,678	0.4%
<b>TOTAL</b>	<b>43,235,469,462</b>	<b>100.0%</b>

	TARGET	ACTUAL	DIFF
Total US Equity	33.0%	33.2%	0.2%
Canada	4.0%	3.5%	-0.5%
Int'l Developed Mkts Equity	13.0%	12.3%	-0.7%
Int'l Emerging Mkts Equity	5.0%	4.5%	-0.5%
US Fixed Income	25.0%	26.6%	1.6%
Inflation Hedged	4.0%	4.9%	0.9%
Real Estate	7.0%	7.5%	0.5%
Private Equity	3.0%	3.4%	0.4%
Strategic Lending Portfolio	5.0%	3.6%	-1.4%
Short Term	1.0%	0.4%	-0.6%

	03/31/16	06/30/16	DIFF
Total US Equity	33.0%	33.2%	0.3%
Canada	3.0%	3.5%	0.5%
Int'l Developed Mkts Equity	12.7%	12.3%	-0.4%
Int'l Emerging Mkts Equity	4.3%	4.5%	0.2%
US Fixed Income	26.9%	26.6%	-0.3%
Inflation Hedged	5.7%	4.9%	-0.8%
Real Estate	7.5%	7.5%	0.0%
Private Equity	3.2%	3.4%	0.2%
Strategic Lending Portfolio	3.3%	3.6%	0.3%
Short Term	0.4%	0.4%	-0.0%

# Total Fund Performance Summary

Period Ending: June 30, 2016

	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)
<b>Total Fund</b>	<b>2.30</b>	<b>2.79</b>	<b>7.41</b>	<b>7.54</b>	<b>9.57</b>	<b>6.03</b>
<i>Policy Index</i> <sup>1</sup>	<u>2.41</u>	<u>3.51</u>	<u>7.59</u>	<u>7.58</u>	<u>9.69</u>	<u>6.38</u>
Excess Return	-0.11	-0.72	-0.18	-0.04	-0.12	-0.35
<i>Allocation Index</i> <sup>2</sup>	<u>2.38</u>	<u>3.59</u>	<u>7.41</u>	<u>7.23</u>	<u>9.33</u>	<u>6.09</u>
<b>North American Equity</b>	<b>2.35</b>	<b>-0.36</b>	<b>9.64</b>	<b>9.90</b>	<b>--</b>	<b>--</b>
<i>N.A. Equity Custom</i> <sup>3</sup>	<u>2.76</u>	<u>2.84</u>	<u>10.46</u>	<u>10.40</u>	--	--
Excess Return	-0.41	-3.20	-0.82	-0.50		
<b>US Equity</b>	<b>2.23</b>	<b>0.08</b>	<b>10.55</b>	<b>11.31</b>	<b>14.62</b>	<b>7.24</b>
<i>US Equity Custom</i> <sup>4</sup>	<u>2.60</u>	<u>3.64</u>	<u>11.52</u>	<u>11.94</u>	<u>15.09</u>	<u>7.53</u>
Excess Return	-0.37	-3.56	-0.97	-0.63	-0.47	-0.29
Index	2.40	4.47	11.81	12.20	14.98	7.55
<i>S&amp;P 500</i>	<u>2.46</u>	<u>3.99</u>	<u>11.66</u>	<u>12.10</u>	<u>14.92</u>	<u>7.42</u>
Excess Return	-0.06	0.48	0.15	0.10	0.06	0.13
Quant	1.45	-2.36	9.04	10.31	13.51	6.95
<i>S&amp;P 500</i>	<u>2.46</u>	<u>3.99</u>	<u>11.66</u>	<u>12.10</u>	<u>14.92</u>	<u>7.42</u>
Excess Return	-1.01	-6.35	-2.62	-1.79	-1.41	-0.47
Sector	2.43	0.08	11.20	11.56	14.54	7.25
<i>S&amp;P 500</i>	<u>2.46</u>	<u>3.99</u>	<u>11.66</u>	<u>12.10</u>	<u>14.92</u>	<u>7.42</u>
Excess Return	-0.03	-3.91	-0.46	-0.54	-0.38	-0.17
Mid Cap <sup>5</sup>	3.83	0.40	11.17	11.13	16.67	8.13
<i>S&amp;P MidCap 400</i> <sup>5</sup>	<u>3.99</u>	<u>1.33</u>	<u>10.53</u>	<u>10.55</u>	<u>16.28</u>	<u>8.19</u>
Excess Return	-0.16	-0.93	0.64	0.58	0.39	-0.06

<sup>1</sup> Effective 1/1/13, Policy Index is 33% S&P 1500/ 4% S&P TSX 60/ 13% MSCI EAFE IMI net/ 5% MSCI Emerging Markets net/ 25% Citigroup LPF/ 4% Citigroup TIPS/ 7% NCREIF 1Q Lag/ 3% S&P 500 + 3% 1Q Lag/ 1% 91 Day T-Bill / 5% Strategic Lending.

<sup>2</sup> Effective 4/1/16, Total Fund Allocation Index is 33% S&P 1500/ 4% S&P TSX 60/ 13% MSCI EAFE IMI net/ 5% MSCI Emerging Markets net/ 25.34% Citigroup LPF/ 5.34% Citigroup TIPS/ 7% NCREIF 1Q Lag/ 3% S&P 500 + 3% 1Q Lag/ 3.32% Strategic Lending/ 1% 91 Day T-Bill.

<sup>3</sup> Effective 1/1/13, benchmark is 89.19% S&P 1500/ 10.81% S&P TSX 60; linked to 87.5% S&P 1500/ 12.5% S&P TSX 60 Index.

<sup>4</sup> Effective 7/1/04, benchmark is S&P 1500.

<sup>5</sup> Effective 7/1/08, strategy was changed from SMID Cap. Benchmark is linked to 100% S&P 100 Index.

# Total Fund Performance Summary

Period Ending: June 30, 2016

	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)
<b>Small Cap <sup>6</sup></b>	<b>3.56</b>	<b>0.20</b>	<b>10.32</b>	<b>10.75</b>	<b>--</b>	<b>--</b>
<i>S&amp;P 600 SmallCap</i>	<u>3.48</u>	<u>-0.03</u>	<u>10.23</u>	<u>11.20</u>	<u>16.32</u>	<u>7.86</u>
Excess Return	0.08	0.23	0.09	-0.45		
<b>Canada</b>	<b>3.78</b>	<b>-4.21</b>	<b>1.49</b>	<b>-1.47</b>	<b>--</b>	<b>--</b>
<i>S&amp;P/TSX 60</i>	<u>3.82</u>	<u>-4.24</u>	<u>1.49</u>	<u>-1.54</u>	<u>5.16</u>	<u>3.52</u>
Excess Return	-0.04	0.03	0.00	0.07		
<b>International Equity</b>	<b>-0.61</b>	<b>-7.20</b>	<b>2.60</b>	<b>2.58</b>	<b>7.49</b>	<b>3.51</b>
<i>Int'l Equity Custom <sup>7</sup></i>	<u>-0.82</u>	<u>-8.74</u>	<u>1.54</u>	<u>0.61</u>	<u>5.35</u>	<u>1.26</u>
Excess Return	0.21	1.54	1.06	1.97	2.14	2.25
<b>Int'l Developed Mkts Equity</b>	<b>-1.48</b>	<b>-7.50</b>	<b>4.04</b>	<b>4.08</b>	<b>8.61</b>	<b>4.27</b>
<i>MSCI EAFE IMI net</i>	<u>-1.62</u>	<u>-9.33</u>	<u>2.72</u>	<u>2.08</u>	<u>6.45</u>	<u>1.99</u>
Excess Return	0.14	1.83	1.32	2.00	2.16	2.28
American Century	-1.54	-1.10	8.57	8.06	13.53	--
<i>MSCI EAFE Small Cap</i>	<u>-2.60</u>	<u>-3.67</u>	<u>7.26</u>	<u>4.84</u>	<u>9.93</u>	<u>3.57</u>
Excess Return	1.06	2.57	1.31	3.22	3.60	
Baring Asset Mgmt	-1.54	-9.72	1.23	2.46	7.24	--
<i>MSCI EAFE</i>	<u>-1.46</u>	<u>-10.16</u>	<u>2.06</u>	<u>1.68</u>	<u>5.97</u>	<u>1.58</u>
Excess Return	-0.08	0.44	-0.83	0.78	1.27	
FIAM	-2.83	-3.10	7.69	6.36	11.22	--
<i>MSCI EAFE Small Cap</i>	<u>-2.60</u>	<u>-3.67</u>	<u>7.26</u>	<u>4.84</u>	<u>9.93</u>	<u>3.57</u>
Excess Return	-0.23	0.57	0.43	1.52	1.29	

<sup>6</sup> Use 100% Russell 2000 Futures returns January 2011-June 2012. Use weighted blend of Russell 2000 Futures and Small Cap Fund returns July 2012- October 2012. Use 100% Small Cap Fund returns November 2012-present.

<sup>7</sup> Effective 1/1/13, benchmark is 72.22% MSCI EAFE IMI net/ 27.78% MSCI Emerainq Mkts net; linked to 100% MSCI EAFE IMI net (10/08-12/12) and 100% MSCI EAFE net Index (7/04-9/08).

# Total Fund Performance Summary

Period Ending: June 30, 2016

	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)
GE Asset	-4.64	-11.88	1.00	0.80	6.31	--
<i>MSCI Europe</i>	<u>-2.69</u>	<u>-11.22</u>	<u>1.96</u>	<u>1.02</u>	<u>6.09</u>	<u>1.52</u>
Excess Return	-1.95	-0.66	-0.96	-0.22	0.22	
Marathon	-2.81	-8.13	4.68	4.92	8.98	5.20
<i>MSCI EAFE net</i>	<u>-1.46</u>	<u>-10.16</u>	<u>2.06</u>	<u>1.68</u>	<u>5.97</u>	<u>1.58</u>
Excess Return	-1.35	2.03	2.62	3.24	3.01	3.62
Pacific Indexed <sup>8</sup>	2.21	-7.38	2.58	2.78	5.71	1.74
<i>MSCI Pacific net</i> <sup>9</sup>	<u>0.87</u>	<u>-8.19</u>	<u>2.16</u>	<u>2.98</u>	<u>5.86</u>	<u>1.72</u>
Excess Return	1.34	0.81	0.42	-0.20	-0.15	0.02
PanAgora Asset Mgmt	-2.06	-9.33	4.41	3.74	8.30	3.34
<i>MSCI EAFE</i>	<u>-1.46</u>	<u>-10.16</u>	<u>2.06</u>	<u>1.68</u>	<u>5.97</u>	<u>1.58</u>
Excess Return	-0.60	0.83	2.35	2.06	2.33	1.76
TT International	-1.39	-12.10	3.61	3.34	7.47	--
<i>MSCI EAFE</i>	<u>-1.46</u>	<u>-10.16</u>	<u>2.06</u>	<u>1.68</u>	<u>5.97</u>	<u>1.58</u>
Excess Return	0.07	-1.94	1.55	1.66	1.50	
Walter Scott	3.31	1.27	4.84	4.81	9.39	6.43
<i>MSCI EAFE net</i> <sup>10</sup>	<u>-1.46</u>	<u>-10.16</u>	<u>2.06</u>	<u>1.68</u>	<u>5.97</u>	<u>1.52</u>
Excess Return	4.77	11.43	2.78	3.13	3.42	4.91
<b>Int'l Emerging Mkts Equity</b>	<b>1.72</b>	<b>-6.39</b>	<b>-1.78</b>	<b>--</b>	<b>--</b>	<b>--</b>
<i>MSCI Emerging Markets ND Custom</i>	<u>0.92</u>	<u>-7.97</u>	<u>-1.96</u>	--	--	--
Excess Return	0.80	1.58	0.18			

<sup>8</sup> Effective 9/4/10, internally managed by TCRS staff. Amundi Pacific terminated.

<sup>9</sup> Effective 7/1/04.

<sup>10</sup> Effective 3/1/09. Benchmark is linked to MSCI Europe Index.

# Total Fund Performance Summary

Period Ending: June 30, 2016

	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)
<b>US Fixed Income</b>	<b>4.11</b>	<b>10.58</b>	<b>6.97</b>	<b>7.02</b>	<b>7.83</b>	<b>6.89</b>
<i>Citigroup LPF</i> <sup>11</sup>	<u>4.04</u>	<u>10.83</u>	<u>6.81</u>	<u>6.49</u>	<u>6.49</u>	<u>6.63</u>
Excess Return	0.07	-0.25	0.16	0.53	1.34	0.26
<b>Corporate</b>	<b>5.41</b>	<b>11.20</b>	<b>7.96</b>	<b>8.42</b>	<b>10.02</b>	<b>8.16</b>
<i>Citigroup LPF Credit</i> <sup>12</sup>	<u>5.67</u>	<u>11.77</u>	<u>7.71</u>	<u>7.50</u>	<u>8.32</u>	<u>7.34</u>
Excess Return	-0.26	-0.57	0.25	0.92	1.70	0.82
<b>Gov't 1-5</b>	<b>5.58</b>	<b>14.81</b>	<b>9.07</b>	<b>10.05</b>	<b>10.23</b>	<b>--</b>
<i>Citigroup LPF Treas/Govt Spons</i> <sup>13</sup>	<u>5.02</u>	<u>15.09</u>	<u>8.36</u>	<u>8.21</u>	<u>7.01</u>	<u>7.00</u>
Excess Return	0.56	-0.28	0.71	1.84	3.22	
<b>Gov't 5 Plus</b>	<b>5.12</b>	<b>15.08</b>	<b>8.43</b>	<b>8.38</b>	<b>8.30</b>	<b>7.09</b>
<i>Citigroup LPF Treas/Govt Spons</i> <sup>14</sup>	<u>5.02</u>	<u>15.09</u>	<u>8.36</u>	<u>8.21</u>	<u>7.64</u>	<u>7.56</u>
Excess Return	0.10	-0.01	0.07	0.17	0.66	-0.47
<b>MBS</b>	<b>1.27</b>	<b>4.47</b>	<b>3.87</b>	<b>3.27</b>	<b>4.21</b>	<b>4.58</b>
<i>Citi BIG Mortgage</i>	<u>1.07</u>	<u>4.29</u>	<u>3.74</u>	<u>3.00</u>	<u>3.78</u>	<u>4.99</u>
Excess Return	0.20	0.18	0.13	0.27	0.43	-0.41
<b>Inflation Hedged</b>	<b>1.85</b>	<b>4.80</b>	<b>2.59</b>	<b>2.79</b>	<b>4.25</b>	<b>4.90</b>
<i>Citi TIPS</i>	<u>1.84</u>	<u>4.66</u>	<u>2.51</u>	<u>2.78</u>	<u>4.47</u>	<u>4.84</u>
Excess Return	0.01	0.14	0.08	0.01	-0.22	0.06

<sup>11</sup> Effective 9/1/11. Benchmark is linked to 50% Citigroup BIG/ 50% Citigroup LPF (4/1/11-8/31/11) and 100% Citigroup BIG (8/1/05-3/31/11).

<sup>12</sup> Effective 7/1/11. Benchmark is linked to 50% Citigroup BIG Credit/ 50% Citigroup LPF (4/1/11-6/30/11) and 100% Citigroup BIG Credit Index (1/1/01-3/31/11).

<sup>13</sup> Effective 9/1/11. Benchmark is linked to Citi 1-7 Govt (7/1/11-8/31/11), 50% Citigroup 1-5 Govt/ 50% Citigroup 1-7 Govt (4/1/11-6/30/11), and 100% Citigroup 1-5 Govt (9/1/09-3/31/11).

<sup>14</sup> Effective 7/1/11. Benchmark is linked to 50% Citigroup Core 5+ Govt/ 50% Citigroup 7+ Govt (4/1/11-6/30/11), 100% Citigroup Core 5+ Govt (9/1/09-3/31/11), and 100% Citigroup Govt (7/1/04-8/31/09).

# Total Fund Performance Summary

Period Ending: June 30, 2016

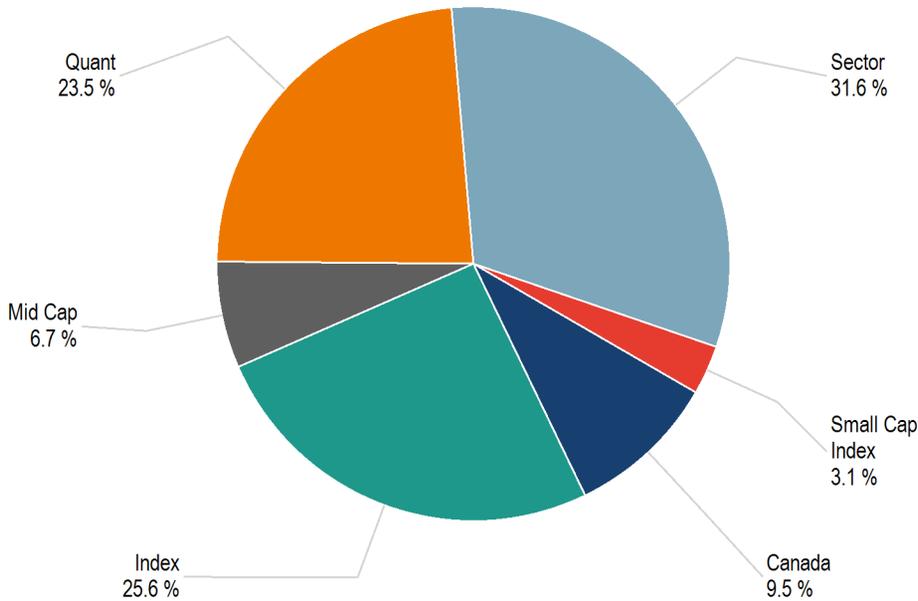
	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)
<b>Real Estate</b>	<b>2.31</b>	<b>12.62</b>	<b>12.05</b>	<b>11.25</b>	<b>7.39</b>	<b>6.21</b>
<i>NCREIF 1Q Lag</i>	<u>2.21</u>	<u>11.84</u>	<u>11.91</u>	<u>11.93</u>	<u>9.12</u>	<u>7.61</u>
Excess Return	0.10	0.78	0.14	-0.68	-1.73	-1.40
<b>Traditional Private Equity *</b>	<b>0.78</b>	<b>10.27</b>	<b>16.23</b>	<b>15.01</b>	<b>--</b>	<b>--</b>
<i>S&amp;P 500 +3% 1Q Lag**</i>	<u>2.09</u>	<u>4.78</u>	<u>14.83</u>	<u>14.58</u>	<u>19.99</u>	<u>10.08</u>
Excess Return	-1.31	5.49	1.40	0.43		
<b>Strategic Lending Portfolio <sup>15</sup></b>	<b>3.42</b>	<b>1.59</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
<i>Strategic Lending <sup>16</sup></i>	<u>4.19</u>	<u>1.33</u>	<u>3.64</u>	--	--	--
Excess Return	-0.77	0.26				
<b>Short Term</b>	<b>0.02</b>	<b>-0.10</b>	<b>0.85</b>	<b>0.88</b>	<b>1.26</b>	<b>--</b>
<i>91 Day T-Bills</i>	<u>0.06</u>	<u>0.16</u>	<u>0.07</u>	<u>0.06</u>	<u>0.08</u>	<u>0.89</u>
Excess Return	-0.04	-0.26	0.78	0.82	1.18	
Short Duration	0.53	1.19	1.15	1.30	1.67	--
<i>91 Day T-Bills</i>	<u>0.06</u>	<u>0.16</u>	<u>0.07</u>	<u>0.06</u>	<u>0.08</u>	<u>0.89</u>
Excess Return	0.47	1.03	1.08	1.24	1.59	
<b>Cash</b>	<b>0.39</b>	<b>1.15</b>	<b>0.62</b>	<b>0.76</b>	<b>1.13</b>	<b>1.93</b>
<i>91 Day T-Bills</i>	<u>0.06</u>	<u>0.16</u>	<u>0.07</u>	<u>0.06</u>	<u>0.08</u>	<u>0.89</u>
Excess Return	0.33	0.99	0.55	0.70	1.05	1.04

\* Effective 4/1/12. One quarter lagged IRR returns are provided by TorreyCove Capital Partners. TorreyCove replaced Cambridge Associates effective 8/1/15.

\*\* Verus' time-weighted returns.

<sup>15</sup> Funded 8/1/13. Reported net of fees.

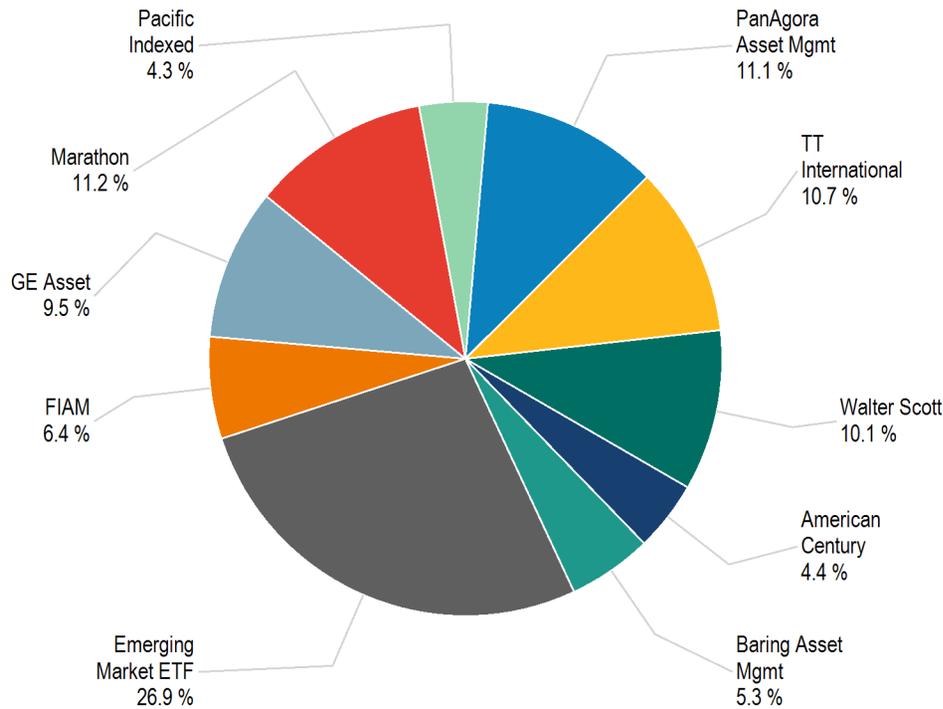
<sup>16</sup> Effective 1/1/13, benchmark is 50% Barclays HY 2% Issuer Capped/ 50% Credit Suisse Leveraged Loans.



	Actual (\$)	Actual %
Canada	\$1,503,593,707	9.5%
Index	\$4,059,268,404	25.6%
Mid Cap	\$1,065,421,282	6.7%
Quant	\$3,731,065,850	23.5%
Sector	\$5,007,919,739	31.6%
Small Cap Index	\$496,453,242	3.1%
<b>Total</b>	<b>\$15,863,722,224</b>	<b>100.0%</b>

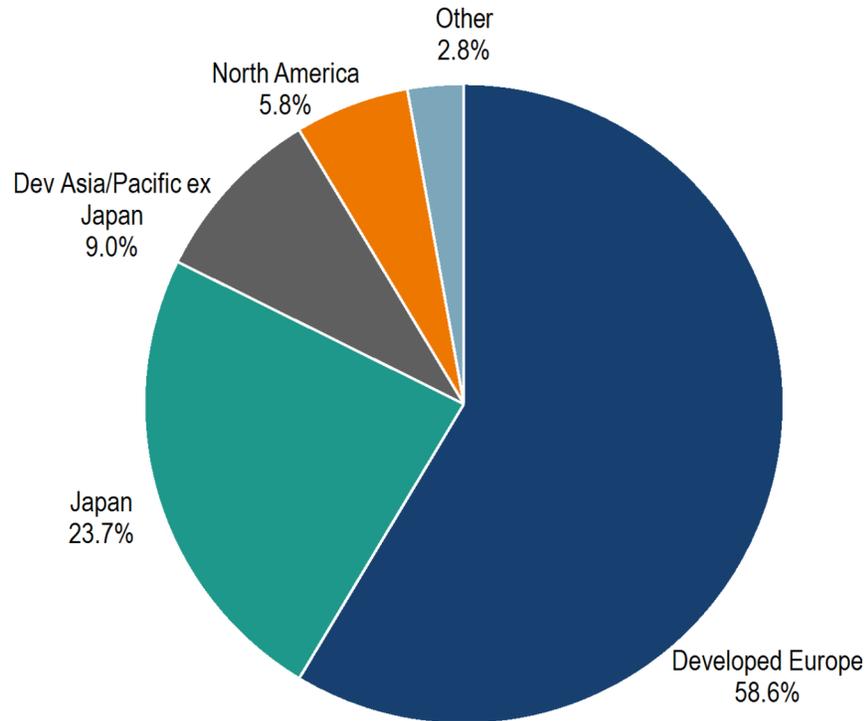
International Equity  
 Manager Allocation Analysis

Period Ending: June 30, 2016

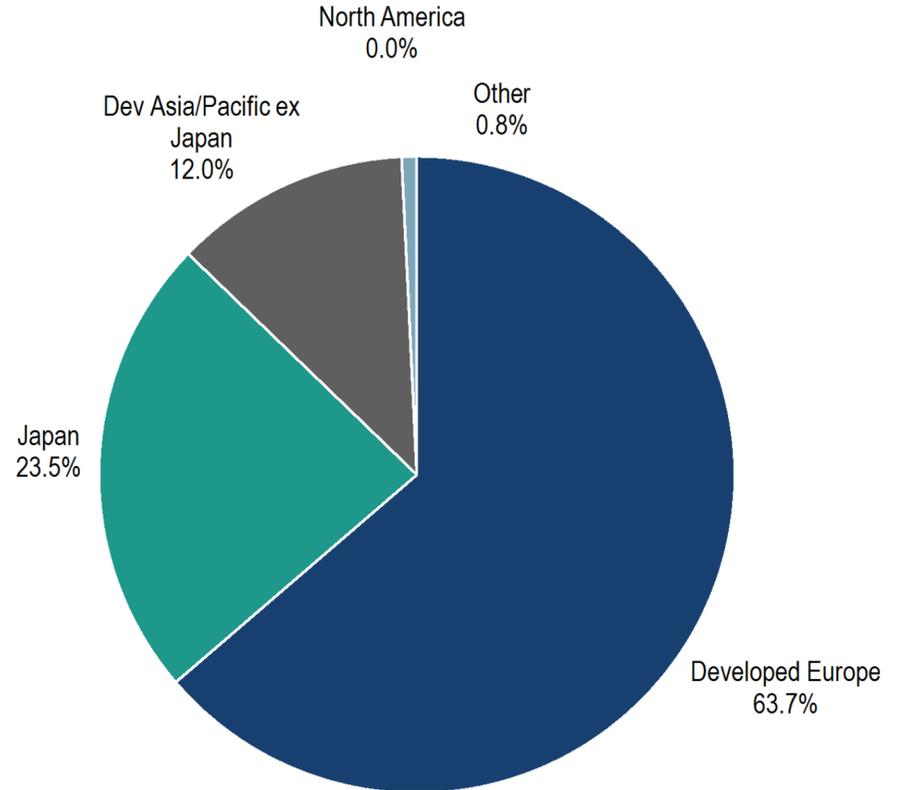


	Actual (\$)	Actual %
American Century	\$320,489,392	4.4%
Baring Asset Mgmt	\$385,825,198	5.3%
Emerging Market ETF	\$1,956,068,507	26.9%
FIAM	\$468,238,105	6.4%
GE Asset	\$694,688,950	9.5%
Marathon	\$815,367,585	11.2%
Pacific Indexed	\$315,386,179	4.3%
PanAgora Asset Mgmt	\$811,166,843	11.1%
TT International	\$777,217,232	10.7%
Walter Scott	\$735,231,753	10.1%
<b>Total</b>	<b>\$7,279,679,744</b>	<b>100.0%</b>

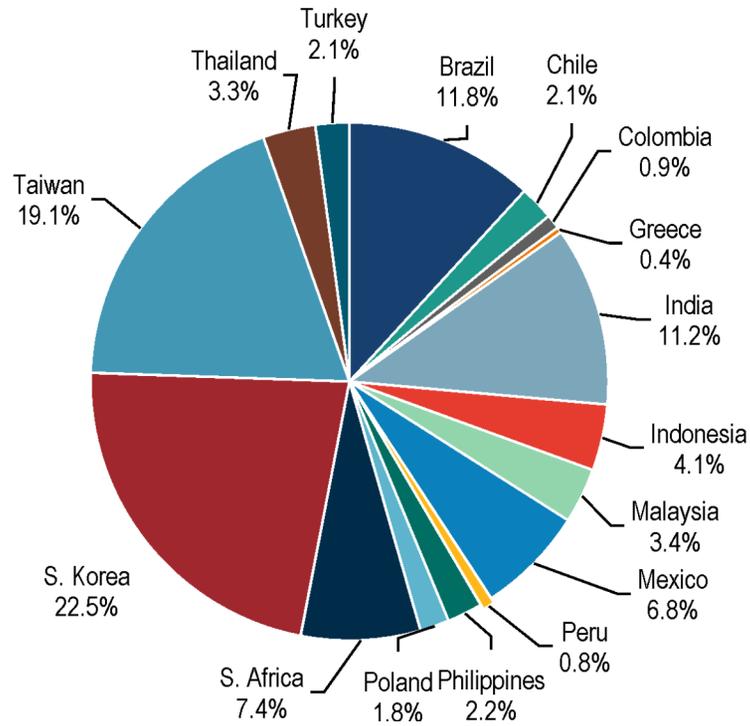
Developed International Equity



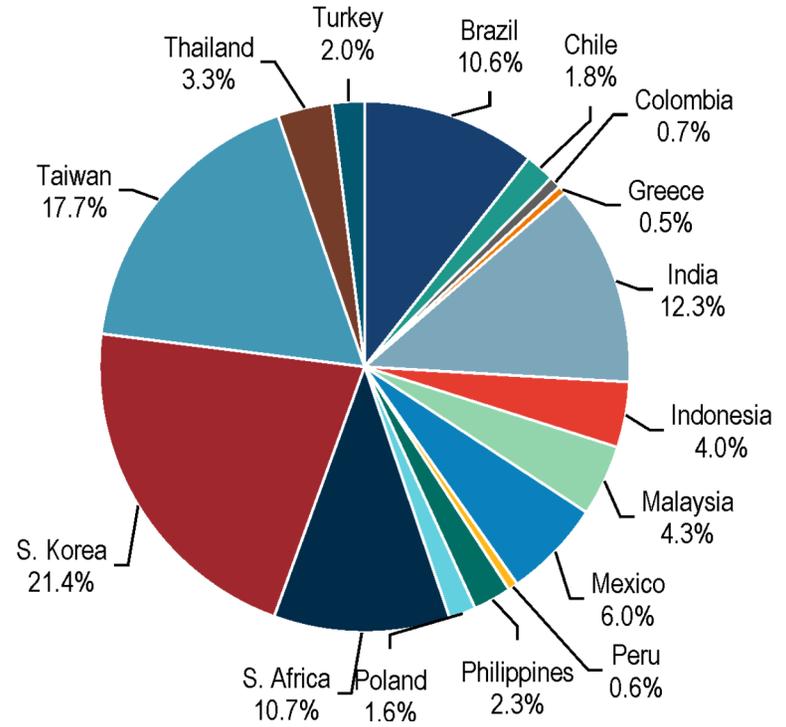
MSCI EAFE Index



Emerging Market ETF

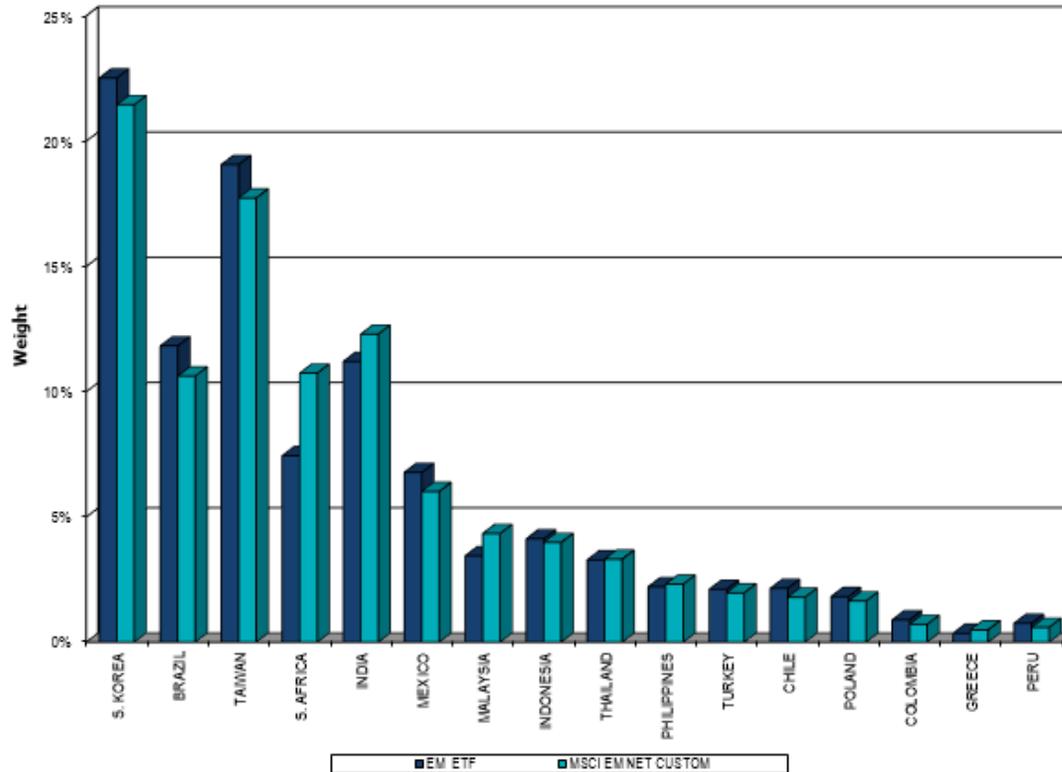


MSCI Emerging Market Net Custom Index

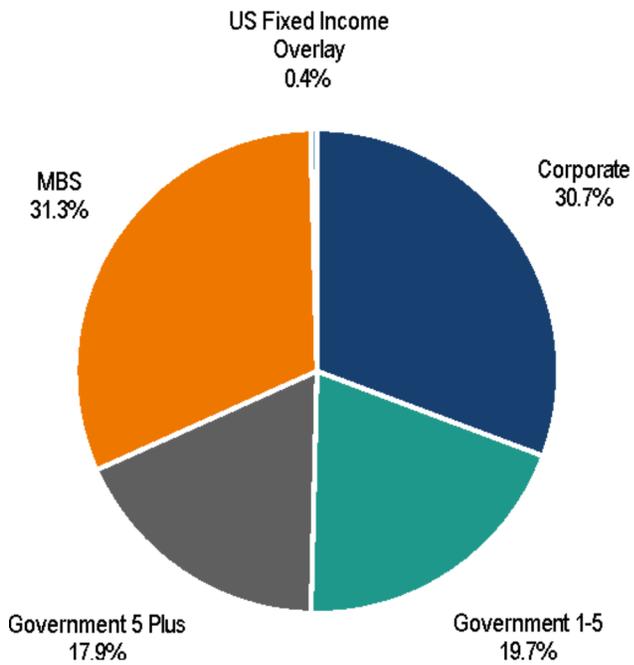


# Int'l Emerging Markets Equity Portfolio Country Weights

Period Ending: June 30, 2016



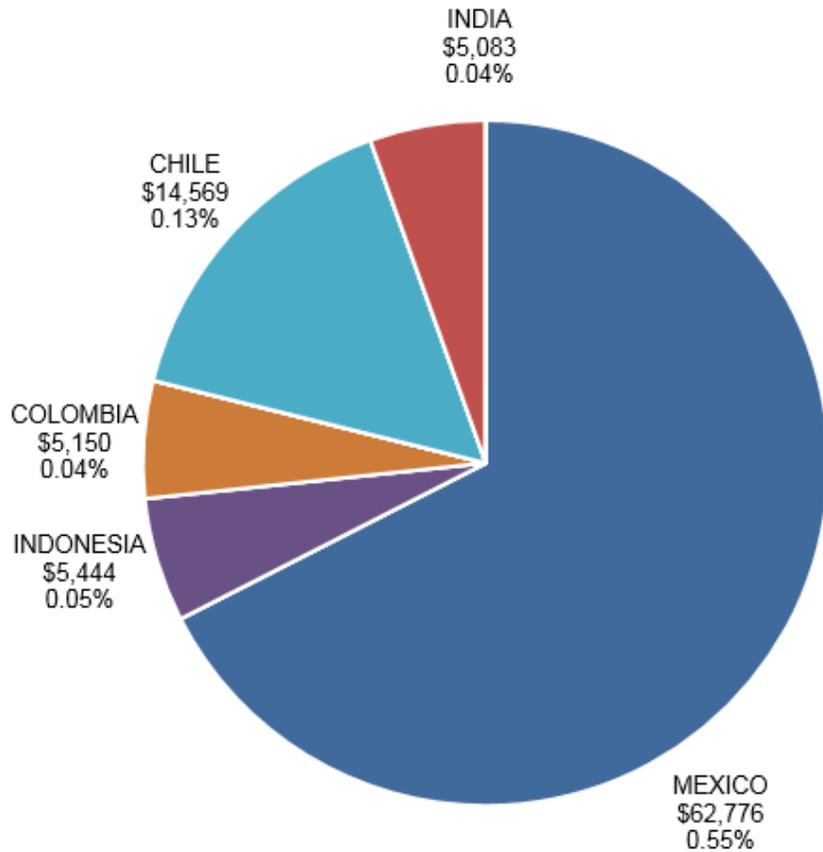
COUNTRY	TCRS MARKET VALUE (\$ 000)	EM ETF	MSCI EM NET CUSTOM	DIFF
S. KOREA	\$ 440,457	22.5%	21.4%	+1.1%
BRAZIL	\$ 231,370	11.8%	10.6%	+1.2%
TAIWAN	\$ 372,891	19.1%	17.7%	+1.3%
S. AFRICA	\$ 145,665	7.4%	10.7%	-3.3%
INDIA	\$ 219,131	11.2%	12.3%	-1.1%
MEXICO	\$ 132,501	6.8%	6.0%	+0.8%
MALAYSIA	\$ 67,464	3.4%	4.3%	-0.9%
INDONESIA	\$ 80,704	4.1%	4.0%	+0.1%
THAILAND	\$ 64,343	3.3%	3.3%	-0.0%
PHILIPPINES	\$ 43,296	2.2%	2.3%	-0.1%
TURKEY	\$ 41,315	2.1%	2.0%	+0.1%
CHILE	\$ 41,972	2.1%	1.8%	+0.4%
POLAND	\$ 35,665	1.8%	1.6%	+0.2%
COLOMBIA	\$ 17,446	0.9%	0.7%	+0.2%
GREECE	\$ 7,032	0.4%	0.5%	-0.1%
PERU	\$ 14,816	0.8%	0.6%	+0.2%
	\$ 1,956,068	100.0%	100.0%	0.0%



	Actual \$	Actual %
Corporate	3,536,497,690	30.7%
Government 1-5	2,268,280,173	19.7%
Government 5 Plus	2,062,872,322	17.9%
MBS	3,602,808,740	31.3%
US Fixed Income Overlay	48,889,821	0.4%
<b>TOTAL</b>	<b>11,519,348,746</b>	<b>100.0%</b>

Emerging Markets Investment Grade Bond  
Portfolio Country Weights

Period Ending: June 30, 2016



COUNTRY	TCRS MARKET VALUE (\$ 000)	TCRS FI	LPF	DIFF
MEXICO	\$ 62,776	0.55%	0.77%	-0.23%
OTHER*	\$ -		0.67%	-0.67%
TURKEY	\$ -		0.37%	-0.37%
INDONESIA	\$ 5,444	0.05%	0.34%	-0.29%
PHILIPPINES	\$ -		0.28%	-0.28%
COLOMBIA	\$ 5,150	0.04%	0.25%	-0.21%
PERU	\$ -		0.14%	-0.14%
S. KOREA	\$ -		0.12%	-0.12%
BRAZIL	\$ -		0.10%	-0.10%
S. AFRICA	\$ -		0.08%	-0.08%
CHILE	\$ 14,569	0.13%	0.05%	+0.08%
POLAND	\$ -		0.04%	-0.04%
MALAYSIA	\$ -		0.04%	-0.04%
INDIA	\$ 5,083	0.04%		+0.04%
THAILAND	\$ -			0.00%
TAIWAN	\$ -			0.00%
	\$ 93,022	0.81%	3.25%	-2.44%

\* Includes Bahrain, British Virgin, Curacao, Iceland, Isle of Man, Panama, Qatar, Slovakia, Slovenia and Uruguay.

\*\* Countries excluded: United States, Japan, Germany, France, The United Kingdom, Italy, Canada, Australia, Spain, Israel, Belgium, Ireland, Luxembourg, Netherlands, Norway, Sweden and Switzerland.

# Glossary

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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