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## Active vs. Passive Review

February 2017

### Background

- Each year ACG updates its Active vs. Passive analysis using manager universe information from eVestment Alliance's subscription database. This database provides qualitative and quantitative information for approximately **41,000 products (strategies) submitted by approximately 10,000 firms**.
- The analysis compares the returns of **actively managed strategies relative to market benchmarks** across a variety of asset classes including **US Large Cap Equity, US Small Cap Equity, International Equity, Emerging Markets Equity and Core Fixed Income**. The intent is to identify the degree to which active managers generally outperform or underperform market benchmarks across asset classes and over time.
- The time frame utilized is **rolling 5-year periods** which are then averaged to provide summary information for each asset class. The analysis includes not only the results of the median manager, but also the top and bottom quartile manager results. This provides a **range of possible outcomes** and gives a sense of the relative importance of manager selection across asset classes.

### Observations

- US Equity – Active managers, generally have struggled in **US Large Cap Equity, with short-term excess returns negative over 1, 3, and 5 years** and a **long-term average excess return of approximately .8%**, gross of fees. Excess returns for **US Small/Mid Cap Equity managers have generally been positive, averaging between 1% and 3%** over periods longer than one year, gross of fees.
- Non-US Equity – **International Equity (Developed)** managers have experienced disappointing results, as excess returns over the short-term have averaged .4% or less gross of fees. However, **longer-term results average above 1.9%**, gross of fees. **Emerging Markets managers** have generally delivered modestly positive excess returns averaging greater than **1% for periods greater than one year**, gross of fees.
- US Fixed Income – **Core Fixed Income managers have had much greater success** in recent years relative to market benchmarks as excess returns have **averaged roughly 0.7% for the last five years**. **Longer-term, excess returns have been roughly 0.4%**.

Shorter-Term Excess Return from Active Management (gross of fees)

<b>Shorter-Term Excess Return from Active Management (gross of fees)</b>			
	<b>1 Year</b>	<b>3 Years</b>	<b>5 Years</b>
<b>Large Cap</b>			
Core	-1.7%	-0.8%	-0.5%
Growth/Value	-2.3%	-1.0%	-0.5%
<b>Small Cap</b>			
Core	-1.0%	1.2%	1.4%
Growth/Value	-2.5%	-0.1%	0.5%
<b>International</b>			
Core	-0.2%	0.5%	0.5%
Growth/Value	0.4%	0.6%	0.3%
<b>Emerging Markets</b>			
Core	-1.2%	1.0%	1.6%
<b>Fixed Income</b>			
Core	0.5%	0.3%	0.7%

*Notes: Based on returns for the periods ending 12/31/16. Universe data from eVestment Alliance database - median results. Growth/Value represents a 50/50 combination of the median growth and median value managers.*

Longer-Term Excess Return from Active Management (gross of fees)

<b>Longer-Term Excess Return from Active Management (gross of fees)</b>			
	<b>Average</b>	<b>Maximum</b>	<b>Minimum</b>
<b>Large Cap</b>			
Core	0.8%	3.1%	-1.9%
Growth/Value	0.8%	3.7%	-2.6%
<b>Small Cap</b>			
Core	2.5%	7.2%	0.4%
Growth/Value	2.6%	6.2%	-0.1%
<b>International</b>			
Core	1.9%	6.7%	0.5%
Growth/Value	2.4%	7.3%	0.1%
<b>Emerging Markets</b>			
Core	1.7%	5.4%	-4.0%
<b>Fixed Income</b>			
Core	0.4%	1.6%	-0.3%

Notes: Based on average annualized return from five-year rolling periods (06/30/94 to 12/31/16). Universe data from eVestment Alliance database - median results. Growth/Value represents a 50/50 combination of the median growth and median value managers.

## Active vs. Passive Summary

### eVestment Alliance Universes vs. Benchmarks

<i>Data as of December 31, 2016</i>	Rates of Return				Standard Deviation			Sharpe Ratio		
	1 Year	3 Years	5 Years	10 Years	3 Years	5 Years	10 Years	3 Years	5 Years	10 Years
25th Percentile Large Cap Core	12.4%	9.0%	15.1%	8.0%	11.6%	11.4%	16.1%	0.83	1.41	0.49
Median Large Cap Core	10.3%	8.0%	14.2%	7.3%	11.1%	10.9%	15.4%	0.71	1.30	0.43
75th Percentile Large Cap Core	8.0%	6.9%	13.1%	6.7%	10.5%	10.3%	14.7%	0.59	1.20	0.38
<b>S&amp;P 500</b>	<b>12.0%</b>	<b>8.9%</b>	<b>14.7%</b>	<b>6.9%</b>	<b>10.7%</b>	<b>10.4%</b>	<b>15.3%</b>	<b>0.82</b>	<b>1.41</b>	<b>0.41</b>
25th Percentile Small Cap Core	23.6%	9.4%	16.9%	9.5%	15.8%	14.8%	20.5%	0.63	1.22	0.46
Median Small Cap Core	20.3%	8.0%	15.8%	8.4%	15.1%	14.2%	19.7%	0.52	1.11	0.39
75th Percentile Small Cap Core	18.4%	6.0%	13.8%	7.5%	14.3%	13.4%	18.6%	0.38	0.99	0.33
<b>Russell 2000</b>	<b>21.3%</b>	<b>6.7%</b>	<b>14.5%</b>	<b>7.1%</b>	<b>16.0%</b>	<b>14.6%</b>	<b>20.1%</b>	<b>0.41</b>	<b>0.98</b>	<b>0.31</b>
25th Percentile Intl Core Market Equity	3.3%	0.4%	8.6%	3.0%	12.9%	13.5%	19.4%	0.02	0.65	0.13
Median Intl Core Market Equity	1.3%	-0.6%	7.5%	2.1%	12.3%	13.1%	18.7%	-0.06	0.58	0.07
75th Percentile Intl Core Market Equity	-0.6%	-1.7%	6.5%	1.4%	11.7%	12.5%	18.0%	-0.15	0.48	0.04
<b>MSCI EAFE</b>	<b>1.5%</b>	<b>-1.2%</b>	<b>7.0%</b>	<b>1.2%</b>	<b>12.7%</b>	<b>13.5%</b>	<b>18.6%</b>	<b>-0.10</b>	<b>0.51</b>	<b>0.03</b>
25th Percentile Emerging Markets	13.7%	-0.1%	4.7%	4.5%	16.4%	16.4%	24.2%	-0.01	0.29	0.17
Median Emerging Markets	10.4%	-1.2%	3.2%	3.2%	15.5%	15.8%	23.5%	-0.09	0.20	0.10
75th Percentile Emerging Markets	6.8%	-2.5%	1.9%	2.2%	14.5%	14.9%	22.6%	-0.16	0.11	0.06
<b>MSCI EM</b>	<b>11.6%</b>	<b>-2.2%</b>	<b>1.6%</b>	<b>2.2%</b>	<b>16.3%</b>	<b>16.2%</b>	<b>23.4%</b>	<b>-0.14</b>	<b>0.10</b>	<b>0.06</b>
25th Percentile Core Bond	3.8%	3.7%	3.3%	5.2%	3.1%	3.1%	3.8%	1.19	1.11	1.29
Median Core Bond	3.2%	3.4%	2.9%	4.9%	3.0%	2.9%	3.5%	1.10	0.97	1.19
75th Percentile Core Bond	2.7%	3.1%	2.6%	4.6%	2.8%	2.8%	3.3%	1.01	0.84	1.09
<b>Barclays Capital Aggregate</b>	<b>2.6%</b>	<b>3.0%</b>	<b>2.2%</b>	<b>4.3%</b>	<b>3.0%</b>	<b>2.9%</b>	<b>3.3%</b>	<b>0.97</b>	<b>0.74</b>	<b>1.09</b>

## Active vs. Passive Summary

### eVestment Alliance Universes vs. Benchmarks

<i>Data as of December 31, 2016</i>	Rates of Return				Standard Deviation			Sharpe Ratio		
	1 Year	3 Years	5 Years	10 Years	3 Years	5 Years	10 Years	3 Years	5 Years	10 Years
25th Percentile Large Cap Growth	7.5%	8.6%	15.0%	8.8%	12.6%	12.4%	17.0%	0.72	1.29	0.51
Median Large Cap Growth	4.6%	7.3%	14.0%	8.1%	11.8%	11.6%	16.0%	0.61	1.20	0.46
75th Percentile Large Cap Growth	1.7%	6.0%	13.0%	7.2%	11.1%	11.0%	15.3%	0.49	1.09	0.41
<b>Russell 1000 Growth</b>	<b>7.1%</b>	<b>8.6%</b>	<b>14.5%</b>	<b>8.3%</b>	<b>11.3%</b>	<b>10.9%</b>	<b>15.5%</b>	<b>0.75</b>	<b>1.32</b>	<b>0.49</b>
25th Percentile Large Cap Value	17.5%	9.0%	15.4%	7.6%	12.4%	11.9%	16.8%	0.80	1.40	0.45
Median Large Cap Value	15.0%	8.0%	14.3%	6.7%	11.5%	11.1%	15.8%	0.68	1.30	0.38
75th Percentile Large Cap Value	11.8%	6.8%	13.0%	6.0%	10.6%	10.2%	14.6%	0.56	1.15	0.32
<b>Russell 1000 Value</b>	<b>17.3%</b>	<b>8.6%</b>	<b>14.8%</b>	<b>5.7%</b>	<b>10.9%</b>	<b>10.6%</b>	<b>16.1%</b>	<b>0.78</b>	<b>1.39</b>	<b>0.31</b>
25th Percentile Small Cap Growth	15.0%	7.0%	16.0%	9.6%	17.0%	15.9%	21.0%	0.46	1.11	0.47
Median Small Cap Growth	10.6%	4.6%	13.9%	8.5%	16.0%	15.1%	20.0%	0.28	0.93	0.38
75th Percentile Small Cap Growth	7.1%	2.4%	12.2%	7.0%	15.1%	14.2%	19.1%	0.14	0.79	0.31
<b>Russell 2000 Growth</b>	<b>11.3%</b>	<b>5.1%</b>	<b>13.7%</b>	<b>7.8%</b>	<b>16.9%</b>	<b>15.5%</b>	<b>20.6%</b>	<b>0.29</b>	<b>0.88</b>	<b>0.34</b>
25th Percentile Small Cap Value	30.6%	10.3%	17.0%	9.6%	16.2%	14.9%	21.1%	0.68	1.23	0.45
Median Small Cap Value	27.0%	8.8%	16.0%	8.5%	15.0%	14.0%	19.7%	0.58	1.14	0.39
75th Percentile Small Cap Value	21.7%	6.2%	14.4%	7.5%	14.3%	13.3%	18.6%	0.40	1.02	0.34
<b>Russell 2000 Value</b>	<b>31.7%</b>	<b>8.3%</b>	<b>15.1%</b>	<b>6.3%</b>	<b>15.7%</b>	<b>14.2%</b>	<b>20.3%</b>	<b>0.52</b>	<b>1.05</b>	<b>0.27</b>

## Active vs. Passive Summary

### eVestment Alliance Universes vs. Benchmarks

Rates of Return (Rolling 10-Year)	12/31/2016	12/31/2015	12/31/2014	12/31/2013	12/31/2012	12/31/2011	12/31/2010	12/31/2009	12/31/2008	12/31/2007	12/31/2006
<i>Data as of December 31, 2016</i>											
Median Large Cap Core	7.3%	7.7%	8.6%	8.2%	7.9%	3.9%	2.9%	1.5%	0.5%	7.4%	9.7%
<b>S&amp;P 500</b>	<b>7.0%</b>	<b>7.3%</b>	<b>7.7%</b>	<b>7.4%</b>	<b>7.1%</b>	<b>2.9%</b>	<b>1.4%</b>	<b>-1.0%</b>	<b>-1.4%</b>	<b>5.9%</b>	<b>8.4%</b>
Median Small Cap Core	8.4%	8.0%	9.2%	10.5%	10.9%	7.4%	8.5%	6.8%	6.0%	9.8%	12.8%
<b>Russell 2000</b>	<b>7.1%</b>	<b>6.8%</b>	<b>7.8%</b>	<b>9.1%</b>	<b>9.7%</b>	<b>5.6%</b>	<b>6.3%</b>	<b>3.5%</b>	<b>3.0%</b>	<b>7.1%</b>	<b>9.4%</b>
Median Intl Core Equity	2.1%	4.3%	5.8%	8.2%	9.5%	6.2%	5.4%	2.8%	3.3%	10.9%	10.3%
<b>MSCI EAFE</b>	<b>1.2%</b>	<b>3.5%</b>	<b>4.9%</b>	<b>7.4%</b>	<b>8.7%</b>	<b>5.1%</b>	<b>3.9%</b>	<b>1.6%</b>	<b>1.2%</b>	<b>9.0%</b>	<b>8.1%</b>
Median Emerging Markets	3.2%	5.0%	10.0%	12.3%	17.6%	14.9%	17.1%	11.4%	11.2%	16.7%	12.3%
<b>MSCI EM</b>	<b>2.2%</b>	<b>4.0%</b>	<b>8.8%</b>	<b>11.5%</b>	<b>16.9%</b>	<b>14.2%</b>	<b>16.2%</b>	<b>10.1%</b>	<b>9.3%</b>	<b>14.5%</b>	<b>9.4%</b>
Median Core Bond	4.9%	5.0%	5.2%	5.0%	5.7%	6.1%	6.2%	6.6%	5.5%	6.1%	6.4%
<b>Barclays Capital Aggregate</b>	<b>4.3%</b>	<b>4.5%</b>	<b>4.7%</b>	<b>4.6%</b>	<b>5.2%</b>	<b>5.8%</b>	<b>5.8%</b>	<b>6.3%</b>	<b>5.6%</b>	<b>6.0%</b>	<b>6.2%</b>

## Active vs. Passive Summary

### eVestment Alliance Universes vs. Benchmarks

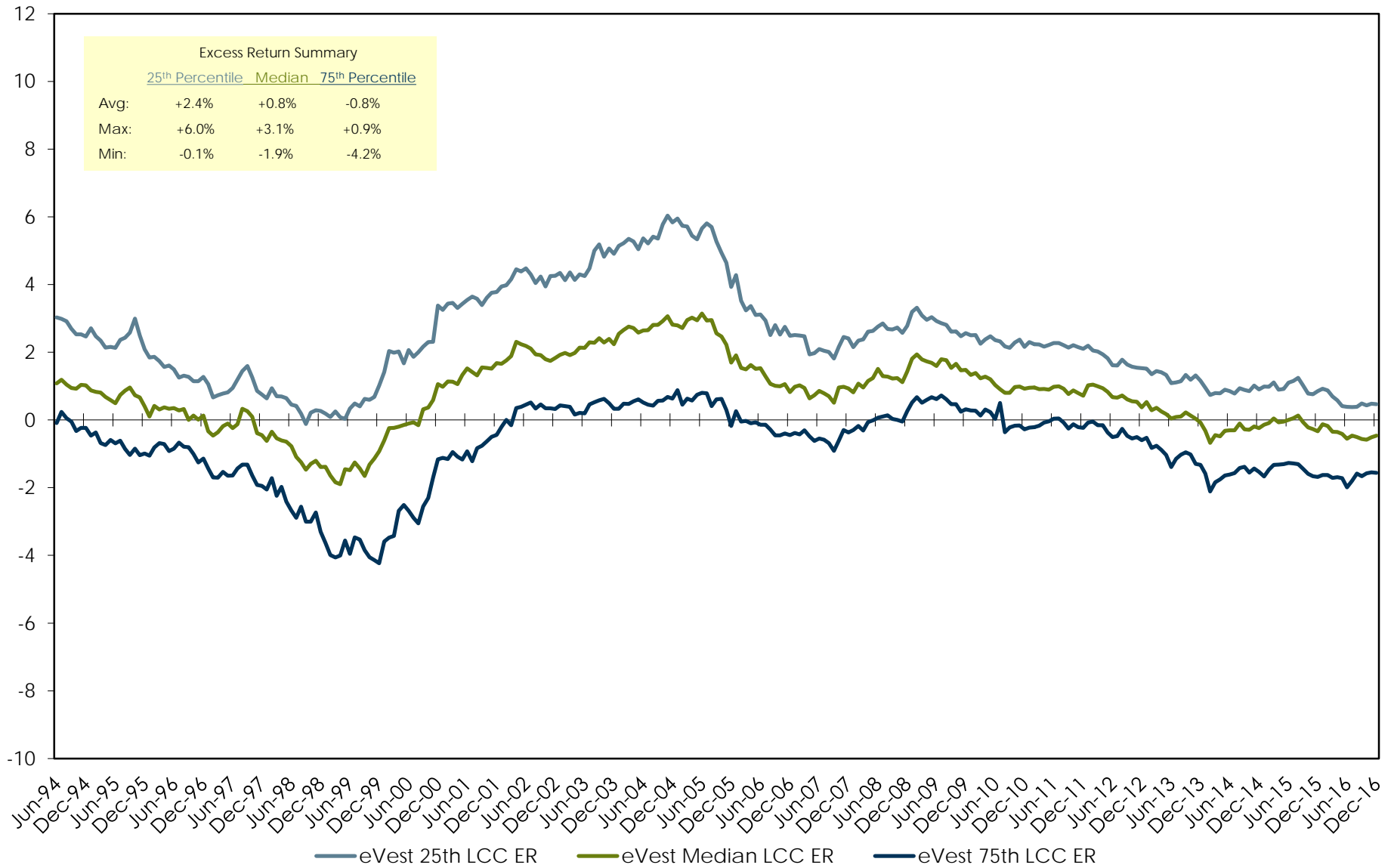
Rates of Return (Rolling 10-Year)	12/31/2016	12/31/2015	12/31/2014	12/31/2013	12/31/2012	12/31/2011	12/31/2010	12/31/2009	12/31/2008	12/31/2007	12/31/2006
<i>Data as of December 31, 2016</i>											
Median Large Cap Growth	8.1%	8.5%	8.6%	8.3%	7.9%	3.6%	1.7%	-0.6%	-0.7%	7.1%	8.4%
<b>Russell 1000 Growth</b>	<b>8.3%</b>	<b>8.5%</b>	<b>8.5%</b>	<b>7.8%</b>	<b>7.5%</b>	<b>2.6%</b>	<b>0.0%</b>	<b>-4.0%</b>	<b>-4.3%</b>	<b>3.8%</b>	<b>5.4%</b>
Median Large Cap Value	6.7%	7.2%	8.3%	8.5%	8.1%	4.7%	4.5%	4.3%	2.5%	8.5%	11.0%
<b>Russell 1000 Value</b>	<b>5.7%</b>	<b>6.2%</b>	<b>7.3%</b>	<b>7.6%</b>	<b>7.4%</b>	<b>3.9%</b>	<b>3.3%</b>	<b>2.5%</b>	<b>1.4%</b>	<b>7.7%</b>	<b>11.0%</b>
Median Small Cap Growth	8.5%	8.4%	9.5%	10.5%	10.9%	5.8%	5.3%	1.7%	3.2%	9.0%	10.2%
<b>Russell 2000 Growth</b>	<b>7.8%</b>	<b>8.0%</b>	<b>8.5%</b>	<b>9.4%</b>	<b>9.8%</b>	<b>4.5%</b>	<b>3.8%</b>	<b>-1.4%</b>	<b>-0.8%</b>	<b>4.3%</b>	<b>4.9%</b>
Median Small Cap Value	8.5%	7.7%	9.1%	10.8%	11.5%	8.7%	10.8%	10.3%	7.5%	10.8%	14.6%
<b>Russell 2000 Value</b>	<b>6.3%</b>	<b>5.6%</b>	<b>6.9%</b>	<b>8.6%</b>	<b>9.5%</b>	<b>6.4%</b>	<b>8.4%</b>	<b>8.3%</b>	<b>6.1%</b>	<b>9.1%</b>	<b>13.3%</b>



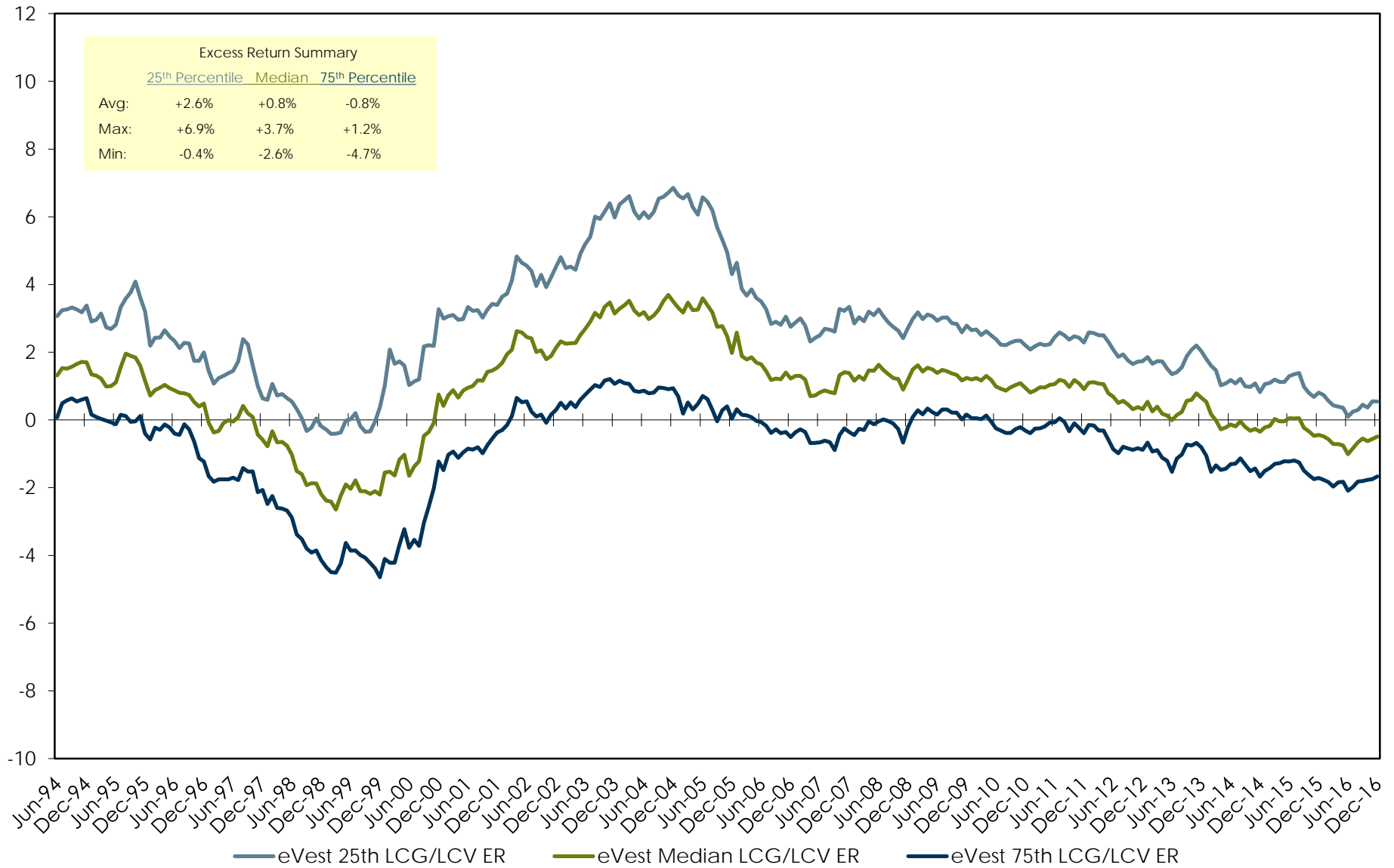
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**Large Cap Equity**

eVestment Large Core vs. S&P 500 Rolling 5-Year Excess Returns



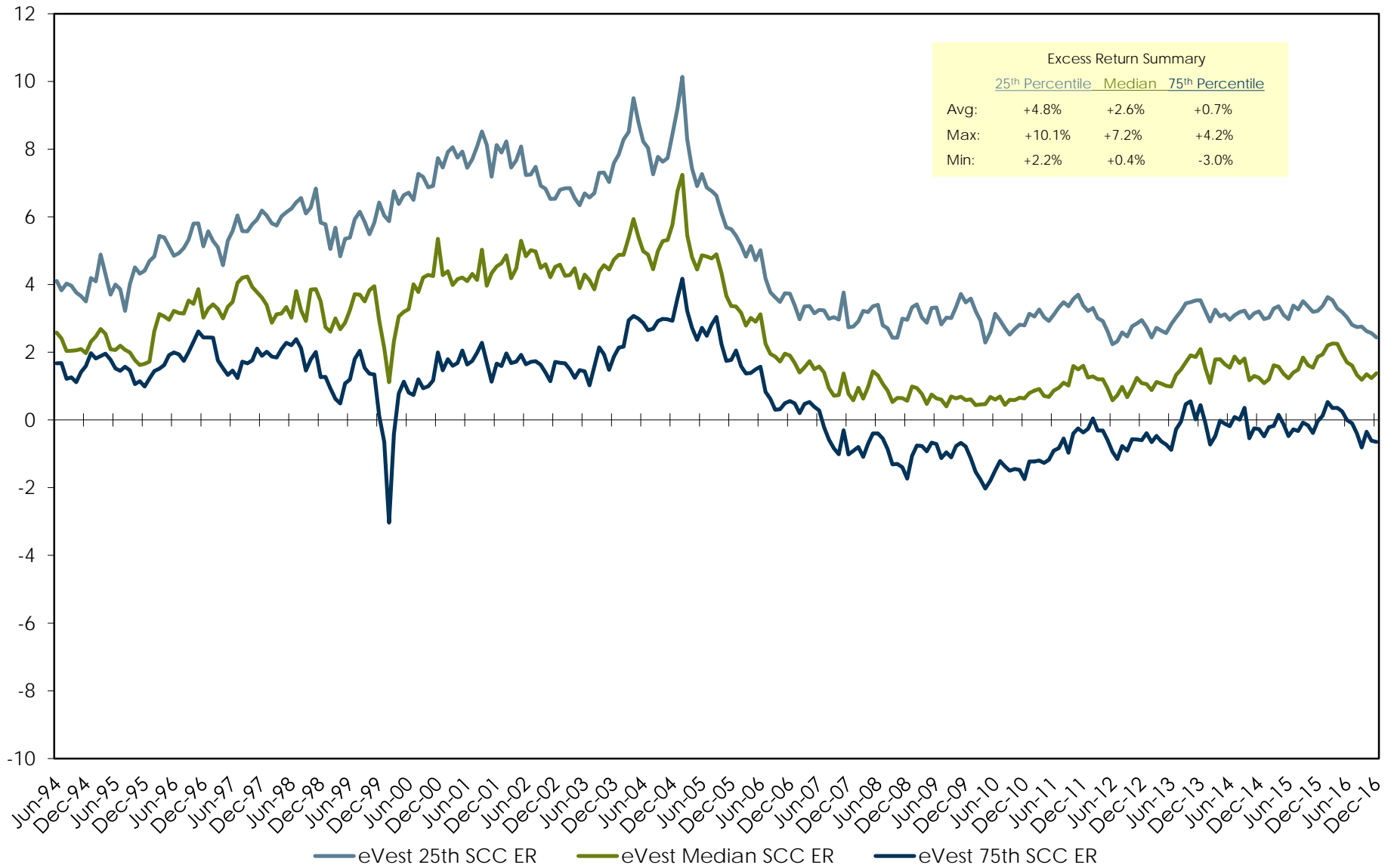
eVestment 50/50 LCG/LCV Combo vs. S&P 500 Rolling 5-Year Excess Returns



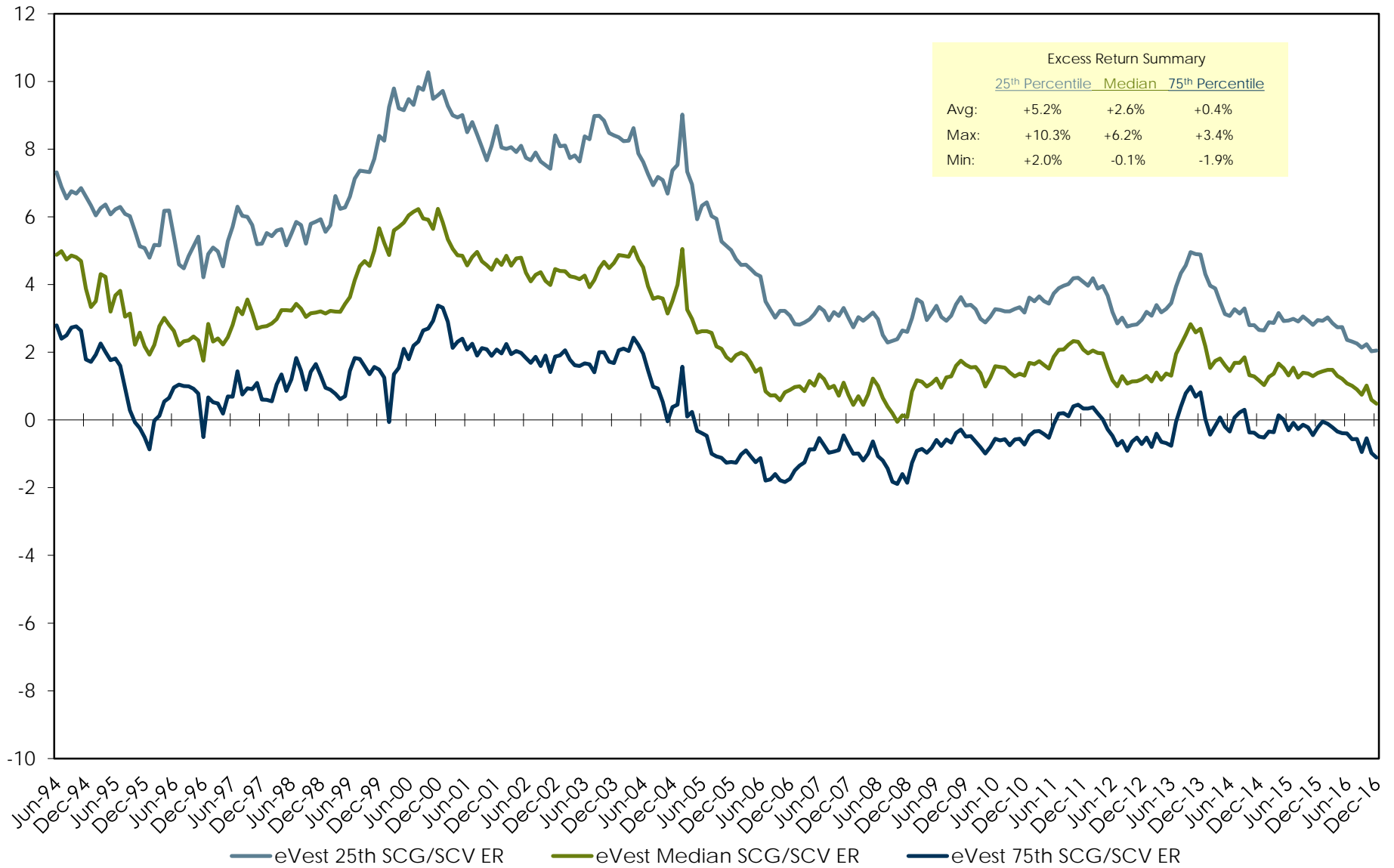
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Small/Mid Cap

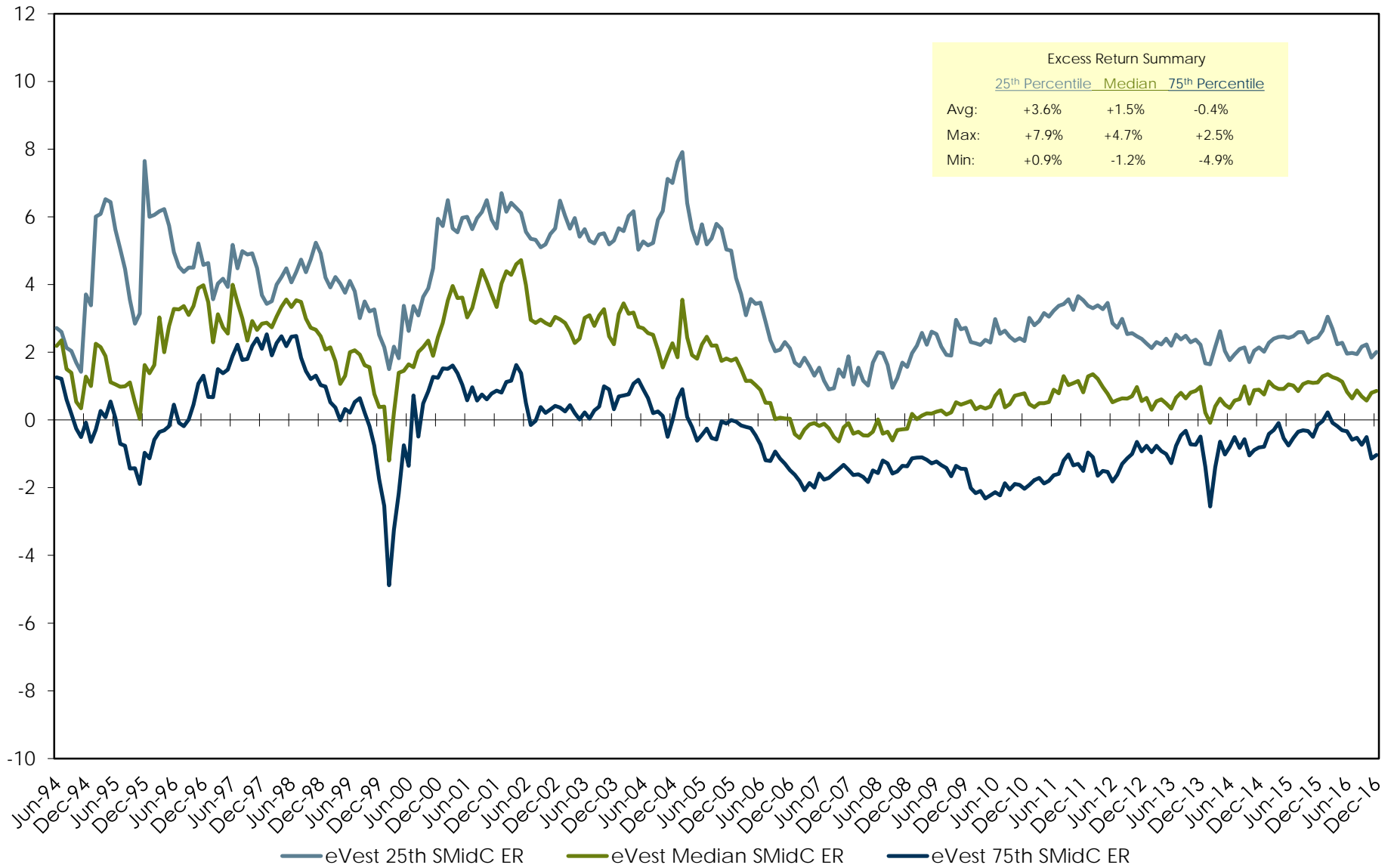
eVestment Small Core vs. Russell 2000 Rolling 5-Year Excess Returns



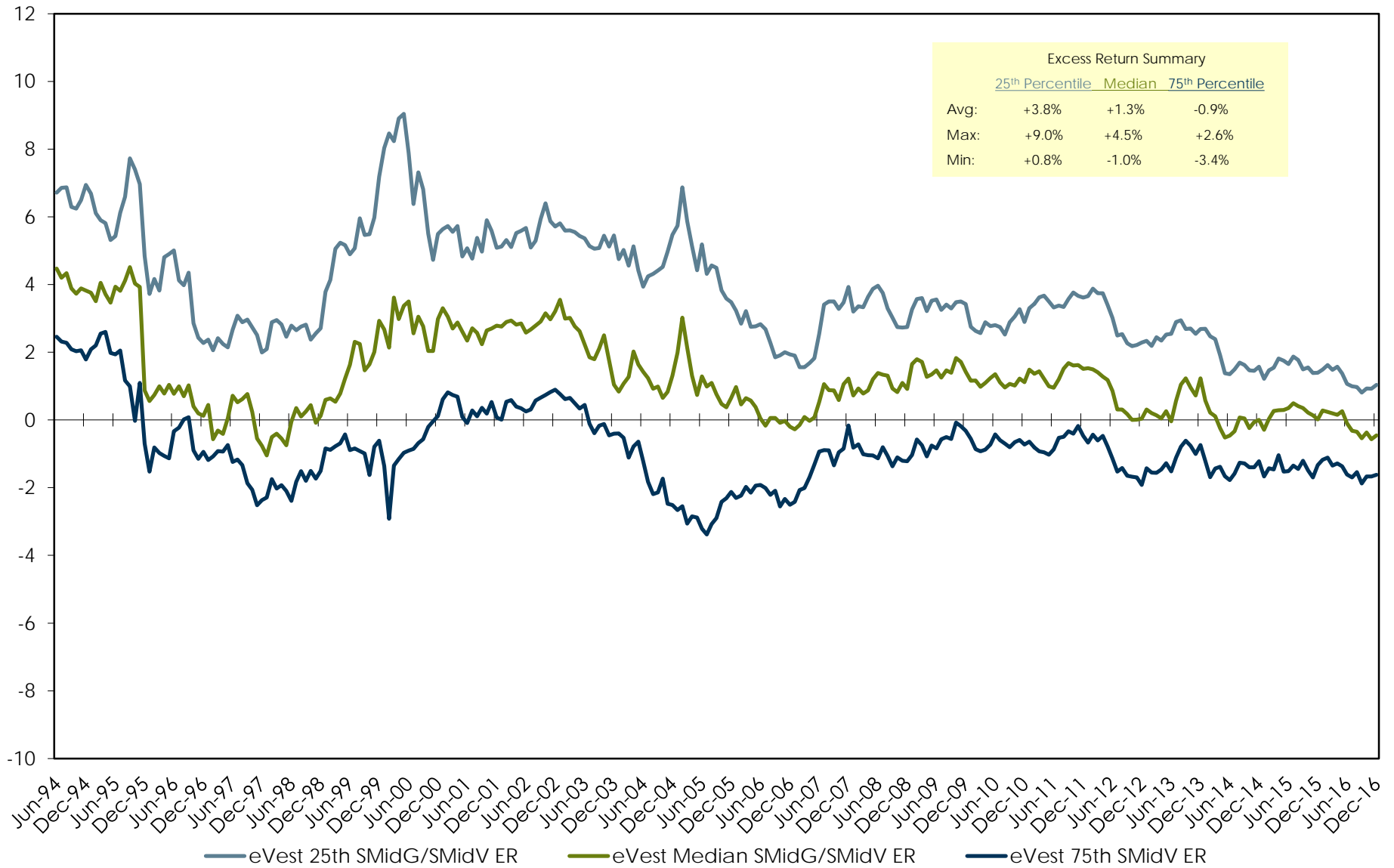
eVestment 50/50 SCG/SCV Combo vs. Russell 2000 Rolling 5-Year Excess Returns



eVestment SMid Core vs. Russell 2500 Rolling 5-Year Excess Returns



eVestment 50/50 SMidG/SMidV Combo vs. Russell 2500 Value Rolling 5-Year Excess Returns

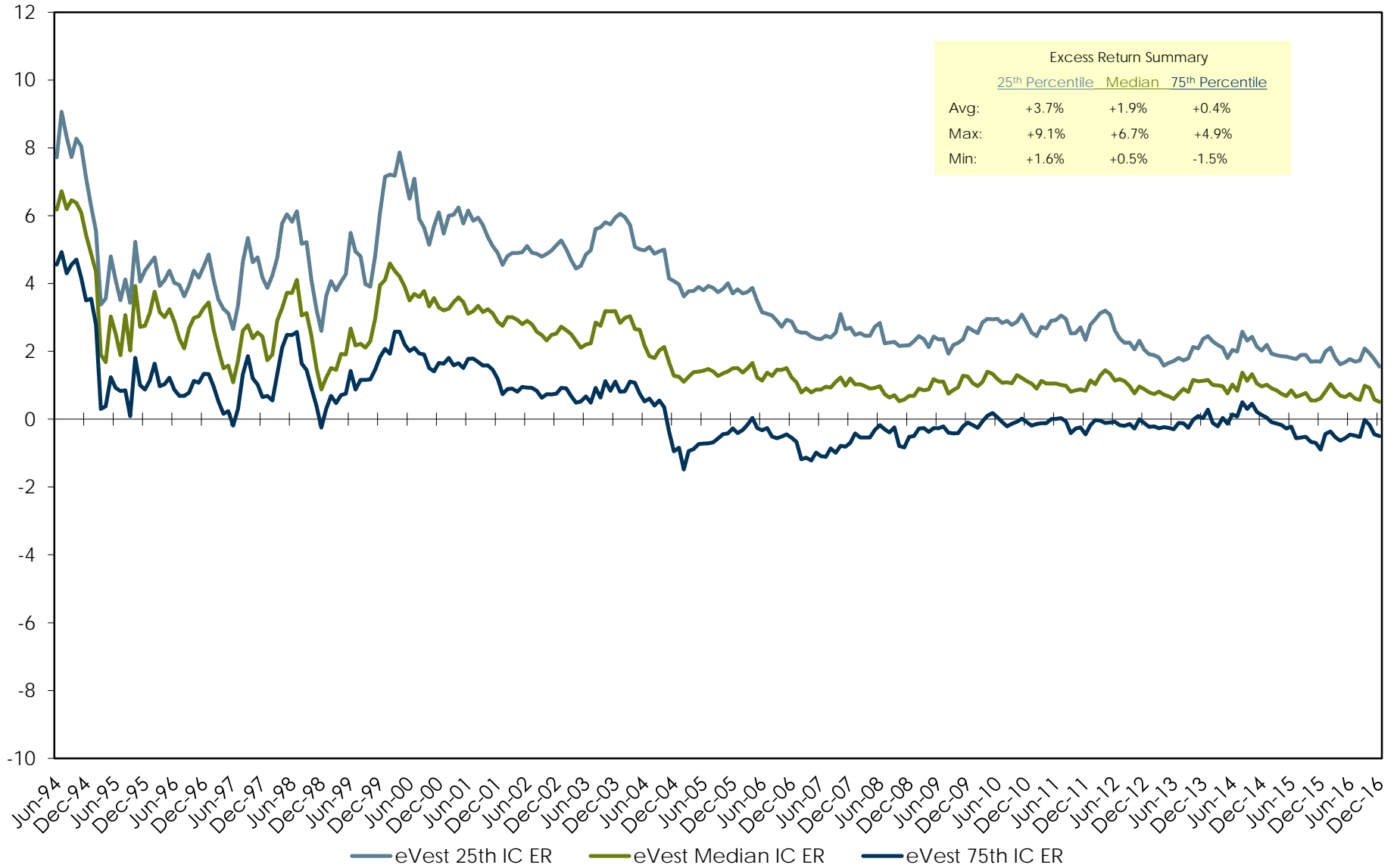




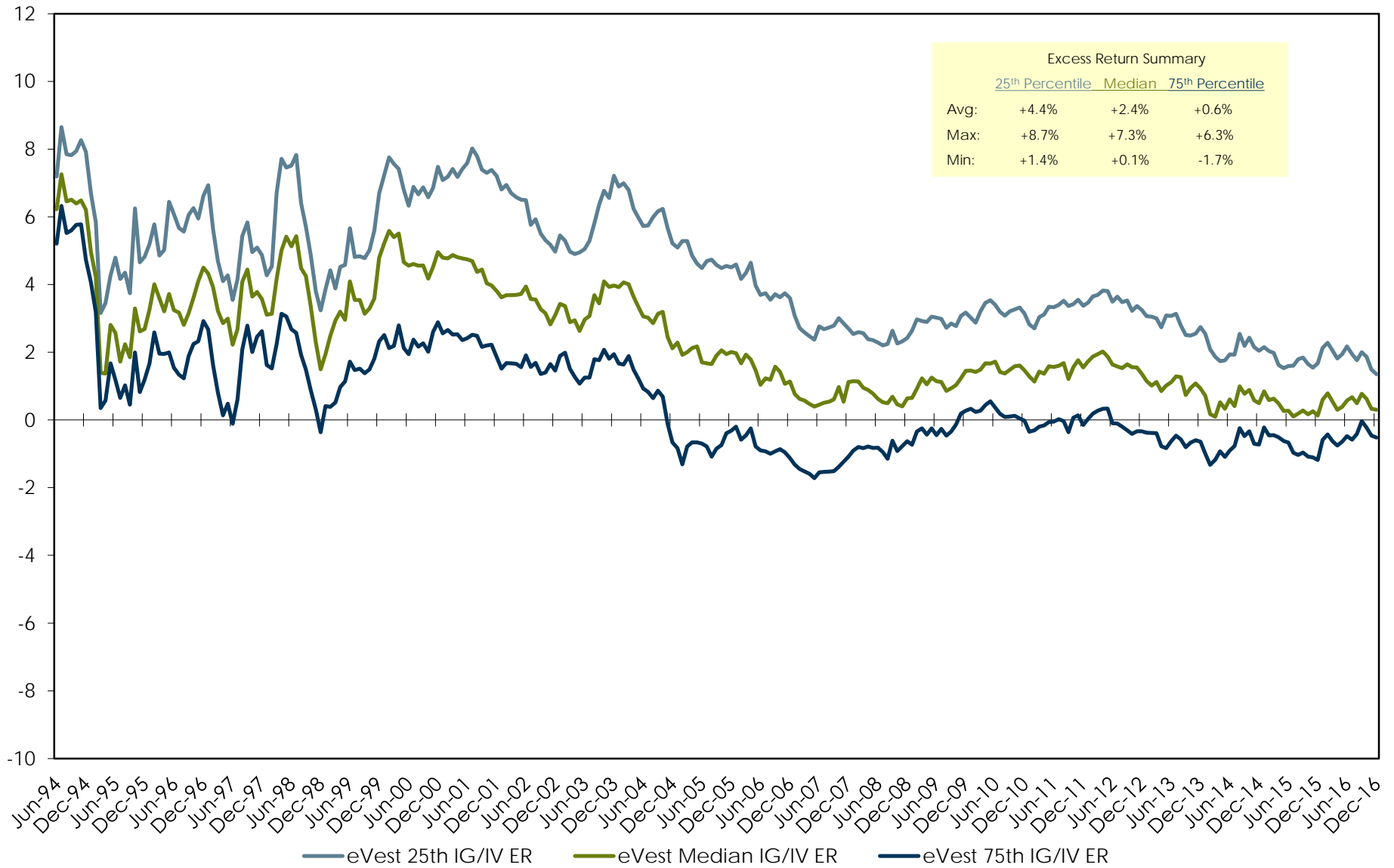
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## International Equity

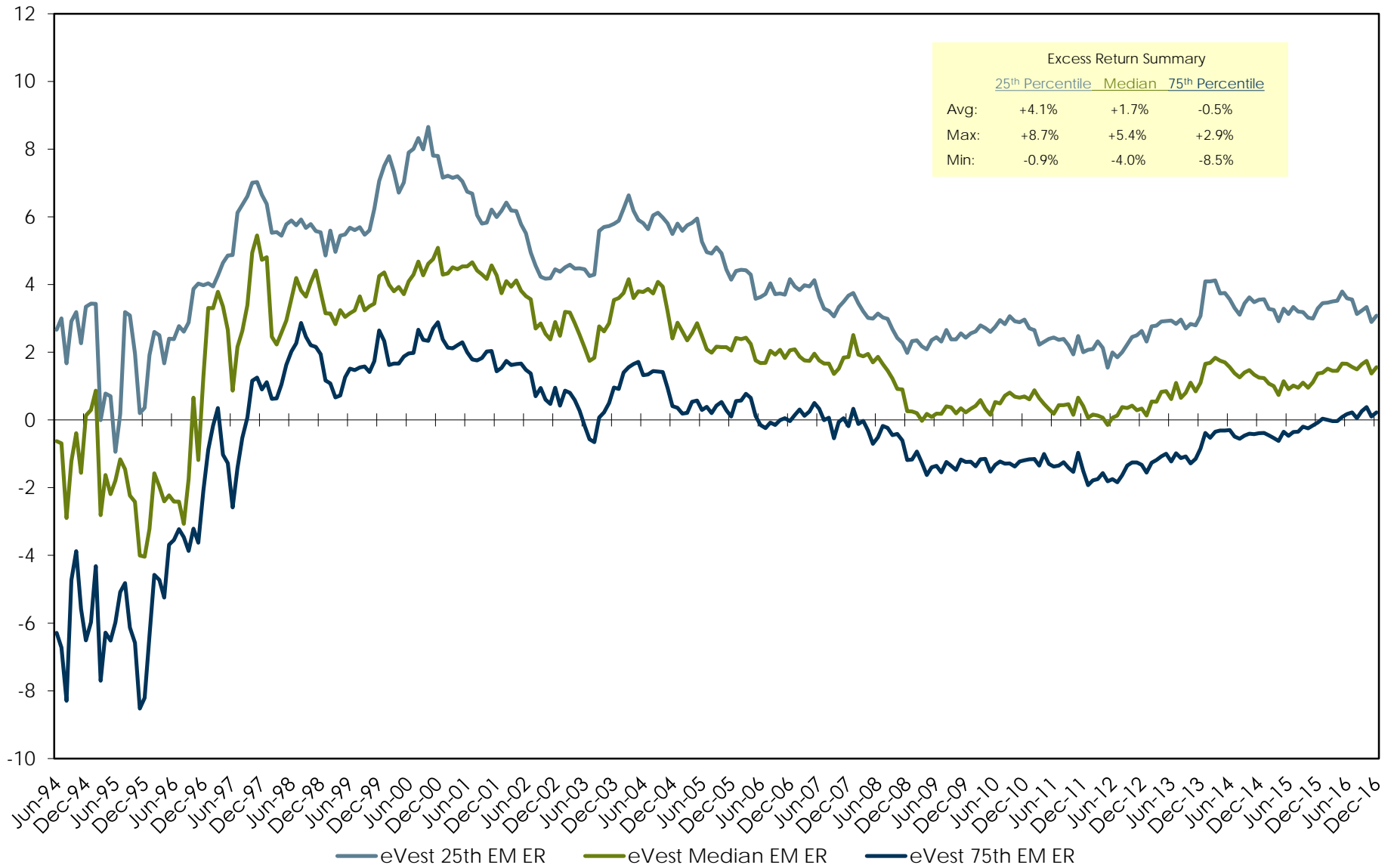
eVestment International Core vs. MSCI EAFE Rolling 5-Year Excess Returns



eVestment 50/50 IG/IV Combo vs. MSCI EAFE Rolling 5-Year Excess Returns



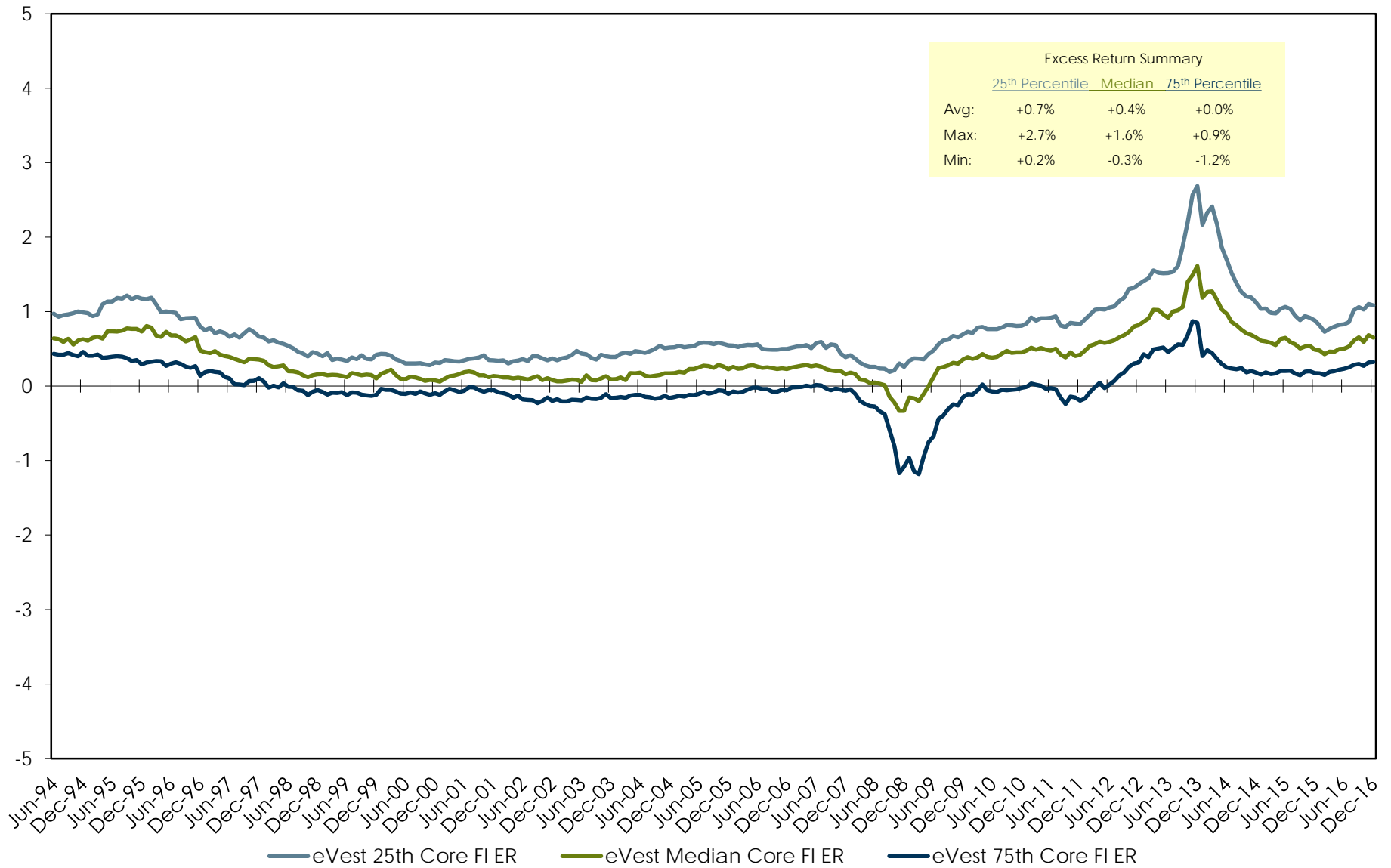
eVestment Emerging Markets vs. MSCI EM Rolling 5-Year Excess Returns



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**Core Fixed Income**

eVestment Core Fixed Income vs. Barclays Capital Aggregate Rolling 5-Year Excess Returns



### U.S. Equity Universes

**Large Cap Core** – eVestment Alliance universe of U.S. Equity products that invest primarily in large capitalization stock with fundamental characteristics between growth and value or products that invest in a relatively even mix of growth and value stocks/sectors. The expected benchmarks for this universe includes the Russell 1000 Index or S&P 500 Index. Managers in this category typically indicate “Primary Capitalization Emphasis” equal to Large Cap and “Primary Style Emphasis” equal to Core. This universe consists of 247 firms representing 391 products.

**Large Cap Growth** – eVestment Alliance universe of U.S. Equity products that invest primarily in large capitalization stocks with fundamental characteristics showing high earnings growth expectations or in fast-growing economic sectors. The expected benchmarks for this universe include the Russell 1000 Growth Index, S&P 500 Index or the S&P/BARRA Growth Index. Managers in this category typically indicate a “Primary Capitalization Emphasis” equal to Large Cap and a “Primary Style Emphasis” equal to Growth. This universe consists of 231 firms representing 357 products.

**Large Cap Value** – eVestment Alliance universe of U.S. Equity products that invest primarily in large capitalization stocks with fundamental characteristics showing them to be under-priced or in slower growing economic sectors. The expected benchmarks for this universe includes the Russell 1000 Value Index, S&P 500 Index or the S&P/BARRA Value Index. Managers in this category typically indicate a “Primary Capitalization Emphasis” equal to Large Cap and a “Primary Style Emphasis” equal to Value. This universe consists of 284 firms representing 439 products.

**Small Cap Core** – eVestment Alliance universe of U.S. Equity products that invest primarily in small capitalization stocks with fundamental characteristics between growth and value or products that invest in a relatively even mix of growth and value stocks/sectors. The expected benchmark for this universe is the Russell 2000 Index. Managers in this category will typically indicate a “Primary Capitalization Emphasis” equal to Small Cap and a “Primary Style Emphasis” equal to Core. This universe consists of 180 firms representing 216 products.

**Small Cap Growth** – eVestment Alliance universe of U.S. Equity products that invest primarily in small capitalization stocks with fundamental characteristics showing high earnings growth expectations or in fast-growing economic sectors. The expected benchmarks for this universe include the Russell 2000 Index, S&P 600 Index or the Russell 2000 Growth Index. Managers in this category typically indicate a “Primary Capitalization Emphasis” equal to Small Cap and a “Primary Style Emphasis” equal to Growth. This universe consists of 169 firms representing 204 products.

**Small Cap Value** – eVestment Alliance universe of U.S. Equity products that invest primarily in small capitalization stocks with fundamental characteristics showing them to be under-priced or in slower growing economic sectors. The expected benchmarks for this universe include the Russell 2000 Index or Russell 2000 Value Index. Managers in this category will typically indicate a “Primary Capitalization Emphasis” equal to Small Cap and a “Primary Style Emphasis” equal to Value. This universe consists of 212 firms representing 267 products.

**SMid Cap Core** – eVestment Alliance universe of U.S. Equity products that invest primarily in small and mid capitalization stocks with fundamental characteristics between growth and value or products that invest in a relatively even mix of growth and value stocks/sectors. The expected benchmarks for this universe includes the Russell 2500 Index. Managers in this category typically indicate a “Primary Capitalization Emphasis” equal to Small-Mid Cap and a “Primary Style Emphasis” equal to Core. This universe is comprised of 74 firms representing 81 products.

**SMid Cap Growth** – eVestment Alliance universe of U.S. Equity products that invest primarily in small and mid capitalization stocks with fundamental characteristics showing high earnings growth expectations or in fast-growing economic sectors. The expected benchmarks for this universe include the Russell 2500 Index or Russell 2500 Growth Index. Managers in this category typically indicate a “Primary Capitalization Emphasis” equal to Small-Mid Cap and a “Primary Style Emphasis” equal to Growth. This universe consists of 82 firms representing 88 products.

**SMid Cap Value** – eVestment Alliance universe of U.S. Equity products that invest primarily in small and mid capitalization stocks with fundamental characteristics showing them to be under-priced or in slower growing economic sectors. The expected benchmarks for this universe include the Russell 2500 Index or Russell 2500 Value Index. Managers in this category typically indicate a “Primary Capitalization Emphasis” equal to Small-Mid Cap and a “Primary Style Emphasis” equal to Value. This universe consists of 88 firms representing 96 products.

### Non-U.S. Equity Universes

**International Core** - eVestment Alliance universes of EAFE Large Cap Core, EAFE All Cap Core, ACWI ex-US Large Cap Core, and ACWI ex-us All Cap Core actively-managed products (universes previously comprised the International Core Equity Universe). The expected benchmarks for this universe include the MSCI World ex-US Index, MSCI EAFE Index and MSCI ACWI ex-US Index. The universe consists of 171 firms representing 326 products.

**International Value** - eVestment Alliance universes of EAFE Large Cap Value, EAFE All Cap Value, ACWI ex-US US Large Cap Value, and ACWI ex-US All Cap Value actively-managed products (universes previously comprised the International Value Equity Universe). The expected benchmarks for this universe include the MSCI World ex-US Index, MSCI EAFE Index, MSCI ACWI ex-US Index, MSCI World ex-US Value Index, and MSCI ACWI ex-US Value Index. The universe consists of 82 firms representing 130 products.

**International Growth** - eVestment Alliance universes of EAFE Large Cap Growth, EAFE All Cap Growth, ACWI ex-US US Large Cap Growth, and ACWI ex-us All Cap Growth actively-managed products (universes previously comprised the International Growth Equity Universe). The expected benchmarks for this universe include the MSCI World ex-US Index, MSCI EAFE Index, MSCI ACWI ex-US Index, MSCI World ex-US Growth Index, and MSCI ACWI ex-US Growth Index. The universe consists of 99 firms representing 151 products.

**Emerging Markets**- eVestment Alliance universes of equity products that invest primarily in small, middle, and/or large capitalization stocks in emerging market countries. The expected benchmarks for this universe include the MSCI EM Free Index or IFC Investable Index. Managers in this category will typically indicate a “Primary Capitalization Emphasis” equal to Small, Mid, or Large Cap and a “Primary Emphasis equal to Growth, Value, or Core. This universe consists of 255 firms representing 504 products.

### Fixed Income Universe

**Core Fixed Income** - eVestment Alliance universe of U.S. Fixed Income products that invest in High Quality debt (as rated by Moody's or S&P) The expected benchmarks for this universe include the Barclays Capital Aggregate Index and Barclays Capital Gov't/Credit Index. Managers in this category will typically indicate a “Fixed Income Style Emphasis” equal to Core and a “Product Duration Emphasis” equal to Core or Intermediate. This universe consists of 196 firms representing 256 products.

**Note:** eVestment Alliance is a publicly available universe populated with approximately 41,000 products (strategies) submitted by approximately 10,000 firms. The universe data is self-reported by investment managers.



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