

## Revisiting Core Principles

The FTSE RAFI Index series utilizes fundamental measures of company size (sales, cash flow, dividends, and book value) as a rebalancing anchor to trade against the constantly shifting expectations of the market.

This approach results in overweights to out-of-favor securities, which are often undervalued, and underweights to popular securities, which are often overvalued.

Over the short term, these exposures can cause relative performance to vary, but this simple, disciplined approach has historically outperformed the cap-weighted benchmark over the long-term.

As a rebalancing strategy that trades against recent winners, the Fundamental Index™ methodology will often face performance headwinds during periods of trending prices, sustained momentum, or extreme value underperformance - and benefit from performance tailwinds during periods of security mean reversion or value outperformance.

The FTSE RAFI All World 3000 Index is comprised of the largest 3000 companies by RAFI fundamental score in both developed and emerging markets.

## Performance

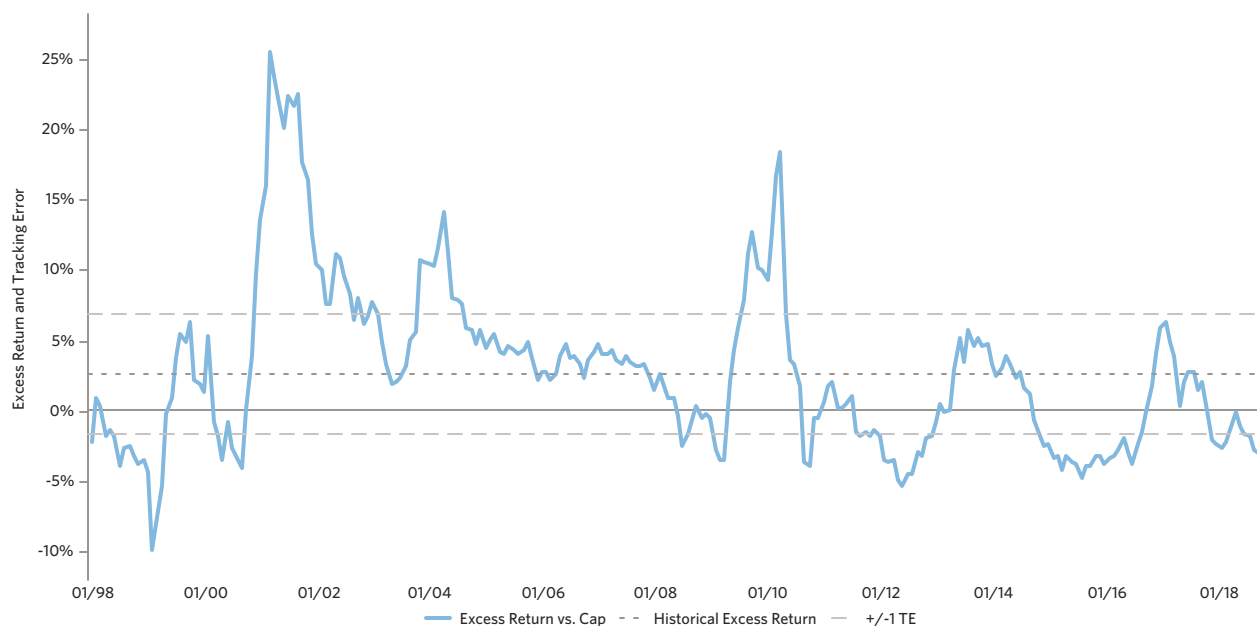
**Exhibit 1:**  
Performance Table

**Exhibit 2:**  
Rolling 1-Year Excess Returns

**Exhibit 1: Performance Table<sup>i</sup>**

	QTD	1-Yr	3-Yr	5-Yr	10-Yr	ITD*
FTSE RAFI™ All World 3000 Index	5.0%	10.3%	19.4%	12.8%	12.4%	14.0%
FTSE All World Series Index	5.7%	13.4%	19.8%	14.1%	12.3%	13.8%
Value Added	-0.7%	-3.1%	-0.5%	-1.3%	0.1%	0.2%
MSCI All Country World Index	5.7%	13.5%	19.9%	14.1%	12.2%	13.7%
Portfolio Standard Deviation		7.6%	8.8%	9.1%	15.0%	14.4%
Benchmark Standard Deviation		7.7%	8.7%	9.0%	13.1%	12.6%
Tracking Error		2.4%	2.8%	2.4%	3.9%	3.9%

**Exhibit 2: Rolling 1-Year Excess Returns<sup>ii</sup>**



i. Exhibit 1.  
Performance derived from FactSet. All returns are total returns in GBP. All returns greater than one year are annualized. Standard deviation and tracking error require a minimum of 1 year return history.  
\*Inception to Date (ITD) returns are calculated starting the first full month of returns following October 6, 2008.

ii. Exhibit 2.  
Performance derived from FactSet. All returns are total returns in GBP. Rolling 1-year excess returns and tracking error are calculated starting January 31, 1997. If applicable, strategy returns prior to inception are simulated. Inception date is October 6, 2008.

## The Value Premium

The strategy invests broadly across the entire economy; however a byproduct of the strategy's rebalancing process is a value tilt.

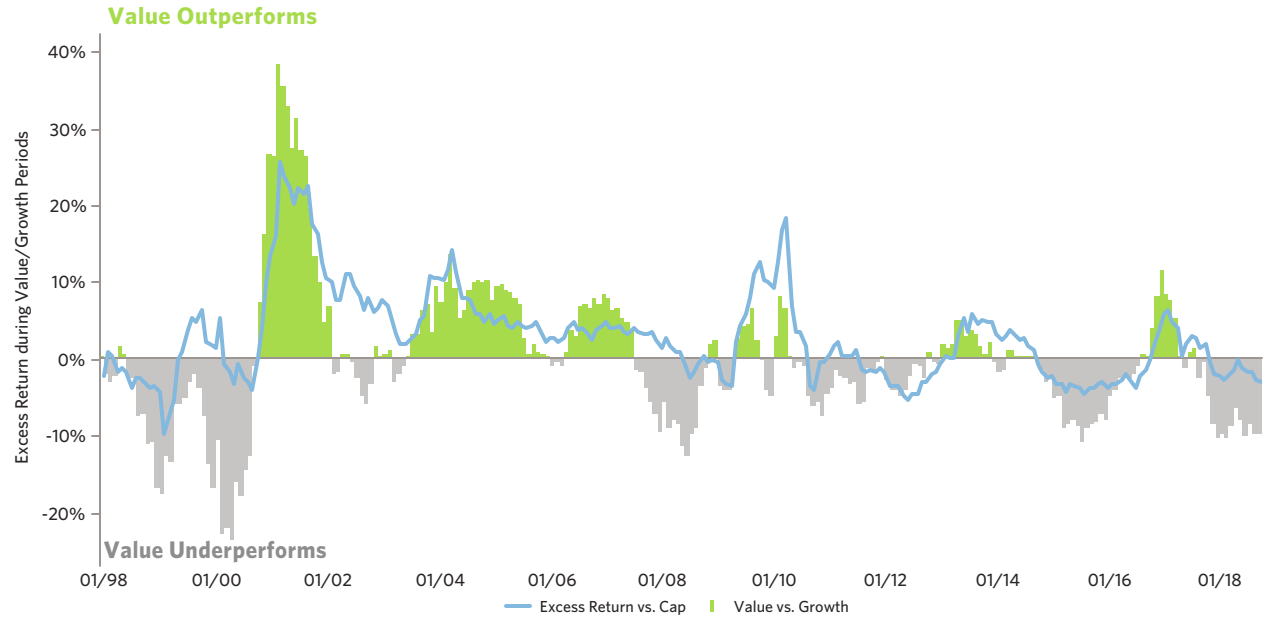
On a one-year rolling basis, the FTSE RAFI™ All World 3000 Index outperformed 90% of the time when value won and 41% of the time when growth won.

Generally, excess returns were achieved by taking advantage of mean reversion in stock prices which can sometimes take several years to run its course.

The FTSE RAFI™ All World 3000 Index delivered consistent outperformance over full market cycles, with positive excess returns in 63% of rolling 1-year periods, 69% of rolling 3-year periods, and 80% of rolling 5-year periods.

### Exhibit 3: Rolling 1-Year Excess Returns

**Exhibit 3: Rolling 1-Year Excess Returns<sup>i</sup>**



<sup>i</sup> Exhibit 3.  
FTSE RAFI™ All World 3000 Index rolling 1-year excess returns are measured against FTSE All World Series Index. Value / Growth periods measured by rolling 1-year excess returns of MSCI AC World Index Value vs. MSCI AC World Index Growth. Calculation starts on January 31, 1997. Strategy returns prior to inception are simulated. Strategy inception is October 6, 2008.

## Portfolio Characteristics

The FTSE RAFI™ All World 3000 Index is attractively positioned relative to the cap-weighted benchmark.

Exhibit 4:  
Portfolio Characteristics

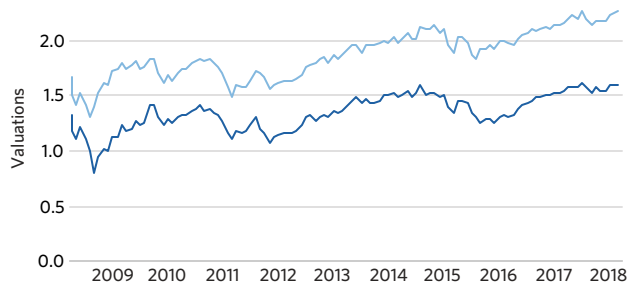
Exhibit 5:  
Historical Portfolio Characteristics

## Exhibit 4: Portfolio Characteristics<sup>i</sup>

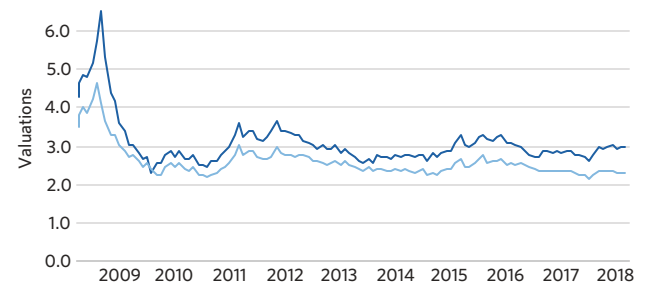
	Number of Holdings	Active Share	Price to Sales	Price to Cash Flow	Price to Book	Div. Yield	Market Cap. (Billions)	Sharpe Ratio*	Info. Ratio*	Tracking Error*
FTSE RAFI™ All World 3000 Index	3031	29.8	1.0	7.4	1.6	3.0%	104	0.80	0.05	3.9%
FTSE All-World Index	3215	--	1.7	10.4	2.3	2.3%	153	0.90	--	--

## Exhibit 5: Historical Portfolio Characteristics<sup>ii</sup>

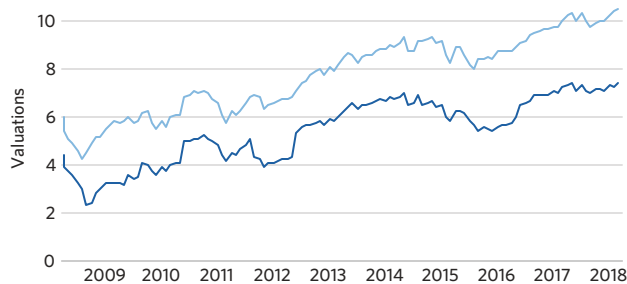
Price to Book



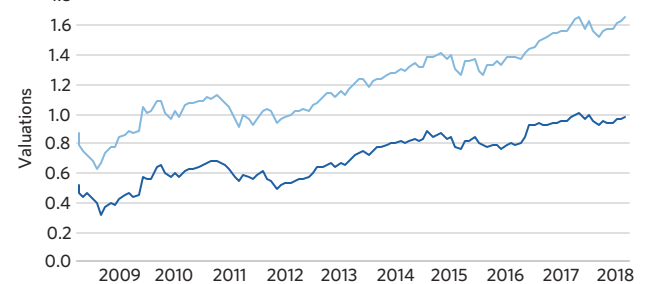
Dividend Yield (%)



Price to Cash Flow



Price to Sales



— FTSE RAFI™ All World 3000 Index (Left) — FTSE All-World Index (Left)

i. Exhibit 4.  
Portfolio characteristics data derived from FactSet.  
\*Sharpe Ratio, Information Ratio, and Tracking Error are calculated starting the first full month of returns following October 6, 2008. Minimum 1-year return history. The 3-mo US Treasury Bill return is used as a proxy for risk-free rate. If applicable, strategy returns prior to inception are simulated. Inception date is October 6, 2008.

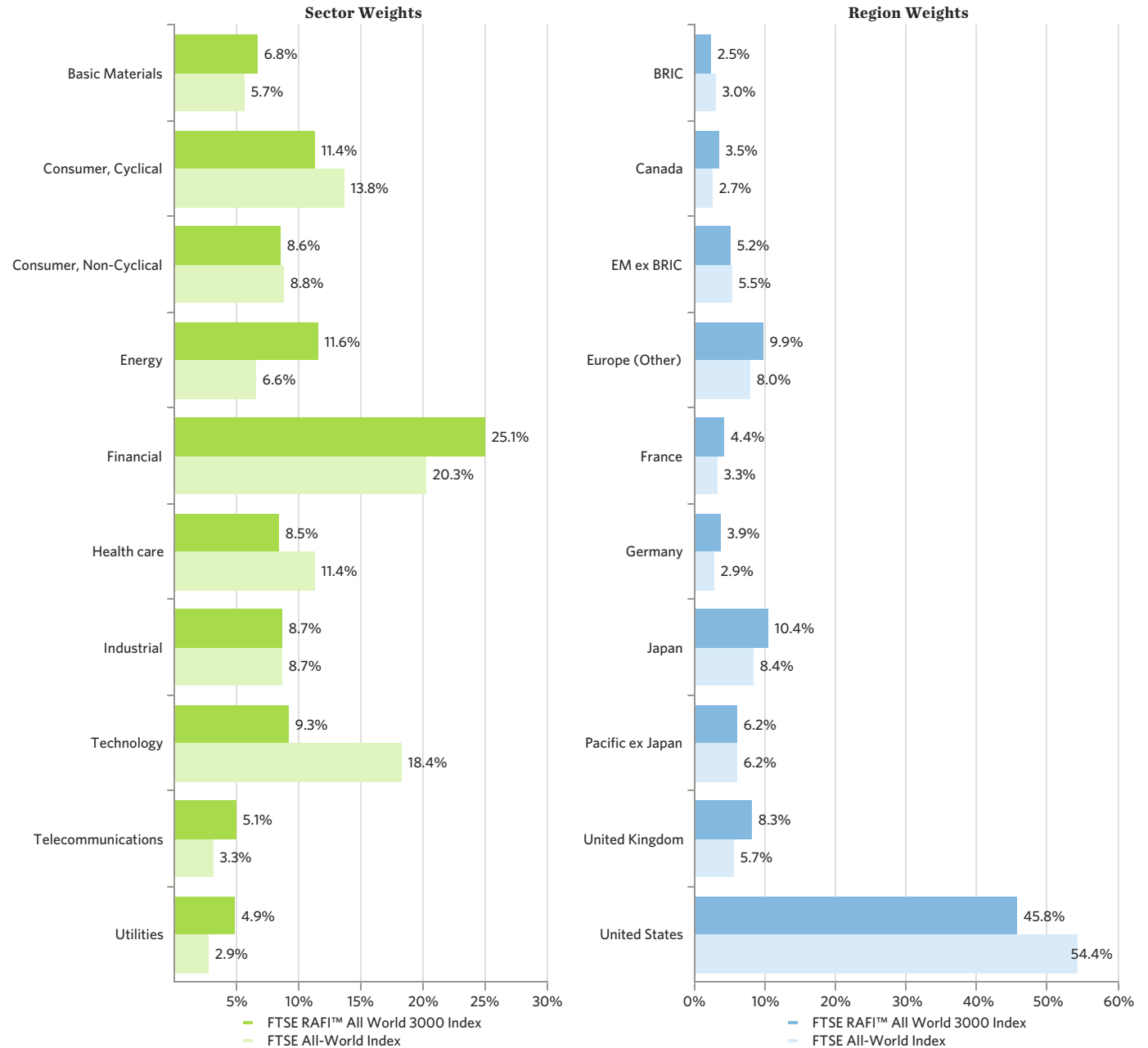
ii. Exhibit 5.  
Portfolio characteristics derived from FactSet. Data prior to strategy inception is simulated. Strategy inception is October 6, 2008.



# Current Position

**Exhibit 6:**  
Sector and Region Weights

**Exhibit 6: Sector and Region Weights<sup>i</sup>**



<sup>i</sup>. Exhibit 6.  
Portfolio characteristics data derived from FactSet.



## Current Position

Exhibit 7:  
Top 10 Holdings

Exhibit 8:  
Top Over/Underweights

### Exhibit 7: Top 10 Holdings<sup>i</sup>

FTSE RAFI™ All World 3000 Index vs. FTSE All World Series Index					
Index	Weights	1-Yr Perf.	Benchmark	Weights	1-Yr Perf.
Apple	1.3%	54.1%	Apple	2.3%	54.1%
Royal Dutch Shell	1.3%	24.5%	Microsoft	1.8%	62.5%
Exxon Mobil	1.2%	11.0%	Amazon	1.7%	115.9%
Chevron	0.9%	11.3%	Alphabet	1.5%	29.3%
Berkshire Hathaway	0.8%	20.4%	Berkshire Hathaway	0.9%	20.4%
AT&T	0.8%	-6.3%	Facebook, Inc. Class A	0.8%	0.5%
JPMorgan Chase	0.8%	24.6%	JPMorgan Chase	0.8%	24.6%
Microsoft	0.7%	62.5%	Johnson & Johnson	0.8%	13.0%
BP	0.7%	31.0%	Exxon Mobil	0.8%	11.0%
Total	0.7%	31.9%	Royal Dutch Shell	0.6%	24.5%

### Exhibit 8: Top Over/Underweights<sup>i</sup>

FTSE RAFI™ All World 3000 Index vs. FTSE All World Series Index					
Top Overweights	Active Weights	1-Yr Total Effect	Top Underweights	Active Weights	1-Yr Total Effect
Royal Dutch Shell	0.7%	0.1%	Amazon	-1.5%	-0.7%
Exxon Mobil	0.5%	0.0%	Microsoft	-1.1%	-0.3%
BP	0.4%	0.1%	Alphabet	-1.1%	-0.1%
Chevron	0.4%	0.0%	Apple	-1.0%	-0.3%
Total	0.3%	0.1%	Facebook, Inc. Class A	-0.7%	0.1%
AT&T	0.3%	0.0%	Tencent Holdings Ltd.	-0.5%	0.1%
Banco Santander	0.2%	-0.1%	Visa	-0.5%	-0.1%
General Electric	0.2%	0.0%	MasterCard	-0.4%	-0.1%
ENI	0.2%	0.0%	Alibaba	-0.4%	0.1%
HSBC	0.2%	-0.1%	NVIDIA Corporation	-0.3%	-0.1%

<sup>i</sup> Exhibit 7, Exhibit 8.  
Portfolio characteristics and securities data derived from FactSet. 1-Yr Total Effect is calculated using a holdings based attribution, and measures the impact that a security had on relative performance. It is a function of the active weight of a company as well as that company's performance versus the overall benchmark.

## Attribution

### Exhibit 9: Sector Attribution

### Exhibit 10: Region Attribution

### Exhibit 9: Sector Attribution<sup>i</sup>

1-Quarter Ending 09/30/2018

Sector	Portfolio Weight	Bench. Weight	Sector Excess Return	Allocation Effect	Selection + Interaction Effect	Total Effect
Basic Materials	6.81%	5.73%	-3.43%	-0.04%	0.01%	-0.03%
Consumer, Cyclical	11.40%	13.81%	-2.75%	0.04%	-0.13%	-0.10%
Consumer, Non-Cyclical	8.62%	8.84%	-2.04%	0.01%	0.02%	0.03%
Energy	11.64%	6.63%	-0.62%	-0.07%	0.10%	0.03%
Financial	25.12%	20.30%	-2.17%	-0.10%	0.00%	-0.10%
Health care	8.49%	11.42%	6.88%	-0.18%	0.04%	-0.15%
Industrial	8.72%	8.73%	0.54%	0.00%	-0.11%	-0.11%
Technology	9.26%	18.42%	2.69%	-0.19%	0.06%	-0.13%
Telecommunications	5.06%	3.27%	0.89%	0.05%	-0.08%	-0.04%
Utilities	4.87%	2.85%	-4.06%	-0.08%	0.00%	-0.09%
Excess Return						-0.68%

1-Year Ending 09/30/2018

Sector	Portfolio Weight	Bench. Weight	Sector Excess Return	Allocation Effect	Selection + Interaction Effect	Total Effect
Basic Materials	6.81%	5.73%	-5.04%	-0.07%	0.06%	-0.01%
Consumer, Cyclical	11.40%	13.81%	-2.90%	-0.10%	-0.89%	-0.99%
Consumer, Non-Cyclical	8.62%	8.84%	-8.81%	0.07%	0.03%	0.10%
Energy	11.64%	6.63%	12.00%	0.32%	0.47%	0.79%
Financial	25.12%	20.30%	-9.96%	-0.38%	-0.44%	-0.82%
Health care	8.49%	11.42%	5.03%	-0.15%	0.04%	-0.11%
Industrial	8.72%	8.73%	-4.90%	0.00%	-0.14%	-0.14%
Technology	9.26%	18.42%	9.50%	-1.22%	-0.32%	-1.53%
Telecommunications	5.06%	3.27%	-11.36%	-0.15%	-0.07%	-0.22%
Utilities	4.87%	2.85%	-9.02%	-0.20%	0.06%	-0.15%
Excess Return						-3.09%

### Exhibit 10: Region Attribution<sup>i</sup>

1-Quarter Ending 09/30/2018

Region	Portfolio Weight	Bench. Weight	Country Excess Return	Allocation Effect	Selection + Interaction Effect	Total Effect
BRIC	2.45%	3.02%	0.41%	0.05%	0.17%	0.22%
Canada	3.48%	2.67%	-4.04%	-0.03%	-0.03%	-0.05%
EM ex BRIC	5.18%	5.51%	-1.20%	0.01%	0.01%	0.02%
Europe (Other)	9.89%	7.99%	-2.53%	-0.04%	-0.04%	-0.08%
France	4.35%	3.27%	-0.66%	-0.01%	0.03%	0.02%
Germany	3.91%	2.92%	-4.22%	-0.05%	0.03%	-0.02%
Japan	10.44%	8.36%	0.29%	-0.01%	0.10%	0.08%
Pacific ex Japan	6.23%	6.20%	-3.49%	0.00%	0.20%	0.21%
United Kingdom	8.32%	5.68%	-6.93%	-0.17%	-0.04%	-0.21%
United States	45.75%	54.38%	1.71%	-0.26%	-0.60%	-0.87%
Excess Return						-0.68%

1-Year Ending 09/30/2018

Region	Portfolio Weight	Bench. Weight	Country Excess Return	Allocation Effect	Selection + Interaction Effect	Total Effect
BRIC	2.45%	3.02%	-9.79%	0.07%	0.16%	0.23%
Canada	3.48%	2.67%	-8.12%	-0.05%	0.01%	-0.04%
EM ex BRIC	5.18%	5.51%	-8.59%	0.02%	-0.01%	0.01%
Europe (Other)	9.89%	7.99%	-12.69%	-0.26%	-0.10%	-0.35%
France	4.35%	3.27%	-9.83%	-0.07%	-0.20%	-0.27%
Germany	3.91%	2.92%	-17.20%	-0.22%	-0.04%	-0.25%
Japan	10.44%	8.36%	-0.45%	0.01%	-0.08%	-0.07%
Pacific ex Japan	6.23%	6.20%	-5.21%	0.00%	0.14%	0.14%
United Kingdom	8.32%	5.68%	-5.94%	-0.22%	0.16%	-0.06%
United States	45.75%	54.38%	3.30%	-0.76%	-1.66%	-2.42%
Excess Return						-3.09%

i. Exhibit 9, Exhibit 10. Portfolio characteristics and securities data derived from FactSet. The attributions have been normalized to match the return of the strategy, as presented in the performance table on page 2. Data prior to strategy inception is simulated. Strategy inception is October 6, 2008.

## Disclosures

Source: FactSet based on data from FTSE Russell.

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Prior to 11/1/2016, the 1-yr performance values reported in the Top 10 Holdings exhibit and the Top Over/Underweights exhibit were incorrect. The calculation has been modified to report the appropriate values moving forward.

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