

Revisiting Core Principles

The FTSE RAFI Low Volatility Index series efficiently reduces equity risk and offers the potential for outperformance relative to the cap-weighted benchmark, all while maintaining broadly diversified market exposures.

The index series is built using the RAFI™ Fundamental Index™ methodology which utilizes fundamental measures of company size (sales, cash flow, dividends and book value) to weight the lowest risk securities and serve as a rebalancing anchor to trade against the constantly shifting expectations of the market. In addition, the strategy employs a valuation screen to remove the most expensive low risk stocks from the index, ensuring that investors avoid the most overpriced securities.

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 Low Volatility Index is comprised of low volatility stocks in developed and emerging markets.

Performance

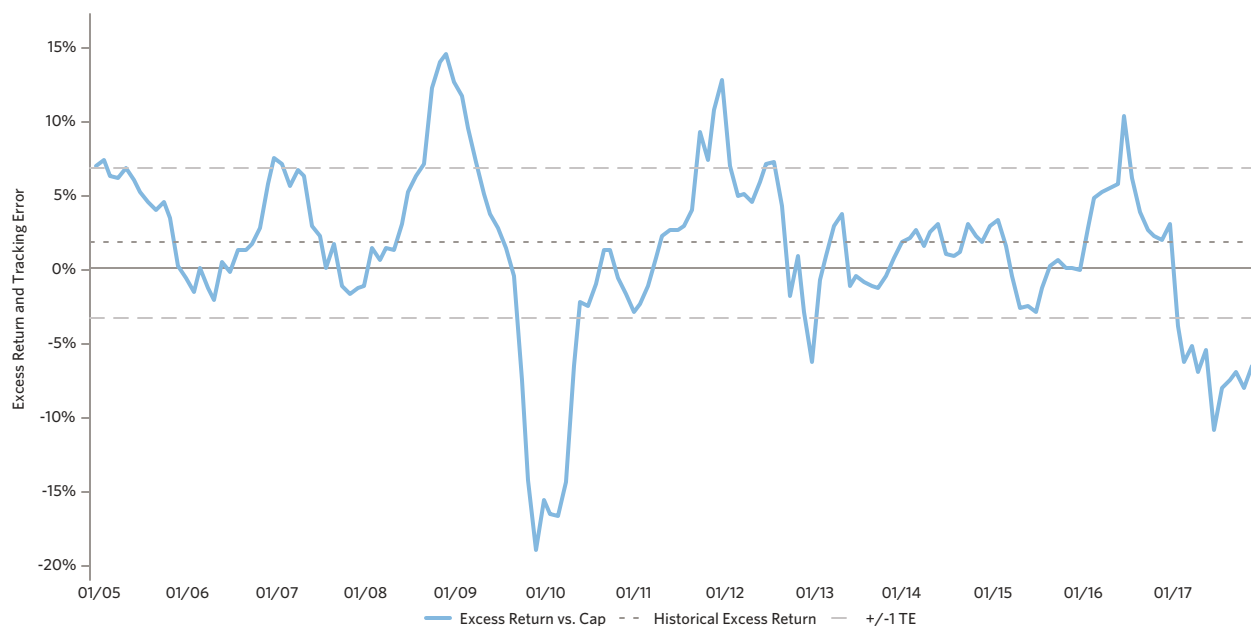
Exhibit 1:
Performance Table

Exhibit 2:
Rolling 1-Year Excess Returns

Exhibit 1: Performance Tableⁱ

	QTD	1-Yr	3-Yr	5-Yr	10-Yr	ITD*
FTSE RAFI™ All-World Low Volatility Index	5.6%	16.9%	8.6%	11.6%	6.6%	6.9%
FTSE All World Index	6.0%	24.6%	10.0%	11.5%	5.3%	8.0%
Value Added	-0.4%	-7.7%	-1.4%	0.1%	1.3%	-1.1%
MSCI All Country World Index	5.8%	24.6%	9.9%	11.4%	5.2%	7.9%
Portfolio Standard Deviation		4.4%	9.1%	9.0%	13.5%	8.8%
Benchmark Standard Deviation		2.8%	10.5%	9.9%	16.9%	10.1%
Tracking Error		3.4%	4.8%	4.1%	5.8%	4.5%

Exhibit 2: Rolling 1-Year Excess Returnsⁱⁱ



i. Exhibit 1.
Performance derived from FactSet. All returns are total returns in USD. 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 June 26, 2014.

ii. Exhibit 2.
Performance derived from FactSet. All returns are total returns in USD. Rolling 1-year excess returns and tracking error are calculated starting January 31, 2004. If applicable, strategy returns prior to inception are simulated. Inception date is June 26, 2014.

The Low Volatility Effect

The strategy's construction methodology aims to provide superior long-term risk adjusted performance - relative to the cap-weighted benchmark - by reducing volatility without sacrificing the return expectations of traditional smart beta strategies.

For the ten years ending December 31, 2017, volatility has been 20.2% lower than the benchmark. In addition, the strategy has produced a ten year Sharpe Ratio of 0.47 vs. 0.3 for the benchmark.

Exhibit 3:
Calendar Year Volatility

Exhibit 3: Calendar Year Volatilityⁱ

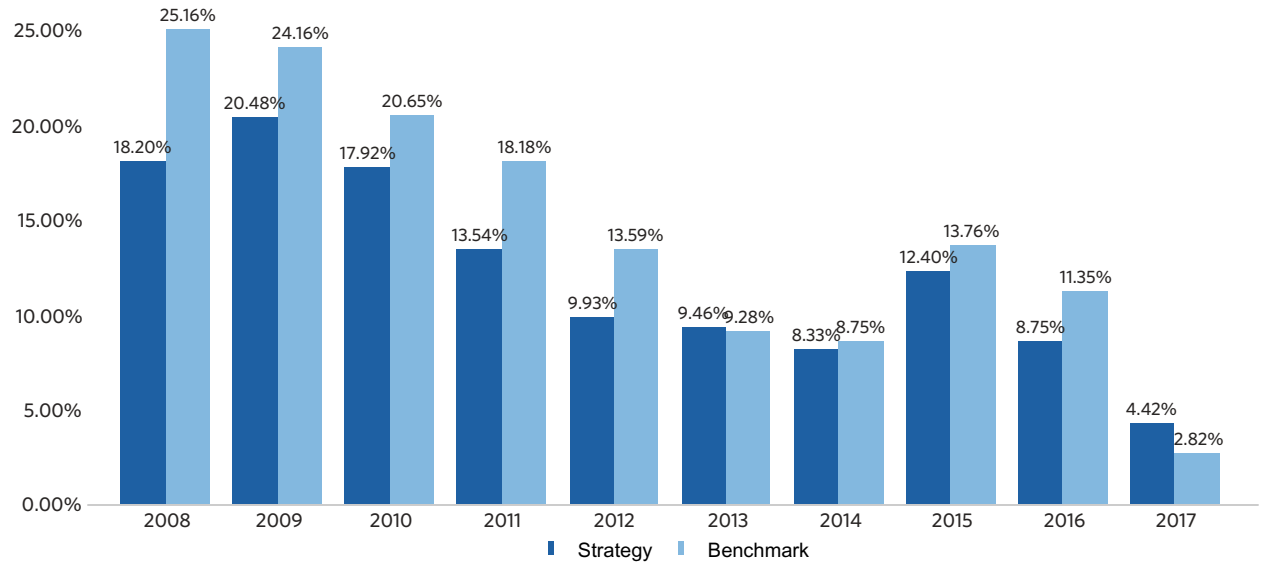
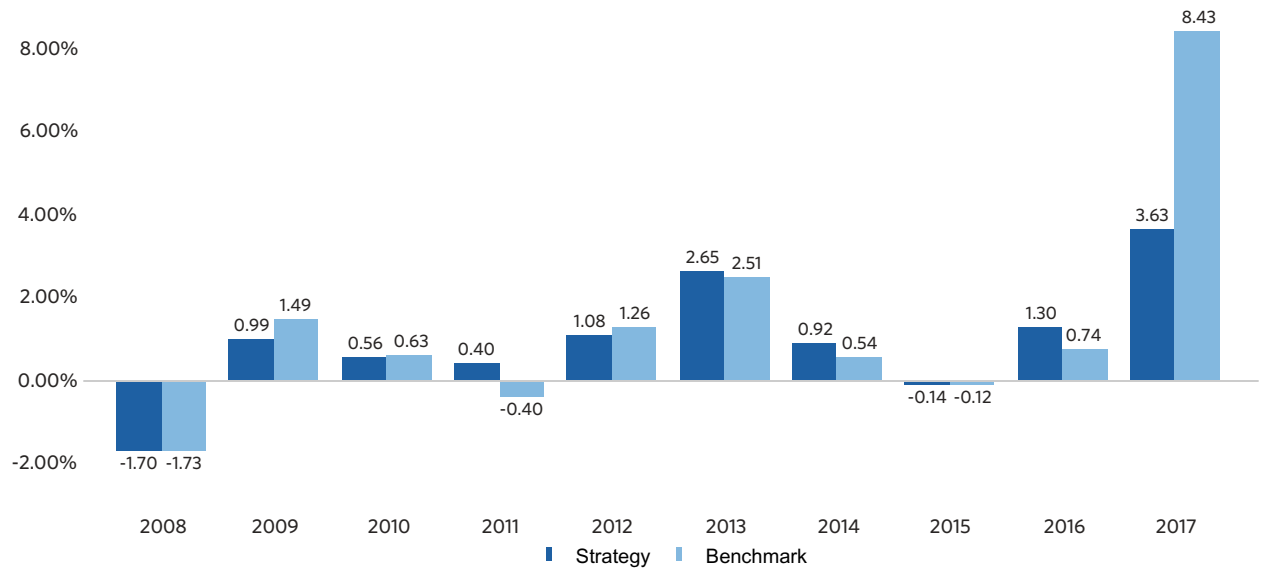


Exhibit 4:
Calendar Year Sharpe Ratios

Exhibit 4: Calendar Year Sharpe Ratiosⁱⁱ



i. Exhibit 3.
FTSE RAFI™ All-World Low Volatility Index calendar volatility measured against the FTSE All World Index. Returns prior to strategy inception are simulated. Strategy inception is June 26, 2014.

ii. Exhibit 4.
Calendar Year Sharpe Ratios measured using the Citigroup 3-Month T-Bill as the risk free rate. Returns prior to strategy inception are simulated. Strategy inception is June 26, 2014.

Portfolio Characteristics

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

Exhibit 5:
Portfolio Characteristics

Exhibit 6:
Historical Portfolio Characteristics

Exhibit 5: Portfolio Characteristicsⁱ

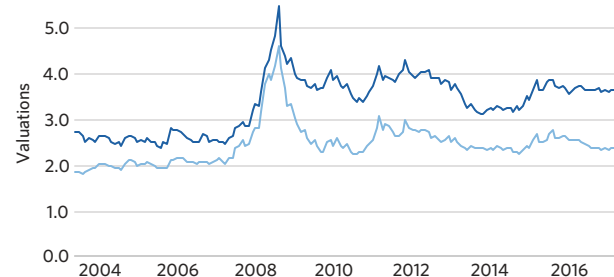
	Number of Holdings	Active Share	Price to Sales	Price to Cash Flow	Price to Book	Div. Yield	Market Cap. (Billions)	Sharpe Ratio*	Info. Ratio*	Tracking Error*
FTSE RAFI™ All-World Low Volatility Index	361	77.2	1.1	9.4	2.0	3.5%	113	0.75	-0.25	4.5%
FTSE All-World Index	3157	--	1.7	10.5	2.3	2.2%	125	0.76	--	--

Exhibit 6: Historical Portfolio Characteristicsⁱⁱ

Price to Book



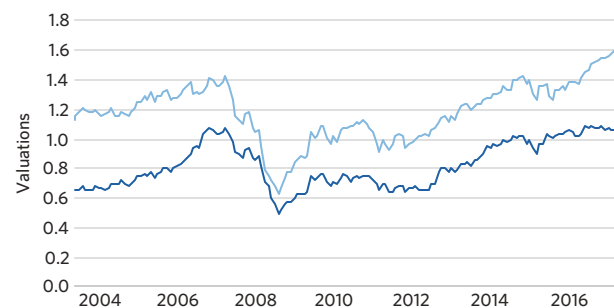
Dividend Yield (%)



Price to Cash Flow



Price to Sales



— FTSE RAFI™ All-World Low Volatility Index (Left) — FTSE All-World Index (Left)

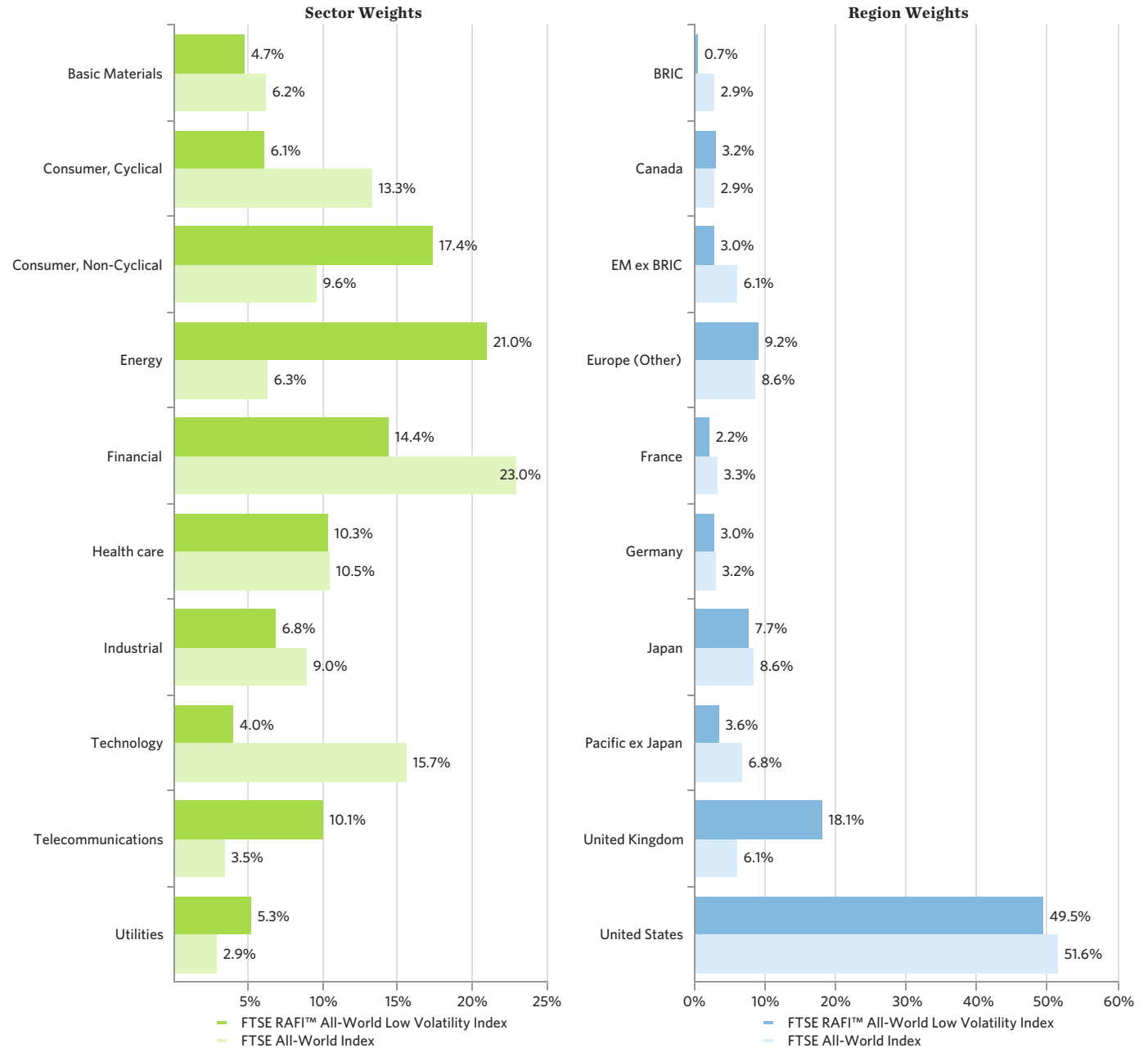
i. Exhibit 5.
Portfolio characteristics data derived from FactSet.
*Sharpe Ratio, Information Ratio, and Tracking Error are calculated starting the first full month of returns following June 26, 2014. Minimum 1-year return history. The 3-mo US Treasury Bill return is used as a proxy for risk-free rate. If applicable, strategy returns prior to inception are simulated. Inception date is June 26, 2014.

ii. Exhibit 6.
Portfolio characteristics derived from FactSet. Data prior to strategy inception is simulated. Strategy inception is June 26, 2014.

Current Position

Exhibit 7:
Sector and Region Weights

Exhibit 7: Sector and Region Weightsⁱ



ⁱ. Exhibit 7.
Portfolio characteristics data derived from FactSet.



Current Position

Exhibit 8:
Top 10 Holdings

Exhibit 9:
Top Over/Underweights

Exhibit 8: Top 10 Holdingsⁱ

FTSE RAFI™ All-World Low Volatility Index vs. FTSE All World Index					
Index	Weights	1-Yr Perf.	Benchmark	Weights	1-Yr Perf.
Royal Dutch Shell	4.9%	28.2%	Apple	1.9%	47.3%
Exxon Mobil	3.5%	-3.9%	Microsoft	1.4%	39.0%
BP	3.1%	20.8%	Alphabet	1.4%	32.4%
Chevron	2.9%	10.5%	Amazon	1.0%	52.8%
AT&T	2.8%	-4.2%	Facebook, Inc. Class A	0.9%	51.7%
HSBC	2.7%	38.1%	Berkshire Hathaway	0.8%	21.6%
Verizon	2.1%	3.3%	Johnson & Johnson	0.8%	24.1%
Johnson & Johnson	2.0%	24.1%	JPMorgan Chase	0.8%	27.3%
Wal-Mart	1.9%	46.3%	Exxon Mobil	0.8%	-3.9%
Nestle	1.8%	23.8%	Bank of America	0.6%	36.3%

Exhibit 9: Top Over/Underweightsⁱ

FTSE RAFI™ All-World Low Volatility Index vs. FTSE All World Index					
Top Overweights	Active Weights	1-Yr Total Effect	Top Underweights	Active Weights	1-Yr Total Effect
Royal Dutch Shell	4.3%	0.1%	Apple	-1.9%	-0.4%
BP	2.8%	-0.1%	Microsoft	-1.4%	-0.1%
Exxon Mobil	2.7%	-0.8%	Alphabet	-1.4%	-0.1%
Chevron	2.4%	-0.4%	Amazon	-1.0%	-0.2%
AT&T	2.3%	-0.5%	Facebook, Inc. Class A	-0.9%	-0.2%
HSBC	2.3%	0.2%	Berkshire Hathaway	-0.8%	0.0%
Verizon	1.6%	-0.2%	JPMorgan Chase	-0.8%	0.0%
Wal-Mart	1.6%	0.3%	Bank of America	-0.6%	-0.1%
Pfizer	1.2%	-0.1%	Tencent Holdings Ltd.	-0.6%	-0.3%
Nestle	1.2%	0.0%	Wells Fargo	-0.6%	0.1%

i. Exhibit 8, Exhibit 9.
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 10: Sector Attribution

Exhibit 11: Region Attribution

Exhibit 10: Sector Attribution ⁱ

1-Quarter Ending 12/31/2017

Sector	Portfolio Weight	Bench. Weight	Sector Excess Return	Allocation Effect	Selection + Interaction Effect	Total Effect
Basic Materials	4.74%	6.19%	0.56%	-0.03%	-0.06%	-0.09%
Consumer, Cyclical	6.05%	13.29%	7.99%	-0.17%	0.35%	0.19%
Consumer, Non-Cyclical	17.35%	9.60%	-1.27%	-0.07%	-0.09%	-0.16%
Energy	20.97%	6.33%	3.11%	0.16%	0.51%	0.67%
Financial	14.44%	23.00%	-1.35%	-0.01%	-0.23%	-0.24%
Health care	10.31%	10.51%	-4.36%	0.02%	0.00%	0.02%
Industrial	6.83%	8.99%	0.39%	0.02%	0.09%	0.10%
Technology	3.99%	15.66%	3.67%	-0.31%	0.01%	-0.30%
Telecommunications	10.06%	3.50%	-3.90%	-0.19%	-0.12%	-0.31%
Utilities	5.26%	2.93%	-6.48%	-0.17%	-0.08%	-0.25%
Excess Return						-0.36%

1-Year Ending 12/31/2017

Sector	Portfolio Weight	Bench. Weight	Sector Excess Return	Allocation Effect	Selection + Interaction Effect	Total Effect
Basic Materials	4.74%	6.19%	2.29%	-0.08%	-0.11%	-0.20%
Consumer, Cyclical	6.05%	13.29%	0.18%	-0.16%	-0.10%	-0.26%
Consumer, Non-Cyclical	17.35%	9.60%	-7.91%	-0.40%	-0.37%	-0.77%
Energy	20.97%	6.33%	-9.72%	-2.46%	1.47%	-0.98%
Financial	14.44%	23.00%	-1.75%	-0.04%	-0.28%	-0.31%
Health care	10.31%	10.51%	-9.49%	0.01%	-0.61%	-0.59%
Industrial	6.83%	8.99%	2.17%	-0.03%	0.07%	0.04%
Technology	3.99%	15.66%	-4.61%	-1.61%	-1.14%	-2.75%
Telecommunications	10.06%	3.50%	-17.81%	-0.92%	-0.18%	-1.09%
Utilities	5.26%	2.93%	-15.34%	-0.33%	-0.47%	-0.80%
Excess Return						-7.72%

Exhibit 11: Region Attribution ⁱ

1-Quarter Ending 12/31/2017

Region	Portfolio Weight	Bench. Weight	Country Excess Return	Allocation Effect	Selection + Interaction Effect	Total Effect
BRIC	0.65%	2.88%	-13.13%	0.02%	-0.08%	-0.06%
Canada	3.16%	2.85%	-1.58%	-0.01%	0.00%	0.00%
EM ex BRIC	2.99%	6.12%	4.73%	-0.09%	0.05%	-0.04%
Europe (Other)	9.17%	8.61%	-3.83%	-0.02%	0.17%	0.14%
France	2.15%	3.28%	-2.87%	0.02%	0.05%	0.07%
Germany	2.99%	3.20%	-3.91%	0.01%	-0.01%	0.00%
Japan	7.70%	8.57%	0.89%	-0.03%	-0.15%	-0.18%
Pacific ex Japan	3.64%	6.80%	-1.58%	-0.07%	-0.14%	-0.21%
United Kingdom	18.11%	6.12%	0.17%	-0.02%	0.06%	0.04%
United States	49.45%	51.56%	0.45%	-0.02%	-0.10%	-0.12%
Excess Return						-0.36%

1-Year Ending 12/31/2017

Region	Portfolio Weight	Bench. Weight	Country Excess Return	Allocation Effect	Selection + Interaction Effect	Total Effect
BRIC	0.65%	2.88%	-23.44%	-0.05%	-0.15%	-0.20%
Canada	3.16%	2.85%	-8.01%	-0.02%	0.00%	-0.03%
EM ex BRIC	2.99%	6.12%	6.62%	-0.35%	-0.09%	-0.45%
Europe (Other)	9.17%	8.61%	-4.55%	0.00%	-0.55%	-0.55%
France	2.15%	3.28%	-0.29%	0.04%	-0.26%	-0.22%
Germany	2.99%	3.20%	-2.96%	0.00%	-0.21%	-0.21%
Japan	7.70%	8.57%	-1.90%	-0.01%	-0.18%	-0.19%
Pacific ex Japan	3.64%	6.80%	-9.65%	-0.28%	-0.72%	-0.99%
United Kingdom	18.11%	6.12%	-3.94%	-0.26%	-0.30%	-0.56%
United States	49.45%	51.56%	-11.35%	0.07%	-4.39%	-4.32%
Excess Return						-7.72%

ⁱ Exhibit 10, Exhibit 11. 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 June 26, 2014.

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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