

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 US Low Volatility Index is comprised of low volatility stocks in the United States.

Performance

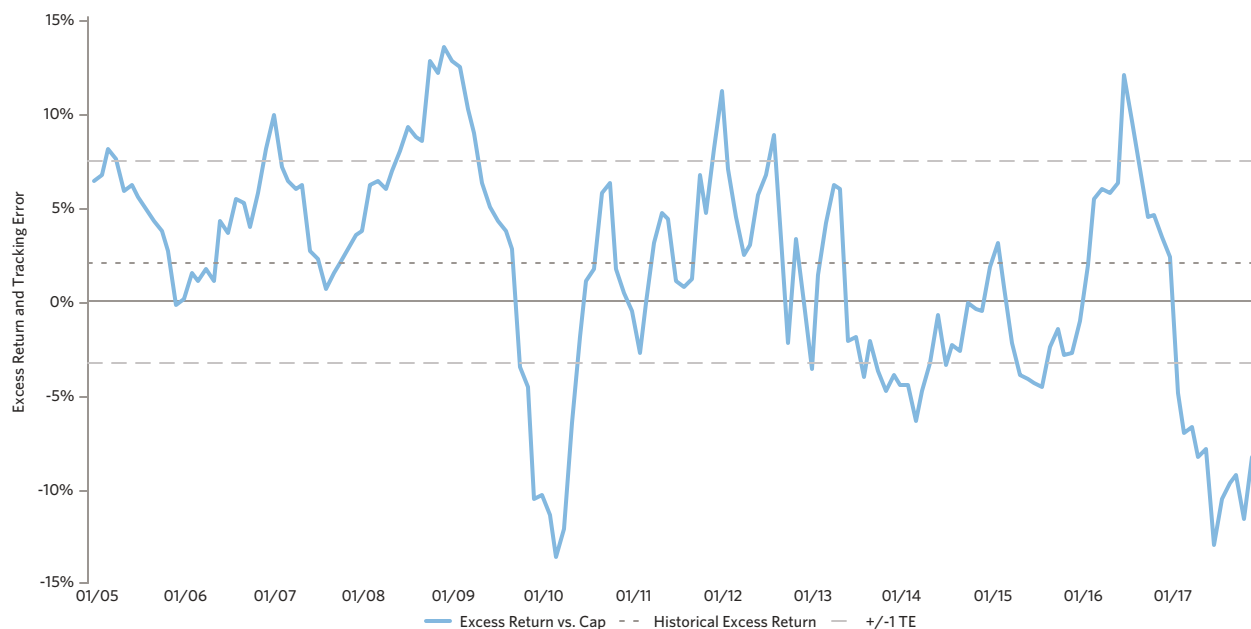
Exhibit 1:
Performance Table

Exhibit 2:
Rolling 1-Year Excess Returns

Exhibit 1: Performance Tableⁱ

	QTD	1-Yr	3-Yr	5-Yr	10-Yr	ITD*
FTSE RAFI™ US Low Volatility Index	6.3%	13.3%	9.0%	13.9%	9.6%	9.3%
Russell 1000 Index	6.6%	21.7%	11.2%	15.7%	8.6%	11.3%
Value Added	-0.3%	-8.4%	-2.3%	-1.8%	1.0%	-2.0%
S&P 500 Index	6.6%	21.8%	11.4%	15.8%	8.5%	11.6%
Portfolio Standard Deviation		5.7%	8.6%	8.7%	12.1%	8.3%
Benchmark Standard Deviation		3.9%	10.1%	9.6%	15.4%	9.8%
Tracking Error		3.6%	5.3%	4.8%	6.0%	4.9%

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 21.3% lower than the benchmark. In addition, the strategy has produced a ten year Sharpe Ratio of 0.77 vs. 0.54 for the benchmark.

Exhibit 3:
Calendar Year Volatility

Exhibit 3: Calendar Year Volatilityⁱ

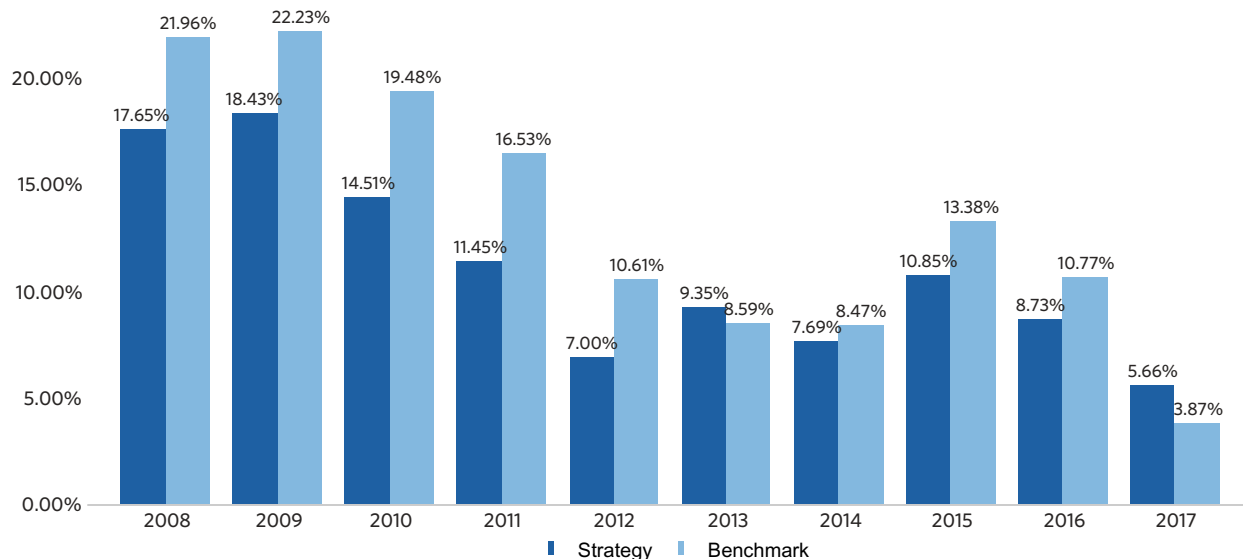
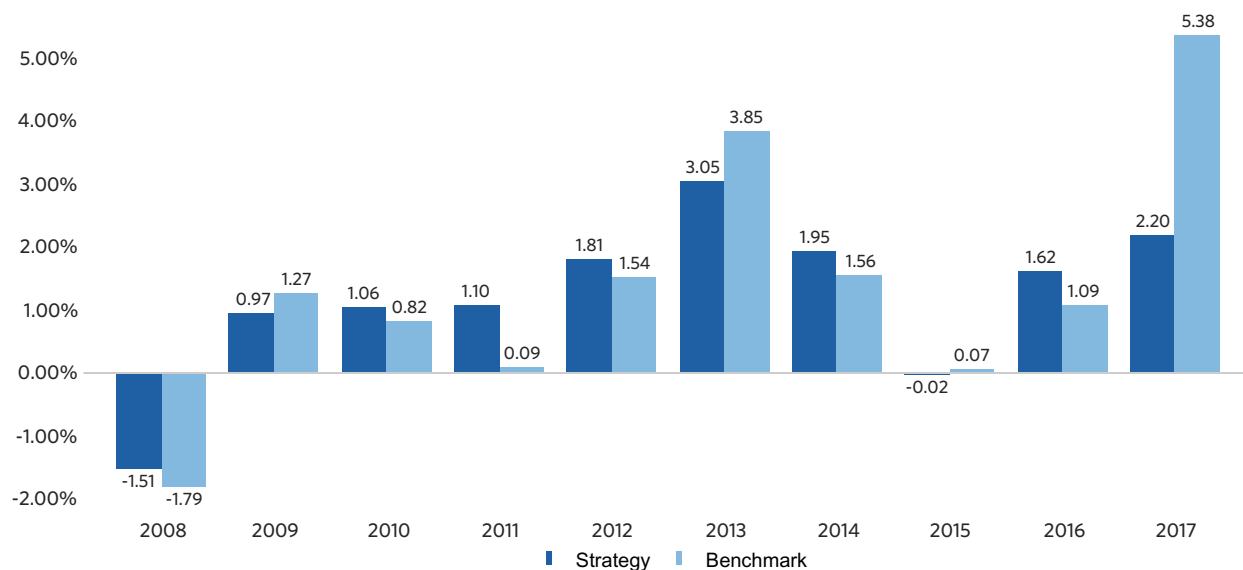


Exhibit 4:
Calendar Year Sharpe Ratios

Exhibit 4: Calendar Year Sharpe Ratiosⁱⁱ



i. Exhibit 3.
FTSE RAFI™ US Low Volatility Index calendar volatility measured against the Russell 1000 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™ US 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

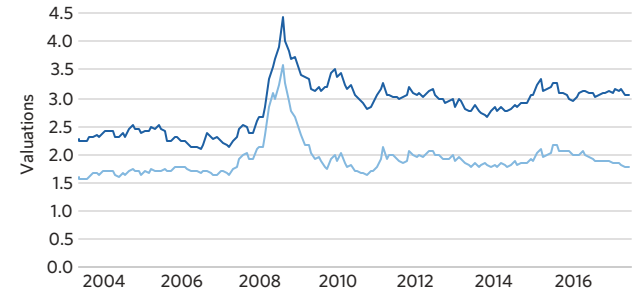
	Number of Holdings	Active Share	Price to Sales	Price to Cash Flow	Price to Book	Div. Yield	Market Cap. (Billions)	Sharpe Ratio*	Info. Ratio*	Tracking Error*
FTSE RAFI™ US Low Volatility Index	213	73.8	1.1	11.2	2.8	3.1%	133	1.08	-0.39	4.9%
Russell 1000	978	--	2.3	13.9	3.1	1.8%	170	1.11	--	--

Exhibit 6: Historical Portfolio Characteristicsⁱⁱ

Price to Book



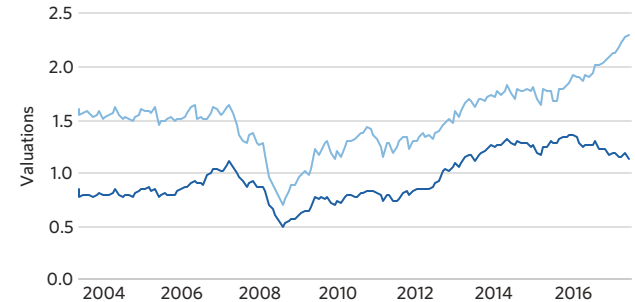
Dividend Yield (%)



Price to Cash Flow



Price to Sales



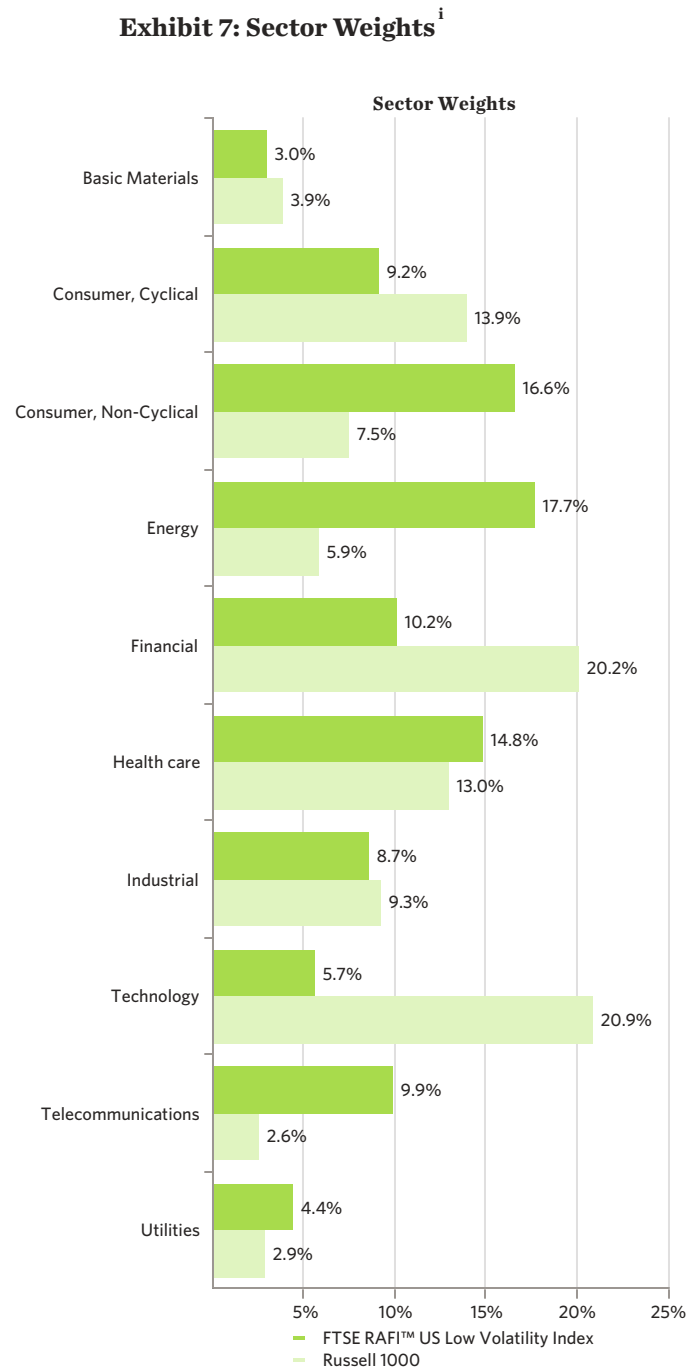
— FTSE RAFI™ US Low Volatility Index (Left) — Russell 1000 (Left)

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 Weights



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™ US Low Volatility Index vs. Russell 1000 Index					
Index	Weights	1-Yr Perf.	Benchmark	Weights	1-Yr Perf.
Chevron	5.3%	10.5%	Apple	3.4%	47.3%
Exxon Mobil	5.0%	-3.9%	Microsoft	2.5%	39.0%
AT&T	4.9%	-4.2%	Alphabet	2.5%	32.4%
Verizon	4.0%	3.3%	Amazon	1.8%	52.8%
Johnson & Johnson	3.8%	24.1%	Facebook, Inc. Class A	1.6%	51.7%
Wal-Mart	3.7%	46.3%	Berkshire Hathaway	1.5%	21.6%
Pfizer	3.3%	15.9%	Johnson & Johnson	1.5%	24.1%
Procter & Gamble	3.0%	12.3%	JPMorgan Chase	1.5%	27.3%
IBM	2.3%	-4.3%	Exxon Mobil	1.4%	-3.9%
Cisco Systems	2.1%	30.2%	Bank of America	1.1%	36.3%

Exhibit 9: Top Over/Underweightsⁱ

FTSE RAFI™ US Low Volatility Index vs. Russell 1000 Index					
Top Overweights	Active Weights	1-Yr Total Effect	Top Underweights	Active Weights	1-Yr Total Effect
Chevron	4.4%	-0.5%	Apple	-3.4%	-0.7%
AT&T	4.0%	-0.9%	Microsoft	-2.5%	-0.1%
Exxon Mobil	3.6%	-0.8%	Alphabet	-2.5%	-0.3%
Verizon	3.2%	-0.3%	Amazon	-1.8%	-0.4%
Wal-Mart	3.1%	0.6%	Facebook, Inc. Class A	-1.6%	-0.4%
Pfizer	2.4%	-0.1%	Berkshire Hathaway	-1.5%	0.0%
Johnson & Johnson	2.3%	0.0%	JPMorgan Chase	-1.5%	-0.1%
Procter & Gamble	2.1%	-0.2%	Bank of America	-1.1%	-0.1%
IBM	1.8%	-0.4%	Wells Fargo	-1.1%	0.1%
Valero	1.5%	0.3%	Home Depot	-0.9%	-0.2%

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 10: Sector Attributionⁱ

1-Quarter Ending 12/31/2017

Sector	Portfolio Weight	Bench. Weight	Sector Excess Return	Allocation Effect	Selection + Interaction Effect	Total Effect
Basic Materials	2.97%	3.86%	-2.55%	0.00%	-0.08%	-0.08%
Consumer, Cyclical	9.17%	13.93%	10.78%	-0.15%	0.67%	0.52%
Consumer, Non-Cyclical	16.61%	7.48%	-2.23%	-0.14%	-0.10%	-0.24%
Energy	17.66%	5.92%	2.58%	-0.02%	0.48%	0.45%
Financial	10.16%	20.15%	-3.34%	-0.08%	-0.38%	-0.46%
Health care	14.83%	12.97%	-3.85%	-0.08%	0.18%	0.10%
Industrial	8.66%	9.30%	1.26%	0.00%	0.14%	0.15%
Technology	5.65%	20.87%	3.79%	-0.34%	0.10%	-0.24%
Telecommunications	9.90%	2.60%	-3.50%	-0.05%	-0.24%	-0.29%
Utilities	4.40%	2.92%	-6.24%	-0.18%	-0.01%	-0.19%
Excess Return						-0.27%

1-Year Ending 12/31/2017

Sector	Portfolio Weight	Bench. Weight	Sector Excess Return	Allocation Effect	Selection + Interaction Effect	Total Effect
Basic Materials	2.97%	3.86%	-9.44%	-0.01%	-0.37%	-0.37%
Consumer, Cyclical	9.17%	13.93%	7.64%	-0.20%	0.33%	0.13%
Consumer, Non-Cyclical	16.61%	7.48%	-12.53%	-0.84%	-0.23%	-1.07%
Energy	17.66%	5.92%	-11.67%	-2.48%	1.93%	-0.54%
Financial	10.16%	20.15%	-6.05%	0.09%	-0.40%	-0.31%
Health care	14.83%	12.97%	-7.28%	0.00%	-1.02%	-1.02%
Industrial	8.66%	9.30%	3.41%	0.01%	0.27%	0.27%
Technology	5.65%	20.87%	-2.39%	-1.96%	-1.44%	-3.41%
Telecommunications	9.90%	2.60%	-24.92%	-1.21%	-0.23%	-1.45%
Utilities	4.40%	2.92%	-11.42%	-0.48%	-0.12%	-0.60%
Excess Return						-8.37%

i. 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 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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