

# S&P Dow Jones Indices

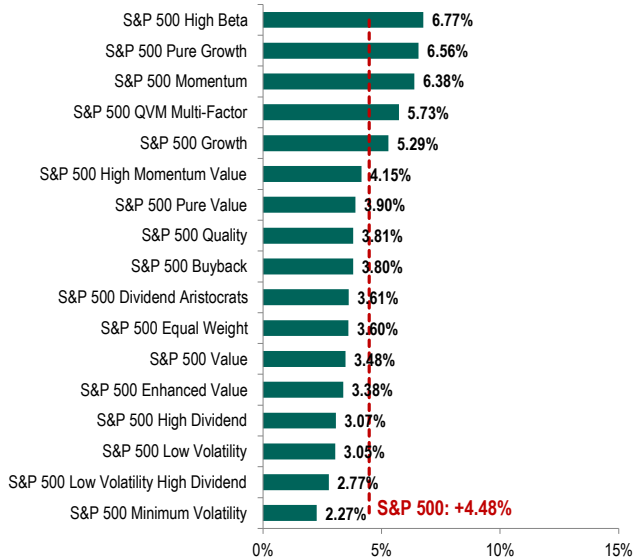
An S&P Global Division

Index Dashboard: S&P 500® Factor- Indices

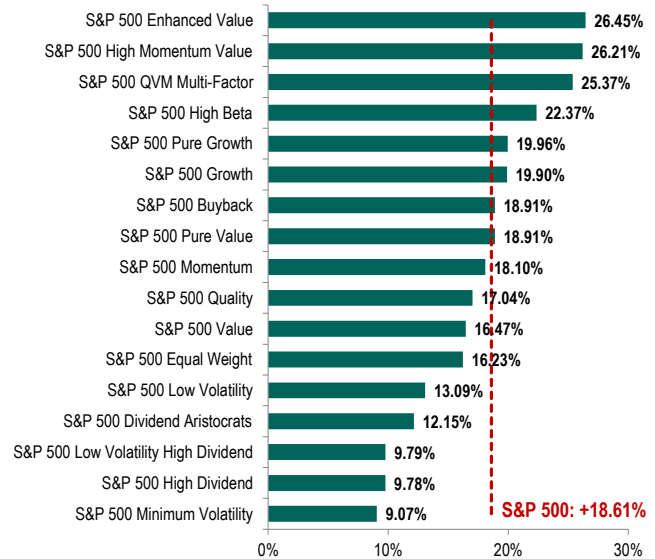
Third Quarter, 2017

## QUARTERLY AND 12M TRAILING PERFORMANCE SUMMARY

Q3 2017 Total Return



12M Total Return

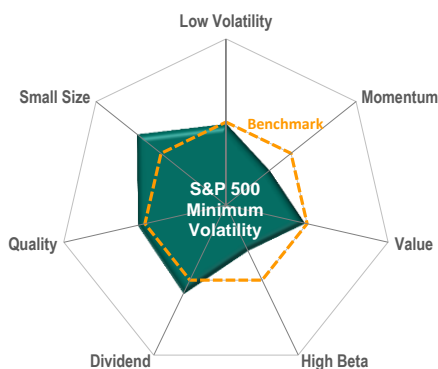


## COMMENTARY

1) High Beta, Growth, and Momentum all performed well in the third quarter of 2017, while Equal Weight (a bellwether for alternatively-weighted indices in general) underperformed. Strong quarterly outperformance from the IT and Financials sectors – which are relatively concentrated in large, high beta S&P 500 stocks – provides a sectoral rationale.

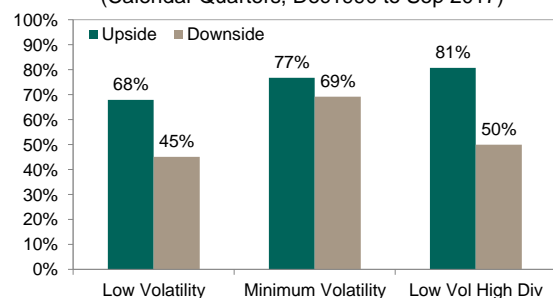
From a macro perspective, U.S. Treasury bond yields have increased across the maturity spectrum in the past year (and quarter); higher dividend-paying stocks have underperformed as the more traditional income sources cheapened.

S&P U.S. Treasury Bond Index Yield (Sep 2016 - Sep 2017, daily)



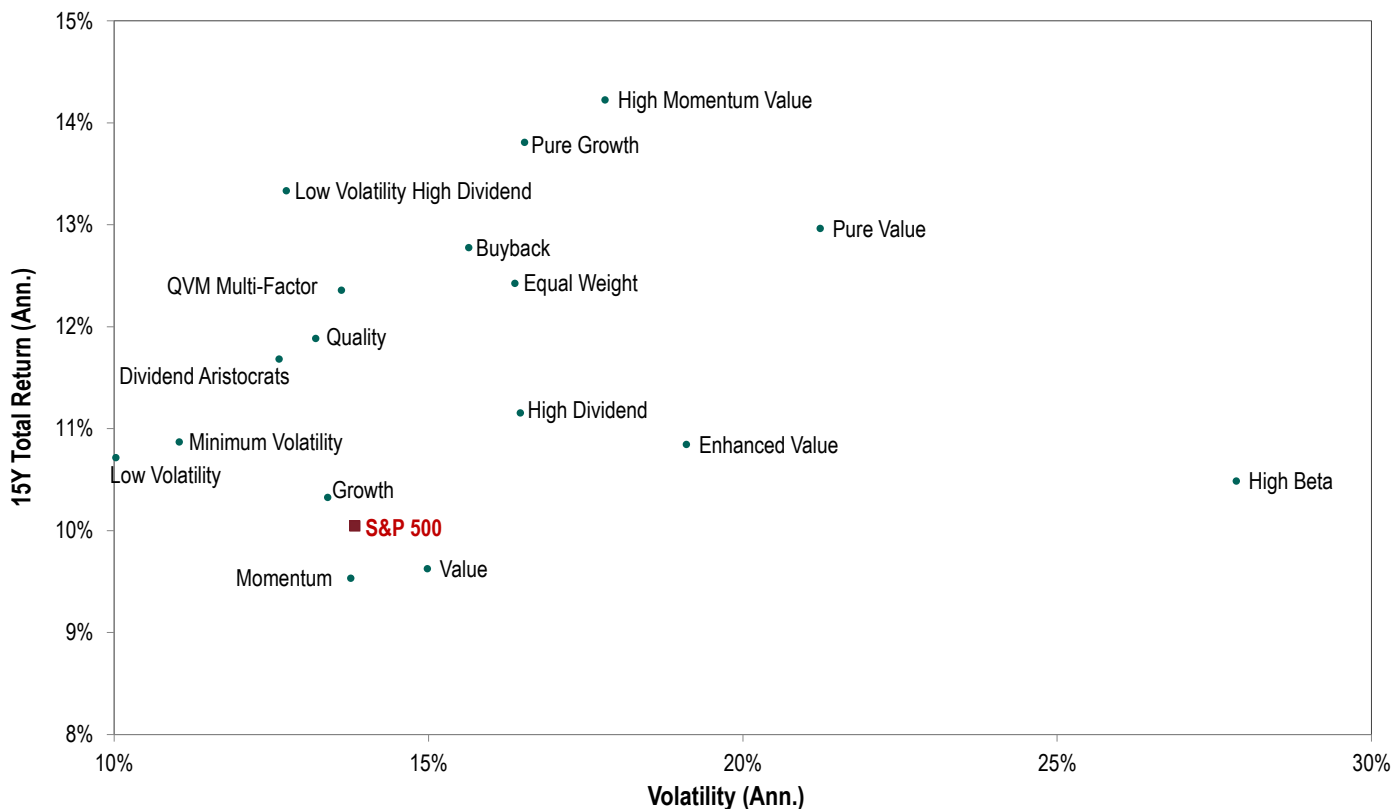
2) With strong tilts away from both high beta and momentum - and moderate tilts towards higher dividends, smaller stocks, and higher quality stocks - the factor exposures of the S&P 500 Minimum Volatility Index have conspired to hurt its performance this year. The Minimum Volatility strategy has underperformed in eight of the last nine months, and has the lowest total return of any of our factor indices on both 3- and 12-month rolling basis.

Capture Ratios (Calendar Quarters, Dec1990 to Sep 2017)



3) However, in an environment of relatively low volatility and during a strong bull market, risk management strategies such as Low Volatility and Minimum Volatility might reasonably be expected to underperform. The S&P 500 Low Volatility Index – for example – historically has captured about two thirds of the gains made by the benchmark S&P 500 in quarters during which the latter gained. Viewed in this context, the quarterly and 12-month performance of the S&P 500 Low Volatility Index is entirely typical.

**15 YEAR RISK & RETURN - ABSOLUTE**

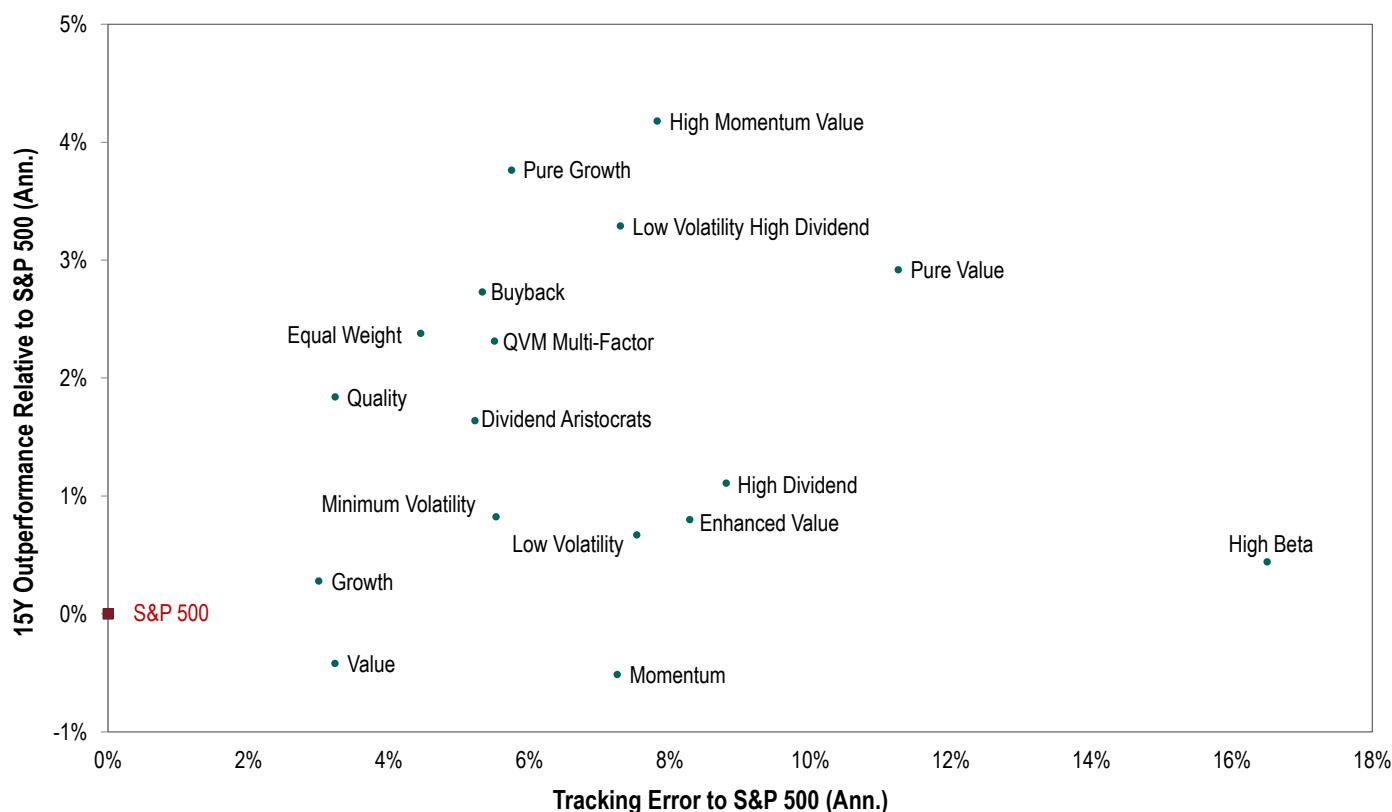


**TOTAL RETURN AND VOLATILITY**

TOTAL RETURN	1M	QTR	1YR	3YR	5YR	10YR	15YR	VOLATILITY (ANN.)	1YR	3YR	5YR	10YR	15YR
S&P 500 High Beta	6.8%	6.8%	22.4%	7.7%	15.5%	3.1%	10.5%	S&P 500 High Beta	13.9%	17.8%	16.1%	27.8%	27.8%
S&P 500 Pure Growth	2.2%	6.6%	20.0%	10.1%	16.5%	11.1%	13.8%	S&P 500 Pure Growth	5.6%	10.5%	11.0%	17.5%	16.5%
S&P 500 Momentum	2.9%	6.4%	18.1%	10.4%	13.2%	7.6%	9.5%	S&P 500 Momentum	5.6%	9.8%	9.6%	14.8%	13.8%
S&P 500 QVM Multi-Factor	3.4%	5.7%	25.4%	10.8%	14.2%	8.5%	12.4%	S&P 500 QVM Multi-Factor	7.6%	10.4%	10.3%	14.8%	13.6%
S&P 500 Growth	1.1%	5.3%	19.9%	12.2%	15.0%	9.1%	10.3%	S&P 500 Growth	5.3%	10.5%	10.0%	14.6%	13.4%
S&P 500 High Momentum Value	3.7%	4.2%	26.2%	11.5%	17.0%	10.8%	14.2%	S&P 500 High Momentum Value	8.1%	10.5%	10.6%	20.3%	17.8%
S&P 500 Pure Value	3.8%	3.9%	18.9%	7.6%	16.5%	8.7%	13.0%	S&P 500 Pure Value	10.1%	13.1%	12.7%	24.1%	21.2%
S&P 500 Quality	2.9%	3.8%	17.0%	10.0%	13.9%	9.2%	11.9%	S&P 500 Quality	5.4%	9.8%	9.8%	14.1%	13.2%
S&P 500 Buyback	3.8%	3.8%	18.9%	9.6%	16.9%	10.7%	12.8%	S&P 500 Buyback	8.0%	12.3%	11.8%	17.6%	15.6%
S&P 500 Dividend Aristocrats	3.1%	3.6%	12.2%	11.3%	14.5%	10.6%	11.7%	S&P 500 Dividend Aristocrats	7.3%	9.3%	9.5%	14.0%	12.6%
S&P 500 Equal Weight	2.9%	3.6%	16.2%	10.1%	15.0%	8.9%	12.4%	S&P 500 Equal Weight	6.4%	10.3%	10.0%	17.7%	16.4%
S&P 500 Value	3.3%	3.5%	16.5%	8.9%	13.2%	5.6%	9.6%	S&P 500 Value	7.7%	10.2%	9.8%	16.3%	15.0%
S&P 500 Enhanced Value	4.0%	3.4%	26.5%	9.7%	16.8%	6.6%	10.8%	S&P 500 Enhanced Value	11.6%	13.4%	12.7%	21.6%	19.1%
S&P 500 High Dividend	3.3%	3.1%	9.8%	12.5%	15.2%	8.0%	11.2%	S&P 500 High Dividend	6.7%	9.4%	9.5%	18.5%	16.5%
S&P 500 Low Volatility	0.8%	3.0%	13.1%	12.2%	13.2%	9.4%	10.7%	S&P 500 Low Volatility	5.7%	8.6%	9.0%	11.0%	10.0%
S&P 500 Low Volatility High Dividend	2.4%	2.8%	9.8%	14.5%	14.9%	11.8%	13.3%	S&P 500 Low Volatility High Dividend	5.8%	8.8%	9.1%	13.8%	12.7%
S&P 500 Minimum Volatility	1.2%	2.3%	9.1%	11.4%	14.1%	7.9%	10.9%	S&P 500 Minimum Volatility	4.9%	8.1%	8.2%	12.0%	11.0%
<b>S&amp;P 500</b>	<b>2.1%</b>	<b>4.5%</b>	<b>18.6%</b>	<b>10.8%</b>	<b>14.2%</b>	<b>7.4%</b>	<b>10.0%</b>	<b>S&amp;P 500</b>	<b>5.2%</b>	<b>9.9%</b>	<b>9.5%</b>	<b>15.1%</b>	<b>13.8%</b>

Performance figures for more than one year are annualized.

15 YEAR RISK & RETURN - RELATIVE TO S&P 500



RELATIVE RETURN AND TRACKING ERROR

PERFORMANCE v S&P 500	1M	QTR	1YR	3YR	5YR	10YR	15YR
S&P 500 High Beta	4.8%	2.3%	3.8%	-3.1%	1.2%	-4.3%	0.4%
S&P 500 Pure Growth	0.1%	2.1%	1.3%	-0.8%	2.3%	3.6%	3.8%
S&P 500 Momentum	0.8%	1.9%	-0.5%	-0.4%	-1.0%	0.2%	-0.5%
S&P 500 QVM Multi-Factor	1.4%	1.3%	6.8%	0.0%	0.0%	1.1%	2.3%
S&P 500 Growth	-0.9%	0.8%	1.3%	1.4%	0.8%	1.7%	0.3%
S&P 500 High Momentum Value	1.6%	-0.3%	7.6%	0.7%	2.8%	3.4%	4.2%
S&P 500 Pure Value	1.7%	-0.6%	0.3%	-3.2%	2.3%	1.3%	2.9%
S&P 500 Quality	0.8%	-0.7%	-1.6%	-0.8%	-0.3%	1.7%	1.8%
S&P 500 Buyback	1.7%	-0.7%	0.3%	-1.2%	2.7%	3.3%	2.7%
S&P 500 Dividend Aristocrats	1.0%	-0.9%	-6.5%	0.5%	0.3%	3.2%	1.6%
S&P 500 Equal Weight	0.9%	-0.9%	-2.4%	-0.7%	0.8%	1.5%	2.4%
S&P 500 Value	1.2%	-1.0%	-2.1%	-1.9%	-1.0%	-1.9%	-0.4%
S&P 500 Enhanced Value	2.0%	-1.1%	7.8%	-1.1%	2.6%	-0.9%	0.8%
S&P 500 High Dividend	1.2%	-1.4%	-8.8%	1.7%	0.9%	0.6%	1.1%
S&P 500 Low Volatility	-1.3%	-1.4%	-5.5%	1.4%	-1.0%	2.0%	0.7%
S&P 500 Low Volatility High Dividend	0.3%	-1.7%	-8.8%	3.7%	0.6%	4.4%	3.3%
S&P 500 Minimum Volatility	-0.8%	-2.2%	-9.5%	0.6%	-0.2%	0.4%	0.8%

TRACKING ERROR v S&P 500 (ANN.)	1YR	3YR	5YR	10YR	15YR
S&P 500 High Beta	11.5%	11.5%	10.0%	15.2%	16.5%
S&P 500 Pure Growth	4.1%	4.0%	4.7%	5.7%	5.7%
S&P 500 Momentum	4.7%	4.7%	4.3%	6.5%	7.2%
S&P 500 QVM Multi-Factor	4.2%	3.4%	3.0%	4.1%	5.5%
S&P 500 Growth	3.8%	3.0%	2.7%	3.2%	3.0%
S&P 500 High Momentum Value	5.2%	4.7%	4.4%	8.5%	7.8%
S&P 500 Pure Value	6.9%	6.3%	6.1%	12.6%	11.3%
S&P 500 Quality	1.6%	2.0%	2.0%	3.2%	3.2%
S&P 500 Buyback	4.9%	4.8%	4.5%	5.6%	5.3%
S&P 500 Dividend Aristocrats	3.2%	4.1%	3.7%	5.6%	5.2%
S&P 500 Equal Weight	2.6%	2.5%	2.4%	4.5%	4.5%
S&P 500 Value	4.3%	3.3%	3.0%	3.5%	3.2%
S&P 500 Enhanced Value	8.8%	6.8%	6.7%	9.3%	8.3%
S&P 500 High Dividend	3.6%	6.9%	6.9%	9.8%	8.8%
S&P 500 Low Volatility	3.8%	6.6%	6.5%	8.1%	7.5%
S&P 500 Low Volatility High Dividend	2.3%	6.8%	6.9%	7.8%	7.3%
S&P 500 Minimum Volatility	2.8%	5.6%	4.7%	6.0%	5.5%

Performance figures for more than one year are annualized.

DEGREE OF PORTFOLIO OVERLAP AND RELATIVE RETURN CORRELATIONS

PORTFOLIO OVERLAP

	S&P 500 Low Volatility	S&P 500 Minimum Volatility	S&P 500 Low Volatility High Dividend	S&P 500 High Dividend	S&P 500 Dividend Aristocrats	S&P 500 Quality	S&P 500 Growth	S&P 500 Pure Growth	S&P 500 Momentum	S&P 500 QVM Multi-Factor	S&P 500 High Momentum Value	S&P 500 Value	S&P 500 Equal Weight	S&P 500 Pure Value	S&P 500 Buyback	S&P 500 Enhanced Value	S&P 500 High Beta	S&P 500
S&P 500 Low Volatility	100%	23%	18%	20%	23%	19%	26%	11%	14%	17%	22%	28%	19%	14%	12%	7%	0%	32%
S&P 500 Minimum Volatility	23%	100%	19%	22%	19%	19%	16%	12%	3%	8%	8%	15%	19%	7%	6%	4%	0%	17%
S&P 500 Low Volatility High Dividend	18%	19%	100%	57%	16%	9%	11%	2%	0%	7%	5%	23%	10%	11%	3%	8%	4%	17%
S&P 500 High Dividend	20%	22%	57%	100%	11%	9%	12%	5%	0%	8%	8%	22%	16%	19%	9%	13%	12%	18%
S&P 500 Dividend Aristocrats	23%	19%	16%	11%	100%	20%	11%	4%	4%	13%	7%	20%	10%	7%	10%	9%	5%	16%
S&P 500 Quality	19%	19%	9%	9%	20%	100%	22%	15%	14%	47%	7%	15%	20%	6%	14%	13%	12%	19%
S&P 500 Growth	26%	16%	11%	12%	11%	22%	100%	33%	33%	18%	7%	28%	42%	0%	14%	1%	9%	68%
S&P 500 Pure Growth	11%	12%	2%	5%	4%	15%	33%	100%	23%	14%	11%	0%	23%	0%	14%	3%	18%	21%
S&P 500 Momentum	14%	3%	0%	0%	4%	14%	33%	23%	100%	43%	22%	24%	20%	16%	20%	24%	17%	29%
S&P 500 QVM Multi-Factor	17%	8%	7%	8%	13%	47%	18%	14%	43%	100%	34%	28%	20%	24%	26%	40%	18%	23%
S&P 500 High Momentum Value	22%	8%	5%	8%	7%	7%	7%	11%	22%	34%	100%	28%	20%	45%	35%	36%	27%	20%
S&P 500 Value	28%	15%	23%	22%	20%	15%	28%	0%	24%	28%	28%	100%	45%	33%	20%	36%	14%	60%
S&P 500 Equal Weight	19%	19%	10%	16%	10%	20%	42%	23%	20%	20%	20%	45%	100%	22%	20%	19%	21%	55%
S&P 500 Pure Value	14%	7%	11%	19%	7%	6%	0%	0%	16%	24%	45%	33%	22%	100%	30%	55%	23%	17%
S&P 500 Buyback	12%	6%	3%	9%	10%	14%	14%	14%	20%	26%	35%	20%	20%	30%	100%	31%	23%	19%
S&P 500 Enhanced Value	7%	4%	8%	13%	9%	13%	1%	3%	24%	40%	36%	36%	19%	55%	31%	100%	16%	17%
S&P 500 High Beta	0%	0%	4%	12%	5%	12%	9%	18%	17%	18%	27%	14%	21%	23%	23%	16%	100%	12%

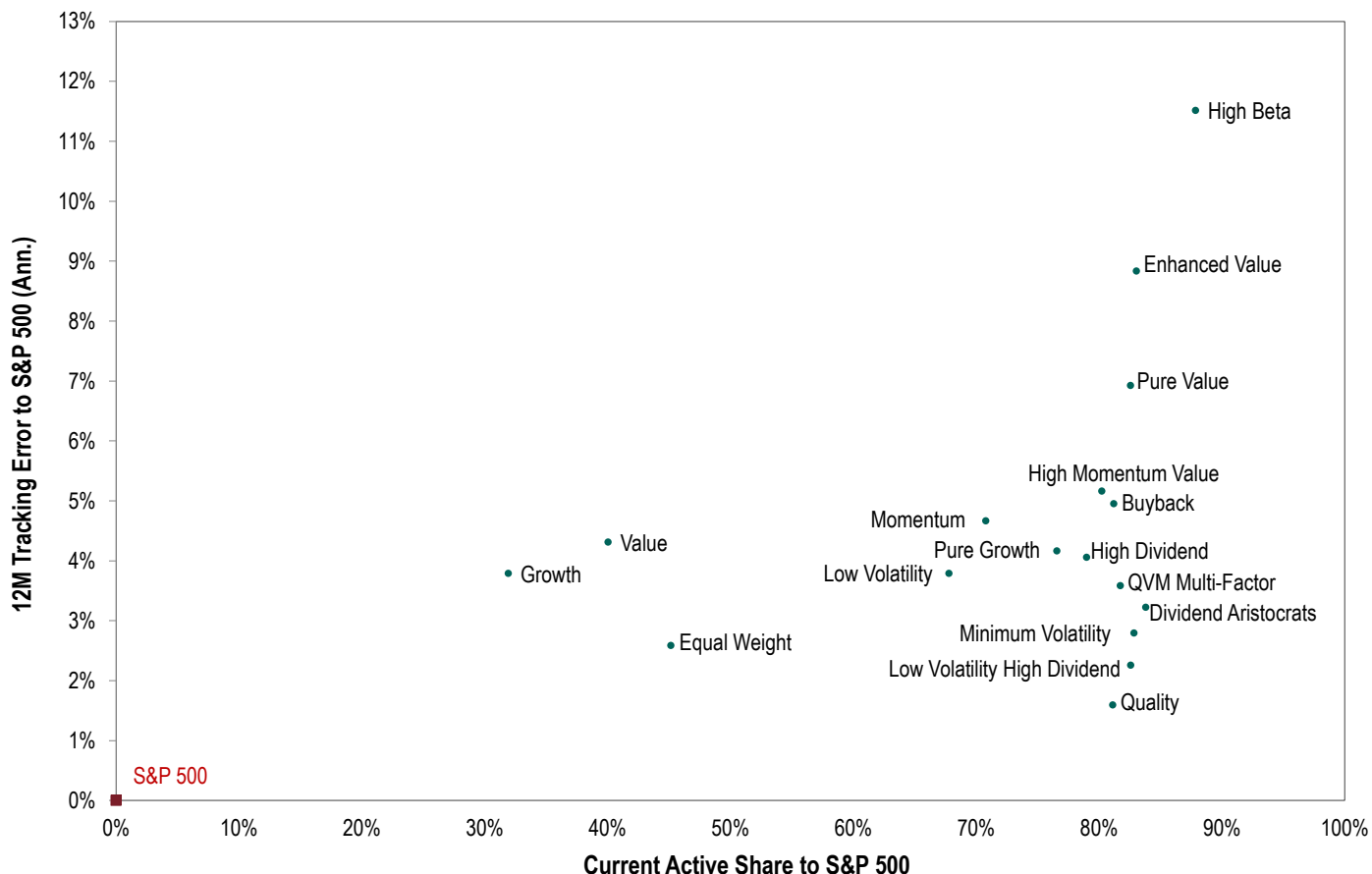
\*Portfolio Overlap\* is percentage of index weights held in common between any two indices.

RELATIVE RETURN CORRELATIONS

	S&P 500 Low Volatility	S&P 500 Minimum Volatility	S&P 500 Low Volatility High Dividend	S&P 500 High Dividend	S&P 500 Dividend Aristocrats	S&P 500 Quality	S&P 500 Growth	S&P 500 Pure Growth	S&P 500 Momentum	S&P 500 QVM Multi-Factor	S&P 500 High Momentum Value	S&P 500 Value	S&P 500 Equal Weight	S&P 500 Pure Value	S&P 500 Buyback	S&P 500 Enhanced Value	S&P 500 High Beta
S&P 500 Low Volatility	1.00	0.87	0.71	0.53	0.72	0.30	0.01	-0.15	0.23	-0.09	-0.11	-0.01	-0.09	-0.34	-0.43	-0.52	-0.68
S&P 500 Minimum Volatility	0.87	1.00	0.72	0.57	0.65	0.28	0.05	-0.10	0.25	-0.12	-0.17	-0.05	-0.07	-0.35	-0.41	-0.54	-0.64
S&P 500 Low Volatility High Dividend	0.71	0.72	1.00	0.89	0.60	0.12	-0.23	-0.31	-0.05	-0.12	0.03	0.23	0.27	0.04	-0.17	-0.25	-0.29
S&P 500 High Dividend	0.53	0.57	0.89	1.00	0.51	0.04	-0.38	-0.34	-0.20	-0.13	0.11	0.37	0.50	0.29	0.06	-0.02	-0.01
S&P 500 Dividend Aristocrats	0.72	0.65	0.60	0.51	1.00	0.39	-0.27	-0.23	0.04	0.00	-0.01	0.27	0.22	-0.03	-0.06	-0.22	-0.38
S&P 500 Quality	0.30	0.28	0.12	0.04	0.39	1.00	0.16	0.16	0.21	0.32	-0.02	-0.15	0.02	-0.25	0.05	-0.33	-0.22
S&P 500 Growth	0.01	0.05	-0.23	-0.38	-0.27	0.16	1.00	0.71	0.44	-0.22	-0.53	-1.00	-0.46	-0.73	-0.36	-0.71	-0.38
S&P 500 Pure Growth	-0.15	-0.10	-0.31	-0.34	-0.23	0.16	0.71	1.00	0.48	0.04	-0.17	-0.71	0.03	-0.35	0.04	-0.34	0.01
S&P 500 Momentum	0.23	0.25	-0.05	-0.20	0.04	0.21	0.44	0.48	1.00	0.20	0.02	-0.41	-0.26	-0.43	-0.25	-0.41	-0.36
S&P 500 QVM Multi-Factor	-0.09	-0.12	-0.12	-0.13	0.00	0.32	-0.22	0.04	0.20	1.00	0.64	0.23	0.13	0.16	0.43	0.32	0.12
S&P 500 High Momentum Value	-0.11	-0.17	0.03	0.11	-0.01	-0.02	-0.53	-0.17	0.02	0.64	1.00	0.54	0.43	0.56	0.54	0.65	0.36
S&P 500 Value	-0.01	-0.05	0.23	0.37	0.27	-0.15	-1.00	-0.71	-0.41	0.23	0.54	1.00	0.46	0.72	0.36	0.71	0.37
S&P 500 Equal Weight	-0.09	-0.07	0.27	0.50	0.22	0.02	-0.46	0.03	-0.26	0.13	0.43	0.46	1.00	0.72	0.66	0.47	0.62
S&P 500 Pure Value	-0.34	-0.35	0.04	0.29	-0.03	-0.25	-0.73	-0.35	-0.43	0.16	0.56	0.72	0.72	1.00	0.61	0.83	0.72
S&P 500 Buyback	-0.43	-0.41	-0.17	0.06	-0.06	0.05	-0.36	0.04	-0.25	0.43	0.54	0.36	0.66	0.61	1.00	0.62	0.62
S&P 500 Enhanced Value	-0.52	-0.54	-0.25	-0.02	-0.22	-0.33	-0.71	-0.34	-0.41	0.32	0.65	0.71	0.47	0.83	0.62	1.00	0.66
S&P 500 High Beta	-0.68	-0.64	-0.29	-0.01	-0.38	-0.22	-0.38	0.01	-0.36	0.12	0.36	0.37	0.62	0.72	0.62	0.66	1.00

Correlation of weekly S&P 500 total return outperformance, three years to September 29, 2017

### TRACKING ERROR & ACTIVE SHARE- RELATIVE TO S&P 500



### FACTOR EXPOSURE SUMMARY (See following page for factor scoring methodology)

INDEX	AVERAGE	LOW VOLATILITY	MOMENTUM	VALUE	HIGH BETA	DIVIDEND	QUALITY	SMALL SIZE
S&P 500 High Momentum Value	19.3%	-20.3%	14.3%	71.1%	34.7%	-2.9%	0.1%	38.2%
S&P 500 QVM Multi-Factor	18.1%	0.5%	25.3%	46.5%	18.7%	0.3%	32.8%	2.7%
S&P 500 Pure Value	14.2%	-48.3%	-7.0%	82.0%	24.9%	11.8%	-2.8%	38.8%
S&P 500 Enhanced Value	12.4%	-34.0%	-8.2%	85.3%	25.0%	9.0%	-2.9%	12.7%
S&P 500 Quality	11.1%	1.4%	-8.2%	-2.6%	-13.7%	14.3%	75.2%	11.2%
S&P 500 High Beta	9.9%	-82.1%	1.1%	23.4%	85.7%	-17.0%	-2.2%	60.3%
S&P 500 Value	6.0%	0.5%	-15.2%	39.6%	-0.6%	19.2%	-4.0%	2.7%
S&P 500 Low Volatility	6.0%	60.7%	0.1%	-0.4%	-48.8%	11.0%	0.1%	19.4%
S&P 500 Buyback	5.2%	-45.5%	1.1%	47.5%	24.7%	-17.7%	-11.1%	37.6%
S&P 500 Momentum	3.8%	-13.2%	63.7%	1.8%	44.8%	-28.1%	-11.5%	-30.7%
S&P 500 High Dividend	1.2%	-30.5%	-56.1%	28.5%	-28.6%	79.4%	-20.3%	36.3%
<b>S&amp;P 500</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>
S&P 500 Equal Weight	-0.2%	-41.6%	-13.3%	9.3%	4.4%	0.3%	-2.8%	42.5%
S&P 500 Dividend Aristocrats	-0.2%	8.1%	-33.3%	4.5%	-24.0%	16.9%	1.5%	25.0%
S&P 500 Low Volatility High Dividend	-1.9%	5.1%	-63.3%	8.2%	-47.1%	78.4%	-19.1%	24.4%
S&P 500 Minimum Volatility	-2.4%	-2.0%	-33.3%	-3.7%	-40.1%	17.4%	8.2%	36.9%
S&P 500 Pure Growth	-4.5%	-48.3%	17.7%	-20.9%	21.0%	-33.8%	-3.7%	36.3%
S&P 500 Growth	-5.3%	0.0%	12.4%	-26.1%	0.3%	-12.5%	0.1%	-11.6%

Source: S&P Dow Jones Indices LLC and/or its affiliates. Data as of September 29, 2017.

# S&P Dow Jones Indices

An S&P Global Division

## Index Dashboard: S&P 500® Factor Indices

Third Quarter, 2017

### KEY TO FACTOR SCORINGS FOR INDICES

#### Factor Definitions

Each constituent of the S&P 500 index is provided with a factor "score" for each of Beta, Volatility, Momentum, Dividend, Size, Value and Quality.



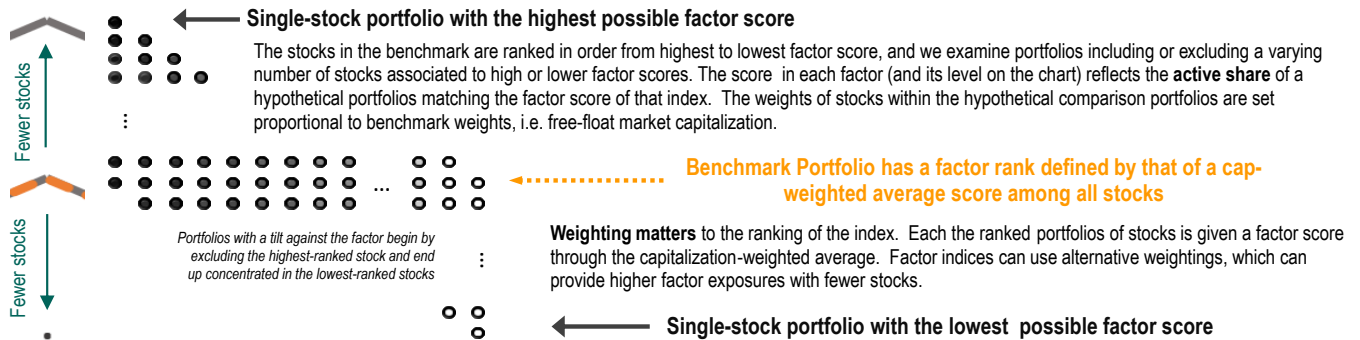
Factor	Measurement at single-stock level
<b>Volatility</b>	Trailing 12-month daily volatility.
<b>Momentum</b>	Twelve-month price change as of one month ago ("13 minus 1 momentum"), divided by the daily volatility during the twelve-month period that ended one month prior. For more details, see the <a href="#">S&amp;P Momentum</a> methodology.
<b>Value</b>	The average of (normalized) earnings to price ratio, book to price ratio and sales to price ratio. For more details, see the <a href="#">S&amp;P Value</a> methodology.
<b>Beta</b>	Trailing 1 year beta of daily returns to the benchmark's returns.
<b>Dividend</b>	Trailing 12-month dividend.
<b>Quality</b>	The average of the (normalized) return on equity, the negative of the accruals ratio and the negative of the financial leverage ratio. For more details, see the <a href="#">S&amp;P Quality</a> methodology. Average and standard deviations for each metric follow below.
<b>Size</b>	Free-float market capitalization.

#### Index Factor Ranking and Factor Diagram Scaling

##### Index Scores

Each index is provided score in each factor from -100% to +100% based on how much of the total capitalization of the benchmark must be excluded in order to provide a portfolio of stocks with similar exposure to that factor. This is done by examining a ranked series of hypothetical cap-weighted portfolios, including or excluding an increasing number of the stocks with the highest or lowest scores. An illustration of the process is below, further details may be found at this [link](#).

##### Factor Diagram Axis



#### Notes On Additional Index Statistics

Statistic	Notes
Active Share (Stock)	Ranging from 0 to 100%, "active share" is a measure of how much a portfolio's composition differs from that of its benchmark, and provides the amount of trading theoretically required to switch from a position in one to a position in the other. The Active Share (Stock) for each index is calculated as the absolute sum of difference between S&P 500 stock weights and Index stock weights, divided by two.
Active Share (Sector)	The Active Share (Sector) is the absolute sum of difference between S&P 500 sector weights and Index sector weights, divided by two.
Concentration (HH Index)	The Herfindahl-Hirschman ("HH") concentration measure is equal to the index constituent's percentage weights, squared. For example, the HH measure of a single-stock portfolio is 10,000 (the maximum possible). The HH measure of a 100-stock, equally weighted index is 100.
Correlation (Stock)	Calculated as the weighted-average 1Yr trailing daily variance of current index constituents, divided by the 1Yr trailing daily Index variance. The value approximates an average stock-to-stock correlation of index constituents, weighted proportionally to both constituent weight and constituent volatility.

#### Benchmark Statistics for Value, Quality and Momentum (normalization variables)

	VALUE			QUALITY			MOMENTUM	
	Earnings to Price	Book to Price	Sales to Price	Accrual Ratio	Return on Equity	Leverage Ratio	12M - 1M Return	Daily Price Volatility
S&P 500 index-weighted average	4.17%	30.3%	44.4%	7.37%	20.19%	1.45	14.71%	1.21%
S&P 500 index-weighted standard deviation	2.56%	24.6%	42.4%	18.49%	25.63%	1.81	20.82%	0.39%

Source: S&P Dow Jones Indices LLC and/or its affiliates. Data as of September 29, 2017.



# S&P Dow Jones Indices

An S&P Global Division

## Index Dashboard: S&P 500® Factor Indices

Third Quarter, 2017

### S&P 500 Low Volatility

#### Description

The S&P 500 Low Volatility is designed to measure the performance of the 100 stocks in the S&P 500 with the lowest volatility, measured on a 1-year trailing basis. The weighting of each stock is in inverse proportion to its volatility.

Index Statistics	1M	3M	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	0.8%	3.0%	13.1%	12.2%	13.2%	9.4%	10.7%
Relative to Benchmark	-1.3%	-1.4%	-5.5%	1.4%	-1.0%	2.0%	0.7%
Index Volatility			5.70%	8.60%	9.02%	11.02%	10.03%
Tracking Error			3.79%	6.65%	6.48%	8.07%	7.53%

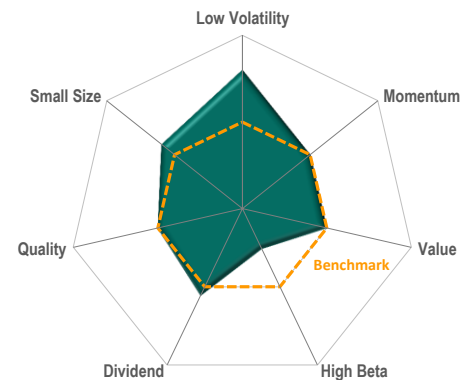
Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 0.65

#### Portfolio Statistics

Active Share (Stock)	68%
Active Share (Sector)	33%
Concentration (HH Index)	101.3
Correlation (stock)	0.24
Average Market Cap (\$ bn)	83.53

#### Top Sector Tilts (versus benchmark)

Sector	Index	Benchmark	Difference
Utilities	16%	3%	13%
Industrials	18%	10%	8%
Health Care	5%	15%	-10%
Information Technology	11%	23%	-12%



### S&P 500 Minimum Volatility

#### Description

The S&P 500 Minimum Volatility uses an optimization process to find the portfolio of S&P 500 stocks, and weights, that would have demonstrated the lowest volatility on a historical basis, subject to constraints maintaining limiting sector and factor exposures. As of Sep 29, 2017 the index comprised 100 constituents.

Index Statistics	1M	3M	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	1.2%	2.3%	9.1%	11.4%	14.1%	7.9%	10.9%
Relative to Benchmark	-0.8%	-2.2%	-9.5%	0.6%	-0.2%	0.4%	0.8%
Index Volatility			4.90%	8.07%	8.15%	11.96%	11.04%
Tracking Error			2.79%	5.61%	4.70%	5.99%	5.52%

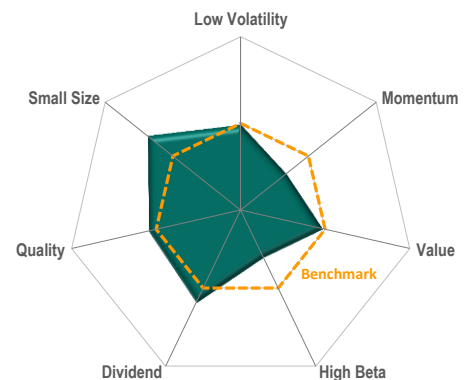
Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 0.74

#### Portfolio Statistics

Active Share (Stock)	83%
Active Share (Sector)	21%
Concentration (HH Index)	144.9
Correlation (stock)	0.14
Average Market Cap (\$ bn)	52.59

#### Top Sector Tilts (versus benchmark)

Sector	Index	Benchmark	Difference
Consumer Staples	13%	8%	5%
Consumer Discretionary	17%	12%	5%
Financials	10%	15%	-5%
Energy	1%	6%	-5%



### S&P 500 Low Volatility High Dividend

#### Description

The S&P 500 Low Volatility High Dividend measures the performance of the 50 least-volatile high dividend-yielding stocks in the S&P 500. Each component is weighted proportionally to its dividend yield.

Index Statistics	1M	3M	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	2.4%	2.8%	9.8%	14.5%	14.9%	11.8%	13.3%
Relative to Benchmark	0.3%	-1.7%	-8.8%	3.7%	0.6%	4.4%	3.3%
Index Volatility			5.82%	8.83%	9.14%	13.78%	12.74%
Tracking Error			2.26%	6.77%	6.87%	7.75%	7.29%

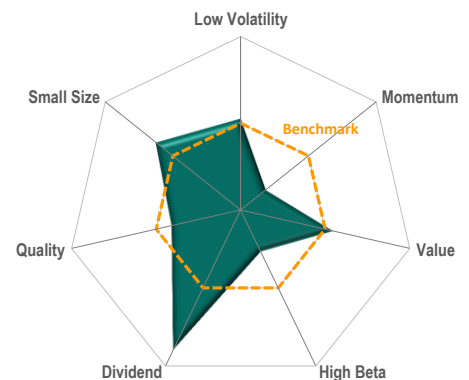
Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 0.8

#### Portfolio Statistics

Active Share (Stock)	83%
Active Share (Sector)	46%
Concentration (HH Index)	209.6
Correlation (stock)	0.20
Average Market Cap (\$ bn)	74.82

#### Top Sector Tilts (versus benchmark)

Sector	Index	Benchmark	Difference
Real Estate	24%	3%	21%
Utilities	19%	3%	16%
Health Care	4%	15%	-11%
Information Technology	10%	23%	-13%



### S&P 500 High Dividend

#### Description

The S&P 500 High Dividend is constructed from the 80 constituents of the S&P 500 with the highest indicated dividend yield.

The index is equal weighted.

Index Statistics	1M	3M	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	3.3%	3.1%	9.8%	12.5%	15.2%	8.0%	11.2%
Relative to Benchmark	1.2%	-1.4%	-8.8%	1.7%	0.9%	0.6%	1.1%
Index Volatility			6.73%	9.38%	9.51%	18.51%	16.46%
Tracking Error			3.58%	6.94%	6.88%	9.84%	8.80%

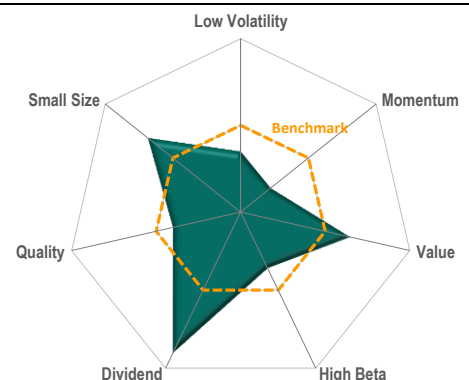
Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 0.94

#### Portfolio Statistics

Active Share (Stock)	82%
Active Share (Sector)	42%
Concentration (HH Index)	127.4
Correlation (stock)	0.18
Average Market Cap (\$ bn)	52.87

#### Top Sector Tilts (versus benchmark)

Sector	Index	Benchmark	Difference
Real Estate	27%	3%	19%
Utilities	18%	3%	15%
Health Care	3%	15%	-12%
Information Technology	11%	23%	-12%



# S&P Dow Jones Indices

An S&P Global Division

## Index Dashboard: S&P 500® Factor Indices

Third Quarter, 2017

### S&P 500 Quality

#### Description

The S&P 500 Quality is designed to track the 100 stocks in the S&P 500 with the highest quality score, which is calculated based on return on equity, accruals ratio and financial leverage ratio. The weighting is proportional to both the quality score, and the market capitalization, of each component.

Index Statistics	1M	3M	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	2.9%	3.8%	17.0%	10.0%	13.9%	9.2%	11.9%
Relative to Benchmark	0.8%	-0.7%	-1.6%	-0.8%	-0.3%	1.7%	1.8%
Index Volatility			5.45%	9.82%	9.80%	14.10%	13.21%
Tracking Error			1.59%	2.00%	1.98%	3.19%	3.23%

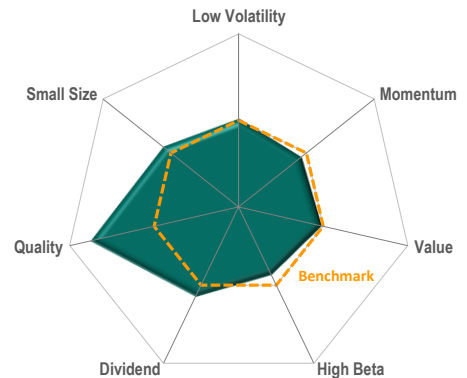
Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 0.9

#### Portfolio Statistics

Active Share (Stock)	81%
Active Share (Sector)	26%
Concentration (HH Index)	226.8
Correlation (stock)	0.16
Average Market Cap (\$ bn)	103.52

#### Top Sector Tilts (versus benchmark)

Sector	Index	Benchmark	Difference
Industrials	23%	10%	12%
Consumer Staples	14%	8%	6%
Energy	1%	6%	-5%
Financials	5%	15%	-10%



### S&P 500 Enhanced Value

#### Description

The S&P 500 Enhanced Value is designed to measure the performance of the 100 stocks in the S&P 500 with the highest average book value-to-price, earnings-to-price, and sales-to-price. The weighting is proportional to both the value score and the market capitalization of each component.

Index Statistics	1M	3M	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	4.0%	3.4%	26.5%	9.7%	16.8%	6.6%	10.8%
Relative to Benchmark	2.0%	-1.1%	7.8%	-1.1%	2.6%	-0.9%	0.8%
Index Volatility			11.64%	13.35%	12.72%	21.58%	19.10%
Tracking Error			8.83%	6.82%	6.68%	9.35%	8.28%

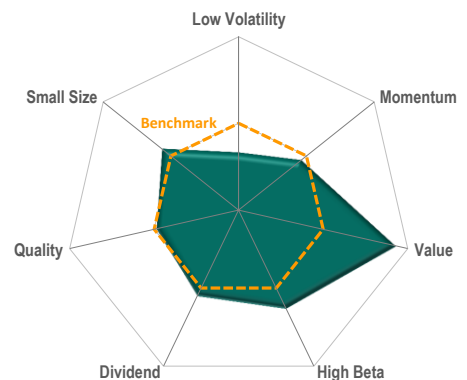
Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 1.18

#### Portfolio Statistics

Active Share (Stock)	83%
Active Share (Sector)	36%
Concentration (HH Index)	215.6
Correlation (stock)	0.26
Average Market Cap (\$ bn)	100.74

#### Top Sector Tilts (versus benchmark)

Sector	Index	Benchmark	Difference
Financials	42%	15%	28%
Consumer Staples	14%	8%	6%
Industrials	4%	10%	-6%
Information Technology	3%	23%	-20%



### S&P 500 Momentum

#### Description

The S&P 500 Momentum comprises the top 100 stocks in the S&P 500 based on 12M prior risk-adjusted performance (excluding the most recent month at the rebalance). The weighting is inversely proportional to the trailing volatility of each component.

Index Statistics	1M	3M	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	2.9%	6.4%	18.1%	10.4%	13.2%	7.6%	9.5%
Relative to Benchmark	0.8%	1.9%	-0.5%	-0.4%	-1.0%	0.2%	-0.5%
Index Volatility			5.58%	9.79%	9.60%	14.83%	13.76%
Tracking Error			4.66%	4.67%	4.33%	6.54%	7.25%

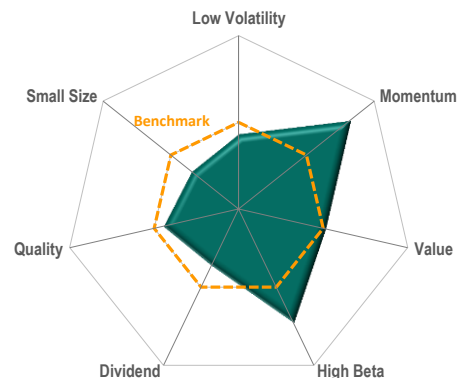
Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 1.06

#### Portfolio Statistics

Active Share (Stock)	71%
Active Share (Sector)	38%
Concentration (HH Index)	345.1
Correlation (stock)	0.24
Average Market Cap (\$ bn)	241.36

#### Top Sector Tilts (versus benchmark)

Sector	Index	Benchmark	Difference
Financials	35%	15%	21%
Information Technology	39%	23%	16%
Consumer Staples	0%	8%	-8%
Health Care	5%	15%	-10%



### S&P 500 QVM Multi-Factor

#### Description

The S&P 500 QVM Multi-Factor comprises the 100 stocks with the highest combined quality, value and momentum scores, weighted in proportion to both market capitalization and multifactor score.

Index Statistics	1M	3M	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	3.4%	5.7%	25.4%	10.8%	14.2%	8.5%	12.4%
Relative to Benchmark	1.4%	1.3%	6.8%	0.0%	0.0%	1.1%	2.3%
Index Volatility			7.63%	10.41%	10.28%	14.83%	13.62%
Tracking Error			4.16%	3.40%	3.04%	4.13%	5.50%

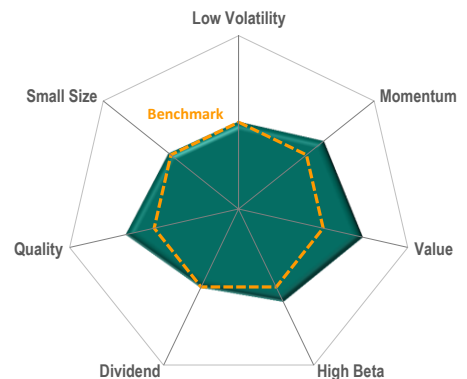
Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 1

#### Portfolio Statistics

Active Share (Stock)	71%
Active Share (Sector)	29%
Concentration (HH Index)	223.3
Correlation (stock)	0.19
Average Market Cap (\$ bn)	139.06

#### Top Sector Tilts (versus benchmark)

Sector	Index	Benchmark	Difference
Financials	31%	15%	17%
Industrials	17%	10%	7%
Energy	1%	6%	-5%
Consumer Discretionary	3%	12%	-8%





# S&P Dow Jones Indices

An S&P Global Division

## Index Dashboard: S&P 500® Factor Indices

Third Quarter, 2017

### S&P 500 High Momentum Value

#### Description

The S&P 500 High Momentum Value is designed to measure the performance of the 100 stocks with the highest momentum selected from the 200 stocks in the S&P 500 with the highest value score, subject to turnover constraints. The weighting is proportional to the value score of each constituent.

Index Statistics	1M	3M	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	3.7%	4.2%	26.2%	11.5%	17.0%	10.8%	14.2%
Relative to Benchmark	1.6%	-0.3%	7.6%	0.7%	2.8%	3.4%	4.2%
Index Volatility			8.13%	10.53%	10.63%	20.27%	17.81%
Tracking Error			5.16%	4.66%	4.37%	8.55%	7.82%

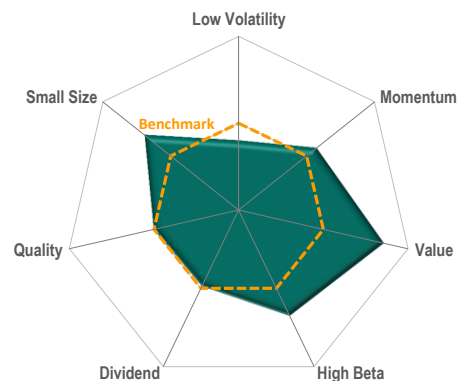
Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 1.06

#### Portfolio Statistics

Active Share (Stock)	80%
Active Share (Sector)	42%
Concentration (HH Index)	110.9
Correlation (stock)	0.22
Average Market Cap (\$ bn)	50.32

#### Top Sector Tilts (versus benchmark)

Sector	Index	Benchmark	Difference
Financials	50%	15%	35%
Utilities	9%	3%	5%
Health Care	7%	15%	-8%
Information Technology	9%	23%	-15%



### S&P 500 Growth

#### Description

The S&P 500 Growth is comprised of S&P 500 stocks with above-average combinations of the ratio of earnings growth to price, sales growth, and momentum. The weighting is by capitalization, although the weight of some stocks is divided between the Value and Growth indices. As of Sep 29, 2017 the index comprised 331 constituents.

Index Statistics	1M	3M	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	1.1%	5.3%	19.9%	12.2%	15.0%	9.1%	10.3%
Relative to Benchmark	-0.9%	0.8%	1.3%	1.4%	0.8%	1.7%	0.3%
Index Volatility			5.28%	10.49%	9.96%	14.61%	13.40%
Tracking Error			3.79%	2.97%	2.72%	3.22%	3.00%

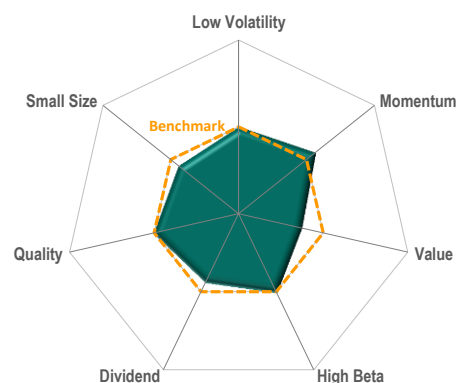
Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 1

#### Portfolio Statistics

Active Share (Stock)	32%
Active Share (Sector)	21%
Concentration (HH Index)	144.9
Correlation (stock)	0.18
Average Market Cap (\$ bn)	194.20

#### Top Sector Tilts (versus benchmark)

Sector	Index	Benchmark	Difference
Information Technology	36%	23%	13%
Consumer Discretionary	16%	12%	4%
Energy	2%	6%	-4%
Financials	4%	15%	-10%



### S&P 500 Value

#### Description

The S&P 500 Value comprises S&P 500 stocks with above-average combinations of book value-to-price, earnings-to-price, and sales-to-price. The weighting is by capitalization, although the weight of some stocks is divided between the Value and Growth indices. As of Sep 29, 2017 the index comprised 349 constituents.

Index Statistics	1M	3M	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	3.3%	3.5%	16.5%	8.9%	13.2%	5.6%	9.6%
Relative to Benchmark	1.2%	-1.0%	-2.1%	-1.9%	-1.0%	-1.9%	-0.4%
Index Volatility			7.75%	10.21%	9.80%	16.33%	14.98%
Tracking Error			4.31%	3.31%	3.03%	3.53%	3.23%

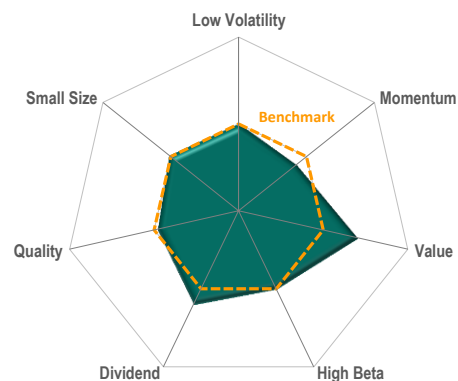
Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 0.99

#### Portfolio Statistics

Active Share (Stock)	40%
Active Share (Sector)	26%
Concentration (HH Index)	109.5
Correlation (stock)	0.19
Average Market Cap (\$ bn)	131.78

#### Top Sector Tilts (versus benchmark)

Sector	Index	Benchmark	Difference
Financials	28%	15%	13%
Energy	11%	6%	5%
Consumer Discretionary	7%	12%	-5%
Information Technology	7%	23%	-16%



### S&P 500 Pure Growth

#### Description

The S&P 500 Pure Growth comprises those S&P 500 stocks with 100% of their market cap in the S&P 500 Growth index and a growth score in the highest quartile. The weighting is proportional to the growth score. As of Sep 29, 2017 the index comprised 116 constituents.

Index Statistics	1M	3M	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	2.2%	6.6%	20.0%	10.1%	16.5%	11.1%	13.8%
Relative to Benchmark	0.1%	2.1%	1.3%	-0.8%	2.3%	3.6%	3.8%
Index Volatility			5.58%	10.52%	10.95%	17.46%	16.53%
Tracking Error			4.06%	4.02%	4.68%	5.65%	5.74%

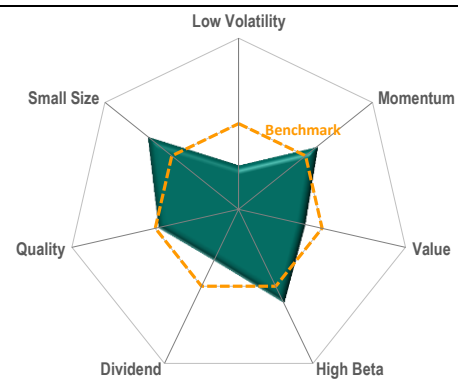
Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 1.14

#### Portfolio Statistics

Active Share (Stock)	79%
Active Share (Sector)	28%
Concentration (HH Index)	113.4
Correlation (stock)	0.18
Average Market Cap (\$ bn)	52.88

#### Top Sector Tilts (versus benchmark)

Sector	Index	Benchmark	Difference
Information Technology	32%	23%	9%
Consumer Discretionary	19%	12%	8%
Consumer Staples	1%	8%	-7%
Financials	5%	15%	-10%



# S&P Dow Jones Indices

An S&P Global Division

## Index Dashboard: S&P 500® Factor Indices

Third Quarter, 2017

### S&P 500 Pure Value

#### Description

The S&P 500 Pure Value comprises S&P 500 stocks with 100% of their market cap in the S&P 500 Value index and a value score in the highest quartile. The weighting is proportional to the value score. As of Sep 29, 2017 the index comprised 107 constituents.

Index Statistics	1M	3M	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	3.8%	3.9%	18.9%	7.6%	16.5%	8.7%	13.0%
Relative to Benchmark	1.7%	-0.6%	0.3%	-3.2%	2.3%	1.3%	2.9%
Index Volatility			10.07%	13.12%	12.68%	24.08%	21.23%
Tracking Error			6.92%	6.26%	6.12%	12.61%	11.25%

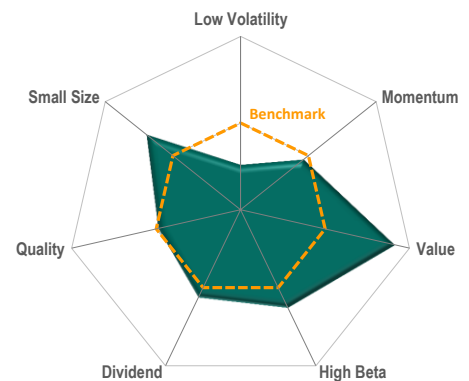
Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 1.2

#### Portfolio Statistics

Active Share (Stock)	83%
Active Share (Sector)	33%
Concentration (HH Index)	121.2
Correlation (stock)	0.22
Average Market Cap (\$ bn)	48.89

#### Top Sector Tilts (versus benchmark)

Sector	Index	Benchmark	Difference
Financials	37%	15%	22%
Utilities	9%	3%	5%
Industrials	6%	10%	-4%
Information Technology	3%	23%	-20%



### S&P 500 Buyback

#### Description

The S&P 500 Buyback is designed to measure the performance of the top 100 stocks in the S&P 500 by buyback ratio. The components are equally weighted.

Index Statistics	1M	3M	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	3.8%	3.8%	18.9%	9.6%	16.9%	10.7%	12.8%
Relative to Benchmark	1.7%	-0.7%	0.3%	-1.2%	2.7%	3.3%	2.7%
Index Volatility			8.02%	12.31%	11.77%	17.62%	15.64%
Tracking Error			4.95%	4.82%	4.49%	5.64%	5.33%

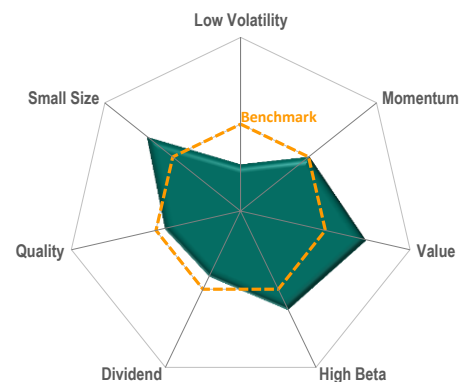
Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 1.16

#### Portfolio Statistics

Active Share (Stock)	81%
Active Share (Sector)	25%
Concentration (HH Index)	102.3
Correlation (stock)	0.20
Average Market Cap (\$ bn)	51.08

#### Top Sector Tilts (versus benchmark)

Sector	Index	Benchmark	Difference
Financials	29%	15%	14%
Consumer Discretionary	22%	12%	10%
Information Technology	17%	23%	-6%
Energy	0%	6%	-6%



### S&P 500 Equal Weight

#### Description

The S&P 500 Equal Weight comprises all 500 stocks in the S&P 500, equally weighted.

Index Statistics	1M	3M	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	2.9%	3.6%	16.2%	10.1%	15.0%	8.9%	12.4%
Relative to Benchmark	0.9%	-0.9%	-2.4%	-0.7%	0.8%	1.5%	2.4%
Index Volatility			6.43%	10.31%	10.04%	17.75%	16.37%
Tracking Error			2.59%	2.49%	2.44%	4.49%	4.45%

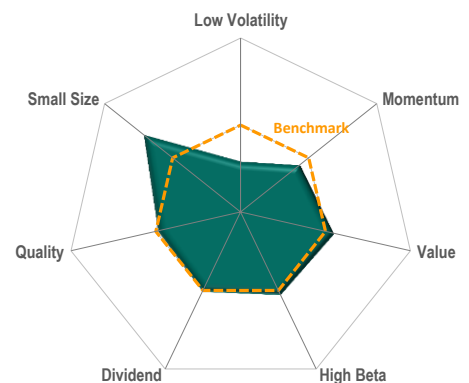
Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 1.05

#### Portfolio Statistics

Active Share (Stock)	45%
Active Share (Sector)	16%
Concentration (HH Index)	20.0
Correlation (stock)	0.14
Average Market Cap (\$ bn)	44.38

#### Top Sector Tilts (versus benchmark)

Sector	Index	Benchmark	Difference
Consumer Discretionary	16%	12%	4%
Industrials	14%	10%	4%
Health Care	12%	15%	-3%
Information Technology	14%	23%	-10%



### S&P 500 Dividend Aristocrats

#### Description

The S&P 500 Dividend Aristocrats measures the performance S&P 500 companies that have increased dividends every year for the last 25 consecutive years. The Index is equally weighted at each rebalance. As of Sep 29, 2017 the index comprised 51 constituents.

Index Statistics	1M	3M	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	3.1%	3.6%	12.2%	11.3%	14.5%	10.6%	11.7%
Relative to Benchmark	1.0%	-0.9%	-6.5%	0.5%	0.3%	3.2%	1.6%
Index Volatility			7.32%	9.35%	9.47%	14.01%	12.63%
Tracking Error			3.22%	4.12%	3.75%	5.61%	5.22%

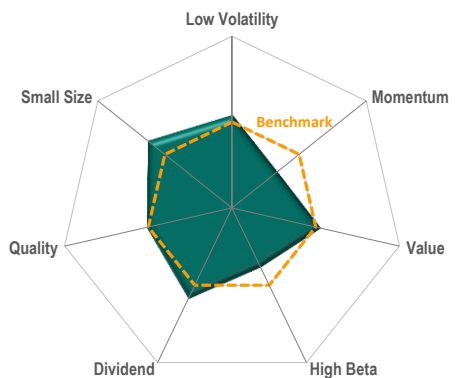
Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 0.86

#### Portfolio Statistics

Active Share (Stock)	84%
Active Share (Sector)	32%
Concentration (HH Index)	196.9
Correlation (stock)	0.18
Average Market Cap (\$ bn)	72.66

#### Top Sector Tilts (versus benchmark)

Sector	Index	Benchmark	Difference
Consumer Staples	25%	8%	17%
Industrials	18%	10%	8%
Financials	10%	15%	-5%
Information Technology	2%	23%	-21%



# S&P Dow Jones Indices

An S&P Global Division

## Index Dashboard: S&P 500® Factor Indices

Third Quarter, 2017

### S&P 500 High Beta

#### Description

The S&P 500 High Beta is designed to measure the performance of the top 100 stocks in the S&P 500 by sensitivity to market returns. The weighting is in proportional to the beta coefficient of each constituent.

Index Statistics	1M	3M	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	6.8%	6.8%	22.4%	7.7%	15.5%	3.1%	10.5%
Relative to Benchmark	4.8%	2.3%	3.8%	-3.1%	1.2%	-4.3%	0.4%
Index Volatility			13.89%	17.84%	16.13%	27.84%	27.85%
Tracking Error			11.51%	11.48%	10.01%	15.16%	16.51%

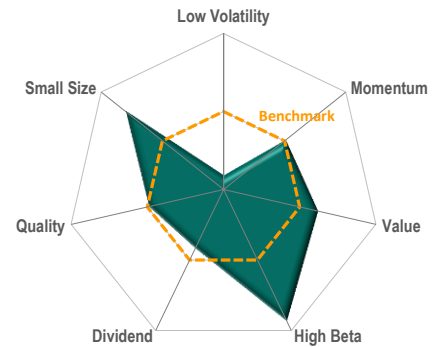
Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 1.56

#### Portfolio Statistics

Active Share (Stock)	88%
Active Share (Sector)	32%
Concentration (HH Index)	103.4
Correlation (stock)	0.26
Average Market Cap (\$ bn)	27.38

#### Top Sector Tilts (versus benchmark)

Sector	Index	Benchmark	Difference
Industrials	24%	10%	13%
Financials	24%	15%	9%
Consumer Staples	0%	8%	-8%
Health Care	4%	15%	-10%



#### General Disclaimer

Copyright © 2017 by S&P Dow Jones Indices LLC, a part of S&P Global. All rights reserved. Standard & Poor's®, S&P 500® and S&P® are registered trademarks of Standard & Poor's Financial Services LLC ("S&P"), a subsidiary of S&P Global. Dow Jones® is a registered trademark of Dow Jones Trademark Holdings LLC ("Dow Jones"). Trademarks have been licensed to S&P Dow Jones Indices LLC. Redistribution, reproduction and/or photocopying in whole or in part are prohibited without written permission. This document does not constitute an offer of services in jurisdictions where S&P Dow Jones Indices LLC, Dow Jones, S&P or their respective affiliates (collectively "S&P Dow Jones Indices") do not have the necessary licenses. All information provided by S&P Dow Jones Indices is impersonal and not tailored to the needs of any person, entity or group of persons. S&P Dow Jones Indices receives compensation in connection with licensing its indices to third parties. Past performance of an index is not a guarantee of future results.

It is not possible to invest directly in an index. Exposure to an asset class represented by an index is available through investable instruments based on that index. S&P Dow Jones Indices does not sponsor, endorse, sell, promote or manage any investment fund or other investment vehicle that is offered by third parties and that seeks to provide an investment return based on the performance of any index. S&P Dow Jones Indices makes no assurance that investment products based on the index will accurately track index performance or provide positive investment returns. S&P Dow Jones Indices LLC is not an investment advisor, and S&P Dow Jones Indices makes no representation regarding the advisability of investing in any such investment fund or other investment vehicle. A decision to invest in any such investment fund or other investment vehicle should not be made in reliance on any of the statements set forth in this document. Prospective investors are advised to make an investment in any such fund or other vehicle only after carefully considering the risks associated with investing in such funds, as detailed in an offering memorandum or similar document that is prepared by or on behalf of the issuer of the investment fund or other vehicle. Inclusion of a security within an index is not a recommendation by S&P Dow Jones Indices to buy, sell, or hold such security, nor is it considered to be investment advice.

These materials have been prepared solely for informational purposes based upon information generally available to the public and from sources believed to be reliable. No content contained in these materials (including index data, ratings, credit-related analyses and data, research, valuations, model, software or other application or output therefrom) or any part thereof (Content) may be modified, reverse-engineered, reproduced or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written permission of S&P Dow Jones Indices. The Content shall not be used for any unlawful or unauthorized purposes. S&P Dow Jones Indices and its third-party data providers and licensors (collectively "S&P Dow Jones Indices Parties") do not guarantee the accuracy, completeness, timeliness or availability of the Content. S&P Dow Jones Indices Parties are not responsible for any errors or omissions, regardless of the cause, for the results obtained from the use of the Content. THE CONTENT IS PROVIDED ON AN "AS IS" BASIS. S&P DOW JONES INDICES PARTIES DISCLAIM ANY AND ALL EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE, FREEDOM FROM BUGS, SOFTWARE ERRORS OR DEFECTS, THAT THE CONTENT'S FUNCTIONING WILL BE UNINTERRUPTED OR THAT THE CONTENT WILL OPERATE WITH ANY SOFTWARE OR HARDWARE CONFIGURATION. In no event shall S&P Dow Jones Indices Parties be liable to any party for any direct, indirect, incidental, exemplary, compensatory, punitive, special or consequential damages, costs, expenses, legal fees, or losses (including, without limitation, lost income or lost profits and opportunity costs) in connection with any use of the Content even if advised of the possibility of such damages.

S&P Dow Jones Indices keeps certain activities of its business units separate from each other in order to preserve the independence and objectivity of their respective activities. As a result, certain business units of S&P Dow Jones Indices may have information that is not available to other business units. S&P Dow Jones Indices has established policies and procedures to maintain the confidentiality of certain non-public information received in connection with each analytical process. In addition, S&P Dow Jones Indices provides a wide range of services to, or relating to, many organizations, including issuers of securities, investment advisers, broker-dealers, investment banks, other financial institutions and financial intermediaries, and accordingly may receive fees or other economic benefits from those organizations, including organizations whose securities or services they may recommend, rate, include in model portfolios, evaluate or otherwise address.

#### Performance Disclosure

The S&P 500 Buyback Index was launched November 29, 2012. The S&P 500 Enhanced Value Index was launched April 27, 2015. The S&P 500 Pure Value was launched December 16, 2005. The S&P 500 Quality Index was launched July 8, 2014. The S&P 500 Pure Growth was launched December 16, 2005. The S&P 500 Momentum was launched November 18, 2014. The S&P 500 High Beta Index was launched April 4, 2011. The S&P 500 Equal Weight Index was launched January 8, 2003. The S&P 500 Low Volatility High Dividend Index was launched September 17, 2012. The S&P 500 Dividend Aristocrats was launched May 2, 2005. The S&P 500 High Dividend Index was launched September 21, 2015. The S&P 500 Minimum Volatility Index was launched November 9, 2012. The S&P 500 Low Volatility Index was launched April 4, 2011. All information presented prior to an index's Launch Date is hypothetical (back-tested), not actual performance. The back-test calculations are based on the same methodology that was in effect on the index Launch Date. Complete index methodology details are available at [www.spdji.com](http://www.spdji.com).

Charts and graphs are provided for illustrative purposes. Past performance is not an indication or guarantee of future results. The charts and graphs may reflect hypothetical historical performance. All information presented prior to the launch date is back-tested. Back-tested performance is not actual performance, but is hypothetical. The back-test calculations are based on the same methodology that was in effect when the index(es) was officially launched. However, it should be noted that the historic calculations of an Economic Index may change from month to month based on revisions to the underlying economic data used in the calculation of the index. Complete index methodology details are available at [www.spdji.com](http://www.spdji.com). It is not possible to invest directly in any index.

S&P Dow Jones Indices defines various dates to assist our clients in providing transparency on their products. The First Value Date is the first day for which there is a calculated value (either live or back-tested) for a given index. The Base Date is the date at which a given index is set at a fixed value for calculation purposes. The Launch Date designates the date upon which the values of a given index are first considered live; index values provided for any date or time period prior to the index's Launch Date are considered back-tested. S&P Dow Jones Indices defines the Launch Date as the date by which the values of an index are known to have been released to the public, for example via S&P Dow Jones Indices's public website or its datafeed to external parties. For Dow Jones-branded indices introduced prior to May 31, 2013, the Launch Date (which prior to May 31, 2013, was termed "Date of introduction") is set at a date upon which no further changes were permitted to be made to the index methodology, but that may have been prior to the index's public release date.

Prospective application of the methodology used to construct the index(es) as well as revisions to economic data may not result in performance commensurate with the back-test returns shown. The back-test period does not necessarily correspond to the entire available history of the index(es). Please refer to the index methodology for the particular index in question, available at [www.spdji.com](http://www.spdji.com), for more details about such index, including the manner in which it is rebalanced, the timing of such rebalancing, criteria for additions and deletions, as well as all index calculations.

Another limitation of using back-tested information is that the back-tested calculation is generally prepared with the benefit of hindsight. Back-tested data and/or information reflects the application of the index methodology and selection of index constituents in hindsight. No hypothetical record can completely account for the impact of financial risk in actual trading. For example, there are numerous factors related to the equities, fixed income, or commodities markets in general which cannot be, and have not been accounted for in the preparation of the index information set forth, all of which can affect actual performance.

The index returns shown do not represent the results of actual trading of investable assets/securities. S&P Dow Jones Indices LLC maintains the index(es) and calculates the index levels and performance shown or discussed, but does not manage actual assets. Index returns do not reflect payment of any sales charges or fees an investor may pay to purchase the securities underlying the index(es) or investment funds that are intended to track the performance of the index(es). The imposition of these fees and charges would cause actual and back-tested performance of the securities/fund to be lower than the index performance shown. As a simple example, if an index returned 10% on a US \$100,000 investment for a 12-month period (or US \$10,000) and an actual asset-based fee of 1.5% was imposed at the end of the period on the investment plus accrued interest (or US \$1,650), the net return would be 8.35% (or US \$8,350) for the year. Over a three year period, an annual 1.5% fee taken at year end with an assumed 10% return per year would result in a cumulative gross return of 33.10%, a total fee of US \$5,375, and a cumulative net return of 27.2% (or US \$27,200).