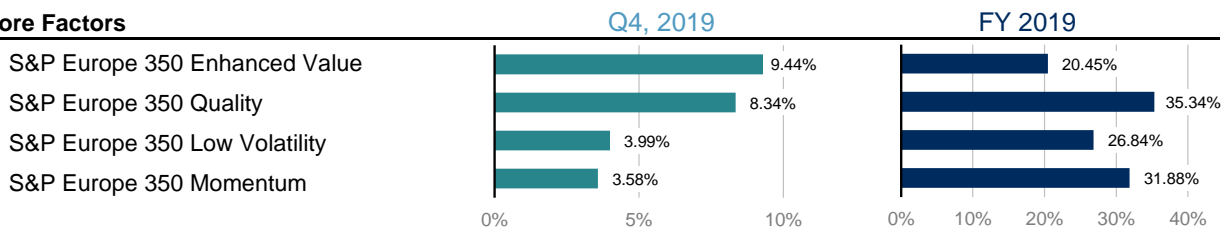
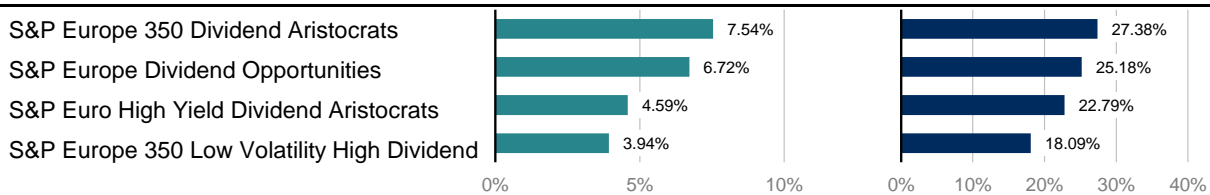


RECENT PERFORMANCE

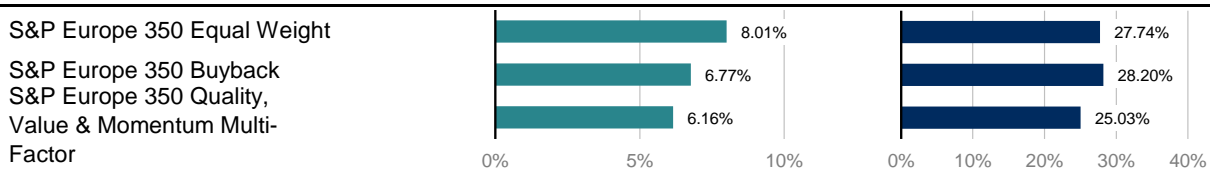
Core Factors



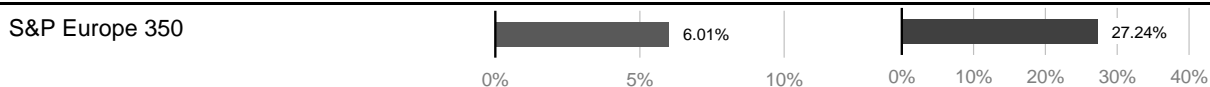
Dividends



Other



Benchmark



COMMENTARY

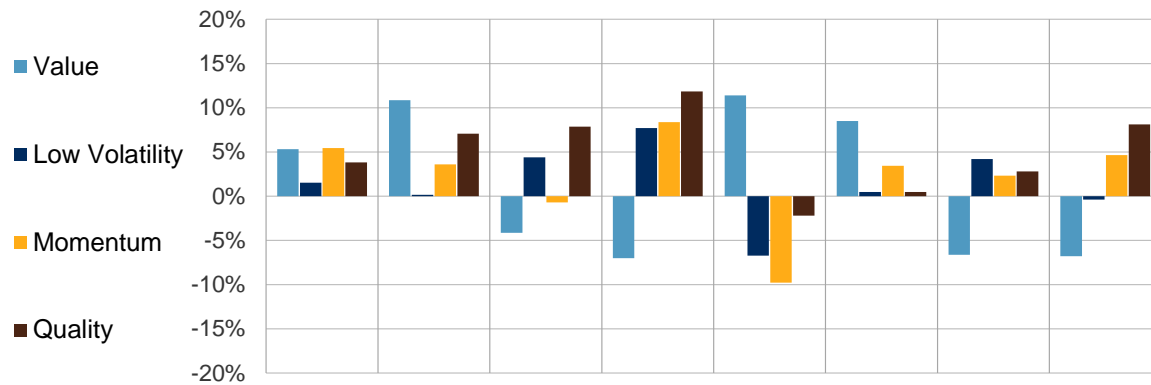
- Despite slowing growth and Britain's ongoing struggles to map an exit from the E.U., central bank stimulus and falling yields helped European equities to mark their best year since 2009. The benchmark S&P Europe 350 rose 6% in the final quarter to complete 2019 with a total return of 27%.
- The S&P Europe 350 Enhanced Value gained the most among European factor indices in the final quarter, gaining 9%. But this wasn't enough to offset Value's poor relative performance in the first part of the year; the index finished the year 7% shy of the benchmark's returns. Quality was the strongest performer in 2019, gaining 35% and completing a third consecutive year of outperformance.
- Overall in 2019, size didn't matter in European equities. The S&P Europe 350 Equal Weight delivered close to the S&P Europe 350's return this year, with the equal weight version outperforming by a modest 0.5%.
- Despite a decline in bond yields and the prospects of additional near-term central bank support, European dividend strategies mostly underperformed in 2019. Taking the wooden spoon, the S&P Europe 350 Low Volatility High Dividend trailed the benchmark by 9.2%. However, the S&P Europe 350 Dividend Aristocrats was an exception; its slight tilt towards higher quality stocks helped the strategy to more or less match the benchmark's returns.

ANNUAL PERFORMANCE

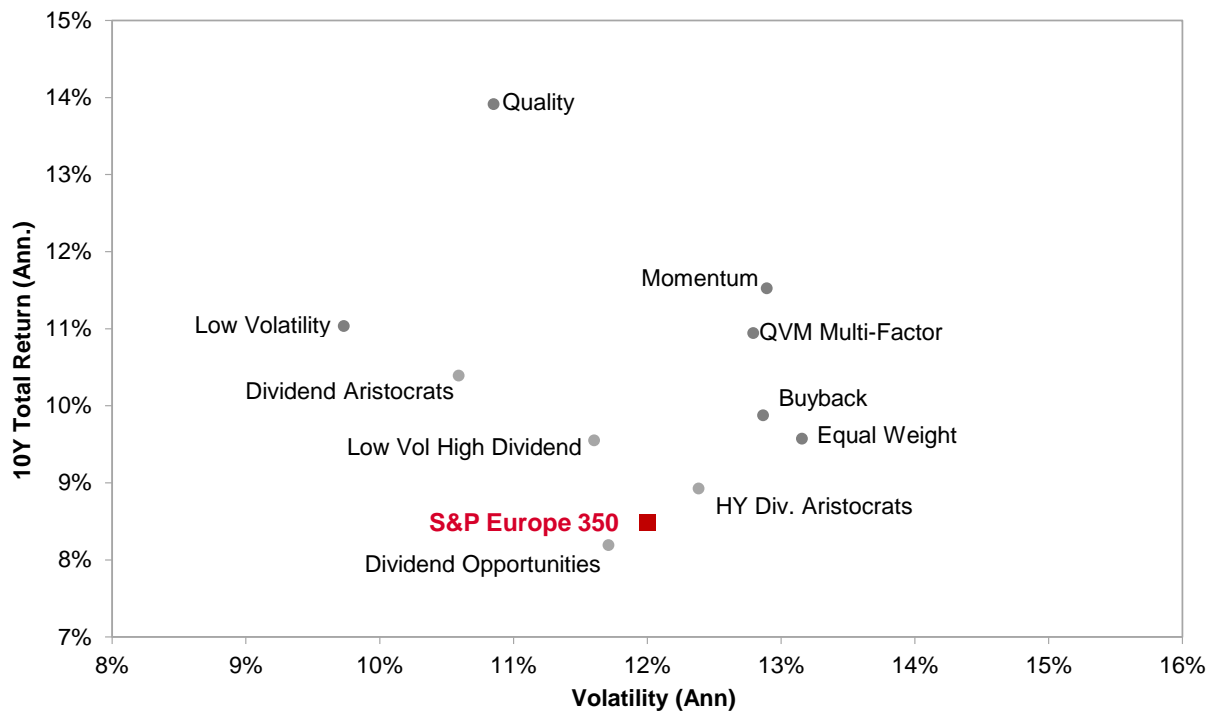
Core factor performance by calendar year, 2012-present:

Total Return	2012	2013	2014	2015	2016	2017	2018	2019
Enhanced Value	23.3%	31.8%	3.7%	1.6%	14.8%	19.2%	-16.5%	20.5%
Low Volatility	19.5%	21.1%	12.3%	16.3%	-3.3%	11.2%	-5.7%	26.8%
Momentum	23.5%	24.6%	7.2%	17.0%	-6.3%	14.2%	-7.6%	31.9%
Quality	21.8%	28.0%	15.7%	20.5%	1.2%	11.2%	-7.1%	35.3%
S&P Europe 350	18.0%	21.0%	7.9%	8.6%	3.4%	10.8%	-9.9%	27.2%

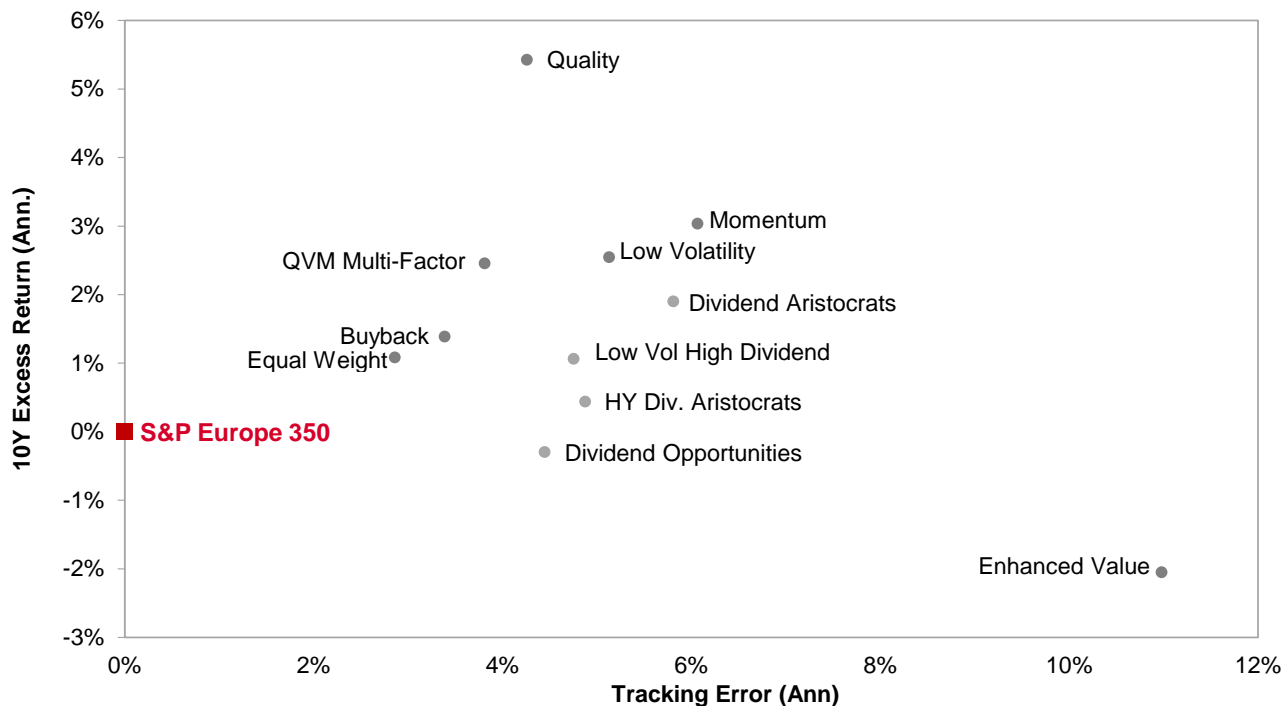
Relative to Benchmark	2012	2013	2014	2015	2016	2017	2018	2019
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10-YEAR RISK / RETURN PROFILE



RELATIVE RISK/RETURN PROFILE



PAIRWISE EXCESS RETURN CORRELATIONS

	Enhanced Value	Equal Weight	Buyback	Low Vol High Dividend	Europe Div. Opportunities	Euro HY Div. Aristocrats	QVM Multi-Factor	Momentum	Dividend Aristocrats	Quality	Low Volatility
S&P Europe 350 Enhanced Value	1.00	0.53	0.25	0.22	0.08	-0.20	-0.02	-0.58	-0.56	-0.60	-0.67
S&P Europe 350 Equal Weight	0.53	1.00	0.68	0.08	0.35	0.13	0.15	-0.26	-0.11	-0.09	-0.18
S&P Europe 350 Buyback	0.25	0.68	1.00	-0.06	0.23	0.11	0.08	-0.06	-0.01	0.11	-0.06
S&P Europe 350 Low Volatility High Dividend	0.22	0.08	-0.06	1.00	0.48	0.37	-0.13	-0.25	-0.05	-0.24	0.12
S&P Europe Dividend Opportunities	0.08	0.35	0.23	0.48	1.00	0.48	0.02	-0.11	0.18	0.03	0.35
S&P Euro High Yield Dividend Aristocrats	-0.20	0.13	0.11	0.37	0.48	1.00	0.12	0.14	0.17	0.20	0.51
S&P Europe 350 QVM Multi-Factor	-0.02	0.15	0.08	-0.13	0.02	0.12	1.00	0.36	-0.04	0.25	0.15
S&P Europe 350 Momentum	-0.58	-0.26	-0.06	-0.25	-0.11	0.14	0.36	1.00	0.25	0.43	0.51
S&P Europe 350 Dividend Aristocrats	-0.56	-0.11	-0.01	-0.05	0.18	0.17	-0.04	0.25	1.00	0.53	0.58
S&P Europe 350 Quality	-0.60	-0.09	0.11	-0.24	0.03	0.20	0.25	0.43	0.53	1.00	0.58
S&P Europe 350 Low Volatility	-0.67	-0.18	-0.06	0.12	0.35	0.51	0.15	0.51	0.58	0.58	1.00

Correlation of weekly excess total returns (versus S&P Europe 350), past 3 years.

INDEX FACTOR SCORES - EXPLAINED

Every index is provided with a factor score between -100% and + 100% in each of Beta, Volatility, Momentum, Dividend, Size, Value and Quality.

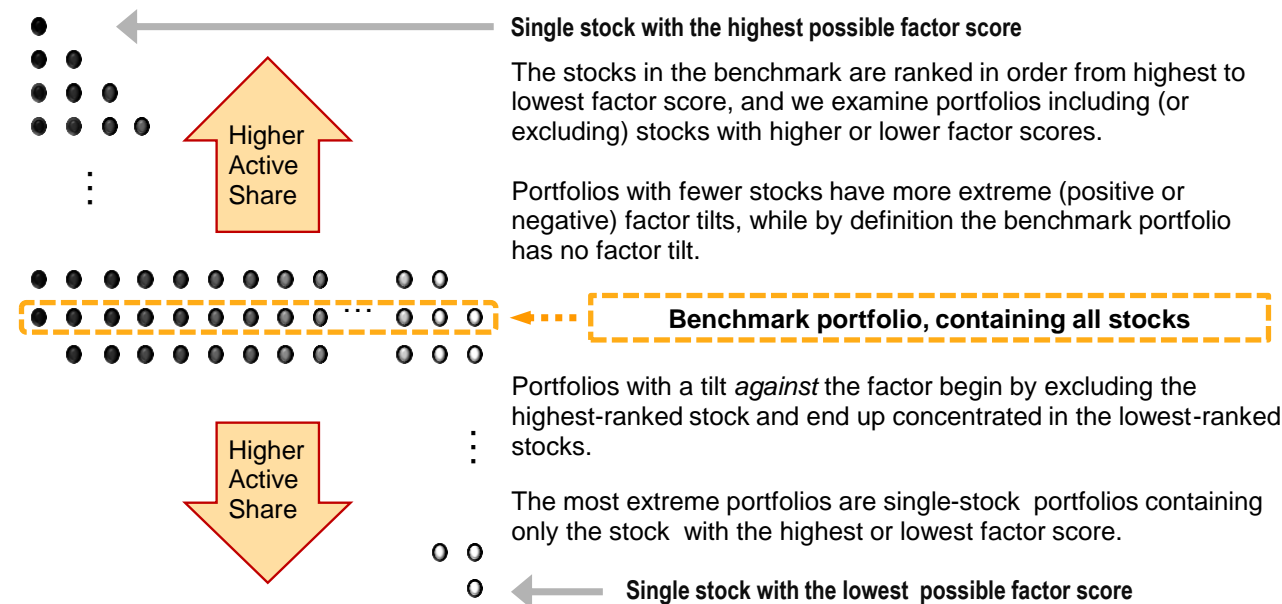
The score relates to the total trading required (sometimes called "active share") to convert a benchmark-replicating portfolio to a cap-weighted portfolio of ranked stocks with the same factor exposure.

The first step is to calculate the **factor scores of each constituent in the benchmark S&P Europe 350**. These measurements are based on the manner in which S&P Dow Jones Indices ranks stocks at the rebalance date for the relevant factor index, summarized below:

Beta	Trailing 1 year beta of stock daily returns to the benchmark's return.
Volatility	Trailing 12-month daily return volatility.
Momentum	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 S&P Momentum methodology .
Value	The average of (normalized) earnings to price ratio, book to price ratio and sales to price ratio. For more details, see the S&P Value methodology .
Dividend	Trailing 12-month dividend.
Quality	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 S&P Quality methodology .
Size	Free-float market capitalization.

The next step is to use the ranked list of stocks create **comparison portfolios for each factor**. These are hypothetical portfolios, including greater or fewer stocks with higher and lower factor scores.

Comparison Portfolio Formation and Ranking

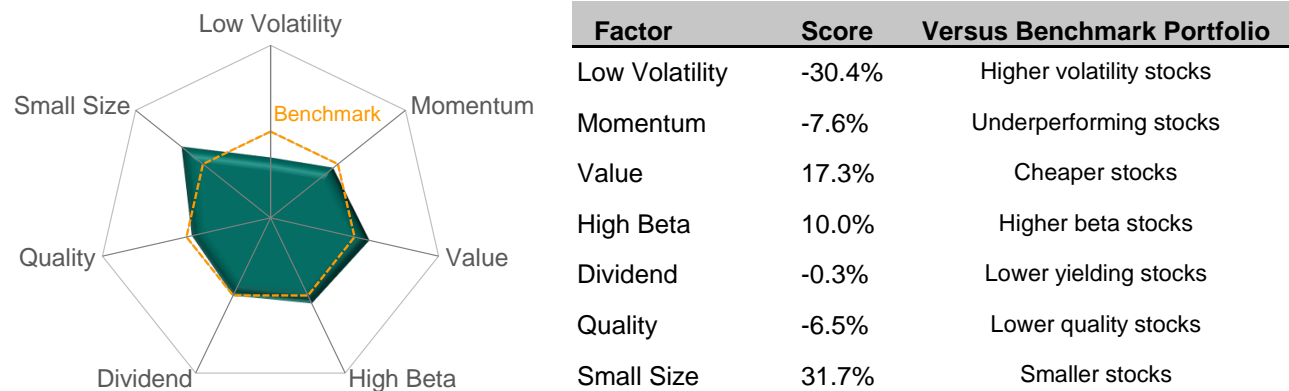


INDEX FACTOR SCORES - CONT'D

For each index and each factor, the **index factor score** is equal to the active share of the comparison portfolio whose weighted-average constituent factor score matches that of the index. The score is positive for tilts towards the factor, negative for tilts away from the factor.

For example, the chart below shows the current factor scores for the S&P Europe 350 Equal Weight Index, together with a table summarizing the values. The benchmark S&P Europe 350 is included for purposes of comparison.

Example: S&P Europe 350 Equal Weight Factor Scores



As of the most recent quarter-end, the index-weighted average free-float market capitalization of the constituents of the S&P Europe 350 Equal Weight was EUR 31 billion, compared to EUR 71.9 billion for the S&P Europe 350. In order to match the size score of the S&P Europe 350 Equal Weight, one would need to exclude the largest 31.7% of stocks in the benchmark by capitalization. Accordingly, the Small Size score of the S&P Europe 350 Equal Weight is 31.7 %.

For more details on how we provide factor scores, see our post on [Indexology](#). Notes on additional statistics provided in our dashboard follow below.

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. The Active Share (Stock) for each index is calculated as the absolute sum of difference between benchmark weights and index weights in each constituent, divided by two.
Active Share (Sector)	The Active Share (Sector) is the absolute sum of difference between benchmark sector weights and index sector weights, divided by two.
Concentration (HH Index)	The Herfindahl-Hirschman ("HH") concentration measure is equal to the sum of an 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 one year trailing daily variance of current index constituents, divided by the index variance. The value approximates an average stock-to-stock correlation of index constituents, weighted proportionally to both constituent weight and constituent volatility.

S&P Europe 350 Low Volatility

Description

The S&P Europe 350 Low Volatility measures the performance of the 100 least-volatile stocks in the S&P Europe 350. Constituents are weighted relative to the inverse of their corresponding volatility, with the least volatile stocks receiving the highest weights.

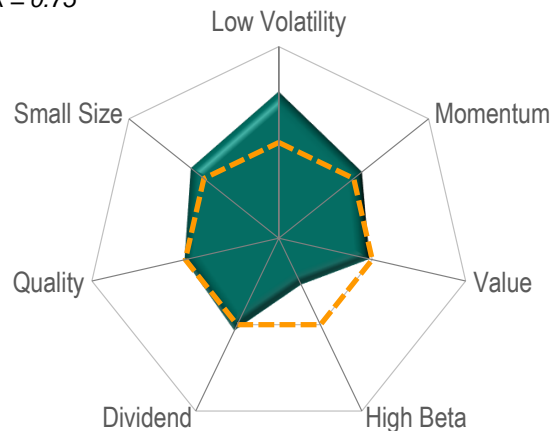
Index Statistics	1M	3M	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	1.4%	4.0%	26.8%	10.0%	8.4%	11.0%	9.4%
Relative to Benchmark	-0.7%	-2.0%	-0.4%	1.7%	1.0%	2.5%	2.6%
Index Volatility			6.3%	8.7%	11.0%	9.7%	10.9%
Tracking Error			4.5%	3.6%	4.2%	5.1%	5.7%

Benchmark: S&P Europe 350. 1 Yr trailing beta to benchmark = 0.75

Top Sector Tilts (versus benchmark)	Index Weight	Difference v Bmark
Utilities	14%	+10%
Communication Services	10%	+6%
Consumer Discretionary	4%	-6%
Health Care	6%	-8%

Portfolio Statistics

Active Share (Stock)	68%
Active Share (Sector)	27%
Concentration (HH Index)	101.4
Correlation (stock)	0.30
Average Market Cap (EUR bn)	43.97



S&P Europe 350 Quality

Description

The S&P Europe 350 Quality measures the performance of the 50 stocks in the S&P Europe 350 with the highest quality score, 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, subject to turnover and diversification constraints.

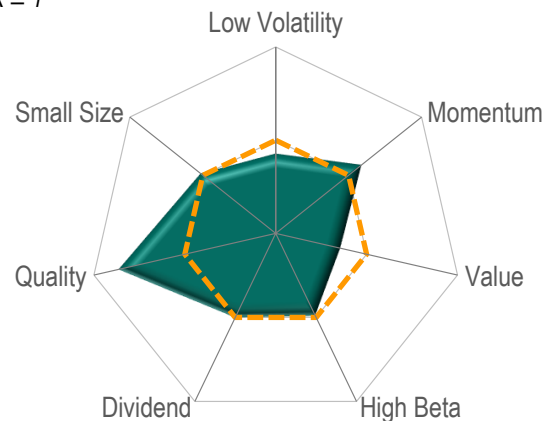
Index Statistics	1M	3M	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	2.8%	8.3%	35.3%	11.8%	11.3%	13.9%	11.6%
Relative to Benchmark	0.7%	2.3%	8.1%	3.5%	3.9%	5.4%	4.8%
Index Volatility			9.8%	10.1%	12.1%	10.9%	12.4%
Tracking Error			2.4%	3.4%	3.9%	4.3%	4.7%

Benchmark: S&P Europe 350. 1 Yr trailing beta to benchmark = 1

Top Sector Tilts (versus benchmark)	Index Weight	Difference v Bmark
Consumer Discretionary	23%	+13%
Industrials	26%	+12%
Energy	1%	-5%
Financials	7%	-11%

Portfolio Statistics

Active Share (Stock)	84%
Active Share (Sector)	31%
Concentration (HH Index)	324.9
Correlation (stock)	0.28
Average Market Cap (EUR bn)	59.84



S&P Europe 350 Momentum

Description

The S&P Europe 350 Momentum measures the performance of securities within the S&P Europe 350 that are in the top quintile of recent risk-adjusted return. The weighting is proportional to the momentum score, and to market capitalization, subject to turnover and concentration constraints. As of December 31, 2019, the index comprised 72 constituents.

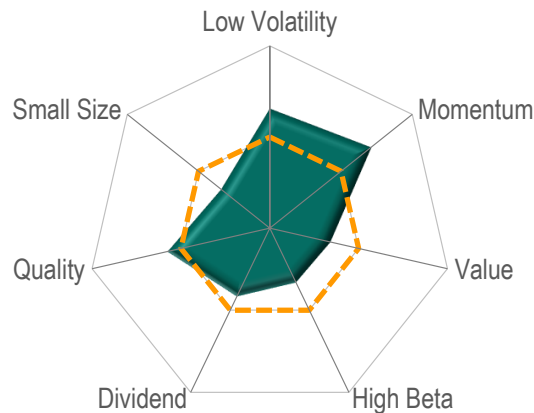
Index Statistics	1M	3M	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	1.6%	3.6%	31.9%	11.6%	8.8%	11.5%	9.3%
Relative to Benchmark	-0.5%	-2.4%	4.6%	3.4%	1.4%	3.0%	2.5%
Index Volatility			8.0%	11.6%	13.2%	12.9%	13.6%
Tracking Error			6.1%	6.0%	6.0%	6.1%	6.6%

Benchmark: S&P Europe 350. 1 Yr trailing beta to benchmark = 0.83

Top Sector Tilts (versus benchmark)	Index Weight	Difference v Bmark
Consumer Staples	22%	+8%
Health Care	22%	+7%
Information Technology	1%	-5%
Energy	0%	-6%

Portfolio Statistics

Active Share (Stock)	68%
Active Share (Sector)	21%
Concentration (HH Index)	340.8
Correlation (stock)	0.35
Average Market Cap (EUR bn)	102.91



S&P Europe 350 Enhanced Value

Description

The S&P Europe 350 Enhanced Value is designed to measure the performance of the 50 stocks in the S&P Europe 350 with the highest average book value-to-price, earnings-to-price, and sales-to-price ratios. The weighting is proportional to both the value score and the market capitalization of each component.

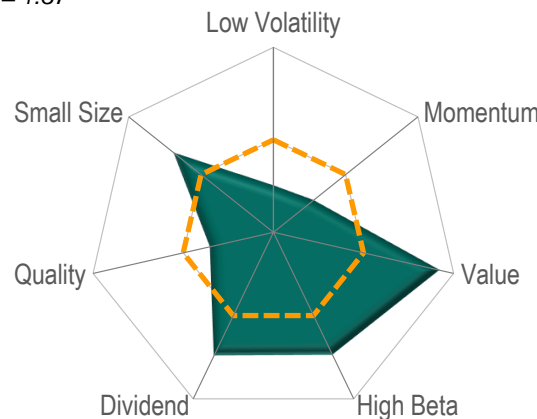
Index Statistics	1M	3M	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	1.5%	9.4%	20.5%	6.2%	6.9%	6.4%	6.2%
Relative to Benchmark	-0.6%	3.4%	-6.8%	-2.1%	-0.4%	-2.1%	-0.6%
Index Volatility			19.0%	15.6%	18.7%	19.7%	24.2%
Tracking Error			10.5%	8.2%	9.7%	11.0%	13.6%

Benchmark: S&P Europe 350. 1 Yr trailing beta to benchmark = 1.37

Top Sector Tilts (versus benchmark)	Index Weight	Difference v Bmark
Financials	41%	+23%
Consumer Discretionary	28%	+18%
Consumer Staples	4%	-10%
Health Care	0%	-14%

Portfolio Statistics

Active Share (Stock)	90%
Active Share (Sector)	43%
Concentration (HH Index)	286.7
Correlation (stock)	0.52
Average Market Cap (EUR bn)	27.73



Source: S&P Dow Jones Indices LLC and/or its affiliates. Data as of Dec. 31, 2019.

S&P Europe 350 Dividend Aristocrats

Description

The S&P Europe 350 Dividend Aristocrats measure the performance of S&P Europe 350 constituents that have consistently maintained or increased their dividends. The constituents are equally weighted. As of December 31, 2019, the index comprised 41 constituents.

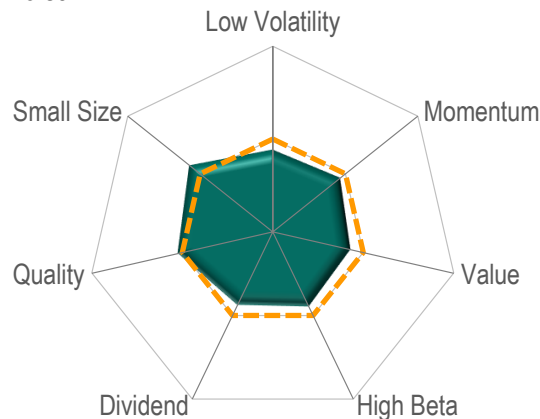
Index Statistics	1M	3M	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	2.2%	7.5%	27.4%	8.6%	6.9%	10.4%	7.9%
Relative to Benchmark	0.1%	1.5%	0.1%	0.3%	-0.4%	1.9%	1.1%
Index Volatility			9.6%	10.7%	12.3%	10.6%	13.2%
Tracking Error			3.2%	4.5%	5.1%	5.8%	6.8%

Benchmark: S&P Europe 350. 1 Yr trailing beta to benchmark = 0.89

Top Sector Tilts (versus benchmark)	Index Weight	Difference v Bmark
Consumer Staples	22%	+8%
Health Care	19%	+5%
Energy	0%	-7%
Financials	7%	-11%

Portfolio Statistics

Active Share (Stock)	81%
Active Share (Sector)	23%
Concentration (HH Index)	244.9
Correlation (stock)	0.24
Average Market Cap (EUR bn)	46.71



S&P Europe Dividend Opportunities

Description

The S&P Europe Dividend Opportunities measures the performance of the 100 highest-yielding stocks in the wider European equity market, subject to diversification, stability, and tradability requirements. The weighting is according to dividend yield, subject to diversification constraints.

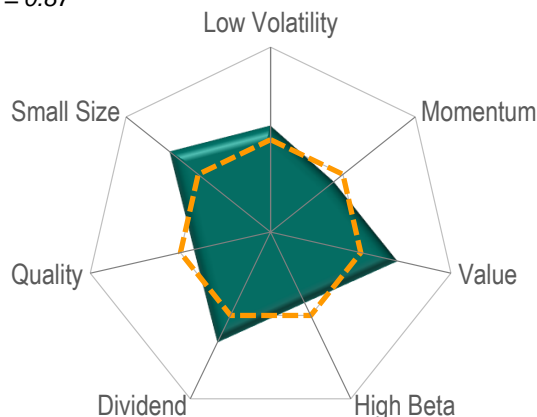
Index Statistics	1M	3M	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	2.5%	6.7%	25.2%	5.9%	7.6%	8.2%	7.7%
Relative to Benchmark	0.5%	0.7%	-2.1%	-2.4%	0.3%	-0.3%	0.9%
Index Volatility			9.6%	9.8%	11.7%	11.7%	15.9%
Tracking Error			2.7%	2.7%	3.6%	4.4%	6.7%

Benchmark: S&P Europe 350. 1 Yr trailing beta to benchmark = 0.87

Top Sector Tilts (versus benchmark)	Index Weight	Difference v Bmark
Utilities	15%	+11%
Communication Services	10%	+6%
Information Technology	1%	-5%
Health Care	3%	-11%

Portfolio Statistics

Active Share (Stock)	80%
Active Share (Sector)	26%
Concentration (HH Index)	108.4
Correlation (stock)	0.28
Average Market Cap (EUR bn)	27.05



S&P Euro High Yield Dividend Aristocrats

Description

The S&P Euro High Yield Dividend Aristocrats measures the performance of the 40 highest-yielding Eurozone companies within the broader European equity market that have consistently maintained or increased their dividends. The weighting is proportional to dividend yield, subject to concentration constraints.

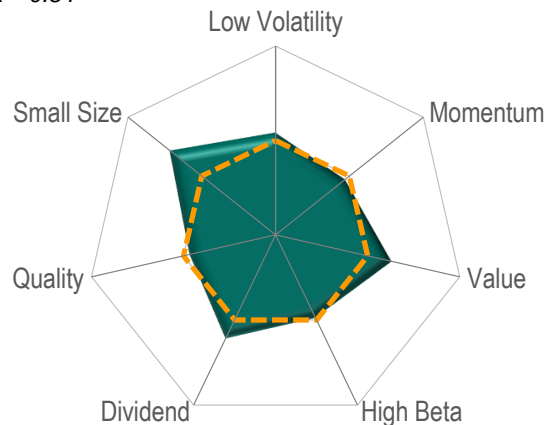
Index Statistics	1M	3M	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	1.2%	4.6%	22.8%	8.2%	9.5%	8.9%	N/A
Relative to Benchmark	-0.9%	-1.4%	-4.4%	-0.1%	2.1%	0.4%	N/A
Index Volatility			8.8%	9.9%	11.5%	12.4%	N/A
Tracking Error			5.2%	4.6%	5.0%	4.9%	N/A

Benchmark: S&P Europe 350. 1 Yr trailing beta to benchmark = 0.84

Top Sector Tilts (versus benchmark)	Index Weight	Difference v Bmark
Utilities	19%	+14%
Industrials	21%	+6%
Health Care	7%	-7%
Consumer Staples	1%	-13%

Portfolio Statistics

Active Share (Stock)	90%
Active Share (Sector)	31%
Concentration (HH Index)	302.1
Correlation (stock)	0.26
Average Market Cap (EUR bn)	24.87



S&P Europe 350 Low Volatility High Dividend

Description

The S&P Europe 350 Low Volatility High Dividend is designed to measure the performance of 50 high-yielding companies within the S&P Europe 350, equally weighted while meeting diversification, volatility and tradability requirements.

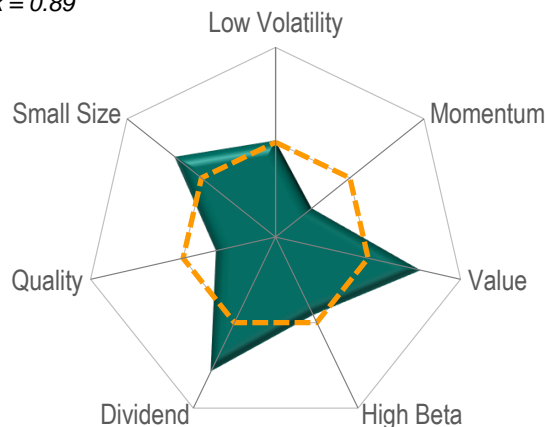
Index Statistics	1M	3M	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	1.7%	3.9%	18.1%	7.2%	8.1%	9.6%	9.8%
Relative to Benchmark	-0.4%	-2.1%	-9.1%	-1.1%	0.8%	1.1%	3.0%
Index Volatility			10.5%	10.1%	11.7%	11.6%	14.0%
Tracking Error			3.7%	4.9%	4.7%	4.8%	5.1%

Benchmark: S&P Europe 350. 1 Yr trailing beta to benchmark = 0.89

Top Sector Tilts (versus benchmark)	Index Weight	Difference v Bmark
Utilities	21%	+16%
Communication Services	19%	+15%
Consumer Staples	4%	-10%
Health Care	0%	-14%

Portfolio Statistics

Active Share (Stock)	86%
Active Share (Sector)	46%
Concentration (HH Index)	202.5
Correlation (stock)	0.28
Average Market Cap (EUR bn)	28.93



S&P Europe 350 Equal Weight

Description

The S&P Europe 350 Equal Weight comprises all the constituents of the S&P Europe 350, equally weighted.

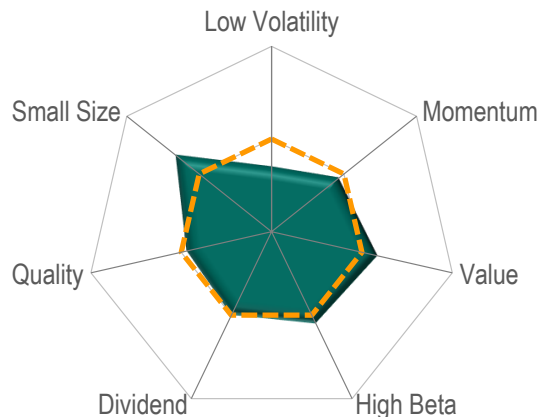
Index Statistics	1M	3M	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	2.4%	8.0%	27.7%	8.7%	8.1%	9.6%	8.0%
Relative to Benchmark	0.4%	2.0%	0.5%	0.4%	0.8%	1.1%	1.2%
Index Volatility			11.9%	11.2%	13.3%	13.2%	15.8%
Tracking Error			2.8%	2.3%	2.6%	2.9%	3.8%

Benchmark: S&P Europe 350. 1 Yr trailing beta to benchmark = 1.09

Top Sector Tilts (versus benchmark)	Index Weight	Difference v Bmark
Industrials	20%	+6%
Materials	10%	+3%
Consumer Staples	8%	-5%
Health Care	7%	-8%

Portfolio Statistics

Active Share (Stock)	40%
Active Share (Sector)	18%
Concentration (HH Index)	28.3
Correlation (stock)	0.27
Average Market Cap (EUR bn)	30.97



S&P Europe 350 Buyback

Description

The S&P Europe 350 Buyback measures the performance of the 70 stocks with the highest buyback ratio in the S&P Europe 350, equally weighted.

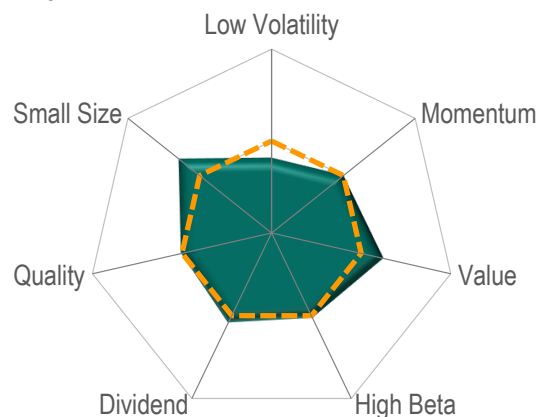
Index Statistics	1M	3M	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	2.0%	6.8%	28.2%	6.6%	7.4%	9.9%	8.6%
Relative to Benchmark	-0.1%	0.8%	1.0%	-1.6%	0.1%	1.4%	1.7%
Index Volatility			12.3%	11.3%	13.3%	12.9%	15.4%
Tracking Error			3.1%	3.4%	3.4%	3.4%	4.0%

Benchmark: S&P Europe 350. 1 Yr trailing beta to benchmark = 1.07

Top Sector Tilts (versus benchmark)	Index Weight	Difference v Bmark
Industrials	21%	+6%
Materials	13%	+5%
Consumer Staples	8%	-6%
Health Care	7%	-7%

Portfolio Statistics

Active Share (Stock)	76%
Active Share (Sector)	20%
Concentration (HH Index)	143.7
Correlation (stock)	0.29
Average Market Cap (EUR bn)	34.18



S&P Europe 350 Quality, Value & Momentum Multi-Factor

Description

The S&P Europe 350 Quality, Value & Momentum Multi-Factor comprises the 70 stocks with the highest combined quality, value and momentum scores, weighted in proportion to both market capitalization and multifactor score.

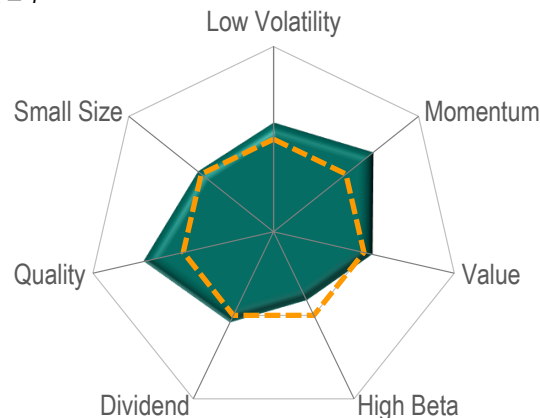
Index Statistics	1M	3M	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	1.6%	6.2%	25.0%	10.2%	9.4%	10.9%	9.5%
Relative to Benchmark	-0.4%	0.1%	-2.2%	1.9%	2.1%	2.5%	2.6%
Index Volatility			11.8%	11.7%	13.3%	12.8%	14.1%
Tracking Error			2.3%	4.2%	4.3%	3.8%	4.1%

Benchmark: S&P Europe 350. 1 Yr trailing beta to benchmark = 1

Top Sector Tilts (versus benchmark)	Index Weight	Difference v Bmark
Utilities	12%	+8%
Financials	25%	+7%
Energy	1%	-5%
Consumer Staples	8%	-6%

Portfolio Statistics

Active Share (Stock)	80%
Active Share (Sector)	21%
Concentration (HH Index)	269.5
Correlation (stock)	0.37
Average Market Cap (EUR bn)	58.88



More Factor Resources



Factor Allocator is a complimentary web-based tool from Optimal Asset Management that allows advisors to build and analyze simulated portfolios using S&P Factor Indices. Using 15 years of S&P 500 factor index data, explore how individual risk factors behave together and in different market conditions in order to meet specific performance goals. Visit factorallocator.com/spdji.



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