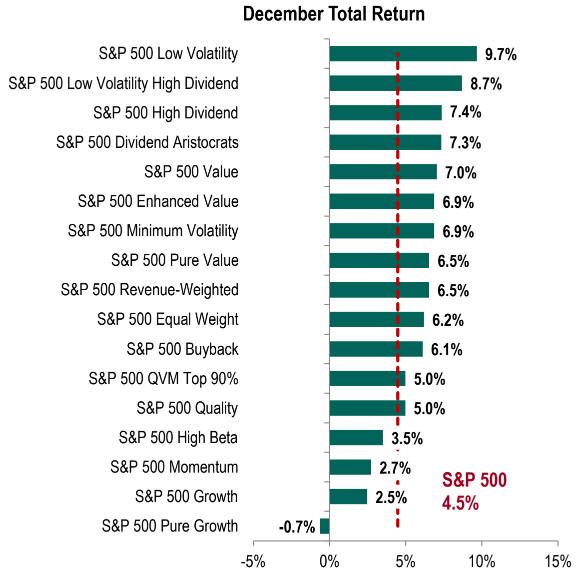
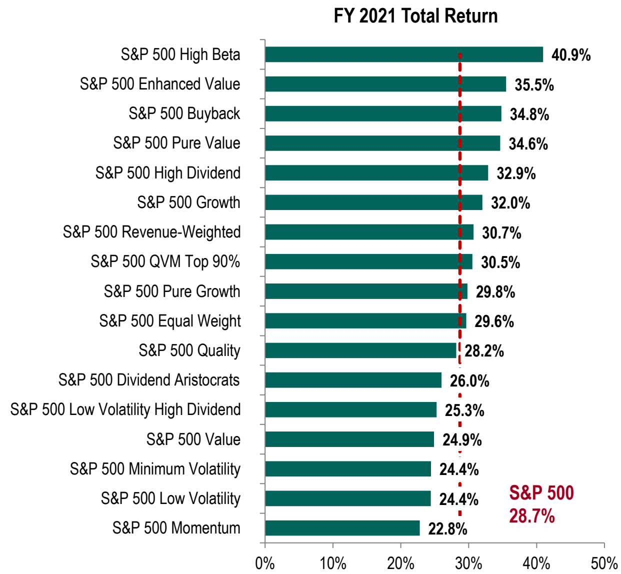
Index Dashboard: S&P 500® Factor Indices

December 2021

MONTHLY AND YTD PERFORMANCE SUMMARY

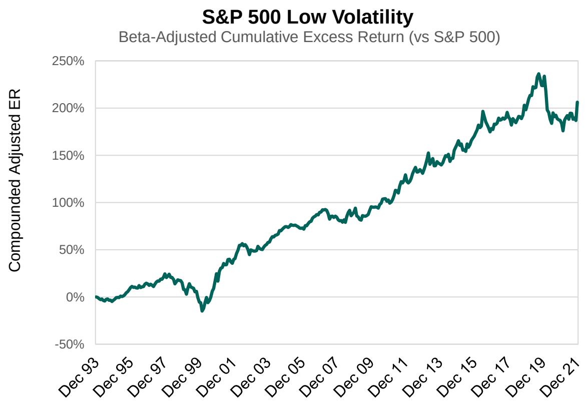




COMMENTARY

High Beta retained the top spot as the best-performing S&P 500 factor index for 2021, but not without a strong challenge in December from its near-opposite as the **S&P 500 Low Volatility Index** placed first among large-cap U.S. factors both for the month and for the final quarter of the year.

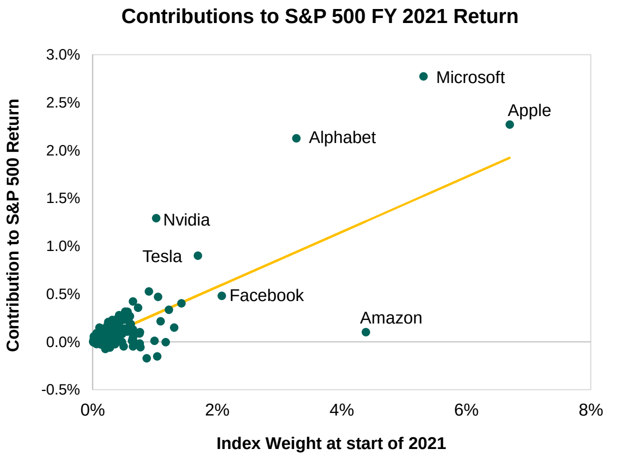
Equal Weight's 1.7% outperformance this month provided a **tailwind for strategies that underweight the largest stocks** in the S&P 500 (which is to say, most of them). Indeed, most of our factor indices outperformed in December, making a strong finish for the year. The top-heavy Growth factor was an exception, along with Momentum, which finished as the worst-performing S&P 500 factor over the calendar year.



Has Low Volatility turned a corner? During the early 2020 pandemic driven sell-off, Low Volatility more or less matched the market's downturn, which was disappointing for a factor that more typically outperformed in bear markets. More promisingly, this month's outperformance is particularly strong given the market's gain – with Low Volatility more than doubling the benchmark's 4.5% gain.

Our first chart plots the cumulative compounded excess monthly return of Low Volatility, adjusted for a long-term average beta of 0.6. Recent months seem to have put an end to the relative underperformance from the factor but, as was the case during the deflation of the technology bubble 20 years ago, **there is still has some way to go before catching up with the prior trendline.**

As we previously highlighted (in October 2021's dashboard), **single stock effects at the very top of the market have played an important role** in determining relative performance this year. While most S&P 500 constituents contributed positively, just two stocks – namely Apple and Microsoft – were responsible for generating over 5% of the benchmark's total gain. (Add in Alphabet, and the figure rises above 7%.) On the other hand, fellow mega-caps Amazon and Facebook underperformed significantly. The relative weights of each factor in just those five stocks, as well as (to a lesser extent) Telsa and Nvidia, were a strong determinant of success or failure this year. **Our second chart compares the contribution of each S&P 500 stock to the index's 2021 total return**, to their relative weight in the index. For purposes of comparison, we also show the "market return" line that would result if each stock matched the benchmark's return.

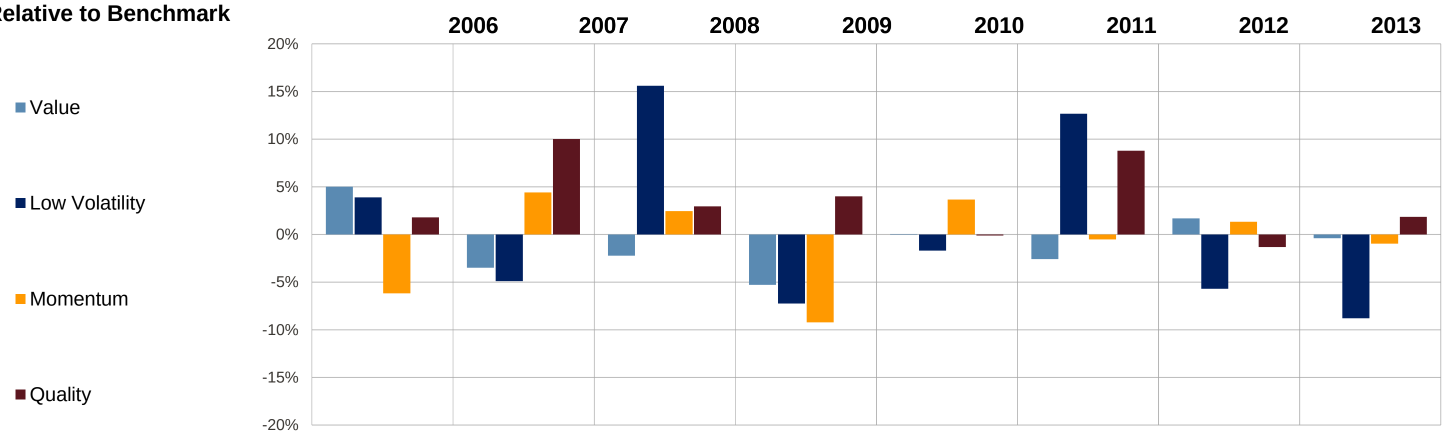


ANNUAL PERFORMANCE

Core factor performance by calendar year, 2006-present:

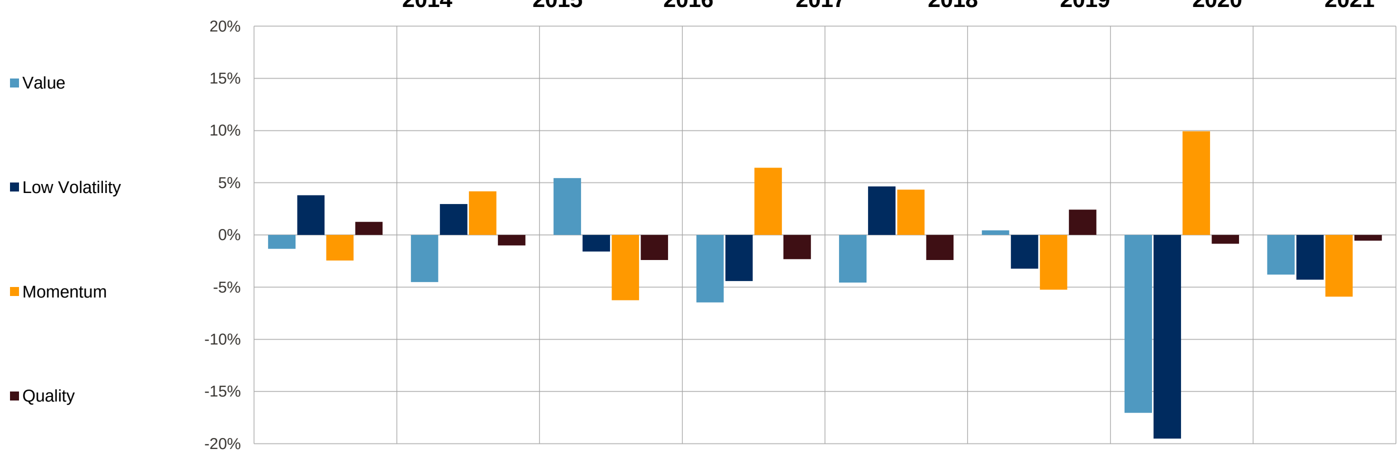
Total Return	2006	2007	2008	2009	2010	2011	2012	2013
Value	20.80%	1.99%	-39.22%	21.18%	15.10%	-0.48%	17.68%	31.99%
Low Volatility	19.69%	0.58%	-21.41%	19.22%	13.36%	14.78%	10.30%	23.59%
Momentum	9.61%	9.89%	-34.56%	17.24%	18.72%	1.60%	17.33%	31.42%
Quality	17.59%	15.50%	-34.06%	30.46%	14.95%	10.89%	14.68%	34.24%
S&P 500	15.79%	5.49%	-37.00%	26.46%	15.06%	2.11%	16.00%	32.39%

Relative to Benchmark



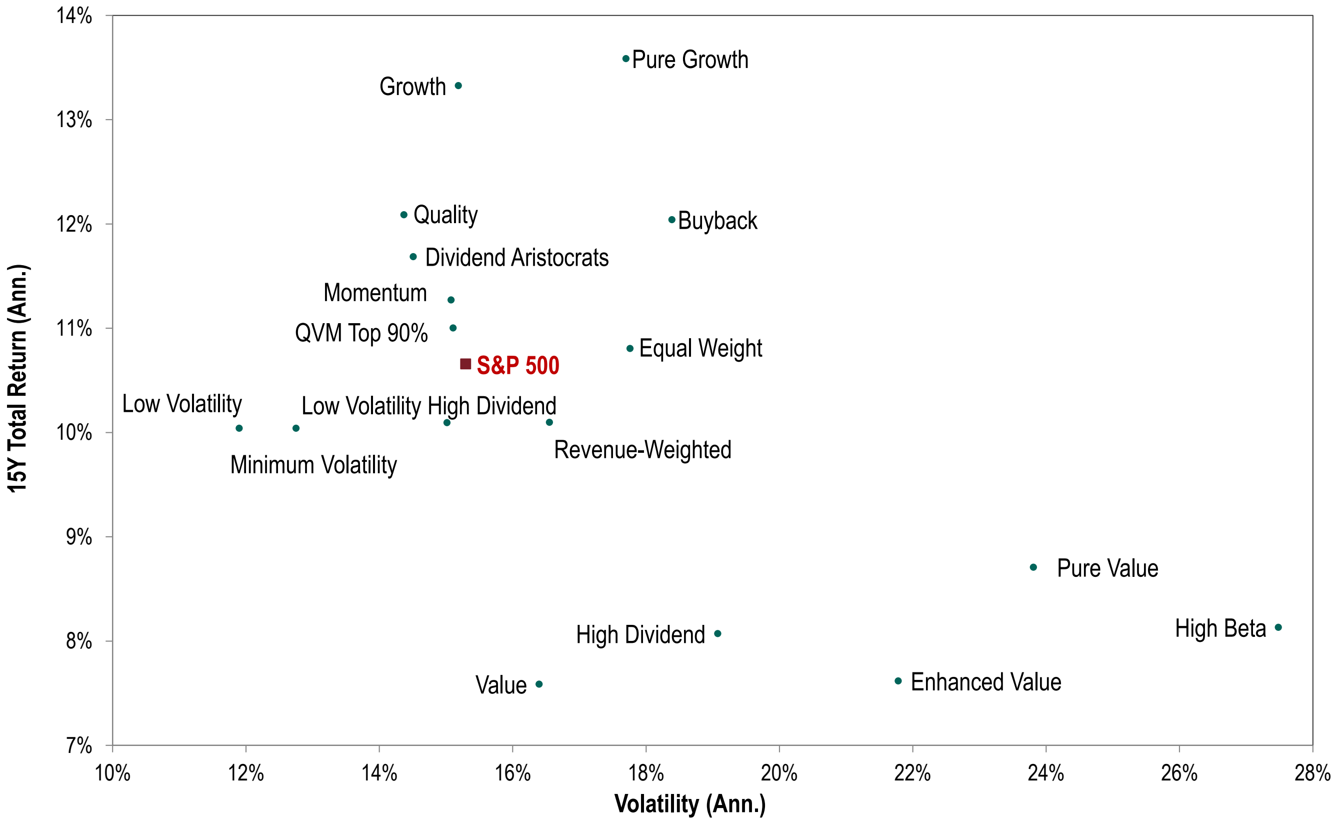
Total Return	2014	2015	2016	2017	2018	2019	2020	2021
Value	12.36%	-3.13%	17.40%	15.36%	-8.95%	31.93%	1.36%	24.90%
Low Volatility	17.49%	4.34%	10.37%	17.41%	0.27%	28.26%	-1.11%	24.42%
Momentum	11.23%	5.56%	5.70%	28.27%	-0.04%	26.25%	28.32%	22.79%
Quality	14.95%	0.38%	9.56%	19.51%	-6.79%	33.91%	17.55%	28.16%
S&P 500	13.69%	1.38%	11.96%	21.83%	-4.38%	31.49%	18.40%	28.71%

Relative to Benchmark



Source: S&P Dow Jones Indices LLC and/or its affiliates. Data as of December 31, 2021.

15 YEAR RISK & RETURN - ABSOLUTE



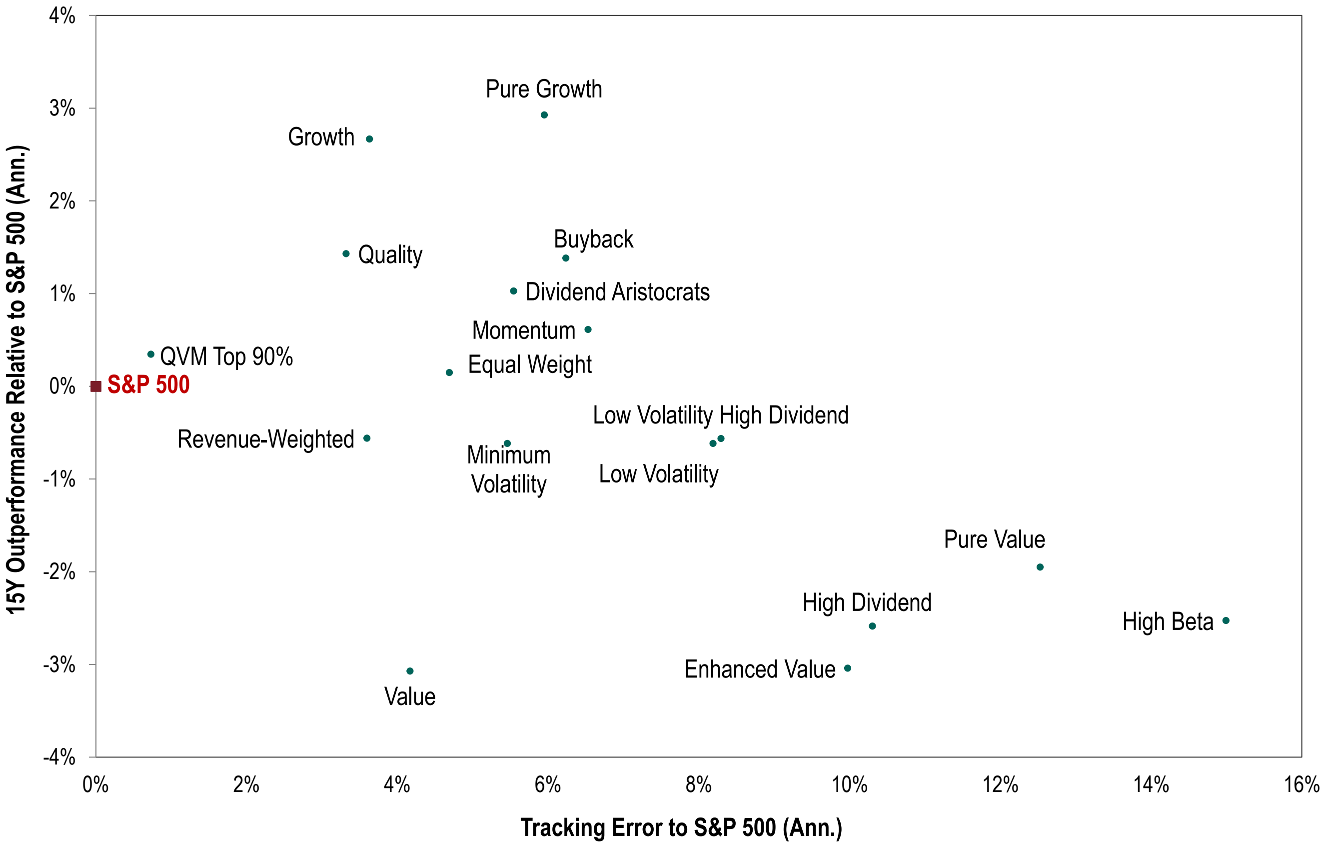
TOTAL RETURN	1M	3M	12M	3Y	5Y	10Y	15Y
S&P 500 Pure Growth	-0.7%	9.5%	29.8%	29.5%	21.4%	18.3%	13.6%
S&P 500 Growth	2.5%	13.4%	32.0%	32.2%	24.1%	19.2%	13.3%
S&P 500 Quality	5.0%	10.0%	28.2%	26.4%	17.6%	15.9%	12.1%
S&P 500 Buyback	6.1%	10.3%	34.8%	24.1%	16.6%	17.0%	12.0%
S&P 500 Dividend Aristocrats	7.3%	11.7%	26.0%	20.6%	15.7%	15.4%	11.7%
S&P 500 Momentum	2.7%	7.3%	22.8%	25.8%	20.6%	17.2%	11.3%
S&P 500 QVM Top 90%	5.0%	12.0%	30.5%	26.6%	18.7%	16.7%	11.0%
S&P 500 Equal Weight	6.2%	9.0%	29.6%	23.6%	15.7%	15.6%	10.8%
S&P 500 Revenue-Weighted	6.5%	10.4%	30.7%	22.5%	15.5%	15.7%	10.1%
S&P 500 Low Volatility High Dividend	8.7%	8.0%	25.3%	11.0%	7.6%	11.3%	10.1%
S&P 500 Low Volatility	9.7%	13.3%	24.4%	16.4%	13.2%	13.1%	10.0%
S&P 500 Minimum Volatility	6.9%	12.8%	24.4%	21.4%	14.8%	15.0%	10.0%
S&P 500 Pure Value	6.5%	7.2%	34.6%	15.5%	9.8%	13.9%	8.7%
S&P 500 High Beta	3.5%	8.3%	40.9%	33.6%	19.0%	17.4%	8.1%
S&P 500 High Dividend	7.4%	7.9%	32.9%	12.6%	8.9%	12.4%	8.1%
S&P 500 Enhanced Value	6.9%	8.6%	35.5%	16.3%	11.2%	14.2%	7.6%
S&P 500 Value	7.0%	8.3%	24.9%	18.6%	11.9%	13.3%	7.6%
S&P 500	4.5%	11.0%	28.7%	26.1%	18.5%	16.6%	10.7%

Performance figures for more than one year are annualized.

VOLATILITY (ANN.)	12M	3Y	5Y	10Y	15Y
S&P 500 Pure Growth	14.5%	19.9%	17.8%	15.2%	17.7%
S&P 500 Growth	13.2%	17.4%	15.8%	13.5%	15.2%
S&P 500 Quality	9.7%	16.0%	14.5%	12.8%	14.4%
S&P 500 Buyback	12.0%	22.8%	19.5%	16.4%	18.4%
S&P 500 Dividend Aristocrats	13.4%	17.3%	15.1%	12.7%	14.5%
S&P 500 Momentum	13.0%	15.7%	14.9%	12.8%	15.1%
S&P 500 QVM Top 90%	11.1%	17.2%	15.3%	13.0%	15.1%
S&P 500 Equal Weight	11.6%	20.3%	17.5%	14.6%	17.8%
S&P 500 Revenue-Weighted	11.4%	18.9%	16.6%	13.9%	16.6%
S&P 500 Low Volatility High Dividend	13.5%	20.5%	17.0%	13.7%	15.0%
S&P 500 Low Volatility	13.6%	15.2%	13.2%	11.3%	11.9%
S&P 500 Minimum Volatility	12.2%	15.7%	13.9%	11.5%	12.8%
S&P 500 Pure Value	15.2%	27.8%	23.2%	19.3%	23.8%
S&P 500 High Beta	19.9%	31.0%	26.4%	22.6%	27.5%
S&P 500 High Dividend	13.5%	24.4%	19.9%	15.7%	19.1%
S&P 500 Enhanced Value	14.7%	26.4%	22.1%	18.5%	21.8%
S&P 500 Value	12.2%	18.7%	16.2%	13.7%	16.4%
S&P 500	10.6%	17.2%	15.3%	13.0%	15.3%

Source: S&P Dow Jones Indices LLC and/or its affiliates. Data as of December 31, 2021.

RELATIVE TO S&P 500



RELATIVE RETURN AND TRACKING ERROR

PERFORMANCE v S&P 500	1M	3M	1YR	3YR	5YR	10YR	15YR
S&P 500 Pure Growth	-5.2%	-1.5%	1.1%	3.4%	2.9%	1.7%	2.9%
S&P 500 Growth	-2.0%	2.3%	3.3%	6.1%	5.6%	2.7%	2.7%
S&P 500 Quality	0.5%	-1.0%	-0.5%	0.3%	-0.9%	-0.7%	1.4%
S&P 500 Buyback	1.6%	-0.7%	6.1%	-2.0%	-1.9%	0.4%	1.4%
S&P 500 Dividend Aristocrats	2.9%	0.7%	-2.7%	-5.5%	-2.8%	-1.1%	1.0%
S&P 500 Momentum	-1.8%	-3.7%	-5.9%	-0.3%	2.1%	0.6%	0.6%
S&P 500 QVM Top 90%	0.5%	1.0%	1.8%	0.5%	0.3%	0.1%	0.3%
S&P 500 Equal Weight	1.7%	-2.0%	0.9%	-2.4%	-2.7%	-0.9%	0.1%
S&P 500 Revenue-Weighted	2.1%	-0.6%	2.0%	-3.6%	-3.0%	-0.9%	-0.6%
S&P 500 Low Volatility High Dividend	4.2%	-3.1%	-3.4%	-15.1%	-10.8%	-5.3%	-0.6%
S&P 500 Low Volatility	5.2%	2.3%	-4.3%	-9.6%	-5.3%	-3.4%	-0.6%
S&P 500 Minimum Volatility	2.4%	1.7%	-4.3%	-4.7%	-3.6%	-1.6%	-0.6%
S&P 500 Pure Value	2.1%	-3.8%	5.9%	-10.5%	-8.7%	-2.6%	-1.9%
S&P 500 High Beta	-1.0%	-2.7%	12.2%	7.5%	0.5%	0.9%	-2.5%
S&P 500 High Dividend	2.9%	-3.1%	4.1%	-13.5%	-9.6%	-4.1%	-2.6%
S&P 500 Enhanced Value	2.4%	-2.4%	6.8%	-9.8%	-7.3%	-2.4%	-3.0%
S&P 500 Value	2.6%	-2.7%	-3.8%	-7.4%	-6.6%	-3.3%	-3.1%

Performance figures for more than one year are annualized.

TRACKING ERROR v S&P 500 (ANN.)	1YR	3YR	5YR	10YR	15YR
S&P 500 Pure Growth	10.2%	7.3%	6.5%	5.7%	5.9%
S&P 500 Growth	6.6%	5.0%	4.4%	3.6%	3.6%
S&P 500 Quality	3.8%	3.8%	3.4%	2.8%	3.3%
S&P 500 Buyback	6.2%	8.8%	7.1%	6.0%	6.2%
S&P 500 Dividend Aristocrats	6.3%	5.6%	5.1%	4.6%	5.5%
S&P 500 Momentum	7.7%	7.3%	6.4%	5.6%	6.5%
S&P 500 QVM Top 90%	0.7%	0.9%	0.7%	0.6%	0.7%
S&P 500 Equal Weight	5.6%	5.9%	4.9%	3.9%	4.7%
S&P 500 Revenue-Weighted	5.9%	5.2%	4.5%	3.5%	3.6%
S&P 500 Low Volatility High Dividend	10.8%	9.6%	8.7%	8.2%	8.3%
S&P 500 Low Volatility	8.0%	9.2%	8.2%	7.8%	8.2%
S&P 500 Minimum Volatility	4.8%	4.6%	4.1%	4.6%	5.5%
S&P 500 Pure Value	13.5%	15.1%	12.2%	10.0%	12.5%
S&P 500 High Beta	17.8%	18.0%	14.9%	12.9%	15.0%
S&P 500 High Dividend	11.8%	13.1%	10.9%	9.4%	10.3%
S&P 500 Enhanced Value	11.7%	13.6%	11.2%	9.4%	10.0%
S&P 500 Value	7.5%	6.1%	5.3%	4.3%	4.2%

DEGREE OF PORTFOLIO OVERLAP AND RELATIVE RETURN CORRELATIONS

PORTFOLIO OVERLAP

	S&P 500 Momentum	S&P 500 Growth	S&P 500 Quality	S&P 500 Pure Growth	S&P 500 Low Volatility	S&P 500 Minimum Volatility	S&P 500 QVM Top 90%	S&P 500 Dividend Aristocrats	S&P 500 Low Volatility High Dividend	S&P 500 High Dividend	S&P 500 Revenue-Weighted	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 Momentum	100%	20%	20%	18%	7%	9%	19%	6%	0%	2%	17%	15%	19%	8%	18%	20%	15%	18%
S&P 500 Growth	20%	100%	24%	30%	11%	25%	62%	6%	2%	3%	32%	27%	29%	0%	12%	3%	16%	65%
S&P 500 Quality	20%	24%	100%	16%	10%	18%	29%	12%	5%	7%	21%	19%	19%	7%	16%	16%	17%	27%
S&P 500 Pure Growth	18%	30%	16%	100%	3%	13%	19%	5%	0%	0%	11%	0%	11%	0%	15%	4%	25%	20%
S&P 500 Low Volatility	7%	11%	10%	3%	100%	33%	22%	26%	20%	20%	20%	30%	20%	9%	13%	4%	0%	22%
S&P 500 Minimum Volatility	9%	25%	18%	13%	33%	100%	32%	17%	10%	10%	26%	30%	18%	7%	11%	8%	6%	33%
S&P 500 QVM Top 90%	19%	62%	29%	19%	22%	32%	100%	15%	9%	11%	55%	60%	47%	14%	18%	12%	14%	88%
S&P 500 Dividend Aristocrats	6%	6%	12%	5%	26%	17%	15%	100%	19%	18%	18%	23%	13%	11%	9%	9%	4%	14%
S&P 500 Low Volatility High Dividend	0%	2%	5%	0%	20%	10%	9%	19%	100%	52%	13%	16%	10%	16%	3%	12%	1%	9%
S&P 500 High Dividend	2%	3%	7%	0%	20%	10%	11%	18%	52%	100%	18%	19%	15%	30%	8%	19%	11%	10%
S&P 500 Revenue-Weighted	17%	32%	21%	11%	20%	26%	55%	18%	13%	18%	100%	59%	49%	34%	24%	31%	12%	60%
S&P 500 Value	15%	27%	19%	0%	30%	30%	60%	23%	16%	19%	59%	100%	55%	24%	17%	20%	11%	61%
S&P 500 Equal Weight	19%	29%	19%	11%	20%	18%	47%	13%	10%	15%	49%	55%	100%	24%	19%	20%	20%	50%
S&P 500 Pure Value	8%	0%	7%	0%	9%	7%	14%	11%	16%	30%	34%	24%	24%	100%	25%	53%	16%	13%
S&P 500 Buyback	18%	12%	16%	15%	13%	11%	18%	9%	3%	8%	24%	17%	19%	25%	100%	26%	17%	16%
S&P 500 Enhanced Value	20%	3%	16%	4%	4%	8%	12%	9%	12%	19%	31%	20%	20%	53%	26%	100%	9%	11%
S&P 500 High Beta	15%	16%	17%	25%	0%	6%	14%	4%	1%	11%	12%	11%	20%	16%	17%	9%	100%	15%

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

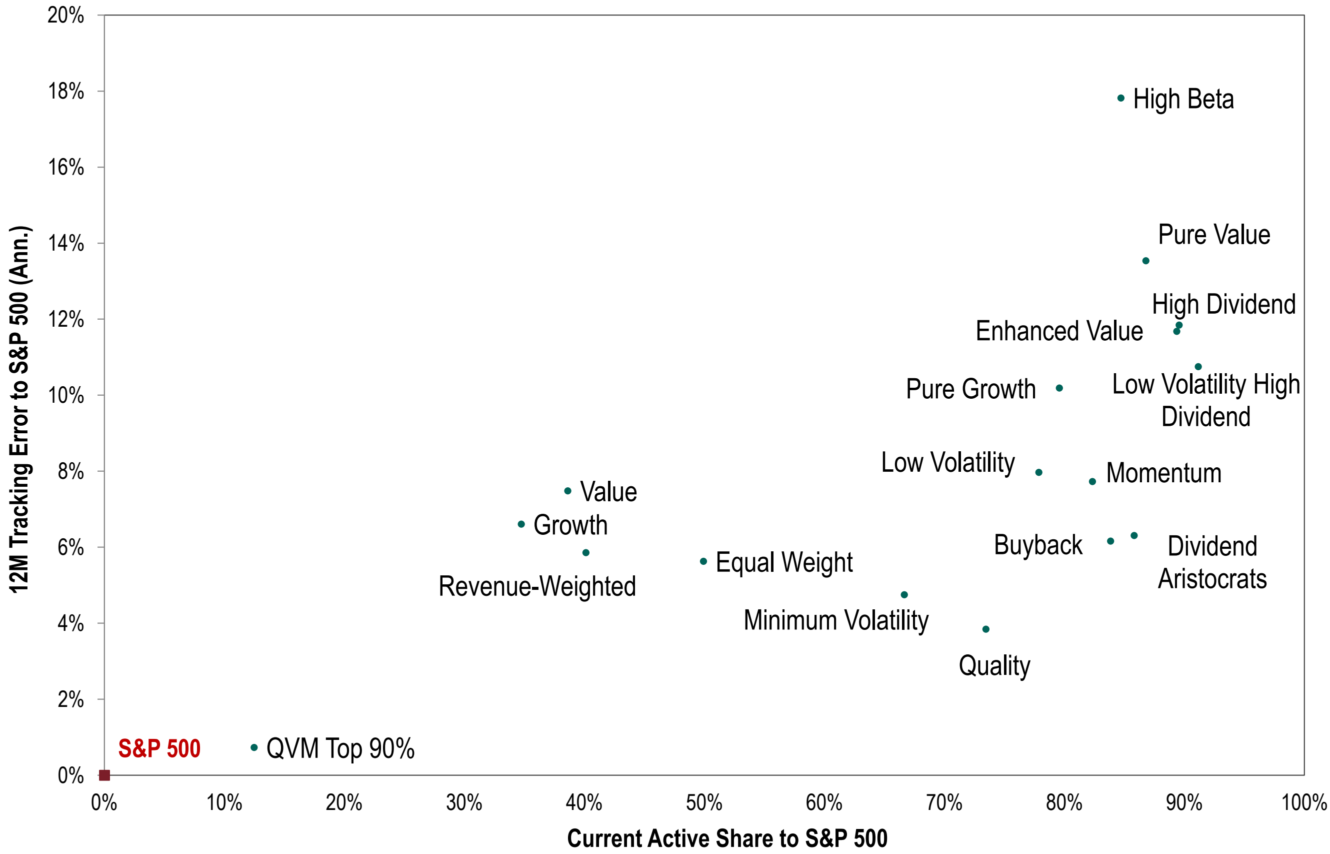
RELATIVE RETURN CORRELATIONS

	S&P 500 Momentum	S&P 500 Growth	S&P 500 Quality	S&P 500 Pure Growth	S&P 500 Low Volatility	S&P 500 Minimum Volatility	S&P 500 QVM Top 90%	S&P 500 Dividend Aristocrats	S&P 500 Low Volatility High Dividend	S&P 500 High Dividend	S&P 500 Revenue-Weighted	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 Momentum	1.00	0.76	0.30	0.51	0.07	0.04	-0.02	-0.57	-0.63	-0.68	-0.72	-0.76	-0.60	-0.66	-0.60	-0.71	-0.58
S&P 500 Growth	0.76	1.00	0.17	0.49	-0.25	-0.21	-0.23	-0.78	-0.82	-0.82	-0.87	-0.99	-0.80	-0.80	-0.70	-0.82	-0.61
S&P 500 Quality	0.30	0.17	1.00	-0.02	-0.02	0.11	-0.16	-0.05	-0.35	-0.41	-0.21	-0.18	-0.33	-0.42	-0.37	-0.45	-0.38
S&P 500 Pure Growth	0.51	0.49	-0.02	1.00	-0.09	-0.14	0.19	-0.38	-0.34	-0.23	-0.40	-0.46	-0.02	-0.14	0.05	-0.17	0.04
S&P 500 Low Volatility	0.07	-0.25	-0.02	-0.09	1.00	0.79	0.22	0.42	0.46	0.28	0.04	0.25	0.17	0.00	0.05	0.05	-0.28
S&P 500 Minimum Volatility	0.04	-0.21	0.11	-0.14	0.79	1.00	0.07	0.47	0.36	0.17	0.10	0.22	0.10	-0.07	-0.05	-0.05	-0.31
S&P 500 QVM Top 90%	-0.02	-0.23	-0.16	0.19	0.22	0.07	1.00	0.20	0.34	0.34	0.12	0.24	0.47	0.42	0.55	0.43	0.33
S&P 500 Dividend Aristocrats	-0.57	-0.78	-0.05	-0.38	0.42	0.47	0.20	1.00	0.75	0.66	0.72	0.80	0.69	0.57	0.53	0.59	0.39
S&P 500 Low Volatility High Dividend	-0.63	-0.82	-0.35	-0.34	0.46	0.36	0.34	0.75	1.00	0.93	0.73	0.83	0.82	0.77	0.71	0.78	0.55
S&P 500 High Dividend	-0.68	-0.82	-0.41	-0.23	0.28	0.17	0.34	0.66	0.93	1.00	0.76	0.84	0.89	0.89	0.80	0.89	0.73
S&P 500 Revenue-Weighted	-0.72	-0.87	-0.21	-0.40	0.04	0.10	0.12	0.72	0.73	0.76	1.00	0.88	0.76	0.81	0.68	0.83	0.65
S&P 500 Value	-0.76	-0.99	-0.18	-0.46	0.25	0.22	0.24	0.80	0.83	0.84	0.88	1.00	0.82	0.81	0.72	0.83	0.64
S&P 500 Equal Weight	-0.60	-0.80	-0.33	-0.02	0.17	0.10	0.47	0.69	0.82	0.89	0.76	0.82	1.00	0.92	0.92	0.90	0.85
S&P 500 Pure Value	-0.66	-0.80	-0.42	-0.14	0.00	-0.07	0.42	0.57	0.77	0.89	0.81	0.81	0.92	1.00	0.90	0.97	0.88
S&P 500 Buyback	-0.60	-0.70	-0.37	0.05	0.05	-0.05	0.55	0.53	0.71	0.80	0.68	0.72	0.92	0.90	1.00	0.91	0.83
S&P 500 Enhanced Value	-0.71	-0.82	-0.45	-0.17	0.05	-0.05	0.43	0.59	0.78	0.89	0.83	0.83	0.90	0.97	0.91	1.00	0.84
S&P 500 High Beta	-0.58	-0.61	-0.38	0.04	-0.28	-0.31	0.33	0.39	0.55	0.73	0.65	0.64	0.85	0.88	0.83	0.84	1.00

Correlation of weekly excess total returns (versus S&P 500), last three years

Source: S&P Dow Jones Indices LLC and/or its affiliates. Data as of December 31, 2021.

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



FACTOR EXPOSURE SUMMARY (See following pages for factor details)

INDEX	PAGE No.	LOW VOLATILITY	MOMENTUM	VALUE	HIGH BETA	DIVIDEND	QUALITY	SMALL SIZE
S&P 500 Low Volatility	7	76.2%	-24.4%	6.9%	-60.8%	42.6%	-12.0%	37.5%
S&P 500 Minimum Volatility	7	24.8%	-18.9%	-2.3%	-44.5%	20.7%	-2.5%	13.1%
S&P 500 Low Volatility High Dividend	8	25.7%	-44.9%	58.6%	-69.3%	88.1%	-31.4%	51.6%
S&P 500 High Dividend	8	0.6%	-17.3%	65.4%	-53.3%	85.5%	-23.2%	61.1%
S&P 500 Quality	9	-23.6%	-2.3%	24.3%	-4.5%	11.0%	43.5%	13.1%
S&P 500 Dividend Aristocrats	9	23.8%	-26.8%	33.5%	-32.4%	50.2%	-12.0%	45.8%
S&P 500 Momentum	10	-30.1%	35.3%	33.5%	20.7%	-14.7%	1.0%	16.7%
S&P 500 Revenue-Weighted	10	2.8%	-18.9%	59.3%	-12.5%	37.9%	-12.0%	13.1%
S&P 500 QVM Top 90%	11	0.2%	5.8%	7.0%	0.2%	5.6%	1.8%	6.9%
S&P 500 Growth	11	-16.4%	27.4%	-21.6%	23.2%	-24.1%	2.9%	-43.1%
S&P 500 Value	12	7.7%	-29.8%	40.7%	-27.2%	37.9%	-12.0%	28.2%
S&P 500 Pure Growth	12	-70.6%	49.1%	-11.5%	34.4%	-29.9%	5.8%	18.8%
S&P 500 Pure Value	13	-33.2%	-35.2%	89.7%	-24.6%	54.2%	-12.0%	63.0%
S&P 500 Buyback	13	-21.8%	-2.3%	62.1%	-2.1%	3.6%	3.3%	42.0%
S&P 500 High Beta	14	-78.8%	-9.9%	22.0%	61.7%	-7.7%	-2.6%	41.4%
S&P 500 Enhanced Value	14	-19.4%	-13.3%	90.8%	-12.5%	51.6%	-16.2%	38.9%
S&P 500 Equal Weight	15	-18.4%	-17.3%	37.3%	-7.7%	19.6%	-12.0%	50.5%

Source: S&P Dow Jones Indices LLC and/or its affiliates. Data as of December 31, 2021.

S&P Dow Jones Indices

A Division of S&P Global

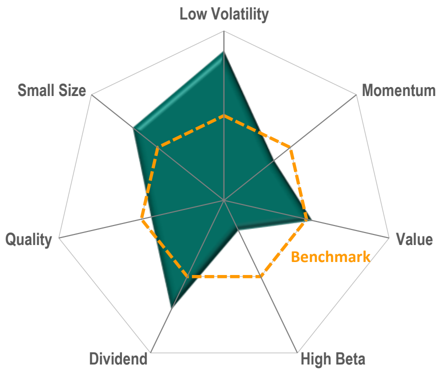
S&P 500 Low Volatility

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. As of December 31, 2021 the index comprised 100 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	9.7%	13.3%	24.4%	24.4%	16.4%	13.2%	13.1%	10.0%
Relative to Benchmark	5.2%	2.3%	-4.3%	-4.3%	-9.6%	-5.3%	-3.4%	-0.6%
Index Volatility				13.6%	15.2%	13.2%	11.3%	11.9%
Tracking Error				8.0%	9.2%	8.2%	7.8%	8.2%

Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 0.62



Factor Exposure Chart

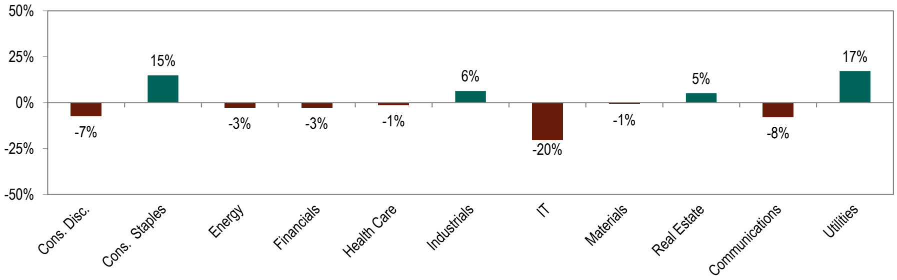
Portfolio Statistics	*Index*	*Bmark*
Active Share (Stock)	78%	0%
Active Share (Sector)	43%	0%
Concentration (HH Index)	101.3	148.1
Correlation (stock)	0.29	0.25
Ann. Turnover (last 10 yr)	0.62	0.04

Top Sector Tilts (versus benchmark)

Sector	*Index*	*Bmark*	*Difference*
Utilities	20%	2%	17%
Cons. Staples	21%	6%	15%
IT	9%	29%	20%
Communications	2%	10%	8%

Index-Weighted Avg.	*Index*	*Bmark*
Stock Volatility	19%	26%
12M - 1M price return	16%	35%
Book/Price	0.22	0.19
Earnings/Price	0.04	0.04
Sales/Price	0.31	0.30
Stock Beta	0.55	1.02
Yield (12M trailing)	2.1%	1.3%
R.O.E.	29%	36%
Market Cap (U.S. $ bn)	117.7	627.9

Sector Tilts (Detail)



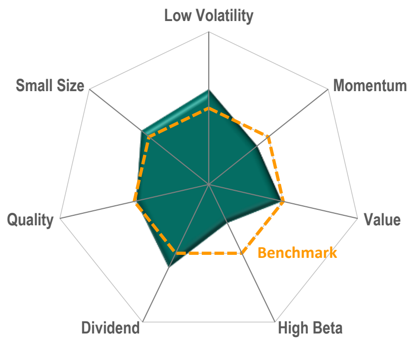
S&P 500 Minimum Volatility

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 December 31, 2021 the index comprised 95 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	6.9%	12.8%	24.4%	24.4%	21.4%	14.8%	15.0%	10.0%
Relative to Benchmark	2.4%	1.7%	-4.3%	-4.3%	-4.7%	-3.6%	-1.6%	-0.6%
Index Volatility				12.2%	15.7%	13.9%	11.5%	12.8%
Tracking Error				4.8%	4.6%	4.1%	4.6%	5.5%

Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 0.78



Factor Exposure Chart

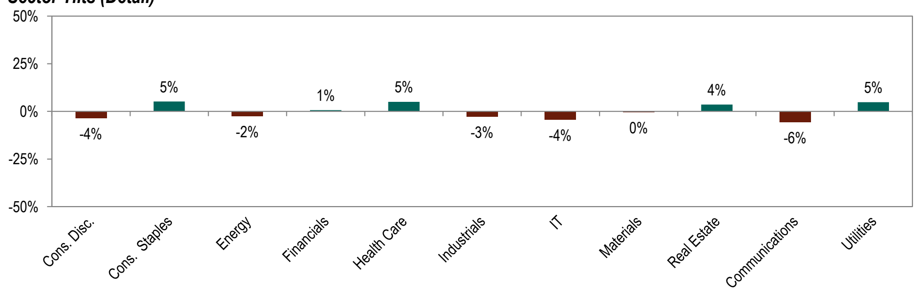
Portfolio Statistics	*Index*	*Bmark*
Active Share (Stock)	67%	0%
Active Share (Sector)	19%	0%
Concentration (HH Index)	154.5	148.1
Correlation (stock)	0.24	0.25
Ann. Turnover (last 10 yr)	0.39	0.04

Top Sector Tilts (versus benchmark)

Sector	*Index*	*Bmark*	*Difference*
Cons. Staples	11%	6%	5%
Health Care	18%	13%	5%
Communications	4%	10%	6%
IT	25%	29%	4%

Index-Weighted Avg.	*Index*	*Bmark*
Stock Volatility	22%	26%
12M - 1M price return	22%	35%
Book/Price	0.18	0.19
Earnings/Price	0.04	0.04
Sales/Price	0.25	0.30
Stock Beta	0.73	1.02
Yield (12M trailing)	1.6%	1.3%
R.O.E.	33%	36%
Market Cap (U.S. $ bn)	315.4	627.9

Sector Tilts (Detail)



Source: S&P Dow Jones Indices LLC and/or its affiliates. Data as of December 31, 2021.

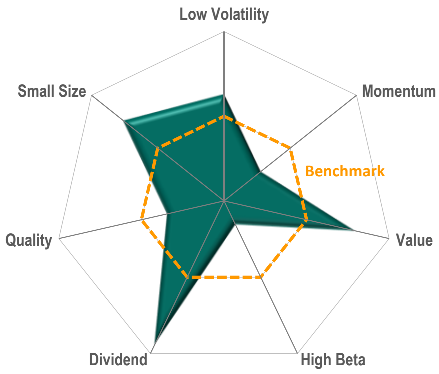
S&P 500 Low Volatility High Dividend

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, subject to single stock and sector constraints. As of December 31, 2021 the index comprised 48 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	8.7%	8.0%	25.3%	25.3%	11.0%	7.6%	11.3%	10.1%
Relative to Benchmark	4.2%	-3.1%	-3.4%	-3.4%	-15.1%	-10.8%	-5.3%	-0.6%
Index Volatility				13.5%	20.5%	17.0%	13.7%	15.0%
Tracking Error				10.8%	9.6%	8.7%	8.2%	8.3%

Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 0.63



Factor Exposure Chart

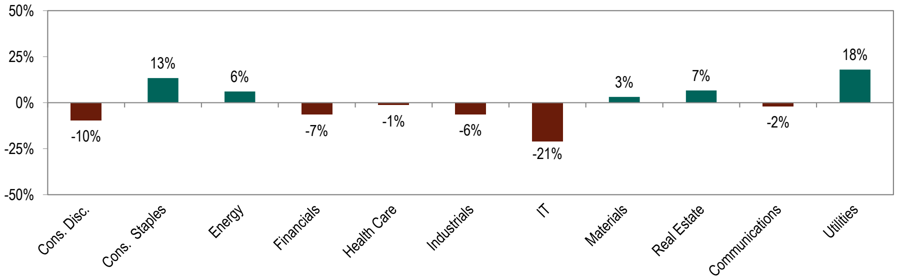
Portfolio Statistics	***Index***	***Bmark***
Active Share (Stock)	91%	0%
Active Share (Sector)	47%	0%
Concentration (HH Index)	221.6	148.1
Correlation (stock)	0.34	0.25
Ann. Turnover (last 10 yr)	0.60	0.04

Top Sector Tilts (versus benchmark)

Sector	***Index***	***Bmark***	***Diff.***
Utilities	20%	2%	18%
Cons. Staples	19%	6%	13%
IT	8%	29%	21%
Cons. Disc.	3%	13%	10%

Index-Weighted Avg.	***Index***	***Bmark***
Stock Volatility	22%	26%
12M - 1M price return	15%	35%
Book/Price	0.39	0.19
Earnings/Price	0.05	0.04
Sales/Price	0.55	0.30
Stock Beta	0.46	1.02
Yield (12M trailing)	4.2%	1.3%
R.O.E.	24%	36%
Market Cap (U.S. $ bn)	79.5	627.9

Sector Tilts (Detail)



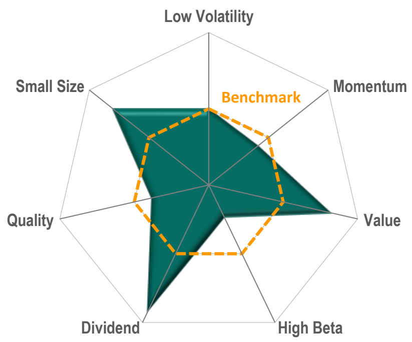
S&P 500 High Dividend

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. As of December 31, 2021 the index comprised 76 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	7.4%	7.9%	32.9%	32.9%	12.6%	8.9%	12.4%	8.1%
Relative to Benchmark	2.9%	-3.1%	4.1%	4.1%	-13.5%	-9.6%	-4.1%	-2.6%
Index Volatility				13.5%	24.4%	19.9%	15.7%	19.1%
Tracking Error				11.8%	13.1%	10.9%	9.4%	10.3%

Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 0.84



Factor Exposure Chart

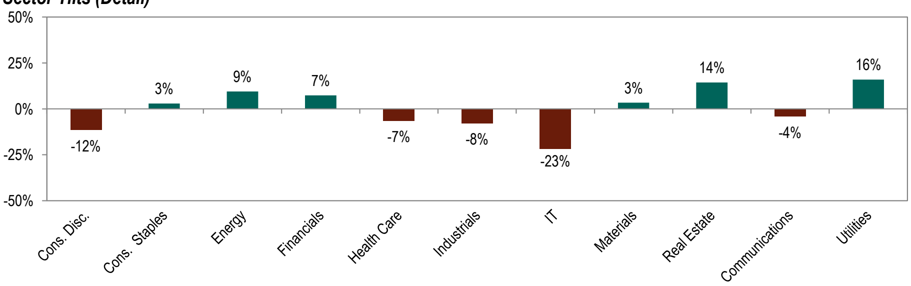
Portfolio Statistics	***Index***	***Bmark***
Active Share (Stock)	90%	0%
Active Share (Sector)	53%	0%
Concentration (HH Index)	133.2	148.1
Correlation (stock)	0.38	0.25
Ann. Turnover (last 10 yr)	0.42	0.04

Top Sector Tilts (versus benchmark)

Sector	***Index***	***Bmark***	***Diff.***
Utilities	18%	2%	16%
Real Estate	17%	3%	14%
IT	6%	29%	23%
Cons. Disc.	1%	13%	12%

Index-Weighted Avg.	***Index***	***Bmark***
Stock Volatility	26%	26%
12M - 1M price return	28%	35%
Book/Price	0.47	0.19
Earnings/Price	0.05	0.04
Sales/Price	0.58	0.30
Stock Beta	0.63	1.02
Yield (12M trailing)	3.9%	1.3%
R.O.E.	19%	36%
Market Cap (U.S. $ bn)	57.9	627.9

Sector Tilts (Detail)



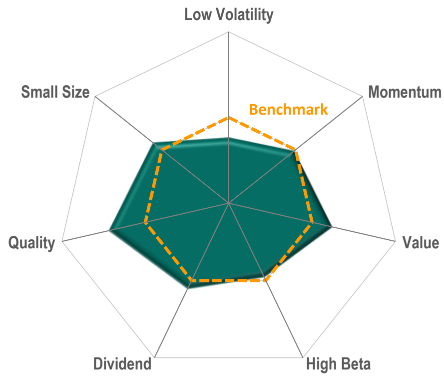
S&P 500 Quality

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, subject to single stock and sector constraints. As of December 31, 2021 the index comprised 100 constituents.

Index Statistics	**1M**	**3M**	**YTD**	**12M**	**3Y**	**5Y**	**10Y**	**15Y**
Total Return (Ann)	5.0%	10.0%	28.2%	28.2%	26.4%	17.6%	15.9%	12.1%
Relative to Benchmark	0.5%	-1.0%	-0.5%	-0.5%	0.3%	-0.9%	-0.7%	1.4%
Index Volatility				9.7%	16.0%	14.5%	12.8%	14.4%
Tracking Error				3.8%	3.8%	3.4%	2.8%	3.3%

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



Factor Exposure Chart

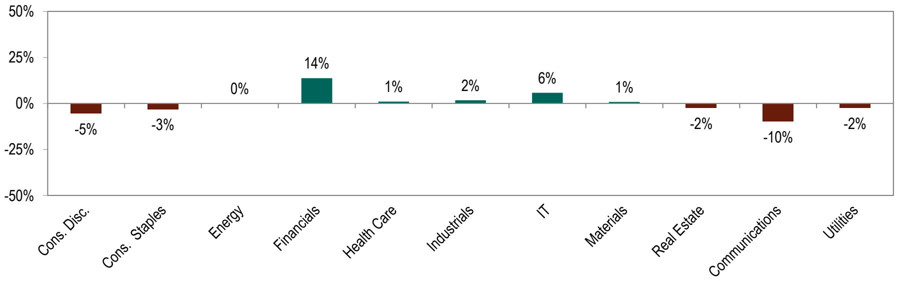
Portfolio Statistics	***Index***	***Bmark***
Active Share (Stock)	73%	0%
Active Share (Sector)	23%	0%
Concentration (HH Index)	253.0	148.1
Correlation (stock)	0.21	0.25
Ann. Turnover (last 10 yr)	0.63	0.04

Top Sector Tilts (versus benchmark)

Sector	***Index***	***Bmark***	***Diff.***
Financials	24%	11%	14%
IT	35%	29%	6%
Communications	0%	10%	10%
Cons. Disc.	7%	13%	5%

Index-Weighted Avg.	***Index***	***Bmark***
Stock Volatility	28%	26%
12M - 1M price return	37%	35%
Book/Price	0.21	0.19
Earnings/Price	0.05	0.04
Sales/Price	0.32	0.30
Stock Beta	0.97	1.02
Yield (12M trailing)	1.4%	1.3%
R.O.E.	47%	36%
Market Cap (U.S. $ bn)	435.0	627.9

Sector Tilts (Detail)



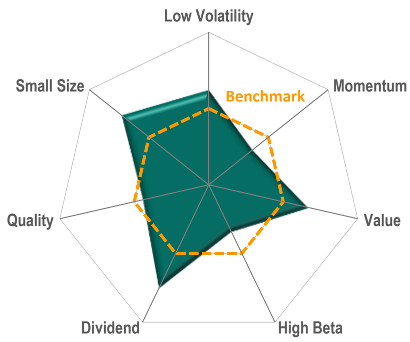
S&P 500 Dividend Aristocrats

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 December 31, 2021 the index comprised 64 constituents.

Index Statistics	**1M**	**3M**	**YTD**	**12M**	**3Y**	**5Y**	**10Y**	**15Y**
Total Return (Ann)	7.3%	11.7%	26.0%	26.0%	20.6%	15.7%	15.4%	11.7%
Relative to Benchmark	2.9%	0.7%	-2.7%	-2.7%	-5.5%	-2.8%	-1.1%	1.0%
Index Volatility				13.4%	17.3%	15.1%	12.7%	14.5%
Tracking Error				6.3%	5.6%	5.1%	4.6%	5.5%

Benchmark: S&P 500.   1 Yr trailing beta to benchmark = 0.79



Factor Exposure Chart

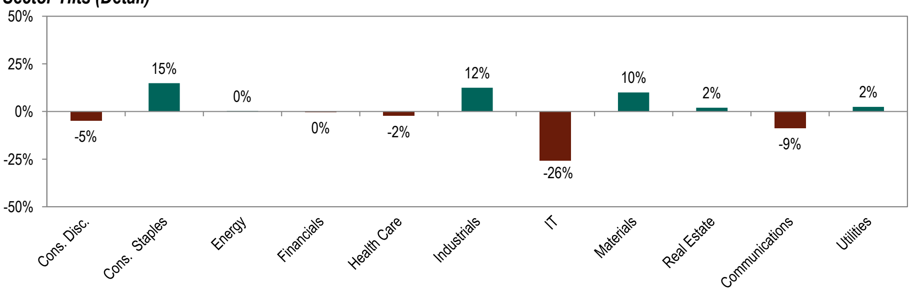
Portfolio Statistics	***Index***	***Bmark***
Active Share (Stock)	86%	0%
Active Share (Sector)	42%	0%
Concentration (HH Index)	157.1	148.1
Correlation (stock)	0.29	0.25
Ann. Turnover (last 10 yr)	0.19	0.04

Top Sector Tilts (versus benchmark)

Sector	***Index***	***Bmark***	***Diff.***
Cons. Staples	21%	6%	15%
Industrials	20%	8%	12%
IT	3%	29%	26%
Communications	1%	10%	9%

Index-Weighted Avg.	***Index***	***Bmark***
Stock Volatility	22%	26%
12M - 1M price return	21%	35%
Book/Price	0.24	0.19
Earnings/Price	0.04	0.04
Sales/Price	0.46	0.30
Stock Beta	0.77	1.02
Yield (12M trailing)	2.3%	1.3%
R.O.E.	32%	36%
Market Cap (U.S. $ bn)	94.6	627.9

Sector Tilts (Detail)



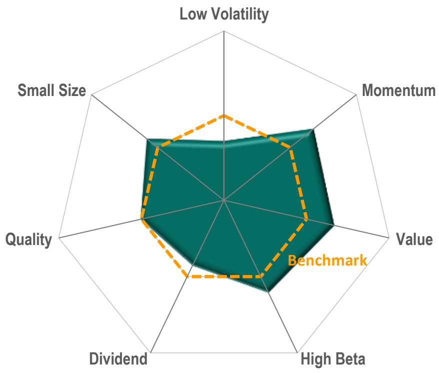
S&P 500 Momentum

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, subject to single stock and sector constraints. As of December 31, 2021 the index comprised 100 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	2.7%	7.3%	22.8%	22.8%	25.8%	20.6%	17.2%	11.3%
Relative to Benchmark	-1.8%	-3.7%	-5.9%	-5.9%	-0.3%	2.1%	0.6%	0.6%
Index Volatility				13.0%	15.7%	14.9%	12.8%	15.1%
Tracking Error				7.7%	7.3%	6.4%	5.6%	6.5%

Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 1.13



Factor Exposure Chart

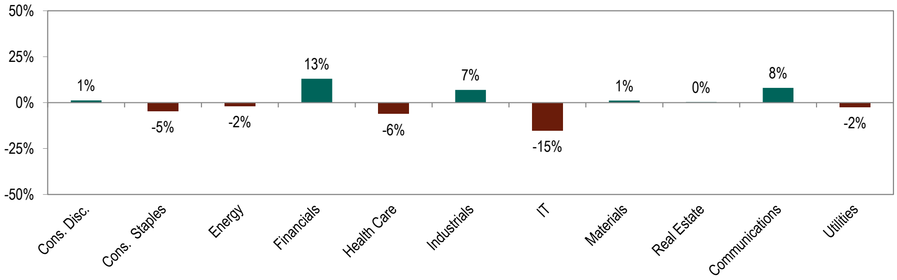
Portfolio Statistics	*Index*	*Bmark*
Active Share (Stock)	82%	0%
Active Share (Sector)	31%	0%
Concentration (HH Index)	302.3	148.1
Correlation (stock)	0.35	0.25
Ann. Turnover (last 10 yr)	1.15	0.04

Top Sector Tilts (versus benchmark)

Sector	*Index*	*Bmark*	*Diff.*
Financials	24%	11%	13%
Communications	18%	10%	8%
IT	14%	29%	15%
Health Care	7%	13%	6%

Index-Weighted Avg.	*Index*	*Bmark*
Stock Volatility	29%	26%
12M - 1M price return	54%	35%
Book/Price	0.23	0.19
Earnings/Price	0.05	0.04
Sales/Price	0.34	0.30
Stock Beta	1.20	1.02
Yield (12M trailing)	0.8%	1.3%
R.O.E.	33%	36%
Market Cap (U.S. $ bn)	271.8	627.9

Sector Tilts (Detail)



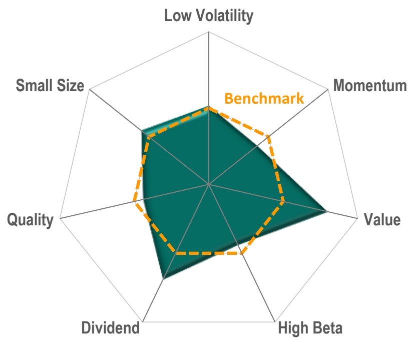
S&P 500 Revenue-Weighted

Description

The S&P 500 Revenue-Weighted comprises all the constituents of the S&P 500, weighted in proportion to revenues. As of December 31, 2021 the index comprised 505 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	6.5%	10.4%	30.7%	30.7%	22.5%	15.5%	15.7%	10.1%
Relative to Benchmark	2.1%	-0.6%	2.0%	2.0%	-3.6%	-3.0%	-0.9%	-0.6%
Index Volatility				11.4%	18.9%	16.6%	13.9%	16.6%
Tracking Error				5.9%	5.2%	4.5%	3.5%	3.6%

Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 0.87



Factor Exposure Chart

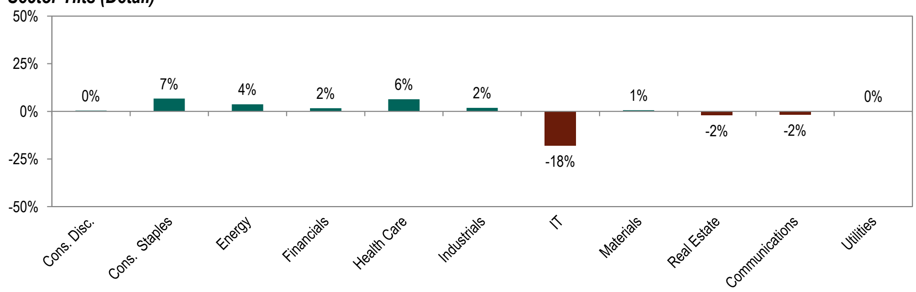
Portfolio Statistics	*Index*	*Bmark*
Active Share (Stock)	40%	0%
Active Share (Sector)	21%	0%
Concentration (HH Index)	94.7	148.1
Correlation (stock)	0.26	0.25
Ann. Turnover (last 10 yr)	0.20	0.04

Top Sector Tilts (versus benchmark)

Sector	*Index*	*Bmark*	*Diff.*
Cons. Staples	13%	6%	7%
Health Care	20%	13%	6%
IT	11%	29%	18%
Real Estate	1%	3%	2%

Index-Weighted Avg.	*Index*	*Bmark*
Stock Volatility	26%	26%
12M - 1M price return	26%	35%
Book/Price	0.30	0.19
Earnings/Price	0.05	0.04
Sales/Price	0.79	0.30
Stock Beta	0.90	1.02
Yield (12M trailing)	1.8%	1.3%
R.O.E.	29%	36%
Market Cap (U.S. $ bn)	319.1	627.9

Sector Tilts (Detail)



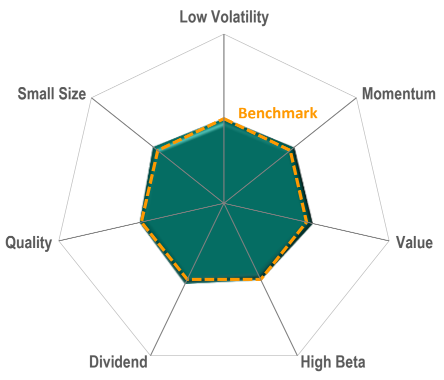
S&P 500 QVM Top 90%

Description

The S&P 500 Quality, Value & Momentum Top 90% Multi-factor Index is designed to measure the performance of 90% of the stocks within the S&P 500, after excluding those with the lowest quality, value, and momentum as determined by a multi-factor score. As of December 31, 2021 the index comprised 450 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	5.0%	12.0%	30.5%	30.5%	26.6%	18.7%	16.7%	11.0%
Relative to Benchmark	0.5%	1.0%	1.8%	1.8%	0.5%	0.3%	0.1%	0.3%
Index Volatility				11.1%	17.2%	15.3%	13.0%	15.1%
Tracking Error				0.7%	0.9%	0.7%	0.6%	0.7%

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



Factor Exposure Chart

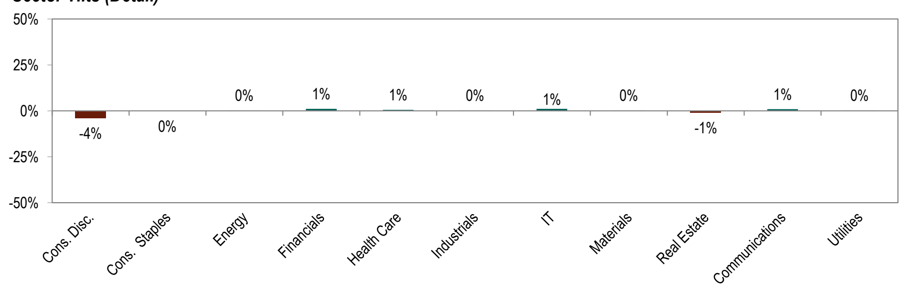
Portfolio Statistics	*Index*	*Bmark*
Active Share (Stock)	12%	0%
Active Share (Sector)	5%	0%
Concentration (HH Index)	176.2	148.1
Correlation (stock)	0.25	0.25
Ann. Turnover (last 10 yr)	0.20	0.04

Top Sector Tilts (versus benchmark)

Sector	*Index*	*Bmark*	*Diff.*
IT	30%	29%	1%
Financials	12%	11%	1%
Cons. Disc.	9%	13%	4%
Real Estate	2%	3%	1%

Index-Weighted Avg.	*Index*	*Bmark*
Stock Volatility	26%	26%
12M - 1M price return	37%	35%
Book/Price	0.20	0.19
Earnings/Price	0.04	0.04
Sales/Price	0.31	0.30
Stock Beta	1.02	1.02
Yield (12M trailing)	1.3%	1.3%
R.O.E.	37%	36%
Market Cap (U.S. $ bn)	625.4	627.9

Sector Tilts (Detail)



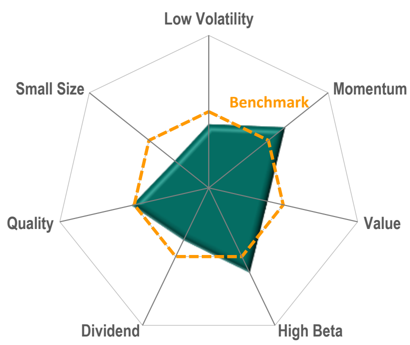
S&P 500 Growth

Description

The S&P 500 Growth is comprises 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 December 31, 2021 the index comprised 239 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	2.5%	13.4%	32.0%	32.0%	32.2%	24.1%	19.2%	13.3%
Relative to Benchmark	-2.0%	2.3%	3.3%	3.3%	6.1%	5.6%	2.7%	2.7%
Index Volatility				13.2%	17.4%	15.8%	13.5%	15.2%
Tracking Error				6.6%	5.0%	4.4%	3.6%	3.6%

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



Factor Exposure Chart

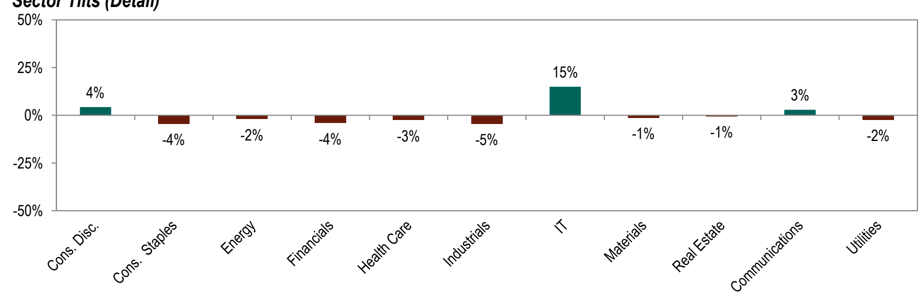
Portfolio Statistics	*Index*	*Bmark*
Active Share (Stock)	35%	0%
Active Share (Sector)	22%	0%
Concentration (HH Index)	457.8	148.1
Correlation (stock)	0.33	0.25
Ann. Turnover (last 10 yr)	0.25	0.04

Top Sector Tilts (versus benchmark)

Sector	*Index*	*Bmark*	*Diff.*
IT	44%	29%	15%
Cons. Disc.	17%	13%	4%
Industrials	3%	8%	5%
Cons. Staples	1%	6%	4%

Index-Weighted Avg.	*Index*	*Bmark*
Stock Volatility	28%	26%
12M - 1M price return	48%	35%
Book/Price	0.09	0.19
Earnings/Price	0.03	0.04
Sales/Price	0.16	0.30
Stock Beta	1.21	1.02
Yield (12M trailing)	0.6%	1.3%
R.O.E.	47%	36%
Market Cap (U.S. $ bn)	1048.7	627.9

Sector Tilts (Detail)



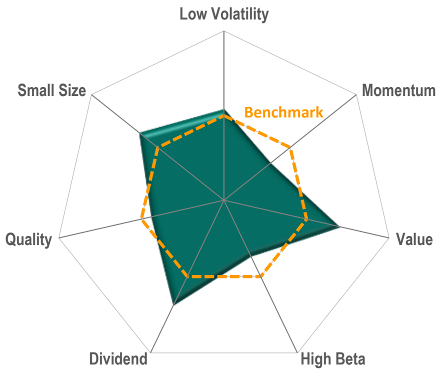
S&P 500 Value

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 December 31, 2021 the index comprised 449 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	7.0%	8.3%	24.9%	24.9%	18.6%	11.9%	13.3%	7.6%
Relative to Benchmark	2.6%	-2.7%	-3.8%	-3.8%	-7.4%	-6.6%	-3.3%	-3.1%
Index Volatility				12.2%	18.7%	16.2%	13.7%	16.4%
Tracking Error				7.5%	6.1%	5.3%	4.3%	4.2%

Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 0.85



Factor Exposure Chart

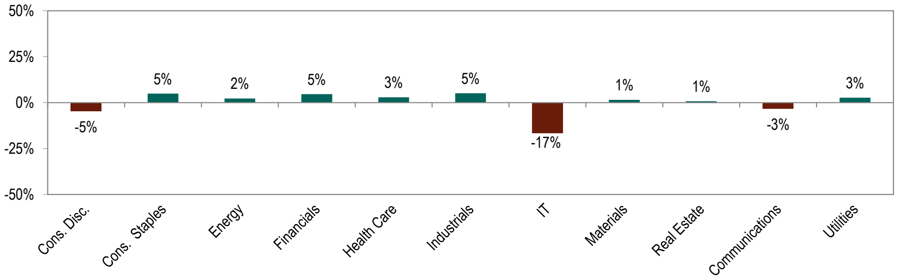
Portfolio Statistics	***Index***	***Bmark***
Active Share (Stock)	39%	0%
Active Share (Sector)	25%	0%
Concentration (HH Index)	64.5	148.1
Correlation (stock)	0.29	0.25
Ann. Turnover (last 10 yr)	0.26	0.04

Top Sector Tilts (versus benchmark)

Sector	***Index***	***Bmark***	***Diff.***
Industrials	13%	8%	5%
Cons. Staples	11%	6%	5%
IT	13%	29%	17%
Cons. Disc.	8%	13%	5%

Index-Weighted Avg.	***Index***	***Bmark***
Stock Volatility	24%	26%
12M - 1M price return	19%	35%
Book/Price	0.30	0.19
Earnings/Price	0.04	0.04
Sales/Price	0.45	0.30
Stock Beta	0.80	1.02
Yield (12M trailing)	2.0%	1.3%
R.O.E.	24%	36%
Market Cap (U.S. $ bn)	160.2	627.9

Sector Tilts (Detail)



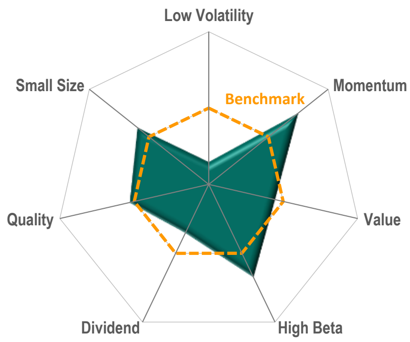
S&P 500 Pure Growth

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 December 31, 2021 the index comprised 56 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	-0.7%	9.5%	29.8%	29.8%	29.5%	21.4%	18.3%	13.6%
Relative to Benchmark	-5.2%	-1.5%	1.1%	1.1%	3.4%	2.9%	1.7%	2.9%
Index Volatility				14.5%	19.9%	17.8%	15.2%	17.7%
Tracking Error				10.2%	7.3%	6.5%	5.7%	5.9%

Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 1.3



Factor Exposure Chart

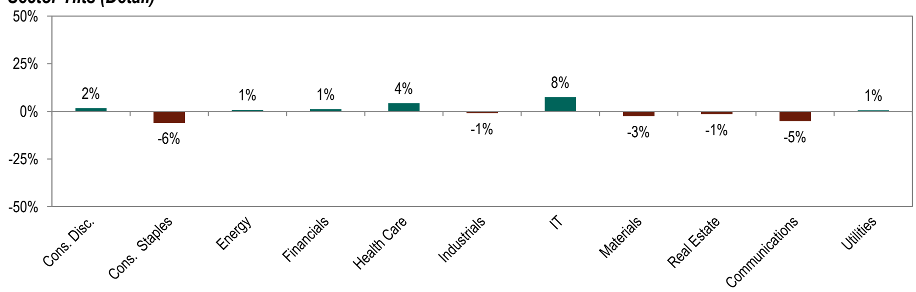
Portfolio Statistics	***Index***	***Bmark***
Active Share (Stock)	80%	0%
Active Share (Sector)	16%	0%
Concentration (HH Index)	192.9	148.1
Correlation (stock)	0.31	0.25
Ann. Turnover (last 10 yr)	0.65	0.04

Top Sector Tilts (versus benchmark)

Sector	***Index***	***Bmark***	***Diff.***
IT	37%	29%	8%
Health Care	18%	13%	4%
Cons. Staples	0%	6%	6%
Communications	5%	10%	5%

Index-Weighted Avg.	***Index***	***Bmark***
Stock Volatility	36%	26%
12M - 1M price return	75%	35%
Book/Price	0.10	0.19
Earnings/Price	0.04	0.04
Sales/Price	0.21	0.30
Stock Beta	1.29	1.02
Yield (12M trailing)	0.5%	1.3%
R.O.E.	45%	36%
Market Cap (U.S. $ bn)	236.7	627.9

Sector Tilts (Detail)



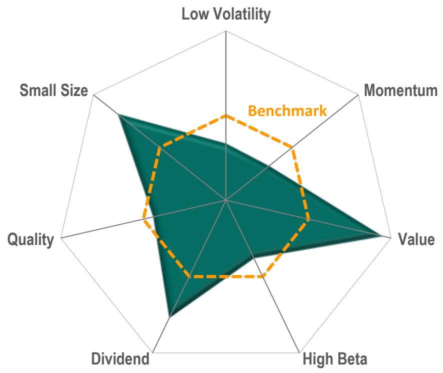
S&P 500 Pure Value

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 December 31, 2021 the index comprised 122 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	6.5%	7.2%	34.6%	34.6%	15.5%	9.8%	13.9%	8.7%
Relative to Benchmark	2.1%	-3.8%	5.9%	5.9%	-10.5%	-8.7%	-2.6%	-1.9%
Index Volatility				15.2%	27.8%	23.2%	19.3%	23.8%
Tracking Error				13.5%	15.1%	12.2%	10.0%	12.5%

Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 0.95



Factor Exposure Chart

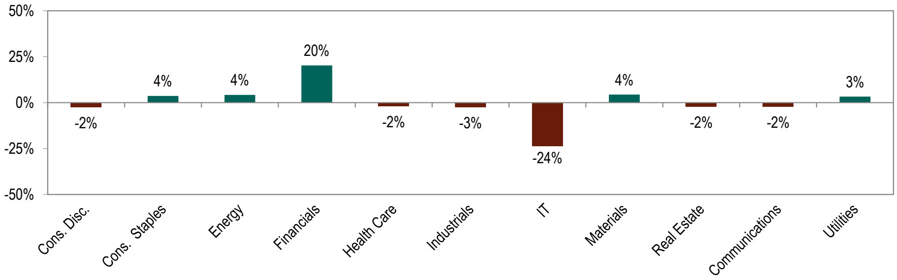
Portfolio Statistics	***Index***	***Bmark***
Active Share (Stock)	87%	0%
Active Share (Sector)	36%	0%
Concentration (HH Index)	104.6	148.1
Correlation (stock)	0.41	0.25
Ann. Turnover (last 10 yr)	0.47	0.04

Top Sector Tilts (versus benchmark)

Sector	***Index***	***Bmark***	***Diff.***
Financials	31%	11%	20%
Materials	7%	3%	4%
IT	5%	29%	24%
Industrials	5%	8%	3%

Index-Weighted Avg.	***Index***	***Bmark***
Stock Volatility	30%	26%
12M - 1M price return	21%	35%
Book/Price	0.64	0.19
Earnings/Price	0.07	0.04
Sales/Price	1.11	0.30
Stock Beta	0.86	1.02
Yield (12M trailing)	2.4%	1.3%
R.O.E.	15%	36%
Market Cap (U.S. $ bn)	54.5	627.9

Sector Tilts (Detail)



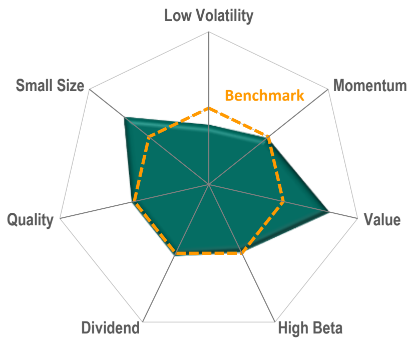
S&P 500 Buyback

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. As of December 31, 2021 the index comprised 99 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	6.1%	10.3%	34.8%	34.8%	24.1%	16.6%	17.0%	12.0%
Relative to Benchmark	1.6%	-0.7%	6.1%	6.1%	-2.0%	-1.9%	0.4%	1.4%
Index Volatility				12.0%	22.8%	19.5%	16.4%	18.4%
Tracking Error				6.2%	8.8%	7.1%	6.0%	6.2%

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



Factor Exposure Chart

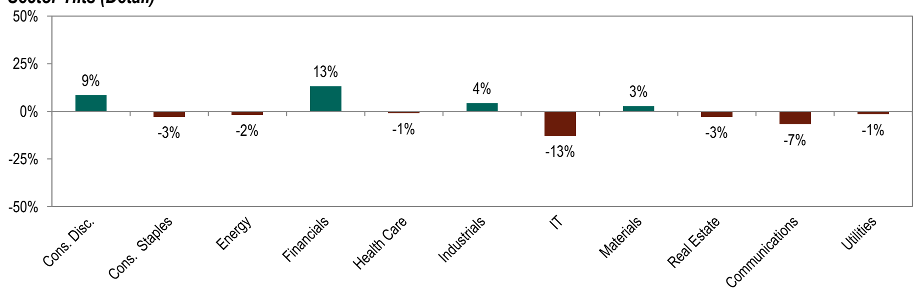
Portfolio Statistics	***Index***	***Bmark***
Active Share (Stock)	84%	0%
Active Share (Sector)	29%	0%
Concentration (HH Index)	102.5	148.1
Correlation (stock)	0.24	0.25
Ann. Turnover (last 10 yr)	0.94	0.04

Top Sector Tilts (versus benchmark)

Sector	***Index***	***Bmark***	***Diff.***
Financials	24%	11%	13%
Cons. Disc.	21%	13%	9%
IT	16%	29%	13%
Communications	3%	10%	7%

Index-Weighted Avg.	***Index***	***Bmark***
Stock Volatility	28%	26%
12M - 1M price return	36%	35%
Book/Price	0.31	0.19
Earnings/Price	0.06	0.04
Sales/Price	0.59	0.30
Stock Beta	0.99	1.02
Yield (12M trailing)	1.3%	1.3%
R.O.E.	35%	36%
Market Cap (U.S. $ bn)	105.6	627.9

Sector Tilts (Detail)



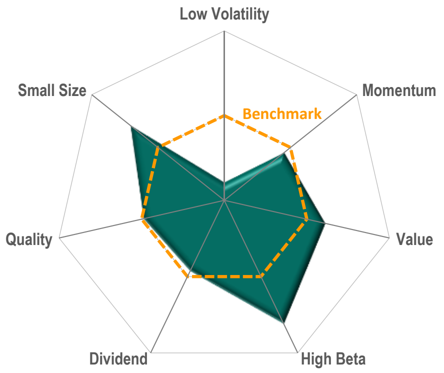
S&P 500 High Beta

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. As of December 31, 2021 the index comprised 100 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	3.5%	8.3%	40.9%	40.9%	33.6%	19.0%	17.4%	8.1%
Relative to Benchmark	-1.0%	-2.7%	12.2%	12.2%	7.5%	0.5%	0.9%	-2.5%
Index Volatility				19.9%	31.0%	26.4%	22.6%	27.5%
Tracking Error				17.8%	18.0%	14.9%	12.9%	15.0%

Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 1.33



Factor Exposure Chart

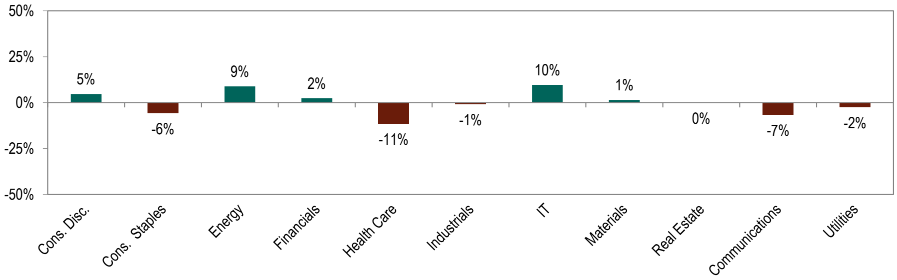
Portfolio Statistics	***Index***	***Bmark***
Active Share (Stock)	85%	0%
Active Share (Sector)	27%	0%
Concentration (HH Index)	103.1	148.1
Correlation (stock)	0.38	0.25
Ann. Turnover (last 10 yr)	0.90	0.04

Top Sector Tilts (versus benchmark)

Sector	***Index***	***Bmark***	***Diff.***
IT	39%	29%	10%
Energy	11%	3%	9%
Health Care	2%	13%	11%
Communications	4%	10%	7%

Index-Weighted Avg.	***Index***	***Bmark***
Stock Volatility	39%	26%
12M - 1M price return	45%	35%
Book/Price	27%	19%
Earnings/Price	3%	4%
Sales/Price	39%	30%
Stock Beta	144%	102%
Yield (12M trailing)	1.0%	1.3%
R.O.E.	27%	36%
Market Cap (U.S. $ bn)	106.6	627.9

Sector Tilts (Detail)



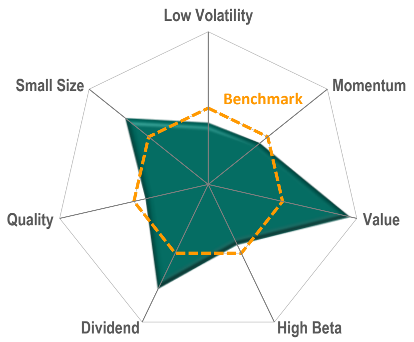
S&P 500 Enhanced Value

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. As of December 31, 2021 the index comprised 100 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	6.9%	8.6%	35.5%	35.5%	16.3%	11.2%	14.2%	7.6%
Relative to Benchmark	2.4%	-2.4%	6.8%	6.8%	-9.8%	-7.3%	-2.4%	-3.0%
Index Volatility				14.7%	26.4%	22.1%	18.5%	21.8%
Tracking Error				11.7%	13.6%	11.2%	9.4%	10.0%

Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 0.85



Factor Exposure Chart

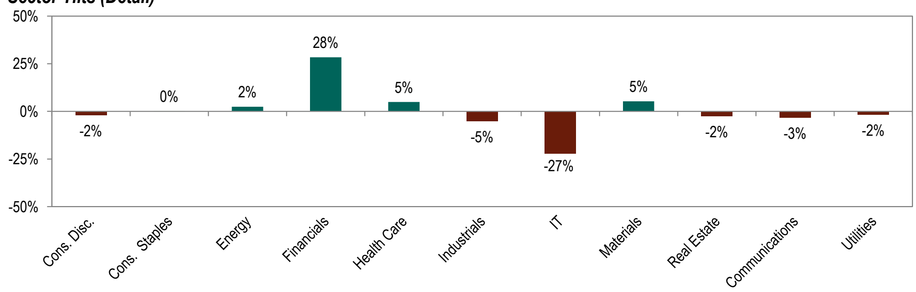
Portfolio Statistics	***Index***	***Bmark***
Active Share (Stock)	89%	0%
Active Share (Sector)	41%	0%
Concentration (HH Index)	223.0	148.1
Correlation (stock)	0.37	0.25
Ann. Turnover (last 10 yr)	0.43	0.04

Top Sector Tilts (versus benchmark)

Sector	***Index***	***Bmark***	***Diff.***
Financials	39%	11%	28%
Materials	8%	3%	5%
IT	3%	29%	27%
Industrials	3%	8%	5%

Index-Weighted Avg.	***Index***	***Bmark***
Stock Volatility	28%	26%
12M - 1M price return	31%	35%
Book/Price	0.60	0.19
Earnings/Price	0.08	0.04
Sales/Price	1.09	0.30
Stock Beta	0.91	1.02
Yield (12M trailing)	2.3%	1.3%
R.O.E.	18%	36%
Market Cap (U.S. $ bn)	114.3	627.9

Sector Tilts (Detail)



S&P Dow Jones Indices

A Division of S&P Global

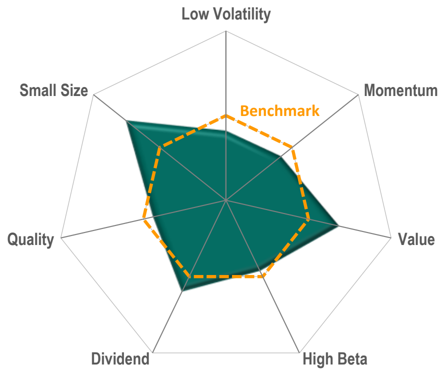
S&P 500 Equal Weight

Description

The S&P 500 Equal Weight comprises all the constituents in the S&P 500, equally weighted at each quarterly rebalance. As of December 31, 2021 the index comprised 505 constituents.

Index Statistics	**1M**	**3M**	**YTD**	**12M**	**3Y**	**5Y**	**10Y**	**15Y**
Total Return (Ann)	6.2%	9.0%	29.6%	29.6%	23.6%	15.7%	15.6%	10.8%
Relative to Benchmark	1.7%	-2.0%	0.9%	0.9%	-2.4%	-2.7%	-0.9%	0.1%
Index Volatility				11.6%	20.3%	17.5%	14.6%	17.8%
Tracking Error				5.6%	5.9%	4.9%	3.9%	4.7%

Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 0.95



Factor Exposure Chart

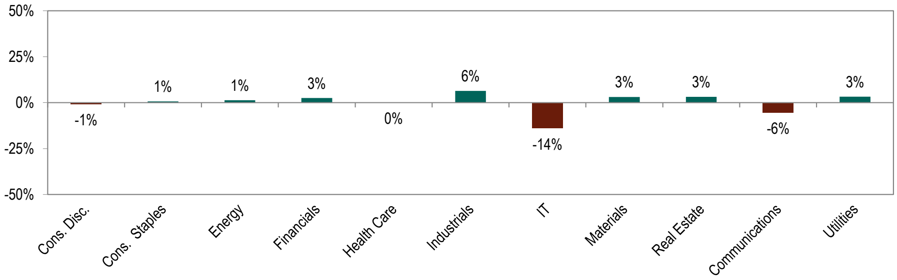
Portfolio Statistics	***Index***	***Bmark***
Active Share (Stock)	50%	0%
Active Share (Sector)	20%	0%
Concentration (HH Index)	20.0	148.1
Correlation (stock)	0.25	0.25
Ann. Turnover (last 10 yr)	0.22	0.04

Top Sector Tilts (versus benchmark)

Sector	***Index***	***Bmark***	***Diff.***
Industrials	14%	8%	6%
Utilities	6%	2%	3%
IT	15%	29%	14%
Communications	5%	10%	6%

Index-Weighted Avg.	***Index***	***Bmark***
Stock Volatility	28%	26%
12M - 1M price return	28%	35%
Book/Price	0.28	0.19
Earnings/Price	0.04	0.04
Sales/Price	0.44	0.30
Stock Beta	0.93	1.02
Yield (12M trailing)	1.6%	1.3%
R.O.E.	27%	36%
Market Cap (U.S. $ bn)	82.2	627.9

Sector Tilts (Detail)



More Factor Resources

factor ALLOCATOR

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

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Indexology® Blog

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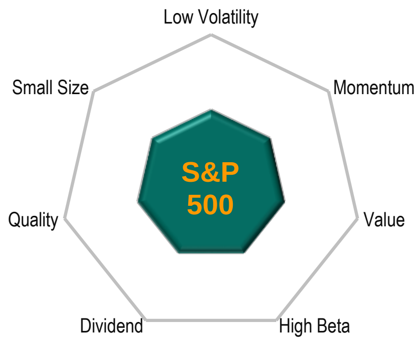
KEY TO FACTOR SCORINGS FOR INDICES

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.



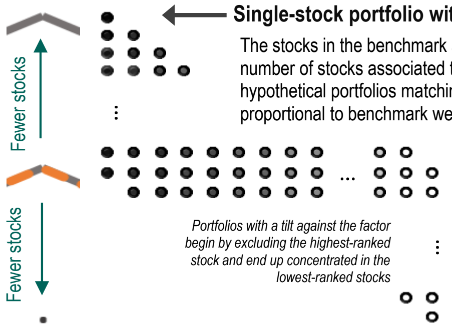
Factor	Measurement at single-stock level
Volatility	Trailing 12-month daily volatility.
Momentum	Twelve-month total return change as of one month ago ("13 minus 1 momentum"), divided by the daily volatility during the twelve-month period that ended one month prior. For more details, see the S&P Momentum 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.
Beta	Trailing 1 year beta of daily returns to the benchmark's returns.
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. Average and standard deviations for each metric follow below.
Size	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



Single-stock portfolio with the highest possible factor score

The stocks in the benchmark are ranked in order from highest to lowest factor score, and we examine portfolios including or e xcluding a varying number of stocks associated to high or lower factor scores. The score in each factor (and its level on the chart) reflects the **active share** of a hypothetical portfolios matching the factor score of that index. The weights of stocks within the hypothetical comparison po rtfolios are set proportional to benchmark weights, i.e. free-float market capitalization.

Benchmark Portfolio has a factor rank defined by that of a cap-weighted average score among all stocks

Weighting matters to the ranking of the index. Each the ranked portfolios of stocks is given a factor score through the capitalization-weighted average. Factor indices can use alternative weightings, which can provide higher factor exposures with fewer stocks.

Single-stock portfolio with the lowest possible factor score

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	13M - 1M Return	Daily Price Volatility
S&P 500 index-weighted average	0.037	0.196	0.302	10.11%	36.03%	1.60	39.15%	1.74%
S&P 500 index-weighted standard deviation	0.032	0.218	0.344	21.65%	30.07%	1.09	39.18%	0.56%

Source: S&P Dow Jones Indices LLC and/or its affiliates. Data as of December 31, 2021.

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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 Revenue-Weighted was launched on Dec 30, 2005. 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. However, when creating back-tested history for periods of market anomalies or other periods that do not reflect the general current market environment, index methodology rules may be relaxed to capture a large enough universe of securities to simulate the target market the index is designed to measure or strategy the index is designed to capture. For example, market capitalization and liquidity thresholds may be reduced. Complete index methodology details are available at www.spglobal.com/spdji. Past performance of the Index is not an indication of future results. Back-tested performance reflects application of an index methodology and selection of index constituents with the benefit of hindsight and knowledge of factors that may have positively affected its performance, cannot account for all financial risk that may affect results and may be considered to reflect survivor/look ahead bias. Actual returns may differ significantly from, and be lower than, back-tested returns. Past performance is not an indication or guarantee of future results. Please refer to the methodology for the Index for more details about the 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. Back-tested performance is for use with institutions only; not for use with retail investors.

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