S&P Dow Jones Indices

A Division of S&P Global

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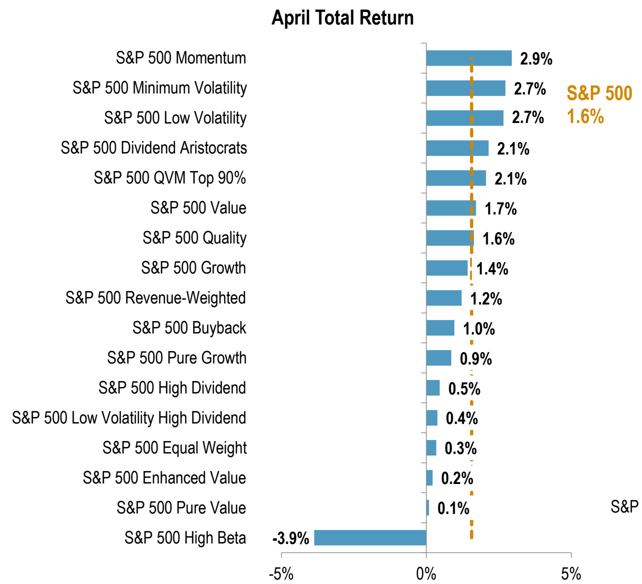
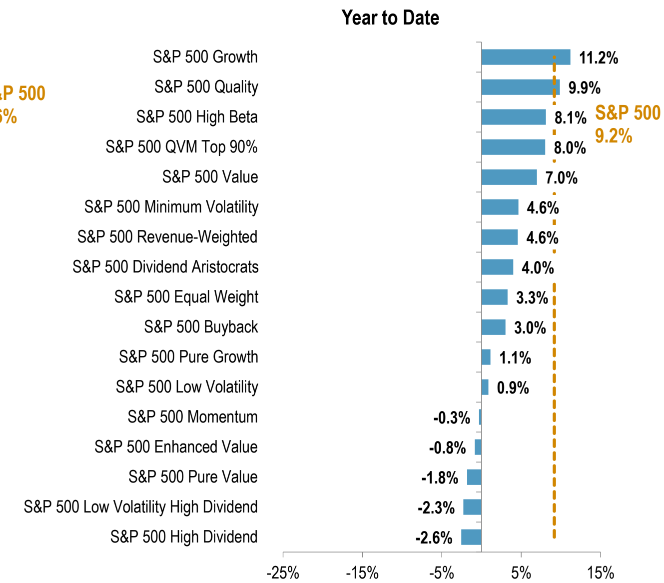
Index Dashboard: S&P 500® Factor Indices

April 2023

MONTHLY AND YTD PERFORMANCE SUMMARY

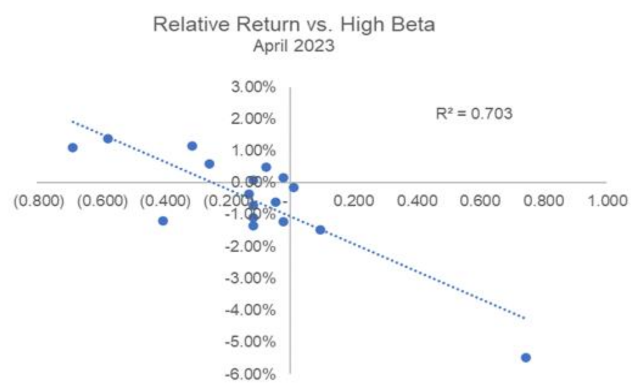


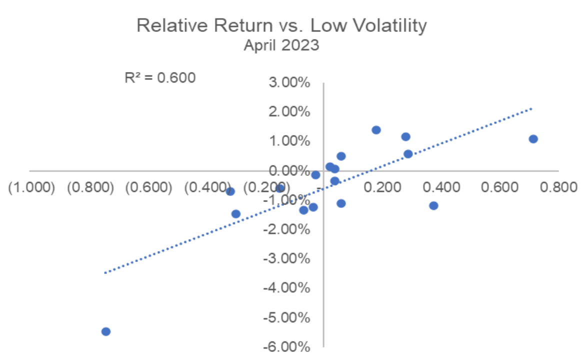


COMMENTARY

The market's recovery continued in April, as the S&P 500 gained 1.6%. Except for High Beta, each factor index also reported positive returns, with Momentum and defensive factors in the lead. It's certainly not unprecedented for High Beta to decline when the S&P 500 rises (it also happened in March), but it is unusual, and may reflect the market's continuing uncertainties about the course of interest rates and the possibility of a recession.

Importantly, the poor returns to beta exposure were not limited to High Beta. Our first chart compares each factor index's relative return in April to its relative beta exposure at the beginning of the month. There was a powerful negative relationship, which explained 70% of the variation in monthly returns across factors.

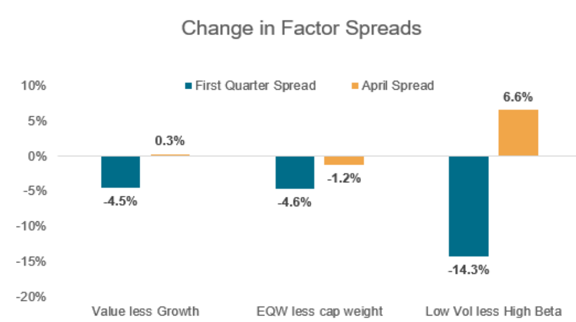




Our second chart shows the corresponding relationship between relative returns and low volatility – the higher a factor index's exposure to low volatility was at the beginning of April, the better its relative return tended to be.

Not surprisingly, the spread between the returns of Low Volatility and High Beta widened considerably in April. Last month we commented that this spread, which had favored High Beta dramatically in January and modestly in February, had begun to reverse. Our third chart shows the strength of the April reversal.

The relationships between Value and Growth and between Equal Weight and the S&P 500 also flipped signs in April, but the Low Vol – High Beta reversal is much more emphatic. Adjusted for dispersion, Low Vol's 6.6% performance advantage places it in the 88th percentile of all comparable monthly data; its first quarter performance was at the 15th percentile.

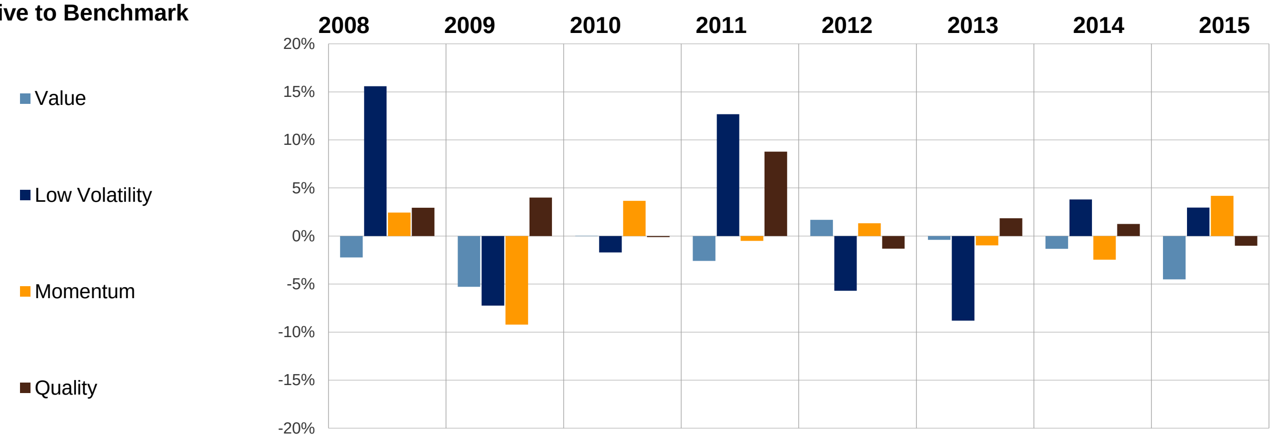


ANNUAL PERFORMANCE

Core factor performance by calendar year, 2008-present:

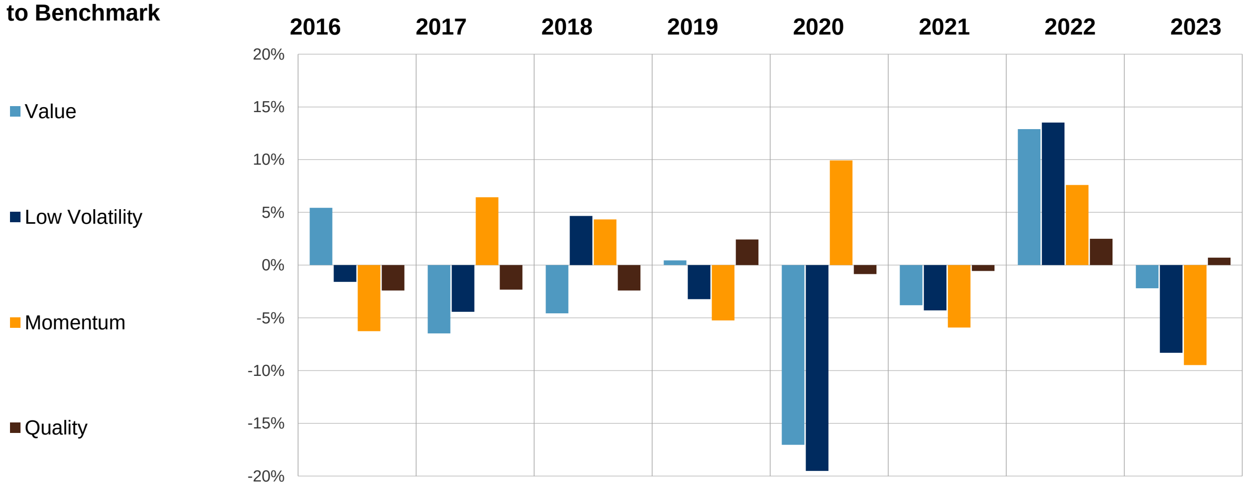
Total Return	2008	2009	2010	2011	2012	2013	2014	2015
Value	-39.22%	21.18%	15.10%	-0.48%	17.68%	31.99%	12.36%	-3.13%
Low Volatility	-21.41%	19.22%	13.36%	14.78%	10.30%	23.59%	17.49%	4.34%
Momentum	-34.56%	17.24%	18.72%	1.60%	17.33%	31.42%	11.23%	5.56%
Quality	-34.06%	30.46%	14.95%	10.89%	14.68%	34.24%	14.95%	0.38%
S&P 500	-37.00%	26.46%	15.06%	2.11%	16.00%	32.39%	13.69%	1.38%

Relative to Benchmark



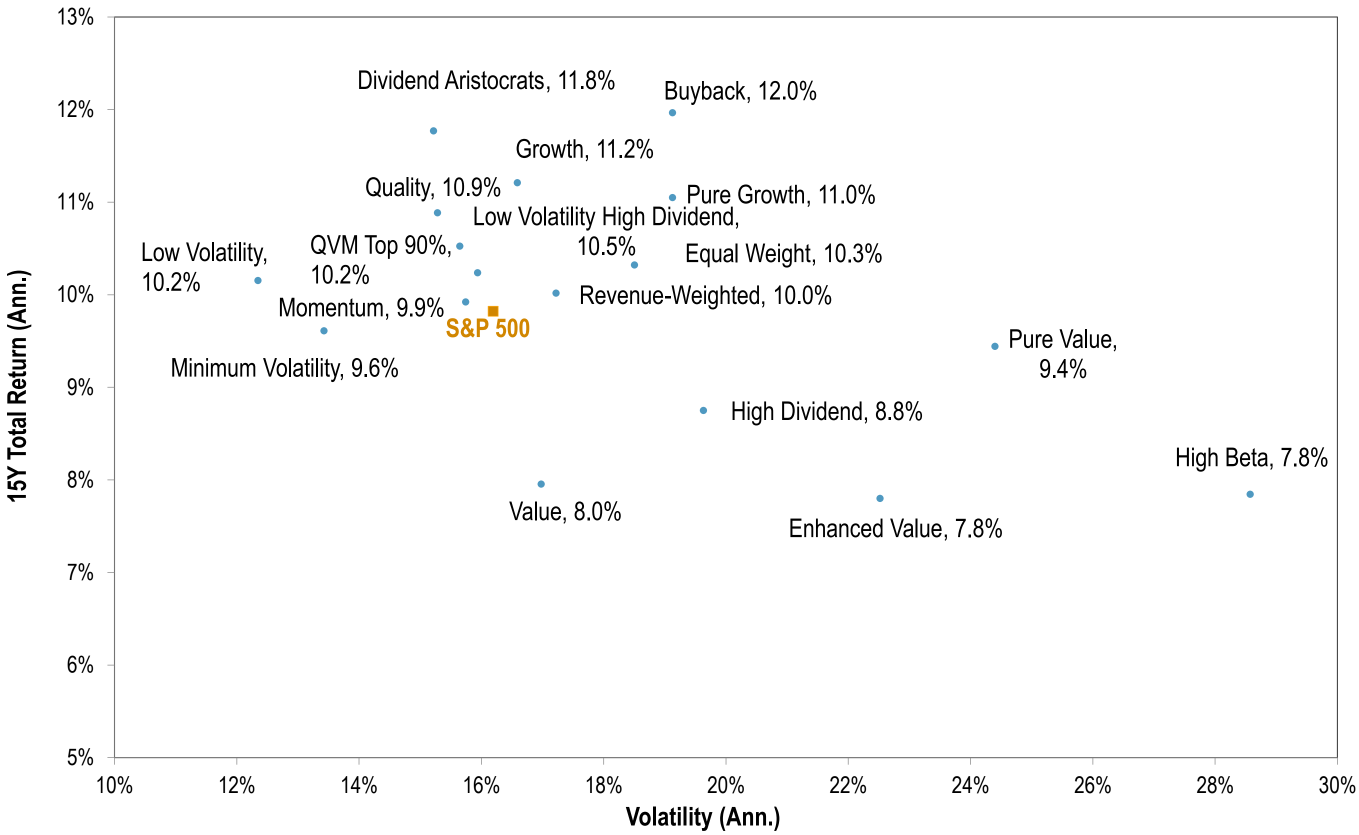
Total Return	2016	2017	2018	2019	2020	2021	2022	2023
Value	17.40%	15.36%	-8.95%	31.93%	1.36%	24.90%	-5.22%	6.97%
Low Volatility	10.37%	17.41%	0.27%	28.26%	-1.11%	24.42%	-4.59%	0.87%
Momentum	5.70%	28.27%	-0.04%	26.25%	28.32%	22.79%	-10.51%	-0.30%
Quality	9.56%	19.51%	-6.79%	33.91%	17.55%	28.16%	-15.62%	9.88%
S&P 500	11.96%	21.83%	-4.38%	31.49%	18.40%	28.71%	-18.11%	9.17%

Relative to Benchmark



Source: S&P Dow Jones Indices LLC and/or its affiliates. Data as of April 28, 2023. Returns in U.S. dollars.

15 YEAR RISK & RETURN - ABSOLUTE



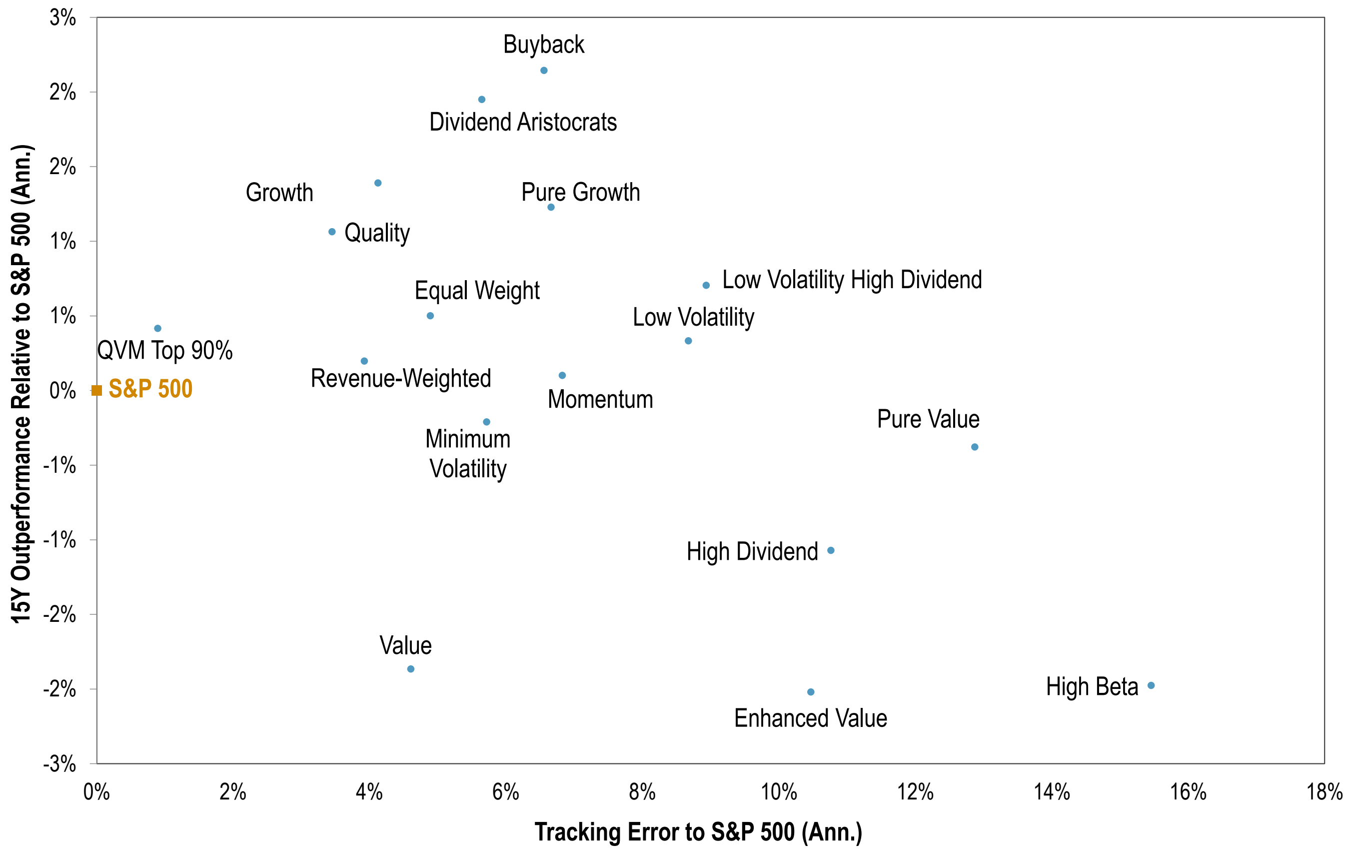
TOTAL RETURN	1M	3M	12M	3Y	5Y	10Y	15Y
S&P 500 Buyback	1.0%	-5.0%	1.8%	18.8%	10.2%	12.3%	12.0%
S&P 500 Dividend Aristocrats	2.1%	0.7%	4.0%	16.3%	11.4%	11.8%	11.8%
S&P 500 Growth	1.4%	5.3%	-1.9%	12.2%	12.2%	13.6%	11.2%
S&P 500 Pure Growth	0.9%	-2.5%	-2.5%	10.2%	8.0%	11.5%	11.0%
S&P 500 Quality	1.6%	4.9%	5.9%	14.7%	12.3%	11.9%	10.9%
S&P 500 Low Volatility High Dividend	0.4%	-6.0%	-5.3%	13.5%	6.0%	8.6%	10.5%
S&P 500 Equal Weight	0.3%	-3.8%	0.4%	16.8%	9.9%	11.3%	10.3%
S&P 500 QVM Top 90%	2.1%	2.4%	2.8%	15.6%	12.0%	12.5%	10.2%
S&P 500 Low Volatility	2.7%	0.8%	0.2%	11.1%	9.1%	9.8%	10.2%
S&P 500 Revenue-Weighted	1.2%	-1.4%	3.5%	18.7%	11.2%	12.0%	10.0%
S&P 500 Momentum	2.9%	0.2%	2.5%	13.7%	11.1%	12.7%	9.9%
S&P 500 Minimum Volatility	2.7%	1.5%	1.6%	12.2%	10.1%	11.2%	9.6%
S&P 500 Pure Value	0.1%	-12.0%	-4.1%	21.5%	5.6%	9.5%	9.4%
S&P 500 High Dividend	0.5%	-8.4%	-6.5%	16.5%	6.0%	9.1%	8.8%
S&P 500 Value	1.7%	0.0%	6.7%	15.8%	9.7%	10.2%	8.0%
S&P 500 High Beta	-3.9%	-6.9%	0.9%	26.2%	11.9%	12.8%	7.8%
S&P 500 Enhanced Value	0.2%	-8.7%	-3.0%	17.4%	6.2%	9.7%	7.8%
S&P 500	1.6%	2.7%	2.7%	14.5%	11.4%	12.2%	9.8%

Performance figures for more than one year are annualized.

VOLATILITY (ANN.)	12M	3Y	5Y	10Y	15Y
S&P 500 Buyback	23.3%	20.1%	21.9%	17.7%	19.1%
S&P 500 Dividend Aristocrats	19.0%	17.1%	17.3%	14.1%	15.2%
S&P 500 Growth	25.1%	22.1%	20.1%	16.0%	16.6%
S&P 500 Pure Growth	25.6%	23.6%	22.2%	17.6%	19.1%
S&P 500 Quality	22.3%	18.2%	17.6%	14.3%	15.3%
S&P 500 Low Volatility High Dividend	19.0%	17.1%	18.7%	14.9%	15.6%
S&P 500 Equal Weight	22.2%	19.2%	20.1%	15.9%	18.5%
S&P 500 QVM Top 90%	21.2%	18.3%	18.2%	14.6%	15.9%
S&P 500 Low Volatility	14.3%	14.2%	14.7%	12.2%	12.3%
S&P 500 Revenue-Weighted	21.2%	18.2%	18.8%	15.2%	17.2%
S&P 500 Momentum	21.3%	18.5%	17.8%	14.5%	15.7%
S&P 500 Minimum Volatility	16.9%	15.7%	16.0%	12.8%	13.4%
S&P 500 Pure Value	25.6%	22.2%	25.5%	20.2%	24.4%
S&P 500 High Dividend	21.6%	19.4%	22.0%	17.0%	19.6%
S&P 500 Value	20.5%	17.2%	18.3%	14.8%	17.0%
S&P 500 High Beta	33.8%	30.1%	30.3%	24.3%	28.6%
S&P 500 Enhanced Value	25.8%	22.4%	24.4%	19.5%	22.5%
S&P 500	21.9%	18.7%	18.3%	14.7%	16.2%

Source: S&P Dow Jones Indices LLC and/or its affiliates. Data as of April 28, 2023. Returns in U.S. dollars.

TO S&P 500



RELATIVE RETURN AND TRACKING ERROR

PERFORMANCE v S&P 500	1M	3M	1YR	3YR	5YR	10YR	15YR
S&P 500 Buyback	-0.6%	-7.7%	-0.9%	4.2%	-1.3%	0.1%	2.1%
S&P 500 Dividend Aristocrats	0.6%	-2.0%	1.3%	1.8%	0.0%	-0.4%	1.9%
S&P 500 Growth	-0.1%	2.6%	-4.5%	-2.3%	0.7%	1.3%	1.4%
S&P 500 Pure Growth	-0.7%	-5.2%	-5.1%	-4.3%	-3.5%	-0.7%	1.2%
S&P 500 Quality	0.1%	2.1%	3.3%	0.2%	0.9%	-0.3%	1.1%
S&P 500 Low Volatility High Dividend	-1.2%	-8.7%	-7.9%	-1.0%	-5.5%	-3.6%	0.7%
S&P 500 Equal Weight	-1.2%	-6.6%	-2.2%	2.3%	-1.5%	-0.9%	0.5%
S&P 500 QVM Top 90%	0.5%	-0.3%	0.2%	1.1%	0.5%	0.3%	0.4%
S&P 500 Low Volatility	1.1%	-1.9%	-2.4%	-3.5%	-2.4%	-2.4%	0.3%
S&P 500 Revenue-Weighted	-0.3%	-4.1%	0.8%	4.1%	-0.2%	-0.2%	0.2%
S&P 500 Momentum	1.4%	-2.6%	-0.2%	-0.9%	-0.3%	0.5%	0.1%
S&P 500 Minimum Volatility	1.2%	-1.2%	-1.1%	-2.4%	-1.3%	-1.0%	-0.2%
S&P 500 Pure Value	-1.5%	-14.8%	-6.7%	7.0%	-5.9%	-2.7%	-0.4%
S&P 500 High Dividend	-1.1%	-11.1%	-9.2%	2.0%	-5.4%	-3.1%	-1.1%
S&P 500 Value	0.2%	-2.7%	4.1%	1.3%	-1.7%	-2.0%	-1.9%
S&P 500 High Beta	-5.5%	-9.6%	-1.8%	11.7%	0.5%	0.6%	-2.0%
S&P 500 Enhanced Value	-1.3%	-11.4%	-5.7%	2.9%	-5.2%	-2.5%	-2.0%

Performance figures for more than one year are annualized.

TRACKING ERROR v S&P 500 (ANN.)	1YR	3YR	5YR	10YR	15YR
S&P 500 Buyback	9.0%	7.8%	8.1%	6.5%	6.6%
S&P 500 Dividend Aristocrats	7.8%	6.7%	6.1%	5.1%	5.6%
S&P 500 Growth	6.7%	6.5%	5.6%	4.4%	4.1%
S&P 500 Pure Growth	7.9%	9.6%	8.1%	6.7%	6.7%
S&P 500 Quality	4.1%	4.2%	4.1%	3.2%	3.4%
S&P 500 Low Volatility High Dividend	12.3%	11.3%	10.4%	9.1%	8.9%
S&P 500 Equal Weight	5.9%	5.8%	5.5%	4.3%	4.9%
S&P 500 QVM Top 90%	1.9%	1.4%	1.2%	0.9%	0.9%
S&P 500 Low Volatility	11.8%	10.3%	9.5%	8.3%	8.7%
S&P 500 Revenue-Weighted	5.5%	6.0%	5.3%	4.1%	3.9%
S&P 500 Momentum	10.0%	8.2%	7.5%	6.3%	6.8%
S&P 500 Minimum Volatility	7.4%	6.0%	5.1%	5.0%	5.7%
S&P 500 Pure Value	15.0%	13.8%	14.2%	10.9%	12.9%
S&P 500 High Dividend	12.4%	12.5%	12.5%	10.2%	10.8%
S&P 500 Value	6.6%	7.3%	6.3%	4.9%	4.6%
S&P 500 High Beta	15.4%	17.1%	16.2%	13.3%	15.5%
S&P 500 Enhanced Value	12.8%	12.8%	12.7%	10.0%	10.5%

Source: S&P Dow Jones Indices LLC and/or its affiliates. Data as of April 28, 2023. Returns in U.S. dollars.

S&P Dow Jones Indices
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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%	25%	27%	29%	21%	19%	18%	13%	5%	5%	22%	7%	20%	3%	19%	18%	1%	16%
S&P 500 Growth	25%	100%	40%	26%	18%	26%	62%	15%	3%	3%	41%	29%	32%	0%	9%	5%	16%	67%
S&P 500 Quality	27%	40%	100%	16%	11%	23%	38%	18%	5%	4%	24%	23%	19%	3%	12%	10%	14%	35%
S&P 500 Pure Growth	29%	26%	16%	100%	10%	11%	11%	9%	3%	3%	15%	15%	15%	0%	21%	21%	14%	16%
S&P 500 Low Volatility	21%	21%	11%	10%	100%	30%	22%	22%	18%	17%	17%	21%	21%	9%	15%	7%	7%	21%
S&P 500 Minimum Volatility	19%	26%	26%	11%	30%	100%	100%	16%	9%	9%	24%	27%	27%	7%	6%	6%	12%	31%
S&P 500 QVM Top 90%	18%	62%	38%	38%	22%	30%	100%	100%	8%	9%	9%	59%	49%	49%	12%	14%	15%	12%
S&P 500 Dividend Aristocrats	13%	15%	15%	9%	9%	16%	17%	100%	15%	16%	16%	16%	14%	5%	5%	7%	3%	15%
S&P 500 Low Volatility High Dividend	7%	3%	5%	5%	18%	9%	9%	15%	100%	100%	9%	12%	10%	10%	5%	13%	13%	7%
S&P 500 High Dividend	5%	5%	4%	3%	17%	17%	9%	16%	16%	100%	100%	14%	15%	26%	26%	18%	5%	8%
S&P 500 Revenue-Weighted	62%	41%	24%	24%	21%	24%	59%	59%	9%	12%	100%	53%	53%	25%	25%	30%	16%	62%
S&P 500 Value	7%	29%	29%	0%	21%	21%	59%	16%	16%	14%	53%	100%	100%	16%	12%	12%	18%	62%
S&P 500 Equal Weight	51%	32%	19%	15%	15%	18%	49%	14%	14%	15%	49%	49%	100%	16%	16%	18%	19%	51%
S&P 500 Pure Value	3%	3%	3%	0%	0%	7%	10%	10%	12%	26%	25%	25%	16%	100%	100%	44%	18%	19%
S&P 500 Buyback	19%	9%	9%	21%	21%	6%	12%	9%	9%	13%	22%	12%	12%	27%	100%	27%	27%	18%
S&P 500 Enhanced Value	18%	5%	5%	8%	7%	7%	7%	7%	13%	13%	30%	19%	18%	18%	27%	100%	13%	12%
S&P 500 High Beta	1%	1%	14%	14%	0%	0%	15%	3%	3%	5%	16%	16%	19%	19%	14%	13%	100%	13%

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

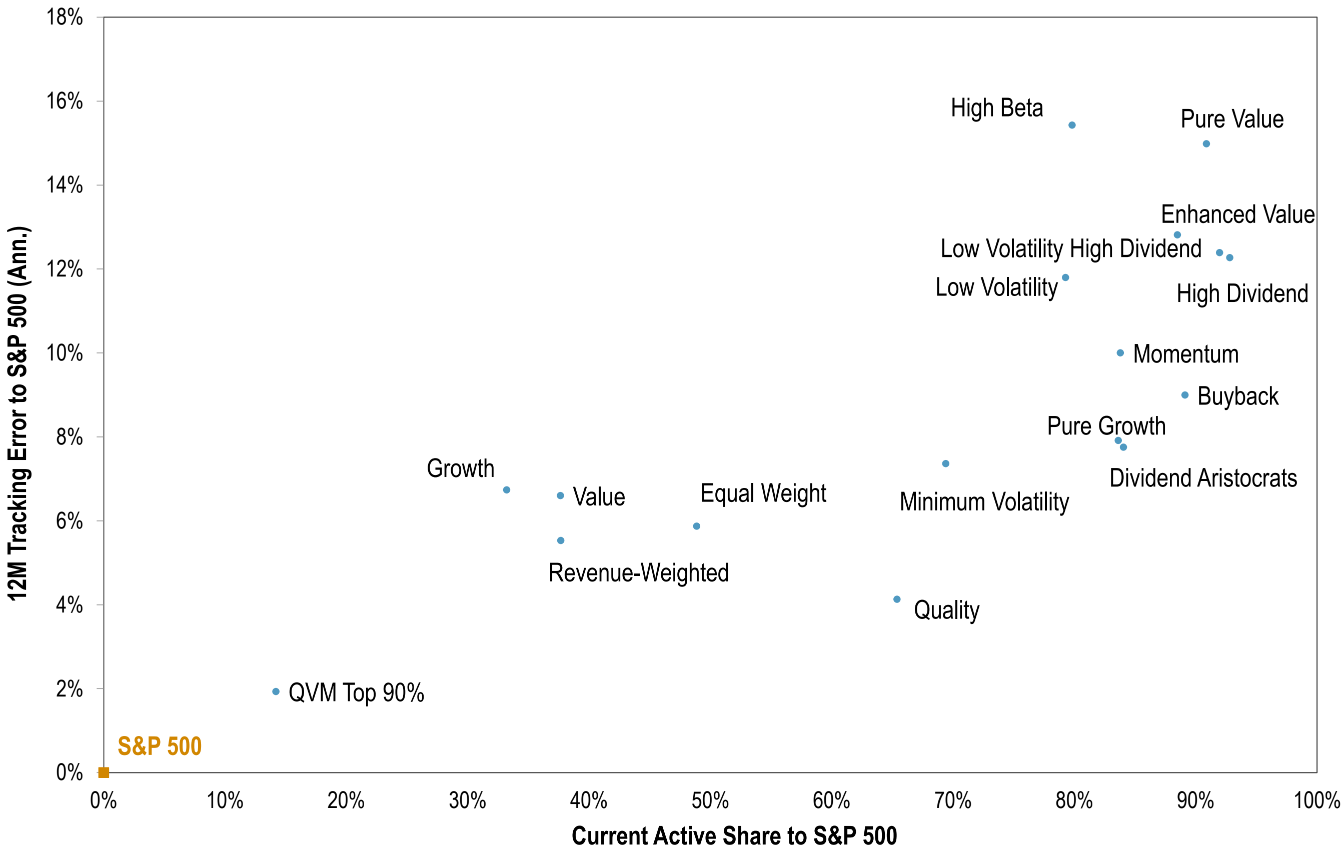
RELATIVE RETURN CORRELATIONS

	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	0.21	0.37	0.34	0.16	0.10	0.12	-0.30	-0.30	-0.38	-0.22	-0.29	-0.38	-0.37	-0.31	-0.35	-0.54
S&P 500 Growth	0.21	1.00	-0.10	0.47	-0.52	-0.43	-0.38	-0.81	-0.86	-0.82	-0.86	-0.98	-0.75	-0.78	-0.63	-0.76	-0.32
S&P 500 Quality	0.37	-0.10	1.00	0.03	-0.02	0.07	0.04	0.03	-0.15	-0.20	0.03	0.06	-0.15	-0.18	-0.12	-0.15	-0.29
S&P 500 Pure Growth	0.34	0.47	0.03	1.00	-0.31	-0.26	0.08	-0.44	-0.41	-0.27	-0.42	-0.46	-0.03	-0.20	0.06	-0.16	0.15
S&P 500 Low Volatility	0.16	-0.52	-0.02	-0.31	1.00	0.82	0.38	0.60	0.60	0.37	0.34	0.48	0.24	0.16	0.15	0.18	-0.36
S&P 500 Minimum Volatility	0.10	-0.43	0.07	-0.26	0.82	1.00	0.29	0.54	0.50	0.25	0.28	0.40	0.16	0.05	0.03	0.06	-0.38
S&P 500 QVM Top 90%	0.12	-0.38	0.04	0.08	0.38	0.29	1.00	0.32	0.45	0.44	0.23	0.36	0.45	0.43	0.52	0.46	0.17
S&P 500 Dividend Aristocrats	-0.30	-0.81	0.03	-0.44	0.60	0.54	0.32	1.00	0.82	0.70	0.76	0.83	0.69	0.59	0.54	0.59	0.22
S&P 500 Low Volatility High Dividend	-0.30	-0.86	-0.15	-0.41	0.60	0.50	0.45	0.82	1.00	0.92	0.79	0.88	0.79	0.78	0.69	0.78	0.36
S&P 500 High Dividend	-0.38	-0.82	-0.20	-0.27	0.37	0.25	0.44	0.70	0.92	1.00	0.79	0.86	0.88	0.92	0.81	0.91	0.60
S&P 500 Revenue-Weighted	-0.22	-0.86	0.03	-0.42	0.34	0.28	0.23	0.76	0.79	0.79	1.00	0.88	0.73	0.79	0.64	0.80	0.40
S&P 500 Value	-0.29	-0.98	0.06	-0.46	0.48	0.40	0.36	0.83	0.88	0.86	0.88	1.00	0.81	0.81	0.67	0.80	0.41
S&P 500 Equal Weight	-0.38	-0.75	-0.15	-0.03	0.24	0.16	0.45	0.69	0.79	0.88	0.73	0.81	1.00	0.90	0.91	0.89	0.75
S&P 500 Pure Value	-0.37	-0.78	-0.18	-0.20	0.16	0.05	0.43	0.59	0.78	0.92	0.79	0.81	0.90	1.00	0.87	0.96	0.73
S&P 500 Buyback	-0.31	-0.63	-0.12	0.06	0.15	0.03	0.52	0.54	0.69	0.81	0.64	0.67	0.91	0.87	1.00	0.89	0.72
S&P 500 Enhanced Value	-0.35	-0.76	-0.15	-0.16	0.18	0.06	0.46	0.59	0.78	0.91	0.80	0.80	0.89	0.96	0.89	1.00	0.71
S&P 500 High Beta	-0.54	-0.32	-0.29	0.15	-0.36	-0.38	0.17	0.22	0.36	0.60	0.40	0.41	0.75	0.73	0.72	0.71	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 April 28, 2023. Returns in U.S. dollars.

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	70.7%	20.8%	26.8%	-66.3%	35.5%	0.6%	43.9%
S&P 500 Minimum Volatility	7	29.2%	2.4%	-3.5%	-31.9%	15.5%	0.6%	13.8%
S&P 500 Low Volatility High Dividend	8	36.5%	-17.7%	50.7%	-35.1%	86.7%	-43.6%	59.8%
S&P 500 High Dividend	8	5.4%	-36.0%	63.6%	-6.8%	87.2%	-46.9%	70.0%
S&P 500 Quality	9	3.3%	26.4%	-1.1%	-10.4%	9.7%	21.1%	7.2%
S&P 500 Dividend Aristocrats	9	27.5%	10.8%	19.6%	-24.9%	33.8%	-0.4%	41.7%
S&P 500 Momentum	10	17.0%	75.4%	44.1%	-58.3%	25.7%	18.9%	23.6%
S&P 500 Revenue-Weighted	10	3.1%	1.6%	57.5%	-11.9%	21.1%	5.0%	13.8%
S&P 500 QVM Top 90%	11	6.0%	1.6%	11.5%	-7.3%	8.0%	1.0%	-1.0%
S&P 500 Growth	11	-1.8%	13.6%	-9.5%	-1.4%	-6.6%	7.2%	-29.4%
S&P 500 Value	12	1.5%	-10.8%	26.8%	0.9%	17.4%	-14.7%	13.8%
S&P 500 Pure Growth	12	-33.0%	45.7%	50.7%	-11.3%	23.4%	-6.8%	37.0%
S&P 500 Pure Value	13	-33.0%	-28.0%	90.4%	14.1%	49.6%	-20.3%	66.5%
S&P 500 Buyback	13	-11.8%	0.2%	71.6%	-3.6%	24.3%	8.9%	67.5%
S&P 500 High Beta	14	-75.6%	-7.1%	19.6%	75.0%	-24.4%	-35.0%	27.8%
S&P 500 Enhanced Value	14	-8.9%	-1.9%	89.1%	-6.8%	62.3%	-14.7%	34.1%
S&P 500 Equal Weight	15	-4.1%	-1.3%	36.5%	-1.4%	19.8%	-14.7%	47.4%

Source: S&P Dow Jones Indices LLC and/or its affiliates. Data as of April 28, 2023. Returns in U.S. dollars.

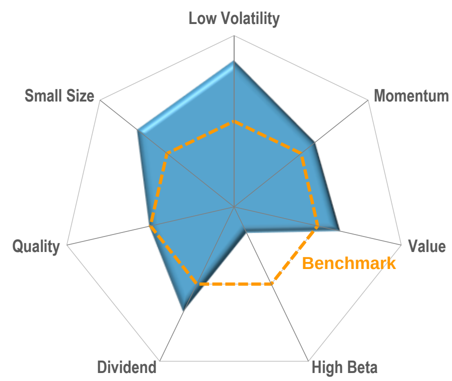
S&P 500 Low Volatility

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 April 28, 2023 the index comprised 100 constituents.

Index Statistics	**1M**	**3M**	**YTD**	**12M**	**3Y**	**5Y**	**10Y**	**15Y**
Total Return (Ann)	2.7%	0.8%	0.9%	0.2%	11.1%	9.1%	9.8%	10.2%
Relative to Benchmark	1.1%	-1.9%	-8.3%	-2.4%	-3.5%	-2.4%	-2.4%	0.3%
Index Volatility				14.3%	14.2%	14.7%	12.2%	12.3%
Tracking Error				11.8%	10.3%	9.5%	8.3%	8.7%

Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 0.6



Factor Exposure Chart

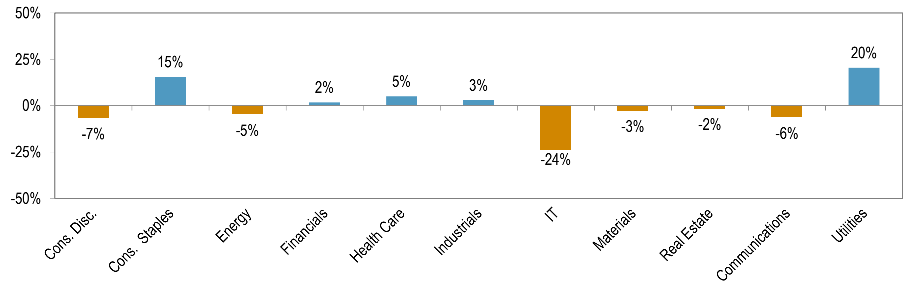
Portfolio Statistics	***Index***	***Bmark***
Active Share (Stock)	79%	0%
Active Share (Sector)	46%	0%
Concentration (HH Index)	101.5	149.1
Correlation (stock)	0.53	0.46
Ann. Turnover (last 10 yr)	0.64	0.04

Top Sector Tilts (versus benchmark)

Sector	***Index***	***Bmark***	***Difference***
Utilities	23%	3%	20%
Cons. Staples	23%	7%	15%
IT	2%	26%	24%
Cons. Disc.	3%	10%	7%

Index-Weighted Avg.	***Index***	***Bmark***
Stock Volatility	23%	34%
12M - 1M price return	2%	-4%
Book/Price	0.32	0.24
Earnings/Price	0.04	0.04
Sales/Price	0.54	0.42
Stock Beta	0.62	1.01
Yield (12M trailing)	2.5%	1.7%
R.O.E.	21%	32%
Market Cap (U.S. $ bn)	83.6	543.9

Sector Tilts (Detail)



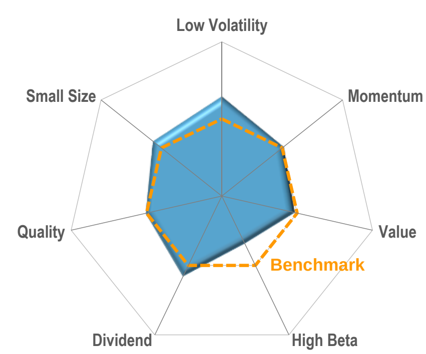
S&P 500 Minimum Volatility

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 April 28, 2023 the index comprised 87 constituents.

Index Statistics	**1M**	**3M**	**YTD**	**12M**	**3Y**	**5Y**	**10Y**	**15Y**
Total Return (Ann)	2.7%	1.5%	4.6%	1.6%	12.2%	10.1%	11.2%	9.6%
Relative to Benchmark	1.2%	-1.2%	-4.5%	-1.1%	-2.4%	-1.3%	-1.0%	-0.2%
Index Volatility				16.9%	15.7%	16.0%	12.8%	13.4%
Tracking Error				7.4%	6.0%	5.1%	5.0%	5.7%

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



Factor Exposure Chart

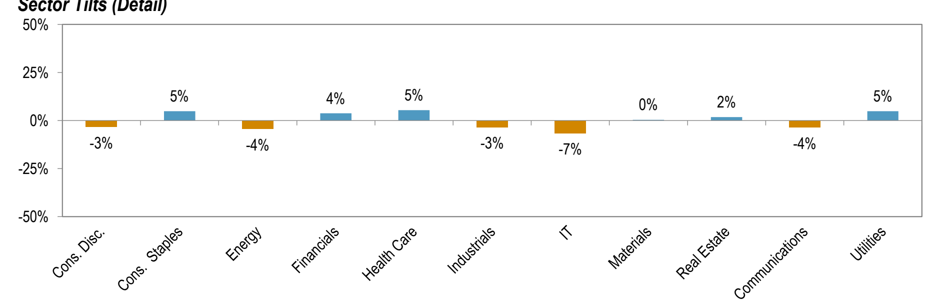
Portfolio Statistics	***Index***	***Bmark***
Active Share (Stock)	69%	0%
Active Share (Sector)	21%	0%
Concentration (HH Index)	155.0	149.1
Correlation (stock)	0.45	0.46
Ann. Turnover (last 10 yr)	0.28	0.04

Top Sector Tilts (versus benchmark)

Sector	***Index***	***Bmark***	***Difference***
Health Care	20%	14%	5%
Cons. Staples	12%	7%	5%
IT	19%	26%	7%
Energy	0%	5%	4%

Index-Weighted Avg.	***Index***	***Bmark***
Stock Volatility	28%	34%
12M - 1M price return	-3%	-4%
Book/Price	0.26	0.24
Earnings/Price	0.03	0.04
Sales/Price	0.35	0.42
Stock Beta	0.84	1.01
Yield (12M trailing)	1.9%	1.7%
R.O.E.	25%	32%
Market Cap (U.S. $ bn)	253.3	543.9

Sector Tilts (Detail)



Source: S&P Dow Jones Indices LLC and/or its affiliates. Data as of April 28, 2023. Returns in U.S. dollars.

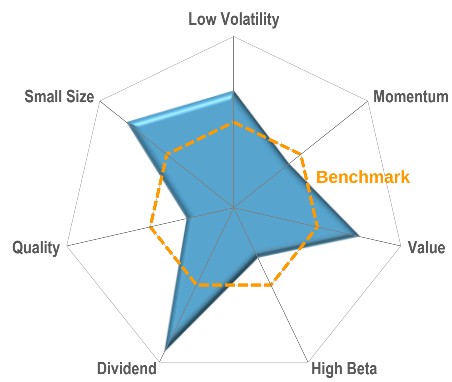
S&P 500 Low Volatility High Dividend

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 April 28, 2023 the index comprised 50 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	0.4%	-6.0%	-2.3%	-5.3%	13.5%	6.0%	8.6%	10.5%
Relative to Benchmark	-1.2%	-8.7%	-11.5%	-7.9%	-1.0%	-5.5%	-3.6%	0.7%
Index Volatility				19.0%	17.1%	18.7%	14.9%	15.6%
Tracking Error				12.3%	11.3%	10.4%	9.1%	8.9%

Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 0.68



Factor Exposure Chart

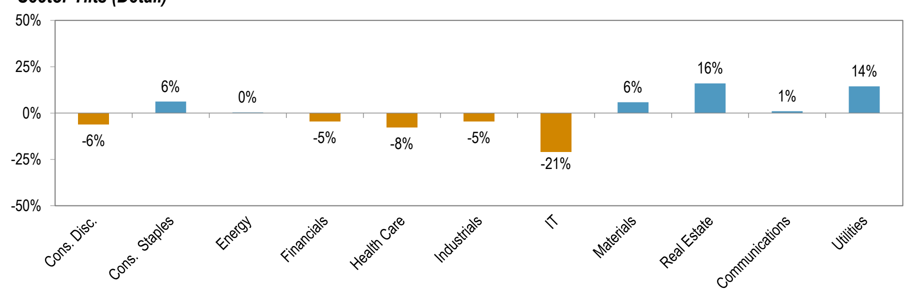
Portfolio Statistics	*Index*	*Bmark*
Active Share (Stock)	93%	0%
Active Share (Sector)	44%	0%
Concentration (HH Index)	208.2	149.1
Correlation (stock)	0.41	0.46
Ann. Turnover (last 10 yr)	0.66	0.04

Top Sector Tilts (versus benchmark)

Sector	*Index*	*Bmark*	*Diff.*
Real Estate	19%	3%	16%
Utilities	17%	3%	14%
IT	5%	26%	21%
Health Care	7%	14%	8%

Index-Weighted Avg.	*Index*	*Bmark*
Stock Volatility	28%	34%
12M - 1M price return	-8%	-4%
Book/Price	0.45	0.24
Earnings/Price	0.05	0.04
Sales/Price	0.62	0.42
Stock Beta	0.82	1.01
Yield (12M trailing)	4.8%	1.7%
R.O.E.	20%	32%
Market Cap (U.S. $ bn)	53.1	543.9

Sector Tilts (Detail)



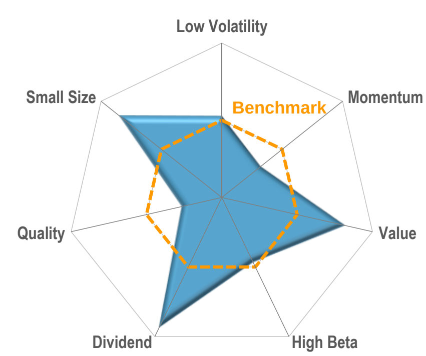
S&P 500 High Dividend

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 April 28, 2023 the index comprised 79 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	0.5%	-8.4%	-2.6%	-6.5%	16.5%	6.0%	9.1%	8.8%
Relative to Benchmark	-1.1%	-11.1%	-11.7%	-9.2%	2.0%	-5.4%	-3.1%	-1.1%
Index Volatility				21.6%	19.4%	22.0%	17.0%	19.6%
Tracking Error				12.4%	12.5%	12.5%	10.2%	10.8%

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



Factor Exposure Chart

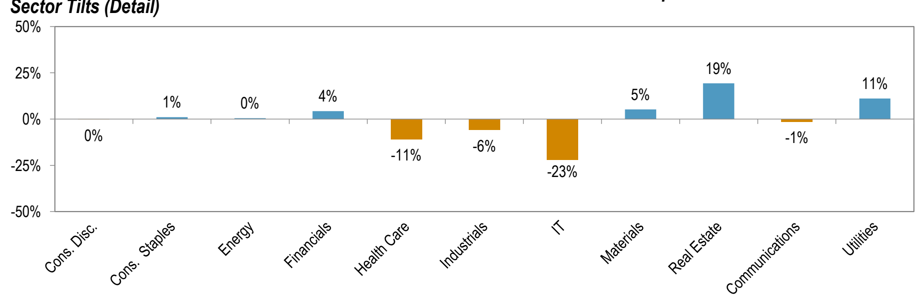
Portfolio Statistics	*Index*	*Bmark*
Active Share (Stock)	92%	0%
Active Share (Sector)	41%	0%
Concentration (HH Index)	128.4	149.1
Correlation (stock)	0.42	0.46
Ann. Turnover (last 10 yr)	0.44	0.04

Top Sector Tilts (versus benchmark)

Sector	*Index*	*Bmark*	*Diff.*
Real Estate	22%	3%	19%
Utilities	14%	3%	11%
IT	3%	26%	23%
Health Care	4%	14%	11%

Index-Weighted Avg.	*Index*	*Bmark*
Stock Volatility	32%	34%
12M - 1M price return	-14%	-4%
Book/Price	0.52	0.24
Earnings/Price	0.05	0.04
Sales/Price	0.84	0.42
Stock Beta	0.96	1.01
Yield (12M trailing)	4.9%	1.7%
R.O.E.	16%	32%
Market Cap (U.S. $ bn)	37.6	543.9

Sector Tilts (Detail)



Source: S&P Dow Jones Indices LLC and/or its affiliates. Data as of April 28, 2023. Returns in U.S. dollars.

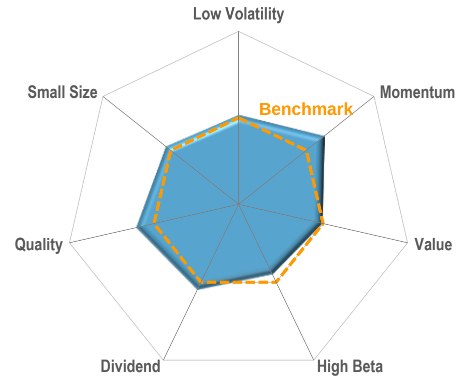
S&P 500 Quality

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 April 28, 2023 the index comprised 100 constituents.

Index Statistics	**1M**	**3M**	**YTD**	**12M**	**3Y**	**5Y**	**10Y**	**15Y**
Total Return (Ann)	1.6%	4.9%	9.9%	5.9%	14.7%	12.3%	11.9%	10.9%
Relative to Benchmark	0.1%	2.1%	0.7%	3.3%	0.2%	0.9%	-0.3%	1.1%
Index Volatility				22.3%	18.2%	17.6%	14.3%	15.3%
Tracking Error				4.1%	4.2%	4.1%	3.2%	3.4%

Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 0.96



Factor Exposure Chart

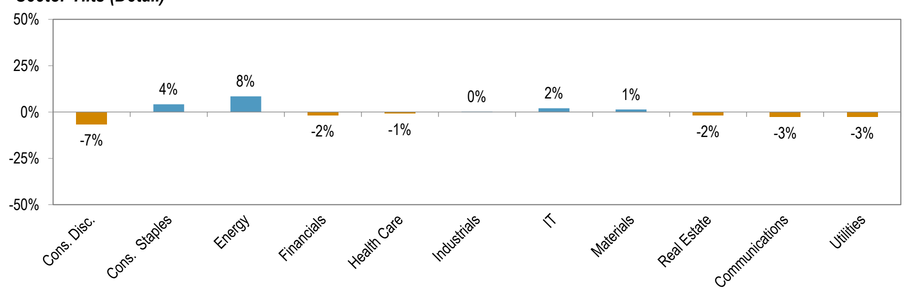
Portfolio Statistics	***Index***	***Bmark***
Active Share (Stock)	65%	0%
Active Share (Sector)	16%	0%
Concentration (HH Index)	281.4	149.1
Correlation (stock)	0.45	0.46
Ann. Turnover (last 10 yr)	0.63	0.04

Top Sector Tilts (versus benchmark)

Sector	***Index***	***Bmark***	***Diff.***
Energy	13%	5%	8%
Cons. Staples	12%	7%	4%
Cons. Disc.	3%	10%	7%
Utilities	0%	3%	3%

Index-Weighted Avg.	***Index***	***Bmark***
Stock Volatility	33%	34%
12M - 1M price return	4%	-4%
Book/Price	0.17	0.24
Earnings/Price	0.05	0.04
Sales/Price	0.37	0.42
Stock Beta	0.94	1.01
Yield (12M trailing)	1.8%	1.7%
R.O.E.	47%	32%
Market Cap (U.S. $ bn)	483.5	543.9

Sector Tilts (Detail)



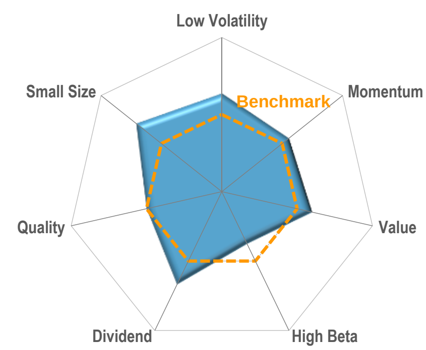
S&P 500 Dividend Aristocrats

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 April 28, 2023 the index comprised 66 constituents.

Index Statistics	**1M**	**3M**	**YTD**	**12M**	**3Y**	**5Y**	**10Y**	**15Y**
Total Return (Ann)	2.1%	0.7%	4.0%	4.0%	16.3%	11.4%	11.8%	11.8%
Relative to Benchmark	0.6%	-2.0%	-5.2%	1.3%	1.8%	0.0%	-0.4%	1.9%
Index Volatility				19.0%	17.1%	17.3%	14.1%	15.2%
Tracking Error				7.8%	6.7%	6.1%	5.1%	5.6%

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



Factor Exposure Chart

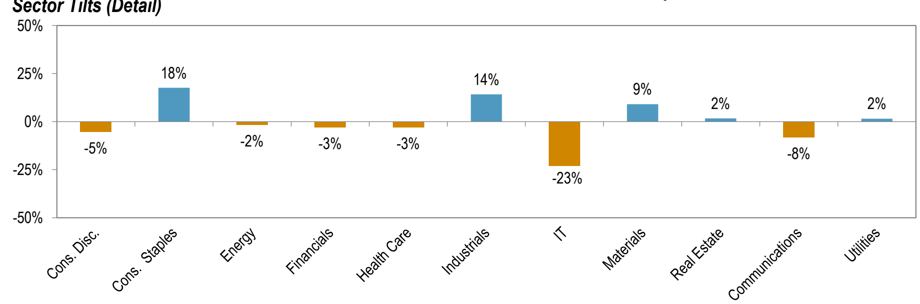
Portfolio Statistics	***Index***	***Bmark***
Active Share (Stock)	84%	0%
Active Share (Sector)	44%	0%
Concentration (HH Index)	153.1	149.1
Correlation (stock)	0.44	0.46
Ann. Turnover (last 10 yr)	0.19	0.04

Top Sector Tilts (versus benchmark)

Sector	***Index***	***Bmark***	***Diff.***
Cons. Staples	25%	7%	18%
Industrials	23%	8%	14%
IT	3%	26%	23%
Communications	0%	8%	8%

Index-Weighted Avg.	***Index***	***Bmark***
Stock Volatility	29%	34%
12M - 1M price return	-1%	-4%
Book/Price	0.26	0.24
Earnings/Price	0.04	0.04
Sales/Price	0.59	0.42
Stock Beta	0.88	1.01
Yield (12M trailing)	2.3%	1.7%
R.O.E.	28%	32%
Market Cap (U.S. $ bn)	89.8	543.9

Sector Tilts (Detail)



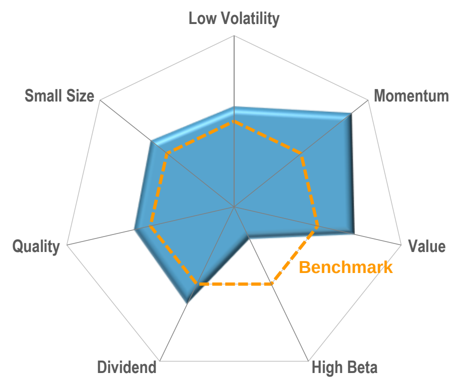
S&P 500 Momentum

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 April 28, 2023 the index comprised 100 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	2.9%	0.2%	-0.3%	2.5%	13.7%	11.1%	12.7%	9.9%
Relative to Benchmark	1.4%	-2.6%	-9.5%	-0.2%	-0.9%	-0.3%	0.5%	0.1%
Index Volatility				21.3%	18.5%	17.8%	14.5%	15.7%
Tracking Error				10.0%	8.2%	7.5%	6.3%	6.8%

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



Factor Exposure Chart

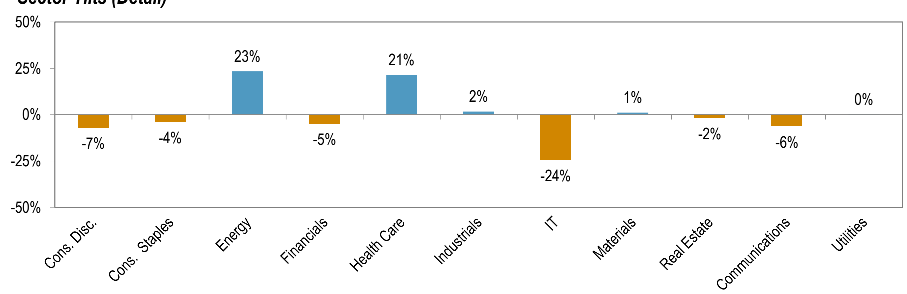
Portfolio Statistics	Index	Bmark
Active Share (Stock)	84%	0%
Active Share (Sector)	48%	0%
Concentration (HH Index)	323.0	149.1
Correlation (stock)	0.45	0.46
Ann. Turnover (last 10 yr)	1.14	0.04

Top Sector Tilts (versus benchmark)

Sector	Index	Bmark	Diff.
Energy	28%	5%	23%
Health Care	36%	14%	21%
IT	2%	26%	24%
Cons. Disc.	3%	10%	7%

Index-Weighted Avg.	Index	Bmark
Stock Volatility	30%	34%
12M - 1M price return	18%	-4%
Book/Price	0.27	0.24
Earnings/Price	0.07	0.04
Sales/Price	0.67	0.42
Stock Beta	0.68	1.01
Yield (12M trailing)	2.2%	1.7%
R.O.E.	32%	32%
Market Cap (U.S. $ bn)	169.5	543.9

Sector Tilts (Detail)



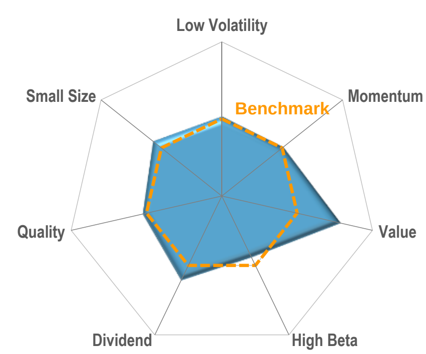
S&P 500 Revenue-Weighted

Description

The S&P 500 Revenue-Weighted comprises all the constituents of the S&P 500, weighted in proportion to revenues. As of April 28, 2023 the index comprised 502 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	1.2%	-1.4%	4.6%	3.5%	18.7%	11.2%	12.0%	10.0%
Relative to Benchmark	-0.3%	-4.1%	-4.6%	0.8%	4.1%	-0.2%	-0.2%	0.2%
Index Volatility				21.2%	18.2%	18.8%	15.2%	17.2%
Tracking Error				5.5%	6.0%	5.3%	4.1%	3.9%

Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 0.88



Factor Exposure Chart

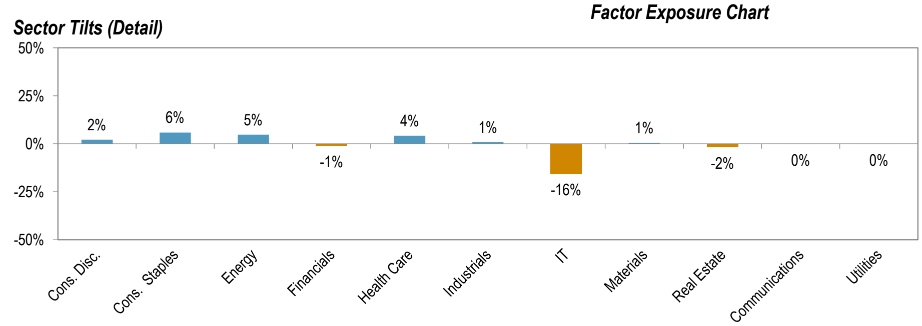
Portfolio Statistics	Index	Bmark
Active Share (Stock)	38%	0%
Active Share (Sector)	19%	0%
Concentration (HH Index)	98.4	149.1
Correlation (stock)	0.37	0.46
Ann. Turnover (last 10 yr)	0.20	0.04

Top Sector Tilts (versus benchmark)

Sector	Index	Bmark	Diff.
Cons. Staples	13%	7%	6%
Energy	9%	5%	5%
IT	10%	26%	16%
Real Estate	1%	3%	2%

Index-Weighted Avg.	Index	Bmark
Stock Volatility	33%	34%
12M - 1M price return	-3%	-4%
Book/Price	0.34	0.24
Earnings/Price	0.05	0.04
Sales/Price	1.12	0.42
Stock Beta	0.93	1.01
Yield (12M trailing)	2.1%	1.7%
R.O.E.	25%	32%
Market Cap (U.S. $ bn)	294.3	543.9

Sector Tilts (Detail)



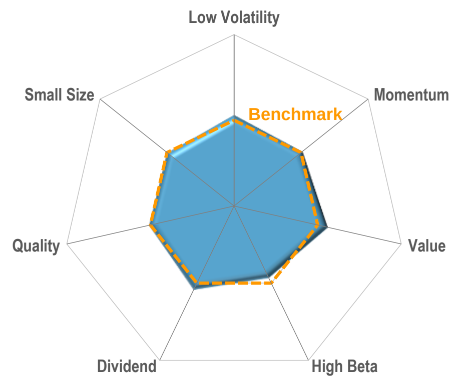
S&P 500 QVM Top 90%

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 April 28, 2023 the index comprised 449 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	2.1%	2.4%	8.0%	2.8%	15.6%	12.0%	12.5%	10.2%
Relative to Benchmark	0.5%	-0.3%	-1.1%	0.2%	1.1%	0.5%	0.3%	0.4%
Index Volatility				21.2%	18.3%	18.2%	14.6%	15.9%
Tracking Error				1.9%	1.4%	1.2%	0.9%	0.9%

Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 0.97



Factor Exposure Chart

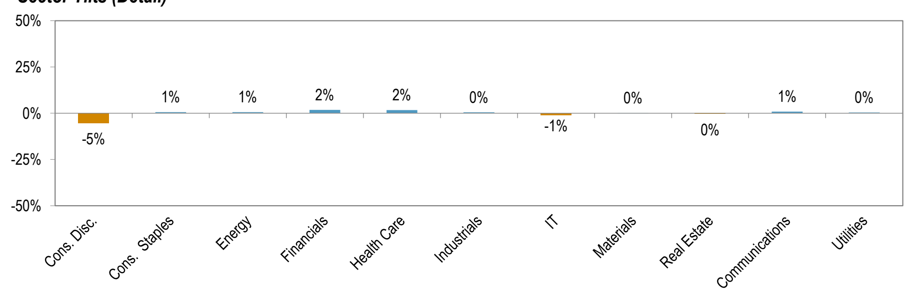
Portfolio Statistics	Index	Bmark
Active Share (Stock)	14%	0%
Active Share (Sector)	7%	0%
Concentration (HH Index)	177.4	149.1
Correlation (stock)	0.47	0.46
Ann. Turnover (last 10 yr)	0.19	0.04

Top Sector Tilts (versus benchmark)

Sector	Index	Bmark	Diff.
Financials	15%	13%	2%
Health Care	16%	14%	2%
Cons. Disc.	5%	10%	5%
IT	25%	26%	1%

Index-Weighted Avg.	Index	Bmark
Stock Volatility	32%	34%
12M - 1M price return	-3%	-4%
Book/Price	0.26	0.24
Earnings/Price	0.05	0.04
Sales/Price	0.44	0.42
Stock Beta	0.95	1.01
Yield (12M trailing)	1.8%	1.7%
R.O.E.	34%	32%
Market Cap (U.S. $ bn)	549.0	543.9

Sector Tilts (Detail)



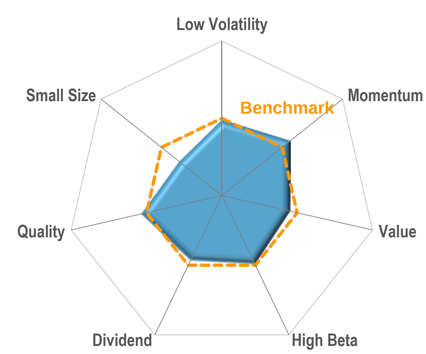
S&P 500 Growth

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 April 28, 2023 the index comprised 231 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	1.4%	5.3%	11.2%	-1.9%	12.2%	12.2%	13.6%	11.2%
Relative to Benchmark	-0.1%	2.6%	2.0%	-4.5%	-2.3%	0.7%	1.3%	1.4%
Index Volatility				25.1%	22.1%	20.1%	16.0%	16.6%
Tracking Error				6.7%	6.5%	5.6%	4.4%	4.1%

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



Factor Exposure Chart

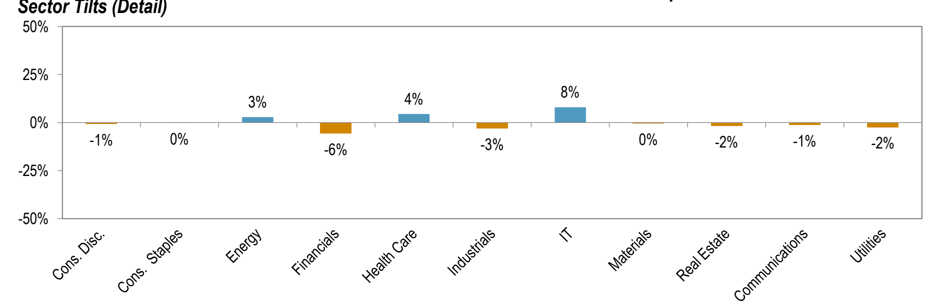
Portfolio Statistics	Index	Bmark
Active Share (Stock)	33%	0%
Active Share (Sector)	15%	0%
Concentration (HH Index)	337.4	149.1
Correlation (stock)	0.68	0.46
Ann. Turnover (last 10 yr)	0.25	0.04

Top Sector Tilts (versus benchmark)

Sector	Index	Bmark	Diff.
IT	34%	26%	8%
Health Care	19%	14%	4%
Financials	7%	13%	6%
Industrials	5%	8%	3%

Index-Weighted Avg.	Index	Bmark
Stock Volatility	34%	34%
12M - 1M price return	-1%	-4%
Book/Price	0.14	0.24
Earnings/Price	0.04	0.04
Sales/Price	0.30	0.42
Stock Beta	1.01	1.01
Yield (12M trailing)	1.3%	1.7%
R.O.E.	43%	32%
Market Cap (U.S. $ bn)	754.2	543.9

Sector Tilts (Detail)



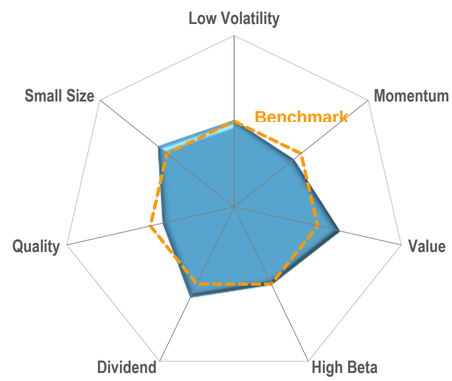
S&P 500 Value

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 April 28, 2023 the index comprised 405 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	1.7%	0.0%	7.0%	6.7%	15.8%	9.7%	10.2%	8.0%
Relative to Benchmark	0.2%	-2.7%	-2.2%	4.1%	1.3%	-1.7%	-2.0%	-1.9%
Index Volatility				20.5%	17.2%	18.3%	14.8%	17.0%
Tracking Error				6.6%	7.3%	6.3%	4.9%	4.6%

Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 0.82



Factor Exposure Chart

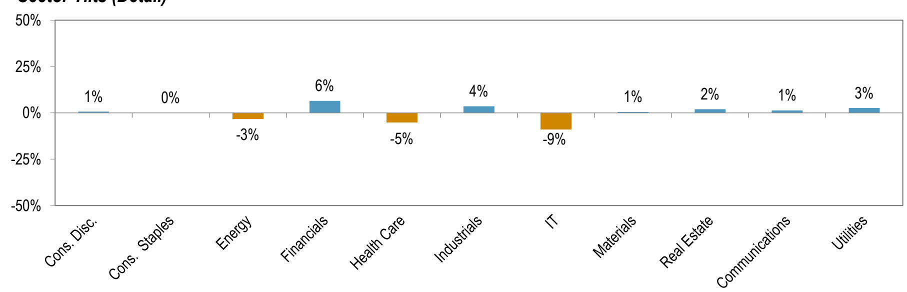
Portfolio Statistics	Index	Bmark
Active Share (Stock)	38%	0%
Active Share (Sector)	17%	0%
Concentration (HH Index)	112.1	149.1
Correlation (stock)	0.32	0.46
Ann. Turnover (last 10 yr)	0.26	0.04

Top Sector Tilts (versus benchmark)

Sector	Index	Bmark	Diff.
Financials	20%	13%	6%
Industrials	12%	8%	4%
IT	17%	26%	9%
Health Care	9%	14%	5%

Index-Weighted Avg.	Index	Bmark
Stock Volatility	33%	34%
12M - 1M price return	-8%	-4%
Book/Price	0.35	0.24
Earnings/Price	0.04	0.04
Sales/Price	0.54	0.42
Stock Beta	1.02	1.01
Yield (12M trailing)	2.0%	1.7%
R.O.E.	20%	32%
Market Cap (U.S. $ bn)	305.7	543.9

Sector Tilts (Detail)



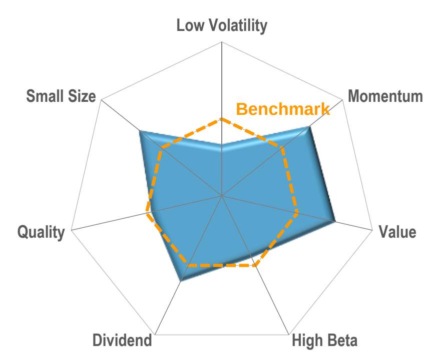
S&P 500 Pure Growth

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 April 28, 2023 the index comprised 75 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	0.9%	-2.5%	1.1%	-2.5%	10.2%	8.0%	11.5%	11.0%
Relative to Benchmark	-0.7%	-5.2%	-8.0%	-5.1%	-4.3%	-3.5%	-0.7%	1.2%
Index Volatility				25.6%	23.6%	22.2%	17.6%	19.1%
Tracking Error				7.9%	9.6%	8.1%	6.7%	6.7%

Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 1.21



Factor Exposure Chart

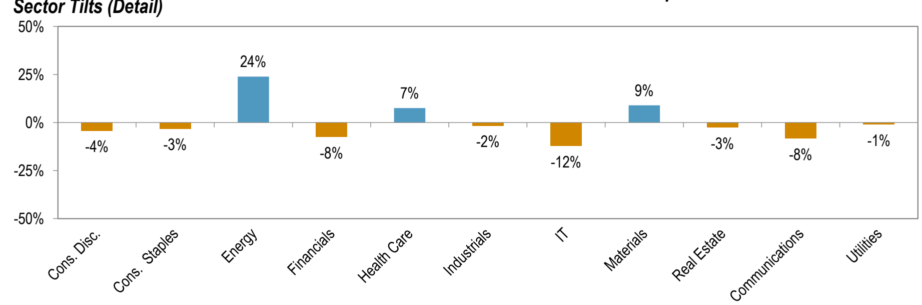
Portfolio Statistics	Index	Bmark
Active Share (Stock)	84%	0%
Active Share (Sector)	40%	0%
Concentration (HH Index)	153.9	149.1
Correlation (stock)	0.56	0.46
Ann. Turnover (last 10 yr)	0.65	0.04

Top Sector Tilts (versus benchmark)

Sector	Index	Bmark	Diff.
Energy	29%	5%	24%
Materials	12%	3%	9%
IT	14%	26%	12%
Communications	0%	8%	8%

Index-Weighted Avg.	Index	Bmark
Stock Volatility	39%	34%
12M - 1M price return	6%	-4%
Book/Price	0.28	0.24
Earnings/Price	0.09	0.04
Sales/Price	0.52	0.42
Stock Beta	0.93	1.01
Yield (12M trailing)	2.1%	1.7%
R.O.E.	35%	32%
Market Cap (U.S. $ bn)	103.1	543.9

Sector Tilts (Detail)



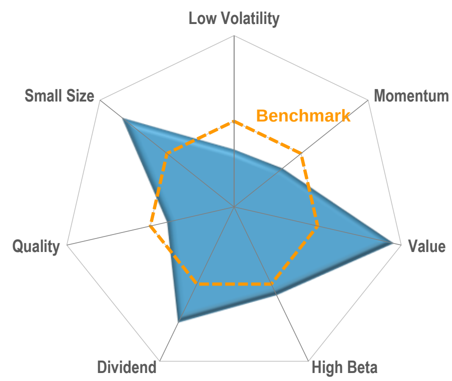
S&P 500 Pure Value

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 April 28, 2023 the index comprised 82 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	0.1%	-12.0%	-1.8%	-4.1%	21.5%	5.6%	9.5%	9.4%
Relative to Benchmark	-1.5%	-14.8%	-11.0%	-6.7%	7.0%	-5.9%	-2.7%	-0.4%
Index Volatility				25.6%	22.2%	25.5%	20.2%	24.4%
Tracking Error				15.0%	13.8%	14.2%	10.9%	12.9%

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



Factor Exposure Chart

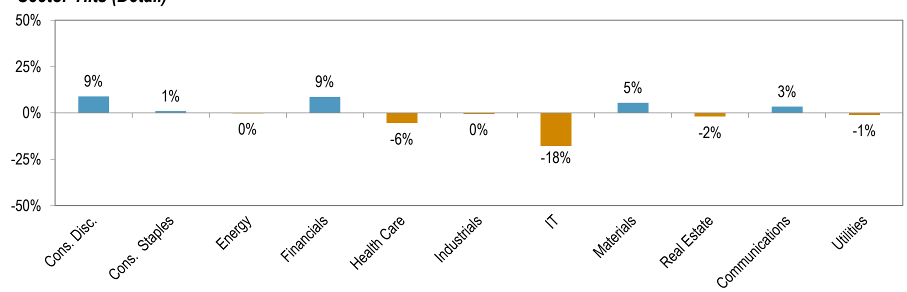
Portfolio Statistics	Index	Bmark
Active Share (Stock)	91%	0%
Active Share (Sector)	27%	0%
Concentration (HH Index)	157.1	149.1
Correlation (stock)	0.32	0.46
Ann. Turnover (last 10 yr)	0.46	0.04

Top Sector Tilts (versus benchmark)

Sector	Index	Bmark	Diff.
Cons. Disc.	19%	10%	9%
Financials	22%	13%	9%
IT	7%	26%	18%
Health Care	9%	14%	6%

Index-Weighted Avg.	Index	Bmark
Stock Volatility	39%	34%
12M - 1M price return	-14%	-4%
Book/Price	0.77	0.24
Earnings/Price	0.07	0.04
Sales/Price	1.85	0.42
Stock Beta	1.10	1.01
Yield (12M trailing)	2.9%	1.7%
R.O.E.	11%	32%
Market Cap (U.S. $ bn)	42.3	543.9

Sector Tilts (Detail)



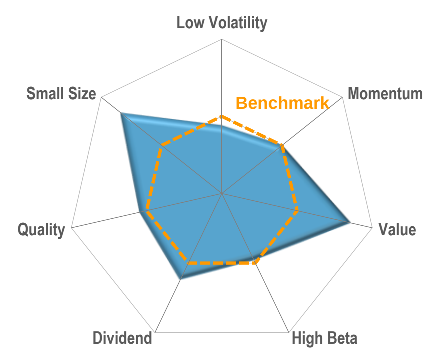
S&P 500 Buyback

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 April 28, 2023 the index comprised 100 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	1.0%	-5.0%	3.0%	1.8%	18.8%	10.2%	12.3%	12.0%
Relative to Benchmark	-0.6%	-7.7%	-6.2%	-0.9%	4.2%	-1.3%	0.1%	2.1%
Index Volatility				23.3%	20.1%	21.9%	17.7%	19.1%
Tracking Error				9.0%	7.8%	8.1%	6.5%	6.6%

Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 0.96



Factor Exposure Chart

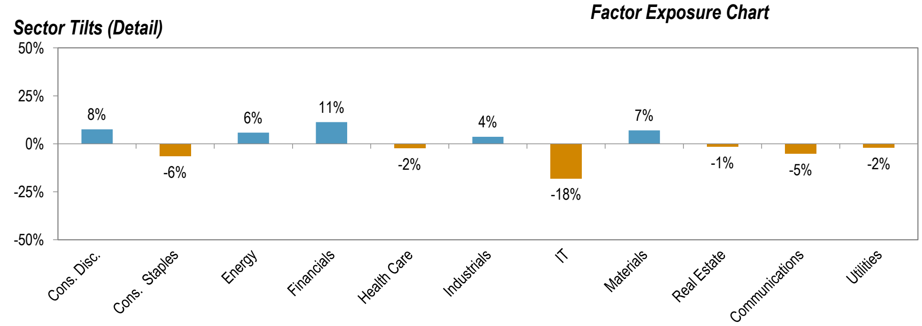
Portfolio Statistics	Index	Bmark
Active Share (Stock)	89%	0%
Active Share (Sector)	35%	0%
Concentration (HH Index)	100.3	149.1
Correlation (stock)	0.42	0.46
Ann. Turnover (last 10 yr)	0.92	0.04

Top Sector Tilts (versus benchmark)

Sector	Index	Bmark	Diff.
Financials	24%	13%	11%
Cons. Disc.	17%	10%	8%
IT	8%	26%	18%
Cons. Staples	1%	7%	6%

Index-Weighted Avg.	Index	Bmark
Stock Volatility	35%	34%
12M - 1M price return	-4%	-4%
Book/Price	0.39	0.24
Earnings/Price	0.08	0.04
Sales/Price	1.08	0.42
Stock Beta	0.98	1.01
Yield (12M trailing)	2.2%	1.7%
R.O.E.	29%	32%
Market Cap (U.S. $ bn)	40.9	543.9

Sector Tilts (Detail)



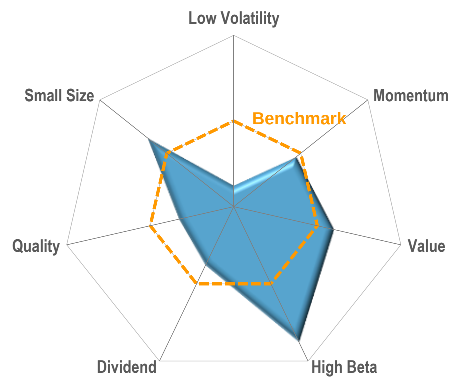
S&P 500 High Beta

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 April 28, 2023 the index comprised 98 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	-3.9%	-6.9%	8.1%	0.9%	26.2%	11.9%	12.8%	7.8%
Relative to Benchmark	-5.5%	-9.6%	-1.1%	-1.8%	11.7%	0.5%	0.6%	-2.0%
Index Volatility				33.8%	30.1%	30.3%	24.3%	28.6%
Tracking Error				15.4%	17.1%	16.2%	13.3%	15.5%

Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 1.44



Factor Exposure Chart

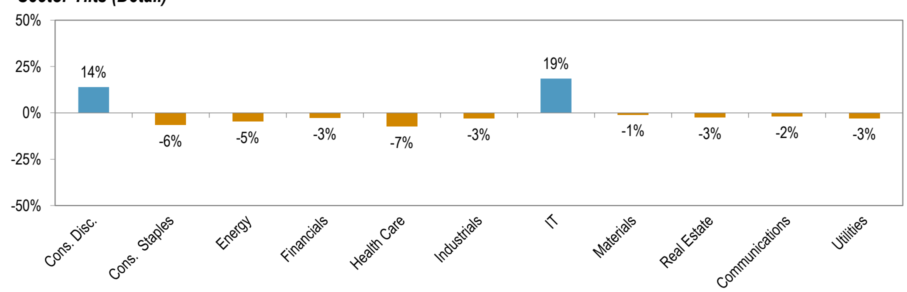
Portfolio Statistics	***Index***	***Bmark***
Active Share (Stock)	80%	0%
Active Share (Sector)	32%	0%
Concentration (HH Index)	107.5	149.1
Correlation (stock)	0.52	0.46
Ann. Turnover (last 10 yr)	0.93	0.04

Top Sector Tilts (versus benchmark)

Sector	***Index***	***Bmark***	***Diff.***
IT	44%	26%	19%
Cons. Disc.	24%	10%	14%
Health Care	7%	14%	7%
Cons. Staples	1%	7%	6%

Index-Weighted Avg.	***Index***	***Bmark***
Stock Volatility	48%	34%
12M - 1M price return	-10%	-4%
Book/Price	28%	24%
Earnings/Price	4%	4%
Sales/Price	59%	42%
Stock Beta	144%	101%
Yield (12M trailing)	0.9%	1.7%
R.O.E.	22%	32%
Market Cap (U.S. $ bn)	144.9	543.9

Sector Tilts (Detail)



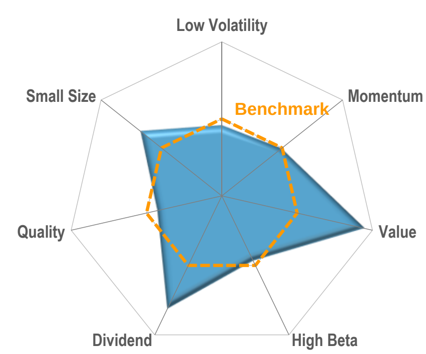
S&P 500 Enhanced Value

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 April 28, 2023 the index comprised 97 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	0.2%	-8.7%	-0.8%	-3.0%	17.4%	6.2%	9.7%	7.8%
Relative to Benchmark	-1.3%	-11.4%	-10.0%	-5.7%	2.9%	-5.2%	-2.5%	-2.0%
Index Volatility				25.8%	22.4%	24.4%	19.5%	22.5%
Tracking Error				12.8%	12.8%	12.7%	10.0%	10.5%

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



Factor Exposure Chart

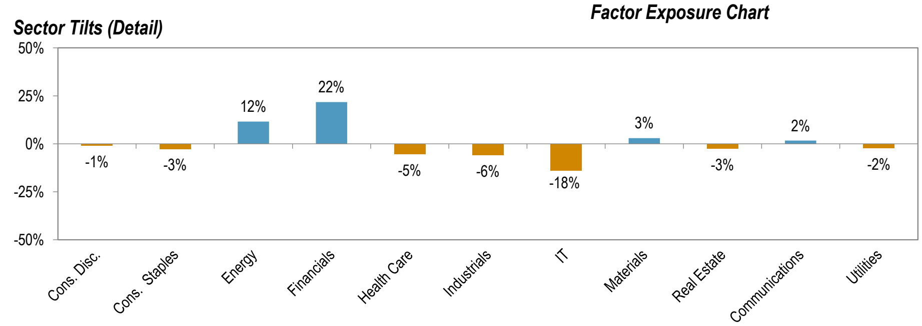
Portfolio Statistics	***Index***	***Bmark***
Active Share (Stock)	88%	0%
Active Share (Sector)	38%	0%
Concentration (HH Index)	243.0	149.1
Correlation (stock)	0.43	0.46
Ann. Turnover (last 10 yr)	0.42	0.04

Top Sector Tilts (versus benchmark)

Sector	***Index***	***Bmark***	***Diff.***
Financials	35%	13%	22%
Energy	16%	5%	12%
IT	8%	26%	18%
Industrials	3%	8%	6%

Index-Weighted Avg.	***Index***	***Bmark***
Stock Volatility	35%	34%
12M - 1M price return	-4%	-4%
Book/Price	0.72	0.24
Earnings/Price	0.10	0.04
Sales/Price	1.41	0.42
Stock Beta	0.96	1.01
Yield (12M trailing)	3.4%	1.7%
R.O.E.	16%	32%
Market Cap (U.S. $ bn)	116.4	543.9

Sector Tilts (Detail)



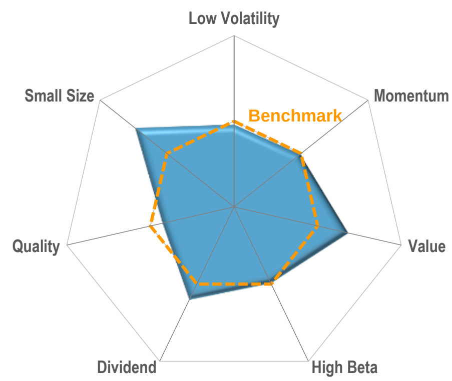
S&P 500 Equal Weight

Description

The S&P 500 Equal Weight comprises all the constituents in the S&P 500, equally weighted at each quarterly rebalance. As of April 28, 2023 the index comprised 503 constituents.

Index Statistics	**1M**	**3M**	**YTD**	**12M**	**3Y**	**5Y**	**10Y**	**15Y**
Total Return (Ann)	0.3%	-3.8%	3.3%	0.4%	16.8%	9.9%	11.3%	10.3%
Relative to Benchmark	-1.2%	-6.6%	-5.9%	-2.2%	2.3%	-1.5%	-0.9%	0.5%
Index Volatility				22.2%	19.2%	20.1%	15.9%	18.5%
Tracking Error				5.9%	5.8%	5.5%	4.3%	4.9%

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



Factor Exposure Chart

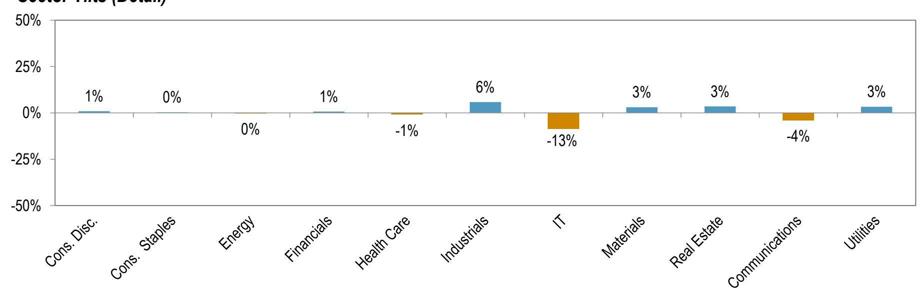
Portfolio Statistics	***Index***	***Bmark***
Active Share (Stock)	49%	0%
Active Share (Sector)	18%	0%
Concentration (HH Index)	20.1	149.1
Correlation (stock)	0.41	0.46
Ann. Turnover (last 10 yr)	0.22	0.04

Top Sector Tilts (versus benchmark)

Sector	***Index***	***Bmark***	***Diff.***
Industrials	14%	8%	6%
Real Estate	6%	3%	3%
IT	13%	26%	13%
Communications	4%	8%	4%

Index-Weighted Avg.	***Index***	***Bmark***
Stock Volatility	34%	34%
12M - 1M price return	-5%	-4%
Book/Price	0.33	0.24
Earnings/Price	0.05	0.04
Sales/Price	0.62	0.42
Stock Beta	1.01	1.01
Yield (12M trailing)	2.0%	1.7%
R.O.E.	23%	32%
Market Cap (U.S. $ bn)	75.4	543.9

Sector Tilts (Detail)



More Factor Resources

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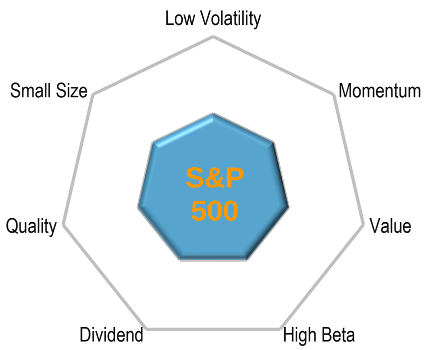
For more about S&P DJI's approach to factors, read "**Factor Indices: A Simple Compendium**" **spglobal.com/spdji/en/research/article/factor-indices-a-simple-compendium**

Source: S&P Dow Jones Indices LLC and/or its affiliates. Data as of April 28, 2023. Returns in U.S. dollars.

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.



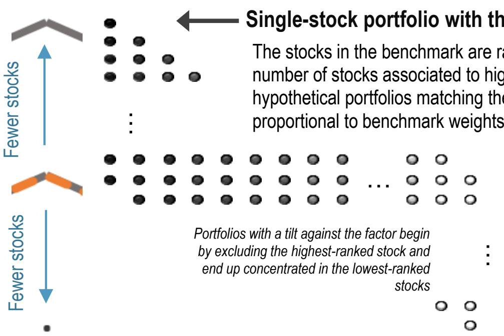
Factor	Measurement at single-stock level
Volatility	Trailing 12-month daily volatility.
Momentum	Twelve-month total return change as of one month ago ("13 minus 1 momentum"), divided by the daily volatility during the twelve-month period that ended one month prior. For more details, see the S&P Momentum 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 excluding 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 portfolios 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	0.042	0.239	0.416	4.64%	32.17%	1.44	-4.09%	2.17%
S&P 500 index-weighted standard deviation	0.039	0.250	0.527	15.74%	29.76%	1.09	17.61%	0.70%

Source: S&P Dow Jones Indices LLC and/or its affiliates. Data as of April 28, 2023. Returns in U.S. dollars.

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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, and is based on the index methodology in effect onthe 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. In addition, forks have not been factored into the back-test data with respect to the S&P Cryptocurrency Indices. For the S&P Cryptocurrency Top 5 & 10 Equal Weight Indices, the custody element of the methodology was not considered; the back-test history is based on the index constituents that meet the custody element as of the Launch Date. Complete index methodology details are available at www.spglobal.com/spdji. 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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