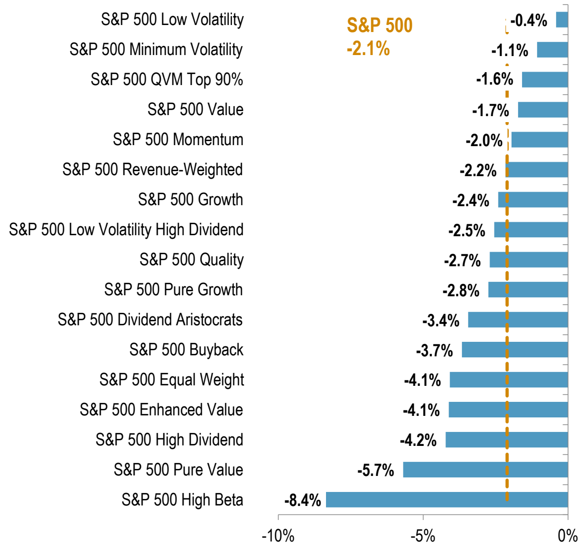
IndexInvestmentStrategy@spglobal.com

Index Dashboard: S&P 500® Factor Indices

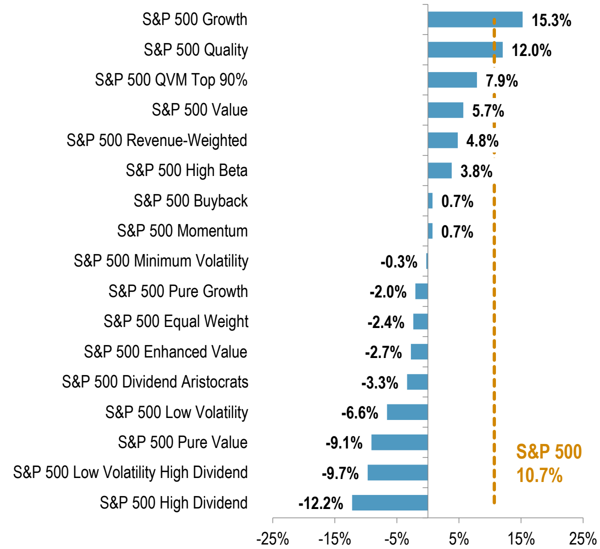
October 2023

MONTHLY AND YTD PERFORMANCE SUMMARY

October Total Return



Year to Date Total Return



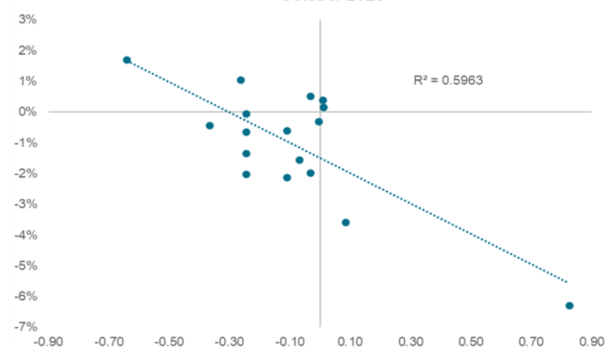
COMMENTARY

The S&P 500's -2.1% total return in October 2023 was its third consecutive monthly decline. Each of our tracked factor indices also fell, although five of them outperformed the S&P 500. As one would expect in a declining market, the best relative performances came from defensive strategies like Low Volatility and Minimum Volatility, and the worst from High Beta.

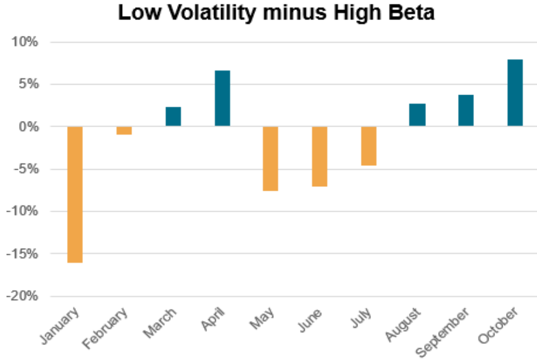
Our first chart plots the relationship between each factor index's exposure to the high beta factor at the beginning of October with its relative performance during the month. The relationship is (unsurprisingly!) downward-sloping, as systematic exposure alone explained more than half of the variation across factor performance.

Relative Return vs. Beta

October 2023



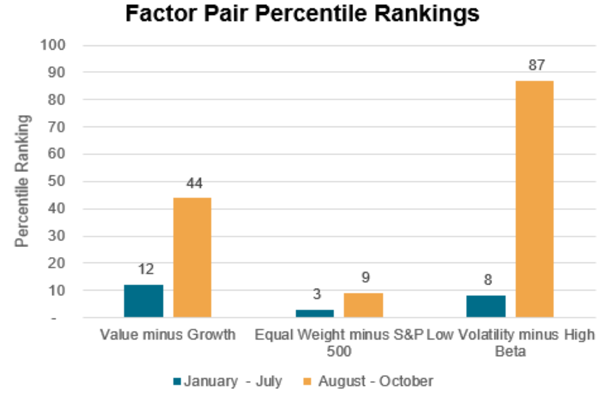
Low Volatility minus High Beta



Our second chart, graphing the difference in total returns between S&P 500 Low Volatility and S&P 500 High Beta, provides a way to visualize the resurgence of defensive indices during the market's recent weakness. In January the S&P 500 rose 6.3% (its best monthly return in 2023, at least so far); January was also the month of Low Vol's worst relative performance. The last three months, however, have seen steady gains in the relative performance of Low Vol as the S&P 500 declined.

Our final chart is an update from last month's report; it shows the percentile rankings of notionally opposite factor pairs during the market's ascendancy through July and in its subsequent decline. For example, the Low Vol – High Beta spread between January and July was at the 8th percentile (relative to all seven-month intervals in our database). In the next three months, however, the spread vaulted to the 87th percentile (relative to all three-month intervals).

Factor Pair Percentile Rankings

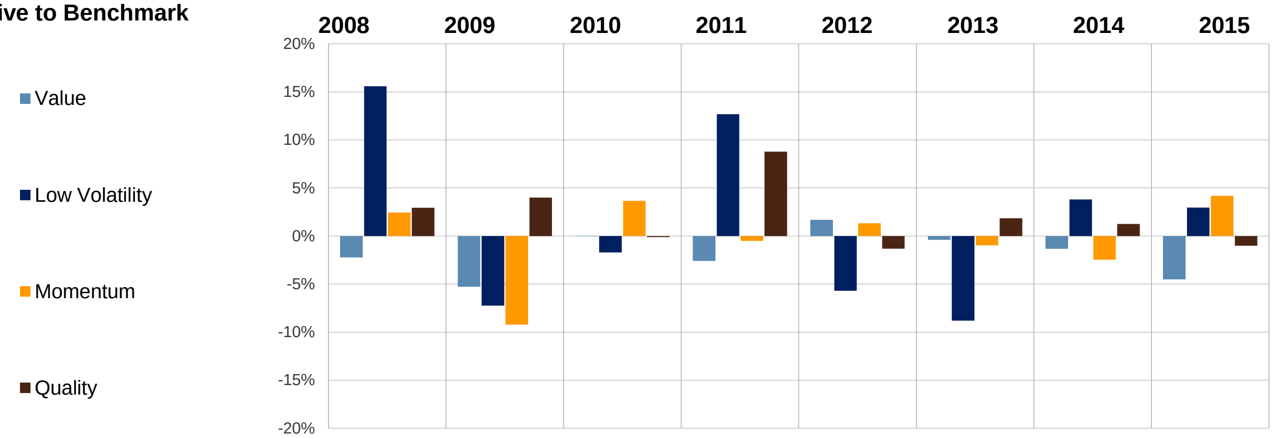


ANNUAL PERFORMANCE

Core factor performance by calendar year, 2008-present:

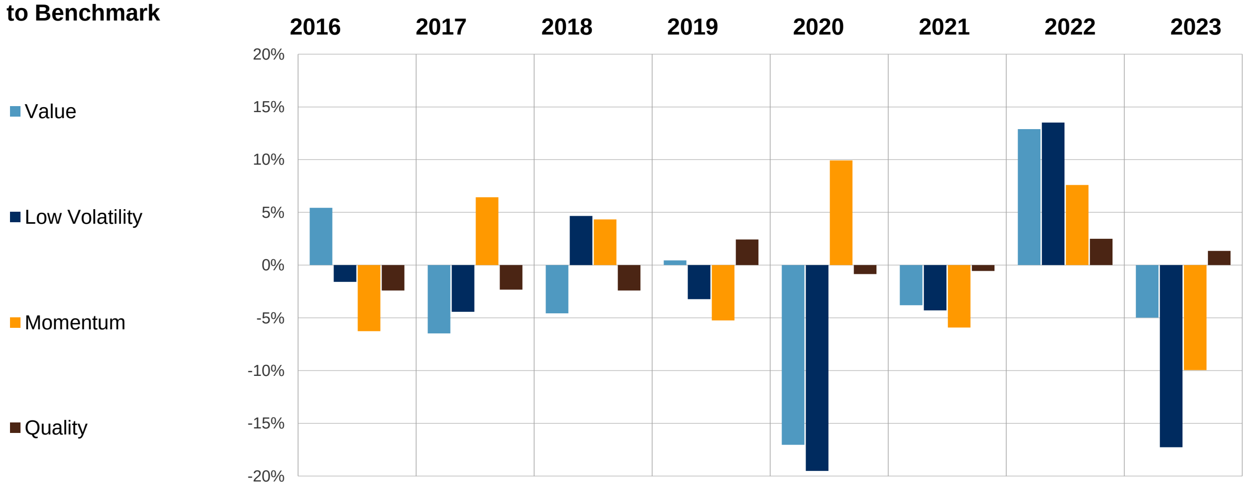
Total Return	2008	2009	2010	2011	2012	2013	2014	2015
Value	-39.22%	21.18%	15.10%	-0.48%	17.68%	31.99%	12.36%	-3.13%
Low Volatility	-21.41%	19.22%	13.36%	14.78%	10.30%	23.59%	17.49%	4.34%
Momentum	-34.56%	17.24%	18.72%	1.60%	17.33%	31.42%	11.23%	5.56%
Quality	-34.06%	30.46%	14.95%	10.89%	14.68%	34.24%	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



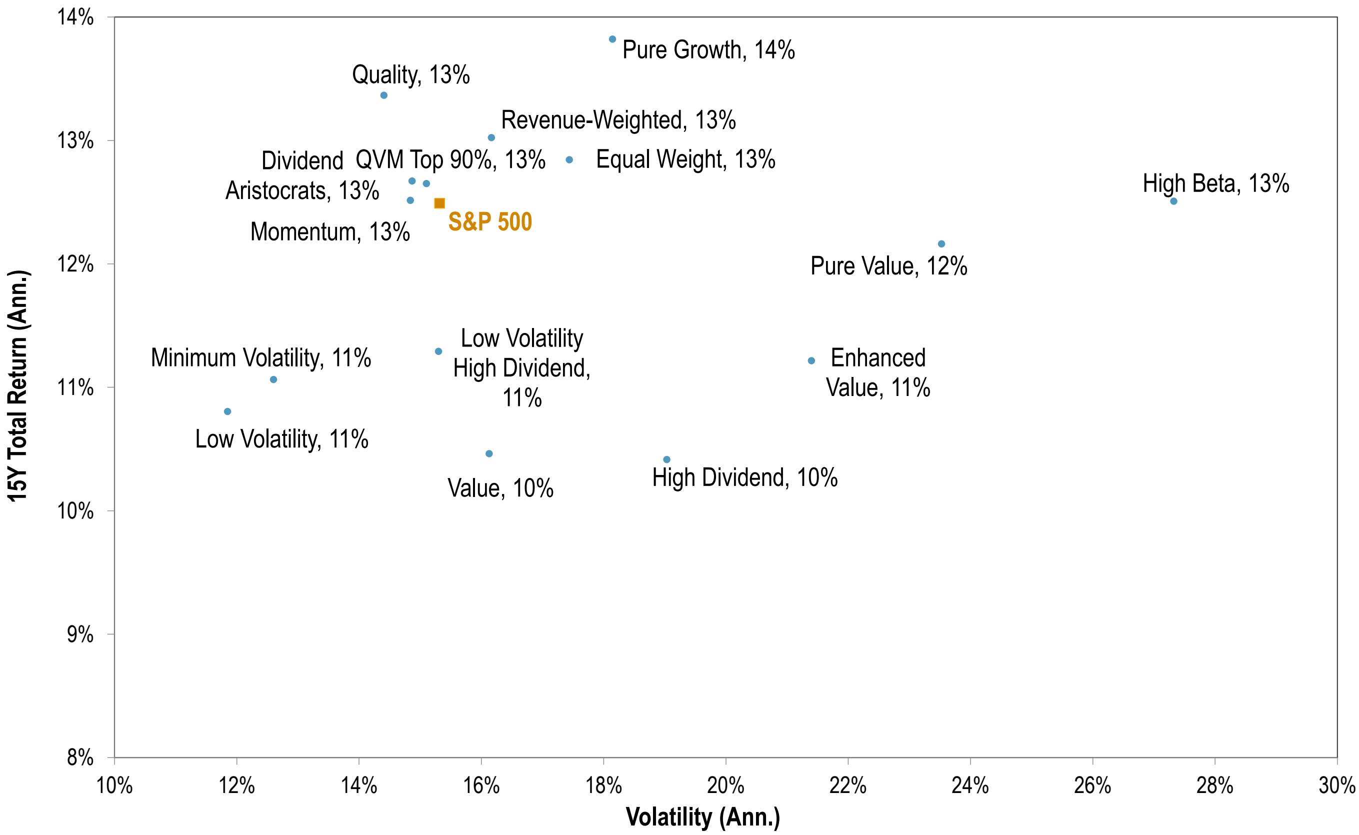
Total Return	2016	2017	2018	2019	2020	2021	2022	2023
Value	17.40%	15.36%	-8.95%	31.93%	1.36%	24.90%	-5.22%	5.71%
Low Volatility	10.37%	17.41%	0.27%	28.26%	-1.11%	24.42%	-4.59%	-6.58%
Momentum	5.70%	28.27%	-0.04%	26.25%	28.32%	22.79%	-10.51%	0.73%
Quality	9.56%	19.51%	-6.79%	33.91%	17.55%	28.16%	-15.62%	12.05%
S&P 500	11.96%	21.83%	-4.38%	31.49%	18.40%	28.71%	-18.11%	10.69%

Relative to Benchmark



Source: S&P Dow Jones Indices LLC and/or its affiliates. Data as of October 31, 2023. Returns in U.S. dollars.

15 YEAR RISK & RETURN - ABSOLUTE



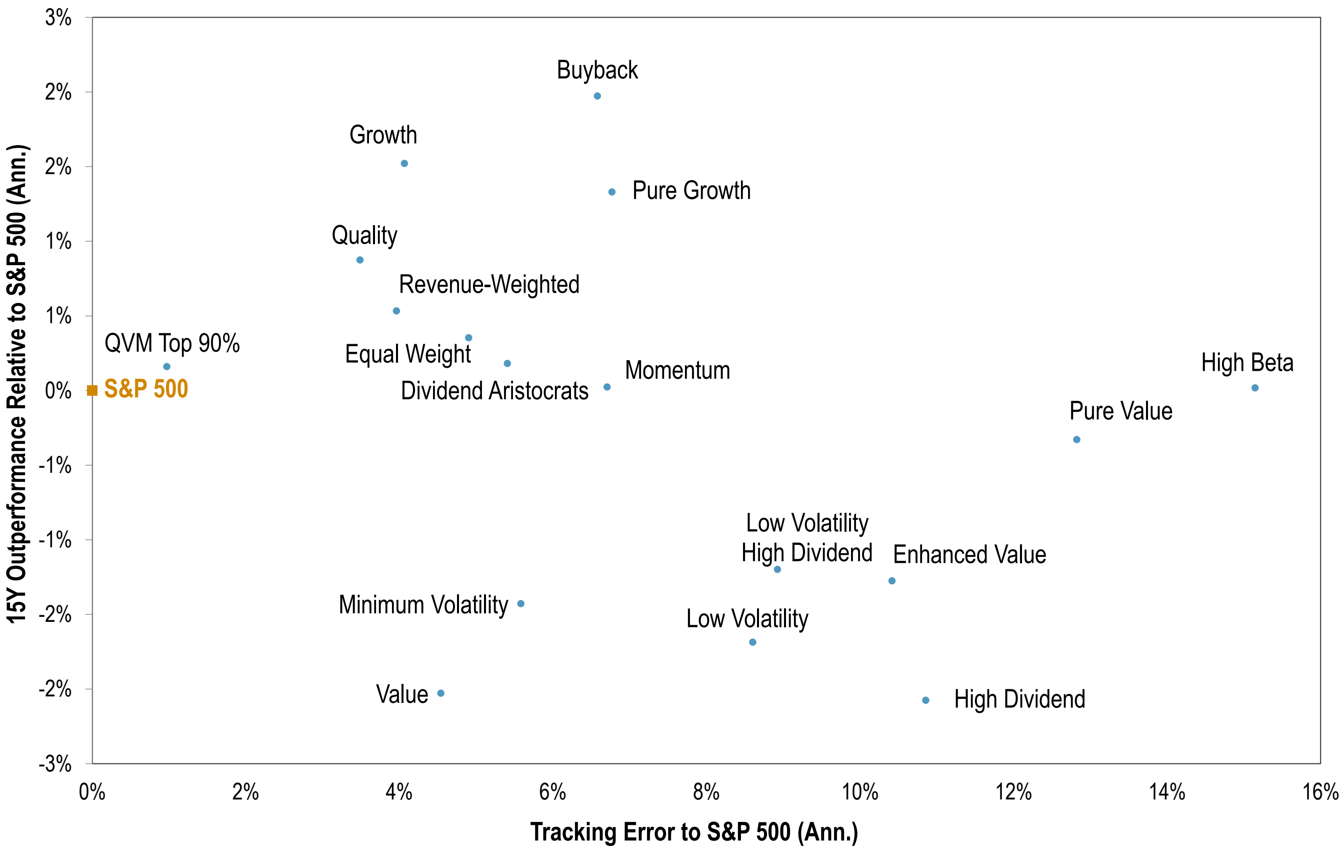
TOTAL RETURN	1M	3M	12M	3Y	5Y	10Y	15Y
S&P 500 Buyback	-3.7%	-9.3%	1.7%	14.2%	9.5%	10.3%	14.5%
S&P 500 Growth	-2.4%	-7.7%	11.9%	7.0%	11.8%	12.7%	14.0%
S&P 500 Pure Growth	-2.8%	-7.5%	-4.3%	2.8%	7.4%	9.4%	13.8%
S&P 500 Quality	-2.7%	-6.7%	14.1%	11.4%	11.8%	11.0%	13.4%
S&P 500 Revenue-Weighted	-2.2%	-7.2%	4.7%	15.1%	10.8%	10.7%	13.0%
S&P 500 Equal Weight	-4.1%	-11.8%	-0.7%	10.1%	8.7%	9.3%	12.8%
S&P 500 Dividend Aristocrats	-3.4%	-11.1%	-0.7%	9.1%	8.9%	9.8%	12.7%
S&P 500 QVM Top 90%	-1.6%	-7.8%	8.1%	10.7%	11.2%	11.3%	12.7%
S&P 500 Momentum	-2.0%	-1.0%	0.5%	7.0%	10.7%	11.8%	12.5%
S&P 500 High Beta	-8.4%	-20.1%	4.0%	16.3%	12.3%	10.3%	12.5%
S&P 500 Pure Value	-5.7%	-13.5%	-9.5%	14.5%	4.2%	6.7%	12.2%
S&P 500 Low Volatility High Dividend	-2.5%	-9.6%	-6.9%	10.1%	3.6%	7.5%	11.3%
S&P 500 Enhanced Value	-4.1%	-9.1%	-2.6%	16.0%	5.6%	8.0%	11.2%
S&P 500 Minimum Volatility	-1.1%	-6.8%	0.7%	7.1%	8.2%	9.8%	11.1%
S&P 500 Low Volatility	-0.4%	-7.0%	-2.8%	6.3%	6.5%	8.7%	10.8%
S&P 500 Value	-1.7%	-8.9%	7.7%	13.5%	9.2%	9.0%	10.5%
S&P 500 High Dividend	-4.2%	-12.5%	-9.8%	12.0%	3.2%	7.3%	10.4%
S&P 500	-2.1%	-8.3%	10.1%	10.4%	11.0%	11.2%	12.5%

Performance figures for more than one year are annualized.

VOLATILITY (ANN.)	12M	3Y	5Y	10Y	15Y
S&P 500 Buyback	17.6%	20.2%	22.5%	18.0%	18.1%
S&P 500 Growth	15.1%	20.2%	20.1%	16.2%	15.7%
S&P 500 Pure Growth	15.0%	22.1%	22.2%	17.8%	18.1%
S&P 500 Quality	13.9%	17.0%	17.7%	14.4%	14.4%
S&P 500 Revenue-Weighted	14.0%	17.8%	19.1%	15.3%	16.2%
S&P 500 Equal Weight	16.5%	19.0%	20.6%	16.3%	17.4%
S&P 500 Dividend Aristocrats	15.7%	17.7%	18.1%	14.5%	14.9%
S&P 500 QVM Top 90%	13.6%	17.2%	18.3%	14.8%	15.1%
S&P 500 Momentum	11.6%	17.1%	17.6%	14.7%	14.8%
S&P 500 High Beta	27.6%	30.2%	30.9%	24.9%	27.3%
S&P 500 Pure Value	21.8%	22.8%	26.3%	20.6%	23.5%
S&P 500 Low Volatility High Dividend	14.9%	17.6%	19.5%	15.1%	15.3%
S&P 500 Enhanced Value	19.0%	22.5%	25.1%	19.8%	21.4%
S&P 500 Minimum Volatility	11.8%	14.9%	16.2%	12.9%	12.6%
S&P 500 Low Volatility	11.2%	14.2%	15.2%	12.3%	11.8%
S&P 500 Value	14.2%	17.2%	18.7%	15.0%	16.1%
S&P 500 High Dividend	18.2%	20.3%	23.0%	17.5%	19.0%
S&P 500	14.1%	17.6%	18.5%	14.9%	15.3%

Source: S&P Dow Jones Indices LLC and/or its affiliates. Data as of October 31, 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	-1.6%	-1.0%	-8.4%	3.8%	-1.6%	-0.9%	2.0%
S&P 500 Growth	-0.3%	0.5%	1.8%	-3.3%	0.8%	1.5%	1.5%
S&P 500 Pure Growth	-0.7%	0.8%	-14.5%	-7.6%	-3.6%	-1.8%	1.3%
S&P 500 Quality	-0.6%	1.6%	3.9%	1.0%	0.8%	-0.2%	0.9%
S&P 500 Revenue-Weighted	-0.1%	1.0%	-5.5%	4.8%	-0.2%	-0.5%	0.5%
S&P 500 Equal Weight	-2.0%	-3.6%	-10.9%	-0.2%	-2.3%	-1.9%	0.4%
S&P 500 Dividend Aristocrats	-1.3%	-2.8%	-10.8%	-1.2%	-2.1%	-1.3%	0.2%
S&P 500 QVM Top 90%	0.5%	0.5%	-2.0%	0.4%	0.1%	0.1%	0.2%
S&P 500 Momentum	0.1%	7.3%	-9.6%	-3.4%	-0.3%	0.6%	0.0%
S&P 500 High Beta	-6.3%	-11.9%	-6.2%	6.0%	1.3%	-0.9%	0.0%
S&P 500 Pure Value	-3.6%	-5.2%	-19.6%	4.2%	-6.8%	-4.5%	-0.3%
S&P 500 Low Volatility High Dividend	-0.4%	-1.3%	-17.0%	-0.3%	-7.5%	-3.6%	-1.2%
S&P 500 Enhanced Value	-2.0%	-0.8%	-12.8%	5.7%	-5.4%	-3.2%	-1.3%
S&P 500 Minimum Volatility	1.0%	1.5%	-9.5%	-3.3%	-2.8%	-1.4%	-1.4%
S&P 500 Low Volatility	1.7%	1.2%	-13.0%	-4.0%	-4.5%	-2.5%	-1.7%
S&P 500 Value	0.4%	-0.6%	-2.5%	3.1%	-1.8%	-2.2%	-2.0%
S&P 500 High Dividend	-2.1%	-4.3%	-20.0%	1.7%	-7.8%	-3.9%	-2.1%

Performance figures for more than one year are annualized.

TRACKING ERROR v S&P 500 (ANN.)	1YR	3YR	5YR	10YR	15YR
S&P 500 Buyback	9.6%	8.5%	8.7%	6.8%	6.6%
S&P 500 Growth	3.8%	6.2%	5.6%	4.5%	4.1%
S&P 500 Pure Growth	7.1%	9.7%	8.3%	6.9%	6.8%
S&P 500 Quality	3.6%	4.2%	4.1%	3.3%	3.5%
S&P 500 Revenue-Weighted	4.6%	6.1%	5.5%	4.3%	4.0%
S&P 500 Equal Weight	6.6%	6.1%	5.9%	4.5%	4.9%
S&P 500 Dividend Aristocrats	7.7%	7.3%	6.6%	5.5%	5.4%
S&P 500 QVM Top 90%	2.1%	1.6%	1.4%	1.0%	1.0%
S&P 500 Momentum	11.1%	9.1%	8.2%	6.8%	6.7%
S&P 500 High Beta	16.3%	17.6%	16.5%	13.6%	15.1%
S&P 500 Pure Value	13.8%	14.4%	14.7%	11.1%	12.8%
S&P 500 Low Volatility High Dividend	8.8%	11.3%	10.6%	9.1%	8.9%
S&P 500 Enhanced Value	12.2%	13.0%	13.2%	10.3%	10.4%
S&P 500 Minimum Volatility	6.2%	6.2%	5.4%	5.2%	5.6%
S&P 500 Low Volatility	9.8%	9.8%	9.8%	8.3%	8.6%
S&P 500 Value	4.1%	6.7%	6.3%	5.0%	4.5%
S&P 500 High Dividend	11.3%	12.7%	12.9%	10.4%	10.9%

Source: S&P Dow Jones Indices LLC and/or its affiliates. Data as of October 31, 2023. Returns in U.S. dollars.

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%	22%	27%	15%	10%	14%	23%	8%	3%	2%	19%	24%	20%	4%	13%	11%	11%	23%
S&P 500 Growth	22%	100%	44%	26%	21%	28%	67%	14%	14%	7%	7%	31%	31%	1%	12%	7%	15%	69%
S&P 500 Quality	27%	44%	100%	19%	14%	22%	39%	16%	8%	6%	24%	21%	19%	4%	13%	14%	12%	36%
S&P 500 Pure Growth	15%	26%	19%	100%	12%	14%	18%	10%	10%	8%	17%	2%	18%	2%	22%	12%	11%	18%
S&P 500 Low Volatility	10%	21%	14%	12%	100%	26%	24%	29%	19%	19%	21%	21%	23%	7%	15%	6%	1%	24%
S&P 500 Minimum Volatility	14%	28%	22%	14%	26%	100%	30%	14%	14%	11%	24%	25%	16%	8%	11%	6%	12%	31%
S&P 500 QVM Top 90%	23%	67%	39%	18%	24%	30%	100%	15%	8%	9%	59%	61%	48%	10%	16%	12%	18%	92%
S&P 500 Dividend Aristocrats	8%	14%	16%	10%	29%	14%	15%	100%	13%	14%	18%	16%	14%	6%	13%	9%	6%	15%
S&P 500 Low Volatility High Dividend	3%	8%	8%	10%	19%	14%	8%	13%	100%	60%	13%	10%	12%	20%	4%	14%	2%	9%
S&P 500 High Dividend	2%	7%	6%	8%	19%	11%	9%	14%	60%	100%	15%	13%	17%	23%	7%	19%	12%	10%
S&P 500 Revenue-Weighted	19%	41%	24%	17%	21%	24%	59%	18%	13%	15%	100%	54%	50%	27%	27%	34%	17%	61%
S&P 500 Value	24%	31%	21%	2%	21%	25%	61%	16%	10%	13%	54%	100%	51%	18%	17%	18%	19%	62%
S&P 500 Equal Weight	20%	32%	19%	18%	23%	16%	48%	14%	12%	17%	50%	51%	100%	17%	21%	20%	20%	50%
S&P 500 Pure Value	4%	1%	4%	2%	7%	8%	10%	6%	20%	23%	27%	18%	17%	100%	21%	41%	20%	10%
S&P 500 Buyback	13%	12%	13%	22%	15%	11%	16%	13%	4%	7%	27%	17%	21%	21%	100%	32%	15%	16%
S&P 500 Enhanced Value	11%	7%	14%	12%	6%	6%	12%	9%	14%	19%	34%	18%	20%	41%	32%	100%	10%	12%
S&P 500 High Beta	11%	15%	12%	11%	1%	12%	18%	6%	2%	12%	17%	19%	20%	20%	15%	10%	100%	20%

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

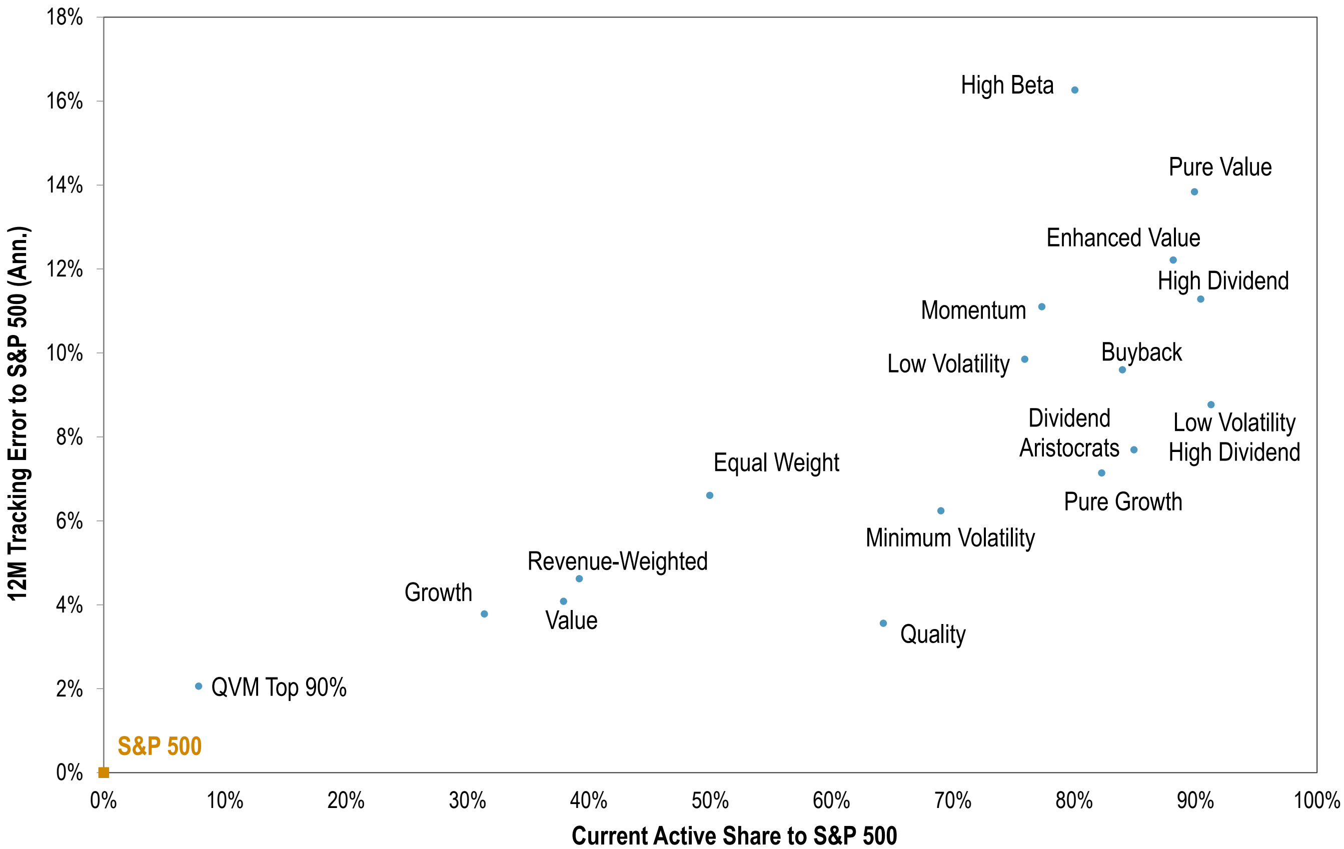
RELATIVE RETURN CORRELATIONS

	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 October 31, 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	69.9%	-27.5%	28.6%	-64.3%	39.8%	-7.1%	42.4%
S&P 500 Minimum Volatility	7	16.4%	-13.0%	-1.0%	-33.3%	21.6%	-4.7%	14.3%
S&P 500 Low Volatility High Dividend	8	25.5%	-47.2%	57.0%	-37.9%	90.7%	-50.4%	58.4%
S&P 500 High Dividend	8	-2.2%	-57.8%	66.4%	-8.5%	90.7%	-50.2%	66.7%
S&P 500 Quality	9	5.0%	23.2%	-3.4%	-12.2%	5.3%	36.2%	7.1%
S&P 500 Dividend Aristocrats	9	29.6%	-19.3%	28.6%	-23.5%	48.4%	-17.8%	45.2%
S&P 500 Momentum	10	-17.3%	71.7%	-3.4%	1.7%	-15.2%	2.5%	14.3%
S&P 500 Revenue-Weighted	10	6.1%	-13.0%	59.8%	-26.0%	28.8%	-5.1%	14.3%
S&P 500 QVM Top 90%	11	2.1%	2.4%	3.9%	-2.1%	-0.1%	1.4%	-4.0%
S&P 500 Growth	11	-5.3%	4.1%	-13.1%	-1.9%	-7.8%	5.7%	-25.9%
S&P 500 Value	12	5.0%	-2.9%	32.3%	1.3%	21.6%	-15.0%	14.3%
S&P 500 Pure Growth	12	-24.4%	-11.1%	37.1%	-25.3%	9.4%	-15.0%	40.4%
S&P 500 Pure Value	13	-23.2%	-14.6%	87.2%	8.9%	52.8%	-38.1%	65.9%
S&P 500 Buyback	13	-5.3%	-11.1%	65.1%	-7.8%	11.2%	0.6%	54.6%
S&P 500 High Beta	14	-73.0%	-17.5%	29.8%	75.5%	-0.3%	-37.4%	29.7%
S&P 500 Enhanced Value	14	-5.3%	-22.5%	92.6%	-22.1%	62.7%	-7.3%	38.5%
S&P 500 Equal Weight	15	-5.3%	-22.8%	37.4%	-5.1%	26.9%	-18.9%	49.3%

Source: S&P Dow Jones Indices LLC and/or its affiliates. Data as of October 31, 2023. Returns in U.S. dollars.

S&P Dow Jones Indices

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Index Dashboard: S&P 500® Factor Indices
October 2023

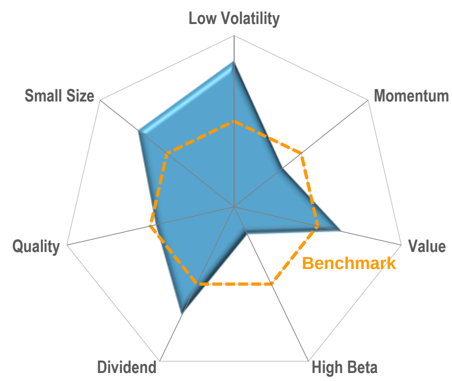
S&P 500 Low Volatility

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 October 31, 2023 the index comprised 100 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	-0.4%	-7.0%	-6.6%	-2.8%	6.3%	6.5%	8.7%	10.8%
Relative to Benchmark	1.7%	1.2%	-17.3%	-13.0%	-4.0%	-4.5%	-2.5%	-1.7%
Index Volatility				11.2%	14.2%	15.2%	12.3%	11.8%
Tracking Error				9.8%	9.8%	9.8%	8.3%	8.6%

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



Factor Exposure Chart

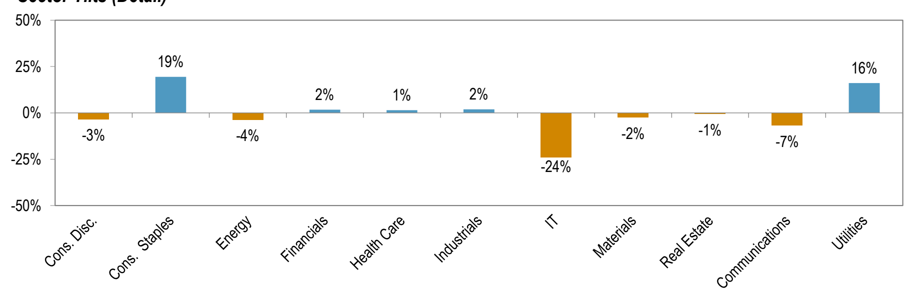
Portfolio Statistics	***Index***	***Bmark***
Active Share (Stock)	76%	0%
Active Share (Sector)	41%	0%
Concentration (HH Index)	99.3	166.8
Correlation (stock)	0.53	0.41
Ann. Turnover (last 10 yr)	0.63	0.04

Top Sector Tilts (versus benchmark)

Sector	***Index***	***Bmark***	***Difference***
Cons. Staples	26%	7%	19%
Utilities	19%	3%	16%
IT	4%	28%	24%
Communications	2%	9%	7%

Index-Weighted Avg.	***Index***	***Bmark***
Stock Volatility	19%	28%
12M - 1M price return	10%	32%
Book/Price	0.31	0.24
Earnings/Price	0.05	0.04
Sales/Price	0.51	0.42
Stock Beta	0.44	1.05
Yield (12M trailing)	2.6%	1.7%
R.O.E.	27%	34%
Market Cap (U.S. $ bn)	94.0	613.6

Sector Tilts (Detail)



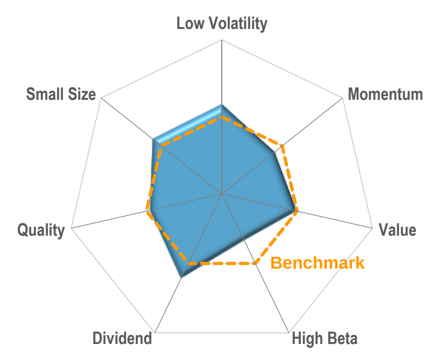
S&P 500 Minimum Volatility

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 October 31, 2023 the index comprised 75 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	-1.1%	-6.8%	-0.3%	0.7%	7.1%	8.2%	9.8%	11.1%
Relative to Benchmark	1.0%	1.5%	-10.9%	-9.5%	-3.3%	-2.8%	-1.4%	-1.4%
Index Volatility				11.8%	14.9%	16.2%	12.9%	12.6%
Tracking Error				6.2%	6.2%	5.4%	5.2%	5.6%

Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 0.77



Factor Exposure Chart

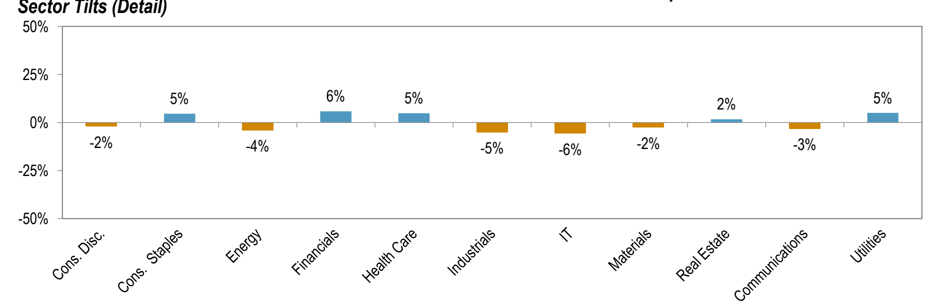
Portfolio Statistics	***Index***	***Bmark***
Active Share (Stock)	69%	0%
Active Share (Sector)	22%	0%
Concentration (HH Index)	182.3	166.8
Correlation (stock)	0.36	0.41
Ann. Turnover (last 10 yr)	0.30	0.04

Top Sector Tilts (versus benchmark)

Sector	***Index***	***Bmark***	***Difference***
Financials	19%	13%	6%
Utilities	8%	3%	5%
IT	22%	28%	6%
Industrials	3%	8%	5%

Index-Weighted Avg.	***Index***	***Bmark***
Stock Volatility	25%	28%
12M - 1M price return	21%	32%
Book/Price	0.27	0.24
Earnings/Price	0.04	0.04
Sales/Price	0.38	0.42
Stock Beta	0.79	1.05
Yield (12M trailing)	2.1%	1.7%
R.O.E.	29%	34%
Market Cap (U.S. $ bn)	305.2	613.6

Sector Tilts (Detail)



Source: S&P Dow Jones Indices LLC and/or its affiliates. Data as of October 31, 2023. Returns in U.S. dollars.

S&P Dow Jones Indices

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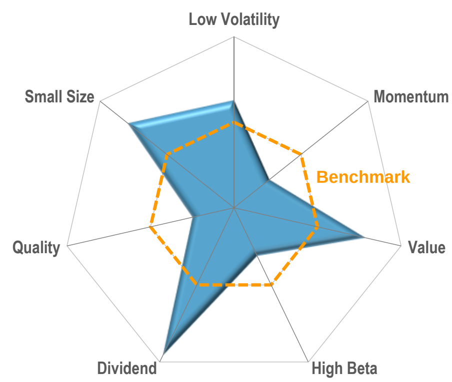
S&P 500 Low Volatility High Dividend

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 October 31, 2023 the index comprised 49 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	-2.5%	-9.6%	-9.7%	-6.9%	10.1%	3.6%	7.5%	11.3%
Relative to Benchmark	-0.4%	-1.3%	-20.4%	-17.0%	-0.3%	-7.5%	-3.6%	-1.2%
Index Volatility				14.9%	17.6%	19.5%	15.1%	15.3%
Tracking Error				8.8%	11.3%	10.6%	9.1%	8.9%

Benchmark: S&P 500.   1 Yr trailing beta to benchmark = 0.77



Factor Exposure Chart

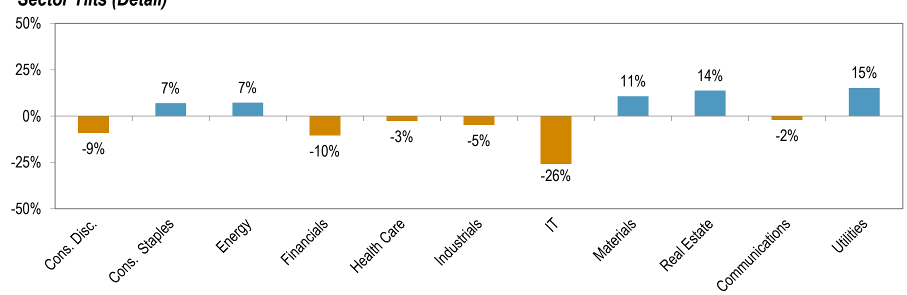
Portfolio Statistics	***Index***	***Bmark***
Active Share (Stock)	91%	0%
Active Share (Sector)	54%	0%
Concentration (HH Index)	214.8	166.8
Correlation (stock)	0.45	0.41
Ann. Turnover (last 10 yr)	0.67	0.04

Top Sector Tilts (versus benchmark)

Sector	***Index***	***Bmark***	***Diff.***
Utilities	18%	3%	15%
Real Estate	16%	2%	14%
IT	2%	28%	26%
Financials	2%	13%	10%

Index-Weighted Avg.	***Index***	***Bmark***
Stock Volatility	24%	28%
12M - 1M price return	7%	32%
Book/Price	0.51	0.24
Earnings/Price	0.04	0.04
Sales/Price	0.89	0.42
Stock Beta	0.71	1.05
Yield (12M trailing)	5.5%	1.7%
R.O.E.	17%	34%
Market Cap (U.S. $ bn)	56.7	613.6

Sector Tilts (Detail)



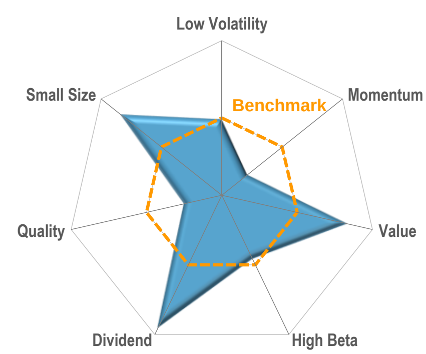
S&P 500 High Dividend

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 October 31, 2023 the index comprised 78 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	-4.2%	-12.5%	-12.2%	-9.8%	12.0%	3.2%	7.3%	10.4%
Relative to Benchmark	-2.1%	-4.3%	-22.9%	-20.0%	1.7%	-7.8%	-3.9%	-2.1%
Index Volatility				18.2%	20.3%	23.0%	17.5%	19.0%
Tracking Error				11.3%	12.7%	12.9%	10.4%	10.9%

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



Factor Exposure Chart

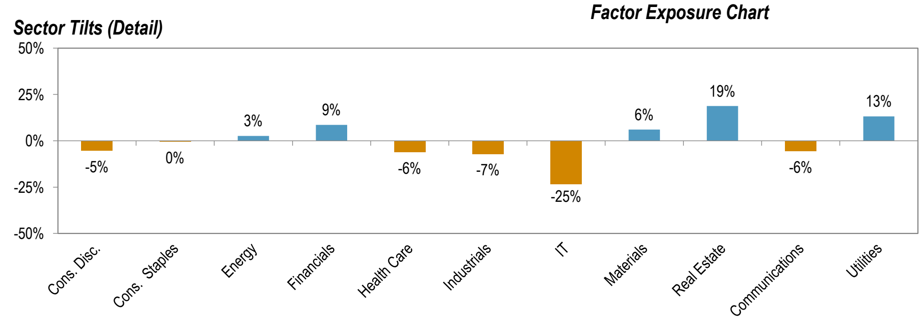
Portfolio Statistics	***Index***	***Bmark***
Active Share (Stock)	90%	0%
Active Share (Sector)	49%	0%
Concentration (HH Index)	130.3	166.8
Correlation (stock)	0.44	0.41
Ann. Turnover (last 10 yr)	0.79	0.04

Top Sector Tilts (versus benchmark)

Sector	***Index***	***Bmark***	***Diff.***
Real Estate	21%	2%	19%
Utilities	16%	3%	13%
IT	3%	28%	25%
Industrials	1%	8%	7%

Index-Weighted Avg.	***Index***	***Bmark***
Stock Volatility	28%	28%
12M - 1M price return	3%	32%
Book/Price	0.61	0.24
Earnings/Price	0.06	0.04
Sales/Price	0.82	0.42
Stock Beta	0.95	1.05
Yield (12M trailing)	5.5%	1.7%
R.O.E.	15%	34%
Market Cap (U.S. $ bn)	43.8	613.6

Sector Tilts (Detail)



Source: S&P Dow Jones Indices LLC and/or its affiliates. Data as of October 31, 2023. Returns in U.S. dollars.

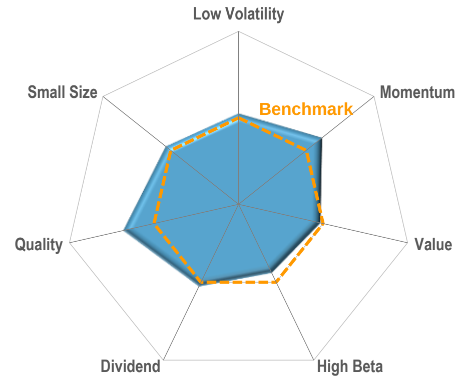
S&P 500 Quality

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 October 31, 2023 the index comprised 100 constituents.

Index Statistics	**1M**	**3M**	**YTD**	**12M**	**3Y**	**5Y**	**10Y**	**15Y**
Total Return (Ann)	-2.7%	-6.7%	12.0%	14.1%	11.4%	11.8%	11.0%	13.4%
Relative to Benchmark	-0.6%	1.6%	1.4%	3.9%	1.0%	0.8%	-0.2%	0.9%
Index Volatility				13.9%	17.0%	17.7%	14.4%	14.4%
Tracking Error				3.6%	4.2%	4.1%	3.3%	3.5%

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



Factor Exposure Chart

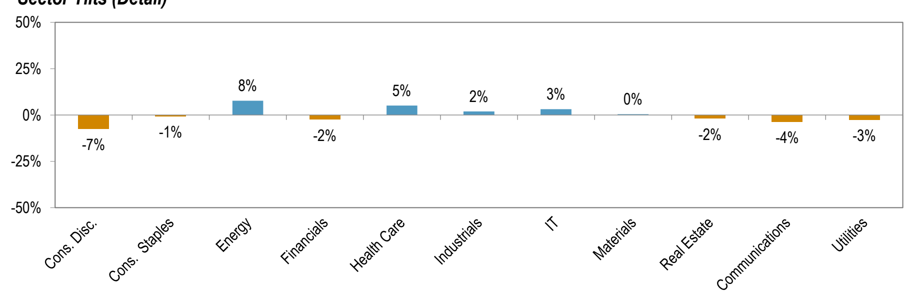
Portfolio Statistics	***Index***	***Bmark***
Active Share (Stock)	64%	0%
Active Share (Sector)	18%	0%
Concentration (HH Index)	280.7	166.8
Correlation (stock)	0.40	0.41
Ann. Turnover (last 10 yr)	0.59	0.04

Top Sector Tilts (versus benchmark)

Sector	***Index***	***Bmark***	***Diff.***
Energy	12%	5%	8%
Health Care	18%	13%	5%
Cons. Disc.	3%	11%	7%
Communications	5%	9%	4%

Index-Weighted Avg.	***Index***	***Bmark***
Stock Volatility	27%	28%
12M - 1M price return	45%	32%
Book/Price	0.19	0.24
Earnings/Price	0.05	0.04
Sales/Price	0.38	0.42
Stock Beta	0.94	1.05
Yield (12M trailing)	1.7%	1.7%
R.O.E.	42%	34%
Market Cap (U.S. $ bn)	504.4	613.6

Sector Tilts (Detail)



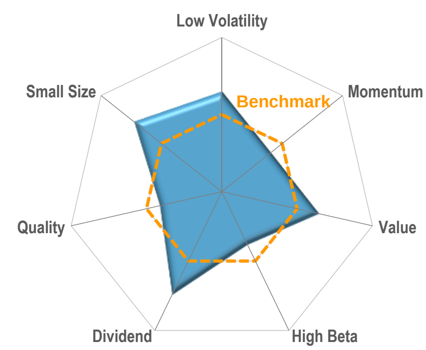
S&P 500 Dividend Aristocrats

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 October 31, 2023 the index comprised 67 constituents.

Index Statistics	**1M**	**3M**	**YTD**	**12M**	**3Y**	**5Y**	**10Y**	**15Y**
Total Return (Ann)	-3.4%	-11.1%	-3.3%	-0.7%	9.1%	8.9%	9.8%	12.7%
Relative to Benchmark	-1.3%	-2.8%	-14.0%	-10.8%	-1.2%	-2.1%	-1.3%	0.2%
Index Volatility				15.7%	17.7%	18.1%	14.5%	14.9%
Tracking Error				7.7%	7.3%	6.6%	5.5%	5.4%

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



Factor Exposure Chart

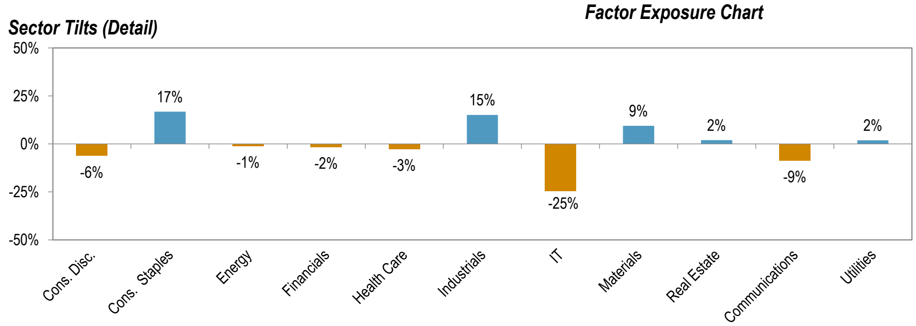
Portfolio Statistics	***Index***	***Bmark***
Active Share (Stock)	85%	0%
Active Share (Sector)	45%	0%
Concentration (HH Index)	152.9	166.8
Correlation (stock)	0.46	0.41
Ann. Turnover (last 10 yr)	0.19	0.04

Top Sector Tilts (versus benchmark)

Sector	***Index***	***Bmark***	***Diff.***
Cons. Staples	23%	7%	17%
Industrials	23%	8%	15%
IT	3%	28%	25%
Communications	0%	9%	9%

Index-Weighted Avg.	***Index***	***Bmark***
Stock Volatility	23%	28%
12M - 1M price return	15%	32%
Book/Price	0.29	0.24
Earnings/Price	0.04	0.04
Sales/Price	0.64	0.42
Stock Beta	0.83	1.05
Yield (12M trailing)	2.7%	1.7%
R.O.E.	28%	34%
Market Cap (U.S. $ bn)	85.0	613.6

Sector Tilts (Detail)



Source: S&P Dow Jones Indices LLC and/or its affiliates. Data as of October 31, 2023. Returns in U.S. dollars.

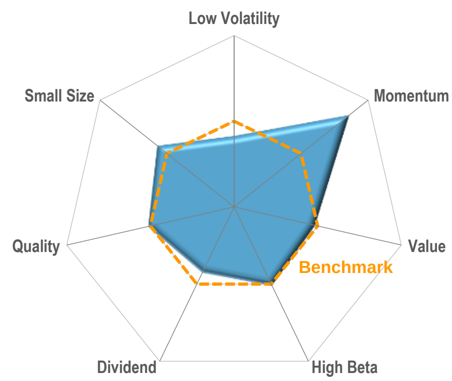
S&P 500 Momentum

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 October 31, 2023 the index comprised 100 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	-2.0%	-1.0%	0.7%	0.5%	7.0%	10.7%	11.8%	12.5%
Relative to Benchmark	0.1%	7.3%	-10.0%	-9.6%	-3.4%	-0.3%	0.6%	0.0%
Index Volatility				11.6%	17.1%	17.6%	14.7%	14.8%
Tracking Error				11.1%	9.1%	8.2%	6.8%	6.7%

Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 0.72



Factor Exposure Chart

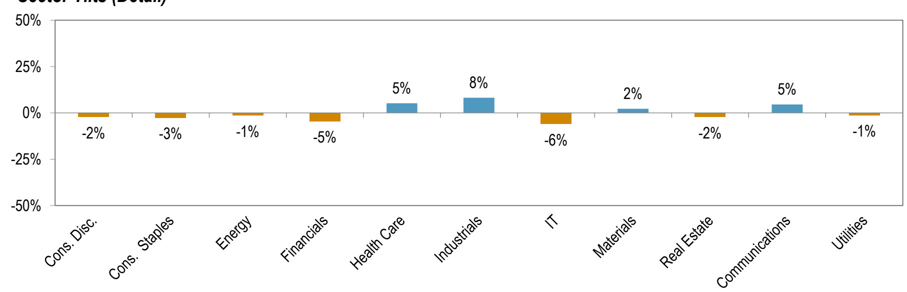
Portfolio Statistics	***Index***	***Bmark***
Active Share (Stock)	77%	0%
Active Share (Sector)	20%	0%
Concentration (HH Index)	364.0	166.8
Correlation (stock)	0.28	0.41
Ann. Turnover (last 10 yr)	1.09	0.04

Top Sector Tilts (versus benchmark)

Sector	***Index***	***Bmark***	***Diff.***
Industrials	17%	8%	8%
Health Care	18%	13%	5%
IT	22%	28%	6%
Financials	8%	13%	5%

Index-Weighted Avg.	***Index***	***Bmark***
Stock Volatility	30%	28%
12M - 1M price return	77%	32%
Book/Price	0.18	0.24
Earnings/Price	0.04	0.04
Sales/Price	0.42	0.42
Stock Beta	1.07	1.05
Yield (12M trailing)	1.1%	1.7%
R.O.E.	36%	34%
Market Cap (U.S. $ bn)	297.3	613.6

Sector Tilts (Detail)



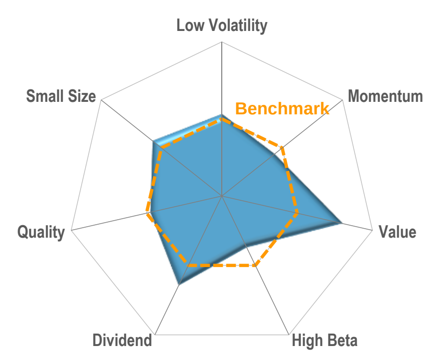
S&P 500 Revenue-Weighted

Description

The S&P 500 Revenue-Weighted comprises all the constituents of the S&P 500, weighted in proportion to revenues. As of October 31, 2023 the index comprised 501 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	-2.2%	-7.2%	4.8%	4.7%	15.1%	10.8%	10.7%	13.0%
Relative to Benchmark	-0.1%	1.0%	-5.9%	-5.5%	4.8%	-0.2%	-0.5%	0.5%
Index Volatility				14.0%	17.8%	19.1%	15.3%	16.2%
Tracking Error				4.6%	6.1%	5.5%	4.3%	4.0%

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



Factor Exposure Chart

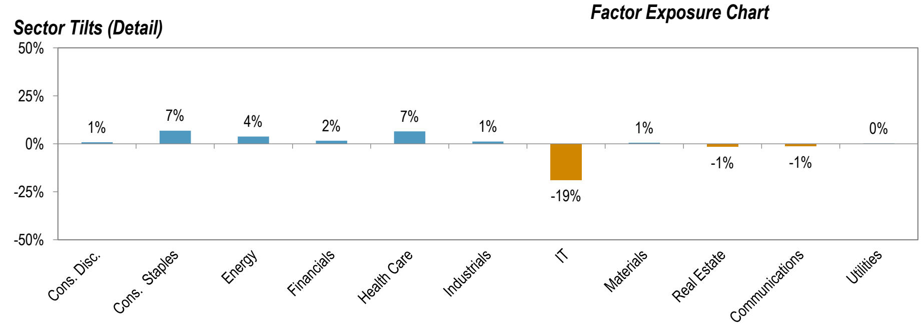
Portfolio Statistics	***Index***	***Bmark***
Active Share (Stock)	39%	0%
Active Share (Sector)	22%	0%
Concentration (HH Index)	95.7	166.8
Correlation (stock)	0.36	0.41
Ann. Turnover (last 10 yr)	0.19	0.04

Top Sector Tilts (versus benchmark)

Sector	***Index***	***Bmark***	***Diff.***
Cons. Staples	13%	7%	7%
Health Care	20%	13%	7%
IT	9%	28%	19%
Real Estate	1%	2%	1%

Index-Weighted Avg.	***Index***	***Bmark***
Stock Volatility	27%	28%
12M - 1M price return	19%	32%
Book/Price	0.37	0.24
Earnings/Price	0.06	0.04
Sales/Price	1.19	0.42
Stock Beta	0.81	1.05
Yield (12M trailing)	2.3%	1.7%
R.O.E.	25%	34%
Market Cap (U.S. $ bn)	293.6	613.6

Sector Tilts (Detail)



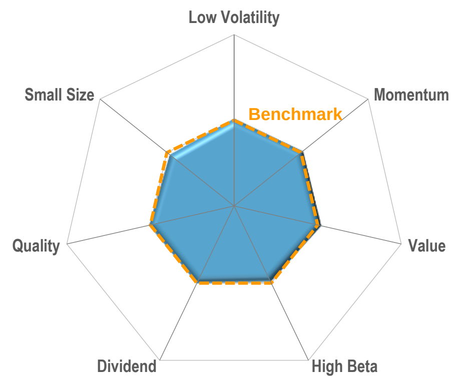
S&P 500 QVM Top 90%

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 October 31, 2023 the index comprised 448 constituents.

Index Statistics	**1M**	**3M**	**YTD**	**12M**	**3Y**	**5Y**	**10Y**	**15Y**
Total Return (Ann)	-1.6%	-7.8%	7.9%	8.1%	10.7%	11.2%	11.3%	12.7%
Relative to Benchmark	0.5%	0.5%	-2.8%	-2.0%	0.4%	0.1%	0.1%	0.2%
Index Volatility				13.6%	17.2%	18.3%	14.8%	15.1%
Tracking Error				2.1%	1.6%	1.4%	1.0%	1.0%

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



Factor Exposure Chart

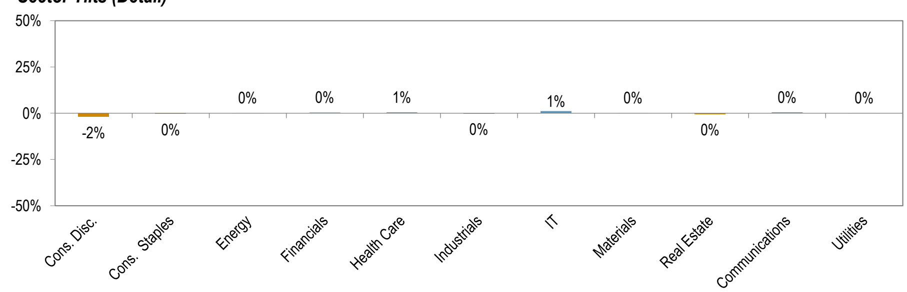
Portfolio Statistics	***Index***	***Bmark***
Active Share (Stock)	8%	0%
Active Share (Sector)	3%	0%
Concentration (HH Index)	193.8	166.8
Correlation (stock)	0.38	0.41
Ann. Turnover (last 10 yr)	0.19	0.04

Top Sector Tilts (versus benchmark)

Sector	***Index***	***Bmark***	***Diff.***
IT	29%	28%	1%
Health Care	14%	13%	1%
Cons. Disc.	9%	11%	2%
Real Estate	2%	2%	0%

Index-Weighted Avg.	***Index***	***Bmark***
Stock Volatility	28%	28%
12M - 1M price return	34%	32%
Book/Price	0.25	0.24
Earnings/Price	0.05	0.04
Sales/Price	0.43	0.42
Stock Beta	1.02	1.05
Yield (12M trailing)	1.6%	1.7%
R.O.E.	35%	34%
Market Cap (U.S. $ bn)	638.7	613.6

Sector Tilts (Detail)



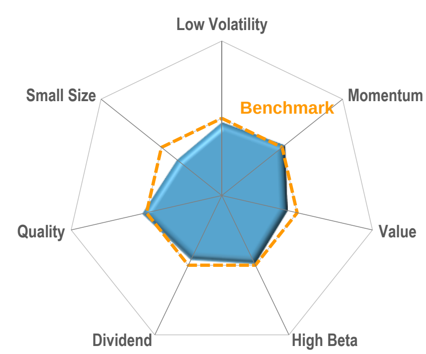
S&P 500 Growth

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 October 31, 2023 the index comprised 238 constituents.

Index Statistics	**1M**	**3M**	**YTD**	**12M**	**3Y**	**5Y**	**10Y**	**15Y**
Total Return (Ann)	-2.4%	-7.7%	15.3%	11.9%	7.0%	11.8%	12.7%	14.0%
Relative to Benchmark	-0.3%	0.5%	4.6%	1.8%	-3.3%	0.8%	1.5%	1.5%
Index Volatility				15.1%	20.2%	20.1%	16.2%	15.7%
Tracking Error				3.8%	6.2%	5.6%	4.5%	4.1%

Benchmark: S&P 500.   1 Yr trailing beta to benchmark = 1.15



Factor Exposure Chart

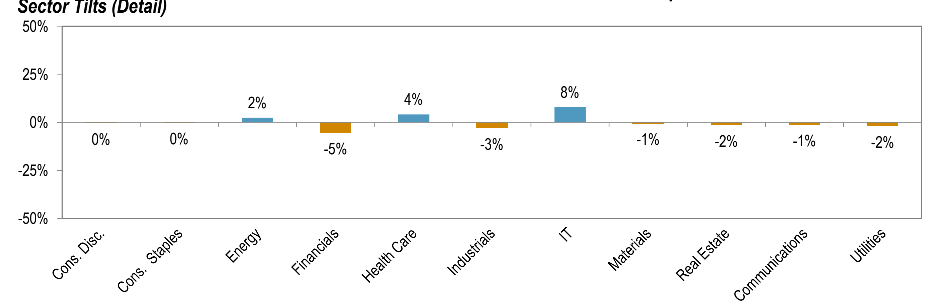
Portfolio Statistics	***Index***	***Bmark***
Active Share (Stock)	31%	0%
Active Share (Sector)	14%	0%
Concentration (HH Index)	346.5	166.8
Correlation (stock)	0.53	0.41
Ann. Turnover (last 10 yr)	0.24	0.04

Top Sector Tilts (versus benchmark)

Sector	***Index***	***Bmark***	***Diff.***
IT	36%	28%	8%
Health Care	17%	13%	4%
Financials	7%	13%	5%
Industrials	5%	8%	3%

Index-Weighted Avg.	***Index***	***Bmark***
Stock Volatility	29%	28%
12M - 1M price return	37%	32%
Book/Price	0.14	0.24
Earnings/Price	0.04	0.04
Sales/Price	0.30	0.42
Stock Beta	1.03	1.05
Yield (12M trailing)	1.3%	1.7%
R.O.E.	43%	34%
Market Cap (U.S. $ bn)	815.1	613.6

Sector Tilts (Detail)



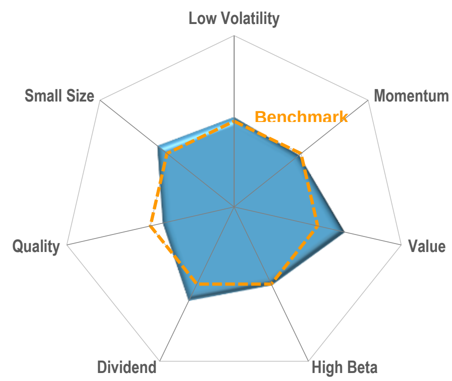
S&P 500 Value

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 October 31, 2023 the index comprised 398 constituents.

Index Statistics	**1M**	**3M**	**YTD**	**12M**	**3Y**	**5Y**	**10Y**	**15Y**
Total Return (Ann)	-1.7%	-8.9%	5.7%	7.7%	13.5%	9.2%	9.0%	10.5%
Relative to Benchmark	0.4%	-0.6%	-5.0%	-2.5%	3.1%	-1.8%	-2.2%	-2.0%
Index Volatility				14.2%	17.2%	18.7%	15.0%	16.1%
Tracking Error				4.1%	6.7%	6.3%	5.0%	4.5%

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



Factor Exposure Chart

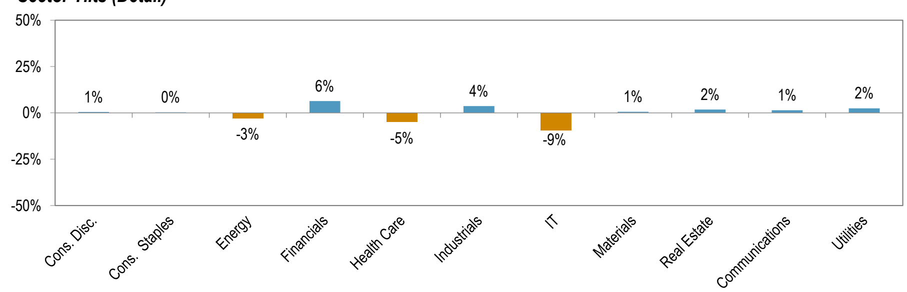
Portfolio Statistics	***Index***	***Bmark***
Active Share (Stock)	38%	0%
Active Share (Sector)	17%	0%
Concentration (HH Index)	136.0	166.8
Correlation (stock)	0.34	0.41
Ann. Turnover (last 10 yr)	0.26	0.04

Top Sector Tilts (versus benchmark)

Sector	***Index***	***Bmark***	***Diff.***
Financials	19%	13%	6%
Industrials	12%	8%	4%
IT	19%	28%	9%
Health Care	8%	13%	5%

Index-Weighted Avg.	***Index***	***Bmark***
Stock Volatility	27%	28%
12M - 1M price return	27%	32%
Book/Price	0.36	0.24
Earnings/Price	0.05	0.04
Sales/Price	0.58	0.42
Stock Beta	1.06	1.05
Yield (12M trailing)	2.1%	1.7%
R.O.E.	23%	34%
Market Cap (U.S. $ bn)	370.3	613.6

Sector Tilts (Detail)



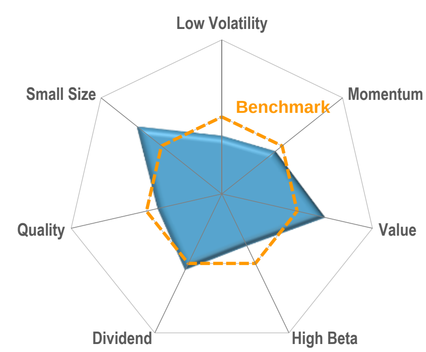
S&P 500 Pure Growth

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 October 31, 2023 the index comprised 81 constituents.

Index Statistics	**1M**	**3M**	**YTD**	**12M**	**3Y**	**5Y**	**10Y**	**15Y**
Total Return (Ann)	-2.8%	-7.5%	-2.0%	-4.3%	2.8%	7.4%	9.4%	13.8%
Relative to Benchmark	-0.7%	0.8%	-12.7%	-14.5%	-7.6%	-3.6%	-1.8%	1.3%
Index Volatility				15.0%	22.1%	22.2%	17.8%	18.1%
Tracking Error				7.1%	9.7%	8.3%	6.9%	6.8%

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



Factor Exposure Chart

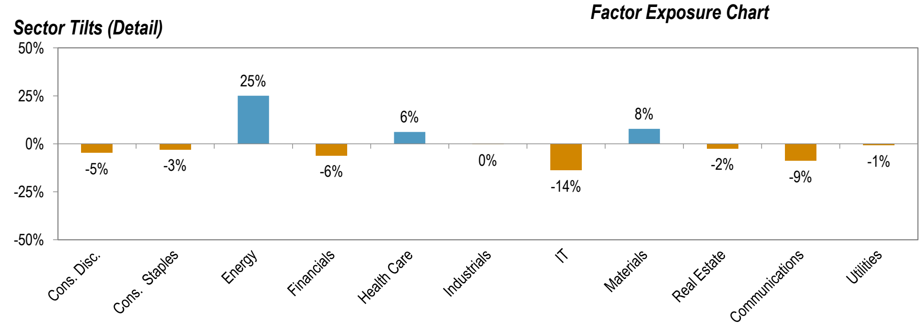
Portfolio Statistics	***Index***	***Bmark***
Active Share (Stock)	82%	0%
Active Share (Sector)	39%	0%
Concentration (HH Index)	152.6	166.8
Correlation (stock)	0.49	0.41
Ann. Turnover (last 10 yr)	0.65	0.04

Top Sector Tilts (versus benchmark)

Sector	***Index***	***Bmark***	***Diff.***
Energy	30%	5%	25%
Materials	10%	2%	8%
IT	14%	28%	14%
Communications	0%	9%	9%

Index-Weighted Avg.	***Index***	***Bmark***
Stock Volatility	31%	28%
12M - 1M price return	24%	32%
Book/Price	0.28	0.24
Earnings/Price	0.07	0.04
Sales/Price	0.48	0.42
Stock Beta	0.81	1.05
Yield (12M trailing)	1.8%	1.7%
R.O.E.	32%	34%
Market Cap (U.S. $ bn)	101.7	613.6

Sector Tilts (Detail)



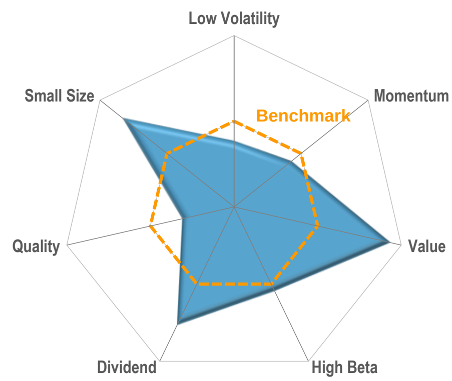
S&P 500 Pure Value

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 October 31, 2023 the index comprised 78 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	-5.7%	-13.5%	-9.1%	-9.5%	14.5%	4.2%	6.7%	12.2%
Relative to Benchmark	-3.6%	-5.2%	-19.8%	-19.6%	4.2%	-6.8%	-4.5%	-0.3%
Index Volatility				21.8%	22.8%	26.3%	20.6%	23.5%
Tracking Error				13.8%	14.4%	14.7%	11.1%	12.8%

Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 0.92



Factor Exposure Chart

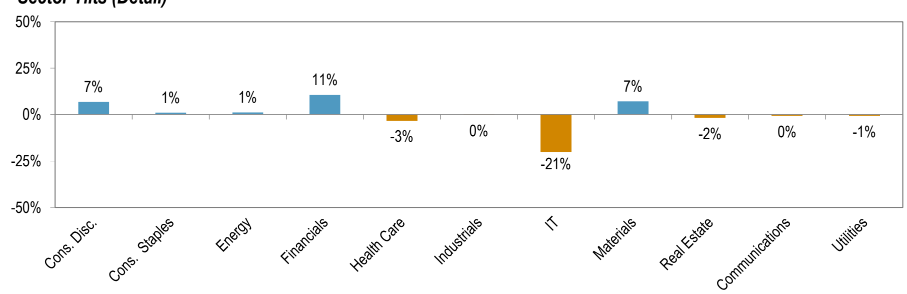
Portfolio Statistics	*Index*	*Bmark*
Active Share (Stock)	90%	0%
Active Share (Sector)	27%	0%
Concentration (HH Index)	158.2	166.8
Correlation (stock)	0.37	0.41
Ann. Turnover (last 10 yr)	0.45	0.04

Top Sector Tilts (versus benchmark)

Sector	*Index*	*Bmark*	*Diff.*
Financials	23%	13%	11%
Materials	10%	2%	7%
IT	7%	28%	21%
Health Care	10%	13%	3%

Index-Weighted Avg.	*Index*	*Bmark*
Stock Volatility	31%	28%
12M - 1M price return	20%	32%
Book/Price	0.77	0.24
Earnings/Price	0.05	0.04
Sales/Price	1.89	0.42
Stock Beta	1.14	1.05
Yield (12M trailing)	3.1%	1.7%
R.O.E.	11%	34%
Market Cap (U.S. $ bn)	45.1	613.6

Sector Tilts (Detail)



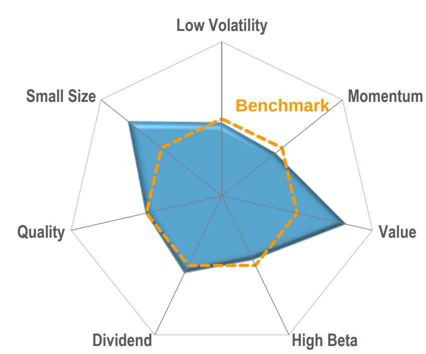
S&P 500 Buyback

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 October 31, 2023 the index comprised 100 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	-3.7%	-9.3%	0.7%	1.7%	14.2%	9.5%	10.3%	14.5%
Relative to Benchmark	-1.6%	-1.0%	-9.9%	-8.4%	3.8%	-1.6%	-0.9%	2.0%
Index Volatility				17.6%	20.2%	22.5%	18.0%	18.1%
Tracking Error				9.6%	8.5%	8.7%	6.8%	6.6%

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



Factor Exposure Chart

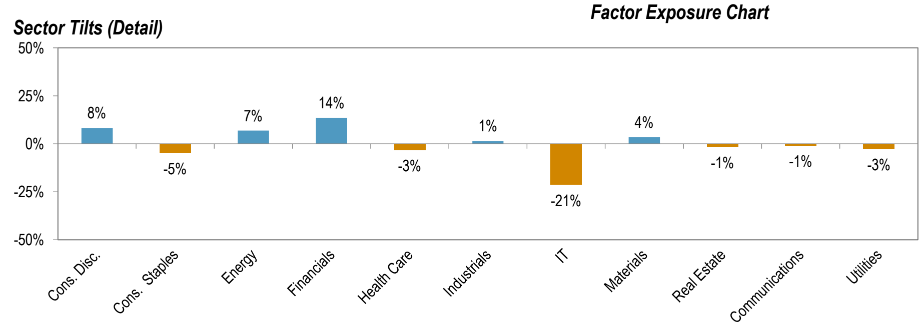
Portfolio Statistics	*Index*	*Bmark*
Active Share (Stock)	84%	0%
Active Share (Sector)	34%	0%
Concentration (HH Index)	99.4	166.8
Correlation (stock)	0.43	0.41
Ann. Turnover (last 10 yr)	0.93	0.04

Top Sector Tilts (versus benchmark)

Sector	*Index*	*Bmark*	*Diff.*
Financials	26%	13%	14%
Cons. Disc.	19%	11%	8%
IT	7%	28%	21%
Cons. Staples	2%	7%	5%

Index-Weighted Avg.	*Index*	*Bmark*
Stock Volatility	29%	28%
12M - 1M price return	21%	32%
Book/Price	0.41	0.24
Earnings/Price	0.08	0.04
Sales/Price	0.92	0.42
Stock Beta	0.96	1.05
Yield (12M trailing)	1.9%	1.7%
R.O.E.	27%	34%
Market Cap (U.S. $ bn)	63.0	613.6

Sector Tilts (Detail)



S&P Dow Jones Indices

A Division of S&P Global

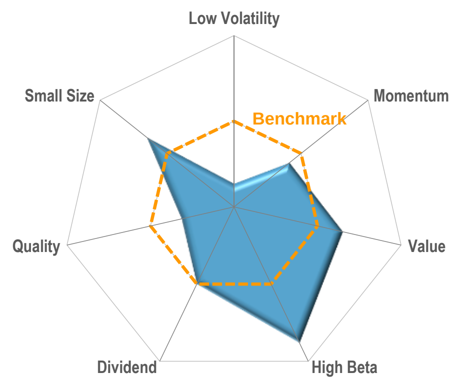
S&P 500 High Beta

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 October 31, 2023 the index comprised 99 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	-8.4%	-20.1%	3.8%	4.0%	16.3%	12.3%	10.3%	12.5%
Relative to Benchmark	-6.3%	-11.9%	-6.9%	-6.2%	6.0%	1.3%	-0.9%	0.0%
Index Volatility				27.6%	30.2%	30.9%	24.9%	27.3%
Tracking Error				16.3%	17.6%	16.5%	13.6%	15.1%

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



Factor Exposure Chart

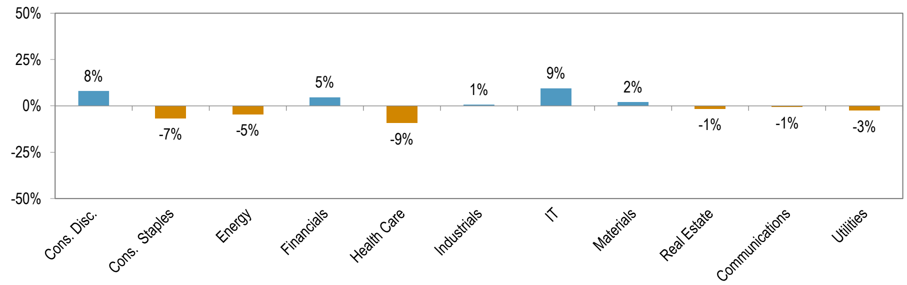
Portfolio Statistics	***Index***	***Bmark***
Active Share (Stock)	80%	0%
Active Share (Sector)	25%	0%
Concentration (HH Index)	103.7	166.8
Correlation (stock)	0.45	0.41
Ann. Turnover (last 10 yr)	0.91	0.04

Top Sector Tilts (versus benchmark)

Sector	***Index***	***Bmark***	***Diff.***
IT	37%	28%	9%
Cons. Disc.	19%	11%	8%
Health Care	4%	13%	9%
Cons. Staples	0%	7%	7%

Index-Weighted Avg.	***Index***	***Bmark***
Stock Volatility	40%	28%
12M - 1M price return	26%	32%
Book/Price	36%	24%
Earnings/Price	4%	4%
Sales/Price	68%	42%
Stock Beta	174%	105%
Yield (12M trailing)	1.6%	1.7%
R.O.E.	22%	34%
Market Cap (U.S. $ bn)	153.6	613.6

Sector Tilts (Detail)



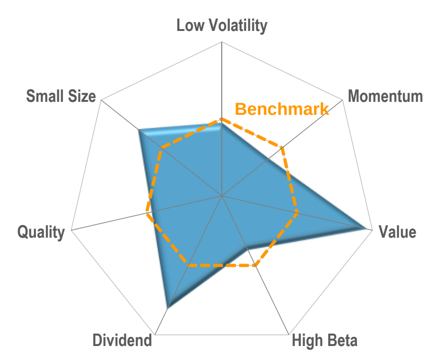
S&P 500 Enhanced Value

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 October 31, 2023 the index comprised 96 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	-4.1%	-9.1%	-2.7%	-2.6%	16.0%	5.6%	8.0%	11.2%
Relative to Benchmark	-2.0%	-0.8%	-13.4%	-12.8%	5.7%	-5.4%	-3.2%	-1.3%
Index Volatility				19.0%	22.5%	25.1%	19.8%	21.4%
Tracking Error				12.2%	13.0%	13.2%	10.3%	10.4%

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



Factor Exposure Chart

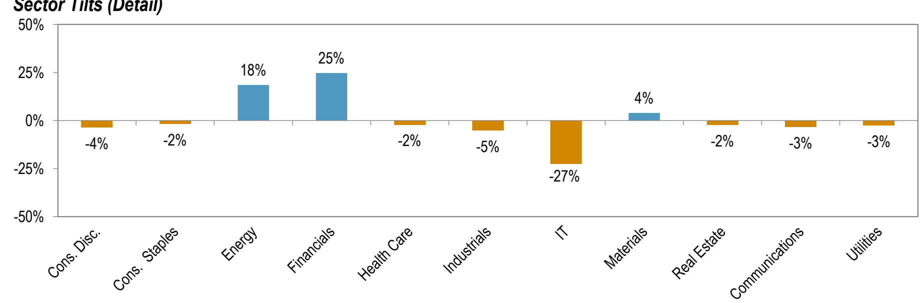
Portfolio Statistics	***Index***	***Bmark***
Active Share (Stock)	88%	0%
Active Share (Sector)	47%	0%
Concentration (HH Index)	239.3	166.8
Correlation (stock)	0.44	0.41
Ann. Turnover (last 10 yr)	0.40	0.04

Top Sector Tilts (versus benchmark)

Sector	***Index***	***Bmark***	***Diff.***
Financials	37%	13%	25%
Energy	23%	5%	18%
IT	1%	28%	27%
Industrials	3%	8%	5%

Index-Weighted Avg.	***Index***	***Bmark***
Stock Volatility	29%	28%
12M - 1M price return	16%	32%
Book/Price	0.72	0.24
Earnings/Price	0.11	0.04
Sales/Price	1.57	0.42
Stock Beta	0.84	1.05
Yield (12M trailing)	3.5%	1.7%
R.O.E.	18%	34%
Market Cap (U.S. $ bn)	108.6	613.6

Sector Tilts (Detail)



Source: S&P Dow Jones Indices LLC and/or its affiliates. Data as of October 31, 2023. Returns in U.S. dollars.

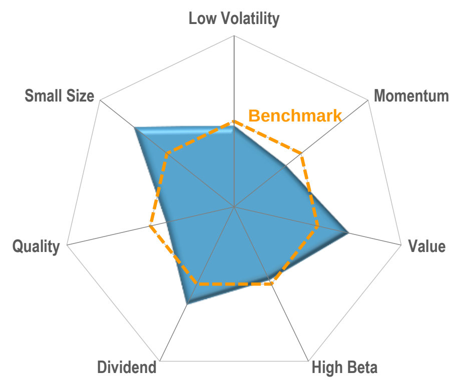
S&P 500 Equal Weight

Description

The S&P 500 Equal Weight comprises all the constituents in the S&P 500, equally weighted at each quarterly rebalance. As of October 31, 2023 the index comprised 503 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	-4.1%	-11.8%	-2.4%	-0.7%	10.1%	8.7%	9.3%	12.8%
Relative to Benchmark	-2.0%	-3.6%	-13.0%	-10.9%	-0.2%	-2.3%	-1.9%	0.4%
Index Volatility				16.5%	19.0%	20.6%	16.3%	17.4%
Tracking Error				6.6%	6.1%	5.9%	4.5%	4.9%

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



Factor Exposure Chart

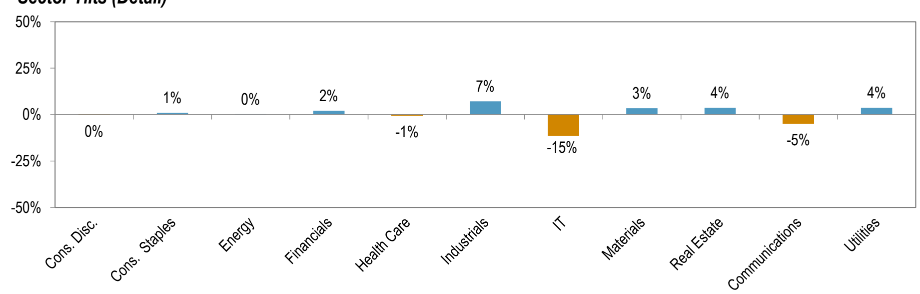
Portfolio Statistics	***Index***	***Bmark***
Active Share (Stock)	50%	0%
Active Share (Sector)	21%	0%
Concentration (HH Index)	19.7	166.8
Correlation (stock)	0.39	0.41
Ann. Turnover (last 10 yr)	0.22	0.04

Top Sector Tilts (versus benchmark)

Sector	***Index***	***Bmark***	***Diff.***
Industrials	15%	8%	7%
Utilities	6%	3%	4%
IT	13%	28%	15%
Communications	4%	9%	5%

Index-Weighted Avg.	***Index***	***Bmark***
Stock Volatility	29%	28%
12M - 1M price return	17%	32%
Book/Price	0.36	0.24
Earnings/Price	0.05	0.04
Sales/Price	0.67	0.42
Stock Beta	0.98	1.05
Yield (12M trailing)	2.3%	1.7%
R.O.E.	24%	34%
Market Cap (U.S. $ bn)	74.2	613.6

Sector Tilts (Detail)



More Factor Resources

indexology®

Access our latest research, education, videos, and webinars on smart beta at **spglobal.com/spdji/en/landing/investment-themes/factors/**

Indexology® Blog

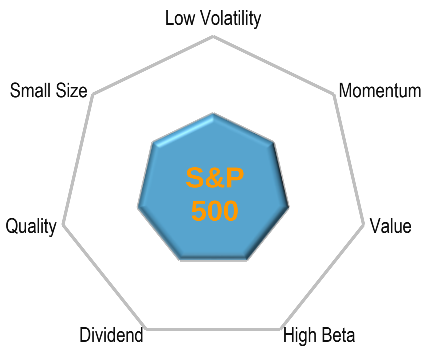
Hear directly from thought leader on the latest developments at **indexologyblog.com/category/factors**

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**

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.



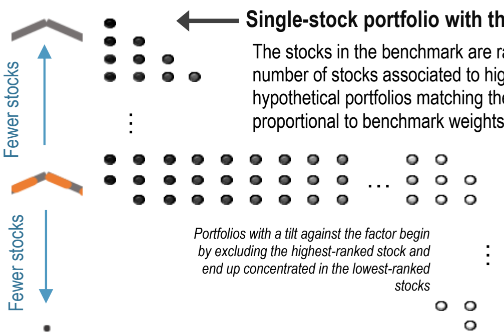
Factor	Measurement at single-stock level
Volatility	Trailing 12-month daily volatility.
Momentum	Twelve-month total return change as of one month ago ("13 minus 1 momentum"), divided by the daily volatility during the twelve-month period that ended one month prior. For more details, see the S&P Momentum 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	0.044	0.238	0.423	4.86%	33.91%	1.43	32.38%	1.86%
S&P 500 index-weighted standard deviation	0.037	0.262	0.533	16.31%	28.91%	1.09	47.54%	0.61%

Source: S&P Dow Jones Indices LLC and/or its affiliates. Data as of October 31, 2023. Returns in U.S. dollars.

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Performance Disclosure

The S&P 500 Buyback Index was launched November 29, 2012. The S&P 500 Enhanced Value Index was launched April 27, 2015. The S&P 500 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.

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

Typically, when S&P DJI creates back-tested index data, S&P DJI uses actual historical constituent-level data (e.g., historical price, market capitalization, and corporate action data) in its calculations. As ESG investing is still in early stages of development, certain datapoints used to calculate S&P DJI's ESG indices may not be available for the entire desired period of back-tested history. The same data availability issue could be true for other indices as well. In cases when actual data is not available for all relevant historical periods, S&P DJI may employ a process of using "Backward Data Assumption" (or pulling back) of ESG data for the calculation of back-tested historical performance. "Backward Data Assumption" is a process that applies the earliest actual live data point available for an index constituent company to all prior historical instances in the index performance. For example, Backward Data Assumption inherently assumes that companies currently not involved in a specific business activity (also known as "product involvement") were never involved historically and similarly also assumes that companies currently involved in a specific business activity were involved historically too. The Backward Data Assumption allows the hypothetical back-test to be extended over more historical years than would be feasible using only actual data. For more information on "Backward Data Assumption" please refer to the FAQ. The methodology and factsheets of any index that employs backward assumption in the back-tested history will explicitly state so. The methodology will include an Appendix with a table setting forth the specific data points and relevant time period for which backward projected data was used.

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