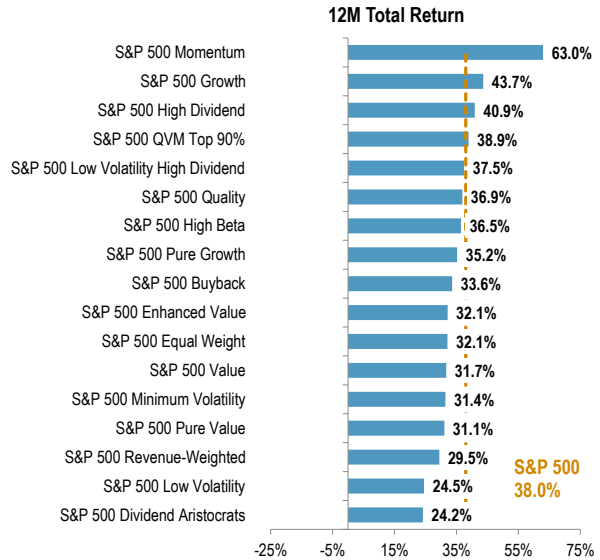
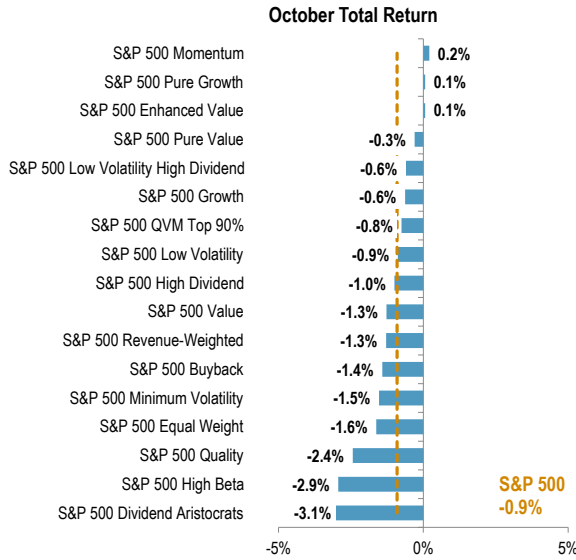
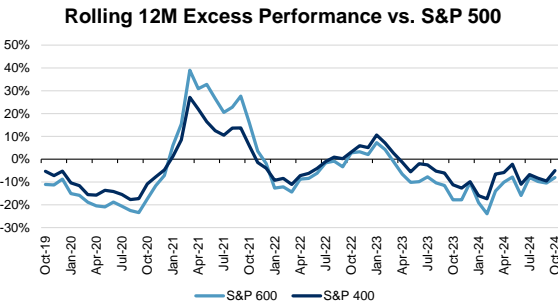
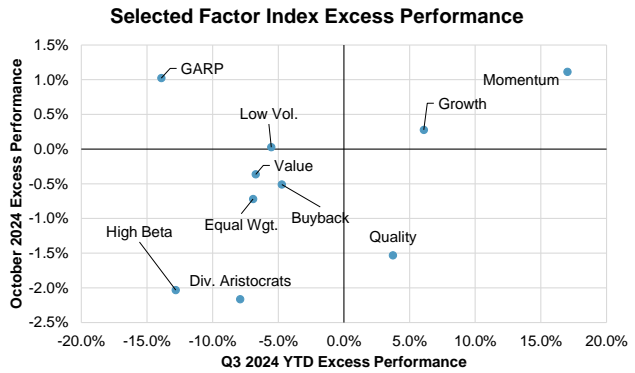


MONTHLY AND YTD PERFORMANCE SUMMARY



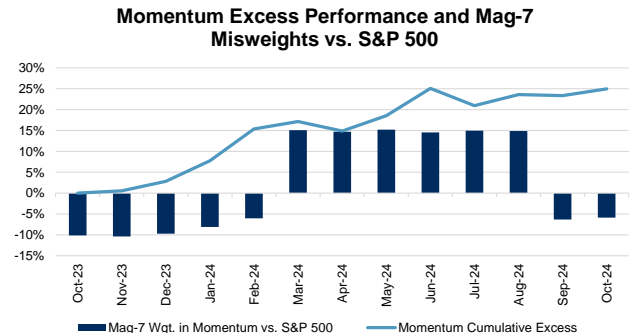
COMMENTARY

With October behind us and remnants of Halloween candy hauls running low, for many the focus shifts firmly to the too-close-to-call elections of 2024. Predicting a winner may be impossible, but understanding changes in investor sentiment via factor performance may be a more approachable task. Our first chart illustrates excess-performance for selected factors during two periods, the first three quarters of 2024 and the month of October. As the year hurtles toward its conclusion, only Momentum and Growth remain as factors outperforming the S&P 500 over both periods. GARP and Low Volatility both had a relatively better start to Q4, slightly outperforming in October after trailing the S&P 500 through Q3.



The strong performance of Momentum and Growth factors throughout 2024 can be largely explained by the all-too-familiar dominance of the largest stocks, particularly the Mag-7, relative to other constituents in the U.S. equity universe. Recent outperformance of large-caps versus small- and mid-cap stocks is evidenced in our second chart, illustrating the rolling 12-month excess performance of the S&P 600 and S&P 400 indices relative to the S&P 500. October marked the 19th month in a row that small-caps lagged large-caps over a trailing one-year period, the second-longest streak over the last 30 years.

As-of the end of October 2024, Magnificent 7 stocks comprised more than 31% of the S&P 500 by weight. One could be forgiven for assuming that the S&P 500 Momentum Index's run of outperformance was fueled by consistent overweight to such stocks. However, adopting such a simple explanation would be to misunderstand the ever-evolving nature of the momentum factor. Our third chart shows the cumulative excess performance of Momentum over the 12-months ending in October, along with the monthly net difference in weights of the Mag 7 in Momentum relative to the S&P 500. Rebalancing plays a key role in maintaining high exposure to the momentum factor, even in periods market leadership moves to different groups of stocks.

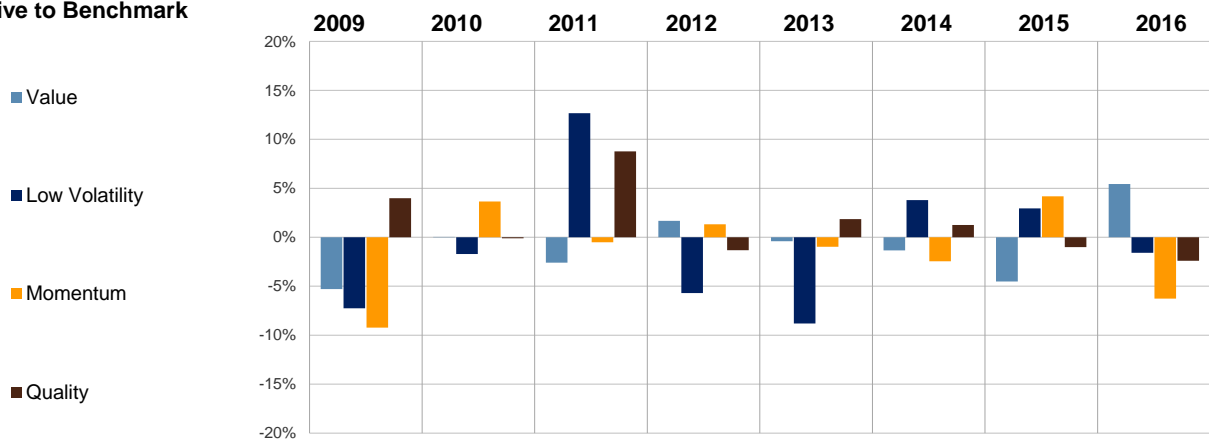


ANNUAL PERFORMANCE

Core factor performance by calendar year, 2009-present:

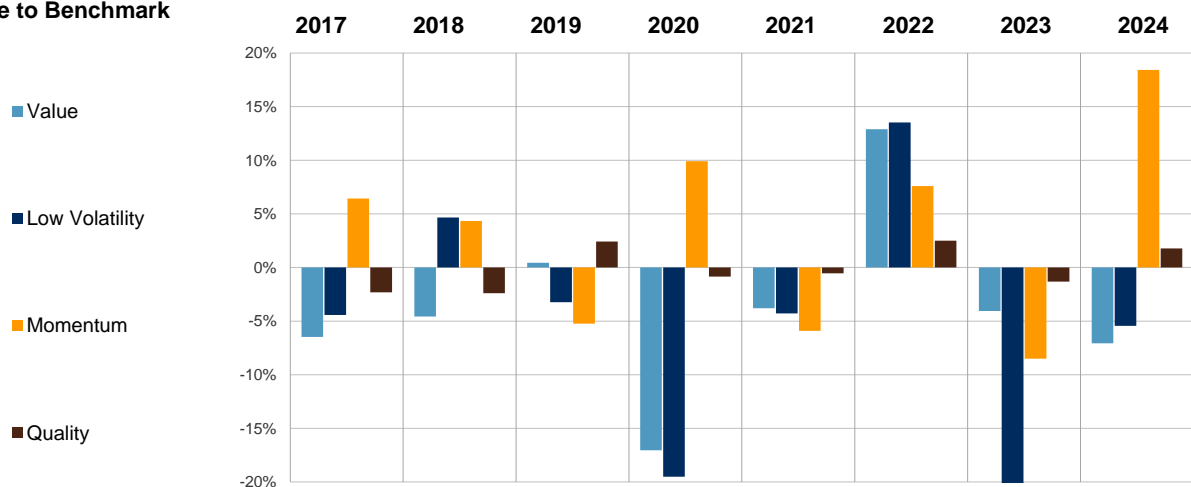
Total Return	2009	2010	2011	2012	2013	2014	2015	2016
Value	21.18%	15.10%	-0.48%	17.68%	31.99%	12.36%	-3.13%	17.40%
Low Volatility	19.22%	13.36%	14.78%	10.30%	23.59%	17.49%	4.34%	10.37%
Momentum	17.24%	18.72%	1.60%	17.33%	31.42%	11.23%	5.56%	5.70%
Quality	30.46%	14.95%	10.89%	14.68%	34.24%	14.95%	0.38%	9.56%
S&P 500	26.46%	15.06%	2.11%	16.00%	32.39%	13.69%	1.38%	11.96%

Relative to Benchmark

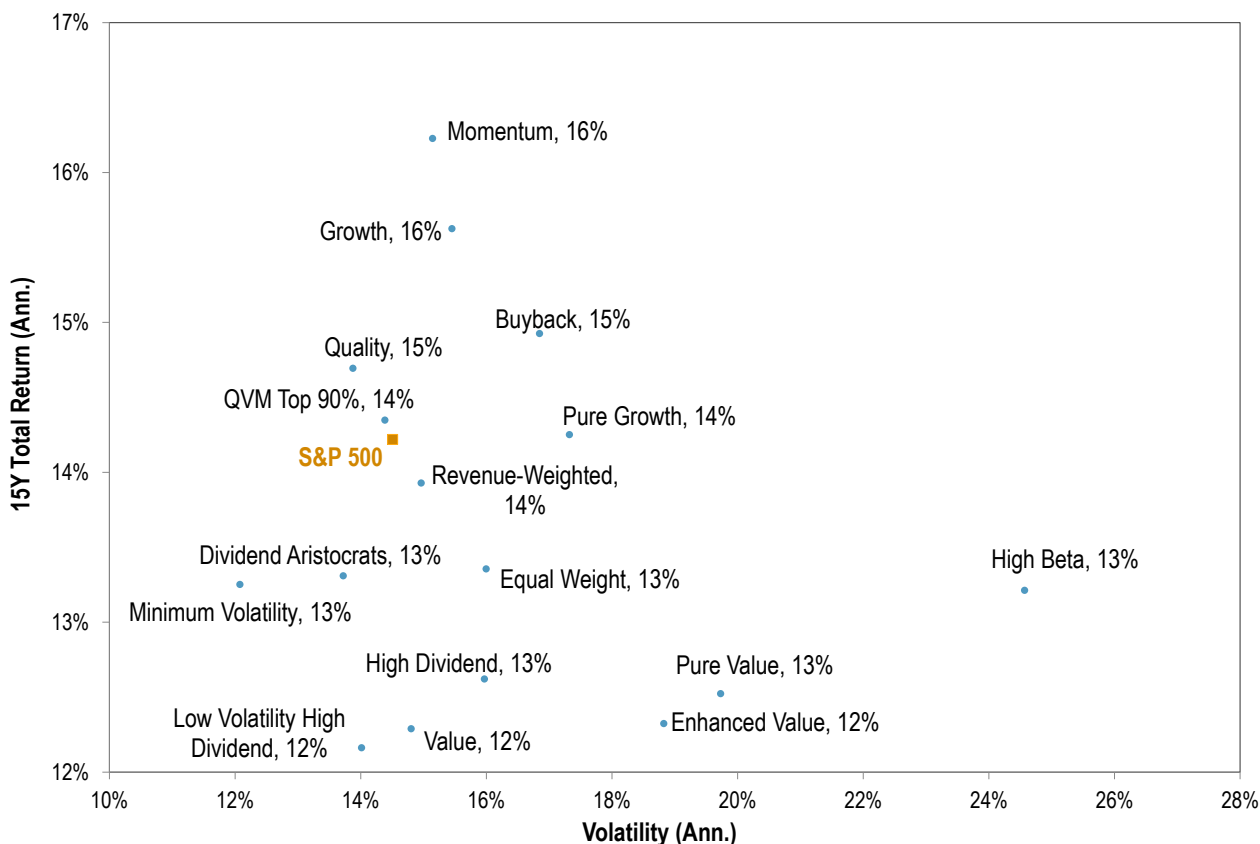


Total Return	2017	2018	2019	2020	2021	2022	2023	2024
Value	15.36%	-8.95%	31.93%	1.36%	24.90%	-5.22%	22.23%	13.90%
Low Volatility	17.41%	0.27%	28.26%	-1.11%	24.42%	-4.59%	0.72%	15.52%
Momentum	28.27%	-0.04%	26.25%	28.32%	22.79%	-10.51%	17.78%	39.39%
Quality	19.51%	-6.79%	33.91%	17.55%	28.16%	-15.62%	24.97%	22.74%
S&P 500	21.83%	-4.38%	31.49%	18.40%	28.71%	-18.11%	26.29%	20.97%

Relative to Benchmark



15 YEAR RISK & RETURN - ABSOLUTE



TOTAL RETURN	1M	3M	12M	3Y	5Y	10Y	15Y
S&P 500 Momentum	0.2%	5.8%	63.0%	13.7%	19.2%	15.5%	16.2%
S&P 500 Growth	-0.6%	4.4%	43.7%	6.7%	17.0%	14.8%	15.6%
S&P 500 Buyback	-1.4%	2.9%	33.6%	8.0%	13.2%	11.4%	14.9%
S&P 500 Quality	-2.4%	2.0%	36.9%	10.3%	15.8%	12.8%	14.7%
S&P 500 QVM Top 90%	-0.8%	3.5%	38.9%	9.5%	15.6%	13.2%	14.3%
S&P 500 Pure Growth	0.1%	6.9%	35.2%	-1.4%	11.6%	10.6%	14.3%
S&P 500 Revenue-Weighted	-1.3%	1.8%	29.5%	10.2%	14.3%	11.8%	13.9%
S&P 500 Equal Weight	-1.6%	3.2%	32.1%	5.7%	12.2%	10.6%	13.4%
S&P 500 Dividend Aristocrats	-3.1%	3.0%	24.2%	5.9%	10.1%	10.6%	13.3%
S&P 500 Minimum Volatility	-1.5%	3.8%	31.4%	7.6%	10.9%	11.2%	13.3%
S&P 500 High Beta	-2.9%	-0.1%	36.5%	4.4%	17.2%	11.6%	13.2%
S&P 500 High Dividend	-1.0%	5.9%	40.9%	8.6%	8.5%	9.0%	12.6%
S&P 500 Pure Value	-0.3%	0.9%	31.1%	6.6%	9.1%	7.8%	12.5%
S&P 500 Enhanced Value	0.1%	0.2%	32.1%	7.7%	9.8%	9.3%	12.3%
S&P 500 Value	-1.3%	2.8%	31.7%	11.0%	12.3%	10.5%	12.3%
S&P 500 Low Volatility High Dividend	-0.6%	6.7%	37.5%	9.9%	8.2%	9.2%	12.2%
S&P 500 Low Volatility	-0.9%	5.4%	24.5%	6.3%	6.8%	9.5%	11.9%
S&P 500	-0.9%	3.7%	38.0%	9.1%	15.3%	13.0%	14.2%

VOLATILITY (ANN.)	12M	3Y	5Y	10Y	15Y
S&P 500 Momentum	15.9%	18.8%	18.4%	15.7%	15.1%
S&P 500 Growth	12.7%	19.7%	20.0%	16.6%	15.5%
S&P 500 Buyback	13.2%	18.6%	21.3%	18.3%	16.8%
S&P 500 Quality	10.1%	16.6%	17.0%	14.6%	13.9%
S&P 500 QVM Top 90%	10.7%	16.5%	17.6%	15.0%	14.4%
S&P 500 Pure Growth	12.3%	20.5%	21.8%	17.9%	17.3%
S&P 500 Revenue-Weighted	10.1%	16.0%	18.0%	15.5%	15.0%
S&P 500 Equal Weight	12.8%	17.9%	19.9%	16.6%	16.0%
S&P 500 Dividend Aristocrats	11.8%	16.5%	17.7%	14.7%	13.7%
S&P 500 Minimum Volatility	9.5%	14.2%	15.6%	13.1%	12.1%
S&P 500 High Beta	20.1%	26.5%	30.3%	25.5%	24.6%
S&P 500 High Dividend	13.9%	18.8%	22.7%	17.9%	16.0%
S&P 500 Pure Value	15.4%	20.7%	25.3%	20.9%	19.7%
S&P 500 Enhanced Value	12.6%	19.6%	23.8%	20.0%	18.8%
S&P 500 Value	12.1%	16.4%	17.8%	15.3%	14.8%
S&P 500 Low Volatility High Dividend	11.0%	16.4%	19.0%	15.4%	14.0%
S&P 500 Low Volatility	8.3%	13.4%	14.8%	12.3%	11.5%
S&P 500	11.0%	17.0%	17.9%	15.2%	14.5%

Performance figures for more than one year are annualized.

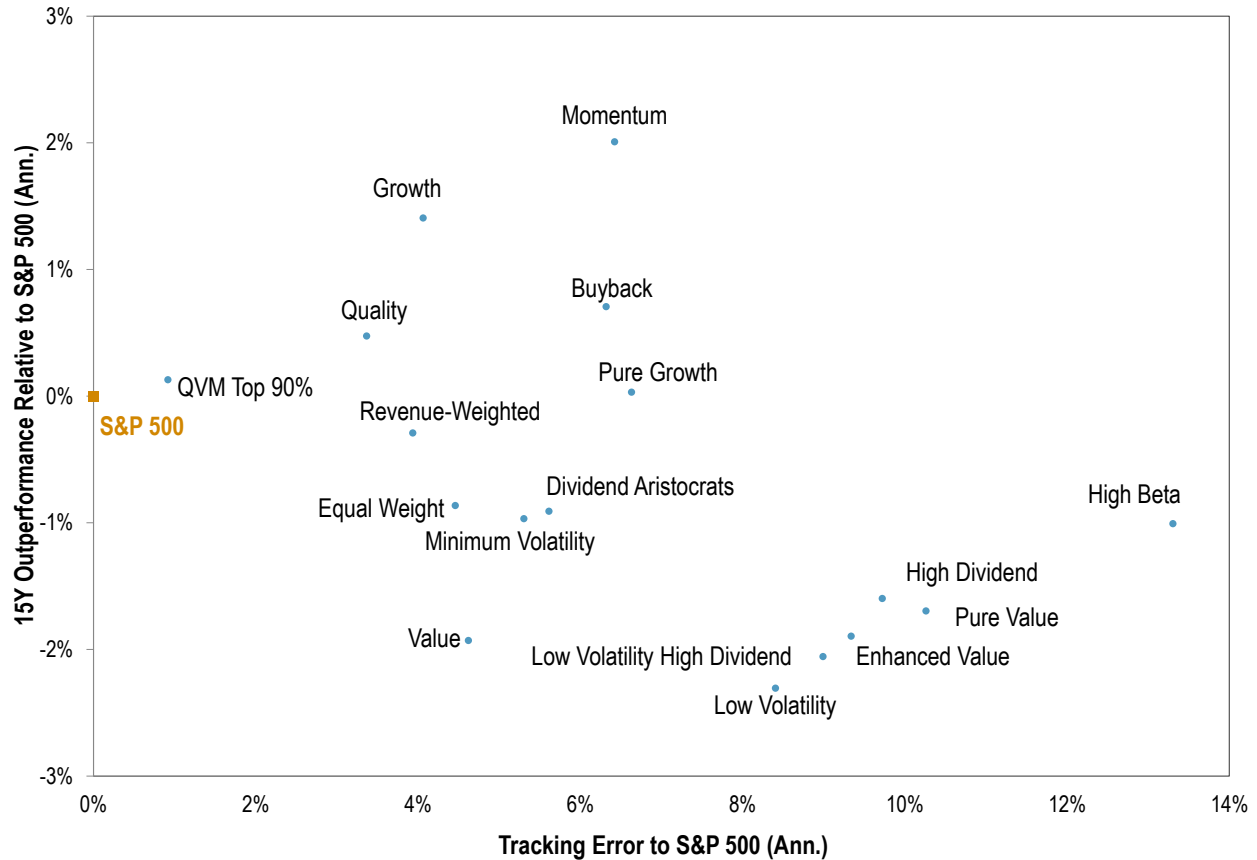
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Index Dashboard: S&P 500® Factor Indices

October 2024

TO S&P 500



RELATIVE RETURN AND TRACKING ERROR

PERFORMANCE v S&P 500	1M	3M	1YR	3YR	5YR	10YR	15YR
S&P 500 Momentum	1.1%	2.1%	25.0%	4.6%	4.0%	2.5%	2.0%
S&P 500 Growth	0.3%	0.8%	5.7%	-2.4%	1.7%	1.8%	1.4%
S&P 500 Buyback	-0.5%	-0.8%	-4.4%	-1.1%	-2.1%	-1.6%	0.7%
S&P 500 Quality	-1.5%	-1.7%	-1.1%	1.2%	0.6%	-0.2%	0.5%
S&P 500 QVM Top 90%	0.2%	-0.1%	0.9%	0.4%	0.3%	0.2%	0.1%
S&P 500 Pure Growth	1.0%	3.2%	-2.8%	-10.5%	-3.7%	-2.4%	0.0%
S&P 500 Revenue-Weighted	-0.4%	-1.9%	-8.5%	1.1%	-0.9%	-1.2%	-0.3%
S&P 500 Equal Weight	-0.7%	-0.5%	-5.9%	-3.3%	-3.1%	-2.4%	-0.9%
S&P 500 Dividend Aristocrats	-2.2%	-0.7%	-13.9%	-3.2%	-5.2%	-2.4%	-0.9%
S&P 500 Minimum Volatility	-0.6%	0.1%	-6.6%	-1.5%	-4.4%	-1.8%	-1.0%
S&P 500 High Beta	-2.0%	-3.8%	-1.5%	-4.7%	2.0%	-1.4%	-1.0%
S&P 500 High Dividend	-0.1%	2.2%	2.9%	-0.5%	-6.8%	-4.0%	-1.6%
S&P 500 Pure Value	0.6%	-2.8%	-6.9%	-2.5%	-6.2%	-5.2%	-1.7%
S&P 500 Enhanced Value	1.0%	-3.5%	-5.9%	-1.4%	-5.4%	-3.7%	-1.9%
S&P 500 Value	-0.4%	-0.9%	-6.3%	1.9%	-2.9%	-2.5%	-1.9%
S&P 500 Low Volatility High Dividend	0.3%	3.0%	-0.5%	0.8%	-7.1%	-3.8%	-2.1%
S&P 500 Low Volatility	0.0%	1.7%	-13.5%	-2.8%	-8.5%	-3.5%	-2.3%

TRACKING ERROR v S&P 500 (ANN.)	1YR	3YR	5YR	10YR	15YR
S&P 500 Momentum	8.0%	9.5%	8.7%	7.3%	6.4%
S&P 500 Growth	5.2%	6.0%	5.9%	4.7%	4.1%
S&P 500 Buyback	7.3%	8.3%	8.8%	7.2%	6.3%
S&P 500 Quality	3.5%	4.0%	4.1%	3.4%	3.4%
S&P 500 QVM Top 90%	1.1%	1.7%	1.4%	1.1%	0.9%
S&P 500 Pure Growth	6.2%	8.8%	8.7%	6.9%	6.6%
S&P 500 Revenue-Weighted	5.2%	5.8%	5.8%	4.6%	3.9%
S&P 500 Equal Weight	6.8%	6.3%	6.5%	5.0%	4.5%
S&P 500 Dividend Aristocrats	8.4%	8.2%	7.3%	6.1%	5.6%
S&P 500 Minimum Volatility	4.1%	6.0%	5.5%	5.3%	5.3%
S&P 500 High Beta	12.6%	13.5%	16.9%	14.1%	13.3%
S&P 500 High Dividend	10.5%	12.0%	13.4%	10.7%	9.7%
S&P 500 Pure Value	10.5%	13.0%	14.9%	11.5%	10.3%
S&P 500 Enhanced Value	9.3%	11.6%	13.2%	10.6%	9.3%
S&P 500 Value	6.6%	6.7%	6.8%	5.4%	4.6%
S&P 500 Low Volatility High Dividend	9.7%	11.2%	11.1%	9.4%	9.0%
S&P 500 Low Volatility	8.0%	10.0%	9.5%	8.6%	8.4%

Performance figures for more than one year are annualized.

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October 2024

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 Momentum	100%	35%	17%	19%	20%	22%	34%	7%	4%	4%	26%	26%	19%	11%	10%	17%	14%	32%
S&P 500 Growth	35%	100%	26%	31%	10%	25%	63%	5%	1%	1%	32%	21%	27%	0%	7%	1%	23%	66%
S&P 500 Quality	17%	26%	100%	14%	18%	25%	27%	15%	4%	1%	18%	18%	19%	3%	9%	5%	14%	26%
S&P 500 Pure Growth	19%	31%	14%	100%	1%	15%	22%	1%	0%	0%	12%	0%	13%	0%	13%	3%	40%	25%
S&P 500 Low Volatility	20%	10%	18%	1%	100%	18%	21%	27%	20%	16%	20%	31%	20%	12%	18%	10%	0%	21%
S&P 500 Minimum Volatility	22%	25%	25%	15%	18%	100%	32%	11%	11%	8%	24%	24%	14%	6%	5%	7%	12%	33%
S&P 500 QVM Top 90%	34%	63%	27%	22%	21%	32%	100%	13%	9%	8%	56%	55%	45%	11%	12%	13%	19%	91%
S&P 500 Dividend Aristocrats	7%	5%	15%	1%	27%	11%	13%	100%	18%	15%	15%	22%	13%	6%	8%	7%	2%	13%
S&P 500 Low Volatility High Dividend	4%	1%	4%	0%	20%	11%	9%	18%	100%	53%	10%	17%	10%	10%	5%	13%	0%	9%
S&P 500 High Dividend	4%	1%	1%	0%	16%	8%	8%	15%	53%	100%	14%	18%	16%	26%	6%	16%	5%	9%
S&P 500 Revenue-Weighted	26%	32%	18%	12%	20%	24%	56%	15%	10%	14%	100%	60%	49%	32%	23%	35%	12%	58%
S&P 500 Value	26%	21%	18%	0%	31%	24%	55%	22%	17%	18%	60%	100%	54%	21%	16%	26%	8%	55%
S&P 500 Equal Weight	19%	27%	19%	13%	20%	14%	45%	13%	10%	16%	49%	54%	100%	18%	20%	19%	20%	48%
S&P 500 Pure Value	11%	0%	3%	0%	12%	6%	11%	6%	10%	26%	32%	21%	18%	100%	23%	47%	6%	10%
S&P 500 Buyback	10%	7%	9%	13%	18%	5%	12%	8%	5%	6%	23%	16%	20%	23%	100%	25%	15%	11%
S&P 500 Enhanced Value	17%	1%	5%	3%	10%	7%	13%	7%	13%	16%	35%	26%	19%	47%	25%	100%	5%	12%
S&P 500 High Beta	14%	23%	14%	40%	0%	12%	19%	2%	0%	5%	12%	8%	20%	6%	15%	5%	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

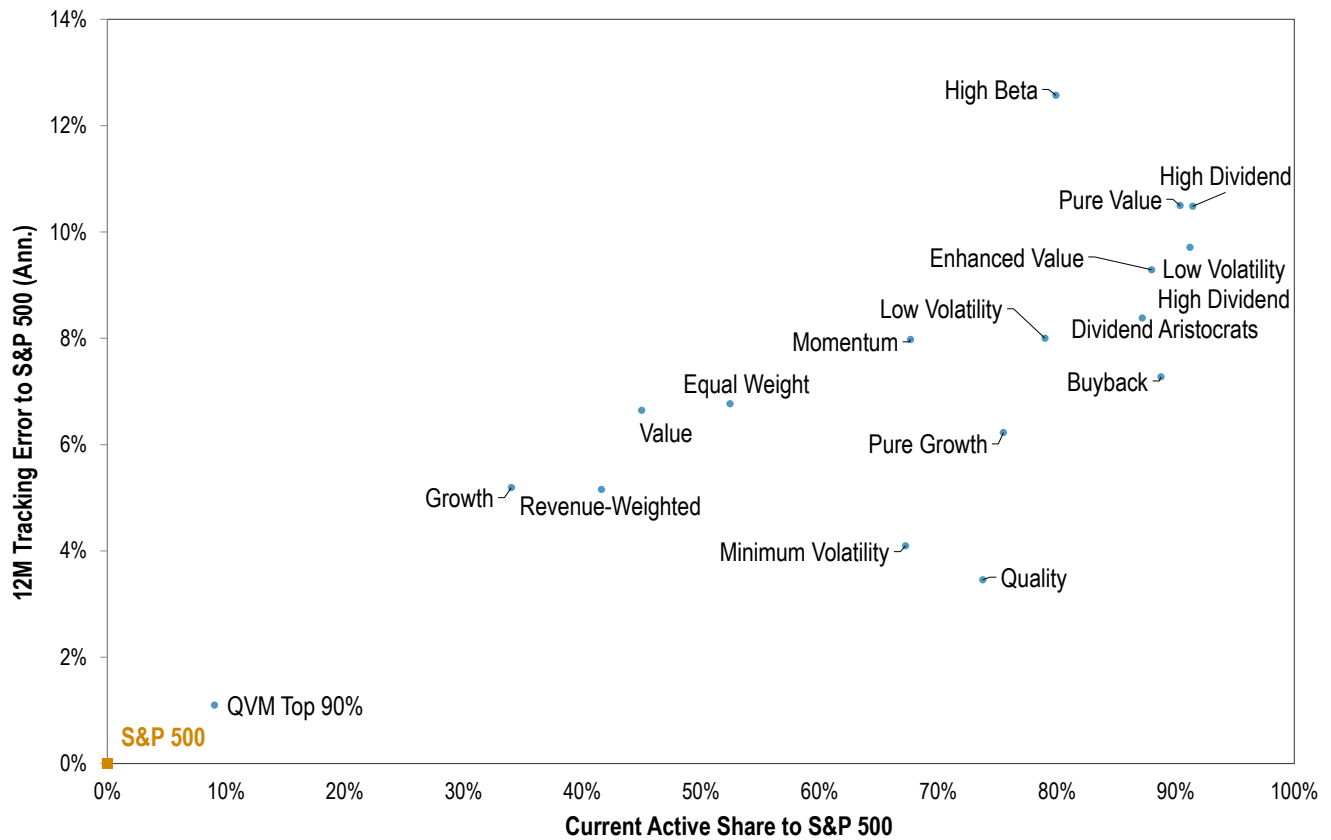
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October 2024

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	68.4%	4.7%	37.3%	-57.8%	41.9%	-8.0%	45.3%
S&P 500 Minimum Volatility	7	10.4%	-9.2%	4.7%	-21.5%	22.6%	-8.0%	20.2%
S&P 500 Low Volatility High Dividend	8	32.3%	-21.1%	56.3%	-71.3%	90.3%	-36.5%	57.2%
S&P 500 High Dividend	8	10.4%	-18.9%	60.4%	-50.8%	89.8%	-42.4%	69.6%
S&P 500 Quality	9	9.6%	-10.2%	-5.3%	-8.4%	4.7%	28.9%	20.2%
S&P 500 Dividend Aristocrats	9	22.4%	-23.6%	37.3%	-50.8%	52.0%	-8.0%	50.0%
S&P 500 Momentum	10	-6.9%	63.6%	1.0%	14.5%	-9.4%	-14.2%	7.1%
S&P 500 Revenue-Weighted	10	9.6%	-18.9%	65.4%	-19.9%	38.4%	-21.6%	20.2%
S&P 500 QVM Top 90%	11	1.8%	2.2%	11.6%	1.1%	-0.4%	1.4%	-3.4%
S&P 500 Growth	11	-24.6%	9.3%	-26.3%	31.0%	-25.3%	14.0%	-39.1%
S&P 500 Value	12	17.0%	-11.7%	48.1%	-37.7%	45.3%	-21.6%	33.3%
S&P 500 Pure Growth	12	-53.2%	10.0%	-9.8%	47.3%	-29.7%	-8.0%	20.2%
S&P 500 Pure Value	13	-11.7%	-24.9%	91.5%	-31.3%	56.9%	-35.6%	59.1%
S&P 500 Buyback	13	-19.5%	-27.9%	68.6%	-19.3%	5.1%	0.8%	63.8%
S&P 500 High Beta	14	-66.8%	-27.0%	4.7%	56.3%	-22.1%	-10.8%	34.9%
S&P 500 Enhanced Value	14	9.6%	-27.0%	91.5%	-37.7%	59.7%	-34.5%	34.9%
S&P 500 Equal Weight	15	-4.6%	-21.6%	42.4%	-12.6%	29.8%	-10.8%	50.5%

Source: S&P Dow Jones Indices LLC and/or its affiliates. Data as of October 31, 2024. Returns in U.S. dollars.

S&P Dow Jones Indices

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Index Dashboard: S&P 500® Factor Indices
October 2024

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, 2024 the index comprised 100 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	-0.9%	5.4%	15.5%	24.5%	6.3%	6.8%	9.5%	11.9%
Relative to Benchmark	0.0%	1.7%	-5.4%	-13.5%	-2.8%	-8.5%	-3.5%	-2.3%
Index Volatility				8.3%	13.4%	14.8%	12.3%	11.5%
Tracking Error				8.0%	10.0%	9.5%	8.6%	8.4%

Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 0.37

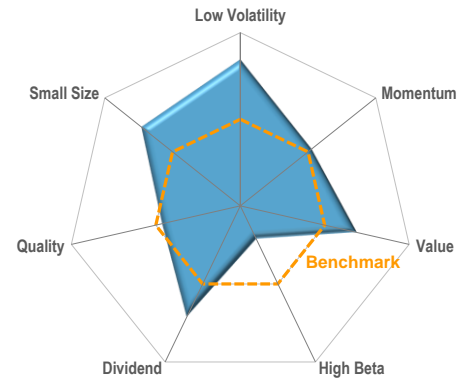
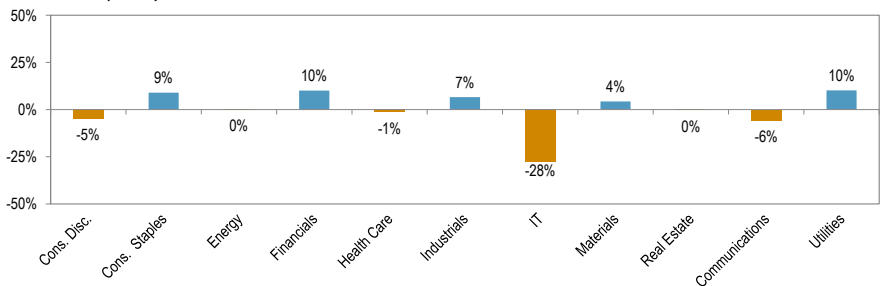
Portfolio Statistics	Index	Bmark
Active Share (Stock)	79%	0%
Active Share (Sector)	40%	0%
Concentration (HH Index)	101.5	193.9
Correlation (stock)	0.26	0.20
Ann. Turnover (last 10 yr)	0.63	0.04

Index-Weighted Avg.	Index	Bmark
Stock Volatility	18%	27%
12M - 1M price return	32%	48%
Book/Price	0.26	0.19
Earnings/Price	0.04	0.03
Sales/Price	0.43	0.32
Stock Beta	0.38	1.05
Yield (12M trailing)	2.1%	1.3%
R.O.E.	28%	38%
Market Cap (U.S. \$ bn)	121.7	956.9

Top Sector Tilts (versus benchmark)

Sector	Index	Bmark	Difference
Utilities	13%	3%	10%
Financials	23%	13%	10%
IT	4%	32%	28%
Communications	3%	9%	6%

Sector Tilts (Detail)



Factor Exposure Chart

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, 2024 the index comprised 75 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	-1.5%	3.8%	18.8%	31.4%	7.6%	10.9%	11.2%	13.3%
Relative to Benchmark	-0.6%	0.1%	-2.1%	-6.6%	-1.5%	-4.4%	-1.8%	-1.0%
Index Volatility				9.5%	14.2%	15.6%	13.1%	12.1%
Tracking Error				4.1%	6.0%	5.5%	5.3%	5.3%

Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 0.69

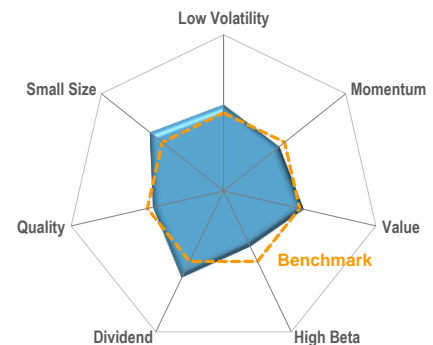
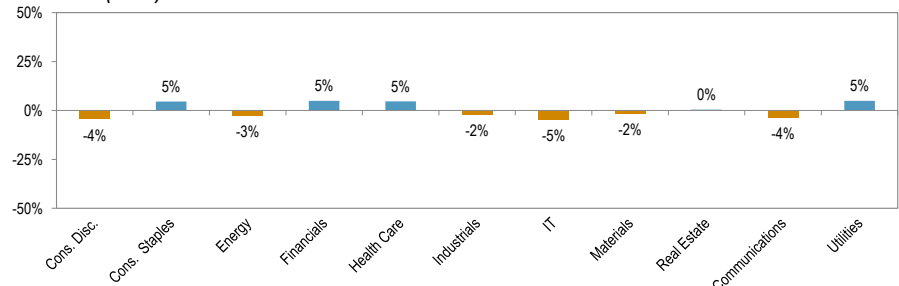
Portfolio Statistics	Index	Bmark
Active Share (Stock)	67%	0%
Active Share (Sector)	19%	0%
Concentration (HH Index)	212.3	193.9
Correlation (stock)	0.17	0.20
Ann. Turnover (last 10 yr)	0.31	0.04

Index-Weighted Avg.	Index	Bmark
Stock Volatility	24%	27%
12M - 1M price return	37%	48%
Book/Price	0.21	0.19
Earnings/Price	0.04	0.03
Sales/Price	0.29	0.32
Stock Beta	0.71	1.05
Yield (12M trailing)	1.6%	1.3%
R.O.E.	32%	38%
Market Cap (U.S. \$ bn)	541.5	956.9

Top Sector Tilts (versus benchmark)

Sector	Index	Bmark	Difference
Financials	18%	13%	5%
Utilities	7%	3%	5%
IT	27%	32%	5%
Cons. Disc.	6%	10%	4%

Sector Tilts (Detail)



Factor Exposure Chart

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Index Dashboard: S&P 500® Factor Indices
October 2024

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, 2024 the index comprised 50 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	-0.6%	6.7%	22.1%	37.5%	9.9%	8.2%	9.2%	12.2%
Relative to Benchmark	0.3%	3.0%	1.1%	-0.5%	0.8%	-7.1%	-3.8%	-2.1%
Index Volatility				11.0%	16.4%	19.0%	15.4%	14.0%
Tracking Error				9.7%	11.2%	11.1%	9.4%	9.0%

Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 0.37

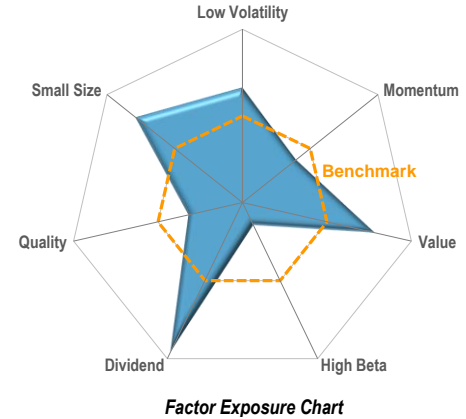
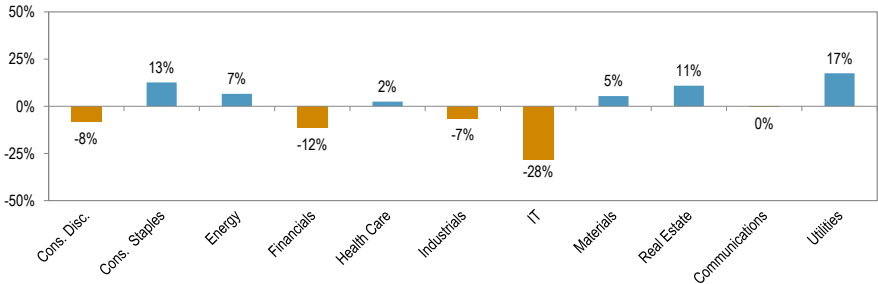
Portfolio Statistics	Index	Bmark
Active Share (Stock)	91%	0%
Active Share (Sector)	55%	0%
Concentration (HH Index)	208.7	193.9
Correlation (stock)	0.33	0.20
Ann. Turnover (last 10 yr)	0.66	0.04

Index-Weighted Avg.	Index	Bmark
Stock Volatility	21%	27%
12M - 1M price return	27%	48%
Book/Price	0.41	0.19
Earnings/Price	0.04	0.03
Sales/Price	0.50	0.32
Stock Beta	0.22	1.05
Yield (12M trailing)	4.3%	1.3%
R.O.E.	16%	38%
Market Cap (U.S. \$ bn)	82.2	956.9

Top Sector Tilts (versus benchmark)

Sector	Index	Bmark	Diff.
Utilities	20%	3%	17%
Cons. Staples	18%	6%	13%
IT	3%	32%	28%
Financials	2%	13%	12%

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, 2024 the index comprised 80 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	-1.0%	5.9%	19.1%	40.9%	8.6%	8.5%	9.0%	12.6%
Relative to Benchmark	-0.1%	2.2%	-1.9%	2.9%	-0.5%	-6.8%	-4.0%	-1.6%
Index Volatility				13.9%	18.8%	22.7%	17.9%	16.0%
Tracking Error				10.5%	12.0%	13.4%	10.7%	9.7%

Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 0.58

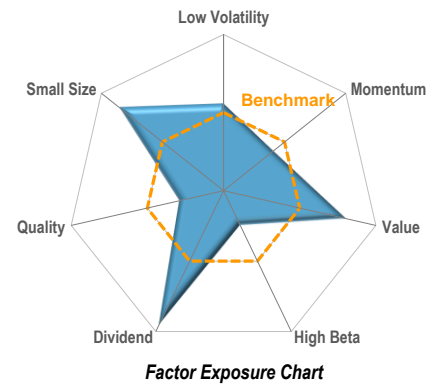
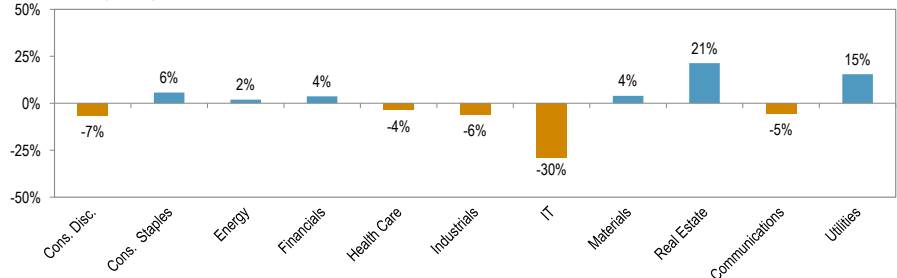
Portfolio Statistics	Index	Bmark
Active Share (Stock)	91%	0%
Active Share (Sector)	52%	0%
Concentration (HH Index)	126.2	193.9
Correlation (stock)	0.34	0.20
Ann. Turnover (last 10 yr)	1.14	0.04

Index-Weighted Avg.	Index	Bmark
Stock Volatility	24%	27%
12M - 1M price return	31%	48%
Book/Price	0.49	0.19
Earnings/Price	0.04	0.03
Sales/Price	0.56	0.32
Stock Beta	0.46	1.05
Yield (12M trailing)	4.2%	1.3%
R.O.E.	13%	38%
Market Cap (U.S. \$ bn)	54.1	956.9

Top Sector Tilts (versus benchmark)

Sector	Index	Bmark	Diff.
Real Estate	24%	2%	21%
Utilities	18%	3%	15%
IT	1%	32%	30%
Cons. Disc.	3%	10%	7%

Sector Tilts (Detail)



S&P Dow Jones Indices

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Index Dashboard: S&P 500® Factor Indices
October 2024

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, 2024 the index comprised 100 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	-2.4%	2.0%	22.7%	36.9%	10.3%	15.8%	12.8%	14.7%
Relative to Benchmark	-1.5%	-1.7%	1.8%	-1.1%	1.2%	0.6%	-0.2%	0.5%
Index Volatility				10.1%	16.6%	17.0%	14.6%	13.9%
Tracking Error				3.5%	4.0%	4.1%	3.4%	3.4%

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

Portfolio Statistics

	Index	Bmark
Active Share (Stock)	74%	0%
Active Share (Sector)	18%	0%
Concentration (HH Index)	277.9	193.9
Correlation (stock)	0.23	0.20
Ann. Turnover (last 10 yr)	0.60	0.04

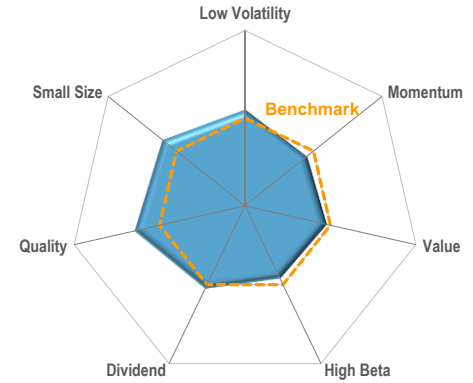
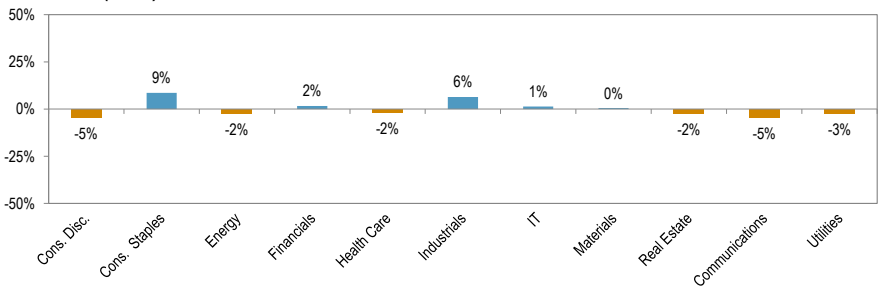
Index-Weighted Avg.

	Index	Bmark
Stock Volatility	25%	27%
12M - 1M price return	37%	48%
Book/Price	0.12	0.19
Earnings/Price	0.04	0.03
Sales/Price	0.31	0.32
Stock Beta	0.94	1.05
Yield (12M trailing)	1.4%	1.3%
R.O.E.	45%	38%
Market Cap (U.S. \$ bn)	526.1	956.9

Top Sector Tilts (versus benchmark)

Sector	Index	Bmark	Diff.
Cons. Staples	14%	6%	9%
Industrials	15%	9%	6%
Cons. Disc.	5%	10%	5%
Communications	5%	9%	5%

Sector Tilts (Detail)



Factor Exposure Chart

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, 2024 the index comprised 66 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	-3.1%	3.0%	10.7%	24.2%	5.9%	10.1%	10.6%	13.3%
Relative to Benchmark	-2.2%	-0.7%	-10.3%	-13.9%	-3.2%	-5.2%	-2.4%	-0.9%
Index Volatility				11.8%	16.5%	17.7%	14.7%	13.7%
Tracking Error				8.4%	8.2%	7.3%	6.1%	5.6%

Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 0.52

Portfolio Statistics

	Index	Bmark
Active Share (Stock)	87%	0%
Active Share (Sector)	47%	0%
Concentration (HH Index)	152.5	193.9
Correlation (stock)	0.21	0.20
Ann. Turnover (last 10 yr)	0.19	0.04

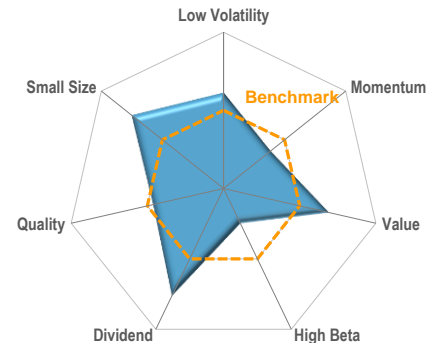
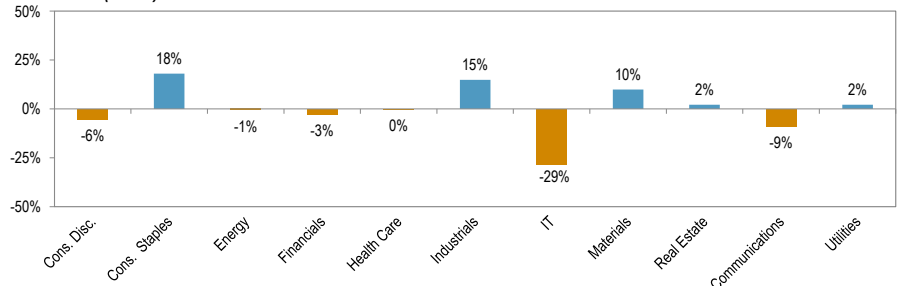
Index-Weighted Avg.

	Index	Bmark
Stock Volatility	22%	27%
12M - 1M price return	25%	48%
Book/Price	0.26	0.19
Earnings/Price	0.04	0.03
Sales/Price	0.51	0.32
Stock Beta	0.49	1.05
Yield (12M trailing)	2.3%	1.3%
R.O.E.	29%	38%
Market Cap (U.S. \$ bn)	101.3	956.9

Top Sector Tilts (versus benchmark)

Sector	Index	Bmark	Diff.
Cons. Staples	24%	6%	18%
Industrials	23%	9%	15%
IT	3%	32%	29%
Communications	0%	9%	9%

Sector Tilts (Detail)



Factor Exposure Chart

S&P Dow Jones Indices

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Index Dashboard: S&P 500® Factor Indices
October 2024

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, 2024 the index comprised 98 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	0.2%	5.8%	39.4%	63.0%	13.7%	19.2%	15.5%	16.2%
Relative to Benchmark	1.1%	2.1%	18.4%	25.0%	4.6%	4.0%	2.5%	2.0%
Index Volatility				15.9%	18.8%	18.4%	15.7%	15.1%
Tracking Error				8.0%	9.5%	8.7%	7.3%	6.4%

Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 1.32

Portfolio Statistics

Portfolio Statistics	Index	Bmark
Active Share (Stock)	68%	0%
Active Share (Sector)	16%	0%
Concentration (HH Index)	413.2	193.9
Correlation (stock)	0.41	0.20
Ann. Turnover (last 10 yr)	1.01	0.04

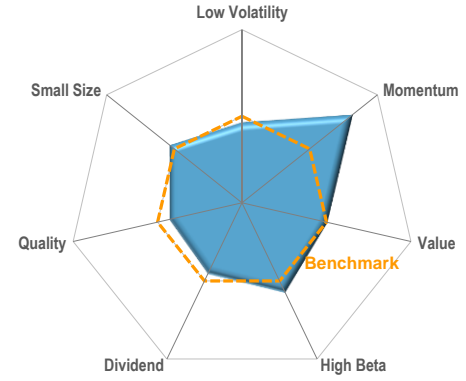
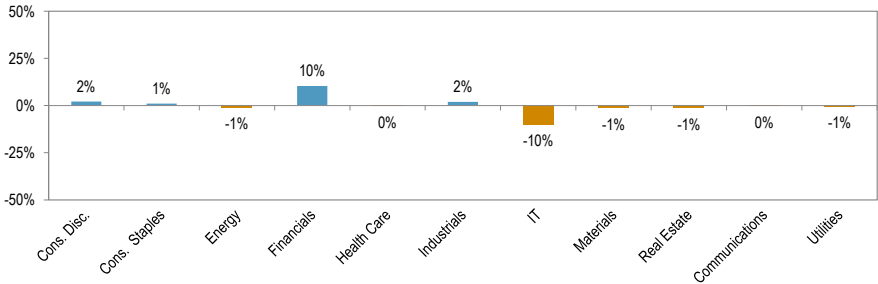
Index-Weighted Avg.

Index-Weighted Avg.	Index	Bmark
Stock Volatility	28%	27%
12M - 1M price return	77%	48%
Book/Price	0.19	0.19
Earnings/Price	0.03	0.03
Sales/Price	0.35	0.32
Stock Beta	1.22	1.05
Yield (12M trailing)	1.0%	1.3%
R.O.E.	37%	38%
Market Cap (U.S. \$ bn)	844.5	956.9

Top Sector Tilts (versus benchmark)

Sector	Index	Bmark	Diff.
Financials	24%	13%	10%
Cons. Disc.	12%	10%	2%
IT	21%	32%	10%
Materials	1%	2%	1%

Sector Tilts (Detail)



Factor Exposure Chart

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, 2024 the index comprised 503 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	-1.3%	1.8%	15.4%	29.5%	10.2%	14.3%	11.8%	13.9%
Relative to Benchmark	-0.4%	-1.9%	-5.6%	-8.5%	1.1%	-0.9%	-1.2%	-0.3%
Index Volatility				10.1%	16.0%	18.0%	15.5%	15.0%
Tracking Error				5.2%	5.8%	5.8%	4.6%	3.9%

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

Portfolio Statistics

Portfolio Statistics	Index	Bmark
Active Share (Stock)	42%	0%
Active Share (Sector)	24%	0%
Concentration (HH Index)	94.8	193.9
Correlation (stock)	0.15	0.20
Ann. Turnover (last 10 yr)	0.19	0.04

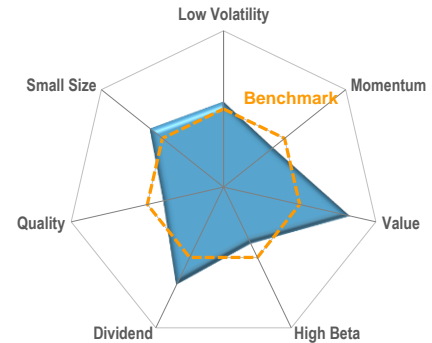
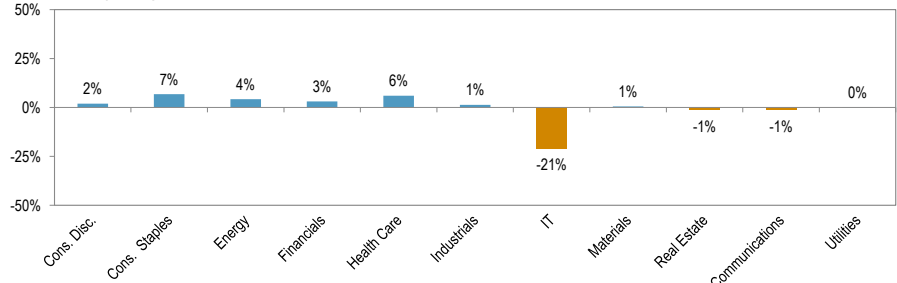
Index-Weighted Avg.

Index-Weighted Avg.	Index	Bmark
Stock Volatility	26%	27%
12M - 1M price return	32%	48%
Book/Price	0.34	0.19
Earnings/Price	0.05	0.03
Sales/Price	0.99	0.32
Stock Beta	0.72	1.05
Yield (12M trailing)	2.0%	1.3%
R.O.E.	27%	38%
Market Cap (U.S. \$ bn)	405.3	956.9

Top Sector Tilts (versus benchmark)

Sector	Index	Bmark	Diff.
Cons. Staples	13%	6%	7%
Health Care	17%	11%	6%
IT	10%	32%	21%
Real Estate	1%	2%	1%

Sector Tilts (Detail)



Factor Exposure Chart

S&P Dow Jones Indices

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Index Dashboard: S&P 500® Factor Indices
October 2024

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, 2024 the index comprised 449 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	-0.8%	3.5%	22.3%	38.9%	9.5%	15.6%	13.2%	14.3%
Relative to Benchmark	0.2%	-0.1%	1.3%	0.9%	0.4%	0.3%	0.2%	0.1%
Index Volatility				10.7%	16.5%	17.6%	15.0%	14.4%
Tracking Error				1.1%	1.7%	1.4%	1.1%	0.9%

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

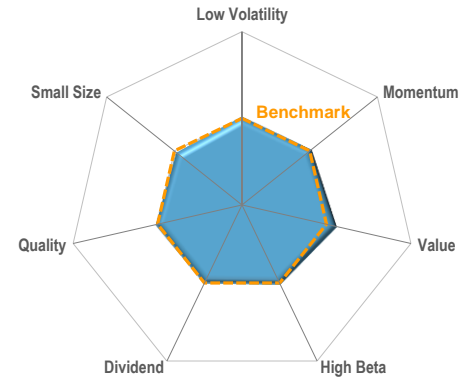
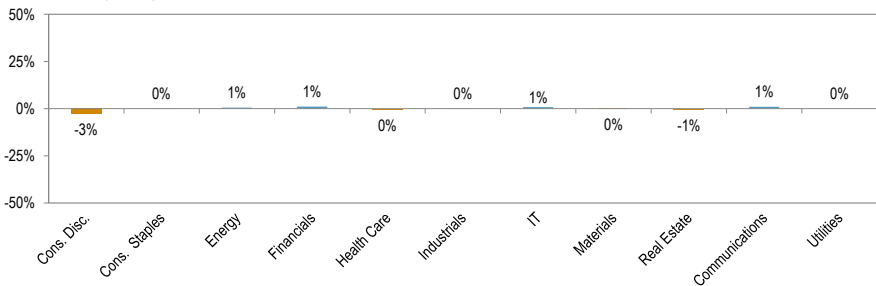
Portfolio Statistics	Index	Bmark
Active Share (Stock)	9%	0%
Active Share (Sector)	4%	0%
Concentration (HH Index)	222.3	193.9
Correlation (stock)	0.20	0.20
Ann. Turnover (last 10 yr)	0.19	0.04

Index-Weighted Avg.	Index	Bmark
Stock Volatility	27%	27%
12M - 1M price return	49%	48%
Book/Price	0.20	0.19
Earnings/Price	0.04	0.03
Sales/Price	0.33	0.32
Stock Beta	1.05	1.05
Yield (12M trailing)	1.3%	1.3%
R.O.E.	38%	38%
Market Cap (U.S. \$ bn)	989.7	956.9

Top Sector Tilts (versus benchmark)

Sector	Index	Bmark	Diff.
Financials	14%	13%	1%
Communications	10%	9%	1%
Cons. Disc.	7%	10%	3%
Real Estate	2%	2%	1%

Sector Tilts (Detail)



Factor Exposure Chart

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, 2024 the index comprised 233 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	-0.6%	4.4%	27.4%	43.7%	6.7%	17.0%	14.8%	15.6%
Relative to Benchmark	0.3%	0.8%	6.4%	5.7%	-2.4%	1.7%	1.8%	1.4%
Index Volatility				12.7%	19.7%	20.0%	16.6%	15.5%
Tracking Error				5.2%	6.0%	5.9%	4.7%	4.1%

Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 1.31

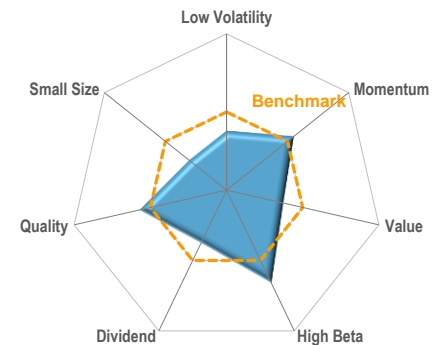
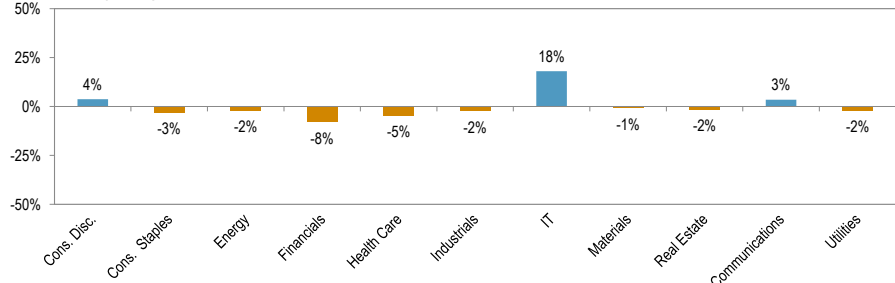
Portfolio Statistics	Index	Bmark
Active Share (Stock)	34%	0%
Active Share (Sector)	25%	0%
Concentration (HH Index)	538.2	193.9
Correlation (stock)	0.31	0.20
Ann. Turnover (last 10 yr)	0.25	0.04

Index-Weighted Avg.	Index	Bmark
Stock Volatility	30%	27%
12M - 1M price return	61%	48%
Book/Price	0.08	0.19
Earnings/Price	0.03	0.03
Sales/Price	0.17	0.32
Stock Beta	1.40	1.05
Yield (12M trailing)	0.6%	1.3%
R.O.E.	51%	38%
Market Cap (U.S. \$ bn)	1525.5	956.9

Top Sector Tilts (versus benchmark)

Sector	Index	Bmark	Diff.
IT	50%	32%	18%
Cons. Disc.	14%	10%	4%
Financials	5%	13%	8%
Health Care	7%	11%	5%

Sector Tilts (Detail)



Factor Exposure Chart

S&P Dow Jones Indices

A Division of **S&P Global**

Index Dashboard: S&P 500® Factor Indices
October 2024

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, 2024 the index comprised 437 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	-1.3%	2.8%	13.9%	31.7%	11.0%	12.3%	10.5%	12.3%
Relative to Benchmark	-0.4%	-0.9%	-7.1%	-6.3%	1.9%	-2.9%	-2.5%	-1.9%
Index Volatility				12.1%	16.4%	17.8%	15.3%	14.8%
Tracking Error				6.6%	6.7%	6.8%	5.4%	4.6%

Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 0.61

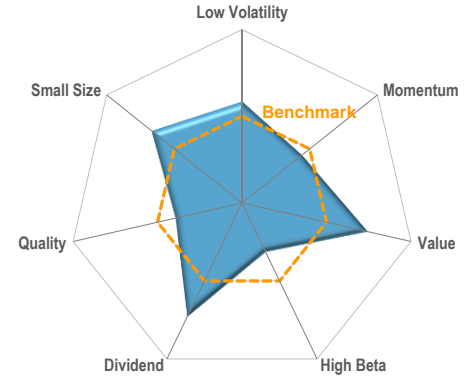
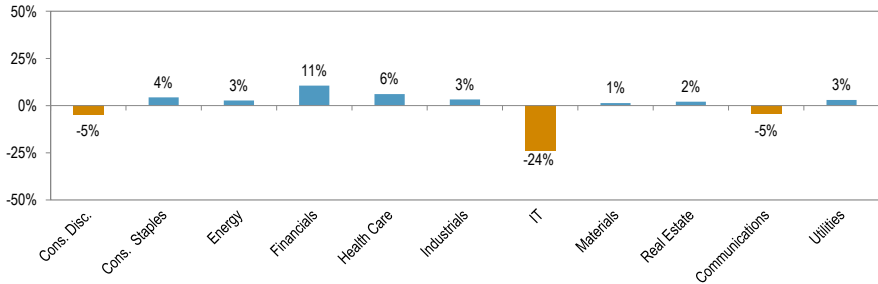
Portfolio Statistics	Index	Bmark
Active Share (Stock)	45%	0%
Active Share (Sector)	33%	0%
Concentration (HH Index)	78.7	193.9
Correlation (stock)	0.19	0.20
Ann. Turnover (last 10 yr)	0.27	0.04

Index-Weighted Avg.	Index	Bmark
Stock Volatility	23%	27%
12M - 1M price return	31%	48%
Book/Price	0.33	0.19
Earnings/Price	0.04	0.03
Sales/Price	0.53	0.32
Stock Beta	0.58	1.05
Yield (12M trailing)	2.2%	1.3%
R.O.E.	23%	38%
Market Cap (U.S. \$ bn)	204.8	956.9

Top Sector Tilts (versus benchmark)

Sector	Index	Bmark	Diff.
Financials	24%	13%	11%
Health Care	17%	11%	6%
IT	8%	32%	24%
Cons. Disc.	5%	10%	5%

Sector Tilts (Detail)



Factor Exposure Chart

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, 2024 the index comprised 66 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	0.1%	6.9%	22.4%	35.2%	-1.4%	11.6%	10.6%	14.3%
Relative to Benchmark	1.0%	3.2%	1.4%	-2.8%	-10.5%	-3.7%	-2.4%	0.0%
Index Volatility				12.3%	20.5%	21.8%	17.9%	17.3%
Tracking Error				6.2%	8.8%	8.7%	6.9%	6.6%

Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 1.4

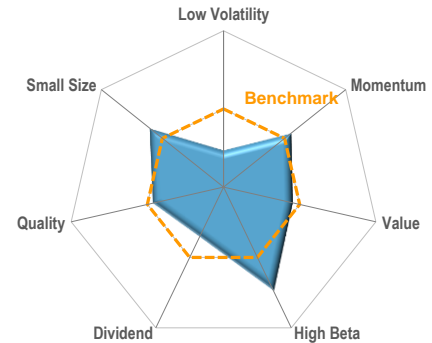
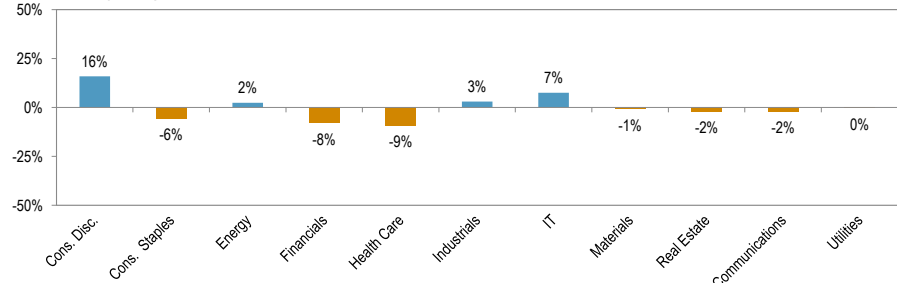
Portfolio Statistics	Index	Bmark
Active Share (Stock)	75%	0%
Active Share (Sector)	29%	0%
Concentration (HH Index)	185.6	193.9
Correlation (stock)	0.28	0.20
Ann. Turnover (last 10 yr)	0.67	0.04

Index-Weighted Avg.	Index	Bmark
Stock Volatility	36%	27%
12M - 1M price return	68%	48%
Book/Price	0.11	0.19
Earnings/Price	0.03	0.03
Sales/Price	0.25	0.32
Stock Beta	1.58	1.05
Yield (12M trailing)	0.5%	1.3%
R.O.E.	39%	38%
Market Cap (U.S. \$ bn)	384.4	956.9

Top Sector Tilts (versus benchmark)

Sector	Index	Bmark	Diff.
Cons. Disc.	26%	10%	16%
IT	39%	32%	7%
Health Care	2%	11%	9%
Financials	5%	13%	8%

Sector Tilts (Detail)



Factor Exposure Chart

S&P Dow Jones Indices

A Division of **S&P Global**

Index Dashboard: S&P 500® Factor Indices
October 2024

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, 2024 the index comprised 93 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	-0.3%	0.9%	10.1%	31.1%	6.6%	9.1%	7.8%	12.5%
Relative to Benchmark	0.6%	-2.8%	-10.9%	-6.9%	-2.5%	-6.2%	-5.2%	-1.7%
Index Volatility				15.4%	20.7%	25.3%	20.9%	19.7%
Tracking Error				10.5%	13.0%	14.9%	11.5%	10.3%

Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 0.73

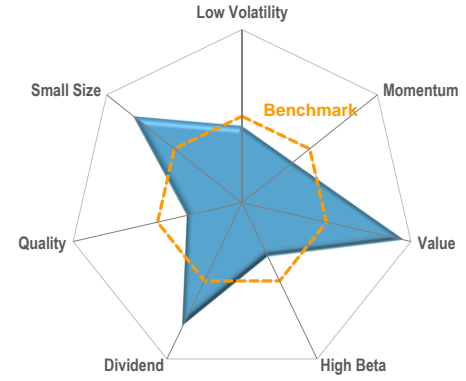
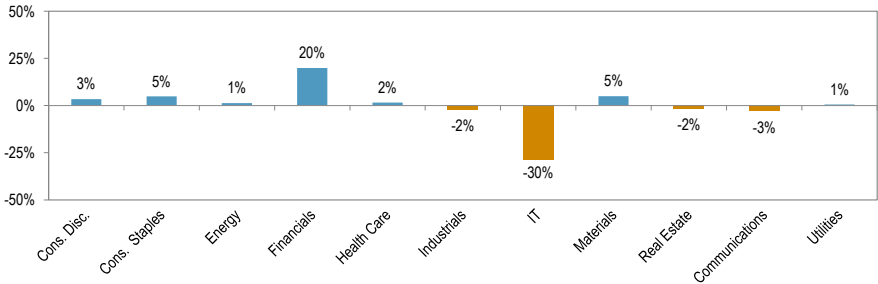
Portfolio Statistics	Index	Bmark
Active Share (Stock)	90%	0%
Active Share (Sector)	37%	0%
Concentration (HH Index)	159.0	193.9
Correlation (stock)	0.27	0.20
Ann. Turnover (last 10 yr)	0.41	0.04

Index-Weighted Avg.	Index	Bmark
Stock Volatility	29%	27%
12M - 1M price return	31%	48%
Book/Price	0.68	0.19
Earnings/Price	0.05	0.03
Sales/Price	1.58	0.32
Stock Beta	0.68	1.05
Yield (12M trailing)	2.6%	1.3%
R.O.E.	14%	38%
Market Cap (U.S. \$ bn)	77.8	956.9

Top Sector Tilts (versus benchmark)

Sector	Index	Bmark	Diff.
Financials	33%	13%	20%
Materials	7%	2%	5%
IT	2%	32%	30%
Communications	6%	9%	3%

Sector Tilts (Detail)



Factor Exposure Chart

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, 2024 the index comprised 100 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	-1.4%	2.9%	15.7%	33.6%	8.0%	13.2%	11.4%	14.9%
Relative to Benchmark	-0.5%	-0.8%	-5.3%	-4.4%	-1.1%	-2.1%	-1.6%	0.7%
Index Volatility				13.2%	18.6%	21.3%	18.3%	16.8%
Tracking Error				7.3%	8.3%	8.8%	7.2%	6.3%

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

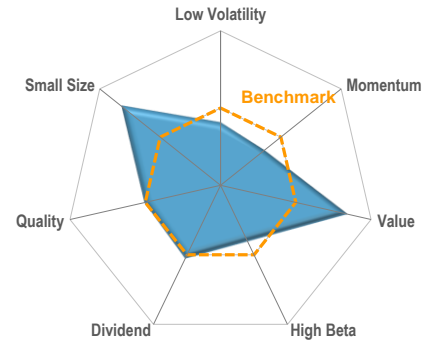
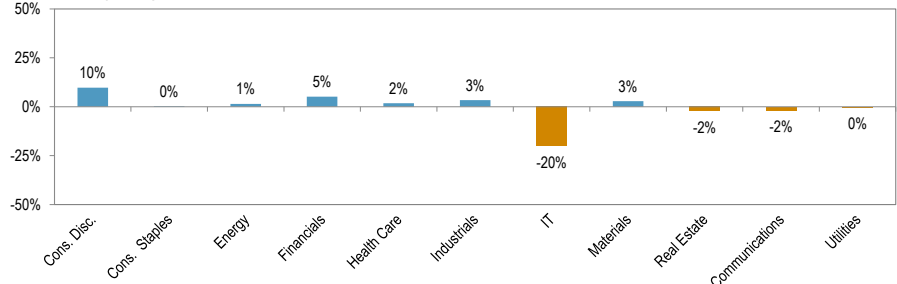
Portfolio Statistics	Index	Bmark
Active Share (Stock)	89%	0%
Active Share (Sector)	25%	0%
Concentration (HH Index)	100.7	193.9
Correlation (stock)	0.16	0.20
Ann. Turnover (last 10 yr)	0.93	0.04

Index-Weighted Avg.	Index	Bmark
Stock Volatility	30%	27%
12M - 1M price return	31%	48%
Book/Price	0.35	0.19
Earnings/Price	0.06	0.03
Sales/Price	0.83	0.32
Stock Beta	0.75	1.05
Yield (12M trailing)	1.4%	1.3%
R.O.E.	25%	38%
Market Cap (U.S. \$ bn)	66.0	956.9

Top Sector Tilts (versus benchmark)

Sector	Index	Bmark	Diff.
Cons. Disc.	20%	10%	10%
Financials	19%	13%	5%
IT	12%	32%	20%
Real Estate	0%	2%	2%

Sector Tilts (Detail)



Factor Exposure Chart

S&P Dow Jones Indices

A Division of **S&P Global**

Index Dashboard: S&P 500® Factor Indices
October 2024

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, 2024 the index comprised 97 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	-2.9%	-0.1%	6.1%	36.5%	4.4%	17.2%	11.6%	13.2%
Relative to Benchmark	-2.0%	-3.8%	-14.9%	-1.5%	-4.7%	2.0%	-1.4%	-1.0%
Index Volatility				20.1%	26.5%	30.3%	25.5%	24.6%
Tracking Error				12.6%	13.5%	16.9%	14.1%	13.3%

Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 1.51

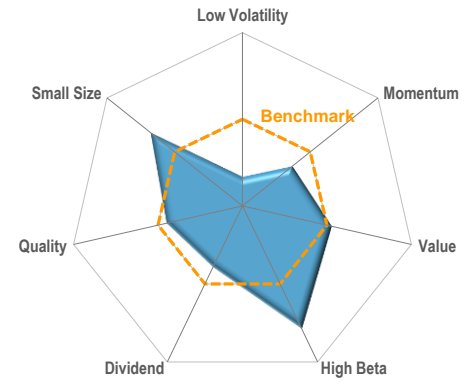
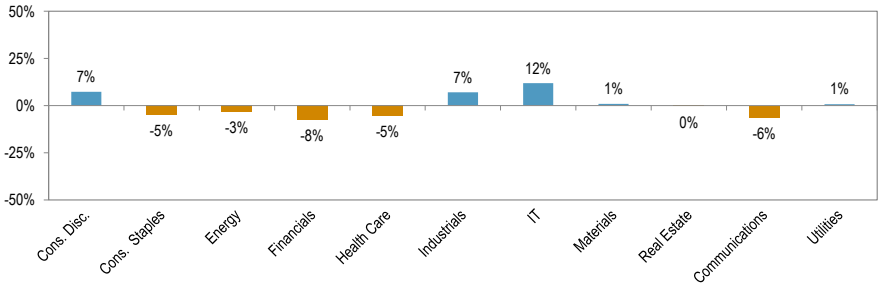
Portfolio Statistics	Index	Bmark
Active Share (Stock)	80%	0%
Active Share (Sector)	28%	0%
Concentration (HH Index)	109.9	193.9
Correlation (stock)	0.28	0.20
Ann. Turnover (last 10 yr)	0.90	0.04

Index-Weighted Avg.	Index	Bmark
Stock Volatility	40%	27%
12M - 1M price return	46%	48%
Book/Price	22%	19%
Earnings/Price	3%	3%
Sales/Price	39%	32%
Stock Beta	170%	105%
Yield (12M trailing)	0.7%	1.3%
R.O.E.	26%	38%
Market Cap (U.S. \$ bn)	195.4	956.9

Top Sector Tilts (versus benchmark)

Sector	Index	Bmark	Diff.
IT	44%	32%	12%
Cons. Disc.	17%	10%	7%
Financials	6%	13%	8%
Communications	3%	9%	6%

Sector Tilts (Detail)



Factor Exposure Chart

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, 2024 the index comprised 99 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	0.1%	0.2%	15.0%	32.1%	7.7%	9.8%	9.3%	12.3%
Relative to Benchmark	1.0%	-3.5%	-5.9%	-5.9%	-1.4%	-5.4%	-3.7%	-1.9%
Index Volatility				12.6%	19.6%	23.8%	20.0%	18.8%
Tracking Error				9.3%	11.6%	13.2%	10.6%	9.3%

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

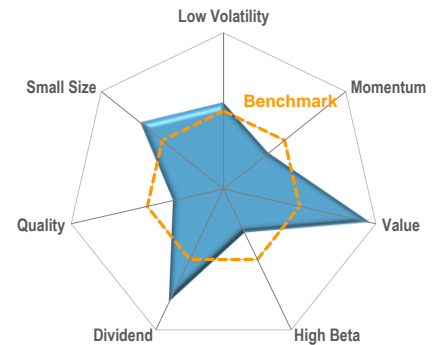
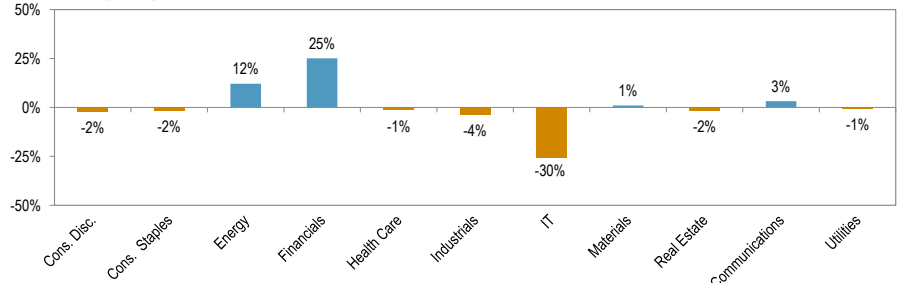
Portfolio Statistics	Index	Bmark
Active Share (Stock)	88%	0%
Active Share (Sector)	41%	0%
Concentration (HH Index)	252.8	193.9
Correlation (stock)	0.26	0.20
Ann. Turnover (last 10 yr)	0.40	0.04

Index-Weighted Avg.	Index	Bmark
Stock Volatility	25%	27%
12M - 1M price return	28%	48%
Book/Price	0.62	0.19
Earnings/Price	0.07	0.03
Sales/Price	1.22	0.32
Stock Beta	0.58	1.05
Yield (12M trailing)	2.7%	1.3%
R.O.E.	15%	38%
Market Cap (U.S. \$ bn)	194.7	956.9

Top Sector Tilts (versus benchmark)

Sector	Index	Bmark	Diff.
Financials	39%	13%	25%
Energy	15%	3%	12%
IT	1%	32%	30%
Industrials	5%	9%	4%

Sector Tilts (Detail)



Factor Exposure Chart

S&P Dow Jones Indices

A Division of **S&P Global**

Index Dashboard: S&P 500® Factor Indices
October 2024

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, 2024 the index comprised 503 constituents.

Index Statistics	1M	3M	YTD	12M	3Y	5Y	10Y	15Y
Total Return (Ann)	-1.6%	3.2%	13.3%	32.1%	5.7%	12.2%	10.6%	13.4%
Relative to Benchmark	-0.7%	-0.5%	-7.7%	-5.9%	-3.3%	-3.1%	-2.4%	-0.9%
Index Volatility				12.8%	17.9%	19.9%	16.6%	16.0%
Tracking Error				6.8%	6.3%	6.5%	5.0%	4.5%

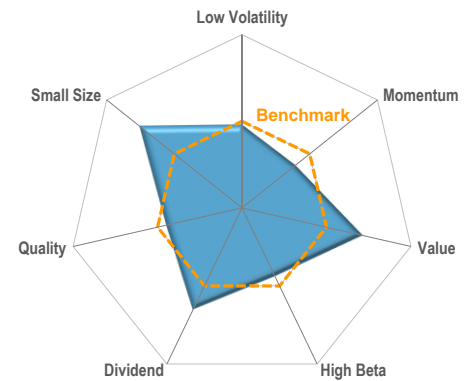
Benchmark: S&P 500. 1 Yr trailing beta to benchmark = 0.79

Portfolio Statistics	Index	Bmark
Active Share (Stock)	52%	0%
Active Share (Sector)	23%	0%
Concentration (HH Index)	20.1	193.9
Correlation (stock)	0.19	0.20
Ann. Turnover (last 10 yr)	0.22	0.04

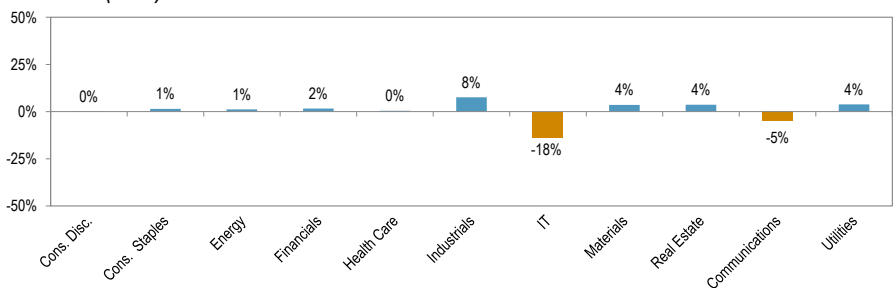
Index-Weighted Avg.	Index	Bmark
Stock Volatility	28%	27%
12M - 1M price return	32%	48%
Book/Price	0.31	0.19
Earnings/Price	0.04	0.03
Sales/Price	0.54	0.32
Stock Beta	0.80	1.05
Yield (12M trailing)	1.8%	1.3%
R.O.E.	24%	38%
Market Cap (U.S. \$ bn)	99.8	956.9

Top Sector Tilts (versus benchmark)

Sector	Index	Bmark	Diff.
Industrials	16%	9%	8%
Utilities	6%	3%	4%
IT	14%	32%	18%
Communications	4%	9%	5%



Sector Tilts (Detail)



More Factor Resources



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



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

S&P Dow Jones Indices

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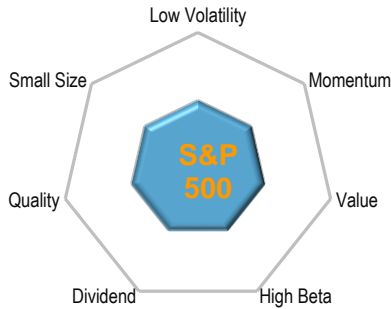
Index Dashboard: S&P 500® Factor Indices

October 2024

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.



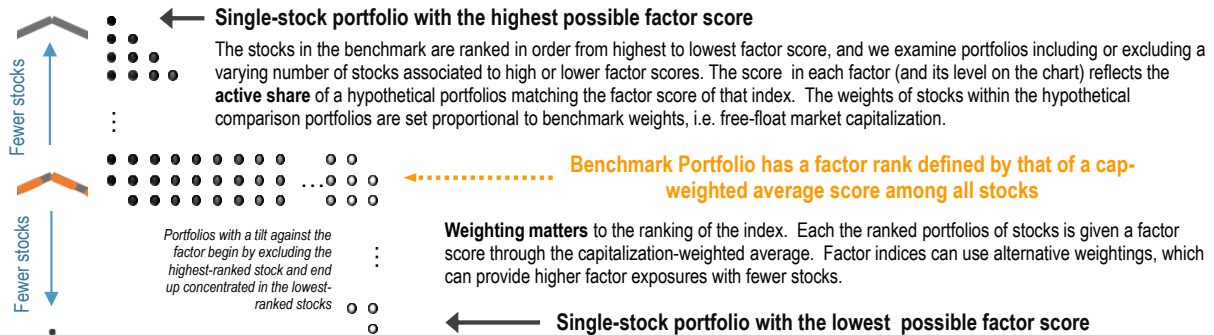
Factor	Measurement at single-stock level
Volatility	Trailing 12-month daily volatility.
Momentum	Twelve-month total return change as of one month ago ("13 minus 1 momentum"), divided by the daily volatility during the twelve-month period that ended one month prior. For more details, see the S&P Momentum 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



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	0.035	0.189	0.323	9.87%	38.57%	1.27	47.89%	1.73%
S&P 500 index-weighted standard deviation	0.023	0.216	0.436	17.53%	32.87%	1.09	44.65%	0.69%

Source: S&P Dow Jones Indices LLC and/or its affiliates. Data as of October 31, 2024. Returns in U.S. dollars.

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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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