

Momentum: A Practitioner's Guide

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What Is Momentum?

As an investment concept, momentum is straightforward—purchase (or avoid) stocks that have performed relatively well (or poorly) recently.¹ The period over which performance is evaluated is important for momentum; for example, there is evidence of a one-month reversal effect in stock prices.

One of the most influential papers on momentum is arguably Mark Carhart's 1997 study, which showed that adding momentum to the Fama-French three-factor model increased the model's explanatory power and demonstrated that momentum was a key factor in explaining cross-sectional performance.² His study also contributed to momentum being incorporated into risk management and active management processes.

The S&P Momentum Indices are rebalanced semiannually after the close of the third Friday of March and September; the reference dates are the last business day of February and August, respectively. As of each rebalance reference date, momentum is calculated using 12 months of data beginning 13 months prior, ensuring the one-month reversal effect is avoided. The momentum scores for each security are adjusted for risk. Employing risk-adjusted momentum instead of raw price momentum may help mitigate the effects of idiosyncratic risk associated with raw momentum and may also reduce downside risk.³ For more information regarding the calculation of the S&P Momentum Indices, please see the [S&P Momentum Indices Methodology](#).

¹ Jegadeesh, Narasimhan and Sheridan Titman, "Returns to Buying Winners and Selling Losers: Implications for Stock Market Efficiency," The Journal of Finance, Vol. 48, No. 1, 65-91, March 1993.

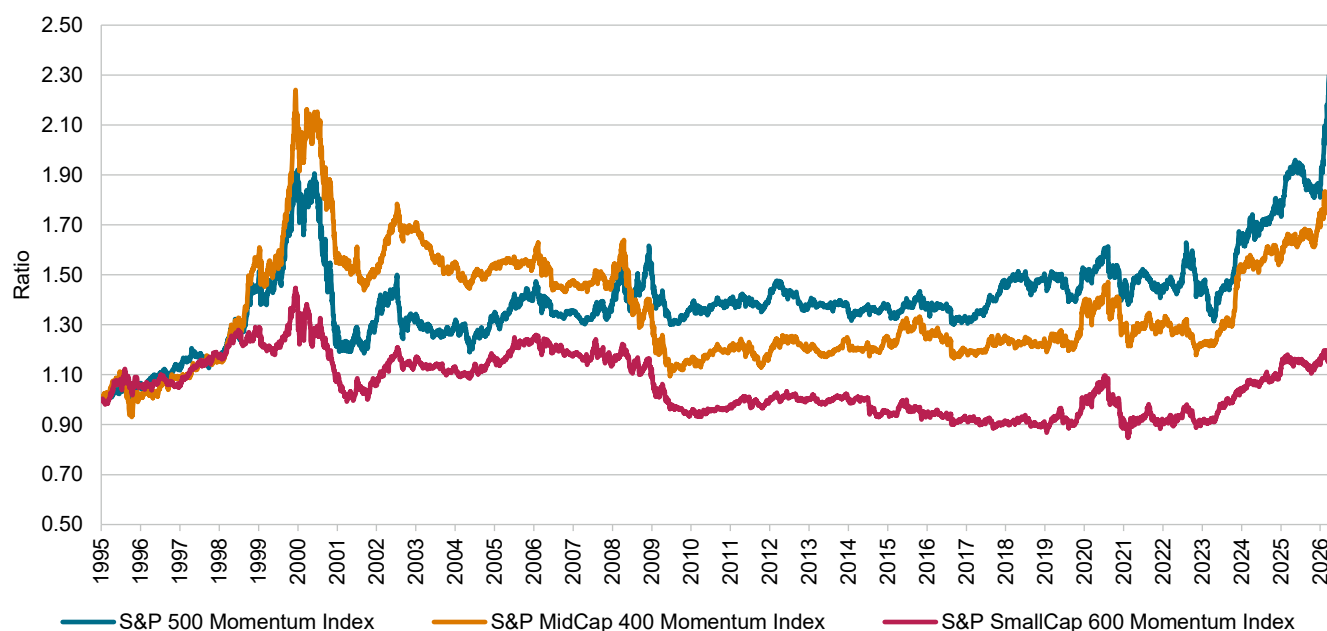
² Carhart, Mark, "[On Persistence in Mutual Fund Performance](#)," Journal of Finance, 52:1, 57-82, March 1997.

³ Fan, Minyou, Kearney Fearghal, Youwei Li and Jiadong Liu, "Momentum and the Cross-section of Stock Volatility," Journal of Economic Dynamics and Control, Volume 144, November 2022.

How Has Momentum Performed?

One of the first questions to ask about momentum is: how has it performed? To analyze this, we turn to the [S&P 500® Momentum Index](#), [S&P MidCap 400® Momentum Index](#) and [S&P SmallCap 600® Momentum Index](#). Exhibit 1 shows the total return performance of these three momentum indices compared to their underlying benchmarks. As the ratios⁴ were typically above one, we can see that the momentum indices generally performed better than their corresponding benchmarks over the period studied. Notably, there were two significant periods of outperformance—1995 to 2000 and 2023 to the end of H1 2026—both of which coincide with strong, sustained market trends, conditions under which momentum strategies tend to perform well. However, if such a trend becomes a bubble that subsequently bursts—as was the case during the technology bubble—momentum may be relatively more affected than the broader market, which is influenced by other factors in addition to momentum.

Exhibit 1: Back-Tested Performance of the S&P Momentum Indices Relative to Their Corresponding Benchmarks



Source: S&P Dow Jones Indices LLC. Data from March 31, 1995, to June 30, 2026. Index performance based on total return in USD. The S&P 500 Momentum Index was launched on Nov. 18, 2014. The S&P MidCap 400 Momentum Index was launched on Nov. 13, 2017. The S&P SmallCap 600 Momentum Index was launched on Jan. 4, 2018. All data prior to such date is back-tested hypothetical data. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

⁴ The ratios are calculated as the index levels of the S&P Momentum Indices divided by their corresponding benchmarks, all rebased to 100 as of March 31, 1995.

Exhibit 2 presents the annualized risk and return statistics. Historically, all three of these S&P Momentum indices outperformed their respective benchmarks in both absolute and risk-adjusted terms, across both short- and long-term horizons. Over the one-year period ending June 30, 2026, the S&P 500 Momentum Index, S&P MidCap 400 Momentum Index and S&P SmallCap 600 Momentum Index surpassed their benchmarks by 25.94%, 6.19% and 6.82%, respectively.

Furthermore, these indices have shown strong capture ratios, delivering higher or similar gains during up markets⁵ and experiencing smaller declines in down markets. During periods of extreme market stress—including the 2008 Global Financial Crisis, the bursting of the tech bubble and the COVID-19 pandemic—the momentum indices generally experienced drawdowns similar to their benchmarks. One notable exception was when the tech bubble burst, with the S&P 500 Momentum Index underperforming the [S&P 500](#) by 11.2%. Overall, the comparable drawdowns suggest that momentum strategies have often adapted effectively to new market trends as previous trends weakened.

Exhibit 2: Performance Comparison

Period	S&P 500 Momentum Index	S&P 500	S&P MidCap 400 Momentum Index	S&P MidCap 400	S&P SmallCap 600 Momentum Index	S&P SmallCap 600
Annualized Total Return (%)						
YTD	36.15	10.21	23.53	17.34	30.73	23.90
1-Year	45.16	22.32	33.58	25.89	39.16	37.50
3-Year	43.79	20.61	30.16	15.41	25.91	16.05
5-Year	23.79	13.41	16.10	9.07	12.75	7.37
10-Year	21.56	15.51	15.24	11.65	13.91	11.52
15-Year	18.16	14.36	13.93	11.28	12.67	11.41
20-Year	14.13	11.39	10.75	10.09	9.40	9.67
25-Year	12.39	9.55	10.56	9.93	10.72	9.95
Full Period	14.07	11.08	13.90	11.86	11.69	11.10

Source: S&P Dow Jones Indices LLC. Data from March 31, 1995, to June 30, 2026. Index performance based on total return in USD. The S&P 500 Momentum Index was launched on Nov. 18, 2014. The S&P MidCap 400 Momentum Index was launched on Nov. 13, 2017. The S&P SmallCap 600 Momentum Index was launched on Jan. 4, 2018. All data prior to such date is back-tested hypothetical data. Past performance is no guarantee of future results. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

⁵ The market is defined as the monthly performance of the underlying benchmarks from March 31, 1995, to June 30, 2026.

Exhibit 2: Performance Comparison (cont.)

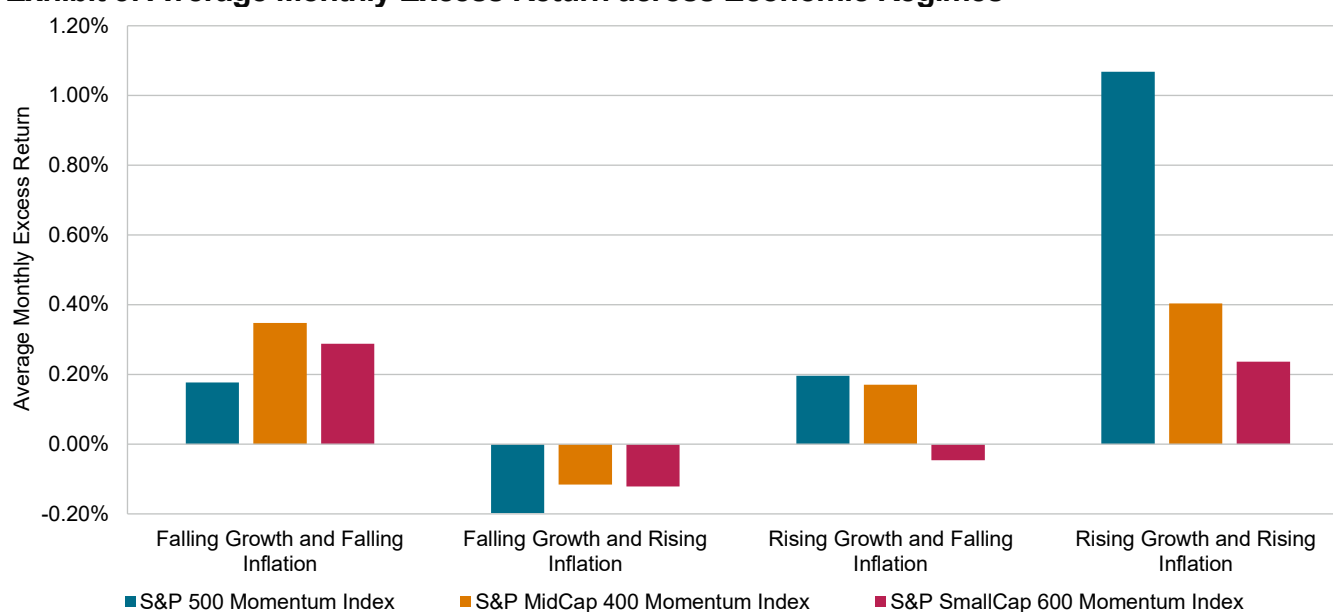
Period	S&P 500 Momentum Index	S&P 500	S&P MidCap 400 Momentum Index	S&P MidCap 400	S&P SmallCap 600 Momentum Index	S&P SmallCap 600
Annualized Volatility (%)						
YTD	26.66	14.20	24.15	16.68	21.27	17.34
1-Year	21.32	12.55	20.01	15.75	19.39	17.75
3-Year	20.75	15.02	20.71	17.89	21.16	20.34
5-Year	20.11	17.01	21.59	19.67	22.69	21.46
10-Year	20.55	18.05	21.63	20.96	23.97	23.16
15-Year	19.25	17.32	20.87	20.10	23.04	22.16
20-Year	20.45	19.54	23.08	22.22	24.64	24.21
25-Year	19.63	19.07	22.11	21.39	23.74	23.25
Full Period	20.88	18.85	23.01	20.86	23.65	22.27
Return/Risk						
YTD	1.36	0.72	0.97	1.04	1.44	1.38
1-Year	2.12	1.78	1.68	1.64	2.02	2.11
3-Year	2.11	1.37	1.46	0.86	1.22	0.79
5-Year	1.18	0.79	0.75	0.46	0.56	0.34
10-Year	1.05	0.86	0.70	0.56	0.58	0.50
15-Year	0.94	0.83	0.67	0.56	0.55	0.51
20-Year	0.69	0.58	0.47	0.45	0.38	0.40
25-Year	0.63	0.50	0.48	0.46	0.45	0.43
Full Period	0.67	0.59	0.60	0.57	0.49	0.50
Capture Ratio						
Up Months	1.06	-	1.05	-	1.00	-
Down Months	0.93	-	0.97	-	0.98	-
Big Drawdowns (%)						
Global Financial Crisis	-46.70	-55.25	-57.10	-55.15	-58.15	-58.30
2020 Tech Bubble Burst	-58.61	-47.41	-20.07	-31.89	-25.23	-33.52
2020 COVID- 19 Pandemic	-31.46	-33.79	-36.28	-42.02	-40.99	-44.41

Source: S&P Dow Jones Indices LLC. Data from March 31, 1995, to June 30, 2026. Index performance based on total return in USD. The S&P 500 Momentum Index was launched on Nov. 18, 2014. The S&P MidCap 400 Momentum Index was launched on Nov. 13, 2017. The S&P SmallCap 600 Momentum Index was launched on Jan. 4, 2018. All data prior to such date is back-tested hypothetical data. Past performance is no guarantee of future results. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Performance across Economic Regimes⁶

Exhibit 3 illustrates the performance of the S&P Momentum Indices relative to their respective benchmarks across four economic regimes defined by rising and falling growth and inflation. The S&P Momentum Indices outperformed in all regimes except during the falling growth and rising inflation regime. This environment, often referred to as stagflation, may prompt market participants to adopt a risk-off stance, shifting their focus from high-growth stocks to more defensive alternatives. As a result, the broader equity market may experience negative performance, and momentum stocks may underperform as market trends shift.

Exhibit 3: Average Monthly Excess Return across Economic Regimes



Source: S&P Dow Jones Indices LLC. Data from March 31, 1995, to June 30, 2026. Index performance based on total return in USD. The S&P 500 Momentum Index was launched on Nov. 18, 2014. The S&P MidCap 400 Momentum Index was launched on Nov. 13, 2017. The S&P SmallCap 600 Momentum Index was launched on Jan. 4, 2018. All data prior to such date is back-tested hypothetical data. Past performance is no guarantee of future results. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

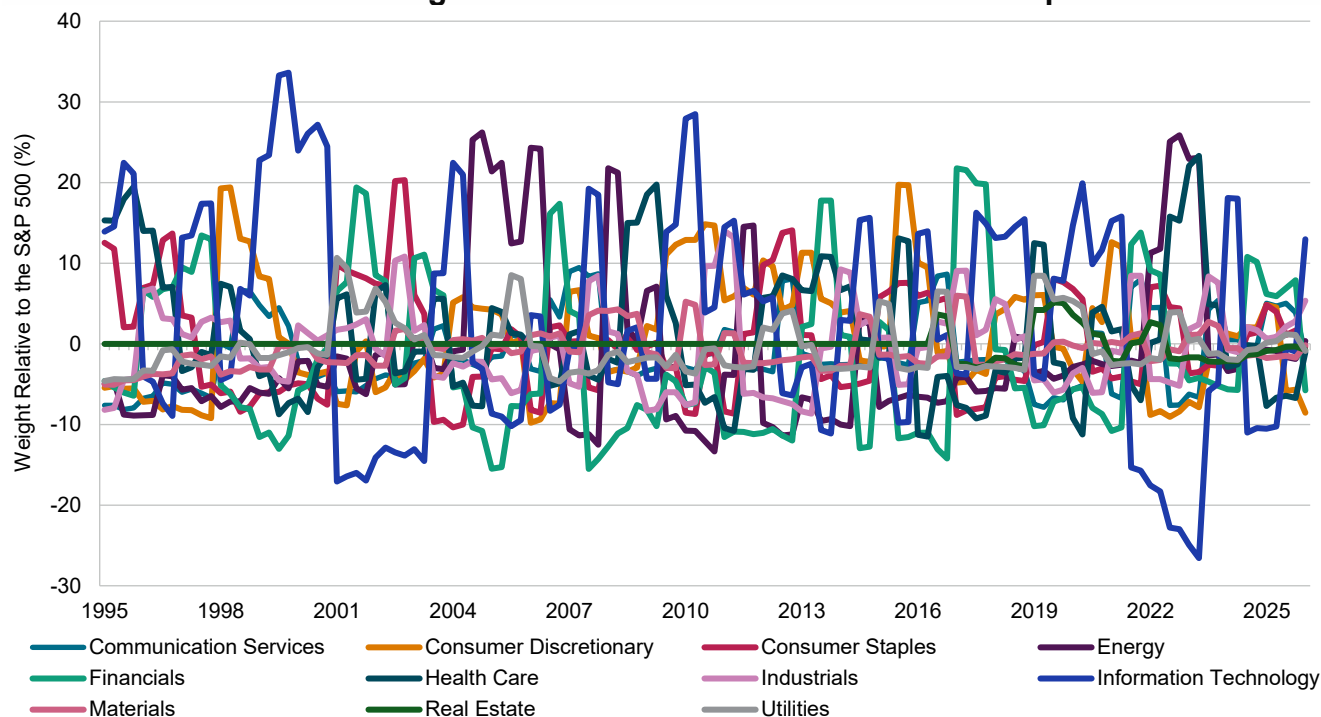
Sector Composition

Exhibit 4 shows the relative sector overweights and underweights of the S&P 500 Momentum Index compared to the S&P 500. These relative sector weights can shift substantially over time in response to changing market conditions. For example, at the peak of the tech bubble in March 2000, the S&P 500 Momentum Index overweighted the Information Technology sector by more than 30%, whereas by 2023, it underweighted the same sector by more than 20%. More recently, the S&P 500 Momentum Index has had overweight positions in stocks

⁶ Hao, Wenli Bill and Rupert Watts, "[A Historical Perspective on Factor Index Performance across Macroeconomic Cycles](#)," S&P Dow Jones Indices LLC, August 2026.

tied to AI themes, which have contributed to strong performance. Fluctuations in sector weights have also been observed in the S&P MidCap 400 Momentum Index and S&P SmallCap 600 Momentum Index, as shown in Appendix I.

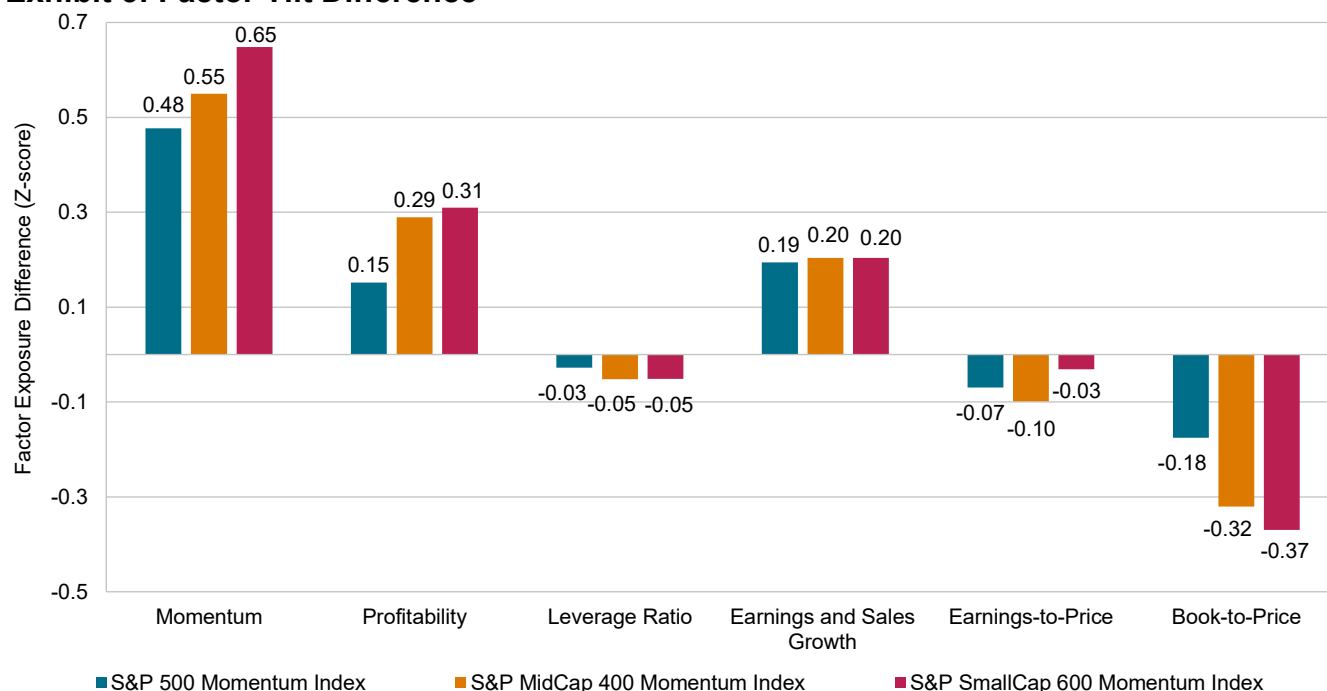
Exhibit 4: Relative Sector Weights of the S&P 500 Momentum Index Compared to the S&P 500



Source: S&P Dow Jones Indices LLC. Data from March 31, 1995, to June 30, 2026. Index performance based on total return in USD. The S&P 500 Momentum Index was launched on Nov. 18, 2014. The S&P MidCap 400 Momentum Index was launched on Nov. 13, 2017. The S&P SmallCap 600 Momentum Index was launched on Jan. 4, 2018. All data prior to such date is back-tested hypothetical data. Past performance is no guarantee of future results. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Factor Tilts

Exhibit 5 illustrates the factor tilt differences between the S&P Momentum Indices and their respective benchmarks, utilizing FactSet Global Risk Model Factor Z-scores. As expected, the S&P Momentum Indices showed significantly higher tilts to the momentum factor relative to their benchmarks. Furthermore, these indices showed a tilt toward higher quality, as evidenced by their higher profitability Z-scores and lower leverage ratio Z-scores. Finally, the indices exhibited a notable tilt toward growth and away from value.

Exhibit 5: Factor Tilt Difference

Source: S&P Dow Jones Indices LLC. Data from March 31, 1995, to June 30, 2026. Index performance based on total return in USD. The S&P 500 Momentum Index was launched on Nov. 18, 2014. The S&P MidCap 400 Momentum Index was launched on Nov. 13, 2017. The S&P SmallCap 600 Momentum Index was launched on Jan. 4, 2018. All data prior to such date is back-tested hypothetical data. Past performance is no guarantee of future results. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Possible Uses of Momentum

Another key question for any factor—momentum included—is: how might market participants use it? One possibility would be to combine momentum and quality, such as through a hypothetical 50/50 blend of the S&P 500 Momentum Index and [S&P 500 Quality Index](#), referred to hereafter as the “50/50 blend.”⁷ Exhibit 7 shows the performance statistics for the S&P 500 Momentum Index, S&P 500 Quality Index, the 50/50 blend, and the S&P 500. The results illustrate the potential diversification effects of combining these two factors.

More Persistent Historical Performance and Higher Capture Ratios

The hypothetical 50/50 blend not only improved on the relative performance of either momentum or quality alone (and at times both) but did so with lower volatility than the S&P 500. Over long-term horizons, the blend also outperformed the broader S&P 500 more consistently in both absolute and risk-adjusted terms (see Exhibits 6 and 7).

⁷ This composition is rebalanced semiannually at the end of June and December.

Furthermore, the 50/50 blend demonstrated higher capture ratios, achieving approximately one-to-one performance during up markets while experiencing significantly smaller declines during down markets.

Outperformance across Historical Economic Regimes

The 50/50 blend demonstrated outperformance across all economic regimes. In contrast, the S&P 500 Quality Index showed relative underperformance during periods of rising growth and falling inflation. This is not unexpected, as quality has tended to lag slightly during periods of strong market growth, particularly when investors favor overcrowded trends over solid fundamentals. However, momentum has typically performed well in such environments, helping to offset quality's underperformance.

Conversely, the S&P 500 Momentum Index underperformed during regimes characterized by falling growth and rising inflation. In these periods, quality's defensive characteristics helped mitigate momentum's underperformance. This complementary dynamic is reflected in the information ratios: the blend's information ratio almost always exceeded at least one of the corresponding ratios for the individual factors during the period studied.

Exhibit 6: Back-Tested Performance Comparison

Period	S&P 500 Momentum Index	S&P 500 Quality Index	50% S&P 500 Momentum Index + 50% S&P 500 Quality Index	S&P 500
Annualized Total Return (%)				
YTD	36.15	20.98	27.57	10.21
1-Year	45.16	28.10	36.19	22.32
3-Year	43.79	23.04	33.15	20.61
5-Year	23.79	14.94	19.40	13.41
10-Year	21.56	15.79	18.51	15.51
15-Year	18.16	14.84	16.28	14.36
20-Year	14.13	12.96	13.46	11.39
25-Year	12.39	11.56	11.98	9.55
Full Period	14.07	13.96	14.17	11.08
Annualized Volatility (%)				
Full Period	20.88	18.02	18.78	18.85
Return/Risk				
Full Period	0.67	0.77	0.75	0.59
Capture Ratio				
Up Months	1.06	0.96	1.01	-
Down Months	0.93	0.80	0.86	-
Drawdown (%)				
Global Financial Crisis	-46.70	-47.30	-46.93	-55.25
2020 Tech Bubble Burst	-58.61	-22.40	-41.27	-47.41
2020 COVID-19 Pandemic	-31.46	-31.15	-31.31	-33.79
Excess Return (%) across Economic Regimes (%)				
Falling Growth and Falling Inflation	0.18	0.39	0.27	-
Falling Growth and Rising Inflation	-0.20	0.58	0.20	-
Rising Growth and Falling Inflation	0.20	-0.05	0.06	-
Rising Growth and Rising Inflation	1.07	0.00	0.56	-

The 50% S&P 500 Momentum Index + 50% S&P 500 Quality Index is a hypothetical composition.

Source: S&P Dow Jones Indices LLC. Data from March 31, 1995, to June 30, 2026. Index performance based on total return in USD. The S&P 500 Momentum Index was launched on Nov. 18, 2014. The S&P 500 Quality Index was launched on July 8, 2014. All data prior to such date is back-tested hypothetical data. Past performance is no guarantee of future results. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Exhibit 7: Tracking Error and Information Ratio Comparisons

Period	S&P 500 Momentum Index	S&P 500 Quality Index	50% S&P 500 Momentum Index + 50% S&P 500 Quality Index
Tracking Error (%)			
1-Year	12.90	7.84	8.27
3-Year	9.90	5.90	6.02
5-Year	9.66	5.29	5.92
10-Year	8.62	4.57	5.30
15-Year	7.61	4.17	4.76
20-Year	7.80	4.39	4.99
25-Year	7.99	4.47	5.13
Full Period	8.89	5.29	5.23
Information Ratio			
1-Year	1.77	0.74	1.68
3-Year	2.34	0.41	2.08
5-Year	1.08	0.29	1.01
10-Year	0.70	0.06	0.57
15-Year	0.50	0.12	0.40
20-Year	0.35	0.36	0.42
25-Year	0.36	0.45	0.47
Full Period	0.34	0.55	0.59

The 50% S&P 500 Momentum Index + 50% S&P 500 Quality Index is a hypothetical composition.

Source: S&P Dow Jones Indices LLC. Data from March 31, 1995, to June 30, 2026. Index performance based on total return in USD. The S&P 500 Momentum Index was launched on Nov. 18, 2014. The S&P 500 Quality Index was launched on July 8, 2014. All data prior to such date is back-tested hypothetical data. Past performance is no guarantee of future results. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Momentum: A Global Reach

For those concerned that this analysis focuses solely on the U.S., it is worth noting that evidence for the momentum factor has been observed across many different global markets. For example, Fama and French (2012) documented the presence of momentum in North America, Europe and Asia-Pacific, with Japan being the notable exception.⁸

To further illustrate momentum's historical performance characteristics across markets, we consider the [S&P World Ex-U.S. Momentum Index](#), which measures the performance of securities in developed markets, excluding the U.S., that exhibit persistence in relative performance (see Exhibit 8). Over the period studied, the index's risk, performance and

⁸ Fama, Eugene and Kenneth French, "Size, value, and momentum in international stock markets," Journal of Financial Economics, 105:3, 457-472 (2012). For earlier evidence of momentum please see, among others, Rouwenhorst (1998); Chan, Jegadeesh and Lakonishok (1996); and Jegadeesh and Titman (1993).

drawdown characteristics were broadly similar to those of the S&P 500 Momentum Index. This suggests that daily conversion of local currency performance into U.S. dollars would not materially change the results.

Exhibit 8: Risk/Return Characteristics of the S&P World Ex-U.S. Momentum Index

Period	S&P World Ex-U.S. Momentum Index	S&P World Ex-U.S. Index
Annualized Total Return (%)		
YTD	9.92	9.69
1-Year	23.27	21.97
3-Year	26.89	17.76
5-Year	16.52	9.87
10-Year	13.34	10.44
15-Year	9.59	7.49
20-Year	8.03	6.28
25-Year	9.42	7.11
Full Period	9.18	6.71
Annualized Volatility (%)		
Full Period	18.04	16.15
Return/Risk		
Full Period	0.51	0.42
Capture Ratio		
Up Months	1.04	-
Down Months	0.93	-

Source: S&P Dow Jones Indices LLC. Data from March 31, 1995, to June 30, 2026. Index performance based on total return in USD. The S&P World Ex-U.S. Momentum Index was launched on Feb. 16, 2016. The S&P World Ex-U.S. Index was launched on Feb. 13, 2009. All data prior to such date is back-tested hypothetical data. Past performance is no guarantee of future results. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

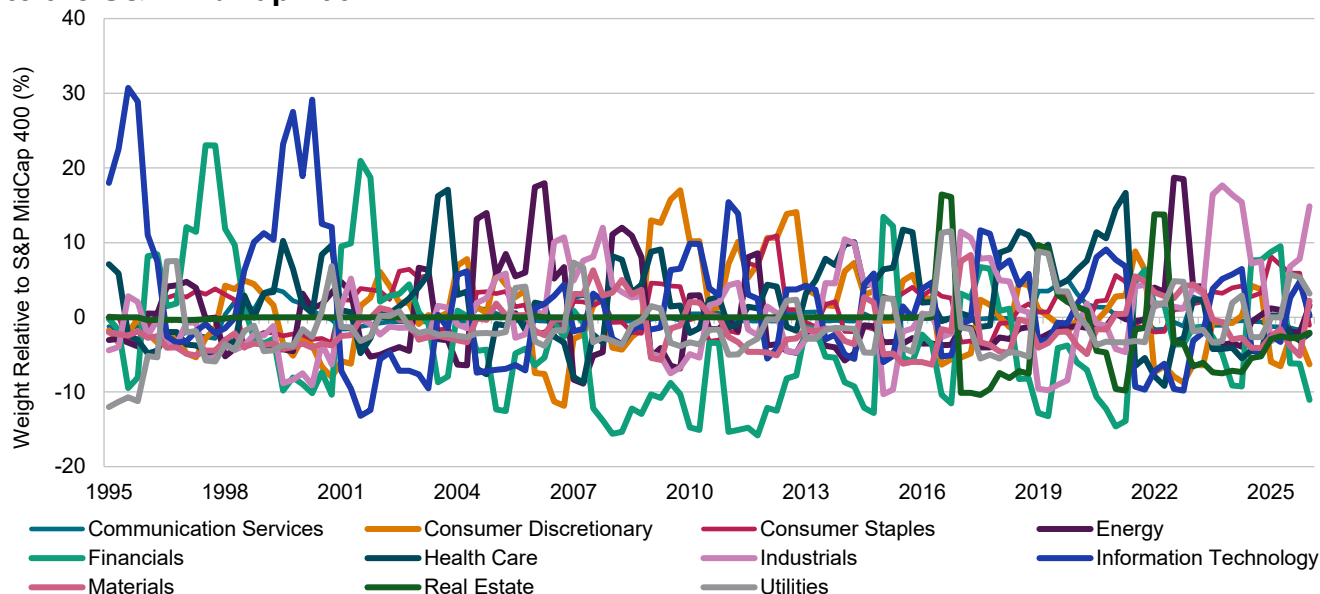
Conclusion

In general, momentum is a straightforward strategy: focus on stocks that have recently performed relatively well and avoid those that have performed relatively poorly. Over the 30-year back-tested period ending in June 2026, the S&P 500 Momentum Index, S&P MidCap 400 Momentum Index and S&P SmallCap 600 Momentum Index outperformed their respective benchmarks, exhibiting higher absolute and risk-adjusted performance across both short- and long-term horizons. The back-tested performance of the S&P World Ex-U.S. Momentum Index further supports evidence of the global presence of the momentum premium.

Pairing momentum with other factors can provide additional characteristics. For example, a hypothetical 50/50 blend of the S&P 500 Momentum Index and S&P 500 Quality Index demonstrated greater diversification—outperforming the S&P 500 more consistently, showing stronger capture ratios and outperforming across all economic environments examined.

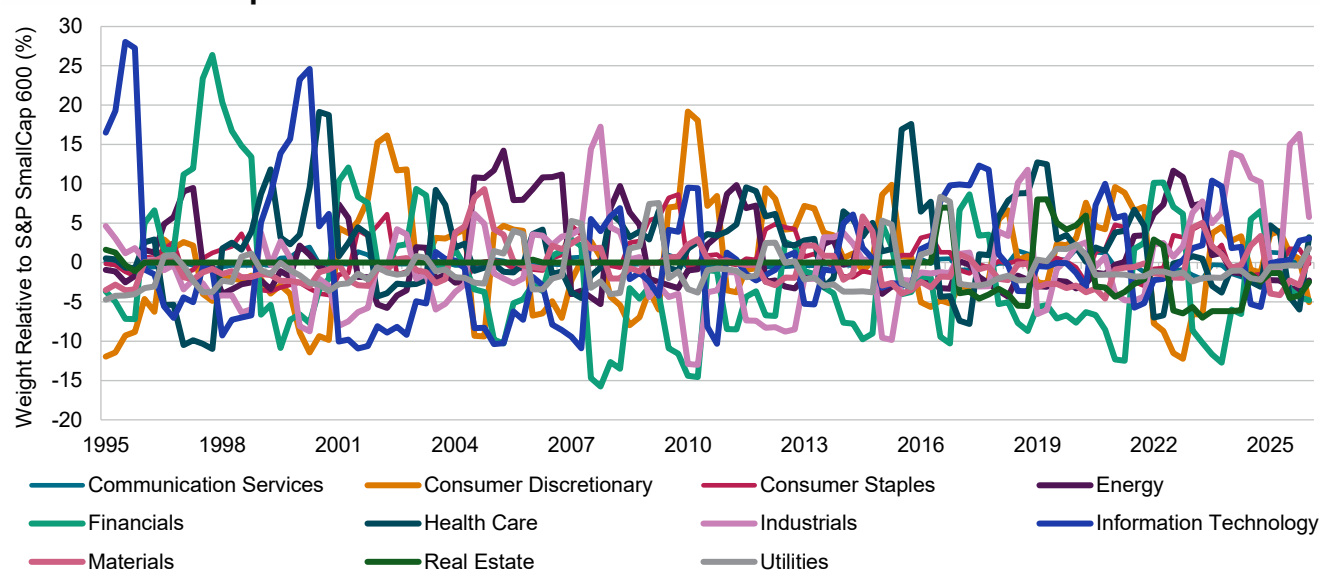
Appendix

Exhibit 9: Relative Sector Weights of the S&P Midcap 400 Momentum Index Compared to the S&P MidCap 400



Source: S&P Dow Jones Indices LLC. Data from March 31, 1995, to June 30, 2026. Index performance based on total return in USD. The S&P MidCap 400 Momentum Index was launched on Nov. 13, 2017. All data prior to such date is back-tested hypothetical data. Past performance is no guarantee of future results. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Exhibit 10: Relative Sector Weights of the S&P SmallCap 600 Momentum Index Compared to the S&P SmallCap 600



Source: S&P Dow Jones Indices LLC. Data from March 31, 1995, to June 30, 2026. Index performance based on total return in USD. The S&P SmallCap 600 Momentum Index was launched on Jan. 4, 2018. All data prior to such date is back-tested hypothetical data. Past performance is no guarantee of future results. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Performance Disclosure/Back-Tested Data

The S&P 500 Momentum Index was launched on November 18, 2014. The S&P MidCap 400 Momentum Index was launched on November 13, 2017. The S&P SmallCap 600 Momentum Index was launched on January 4, 2018. The S&P World Ex-U.S. Momentum Index was launched on February 16, 2016. The S&P World Ex-U.S. Index was launched February 13, 2009. 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 on the index launch date. However, when creating back-tested history for periods of market anomalies or other periods that do not reflect the general current market environment, index methodology rules may be relaxed to capture a large enough universe of securities to simulate the target market the index is designed to measure or strategy the index is designed to capture. For example, market capitalization and liquidity thresholds may be reduced. 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. Also, the treatment of corporate actions in back-tested performance may differ from treatment for live indices due to limitations in replicating index management decisions. 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.

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