

# Outlier momentum events in down markets

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## Research Signals

Since the US stock market peak in late 2021, investors have been searching for the market bottom, with many fits and starts along the way. Likewise, from a factor style perspective, while Valuation has been the winning strategy during the current market downturn, Price Momentum has benefited from occasional bursts of investor enthusiasm, including in recent months. However, does the overall direction of the market affect how high momentum stocks come out of the initial bounce? With this question in mind, we perform an event study of price momentum factor performance during prior periods of downward trending markets.

- The Price Momentum style has been a positive signal throughout our factor history, with an average monthly quintile spread of 0.62% and standard deviation of 3.26%
- When Price Momentum performance exceeded the one standard deviation band around the mean, positive spreads carried over to the subsequent month on average well above the level in up/neutral markets (1.53%) compared with down markets (0.12%), with a slightly wider difference (1.84% and 0.26%, respectively) when spreads topped 5%
- The reverse was seen with performance of the Valuation style, with negative average spreads (-0.36%) in the months following spikes in Price Momentum during up/neutral markets, compared with positive spreads (0.49%) on average during down markets

## Price Momentum performance and market down trends

First, to set the stage, we provide statistics on the historical behavior of Price Momentum factor performance. For our analysis, we use a representative style formulation from the S&P Capital IQ platform constructed as the equally weighted combination of the following factors:

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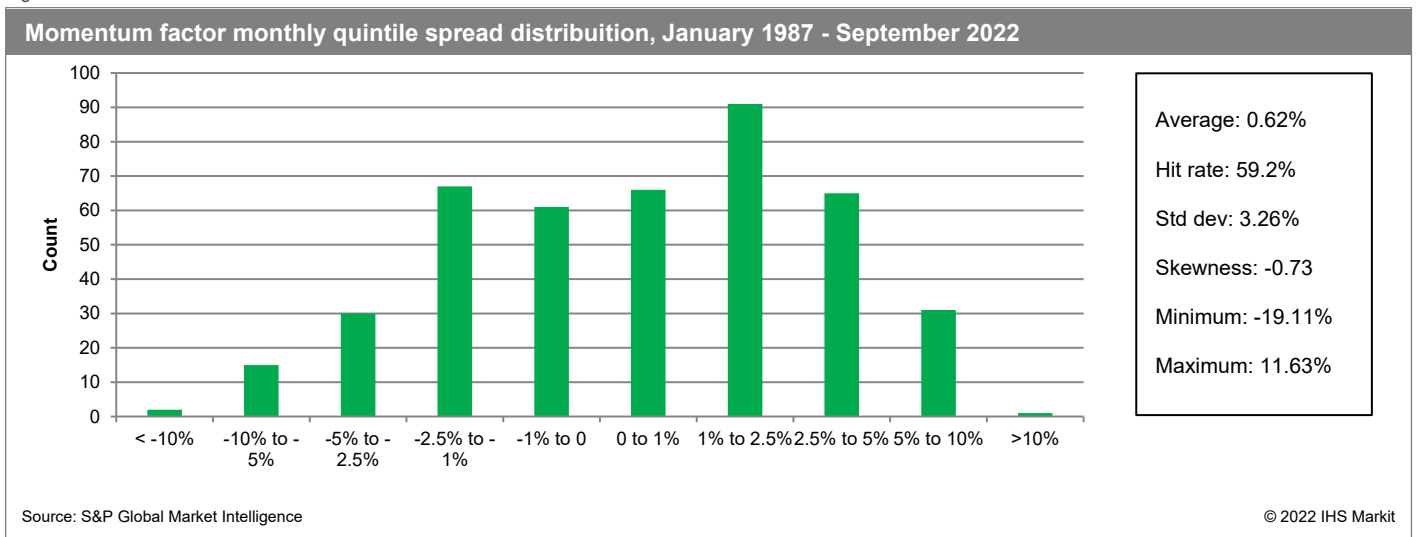
By using this combination, we avoid spurious results that may be associated with any one factor, though we acknowledge that Price Momentum factors in general have high correlation among themselves.

We measure performance using the monthly quintile spread across the S&P 500 universe from January 1987 through September 2022. First, factors are ranked at the beginning of the month and the top 20% of stocks are assigned to quintile 1 (Q1) and the bottom 20% to quintile 5 (Q5). We then compute the quintile spread as the difference between the equal weighted monthly return of Q1 and Q5.

Figure 1 presents a histogram of Price Momentum monthly quintile spreads over the analysis period, with the bins centered around a 0.00% spread and a symmetric breakout on either side. First, we note the negative skewness (-0.73), signifying that the left (negative) tail is longer. In other words, there is a larger distribution of spreads on the right, or in positive territory, creating a right-leaning curve. The implication is that there was a higher occurrence of positive versus negative spreads, indicating that Price Momentum has been a successful signal in providing positive alpha during the analysis period.

Indeed, the average quintile spread is 0.62%, with a hit rate (percent of months with positive spreads) of 59.2% and standard deviation of 3.26%. The t-statistic is around 4, suggesting a strong confidence in the positive signal. We further remark that the spread was driven by a Q1 average excess return of 0.26% versus -0.36% for Q5, suggesting that the signal correctly identified outperforming Q1 stocks and underperforming Q5 stocks on average, with a slight advantage in magnitude with the latter group.

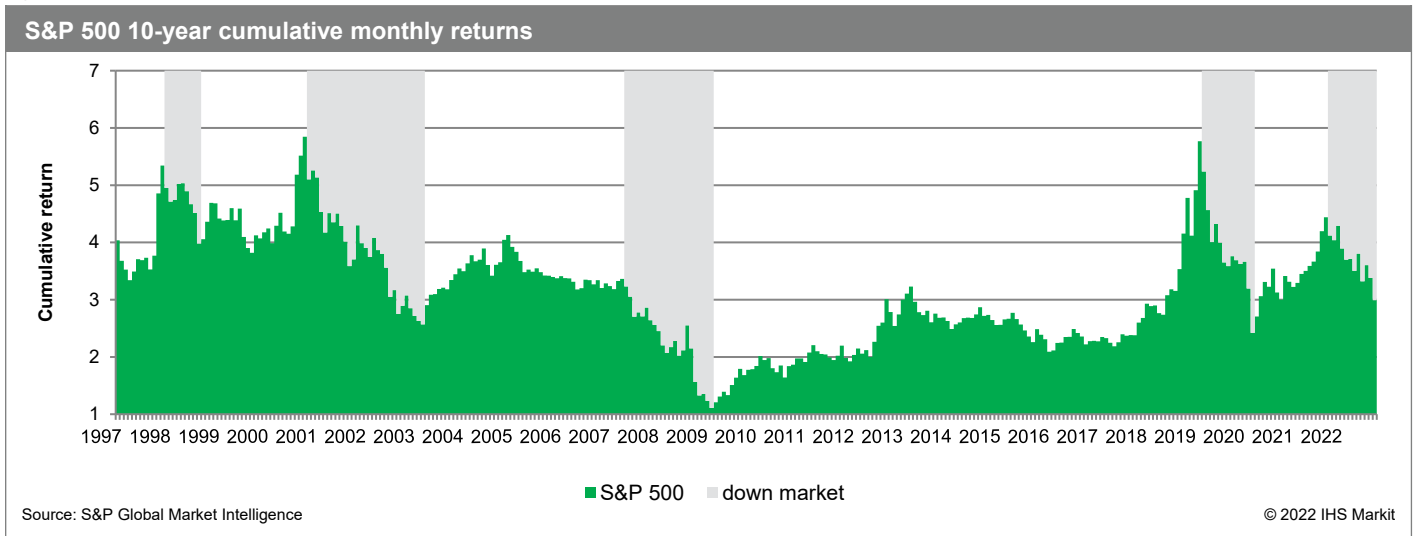
Figure 1



Our next step is to provide our definition of down markets for this study. In this case, we use 10-year cumulative monthly S&P 500 index returns to smooth out the long-term trend in what would otherwise be a noisy monthly

signal. In Figure 2 we highlight peak to trough periods of significant downward trending cumulative returns which we use for our analysis. These include corrections during the periods of the 1998 Russian ruble crisis, the bursting of the internet bubble of 2000, the 2008 financial crisis, the 2020 COVID-19 pandemic and the most recent market downturn which some refer to as the ‘everything bubble’ driven by unprecedented fiscal stimulus and monetary easing in the aftermath of the pandemic.

Figure 2



## Bear-ing down on Price Momentum spikes

With this background, we study Price Momentum performance during market downtrends, with focus on abnormal bursts in investor sentiment toward high momentum shares. We consider two scenarios of Price Momentum performance, 1) quintile spreads above the one standard deviation band around the mean (3.88%); and 2) more extreme quintile spreads above 5%.

To add more context, we also compare Price Momentum performance to that of Valuation, which is constructed on the Capital IQ platform as the equally weighted combination of the following factors:

- Book to Price
- Free Cash Flow to Price
- EBITDA to Enterprise Value
- Earnings to Price
- Dividends to Price Ratio
- Sales to EV Ratio

Table 1 summarizes some basic statistics that we discuss in more detail. We report on Price Momentum average excess returns for Q1 and Q5 during the month of the sharp increase in outperformance during both down markets and other months in up/neutral markets. We also present the average monthly quintile spread for Price Momentum and Valuation

styles in the months following the spike in Price Momentum performance, along with the average monthly run in positive spreads for the same periods.

Table 1

Monthly quintile spread attributes					
Style		Spread > 3.88%		Spread > 5%	
		Down markets (20 months)	Up/neutral markets (37 months)	Down markets (11 months)	Up/neutral markets (21 months)
Average return current month	Price Momentum Q1	2.78%	2.83%	3.49%	3.04%
	Price Momentum Q5	-3.31%	-2.74%	-3.93%	-3.41%
Average spread next month	Price Momentum	0.12%	1.53%	0.26%	1.84%
	Valuation	0.49%	-0.36%	1.49%	-0.24%
Continuation of positive spreads	Price Momentum	1.2 months	1.5 months	1.1 months	1.8 months
	Valuation	1.8 months	1.2 months	1.7 months	1.4 months

Source: S&amp;P Global Market Intelligence

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The monthly Price Momentum quintile spread exceeded the one standard deviation band around the mean in 20 months during down markets. During these events, the outperformance of the Price Momentum signal benefited to a greater extent from identifying Q5 underperformers (-3.31%) than Q1 outperformers (2.78%) compared with other markets where the magnitude of Q1 (2.83%) and Q5 (-2.74%) excess returns was more in line.

Following the upward spike in Price Momentum performance, the spread in the subsequent month was 0.12% on average, well below that in the 37 months during other market regimes (1.53%). Moreover, Valuation performance improved from -0.36% in the same months of up/neutral markets to 0.49% during down markets following the sharp increase in Price Momentum spread.

In terms of persistence of investor sentiment toward high momentum shares following months with spreads above 3.88%, the positive performance carried over to an average of 1.2 months in down markets, shy of that seen in other periods (1.5 months). Valuation, on the other hand, saw an improvement with an average run of 1.2 months increasing to 1.8 months of subsequent positive performance during down markets.

We also consider periods of more extreme investor euphoria towards high momentum shares where monthly quintile spreads surpassed 5%. During market downtrends, this occurred less frequently for a total of 11 months versus 21 months in other markets. In this case, a slightly higher difference between market regimes was seen, with Price Momentum spreads reaching an average of 1.84% in the following month during up/neutral markets, while dropping to 0.26% in down markets, though the quintile performance in current month was similar in both regimes. Valuation also saw the difference in its subsequent monthly performance widen from -0.24% in up/neutral markets to 1.49% in down markets.

Lastly, positive investor sentiment captured by 5% Price Momentum monthly spreads extended out to 1.8 months on average during up to neutral markets, while only carrying over to an average of 1.1 months in down markets, indicating market euphoria can remain more persistent in a bull market. Conversely, positive Valuation spreads saw a run of 1.4 months on average in other periods improved to 1.7 months during down markets.

In summary, while the market has been in a downtrend since late 2021, investors have, in a couple of instances, fought the tide with aggressive buying of high momentum shares. To test if the current market regime affects the durability of this trade, we investigate differences in investors' reaction to extreme moves in Price Momentum performance in prior down markets compared with up/neutral markets. When Price Momentum monthly quintile spreads were in excess of the one standard deviation band around the mean (3.88%) of the historical distribution,

positive spreads carried over to the subsequent month on average at a much higher level in up to neutral markets (1.53%) compared with down markets (0.12%). At the further 5% extreme, a wider difference of 1.84% and 0.26%, respectively, was observed on average. On the contrary, Valuation style performance moved from negative to positive spreads on average in the months following Price Momentum spikes above the one standard deviation around the mean (-0.36% to 0.49%) and in excess of 5% (-0.24% to 1.49%).

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