FOCUS: MOMENTUM

Factor Investing

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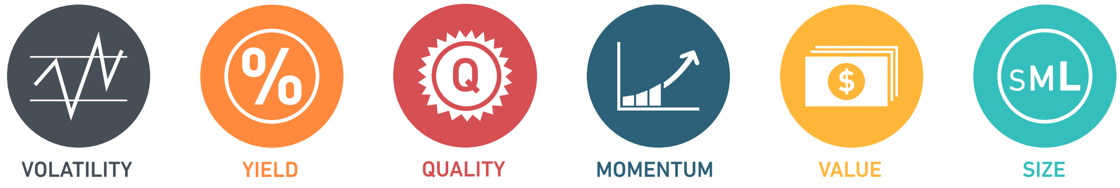


FACTOR FOCUS: **MOMENTUM**

IN THE REALM OF INVESTING, A FACTOR IS ANY CHARACTERISTIC THAT HELPS EXPLAIN THE LONG-TERM RISK AND RETURN PERFORMANCE OF AN ASSET. MSCI FACTOR INDEXES ARE DESIGNED TO CAPTURE THE RETURN OF FACTORS WHICH HAVE HISTORICALLY DEMONSTRATED EXCESS MARKET RETURNS OVER THE LONG RUN.

MSCI Factor Indexes are rules-based, transparent indexes targeting stocks with favorable factor characteristics – as backed by robust academic findings and empirical results – and are designed for simple implementation, replicability, and use for both traditional passive and active mandates.

DEFINING MOMENTUM

The momentum factor refers to the tendency of winning stocks to continue performing well in the near term. Momentum is categorized as a "persistence" factor i.e., it tends to benefit from continued trends in markets (see "Performance and Implementation").

The MSCI Momentum Index measures:

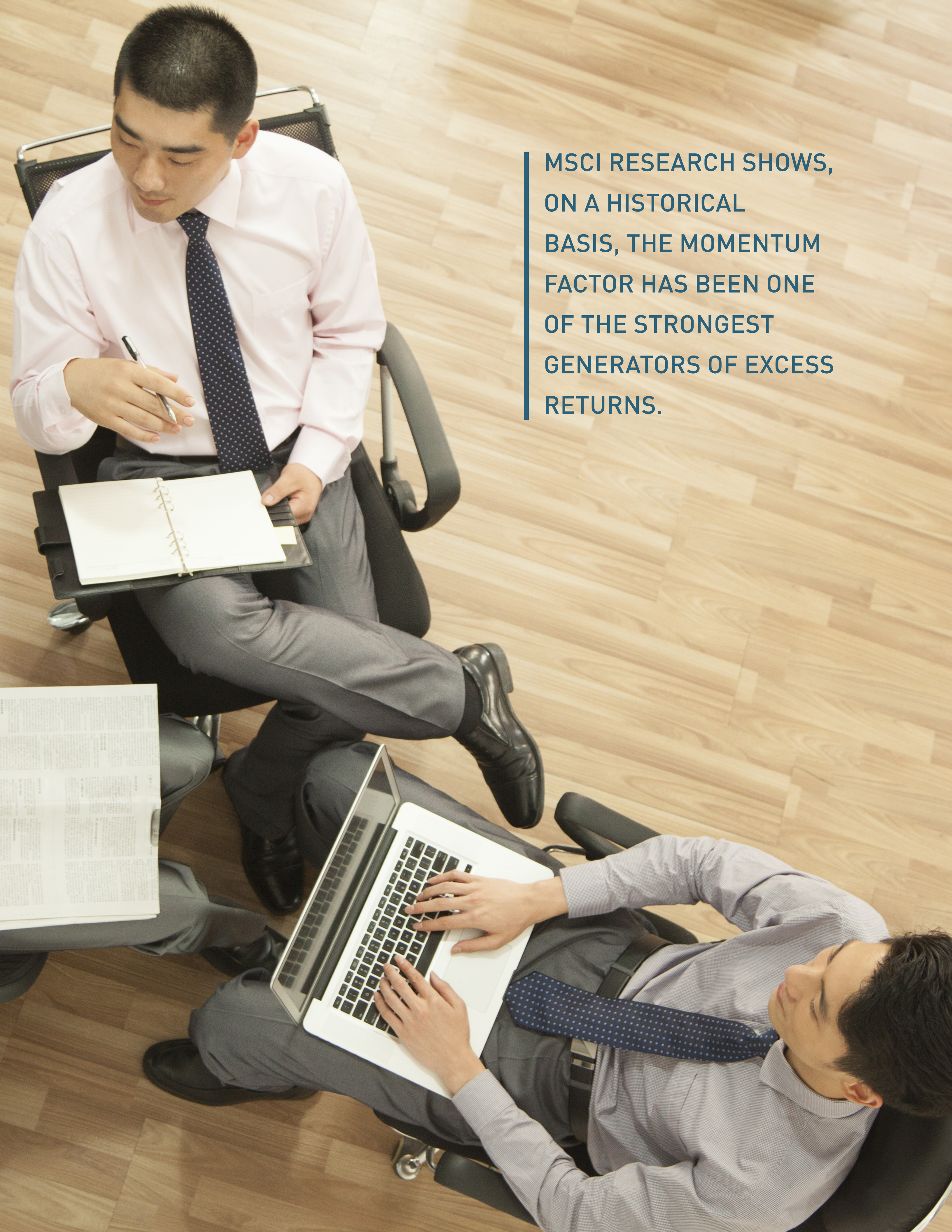
- Risk-adjusted excess return - that which exceeds the benchmark - for 6-month periods
- Risk-adjusted excess return - that which exceeds the benchmark - for 12-month periods

WHY INSTITUTIONAL INVESTORS HAVE USED MOMENTUM STRATEGIES

Academics first identified the momentum premium in 1993, when UCLA scholars Narasimhan Jegadeesh and Sheridan Titman demonstrated that the strategy of buying stocks that have done well and selling stocks that have done poorly generated significant positive returns over 3- to 12-month holding periods.

Many studies since then have found the momentum factor present across equity sectors, countries, and more broadly asset classes.[1] Momentum may not be as well understood as other factors, although various theories attempt to explain it. Some postulate that it is compensation for bearing high risk; others believe it may be a consequence of market inefficiencies produced by delayed price reactions to firm-specific information.[2]
MSCI research shows, on a historical basis, the momentum factor has been one of the strongest generators of excess returns.

The momentum factor has typically outperformed in a macro environment characterized by a long cycle in underlying market trends (see chart Macro Effects on Factor Performance on p6).

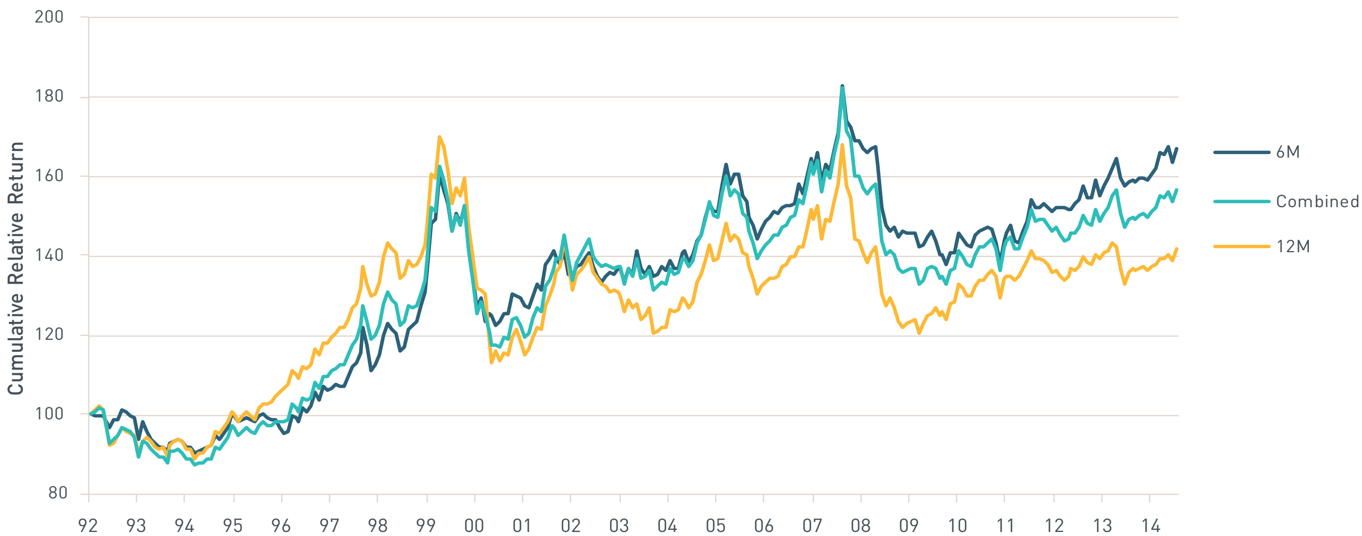


MSCI RESEARCH SHOWS, ON A HISTORICAL BASIS, THE MOMENTUM FACTOR HAS BEEN ONE OF THE STRONGEST GENERATORS OF EXCESS RETURNS.

PERFORMANCE & IMPLEMENTATION

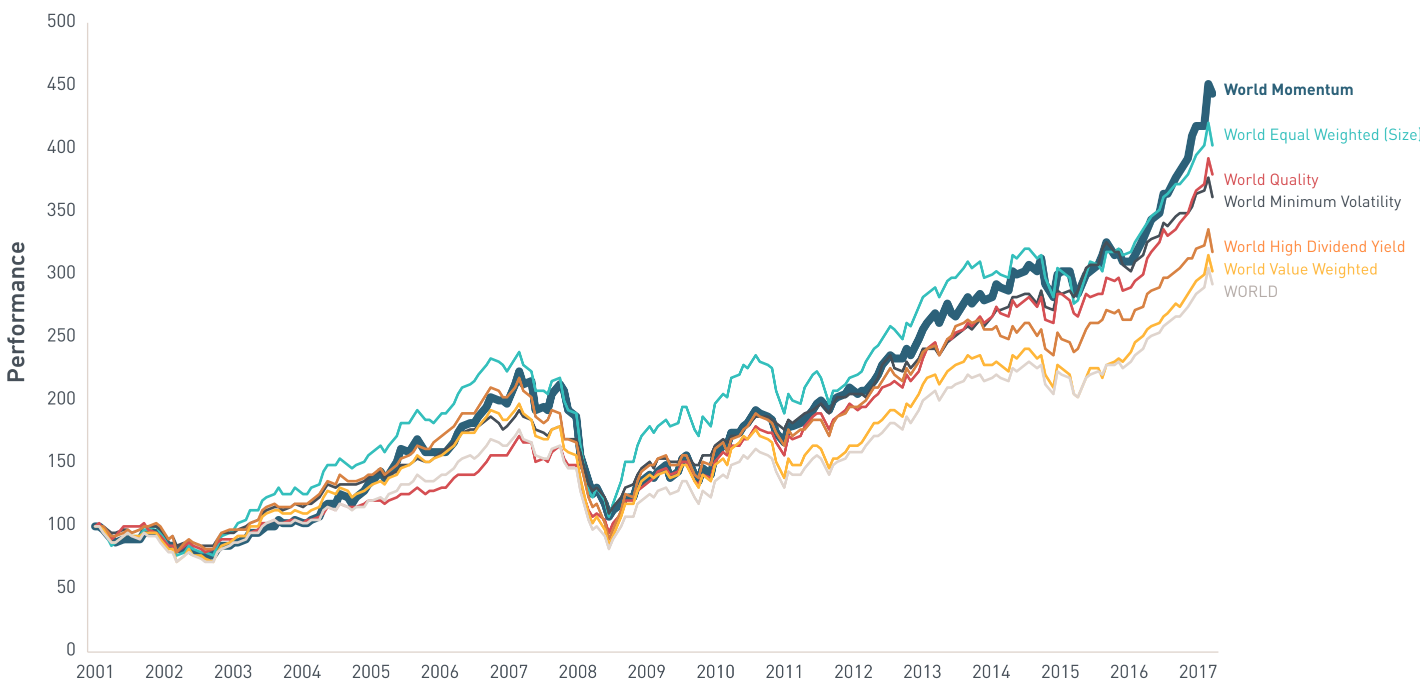
Portfolio managers usually implement momentum by choosing stocks based upon their performance over the previous three to 12 months, omitting the most recent month to allow for short-term reversal effects. In MSCI's simulated strategies (see chart below), both the 6- and 12-month approaches outperformed the MSCI World Index over the period November 1992 to May 2015.

RELATIVE RETURNS OF WORLD MOMENTUM STRATEGIES



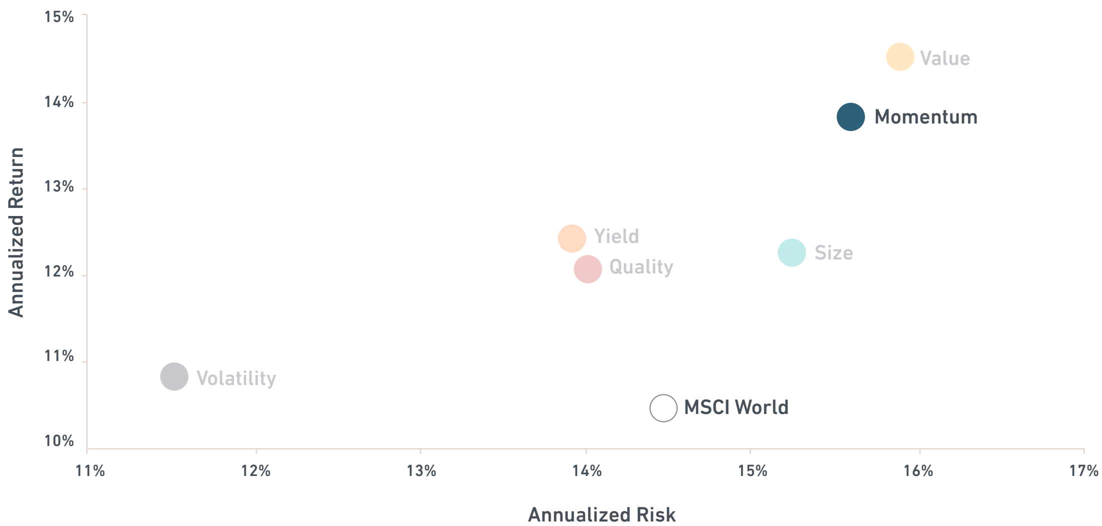
Over time, individual factors have delivered outperformance relative to the market. Since March 2009, the MSCI World Momentum index has been the leading performer amongst the factor indexes. Over the period 2001-2016, despite there being a number of momentum crashes, the momentum index has recovered swiftly and outperformed the five other factors discussed in this brochure series.

MSCI WORLD FACTOR INDEXES



From a longer-term perspective, the simulated MSCI World Momentum Index has generated an annualized return of more than 13% during a 40-year period (see chart below). In comparison to other factor indexes over the same period, the momentum factor index tends to be at the higher end of the risk/return spectrum.

LONG-TERM PERFORMANCE: JANUARY 1977 TO DECEMBER 2017



Although factor strategies have exhibited long-term outperformance, in the short-term factor performance has been cyclical and has generated periods of underperformance.

HOW THE SIX FACTORS HAVE PERFORMED RELATIVE TO EACH OTHER: MOMENTUM

1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
45.6%	1.5%	-4.5%	-9.6%	56.7%	28.6%	28.4%	31.0%	19.9%	-29.2%	42.0%	18.2%	8.0%	16.7%	32.7%	12.1%	5.8%	10.3%	32.6%
40.1%	1.2%	-8.0%	-9.8%	50.4%	24.1%	17.2%	28.9%	16.8%	-35.5%	41.9%	16.5%	4.8%	16.5%	30.3%	9.0%	4.5%	9.4%	26.6%
25.3%	0.3%	-10.0%	-13.6%	33.8%	21.3%	15.2%	22.1%	10.3%	-39.9%	33.8%	12.8%	4.8%	15.0%	27.7%	7.0%	4.2%	8.9%	23.9%
20.5%	-2.1%	-11.5%	-14.4%	30.5%	20.8%	10.0%	21.2%	9.6%	-40.3%	35.5%	12.3%	4.4%	14.8%	27.4%	5.5%	-0.3%	8.2%	23.1%
18.4%	-10.2%	-12.0%	-15.1%	26.0%	20.0%	8.5%	20.7%	7.3%	-41.9%	30.8%	11.4%	-5.0%	13.7%	26.5%	4.6%	-1.0%	8.2%	22.9%
8.6%	-12.9%	-16.5%	-16.5%	25.9%	15.2%	8.3%	19.1%	6.4%	-42.4%	17.2%	9.1%	-9.3%	13.3%	22.9%	3.4%	-2.4%	5.1%	19.2%
8.4%	-18.9%	-20.5%	-19.5%	22.0%	12.7%	6.0%	16.8%	6.1%	-42.6%	14.8%	7.2%	-11.0%	8.9%	19.4%	3.3%	-2.7%	4.7%	18.0%

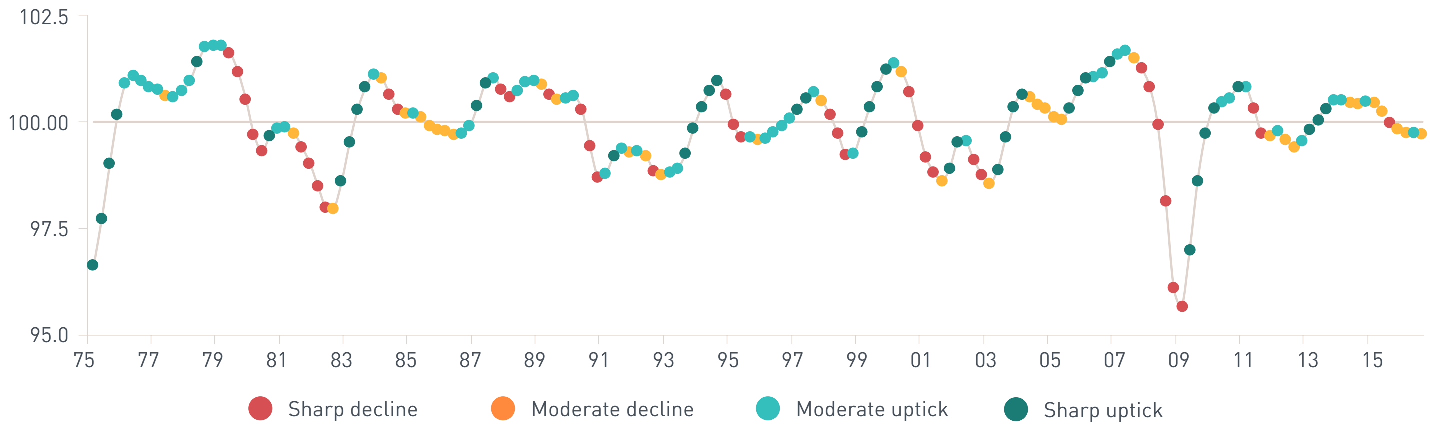
Volatility Yield Quality Momentum Value Size World

The analysis and observations in this report are limited solely to the period of the relevant historical data, backtest or simulation. Past performance — whether actual, back tested or simulated — is no indication or guarantee of future performance. None of the information or analysis herein is intended to constitute investment advice or a recommendation to make (or refrain from making) any kind of investment decision or asset allocation and should not be relied on as such.

The time periods covered in the charts in this paper were dictated by the data available when we conducted the simulations which produced them.

There are frequently material differences between backtested or simulated performance results and actual results subsequently achieved by any investment strategy

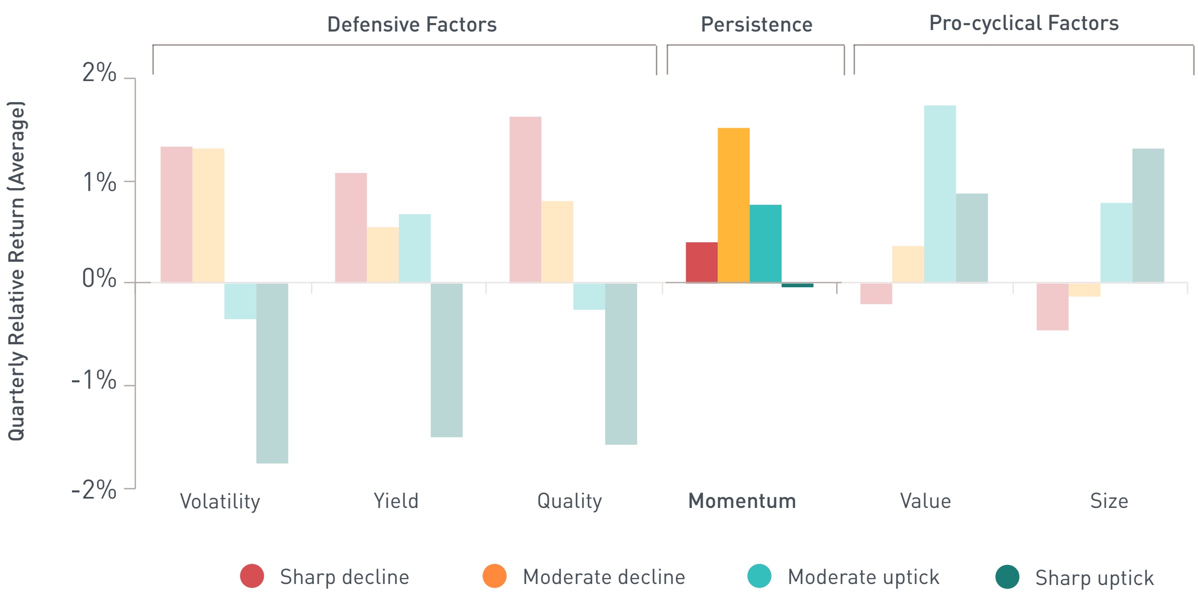
MACRO EFFECTS ON FACTOR PERFORMANCE



In general, factor performance has been cyclical in nature. Individual factors have been shown to outperform during different macroeconomic environments. As the charts on this page illustrate, the momentum factor falls into the "persistence" category, meaning that this type of strategy historically outperformed during stable market conditions over the study period.

In practice, momentum is typically combined with value to gain diversification benefits, due to the low and often negative correlation between the two factors.

The Composite Leading Indicator used here, designed to provide early-warning signals on business-cycle turning points, is an aggregate time series displaying a reasonably consistent leading relationship with the reference series for the macroeconomic cycle.



Data from November 28, 1975 to September 30, 2016.

MOMENTUM

CONCLUSION

The momentum factor historically has produced long-term excess return, and several studies show that it has been present across asset classes, markets, sectors and industries. However, momentum strategies have sometimes been plagued by crashes and investability constraints. MSCI has developed a momentum index designed to target securities based on risk-adjusted performance, with the goal of mitigating momentum crashes and reducing unnecessary turnover.

FOOTNOTES & REFERENCES

1 Moskowitz, T.J. and M. Grinblatt. (1999). "Do Industries Explain Momentum?" Journal of Finance, Vol. 54, No. 4, pp. 1249–1290.

2 Jegadeesh, N. and S. Titman. (1993). "Returns to Buying Winners and Selling Losers: Implications for Stock Market Efficiency." Journal of Finance, Vol. 48, No. 1, pp. 65–91.

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