When we published our paper Momentum Crashes: The Long & the Short of It in April of last year, we didn't think we would have to update it so soon. However, since we published the paper, global equity markets have experienced historically significant momentum crashes in both the second half of 2022 and the beginning of 2023.

In US equity markets, January 2023 ranked as the 10th worst month for the momentum factor (WML) since 1927. True to form, momentum's decline followed a prior 2-year market decline (although a mild 1%) and was defined by the losers crashing upwards (losers portfolio +19% versus winners +3%).

January 2023 was the 10th worst month in US history for the momentum factor (WML)

Year-Month	Market Return	Preceding Market 2-Year Return	WML	Winners	Losers	Winners Excess to Market	Losers Excess to Market	Winners + Value Excess to Market
1932-08	37%	-68%	-52%	32%	84%	-5%	47%	16%
1932-07	34%	-75%	-45%	23%	68%	-11%	34%	10%
2009-04	10%	-41%	-34%	6%	40%	-4%	30%	1%
1939-09	17%	-22%	-31%	17%	48%	0%	31%	16%
2001-01	4%	11%	-25%	-1%	25%	-4%	21%	-3%
1938-06	24%	-28%	-25%	17%	42%	-6%	18%	-1%
1931-06	14%	-48%	-18%	10%	28%	-4%	14%	2%
1933-04	39%	-59%	-17%	39%	56%	0%	17%	9%
2002-11	6%	-36%	-16%	1%	17%	-5%	11%	-2%
2023-01	7%	-1%	-16%	3%	19%	-4%	12%	-2%
1931-02	11%	-39%	-14%	9%	24%	-2%	13%	1%
1975-01	14%	-42%	-14%	15%	29%	1%	15%	6%
2009-05	5%	-37%	-12%	2%	15%	-3%	9%	-2%
2020-11	12%	27%	-12%	14%	27%	2%	14%	4%
2009-03	9%	-45%	-12%	7%	19%	-2%	10%	0%

Portfolios are calculated using data from Ken French's website: https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html The Momentum (or Value) portfolio returns are formed as the average return over the top 30% by prior return (or B/M for value) intersected with a large cap and a small cap portfolio. The Market portfolio return represents the cap-weighted entire universe of stocks return and the winners/value combination is the equally-weighted winners portfolio return with the value portfolio return. Please see Important Disclosures at the end of this document.

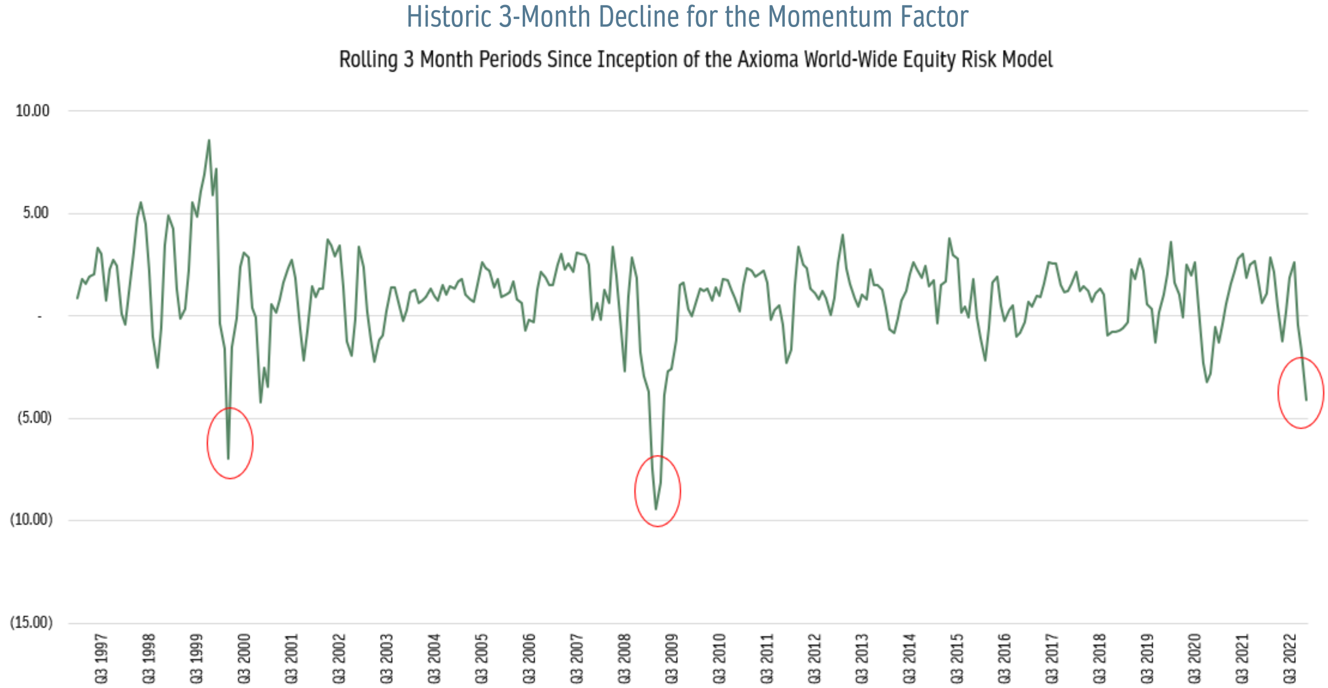
In non-US equity markets, both November 2022 and January 2023 witnessed historically significant momentum (WML) drawdowns. To wit, November ranked as the 15th worst month since 1990, and January ranked as the 17th worst. Similarly, each momentum crash was defined by the losers portfolio significantly outperforming the winners portfolio.

November 2022 and January 2023 were historically significant momentum (WML) drawdowns in non-US equity markets

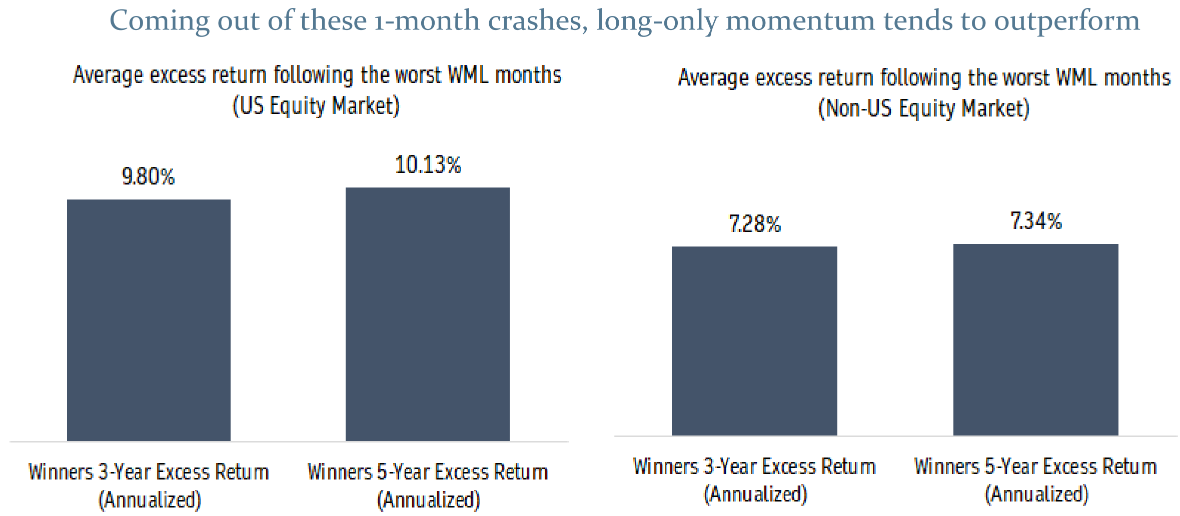
Year-Month	Market Return	Preceding Market 2-Year Return	WML	Winners	Losers	Winners Excess to Market	Losers Excess to Market	Winners + Value Excess to Market
2009-04	14%	-44%	-20%	6%	26%	-8%	13%	-3%
2020-11	13%	10%	-11%	9%	21%	-4%	7%	-1%
2009-05	15%	-39%	-11%	11%	22%	-3%	7%	-1%
1991-02	11%	--	-10%	9%	19%	-2%	8%	-1%
2000-03	2%	39%	-9%	-4%	5%	-6%	3%	-3%
2000-04	-7%	37%	-9%	-13%	-5%	-6%	3%	-3%
2001-11	5%	-28%	-9%	1%	10%	-4%	5%	-2%
2009-03	8%	-46%	-8%	4%	12%	-4%	4%	-2%
2000-05	-3%	26%	-7%	-5%	2%	-3%	4%	0%
2012-01	7%	-2%	-7%	5%	12%	-2%	5%	-1%
2001-01	4%	14%	-6%	1%	8%	-3%	4%	-2%
1999-03	5%	-1%	-6%	3%	9%	-2%	4%	0%
2003-04	9%	-21%	-6%	6%	12%	-3%	2%	-2%
1999-04	6%	6%	-5%	6%	11%	0%	5%	2%
2022-11	12%	0%	-5%	9%	14%	-3%	2%	-2%
2009-08	3%	-28%	-5%	2%	7%	-1%	4%	1%
2023-01	7%	-8%	-5%	5%	10%	-2%	2%	-2%

Portfolios are calculated using data from Ken French's website: https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html Non-US portfolios are formed with using a Developed markets weight of 75%, and an Emerging markets weight of 25%. The Momentum (or Value) portfolio returns are formed as the average return over the top 30% by prior return (or B/M for value) intersected with a large cap and a small cap portfolio. The Market portfolio return represents the cap-weighted entire universe of stocks return and the winners/value combination is the equally-weighted winners portfolio return with the value portfolio return. Please see Important Disclosures at the end of this document.

Additionally, using an alternative definition from Axioma's World-Wide Equity Risk Model, we see the historical significance of the momentum factor's recent decline in the table below. In fact, momentum's rolling 3-month decline ending in January 2023 is the 3rd worst behind the burst of the Tech Bubble in the early 2000s and the recovery from the Global Financial Crisis in 2009.



As we have detailed in our past research, momentum has a long history of long-term outperformance. However, like any investment approach, momentum does go through periods of underperformance. As we have just witnessed, momentum drawdowns tend to be short and sharp, and they tend to cluster around times of general market volatility. Still, historically speaking, an investor would be well-served by investing immediately following a significant monthly drawdown of momentum. In fact, after 15[1] of the worst months for momentum (WML) since 1927 in US equity markets, the average 3- and 5-year annualized excess return above the market for long-only momentum has been close to 10%. Similarly, after 17[1] of the worst months for momentum (WML) since 1990 in non-US equity markets, the average 3- and 5-year annualized excess return for long-only momentum has been over 7%.



[1]Periods with a 3- and 5-year return as of February 2023.

About EAM

EAM Investors is solely focused on delivering alpha for clients in global equity markets. A momentum-driven approach to investing leverages their collective insight within a systematic process designed to deliver consistent and predictable outcomes. EAM's Informed Momentum® investment process has been applied consistently across all strategies since inception of the firm in 2007.

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Fama-French returns referenced in this document are calculated using monthly and daily data from Ken French's website:
https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html

The U.S. Market portfolio return represents the return of the U.S. universe of stocks. The Winners portfolio return is the average return over the top 30% prior return intersected with a large and a small cap portfolio. The Losers portfolio return is the average return over the bottom 30% prior return intersected with a large and a small cap portfolio. The Momentum portfolio return is the winners return minus the losers return. The Value portfolio return is the average return over the top 30% Book/Market intersected with a large and a small cap portfolio. The Momentum and Value combination portfolio is equally weighted between momentum and value. The Non-US portfolios are formed with using a Developed markets weight of 75%, and an Emerging markets weight of 25%. The U.S. Dollar is the currency used to express performance.