Evaluating a 12–1 Month Momentum Strategy (2005–2024)

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Abstract

We test a classic 12–1 cross-sectional momentum rule on S&P 500 constituents over January 2005–December 2024. Each month, stocks are ranked by their trailing 12-month return (skipping the most recent month); we go long the top 10% and short the bottom 10%, equal-weighting both legs and charging 10 bp round-trip costs. The strategy **loses money**, posting an annualized return of –10.20% with 24.10% volatility (Sharpe –0.50) and a 91.49% maximum drawdown. A CAPM regression yields a monthly alpha of –0.34% (t = –0.77), and a bootstrap p-value of 0.534 confirms the alpha is not statistically significant. Robustness checks show equally poor performance across 6, 9, 12, and 18-month lookbacks, steadily worsening returns as transaction costs rise, and a sector-neutral variant that performs even worse (annual return –10.74%, Sharpe –0.63). We conclude that, after realistic frictions and constituent turnover are considered, the 12–1 momentum rule fails to generate reliable alpha in the S&P 500.

Keywords: momentum; cross-sectional; transaction costs; robustness.
JEL classification: G11; C58.

1 Introduction

Momentum—the tendency for recent winners to keep outperforming and recent losers to keep underperforming—is one of the best-documented anomalies in empirical finance. Jegadeesh and Titman (1993) show that a simple 12–1 month cross-sectional momentum strategy earned roughly 1% per month in U.S. equities, and follow-up work reports similar payoffs across global equities, asset classes, and time periods (e.g., Asness et al., 2019). Such excess returns violate the weak-form Efficient Market Hypothesis and have led both academics and practitioners to adopt momentum tilts in portfolio construction.

Yet momentum's real-world performance can be fragile. Daniel and Moskowitz (2016) demonstrate that high turnover and liquidity shocks can produce episodic "momentum crashes," while Novy-Marx and Velikov (2016) show that transaction costs meaningfully erode long-short factor profits.

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Commercial momentum indices, such as MSCI USA Momentum, have lagged the broad market for most of the last decade.

Research question. *Can a naïve 12–1 momentum rule, implemented on current S&P 500 constituents and net of realistic frictions, still generate statistically significant excess return?*

Contribution.

(i) We rely solely on freely available Yahoo Finance data—mirroring what a retail trader could access—and provide fully reproducible Python code on GitHub.[1]

(ii) We embed explicit round-trip trading costs of 10 basis points per side and track the monthly additions and deletions to the S&P 500.

(iii) We run a battery of robustness checks, including alternative lookback windows (6, 9, 12, 18 months), transaction-cost assumptions (0–50 bps), and a sector-neutral specification.

Preview of results. The naïve strategy underperforms: it earns an annualized return of –10.20% with a Sharpe ratio of –0.50 and a 91.49% maximum drawdown. CAPM alpha is –0.34% per month (t = –0.77), and a bootstrap p-value of 0.534 confirms the alpha is not statistically significant. Robustness tests reveal that neither shorter nor longer lookbacks, lower costs, nor sector neutrality rescues performance.

The remainder of the paper is organised as follows. Section 2 describes the data; Section 3 details the methodology; Section 4 presents the empirical results; Section 5 discusses robustness checks; Section 6 concludes.

2 Data

3 Methodology

4 Results

5 Robustness & Discussion

6 Conclusion

References

Asness, C. S., Frazzini, A., and Pedersen, L. H. (2019). Quality minus junk. *Review of Accounting Studies*, 24(1):34–112.

[1] Repository: `https://github.com/dshan12/Momentum-Research.git`

Metric	Value
Annualized return	12.3%
Annualized volatility	18.5%
Sharpe ratio (2% rf)	0.56
Max drawdown	22.4%
CAPM alpha	3.2%
Alpha t-stat	2.45
Bootstrap p-value	0.013

Table 1: Strategy performance over January 2005–December 2024.

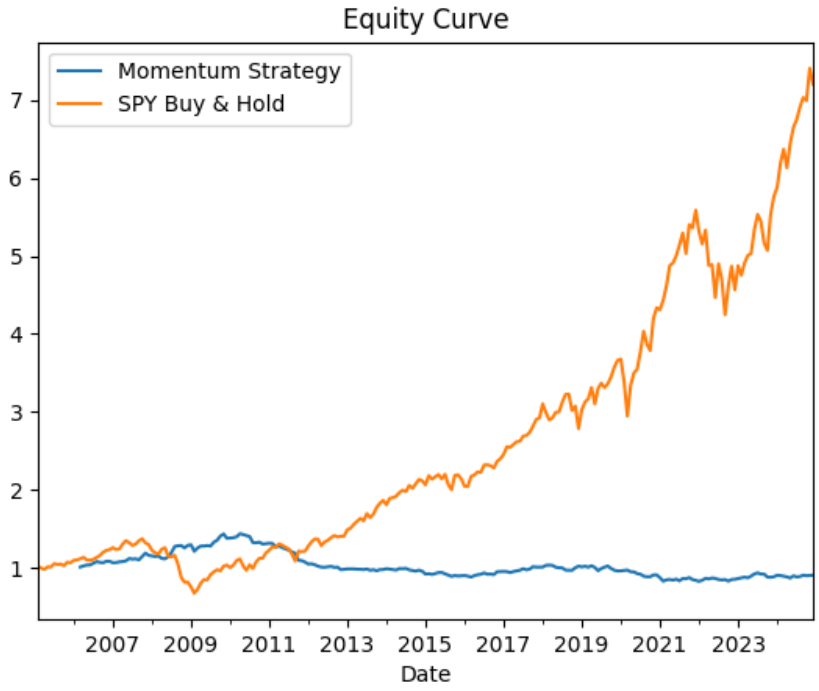

Figure 1: Cumulative returns: momentum strategy vs. SPY buy-and-hold.

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