Trend Following Is Insurance, Not Alpha

Gaurav Gupta · Research note · October 2026 · github.com/guptagaurav-info/trend-following-out-of-sample · Data: Shiller S&P 500 monthly (1871–2023), SPY daily with dividends and 3-month T-bills (1996–2026)

0.95 → 0.67
Sharpe of the 10-month rule: averaged vs tradable SPY prices, 1997–2026

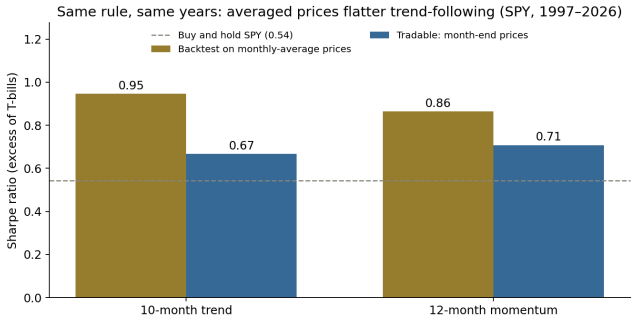
~2/3
of the apparent Sharpe improvement over buy and hold came from price averaging

-51% → -22%
Worst drawdown, buy and hold vs trend rule (tradable)

0.6 pts/yr
Return given up, 1997–2026 (about 2.0 pts/yr since June 2007)

Test	Trend CAGR	B&H CAGR	Trend Sharpe	B&H Sharpe	Trend max DD	B&H max DD
Shiller averages, 1872–2023, 10-month (cash 0%)	9.2%	9.1%	0.97	0.69	-46%	-82%
SPY averaged prices, 1997–2026, 10-month	10.9%	9.8%	0.95	0.62	-19%	-49%
SPY month-end (tradable), 1997–2026, 10-month	9.2%	9.8%	0.67	0.54	-22%	-51%
SPY month-end, 1997–2026, 12-month momentum	10.5%	9.8%	0.71	0.54	-20%	-51%
SPY month-end, June 2007 onward, 10-month	8.7%	10.7%	0.70	0.64	-22%	-51%

Sharpe in excess of 3-month T-bills for SPY tests. 5 bp per switch; 25 bp stress lowers tradable 10-month CAGR to 8.9%. Lag-1 autocorrelation of monthly returns: 0.19 averaged vs 0.00 month-end SPY; 0.27 Shiller.



Same rule, same years: averaged prices overstate the edge.

SOURCES

- Shiller, R. J., Irrational Exuberance online data (Yale); mirror github.com/datasets/s-and-p-500
- SPY prices and dividends (Yahoo Finance) and U.S. Treasury daily par yields, mirror huggingface.co/datasets/defeatbeta/yahoo-finance-data (ODC-BY)
- All files sha256-pinned at download (2026-10-20)

METHOD

- Rules: 10-month moving average (Faber 2007); 12-month time-series momentum (Moskowitz, Ooi & Pedersen 2012)
- Signal at end of month t sets the position for month t+1; cash in T-bills
- Identical rules run on monthly-average and month-end SPY prices to isolate averaging bias (Working 1960)

KEY CALCULATIONS

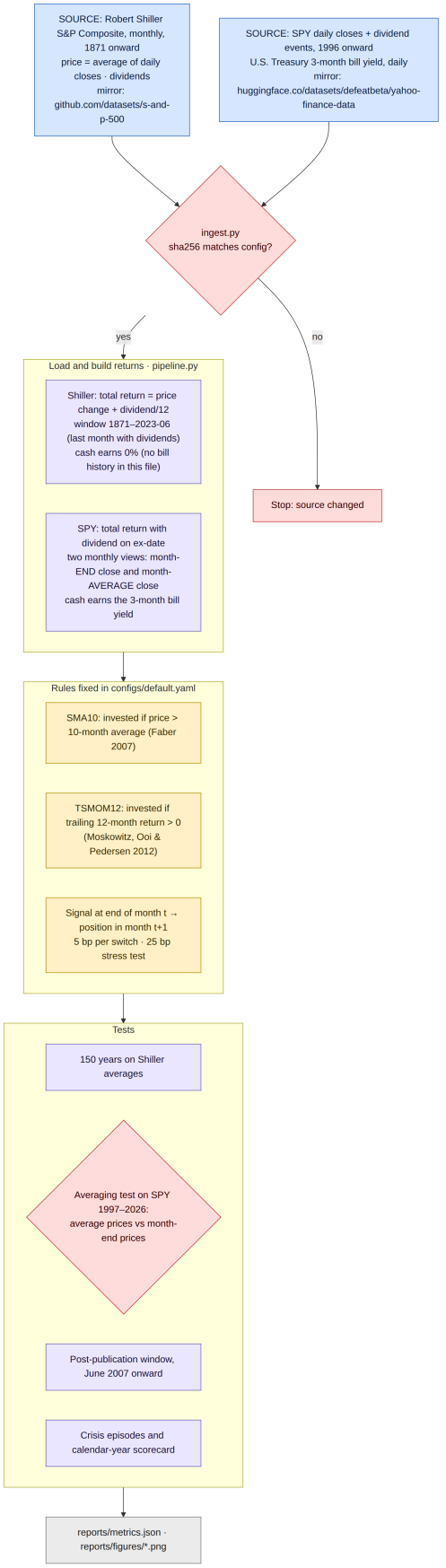
- Total return = (close + dividend) / prior close − 1
- Sharpe = mean(return − bill) / stdev(return) × √12
- Business: bn × measured drawdown; premium = CAGR gap × bn

RECOMMENDATIONS

- Treat trend overlays as hedges with an expected premium of ~0.5–2 pts a year, sized to the drawdown the portfolio cannot tolerate.
- Agree evaluation horizon and expected losing years before launch; the rule trailed in 17 of 28 years.
- Pair with a fast-crash tool (volatility sizing or options): a monthly signal cannot react to a four-week crash.
- Make tradable-price backtests with disclosed data construction a standing model-risk control.

Independent research on public data, not investment advice. Dollar figures illustrative. Produced with AI assistance and reviewed by the author; sources as cited.

Pipeline: sources, checksum gate, rules and tests



The averaging test

