RF100 · Random Forest versus momentum

2010-03-01 to 2026-07-01 · 197 observations

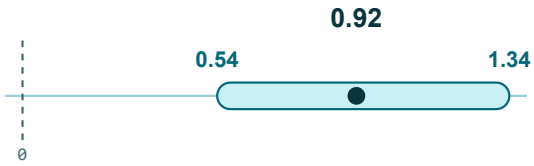
FINDING Historical walk-forward

RF100 returned 29.27% annualized versus 32.14% for momentum. The annual mean difference was -1.28 pp (HAC t -0.19).

RETURN AND RISK

METRIC	STRATEGY	BENCHMARK
Compound annual growth	**29.27%**	32.14%
Sharpe	**0.92**	1.07
Maximum drawdown	**−32.85%**	−37.62%

Sharpe ratio interval



95.00% block-bootstrap interval. Standard error 0.21.

HOW IT WAS PRODUCED

Re-trained all 17 annual folds using 100 features, a 300-tree Random Forest and a minimum 43-session purge. Both monthly portfolios use the same 197 complete opening-to-opening intervals.

Five equal-weighted stocks per portfolio, 10 bp per side and 0% risk-free rate as in the original metric. Monthly rank IC 0.069. Uncertainty uses three HAC lags and 6-month bootstrap blocks.

EVIDENCE SCOPE

EVIDENCE LEVEL **Historical walk-forward** Unsigned research evidence

- Fixed, retrospectively selected 20-stock universe without delistings or point-in-time membership.
- This run freezes a fresh set of adjusted Yahoo data. The original vendor snapshot is unpublished and its results differ.
- The comparison uses historical folds and fixed costs without modelling liquidity or market impact.

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RETURN AND RISK

METRIC	STRATEGY	BENCHMARK
Compound annual growth	**29.27%**	32.14%
Arithmetic annual return	**31.21%**	32.48%
Cumulative return	**6,667.47%**	9,602.76%
Annual volatility	**33.85%**	30.23%
Sharpe	**0.92**	1.07
Sortino	**1.91**	2.19
Calmar	**0.89**	0.85
Maximum drawdown	**−32.85%**	−37.62%
Positive periods	**59.90%**	63.96%
Peak to trough periods	**7**	10
Recovery periods	**8**	19
Skewness	**1.28**	0.86
Excess kurtosis	**5.11**	3.32

AGAINST THE BENCHMARK

METRIC	ESTIMATE
Arithmetic annual difference	−1.28%
Tracking error	30.35%
Information ratio	−0.04
Beta	0.62
Correlation	0.56
Annual Jensen alpha	10.98%

UNCERTAINTY AND VERIFICATION

METRIC	ESTIMATE
Sharpe interval	0.54 … 1.34
Information ratio interval	−0.53 … 0.34
Active return HAC t	−0.19
Two-sided HAC p	0.85
Block length	6
Valid resamples	1,000

CONFIGURATION

METRIC	ESTIMATE
Benchmark	126-session momentum, top five
Annual risk-free rate	0.00%
Periods per year	12
Calendar	XNYS