SIGNAL RESEARCH NOTE

Penalized Residual Reversion

Short-horizon mean-reversion evidence across a broad liquid equity universe.

Penalized Ou Statistical Arbitrage | Primary research | 5d preferred horizon

Executive Summary

This note summarizes historical rank evidence for Penalized Residual Reversion. Metrics are reported as research diagnostics under the source-run assumptions and should be read as evidence about ranking behavior, not as a live recommendation.

Preferred horizon	5d
Top-bottom spread	0.44%
Rank IC	0.049
Long-leg return	0.70%
Average turnover	79.17%

1. The preferred diagnostic horizon is 5d, where the recorded rank spread is 0.44%.
2. Rank IC is positive in the reported research run at 0.049.
3. The signal is best read as a research-library ranking component, not as a standalone product.

Data and Research Setup

UNIVERSE

A fixed broad panel of 3,000 liquid global equities used by the source research run.

INPUTS

Daily closing prices and lag-safe relative price-state observations.

CADENCE

Monthly cross-sectional ranking review at a 5d forward research horizon.

COMPARISON BASIS

Comparisons use the same universe and source assumptions inside each run. The note excludes instrument-level lists and live recommendations.

The source files were used for historical research extraction only. This note does not include instrument-level lists or position-level recommendations.

Signal Methodology

Without disclosing the exact functional, the construction proceeds along three conceptual steps.

1. **Signal measurement.** Measures short-horizon relative dislocation after separating common and security-specific price behavior.

2. **Cross-sectional ranking.** Ranks equities by the direction and scale of the resulting residual state.

3. **Horizon evaluation.** Evaluates whether the ordering is followed by cross-sectional convergence over the next five trading days.

The description is intentionally conceptual. Formula details, exact construction rules and implementation parameters are not disclosed.

Results and Horizon Context

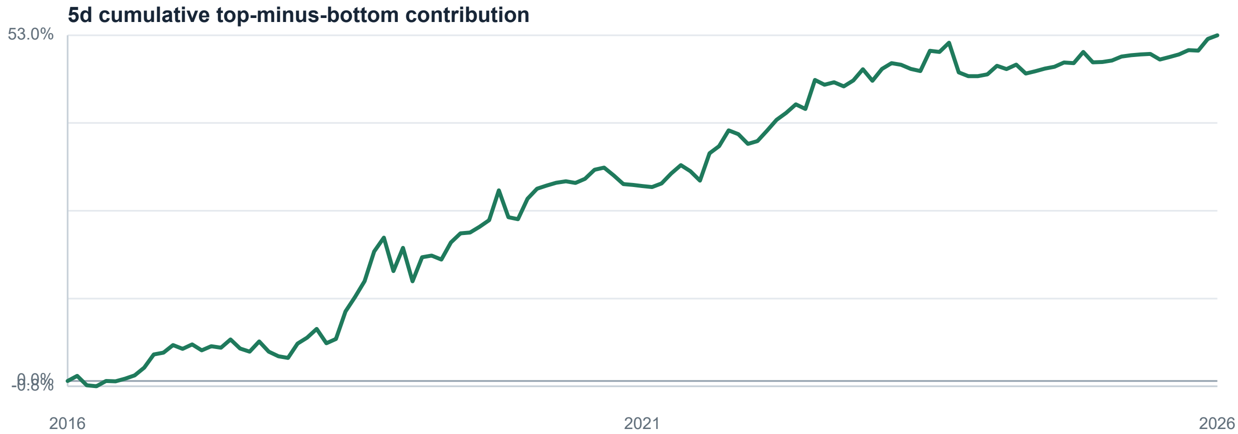

Figure 1. Cumulative 5d top-minus-bottom rank-spread contribution. Long-horizon forward observations can overlap, so the series should be read as a ranking diagnostic, not as a standalone portfolio NAV.

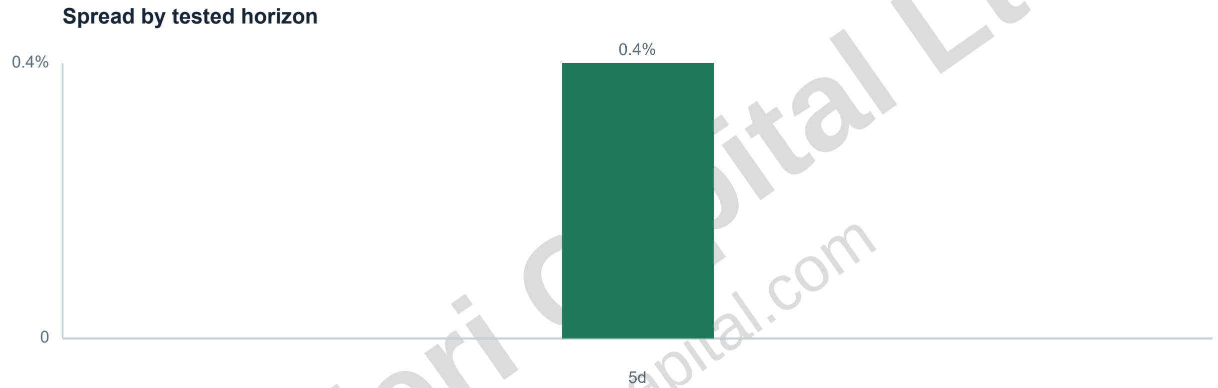

Figure 2. Spread profile across the tested horizons available in the source validation summary.

Horizon	Rank spread	Rank IC	Long-leg return	Turnover
5d	**0.44%**	**0.049**	**0.70%**	**79.17%**

Stability and Robustness

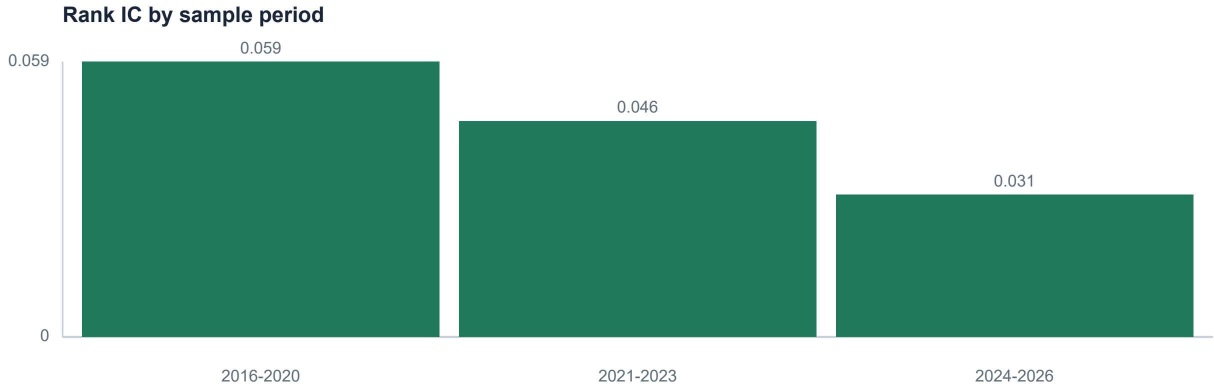

Figure 3. Rank-IC evidence across chronological sample periods from the source OOS audit.

The recorded spread is positive in 3 of 3 chronological sample periods.

Positive-year fraction	**n/a**
Universe size	**3,000**
Validation dates	**120**

Research Interpretation

ROLE IN RESEARCH LIBRARY

Primary short-horizon equity-ranking candidate inside the research library.

WHAT IT CAPTURES

Security-specific relative dislocations that may converge after common price behavior is separated.

KNOWN LIMITATIONS

Turnover is high, one chronological split is weaker, and the result depends on broad-universe coverage and the source run's historical controls.

The evidence supports retaining the signal in the research library where it can be compared with related components under the same assumptions.