SIGNAL RESEARCH NOTE

Random Forest Residual Return Rank

Machine-learning rank evidence across a broad liquid equity universe.

Ml Random Forest Return Residual Return Prediction | Secondary research | 126d preferred horizon

Executive Summary

This note summarizes historical rank evidence for Random Forest Residual Return Rank. 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	**126d**
Top-bottom spread	**13.01%**
Rank IC	**0.061**
Long-leg return	**22.12%**
Average turnover	**51.86%**

1. The preferred diagnostic horizon is 126d, where the recorded rank spread is 13.01%.
2. Spread evidence is strongest around the 252d horizon in the available comparison set.
3. Rank IC is positive in the reported research run at 0.061.

Data and Research Setup

UNIVERSE

Broad liquid equity universe used by the source research run.

INPUTS

Daily close prices and dated feature panels available at the research observation date.

CADENCE

Cross-sectional rank review at the reported horizon set.

COMPARISON BASIS

Comparisons use the same universe and source assumptions inside each run. The note omits current constituents, current tickers and live recommendations.

The source files were used for historical research extraction only. This note does not disclose current constituents, current ranks or position-level recommendations.

Signal Methodology

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

1. **Signal measurement.** Measures relative extension or residual dislocation in the source universe.
2. **Cross-sectional ranking.** Ranks observations by the degree of overextension after applying the source-run controls.
3. **Horizon evaluation.** Evaluates whether subsequent return differences are directionally consistent across horizons.

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

Results and Horizon Context

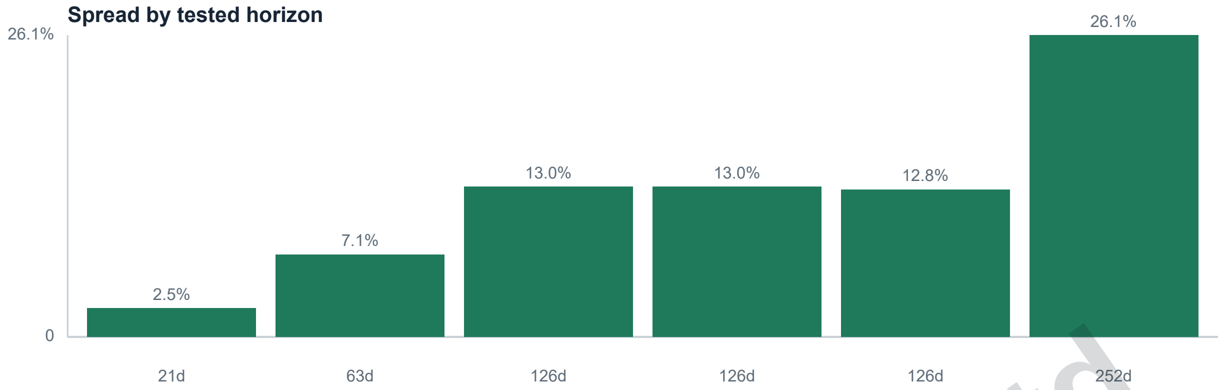

Figure 1. Top-minus-bottom spread by tested horizon from the available validation summary. The chart is a diagnostic comparison, not a standalone portfolio NAV.

Horizon	Rank spread	Rank IC	Long-leg return	Turnover
21d	2.47%	0.032	3.50%	n/a
63d	7.14%	0.053	10.93%	n/a
126d	**13.01%**	**0.061**	**22.12%**	**51.86%**
126d	**13.01%**	**0.061**	**22.12%**	**n/a**
126d	**12.78%**	**0.074**	**21.47%**	**54.21%**
252d	26.11%	0.061	45.93%	n/a

Stability and Robustness

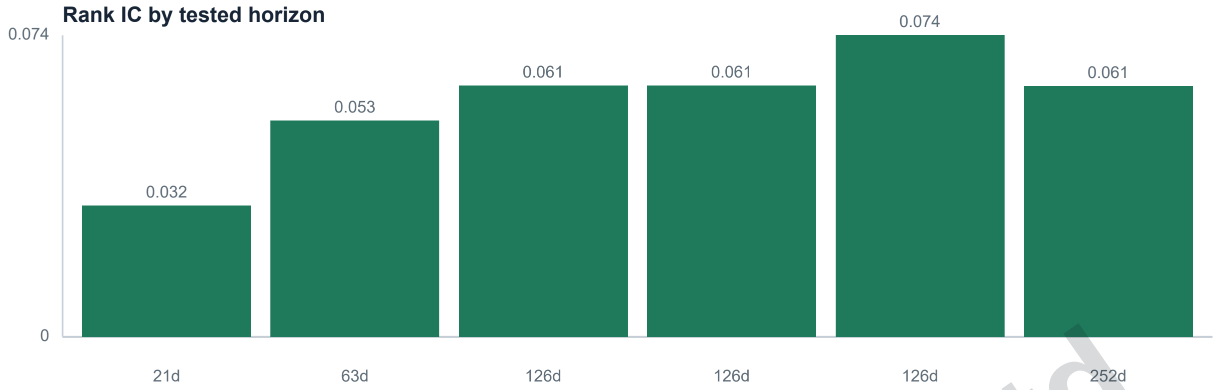

Figure 3. Rank-IC evidence across the available horizon set. Where only one horizon is available, the chart should be read as a compact evidence marker.

The available horizon evidence is coherent enough for a research note. Positive-year fraction is 100.0% in the source run.

Positive-year fraction	100.0%
Universe size	2,965
Validation dates	60

Research Interpretation

ROLE IN RESEARCH LIBRARY

Machine-learning ranking component inside the research library.

WHAT IT CAPTURES

Nonlinear interaction evidence between the source feature set and subsequent cross-sectional returns.

KNOWN LIMITATIONS

Model evidence depends on the training window, feature availability and replay assumptions. It is not a live trading specification.

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