SIGNAL RESEARCH NOTE

Robust Gas-Oil Residual Reversion

Heavy-tail-aware convergence evidence between liquid natural-gas and crude-oil exposures.

Gas Oil Cointegration Reversion | Secondary research | 21d preferred horizon

Executive Summary

This note summarizes historical rank evidence for Robust Gas-Oil 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	21d
Top-bottom spread	3.30%
Rank IC	0.084
Long-leg return	n/a
Average turnover	36.57%

1. The preferred diagnostic horizon is 21d, where the recorded rank spread is 3.30%.
2. Spread evidence is strongest around the 63d horizon in the available comparison set.
3. Rank IC is positive in the reported research run at 0.084.

Data and Research Setup

UNIVERSE

Liquid natural-gas and crude-oil continuous-futures proxy histories.

INPUTS

Daily closing prices for the two energy exposures, aligned on a common historical calendar.

CADENCE

Daily relative-value observations evaluated over 5d, 21d and 63d forward horizons.

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 relative extension between liquid natural-gas and crude-oil proxy exposures.

2. **Cross-sectional ranking.** Orders historical observations by the direction and scale of the residual dislocation.

3. **Horizon evaluation.** Evaluates whether the dislocation subsequently converges over the reported forward horizons.

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

Results and Horizon Context

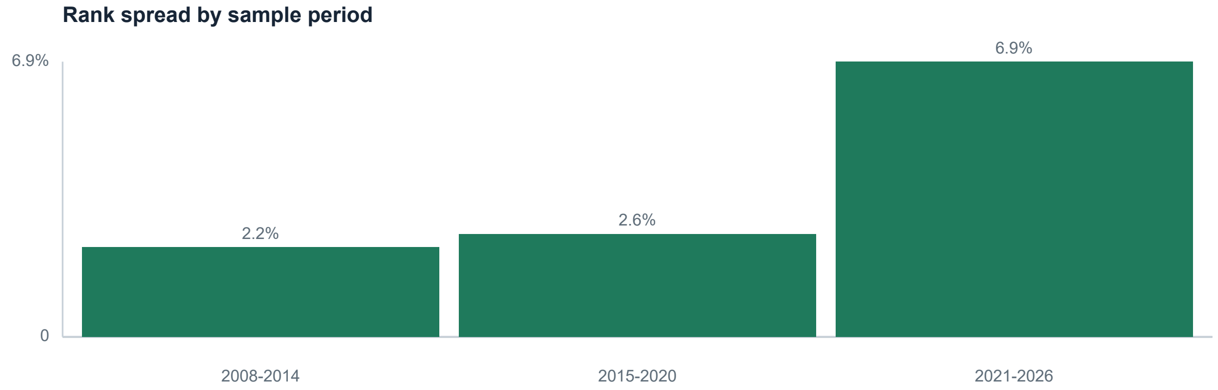

Figure 1. Top-minus-bottom rank spread across chronological sample periods. The bars are historical ranking diagnostics, not a standalone portfolio NAV.

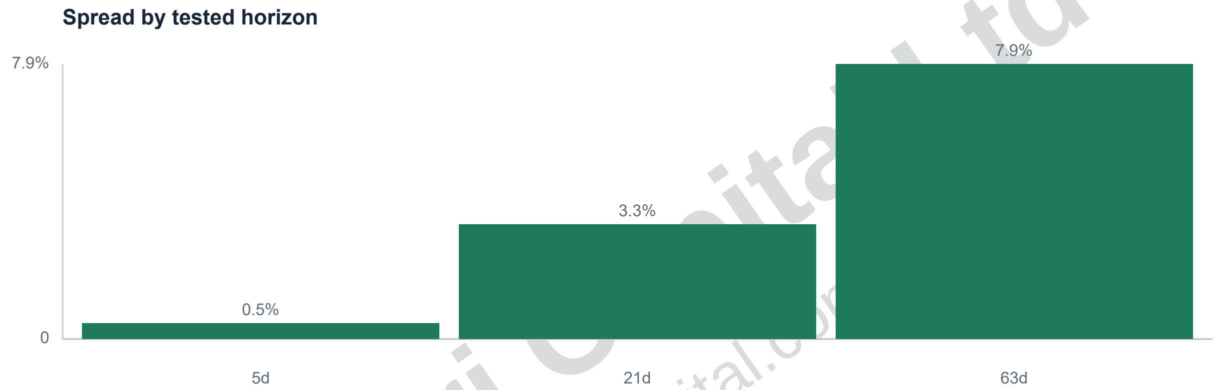

Figure 2. Spread profile across the tested horizons available in the source validation summary.

Horizon	Rank spread	Rank IC	Long-leg return	Turnover
5d	0.45%	0.022	n/a	36.57%
21d	**3.30%**	**0.084**	**n/a**	**36.57%**
63d	7.91%	0.131	n/a	36.57%

Stability and Robustness

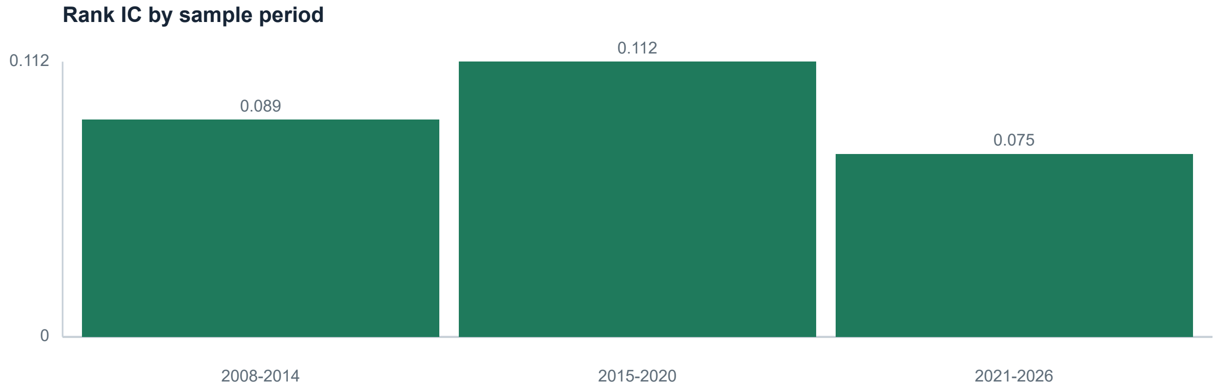

Figure 3. Rank-IC evidence across chronological sample periods from the source OOS audit.

The recorded spread is positive in 3 of 3 chronological sample periods. Positive-year fraction is 77.8% in the source run.

Positive-year fraction	**77.8%**
Universe size	**1**
Validation dates	**901**

Research Interpretation

ROLE IN RESEARCH LIBRARY

Secondary energy relative-value diagnostic inside the research library.

WHAT IT CAPTURES

Medium-horizon convergence following relative dislocations between natural-gas and crude-oil exposures.

KNOWN LIMITATIONS

The evidence uses continuous-futures proxy series. It does not establish contract selection, roll treatment, execution costs or capacity for a futures implementation.

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