

# LightGBM 126d Regression Rank

Machine-learning model-variation ranking evidence across broad listed equities.

|                                                 |                                                                   |                                             |
|-------------------------------------------------|-------------------------------------------------------------------|---------------------------------------------|
| <div>FAMILY</div> <div>ML model variation</div> | <div>UNIVERSE</div> <div>Broad listed-equity research panel</div> | <div>RESEARCH HORIZON</div> <div>126d</div> |
|-------------------------------------------------|-------------------------------------------------------------------|---------------------------------------------|

# Executive Summary

LightGBM 126d Regression Rank evaluates a model-variation rank on a broad listed-equity panel. The preferred 126d row shows a 13.49% top-minus-bottom spread and a 0.078 rank IC.

|                   |        |
|-------------------|--------|
| Preferred horizon | 126d   |
| 126d rank spread  | 13.49% |
| Rank IC           | 0.078  |
| Long-leg return   | 22.18% |
| Average turnover  | 57.64% |

## Observations

1. The note shows historical rank-ordering diagnostics for a model variation.
2. Neighbouring horizons and yearly splits are included to show whether the result is isolated.
3. Formula details, feature recipes and model parameters are intentionally not disclosed.

# Data and Research Setup

The setup evaluates ML model variations on the same broad listed-equity panel and horizon grid.

## UNIVERSE

Broad listed-equity research panel. Current holdings and issuer-level rank tables are not shown.

## INPUTS

Historical price, liquidity and derived feature fields are aligned to a dated research panel.

## COMPARISON BASIS

Displayed rows use the same panel construction, date grid and forward-return convention.

## OUTPUT BOUNDARY

The figures are historical diagnostics and do not present current positions or instrument rankings.

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# Signal Methodology

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

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## STEP 1

### Model variation

The research compares alternative model families, feature treatments or ranking objectives.

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## STEP 2

### Cross-sectional ranking

Each observation date is converted into a peer-relative rank within the research panel.

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## STEP 3

### Forward evaluation

Ranked groups are compared over the research horizon to measure top-minus-bottom behaviour.

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

# Results and Horizon Context

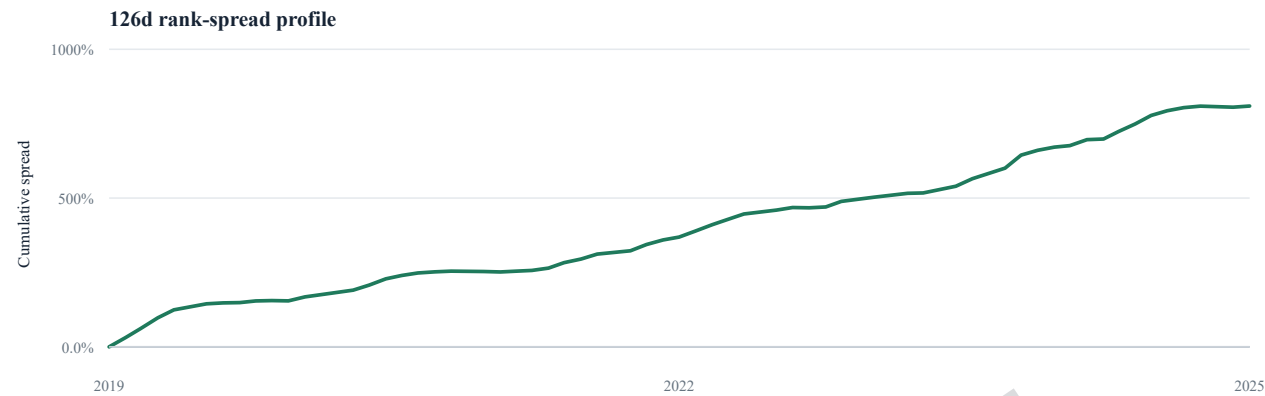


Figure 1. Cumulative 126d top-minus-bottom rank-spread contribution, normalised to zero at the first valid research observation. Long-horizon forward observations overlap, so the series should be read as a ranking diagnostic, not as a standalone return path.

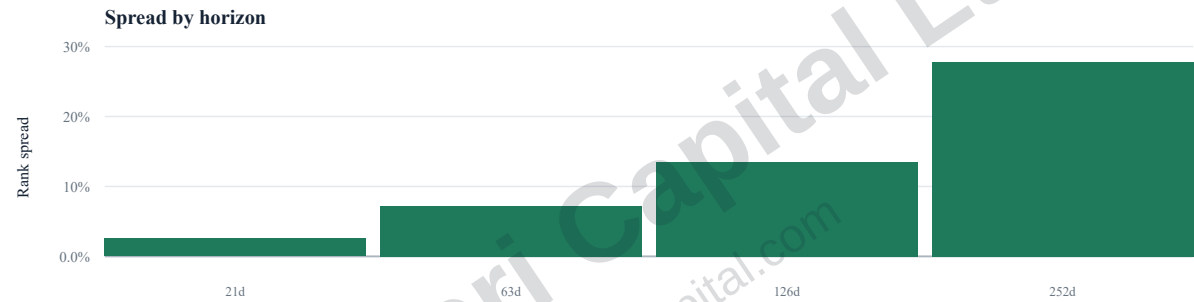


Figure 2. Top-minus-bottom spread across tested horizons under the same comparison setup.

| Horizon | Rank spread | Rank IC | Long-leg return | Turnover |
|---------|-------------|---------|-----------------|----------|
| 21d     | 2.55%       | 0.038   | 3.50%           | 57.64%   |
| 63d     | 7.22%       | 0.064   | 10.82%          | 57.64%   |
| 126d    | 13.49%      | 0.078   | 22.18%          | 57.64%   |
| 252d    | 27.78%      | 0.089   | 46.00%          | 57.64%   |

The horizon profile and yearly evidence are diagnostics for model ranking behaviour, not current allocation instructions.

# Stability and Robustness

Stability is assessed from the yearly preferred-horizon spread profile and neighbouring horizon rows.

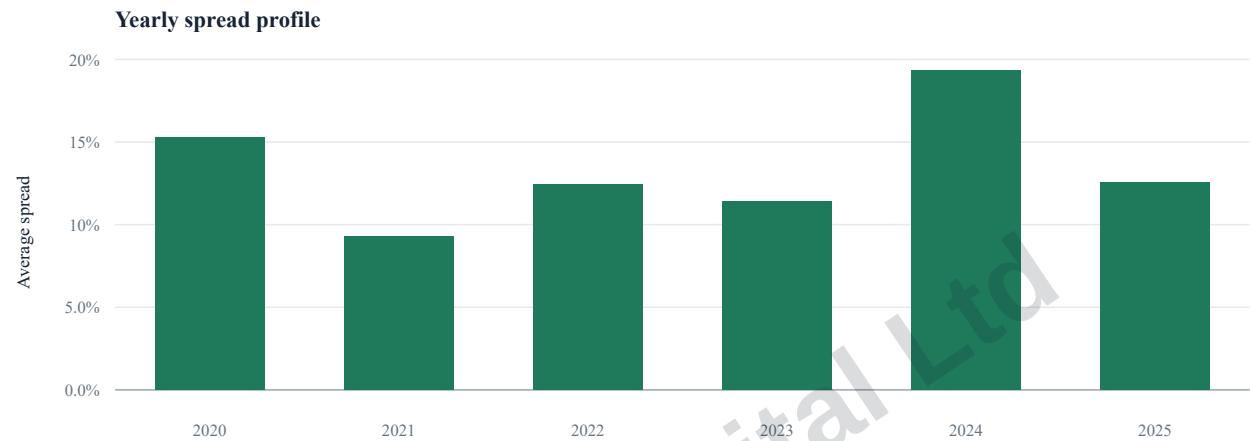


Figure 3. Yearly average 126d rank-spread contribution for the preferred horizon.

| Year | Average spread |
|------|----------------|
| 2020 | 15.27%         |
| 2021 | 9.31%          |
| 2022 | 12.47%         |
| 2023 | 11.42%         |
| 2024 | 19.32%         |
| 2025 | 12.55%         |

A coherent result should not depend on a single isolated observation window.

# Research Interpretation

The signal is retained in the research library as model-variation ranking evidence.

|                                                                                              |                                                                                                                                                                             |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ROLE</b><br>Secondary ML model-variation candidate.                                       | <b>CAPTURES</b><br>Alternative ML rank construction evidence across the same equity research panel.                                                                         |
| <b>USE</b><br>Ranking or comparison component inside broader systematic allocation research. | <b>LIMITATIONS</b><br>The note does not disclose construction details, feature recipes, model parameters, issuer-level ranks, execution assumptions or product suitability. |