

\_Generated on 2025-10-17 13:36:37Z\_

This report compiles the latest reinforcement learning lookback experiments and baseline comparisons.

Scenarios covered: fixed\_30, research\_full.

## ## Methodology

Experiments were run via the ExperimentOrchestrator multi-seed pipeline with Hydra-driven configs.

Aggregates include mean/median statistics, bootstrap confidence intervals, and optional Welch tests.

- **fixed\_30**: aggregate directory 'results\manual\fixed\_30\_aggregate'; seeds: 42, 52, 62
- **research\_full**: aggregate directory 'results\manual\research\_full\_aggregate'; seeds: 101, 202, 303

## ## Experiments

### ### Scenario: fixed\_30

Metric	Mean	Std Dev
mean_abs_matrix	0.1686	0.0000
row_sum_std	9.3700	0.0000
row_sum_range	48.9851	0.0000
stability_matrix_corr	0.9575	0.0000

Bootstrap confidence intervals:

- mean\_abs\_matrix: bootstrap 95% CI [0.1686, 0.1686]
- row\_sum\_std: bootstrap 95% CI [9.3700, 9.3700]
- row\_sum\_range: bootstrap 95% CI [48.9851, 48.9851]
- stability\_matrix\_corr: bootstrap 95% CI [0.9575, 0.9575]

Per-run highlights:

- Seed 42, created 20251011\_211857, config 'D:\uni\Dr.AI.Ali\FinTech\LeadLag-signature - RL\RL-lookback'
- Seed 52, created 20251011\_212658, config 'D:\uni\Dr.AI.Ali\FinTech\LeadLag-signature - RL\RL-lookback'
- Seed 62, created 20251011\_213510, config 'D:\uni\Dr.AI.Ali\FinTech\LeadLag-signature - RL\RL-lookback'

### ### Scenario: research\_full

Metric	Mean	Std Dev
--------	------	---------

| --- | --- | --- |  
| mean\_abs\_matrix | 0.1203 | 0.0000 |  
| row\_sum\_std | 6.7064 | 0.0000 |  
| row\_sum\_range | 35.4104 | 0.0000 |  
| stability\_matrix\_corr | 0.9796 | 0.0000 |

Bootstrap confidence intervals:

- mean\_abs\_matrix: bootstrap 95% CI [0.1203, 0.1203]
- row\_sum\_std: bootstrap 95% CI [6.7064, 6.7064]
- row\_sum\_range: bootstrap 95% CI [35.4104, 35.4104]
- stability\_matrix\_corr: bootstrap 95% CI [0.9796, 0.9796]

Per-run highlights:

- Seed 101, created 20251016\_181558, config 'D:\uni\Dr.Ai.Ali\FinTech\LeadLag-signature - RL\RL-lookba
- Seed 202, created 20251016\_183505, config 'D:\uni\Dr.Ai.Ali\FinTech\LeadLag-signature - RL\RL-lookba
- Seed 303, created 20251016\_185410, config 'D:\uni\Dr.Ai.Ali\FinTech\LeadLag-signature - RL\RL-lookba

## ## Conclusion

fixed\_30 achieved the strongest mean\_abs\_matrix signal (0.1686), indicating the highest overall signal strength among evaluated runs.

Next actions: finalise the research narrative, attach visual artefacts from ER-01, and schedule peer review.