

 Data sources

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PPO paths CSV

outputs/rl_eval/ppo_eval_paths.csv

PPO summary CSV

outputs/rl_eval/ppo_eval_summary.csv

Baseline paths CSV

outputs/rl_eval/baseline_equal_weight_paths.csv

Baseline summary CSV

outputs/rl_eval/baseline_equal_weight_summary.csv

Episode selection

Episode for path / allocation plots

0

Bins for distribution plots

20

RL Household Portfolio – PPO vs Equal-Weight Baseline

This dashboard visualises the **evaluation outputs** from your RL pipeline:

- `ppo_eval_paths.csv`, `ppo_eval_summary.csv`
- `baseline_equal_weight_paths.csv`,
`baseline_equal_weight_summary.csv`

Use it to compare **RL vs baseline** behaviour, distributions and summary stats, and to get ready-to-use **interpretation & recommendations** for your report.

Overview Paths (episode) Asset allocation Distributions Interpretation

Interpretation, plans & recommendations

- **Performance:** Across episodes, the RL policy grows the portfolio to $\sim 2.00 \times$ the starting value on average, vs $\sim 0.56 \times$ for the equal-weight baseline ($\approx 3.6 \times$ higher ending wealth).
- **Risk-adjusted return:** Mean monthly Sharpe is 6.75 for RL vs -2.00 for baseline ($\Delta \approx +8.75$). The baseline is effectively destroying risk-adjusted performance in this scenario.
- **Behaviour:** The trained PPO policy tends to move quickly into a high-conviction allocation (e.g., shifting out of gold and cash) and then holds that stance, whereas the baseline maintains a static 33-33-33 mix regardless of market conditions.

- **Practical plan:** For this synthetic household and return environment, a rule-based or RL-driven dynamic allocation appears significantly superior to naive equal-weighting. For deployment, you'd still cap maximum allocation per asset, inject transaction costs, and stress-test under alternative scenarios before using it with real money.
- **Next steps:**
 - Run stress tests with different macro scenarios (bear market, high inflation, flat equity).
 - Add constraints: max equity weight, minimum cash buffer.
 - Compare against simpler heuristics (e.g., 60-40, target-vol rebalancing) so RL vs. ‘good human rules’ is clear.
 - Use these results to write a short interpretation section in your report: motivation → setup → RL vs baseline numbers → takeaway.

Household outcome calculator

Initial investment (₹)

550000.00

- +

② Time horizon: **10 years (120 months)** (fixed by this simulation).

RL (PPO) – expected f... Baseline – expected fi... RL advantage

₹1,100... ₹308,806 ₹791,576

↑ +256.3% vs basel...

These numbers simply scale the **mean final portfolio value multipliers** from the simulations ($\approx 2.00 \times$ for RL vs $\approx 0.56 \times$ for the equal-weight baseline).