

POLITECNICO

MILANO 1863

Computational Finance

Computational Finance Group 9

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1. Exercise 5 — Out-of-sample evaluation on 2025 data

1.1. Strategy (summary)

We apply the personal allocation strategy introduced in the main report (Exercise 5), based on a feed-forward neural network that maps a long rolling window of past daily returns into long-only portfolio weights. The output layer is a softmax, enforcing full investment and non-negativity. The model is trained to maximize a risk-adjusted objective relative to the market-cap benchmark, with regularization terms controlling weight concentration and deviation from the benchmark.

1.2. Out-of-sample results (2025)

Table 1 reports the performance metrics computed on the newly released out-of-sample prices for year 2025. Figure 3 shows the equity curve (strategy vs. benchmark) and the strategy drawdown profile.

Table 1: Out-of-sample performance metrics (2025).

Metric	Neural Net Strategy
Annualized Return	16.58%
Annualized Volatility	16.32%
Sharpe Ratio	1.02
Maximum Drawdown	-15.22%
Calmar Ratio	1.09

1.3. Brief discussion

In 2025 the strategy remains profitable and, as shown in the equity curve, it outperforms the market benchmark over the year. However, the risk profile worsens compared to earlier out-of-sample years: volatility is higher and the maximum drawdown reaches about -15.5%, reducing risk-adjusted performance (Sharpe below 1). Overall, results suggest robustness in returns but a less stable risk regime in 2025, highlighting the role of drawdown control when market conditions become more volatile.

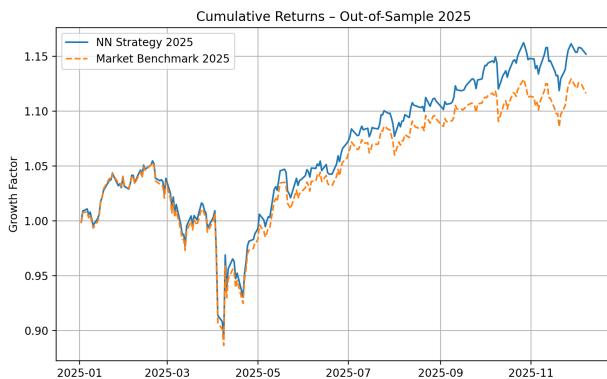


Figure 1: Cumulative returns (OOS 2025)

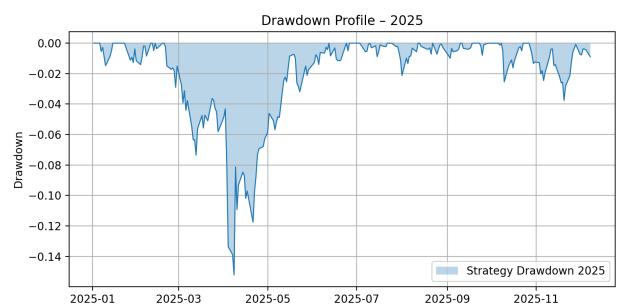


Figure 2: Drawdown profile (OOS 2025)

Figure 3: Out-of-sample results on 2025 data.