Exercise 4B: Rolling-Window Backtest

BUSI 722: Data-Driven Finance II

Using the same setup as Exercise 4A, compare a rolling-window approach to the expanding-window backtest.

Submission

Submit a **Jupyter notebook** (`.ipynb`) containing all code, output, and charts. Use markdown cells for any written discussion.

---

1. Repeat the backtest from Exercise 4A using a **rolling window** of 12 months instead of an expanding window.
   - Each month, train only on the most recent 12 months of data.
2. Report the same statistics: decile mean returns, Sharpe ratios, and cumulative return chart.
3. Compare expanding vs. rolling window. In a markdown cell, discuss:
   - Which produces a better D10 - D1 spread?
   - Which has a higher Sharpe ratio for the long-short portfolio?

   Plot both long-short cumulative return series on a single chart.