Data Analysis and Forecasting - Homework 3

November 18, 2024; due November 24, 2024

1. Use the `tq_get R` command to download observations of the General Electric daily closing stock price from June 1, 2024, to November 10, 2024.

(a) Assess the accuracy of the naïve and drift method (with $h = 1$) using the RMSE computed on the forecast errors obtained via time series cross-validation.

(b) Split the series into a training set (the first 90 observations) and a test set (the remaining observations). Assess the accuracy of the naïve and drift method using the test-set RMSE.

(c) Would you trust more the outcomes of (a) or of (b)? Why?

2. Consider the time series `series.txt` available on Moodle; it is a daily time series from Jan 1, 2024 to Apr. 10, 2024.

(a) Import the data into `R`.

(b) Compute point forecasts for the next 10 days by means of the naïve and drift method.

(c) Compute the corresponding 95% prediction interval for both methods and comment the results. Do you think the PIs can be trusted?

(d) Do you think a Box-Cox transformation may be useful?