

Lecture 4: In-Class Assignment

FA-542

September 27, 2023

Problem 1 Create a code in R to:

- (i) Download daily price data for January 1, 2016 through December 31, 2021 of IBM stock from Yahoo Finance. You may use the `quantmod` package in R for this purpose.
- (ii) Compute the sample mean, standard deviation, skewness and kurtosis (if *excess* kurtosis state that clearly) of the daily log returns.
- (iii) Compute and plot the autocorrelations of the daily log returns.
- (iv) Test if the lag-1 autocorrelation is non-zero (with 5% significance level). Interpret your results.
- (v) Perform the Ljung-Box test to test if the first 3, first 7, and first 20 lagged autocorrelations are non-zero (with 5% significance level). Interpret your results.