ASSIGNMENT 02
Quantitative Methods in Applied Economics

Submission Deadline: 04 January 2024, Time 23:59
Submission: bampinasg@gmail.com
Assignment Type: Personal

Prepare answers for the following questions and submit the word and gretl session documents including your answers to the email given above.

Download from *yahoo finance*(or other source) two end of month stock prices, for a period about 20 years.

1. Using the data *F-F_Research_Data_Factors.txt* estimate the Fama and French three factor model below and comment on your findings:

$$r - r_f = a + b_{mkt}\left(r_m - r_f\right) + b_{HML}HML + b_{SMB}SMB + e \quad (1)$$

2. Are the residuals of the above regression correlated? Perform the Durbin-Watson and the Breusch-Godfrey test for autocorrelation. Comment on your findings.

3. In the residuals of equation (1) perform two tests for heteroscedasticity: the Breusch-Pagan and White tests. What can you infer?

4. Run equation (1) using the HAC standard errors. Is there a difference compared to the ordinary OLS standard errors? What may you infer?

5. Is the model in equation 1 correctly specified? Perform the Ramsey RESET test and comment on your findings.

6. Estimate the following CAPM model:

$$r - r_f = \beta\left(r_m - r_f\right) + e$$

Using the CAPM model as the original model perform the Lagrange multiplier test to examine whether this model is misspecified (use equation 1 for the comparison)