Assignment 2

The files SP500TBTESLA.xlsx and SP500TBTESLA.txt  contain daily observations on three months T-bill rates, and daily closing prices of the S&P 500 index and TESLA stock between 2019/01/02 and 2021/12/31.

Use the code in file Assgn2.txt to calculate the excess returns on S&P 500 and TESLA and estimate the CAPM model, as shown on page 239 of the textbook.

1. Write the estimated regression model with and without the intercept. Refer to them as Model 1 and Model 2.

2. Explain what parameters are estimated and what hypotheses are tested in the computer output for Models 1 and 2.

3. Comment on the values of the estimated parameters and the outcomes of tests of their statistical significance for Models 1 and 2.

4. Define and write the correlation coefficient. Use your output to demonstrate that there exists a statistically significant correlation between the excess returns on TESLA and excess market returns in Models 1 and 2.

5. Are the results of the estimation without an intercept consistent with those when the intercept is included?

6. What is the financial interpretation of test of the null hypothesis "intercept = 0" ?

7. Do the data provide sufficient evidence that the CAPM holds?