Empirical Finance: Course Work 2

Your team has been recently hired by **Imperial Global Asset Management**, and your task is to run a few exercises. Below, you find the guidelines about your assignments, but you can amend the specifications if you have plausible economic arguments. Finally, write a brief investment report no longer than about 3,000 words (this is just an indicative) as a financial economist. Describe what you have done and present the key results. There is no need to write any formulas. You can also be creative and report whatever may convince an investor to bet on your strategy. Whether a strategy works or not, try to come up with an economic story that explains why this is the case. Last but not least, make any assumptions you need, but please mention them. You do not need to submit codes and/or excel files.

Exercise 1 [50%]

Collect monthly data on the VIX index and the S&P500 index and answer the following questions.

Questions

1. Construct the Volatility Risk Premium (VRP),

2. Use the VRP as a predictor for the S&P500 return running one-step ahead out-of-sample forecasts (use a rolling window of 10 years) and construct the R^2_{oos} against a random walk with drift.

3. Bootstrap the p-value of the R^2_{oos} by running 1000 bootstrap samples.

Exercise 2 [50%]

Collect the 25 portfolios sorted on Size and Book-to-Market from Kenneth French's website and answer the following questions.

Questions

1. Run Fama-MacBeth Regression using the 3 Fama-French Factors (available on the same website) and report estimates of the factor price of risk and quantity of risk.

2. Run Fama-MacBeth Regression using the 3 Fama-French Factors (available on the same website) augmented with the first log difference on the VIX and report estimates of the factor price of risk and quantity of risk.

3. Discuss your results.

Good Luck!