Homework #2 Questions

Note: ***In answering the questions, you should supply easy-to-follow calculations and/or reasoning and not simply write down an answer.***

Stan Statman has a $20,000 windfall that he wants to invest in stocks. He has decided to invest part of his windfall in Facebook (symbol: FB) and part in Florida Power and Light (symbol: NEE). The Excel workbook "*Stan's stocks.xlsx*" on Canvas has the daily closing prices of FB, NEE, and the Standard and Poors 500 Index for an historical time period.

Use the data to help answer the following questions. You may wish to do most or all of your calculations in Excel.

1. Use appropriate qualitative or quantitative tests of whether the "L","H", and "I" conditions are satisfied in the tests of whether FB is a RW. You must clearly state Yes or No for each condition and explain why you think so.

2. Use appropriate qualitative or quantitative tests (non-logarithmic) of whether the "L","H", and "I" conditions are satisfied in the tests of whether FB is a GRW. You must clearly state Yes or No for each condition and explain why you think so.

3. Use appropriate qualitative or quantitative tests of whether the "L","H", and "I" conditions are satisfied in the tests of whether log(FB) [natural logarithm] is a RW. You must clearly state Yes or No for each condition and explain why you think so.

4. Assume that FB is a RW. Using the RW model, forecast the next price of FB (for October 1, 2014) and provide an approximate 90% confidence interval for your forecast. What fact (if any) do you need to assume or (better) demonstrate *[do not actually demonstrate it]* in order to have a valid confidence interval?

5. Assume that FB is a GRW. Using the GRW model, forecast the next price of FB (for October 1, 2014) and provide an approximate 90% confidence interval for your forecast. What fact (if any) do you need to assume or (better) demonstrate *[do not actually demonstrate it]* in order to have a valid confidence interval?

6. Assume that log(FB) is a RW. Using the RW model for log(FB), forecast the next price of FB (for October 1, 2014) and provide an approximate 90% confidence interval for your forecast. What fact (if any) do you need to assume or (better) demonstrate *[do not actually demonstrate it]* in order to have a valid confidence interval?

Calculate the daily returns (daily percentage *[or proportion]* changes) in FB, FPL, and the S&P 500 index over the time period covered by the data.

7. Using the method taught in this course, calculate the betas of FB and FPL over the given time period. How does the riskiness of each stock compare with the General Market, as represented by the S&P 500 index? Is there a convincing case that FPL is less risky than the General Market and that FB is riskier than the General Market?

8. Is it believable that the alphas of FB and FPL are both zero?

Stan wonders what the riskiness of his portfolio will be if he invests $10,000 in FB and $10,000 in FPL. Suppose that Stan buys $10,000 of FB and $10,000 of FPL on May 1, 2014. Stan subsequently makes no additions or withdrawals from his account.

9. Calculate the beta of Stan's portfolio over the given time period. *[Hint: You will need to calculate Stan's daily portfolio returns over the given time period, based upon the daily total portfolio value.]*

10. How much of the volatility of Stan's portfolio value can be attributed to the influence of the General Market? Are you surprised by this – given the corresponding figures for FB and FPL separately?