

Fin 335 Assignment 4

3/22/2009

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1. Due March 27 (F) (6:00pm). No late submission will be accepted.
2. Total scores: 50 points. You can discuss the assignment with your classmates *but you need to do the assignment on your own hands and write down your own answers*. Otherwise, you learn little from this assignment. After finishing your homework, turn in your assignment electronically via D2L Dropbox. In this assignment, you will have to submit one MS excel file (stocks.xls), including four parts: (1) ftse and one chart; (2) SAS autocorrelation output; (3) Robert Shiller's stocks prices and dividends series and regression result and (4) Housing return seasonal model output.

Q1.

You are an analyst in Moody's. Your boss Simon asked you to analyze the autocorrelation of the UK stock returns for the past two years. You need to tell your boss if you can find any dynamic patterns from the stock returns. If so, you can predict the short-term stock returns accordingly. For comparison, your colleague Paula suggested you to simulate a white noise and also analyze its autocorrelations.

- Go to course website to download the stocks.xls.
- Open the stocks.xls. Create a new series of FTSE 100 **returns** in Column C of ftse tab.
- In Column D, create a white noise series and name it noise, with 518 numbers (D3: D520) and normal distribution (Mean = 0, and S.D.=1.3) by using Excel Data Analysis: Random Number Generation.
- Plot the series of FTSE returns and noise and save it as the Chart 1 in the stocks.xls.
- Write a SAS program (using ARIMA proc, identify function) to find the autocorrelation of FTSE 100 stock **prices**, **returns** and the simulated **noises**.
- Use SAS ODS to produce the output named a04.xls (which is Excel file). To save my time for grading your assignment, you should copy the output of a04.xls into the sasouput tab of stocks.xls.
- Briefly explain your output.

Q2. You are an analyst in Vanguard Group. You want to know if the **Price-Dividend Ratio** (Stocks Prices /Dividends) could be an effective predictor of the long-term stock returns in the future. You remember the equation you learned in Fin 335 and you therefore run the regression as follows,

$$R_{10} = \alpha + \beta \times P/D_{10}$$

R_{10} is the average stock **returns** in the **following** 10 years

P/D_{10} is the average P/D ratio (prices/dividends) in the **previous** ten years

In Shiller tab, create the series above and run the regression by Excel Data Analysis. Briefly explain the regression results (name it pdratiooutput).

Q3. You are an analyst in S&P's. Your boss Randy asked you to analyze if there is a seasonal pattern in the US housing returns. You need to show him the weight of each month.

- Click the housing tab of stocks.xls and then use **Model 5** to conduct the research.
Note: Plot the housing return data first. Is there any trend in the data? If not, you don't need to add the trend term in the regression (unlike retail sales).
- In the regression output (name it housingoutput), you need to show the weight for each month and plot them with [Insert] [Column].
- Briefly explain your results.