Evaluation Exercise 1

1) Import in MATLAB all the data contained in the file STOCK-INT2010.XLS and perform the transformation in datatran_int.m

2) Estimate the over the sample 1974:1 1999:4 the following AR(1) model of log returns for each of the countries:

$$dp^i_{t+1} = \beta^i_0 + \beta^i_1 dp^i_t + \varepsilon^i_{t+1} \tag{1}$$

- Estimate the parameter vector $\gamma_i = (\beta^i_0, \beta^i_1)\prime$ for $i = 1, 2, 3$ via OLS in MATLAB. Compute the corresponding t-statistics and R^2.

- Evaluate the forecasting performance of the AR when forecasting one-step ahead (next quarter dividends) over the sample 2000:1-2009:4, you should produce 40 forecasts and their associated 95 per cent confidence interval and evaluate them against the realized values. Do this via a graphical analysis. Rank the forecasting performance of the model for different countries.

- In the light of your results would you consider d^i_t and p^i_t as cointegrated variables ?

3) Define the k-period cumulative return from period $t + 1$ through period $t + k$, as follows:

$$\mathbf{r}_{t,t+k} = \sum_{i=1}^{k} \mathbf{r}_{t+i}$$

Run a the following predictive regressions for UK, US and Germany

$$\mathbf{r}^i_{t,t+k} = \alpha^i_0 + \alpha^i_1 dp^i_t + \varepsilon^i_{t+k} \tag{2}$$

Where dp^i_t is the log dividend/price ratio for the country i. Make comparisons across countries (i.e. given the horizon) and within country (i.e. given the country). Are stock returns predictable from dividend yields?