

# 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:

$$dp_{t+1}^i = \beta_0^i + \beta_1^i dp_t^i + \varepsilon_{t+1}^i \quad (1)$$

- Estimate the parameter vector  $\gamma_i = (\beta_0^i, \beta_1^i)'$  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  $d_t^i$  and  $p_t^i$  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

$$\mathbf{r}_{t,t+k}^i = \alpha_0^i + \alpha_1^i dp_t^i + \varepsilon_{t+k}^i \quad (2)$$

Where  $dp_t^i$  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?