Three important financial indicators in Economics are the country's stock market index, the treasury bond and the currency exchange behavior. You are given the series of DAX30 performance, T-Bill and USD-Euro Exchange between years 2007 and 2012. The series are collected in two time units: Daily and Monthly. Data is retrieved from Data-stream facilities of Faculty of Economics at Albert-Ludwigs University Freiburg.

You are expected to analyze these series by using the methods covered in the course.

The questions raised are:

1. How can be the behavior of each variable modeled by using Time Series models?

   You should analyze the series **DAX Daily, DAX Monthly, USEURO Daily and USEURO Monthly** separately,
   - fit the appropriate model,
   - check if the unit root, GARCH affects exist,
   - make diagnostics checks,
   - perform in-sample and out-sample forecasts for 10 terms only for **DAX Daily and DAX Monthly data**, comment efficiency of the forecasts.

   Comment on the results, and make comparisons on the models over different time units to answer how the time unit affect your models, in DAX and Exchange rate behavior?

2. Consider the **TBill Daily and T Bill Monthly** Data. Analyze and interpret the change in the mean level of these series?

3. How can be the joint behavior of the variables modeled by using multivariate Time series modeling?

   Use only **DAX Daily, USEURO Daily**
   - Run VAR or cointegration analysis.
   - Determine the causality among the variables, estimate the model.
   - Interpret the impulse response functions and estimate Error Correction Model
   - Comment on the short term, and long term behavior of the joint model
   - Determine the period required to return back to the equilibrium.

Analyses with explanatory figures/outputs should be reported in a text which should be clearly and neatly arranged. Each group should submit one printed set of the text which to be submitted till the deadline either to the Secretary Office of the Department or to the Proctor at the Final Examination. The same text should also be sent to the instructor and the course assistant by an email within the deadline stated above.

Good Luck in your Final Examinations and your future studies.