Cobb-Douglas theory is characterized by the following mathematical formulation where capital formation (K) and labor force (L) in the countries are regressed on national income (Q). Afterwards, growth models in econometric theory have been adopted into Cobb-Douglas function in order to estimate the impact of different measures of macroeconomic fundamentals (like exports, imports, stock markets, etc.) on economic growth in the countries (A very famous growth model in this field is Solow Growth Model). The following function is simple Cobb-Douglas function:

\[ Q = f (K, L) \]

When the other variables are incorporated into this function, it becomes:

\[ Q = f (K, L) + X_i \]

Where \( X_i \) represents exogenous variables (such as exports, imports, stock markets, etc.) incorporated into the system as also suggested in the Solow Growth Models. Then, the regression of the above model will be estimated as:

\[ Y = \beta_0 + \beta_1 X_i + \epsilon_i \] (\( X_i \) represents, K, L, and the others)

And

\[ Q = \beta_0 + \beta_1 K_i + \beta_2 L_i + \beta_3 X_i + \epsilon_i \]

(Now, \( X_i \) represents exogenous variables other than K and L)

Talking about growth models, the above regression model should be estimated under double logarithmic function as below:

\[ \ln Q = \beta_0 + \beta_1 \ln K_i + \beta_2 \ln L_i + \beta_3 \ln X_i + \epsilon_i \] (where coefficients are now elasticities)
PROJECT:

Having the above theoretical setting, each group is expected to estimate growth model for net foreign direct investment inflows and real GDP per capita for the countries provided in the MS Excel data. The model will be:

\[ \ln Q = \beta_0 + \beta_1 \ln K_i + \beta_2 \ln L_i + \beta_3 \ln FDI_i + \epsilon_t \]

In MS Excel file, you will find data for GDP per capita, gross capital formation as percent of GDP and net FDI inflows as percent of GDP during 1980-2006 for the following countries (15 countries):

Turkey, USA, UK, France, Italy, Germany, South Cyprus, Japan, Finland, Canada, China, Australia, Argentina, Brazil, and Denmark.

Data are from World Bank Development Indicators. You will find a section of FINAL DATA in MS Excel. Please copy and paste your data into EVIEWS software.

You will select only one of these countries and estimate the above model. But you should be careful that each group is going to select different countries from the data set.

REQUIRED:

Outline of your project:

1. **INTRODUCTION:** In this section, you will give a very brief information about the country selected (geographical location, income level, inflation, etc.)

2. **MODEL SPECIFICATION:** In this section, you will define your model as provided above and define what beta coefficients stand for.

3. **RESULTS AND DIAGNOSTIC TESTS:** In this section, you will estimate and provide your empirical model, you will test the validity of coefficients and the model in general by t and F tests, you make interpretation of coefficients and \( R^2 \) of the model.

4. **CONCLUSION AND POLICY IMPLICATIONS:** In this section, you will briefly provide your major finding or conclusion in the model? What do you suggest to policy makers? Are FDI inflows, capital and labor forces statistically significant for the selected country? Are they elastic or inelastic?