<p style="text-align:center">Geographical Economics Winter 2014/2015
Assignment #1: Due October 28th 2014</p>

General information

This problem set MUST be solved individually. Each student MUST turn in the copy of the solution on paper support. Do not forget to identify at the beginning of each page. There are not specific requirements about the format (font, lines etc) of the document students are expected to turn in.

The solution of this assignment MUST be turned in at the beginning of the class. No delay or extra time will be granted. Exercises #1 and #2 score 2 points each. Exercises #3 and #4 score 3 point each.

1 Exercise # 1

Let us focus on the relationship between the size of the export market and the role of distance. Consider two islands: Ireland and United Kingdom.

Following the example discussed in class and referring to the WTO website

(http://www.wto.org/english/res_e/statis_e/statis_e.htm)

and national statistical offices

(UK Office for statistics: http://www.ons.gov.uk/ons/index.html;

Irish central statistical office: http://www.cso.ie/en/statistics/externaltrade/):

a) Find the first five largest export markets for each of the reporter country and gather data about GDP per capita (the most recent available data referring to the World Bank or IMF statistics) for each destination market. Which types of market are they? Is the magnitude of their GDP per-capita similar to the one of the reporter country ?

b) Determine the distance from each island to each destination market according to the data included in the CEPII database (http://www.cepii.fr/CEPII/fr/bdd_modele/presentation.asp?id=6).

c) Plot the relationship between the size of the export market and the distance from those market ? Does the negative relationship hold? If not, why ? Is geography important in the definition of the trade patterns for Ireland and United Kingdom ?

2 Exercise # 2

Refer to the core-periphery setting. Let us consider the North the core and the South the periphery. Population is mobile. We begin with a partial agglomeration in the North region. Your plant is settled in the core. In order to minimize your production costs, consider that for your firm is optimal to open a second plant and your plants will operate incurring in average transport costs. Where would you locate the second plant if all the other firms (namely competitors) have already two plants in one of each location ?

Now, consider that population is immobile and transport costs are infinite. Again, you have to open a new plant and all your competitors have just one single plant in North. Which is your optimal location under these circumstances ?

3 Exercise # 3

(NB: This exercise has been taken from the last year exam)

a) In a Solow-Swann setting, consider the case of an economy with population growth but no knowledge growth. How can you represent graphically the key components of this economy?

b) Does this economy achieves the balanced growth path? The optimal value k* would be larger than the canonical case when we admit knowledge growth? Show graphically

c) Refer to case a), now, suppose that the rate of population growth falls. What happens to the value k*? And to the output per worker? Show it graphically

4 Exercise # 4

Refer to the webpage of the Penn World tables (http://www.rug.nl/research/ggdc/data/penn-world-table).

Create a sample of at least 10 countries by collecting information about their (real) GDP values from 1950 onward and, then answer to the following questions:

- Do these countries experience an absolute convergence ? Why ?

- Do you think that the geographical proximity may affect your outcome ?

- Now, split the data of your sample into 20-year periods (namely, you are expected to handle three subsamples for your group of countries). Replicate the previous exercise in order to asses the existence of an absolute convergence process. Do these countries experience a convergence or divergence process in each subsample ? What could happen if you split your data into two time-subsamples ?

- Looking at your last results: do you think the time dimension may have a role in boosting the convergence (or divergence) in your sample of countries ?

- Do you think that the time dimension may be more relevant than the geographical dimension in impacting the growth evolutionary path in your sample ?