

# Geographical Economics Winter 2014/2015

## Assignment 2: Due by November 28th 2014

### **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 my office by 12 p.m.. (B3-0114)**

1. Suppose that country L has a plentiful supply of labor (and low wages) but a relatively low supply of raw materials. In contrast, H has a plentiful supply of raw materials, but a relatively low supply of labor (and high wages). The two countries are separated by a mountain range that makes travel between the two countries prohibitively costly. Suppose that a weight-losing product is initially produced in H (close to the supply of raw materials). Suppose that a tunnel is bored through the mountain, decreasing

the costs of shipping raw materials and output between the two countries. Assume that laborers do not migrate from one country to the other.

a. How will the tunnel affect the location choices of weight-losing firms?

b. How will the tunnel affect wages in the two countries?

c. How might this analysis be used to explain (1) the shift in manufacturing from the United States to East Asian countries and (2) the narrowing of the wage differential between the United States and East Asian countries?

2. The firms of an industry produce a consumption good in a market in perfect competition. They use an intermediate good to produce the final good. The production of the intermediate input is subject to the following function of total costs:  $TC(x) = 4x$  where TC is the total cost of producing the intermediate inputs and x is the quantity produced of the intermediate input.

Discuss if the firms of the final good will have incentives to agglomerate in a cluster to benefit from the joint use of the producers of the intermediate input.

3. Explain why product differentiation favors the agglomeration of firms producing the same type of good?

4. Why small and medium size cities tend to be specialized in some tradable product?

5. Imagine that you want to estimate an equation like the following:

$$\ln w_{cs} = \alpha + \beta \cdot denemp_c + \varepsilon_{cs}$$

where  $w_{cs}$  is the average wage in local area c and sector s

$denemp_c$  is the employment density in local area c

Explain:

- a) Why should be expected a relationship between wage/productivity of a local area/sector and employment density of the area.
- b) Suppose that you run a regression and find a negative sign of  $\beta$ . How would you interpret that negative sign?