

# Geographical Economics Winter 2012/2013

## Assignment 4: Due February 5th 2013

### 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.

No delay or extra time will be granted. Exercises 1 and 2 score 3 points each. Exercises 3 and 4 score 2 points each.

1. Discuss the following sentence in relation to the effects of agglomeration economies:  
 “The irony and ultimately the tragedy of Detroit is that its small, dynamic firms and independent suppliers gave rise to gigantic, wholly integrated car companies, which then became synonymous with stagnation”

Edward Glaeser “The Triumph of the City”. The Penguin Press. New York. 2011

2. Production functions are estimated for Spanish urban areas and each of the 4 sectors in the table below. The production functions take the following general form:

$$Q_i = N_i^\delta n_i^\epsilon K_i^\alpha L_i^\beta$$

Where  $Q_i$  is the output of the sector in city  $i$ ,

$N_i$  is the total number of firms in city  $i$ ,

$n_i$  is the number of firms in the corresponding sector in city  $i$ ,

$K_i$  is the stock of capital of the sector in city  $i$

and  $L_i$  is the labour endowment of the corresponding sector in city  $i$ .

The estimated coefficients  $\delta$  and  $\epsilon$  are shown for each sector. Below each coefficient you can see within brackets the value of the t statistics. Those with an asterisk are non-significant coefficients

	Office machinery & computing	Motor vehicles	Textile	Leather & Footwear
<b>N (<math>\delta</math>)</b>	0.052	-1.071	0.012	0.016
<b>t-statistics</b>	(2.817)	(-0.854)*	(0.275)*	(0.948)*
<b>n (<math>\epsilon</math>)</b>	0.012	0.049	0.0433	0.0587
<b>t-statistics</b>	(0.572)*	(1.492)*	(3.428)	(4.317)

- a) What is capturing N and what is capturing n in the estimation?
  - b) Give an explanation of the results trying to find a sense to the differences in the results by sector
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3. According to Glaeser et al. (1992) “Growth in cities” the more sectorally diverse the urban economy the higher the growth of the city. Discuss the validity of this result
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4. Explain under what conditions cities will be specialized and why the size of the city is different according to the sector of specialization.