

Written Exam for the M.Sc. in Economics winter 2012-2013 – Re-exam

International Trade and Investment

Final Exam

18th of February 2013

(3-hour closed book exam)

Please note that the language used in your exam paper must correspond to the language of the title for which you registered during exam registration. I.e. if you registered for the English title of the course, you must write your exam paper in English. Likewise, if you registered for the Danish title of the course or if you registered for the English title which was followed by “eksamen på dansk” in brackets, you must write your exam paper in Danish.

If you are in doubt about which title you registered for, please see the print of your exam registration from the students’ self-service system.

Question 1

Consider a model of two countries that initially trade with one another, so they can be considered one large integrated economy.

There is monopolistic competition in the market for goods. There is a continuum of product varieties i and the model is symmetrical for all i . For any given product variety, demand, c , is a negative function of price p . We assume that the price elasticity for each product variety is

$$\eta = -\frac{dc}{dp} \frac{p}{c}$$

and that elasticity is a decreasing function of c . The producer of product variety i is faced with a downward sloping marginal revenue curve of the type

$$MR = p \left(1 - \frac{1}{\eta} \right)$$

The supply side is modeled in the following way:

There is only one input, labor, with each country having the endowment of L_A and L_B respectively.

$$L_i = \alpha + \beta y_i$$
$$Q_i = wL_i$$

Where L_i is the amount of labor allocated to product variety i and Q_i is total cost for product variety i . Equilibrium obtains when for each product variety marginal revenue equals marginal cost and the price equals the average cost.

- Calculate the equilibrium number of product varieties N under trade

The two countries now have a trade dispute and therefore revert to autarky. There is now monopolistic competition in the market for goods in each country.

- What is change in the number of product varieties produced in country A?
- What is the change in the number of product varieties consumed in country A?

- d. How would this be expected to impact welfare in the model?
- e. What is the impact on the size of the average firm in country A?

Imagine an empirical testing of average firm size and overall labor productivity in Country A during the transition from trade to autarky.

	Change in size of average firm	Change in labor productivity in country A
Country A	Insignificant	Strongly significant

- f. Discuss these findings.

Imagine that producers have a simpler behavior, where they produce the same amount of output irrespective of changes in prices or other variables. Consider again the move from trade to autarky.

- g. What is the change in the number of product varieties produced in country A?
- h. What is the change in the number of product varieties consumed in country A?

Question 2

Consider a two-good, two-factor model (goods are y_1 and y_2 , factors are L and K). Country A trades at given world market prices and given those prices, producers in country A minimize cost when good 1, y_1 is produced using 3 units of labor and 1 unit of capital and good 2, y_2 is produced using 1 unit of labor and 3 units of capital.

- a. When will Country A produce both goods, specialize in y_1 or specialize in y_2 ? You may use graphical analysis.
- b. When does factor price equalization obtain?
- c. When factor price equalization does not obtain, how are factor prices determined?

Question 3

Consider the gravity equation model and two countries A and B, where A represents 10 per cent of global GDP and B represents 20 per cent.

- a. What is the trade between A and B in percentage of global GDP?

Assume the two countries form a regional trading arrangement called AB. Two other countries, C and D, each representing 15 per cent of global GDP, form another regional trading arrangement call CD.

- b. Which regional arrangement would you expect to have the highest volume of intraregional trade relative to regional GDP?
- c. Discuss the background for this result (you are not required to formally derive or quote the Helpman theorem).