Written Exam for the M.Sc. in Economics 2008

International Economics
Final Exam/ Elective Course/ 3rd Year course
June 4th, 2008

4-hour closed book exam

- There are SIX pages in this exam paper, including this instruction page
- You need to answer all questions, so manage your time accordingly.
- If a question asks you to list three things, please number and underline the list as exampled below.

  1. Thing number 1
  2. Thing number 2
  3. Thing number 3

- Make your math legible and easily followed, with the final answer boxed.
- Partial credit may be given.

Good Luck!

1. Short answer questions

   Answer each of the below short answer statements. Your answers should not be more than two sentences. If the question is a true or false question, explain your answer in one or two sentences.

   (a) True or False: The GATT/WTO allows countries to charge a higher tariff for some products. A: True, under certain conditions.

   (b) Explain the phrase "slicing the value chain." in the model of outsourcing. A: If we rank production activities by skilled/unskilled labor, the skilled endowed country will outsource those activities that require relatively more unskilled labor.

   (c) What is the difference between vertical and horizontal FDI? Give an example of both.A: Vertical FDI is used to take advantage of low wages in developing countries. Horizontal FDI is done between two industrialized countries to avoid trade costs. Many examples apply

   (d) Write down the gravity model of trade. What theoretical model of trade can reproduce the gravity model?A:

   $$Trade_{ij} = A\frac{GDP_i * GDP_j}{dist^n} \tag{1}$$

   The Krugman model of trade with "love of variety" can reproduce the gravity model.

   (e) Briefly describe the WTO Biotech Food case. What was the 2006 WTO ruling? A: The US accused Europe that they were unfairly restricting the import of genetically modified US foodstuffs. The WTO ruled that the import restrictions were illegal because there was no sound scientific evidence to back it up.

   (f) True or False: According to the theory of optimum currency areas, the macroeconomic costs of abandoning national currencies will be smaller for lower frequencies of asymmetric shocks to individual countries. A: True, see the handout.

   (g) True or False: Dumping can arise in a zero-profit competitive market without government intervention. A: True, see Brander and Krugman 1983.

   (h) What cross-country dissimilarities lead to disparate autarky prices in the Ricardian model? A: Technology/productivity differences

(i) True or False: The Heckscher-Ohlin model is a short-run version of the Specific Factors model. A. False. It's the other way around.

2. Import tariffs under Perfect Competition

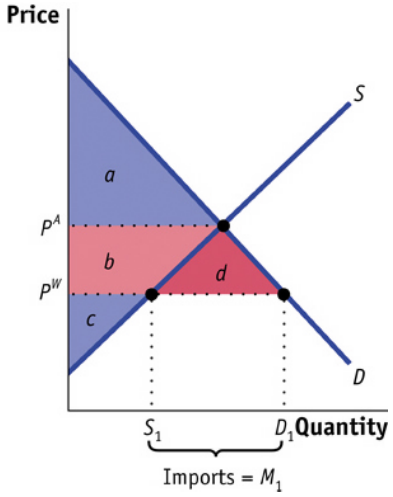
Consider the market for chalk in Denmark. The demand curve for chalk in Denmark is $D = 40 - P$. The Danish import demand curve is $M = 50 - 2P$. The foreign export supply curve is $X = -4 + P^*$, where P^* is the price received by foreign sellers on the world market.

(a) What is the domestic supply curve in Denmark? What is the autarky equilibrium price and quantity? A: $S = -10 + P$. $(P, Q)^{autarky} = (25, 15)$

(b) What is the free trade equilibrium price? At that price, what is the quantity of chalk imported? $A : P^* = P = 18$. $M = 14$.

(c) Is Denmark a small or large country in this scenario? How do you know? A: large, upward sloping export supply curve

(d) Illustrate graphically the gains/losses to Consumer/Producer surplus when going from autarky to free trade.
A:b+d is the gain in consumer surplus. b is the loss in Producer surplus:
Something like this:



(e) Now suppose Denmark imposes a tariff of t on imports. How big does this tariff need to be in order to stop all chalk imports? A: $t > 21$

(f) Suppose $t = 6$. Calculate the export price, import price, quantities imported. $A : P^* = 14, P = 20, X = M = 10$.

(g) Find the elasticity of Export Supply at this tariff rate.A: $\varepsilon_S = \frac{dX}{dP^*} * \frac{P^*}{X} = \frac{14}{10}$

(h) Should Denmark increase, decrease, or keep the chalk tariff the same? Why or why not? A: increase. The current percent tariff rate of 6/14 is less than the optimal tariff rate of 10/14.

3. The Heckscher-Ohlin model

Consider the home country producing two goods, Napkins(N) and Margorine(M), with two factors capital and labor. The factors are endowed at country levels $K = 10$ and $L = 50$. The production of these goods use the following technology.

$$\begin{aligned} y_N &= K_N^{\alpha} L_N^{1-\alpha} \\ y_M &= K_M^{\beta} L_M^{1-\beta} \\ 0 &< \alpha < \beta < 1 \end{aligned}$$

The country faces exogenous world prices of P_N^W and P_M^W. The country face endogenous factor prices of r and w for capital and labor.

(a) Which industry is capital intensive? A: Margorine

(b) Show that the relative labor demand for the Napkin industry is

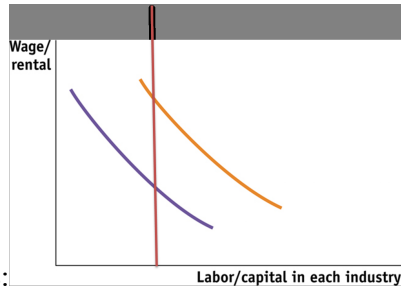
$$\frac{L_N}{K_N} = \frac{r}{w}\frac{1-\alpha}{\alpha}$$

A:

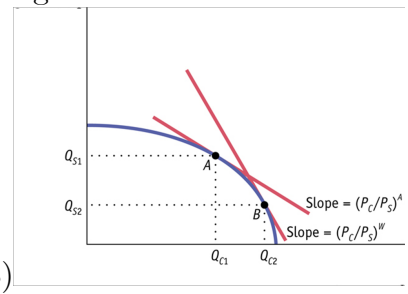
$$\begin{aligned} w &= P_N * MPL = P_N \frac{(1-\alpha)\, y_N}{L_N} \\ r &= P_N * MPK = P_N \frac{\alpha y_N}{K_N} \\ \frac{r}{w} &= \frac{\alpha y_N}{K_N} \Big/ \frac{(1-\alpha)\, y_N}{L_N} \\ \frac{L_N}{K_N} &= \frac{r}{w}\frac{1-\alpha}{\alpha} \end{aligned}$$

(c) Draw the relative labor demand curves for both industries and the relative

labor supply curve.A: Something like this:

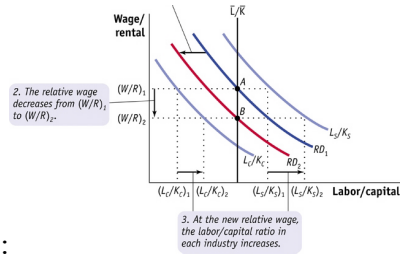


(d) Suppose the world price of napkins decreases. Illustrate graphically how that affects the production pattern in the home country. A : production moves towards Margorine on the country ppf., like this (assuming margorine is on the horizontal axis and we're moving from point A to B)



(e) Illustrate graphically how the decrease in the world price of napkins affects the relative wage. What happens to the labor intensities in the Napkin industry? What about the Margorine industry?A: relative wage falls, labor intensity increases in both industries.

Something like this:



(f) Why does the real rent increase? A: Since the labor intensity in both industries increase, this increases the marginal product of capital in both industries. real rent = marginal product of capital

(g) Does the real wage increase or decrease? Why? A: It decreases because the capital intensities in both industries decrease, which reduces the marginal product of labor in both industries.