

**Economics 433: Advanced International Trade**

**Second Midterm Exam**

November 14, 2006

Professor Tybout

Please print name \_\_\_\_\_ **Answer Key** \_\_\_\_\_

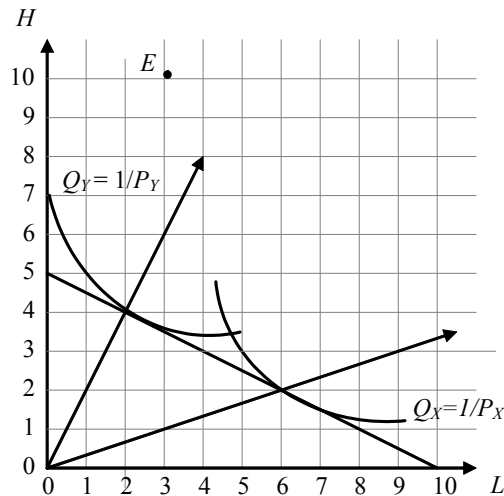
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This exam has two sections; each will be weighted in proportion to its allotted time. Please read the questions carefully, and provide concise explanations when then are solicited.

There is no penalty for guessing, and partial credit will be awarded, so be sure to attempt all questions and show your work.

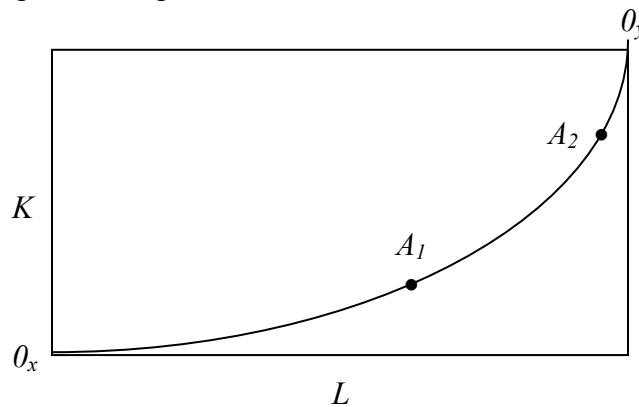
**Part I: Multiple Choice (20 minutes)**

- 1) Suppose the government of Examistan wishes to encourage chocolate production because it smells good. In terms of social welfare, the most efficient way to accomplish this objective is with:
  - a. a tariff on imports of chocolate.
  - b. a tax on exports of non-chocolate goods.
  - c. a subsidy to consumers for chocolate consumption.
  - d. a subsidy to producers for chocolate production.**
  
- 2) Economists who have tested the factor content theorem have found:
  - a. It dramatically understates the volume of implicit trade in factors.**
  - b. It dramatically overstates the volume of implicit trade in factors.
  - c. It accurately predicts the volume of implicit trade in factors.
  - d.. It accurately predicted the volume of implicit trade in factors during the 1950s, but it no longer does.
  
- 3) Suppose there are two goods in the world,  $X$  and  $Y$ , and two factors of production, human capital ( $H$ ) and unskilled labor ( $L$ ). Further suppose that the unit revenue isoquants for these two goods, given world prices, are as depicted below. Then, if a country is endowed with  $H=10$  units of human capital and  $L=3$  units of unskilled labor (as shown):



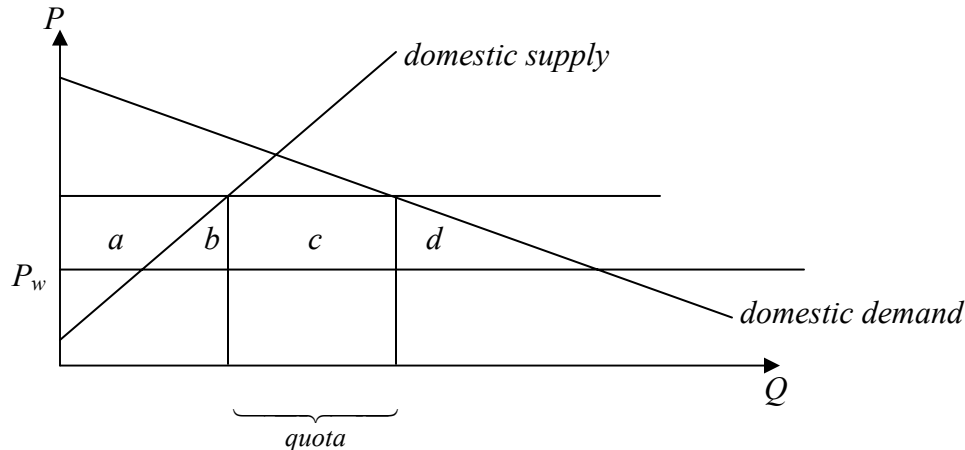
- a. This country will specialize in the production of good  $X$  and its relative wage for unskilled labor ( $w_L / w_H$ ) will be less than  $\frac{1}{2}$ .
- b. This country will specialize in the production of good  $Y$  and its relative wage for unskilled labor ( $w_L / w_H$ ) will exceed  $\frac{1}{2}$ .**
- c. This country will produce both goods and its relative wage for unskilled labor ( $w_L / w_H$ ) will be equal to  $\frac{1}{2}$ .
- d. This country will be unable to produce either good cheaply enough to compete in global markets, regardless of its factor prices.

4) Referring to the Edgeworth box below, which of the following statements is correct?



- a. Good  $X$  is more capital-intensive than good  $Y$ .
  - b. Production of good  $Y$  is higher at point  $A_1$  than at point  $A_2$ .**
  - c. Point  $A_1$  corresponds to a point inside the production possibility frontier, while point  $A_2$  corresponds to a point *on* the frontier.
  - d. The wage-rental ratio,  $\frac{w}{r}$ , is higher at point  $A_1$  than at point  $A_2$ .
- 5) Which of the following statements concerning the Multi-fiber Arrangement (MFA) is correct?
- a. The arrangement encouraged apparel manufacturers in the United States to “dump” cheap shirts in developing countries.
  - b. The developing countries insisted that this arrangement be made permanent when the World Trade Organization was created in 1995.
  - c. The World Health Organization created this program to ensure that global supplies of fibers would remain sufficient to meet minimum daily dietetic requirements.
  - d. This arrangement placed quantitative restrictions on developing countries’ exports of textiles and apparel to the United States and the European Union.**
- 6) According to Lori Kletzer, which of the following does not describe those workers who are most vulnerable to job loss from heightened import competition?
- a. They are younger than average.**
  - b. They have less education than average.
  - c. They are more likely to be female than a randomly selected worker.
  - d. They are more likely to have been in the same job for a lengthy period of time.
- 7) According to the Stolper-Samuelson theorem, when there are two goods and two factors of production (labor and capital):
- a. An increase in the price of the labor-intensive good will drive up the relative price of labor ( $w/r$ ).**
  - b. An increase in the supply of labor will drive down relative price of labor ( $w/r$ ).
  - c. Opening to trade will generally drive down the price of the exportable good.
  - d. An increase in imports of the labor-intensive good will create unemployment.

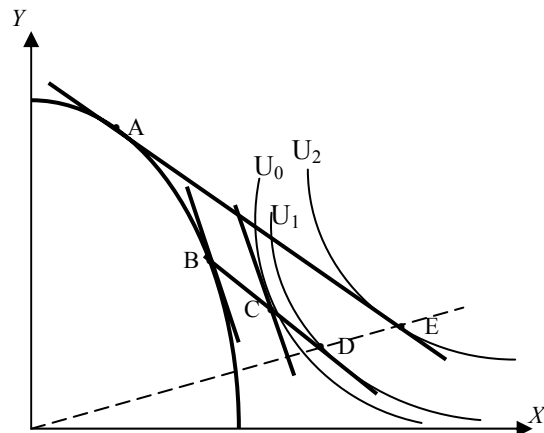
- 8) After the Uruguay round of trade negotiations was completed in 1995:
- average tariffs were lower in developing countries than in industrialized countries.
  - average tariffs in industrialized countries were typically around 20 percent.
  - tariffs in the United States, Japan and the European Union still exceeded 100 percent for selected agricultural products.**
  - average tariffs rose in most countries.
- 9) The diagram below depicts the domestic shoe market in the presence of a quota. The world price of shoes is identified as  $P_w$ :



Which of the following statements concerning this diagram is correct?

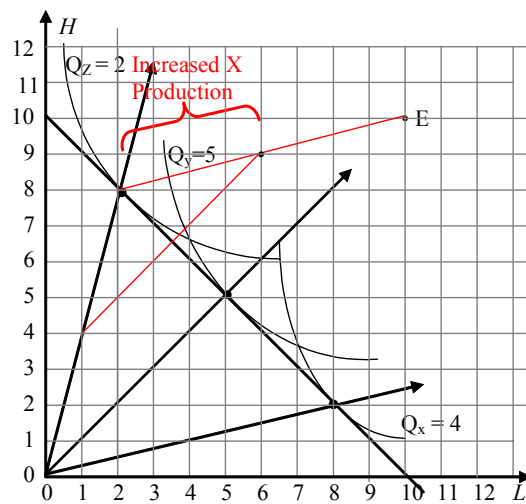
- The area  $a+b$  represents the deadweight loss to the economy induced by the quota.
  - Because of the quota, this country is a net exporter of shoes.
  - Relative to free trade, this quota has induced some additional domestic production.**
  - Relative to free trade, the quota has driven up producer prices but it has left the prices faced by consumers unaffected.
- 10) The graph below depicts the effect of a tariff on imports of good X. Which of the following statements concerning this graph is incorrect?

- If producers had been moved from point A to point B with a production subsidy rather than a tariff, social welfare would have been  $U_1$ .
- The fact that the line passing through AE has the same slope as the line passing through BCD is consistent with the assumption that this is a small country.
- The fact that points D and E lie along a ray from the origin is consistent with homothetic preferences.
- The tariff induces consumption at point D.**



**Part II: Problems and Short Answers (55 minutes)**

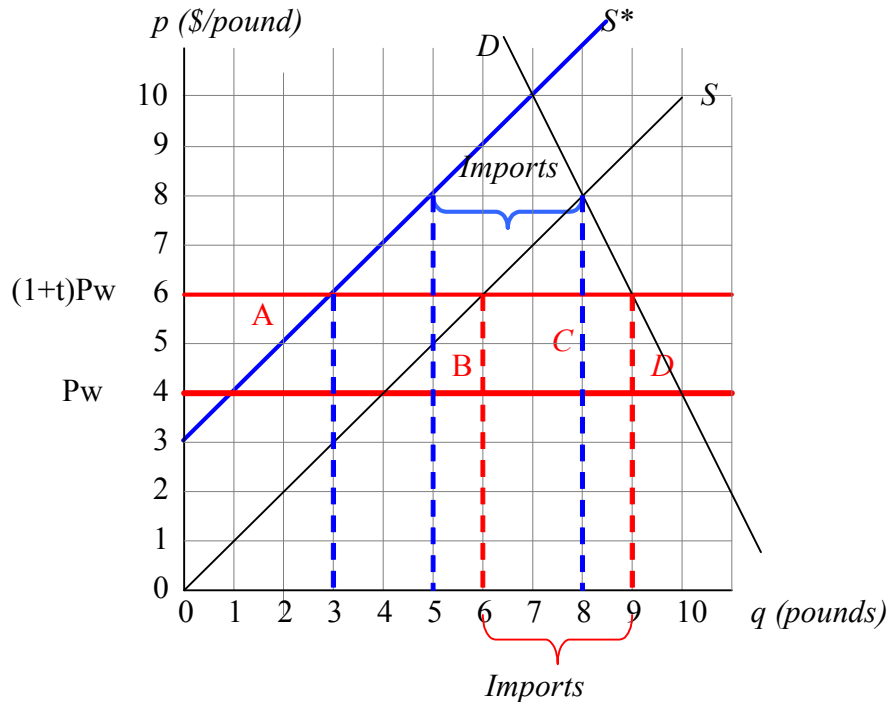
1. **(15 minutes)** Scandalandia, has two types of factors—human capital ( $H$ ) and unskilled labor ( $L$ ). It is capable of three types of activities: low-skill services production (activity  $X$ ), component manufacturing and assembly (activity  $Y$ ), and product development and operations management (activity  $Z$ ). Low-skill services include various non-tradable activities (like burger flipping), but the other two activities can be purchased on global markets. Unit revenue isoquants for each activity are depicted below for an initial “no-outsourcing” equilibrium. (Note the quantities associated with the isoquants.) Arrows represent factor intensities of production for each activity, given their initial prices ( $P_x$ ,  $P_y$  and  $P_z$ ).



- a) At the initial activity prices ( $P_x$ ,  $P_y$  and  $P_z$ ), what is the price for a unit of human capital in this no-outsourcing equilibrium?  $w_h = \underline{1/10}$  What is the price for a unit of unskilled labor?  $w_l = \underline{1/10}$ .
- b) If it becomes possible to do manufacturing and assembly (activity  $Y$ ) offshore cheaply enough, Scandalandia will outsource this type of production. Assuming that  $P_x = \$0.25$  and  $P_z = \$0.50$ , below what foreign price for a unit of  $Y$  activity will this occur?  $P_y < \underline{.20}$ . Suppose Scandalandia does indeed face a foreign  $P_y$  low enough to induce outsourcing. Further suppose that Scandalandia’s factor endowment is  $H = 10$  and  $L = 10$ , as depicted by the endowment point  $E$ . How much of activity  $X$  and activity  $Z$  does the economy do in this outsourcing equilibrium?  $Q_x = \underline{4}$ ,  $Q_z = \underline{2}$ . Will this outsourcing equilibrium entail more or less low-skill service ( $X$ ) activity than the no-outsourcing equilibrium? more Briefly explain why.

**With no outsourcing, resources will be devoted to Y production, drawing resources from X and Z. Therefore, with outsourcing, these resources that were previously devoted to Y production will be devoted to X and Z production. (see graph above)**

2. (20 minutes) The graph below shows domestic supply ( $S$ ) and demand ( $D$ ) for cheese in a small country. Suppose that this country faces a world price of \$4 per pound of cheese, but it has just gone from free trade to a 50 percent tariff on cheese imports ( $t = 0.5$ ).



- Characterize the market equilibrium *after* the tariff is imposed. Specifically, using the grid lines in the figure to calculate the quantities supplied domestically 6, demanded domestically 9, and imported 3. What is the domestic price of cheese after the tariff is imposed? 6.
- How has the tariff affected welfare? Calculate the *changes* it has induced in producer surplus 10 (A), consumer surplus -19 (-A-B-C-D), government tariff revenue 6 (C) and the country as a whole -3 (-B-D). (Be sure to use negative signs when welfare falls.)
- Continue to assume that the 50 percent tariff is in effect. But now suppose that rising dairy prices shift the domestic supply curve upward by 3 units. What is the new quantity of cheese supplied domestically? 3, consumed? 9 What is the new domestic price of cheese? 6.
- Suppose that, instead of a tariff, the government had restricted imports by imposing a *quota* that allowed precisely the level of imports you calculated in part a above. How would the supply shift described in part (c) have affected the market equilibrium? (You may assume that the world price is unaffected by the domestic supply shift.) Calculate the quantity of cheese supplied domestically 5, consumed 8, imported 3, and the domestic price of cheese: 8.

3. **(10 minutes)** Suppose the world is made up of two large economies, *A* and *B*, that satisfy the assumptions of the Heckscher-Ohlin model. Each produces two goods (good *X* and good *Y*) using capital and labor, and each trades freely with the other. Country *A* is more capital-abundant than country *B*.
- a. If country *A* exports good *Y*, is good *Y* more capital-intensive or less capital-intensive than good *X*? (**more**, less) \_\_\_\_\_. Briefly explain.

**The H/O model predicts that countries export goods that use their abundant factor intensively. If Country A is capital-abundant, then the good that it exports is capital-intensive**

- b. Owners of which factor in country *B* would stand to gain from trade protection? (**capital**, labor, both) \_\_\_\_\_. Briefly explain.

**If Country B is importing Y, it must be that this good is capital-intensive. Protection will drive up the domestic price of the imported good, therefore helping capital (Stolper-Samuelson)**

- c. If some labor were to migrate from country *A* to country *B*, and if global prices were *not* affected, what would happen to the quantities of good *X* and good *Y* produced in each country? In each box in the grid below, write “increases,” “deceases,” “doesn’t change,” or “Am I supposed to know this? It wasn’t on the homework.” (The latter answer is unlikely to earn you points.) Hint: remember Rybcznski.

	<i>Good X production</i>	<i>Good Y production</i>
Country A	<b>Down</b>	<b>Up</b>
Country B	<b>Up</b>	<b>Down</b>

4. **(10 minutes)** Suppose the global economy is made up of two large countries—Euroland and Neverland. Both countries satisfy the assumptions of the Hecksher-Ohlin model, and both produce and trade two goods. The endowments and incomes of these countries are given in the table below.

	Labor Force	Capital Stock	Income
Euroland	50	100	200
Neverland	250	100	600
<b>Global totals</b>	<b>300</b>	<b>200</b>	<b>800</b>

Using the Factor Content theorem, and assuming that factor prices equalize internationally, indicate in the table below the amount of each factor that will be embodied in each country’s net export. When a country is a net importer of a factor, be sure to record a negative number, and **remember to show your work**.

	Net exports of capital	Net exports of labor
Euroland	<b>50</b>	<b>-25</b>
Neverland	<b>-50</b>	<b>25</b>

**Euroland:**

$$Tl = 250 - \frac{1}{4} * 300 = -25$$

$$Tk = 100 - \frac{1}{4} * 200 = 50$$

**Neverland:**

$$Tl = 250 - \frac{3}{4} * 300 = 25$$

$$Tk = 100 - \frac{3}{4} * 200 = -50$$