

Econ 4431V-Practice Questions Midterm Exam

EXERCISE 1

Consider the following Classical-Type table showing the number of days of labor input required to obtain 1 unit of output of each of the three commodities in each of the two countries:

	Apples	Bananas	Cranberries
Italy	6	5	4
UK	3	4	5

- Assume that the wage rate in UK (W_{UK}) is £3/day, the wage rate in Italy (W_{IT}) is €1 and the exchange rate (e) is €1/£2. With this information, determine the goods that will be UK exports and the goods that will be US exports.
- Keeping W_{UK} at £3/day and keeping the exchange rate e at €1/£2, calculate the upper and lower limit that are consistent with two way trade between the countries.
- Keeping W_{UK} at £3/day and keeping (W_{IT}) at €1/day, calculate the upper and lower limits (in €/£) to the exchange rate that are consistent with two way trade between the countries.

EXERCISE 2

(a) State the assumption of the Ricardian Model. (b) In the Ricardian Model both countries gain from trade. If good x is normal (or inferior) and good y is luxury, which country gains more (the one specializing in the good x or the one specializing in good y) ? Why?

EXERCISE 3

Home and Foreign produce two goods each, cars and apparel, and use three factors. Cars are produced using skilled labor and capital, but no unskilled labor. Apparel is produced from unskilled labor and capital but without skilled labor. Capital is completely mobile between sectors. Assume both countries has the same capital and total labor, but Home has a larger number of skilled workers.

- What can you say about skill wage premium in the two countries, in case of autarky? What about the allocation of capital across sectors?

- b How your result would change if the two countries open up to free trade? How does this affect the allocation of capital between cars and apparel?
- c Assume no free trade is possible, but unskilled labor can move between countries. How does this affect the allocation of capital between cars and apparel?
- d How does immigration affect the returns to skilled labor in both countries?

EXERCISE 4

Consider two goods 1,2 produced with two different technologies with two inputs. Each good is produced with two inputs, Capital (K) and labor (L). We denote with $F_i(K, L)$ the production function for good i , with w the price of one unit of labor and with r the rental price of one unit of capital.

- a What does it mean that the the technology for good 1 is capital intensive with respect to the technology for good 2? (Formulate a rigorous definition)
- b Suppose that the production functions are the following: $F_i = A_i(\alpha_i K^{1/2} + (1 - \alpha_i)L^{1/2})^2$. Prove that the technology for good 1 is capital intensive if and only if $\alpha_1 > \alpha_2$

EXERCISE 5

Suppose that the United States and Canada have the factor endowments in the table below. Suppose further that the production requirements for a unit of steel is two machines and eight workers, and the requirements for a unit of bread is one machine and eight workers.

	United States	Canada
Capital	40	10
Labor	200	60

- a Which good, bread or steel, is relatively capital intensive? Labor Intensive? Explain how you know.
- a Which country would export bread? Why?

EXERCISE 6

Consider two countries (1 and 2) producing two goods, x and y. Country 1 and Country 2 are identical in everything but preferences. In particular consumers in country 1 like to consume 1 unit of x for each unit of y ($U_1(x, y) = \min[x, y]$), while consumers in country like to consumer 1 unit of x with two units of y ($U_1(x, y) = \min[x, \frac{y}{2}]$).

- a In which country will the relative price of x (p_x/p_y) be higher?
- a Will they trade? Which country will export good x ? Which country will export good y ? Why? Explain

EXERCISE 7

The exports and imports of country A in year 1 are listed below. These are the only goods traded by country 1.

Good	Exports	Imports
T	100	20
X	300	80
Y	100	300

Calculate country A's index of industry trade for year 1.

EXERCISE 8

Suppose that two countries have the same relative prices in autarky.

- a According to H-O model, is there room for gain from trade? Why?
- b According to Krugman model, is there room for gain from trade? Why?