Some Additional Exercises for the Midterm

Tiago Tavares[*]

International Trade I at ITAM

1. Suppose costs of production depend only on labor and to produce a unit of each commodity in each country takes a number of labor-hours given by:

	commodity 1	commodity 2	commodity 3
Home	10	10	10
Foreign	3	5	8

   (a) In which commodity does the home country have the highest comparative advantage?

   (b) If the foreign wage rate is $1 and a free trade equilibrium is achieved what is the most that the wage rate can be at home? Why?

   (c) If the foreign wage rate is $1 what would be a possible wage rate at home such that the home country would produce only one commodity? Which would be that commodity?

   (d) Suppose the foreign wage rate is $1 and $3/5 at home. What will be the pattern of specialization?

   (e) For the same wages as before, suppose that we have an additional symmetric transportation cost (iceberg cost). What is the lowest value of that iceberg cost to induce non-tradability on some commodities? Which commodity will that be?

2. A small country has been in total isolation, with labor input coefficients (labor is the only factor of production) of $a_{L1} = 10$, $a_{L2} = 8$, $a_{L3} = 12$, $a_{L4} = 7$.

---

[*]Email: Please contact me to tgstavares@gmail.com if you find any errors in the text.

(a) In autarky, how many units of the first commodity would be required to exchange for one unit of the third commodity?

(b) This country is now open to free trade with the rest of the world. Prices are given by $p_1 = 1$, $p_2 = 8$, $p_3 = 10$ and $p_4 = 2$. What is the pattern of production in this country after trade is opened up?

(c) Show what happens to the welfare of a worker who consumes only the fourth commodity before and after trade.

3. Suppose China and Mexico produce multiple goods (more than 2). Now let China gets better at producing one commodity that was initially produced in both China and Mexico, but not to the extent of wiping out completely production in Mexico for that commodity. What would happen to Mexico real income? Would the Mexican real income be reduced if Mexico was an initial importer of that good? (no math necessary)

4. Consider the equilibrium of a Ricardian model extension to a continuous of commodities. Try to analyze the impact of an uniform increase of the foreigns country technology on trade and welfare.

5. Explain why Australian capitalists and landlords probably favor the same policy towards immigration. Given the traditional export position of Australian wool in the world, how might owners of sheep stations be expected to react to an increase in domestic prices of manufacturers brought by a tariff? Through what mechanism might land rents be distributed?

6. Suppose only one technique can be used in the production of clothing. To produce one unit of clothing we need 4 units of labor-hours and 1 of capital. To produce one unit of food, we require 1 unit of capital and 1 unit of labor-hours. Suppose initially that both the wage and the rental rate of capital are equal to $2.

(a) If both goods are produced what are they prices?

(b) Let's keep the price of food constant and raise the price of clothing to $15. Rank the relative change in the relative change of the price of food, price of clothing, wage rate and the rental rate of capital.

7. Assume that an economy has a linear technique of production with the following factor requirements:

$$a_{lc} = 4$$
$$a_{kc} = 1$$
$$a_{lf} = 1$$
$$a_{kf} = 1$$

(a) Draw a diagram with capital on the vertical axis and labor on the horizontal axis. Draw a ray through the origin with slope 1 and show how output for food can be measured along this ray; draw a flatter ray with slope $1/4$ and show how output of clothing can be measured along that ray.

(b) Suppose that the economy possesses 1000 units of labor and 500 units of capital. Find the full employment level of output on each sector.

(c) Find the lowest and the highest capital stock that still allow for full employment of both factors.