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**Econ 464  
Fall 2007**

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**Midterm 1 (Total Points : 95 )**

**(I)** The production technologies of Home and Foreign are specified by the unit labor requirements shown below:

	Home	Foreign (*)
Textiles(T)	2	4
Wine(V)	4	1

Suppose there are 40 units of labor in each country, that consumers have “nice” indifference curves and that both commodities are consumed in autarky.

**Answer the following questions. Justify fully. Use a diagram or an equation when you are able to do so.**

(1) (4 pts) Graph the production possibilities frontier and a possible autarky point for both countries (**put textiles in the horizontal axis**).

(2) (6 pts) What are the autarky relative prices  $p_T/p_V$  in each country? Which country has a comparative advantage in textiles and why?

**Free trade**

Suppose that when both countries trade freely, the relative price of wine in terms of textiles is  $1/2$ , i.e. the free trade prices are  $p_V/p_T = 1/2$ .

(3) (4 pts) What is the pattern of trade? Draw a new graph for Home showing: the free trade production point, a plausible consumption point, exports and imports.

(4) (9 pts) Show with a new diagram how Home's gains from trade can be divided in gains from exchange and gains from specialization.

(5) (6 pts) Calculate the real wages in terms of wine and textiles (i.e.  $w/p_V$  and  $w/p_T$ ) for Home under **Free Trade**.

(6) (6 pts) Assume that wine is used as a numeraire (i.e.  $p_V=1$ ) and that the countries are trading freely at the specified free trade prices ( $p_V/p_T = 1/2$ ). Calculate the Average Cost of producing Wine in the Home Country?

(7) (6 pts) Draw the World Relative Supply Curve (put  $p_T/p_V$  in the vertical axis,  $T + T^* / V + V^*$  in the horizontal axis and identify where the jump occurs). Draw a “nice” World Relative Demand curve that crosses the World Relative Supply curve at the stated free trade price ratio.

Suppose now that a deadly disease strikes the Foreign country and half of its labor force dies (i.e. now Foreign has only 20 units of labor). Suppose further that Foreign continues to trade freely with Home and that the World Relative Demand does not change.

Answer questions (8) and (9). **Justify fully**.

(8) (8 pts) What will happen to the equilibrium free trade prices? (Use the World Relative Supply and Demand Diagram to show this).

(9) (8 pts) Consider now the situation of one of the surviving Foreign workers. Do you think that he/she will be better off or worse off than before the outbreak of the disease? Justify with a clear argument.

## (II) Specific Factors Model

Consider the Specific Factors model studied in class (all the **standard assumptions** hold : decreasing marginal products, “nice” preferences, etc ). There are two countries (Chile and Germany), two commodities (equipment and grapes) and three factors (capital, land and labor). The production of equipment uses capital (K) and labor, while the production of grapes uses land (T) and labor. Suppose both countries have the same labor force , technologies and preferences. Assume land is relatively abundant in Chile and capital is relatively abundant in Germany.

**Answer the following questions. Justify fully. Use a diagram or an equation when you are able to do so.**

### *Free trade among Chile and Germany (\*)*

Suppose both countries are trading freely.

- (1) (6 pts) Draw a diagram for each country where you show reasonable production and consumption points under free trade (use the horizontal axis for equipment).
- (2) (4 pts) Draw a reasonable World Relative Demand and World Relative Supply ( put  $p_E/p_G$  in the vertical axis,  $E + E^* / G + G^*$  in the horizontal axis)

### *Effects of a preference shift towards grapes*

Assume preferences in both countries shift towards grapes (i.e. at every price ratio people want to consume relatively more grapes)

- (3) (4 pts) What will happen to free trade prices? Justify (use the World Relative Supply and Demand Diagram ).
- (4) (8 pts) Use a diagram and a clear explanation to show what happens to  $w/p_G$  and  $w/p_E$  in Chile after this change.
- (5) (8 pts) Use your results in (4), a diagram and a clear explanation to show whether Chilean capital owners will benefit or not from this change.

## (III) Short questions

- (1) (4 pts) Will a country always be better off in Free trade than in autarky?
- (2) (4 pts) What is the most important conclusion of the Specific Factors model?