

Ricardian Model I

Consider the Ricardian model with two countries (Home and Foreign) and two goods (food and clothing). Units of labor needed to produce one unit of clothing and food respectively are given by $a_{LC} = 3$ and $a_{LF} = 1$ for the home country and by $a_{LC}^* = 4$ and $a_{LF}^* = 2$ for the foreign country.

- a) Determine absolute and comparative advantage.
- b) Is it possible that trade between the two countries occurs at a price $\frac{P_C}{P_F} = 1$? Explain.
- c) Is it possible that wages in the foreign country are higher than in the home country? Explain.
- d) Is it possible that the two countries trade with each other, and both countries produce both goods? Explain.

Ricardian Model II

Consider the Ricardian model with two countries (Home and Foreign) and two goods, food(F) and clothing(C). Labor hours needed to produce clothing and food are $a_{LC} = 1$ and $a_{LF} = 2$ for the home country and $a_{LC}^* = 3$ and $a_{LF}^* = 5$ for the foreign country.

- a) Determine absolute and comparative advantage.
- b) If the two countries engage in trade, in which range will the relative price $\frac{P_F}{P_C}$ be?
- c) Now suppose the two countries are part of a larger world market. At which world price(s) $\frac{P_F}{P_C}$ will both countries produce the same good? (and both produce only this good)
- d) Suppose the two countries engage in trade and the price of food is given by $P_F = 1\$$. The home country produces both goods. Determine the wage rate in both countries.

H-O Model I

Consider the rigid-technology version of the Heckscher-Ohlin model. There are two goods: Wool (W) and Food (F) that both require labor (L) and capital (K) as input factors. One unit of wool requires 1 unit of capital ($a_{KW} = 1$) and 4 units of labor ($a_{LW} = 4$). One unit of food requires 2 units of capital ($a_{KF} = 2$) and 3 units of labor ($a_{LF} = 3$). There is a country (call it Australia) that is endowed with 600 units of labor and 300 units of capital.

- a) Draw the production possibility frontier of Australia. (Draw W on X-axis and F on Y-axis)
- b) Suppose Australia lives in Autarky. The autarky price of wool in Australia is lower than the world price of wool. Who in Australia is in favor and who against trade? (if anybody). Explain your answer.
- c) How does production in Australia change if there is immigration, i.e. the amount of labor in Australia increases? You may show your answer graphically, using the PPF from question a). If you do not show it graphically, give an explanation for your answer.

H-O Model II

Consider the Heckscher-Ohlin model (rigid technology version) discussed in class, with the production factors capital and labor, which are used to produce the goods food (F) and manufactures (M). F is labor intensive and M is capital intensive. The world consists of two countries, Algeria and Morocco. Algeria is capital abundant and Morocco is labor abundant. Both countries have the same technology and preferences.

- a) Given this information, can you say anything about relative wages in the two countries (i.e. which country has the higher wage), under autarky and under free trade?
- b) Is everybody in the two countries in favor of free trade? Explain
- c) If the countries open up to trade, how will the production pattern change in Morocco? What happens to wages and capital rental rates in Morocco?