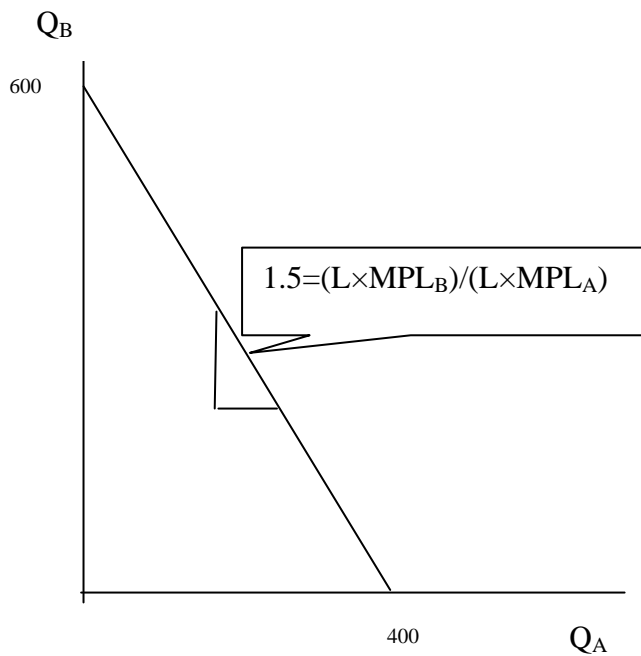


Practice Problems on the Ricardian Model

Home has 1200 units of labor available. It can produce two goods, apples and bananas. The unit labor requirement in apple production is 3 (unit labor requirement is $1/\text{MPL}$), while in banana production it is 2.

a. Graph Home's PPF.



b. What is the opportunity cost of apples in terms of bananas?

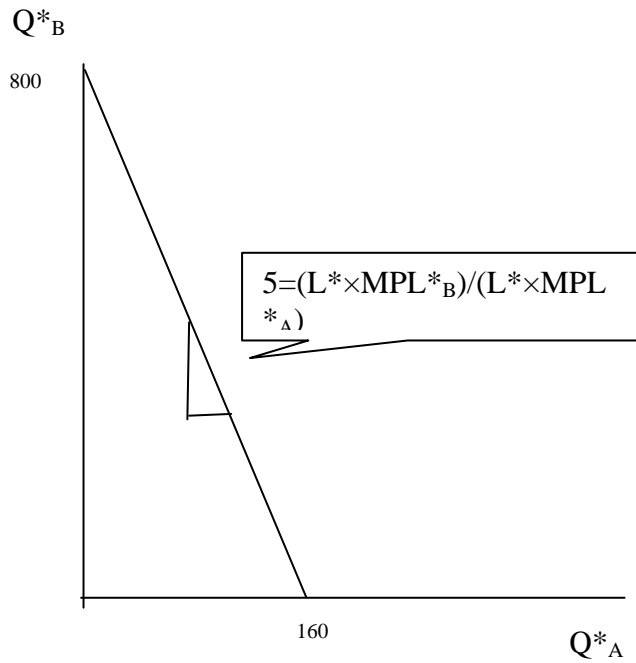
The opportunity cost of apples in terms of bananas is 1.5 bananas per apple.

c. In the absence of trade, what would the price of apples in terms of bananas be? Why?

$P_A/P_B = 1.5$ in the absence of trade. The relative price equals the slope of the PPF in autarky.

Assume Home is as before. Now there is another country, Foreign, with a labor force of 800. Foreign's unit labor requirement in apple production is 5 ($\text{MPL}_A = 1/5$), while in banana production it is 1 ($\text{MPL}_B = 1$).

a. Graph Foreign's production possibility frontier.



7. Assume that Home and Foreign produce two goods, televisions and cars, and use the following information to answer the questions.

In the no-trade equilibrium:			
Home Country		Foreign Country	
$Wage_{TV} = 12$	$Wage_c = ?$	$Wage_{TV}^* = ?$	$Wage_c^* = 6$
$MPL_{TV} = 2$	$MPL_c = ?$	$MPL_{TV}^* = ?$	$MPL_c^* = 1$
$P_{TV} = ?$	$P_c = 4$	$P_{TV}^* = 3$	$P_c^* = ?$

- a. What is the marginal product of labor for televisions and cars in the Home country? What is the no-trade relative price of televisions at Home?
- Answer:** $MPL_c = 3$, $MPL_{TV} = 2$, and $P_{TV} / P_c = MPL_c / MPL_{TV} = 3/2$
- b. What is the marginal product of labor for televisions and cars in Foreign? What is the no-trade relative price of televisions in Foreign?

Answer: $MPL_c^* = 1$, $MPL_{TV}^* = 2$, and $P_{TV}^* / P_c^* = MPL_c^* / MPL_{TV}^* = 1/2$

- c. Suppose the world relative price of televisions in the trade equilibrium is $P_{TV} / P_C = 1$. Which good will each country export? Briefly explain why.

Answer: Home will export cars and Foreign will export televisions because Home has a comparative advantage in cars whereas Foreign has a comparative advantage in televisions.

- d. In the trade equilibrium, what is the real wage at Home in terms of cars and in terms of televisions? How do these values compare with the real wage in terms of either good in the no-trade equilibrium?

Answer: Workers at Home are paid in terms of cars because Home exports cars. Home is better off with trade because its real wage in terms of televisions has increased.

$$\text{Home wages with trade} = \begin{cases} MPL_C = 3 \text{ units of car} \\ \text{or} \\ (P_C / P_{TV}) \cdot MPL_C = (1) \cdot 3 = 3 \text{ units of TV} \end{cases}$$

$$\text{Home wages without trade} = \begin{cases} MPL_C = 3 \text{ units of car} \\ \text{or} \\ (P_C / P_{TV}) \cdot MPL_C = (2/3) \cdot 3 = 2 \text{ units of TV} \end{cases}$$

- e. In the trade equilibrium, what is the real wage in Foreign in terms of televisions and in terms of cars? How do these values compare with the real wage in terms of either good in the no-trade equilibrium?

Answer: Foreign workers are paid in terms of televisions because Foreign exports televisions. Foreign gains in terms of cars with trade.

$$\text{Foreign wages with trade} = \begin{cases} (P_{TV} / P_C) \cdot MPL_{TV}^* = (1) \cdot 2 = 2 \text{ units of cars} \\ \text{or} \\ MPL_{TV}^* = 2 \text{ units of TV} \end{cases}$$

$$\text{Foreign wages without trade} = \begin{cases} (P_{TV}^* / P_C^*) \cdot MPL_{TV}^* = (1/2) \cdot 2 = 1 \text{ unit of car} \\ \text{or} \\ MPL_{TV}^* = 2 \text{ units of TV} \end{cases}$$

- f. In the trade equilibrium, do Foreign workers earn more or less than those at Home, measured in terms of their ability to purchase goods? Explain why.

Answer: Foreign workers earn less than workers at Home in terms of cars because Home has an absolute advantage in the production of cars. Home workers also earn more than Foreign workers in terms of televisions.