

Homework 1: comparative advantage, gains from trade, Ricardian model of trade

Multiple multiple choice. Each question can have from zero to four correct answers (any combination of a,b,c,d, or none of them.) Write in the letter of each correct answer.

1. In China the opportunity cost of producing 1 bushel of wheat is 2 television sets. In the U.S. the opportunity cost of producing 1 television set is 2 bushels of wheat. All other things being equal:

- a) China should import televisions.
- b) China should import wheat.*
- c) The U.S. should export wheat.*
- d) The U.S. should import televisions.*

2. Now, productivity in China improves so that the the opportunity cost of producing 1 bushel of wheat is 1 television set (conditions in the US stay the same). All other things being equal:

- a) China should not trade.
- b) China should import televisions.
- c) The U.S. should export wheat.*
- d) The U.S. should import televisions.*

3. Mexico can produce 3 million cars per year, Germany can produce 5 million cars per year, the US can produce 10 million cars per year. Which country has a comparative advantage in producing cars:

- a) Mexico
- b) the U.S.
- c) Germany
- d) can not be determined from the information above *

4. The set of production opportunities available to an economy are defined as

- a) opportunity cost
- b) production possibility frontier*
- c) absolute advantage
- d) comparative advantage

5. To produce levels of output outside the production possibility frontier (PPF), what must be true?

- a) output beyond the PPF can never be obtained
- b) output beyond the PPF can be obtained at current levels of input and technology
- c) output beyond the PPF can be obtained through trade
- c) output beyond the PPF can be obtained only if there is growth in inputs or through technological innovation*

6. Choose the correct statement(s) about the consumption possibilities frontier (CPF):

- a) In autarky, a country's CPF and PPF are identical.*
- b) In the presence of trade, a country's CPF and PPF are identical.
- c) A country's CPF under autarky lies outside its CPF under trade.
- d) In autarky, a country's CPF is a straight line.*

For the next two questions, suppose Finlandia produces corn and wheat using only labor. The total supply of labor is 100, the unit labor requirement for corn production is 1, and the unit labor requirement for wheat production is 2.

7. Select the correct statement(s):

- a) The maximum possible amount of wheat produced in the country is 50.*
- b) If wheat production is 10, maximum corn production is 100.
- c) Finlandia can produce more corn by producing less wheat.*
- d) The opportunity cost of producing more wheat is defined as the amount of corn production given up.*

8. Select the correct statement(s):

- a) The autarky price of wheat relative to corn is 2.*
- b) Finlandia is more efficient at producing wheat and so will export wheat.
- c) Finlandia will gain from trade with any country having more than 100 units of labor.
- d) In autarky, reducing the unit labor requirement for wheat production makes Finlandia better off.*

For questions 9 - 14, suppose there are 2 countries (Albania and Belgium), 2 goods (wheat and Corn), which are produced using only labor. The unit labor requirements for Albania are (a_w and a_c), and for Belgium are (b_w and b_c).

9. Under autarky, the relative prices of wheat and corn are different in Albania and Belgium if

- a) $\frac{a_w}{a_c} > \frac{b_w}{b_c}$ *
- b) PPFs in Albania and Belgium have different slopes*
- c) Albania and Belgium have different endowments of labor
- d) Prices of wheat and corn change in the case of trade*

True / False / Uncertain. For each question, answer true, false, or uncertain (uncertain means that you the answer may be true or false, or that you cannot determine the answer from the question). THEN EXPLAIN YOUR ANSWER (please limit responses to a few lines, and one paragraph at most).

10. In the absence of trade, the PPF is a straight downward sloping line because the opportunity cost of corn in terms of wheat declines gradually with an increase of production of corn.

False. The PPF is a straight downward sloping line, which reflects that increasing C production requires decreasing W production. However, this trade off occurs at a constant rate -- opportunity cost is constant in this model.

11. Consider Albania in autarky. If the opportunity cost of corn in terms of wheat increases, the new PPF shifts out parallel to the old PPF.

False. The slope of the PPF is given by the opportunity costs of C in terms of W, so changing the opportunity cost changes the slope – this is a twist of the PPF.

12. If a_w and a_c decrease in equal proportions it will cause the parallel shift in of the PPF.

False. A proportionate decrease in the unit labor requirements will have a parallel shift of the PPF, but the curve will shift out.

13. Trade between Albania and Belgium will continue until the wages are equal in the countries.

False. Trade equalizes the price of goods between the countries, but wages are determined by absolute productivity levels.

14. Suppose Belgium has an absolute advantage in both wheat and corn. In trade between Albania and Belgium, only Belgium will gain.

False. The gains from trade are mutual and unrelated to which country has an absolute advantage.

15. Since the average wage in the US is higher than in Mexico, trade between these two countries will mostly consist of Mexico exporting to the US.

False. Mexico will both import from and export to the United States.

16. It is possible for both countries to gain from trade as long as each country exports the good that they have a comparative advantage.

True.

17. Suppose plants close in the US as a result of free trade with Mexico. This is an evidence that trade is bad for the economy.

False. Trade leads to specialization, which means that some sectors of the economy grow while others shrink. The gains from trade are caused by relatively inefficient domestic sectors shrinking (plants closing) so that more efficient foreign producers can take their place.

18. The gains from trade are the greatest when autarky prices are equal.

False. When autarky prices are equal, there is no reason to trade, and no gains from trade.

19. Trade is beneficial because it lowers an economy's unemployment rate.

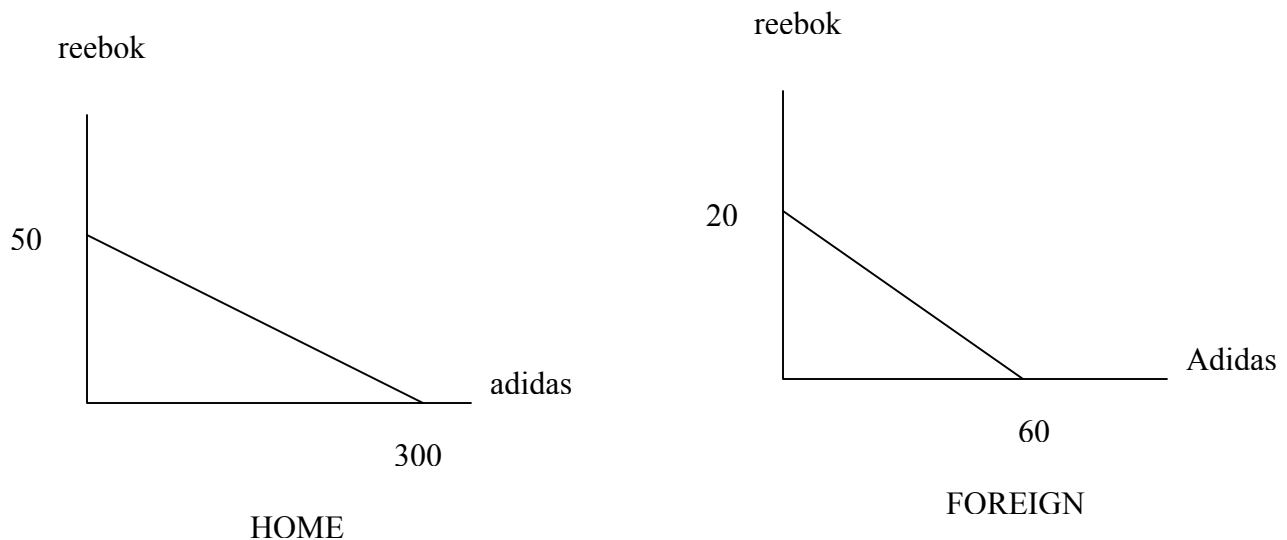
False. The gains from trade are unrelated to unemployment, and trade does not generally affect unemployment rates.

20. The following table describes the technology of production Reebok shoes and Adidas t-shirts in countries home and foreign.

Country	Home	Foreign
Labor endowment	600	300
Labor needed to produce 1 unit of:		
Reebok shoes	12	15
Adidas t-shirt	2	5

For each country, under autarky

a. Draw the PPF.



b. what is the opportunity cost of Reebok in terms of Adidas?

Home: to produce 1 more reebok I have to give up 6 adidas.

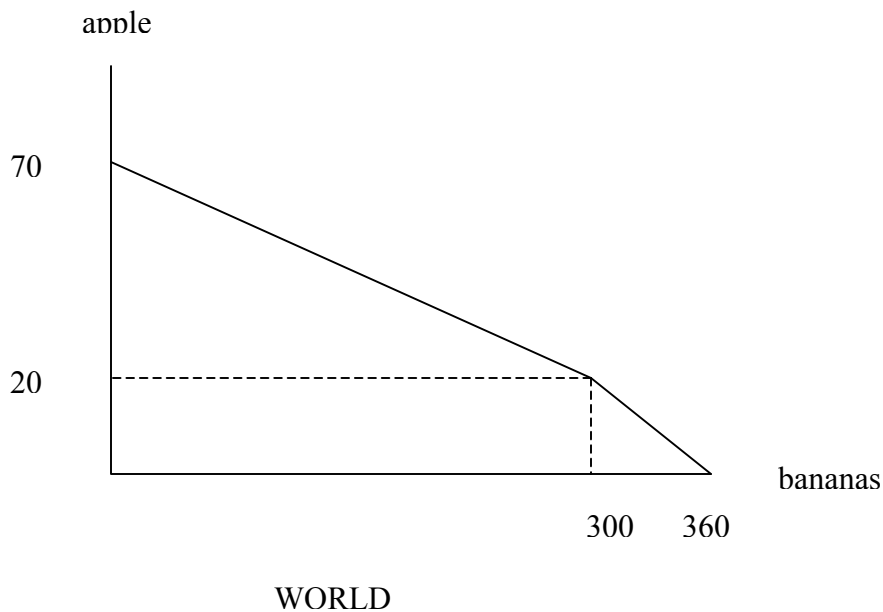
Foreign: to produce 1 more reebok I have to give up 3 adidas.

b. In the absence of trade, what is the relative price of Reeboks and Adidas?

Home: $P_r/P_a = 6$; Foreign: $P_r/P_a = 3$

With trade

c. Draw the world PPF



d. Which country has an absolute advantage in producing Reebok? Adidas?

Home has an absolute advantage in producing both reeboks and adidas.

e. Which country should specialize in producing Reebok? Adidas?

Home should produce adidas; foreign should produce reeboks.

f. In which country are wage rates higher? Why?

Wages are higher in the home country because it is more productive. To see the exact

values, $\frac{w^H}{w^F} = \frac{p_a a_r^F}{p_r a_a^H} = \frac{p_a 15}{p_r 2}$. We know that relative prices have to wind up

somewhere between the autarky prices for home and foreign, $1/3$ and $1/6$. (If that's confusing, note that I just inverted the prices above. If $p_r/p_a = 3$, then $p_a/p_r = 1/3$.) At relative price = $1/3$, the home wage is $5/2$ higher than the foreign wage. If the relative price is $1/6$ then the home wage is $5/4$ higher than the foreign wage.