

INTERNATIONAL ECONOMICS, 7TH EDITION

Study Resources: Questions for Study & Review

Chapter 2: Answers

1. Ricardo's insight was that a basis for trade would depend upon relative costs of production in each country, where the cost of expanding output of one good was measured in terms of how much of the other good must be given up. While absolute levels of productivity are important in determining the standard of living of a country (the greater the productivity, the higher the standard of living), it is the difference in relative productivity that allows a country to gain from producing more of the good where it holds a comparative advantage and importing the good where it has a comparative disadvantage.

Therefore, Ricardo would not compare EU productivity to Chinese productivity, but rather the ratio of labor productivity in two different goods in the EU to the corresponding ratio in China. Likewise, Ricardo would not compare the EU and the Chinese wage rates as the determinant of potential gains from trade, but would find that ratio a useful indicator of the opportunity cost of using labor elsewhere in the economy. If the Chinese/EU wage ratio (say, 1/10) was less than the Chinese/EU

productivity ratio in producing computers (say $1/5$), then Chinese firms would have a comparative advantage in producing computers.

2. French productivity is 5 times greater than Indonesian productivity in electronic assembly. For Indonesia to have a comparative advantage in electronic assembly, the French/Indonesian productivity ratio in bicycles must be less than 5. This would be the case if Indonesian productivity in bicycle production were less than 2 bicycles per hour. France will have an absolute advantage in bicycle production for any Indonesian productivity value less than 10 bicycles per hour.
3.
 - a. The cost of coffee in A is $\frac{1}{2}$ ton of sugar per ton of coffee, and in B it is 2 tons of sugar per ton of coffee, as given by the ratio of labor input requirements. A has a comparative advantage in coffee production, as well as an absolute advantage in coffee production.
 - b. The 20 individuals in B will no longer produce 1 ton of coffee and now will produce 2 tons of sugar. If they can exchange this sugar for coffee in A, where the price ratio is $\frac{1}{2}$ ton of sugar per 1 ton of coffee, they will receive 4 tons of coffee. B produces 1 ton less of coffee but receives 4 tons of coffee in return, a gain of 3 tons of coffee.
 - c. If B is much smaller than A, then it is more likely to capture such a large gain from trade, because its offer of more sugar will be a small addition to

the total amount of domestic plus foreign sugar available in A. There will be little downward pressure on the price of sugar due to this increase in supply.

4. French productivity is 5 times greater than Indonesian productivity in electronic assembly. For Indonesia to have a comparative advantage in electronic assembly, the French/Indonesian productivity ratio in bicycles must be less than 5. This would be the case if Indonesian productivity in bicycle production were less than 2 bicycles per hour. France will have an absolute advantage in bicycle production for any Indonesian productivity value less than 10 bicycles per hour.
5. With constant costs of production, a small country will become completely specialized in just one good, producing as much as possible for the large world market of the good where it has a comparative advantage. It will then import other goods where it has a comparative disadvantage. Given the kinked supply curve representation, it produces on the vertical range of the curve where it is completely specialized and can expand output of its export good no further.
6. a) The ratio of Japan/India labor productivities in nails is 10, in oranges 5, and in rice 6. Japan has a comparative advantage in nails and a comparative disadvantage in oranges. Alternatively, the price of nails in Japan is 1 orange, and in India it is 2 oranges, which demonstrates Japan's lower relative cost of nails. Japan's price of rice is $\frac{1}{3}$ of an orange, and India's price is $\frac{2}{5}$ th of an orange, but Japan's price of rice is

1/3 of a nail, and India's price is 1/5th of a nail. Therefore, without additional (demand) information we can't say whether Japan has a comparative advantage in rice.

b) The ratio of Japanese wages to Indian wages can range from 5 to 10. If the ratio is 5.5, then the Japanese productivity advantage exceeds the wage disadvantage in nails and rice, which it will export. Because Japan's productivity advantage is only 5 in oranges, at Japan's higher wages domestic oranges will be more expensive than imported oranges. Japan will export nails and rice to India in return for oranges.

Alternatively, we could have calculated the ratio of required labor in Japan compared to India, and would have found the values 0.1 in nails, 0.16 in rice and 0.20 in oranges. Because the ratio of Indian wages to Japanese wages is 0.18, Japan has a lower cost of providing nails and rice to India.

7. a. The labor cost of Japanese nails exported to India, including the transport charge, will be 0.14 units of labor, and the domestic labor cost in India still will be 1 unit of labor. The ratio of required labor in Japan relative to India no longer is 0.1, but now is 0.14, which still is less than the ratio of Indian wages to Japanese wages, 0.18. Thus, Japan will still export nails to India, and nails will be a traded good, not a nontraded good.

b. In the case of rice, the Japanese labor cost to export to India rises from 0.033 to 0.073, and the domestic labor cost in India still is 0.2. This ratio rises from 0.16 to 0.37, which now exceeds the Indian/Japanese wage ratio. Even though much less labor is necessary to grow rice in Japan, the combination of a high transport charge and a high Japanese wage results in India choosing to buy domestically produced rice instead. Rice has become a nontraded good. Japanese rice is noncompetitive in the Indian market, and Indian rice is noncompetitive in the Japanese market.

In the case of oranges, the ratio of Indian to Japanese labor costs becomes $(0.5+0.04)/0.1$, or 5.4. Because the ratio of Japanese to Indian wages is 5.5, India will still export oranges to Japan.