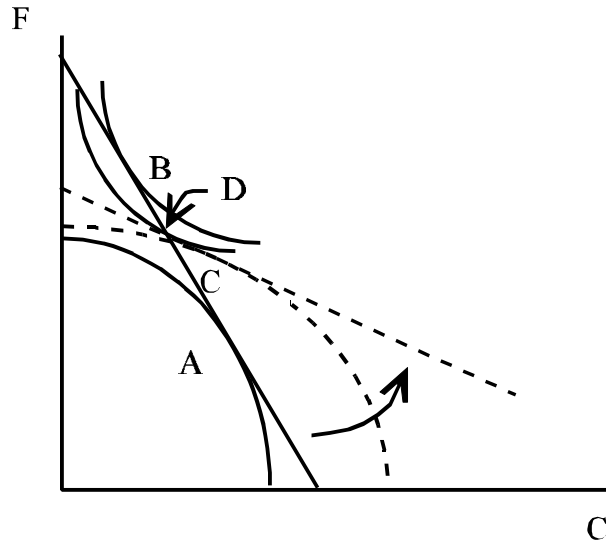


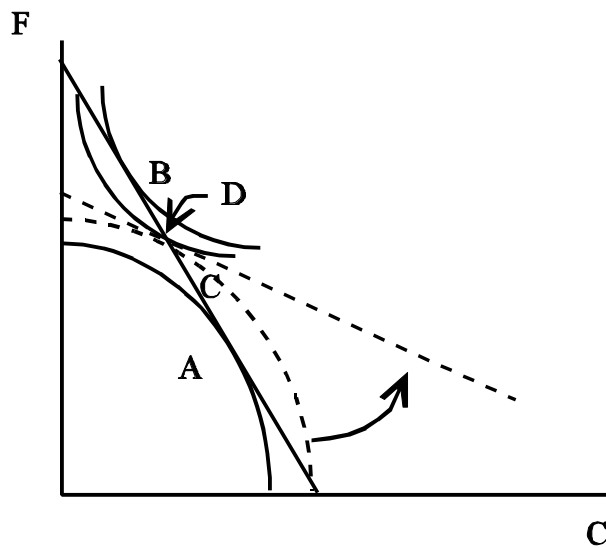
Homework #3: Answers

Text questions, Chapter 4, problems 1-5:

1. Figure 4.3 illustrates the phenomenon of immiserizing growth when the country's growth is strongly biased toward its export industry (clothing).



- a. Construct a diagram that illustrates the possibility that a country will suffer a welfare loss when growth (at initial terms of trade) results in a balanced (proportional) increases in food and clothing outputs.



- b. Can such immiserization accompany growth that is concentrated in food (the import-competing sector).

No. In this case, the terms-of-trade effect increases national welfare. Thus, since both the effect with price held constant and the ToT effect are positive, welfare must increase.

2. If imports of food represent 20 percent of a country's national income and the relative price of food rises by 10 percent, by approximately how much is national income reduced?

If food imports represent 20 percent of national income and the price of food rises by 10 percent, then the country can purchase 10 percent less food imports. This will correspond to a 2 percent decline in national income (as food imports are 20 percent of income).

3. Suppose that the home and foreign countries' taste patterns differ, but that each is inflexible: The home country consumes food to clothing in proportions 2:1 (at any prices), while the foreign food to clothing consumption ratio is always 1:1. The two countries have identical bowed out transformation schedules.

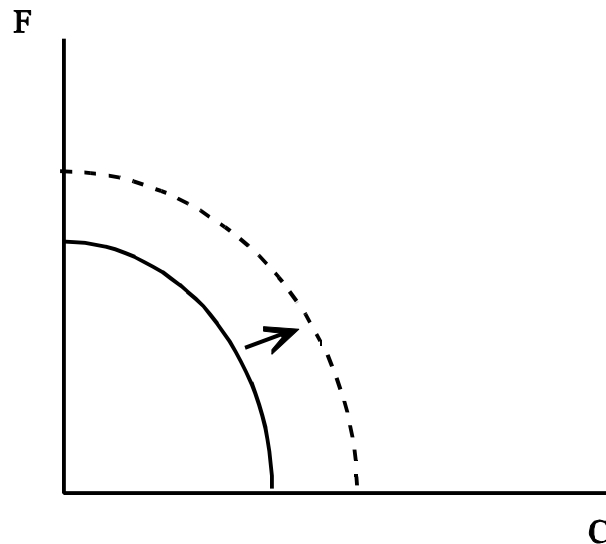
- a. What happens to the home country's terms of trade if it makes a consumption loan to the foreign country?

With identical production conditions, we can use the fact that the Home country has a relatively greater preference for food than the Foreign country, thus before the transfer, the home imports food. The home country gives T dollars to the foreign country. At constant terms of trade, the home country seeks to reduce its consumption of food and clothing in a 2:1 ratio. The foreign country seeks to use the T dollars to increase its consumption in a 1:1 ratio. This creates excess supply of food and excess demand for clothing. The relative price of food must fall. Since the home country is a food importer, this is an improvement in its terms of trade.

- b. Is there a secondary burden of the loan?

Secondary burden refers to an additional redistribution of income induced by a change in the terms of trade. Since the terms-of-trade move in favor of the transferor, there is not a secondary burden.

4. Draw a diagram to illustrate the case of uniform growth—the transformation schedule shifts out radially from the origin by 30 percent.



- a. How might such growth affect the terms of trade?

If this is a large country, such growth will certainly affect the country's terms of trade. The size and direction of the effect on the ToT will depend on world demand elasticities.

- b. Now suppose a country receives as a transfer a quantity of resources from its trading partner. Suppose also that this has the effect of causing its transformation schedule to shift outward by 10 percent and the giving country's schedule to shift inward by 10 percent. Would the Giving country experience a secondary burden or blessing?

In this case, the terms of trade will shift in favor of the transferor.

- c. How is the growth case related to the transfer exercise?

The transfer case is like simultaneous growth in one country and shrinkage in the other.

5. Suppose that only two countries engage in trade and that initially trade is balanced in the current period.

- a. If the home country discovers a new process that will raise productivity in its export sector in the next period, how would the current balance of trade be affected?

If the home country discovers a new process that will raise productivity tomorrow then it

will have higher output in the future. Therefore, it will want to increase consumption today. It will do this by running a trade deficit today and having a trade surplus in the next period (after production has expanded).

- b. Would your answer be modified if both countries also expect that the discovery will worsen the Home country's terms of trade during the following period? [*hint*: Could the foreign country's real net wealth be increased by more than the home country's as a consequence of the expected terms of trade change?]

If this causes ToT to worsen in the future (i.e. expanded production causes world relative supply for the country's export good to increase, leading to a fall in the relative price of exports), then this will make the gain in future income as a result of technological progress smaller. This will reduce the country's desire to borrow from the future, making the current trade deficit and future surplus smaller. However, the ToT change may make the other country's future income rise by more than the Home country's. In this case, the Foreign country will want to increase consumption today. The Home country will then have a trade surplus now and a deficit later.

Workbook problems, 1-3

1. Preferred elasticity of trading partner: If foreign demand for our exports went up, would the foreigners prefer that our export supply curve be of high or low elasticity?

High elasticity to reduce the worsening of their terms-of-trade.

2. Trade restrictions and terms of trade: The left panel of the following diagram illustrates the home country's export supply curve of clothing and the home country's import demand curve for the same product, while the right diagram illustrates the international market for food.

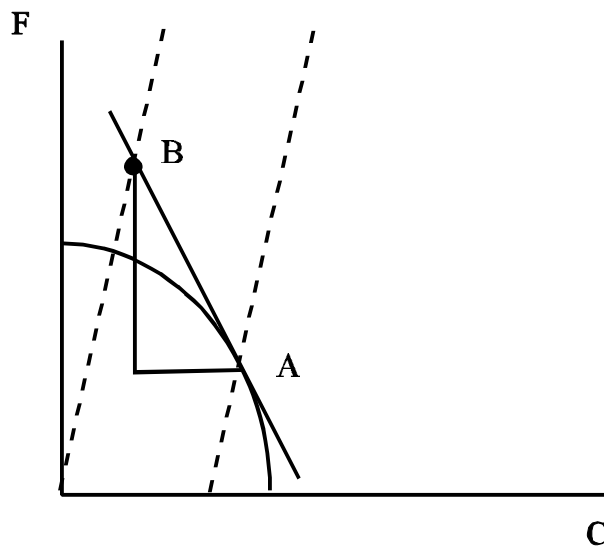
a. Illustrate the effect of imposing a ceiling on home exports in both panels.

The effect of the restriction is to cause the supply curve to become vertical at the quantity to which exports are restricted. If this quantity is greater than than the equilibrium amount presently exchanged, nothing of significance happens. If this quantity is less, the terms of trade of the exporter improve. The Import demand curve shifts to the left.

b. What conditions are likely to lead to a large improvement in the home country's terms of trade?

A very inelastic foreign demand curve for home's export good, a very elastic export supply curve, or severely restricting home supply of the export good are all likely to improve the home country's terms of trade.

3. Terms of trade and growth—the knife-edge case: Consider the following large country, where A is initial production and B is initial consumption. Assuming that preferences are homothetic, which growth path will leave its terms of trade constant. (*Hint: Draw the initial trade triangle*).



Draw a ray from the origin through point B. Due to homotheticity, this in the IC line if world price do not change. Draw a line through point A parallel to this ray. Indicate the trade triangle implied by A and B. For any growth along the line through A, the size of the implied trade triangle is the same as the intial trade triangle connecting A and B. Thus, there is no effect on world prices, even though this country is large.