

# CHAPTER 2

## THE BASIC THEORY USING DEMAND AND SUPPLY

### Objectives of the Chapter

Chapter 2 sets up supply and demand for our basic trade model. It enables us to determine precisely the equilibrium relative price and equilibrium quantities traded, and the distribution of the gains from trade.

Simply put, international trade occurs if Country A's consumers find that they can purchase a good at a lower price in Country B than at home, or if Country J's producers find that they can sell their goods at a higher price in Country K than at home. Abstracting from any barriers to trade, the international price of a good reaches equilibrium when aggregate world demand equals aggregate world supply, or when the quantity of imports demanded equals the quantity of exports supplied.

Although both the importers of the good and the exporters of the good gain from the transaction (why else would they trade voluntarily?), it is not true that everyone gains or that all the winners enjoy equal gains from trade. Some groups will actually lose from the opening of trade: the consumers of the good in the export country (who now have to compete with the rest of the world's buyers) and the domestic producers of the good in the import country (who now have to compete with the rest of the world's producers). On net, however, we can show that the losses that these groups experience will be smaller than the gains enjoyed by their counterparts: home producers of the exported good and home consumers of the imported good. The division of the gains from trade between buyers and sellers will depend largely on how far the international price is from the pre-trade (or "autarkic") price of the good. The farther the trade price is from one's own pre-trade price, the larger one's share of the gains.

After studying Chapter 2, you should understand:

1. The basic theory of supply and demand and the concept of market equilibrium.
2. The construction of the demand for imports curve and the supply of exports curve.
3. The determination of the equilibrium world price with trade.
4. The consumer surplus and producer surplus, and how they reflect the gains from trade.
5. The "one-dollar, one-vote" concept.
6. The relationship between price elasticities and gains from trade.

### Important Concepts

**Arbitrage:** Buying something at a low price in one market and reselling it at a higher price in another market.

**Consumer surplus:** The difference between what a person would be willing to pay and what she actually has to pay to buy a certain amount of a good. It is the area below the demand curve and above the price level.

**Producer surplus:** The difference between what a producer is paid for a certain amount of a good and the lowest price she requires in order to supply that amount. It is the area above the supply curve and below the price level.

## **Warm-up Questions**

### **True or False? Explain.**

1. T / F When trade opens up, all consumers are made better off.
2. T / F In the simple trade model, countries with identical pre-trade prices for a good have no incentive to trade in that good.
3. T / F If one producer is made better off by trade, then all producers in the same country must be made better off by trade.
4. T / F At the equilibrium trade price between two countries, the excess supply of the good in one country must equal the excess demand for the good in the other country.
5. T / F There ain't no such thing as a free lunch, but there is such a thing as free trade.

## **Multiple Choice**

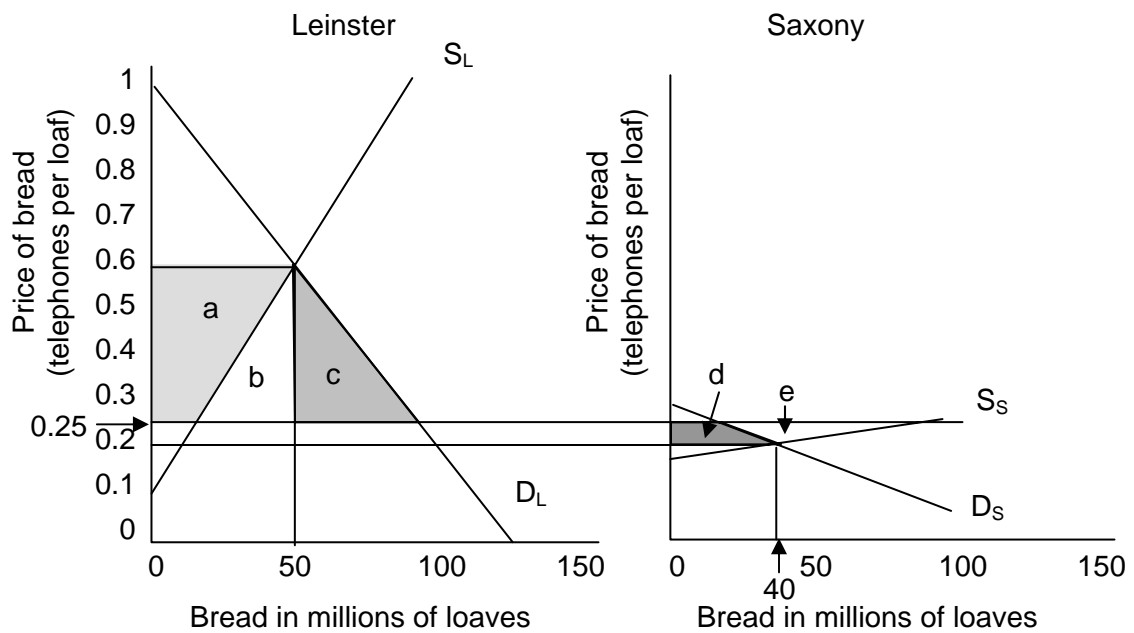
1. After trade has opened up, the gains that trade brings to consumers of the imported goods are, in absolute value,
  - A. larger than the losses to domestic producers of that good.
  - B. smaller than the losses to domestic producers of that good.
  - C. exactly equal to the losses to domestic producers of that good.
  - D. immeasurable.
2. Which of the following is *not* likely to promote free trade in lumber between countries?
  - A. Pre-trade lumber prices that are equal across countries.
  - B. Profit-seeking lumber arbitrageurs.
  - C. Lumber supply differences between countries.
  - D. Lumber demand differences between countries.
3. Consumer surplus is
  - A. what consumers must pay the government to produce goods.
  - B. the quantity of goods consumers can get below the market price.
  - C. the difference between the market price and the maximum price consumers would pay for a good.
  - D. the revenues transferred from buyers to sellers.
4. After trade, the distribution of income in a country changes as
  - A. import-competing producers lose while producers of the exportable good gain.
  - B. the nation as a whole gains while individuals lose.
  - C. consumers lose while producers gain.
  - D. income flows from consumers to producers.

5. If export supply is less price elastic than import demand, then the
- importing country will not want to trade.
  - exporting country will not want to trade.
  - exporting country will receive the largest share of the gains from trade.
  - importing country will receive the largest share of the gains from trade.

**Problems**

1. Consider the graphs of the domestic markets for bread in the hypothetical countries of Leinster and Saxony.

**Figure 2.1**



- What is the pre-trade equilibrium price of bread in each country?
- Is there a reason for trade in bread between Leinster and Saxony?



- h. On your “international” graph with the export and import curves, indicate the net gains from trade for each country.
  
  - i. Which country gains the larger share from trade? Why? (Hint: Look at the elasticities of the trade curves you derived.)
  
  - j. Indicate the losses each country would incur if trade in bread were eliminated.
2. Assume that, for some unknown reason, both the domestic supply of and the domestic demand for bread in Leinster become very elastic, while the curves for Saxony are unchanged. What impact would this have on the international price, the quantities traded, and the net gains from trade for Leinster and Saxony?
3. Assume that American lumber companies make 52 billion board-feet of lumber each year, of which 10 billion are exported and 42 billion are sold in the United States. The average price is 30 cents per board-foot. If lumber exports were banned by law, production (now for the domestic market only) would be 48 billion board-feet, and the price would drop to 25 cents per board-foot. How much producer surplus would U.S. lumber producers lose each year as a result of the export ban?

4. Suppose that opening up trade would make our nation export beans and import jeans. Let's say that it raises the price of beans from 0.20 jeans/bushel to 0.25 jeans/bushel (so that jeans drop in price from 5 bushels of beans to 4 bushels per pair).
  - a. What are the welfare effects of trade on bean consumers, bean producers, jeans consumers, and jeans producers?
  - b. Describe how to measure the net national gain or loss (measured in units of real goods) from the opening of trade.

### **Discussion Topics**

1. What ways of measuring welfare can you think of besides the "one-dollar, one-vote" metric?
2. Is profiting from arbitrage in commodities a good or a bad thing?
3. What might motivate trade between two countries, other than price differentials?
4. Using the ideas of consumer and producer surplus, try to formulate an argument for avoiding a (trade) war between two countries.

### **Postscript**

**Cecil Graham:** *What is a cynic?*

**Lord Darlington:** *A man who knows the price of everything, and the value of nothing.*

– Oscar Wilde, *Lady Windermere's Fan*, 1892