

1 International Economics Is Different

Objectives of the Chapter

While it is true that international economics is different, your other courses in economics were not wasted! Both the microeconomic and macroeconomic theories that you have learned in the past will be useful in analyzing the different predicaments faced when dealing with interactions of economic actors across national borders. You will be able to discuss issues ranging from rumors and currency speculation to political lobbyists and trade wars.

If you want to keep abreast of international economic developments in the real world, you should regularly read the business section of a major daily paper. *The Wall Street Journal*, the weekly magazine *The Economist*, and the London daily *Financial Times* provide the most thorough coverage and look really impressive sitting on your desk. Most offer students discounted subscription rates.

At the end of your course of study you should be able to understand current issues related to foreign trade and international finance and to critically evaluate the debate around the policy options available to your country's government. While we can't guarantee that this will make you a better person, it will make you a better informed person.

Postscript

The theory of economics does not furnish a body of settled conclusions immediately applicable to policy. It is a method rather than a doctrine, an apparatus of the mind, a technique of thinking which helps its possessor to draw correct conclusions.

— John Maynard Keynes, 1923

2

Basic Theory of International Trade

Objectives of the Chapter

Chapter Two 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.

After studying Chapter Two you should understand:

1. Basic theory of supply and demand and the concept of market equilibrium.
2. Construction of the demand for imports curve and the supply of exports curve.
3. Determination of the equilibrium world price with trade.
4. Consumer surplus and producer surplus, and how they reflect the gains from trade.
5. "One-dollar, one-vote" concept.
6. Relationship between price elasticities and gains from trade.

Key Terms

- 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 a 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

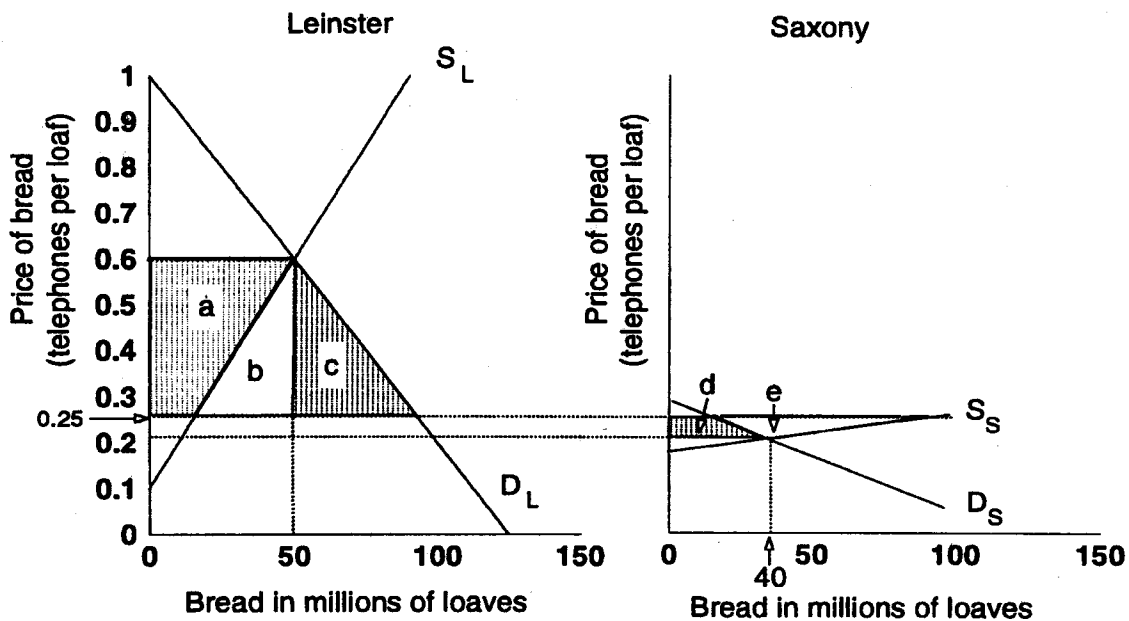
1. After trade has opened up, the gains that trade brings to consumers of the imported goods are, in absolute value:
- A. Larger than the losses to domestic producers of that good.
 - B. Smaller than the losses to domestic producers of that good.
 - C. Exactly equal to the losses to domestic producers 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 across countries.
 - D. Lumber demand differences across countries.
3. Consumer surplus is:
- A. What consumers must pay the government to produce goods.
 - B. What consumers can get below the market price.
 - C. What it is worth to consumers to be able to buy the product at a price lower than the price some of them would be willing and able to pay.
 - D. What they can get at all prices.

4. After trade, the distribution of income in a country changes as:
- Import-competing producers lose while producers of the exportable good gain.
 - The nation as a whole gains while individuals lose.
 - Consumers lose while producers gain.
 - 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 to 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



- a. What is the pre-trade equilibrium price of bread in each country?

- b. Is there a reason for trade in bread between Leinster and Saxony?
- c. Construct the appropriate import demand and export supply curves, assuming that “the world” consists of only these two countries.
- d. What is the equilibrium trade price of bread in Leinster? In Saxony?

- e. On the domestic market graphs, show that, at the equilibrium trade price, the quantity of bread exported from Saxony equals the quantity of bread imported into Leinster.
- f. On the domestic market graphs, indicate the changes in consumer and producer welfare which result from trade opening in each country.
- g. Which groups in the two countries will be happy with free trade in bread between the countries? Which groups will wish free trade would be banned?
- 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 an 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. U.S. lumber companies make 52 billion board-feet of lumber each year, of which 10 billion board-feet 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 (so that jeans drop in price from 5 bushels of beans to 4 bushels).
- a. What are the welfare effects of trade on bean consumers, bean producers, jeans consumers, and jeans producers?
- b. Will the opening of trade bring a net national gain? How do you know?

- c. 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” yardstick?
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

3

Why Everybody Trades

Objectives of the Chapter

Chapter Three looks at trade in a hypothetical world of two countries and two commodities. This simple trade model is based on barter, where countries exchange only goods without any money being used. The price of each good is, therefore, what each unit of the good is worth in units of the other good. Countries trade because their prices would differ if something prevented international trade. In this chapter we focus on production-side differences between countries as a source of price differentials. Each country has a comparative advantage in producing some good for which it has more resources or higher productivity than other countries.

To understand this chapter you should be able to:

1. Explain production-possibilities curves and community indifference curves.
2. Relate opportunity cost and price.
3. Understand trade and arbitrage profits.
4. Show how countries can gain from trade on the basis of absolute advantage.
5. Explain the development of the theory of comparative advantage through:
 - a. Ricardo's comparative advantage using the labor theory of value.
 - b. Measurement of opportunity cost under constant and under increasing costs.
 - c. Heckscher-Ohlin (H-O) theory – or the factor-proportions theory of trade.

Key Terms

Absolute advantage:	A nation has an absolute advantage in a commodity it produces more efficiently (with higher productivity) than the rest of the world.
Barter trade:	A method of exchanging goods and services directly for other goods and services without using a separate unit of account or medium of exchange.
Basis for trade:	The mechanism that explains differences in (relative) prices in different countries, which in turn gives rise to trade between countries.
Community indifference curves:	An illustration of the different combinations of commodity quantities that would bring the whole

community (here, the nation) the same level of satisfaction.

Comparative advantage:

A nation has a comparative advantage in the production of those goods which (compared to other goods and countries in the world) it produces less inefficiently than other commodities. A country will have a comparative advantage in one or more commodities, whether or not it has absolute advantages.

Factor abundance and scarcity:

A country is relatively abundant (scarce) in some factor if the ratio of the amount of that factor to other factors in that country is higher (lower) than in the rest of the world.

Factor intensity:

A product is intensive in some factor if the cost of that factor is a greater share of the product's value than it is of the value of other products.

Heckscher-Ohlin (H-O) theory:

A country will export that good which intensively uses the country's abundant (cheap) factor, and import the good which intensively uses its scarce (expensive) factor.

Mercantilism:

A school of thought which was dominant in Europe (roughly in the 16th century through the 18th century). Mercantilism advocates trade restrictions through restriction of imports and expansion of exports so as to accumulate gold and foreign exchange.

Terms of trade:

The ratio of the price of a country's exports to the price of its imports.

Warm-up Questions

True or False? Explain.

1. T / F A country can have a comparative advantage in a good even if it is at an absolute disadvantage in producing that same good.

2. T / F David Ricardo was the husband in "I Love Lucy."

3. T / F Under the H-O theory, a country is considered "land abundant" if it has more acres of land than another country.

4. T / F Under increasing costs, countries will not necessarily specialize completely in one good.
5. T / F The Heckscher-Ohlin theory assumes each country has the same tastes for goods.

Multiple Choice

1. The economist credited with the first systematic expression of the principle of comparative advantage was:
- A. Bertil Ohlin
 - B. Eli Heckscher
 - C. John Maynard Keynes
 - D. David Ricardo
 - E. Adam Smith
2. The Heckscher-Ohlin theorem indicates that:
- A. Nations with much labor relative to other resources do not have a comparative advantage.
 - B. A nation with a high ratio of labor to nonlabor resources should minimize participation in international trade.
 - C. A nation relatively rich in nonlabor resources will not gain from international trade.
 - D. Nations will be led by international market forces to specialize in production and export of goods that heavily use their relatively abundant factors.
3. If with one hour of labor nation A can produce either 3x or 3y, while nation B can produce either 1x or 1y with an hour of labor, and if labor is the only input, then:
- A. Nation A has an absolute advantage in both goods.
 - B. Nation B has an absolute advantage in both goods.
 - C. Nation A has a comparative disadvantage in both goods.
 - D. Nation A has a comparative advantage in both goods.

4. For Heckscher-Ohlin, the most important cause of the difference in relative commodity prices is the difference between countries in:
- A. Factor endowments.
 - B. National income.
 - C. Technology.
 - D. Tastes.
5. In the absence of trade, the consumption points available to a nation:
- A. Are above the production possibilities curve.
 - B. Are on or inside the production possibilities curve.
 - C. Lie on the production possibilities curve.
 - D. Cannot be identified.

Problems

1. Consider the following hypothetical data on labor requirements in Leinster and Saxony, the only two countries in “the world”:

	In Leinster	In Saxony
Labor needed to make one loaf bread	3 hours	4 hours
Labor needed to make one telephone	5 hours	20 hours

- a. Which country, if any, has an absolute advantage in bread? In telephones?
- b. Which country has a comparative advantage in bread? In telephones?
- c. What price rations (telephones per loaf) are possible with free trade?

d. What price ratios are likely in the two countries if trade is stopped?

2. Let's try an application of the Heckscher-Ohlin model to the countries of Leinster and Saxony. Assume the only two factors of production are labor and land.

a. If Leinster has 8 million acres of land and 2 million laborers while Saxony has 2 million acres of land and 400,000 laborers, which country is "labor abundant?" Which is "land abundant?" Explain.

b. If labor accounts for 80 percent of the total cost of producing telephones but only 20 percent of the total cost of producing bread, which country is more likely to export telephones? Bread? Why?

3. Consider two countries that have exactly the same increasing-cost production possibilities curves. Show how a difference in the tastes of the two countries can then determine the pattern of trade between the countries.

4. Assume that Chile has 600 units of labor and Brazil has 1000 units of labor. Both countries produce cloth and wheat. In Chile, the labor requirement for a yard of cloth is 3 units, while for a bushel of wheat requires 2 units. In Brazil, the labor requirement for a

yard of cloth is 5 units, while a bushel of wheat requires 2 units. In both countries there are constant costs of production.

- a. Draw the production possibilities curves for each country and calculate the pre-trade price of wheat in each country.
- b. When these two countries engage in free trade, which country would export cloth? Why? Is it possible for the cloth-exporting country to charge 5 bushels/yard for its cloth?
- c. Suppose that the labor endowment in Chile increases to 1200 units. how could this affect the pattern of trade?
- d. Suppose instead that the unit labor requirement in Brazil's cloth industry drops to two. What will happen to the pattern of trade?

5. Using the logic of comparative advantage, explain why it makes sense for parents to require even the youngest children of a family to do household chores.

Discussion Topics

1. Can a country do anything to change its relative factor abundances?
2. Are there reasons for a country to want relative abundance in one factor rather than another?

Postscript

*The cost of a thing is the amount of what
I will call life which is required to pay for it.*

– Henry David Thoreau, 1854

4 Who Gains and Who Loses from Trade?

Objectives of the Chapter

In this chapter we see how trade patterns predicted by the Heckscher-Ohlin model may lead to change in income distribution. International trade divides society into gainers from trade and losers from trade as a result of changes in relative commodity prices. The Stolper-Samuelson theorem explains that in the short run, factors employed to produce the rising-price good gain, while the factors employed to produce the falling-price good lose. In the long run, when factors are mobile between industries, the factor used intensively in producing the rising-price good gains whether or not it is actually employed in that industry. Similarly, the factor used intensively in producing the falling-price good loses.

The factor price equalization theorem uses both the H-O model and the Stolper-Samuelson theorem. It assumes that the more abundant factor works more in the export industry while the more scarce factor is bound to work more in the import-competing industry; furthermore, it assumes that factors producing the rising-price good have rising incomes in the long run. As a result scarce (expensive) labor in one country sees its wage fall, while abundant (cheap) labor in another country see its wage rise. Consequently, wages in the two countries converge.

Because the Heckscher-Ohlin model is central to these other theorems, economists have tested the validity of the H-O theory using the trade patterns of different countries. Using data from 1947 for the United States, Leontief came up with the paradoxical observation that Americans imported capital-intensive goods. More recent tests indicate some trade follows the H-O predictions.

After studying this chapter you should know:

1. How income distribution relates to international trade through the Stolper-Samuelson theorem.
2. The assumptions and conclusions of the factor price equalization theorem.
3. The Leontief Paradox.

Key Terms

Factor price equalization theorem:

Under certain assumptions free trade will equalize not only commodity prices between countries but also *factor* prices, so that all laborers will earn the same wage rate and all units of land will earn the same rental return in both countries regardless of the factor supplies or the demand patterns in the two countries.

- Factor specialization:** The degree of concentration of a factor in the production of a commodity or group of commodities.
- Neutral factor:** A factor which accounts for the same share of the value of output in all commodity lines.
- Magnification effect:** The principle that a factor's price changes by a greater percentage than the change in the commodity price that caused it.
- Stolper-Samuelson theorem:** Under certain assumptions, moving from no trade to free trade unambiguously raises the returns to the factor used intensively in the rising-price industry and lowers the returns to the factor used intensively in the falling-price industry, regardless of which goods the owners of the factors prefer to consume.

Warm-up Questions

True or False? Explain

1. T / F The Leontief Paradox may be resolved by using more disaggregated definitions of factors of production.
2. T / F The Stolper-Samuelson theorem says that trade will cause the owners of the abundant factor to receive lower real incomes while the real incomes received by owners of the scarce factor will rise.
3. T / F Nobel prizes are not given to dead economists.
4. T / F Factor prices will not be equalized by trade if technologies are not the same in different countries.
5. T / F Unskilled workers in the United States should be more opposed to free trade than skilled workers in the United States.

Multiple Choice

1. Studies of U.S. trade and its effects on employment of U.S. labor show that, on average:
 - A. Trade has no effect on total employment.
 - B. Replacing imports (e.g. through protection from foreign competition) saved (or created) more jobs than an equivalent expansion of exports.
 - C. Expanding exports creates more jobs than an equivalent amount of import substitution.
 - D. Foreign competition has clearly raised the unemployment rate, particularly in the 1980s.

2. After trade opens up, in the short run:
 - A. All groups tied to the declining sectors lose.
 - B. Only factors more intensively used in the declining sectors lose.
 - C. Only factors less intensively used in the declining sectors lose.
 - D. Only the most abundant factor in the country loses.

3. Mexico is an unskilled-labor abundant country, while the United States is a skilled-labor abundant country. With the opening of trade you would expect that in the long run wages for unskilled workers:
 - A. Decline in both countries.
 - B. Decline in the United States and rise in Mexico.
 - C. Rise in the United States and decline in Mexico.
 - D. Rise in both countries.

4. Which of the following statements is false?
 - A. Consumption patterns do not matter for welfare gains or losses of neutral factors.
 - B. Consumption patterns do affect the size of the gains or losses to all factors.
 - C. Consumption patterns do not affect the direction of gains or losses for the most specialized factors.
 - D. Consumption patterns do not matter for the welfare gains or losses of a nation as a whole.

5. Factor price equalization will not hold if:
 - A. Factors are immobile between sectors of the economy.
 - B. Factors have different productivities in different countries.
 - C. Countries put up barriers to free trade.
 - D. All of the above.

Problems

1. Recall our hypothetical trade model: Leinster is a labor-abundant country and Saxony is a land-abundant country; telephones are labor-intensive goods and bread is a land-intensive good. Assume that free trade prevails between the two countries.
 - a. What happens to wages earned by workers in Leinster in the short run?
In the long run?
 - b. What happens to wages earned by workers in Saxony in the short run?
In the long run?
 - c. According to the factor price equalization theorem, will labor wages in Leinster equal land rents in Leinster, or will Leinster wages equal Saxony wages?
2. Given the implications of trade models for factor prices, how would you explain an observation that, in the late 1980s, the hourly manufacturing wage in West Germany was \$13.44 while the wage was only \$7.46 in the United Kingdom?
3. Consider an economy producing capital-intensive computers and land-intensive wheat. Labor is employed to produce both goods. If free trade raises the price of computers relative to wheat, who would gain and who would lose in each of the following two cases:

a. Factors are perfectly immobile between the two sectors.

b. Factors are perfectly mobile between the two sectors.

4. a. Have America's existing import barriers raised or lowered the demand for U.S. labor? Explain.

b. Would a uniform percentage cut in U.S. imports raise or lower the demand for U.S. labor? Explain.

5. You are given the following cost data for France, where they have nothing but capital and labor and make nothing but bread and wine:

	To make a loaf of bread	To make a bottle of wine
capital input	5 francs	20 francs
labor input	4 francs	10 francs
total cost	9 francs	30 francs

- a. Is bread making more capital-intensive than wine-making or vice versa? Explain.
- b. Suppose trade opens and the price of wine rises while the price of bread falls. If capital and labor were completely immobile between bread-making and wine making, who in France would gain from the shift in prices? Who would lose? (Consider the four groups of bread capitalists, bread laborers, wine capitalists, and wine laborers.)
- c. Which group of consumers will rejoice with the winemakers in the situation presented in question 5b? Which group of consumers will commiserate with the breadmakers?
6. Suppose that a new isolationist government in Leinster decides to shut off the country's imports of land-intensive bread, preferring to produce its own food instead of making labor-intensive telephones for export. After trade is shut off, bread becomes 14 percent

more expensive relative to telephones (i.e., telephones become 14 percent cheaper relative to bread).

- a. Over the long run how greatly, and in what direction, will the isolation change Leinsterian laborer's real wage incomes?

- b. Over the long run how greatly, and in what direction, will the isolation change Leinsterian landlords' real rental income?

Discussion Topics

1. What do you think would happen to factor prices internationally if an energy crisis tripled the cost of shipping goods around the globe?
2. Policymakers today are concerned about retraining unemployed workers. Try to make a case for such programs as a means of increasing public support for free trade.

Postscript

For everything you have missed, you have gained something else; and for everything you gain, you lose something else.

– Ralph Waldo Emerson, 1841