CHAPTER 2

FOUNDATIONS OF MODERN TRADE THEORY: COMPARATIVE ADVANTAGE

CHAPTER OVERVIEW

This chapter introduces students to the foundations of modern trade theory which seeks to answer three questions: (1) What constitutes the basis for trade? (2) At what terms of trade are products exchanged in international markets? (3) What are the gains from trade in terms of production and consumption?

The chapter first examines the historical development of modern trade theory by introducing the ideas of the mercantilists, Adam Smith, and David Ricardo. Next, the deficiencies of mercantilism and Adam Smith's principle of absolute advantage are noted and attention shifts to David Ricardo's principle of comparative advantage. This principle is explained in terms of a production possibilities table and also in terms of money.

The principle of comparative advantage is then explained under conditions of constant opportunity cost and increasing opportunity cost. The analysis concludes that international trade can provide economic gains for all trading nations. The chapter then extends the principle of comparative advantage to more than two products and two countries. The chapter concludes by examining the empirical evidence regarding comparative advantage.

Attention then shifts to the determination of the equilibrium terms of trade. The chapter emphasizes the theory of reciprocal demand and offer curves in the determination of the equilibrium terms of trade. The effect of economic growth on the terms of trade is also examined as is empirical data regarding the terms of trade.

This chapter also discusses the role of demand in the trading model. The inclusion of demand allows us to determine the autarky point on each nation's production possibilities schedule, the equilibrium value of the international terms of trade, and the equilibrium consumption point of each nation under free trade.

Indifference curves are used to show the role of demand in the trading model. It is noted that a country in autarky will maximize its well being at the point where its community indifference curve is tangent to its production possibilities schedule. Similarly, a trading nation will maximize its welfare at the point where its community indifference curve is tangent to its international terms of trade ratio.

After completing the chapter, students should be able to:
•   Identify the trading ideas of the mercantilists, Adam Smith, and David Ricardo.
•   Compare and contrast the principle of absolute advantage and the principle of comparative advantage.
•   Identify the effects of comparative advantage under conditions of constant opportunity costs and increasing opportunity costs.
•   Explain how exit barriers and trade barriers modify the conclusions of the principle of comparative advantage.
•   Summarize the empirical evidence regarding comparative advantage.
•   Explain how the equilibrium terms of trade is influenced by changing supply and demand conditions.
•   Show how the commodity-terms-of-trade concept measures the direction of the gains from trade.
•   Discuss how the introduction of community indifference curves into the trade model allows a restatement of the basis for trade and the gains from trade.

BRIEF ANSWERS TO STUDY QUESTIONS

1. Modern trade theory addresses the following questions: (1) What constitutes the basis for trade? (2) At what terms of trade do nations export and import certain products? (3) What are the gains from trade in terms of production and consumption?

2. The mercantilists maintained that government should stimulate exports and restrict imports so as to increase a nation's holdings of gold. A nation could only gain at the expense of other nations because not all nations could simultaneously have a trade surplus. Smith maintained that with free trade, international specialization of resources in production leads to an increase in world output which can be shared by both trading partners. All nations simultaneously can enjoy gains from trade in terms of production and consumption.

3. Assume that by devoting all of its resources to the production of steel, France can produce 40 tons. By devoting all of its resources to televisions, France can produce 60 televisions. Comparable figures for Japan are 20 tons of steel and 10 televisions. In this example, France has an absolute advantage in the production of steel and televisions. France has a comparative advantage in televisions.

4. Ignoring the role of demand's impact on market prices, Smith and Ricardo maintained that a country's competitive position is underlaid by cost conditions. Smith's trade theory is based on absolute costs, while comparative costs underlie Ricardo's trade theory.

5. The principle of comparative advantage can be explained in opportunity cost, which indicates the amount of one product that must be sacrificed in order to release enough resources to be able to produce one more unit of another product. The slope of the production possibilities curve (i.e., the marginal rate of transformation) indicates this rate of sacrifice. A nation facing a straight-line production possibilities curve produces under conditions of constant costs, while production under increasing costs refers to a bowed-out (i.e., concave) production possibilities curve.

6. Constant opportunity costs refer to a situation where the cost of each additional unit of one product in terms of another product remains the same. Constant costs occur when resources are completely adaptable to alternative uses. Under increasing cost conditions, a nation must sacrifice more and more of one product to produce each additional unit of another product. Increasing costs occur when resources are not completely adaptable to alternative uses.

7. Where a nation produces along its production possibilities curve in autarky affects the nation's comparative costs under increasing cost conditions. This is because the slope of a bowed-out production possibilities curve, which indicates the marginal rate of transformation, varies at each point along the curve. Under conditions of constant costs, the production possibilities curve is a straight line. The marginal rate of transformation does not change in response to movements along the production possibilities curve.

8. Under constant opportunity cost conditions, specialization is complete. A country can devote all of its resources to the production of a good without losing its comparative advantage. Under increasing cost conditions, specialization tends to be partial. As production costs rise with expanded production, the home country eventually loses its comparative advantage.

9. Production gains from trade refer to the increased output of goods and services made possible by the international division of labor and specialization. Consumption gains from trade refer to the increased amount of goods made available to consumers as the result of international trade.

10. The trade triangle includes a nation's exports, its imports, and international terms of trade.

11. The free trade argument maintains that international trade permits international division of labor and specialization and results in resources being transferred to their highest productivity. World output thus rises above autarky levels.

12. a. Canada's MRT of steel into aluminum equals 1/3 ton of steel per ton of aluminum while France's MRT of steel into aluminum equals 1 ½ tons of steel per ton of aluminum. Canada specializes in the production of aluminum while France specializes in the production of steel. Complete specialization occurs in each country. The production gains from trade for the two countries total 500 tons of aluminum and 300 tons of steel.

   b. Lower limit, 1 ton of aluminum = 1/3 ton of steel; upper limit, 1 ton of aluminum = 1 ½ tons of steel. The consumption gains from trade for Canada consist of 400 tons of aluminum and 200 tons of steel; the consumption gains from trade for France consist of 100 tons of aluminum and 100 tons of steel.

   c. Canada's trade triangle is bounded by 500 tons of aluminum (export), 500 tons of steel (import), and a terms of trade equal to 1 ton of aluminum per ton of steel. France's trade triangle is bounded by 500 tons of steel (export), 500 tons of aluminum (import), and a terms of trade equal to 1 ton of steel per ton of aluminum.

13. a. Concave production possibilities schedules are explained by increasing opportunity costs.

   b. Japan's MRT of steel into autos equals 1/6 ton of steel per auto; South Korea's MRT of steel into autos equals 6 tons of steel per auto.

   c. Japan specializes in the production of autos while South Korea specializes in steel.

   d. With partial specialization, Japan produces 200 tons of steel and 1300 autos while South Korea produces 900 tons of steel and 400 autos. The production gains for the two countries combined total 400 tons of steel and 300 autos.

   e. Japan's consumption gains from trade consist of 200 tons of steel and 200 autos; South Korea's consumption gains consist of 200 tons of steel and 100 autos.

14. Japan's commodity terms of trade improved to 107. Canada's commodity terms of trade remained constant at 100. Ireland's commodity terms of trade worsened to 88.

15. The gains a country enjoys from free trade depend on the equilibrium terms of trade, which is determined by world supply and demand conditions. By recognizing only the role of supply, Ricardo was unable to determine the equilibrium terms of trade.

16. The law of reciprocal demand suggests that if we know the domestic demands expressed by both trading partners for both products, the equilibrium terms of trade can be defined.

17. The commodity terms of trade considers the direction of the gains from trade by measuring the relationship between the prices a country gets for its exports and the prices it pays for its imports, over a given time period.

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