Chapter 2 - Why Nations Trade

I. Structure

II. Instructor Insight

This long chapter will be quite difficult for students who are not well versed in principles of microeconomics. It will take more than a week to adequately cover the entire chapter.

The first section covers the principle of comparative advantage using a simple Ricardian model with two countries, two goods, and one factor of production. Both countries are shown to benefit from trade. Factors influencing the distribution of those gains between countries are discussed.

The second section (***Comparative Opportunity Cost***) generalizes the analysis by introducing an additional factor of production. The pattern of comparative advantage is analyzed using figures on per unit production costs rather than productivity data.

The third section (***Absolute Advantage and Wage Rates***) shows that absolute advantage determines relative wage rates between nations. Section four (***Summary of Policy Implications***) reminds us that trade raises the real income of a community by improving the efficiency of resource utilization. Any interference with free trade generally results in an inefficient pattern of resource use and a loss of income to the community. The fifth and final section (***Dynamic Gains from Trade***) emphasizes how trade can raise an economy's growth path by providing additional productive resources, introducing new technologies, generating positive externalities, and enabling firms to achieve economies of scale.

Students should come away from this chapter with an understanding of the gains from trade, sources of trade gains, the commodity composition of trade, behavior of prices and outputs with trade, and why they should seek employment in comparative advantage activities and avoid import-competing sectors.

III. Important Concepts

Comparative advantage
Absolute advantage
Terms of trade
Demand considerations
Relative wage rates
Country "in isolation"
Industry ranking
Static gains from trade
Dynamic gains from trade
Trade and inflation

IV. Summary

1. Comparative advantage determines which goods are exported and which are imported, and defines the limits to mutually beneficial trade.

2. Within the limits to mutually beneficial trade, the actual exchange ratio (terms of trade) is determined by the intensity of each country's demand for the other country's product.

3. Trade leads to complete specialization in the Ricardian example due to the assumption that production costs per unit of output remain constant as output expands or contracts. The existence of one homogeneous factor of production (labor) gives rise to constant cost conditions.

4. Limits to a sustainable exchange rate are determined by a country's cost ratios.

5. Relative wages and, hence, living standards of countries are determined by absolute, not comparative advantage.

6. Trade raises real income of a community by encouraging a more efficient allocation of productive resources across sectors.

7. Trade is anti-inflationary, and growth promoting.

V. Condensed Answers to Review Questions

1. The U.S. opportunity cost of one bushel of wheat is 1/3 yard of textiles, while that for the U.K. is 1 yard of textiles. Wheat is cheaper in terms of textiles in the U.S. The U.S. will produce and export wheat. The U.S. opportunity cost of one yard of textiles is 3 bushels of wheat, while that for the U.K. is 1 bushel of wheat. Textiles are cheaper in terms of wheat in the U.K. The U.K. will produce and export textiles.

   The U.S. would be unwilling to trade 3 bushels of wheat for anything less than 1 yard of textiles because it can do better at home. It would be willing to trade 3 bushels of wheat for more than 1 yard of textiles. The U.K. would trade if it could obtain more than 1 bushel of wheat per yard of textiles. Limits to mutually beneficial trade vary between 3 bushels of wheat for the U.S. to 1 bushel of wheat for the U.K. per 1 yard of textiles.

   Limits to a sustainable exchange rate are determined by assigning each commodity the price it commands in the country in which it is produced, in terms of the currency of that country. One yard of textiles will cost £1, while a bushel of wheat costs $1. Limits to the sustainable exchange rate are determined by these cost ratios. The pound can be as strong as $3 or as weak as $1.

2. a. Consider Figure 2.2. The domestic cost ratios define limits of mutually beneficial trade. Within the region of mutually beneficial trade the actual exchange rate will be determined by the relative intensity of each country's demand for the other country's product. A full analysis requires an understanding of reciprocal demand curves, but the following general principle might help heuristically. If the British are more eager to buy U.S. wheat than the Americans are eager for British textiles, the exchange ratio falls close to the U.K. domestic cost ratio and the U.S. can be viewed as capturing a greater share of the gains from trade.

   b. Since the real world does not conform to the convenient two-country, two-good assumptions, the simple theoretical model is not immediately applicable. However, we can generalize the model to many goods and many nations. The fundamental truth remains. Countries export those goods in which their relative production costs are lower and import those goods for which the relative costs are higher.

   c. While trade tends to raise the prices of exportables in the domestic economy, the effect of trade is to lower the average price level of all goods. Trade gives consumers an opportunity to consume at lower world prices. Many goods will be cheaper when purchased from foreign supply sources.

Trade also conveys procompetitive effects, stimulates the adoption of new technologies, and allows firms to achieve efficient scale production levels. Thus, trade is anti-inflationary.

d. The reunification of the German economy in 1990 was undertaken on the basis that a unit of the deutschmark, the West German currency, should be equal in value to a unit of the ostmark, the East German currency. At this exchange rate, goods produced in East Germany were almost universally more expensive to produce than their counterparts in the West. Labor productivity in East German manufacturing was found to be about 35% of the West German level. Under these conditions the East German manufacturing sector collapsed. Investors were reluctant to purchase East German factories and large scale closures and dismissals resulted.

3. The U.S. wage must be between 2 and 3 times greater than the U.K. wage. If the U.S. wage goes any higher relative to the U.K. wage, then the U.K. will be the low cost supplier of both commodities. If the U.S. wage is less than double the U.K. wage, the U.S. can produce both commodities more cheaply.

4. a. If a country possesses absolute advantage over another country in all commodities we can infer that its labor is more productive, and that wage rates and standards of living will be higher.

b. Nothing. We need to know the structure of comparative advantage before we can determine the direction of trade.

c. A country will export that good in which it has a comparative advantage and import that good in which it has a comparative disadvantage.

5. a. The U.S. enjoys a comparative advantage in grains. It also produces oil, but will gain by specializing in grain production and using proceeds of exported agricultural products to purchase oil from nations that produce oil relatively more efficiently. Russia is relatively more efficient in the production of oil and will gain by purchasing grain from the U.S. in exchange for oil.

b. The popular press asserts that by exporting grain from the U.S. (say to the former USSR) we are lowering the domestic supply of grain and raising the domestic U.S. price of grain. Since grain is an important ingredient in many food products, grain exports are believed to increase the price of those products. However, the price of grain is determined in world markets. U.S. exports alone cannot permanently raise the domestic U.S. price. If the domestic U.S. grain price rose above the world price, the U.S. would be a net importer of grains and the domestic price would fall.

6. We can infer that unit labor costs in steel rose relative to manufacturing because wages in steel advanced more quickly than those in other industries while productivity moved at the same rate. In Japan, because both wages and productivity rose at the same rate as the rest of manufacturing, relative unit labor costs between steel and manufacturing remained constant. Consequently, the U.S. lost comparative advantage in steel production.

7. Table 2-2 presents data on unit labor costs in certain sectors relative to that of all manufactures. Iron and steel and motor vehicle sectors in the U.S. have high unit labor costs relative to that of all manufactures. When compared with corresponding figures for Japan and Germany, we can conclude the U.S. has a comparative disadvantage in these activities. The reverse holds for high-tech sectors in the U.S.