

How to Study for Chapter 26 International Trade

Chapter 26 discusses the theories involving international trade and considers the arguments both for and against free trade. It also discusses recent changes in the trade relations between nations. You will need to review the concepts of production possibilities curve from Chapter 2 and the concepts of absolute advantage and comparative advantage from Chapter 3.

1. Begin by looking over the Objectives listed below. This will tell you the main points you should be looking for as you read the chapter.
2. New words or definitions and certain key points are highlighted in italics in the text and in red color. Other key points are highlighted in bold type and in blue color.
3. You will be given an In Class Assignment and a Homework assignment to illustrate the main concepts of this chapter.
4. There are a few new words in this chapter. Be sure to spend time on the various definitions. There are no new graphs. But there is a review of the production possibilities curve, first presented in Chapter 2. The numerical example illustrating comparative advantage is complicated. Go over it slowly and be sure you understand how each number was derived. The calculations are reinforced in the In Class Assignment and the Homework Assignment.
5. The teacher will focus on the main technical parts of this chapter. You are also responsible for the cases and the ways by which each case illustrates a main principle. You are especially responsible for the way by which the case study of the NAFTA illustrates the principles of the chapter.
6. When you have finished the text, the Test Your Understanding questions, and the assignments, go back to the Objectives. See if you can answer the questions without looking back at the text. If not, go back and re-read that part of the text. When you are ready, take the Practice Quiz for Chapter 26.

Objectives for Chapter 26 International Trade

At the end of Chapter 26, you will be able to answer the following questions:

1. What happened to the importance of international trade in the 20th century? Why?
2. What is meant by “**international competitiveness**”?
3. What is meant by “**absolute advantage**”? What is meant by “**comparative advantage**”? (This is a review question from Chapter 3.)
4. What is the production possibilities curve? (This is a review question from Chapter 2)
5. Given a set of numbers, determine which country has a comparative advantage in which goods. Therefore, determine which goods will be exported and which imported.
6. Using a set of numbers, show why trade increases the standard of living in both of the trading partners.
7. Show how trade affects the production possibilities curve.
8. What is “**intra-industry trade**” and why might it occur?
9. What determines the goods for which a country will have a comparative advantage?
10. Who are the people who “win” from free trade (and why do they “win”) and who are

- the people who “lose” (and why do they “lose”).
11. Analyze the effects of a **tariff**. Explain why tariffs impose overall losses on the country imposing the tariff as well as the other trading partner.
 12. Explain the “**optimal tariff**”. Under what conditions does it exist?
 13. Name at least three of the arguments in favor of trade protection and then explain each argument.
 14. What is meant by a “**strategic trade policy**”? What is an “**infant industry**”? What is a “**first mover advantage**”?
 15. Briefly describe American trade policies over the past 150 years. What has happened to American tariff rates since 1945? In what cases does the American government tend to interfere with free trade? Why does it do so?
 16. What was the **General Agreement on Tariffs and Trade (GATT)**? What is **Most Favored Nation Status (MFN)**? What is the **World Trade Organization (WTO)**?
 17. Describe the **North American Free Trade Agreement (NAFTA)**. Name at least three of its main provisions?
 18. What were the benefits to the United States and to Mexico from the NAFTA? In each country, who would gain and who would lose?
 19. Name three of the main arguments made against having the NAFTA passed into law?

Chapter 26 The Economics of International Trade (latest revision July 2004)

As the 20th century drew to a close, news people devoted much time to remembering the significant events of the century. Certainly, one of the most significant occurrences of the 20th century was the growth of a “global economy”. Throughout the century, and especially throughout the second half of the century, countries became economically interdependent as they had never been before. Today, almost every important aspect of a nation’s economy is linked to events in other countries. In particular, a much greater share of the national production is sold to foreigners (*exported*) than ever before. And a much greater share of those goods that people buy are bought from foreigners (*imported*) than ever before. This increase in economic interdependence occurred for most of the countries of the world, including the United States. For example, in 2003, about 10% of all of the goods and services produced in the United States were sold to buyers in other countries compared to only about 4% in 1959. American exports rose from about \$72 billion in 1959 to \$1,033 billion in 2003 (both numbers are in constant dollars), an increase of over 1400%. Over the same time period, American purchases of goods and services from other countries increased approximately 1500%, again in constant dollars. Today, about one out of every four Americans has a job that is closely linked to international trade. And it has been estimated that 70% of American manufacturing companies now face significant competition from companies in other countries.

This rise in the importance of international trade is not an accident. It is mainly the result of the enacting of policies to make trade between countries much freer than it was at the end of World War II. Most of these policies were initiated by the United States government. We shall consider below one illustration of the policies initiated to promote free trade: the North American Free Trade Agreement (NAFTA). In developing policies to promote free trade between nations, the United States and other governments have been especially influenced by economists. While there are many things on which

economists disagree, *the desirability of free trade between countries is a view held by the large majority of economists*. However, many non-economists (and some economists) have opposed policies to free trade between countries. We will consider both the arguments in support of and the arguments against free trade below.

A major topic of discussion in the late twentieth century was *“international competitiveness”*. *This involves the ability of a nation to design, produce, and market goods and services that are better or cheaper than those of other countries*. Through much of the 1980s and early 1990s, some people claimed that the United States was losing its international competitiveness, especially in relation to Japan. Many different remedies were proposed. From Chapter 3, we know that the United States will not be able to produce “better or cheaper” for all products. So, let us first consider which goods will be produced and which goods will be imported. In doing so, we return to the *principle of comparative advantage*, first introduced in Chapter 3. This will allow us to present the reasons that so many economists believe that free trade is highly beneficial for the United States and for the world as a whole.

I. The Economists’ Case for Free Trade

In Chapter 3, we discussed Adam Smith’s theory of absolute advantage and David Ricardo’s theory of comparative advantage in relation to families. Both of these early economists applied the same reasoning to nations. As Adam Smith put it, “what is prudence in the conduct of every private family can scarce be folly in that of a great kingdom”. Here let us focus on Ricardo’s argument, as this has been the heart of the economists’ defense of free trade. This argument dates to the 1830s. In his text, Ricardo made several simplifying assumptions and we will do the same here. He assumed that there are only two countries; let us call them the United States and Rest of World. He assumed that there are only two products: let us call them agricultural products and manufactured products. To simplify, we will represent agricultural products by wheat and we shall represent manufactured products by computers. Ricardo assumed that the cost of making a unit of a product is determined by the amount of labor time that must be used to produce it and that this cost would not change as the quantity produced is increased. Finally, he assumed that product quality is the same in both countries, that there is no technological change, that there are no transportation costs, and that there is perfect competition in all markets. The chart below shows an illustration, based on Ricardo, of the labor time to produce a unit of each product in each country.

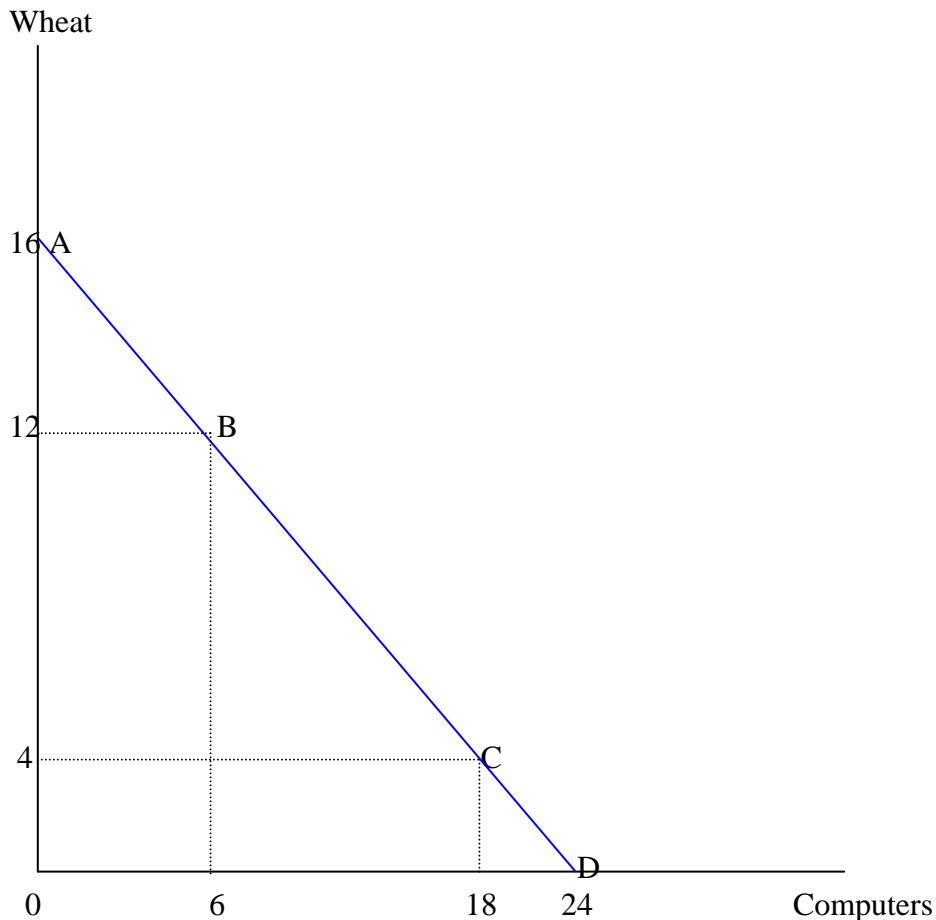
	In the United States	In the Rest of the World
Labor Cost Required:		
1 bushel of wheat	3 hours	8 hours
1 computer	2 hours	4 hours

In this made-up example, the United States has an *absolute advantage* in the production of both agricultural goods and manufactured goods. *This means that the United States can produce both agricultural goods manufactured goods at a lower cost than the Rest of the World*. The Rest of the World has an *absolute disadvantage* in the production of

both goods. But as was shown in Chapter 3, *there is a benefit to trading, even if one country can produce all products at lower cost than the other country.*

Assume that there are 48 hours of labor available in each country and no trade is possible. If the United States devoted all of its hours to wheat, it could produce 16 (48 divided by 3) bushels of wheat (point A). If it devoted all of its hours to computers, it could produce 24 (48 divided by 2) computers (point D). Or it could produce some combination in between --- for example, 4 bushels of wheat and 18 computers (point C) or 12 bushels of wheat and 6 computers (point B). The choices that are available are shown in the *production possibilities curve* below. The production possibilities curve was introduced in Chapter 2. *It shows all combinations of goods that can be produced.* Points inside the curve are inefficient, as more goods are capable of being produced. Points outside the curve are not attainable. The production possibilities curve is drawn as a straight line because Ricardo assumed that the costs of producing are constant (that is, no matter how many bushels of wheat have been produced, another unit will still take 3 hours and no matter how many computers we have produced, another unit will still take 2 hours). We know from the discussion in Chapter 14 that costs of production actually rise as the quantity produced increased. However, Ricardo's assumption makes the analysis easier and does not alter the ultimate conclusion of his analysis.

Production Possibilities Curve Without Trade



Now assume that the two countries can trade freely. As we know from Chapter 3, countries will be best off if they specialize in those goods for which they have a **comparative advantage** (not an absolute advantage). **Comparative advantage occurs where the opportunity cost of producing is lowest.** In the United States, a computer requires the sacrifice of $\frac{2}{3}$ of a bushel of wheat (that is, the 2 hours needed to produce one computer would also have produced $\frac{2}{3}$ of a bushel of wheat). In the Rest of the World, a computer requires the sacrifice of $\frac{1}{2}$ of a bushel of wheat. (In each case, you should be able to explain why.) **Therefore, the Rest of the World has a lower opportunity cost for computers.** In the United States, a bushel of wheat requires the sacrifice of $1\frac{1}{2}$ Computers ($\frac{3}{2}$). In the Rest of the World, a bushel of wheat requires the sacrifice of 2 computers ($\frac{8}{4}$). Therefore, the United States has a lower opportunity cost for agricultural goods. **Even though the United States has an absolute advantage in both products, it has a comparative advantage only in wheat. In this example, the United States should specialize in wheat and trade for computers.**

To illustrate why international trade is seen as desirable, begin with Point B on the production possibilities curve on the previous page. It shows that, with no trade, the United States can produce 12 bushels of wheat and 6 computers. Now assume the United States specializes completely in wheat. Point A shows that the United States can produce 16 bushels of wheat. Suppose that the United States trades 4 of these bushels to the Rest of the World in exchange for computers. How much will the United States get in return? The answer is 8 computers.

Test Your Understanding

Explain why each bushel of wheat traded will bring back 2 computers from the Rest of the World.

The United States will have the same amount of wheat (12 bushels) and more computers (8) if trade occurs. It is better off! The Rest of the World is also better off. Examine to the production possibilities curve below. The solid line indicates the combinations without trade, and is repeated from above. The dashed line indicates the combinations with trade. If the United States specializes in wheat and trades, it can have 12 bushels of wheat and 8 computers, 4 bushels of wheat and 24 computers, or 0 bushels of wheat and 32 computers. This occurs because each bushel of wheat traded will bring back 2 computers from the Rest of the World. Go over these numbers carefully to be sure you understand how each was derived. **The production possibilities curve has shifted out to the right.** More goods are possible with trade. The United States as a whole is unambiguously better off. So is the Rest of the World.

Test Your Understanding

The text does the case for the United States. Here, do the case for the Rest of the World.

1. First, in the space below, draw the production possibilities curve for the Rest of the World, assuming that there are only 48 hours of labor time available. Remember that the production possibilities curve shows all possible combinations of goods that can be produced. If all of the hours are devoted to agricultural goods, Rest of the World can produce ____ units. If all of the hours are devoted to manufactured goods, Rest of the World can produce ____ units. If 40 hours were devoted to agricultural goods and 8 hours to manufactured goods, Rest of the World can produce ____ units of agricultural goods and ____ units of manufactured goods. If 24 hours

were devoted to agricultural goods and 24 hours to manufactured goods, Rest of the World can produce ____ units of agricultural goods and ____ units of manufactured goods. Show these on the graph below. Show the production possibilities curve as a solid line.

2. Second, in Rest of the World, each hour devoted to manufactured goods requires the sacrifice of ____ unit of agricultural goods. This is the **opportunity cost**.

In the United States, each hour devoted to manufactured goods requires the sacrifice of ____ unit of agricultural goods. This is the **opportunity cost**.

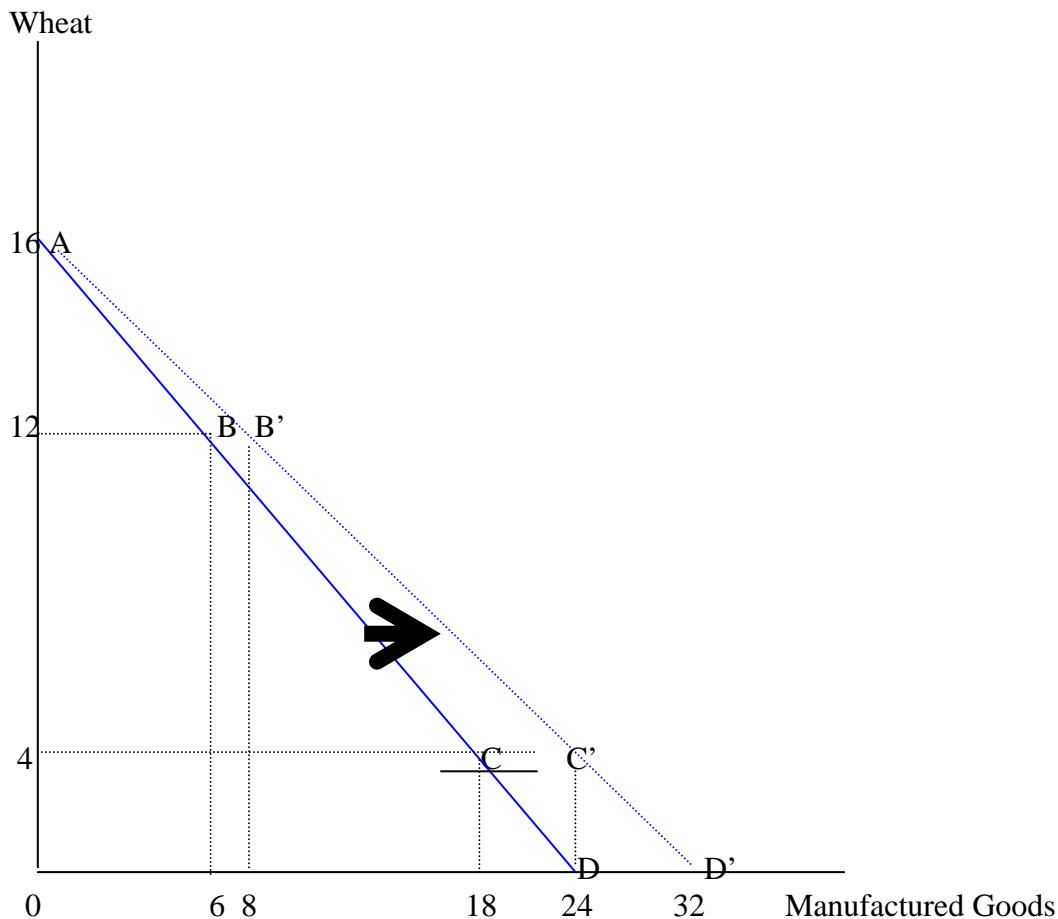
Rest of the World has the **absolute advantage** in _____. The United States has the **absolute advantage** in _____. (Choose agricultural goods, manufactured goods, both, or neither). Rest of the World has the **comparative advantage** in _____. The United States has the **comparative advantage** in _____. (Choose agricultural goods, manufactured goods, both, or neither). Rest of the World should export _____ goods and it should import _____ goods.

3. Third, imagine that rest of the World specialized completely in manufactured goods. All 48 hours were used to produce manufactured goods. Rest of the World then trades 6 units of manufactured goods to the United States. In return, it gets back ____ units of agricultural goods from the United States.

Is Rest of the World better-off with trade? **Why?** _____

4. Finally, show the **production possibilities curve with trade** on the graph. Show the new production possibilities curve as a dashed line.

Production Possibilities Curve With Trade



That the United States specializes in wheat in this example, while the Rest of the World specializes in computers, does not occur just because it is desirable. The action of markets brings about this result. To illustrate this, let us convert the analysis into money terms. Assume that workers are paid \$15 per hour in the United States and \$7 per hour in the Rest of the World. (Wages must be lower in the Rest of the World because their workers are less productive.) The costs of making products in the two countries are shown below (assuming again that labor is the only cost):

	United States	Rest of the World
Agricultural Goods	\$45	\$56
Manufactured Goods	\$30	\$28

People in both countries will buy wheat from the United States because it is cheaper. And people in both countries will buy computers from the Rest of the World because they are cheaper.

The example created here is based on the example provided by Ricardo in the 1830s. In his example, he showed that there were gains to trading English cloth for Portuguese wine even though Portugal could produce both products at lower cost (but was especially better at producing wine). His example is quite simplistic, as we noted above. **But even if we make the illustration more realistic, the basic conclusion is not changed. This basic conclusion is that, even if a country can produce all goods at a lower cost than another country, there are gains from specializing in those goods for which there is a comparative advantage and trading for those goods in which there is a comparative disadvantage.** Since comparative advantage depends on relative costs, it is impossible for a nation to have no comparative advantage at all. All countries benefit from trade because they have more goods and services with trade than without it. This conclusion has been one of the most important intellectual arguments of the past two centuries.

II. What Determines Comparative Advantage?

The above example was made up so that the United States had a comparative advantage in wheat production. But, in reality, what does determine the comparative advantage that a country will have? The most important theory to answer this question came from two Swedish economists, Eli Heckscher (1919) and his student, Bertil Ohlin (1933). Their theory has two aspects. **First, certain countries have abundant amounts of certain factors of production and lesser amounts of other factors of production.** So, the United States has abundant agricultural land while, in Sweden, agricultural land is very scarce. The United States has abundant capital and skilled labor while, in China, both are relatively scarce. But China has abundant unskilled labor while, in the United States, such labor is relatively scarce. **The second aspect of the theory is that certain goods require certain factors of production.** Thus, automobile production is **capital-intensive**, wheat production is **land-intensive**, textile production is **labor-intensive**, computer software production is **technology-intensive**, and so forth. The Heckscher-Ohlin theory says, in Ohlin's words,

“Commodities requiring for their production much of the abundant factors of production and little of the scarce factors of production are exported in exchange for goods that call for factors in the opposite proportions.”

In the made-up example above, the United States would export wheat because of its abundant land. The Rest of the World would export computers either because of more abundant capital or more abundant labor (most likely the latter).

Do the actual patterns of trade fit the predictions of the Heckscher-Ohlin theory? The answer seems to be “basically yes”. Most of American trade, as well as that of other countries, seems to be consistent with this theory. However, there is some trade that cannot be explained in this way.

Test Your Understanding

According to a study for the year 1980, the United States had 28.6% of all of the world’s resources. It had the following percentages for the individual factors of production:

Physical Capital	33.6%	Unskilled Labor	0.19%
Skilled Labor	27.7%	Arable Land	29.3%
Semi-skilled Labor	19.1%	R&D Scientists	50.7%

The United States is relatively abundant in which of the above factors of production?

The United States is relatively scarce in which of the above factors of production?

Go on the Internet. What goods and services are the **main exports** of the United States? Illustrate with numbers (i.e., what percent of American exports does that good represent?) What goods and services are the **main imports** of the United States? Again illustrate with numbers. Is the trade pattern of the United States consistent with the Heckscher-Ohlin theory? Explain why or why not.

Making the Theory More Realistic

From the theory of comparative advantage of Ricardo, we should expect that countries that are similar would not trade with each other very much. Most trade would occur between countries that are very different. But this is not what we observe. **Most American trade is conducted with other industrialized countries whose economies are quite similar to the United States.** Indeed, much trade between these industrialized countries is *intra-industry trade* —trading the same or very similar goods. For example, in 1992, the United States imported almost \$23 billion worth of computers and exported over \$17 billion worth of computers. How do we explain this result? The answer is that the theory of Ricardo assumed perfect competition. In perfect competition, all products are assumed to be identical. In reality, most competition involves monopolistic competition. Industries are competitive, but the products traded are differentiated. It is certainly understandable that the United States would export Ford automobiles to Germany and import BMWs. Or that the United States would export strawberries grown in the spring and summer to Mexico while importing back from Mexico strawberries grown in the winter.

III. Winners and Losers from Free Trade

The conclusion that trade is beneficial to each country as a whole, as well as to the world as a whole, is widely accepted by most economists. But this does not mean that trade is good for every person. *Within each country, trade generates “winners” and “losers”*. The “losers” have often been strong opponents of policies that open trade between countries. In many cases, they have been able to prevent such opening. Who are these “winners” and who are these “losers” from international trade?

As we have just seen, if trade is free, *a country will export those goods that require the factors of production that are in relative abundance and import those that require the factors of production that are relatively scarce*. For the United States, this means exporting goods that use large amounts of arable land, capital, and highly skilled labor. It also means importing goods that require large amounts of unskilled labor. Suppose, as is likely to be the case, that the United States has a comparative advantage in production of computer software. The ability to trade, and therefore to sell in foreign countries, increases the demand for American computer software. This increase in demand both increases the quantity of computer software products sold and also increases their prices. Both the increased quantity sold and the increased prices will increase the short-run profits of owners of computer software companies. They will also increase the demand for labor, increasing the number of people employed in the computer software industry as well as their wages. **Therefore, the owners of computer software companies and their workers are both “winners”**. On the other hand, assume, as is likely to be the case, that the United States has a comparative disadvantage in textiles. With free trade, the United States will import textile products. The imports increase the supply of textile products in the United States, decreasing their prices. The decrease in prices will reduce the profits of the owners of American textile companies in the short-run. The decrease in textile prices will also decrease the demand for American textile workers, causing both the number of jobs for American textile workers and their wages to decrease. **Therefore, the owners of American textile companies and their workers are “losers”** from international trade. *In general, for the United States, free trade benefits owners of arable farmland and highly skilled workers. Free trade hurts unskilled and semi-skilled workers*. In a country such as Mexico, the opposite occurs. *In Mexico, free trade benefits unskilled and semi-skilled workers as well as the owners of the companies that employ them. In Mexico, free trade hurts highly skilled workers*. Certain owners of arable land in Mexico are “winners” (for example, those with land that can grow strawberries or bananas) while owners of other arable land are “losers” (for example, those with land that can grow wheat).

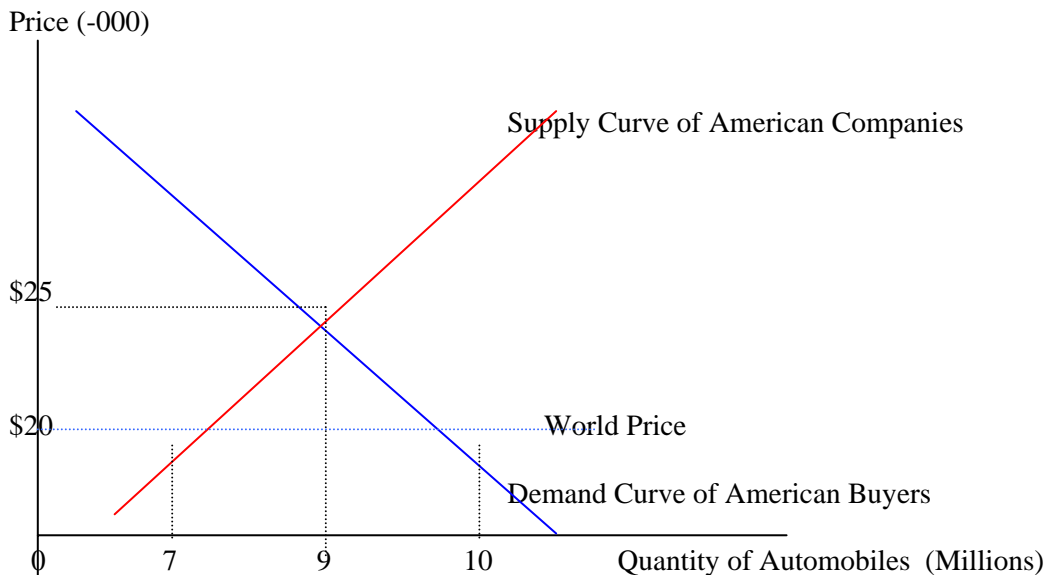
In summary, owners of factors of production specific to export industries tend to gain from international trade while owners of factors of production specific to import-competing industries lose. But for this statement to be true, **it must be assumed that the factors of production are specific, and not general. This means that the factors of production cannot easily shift from one employment to another**. American textile workers would not be hurt if they could shift easily to work in the computer software

industry. But for many workers, and for most capital, such a shift is very difficult and costly.

The analysis of the benefits of free trade shows clearly that the gain to the “winners” from free trade exceed the harm to the “losers”. We know this because we showed that the United States as a whole (and the world as a whole) is better off with free trade. Yet, in political decision-making, the “losers” are often able to prevent policies that promote free trade. In order to understand why policies that are good for the country as a whole are not enacted, review the section on Public Choice in Chapter 11. In this case, the **benefits from free trade are widespread (many workers and owners increase their incomes plus consumers have more consumer goods available) while the costs of free trade are concentrated (certain workers and owners lose their jobs or have their incomes reduced).**

IV. Tariffs

As just stated, those who “lose” from free trade are often able to obtain government policies that restrict trade. The most common of these restrictions is a *tariff, a tax on imported goods or services*. Let us show this on the familiar demand and supply graph. In the graph below, assume that, if there were no trade, the price of automobiles would be \$25,000 per automobile. The world price is \$20,000. With free trade, buyers would be able to buy 10 million automobiles at the world price of \$20,000. Given the costs of making automobiles, American automobile companies would produce only 7 million automobiles at the world price of \$20,000. The other 3 million automobiles would be imported.



Now, imagine there is a tariff enacted that raises the price in the United States to \$25,000. First, what are the effects on American consumers? American consumers will now buy 9 million automobiles per year instead of 10 million. Therefore, they lose the satisfaction they would have gained from 1 million new automobiles. And, American

consumers will now pay \$25,000 per automobile instead of \$20,000. This extra \$3,000 per automobile applies to all automobiles, not just to the imported ones. American consumers will now pay \$225 billion for their automobiles (\$25,000 times 9 million) instead of \$200 billion (\$20,000 times 10 million). **They will be paying more, receiving fewer automobiles, and have less choice and variety.**

Second, what are the effects of the tariff on American producers? By raising the price of foreign automobiles, the tariff causes American buyers to shift to American automobiles. The prices of American automobiles rise (to \$25,000). This stimulates American automobile companies to produce more automobiles. **Therefore, American producers gain both from the higher prices and from the additional automobiles produced.** In the graph on Page 10, they would produce 2 million additional automobiles as a result of the tariff (9 million instead of 7 million) and charge \$5,000 more for their automobiles (\$25,000 instead of \$20,000). Once again, the American automobile companies would be able to charge a higher price because the tariff makes foreign automobiles (a substitute) more expensive.

Notice that the American automobile producers gain the benefit of the higher prices on the automobiles they produce. But American consumers pay the higher prices not only on the American automobiles but also on the foreign automobiles. **Therefore, the loss to American consumers must be greater than the gain to the American producers.** As a whole, Americans are worse-off. This conclusion holds even if we consider the tariff revenue collected by the government as part of the national gain.

This analysis of the effects of a tariff has thus far assumed that the United States cannot affect the world price of automobiles (\$20,000) by its tariff policies. For small countries this is likely to be true. But for large countries such as the United States, this may not be true. If American purchases of automobiles can indeed affect the world price, we have the case of **the optimal tariff**, discussed in Chapter 7. In the case on the previous page, the United States imposed a tariff and the American automobile buyers shifted their purchases to American automobiles. Now suppose that, facing a major loss in sales, the foreign automobile producers are forced to lower their prices. The world automobile price decreases. **In effect, foreign automobile producers are paying part of the tariff.** Indeed, if the world price fell from \$20,000 to \$15,000, foreign automobile producers would be paying the entire tariff. Tariffs still cause overall losses. But now the United States is able to shift the losses on to foreigners. **For this result to occur, the American demand must be able to influence the world price (that is, foreign producers must be dependent on American buyers) and American buyers must respond strongly to changes in the relative prices of foreign and American products (the demand for foreign products must be very elastic).**

Our analysis indicates that the United States as a whole loses when it imposes a tariff. But we need to know if tariffs (and other forms of protection against imported products) impose large or small losses on the United States. There have been several studies designed to answer this question. **The conclusion from these studies is that, as a percent of American total income, tariffs impose a very small cost.** A typical estimate would be that American total income is reduced perhaps 0.1% as a result of tariffs. **This**

result occurs because tariffs are imposed on few products. But for those products on which tariffs are imposed, the burden can be high. One study in 1990 for 23 industries on which there were tariffs concluded that Americans lose \$1.49 for each \$1.00 gained by the protected industry. The other \$0.49 is pure loss to the United States. Political battles as to whether trade should be free or should be protected against imports can be battles over billions of dollars in total income.

V. Arguments for Trade Protection

It has been stated several times that most economists support free trade and oppose policies of protection. There are, however, some significant economic arguments made by those who do support policies of trade protection, such as tariffs. First and foremost, there is *the infant industry argument*. If a domestic industry is new, it will produce a small quantity of the product. As we know from Chapter 15, producing a small quantity will cause costs of production to be high. As the companies in the domestic industry increase production, they will be able to produce at a lower cost because of *economies of scale*. They may also be able to gain *dynamic increasing returns to scale*. As we saw in Chapter 15, this means that the companies can “learn by doing” and therefore find ways to lower their costs. Finally, the companies in the domestic industry may be able to gain *economies of scope*. Again, as we saw in Chapter 15, this means that, by producing several products, the companies can produce each one at a lower cost. The point is that, **once the companies in the domestic industry sell enough of the products, they will be able to produce at a cost that will enable them to compete with the foreign companies**. At that time, the tariff protection would no longer be needed. This infant industry argument was used by Alexander Hamilton in a 1791 report that formed the basis for 19th century American trade policies (see below). In recent times, it was used by the Japanese government, who protected their domestic steel, shipbuilding, automobile, electronics, and computer industries before they became strong international competitors.

A related argument made for trade protection involves the fact that, in some industries, trade comes to be dominated by very few companies. This, of course, is oligopoly. So, for example, commercial aircraft is dominated by Boeing and Airbus and microprocessors are dominated by Intel and Motorola. There are several industries, such as automobiles and steel, in which more than half of world trade is conducted by five or fewer companies. Why does this occur? The answer takes us back to *economies of scale*. When fixed costs are high, an increase in the quantity sold by a company will lower the cost per unit of producing (the average total cost).¹ Because of economies of scale, the industry will become an oligopoly. **(Review the explanation of natural monopoly from Chapter 19 to be sure you understand the reasons for this.)** Oligopoly companies can earn significant economic profits from their export sales. **Because of this, it matters greatly to a country where the production takes place**. If these oligopoly companies are located in the United States, their economic profits will add to American income, at the expense of foreigners. Because they can produce at a lower cost, it will be very hard for companies in other countries to be able to compete with them. They would have what

are called “*first mover advantages*”. This means that the companies that produce first will have cost advantages that make it very difficult for others to begin to compete with them. Therefore, these economic profits will persist. Undertaking policies to assure that these particular companies are located in the United States has been called “*strategic trade policy*”. Companies in high technology industries are especially likely to have such first-mover advantages. In high technology, companies often experience very high fixed costs but low (perhaps zero) marginal costs. This combination causes them to become oligopolies. Because their products are in great demand, they can earn great economic profits. Several economists who ultimately became important advisors to President Clinton had been advocates of a strategic trade policy toward high technology industries in order to assure that the companies in such industries would earn their economic profits within the boundaries of the United States.

¹Economies of scale may also occur for the industry as a whole. This could occur because one large company brings enough specialized labor into the area to lower the costs of labor for other companies. Or it could occur because one large company allows product and production technology to diffuse quickly to other companies in the same area. Silicon Valley would be an example of this point.

A third argument made for trade protection is that domestic production in certain industries provides social benefits that will not be provided if the products are imported. For example, a growing computer industry provides knowledge that is important for companies that produce computer-related products and for companies that use the computer services. (Those who make this point argue that the benefits from expanded computer production do not easily spill over national boundaries. The growth of American computer chips led to the growth of an American software industry. It did not help the software industry of France.)

A fourth argument made for trade protection involves contracting industries. Suppose that the United States develops a comparative advantage in computer and computer products and loses its comparative advantage in production of steel. Under free trade, the United States will increase its production of computers and computer products and decrease its production of steel. The argument of Ricardo assumed that workers would simply shift from steel production to computer production. In a world when most workers were unskilled, this assumption may not have been too bad. But as noted earlier, workers usually have *specific skills* that will be lost if they shift to other industries. And because workers have ties to the place in which they live, being forced to move will be a large burden for them. Tariffs can prevent these very large costs being imposed on these workers. (In this case, trade that is within an industry commonly has less political opposition than trade between industries. It is virtually impossible for a textile worker to become a highly skilled computer professional. But it is not as difficult for a worker on a Pontiac to become a worker for Honda in Ohio.)

A fifth argument made for trade protection involves the distribution of income. As we saw above, free trade in the United States increases the incomes of highly skilled workers as well as the incomes of owners of certain types of capital goods. It also decreases the incomes of less skilled workers. To some people, this seems unfair since less skilled workers are likely to have relatively low incomes. **In this argument, a tariff**

would act to make the distribution of income more equal by increasing the incomes of those whose incomes are likely to be near the bottom of the income distribution.

A sixth argument made for trade protection involves the environment. Indeed, many environmental groups are commonly against policies to make international trade freer. The main argument of environmentalists is that developing countries, such as Mexico, either have more lax environmental laws or do not enforce their environmental laws very well. There are two ways to make products cheaper --- improve efficiency or externalize costs (impose the costs on others). In competitive markets, companies will look to lower costs and will therefore externalize costs if they can get away with it. Allowing free trade between these countries allows American companies to locate in countries where they can “get away with it”.¹ We shall examine this argument in the section on NAFTA below. (*A related argument is that allowing free trade also allows American companies to escape tough American laws relating to workers.* Under free trade, American companies can locate production in countries where they can force workers to work many hours per day for very low wages.)

An example of the environmental effects of free trade involves the fact that, under the modern method of fishing for tuna called purse-seine, large numbers of dolphins are killed. Since this method of fishing for tuna came into use around 1960, over 6 million dolphins have been killed. Most Mexican fishers of tuna continue to use this method of fishing. In 1991, the United States banned imports of tuna from Mexico. Mexico protested, arguing that the United States was simply using the killing of dolphins as a way to protect its own tuna industry. The organization that heard the case, then called the *General Agreement on Tariffs and Trade (GATT)*, agreed with Mexico and forced the United States to remove its ban. This case has made many environmental groups suspicious of free trade agreements.

Free trade, they argue, creates a separation between the consumption of goods and the environmental damage. If buying certain goods (oil, for example) would damage the beaches of California, many people will be mobilized to do something to protect the beaches. But if eating a hamburger at McDonald’s damages the rainforest of Brazil, few Californians are likely to know, or even care. Brazilians who are affected may be powerless to stop the production that damages their forests.

1. This situation was common in American history. For example, until the 1930s, policies were governed mainly at the state level. This made it very difficult to pass laws to eliminate child labor. Northern companies, especially in textiles, had more capital and better technology. Southern states would allow child labor because the cheap labor allowed their companies to compete with the northern companies. Northern states would not pass restrictions on child labor because doing so would hurt their companies. Until the national government passed laws on the matter, child labor was common in American manufacturing. Likewise, dealing with environmental externalities may be very hard to do at the level of the nation; it will require international agreements.

Finally, there are other, non-economic arguments made for trade protection. Some products, it is argued, should be produced domestically because they are sources of **national pride**. For example, most Latin American countries have national orchestras. Trade theory would dictate that these countries focus on exports of wool or beef and import better symphonies from Europe. These Latin American countries believe that their communities are enriched by having their own orchestras. And some products, it is argued, need to be produced domestically because they are essential to the **national**

defense. (From 1959 to 1973, this was a main justification for limits on imports of oil.) It is also argued that **free trade causes individual nations to lose the ability to control their economic lives.** Most economists take these arguments for protection quite seriously. As is often the case, there are good arguments on both sides of this issue.

Test Your Understanding

In November of 1999, the **World Trade Organization (WTO)** met in Seattle. There were about 50,000 protestors there. There was destruction and some arrests.

1. What does the World Trade Organization (WTO) do? You will need to get information from the Internet or newspapers.
2. Choose one of the following groups who opposed the World Trade Organization (WTO). In each case, explain the reasons that the group opposes the WTO. How does it want the WTO to change? You will get the information you need from the Internet or from newspapers.
 - a. The AFL – CIO or any particular labor union
 - b. Any Environmental group who opposed the WTO
 - c. Any other political group who opposed the WTO. In this case, find some group who was in Seattle to protest but who was not affiliated with a labor union or environmental group.
3. Present arguments made by people in support of the World Trade Organization (WTO). Who are the people supporting the WTO? What arguments do they make that it has been good for the world economy? You will get the information you need from the Internet or from newspaper accounts.

VI. American Trade Policies

Since the end of World War II, the United States has been the leading proponent of free trade around the world. But it was not always so. For the century and a half up to World War II, the United States was basically a protectionist country. Over the entire period, American tariffs averaged just about 30%. (This is equivalent to a 30% sales tax on imported products.) Particularly noteworthy were the so-called Tariff of Abominations of 1828 (in which the tariff on imported woolen products reached over 80%) and the Hawley-Smoot Tariff of 1930. Tariffs were so high for two reasons. First, the money raised was a major source of revenue for the federal government. And second, there was strong pressure for protection from New England producers of manufactured goods. As with all tariffs, the United States paid a cost for its protectionist policy.

Because the tariff was high on imported capital goods (to protect the New England manufacturers), it raised the prices in the United States of all capital goods, whether imported or produced at home. With higher prices, buyers bought fewer capital goods. Since capital goods are those that are used in production, fewer goods and services were produced in the United States prior to World War II than could have been produced had there been no tariffs.

Since World War II, the United States government has relied much more on income taxes, and much less on tariffs, for its revenues. And American manufacturers found exporting more important than restricting imports. In 1947, the United States entered the **General Agreement of Tariffs and Trade (GATT)**. The purpose of GATT was to find ways for countries to negotiate bilateral reductions in their tariffs (that is, both countries agreeing to reduce tariffs). As part of GATT, the member countries agreed to the **Most –**

Favored – Nation (MFN) principle. This meant that each country would have a tariff rate for all member countries that was the same as that of the most favored nation (the nation that received the lowest tariff rate). Over the years, tariff rates between most of the industrial countries have been lowered in a series of steps. **As of now, the overall American tariff rate averages only about 3%.** In the mid-1990s, the GATT was replaced by the **World Trade Organization (WTO)**, with the same goals.

Despite being the leading proponent of free trade over the past 50 years, the United States government has still interfered in international trade on several occasions. Most of this intervention has been to try to offset the decline of an American industry. For example, the American steel and automobile companies had once dominated the world. But over the 1960s and 1970s, they continually lost their share of the world market, and even the American market, to the Japanese companies. The key reason for their decline was their inability to raise productivity as much as the Japanese could. This made them high cost producers. For both industries, the United States government intervened to help prevent the decline. The tariffs against Japanese steel were discussed in Chapter 16 on Dumping. And the “Voluntary Export Restraints” against Japanese automobiles in the 1980s were discussed in Chapter 7. In a **Voluntary Export Restraint**, the United States government pressured the foreign government to “volunteer” to limit the sales of a given product in the United States. Government loans were also made to the Chrysler Corporation to help it make changes that would allow it to survive. The apparel industry in the United States, based as it is on unskilled labor, also has been in decline for many years. To slow this decline, there has been a “Voluntary Export Restraint” against imports of apparel from Asia since 1962. The United States government has also intervened as its electronics and semiconductor industries lost world market share. For these industries, the intervention mainly involved suits and negotiations with foreign governments to change practices in the foreign country (especially Japan).

While much of the intervention of the American government has involved declining American industries, some has not. The very high tariff on imported sugar was discussed in Chapter 11. There are restrictions on importing many agricultural products. The American government also has provided large subsidies to Boeing to help stimulate sales of commercial aircraft in foreign markets.

Test Your Understanding

The text refers to a paradox. On the one hand, since the end of World War II, the government of the United States has been the leading proponent of free trade around the world. Many actions have been taken by the American government to promote free trade. Yet, on the other hand, the American government has imposed trade restrictions on Japanese steel, Japanese automobiles, textiles, agricultural products, etc. The American government has also subsidized certain companies, such as Boeing, to aid them in international competition. How do you explain this paradox? (You may want to review the section on Public Choice before answering.)

Case Study: The North American Free Trade Agreement of 1994 (NAFTA)

From the 1950s until the early 1980s, Mexico pursued a development strategy called **import-substitution industrialization**. This meant that Mexico attempted to avoid dependence on international trade in its pursuit of economic growth and development. As late as 1971, only about 6% of goods bought by Mexicans were imported. Even by 1988,

this figure had risen to only 10.7%. Imports and exports were less significant for Mexico than for the United States and much less significant than for the countries of East Asia or Europe. Although its trade was limited, Mexico was very dependent on the United States, as a very high proportion of Mexican exports and imports involved the United States. By contrast, America was not very dependent on Mexico -- only about 5% of American imports came from Mexico.

The Mexican import substitution strategy had been designed to protect domestic Mexican producers against foreign competition. The strategy saw exports as necessary only to earn the dollars necessary to be able to buy the capital goods and raw materials needed for industrialization. Imports were limited to those capital goods and raw materials through **a system of licenses and high tariffs**. There were restrictions on foreigners owning companies in Mexico. The protected market was designed to give Mexican producers the time to grow so that they could become competitive with American, European, and Japanese manufacturers. This was the infant-industry argument, discussed above.

Under pressure from the United States government following its debt crisis of 1982, Mexico shifted away from its import-substitution industrialization strategy and toward a policy of freer trade (called "*liberalization*"). The use of licenses to limit imports was virtually eliminated. Tariffs were reduced significantly. Most of Mexico's industries were opened to foreign investors. In 1986, Mexico joined the GATT. Mexican exports expanded greatly in the 1980s and 1990s, rising from the \$20 billion to about \$50 billion by 1994. Most of these Mexican exports were sold in the United States. As dependent as it was becoming on trade with the United States, Mexico felt threatened by rising trade protectionist sentiments in the United States. Beginning in 1990, Mexican President Salinas requested discussions with the United States to create a **North American Free Trade Agreement (NAFTA)**.

In August of 1992, the United States, Mexico, and Canada signed the agreement to form a North American Free Trade Area (NAFTA). (Canada and the United States had already formed a free trade area in 1989.) **In a Free Trade Area, there are no tariffs between the countries**. In the agreement, all tariffs and duties were to be phased-out over 15 years, beginning with 1994. The agreement was historic; there had never been such an agreement between countries with such disparate standards of living. The Free Trade Area took effect on January 1, 1994. The agreement was, and still is, a source of considerable controversy in the United States. To understand this controversy, let us first look at the effects of the agreement on the American economy.

The main purpose of the free trade agreement was to expand trade and American investment in Mexico. Most studies have indicated that the NAFTA did indeed expand trade. In 1994, exports among the three countries grew by 19%. **American exports of a large number of products expanded significantly**: field crops (corn, wheat, and soybeans) and processed foods, chemical products, plastics, pharmaceuticals, high-grade steel, automobiles and automobile parts, machinery, and products related to high technology. American imports of several products expanded as well: crude and refined

petroleum, fruits and vegetables, apparel and textiles, footwear, and trucking services. Imports of cars produced in Mexico also rose. *In general, one would expect American exports of capital or technology-intensive products to expand and Mexican exports of labor-intensive products to expand.* Despite the financial crisis in Mexico in 1995 and the recession of 2001, this seems to be what has occurred.

One area of concern for both countries was **agriculture**. As discussed in an earlier chapter, agriculture has been a highly subsidized and protected industry in most countries. The United States had low tariffs (4% on average in 1990, covering 25% of agricultural imports from Mexico) but many non-tariff barriers. Mexico had higher tariffs (11%) and import licensing requirements for many products (representing over 50% of Mexican agricultural imports from the United States). Agriculture has provided the livelihood for more than one quarter of the Mexican labor force. Thus, Mexico had an interest in slowing the liberalization of agricultural trade. Under the NAFTA, half of the agricultural goods imported into Mexico from the United States immediately became tariff-free. Other tariffs were to be phased out over 15 years. However, when imports cause an enormous burden of adjustment, tariffs are allowed to rise. (So, the United States has restrictions against Mexican sugar, peanuts, corn, beans, and winter vegetables.) In the United States, grain farmers and livestock producers should see the market for their products expand. Grain (especially corn) farmers in Mexico should lose some of their market; these are typically the small and poor farmers in the south of Mexico. On the other hand, American fruit and vegetable farmers should lose some of their market as imports from Mexico increase. (Those who grow citrus in Florida should lose more than those who grow citrus in California because Mexican imports compete mainly in the winter months.) Fruit and vegetable farmers in Mexico should gain markets; these are the richer, commercial farmers in the north of Mexico.

Another trade issue of concern, especially to American automobile and textile companies, involved **rules of origin**. The concern here was that other countries (especially Japan) could ship goods through Mexico (or have a small portion of the good produced in Mexico) in order to avoid American and Canadian tariffs. *In the NAFTA, it was agreed that cars and light trucks must have 62.5% (5/8) of the value of their parts and labor be produced in North America in order to qualify for the tariff-free status.* In addition, for several years, the advantage of tariff-free status goes only to firms that already had assembly plants in Mexico (General Motors, Ford, Chrysler, Nissan, and Volkswagen). A similar provision was adopted for textiles: tariff-free status is granted only to goods made with yarn and fabric produced in North America.

There has been great concern in the United States about the effects of the NAFTA on the American labor market. *Nearly all studies indicated that there would be a net job gain for the United States.* Because the NAFTA was expected to generate more American exports to Mexico than American imports, it was expected to create more new jobs than would be lost. (Remember that American tariff rates were already low while Mexican tariff rates were not.) And those jobs that would be lost would be lost over several years, even further reducing the burden of adjustment. But there certainly has been hardship on some families as a result of the NAFTA. The highest estimate of job

losses due to NAFTA is 420,000 (the American labor force totaled over 143,000,000 at the end of 2003). Those workers became eligible for employment services, training, and income support for up to 78 weeks. **Those Americans most at risk are those who work in the labor-intensive manufacturing industries, such as textiles and apparel, and labor-intensive agricultural goods, such as sugar, fruits, and vegetables.** Most job losers will be non-college educated workers who tend to be at the lower end of the wage distribution. Most job gainers will be more educated workers whose wages are normally at the high end of the distribution. *But the striking conclusion of the vast majority of studies indicates that the effect on the American labor market has been small.*

Another labor market issue involved labor practices in Mexico. It was argued that Mexico allows "sweatshop" conditions and therefore gains a labor market advantage in an unacceptable way. Mexican labor laws protecting worker rights are similar to the American laws. But the enforcement is very weak. **The North American Agreement on Labor Cooperation (NAALC)** was established to monitor labor issues and address complaints about non-enforcement of labor laws. As of this writing, it does not have enforcement powers. The NAFTA side agreement did specify eleven fundamental rights of labor.

Another fear of many people is that the NAFTA will contribute to worsening **environmental problems.** The argument is that many American companies will locate in Mexico in order to escape from American environmental laws. As with worker protection laws, Mexican environmental laws are not significantly different from those of the United States; however, Mexican environmental laws are often poorly enforced due to a lack of enforcement personnel and to corruption. In recent years, Mexico has increased its efforts at environmental protection. It should be stressed, however, that for American companies to locate in Mexico to take advantage of weak enforcement of environmental laws, three conditions must be met: (1) the costs of meeting American environmental laws must be high in relation to the total cost of production (otherwise, it is not worth the cost of the move), (2) the industry must already have significant trade protection (otherwise the companies would already have located plants in Mexico), and (3) the company must be able to relocate production relatively easily. The number of companies that meet these conditions is likely to be small. Of 442 American industries, only 11 meet the first two conditions. Of these, several are not easily relocated. *Therefore, the cost of American environmental regulations is NOT likely to be a significant incentive for relocation to Mexico.*

Another environmental issue involves food safety standards, which are much stricter in the United States. Under the NAFTA, the United States may prohibit imports of fruits and vegetables from Mexico that do not meet American safety standards. Some argue that this raises the possibility of setting the standards so high that environmental standards are in fact a form of trade protection. For example, in 1996, there was a major dispute over the importation of avocados from Mexico. American avocado growers claimed that Mexican avocados brought with them a disease that could destroy local crops. Mexican producers believed that their avocados were safe and saw the American claim as a form of trade protection.

Yet a third environmental issue involves **infrastructure along the border** (roads, railways, airports, and so forth). The increase in trade creates bottlenecks along the border. A **North American Development Bank** was created in 1994 with \$3 billion in capital, provided by both the United States and Mexico, to provide financing for border environmental projects – both for cleanup and for new infrastructure. As of this writing, it has done little.

The evidence above provides what is generally a supportive view of the NAFTA. Yet, the agreement has been very controversial. Let us summarize some of the main arguments used by opponents of the agreement. ***First, many opponents of NAFTA focused on the loss of jobs and the decline in wages.*** Most agreed that, in the aggregate, the effects of the agreement on the American labor market are small. But, to those who lose their jobs, this is no consolation. Job losses will cause considerable pain specifically to those people who are least able to adjust. They believed that the American program of Trade Adjustment Assistance is insufficient to cope with the problem. ***Second, many opponents believed that the NAFTA encourages greater American direct investment in Mexico, as it was intended to do.*** This means that more American companies are likely to open companies in Mexico. American companies, they argued, are more willing to invest in Mexico because of the assurance that goods produced in Mexico will have open access to the United States and because, under the NAFTA, they must be treated the same as Mexican companies. The ability of American companies to re-locate to Mexico could weaken the power of American labor unions to gain higher wages and better working conditions for their workers. It could also weaken the power of American local governments (as the companies could use the threat of movement to Mexico to extract certain benefits from the local government agencies). ***Third, opponents argued that NAFTA ultimately will reduce American international competitiveness.*** NAFTA, they argued, allows companies to continue to rely on low-wage labor. If this low-wage labor were not available, it is possible that these companies would develop new machines and new technologies to be able to continue production. These new machines and new technologies would ultimately make workers more productive and therefore lead to higher wages. ***Fourth, many opponents believed that the NAFTA leads to environmental degradation, especially along the border.*** This argument was considered above.

If one believes the majority of studies, it appears that there are net benefits to the United States from the NAFTA (the benefits exceed the costs for the nation as a whole). Over the long term, the NAFTA should increase American economic growth, should create more jobs than are lost, and may improve the American trade balance. But the burden of adjustment will fall disproportionately on American low-wage, low skilled workers. The American distribution of income will become more unequal. And there is the potential for greater environmental problems.

There are benefits from the NAFTA for Mexico as well. Mexican businesses gained a secure access to the American and Canadian markets. Correspondingly, Mexican exports to the United States and Canada have risen significantly. The increase in American investment in Mexico should bring Mexico more modern machinery and new technology.

(When 1992 presidential candidate Ross Perot announced that he was against the NAFTA, the Mexican stock market plunged. When he dropped out of the American presidential race, it rose significantly.) Increased competition from American companies should force the Mexican companies to become more productive. Low-skilled Mexican workers should benefit, either from more jobs being available or from higher wages. Higher skilled workers in Mexico should be hurt by the competition with the United States. Many Mexican businesses will not be able to compete with the American imports or with the American-owned companies in Mexico. And when agriculture is fully liberalized, many small farmers will not be able to compete with the American products. The NAFTA will require considerable adjustment within Mexico as well as within the United States.

NAFTA was an historical document that sought to overcome many difficulties. It sought to increase the economic integration of countries that are very different not only in standard of living but also in culture, in language, and in their legal and accounting systems. It will be decades before a full assessment of the NAFTA can be made. Yet, the NAFTA is here to stay. And the main focus today is to advance the principle of economic integration. Since 1997, there has been a move to add a fourth country to the NAFTA – Chile. And presently, there is a movement to create a free trade area over all of North American, Central America, and South America – a *Free Trade Area of the Americas (FTAA)*. At this writing, President Bush has affirmed his desire to build the Free Trade Area of the Americas (building on an initiative introduced by his father in 1990). Whether this will occur remains to be seen.

Test Your Understanding

1. The North American Free Trade Agreement (NAFTA) was described in the chapter. It created a Free Trade Area between the United States, Canada, and Mexico. Assume now, that there is a proposal to extend the Agreement to become the **Free Trade Area of the Americas (FTAA)**. This means that there would be a Free Trade Area covering all of the Americas --- North America, Central America, and South America. Debate whether the American Free Trade Agreement should be passed. Half of you will be assigned to debate **in favor of** an American Free Trade Agreement. The other half will be assigned to debate **against** an American Free Trade Agreement.
2. The NAFTA was passed in 1992 and went into effect in 1994. Pick a company located in San Diego County. It may be a place at which you work or not. Your task is to discover how this company has been affected by the NAFTA. You may get your information by interviewing people in the company who would be able to know how the company has been affected. You may also read articles in a newspaper (San Diego Union Tribune, North County Times) or on the Internet. Write a short essay describing how this San Diego County company has been affected by the NAFTA.
3. As of the summer of 2001, there is a recurrence of a dispute over the ability to Mexican trucks to ship inside the United States. The NAFTA provision allowed them this right. But the United States government has not allowed it. Go to newspapers or the Internet. Use sources from the summer of 2001. What are the arguments made by people that Mexican trucks should not be allowed to ship in the United States (see the site for the Teamsters Union especially)? What are the arguments made by people that Mexican trucks should be allowed to ship in the United States? What is your conclusion?

VII. Summary and Conclusion

What have we learned in this chapter? First, we have tried to understand the economists' intellectual argument in favor of free trade. It is an argument that is two centuries old. As part of this argument, we have seen that tariffs and other restrictions to free trade make both the country that restricts trade and its trading partner worse-off economically than they otherwise would be. Second, we have seen that, while free trade enhances the well being of all countries, it does not enhance the well being of all individuals. Free trade creates many "winners" but it also creates many "losers". And third, we have seen that, as with most debates, there are good arguments on both sides --- both in favor of free trade and also against free trade.

The arguments in favor of free trade have had enormous influence in the second half of the twentieth century. Until World War II, the United States was mainly a country that restricted trade. Since the end of World War II, the United States has become a country that is, for the most part, open to trade. The same opening to trade has occurred throughout the world. Western Europe began to open to trade after World War II and is now in the process of becoming an integrated economy. Trade for the former communist countries and the developing countries had been very small until 1980. Now this trade is becoming significant. We saw this change in our case study on the NAFTA. Companies now locate various parts of their production around the world. Indeed, much of our trade simply takes place within various parts of the same company. As we enter the 21st century, we are indeed becoming a "global economy". Your study of this chapter will provide you a greater ability to assess to what extent this shift to a "global economy" is indeed a good thing.

Test Your Understanding

Assume that there are only two countries and two products. The cost of making a product in each country (that is, the amount of labor time) is given by the following:

	In Vineland	In Cheeseheadland
Labor Hours Required:		
1 Bottle of Wine	15 hours	10 hours
1 Kilogram of Cheese	10 hours	4 hours

1. First, draw the production possibilities curve for Vineland, assuming that there are 30 million hours of labor time available per year. Remember that the production possibilities curve shows all possible combinations of goods that can be produced. If all of the hours are devoted to wine, Vineland can produce _____ bottles of wine. If all of the hours are devoted to cheese, Vineland can produce _____ kilograms of cheese. If 15 million hours were devoted to wine and 15 million hours to cheese, Vineland can produce _____ bottles of wine and _____ kilograms of cheese. Show these on the graph below. Show the production possibilities curve as a solid line.

2. Second, in Vineland, each hour devoted to producing wine requires the sacrifice of _____ kilograms of cheese. This is the **opportunity cost**.

In Cheeseheadland, each hour devoted to wine requires the sacrifice of _____ kilograms of cheese. This is the **opportunity cost**.

Vineland has the **absolute advantage** in _____. Cheeseheadland has the **absolute advantage** in _____. (Choose wine, cheese, both, or neither).

Vineland has the **comparative advantage** in _____. Cheeseheadland has the **comparative advantage** in _____. (Choose wine, cheese, both, or neither).

Vineland should export _____ goods and it should import _____ goods.

3. Third, imagine that Vineland specializes completely in wine. All 30 million hours were used to produce wine. Vineland then trades 1 million bottles of wine to Cheeseheadland. In return, it gets back _____ kilograms of cheese from Cheeseheadland.

Are the two countries better-off with trade? **Why?** _____

4. Finally, show the **production possibilities curve with trade** on the graph above. Show the new production possibilities curve as a dashed line.

Practice Quiz on Chapter 28

- | | In the United States | In the Rest of the World |
|---------------------------------|----------------------|--------------------------|
| Labor Cost Required | | |
| 1 Unit of Agricultural Products | 6 hours | 8 hours |
| 1 Unit of Manufactured Products | 2 hours | 12 hours |
- Using these numbers, the United States has an **absolute advantage** in
- a. Agricultural Products Only c. Both Agricultural Products and Manufactured Products

b. Manufactured Products Only d. Neither Agricultural Products nor Manufactured Products
 - Using the numbers in question 1, the United States has a **comparative advantage** in

a. Agricultural Products Only c. Both Agricultural Products and Manufactured Products

b. Manufactured Products Only d. Neither Agricultural Products nor Manufactured Products
 - An increase in international trade will cause **the production possibilities curve** to

a. shift out to the right b. shift in to the left c. become upward sloping d. not change
 - A country will have a **comparative advantage** in

a. those products which require factors of production that are relatively scarce

b. those products that require factors of production that are relatively abundant

c. all products for which it also has an absolute advantage

d. those products for which it chooses to have a comparative advantage
 - If the United States engages in greater international trade, those who are likely to **lose** are:

a. skilled workers in the United States c. owners of capital goods in the United States

b. unskilled workers in the United States d. computer experts in the United States
 - Which of the following would result if a **tariff** is imposed on steel made in Japan?

a. a higher price for Japanese steel c. a lower standard of living in the United States

b. a higher price for American steel d. all of the above
 - When Japanese autos are sold in the United States and American autos are sold in Japan, we have

a. free trade b. quotas c. intra-industry trade d. tariffs
 - Which of the following is an argument for **trade protection**?

a. the infant industry argument

b. trade may become dominated by very few companies

c. domestic companies may social benefits that will not be provided if the goods are imported

d. all of the above
 - The organization that now makes rules regarding international trade is called the

a. GATT b. WTO c. Congress of the United States d. IMF

10. When the United States, Canada, and Mexico agreed to end tariffs between their countries, they created
a. a common market b. a single country c. a free trade area d. an economic union

Answers: 1. C 2. B 3. A 4. B 5. B 6. D 7. C 8. D 9. B 10. C