

Section 1

Why Nations Trade

Preview

Objectives

After studying this section you will be able to:

1. **Analyze** the locations of resources and evaluate the significance of these locations.
2. **Explain** the concepts of absolute and comparative advantage and apply the concept of comparative advantage to explain why and how countries trade.
3. **Analyze** the impact of U.S. imports and exports on the United States and its trading partners.
4. **Describe** the effects of trade on employment.

Section Focus

International trade is based on resources that one country needs and another can provide. Each country in the world possesses different resources. By specializing in the production of certain goods and services, nations can use their resources more efficiently. Specialization and trade can benefit all nations.

Key Terms

absolute advantage
comparative advantage
law of comparative advantage
export
import

Have you logged on to a computer today? Ridden in a car or bus? Bought a new sweatshirt or jacket? Chances are these items all have one thing in common. They—or some of their components—were likely made outside the United States.

We know that the United States produces many products, such as jeans, machinery, and some types of computers. We don't, however, produce most of the world's video game systems or VCRs. Why? The answer lies with resources and their distribution. The unequal distribution of resources prevents countries from producing everything their citizens need and want. This is also why we trade.

Resource Distribution

As you read in Chapter 1, the resources that are used to make goods and services are called the factors of production. They include natural resources (land), human resources (labor), and capital resources.

Natural Resources

As you have read, natural resources include those materials found in nature that people use to make goods and provide services.

Natural resources include arable land (land that can be farmed), mineral deposits, oil and gas deposits, water, and raw materials like timber.

It is easy to see why a region with fertile soil, such as the central United States, is likely to have an economy based on agriculture. Similarly, you can predict that a region with large oil and natural gas reserves—such as Southwest Asia—is likely to have an economy based on income from the sale of these resources.

Natural resources, as well as climate and location, help determine what goods and services an economy produces. They are not, however, the only influences.

Human Capital

You learned in Chapter 1 that human capital is the knowledge and skills gained by a worker through education and experience. Every job requires some human capital. To be a surgeon you must learn about anatomy and acquire surgical skills. To be a taxi driver, you must know the layout of the city streets.

How do you measure the amount of human capital available in a country? One measure is the literacy rate, or percentage



▲ Many items of clothing are traded internationally.

	Peru	United Kingdom	United States
Total area (sq km)	3,287,590	244,820	9,629,091
Arable land (sq km)	1,664,986	60,398	1,740,202
Natural resources	Coal, iron ore, manganese, mica, bauxite, titanium ore, chromite, natural gas, diamonds, petroleum, limestone, arable land	Copper, silver, gold, petroleum, timber, fish, iron ore, coal, phosphate, potash, hydropower	Coal, copper, lead, phosphates, molybdenum, uranium, bauxite, gold, iron, mercury, nickel, potash, silver, tungsten, zinc, petroleum, natural gas, timber
Population	1.030 billion	59,647,790	278,058,881
Labor force	441 million	30 million	143 million
Literacy rate	52%	99%	97%
Telephones*	27 per 1,000 people	55 per 1,000 people	697 per 1,000 people
Airports	337	489	14,720

*non-cellular

Sources: CIA World Factbook, 2001; WorldBank



These countries each possess different natural, human, and physical resources. **Specialization** How do a nation's resources determine what that nation produces?

of people over 15 who can read and write. A country with a high literacy rate is likely to have an educated, skilled work force.

Physical Capital

Physical capital includes objects made by men and women that are used to produce goods and services. Examples include factories, machinery, and computers. Physical capital also includes the public infrastructure, such as roads and bridges, that allows raw materials and finished goods to be manufactured and transported.

Economic Activity Patterns

Five major economic activities are producing, exchanging, consuming, saving, and investing. Patterns of production, distribution, and use develop as the economic activities become concentrated in urban, industrial, or agricultural areas. Geographic and human factors also influence patterns of economic activity. Ski resorts develop in the mountains, farming in the valleys, and mining where there are ore deposits. Saving and investment also follow patterns, becoming concentrated in areas of potential growth.

Unequal Resource Distribution

Each country in the world possesses different types and quantities of land, labor, and capital resources. Some of these resources are determined by nature. Others are not. A nation's culture and history affect its human and physical resources. For example, if a nation has experienced prolonged civil wars, it may not have been able to develop its resources fully.

The table in Figure 17.1 provides data on different types of resources in selected countries. You can see that the availability of resources differs greatly from country to country. For example, the United Kingdom has over twice as many airports as Peru despite its smaller land area, suggesting that the United Kingdom has more physical capital than Peru. Economists can confirm this fact with additional data. As you might expect, because countries differ in resources, they also differ in their capacities to produce different goods and services.

The Need for Trade

Specialization occurs when producers—either individuals or nations—decide to produce only certain goods and services.

rather than producing all the goods and services they need. Specialization is determined by a nation's natural resources and by its human and physical capital. For example, the world's wheat is grown in regions with a cool climate. In the United States, we grow wheat, soybeans, and other crops for which we have appropriate soil and climate conditions. We cannot, however, produce diamonds or coffee.

When nations specialize in producing only certain goods, they obtain the goods they don't or can't produce through trade. For example, Costa Rica specializes in producing coffee and exports a large quantity of coffee beans. The country then uses the money it earns from coffee exports to buy products that it does not produce.

What about a nation that enjoys an abundance of resources, including a rich natural environment, a well-educated work force, and the latest technologies? It can, in theory, produce almost all that it needs by itself, without trade. If you were in charge of such a country, would you engage in large-scale trading? Or, would you decide to rely mostly on your country's own resources and be largely self-sufficient? Although self-sufficiency may sound appealing, it actually is better for countries to specialize in some products and trade for others.

Absolute and Comparative Advantage

Trading relationships benefit countries with abundant resources as well as countries with few resources. To see why, you need to look at two related concepts—absolute advantage and comparative advantage.

Absolute Advantage

A person or nation has an **absolute advantage** when it can produce more of a given product using a given amount of resources. A simple example can illustrate this idea.

Suppose that two of your friends, Carl and Kate, want to make some extra money. They decide to print designs on T-shirts and make birdhouses.

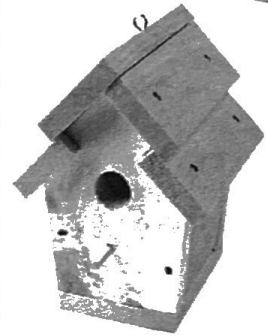
Figure 17.2 Productivity per Hour

	T-shirts per hour	Birdhouses per hour
Kate	6	2
Carl	1	1



Kate has an absolute advantage in producing both T-shirts and birdhouses.

Specialization In which good should each person specialize?



As shown in Figure 17.2, Kate can either print six T-shirts or make two birdhouses per hour. Carl can print one T-shirt or make one birdhouse per hour. In other words, Kate is more productive than Carl in making both T-shirts and birdhouses. In economic terms, Kate has an absolute advantage over Carl in producing both goods.

Suppose that each person is initially self-sufficient. Both Kate and Carl produce their own T-shirts and their own birdhouses. Because Kate enjoys an absolute advantage in both goods, should she remain self-sufficient? Or would Kate be better off if she specialized in either T-shirts or birdhouses? What should Carl produce—T-shirts, birdhouses, or both?

Countries have to face the same sorts of questions as individuals. Should a wealthy country with many resources be self-sufficient, or should it specialize in a few products and trade for the goods it doesn't produce? How does a poorer nation decide what to produce? The answer to these questions lies with the concept of comparative advantage.

Comparative Advantage

Early in the nineteenth century, British political economist David Ricardo argued that the key to determining which country should produce which goods is opportunity cost. Remember that the opportunity cost is what you give up in order to produce a certain product. The nation that has the lower opportunity cost in producing a

absolute advantage
the ability to produce more of a given product using a given amount of resources



Kate gives up three T-shirts for each birdhouse she produces. Carl gives up only one T-shirt for each birdhouse he produces.

Opportunity Costs
What are Kate and Carl's opportunity costs for T-shirts and birdhouses?

Figure 17.3 Opportunity Costs for Kate and Carl

	Opportunity cost of a T-shirt	Opportunity cost of a birdhouse
Kate	$\frac{1}{3}$ birdhouse	3 T-shirts
Carl	1 birdhouse	1 T-shirt

certain good has a comparative advantage in producing that good. A country has a **comparative advantage** in the product that it can produce most efficiently given all the products it could choose to produce. It is the nation with the comparative advantage—not necessarily the absolute advantage—that should specialize in producing that good.

According to the **law of comparative advantage**, a nation is better off when it produces goods and services for which it has a comparative advantage. Each nation can then use the money it earns selling those goods to buy other goods that it cannot produce as efficiently. We can use the example of Kate and Carl to illustrate the benefits from trade that is based on comparative advantage.

The Importance of Opportunity Cost

To determine comparative advantage in the example involving Kate and Carl, you need to look at the opportunity costs of producing T-shirts and birdhouses.

- **Kate's opportunity costs** In an hour, Kate can make either six T-shirts or two birdhouses. She therefore sacrifices three T-shirts for every birdhouse she produces. In other words, the opportunity cost of a birdhouse is the three T-shirts she could have produced instead. Conversely, the opportunity cost of a T-shirt is one third of a birdhouse.

- **Carl's opportunity costs** Carl sacrifices only one T-shirt for every birdhouse. His opportunity cost for a birdhouse is the one T-shirt that he could have produced instead.

As you have read, each person should produce the good for which he or she has a

comparative advantage—that is, a lower opportunity cost than another person. Carl's opportunity cost for producing a birdhouse (one T-shirt) is lower than Kate's (three T-shirts), so it is sensible for Carl to produce birdhouses. Kate's opportunity cost for producing a T-shirt (one third of a birdhouse) is lower than Carl's (one birdhouse), so Kate should produce T-shirts.

Why is it sensible for Carl to specialize in birdhouses? Although Kate has an absolute advantage in making birdhouses, Carl has a comparative advantage in birdhouses because he has a lower opportunity cost. Remember that in order to make a birdhouse, Kate has to give up three T-shirts. In order to make a birdhouse, Carl has to give up only one T-shirt.

Benefits for Trading Partners

As you might remember from trading baseball cards or small toys when you were younger, trade usually involves bargaining. Each side tries to make the best deal it can. In a modern economy, we don't exchange goods directly—we use money. The main principle, however, remains the same: both sides agree on a price that benefits both.

When Kate wants a birdhouse, she can either produce it herself or produce some shirts and trade some of them for a birdhouse made by Carl. Suppose Kate and Carl agree to trade two T-shirts for one birdhouse. In this case, Kate will be better off producing T-shirts and trading for a birdhouse. That's because in the time she could have taken to produce her own birdhouse, Kate can produce three T-shirts. Once she pays Carl two T-shirts to get a birdhouse, she will still have one T-shirt left over. In other words, trade makes her better off by one T-shirt. (See Figure 17.4.)

When Carl wants two more T-shirts, he can either make them himself, or make some birdhouses and trade some of them for shirts made by Kate. If Kate and Carl agree to trade one birdhouse for two T-shirts, Carl will be better off producing birdhouses and trading for shirts. In the time he could have taken to produce two T-shirts for himself, he can produce two

comparative advantage the ability to produce a product most efficiently given all the other products that could be produced

law of comparative advantage the idea that a nation is better off when it produces goods and services for which it has a comparative advantage

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birdhouses. Once he pays one birdhouse to Kate to get two T-shirts, he will still have one birdhouse left over. Trade makes him better off by one birdhouse.

Kate and Carl both benefit from trade. Each person specializes in the production of the good for which he or she has a comparative advantage, and then trades for the other good. The same is true with nations—both sides benefit from trade.

Comparative Advantage and International Trade

The lessons from this example of trade between two individuals apply to trade between nations. According to Ricardo, the nation that has the lower opportunity cost in producing a certain good has a comparative advantage in producing that good. Remember that comparative advantage is the ability of one nation to produce a good at a lower opportunity cost than that of another nation. It is the nation with the

comparative advantage—not necessarily the absolute advantage—that should specialize in producing that good.

Suppose 2 countries, Country A and Country B, produce bananas and sugar. If Country A must sacrifice 2 tons of sugar in order to produce a ton of bananas, the opportunity cost of a ton of bananas is 2 tons of sugar. If the opportunity cost of a ton of bananas in Country B is 3 tons of sugar, Country A has a comparative advantage in producing bananas. That's because Country A's opportunity cost (2 tons of sugar) is lower than Country B's (3 tons of sugar). If Country A specializes in producing bananas, it could use the money earned from selling bananas to buy other goods and services.

The United States and Trade

The United States enjoys a comparative advantage in producing many goods and services. What, then, is its position as an

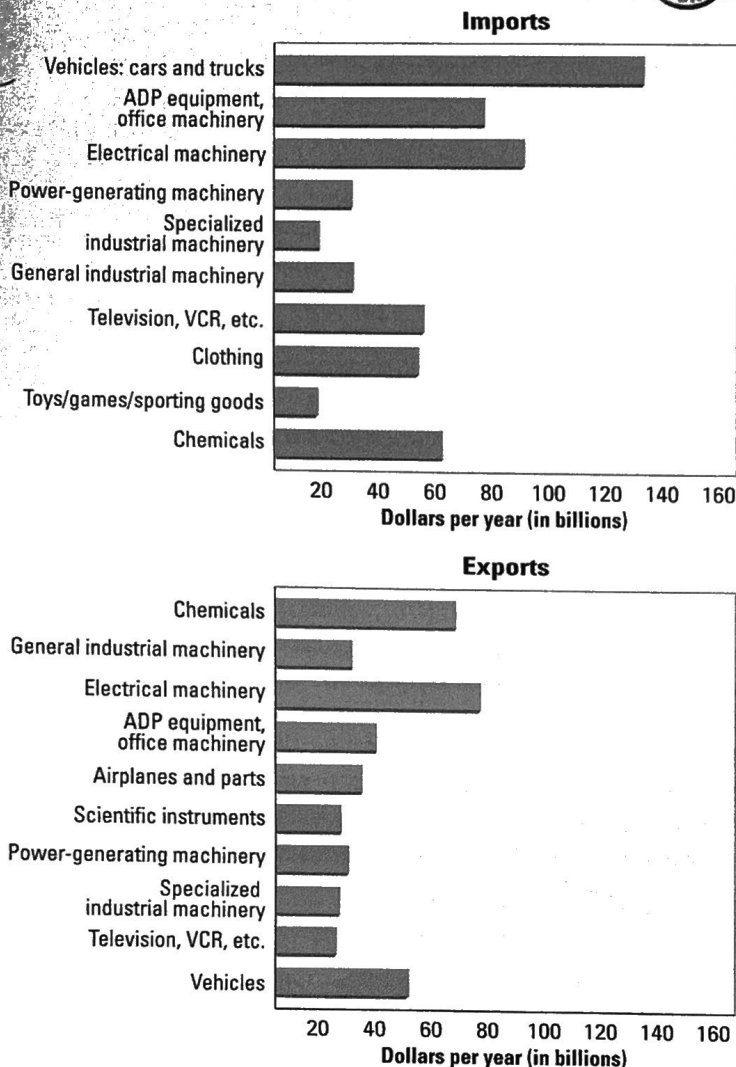
Figure 17.4 Benefits From Specialization and Trade for Carl and Kate

Carl			Kate		
Specialization	Trade	Net Effect	Specialization	Trade	Net Effect
Carl specializes, switching 2 hours from T-shirt production to birdhouse production.	Carl trades 1 birdhouse for 2 T-shirts.	Net effect is same number of T-shirts and 1 more birdhouse.	Kate specializes, switching one half-hour from birdhouse production to T-shirt production.	Kate trades 2 T-shirts for 1 birdhouse.	Net effect is the same number of birdhouses and 1 more T-shirt.



Kate and Carl both benefit from specialization and trade. Trade What is the net effect of trade for Kate and Carl? Why are they

Figure 17.5 Major U.S. Imports and Exports, 2000



Source: U.S. Census Bureau



The United States is both the world's largest importer and its largest exporter. Trade **Judging from these graphs, does the United States export more than it imports or import more than it exports? Explain your answer.**

export a good that is sent to another country for sale

import a good that is brought in from another country for sale

importer and exporter on the world market? In the language of international trade, an **export** is a good sent to another country for sale. An **import** is a good brought in from another country for sale.

As you can see from the map on page 545 of the Databank, the main U.S. trading partners are Canada, Mexico, Japan, and China. Trade with China has grown tremendously in recent years.

The United States as an Exporter

The United States is the world's leading exporter, followed by Germany and Japan. One reason for the success of the United States as an exporter is the wide range of its exports, from telecommunications equipment to soybeans. Another reason is that the United States has a commanding lead in manufacturing such products as computer software, medical equipment, and other advanced technology.

The United States is also in a good position to benefit from increased trade in services. Goods make up the bulk of international trade, but services are also traded on the world market. These include education, information services, computer and data processing, financial services, and medical care. Exports of services have grown rapidly over the last decade. The United States is the world's top exporter of services, so it stands to gain significantly from this trend.

The United States as an Importer

Besides being the world's largest exporter, the United States is also the world's top importer, and by a significant amount. The United States imports nearly \$900 billion in goods and services, or 16.1 percent of the world's total. That amount exceeds total imports for Germany and Japan combined, the world's largest importers after the United States.

The Effects of Trade on Employment

Trade allows nations to specialize in producing a limited number of goods while consuming a greater variety of goods. However, specialization can also dramatically change a nation's employment patterns.

Specialization and Employment

To help you better understand the effects of international trade on employment, think back to the example of Kate and Carl. As you have read, Kate can make six T-shirts or two birdhouses by herself in an hour.

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Suppose she hires Ari to help her build birdhouses. She later realizes that she should specialize only in T-shirts since that is where her comparative advantage lies. She no longer needs Ari to help her. Unfortunately, Ari's only skill is making birdhouses.

Ari now faces three possibilities: unemployment, retraining, or relocating to a part of the country where his skills are in demand. Ari may be able to find a training program and learn to make T-shirts or another product. He might even find himself better off than he was making birdhouses.

If Ari relocates, he may or may not be better off. How well he does depends on housing prices, the quality of his new neighborhood, the impact on his family, and a variety of other factors.

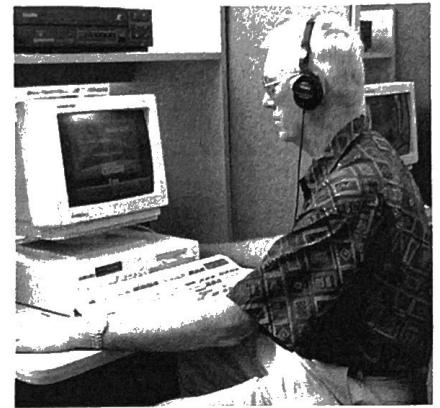
Government assistance is often available to help retrain laid-off workers for new jobs or to help them relocate to fit shifts in employment patterns. However, especially in the case of older workers or workers with families, retraining or relocation is not an easy (or sometimes not a possible) option. Some workers may become unemployed or be forced to take lower-paying jobs.

Specialization and Employment in the United States

In the United States, significant changes in employment patterns have occurred in the past two decades as a result of specialization and international trade. For example, during the 1970s, specialization, new technologies like robotics, and high productivity gave

Japan a comparative advantage in producing automobiles. As a result, Japanese cars became less expensive than many comparable American-made cars. As more consumers bought Japanese cars, many American workers lost jobs in automobile-producing centers such as Detroit.

Many other shifts in employment have also taken place in the United States in recent decades as a result of world trade and other factors. The overall result has been a shift in population from the manufacturing states of the Midwest to the Sunbelt states of the South and Southwest.



▲ Workers who lose their jobs can often learn new skills.

Section 1 Assessment

Key Terms and Main Ideas

1. How do nations obtain goods and services for which they lack adequate resources?
2. Susan grows coffee in a North Dakota greenhouse under sunlamps. Growing coffee this way takes a lot of effort and money. She also grows sunflowers, which are easy to grow in the dry climate in which she lives. In which crop does she probably have a **comparative advantage**?
3. Why is a nation with abundant resources better off trading than being self-sufficient?
4. Specialization and trade can result in shifting employment patterns. (a) What possibilities are available to people who lose their jobs due to changes in employment patterns? (b) What are the advantages and disadvantages of each possibility?

Applying Economic Concepts

5. **Critical Thinking** Suppose a nation has a great deal of human capital but few natural resources. In what kinds of products might it specialize?
6. **Try This** Make a Productivity Table for yourself and a friend using the table on page 443 as a model. Choose your own goods and estimate production times. Then decide where you and your friend have a comparative advantage.
7. **Using the Databank** Turn to the map showing United States trading partners on page 545. Considering geographical location and resources, give reasons to explain why the countries shown are major U.S. trading partners.



Take It to the NET

Compare the resources available in the United States to those of two other countries. Use the links provided in the Social Studies area at the following Web site for help in completing this activity. www.phschool.com