

16



LEARNING OBJECTIVES

After reading this chapter, you should be able to:

- 16.1 Discuss the worldwide importance, trends, and patterns of trade, and the importance of trade to Canada.
- 16.2 Distinguish between comparative advantage and absolute advantage.
- 16.3 Explain why nations can gain from specializing in production and engaging in international trade.
- 16.4 Outline common arguments against free trade.
- 16.5 Describe two ways that nations restrict foreign trade.
- 16.6 Identify Canada's most significant international agreement and name the primary organization that adjudicates trade disputes among nations.

Comparative Advantage and the Open Economy

In the midst of the recession of 2008–2009, the governments of the Group of Twenty (G20) nations—an informal association that includes the most industrialized countries—promised to keep their economies open to international trade. Nevertheless, within a few months, nearly every G20 nation had enacted measures that limited or even prohibited inflows of foreign goods across their borders. Although their exact nature varied from country to country, the common objective of such measures was to protect domestic firms from foreign competition. Who gains and who loses from international trade? Why does international trade occur at all? This chapter addresses these questions.



MyEconLab helps you master each objective and study more efficiently. See end of chapter for details.

DID YOU KNOW THAT...?

The 2009 U.S. stimulus law required U.S. construction projects receiving federal funding from the U.S. federal government to use only American materials. The consequences of this decision reverberated across the United States and its trading partners, such as Canada. For instance, the U.S. Navy had to rip Canadian pipe fittings out of the ground in California and replace them with American-made pipes. The Canadian government retaliated by prohibiting U.S. companies from providing materials for Canadian municipal

projects. Canada's retaliation and similar acts by other nations had measurable negative consequences in the United States. For instance, steel companies in Pennsylvania furloughed workers because of cancelled foreign orders.

What effects do restrictions on imports have on quantities and prices of domestically produced goods and services? You will learn the answer to this question in this chapter. First, however, you must learn more about international trade.

16.1 The Worldwide Importance, Trends, and Patterns of International Trade

Look at part (a) of Figure 16–1. Since the end of World War II, world output of goods and services (world gross domestic product, or GDP) has increased almost every year until the present, when it is almost nine times what it used to be. Look at the top line in part (a). World trade has increased to more than 28 times what it was in 1950.

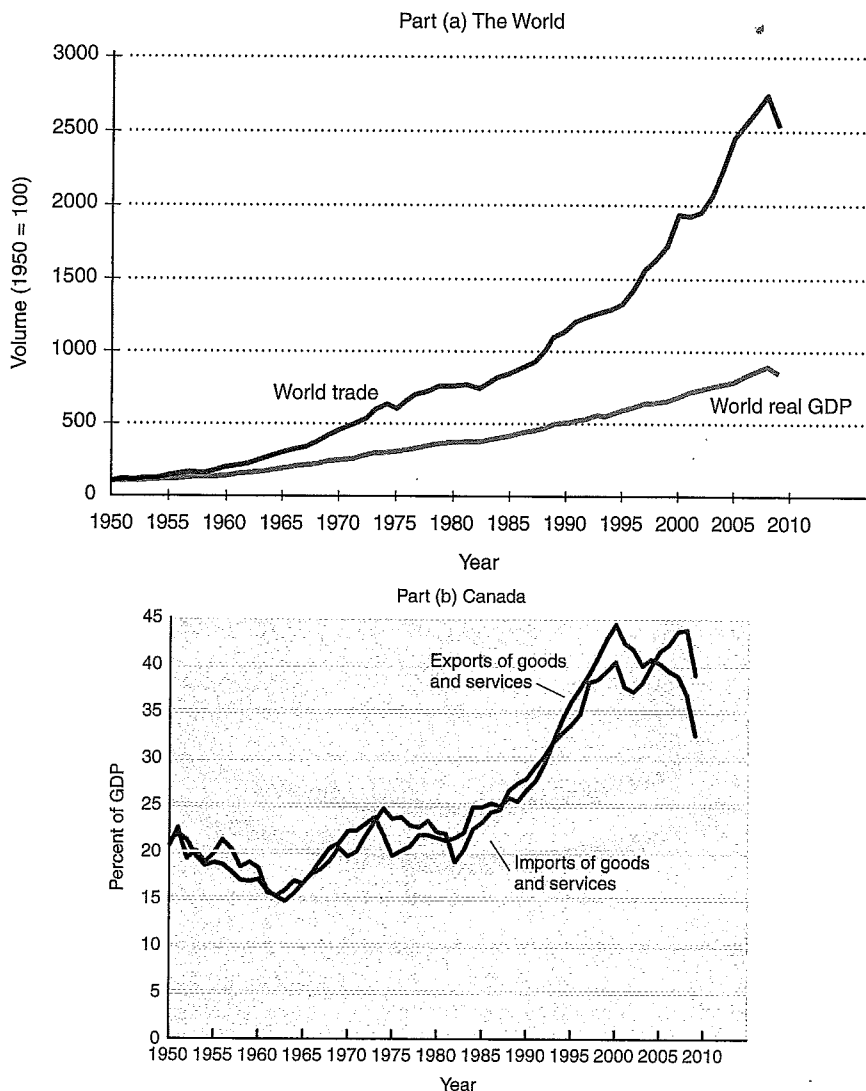


FIGURE 16–1
The Growth of World Trade

In part (a), you can see the growth in world trade in relative terms because we use an index of 100 to represent real world trade in 1950. By the mid-2000s, that index had increased to over 2800. At the same time, the index of world GDP (annual world income) had gone up to only around 900. World trade is clearly on the rise: In Canada, both imports and exports, expressed as a percentage of annual national income (GDP) in part (b), have generally been rising.

Sources: Part (a) Steven Husted and Michael Melvin, *International Economics*, 3d ed. (New York: HarperCollins, 1995), p. 11, used with permission; World Trade Organization; Federal Reserve System; U.S. Department of Commerce; Part (b) Adapted from the Statistics Canada CANSIM database, Series V3860085, V3860078, and V3680081.

In 2009, the global economic crisis resulted in a 12.2 percent contraction in the volume of world trade. This was the largest decline since World War II. Since 1965, world trade volumes have fallen on three other occasions (0.2 percent in 2001, 2 percent in 1982, and 7 percent in 1975). Canada has figured prominently in this expansion of world trade. In part (b) of Figure 16-1, you see imports and exports expressed as a percentage of total annual yearly income (GDP). While international trade was always important to Canada, with imports plus exports adding up to almost 50 percent of annual national income in 1950, in 2008 it accounted for over 80 percent of GDP and in 2009, over 71 percent. A further illustration of the importance of international trade for Canada is shown in Examples 16-1 and 16-2.

EXAMPLE 16-1 The Importance of International Trade in Various Countries

While imports and exports each account for more than 30 percent of total annual national income in Canada, in some countries, the figure is much higher. In others, it is much less, as you can see in Table 16-1. Certain nations, such as Luxembourg, must import practically everything! Another way to understand the worldwide importance of international trade is to look at trade flows on the world map in Figure 16-2.

TABLE 16-1
Importance of Imports in Selected Countries

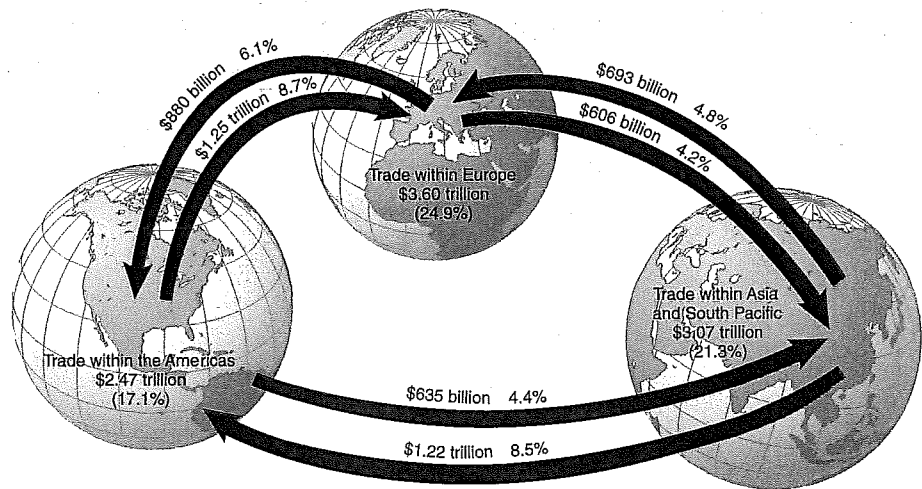
Country	Imports as a Percentage of Annual National Income	Country	Imports as a Percentage of Annual National Income
Luxembourg	95.0	United Kingdom	21.0
Netherlands	58.0	China	19.0
Canada	35.0	France	18.4
Norway	30.0	United States	12.8
Germany	23.0	Japan	6.8

Source: International Monetary Fund.

FIGURE 16-2
World Trade Flows

International merchandise trade amounts to over US\$6 trillion worldwide. The percentage figures show the proportion of trade flowing in the various directions.

Source: World Trade Organization and author's estimates (data are for 2009, expressed in US dollars).



For critical analysis: How can Luxembourg have a strong economy if it imports so many goods and services?

EXAMPLE 16-2 U.S. Consumers Go Online to Import Canadian Pharmaceuticals

Today, about 270 pharmacies in Canada offer services to U.S. consumers. After the pharmacies receive prescriptions from U.S. physicians, Canadian physicians review the prescriptions to verify that they comply with that nation's health care laws. Then the pharmacies ship the medications across the border. All told, more than US\$700 million worth of pharmaceuticals now flow southward across the U.S.–Canada border each year.

For critical analysis: Some critics claim that international trade causes nations to “lose jobs.” Why do you suppose that the premier of the province of Manitoba credits international trade in pharmaceuticals with creating 2000 jobs at the province's online and mail-order pharmacies?

Example 16-2 discusses how the Internet has contributed to increased pharmaceutical trade between Canada and the U.S. because of lower Canadian drug prices. The strong Canadian dollar is contributing to more Canadians seeking competitively priced goods on the Internet from the U.S.

The pattern of Canada's merchandise trade in goods with the rest of the world is shown in the 2008–2009 data in Figure 16-3. The United States is by far Canada's largest customer at \$369.9 million in 2008, representing 81.2 percent of total exports, and at \$271.2 million in 2009, representing 59.5 percent of total exports. The U.S. is also the largest source of Canada's imports at \$280.8 million in 2008, representing 69.4 percent of total imports, and \$236.5 million in 2009, representing 58.5 percent of total imports in the recession year in 2009. Canada's next largest trading partners are the European Union and Japan, with the emerging nations of China and India steadily gaining in importance. To illustrate the magnitude of trade with the United States, Canada's trade with Home Depot (a U.S. company) is greater than its entire trade with France.

The composition of Canadian merchandise exports and imports by type is shown in Figure 16-4. Imports of manufactured goods—industrial goods, machinery and equipment, and automotive products—make up about 64 percent of imports in 2008 and 2009. On the export side, manufactured goods—industrial goods machinery and equipment, and automotive products—account for about 55 percent of all exports in 2008 and 2009. A further 25.7 percent in 2008 and 21.6 percent in 2009 of total exports are energy.

And that just accounts for Canada's merchandise trade in goods. Canada also trades in services—non-merchandise trade—such as insurance services, banking services, consulting services, and so forth. In 2009, Canada imported \$90.1 million and exported \$68.5 million in services.

16.2 Why We Trade: Comparative Advantage and Exhausting Mutual Gains from Exchange

You have already been introduced to the concepts of specialization and mutual gains from trade in Chapter 2. These ideas are worth repeating because they are essential to understanding why the world is better off because of more international trade. The best way to understand the gains from trade among nations is first to understand the output gains from specialization between individuals.

The Output Gains from Specialization

Suppose that a creative advertising specialist can generate two pages of ad copy (written words) or one computerized art rendering per hour. At the same time, a computer artist can write one page of ad copy or complete one computerized art rendering per hour. Here,

FIGURE 16-3
Canadian Merchandise Trade by Geographic Area, 2008-2009

Source: Statistics Canada, CANSIM, Table 228-003.

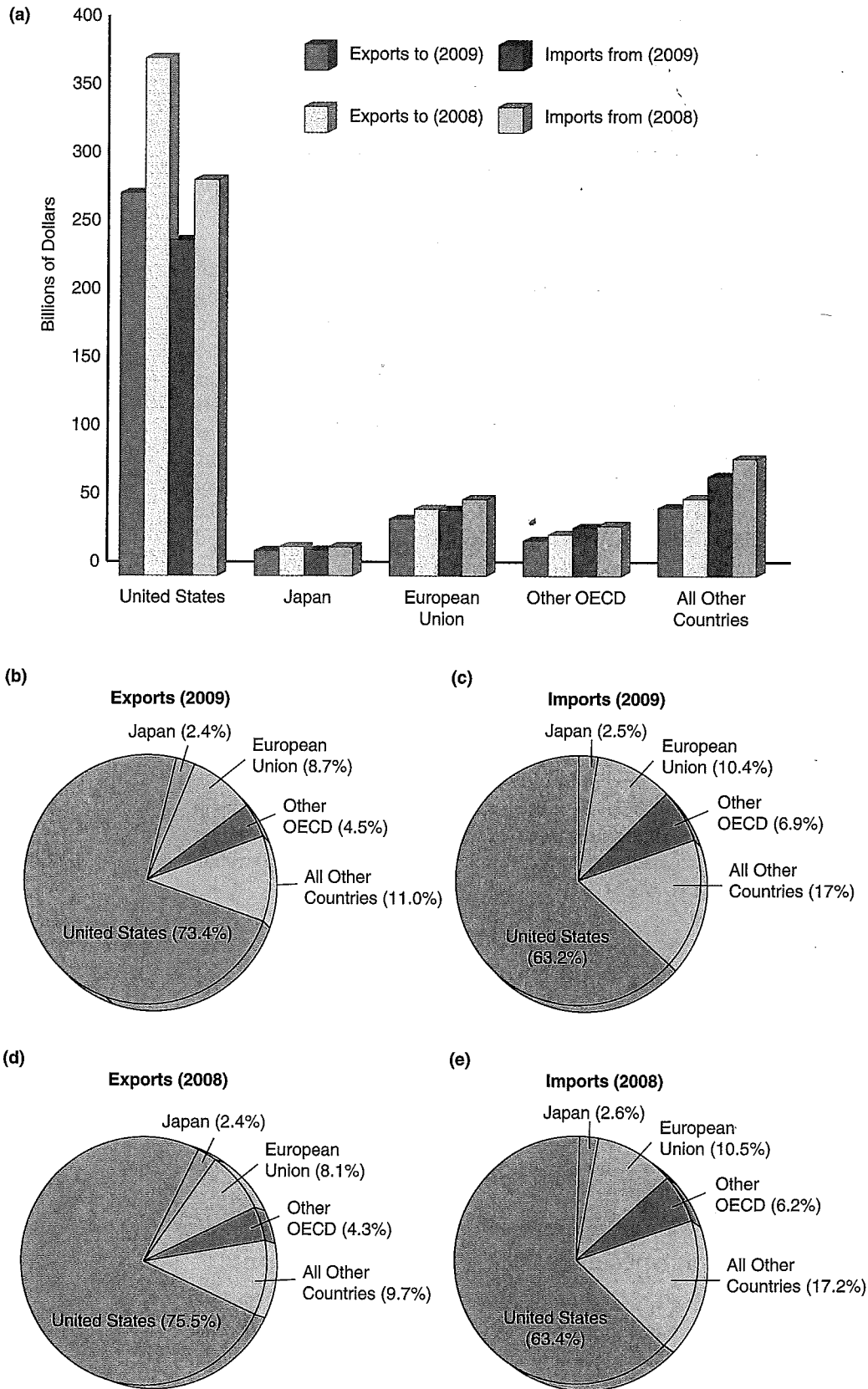
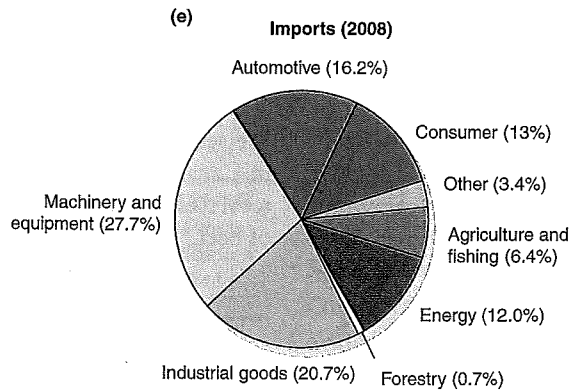
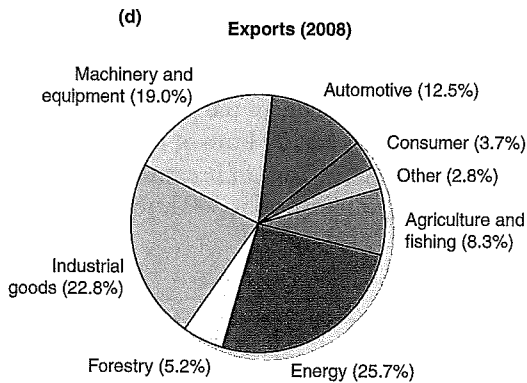
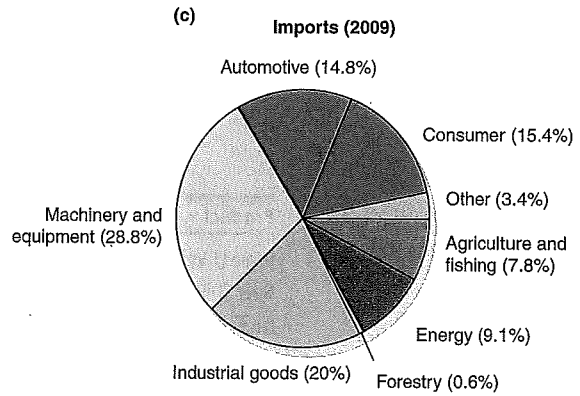
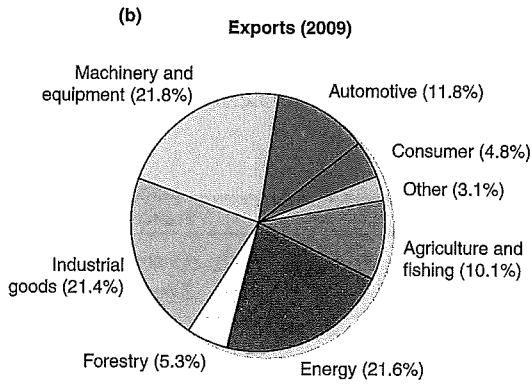
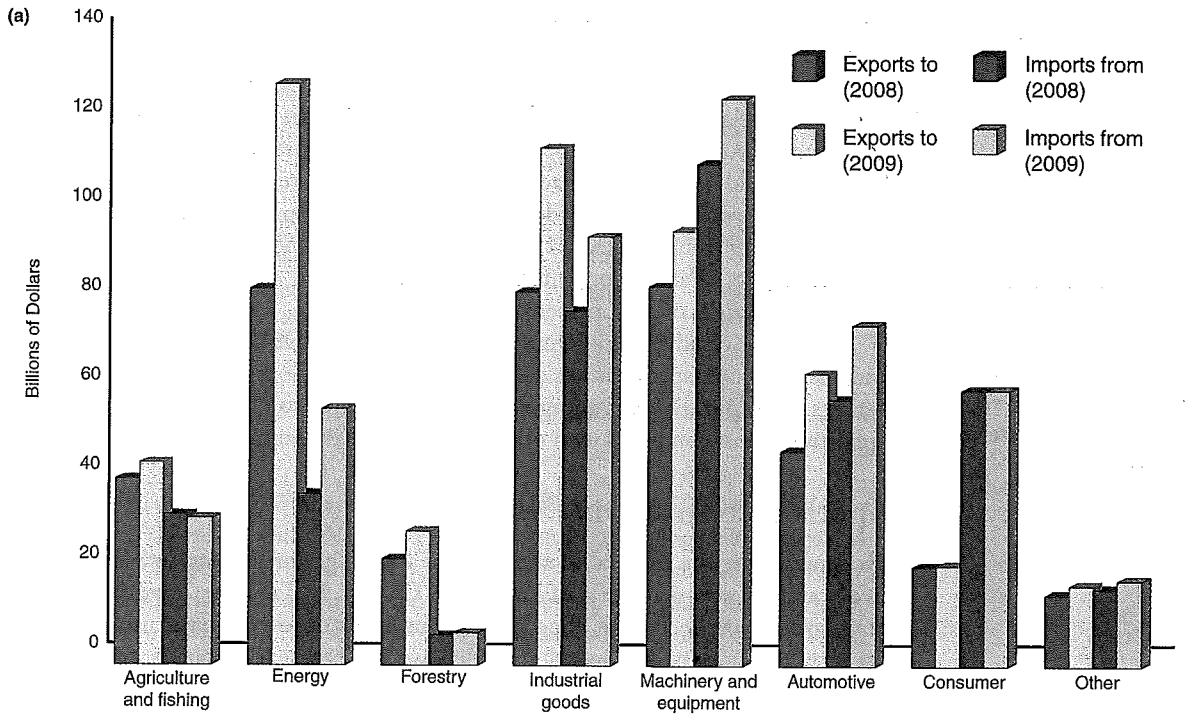


FIGURE 16-4
Distribution of Merchandise Exports and Imports for Canada by Broad Commodity Groups, 2008-2009

Source: Statistics Canada, CANSIM, Table 228-0003.



the ad specialist can come up with more pages of ad copy per hour than the computer specialist and seemingly is just as good as the computer specialist at computerized art renderings. Is there any reason for the creative specialist and the computer specialist to “trade”? The answer is yes, because such trading will lead to higher output.

Consider the scenario of no trading. Assume that during each eight-hour day, the ad specialist and the computer whiz devote half of their day to writing ad copy and half to computerized art rendering. The ad specialist would create eight pages of ad copy (4 hours × 2) and four computerized art renderings (4 × 1). During that same period, the computer specialist would create four pages of ad copy (4 × 1) and four computerized art renderings (4 × 1). Each day, the combined output for the ad specialist and the computer specialist would be 12 pages of ad copy and eight computerized art renderings.

If the ad specialist specialized only in writing ad copy and the computer artist specialized only in creating computerized art renderings, their combined output would rise to 16 pages of ad copy (8 × 2) and 8 computerized art renderings (8 × 1). Overall, production would increase by 4 pages of ad copy per day.

The creative advertising employee has a comparative advantage in writing ad copy, and the computer specialist has a comparative advantage in doing computerized art renderings. **Comparative advantage** involves the ability to produce something at a lower opportunity cost compared with other producers, as we pointed out in Chapter 2.

Comparative advantage The ability to produce something at a lower opportunity cost compared with other producers.

Specialization among Nations

To demonstrate the concept of comparative advantage for nations, let’s consider a simple two-country, two-good world of France and Canada. In Table 16–2, we show the comparative costs of production of wine and beer in terms of worker-days, using a simple two-country, two-commodity world in which we assume that labour is the only factor of production. As you can see from the table, in Canada, it takes one worker-day to produce one litre of wine, and the same is true for one litre of beer. In France, it takes one worker-day to produce one litre of wine but two worker-days for one litre of beer. In this sense, Canadians appear to be just as good at producing wine as the French and actually have an **absolute advantage** in producing beer. Absolute advantage is the ability to produce more output from given inputs of resources than other producers can.

Absolute advantage The ability to produce more output from given inputs of resources than other producers can.

TABLE 16–2
Comparative Costs of Production

Product	Canada	France
Wine (1 litre)	1 worker-day	1 worker-day
Beer (1 litre)	1 worker-day	2 worker-days

Trade will still take place, however, which may seem paradoxical. How can trade take place if Canada is able to produce both goods at least as cheaply as the French can? Why don’t we just produce both ourselves? To understand why, let us assume first that there is no trade and no specialization and that the workforce in each country consists of 200 workers. These 200 workers are divided equally in the production of wine and beer. We see in Table 16–3 that 100 litres of wine and 100 litres of beer are produced per day in Canada. In France, 100 litres of wine and 50 litres of beer are produced per day. The total daily world production in our two-country world is 200 litres of wine and 150 litres of beer.

TABLE 16–3
Daily World Output before Specialization

It is assumed that 200 workers are available in each country.

Product	Workers	Canada		France	
		Output (litres)	Workers	Output (litres)	World Output (litres)
Wine	100	100	100	100	200
Beer	100	100	100	50	150

Now the countries specialize. What can France produce more cheaply? Look at the comparative costs of production expressed in worker-days in Table 16-2. What is the cost of producing one litre more of wine? One worker-day. What is the cost of producing one litre more of beer? Two worker-days. We can say, then, that in France the opportunity cost of producing wine is less than that of producing beer. The residents of France realistically will choose to specialize in the activity for which they experience a lower opportunity cost. In other words, French residents will specialize in the activity in which they have comparative advantage, which is the production of wine. Likewise, residents of Canada will specialize in the area of manufacturing in which they have comparative advantage, which is the production of beer.

Product	Canada		France		World Output (litres)
	Workers	Output (litres)	Workers	Output (litres)	
Wine	—	—	200	200	200
Beer	200	200	—	—	200

TABLE 16-4

Daily World Output after Specialization

It is assumed that 200 workers are available in each country.

According to Table 16-4, after specialization, Canada produces 200 litres of beer and France produces 200 litres of wine. Note that the total world production per day has gone up from 200 litres of wine and 150 litres of beer to 200 litres of wine and 200 litres of beer per day. This was done without any increased use of resources. The gain, 50 “free” litres of beer, results from a more efficient allocation of resources worldwide. World output is greater when countries specialize in producing the goods in which they have a comparative advantage and then engage in foreign trade. Another way of looking at this is to consider the choice between two ways of producing a good. Obviously, each country would choose the less costly production process. One way of “producing” a good is to import it; so, if the imported good is, in fact, cheaper than the domestically produced good, we will “produce” it by importing it.

Gains from Trade

Trade is the means by which consumers in these two countries can consume both wine and beer.

Because 1 beer = 1 wine in Canada, if trade is to occur, Canada would expect to get more than 1 wine for every beer it sells; otherwise why specialize and engage in trade?

Similarly, because 1 wine = 0.5 beer in France, France would expect to get more than 0.5 beer for every wine.

Suppose the terms of trade falls somewhere in between these two cost conditions, say, 1 wine = 0.75 beer (alternatively 1 beer = 1.33 wine) and 100 wine is exchanged for 75 beer. The gains from trade after specialization based upon comparative advantage in this situation are 25 beer for Canada and 25 beer for France. This equals the overall gain in global output of 50 beer. This result is shown in Table 16-5.

Country	(1) Outputs before Specialization	(2) Outputs after Specialization	(3) Trade Exports (-) Imports (+)	(4) Outputs after Trade	(5) = (4) - (1) Gains from Specialization and Trade
Canada					
Wine	100	0	+100	100	0
Beer	100	200	-75	125	+25
France					
Wine	100	200	-100	100	0
Beer	50	0	+75	75	+25

TABLE 16-5

International Specialization Based on Comparative Advantage and the Gains from Trade

This example shows that when nations specialize in producing goods for which they have comparative advantage and engage in international trade, considerable production and consumption gains are possible for those nations and hence for the world. Why is this so? The answer is that specializing in producing goods for which the two nations have a comparative advantage allows both nations to produce more efficiently. As a consequence, worldwide production possibilities increase. This makes greater worldwide consumption possible through international trade.

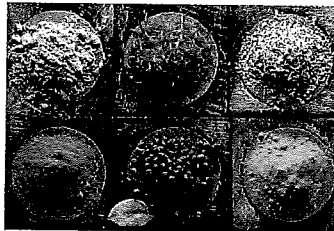
How the overall gains from international specialization and trade are divided will depend on the actual terms of trade or exchange ratio. This ratio will be determined by world supply and demand conditions.

Not everybody, of course, is better off when free trade occurs. In our example, Canadian wine makers and French beer makers are worse off because those two *domestic* industries have disappeared. Beer customers in the importing country, France, get lower-priced beer and more beer. In Canada, which has comparative advantage in beer production, customers will get more beer, but they will be paying more, the world price, for that beer.

Some people are worried that Canada (or any other country, for that matter) might someday “run out of exports” because of overaggressive foreign competition. The analysis of comparative advantage tells us the opposite. No matter how much other countries compete for our business, Canada (or any other country) will always have a comparative advantage in something that it can export. In 10 or 20 years, that something may not be what we export today, but it will be exportable, nonetheless, because we will have a comparative advantage in producing it.

As a result of specialization based on comparative advantage and trade, countries benefit. The effect of such specialization is to improve global efficiencies and to move the respective production possibilities curves outward.

Other Benefits from International Trade: The Transmission of Ideas



To what extent has international trade been responsible for the worldwide spread of spices and coffee?

Beyond the fact that comparative advantage generally results in an overall increase in the output of goods produced and consumed, there is another benefit to international trade—the international transmission of ideas. According to economic historians, international trade has been the principal means by which new goods, services, and processes have spread around the world. For example, coffee was initially grown in Arabia near the Red Sea. Starting around 675 A.D., coffee beans were roasted, and coffee was consumed as a beverage. Eventually, it was exported to other parts of the world, and the Dutch started cultivating it in their colonies during the 17th century and the French in the 18th century. The lowly potato is native to the Peruvian Andes. In the 16th century, it was brought to Europe by Spanish explorers. Thereafter, its cultivation and consumption spread rapidly. The alphabet was also spread through international trade, as discussed in Example 16–3.

EXAMPLE 16–3 International Trade and the Alphabet

Even the alphabetic system of writing that appears to be the source of most alphabets in the world today was spread through international trade. According to some scholars, the Phoenicians, who lived on the long, narrow strip of Mediterranean coast north of Israel from the 9th century B.C. to around 300 B.C., created the first true alphabet. Presumably, they developed the alphabet to keep international trading records on their ships, rather than having to take along highly trained scribes.

For critical analysis: Before alphabets were used, how might have people communicated in written form?

All of the *intellectual property* that has been introduced throughout the world is a result of international trade. This includes new music, such as rock and roll in the 1950s and hip hop and grunge in the 1990s. It also includes the software applications that are common for computer users everywhere.

New processes have been transmitted through international trade. One of those involves the Japanese manufacturing innovation that emphasized redesigning the system, rather than running the existing system in the best possible way. Inventories were reduced to just-in-time levels by re-engineering machine setup methods. Just-in-time inventory control is now common in Canadian factories.

The Relationship between Imports and Exports

The basic proposition in understanding all of international trade is this:

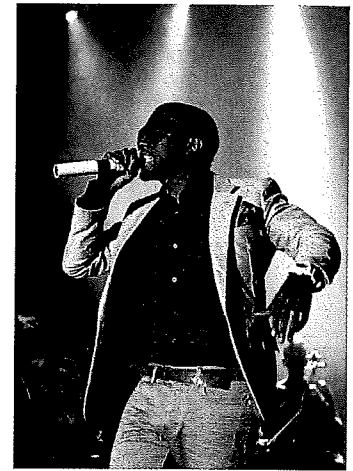
In the long run, imports are paid for by exports.¹

The reason that imports are ultimately paid for by exports is that foreigners want something in exchange for the goods that are shipped to Canada. For the most part, they want goods made in Canada. From this truism comes a remarkable corollary:

Any restriction of imports ultimately reduces exports.

This is a shocking revelation to many people who want to restrict foreign competition in order to protect domestic jobs. Although it is possible to protect certain Canadian jobs by restricting foreign competition, it is impossible to make *everyone* better off by imposing import restrictions. Why? Because ultimately such restrictions lead to a reduction in employment in the export industries of the nation. For instance, as described in Example 16-4, the importation of young seminarians from Latin America to Spain allows Spaniards to work where they have comparative advantage.

Think of exports as simply another way of producing goods. International trade is merely an economic activity like all others; it is a production process that transforms exports into imports.



How has international trade benefited the music industry?

EXAMPLE 16-4 The Importation of Priests into Spain

Imports affect not only goods, but also services and the movement of labour. In Spain, some 3000 priests retire each year, but barely 250 young men are ordained to replace them. Over 70 percent of the priests in Spain are now over the age of 50. The Spanish church estimated that by 2005, the number of priests would fall to half the 20 441 who were active in Spain in 1990. The Spanish church has had to seek young seminarians from Latin America under what it calls "Operation Moses." It is currently subsidizing the travel and training of an increasing number of young Latin Americans to take over where native Spaniards have been before.

For critical analysis: How might the Spanish church induce more native Spaniards to become priests?

16.3 International Competitiveness

"Canada is falling behind." "We need to stay competitive internationally." These and similar statements are often heard in government circles when the subject of international trade comes up. There are two problems with this issue. The first has to do with a simple definition. What does "global competitiveness" really mean? When one company competes with another, it is in competition. Is Canada like one big corporation, in competition with

¹We have to modify this rule by adding that in the short run, imports can also be paid for by the sale (or export) of real and financial assets, such as land, shares, and bonds, or through an extension of credit from other countries.