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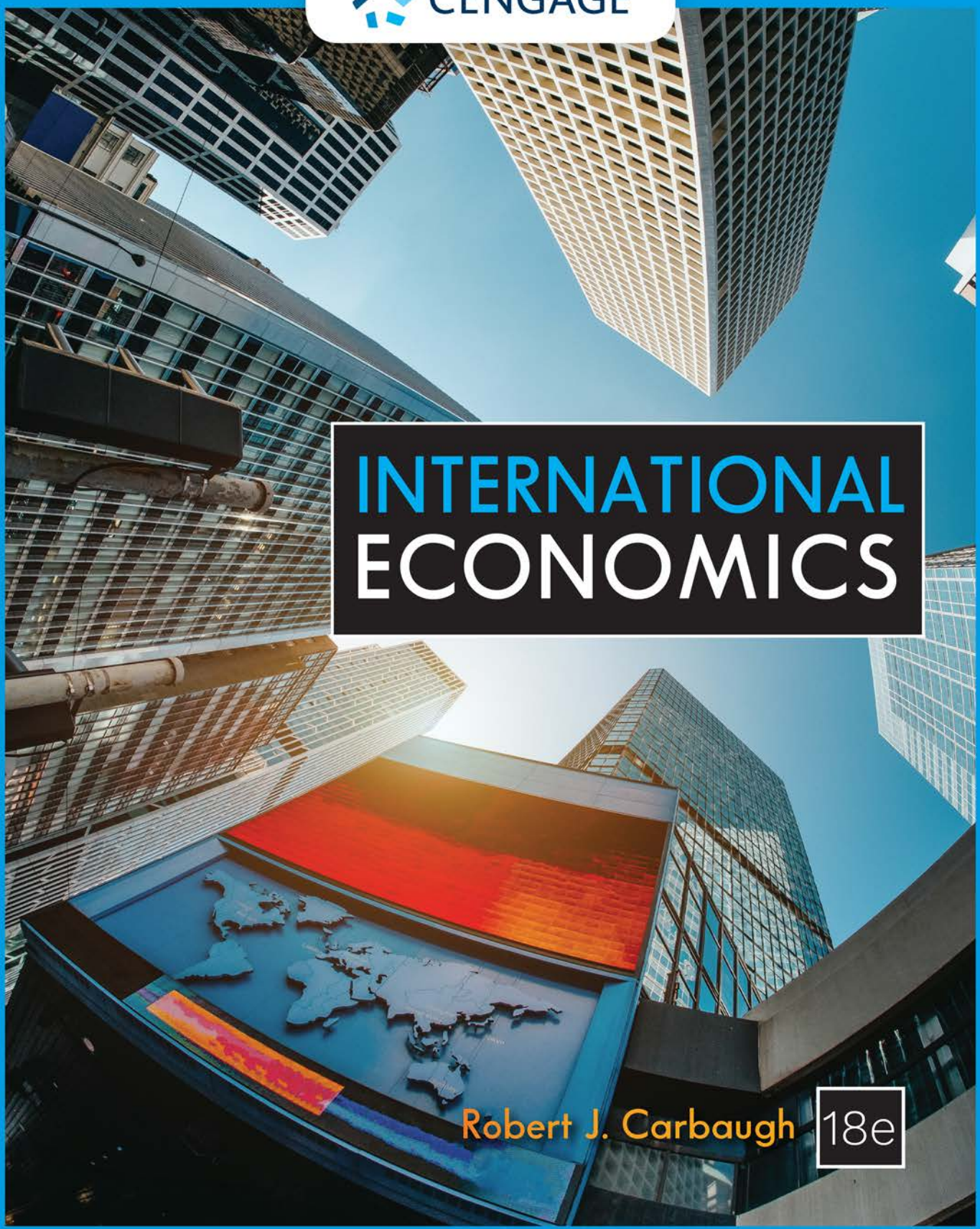

INTERNATIONAL ECONOMICS

Robert J. Carbaugh

18e

International Economics

Eighteenth Edition

Robert J. Carbaugh
Professor of Economics, Central Washington University

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Eighteenth Edition
Robert J. Carbaugh

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Preface

I believe the best way to motivate students to learn a subject is to demonstrate how it is used in practice. The first seventeen editions of *International Economics* reflected this belief and were written to provide a serious presentation of international economic theory with an emphasis on current applications. Adopters of these editions strongly supported the integration of economic theory with current events.

The eighteenth edition has been revised with an eye toward improving this presentation and updating the applications as well as including the latest theoretical developments. Like its predecessors, this edition is intended for use in a one-quarter or one-semester course for students having no more background than principles of economics. This book's strengths are its clarity, organization, and applications that demonstrate the usefulness of theory to students. The revised and updated material in this edition emphasizes current applications of economic theory and incorporates recent theoretical and policy developments in international trade and finance. Here are some examples.

International Economics Themes

This edition highlights five current themes that are at the forefront of international economics:

Globalization of Economic Activity

- COVID-19 and the global economy—Ch. 1 and 15
- Red Wing Shoe Company faces challenges when producing in the United States—Ch. 1
- Industrial robots and job losers—Ch. 2
- Trump's "America First" policy and globalization—Ch. 1
- Stanley Black and Decker move back to the United States—Ch. 1
- Is international trade an opportunity or a threat to workers?—Ch. 1
- Is international trade responsible for the loss of American jobs?—Ch. 3
- Shifting competitiveness in shipping routes—Ch. 3
- How containers revolutionized the world of shipping—Ch. 3
- Factor mobility, exit barriers, and trade—Ch. 2
- Dynamic gains from digital trade—Ch. 2
- Wooster, Ohio, bears brunt of globalization—Ch. 2
- Comparative advantage and global supply chains—Ch. 2
- Caterpillar bulldozes Canadian locomotive workers—Ch. 9
- Diesel engines and gas turbines as engines of growth—Ch. 1
- Waves of globalization—Ch. 1
- Constraints imposed by capital flows on the choice of an exchange rate system—Ch. 15

Free Trade and Protectionism

- Joe Biden and buy American laws—Ch. 5
- American boat makers tread water under Trump—Ch. 4

- Does trade with China take away blue-collar American jobs?—Ch. 3
- Would a tariff wall protect American jobs?—Ch. 4
- Donald Trump's border tax: How to pay for the wall—Ch. 4
- Vaughan Basset Furniture and dumping—Ch. 5
- United States lifts its restrictions on oil exports—Ch. 6
- U.S. Export-Import Bank avoids shutdown—Ch. 6
- Whirlpool agitates for antidumping tariffs on clothes washers—Ch. 5
- Wage increases and China's trade—Ch. 3
- Government procurement policies and buy American—Ch. 5
- Carbon tariffs—Ch. 6
- Carrier agrees to keep jobs in Indiana—Ch. 6
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- WTO rules against subsidies to Boeing and Airbus—Ch. 6
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- China's hoarding of rare earth metals declared illegal by WTO—Ch. 6
- The environment and free trade—Ch. 6

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- Made in China 2025—Ch. 7
- Forced technology transfer and China—Ch. 7
- Russia hit by sanctions over Ukraine—Ch. 6
- U.S. economic sanctions and Iran—Ch. 6
- China's economic challenges—Ch. 7
- U.S.-Mexico tomato dispute—Ch. 8
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- Does foreign aid promote the growth of developing countries?—Ch. 7
- The globalization of intellectual property rights—Ch. 7
- Microsoft scorns China's piracy of software—Ch. 7
- China's export boom comes at a cost: How to make factories play fair—Ch. 7
- Do U.S. multinationals exploit foreign workers?—Ch. 9

Liberalizing Trade: The WTO versus Regional Trading Arrangements

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- Britain's exit from the European Union—Ch. 8
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- Computer software programs and arbitrage—Ch. 11
- Foreign currency trading becomes automated—Ch. 11

- Is Trump's trade doctrine misguided?—Ch. 10
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Organizational Framework: Exploring Further Sections

Although instructors generally agree on the basic content of the international economics course, opinions vary widely about what arrangement of material is appropriate. This book is structured to provide considerable organizational flexibility. The topic of international trade relations is presented before international monetary relations, but the order can be reversed by instructors choosing to start with monetary theory. Instructors can begin with Chapters 10–15 and conclude with Chapters 2–9. Those who do not wish to cover all the material in the book can easily omit all or parts of Chapters 6–9 and Chapters 14–15 without loss of continuity.

The eighteenth edition streamlines its presentation of theory to provide greater flexibility for instructors. This edition uses online *Exploring Further* sections to discuss more advanced topics. By locating the *Exploring Further* sections online rather than in the textbook, as occurred in previous editions, more textbook coverage can be devoted to contemporary applications of theory. The *Exploring Further* sections consist of the following:

- Comparative advantage in money terms—Ch. 2
- Indifference curves and trade—Ch. 2
- Offer curves and the equilibrium terms of trade—Ch. 2
- The specific-factors theory—Ch. 3
- Offer curves and tariffs—Ch. 4
- Tariff-rate quota welfare effects—Ch. 5
- Export quota welfare effects—Ch. 5
- Welfare effects of strategic trade policy—Ch. 6
- Government procurement policy and the European Union—Ch. 8
- Economies of scale and NAFTA—Ch. 8
- Techniques of foreign-exchange market speculation—Ch. 11
- A primer on foreign-exchange trading—Ch. 11
- Fundamental forecasting–regression analysis—Ch. 12
- Income adjustment mechanism—Ch. 13
- Exchange-rate pass-through—Ch. 14

To access the *Exploring Further* sections, go to www.cengagebrain.com.

Supplementary Materials

For Instructors

PowerPoint Slides The eighteenth edition also includes PowerPoint slides. These slides can be easily downloaded from cengage.com. Slides may be edited to meet individual needs. They may also serve as a study tool for students.

Instructor's Manual To assist instructors in the teaching of international economics, there is an *Instructor's Manual* that accompanies the eighteenth edition, available at cengage.com.

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I would appreciate any comments, corrections, or suggestions that faculty or students wish to make so I can continue to improve this text in the years ahead. Please contact me! Thank you for permitting this text to evolve to the eighteenth edition.

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About the Author

When students take my economics courses at Central Washington University, on the first day of class I ask them to stand up, go around the classroom, and meet all of the other students in the class. I feel that we are a community of learners and that getting to know each other is very important. So allow me to tell you a little about myself and how I became the author of *International Economics*.

I was born in the year that the famous British economist, John Maynard Keynes died (you can look it up if you wish). I proudly remind my fellow economists that this allows me to be the successor of Keynes, and that since that time all great ideas come from me. However, I can't figure out why they are not impressed with my conclusion—to me, it seems obvious. But it should be noted that I was born without much hair, and I maintain this characteristic even today.

Growing up in Spokane, Washington, I came from a family of Mom and Dad and five brothers and sisters. We lived in a modest three-bedroom house with one bathroom and bunk beds for the kids. It was at this time that I first learned about productivity in terms of not tying up the bathroom. Also, I enthusiastically played baseball from little-league through high school. I was a pitcher who threw a fastball (it wasn't that fast), a roundhouse curveball, and a change-up. Being able to hit for a high percentage, I played left field while not pitching. I also played club hockey, competed in local golf tournaments, and eventually got into running 10K races.

As for music, 1950s rock was fun. Looking back in life, I wish that I had learned to play a saxophone so I could have played in a 50s rock band. However, the folk music of the late 1950s and 1960s had the biggest musical influence on my life, and it still does. Without musical background, my friends and I bought cheap guitars and learned how to play folk songs while listening to 33 1/3 LPs (not CDs) by groups such as the Kingston Trio, Brothers Four, and New Christy Minstrels. One of my friends became the banjo player with the Brothers Four, which still makes CDs and plays at concerts worldwide.

By the time I went to Gonzaga University, I was becoming quite serious about my education, and I enjoyed being challenged by my professors and fellow students. To help finance my college education, I worked at many part-time jobs: I washed dishes at the student dining hall, pumped gas and performed mechanical work at gasoline stations, stocked bottles of liquor on the shelves of the Garland Liquor Store, drove a delivery truck with cement blocks for the Spokane Block Co., bailed hay for farmers, and so on. These were learning experiences. In 1969 I graduated from Gonzaga with a bachelor's degree in economics and a minor in philosophy/theology. It was at this time that I met my wife, Cathy—we now have four daughters and nine grandchildren.

While attending Lewis and Clark High School, I thought about becoming a high school social studies teacher. But along came economics classes at Gonzaga and I found a college major that I was very excited about. During my junior year, one of my professors had to miss two of his principles of economics classes. After my pleading with him, he allowed me to be his substitute teacher, and I presented lectures dealing with supply and demand. A "light bulb" turned on in my head, and I knew what career I wanted to pursue—a college economics professor. But this required getting an advanced degree in economics. So off

I went to Colorado State University where I combined graduate education with a great outdoors environment. In the high altitude of Fort Collins, Colorado (5,003 feet above sea level), I could drive a golf ball a long way. I received my Ph.D. in economics in 1974.

My first college teaching job was at South Dakota State University in 1974 where I learned a lot about growing corn. This was followed by my teaching for ten years at University of Wisconsin—Eau Claire where I learned about the Green Bay Packers, brats and cheese, minus 40 degree winters, and humid summers. I returned to my home state of Washington in 1985 to teach at Central Washington University. Two memorable experiences include being featured on *Saturday Night Live* in 2000, when an actor impersonating Al Gore read from my *International Economics* textbook, and lecturing at Oxford University in England in 2004.

Concerning my *International Economics* textbook, I have not matched the success of J.K. Rowling and her *Harry Potter* books—Rowling's magic is much better than mine. Yet I identify with some of her early experiences as an author, and perhaps the experiences of other authors. Aside from the difficulty in finding a house that was willing to publish our books, we had to learn how to deal with editors, marketing staff, and the business aspects of publishing. Success did not occur instantly and it was not easy.

My writing *International Economics* was motivated by my former students at the University of Wisconsin—Eau Claire in 1975. When I asked them what they hoped to get out of my international economics class, they indicated that they wanted to learn about the burning international economic issues at that time and that the materials used in the class should be concise, timely, and informative. Therefore, I set out to write the manuscript for *International Economics* long hand on a yellow writing pad (there were no computers at that time). Then I typed the manuscript using an ancient, black-colored Underwood typewriter with no self-correct mechanism. When a typing error occurred, I brushed white-colored Liquid Paper over the typo; I had to wait for it to dry before typing the correct key. Ugh, what an effort! But life seemed good at that time, particularly because I thought that I was on the cutting edge. This resulted in the first edition of *International Economics* appearing in 1980. Since that time, I have been most fortunate to have many opportunities to revise and improve this text, resulting in the current eighteenth edition. It has been a long journey but also a labor of love. I hope that you find this edition to be interesting and user friendly. With best wishes.

Bob Carbaugh

P.S. My students have mistakenly identified me as driving a Hummer around Central Washington University. Rather than driving a Hummer, I usually walk or ride a single-speed, imported Schwinn bike (Schwinns are now manufactured in China) to and from my office. When I do drive, it is usually in a rapidly deteriorating 1997 Dodge Caravan—something appropriate for an aging and cranky economics professor.

CHAPTER 1

The International Economy and Globalization

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In today's world, no nation exists in economic isolation. All aspects of a nation's economy—its industries, service sectors, levels of income and employment, and living standard—are linked to the economies of its trading partners. This linkage takes the form of international movements of goods and services, labor, business enterprise, investment funds, and technology. Indeed, national economic policies cannot be formulated without evaluating their probable impacts on the economies of other countries.

The high degree of **economic interdependence** among today's economies reflects the historical evolution of the world's economic and political order. At the end of World War II, the United States was economically and politically the most powerful nation in the world, a situation expressed in the saying, "When the United States sneezes, the economies of other nations catch a cold." But with the passage of time, the U.S. economy has become increasingly integrated into the activities of foreign countries.

An example of this interdependence was the coronavirus pandemic of 2019–2021, which was the global spreading of a new disease, COVID-19, for which people did not have immunity. It began in China in late 2019 and moved throughout the world at an alarming speed. Several million people died because of this virus, which resulted in organ failure and breathing failure. Many governments attempted to slow the transmission of this disease by minimizing close contact between individuals. Methods included quarantines, travel restrictions, and the closing of businesses, schools, stadiums, theaters, shopping centers, and restaurants. This resulted in many economies falling into recession and high levels of unemployment. Indeed, "when China sneezed, other countries caught a cold."

The Great Recession of 2007–2009 provides another example of economic interdependence. The immediate cause of the recession was a collapse of the U.S. housing market and the resulting surge in mortgage loan defaults. Hundreds of billions of dollars in losses on these mortgages undermined the financial institutions that originated and invested in them. Credit markets froze, banks would not lend to each other, and businesses and households

could not get loans needed to finance day-to-day operations. This shoved the economy into recession. Soon the crisis spread to Europe whose banks were drawn into the financial crisis in part because of their exposure to defaulted mortgages in the United States. The financial crisis also spread to emerging economies such as Iceland and Russia that generally lacked the resources to restore confidence in their economic systems. It is no wonder that "when the United States sneezed, other economies caught a cold."

Recognizing that world economic interdependence is complex and its effects uneven, the economic community has taken steps toward international cooperation. Conferences devoted to global economic issues have explored the avenues through which cooperation could be fostered between industrial and developing nations. The efforts of developing nations to reap larger gains from international trade and to participate more fully in international institutions have been hastened by the impact of the global recession, industrial inflation, and the burdens of high-priced energy.

Economic interdependence also has direct consequences for a student taking an introductory course in international economics. As consumers, we can be affected by changes in the international values of currencies. Should the Japanese yen or British pound appreciate against the U.S. dollar, it would cost us more to purchase Japanese television sets or British automobiles. As investors, we might prefer to purchase Swiss securities if Swiss interest rates rise above U.S. levels. As members of the labor force, we might want to know whether the president plans to protect U.S. steelworkers and autoworkers from foreign competition.

In short, economic interdependence has become a complex issue in recent times, often resulting in strong and uneven impacts among nations and among sectors within a given nation. Business, labor, investors, and consumers all feel the repercussions of changing economic conditions and trade policies in other nations. Today's global economy requires cooperation on an international level to cope with the myriad issues and problems.

Economic Interdependence: Red Wing Shoe Company Faces Challenges When Producing in the United States

In the early 1900s, German immigrant Charles Beckman saw the need for footwear specifically designed for the rugged work of farming, mining, logging, and construction. These rigorous jobs require boots that are durable enough to survive a tough working environment as well as being comfortable for those who wear them. In 1905 Beckman founded the Red Wing Shoe Company, headquartered in Red Wing, Minnesota, to produce high-end work boots that satisfy this need. By the 1980s, Red Wing expanded its product lines beyond work boots to include household shoes. Today, Red Wing's footwear is used by people in more than 100 countries throughout the world, a testimony to the company's years of hard work and dedication to quality.[1]

Although Red Wing is committed to manufacturing footwear in the United States, it has encountered stiff competition from other American footwear firms that have moved overseas to take advantage of lower labor costs. For decades, major shoe companies such as Nike and Timberland have relied on a network of factories throughout the world that manufacture more than 90 percent of the footwear purchased by Americans. Therefore, Red Wing has become an international firm that produces most of its household shoes in countries such as China while producing its high-end work boots in plants located in Red Wing, Minnesota; Potosi, Missouri; and Danville, Kentucky, which use imported components such as soles and laces from South Korea, Vietnam, and China.

[1]Ruth Simon, "Red Wing, Iconic U.S. Shoe Maker, Labors Mightily to Bring Production Home," *The Wall Street Journal*, July 12, 2019; Eric Wilson, "At Their Feet, Crafted by Hand," *The New York Times*, April 20, 2011; John Manning, "Red Wing Shoes is a Family Affair," *Minneapolis-St. Paul Business Journal*, November 2, 1997; "Red Wing Shoe Company, Inc. History," *International Directory of Company Histories*, Vol. 30, St. James Press, 2000.

In 2019, Red Wing reversed its movement toward globalization when it introduced a new line of work boots that are produced in the United States. This was inspired by the firm's concerns about difficulties encountered when locating production facilities abroad as well as increased domestic opposition to free-trade policies, including the possibility of higher U.S. tariffs placed on imports of footwear. Also, Red Wing realized that producing boots in the United States shortens delivery times to American consumers, resulting in less need to maintain expensive inventories of boots. It also allows Red Wing to quickly react to surges in demand, such as for waterproof boots with safety toes following a hurricane.

However, establishing more manufacturing in the United States has presented challenges for Red Wing because much of its supply chain has been moved abroad. For example, the production of Red Wing work boots combines technology and craftsmanship, and finding skilled, experienced craft workers is difficult. Scarcity of such workers has forced Red Wing to look for less experienced workers that have craft skills in other parts of their lives such as building farm equipment, restoring cars, or sewing quilts. However, training these workers to produce high-end work boots is costly and requires much time.

Another problem for Red Wing is that the wages it pays to its American workers are higher than those paid to competing workers overseas. To maintain competitiveness, Red Wing has increasingly automated its factories to reduce the labor content of its work boots. For example, Red Wing employs machines that use artificial intelligence to determine how best to cut a hide for the leather needed to produce boots, automated machines that cut leather, and computerized stitchers that allow for continuous sewing. Yet skilled craftsmen are needed to operate these machines.

Red Wing recognizes that by adhering to the principle of "Made in the USA," the firm has likely left some money on the table. Nevertheless, as a privately held business, whose ownership is dominated by local family members, Red Wing maintains that it is not all about maximizing profits. It notes that although the company needs to earn money to finance investment, it runs its business so as to recognize all interests, including its investors, its workers and the community at large.

International Trade Application

Diesel Engines and Gas Turbines as Movers of Globalization

When you consider internal combustion engines, you probably think about the one under the hood of your car or truck, the gasoline-powered engine. Although this engine is good for moving you around, it is not adequate for moving large quantities of goods and people long distances; global transportation requires more massive engines.

What makes it possible for us to transport billions of tons of raw materials and manufactured goods from country to country? Why are we able to fly almost anywhere in the world in a Boeing or Airbus jetliner within 24 hours? Two notable technical innovations that have driven globalization are diesel engines, which power cargo ships, locomotives, and large trucks, and natural gas-fired turbines that power planes and other means of transportation.

The diesel engine was first developed to the point of commercial success by Rudolf Diesel in the 1890s. After graduating from Munich Polytechnic in Germany, Diesel became a refrigerator engineer, but his true love lay in engine design. He developed an engine that converted the chemical energy available in diesel fuel into mechanical energy that could power trucks, cargo ships, and so on. Today, more than 90 percent of global trade in manufactured goods and raw materials is transported with the use of diesel engines.

The natural gas-fired turbine is another driver of globalization. A gas turbine is a rotary engine that extracts energy from a flow of combustion gas. This energy produces a power thrust that sends an airplane into the sky. It also turns a shaft or a propeller that moves locomotives and ships. The gas turbine was invented by Frank Whittle, a British engineer, in the early 1900s. Although Wilbur and Orville Wright are the first fathers of flight,

(continued)

Whittle's influence on global air travel should not be underestimated.

These two engines, diesels and turbines, have become important movers of goods and people throughout the world. They have reduced transportation costs to such an extent that distance to the market is a much smaller factor affecting the location of manufacturers or the selection of the origin of imported raw materials. Indeed, neither international trade nor intercontinental flights would have realized such levels of speed, reliability, and affordability that have been achieved had it not been for diesel engines and gas turbines. Although diesels and turbines have caused environmental problems, such as air and water pollution, these machines will likely not disappear soon.

What do you think? How did diesel engines and gas turbines promote international trade among nations?

Sources: Vaclav Smil, *Prime Movers of Globalization*, MIT Press, Cambridge, Massachusetts, 2010; and Nick Schulz, "Engines of Commerce," *The Wall Street Journal*, December 1, 2010.

1-1 Globalization of Economic Activity

When listening to the news, we often hear about globalization. What does this term mean? **Globalization** is the process of greater interdependence among countries and their citizens. It consists of the increased interaction of product and resource markets across nations via trade, immigration, and foreign investment—that is, via international flows of goods and services, people, and investments in equipment, factories, stocks, and bonds. It also includes noneconomic elements such as ideas, culture, and the environment. Simply put, globalization is political, technological, and cultural, as well as economic.

In terms of people's daily lives, globalization means that the residents of one country are more likely now than they were 50 years ago to consume the products of another country, invest in another country, earn income from other countries, talk by telephone to people in other countries, visit other countries, know that they are being affected by economic developments in other countries, and know about developments in other countries.

What forces are driving globalization?[2] The first and perhaps most profound influence is technological change. Since the Industrial Revolution of the late 1700s, technical innovations have led to an explosion in productivity and slashed transportation costs. The steam engine preceded the arrival of railways and the mechanization of a growing number of activities hitherto reliant on muscle power. Later discoveries and inventions such as electricity, the telephone, the automobile, container ships, and pipelines altered production, communication, and transportation in ways unimagined by earlier generations. More recently, rapid developments in computer information and communications technology have further shrunk the influence of time and geography on the capacity of individuals and enterprises to interact and transact around the world. For services, the rise of the Internet has been a major factor in falling communication costs and increased trade. As technical progress has extended the scope of what can be produced and where it can be produced, and advances in transport technology have continued to bring people and enterprises closer together, the boundary of tradable goods and services has been greatly extended.

Also, continuing liberalization of trade and investment has resulted from multilateral trade negotiations. For example, tariffs in industrial countries have come down from high double digits in the 1940s to about 4 percent by 2020. At the same time, most quotas on trade, except for those imposed for health, safety, or other public policy reasons, have been removed. Globalization has also been promoted through the widespread liberalization of investment transactions and the development of international financial markets. These factors have facilitated international trade through the greater availability and affordability of financing.

[2]World Trade Organization, *Annual Report*, 1998, pp. 33–36.

Lower trade barriers and financial liberalization have allowed more companies to globalize production structures through investment abroad, which in turn has provided a further stimulus to trade. On the technology side, increased information flows and the greater tradability of goods and services have profoundly influenced production location decisions. Businesses are increasingly able to locate different components of their production processes in various countries and regions and still maintain a single corporate identity. As firms subcontract part of their production processes to their affiliates or other enterprises abroad, they transfer jobs, technologies, capital, and skills around the globe.

1-2 Waves of Globalization

The history of globalization is related to the evolution of trade.[3] Centuries ago, when transportation was difficult, international trade was limited to the most expensive items such as silk or spices. With the industrial revolution in the late 1700s and 1800s, mass production and improved transportation made international trade much easier, and most goods became tradable. The Industrial Revolution saw the rise of large industries, with workers performing specialized tasks and increasingly supplanting traditional craftsmen. Huge factories were established that could serve distant markets thanks to a new network of railways, intercity roads, and ocean freight.

By the 1990s, a new phenomenon known as *global manufacturing* was again increasing the volume and diversity of products being traded. Global manufacturing is characterized by the geographical fragmentation of productive processes and the offshoring of industrial tasks. Trade in intermediate goods, such as parts and components, has encouraged the specialization of different economies, resulting in a trade in tasks that adds value along the production chain. Specialization is no longer founded on the comparative advantage of countries in producing a final good, but on the comparative advantage of tasks that these countries complete at a specific step along the global value chain. Let us consider the major waves of globalization that have occurred in recent history, as summarized in **Table 1.1**.

Table 1.1

Waves of Globalization

	First Wave	Second Wave	Third Wave
Time Period	1870–1914	1944–1980	1980–Present
Technology	Steam engine Telegraph Electricity Internal combustion engine	Container shipping Jet planes Communication satellites Television	Personal computers Internet Mobile phones
Political Leadership	Great Britain economic leader	U.S. economic leader	Multipolar: United States, European Union, China
Commerce	Initially free trade but rising protectionism	Gradually decreasing tariffs	Freer trade spreading followed by rising protectionism
Capital movements	Free	Regulated	Free
Migration	Free migration	Regulated migration	Regulated migration

Source: Drawn from Anders Johnson, *The Three Waves of Globalisation*, Nordregio, Stockholm, Sweden at http://archive.nordregio.se/en/Metameny/About-Nordregio/Journal-of-Nordregio/2008/Journal-of-Nordregio-no-1-2008/The-Three-Waves-of-Globalisation/index.html

[3]This section draws from World Bank, *Globalization, Growth and Poverty: Building an Inclusive World Economy*, 2001.

1-2a First Wave of Globalization: 1870–1914

In the last 150 years, the first wave of global interdependence occurred from 1870 to 1914. The interdependence was sparked by decreases in tariff barriers and new technologies that resulted in declining transportation costs, such as the shift from sail to steamships and the advent of railways. The main agent that drove the process of globalization was how much muscle, horsepower, wind power, or, later on, steam power a country had and how creatively it could deploy that power. This wave of globalization was largely driven by European and American businesses and individuals. Therefore, exports as a share of world income nearly doubled to about 8 percent while per capita incomes, which had risen by 0.5 percent per year in the previous 50 years, rose by an annual average of 1.3 percent. Great Britain was the world's leading economy during this era, and its currency, the pound, was the generally accepted currency of international business.

However, the first wave of globalization was brought to an end by World War I. Also, during the Great Depression of the 1930s, governments responded by practicing protectionism: a futile attempt to enact tariffs on imports to shift demand into their domestic markets, thus promoting sales for domestic companies and jobs for domestic workers. For the world economy, increasing protectionism caused exports as a share of national income to fall to about 5 percent, thereby undoing 80 years of technological progress in transportation.

1-2b Second Wave of Globalization: 1945–1980

The horrors of the retreat into nationalism provided renewed incentive for internationalism following World War II. During the late 1940s, the United States helped construct a global economic order that was governed by mutually accepted rules and overseen by multilateral institutions. The goal was to develop a better world with countries cooperating with each other to foster peace and prosperity. Free trade and the rule of law became fundamental principles of this system. The institutions that were established include the following:

International Monetary Fund (IMF). Established in 1944, the IMF currently has 190 members. It seeks to stabilize the international monetary system by assisting countries having balance-of-payment and debt crises.

World Bank. Established in 1945, the World Bank has 189 members. It provides loans and policy advice to help developing countries improve education, health, and infrastructure.

United Nations (UN). Established in 1945, the UN consists of 193 member countries. It attempts to prevent conflict with global security standards and assistance for humanitarian crises.

World Trade Organization (WTO). This organization was initially established in 1948 as the General Agreement on Tariffs and Trade (GATT). In 1995 GATT was replaced by the WTO, which now has 164 member countries. It establishes rules for international trade and judicially settles trade disputes among member countries.

North Atlantic Treaty Organization (NATO). This organization was established in 1949 and currently has 30 members. NATO's original purpose was to defend member nations from threats by communist countries, including the Soviet Union.

During the second wave of globalization, most developing countries did not participate in the growth of global trade in manufacturing and services. The combination of continuing trade barriers in developed countries and unfavorable investment climates and antitrade policies in developing countries confined them to dependence on agricultural and natural resource products.

Although the second globalization wave succeeded in increasing per capita incomes within the developed countries, developing countries as a group were being left behind. World inequality fueled the developing countries' distrust of the existing international trading system that seemed to favor developed countries. Therefore, developing countries became increasingly vocal in their desire to be granted better access to developed country markets for manufactured goods and services, thus fostering additional jobs and rising incomes for their people.

1-2c Third Wave of Globalization

The third wave of globalization that began in about 1980 is distinctive. First, developing countries such as China, India, and Brazil broke into the world markets for manufacturers. Second, other developing countries became increasingly marginalized in the world economy and realized decreasing incomes and increasing poverty. Third, international capital movements, which were modest during the second wave of globalization, again became significant.

Of major significance for this wave of globalization is that some developing countries succeeded for the first time in harnessing their labor abundance to provide them with a competitive advantage in labor-intensive manufacturing. Examples of developing countries that have shifted into manufacturing trade include Bangladesh, Malaysia, Turkey, Mexico, Hungary, Indonesia, Sri Lanka, Thailand, and the Philippines. This shift is partly because of tariff cuts that developed countries have made on imports of manufactured goods. Also, many developing countries liberalized barriers to foreign investment that encouraged firms such as Ford Motor Company to locate assembly plants within their borders. Moreover, technological progress in transportation and communications permitted developing countries to participate in international production networks.

Another aspect of the most recent wave of globalization is foreign outsourcing—that is, when certain aspects of a product's manufacture are performed in more than one country. As travel and communication became easier in the 1980s, manufacturing increasingly moved to wherever costs were the lowest. U.S. companies shifted the assembly of autos and the production of shoes, electronics, and toys to low-wage developing countries. This shift resulted in job losses for blue-collar American workers producing these goods and cries for the passage of laws to restrict outsourcing.[4]

The Boeing 787 Dreamliner provides an example of trade occurring between the different participants of a production chain. For its entire history, Boeing has guarded its techniques for designing and mass producing commercial jetliner wings. Also, final assembly of the 787 has occurred at Boeing's plants in Seattle, Washington, and Charleston, South Carolina. For economic reasons, Boeing subcontracts the production of parts and components to various American and foreign producers. For example, passenger doors come from France, tires come from Japan, cargo doors come from Sweden, and so on.

Moreover, the third wave of globalization has increasingly become an "age of automation." **Automation** is the creation of technology, such as robots, that are used to produce and deliver various goods and services. It performs jobs that were previously performed by humans. Automation promotes quality and efficiency while reducing the importance of labor costs. Other factors, such as the speed at which firms can get their goods to consumers, access to resources, and the skills that workers possess are more significant. As automation technologies decrease the significance of labor costs, some companies have

[4]Susan Lund and Laura Tyson, "Globalization Is Not in Retreat," *Foreign Affairs*, May–June, 2018 and Susan Lund, James Manyika, and Michael Spence, "The Global Economy's Next Winners," *Foreign Affairs*, July–August 2019.

decided to move some production closer to end markets in advanced countries than to maintain production in low-wage developing countries.[5]

1-2d Is Globalization in Decline?

During the Great Recession of 2007–2009 and its aftermath, the tide of globalization receded. Not only did global trade decline but also cross-border bank lending was down, as were international capital flows. Moreover, immigration in the United States and Western Europe witnessed a deepening public backlash. Finally, nationalist policies were on the rise as seen in the United Kingdom's proceedings to remove itself from the European Union and the United States' pulling out of the proposed Trans-Pacific Partnership on President Donald Trump's third day in the Oval Office in 2017. When Trump became president, he declared that his policies would be in favor of America First rather than globalism. To show that he was serious about his America First policy, Trump imposed tariffs on a variety of products imported from China and other countries. In turn, retaliatory tariffs were levied against American exports.

For many countries that have traditionally favored globalization, such as the United Kingdom and the United States, political discussion about trade has shifted from an emphasis on the economic benefits to apprehensions about job loss, dislocation, deindustrialization, and inequality. The once held view that trade is a win–win situation has given way to view that trade is a win–lose situation (zero-sum game) and calls for increased barriers to trade.

Yet even as the critics of globalization have established new barriers and turned away from free-trade agreements, globalization has been proceeding, but along new avenues. In particular, the global economy is rebalancing as China and other countries with emerging markets move to the next stage of economic development. After several decades of participating in global trade primarily as producers of natural-resource products and labor-intensive manufactured goods, emerging countries have become major sources of demand for products such as automobiles and other manufactured goods. Moreover, in its previous form, globalization was largely based on trade in goods and services and led by Western nations like the United States. Today, globalization is being driven by digital technology from e-mailing and video sharing to file sharing, and it is increasingly being led by China and other emerging nations. The countries that led the world during the past era of globalization may not necessarily be the same ones that prosper in the next era. **Table 1.2** identifies possible risks of backpeddling on globalization.

1-3 The United States as an Open Economy

The U.S. economy has become increasingly integrated into the world economy (and become a more open economy) in recent decades. Such integration involves several dimensions that include the trade of goods and services, financial markets, the labor force, ownership of production facilities, and the dependence on imported materials.

1-3a Trade Patterns

To appreciate the globalization of the U.S. economy, go to a local supermarket. Almost any supermarket doubles as an international food bazaar. Alongside potatoes from Idaho and beef from Texas, stores display melons from Mexico, olive oil from Italy, coffee from Colombia, cinnamon from Sri Lanka, wine and cheese from France, and bananas from Costa Rica. **Table 1.3** shows a global fruit basket that is available for American consumers.

[5]McKinsey Global Institute, *Globalization in Transition: The Future of Trade and Value Chains*, 2019, Boston, MA.

Table 1.2

Risks of Backpedaling on Globalization*

U.S. Trade Policy	Risks
Participating in a trade war with continuous rounds of escalating tariffs	Tariff retaliation harms American exports. Both countries suffer when the volume of trade falls. . . . Trade wars create uncertainty for businesses, which causes investment spending to fall, thus lessening the economy's ability to grow.
Withdrawing from free-trade agreements such as the Trans-Pacific Partnership	May place America at a competitive disadvantage as other countries form trade pacts with each other. Results in rising tariffs on American exports that dampens sales abroad. Detracts from America's role as a leader in international cooperation, making it harder to achieve agreements on the environment, immigration, and national security.
Levying tariffs to protect American manufacturing jobs at particular firms	The few jobs that are saved come at a high cost to domestic consumers.
Violating rules of the World Trade Organization to protect America interests	Weakens the rules-based trading system that many countries rely on to settle trade disputes and maintain open markets.
Restricting imports from particular countries in an attempt to decrease bilateral trade deficits	Trading partners may retaliate. Reductions in bilateral trade deficits are not a good indicator of economic development.

*For an expanded discussion of this topic, refer to William Melancon, *What is Globalization*? Peterson Institute for International Economics, Washington, D.C., October 29, 2018.

Table 1.3

The Fruits of Free Trade: A Global Fruit Basket

On a trip to the grocery store, consumers can find goods from all over the globe.

Fruit	Country	Fruit	Country
Apples	New Zealand	Limes	El Salvador
Apricots	China	Oranges	Australia
Bananas	Ecuador	Pears	South Korea
Blackberries	Canada	Pineapples	Costa Rica
Blueberries	Chile	Plums	Guatemala
Coconuts	Philippines	Raspberries	Mexico
Grapefruit	Bahamas	Strawberries	Poland
Grapes	Peru	Tangerines	South Africa
Kiwifruit	Italy	Watermelons	Honduras
Lemons	Argentina		

Source: From "The Fruits of Free Trade," *Annual Report*, Federal Reserve Bank of Dallas, 2002, p. 3.

The grocery store isn't the only place Americans indulge their taste for foreign-made products. We buy cameras and cars from Japan, shirts from Bangladesh, DVD players from South Korea, paper products from Canada, and fresh flowers from Ecuador. We get oil from Kuwait, steel from China, computer programs from India, and semiconductors from Taiwan. Most Americans are well aware of our desire to import, but they may not realize that the United States ranks as the world's greatest exporter by selling personal computers, bulldozers, jetliners, financial services, movies, and thousands of other products to just about all parts of the globe. International trade and investment are facts of everyday life.

As a rough measure of the importance of international trade in a nation's economy, we can look at that nation's exports and imports as a percentage of its gross domestic product (GDP). This ratio is known as **openness**.

$$\text{Openness} = \frac{(\text{Exports} + \text{Imports})}{\text{GDP}}$$

Table 1.4 shows measures of openness for selected nations as of 2018. In that year, the United States exported 12 percent of its GDP while imports were 15 percent of GDP; the openness of the U.S. economy to trade equaled 27 percent. Although the U.S. economy is significantly tied to international trade, this tendency is even more striking for many smaller nations, as shown in the table. Large countries tend to be less reliant on international trade because many of their companies can attain an optimal production size without having to export to foreign nations. Therefore, small countries tend to have higher measures of openness than do large ones.

Table 1.4

Exports and Imports of Goods and Services as a Percentage of Gross Domestic Product (GDP), 2018

Country	Exports as a Percentage of GDP	Imports as a Percentage of GDP	Exports Plus Imports as a Percentage of GDP
Netherlands	84	73	157
Germany	47	40	87
Canada	32	34	66
United Kingdom	30	31	61
China	20	19	39
Japan	18	17	35
United States	12	15	27

Source: From The World Bank Group, *World Development Indicators: Data Bank*, 2019, available at http://www.worldbank.org

What has been the trend of the openness of the U.S. economy? One significant trend is that the United States became less open to international trade between 1890 and 1950. Openness was relatively high in the late 1800s because of the rise in world trade resulting from technological improvements in transportation (steamships) and communications (trans-Atlantic telegraph cable). However, two world wars and the Great Depression of the 1930s caused the United States to reduce its dependence on trade, partly for national security reasons and partly to protect its home industries from import competition. Following World War II, the United States and other countries negotiated reductions in trade barriers that contributed to rising world trade. Technological improvements in

shipping and communications also bolstered trade and the increasing openness of the U.S. economy.

With which nations does the United States conduct trade? China, Canada, Mexico, and Japan head the list as shown in **Table 1.5**.

Table 1.5

Top Eight U.S. Trading Partners, 2018

Country	Value of U.S. Exports of Goods (in Billions of Dollars)	Value of U.S. Imports of Goods (in Billions of Dollars)	Total Value of Trade (in Billions of Dollars)
China	120.1	539.7	659.8
Canada	298.8	318.8	617.6
Mexico	265.4	346.1	611.5
Japan	75.2	142.4	217.6
Germany	57.8	125.8	183.6
United Kingdom	66.3	60.8	127.1
South Korea	33.0	45.7	78.7
France	36.6	52.4	89.0

Source: From U.S. Department of Commerce, U.S. Census Bureau, *Foreign Trade: U.S. Trade in Goods by Country*, 2019.

1-3b Labor and Capital

Besides the trade of goods and services, movements in factors of production are a measure of economic interdependence. As nations become more interdependent, labor and capital should move more freely across nations.

However, during the past 100 years, labor mobility has not risen for the United States. In 1900, about 14 percent of the U.S. population was foreign born. But from the 1920s to the 1960s, the United States sharply curtailed immigration. This curtailment resulted in the foreign-born U.S. population declining to 6 percent of the total population. During the 1960s, the United States liberalized restrictions, and the flow of immigrants increased. By 2020, about 14 percent of the U.S. population was foreign born. People from Latin America accounted for about half of this figure, while Asians accounted for another quarter. These immigrants contributed to economic growth in the United States by taking jobs in labor-scarce regions and filling the types of jobs native workers often shun.

Although labor mobility has not risen for the United States in recent decades, the country has become increasingly tied to the rest of the world through capital (investment) flows. Foreign ownership of U.S. financial assets has risen since the 1960s. During the 1970s, The Organization of Petroleum Exporting Countries (OPEC) recycled many of its oil dollars by making investments in U.S. financial markets. The 1980s also witnessed major flows of investment funds to the United States as Japan and other nations, with dollars accumulated from trade surpluses with the United States, acquired U.S. financial assets, businesses, and real estate. By the late 1980s, the United States was consuming more than it produced and became a net borrower from the rest of the world to pay for the difference. Increasing concerns were raised about the interest cost of this debt to the U.S. economy and the impact of this debt burden on the living standards of future U.S. generations. This concern remains at the writing of this book in 2021.

Globalization has also increased in international banking. The average daily volume of trading (turnover) in today's foreign exchange market (where currencies are bought and sold) is estimated at about over $6 trillion compared to $205 billion in 1986. In commercial banking, U.S. banks have developed worldwide branch networks for loans, payments, and foreign exchange trading. Foreign banks have also increased their presence in the United States, reflecting the multinational population base of the United States, the size and importance of U.S. markets, and the role of the U.S. dollar as an international medium of exchange and reserve currency. Also, securities firms have globalized their operations.

International Trade Application

COVID-19 and Globalization

The COVID-19 pandemic was a major blow to globalization. Besides causing the deaths of many people, it resulted in the sudden closure of businesses around the world, declining trade and investment, and soaring unemployment rates, thus contributing to a massive economic shock. Government policy makers scrambled to contain the damage by underwriting firms that were on the verge of bankruptcy and engaging in policies to keep people afloat through social insurance programs.

But in the years preceding the pandemic, globalization was faltering. The open system of trade that had dominated the world economy for decades had been disrupted by China's entry into the World Trade Organization in 2001 and the financial crash and Great Recession of 2007–2009. Because of this collapse, many banks and some multinational corporations pulled back, causing trade and foreign investment to decline relative to gross domestic product. Then came President Donald Trump's trade conflicts with China and other nations, which further disrupted trade and investment. By 2020, the global economy reeled from a fourth blow in 20 years as COVID-19 spread from China throughout the world, and lockdowns sealed national borders and disrupted commerce.

Shocks to economies are often discreet, affecting particular companies, industries, or countries. Examples include the September 11, 2001, terrorist attack against the United States, the 2011 earthquake in Japan, surges in raw-material prices, and strikes by labor unions. However, COVID-19 resulted in large and widespread supply shocks and demand shocks that occurred simultaneously. It was characterized by three overlapping shock waves spreading throughout the world:

- The first shock wave started with a production shutdown (supply shock) in China in 2019, followed by a collapse of domestic demand as affected workers became unemployed, lost income, and reduced consumption spending. For example, as microchip factories in China shut down, domestic customers scrambled to increase their inventories of microchips, thus amplifying the global shortage of microchips. As the virus spread, the same shocks hit other Asian countries such as South Korea and Japan.
- The second shock wave spread into Europe and other countries. For example, European manufacturers of automobile control units got hit by the Asian supply shock of decreasing production of microchips. As Europe's production of automobile control units shut down (European supply shock), European workers became unemployed and lost income, therefore cutting back on consumption spending.
- The third shock wave hammered North America. Similar to the European pattern, American auto manufacturers that require the European control units felt the impact of Asia's and Europe's supply shocks. As American auto companies shut down production, their workers faced layoffs and falling income that caused them to reduce consumption spending. In all regions, the shocks were further heightened by local transportation disruptions such as airport closings, slowdowns in shipping, and decreases in the workforce that resulted from illness and quarantine.

The COVID-19 pandemic highlighted some of the preexisting weaknesses of globalization. For the previous 20 years, global supply chains brought together factories, distributors, and consumers throughout the world. However, although international supply chains promote economic efficiency, they are vulnerable to disruption. From semiconductor producers to surgical-gown producers, companies during the coronavirus pandemic had to reassess

global production networks that proved to be susceptible to disruption.

For example, Indiana based Cummins Inc. is a producer of diesel engines that has 125 factories in 27 countries. But with natural disasters, disease, and trade wars occurring in recent years, Cummins has seen an increasing amount of risk in its global supply chains. These disruptions motivated Cummins to make its production systems less global in order to concentrate production closer to where its diesel engines are sold. However, if governments wall off from globalization large segments of their economies, costs could increase and economic growth could falter.

Many observers believe that the coronavirus pandemic will have long-lasting effects on global trade, technology, finance, and economic policy. They note that the pandemic will result in more activity being digitalized and occurring online as people work from their homes and business becomes increasingly dominated by firms having advanced intellectual property and large repositories of data. Moreover, global capitalism will likely move toward a rebalancing in which the equilibrium between efficiency and resilience will move toward the side of resilience. That is, in the post-pandemic world, more economic activity will be deemed essential for national security and thus require self-sufficiency. Therefore, there will be greater desire to bring closer to home supply chains that are massive and fragile and to diversify suppliers. Simply put, the pandemic will not terminate globalization, but it will reshape it.

Sources: Henry Curr, "The Peril and the Promise," *The Economist*, October 10, 2020; James Schlesinger, "Coronavirus Reshapes World Trade," *The Wall Street Journal*, June 20–21, 2020; Michal Lierow, Cornelius Herzog, and Stefan Blank, "Covid-19 Shocks Supply Chains," *Oliver Wyman Insights*, April 16, 2020; "Has Covid-19 Killed Globalisation?" *The Economist*, May 14, 2020.

Globalization and Competition

Although economists recognize that globalization and free trade can provide benefits to many firms, workers, and consumers, they can inflict burdens on others. Consider the cases of Eastman Kodak Company, the Schwinn Bicycle Company, and Stanley Black and Decker Company.

Globalization Forces Kodak to Reinvent Itself

Vladimir Lenin, a Russian politician, once said, "A capitalist will sell you the rope to hang him." That quote may contain an element of truth. Capitalists often invest in the technology that ruins their business, as seen in the case of Eastman Kodak Company.

Kodak is a multinational imaging and photographic equipment company headquartered in Rochester, New York. Its history goes back to 1889 when it was founded by George Eastman. During much of the 1900s, Kodak held a dominant position in the photographic equipment market. In 1976, it had a 90 percent market share of film sales and an 85 percent share of camera sales in the United States. Kodak's slogan was "You press the button and we do the rest." However, Kodak's near monopoly position resulted in a culture of complacency for its management, which resisted changing the company's strategy as global competition and new technologies emerged.

In the 1980s, Japanese competitor Fuji Photo Film Co. entered the U.S. market with lower-priced film and supplies. However, Kodak refused to believe that American consumers would ever desert its popular brand. Kodak passed on the opportunity to become the official film of the 1984 Los Angeles Olympics. Fuji won these sponsorship rights, which provided it a permanent foothold in the American market. Fuji opened up a film manufacturing plant in the United States, and its aggressive marketing and price cutting began capturing market share from Kodak. By the mid-1990s, Fuji held a 17 percent share of the U.S. market for photo film while Kodak's market share plunged to 75 percent. Meanwhile, Kodak made little headway in Japan, the second largest market for its photo film and paper after the United States. Clearly, Kodak underestimated the competitiveness of its Japanese rival.

Another factor that contributed to Kodak's decline was the development of digital cameras and smartphones that operate as cameras. Strange as it may seem, Kodak built one of the first digital

(continued)

cameras in 1975, but Kodak was slow in launching the production of digital cameras. Because Kodak's competitors did not have this technology at that time, Kodak faced no pressure to change its strategy of selling cheap cameras to customers who would buy lots of its expensive film. All of this changed in the 1990s with the development of digital cameras by companies like Sony. With its lucrative film sales dropping, Kodak launched the production of digital cameras.

By 2005, Kodak ranked at the top of the digital camera market in the United States. Despite high growth, Kodak failed to anticipate how fast these digital cameras became commodities with low profit margins as more companies entered the market. Kodak's digital camera sales were quickly undercut by Asian competitors who could produce their cameras more cheaply. Also, smartphones were developed to replace cameras. Kodak also failed to understand emerging markets. Kodak hoped that the new Chinese middle class would purchase lots of film. It did for a short while but then decided that digital cameras were preferable.

Kodak provides a striking example of an industrial giant that faltered in the face of global competition and advancing technology. By 2012, Kodak was running short of cash. As a result, Kodak filed for Chapter 11 bankruptcy and would undergo reorganization under the supervision of a bankruptcy court judge. Upon receiving court approval for its bankruptcy plan, Kodak stopped making digital cameras, pocket video cameras, and digital picture frames and focused on the corporate digital imaging market. Therefore, Kodak sold off many of its businesses and patents while shutting down the camera unit that first made it famous. Many of Kodak's former employees lost retirement and health-care benefits as a result of the bankruptcy. Kodak has emerged from bankruptcy as a much smaller and leaner company. It remains to be seen how the firm will perform in the years ahead.

Bicycle Imports Force Schwinn to Downshift

The Schwinn Bicycle Company illustrates the notion of globalization and how producers react to foreign competitive pressure. Founded in Chicago in 1895, Schwinn grew to produce bicycles that became the standard of the industry. Although the Great Depression drove most bicycle companies out of business, Schwinn survived by producing durable and stylish bikes sold by dealerships that were run by people who understood bicycles and were anxious to promote the brand. Schwinn emphasized continuous innovation that resulted in features such as built-in kickstands, balloon tires, chrome fenders, head and tail lights, and more. By the 1960s, the Schwinn Sting Ray became the bicycle that virtually every child wanted. Celebrities such as Captain Kangaroo and Ronald Reagan pitched ads claiming that "Schwinn bikes are the best."

Although Schwinn dominated the U.S. bicycle industry, the nature of the bicycle market was changing. Cyclists wanted features other than heavy, durable bicycles that had been Schwinn's mainstay for decades. Competitors emerged, such as Trek, which built mountain bikes, and Mongoose, which produced bikes for BMX racing.

Falling tariffs on imported bicycles encouraged Americans to import from companies in Japan, South Korea, Taiwan, and eventually China. These companies supplied Americans with everything ranging from parts to entire bicycles under U.S. brand names or their own brands. Using production techniques initially developed by Schwinn, foreign companies hired low-wage workers to manufacture competitive bicycles at a fraction of Schwinn's cost.

As foreign competition intensified, Schwinn moved production to a plant in Greenville, Mississippi, in 1981. The location was strategic. Like other U.S. manufacturers, Schwinn relocated production to the South to hire nonunion workers at lower wages. Schwinn also obtained parts produced by low-wage workers in foreign countries. The Greenville plant suffered from uneven quality and low efficiency, and it produced bicycles no better than the ones imported from Asia. As losses mounted for Schwinn, the firm declared bankruptcy in 1993.

Eventually Schwinn was purchased by the Pacific Cycle Company, which farmed the production of Schwinn bicycles out to low-wage workers in China. Most Schwinn bicycles today are built

in Chinese factories and are sold by Walmart and other discount merchants. Cyclists do pay less for a new Schwinn under Pacific's ownership. It may not be the industry standard that was the old Schwinn, but it sells at Walmart for approximately $180, about a third of the original price in today's dollars. Although cyclists may lament that a Schwinn is no longer the bike it used to be, Pacific Cycle officials note that it is not as expensive as in the past either.[6]

Stanley Black & Decker Moves Back to the United States

Stanley Black & Decker Inc. is a producer of hand tools. The firm was founded by Frederick Stanley in 1843, originally as a bolt and door hardware manufacturing company in New Britain, Connecticut. Today, Stanley is a well-known producer of hand planes, saws, rulers, chisels, screwdrivers, and many other types of tools for consumer and industrial use.

In 2017, Stanley acquired the Craftsman tool brand from Sears Holdings Corp., which had moved production of Craftsman tools to China to decrease costs. Sears's move to China occurred after decades of contracting with manufacturers in the United States, including Stanley, to produce its tools. Upon acquiring the Craftsman brand, Stanley said that it would localize in the United States as much manufacturing as possible while using materials around the world, a plan consistent with its operating model of producing close to its American customers.

In 2019, Stanley announced that it would move production of Craftsman wrenches from China back to the United States, partly in response to the Trump administration's tariffs, which increased the cost of imports. Stanley invested about $90 million to open a plant in Fort Worth, Texas, that would employ about 500 workers to manufacture 10 million Craftsman wrenches and ratchets and 50 million sockets annually.

By relocating production from China to Fort Worth, Stanley encountered rising costs because of higher wages paid to American workers than Chinese workers. To offset this cost increase, Stanley increased the automation of its Fort Worth factory by utilizing industrial robots and fast-forging presses, thus requiring fewer workers to produce a given level of output. Stanley expected that automation would help boost productivity about 25 percent above the older forging machinery it used to produce Craftsman wrenches in China, therefore helping keep production costs at the Fort Worth plant in line with those in China.

Stanley's strategy has been similar to other manufacturers in recent years to bring some foreign production back to more automated factories in the United States, such as Whirlpool Corp. and Caterpillar Corp.[7]

1-4 Common Fallacies of International Trade

Although gains from international trade are apparent, misconceptions prevail.[8] One misconception is that trade results in a zero-sum game: If one trading partner benefits, the other must suffer. It turns out that both partners can benefit from trade.

[6]Judith Crown and Glenn Coleman, *No Hands: The Rise and Fall of the Schwinn Bicycle Company, an American Institution* (New York: Henry Holt and Co., 1996); and Jay Pridmore, *Schwinn Bicycles* (Osceola, WI: Motorbooks International, 2002). See also Griff Wittee, "A Rough Ride for Schwinn Bicycle," *Washington Post*, December 3, 2004.

[7]Bob Tita, "Stanley to Make More Craftsman tools in U.S.," *The Wall Street Journal*, May 15, 2019; Elizabeth Brotherton-Bunch, *Stanley Black & Decker Is Reshoring More Production of Stanley Tools*, Alliance for American Manufacturing, May 15, 2019; "New Factory Means More Craftsman Hand Tools Will Be Made in the USA," *ToolGuyd*, May 15, 2019.

[8]This section is drawn from James Gwartney and James Carter, *Twelve Myths of International Trade*, U.S. Senate, Joint Economic Committee, June 2000, pp. 4–11.

Consider the example of trade between Colombia and Canada. These countries can produce more combined output when Canadians supply natural gas and Colombians supply bananas. The larger output allows Colombians to benefit by using revenues from their banana exports to buy Canadian natural gas. Canadians benefit by using revenues from their natural gas exports to buy Colombian bananas. Therefore, the larger combined production yields mutual benefits for both countries. According to the principle of comparative advantage, if countries specialize in what they are relatively best at producing, they will import products that their trading partners are most efficient at producing, yielding benefits for both countries.

Another misconception is that imports result in unemployment and burden the economy, while exports enhance economic growth and jobs for workers. The source of this misconception is a failure to consider the connections between imports and exports. American imports of German machinery will result in losses of sales, output, and jobs in the U.S. machinery industry. However, as Germany's machinery sales to the United States increase, Germans will have more purchasing power to buy American computer software. Output and employment will thus increase in the U.S. computer software industry. The drag on the U.S. economy caused by rising imports of machinery tends to be offset by the stimulus on the economy caused by rising exports of computer software.

People sometimes feel tariffs, quotas, and other import restrictions result in more jobs for domestic workers. However, they fail to understand that a decrease in imports does not take place in isolation. When we impose import barriers that reduce the ability of foreigners to export to us, we are also reducing their ability to obtain the dollars required to import from us. Trade restrictions that decrease the volume of imports will also decrease exports. As a result, jobs promoted by import barriers tend to be offset by jobs lost from falling exports.

If tariffs and quotas were that beneficial, why don't we use them to impede trade throughout the United States? Consider the jobs that are lost when, for example, Wisconsin purchases grapefruit from Florida, cotton from Alabama, tomatoes from Texas, and grapes from California. All of these goods could be produced in Wisconsin, although at a higher cost. Thus, Wisconsin residents find it less expensive to "import" these products. Wisconsin benefits by using its resources to produce and "export" milk, beer, electronics, and other products it can produce efficiently. Indeed, most people feel that free trade throughout America is an important contributor of prosperity for each of the states. The conclusions are the same for trade among nations. Free trade throughout America fosters prosperity; so, too, does free trade among nations.

1-5 Is International Trade an Opportunity or a Threat to Workers?

International trade provides both an opportunity and a threat for firms and workers as seen in the case of North Carolina. As of 2021, companies from North Carolina exported goods to countries such as Canada, Mexico, China, and Japan. The state's largest merchandise exports included chemicals, machinery, transportation equipment, computer and electronic products, and textiles and fabrics. Export activities created jobs for many residents of North Carolina. However, international trade has also resulted in casualties to the firms and workers of North Carolina.

Consider the historic Revolution Cotton Mill in Greensboro, North Carolina. This textile mill was built in the early 1900s, an exciting era for North Carolina's businesses. America's cotton industry was moving south from New England to benefit from lower wages. The number of textile mills in the South more than doubled between 1890 and 1900 to 542. By 1938, Revolution Cotton Mill was the world's largest factory that exclusively produced flannel, making 50 million yards of cloth a year. However, today, you no longer hear the clacking of

textile looms at Revolution Cotton Mill. It terminated production in 1982, an early indication of another revolution on a worldwide scale. The American textile industry was starting a fresh migration in search of cheaper labor, this time in Asia and Latin America. Revolution Cotton Mill is now a monument to an industry that lost out to globalization. The mill is used to house apartments, restaurants, small businesses, and meeting places for local residents.

For the entire United States, international trade benefits many workers. Trade enables them to shop for the cheapest consumption goods and permits employers to purchase the technologies and equipment that best complement their workers' skills. Trade also allows workers to become more productive as the goods they produce increase in value. Producing goods for export generates jobs and income for domestic workers.

As seen in **Table 1.6**, the jobs of millions of Americans are connected to exports. For example, in 2016 about 10.7 million American jobs were supported by exports, around 8 percent of total employment. Some 15 states accounted for more than 70 percent of the total number of American jobs that were supported by exports in 2016; the top five states were Texas, California, Washington, New York, and Illinois, in descending order. For Americans working for exporting firms, average wages are about 18 percent higher than average wages in nonexporting firms.[9]

Table 1.6

Millions of American Jobs Supported by Exports: Total, Goods, and Services

Year	Total	Goods	Services
2016	10.7	6.3	4.4
2015	10.9	6.4	4.5
2014	11.3	6.8	4.5
2013	11.2	6.7	4.5
2012	11.2	6.8	4.4
2011	10.7	6.6	4.1
2010	10.0	6.2	3.8

Source: Chris Rasmussen, Office of Trade and Economic Analysis, International Trade Administration, U.S. Department of Commerce, *Jobs Supported by Exports 2016: An Update*, August 2, 2017.

However, not all workers gain from international trade. The world trading system, for example, has come under attack by some in industrial countries where rising unemployment and wage inequality have made people feel apprehensive about the future. Cheap exports produced by lower-cost foreign workers threaten to eliminate jobs for some workers in industrial countries. Others worry that firms are relocating abroad in search of low wages and lax environmental standards or fear that masses of poor immigrants will be at their company's door offering to work for lower wages. Trade with low-wage developing countries is particularly threatening to unskilled workers in the import-competing sectors of industrial countries.

International trade is just another kind of technology. Think of it as a machine that adds value to its inputs. In the United States, trade is the machine that turns computer software that the United States makes very well into CD players, baseballs, and other things that it also wants but does not make quite so well. International trade does this at a net gain to the

[9]David Riker, Export-Intensive *Industries Pay More on Average: An Update*, U.S. International Trade Commission, April 2015.

economy as a whole. If somebody invented a device that could do this, it would be considered a miracle. Fortunately, international trade has been developed.

If international trade is squeezing the wages of the less skilled, so are other kinds of advancing technology—only more so. "Yes," you might say, "but to tax technological progress or put restrictions on labor saving investment would be idiotic: That would only make everybody worse off." Indeed it would, and exactly the same goes for international trade—whether this superior technology is taxed (through tariffs) or overregulated (in the form of international efforts to harmonize labor standards). However, this is not an easy thing to explain to American textile workers who compete with low-wage workers in China, Malaysia, and other countries.

1-6 Has Globalization Gone Too Far?

Most mainstream economists contend that open economies provide more opportunities than do closed ones. And, in general, greater opportunity makes people better off. Without trade, coffee drinkers in the United States would pay much higher prices because the nation's supply would depend solely on Hawaiian or Puerto Rican sources. The optimism of mainstream economists is based on evidence that the developed world has seen its wealth grow over the last five decades as its commitment to an open trading system has strengthened.

However, critics note that the distribution of this wealth has been uneven, with the incomes of the least skilled workers in the developed world decreasing or, at best, holding steady. They also maintain that U.S. trade policies primarily benefit large corporations rather than average citizens—of the United States or any other country. Also, environmentalists argue that elitist trade organizations such as the World Trade Organization make undemocratic decisions that undermine national sovereignty on environmental regulation. Unions maintain that unfettered trade permits unfair competition from countries that lack labor standards. Human rights activists contend that the World Bank and International Monetary Fund support governments that allow sweatshops and pursue policies that bail out governmental officials at the expense of local economies. A gnawing sense of unfairness and frustration has emerged about trade policies that ignore the concerns of the environment, American workers, and international labor standards. **Table 1.7** summarizes some of the pros and cons of globalization.

Table 1.7

Advantages and Disadvantages of Globalization

Advantages	Disadvantages
Productivity increases faster when countries produce goods and services in which they have a comparative advantage. Living standards can increase more rapidly.	Millions of Americans have lost jobs because of imports or shifts in production abroad. Most find new jobs that pay less.
Global competition and cheap imports keep a constraint on prices, so inflation is less likely to disrupt economic growth.	Millions of other Americans fear getting laid off, especially at those firms operating in import-competing industries.
An open economy promotes technological development and innovation with fresh ideas from abroad. This promotes economic growth and more jobs.	Workers face demands of wage concessions from their employers, which often threaten to export jobs abroad if wage concessions are not accepted.
Jobs in export industries typically pay up to 18 percent more than jobs in import-competing industries.	Besides blue-collar jobs, service jobs and white-collar jobs are increasingly vulnerable to operations being sent overseas.
Unfettered capital movements provide the United States access to foreign investment and maintain low interest rates.	American employees can lose their competitiveness when companies build state-of-the-art factories in low-wage countries, making them as productive as those in the United States.

Source: "Mike Collins, "The Pros and Cons of Globalization," *Forbes*, May 6, 2015 and "Backlash Behind the Anxiety over Globalization," *Business Week*, April 24, 2000.

Some economists have detected a structural problem in globalization. They maintain that by the 2000s, globalization was increasingly exposing a deep fault line between groups who have the skills and mobility to flourish in global markets and those who don't have these advantages. For example, America's massive increases in imports from China have adversely affected employment and wages in parts of the country (Tennessee, Kentucky, Ohio, and Pennsylvania) that produce goods (footwear, apparel, furniture, and low-end electronics) that compete with China. The workers in those regions are often the losers of globalization.

Also, the rise in competition from Chinese imports during the early 2000s has resulted in considerable adjustment burdens for many Americans. For example, it can be very expensive for workers displaced by trade to go back to school to develop new skills or to move to other cities or regions. Also, displaced workers may have to accept permanently lower wages at their new jobs in another growing industry than they received at their former jobs in a declining industry. Critics of China's entry into the World Trade Organization in 2001 maintain that surging Chinese imports hurt American workers far more than many globalization advocates thought it would.

Yet some regions of the United States have rebounded from the adversities of globalization as seen in the case of South Carolina. In the 1990s, South Carolina was a "three T" state—that's tobacco, textiles, and tourism. Like other states, South Carolina saw its traditional industries harmed by globalization and automation as low-skilled factory jobs disappeared or migrated to low-labor-cost countries. However, by the 2000s, South Carolina was regaining manufacturing jobs thanks to a combination of economic incentives, robust supply chains, and trading infrastructure. Also, there is an abundance of cheap labor in the state, partly because of the lowest union membership in the country. South Carolina's economic revival strategy has attracted global manufacturers like Mercedes, Honda, BMW, Michelin, and Boeing that hire highly skilled workers—many trained at one of South Carolina's 16 technical colleges through the state-sponsored program Ready South Carolina. But labor union officials maintain that South Carolina is building industries on the backs of nonunion workers who are getting a raw deal compared to unionized workers in other parts of the United States.

1-7 The Plan of This Text

This text is an examination of the functioning of the international economy. Although the emphasis is on the theoretical principles that govern international trade, there also is considerable coverage of the empirical evidence of world trade patterns and trade policies of the industrial and developing nations. The book is divided into two parts. Part 1 deals with international trade and commercial policy; Part 2 stresses the balance of payments and the adjustment in the balance of payments.

Chapters 2 and 3 deal with the theory of comparative advantage, as well as theoretical extensions and empirical tests of this theory. This topic is followed by Chapters 4 through 6, a treatment of tariffs, nontariff trade barriers, and contemporary trade policies of the United States. Discussions of trade policies for the developing nations, regional trading arrangements, and international factor movements in Chapters 7 through 9 complete the first part of the text.

The treatment of international financial relations begins with an overview of the balance of payments, the foreign exchange market, and the exchange rate determination in Chapters 10 through 12. The balance-of-payment adjustment under alternative exchange rate regimes is discussed in Chapters 13 and 14. Chapter 15 considers macroeconomic policy in an open economy.

Summary

1. Throughout the post–World War II era, the world's economies have become increasingly interdependent in the movement of goods and services, business enterprise, capital, and technology.
2. The United States has seen growing interdependence with the rest of the world in its trade sector, financial markets, ownership of production facilities, and labor force.
3. Largely owing to the vastness and wide diversity of its economy, the United States remains among the countries whose exports constitute a small fraction of national output.
4. Proponents of an open trading system contend that international trade results in higher levels of consumption and investment, lower prices of commodities, and a wider range of product choices for consumers. Arguments against free trade tend to be voiced during periods of excess production capacity and high unemployment.
5. International competitiveness can be analyzed in terms of a firm, an industry, and a nation. Key to the concept of competitiveness is productivity, or output per worker hour.
6. Researchers have shown that exposure to competition with the world leader in an industry improves a firm's performance in that industry. Global competitiveness is a bit like sports: You get better by playing against folks who are better than you.
7. Although international trade helps workers in export industries, workers in import-competing industries feel the threat of foreign competition. They often see their jobs and wage levels undermined by cheap foreign labor.
8. Among the challenges that the international trading system faces are dealing with fair labor standards and concerns about the environment.

Key Concepts and Terms

Automation (p. 7)

Economic interdependence (p. 1)

Globalization (p. 4)

Openness (p. 10)

Study Questions

1. What factors explain why the world's trading nations have become increasingly interdependent, from an economic and political viewpoint, during the post–World War II era?
2. What are some of the major arguments for and against an open trading system?
3. What significance does growing economic interdependence have for a country like the United States?
4. What factors influence the rate of growth in the volume of world trade?
5. Identify the major fallacies of international trade.
6. What is meant by international competitiveness? How does this concept apply to a firm, an industry, and a nation?
7. What do researchers have to say about the relation between a firm's productivity and exposure to global competition?
8. When is international trade an opportunity for workers? When is it a threat to workers?
9. Identify some of the major challenges confronting the international trading system.

PART 1

International Trade Relations

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CHAPTER 2

Foundations of Modern Trade Theory: Comparative Advantage

d3sign/Moment/Getty Images

The previous chapter discussed the importance of international trade. This chapter answers the following questions: (1) What constitutes the **basis for trade**—that is, why do nations export and import certain products? (2) At what **terms of trade** are products exchanged in the world market? (3) What are the **gains from international trade** in terms of production and consumption? This chapter addresses these questions, first by summarizing the historical development of modern trade theory and next by presenting the contemporary theoretical principles used in analyzing the effects of international trade.

2-1 Historical Development of Modern Trade Theory

Modern trade theory is the product of an evolution of ideas in economic thought. In particular, the writings of the mercantilists, and later those of the classical economists—Adam Smith, David Ricardo, and John Stuart Mill—have been instrumental in providing the framework of modern trade theory.

2-1a The Mercantilists

During the period 1500–1800, a group of writers appeared in Europe who were concerned with the process of *nation building*—that is, *economic nationalism*. For economic nationalists, national prosperity depends on winning, or at least catching up, in a competitive race against other countries.

According to the **mercantilists**, the central question was how a nation could regulate its domestic and international affairs to promote its own interests. The solution lay in a strong foreign trade sector. If a country could achieve a *favorable trade balance* (a surplus of exports over imports), it would realize net payments received from the rest of the world in the form of gold and silver. Such revenues would contribute to increased spending and a rise in domestic output and employment. To promote a favorable trade balance, the mercantilists

advocated government regulation of trade. Tariffs, quotas, and other commercial policies were proposed by the mercantilists to minimize imports to protect a nation's trade position.[1] Common to these trade policies is that they attempt to foster the national economic interest at the expense of foreign interests, at least in the short term.

Great Britain provides an example of a country using mercantilism as a system of economic development during the 1600s–1800s. Having relatively few natural resources, it established colonies in America and other nations. The goal was to force the colonists to sell their raw materials to the British at bargain basement prices. These materials would be processed into manufactured goods, which would then be resold to the colonies at inflated prices, resulting in Great Britain's accumulation of wealth (gold and silver) through a positive trade balance. To grow its wealth, Great Britain enacted policies that discouraged colonists from buying competing foreign products, while creating incentives to only buy British goods. For example, the Sugar Act of 1764 raised tariffs on foreign refined sugar and molasses imported by the American colonies in an attempt to provide British sugar growers in the West Indies a monopoly on America's market. These events amplified the colonists' anxieties about the objectives of the British government and inspired the undertaking that became the American Revolution.

By the 18th century, the economic policies of the mercantilists were under strong attack. According to David Hume's **price–specie–flow doctrine**, a favorable trade balance is possible only in the short run because it would automatically be eliminated over time. To illustrate, suppose England achieves a trade surplus that results in an inflow of gold and silver. Because these precious metals constitute part of England's money supply, their inflow increases the amount of money in circulation. This leads to a rise in England's price level relative to that of its trading partners. English residents would therefore be encouraged to purchase foreign-produced goods, while England's exports would decline. As a result, the country's trade surplus would eventually be eliminated. The price–specie–flow mechanism thus shows that mercantilist policies could provide at best only short-term economic advantages.[2]

The mercantilists were also attacked for their *static view* of the world economy. To the mercantilists, the world's wealth was fixed. This view meant that one nation's gains from trade came at the expense of its trading partners; not all nations could simultaneously enjoy the benefits of international trade. This view was challenged with the publication in 1776 of Adam Smith's *The Wealth of Nations*. According to Smith (1723–1790), the world's wealth is not a fixed quantity. International trade permits nations to take advantage of specialization and the division of labor to increase the general level of productivity within a country and thus increase world output (wealth). Smith's dynamic view of trade suggested that *both* trading partners could simultaneously enjoy higher levels of production and consumption with trade. Smith's trade theory is further explained in the next section.

Although the foundations of mercantilism have been refuted, mercantilism is alive today. However, it now emphasizes employment rather than holdings of gold and silver. Neomercantilists contend exports are beneficial because they result in jobs for domestic workers, while imports are bad because they take jobs away from domestic workers and transfer them to foreign workers. Trade is considered a zero-sum activity in which one country must lose for the other to win. There is no acknowledgment that trade can provide benefits to all countries, including mutual benefits in employment as prosperity increases throughout the world.

[1]See E. A. J. Johnson, *Predecessors of Adam Smith* (New York: Prentice Hall, 1937).

[2]David Hume, "Of Money," *Essays*, Vol. 1 (London: Green and Co., 1912), p. 319. Hume's writings are also available in Eugene Rotwein, *The Economic Writings of David Hume* (Edinburgh: Nelson, 1955).

Many observers felt that President Donald Trump's views on international trade approximated the principles of mercantilism—that exports are good and imports are bad and that trade policy (tariffs) should be used to maximize the value of your exports and minimize the value of your imports to increase the amount of wealth your country has. When Trump stated in 2018 that "trade wars are good and easy to win," it appears that he was arguing along the lines of mercantilism.

2-1b Why Nations Trade: Absolute Advantage

Adam Smith, a classical economist, was a leading advocate of **free trade** (open markets) on the grounds that it promoted the international division of labor. With free trade, nations could concentrate their production on the goods they could make the most cheaply, with all the consequent benefits from the division of labor.

Accepting the idea that *cost differences* govern the international movement of goods, Smith sought to explain why costs differ among nations. Smith maintained that *productivities* of factor inputs represent the major determinant of production cost. Such productivities are based on natural and acquired advantages. The former include factors relating to climate, soil, and mineral wealth, whereas the latter include special skills and techniques. Given a natural or acquired advantage in the production of a good, Smith reasoned that a nation would produce that good at a lower cost and become more competitive than its trading partner. Smith viewed the determination of competitiveness from the *supply side* of the market.[3]

Smith founded his concept of cost on the **labor theory of value** that assumes that labor within each nation is the only factor of production and is homogeneous (of one quality) and the cost or price of a good depends exclusively on the amount of labor required to produce it. For example, if the United States uses less labor to manufacture a yard of cloth than the United Kingdom, then the U.S. production cost will be lower.

Smith's trading principle was the **principle of absolute advantage**: In a two-nation, two-product world, international specialization and trade will be beneficial when one nation has an absolute cost advantage (uses less labor to produce a unit of output) in one good and the other nation has an absolute cost advantage in the other good. For the world to benefit from specialization, each nation must have a good that is absolutely more efficient in producing than its trading partner. A nation will *import* goods in which it has an absolute cost *disadvantage* and *export* those goods in which it has an absolute cost *advantage*.

An arithmetic example helps illustrate the principle of absolute advantage. Referring to **Table 2.1**, suppose workers in the United States can produce 5 bottles of wine or 20 yards of

Table 2.1

A Case of Absolute Advantage When Each Nation Is More Efficient in the Production of One Good

World output possibilities in the absence of specialization

	Output Per Labor Hour	
Nation	**Wine**	**Cloth**
United States	5 bottles	20 yards
United Kingdom	15 bottles	10 yards

[3]Adam Smith, *The Wealth of Nations* (New York: Modern Library, 1937).

cloth in an hour's time, while workers in the United Kingdom can produce 15 bottles of wine or 10 yards of cloth in an hour. Clearly, the United States has an absolute advantage in cloth production; its cloth workers' productivity (output per worker hour) is higher than that of the United Kingdom and leads to lower costs (less labor required to produce a yard of cloth). In like manner, the United Kingdom has an absolute advantage in wine production.

According to Smith, each nation benefits by specializing in the production of the good that it produces at a lower cost than the other nation while importing the good that it produces at a higher cost. Because the world uses its resources more efficiently as the result of specializing, an increase in world output occurs that is distributed to the two nations through trade. All nations can benefit from trade, according to Smith.

The writings of Smith established the case for free trade that is still influential today. According to Smith, free trade would increase competition in the home market and reduce the market power of domestic companies by lessening their ability to take advantage of consumers by charging high prices and providing poor service. Also, the country would benefit by exporting goods that are desired on the world market for imports that are cheap on the world market. Smith maintained that the wealth of a nation depends on this division of labor, which is limited by the extent of the market. Smaller and more isolated economies cannot support the degree of specialization needed to significantly increase productivity and reduce cost and thus tend to be relatively poor. Free trade allows countries, especially smaller countries, to more fully take advantage of the division of labor, thus attaining higher levels of productivity and real income.

Would Adam Smith Have Approved of A "Retaliatory" Trade Policy?

Upon entering the Oval Office in 2017, President Donald Trump noted that the United States needs to adopt an "America First" policy that protects the nation's borders from the damages of other countries making its products, stealing its companies and intellectual property, and destroying its jobs. His feelings were especially aimed at China, which Trump claims has practiced unfair trade. To maximize his negotiating leverage, Trump imposed an array of tariffs on imports of Chinese goods. He maintained that his tariffs were "retaliatory" in that they were in response to China's discriminatory practices against the United States. Trump felt that his tariffs would weaken China's economy to the extent that it would come to the bargaining table and agree to modify its behavior. However, China retaliated by imposing tariffs on America's exports, resulting in a trade war between the two countries. Would Adam Smith have approved of Trump's "retaliatory" tariffs?[4]

Smith was committed to the benefits that free trade provides by enabling countries to attain a more efficient allocation of resources and a greater level of material well-being than without free trade. He noted that prolonged use of tariffs would result in the negative effects of increasing domestic prices, decreasing competition, and increasing the demands of businesses for favors from the government. However, Smith did not maintain that free trade means zero tariffs; governments need to tax trade for the purpose of raising revenue to finance their operation and tariffs are appropriate for protecting domestic industries that are vital for the nation's defense. Therefore, Smith felt that free trade implied an open trade system in which countries could impose tariffs and regulate shipping but in a nondiscriminatory manner. He also realized that the pursuit of the gains from trade did not always result in international harmony because nations sometimes attempt to dominate each other.

[4]Adam Smith, *The Wealth of Nations* (New York: Modern Library, 1937), Book 4, Chapter 2; Jesse Norman, *Adam Smith: What He Thought, and Why It Matters* (London: Penguin Books, 2018) and *Adam Smith: Father of Economics* (New York: Basic Books, 2018).

Smith also believed that there is a role for government in a global economy to preserve a stable and fair trading system. He grudgingly admitted that, during a trade conflict, the imposition of temporary, retaliatory tariffs could have a beneficial impact if they force the offending country to reduce its tariffs and end other unfair trade practices, thus returning to free trade. Although a retaliatory tariff might harm the home economy in the short run, the return to free trade could result in the recovery of large foreign markets in which to do business, more than offsetting the transitory inconvenience of paying more in the short run for imported goods. Simply put, retaliatory tariffs are justified when there is a high probability that they will lead to the return to free trade. However, Smith felt that, in practice, politicians might continue to prolong the trade war because they do not have to bear the costs of the conflict themselves and can shift the costs to other classes in the society. Thus, a policy of retaliatory tariffs can easily spiral, leading to an enduring trade war that imposes long-term costs on consumers and businesses.

President Trump felt justified in retaliating against what he considered to be unfair foreign competition from China. Do you feel that Adam Smith would have approved of his retaliatory trade policy?

International Trade Application

Adam Smith and David Ricardo

For more than two centuries, many economists have advocated free trade among nations as the best trade policy. Adam Smith and David Ricardo were pioneers of the argument for free trade. They maintained that, with specialization and trade, the world economy can attain a more efficient allocation of resources and a higher level of material well-being than it can without free trade. Let us briefly consider the lives and ideas of these two influential economists.

Adam Smith

Adam Smith (1723–1790) was born in Kirkcaldy, Scotland, where his widowed mother raised him. At age 14, he entered the University of Glasgow on scholarship and later enrolled at Oxford University, studying social philosophy. In 1751, he obtained a professorship at University of Glasgow, teaching moral philosophy. In his later life, Smith took a tutoring position that permitted him to travel throughout Europe, where he met and communicated with other intellectual leaders of his time.

Smith is best known for two classic works: *The Theory of Moral Sentiments* (1759) and *An Inquiry into the Nature and Causes of the Wealth of Nations* (1776). He is widely regarded as the founder of modern economics and is among the most influential thinkers in the field of economics today.

Smith believed that free trade and a self-regulating economy foster social progress. He criticized the British government's tariffs and other restrictions on individual freedom in trade. Smith maintained that government need only maintain law and order, enforce justice, defend the nation, and provide for a few social needs that could not be provided by the market.

One aspect of the English scene struck Smith. This was the substantial increase in productivity that resulted from the division and specialization of labor. Going into a pin factory, Smith saw a group of 10 workers producing upward of 48,000 pins in a day as a result of specialization and the division of labor. He noted that if these workers had all worked separately and independently, none of them could produce 20 pins, perhaps not even one pin, in a day.

Smith felt that the operation of a market system results in unity between private interests and social interests. Firms and suppliers of resources, desiring to fulfill their own self-interest and operating within the framework of a competitive market system, will simultaneously, as though led by an "invisible hand," foster the public or social interest. Nevertheless, he was skeptical of businessmen and warned of their conspiracy against the public to increase prices. He also warned that a business-dominated political system would permit a conspiracy of businesses against consumers.

(continued)

The Wealth of Nations went through five editions during Smith's lifetime, but it had minimal impact on economic policy until the early 1800s.

David Ricardo

David Ricardo (1772–1823) was the leading British economist of the early 1800s. He helped develop the theories of *classical economics* that emphasize economic freedom through free trade and competition. Ricardo was a successful businessman, financier, and speculator, and he accumulated a sizable fortune.

Being the third of 17 children, Ricardo was born into a wealthy Jewish family. His father was a merchant banker. They initially lived in the Netherlands and then moved to London. Having little formal education and never attending college, Ricardo went to work for his father at age 14. When he was 21, Ricardo married a Quaker despite his parents' preferences. After his family disinherited him for marrying outside the Jewish faith, Ricardo became a stockbroker and a loan broker. He was highly successful in business and was able to retire at 42, accumulating an estate that was worth more than $100 million in today's dollars. Upon retirement, Ricardo bought a country estate and established himself as a country gentleman. In 1819, Ricardo purchased a seat in the British Parliament and held the post until the year of his death in 1823. As a member of Parliament, Ricardo advocated the repeal of the Corn Laws that established trade barriers to protect British landowners from foreign competition. However, he was unable to get Parliament to abolish the law at that time, and it was not repealed until 1846.

Ricardo's interest in economics was inspired by a chance reading of Adam Smith's *The Wealth of Nations* when he was in his late 20s. At the urging of his friends, Ricardo began writing newspaper articles on economic questions. In 1817, Ricardo published his groundbreaking *The Principles of Political Economy and Taxation* that laid out the theory of comparative advantage as discussed in this chapter.

Like Adam Smith, Ricardo was an advocate of free trade and an opponent of protectionism. He believed that protectionism led countries toward economic stagnation. However, Ricardo was less confident than Smith about the ability of a market economy's potential to benefit society. Instead, Ricardo felt that the economy tends to move toward a standstill. Yet Ricardo contended that if government meddled with the economy, the result would be only further economic stagnation.

Ricardo's ideas have greatly affected other economists. His theory of comparative advantage has been a cornerstone of international trade theory for about 200 years and has influenced generations of economists in the belief that protectionism is bad for an economy.

What do you think? Compare the ideas of Adam Smith and David Ricardo regarding free trade and protectionism.

Sources: Roy Campbell and A. S. Skinner, *Adam Smith* (New York: St. Martin's, 1982); Mark Blaug, *Ricardian Economics* (New Haven, CT: Yale University Press, 1958); Samuel Hollander, *The Economics of David Ricardo* (Cambridge: Cambridge University Press, 1993); and Robert Heilbronner, *The Worldly Philosophers* (New York: Simon and Schuster, 1961).

2-1c Why Nations Trade: Comparative Advantage

In 1800, a wealthy London businessman named David Ricardo (1772–1823) came across *The Wealth of Nations* while on vacation and was intrigued. Although Ricardo appreciated the persuasive flair of Smith's argument for free trade, he thought that some of Smith's analysis needed improvement. According to Smith, mutually beneficial trade requires each nation to be the *least-cost producer* of at least one good it can export to its trading partner. But what if a nation is more efficient than its trading partner in the production of *all* goods? Dissatisfied with this looseness in Smith's theory, Ricardo developed a principle to show that mutually beneficial trade can occur whether or not countries have an absolute advantage. Ricardo's theory became known as the **principle of comparative advantage**.[6]

Like Smith, Ricardo emphasized the supply side of the market. The immediate basis for trade stemmed from the cost differences between nations that their natural and acquired advantages supported. Unlike Smith, who emphasized the importance of absolute cost differences among nations, Ricardo emphasized *comparative* (relative) cost differences. Indeed, countries often develop comparative advantages, as shown in **Table 2.2**.

[5]David Ricardo, *The Principles of Political Economy and Taxation* (London: Cambridge University Press, 1966), Chapter 7. Originally published in 1817.

Table 2.2

Examples of Comparative Advantages in International Trade

Country	Product
Canada	Lumber
Israel	Citrus fruit
Italy	Wine
Jamaica	Aluminum ore
Mexico	Tomatoes
Saudi Arabia	Oil
China	Textiles
Japan	Automobiles
South Korea	Steel, ships
Switzerland	Watches
United Kingdom	Financial services

According to the principle of comparative advantage, even if a nation has an absolute cost disadvantage in the production of *both* goods, a basis for mutually beneficial trade may still exist. The *less efficient* nation should specialize in and export the good that is relatively less inefficient (where its absolute disadvantage is least). The *more efficient* nation should specialize in and export that good that is relatively more efficient (where its absolute advantage is greatest).

To demonstrate the principle of comparative advantage, Ricardo formulated a simplified model based on the following *assumptions*:

1. The world consists of two nations, each using a single input to produce two commodities.
2. In each nation, labor is the only input (the labor theory of value). Each nation has a fixed endowment of labor and labor is fully employed and homogeneous.
3. Labor can move freely among industries within a nation but is incapable of moving between nations.
4. The level of technology is fixed for both nations. Different nations may use different technologies, but all firms within each nation utilize a common production method for each commodity.
5. Costs do not vary with the level of production and are proportional to the amount of labor used.
6. Perfect competition prevails in all markets. Because no single producer or consumer is large enough to influence the market, all are price takers. Product quality does not vary among nations, implying that all units of each product are identical. There is free entry to and exit from an industry, and the price of each product equals the product's marginal cost of production.
7. Free trade occurs between nations; that is, no government barriers to trade exist.
8. Transportation costs are zero. Consumers will thus be indifferent between domestically produced and imported versions of a product if the domestic prices of the two products are identical.
9. Firms make production decisions in an attempt to maximize profits, whereas consumers maximize satisfaction through their consumption decisions.
10. There is no money illusion; when consumers make their consumption choices and firms make their production decisions, they take into account the behavior of all prices.
11. Trade is balanced (exports must pay for imports), thus ruling out flows of money between nations.

Table 2.3 illustrates Ricardo's principle of comparative advantage when one nation has an absolute advantage in the production of both goods. Assume that in 1 hour's time, U.S. workers can produce 40 bottles of wine or 40 yards of cloth, while U.K. workers can produce 20 bottles of wine or 10 yards of cloth. According to Smith's principle of absolute advantage, there is no basis for mutually beneficial specialization and trade because the U.S. workers are more efficient in the production of both goods.

Table 2.3

A Case of Comparative Advantage When the United States Has an Absolute Advantage in the Production of Both Goods

World output possibilities in the absence of specialization

	Output Per Labor Hour	
Nation	**Wine**	**Cloth**
United States	40 bottles	40 yards
United Kingdom	20 bottles	10 yards

However, the principle of comparative advantage recognizes that U.S. workers are four times as efficient in cloth production (40/10 = 4) but only twice as efficient in wine production (40/20 = 2). The United States thus has a *greater absolute advantage* in cloth than in wine, while the United Kingdom has a *smaller absolute disadvantage* in wine than in cloth. Each nation specializes in and exports that good in which it has a *comparative* advantage—the United States in cloth, and the United Kingdom in wine. Therefore, through the process of trade, the two nations receive the output gains from specialization. Like Smith, Ricardo asserted that both nations can gain from trade.

Simply put, Ricardo's principle of comparative advantage maintains that international trade is solely due to international differences in the productivity of labor. The basic prediction of Ricardo's principle is that countries tend to export those goods in which their labor productivity is relatively high.

In recent years, the United States has realized large trade deficits (imports exceed exports) with countries such as China and Japan. Some of those who have witnessed the flood of imports coming into the United States seem to suggest that the United States does not have a comparative advantage in anything. It is possible for a nation not to have an absolute advantage in anything, but it is not possible for one nation to have a comparative advantage in everything and the other nation to have a comparative advantage in nothing. That's because comparative advantage depends on *relative* costs. As we have seen, a nation having an absolute disadvantage in all goods would find it advantageous to specialize in the production of the good in which its absolute disadvantage is *least*. There is no reason for the United States to surrender and let China produce all of everything. The United States would lose and so would China, because world output would be reduced if U.S. resources were left idle. The idea that a nation has nothing to offer confuses absolute advantage and comparative advantage.

Although the principle of comparative advantage is used to explain international trade patterns, people are not generally concerned with which nation has a comparative advantage when they purchase something. A person in a candy store does not look at Swiss

chocolate and U.S. chocolate and ask, "I wonder which nation has the comparative advantage in chocolate production?" The buyer relies on price, after allowing for quality differences, to tell which nation has the comparative advantage.

2-2 Production Possibilities Frontiers

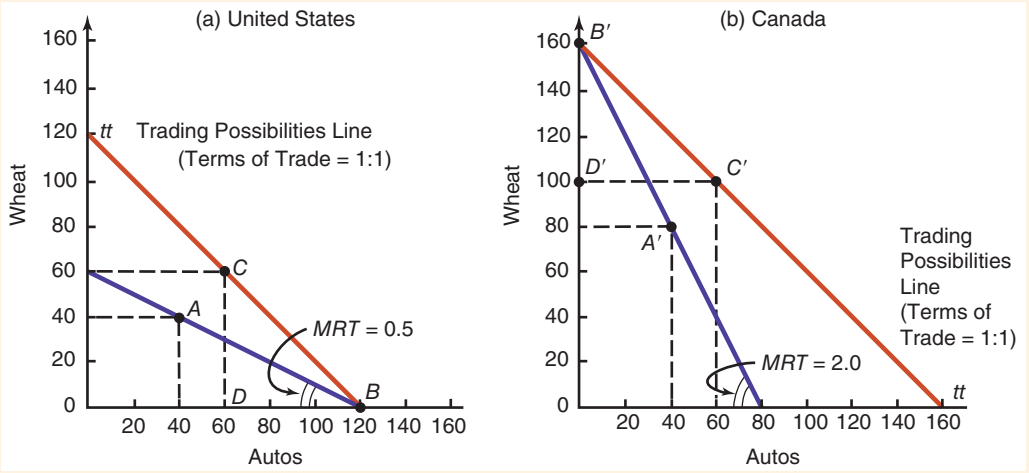
Ricardo's law of comparative advantage suggested that specialization and trade can lead to gains for both nations. His theory, however, depended on the restrictive assumption of the labor theory of value, which assumed labor was the only factor input. In practice, labor is only one of several factor inputs.

Recognizing the shortcomings of the labor theory of value, modern trade theory provides a more generalized theory of comparative advantage. It explains the theory using a **production possibilities frontier**. This frontier shows various alternative combinations of two goods that a nation can produce when *all* of its factor inputs (land, labor, capital, and entrepreneurship) are used in their most efficient manner. The production possibilities frontier thus illustrates the maximum output possibilities of a nation. Note that we are no longer assuming labor to be the only factor input, as Ricardo did.

Figure 2.1 illustrates hypothetical production possibilities frontiers for the United States and Canada. By fully using all available inputs with the best available technology during a given time period, the United States can produce either 60 bushels of wheat or 120 autos or certain combinations of the two products. Similarly, Canada can produce either 160 bushels of wheat or 80 autos or certain combinations of the two products.

Figure 2.1

Trading under Constant Opportunity Costs



With constant opportunity costs, a nation will specialize in the product of its comparative advantage. The principle of comparative advantage implies that with specialization and free trade, a nation enjoys production gains and consumption gains. A nation's trade triangle denotes its exports, imports, and terms of trade. In a two-nation, two-product world, the trade triangle of one nation equals that of the other nation. One nation's exports equal the other nation's imports, and there is one equilibrium terms of trade.

Just how does a production possibilities frontier illustrate the concept of comparative cost? The answer lies in the slope of the production possibilities frontier, which is referred to as the **marginal rate of transformation (MRT)**. The MRT shows the amount of one product a nation must sacrifice to get one additional unit of the other product:

$$MRT = \frac{\Delta\ Wheat}{\Delta\ Autos}$$

This rate of sacrifice is sometimes called the *opportunity cost* of a product. Because this formula also refers to the slope of the production possibilities frontier, the MRT equals the absolute value of the production possibilities frontier's slope.

In **Figure 2.1**, the MRT of wheat into autos gives the amount of wheat that must be sacrificed for each additional auto produced. Concerning the United States, movement from the top endpoint on its production possibilities frontier to the bottom endpoint shows that the relative cost of producing 120 additional autos is the sacrifice of 60 bushels of wheat. This sacrifice means that the relative cost of each auto produced is 0.5 bushel of wheat sacrificed (60/120 = 0.5); the MRT = 0.5. Similarly, Canada's relative cost of each auto produced is 2 bushels of wheat; that is, Canada's MRT = 2.0.

2-3 Trading under Constant-Cost Conditions

This section illustrates the principle of comparative advantage under **constant opportunity costs**. Although the constant-cost case may be of limited relevance to the real world, it serves as a useful pedagogical tool for analyzing international trade. The discussion focuses on two questions. First, what are the *basis for trade* and the *direction of trade*? Second, what are the potential *gains from trade* for a single nation and for the world as a whole?

Referring to **Figure 2.1**, notice that the production possibilities frontiers for the United States and Canada are drawn as straight lines. The fact that these frontiers are linear indicates that the relative costs of the two products do not change as the economy shifts its production from all wheat to all autos or anywhere in between. For the United States, the relative cost of an auto is 0.5 bushel of wheat as output expands or contracts; for Canada, the relative cost of an auto is 2 bushels of wheat as output expands or contracts.

There are *two reasons* for constant costs. First, the factors of production are perfect substitutes for each other. Second, all units of a given factor are of the same quality. As a country transfers resources from the production of wheat into the production of autos or vice versa, the country will not have to resort to resources that are inadequate for the production of the good. Therefore, the country must sacrifice exactly the same amount of wheat for each additional auto produced, regardless of how many autos it is already producing.

2-3a Basis for Trade and Direction of Trade

Let us examine trade under constant-cost conditions. Referring to **Figure 2.1**, assume that in **autarky** (the absence of trade) the United States prefers to produce and consume at point *A* on its production possibilities frontier with 40 autos and 40 bushels of wheat. Assume also that Canada produces and consumes at point *A′* on its production possibilities frontier with 40 autos and 80 bushels of wheat.

The *slopes* of the two countries' production possibilities frontiers give the *relative cost* of one product in terms of the other. The relative cost of producing an additional auto is only 0.5 bushel of wheat for the United States but 2 bushels of wheat for Canada. According to the principle of comparative advantage, this situation provides a basis for mutually favorable specialization and trade owing to the differences in the countries' relative costs. As for the direction of trade, we find the United States specializing in and exporting autos and Canada specializing in and exporting wheat.

2-3b Production Gains from Specialization

The law of comparative advantage asserts that with trade, each country will find it favorable to specialize in the production of the good of its comparative advantage and will trade part of this for the good of its comparative disadvantage. In **Figure 2.1**, the United States moves from production point *A* to production point *B*, totally specializing in auto production. Canada specializes in wheat production by moving from production point *A′* to production point *B′* in the figure. Taking advantage of specialization can result in **production gains** for both countries.

We find that prior to specialization, the United States produces 40 autos and 40 bushels of wheat. But with complete specialization, the United States produces 120 autos and no wheat. As for Canada, its production point in the absence of specialization is at 40 autos and 80 bushels of wheat, whereas its production point under complete specialization is at 160 bushels of wheat and no autos. Combining these results, we find that both nations together have experienced a net production gain of 40 autos and 40 bushels of wheat under conditions of complete specialization. **Table 2.4(a)** summarizes these production gains. Because these production gains arise from the reallocation of *existing* resources, they are also called the *static gains* from specialization: Through specialization, a country can use its current supply of resources more efficiently and thus achieve a higher level of output than it could without specialization.

Table 2.4

Gains from Specialization and Trade: Constant Opportunity Costs

(a) Production Gains from Specialization

	Before Specialization		After Specialization		Net Gain (Loss)	
	Autos	Wheat	Autos	Wheat	Autos	Wheat
United States	40	40	120	0	80	–40
Canada	40	80	0	160	–40	80
World	80	120	120	160	40	40

(b) Consumption Gains from Trade

	Before Trade		After Trade		Net Gain (Loss)	
	Autos	Wheat	Autos	Wheat	Autos	Wheat
United States	40	40	60	60	20	20
Canada	40	80	60	100	20	20
World	80	120	120	160	40	40

Japan's opening to the global economy is an example of the static gains from comparative advantage. Responding to pressure from the United States, in 1859 Japan opened its ports to international trade after more than 200 years of self-imposed economic isolation. In autarky, Japan found that it had a comparative advantage in some products and a comparative disadvantage in others. For example, the price of tea and silk was much higher on world markets than in Japan prior to the opening of trade, while the price of woolen goods and cotton was much lower on world markets. Japan responded according to the principle of comparative advantage: It exported tea and silk in exchange for imports of clothing. By using its resources more efficiently and trading with the rest of the world, Japan was able to realize static gains from specialization that equaled