But there are many other crucial ways in which nations are interdependent, so that economic events and policies in one nation significantly affect other nations (and vice versa). For example, if the United States stimulates its economy, part of the increased demand for goods and services by its citizens spills into imports, which stimulate the economies of other nations that export those commodities. On the other hand, an increase in interest rates in the United States is likely to attract funds (capital) from abroad and increase the international value of the dollar. This stimulates U.S. imports and discourages U.S. exports, thus dampening economic activity in the United States and stimulating it abroad.

Finally, trade negotiations that reduce trade barriers across nations may lead to an increase in the exports of high-technology goods (such as computers) and thus to an increase in employment and wages in those industries in the United States, but also to an increase in imports of shoes and textiles, thereby reducing employment and wages in those sectors. Thus, we see how closely linked, or interdependent, nations are in today's world and how government policies aimed at solving purely domestic problems can have significant international repercussions.

1.3 The International Flow of Goods, Services, Labor, and Capital

Interdependence in the world economy is reflected in the flow of goods, services, labor, and capital across national boundaries.

1.3A The International Flow of Goods and Services: The Gravity Model

We have seen that international trade is of growing importance to the nation's well-being. But which are the major U.S. trade partners and why? In general, we would expect nations to trade more with larger nations (i.e., with nations with larger GDPs) than with smaller ones, with nations that are geographically closer than with nations that are more distant (for which transportation costs would be greater), with nations with more open economic systems than with nations with less open systems, and with nations with similar language and cultural background than with nations that are more different.

In its simplest form, the gravity model postulates that (other things equal), the bilateral trade between two countries is proportional, or at least positively related, to the product of the two countries' GDPs and to be smaller the greater the distance between the two countries (just like in Newton's law of gravity in physics). That is, the larger (and the more equal in size) and the closer the two countries are, the larger the volume of trade between them is expected to be.

According to the gravity model, we expect the United States to trade more with its neighbors Canada and Mexico than with similar but more distant nations, and more with large economies such as China, Japan, and Germany than with smaller ones. This is exactly what Table 1.3 shows. That is, the largest trade partners of the United States are generally closer and/or larger. (The Appendix to this chapter provides detailed data on the commodity and geographic concentration of international trade, as well as on the world's leading exporters and importers of goods and services; Case Study 13-1 then gives the major commodity exports and imports of the United States.)

TABLE 1.3. The Major Trade Partners of the United States in 2011 (billions of dollars)

Country	Exports	Imports	Export Plus Imports
Canada	$282.3	$320.5	$602.8
China	105.3	400.6	505.9
Mexico	198.7	267.3	466.0
Japan	67.2	131.8	199.0
Germany	49.6	99.4	149.0
United Kingdom	57.0	51.9	108.9
South Korea	45.2	57.5	102.7
France	28.5	40.7	69.2
Taiwan	27.1	41.5	68.6
Italy	16.2	34.3	50.5

Source: U.S. Department of Commerce, *Survey of Current Business* (Washington, D.C.: U.S. Government Printing Office, July 2012), pp. 34–35.

1.3B The International Flow of Labor and Capital

Besides trade in goods and services, the international flow of people (migration) and capital across national boundaries is another measure or indicator of economic integration and globalization in the world economy.

Today there are about 190 million people in the world who live in a country other than the one in which they were born—nearly 60 percent of them are in rich countries (about 36 million in Europe and 38 million in the United States). People migrate primarily for economic reasons (i.e., to improve their standard of living and provide more opportunities for their children), but some do so to escape political and religious oppression. The 38 million foreign-born people who live in the United States represent 12.5 percent of the U.S. population and 16.2 percent of the American labor force. Of these, over 11 million, or nearly 30 percent, entered the nation illegally. Most nations impose restrictions on immigration to reduce the inflow of low-skilled people (while often encouraging the immigration of highly skilled and technical people). Migration is generally more restricted and regulated than the international flow of goods, services, and capital. (International labor migration is examined in detail in Section 12.6.)

In general, capital flows more freely across national boundaries than people. Financial or portfolio capital (bank loans and bonds) generally move to nations and markets where interest rates are higher, and foreign direct investments in plants and firms flows to nations where expected profits are higher. This leads to the more efficient use of capital and generally benefits both lenders and borrowers. During the 1970s, Middle Eastern nations deposited a great deal of their huge earnings from petroleum exports in New York and London banks, which then lent (recycled) them to Latin American and Asian governments and corporations. During the 1980s, Japan invested a large chunk of its huge export earnings in financial assets and real estate and to set up corporate subsidiaries in the United States.

Since the mid-1980s, the United States has become an increasingly large net borrower from the rest of the world to cover its excess of spending over production (see Case Study 1-5). Global banks established branches in major international monetary centers around the world (New York, London, Frankfurt, Tokyo, Shanghai, Singapore). More than $3 trillion (about 20 percent of the size of the U.S. GDP or economy) of foreign currencies

CASE STUDY 1-5 Major Net Exporters and Importers of Capital

Table 1.4 shows data on the major net exporters and importers of capital in 2011. Practically all nations export and import capital as their investors take advantage of foreign lending and investment opportunities, cover risk, and diversify their portfolios. Nations that export more capital than they import are the net capital exporters on the world scene, while those that import more capital than they export are the net capital importers. From the table we see that Germany and China are the largest net capital exporters, followed by Saudi Arabia and Japan. The United States, on the other hand, is by far the largest net capital importer. The United States is simply spending too much and living beyond its means—a situation that the United States needs to correct.

TABLE 1.4. Major Net Exporters and Importers of Capital in 2011

Net Exporters of Capital	Percent of World Capital Exports	Net Importers of Capital	Percent of World Capital Imports
Germany	12.8%	United States	38.5%
China	12.5	Turkey	6.3
Saudi Arabia	8.8	Italy	5.7
Japan	7.5	France	5.0
Russia	6.3	Spain	4.5
Switzerland	5.6	Brazil	4.3
Kuwait	4.6	Canada	4.0
Other	41.9	Other	31.7

Source: International Monetary Fund, *Global Financial Stability Report* (Washington, D.C.: IMF, April 2012), p. 3.

are exchanged each day by around-the-clock trading in world financial centers, and newly established sovereign funds (financial institutions owned by Middle Eastern petroleum exporting nations, Singapore, China, Russia, and Brazil) are making huge investments of all kinds all over the world. Financial markets are globalized as never before. The downside is that when a financial crisis starts in one country, it quickly spreads to others. (International capital flows are examined in detail in Chapter 12 and financial crises in Chapter 21.)

1.4 International Economic Theories and Policies

Let us now examine the purpose of international economic theories and policies and the subject matter of international economics.

1.4A Purpose of International Economic Theories and Policies

The purpose of economic theory in general is to predict and explain. That is, economic theory abstracts from the details surrounding an economic event in order to isolate the few variables and relationships deemed most important in predicting and explaining the event. Along these lines, international economic theory usually assumes a two-nation, two-commodity, and two-factor world. It further assumes no trade restrictions to begin with, perfect mobility of factors within the nations but no international mobility, perfect competition in all commodity and factor markets, and no transportation costs.

These assumptions may seem unduly restrictive. However, most of the conclusions reached on the basis of these simplifying assumptions hold even when they are relaxed to deal with a world of more than two nations, two commodities, and two factors, and with a world where there is some international mobility of factors, imperfect competition, transportation costs, and trade restrictions.

Starting with the simplifying assumptions just mentioned, international economic theory examines the basis for and the gains from trade, the reasons for and the effects of trade restrictions, policies directed at regulating the flows of international payments and receipts, and the effects of these policies on a nation's welfare and on the welfare of other nations. International economic theory also examines the effectiveness of macroeconomic policies under different types of international monetary arrangements or monetary systems.

Although most of international economics represents the application of general microeconomic and macroeconomic principles to the international context, many theoretical advances were made in the field of international economics itself, and only subsequently did they find their way into the body of general economic theory. One example is the so-called theory of the second best (discussed in Section 10.4A). Production and general equilibrium theory, growth theory, welfare economics, as well as many other economic theories, have also benefited from work in the international sphere. These contributions attest to the vitality and importance of international economics as a special branch of economics.

1.4B The Subject Matter of International Economics

International economics deals with the economic and financial interdependence among nations. It analyzes the flow of goods, services, payments, and monies between a nation and the rest of the world, the policies directed at regulating these flows, and their effect on the nation's welfare. This economic and financial interdependence is affected by, and in turn influences, the political, social, cultural, and military relations among nations.

Specifically, international economics deals with international trade theory, international trade policy, the balance of payments and foreign exchange markets, and open-economy macroeconomics. International trade theory analyzes the basis and the gains from trade. International trade policy examines the reasons for and the effects of trade restrictions. The balance of payments measures a nation's total receipts from and the total payments to the rest of the world, while foreign exchange markets are the institutional framework for the exchange of one national currency for others. Finally, open-economy macroeconomics deals with the mechanisms of adjustment in balance-of-payments disequilibria (deficits and surpluses). More importantly, it analyzes the relationship between the internal and the external sectors of the economy of a nation, and how they are interrelated or interdependent with the rest of the world economy under different international monetary systems.

International trade theory and policies are the microeconomic aspects of international economics because they deal with *individual* nations treated as single units and with the (relative) price of *individual* commodities. On the other hand, since the balance of payments deals with *total* receipts and payments, as well as with adjustment and other economic policies that affect the level of *national* income and the *general* price level of the nation as a whole, they represent the macroeconomic aspects of international economics. These are often referred to as open-economy macroeconomics or international finance.

International economic relations differ from interregional economic relations (i.e., the economic relations among different parts of the same nation), thus requiring somewhat different tools of analysis and justifying international economics as a distinct branch of economics. That is, nations usually impose some restrictions on the flow of goods, services, and factors across their borders, but not internally. In addition, international flows are to some extent hampered by differences in language, customs, and laws. Furthermore, international flows of goods, services, and resources give rise to payments and receipts in foreign currencies, which change in value over time.

International economics has enjoyed a long, continuous, and rich development over the past two centuries, with contributions from some of the world's most distinguished economists, from *Adam Smith* to *David Ricardo, John Stuart Mill, Alfred Marshall, John Maynard Keynes*, and *Paul Samuelson*. We will be examining the contribution made by each of these and other great economists in the following chapters. Other special branches of economics are of more recent vintage, and none can claim such a distinguished list of contributors and background.

1.5 Current International Economic Problems and Challenges

In this section, we briefly identify the most important international economic problems and challenges facing the world today. These are the problems that the study of international economic theories and policies can help us understand and evaluate suggestions for their resolution. The most serious economic problem in the world today is the slow growth and high unemployment facing the United States and most other advanced countries. On the trade side, the most serious problem is rising protectionism in advanced countries in the context of a rapidly globalizing world. On the monetary side are the excessive volatility of exchange rates (i.e., the very large fluctuations in the international value of national currencies) and their large and persistent misalignments (i.e., the fact that exchange rates can be far out of equilibrium for long periods of time). Other serious international economic problems are the deep structural imbalances in the United States, slow growth in Europe and Japan, and insufficient restructuring in the transition economies of Central and Eastern Europe; the deep poverty in many developing countries; and resource scarcity, environmental degradation, and climate change, and the danger they pose for continued growth and sustainable world development. A brief description of these problems and challenges follows.

1. *Slow Growth and High Unemployment in Advanced Economies after "the Great Recession"*
   In 2010 and 2011, advanced economies experienced slow growth and high unemployment as they came out of the most serious financial and economic crisis (often referred to as "the great recession") since the Great Depression of 1929. The 2008–2009 crisis started in the U.S. subprime (high-risk) housing mortgage market in August 2007 and then spread to the entire financial and real sectors of the U.S. economy in 2008, and from there to the rest of the world. The United States and other advanced nations responded by rescuing banks and other financial institutions from bankruptcy,

slashing interest rates and introducing huge economic stimulus packages. These efforts, however, only succeeded in preventing the economic recession from being deeper than otherwise. Even though the recession was officially over in 2010, slow growth and high unemployment remain the most serious economic problems facing most advanced nations. These problems are even greater for Greece, Ireland, Portugal, Spain and Italy (all members of the 17-nation European Monetary Union), which remain in deep crisis from overborrowing, unsustainable budget deficits, and loss of international competitiveness.

2. *Trade Protectionism in Advanced Countries in a Rapidly Globalizing World*
In the study of the pure theory of international trade in Part One (Chapters 2–7), we see that the best policy for the world as a whole is free trade. With free trade, each nation will specialize in the production of the commodities that it can produce most efficiently and, by exporting some of them, obtain more of other commodities than it could produce at home. In the real world, however, most nations impose some restrictions on the free flow of trade. Although invariably justified on national welfare grounds, trade restrictions are usually advocated by and greatly benefit a small minority of producers in the nation at the expense of the mostly silent majority of consumers. The problem is now exacerbated by the increasing competitive challenge that advanced countries face from the leading emerging market economies, particularly China and India. Widespread fears of large job losses have led to calls for protection from foreign competition in advanced countries, especially the United States. The challenge for advanced countries is how to remain competitive, avoid major job losses, share in the benefits of globalization, and avoid increased protectionism. How advanced countries can meet this challenge is examined in Part Two (Chapters 8–12) of the text.

3. *Excessive Fluctuations and Misalignment in Exchange Rates and Financial Crises*
In the study of international finance in Part Three (Chapters 13–15), we see that exchange rates have exhibited excessive fluctuations and volatility, as well as persistent misalignments or disequilibria. Periodic financial crises have also led to financial and economic instability and dampened growth in advanced and emerging markets alike—witness the financial crisis that started in Southeast Asia in 1997 and in the United States in 2007. These can disrupt the pattern of international trade and specialization and can lead to unstable international financial conditions throughout the world. They have also led to renewed calls for reforms of the present international monetary system and for more international coordination of economic policies among the leading economies (examined in Chapters 20 and 21 of the text).

4. *Structural Imbalances in Advanced Economies and Insufficient Restructuring in Transition Economies*
The United States faces deep structural imbalances in the form of excessive spending and inadequate national saving. This means that the United States is simply living beyond its means by borrowing excessively abroad. The result is huge capital inflows, an overvalued dollar, huge and unsustainable trade deficits, and unstable financial conditions. Europe faces inflexible labor markets and Japan serious inefficiencies in its distribution system, which slows their growth. Transition economies (the former communist countries of Central and Eastern Europe) require additional economic restructuring in order to establish full-fledged market economies and achieve more rapid growth. Inadequate growth in these areas dampens the growth of the entire

world economy and leads to calls for protectionism. Thus, we see how national and regional challenges quickly become global economic problems in our interdependent world. Part Four of the text (dealing with open-economy macroeconomics) examines the policies available to address these challenges.

5. *Deep Poverty in Many Developing Countries*
Even though many developing countries, especially China and India, have been growing very rapidly, some of the poorest developing nations, particularly those of sub-Saharan Africa, face deep poverty, unmanageable international debts, economic stagnation, and widening international inequalities in living standards. There are today more than 1 billion people (about one-sixth of the world population) who live on less than $1.25 a day! A world where millions of people starve each year not only is unacceptable from an ethical point of view but also can hardly be expected to be peaceful and tranquil. Chapters 11 and 21 will examine why international inequalities in standards of living between the rich and many of the poorest developing countries of the world are so large and widening, and what can be done to stimulate growth in the world's poorest countries.

6. *Resource Scarcity, Environmental Degradation, Climate Change, and Unsustainable Development*
Growth in rich countries and development in poor countries are now threatened by resource scarcity, environmental degradation, and climate change. In the face of rapidly growing demand, particularly by China and India, and supply rigidities in producing nations, the price of petroleum and other raw materials has risen sharply during the past few years, and so has the price of food. In many leading emerging market economies protection of the environment takes a backseat to the growth imperative. Environmental pollution is dramatic in some parts of China and the Amazon forest is rapidly being destroyed. And we are witnessing very dangerous climate changes that may have increasingly dramatic effects on life on earth. These problems can be only adequately analyzed and addressed by a joint effort of all the sciences together, a major worldwide cooperative effort, and a change in world governance.

1.6 Organization and Methodology of the Text

In this section, we briefly describe the organization, content, and methodology of this text.

1.6A Organization of the Text

This text is organized into four parts. Part One (Chapters 2–7) deals with international trade theory. It starts with the explanation of the important theory of comparative advantage in Chapter 2, examines the basis and the gains from trade in Chapter 3, and shows how equilibrium-relative prices are determined for internationally traded goods and services in Chapter 4. The Heckscher–Ohlin theory of international trade and its empirical relevance are examined in Chapter 5. Chapter 6 then discusses with new trade theories that base trade on economies of scale and imperfect competition. Chapter 7 deals with growth and trade.

Part Two (Chapters 8–12) focuses on international trade policies. Chapter 8 examines tariffs, the most important of the trade restrictions, while Chapter 9 extends the discussion to nontariff trade barriers, evaluates the justifications usually given for trade protectionism,