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ECONOMICS

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Thomas A. Pugel



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International Economics

Eighteenth Edition

Thomas A. Pugel
New York University





INTERNATIONAL ECONOMICS

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To my wonderful family, my dear wife Bonnie and our next generation, Gabe, Maggie, James, and Krista. I am so grateful for the love we share.

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Preface

International economics combines the excitement of world events and the incisiveness of economic analysis. We are in the second great wave of globalization, in which product, capital, and labor markets become more integrated across countries. This second wave, which began in about 1950 and picked up steam in the 1980s, has lasted longer than the first, which began in about 1870 and ended with World War I (or perhaps with the onset of the Great Depression in 1930).

In the process of globalization, international trade, foreign direct investment, cross-border lending, and international portfolio investments have grown faster than world production. In addition, information, data, and rumors now spread around the world instantly through the Internet and other global electronic media.

As the world has become more integrated, countries have become more interdependent. Increasingly, events and policy changes in one country affect many other countries. Also increasingly, companies make decisions about production and product development based on global markets.

It is important to recognize, however, that globalization is not inevitable. Since the 2007–2009 global financial and economic crisis, the process of globalization has slowed markedly. More recently, the global spread of COVID-19 led to limits on international activities as governments imposed lockdowns on production activities and restrictions on international travel.

To some extent, we may be in a pause to allow regrouping of the economic forces driving globalization. For example, before the financial and economic crisis, global financial flows may have overexpanded, so a retrenchment was healthy. Other forces resisting globalization are political, including rising nationalism. Are national well-being and globalization enemies? A key task of international economics is to examine the national interest within an

internationally linked world.

My goal in writing and revising this book is to provide the best blend of events and analysis, so that the reader builds the abilities to understand global economic developments and to evaluate proposals for changes in economic policies. The book is informed by current events and by the latest in applied international research. My job is to synthesize all of this to facilitate learning. The book

Combines rigorous economic analysis with attention to the issues of economic policy that are alive and important today.

Is written to be concise and readable.

Uses economic terminology when it enhances the analysis but avoids jargon for jargon's sake.

I follow these principles when I teach international economics to undergraduates and master's degree students. I believe that the book benefits as I bring into it what I learn from the classroom.

THE SCHEME OF THE BOOK

The examples presented in [Chapter 1](#) show that international economics is exciting and sometimes controversial because there are both differences between countries and interconnections among countries. Still, international economics is like other economics in that we will be examining the fundamental challenge of scarcity of resources—how we can best use our scarce resources to create the most value and the most benefits. We will be able to draw on many standard tools and concepts of economics, such as supply and demand analysis, and extend their use to the international arena.

We begin our in-depth exploration of international economics with international trade theory and policy. In [Chapters 2–7](#) we look at why countries trade goods and services. In [Chapters 8–15](#) we examine what

government policies toward trade would bring benefits and to whom. This first half of the book might be called international microeconomics.

Our basic theory of trade, presented in [Chapter 2](#), says that trade usually results from the interaction of competitive demand and supply. It shows how the gains that trade brings to some people and the losses it brings to others can sum to overall global and national gains from trade. [Chapter 3](#) launches an exploration of what lies behind the demand and supply curves and discovers the concept of comparative advantage. [Chapter 4](#) shows that countries have different comparative advantages for the fundamental reason that people, and therefore countries, differ from each other in the resources they bring to production of goods and services. [Chapter 5](#) looks at the strong impacts of trade on people who own those productive resources—the human labor and skills, the capital, the land, and other resources. Some ways of making a living are definitely helped by trade, while others are hurt. [Chapter 6](#) examines how actual trade may reflect forces calling for theories that go beyond our basic ideas of demand and supply and of comparative advantage. [Chapter 7](#) explores some key links between trade and economic growth.

[Chapters 8–15](#) use the theories of the previous chapters to analyze a broad range of government policy issues. [Chapters 8–10](#) set out on a journey to map the border between good trade barriers and bad ones. This journey turns out to be intellectually challenging, calling for careful reasoning. [Chapter 11](#) explores how firms and governments sometimes push for more trade rather than less, promoting exports more than a competitive marketplace would. [Chapter 12](#) switches to the economics of trade blocs like the European Union and the United States-Mexico-Canada Agreement. [Chapter 13](#) faces the intense debate over how environmental concerns should affect trade policy. [Chapter 14](#) looks at how trade creates challenges and opportunities for developing countries. [Chapter 15](#) examines the economics of emigration and immigration and the roles of global companies in the transfer of resources, including technology, between countries.

The focus of the second half of the book shifts to international finance and macroeconomics. In [📄 Chapters 16–📄 21](#) we enter the world of different moneys, the exchange rates between these moneys, and international investors and speculators. [📄 Chapters 22–📄 25](#) survey the effects of a national government’s choice of exchange-rate policy on the country’s macroeconomic performance, especially unemployment and inflation.

[📄 Chapter 16](#) presents the balance of payments, a way to keep track of all the economic transactions between a country and the rest of the world. In


[📄 Chapter 17](#) we explore the basics of exchange rates between currencies and the functioning and enormous size of the foreign exchange market.

[📄 Chapter 18](#) provides a tour of the returns to and risks of foreign financial investments. Exchange rates are prices, and in [📄 Chapter 19](#) we look behind basic supply and demand in the foreign exchange market, in search of fundamental economic determinants of exchange-rate values. [📄 Chapter 20](#) examines government policies toward the foreign-exchange market, first using description and analysis, and then presenting the history of exchange-rate regimes, starting with the gold standard and finishing with the current mash-up of different national policies. Well-behaved international lending and borrowing can create global gains, but [📄 Chapter 21](#) also examines financial crises that can arise from some kinds of foreign borrowing and that can spread across countries, a clear downside of globalization.

[📄 Chapter 22](#) begins our explication of international macroeconomics by developing a framework for analyzing a national economy that is linked to the rest of the world through international trade and international financial investing. We use this framework in the next two chapters to explore the macroeconomic performance of a country that maintains a fixed exchange-rate value for its currency ([📄 Chapter 23](#)) and of a country that allows a floating, market-driven exchange-rate value for its currency ([📄 Chapter 24](#)).

[📄 Chapter 25](#) uses what we have learned throughout the second half of the book to examine the benefits and costs of alternatives for a country’s

exchange-rate policy. While rather extreme versions of fixed exchange rates serve some countries well, the general trend is toward more flexible exchange rates.

In a few places the book's scheme (international trade first, international finance second) creates some momentary inconvenience, as when we look at the exchange-rate link between cutting imports and reducing exports in  **Chapter 5** before we have discussed exchange rates in depth. Mostly the organization serves us well. The understanding we gain about earlier topics provides us with building blocks that allow us to explore broader issues later in the book.

CURRENT EVENTS, NEW EXAMPLES, AND NEW RESEARCH

It is a challenge and a pleasure for me to incorporate the events and policy changes that continue to transform the global economy, and to find the new examples that show the effects of globalization (both its upside and its downside). Here are some of the current and recent events and issues that are included in this edition (in the order in which they appear in the text), to provide new examples that show the practical use of our international economic analysis:

- In early 2020 COVID-19 became a global pandemic that had dire effects on global health and very large effects on the global economy. Most countries went into deep recessions in 2020, and international trade in goods and services shrank. Investors' flight to safety and "dash for cash" disrupted financial markets. Monetary policy and fiscal policy shifted quickly to expansionary, and the global recession was short. The International Monetary Fund (IMF) reacted quickly, with a large allocation of new special drawing rights and emergency lending to a large number of developing countries.
- During Donald Trump's term as U.S. president, he issued a series of executive orders that restricted immigration into the United States. When

Joe Biden became president in 2021, he quickly issued executive orders that reversed many of those issued by Trump.

- Brexit, the United Kingdom (UK) leaving the European Union (EU), occurred in early 2020. The UK and the EU implemented a free trade area for their goods trade that went into effect at the beginning of 2021. While the free trade agreement continued trade with no tariffs or quantitative limits, the UK and EU imposed new nontariff impediments to goods trade, and trade between the UK and EU declined. As of mid-2022, rules for trade in services, including financial services, a British strength, had not yet been agreed. With Brexit the UK and EU imposed their government policies to migration between them. UK immigration from the EU declined substantially.
- In 2020, as international investors sought out ultra-safe financial investments, many shifted investments to Switzerland. As they bought Swiss francs in the foreign exchange market, this put upward pressure on the exchange rate value of the Swiss franc, especially relative to the euro, the currency of its major trading partners in the EU. Fearing the negative macroeconomic effects of franc appreciation on the Swiss economy, the Swiss central bank made large interventions into the foreign exchange market, selling Swiss francs and buying euros. But the interventions brought Switzerland into conflict with U.S. laws, and in late 2020 the U.S. Treasury Department formally designated Switzerland as currency manipulator. After discussions and negotiations between the two governments, the U.S. dropped the designation in 2021.
- Semiconductor integrated circuits became increasingly pervasive in many products. The Dutch firm ASML is the sole manufacturer of the most advanced version of lithographic machines needed to produce cutting-edge integrated circuits. ASML is the most important global monopoly that most people have never heard of.
- The trade war that the Trump administration started with China in 2018 continued to escalate in 2019. Twice in 2019 the United States imposed additional tariffs on imports from China, and China retaliated by increasing

its tariffs on imports from the United States. With a Phase One agreement between the China and the United States in early 2020, the trade war stalemated.

- The Trump administration bold-faced its complaints about shortcomings of the World Trade Organization (WTO) by blocking appointments of new members to join the Appellate Body for the WTO dispute settlement process. As the terms of judges expired with no replacements, the Appellate Body could no longer function. Panel decisions in WTO dispute cases that were appealed went into suspensions, with the cases unresolved.
- Even though American steel-producing firms benefitted from higher tariffs on steel imports imposed by the Trump administration in 2018 (part of the second front of the trade war), the firms continued to file cases alleging foreign dumping of steel. Of the 19 cases filed, the U.S. government imposed anti-dumping duties in 17. The duties apply in addition to the higher tariffs.
- The battle at the WTO between the United States and the EU over subsidies to their civilian aircraft producers (Boeing and Airbus) ended in a truce in 2021, 17 years after it started. The truce left the United States, the EU, and their complaints about each other's policies back to about where they were in 1992.

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- The United States-Mexico-Canada Agreement (USMCA), the successor to the North American Free Trade Area (NAFTA), entered into effect in 2020. Much of the USMCA is the same as NAFTA. The USMCA updates some rules and has rules for new areas, including digital trade and regulatory practices. It incorporates provisions for labor and the environment. And, it increases impediments to automobile trade.
- The Comprehensive and Progressive Trans-Pacific Partnership (CPTPP) came into force in 2018. The United States was active in negotiating the pact but withdrew from joining.
- A coalition of countries imposed broad sanctions on Russia after it invaded Ukraine in 2022. The sanctions included limits on or blocking of Russia's international trade and restrictions on Russia's ability to use international

financial and payments systems.

- By 2021 China had eliminated most of its limits on foreign ownership of financial firms, and in 2022 China removed such limits for automobile firms. In these industries foreign multinational enterprises became free to have majority- or wholly-owned affiliate firms in China. China also updated its lists of industries in which foreign direct investment is encouraged and industries in which it is prohibited.
- In May 2022 the Nigerian government had an official fixed exchange rate of 416 naira per U.S. dollar, but it also had extensive controls to limit access to dollars at this rate. Frustrated people who wanted to buy dollars could instead use an unofficial parallel market with a rate of about 600 naira per dollar.
- During 2018–2019 the IMF disbursed a loan to Argentina’s government, the largest IMF program ever. In 2020 Argentina defaulted on \$65 billion of its debt to private lenders and began discussions with the IMF to restructure its \$44 billion debt to the IMF.
- In addition to Argentina, five other developing countries defaulted on their international debt in 2020. A new issue became prominent. Government debts to Chinese lenders, mostly state-owned financial institutions and other enterprises, have grown. Limited availability of information about the Chinese loans made other lenders reluctant to agree to restructure their loans.
- Bulgaria and Croatia joined the Exchange Rate Mechanism for their fixed exchange rates with the euro, as part of the process for them to adopt the euro in place of their own currencies.
- In addition to Switzerland, the U.S. government also officially designated China as a currency manipulator in 2019 and Vietnam as a currency manipulator in 2020.
- Nigeria and Suriname devalued the exchange rate values of their currencies in 2020 and again in 2021. Egypt devalued its currency in 2022.
- Hong Kong uses a currency board to maintain the fixed exchange rate of its Hong Kong dollar to the U.S. dollar. With the rapid increase in U.S.

interest rates in 2022, the Hong Kong dollar depreciated to the edge of its of small exchange-rate band. The Hong Kong monetary authority intervened to buy Hong Kong dollars and sell U.S. dollars. The Hong Kong monetary base decreased and Hong Kong interest rates increased.

- To end its hyperinflation, Zimbabwe in 2009 abolished its own currency and “dollarized”—began to use the U.S. dollar as its currency. But, this constrained the government’s ability to run fiscal deficits. The government reintroduced its own currency and in 2019 declared it the sole legal tender. Quickly, very high inflation rates reappeared, driven by rapid money growth as the central bank “printed” money for the government to spend.

In addition to new events and examples, it is important for me to incorporate current and recent economic research that provides useful new insights into the effects of international economic activities and government policies toward international trade and finance. Here are examples that have been incorporated into this edition:

- Economics research quickly contributed to our understanding of the effects of the trade war initiated by the U.S. government in 2018. In two studies Mary Amiti, Stephen Redding, and David Weinstein examined the effects on trade prices and quantities. Pablo Fajgelbaum, Pinelopi Goldberg, Patrick Kennedy, and Amit Khandelwal also provided estimates of effects on trade prices and quantities, as well as changes in consumer surplus and deadweight loss. The study by Alberto Cavallo, Gita Gopinath, Brent Neiman, and Jenny Tang focused on the effects of U.S. tariffs on U.S. prices. These studies used monthly data on tariff rates and trade for detailed products by partner country. The research concluded that, with one exception, U.S. import tariffs were almost fully passed into prices of those imports in the United States, so that U.S. households and firms paid the U.S. tariffs. The exception is evidence from the second study by Amiti, Redding, and Weinstein. They found that, for the time beyond about a year, foreign steel exporters to the United States cut their export prices, so U.S. steel users only paid about half the tariff. The studies that examined

quantities all concluded that increased U.S. tariffs on imports substantially reduced those U.S. imports, and that foreign retaliatory tariffs on U.S. exports substantially reduced those U.S. exports.

- Yixiao Zhou and Harry Block examined the process of factor price equalization using data from 39 countries for 35 industries. They used purchasing power parity-adjusted wage rates for three groups of workers—low, medium, and high skill, defined by educational attainment. They found that differences in real wage rates across countries for each skill group decreased at a rate of about 4 percent per year.
- Research by Gary Hufbauer and Euijin Jung provided estimates of both the cost to U.S. consumers and the net cost to the United States of using high tariffs to maintain jobs in the clothing and textile industries. For each product, they used a supply-demand model, data on U.S. production, U.S. imports, and the average U.S. tariff rate, and estimates of demand and supply elasticities to calculate their cost estimates.
- Michele Ca' Zorzi and Michał Rubaszek were interested in forecasting future exchange rates. They began with monthly data on nominal (regular money to money) exchange rates, real (inflation adjusted) exchange rates, and consumer price indexes, for each of 10 other developed countries relative to the United States and the U.S. dollar. They confirmed two findings from previous studies. First, the real exchange rate is mean reverting (that is, relative purchasing parity tends to hold in the longer run). Second, changes in real exchange rates for developed countries are mostly the result of changes in nominal exchange rates. They combined these two insights into a simple forecasting method. For forecasting exchange rates more than a year in the future, their approach outperformed both the random walk proposition that the forecast of the future nominal exchange rate is simply the current exchange rate and some other more complex forecasting methods.

In this edition I introduce and extend a number of improvements to the pedagogical structure and topical coverage of the book.

- The COVID-19 pandemic has had wide-ranging effects on the international economy since early 2020. This edition interweaves the economic effects of the pandemic across its chapters. The overview of the global COVID-19 pandemic crisis opens Chapter 1. Among the controversial developments discussed in this overview are the shortages of imported personal protective equipment and other medical goods in 2020 and the stresses placed on global supply chains for many products. The large decline in the world's international trade is discussed in Chapter 2, which includes a visual comparison to the 2009 trade decline caused by the global financial and economic crisis. National bans and restrictions on exports of personal protective equipment and other medical goods appear in the discussion of export taxes and other limitations in Chapter 8. Chapter 15 notes that immigrant remittances back to their families decreased in 2020 and then recovered in 2021.

The discussion of the U.S. balance of payments in Chapter 16 includes the increases in the sizes of U.S. deficits in international trade and the current account during 2020–2021, and discussion in Chapter 24 relates the increased deficits to other macroeconomic developments. International dimensions of the financial disruptions caused by investors' flight to safety and "dash for cash" in March 2020 appear twice in the book. An updated figure in Chapter 18 shows that the disruptions included a widening of deviations from covered interest parity. Chapter 24 discusses the re-expansion of central bank liquidity swaps, an innovation from the global financial and economic crisis, to address the disruption that curtailed the access of foreign financial institutions to dollar funding. Two related boxes in Chapters 20 and 21 provide information on the response of the International Monetary Fund to the global COVID-19 pandemic crisis, including the creation and distribution of \$650 billion of new special drawing rights and rapid emergency lending of \$41 billion to 87 developing countries. Chapter 22 explains the path of the inflation rate in the United States (and many other countries). The initial effect with the deep recession was a decrease in inflation. The quick recovery and the demand shift toward

goods then led to rising inflation rates that became quite high by late-2021. And, Chapter 25's discussion of the euro highlights that the economic effects of COVID-19 led to two major EU policy changes—a suspension of the rules restricting national fiscal policies, and the implementation of the first large union-wide expansionary fiscal policy.

- Chapter 13 on trade and the environment continues as a unique and powerful treatment of issues of interest to many students. The presentation of global warming has been revised. It updates facts and baseline projections, including which countries and areas are expected to be most badly affected. It notes that, soon after Joe Biden became U.S. president, the United States rejoined the Paris Agreement. It presents principles for an effective global approach, and applies them to discuss the strengths and weaknesses of the Paris Agreement. And, it discusses the spread of national commitments to achieving net-zero carbon emissions, a development that offers some hope for progress in reducing global warming.

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- The 18th edition includes three new boxes. The new case study box “The Tariff-Driven Trade War of 2018–2019” in Chapter 8 explains how President Donald Trump and the U.S. government started a trade war on two fronts, one for steel and aluminum and one with China. The box describes the processes used to impose the initial U.S. tariffs, the retaliation tariffs by foreign countries, and counter-retaliation by the United States. The box also provides estimates of the sizes of the effects on trade flows, U.S. producers of various products, and U.S. consumers, as well as the net losses to the U.S. overall. The trade war provides an example that motivates the analysis of import barriers in Chapters 8 and 9.

The box “The World Trade Organization” in Chapter 9 is a combination and extension of two boxes from the 17th edition. The box includes discussion of the WTO's history, the general success in lowering tariffs, and the mixed record in reducing nontariff barriers to trade. It concludes by presenting a set of current challenges facing the WTO: the failure to achieve a new broad trade liberalization agreement; complaints by the United States and other countries about Chinese government policies, especially trade-

distortive subsidies to Chinese production and pressures to force technology transfers from foreign firms to Chinese firms; complaints by the U.S. government because WTO dispute settlement decisions repeatedly have found that U.S. procedures for imposing anti-dumping duties violate WTO rules; the WTO's inability to head off or de-escalate the trade war; and the U.S. government refusal to approve new judges, which has stymied a key part of the WTO dispute settlement process.

The new box “A Deeper Look at Monetary Policy” in Chapter 22 provides a discussion of different procedures used by countries to carry out their monetary policy. Some countries conduct their monetary policy by altering the quantity of money using tools like open market operations and reserve requirements. This approach motivates the LM curve used in Chapters 23 and 24. Other countries use interest rates that they control directly to move market-driven short-term interest rates close to the central bank's interest rate target. For the U.S. Federal Reserve, the target is the market rate for overnight federal funds lending, and the key rate set by the Fed is the interest rate that it pays on (regular) bank deposits at the Fed. The box notes that a modified version of the LM curve would fit this operating procedure, even though the central bank is not manipulating the money supply. The rest of our macroeconomic analysis in Chapters 23 and 24 would be very similar.

- I used the latest available sources to update the wide range of data and information presented in the figures and text of the book. Among other updates, the book offers the latest information on national factor endowments; international trade in specific products for the United States, China, and Japan; wage rates and productivity levels in the manufacturing sectors of 79 countries; national shares of intra-industry trade as a percentage of total trade; national average tariff rates; dumping and subsidy cases; levels and growth rates of national incomes per capita; trends in the relative prices of primary products; patterns of foreign direct investments broadly and by major home country; rates of immigration into the United States, Canada, and the European Union; the U.S. balance of payments and the U.S. international investment position; the sizes of foreign exchange trading and foreign exchange futures, swaps, and options; levels and trends

for nominal exchange rates; effective exchange-rate values for the U.S. dollar; evidence about relative purchasing power parity; the exchange-rate policies chosen by national governments; the flows of international financing to and the outstanding foreign debt of developing countries; and gold prices.

FORMAT AND STYLE

I have been careful to retain the goals of clarity and honesty that have made *International Economics* an extraordinary success in classrooms and courses around the world. There are plenty of quick road signs at the start of and within chapters. The summaries at the ends of the chapters offer an integration of what has been discussed. Students get the signs, “Here’s where we are going; here’s where we have just been.” I use bullet-point and numbered lists to add to the visual appeal of the text and to emphasize sets of determinants or effects. I strive to keep paragraphs to reasonable lengths, and I have found ways to break up some long paragraphs to make the text easier to read.

I am candid about ranking some tools or facts ahead of others. The undeniable power of some of the economist’s tools is applied repeatedly to events and issues without apology. Theories and concepts that fail to improve on common sense are not oversold.

The format of the book is fine-tuned for better learning. Students need to master the language of international economics. Most exam-worthy **terms** appear in boldface in the text, with their definitions usually contiguous. The material at the end of each chapter includes a listing of these *key terms*. Words and phrases that deserve *special emphasis* are in italics.

QUESTIONS AND PROBLEMS

Answering questions and working problems are great ways for students to engage with the book's contents and build their facility in using the concepts and analysis of international economics.

- The book includes a total of 313 end-of-chapter *Questions and Problems*. Each chapter (except for the short introductory chapter) has at least 12 questions and problems.
- The answers to all odd-numbered questions and problems are included in the material at the end of the book. As a reminder, these odd-numbered questions are marked with a ♦.
- Each *Case Study* box has a discussion question, a total of 21 questions that focus on issues raised in the case studies.

Box

Shaded boxes appear in different font with a different right-edge format and two columns per page, in contrast to the style of the main text. The boxes are labeled by type and provide discussions of the euro crisis that began in 2010, the global financial and economic crisis that began in 2007, the roles of the WTO and the IMF in global governance, China's international trade and investment, labor issues, case studies, and extensions of the concepts presented in the text.

SUPPLEMENTS

The following ancillaries are available for quick download and convenient access via the Instructor Resource material available through McGraw Hill Connect[®].

- **PowerPoint Presentations:** Revised with accessibility in mind, the

PowerPoint slides include a brief, detailed review of the important ideas covered in each chapter, accompanied by relevant tables and figures featured within the text and accessible descriptions for all figures compatible with most screen reader technology. You can edit, print, or rearrange the slides to fit the needs of your course.

- **Test Bank:** Updated for the eighteenth edition, the test bank offers well over 1,500 questions categorized by level of difficulty, AACSB learning categories, Bloom's taxonomy, and topic.
- **Instructor's Manual:** Written by the author, the instructor's manual contains chapter overviews, teaching tips, and suggested answers to the discussion questions featured among the case studies as well as the end-of-chapter questions and problems. To increase flexibility, the Tips section in each chapter often provides the author's thoughts and suggestions for customizing the coverage of certain sections and chapters.

REMOTE PROCTORING & BROWSER-LOCKING CAPABILITIES



Remote proctoring and browser-locking capabilities, hosted by Proctorio within Connect, provide control of the assessment environment by enabling security options and verifying the identity of the student.

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WRITING ASSIGNMENT

Available within Connect and Connect Master, the Writing Assignment tool delivers a learning experience to help students improve their written communication skills and conceptual understanding. As an instructor, you can assign, monitor, grade, and provide feedback on writing more efficiently and effectively.

Acknowledgments

I offer my deepest thanks to the many people whose advice helped me to improve *International Economics* in its *eighteenth* edition. My first thanks are to Peter H. Lindert, my coauthor on several previous editions. I learned much from him about the art of writing for the community of students who want to deepen their knowledge and understanding of the global economy.

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Thomas A. Pugel



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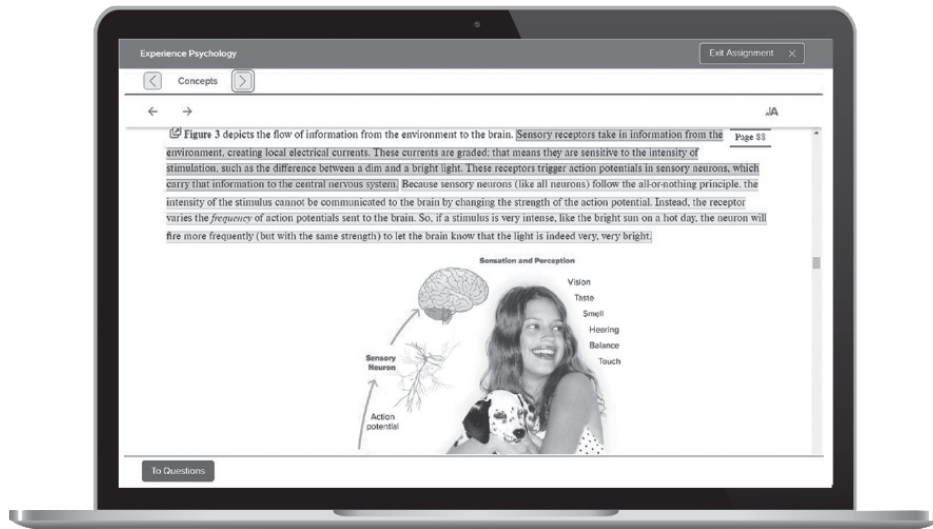
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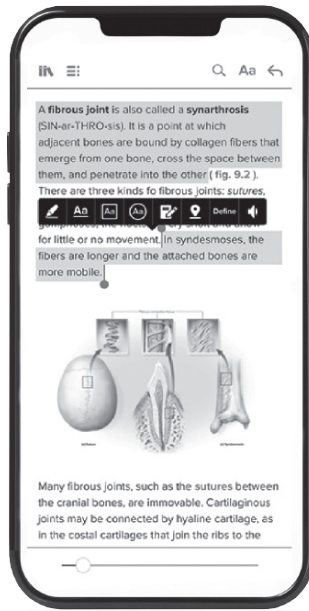
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Chapter One

International Economics Is Different

Nations are not like regions or families. They are sovereign, meaning that no central court can enforce its will on them with a global police force. Being sovereign, nations can put all sorts of barriers between their residents and the outside world. A region or family must deal with the political reality that others within the same nation can outvote it and can therefore coerce it or tax it. A family or region has to compromise with others who have political voice. A nation feels less pressure to compromise and often ignores the interests of foreigners. A nation uses policy tools that are seldom available to a region and never available to a family. A nation can have its own currency, its own barriers to trading with foreigners, its own government taxing and spending, and its own laws of citizenship and residence.

As long as countries exist, international economics will be a body of analysis distinct from the rest of economics. The special nature of international economics makes it fascinating and sometimes difficult. Let's look at four controversial developments that frame the scope of this book.

FOUR CONTROVERSIES

The Global COVID-19 Pandemic Crisis

The COVID-19 pandemic has had disastrous effects on global health. The disease is caused by the novel coronavirus SARS-CoV-2, which was first identified in Wuhan, China, in December 2019. By June 2022, the disease had spread around the world and caused, by official national estimates, over 6.3 million deaths globally. We are sure that this is a major undercount. The Economist used a statistical measure of excess deaths—the difference between actual deaths since the beginning of 2020 and the number of deaths expected based on pre-pandemic patterns—to estimate that COVID-19 had led to 21.5 million deaths. Most were probably the direct outcome of the disease, but some were an indirect result. The functioning of health systems in many countries served non-COVID patients less effectively, especially during waves of increased COVID-19.

The global COVID-19 pandemic crisis also had global economic effects. Most countries experienced deep recessions during 2020. At the beginning of 2020, the International Monetary Fund (IMF) forecast that the increase in global output of goods and services—in economists' terms, growth of real (inflation-adjusted) gross domestic product (GDP)—would be 2.7 percent for 2020. Instead, global real GDP decreased by 3.5 percent. World production was about \$5.3 trillion less than it would have been without COVID-19.

After 2020 people continued to catch COVID-19, including major waves driven by new variants. Fortunately, the global economy functioned better since the global recession depths during the second quarter of 2020. The IMF estimated that the growth rate of global real GDP for 2021 was about 5.7

percent.

The global COVID-19 pandemic crisis had major effects on international trade in goods and services, and international trade had effects on how countries could address their health challenges. The interplay between COVID-19 and international trade has been controversial.

The Effects of COVID-19 on International Trade

Before the global COVID-19 pandemic, world output and world trade in goods and services had been growing at about the same rate during 2012–2019. The global COVID-19 pandemic crisis had effects on international trade unlike those of any other global recession in the past century.

With the initial global spread of COVID-19, international trade fell dramatically. International trade in goods for the second quarter of 2020 was 12 percent below goods trade in the last quarter of 2019, and international trade in services was 21 percent less. For the entire year 2020, trade in goods was 6 percent below goods trade in 2019. Trade in services during 2020 was 25 percent less.

How well can standard economic drivers explain the declines in trade? Throughout the book we will examine a country's *demand for imports*, focusing on two economic drivers. First, income. As people have less income, they tend to buy less of all kinds of products, including imports. And, as the importing country's businesses produce less of their products, they tend to use less of imported inputs like raw materials, components, and business services. Second, product prices. As the prices of imported products increase, relative to the prices of locally produced products, people and businesses tend to buy less of the imported products.

The IMF presented its analysis of 2020's trade decline in Chapter 4 of the April 2022 edition of its *World Economic Outlook*. For the decline in goods trade during 2020, the standard economic drivers predict that the import decrease would be 10 percent, but it was only 6 percent. For trade in services, the standard drivers predict an import decline of 8 percent, but the actual

decline was 25 percent. The discrepancies are larger than we had seen for previous global recessions.

In many ways the COVID-19 recession was different. One difference is that governments in many countries implemented lockdowns and similar restrictions that limited national production and distribution (including the shipping of exports from the country). The IMF studied the role of lockdowns in affecting international good trade. It concluded that a little over half of the decline in imports of goods in the first half of 2020 was the result of lockdowns in exporting countries.

That is one way in which the COVID-19 recession was different. But, for the decline in goods trade for all of 2020, it cuts the wrong way. Policies directly limiting production in exporting countries suggest that the decline in goods trade would have been larger than standard economics predicts. Instead, the actual decline in goods imports was smaller (6 percent) than predicted (10 percent) by changes in national income and output in the importing countries and changes in relative import prices.

The COVID-19 pandemic had another (and initially surprising) effect on product demand. Many people began to work from home, and they also limited their contact with people from outside their households. They shifted the types of products that they were buying. They purchased more goods, especially durable goods like home appliances, furniture, and electronics, and they purchased fewer contact-intensive services (like haircuts and eat-in restaurant meals). This was a *shift* to more demand for imports of goods (other things like income and product prices held constant, as economists like to say). At the same time, lockdowns in export-producing countries like China were relaxed, and businesses learned how to maintain production even with some continuing restrictions. The result was that trade in goods in the second half of 2020 was larger than standard economic drivers would predict. And, for all of 2020, goods trade did not decline as much these drivers predicted.

Why was the decline in international trade in services so much larger than standard economic analysis would predict? The major explanation is the

remarkably negative effects of COVID-19 on international travel and tourism. Such travel is one kind of service that people and businesses drastically cut. Imports of international travel and tourism in the second quarter of 2020 fell by 80 percent from the last quarter of 2019 and remained at about this greatly diminished level through the beginning of 2022.

The declines of international trade in goods and in services during 2020 had their initially puzzling (if not controversial) aspects. We now have a better understanding of how this contagious-disease pandemic recession was different from previous recessions. Still, there are aspects of the decrease in international trade that did become controversial.

Medical Products: Personal Protective Goods

In a pandemic access to medical goods, especially imported medical goods, can easily become challenging and controversial. Given the trade war that the Trump administration had started with China in 2018, it is not surprising that imports from China were at the center of U.S. concerns.

Evenett (2020) provides useful evidence on U.S. imports of medical goods from China for 2019, the year before the COVID-19 pandemic began. He examined four types of medical goods. For medical equipment, Germany was a leading source of U.S. imports, and China was the top source of U.S. imports for 16 of 75 specific types of medical equipment. For pharmaceuticals, India was a leading source, and China was the top source for only 3 out of 73 types. For medical supplies, China was the top source for 22 of 83 types. For personal protective goods, also called personal protective equipment (PPE), China was the top source for 53 of 99 types. Overall, China was the source of about 8 percent of U.S. imports, the fourth largest source, behind Ireland, Germany, and Switzerland.

In [🔗](#) **Chapters 3-[🔗](#) 5** of the book, we will examine comparative advantage as a reason for countries to trade with each other. The pattern of trade that we see for these medical products is not surprising. China has a relative abundance of medium-skilled workers. China is a major source of exports of PPE, which are products that make intensive use of moderately skilled labor to

manufacture good quality products at a reasonable cost. China is a smaller source of medical equipment and pharmaceuticals, which require intensive use of skilled labor in research, development, and production.

Still, PPE was crucial in the efforts to treat those with COVID-19 and limit the spread of the disease. In the first months of the pandemic, there was a severe global shortage of PPE. China was hit first with the pandemic, and Chinese demand for PPE exploded in January 2020. Chinese imports of PPE increased, and PPE exports from China fell off sharply, just as demand for PPE in the United States (and elsewhere) took off.¹

Were imports, and especially imports from China, the culprit for the shortages of PPE and surging prices for PPE in the United States and in other countries? In contrast to much of the political discussion at the time, the economics of the dire situation suggest not so much. How can a country be ready to greatly expand its use of medical products like PPE during a health emergency?

First, the country can maintain stockpiles of PPE. For building stockpiles, international trade is part of the solution. Imports are often one of the lower-cost sources of these goods to add to stocks during nonemergency periods. Unfortunately, in 2018 and 2019 the Trump administration had increased tariffs (taxes) by rather large amounts (15 to 25 percent) on U.S. imports of many PPE products from China, and imports had declined. U.S. government stockpiles were too small, and private entities like hospitals maintained small stocks in their efforts to keep their costs low. The inadequate U.S. stockpiles of PPE were quickly used up.

Second, the country can incentivize rapid expansion of domestic production of PPE. The U.S. government did provide hundreds of millions of dollars of subsidies. U.S. firms that were producing some PPE in United States expanded their production, and some U.S. firms entered into PPE production. But, this was only part of the solution.

Third, even with stockpiles and expanding U.S. production, imports had to be another part. Firms in China and other exporting countries became a key to

expanding U.S. (and world) use of PPE. By early March, Chinese firms were producing a lot more PPE, and they continued to expand, incentivized by high prices and profits. By April, China's exports had returned to their pre-pandemic levels, and for most products, including masks and respirators, protective garments, gloves, and goggles, China's exports continued to expand during the rest of the year. (The exceptions included face shields and shoe covers. And, another problem, that of counterfeit products, became larger.)

By early to mid-2021, the prices of many PPE goods had returned close to pre-pandemic levels. The global shortage of PPE was largely resolved, with global production expansions that had caught up with demand at more reasonable price levels.

In addition to the role of comparative advantage in determining patterns of trade in specific products, the book will also examine government policies that were parts of the PPE story. In [🔗 Chapters 8](#) and [🔗 10](#), we analyze the effects when a country imposes or raises tariffs on imports, and a box toward the beginning of [🔗 Chapter 8](#) discusses the trade war started by the Trump administration in 2018. In [🔗 Chapter 10](#) we explore the use of production subsidies to expand domestic output of a product, and we discuss the connection of trade to stockpiles of products essential to the national defense. And, although not mentioned earlier because they seem to have played a relatively modest role in the PPE story, the U.S. government enacted export restrictions on many types of PPE. We discuss export taxes and restrictions in a box in [🔗 Chapter 8](#).

Global Supply Chains

Concerns about the availability of imports in the United States and other countries spread from PPE to other products as the pandemic led to disruptions in the availability of many other goods. For several decades up to early 2010s, manufacturing firms had expanded the range of their international activities by building global supply chains. Such extensive use of

global supply chains became controversial—had it gone too far and left countries exposed to unnecessary product shortages and price increases?

In a global supply chain (GSC) the business producing the final product locates each step in the production process in the country that results in the lowest overall cost. In some foreign locations, the firm owns and controls the affiliate firms that do production within the GSC. In other foreign locations, the firm contracts with independent firms producing in that location. The industry sectors in which firms have built out the most extensive GSCs included electronics (example, Apple), automobiles (example, Toyota), and medical goods (example, Johnson and Johnson).

Global supply chains allow firms to lower the all-in costs of producing and distributing their final products. At their core GSCs are the broad application of comparative advantage, the concept that we previously noted for PPE. To lower global costs, a step in the production process that requires highly skilled workers (like research and development or advanced manufacturing) should be located in a country that has an abundance of this type of workers. A step that requires lower skill workers (like assembly of components) should be located in a country that has an abundance of this type of workers. The overall cost of producing the final product can be lower as long as additional international transport costs and communication and control costs are not too high, and as long as government impediments (like tariffs) to the increased international trade are not too high.

The global COVID-19 pandemic created major problems for this business strategy. First, national governments imposed lockdowns or restrictions on production activities. A production shutdown for a component early in the supply chain spreads through that chain by slowing or stopping production in the later steps and ultimately reduces availability of the final good. The same effects occurred when international transportation temporarily shut down or slowed.

COVID-19 made it clear that global supply chains were exposed to a range of risks to their smooth operations. Could production of final products be made more resilient, to better function when a massive shock like COVID-19 hits

their operations? Here are some possibilities:

- Move production back to country where the firm is headquartered or the country in which most of the final product is sold, to eliminate the international risks inherent in the global supply chain.
- Develop two or more countries for each step in the supply chain, to diversify the risk of relying on a single foreign location for that step.
- Develop flexible design of the product so that the product can be produced using some other component in place of any component that is temporarily in short supply.
- Hold larger inventories of components needed as inputs in each step of the chain, to ride out temporary shortfalls of new production of that component.

Each of these could lower risk. But, each would also increase cost. (And, moving the entire production process of the final product to a single country leads to a concentration of risk in that country.)

Each business recognizes the risks to its global supply chain and adopts ways to manage that risk. In fact, global supply chains turned out to be more resilient than many initially feared in mid-2020, with one exception. In response to the expansion of global demand, global production of electronics and global production of medical products increased substantially after the initial months of the pandemic. The exception was automobiles. When the COVID-19 pandemic started, most large auto producers expected a long period of lower demand for new vehicles, and they canceled orders for the semiconductor chips that are essential to a car's operation. When demand for new cars came back quickly and strongly, the auto firms had fallen toward the back of the buyer queue. Two years later, in 2022, global auto production was still limited by lack of semiconductors, but it is hard to see how a different configuration of the auto firms' global supply chains could have made much difference.

The idea of bringing all production back to the home country is an example of

establishing national self-sufficiency in a product rather than using international trade to obtain the product. We use the contrast between these two in [🔗 Chapters 2–🔗 6](#) of the book to analyze the effects, benefits, and costs to a country of engaging in international trade. [🔗 Chapters 8–🔗 12](#) examine a range of government policies toward international trade. And, we discuss firms that own and operate production affiliates in other countries, that is, multinational enterprises, in [🔗 Chapter 15](#).

Immigration

About 275 million people, 3.5 percent of the world’s population, live outside the country of their birth. For most developed countries (an exception is Japan), the percentage of the country’s population that is foreign-born is rather high—14 percent for the United States and the United Kingdom, 21 percent for Canada, 16 percent for Germany, 20 percent for Sweden, and 30 percent for Australia and Switzerland—and, for most, this percentage is rising. Many of the foreign-born are undocumented immigrants—about 23 percent of the total for the United States. Rising immigration has set off rising controversy.

In 2007, 2013, and 2018, the U.S. Congress considered and rejected bills to enact comprehensive reform of U.S. policies toward immigration. On the day he became president in January 2021, Joe Biden submitted his version, the U.S. Citizenship Act of 2021. As of mid-2022, Congress had taken no action on the proposed law.

In the absence of new U.S. federal laws, presidential actions and new state laws became the instruments of changes in U.S. policy toward immigration. In his campaign for the presidency in 2016, Donald Trump used his platform to amplify and exploit voters’ fears of immigrants. He decried that immigrants hurt the United States by taking jobs from American workers. After assuming office, he issued a series of restrictive orders and directives.

In the first weeks of his presidency, Joe Biden issued his own series of orders to reverse many of Trump's orders. On the day he became president, Biden ended Trump's bans on citizens of a dozen countries, mostly African or Muslim-majority, traveling to the United States. He issued new guidance on immigration enforcement priorities and ended the Trump order to pursue prompt deportation of all undocumented immigrants. He preserved the "Dreamers" program (for undocumented immigrants who had been brought to the United States as children), a program that Trump wanted to dismantle. He halted the Trump program to build parts of a wall with Mexico, and he initiated efforts to correct the environmental damage from the sections that had been built. He reversed the Trump order to exclude undocumented immigrants from federal uses of the 2020 census population numbers. In early 2022, Biden addressed the aftermath of the Trump program that started in 2018 and had separated over 5,500 children from their parents. Biden set up a task force to reunite hundreds of still-separated children with their families. Reversing Trump's efforts to impede both legal immigration and asylum seekers, Biden ordered that the processing of applications be improved. He also ordered the enhancement of refugee resettlement programs and increases in the annual caps on refugee admissions.

In recent decades individual states have enacted hundreds of state laws about immigration. In some states—including California, Illinois, New York, and Washington—most of the new laws have been supportive and accommodating to immigrants. In other states—including Alabama, Arizona, Georgia, and South Carolina—most of the new laws tightened restrictions on immigrants, especially undocumented immigrants. For instance, Arizona passed a series of laws, beginning in 2004, that stop government assistance to unauthorized immigrants (unless federal law explicitly requires it), that can revoke a firm's right to do business if it employs unauthorized immigrants, that make it a crime for an unauthorized immigrant to solicit work or hold a job, and that require police to check the immigration status of any person whom they suspect is an unauthorized immigrant. The latter requirement encouraged racial profiling.

Anti-immigrant rhetoric and actions have been rising in many European

countries as well. The 2015–2016 surge into the European Union of refugees from wars in the Middle East intensified anti-immigrant rhetoric and actions. In Austria in 2017, the anti-immigrant Freedom Party became a partner in the new coalition government. In Italy in 2018, the anti-immigrant League (formerly the Northern League) became a partner in the new coalition government. Voters in Denmark, Finland, France, the Netherlands, and Sweden have also shifted toward candidates who promise to reduce and restrict immigration.

Opponents of immigration stress a range of problems that they believe arise from immigration, including general losses to the economy; the fiscal burden that may arise from immigrants' use of government services (such as health care and schooling); slow integration of immigrants into the new national culture, values, and language; increased crime; and links of some immigrants to terrorism. What should one make of the claims of the opponents? The largest number of immigrants move to obtain jobs at pay that is better than they can receive in their home countries, so it seems important to examine the economic effects.

How much harm do immigrants do to the economies of the countries they move to? International economic analysis helps us to think through the issue objectively, without being diverted by emotional traps. The answer is perhaps surprising, given the heat from immigration's opponents.

As we will see in more depth in [Chapter 15](#), such job-seeking immigration brings net economic benefits not only to the immigrants, but also to the receiving country overall. The basic analysis shows that there are winners and losers within the receiving country. The winners include the firms that employ the immigrants and the consumers who buy the products that the immigrants help to produce. The group that loses is the workers who compete with the immigrants for jobs. For instance, for the developed countries, the real wages of low-skilled workers have been depressed by the influx of low-skilled workers from developing countries. Putting all of this together, we find that the net effect for the receiving country is positive—the winners win more than the

losers lose.

It is important to recognize economic net benefits, but there will be fights over immigration as long as there are national borders. National governments have the ability to impose limits on immigration, and many do. If legal immigration is severely restricted by national policies, some immigrants move illegally. Migration, both legal and undocumented, brings major gains in global economic well-being. But it remains socially and politically controversial.

Brexit

| *“Should the United Kingdom remain a member of the European Union or leave the European Union?”*

The vote in the United Kingdom on June 23, 2016, was 52 percent leave and 48 percent remain. Britain had voted to exit the economic union that it had joined in 1973, more than 40 years earlier. How did an arrangement that had seemed to serve Britain fairly well for those decades become so controversial? Why did the close vote lean to “leave”? Differences in the vote were geographic. London, Scotland, and Northern Ireland voted to remain. The rest of England (outside London) and Wales voted to leave. Differences were also demographic. Remain voters tended to be younger and more educated.

What is it that Britain voted to leave? The key economic features of the European Union (EU) include:

- The customs union, which eliminates tariffs on trade between the EU member countries and imposes a common set of tariffs on imports from outside countries.
- The single market, which promotes free movements of goods, services, financial capital, and people among EU member countries.
- The euro, a common currency used by 19 EU member countries, with a common monetary policy set by the European Central Bank.

For goods, the single market has been successful in extending the customs union to eliminate nontariff trade barriers by adopting common product regulations and standards. The single market has been only partially successful

in removing barriers to trade in services. One of its successes is financial services. Banks have “passporting rights,” so a bank based in an EU country faces no regulatory barriers when it sells financial services to residents of any EU country. The single market for financial capital has been reasonably successful, eliminating barriers to borrowing, lending, and investing across EU countries (though the euro crisis led to the imposition of some capital controls, especially by Greece). The single market for people has also been successful in allowing free movement for both short stays and longer residence in other EU countries.

In the 2016 referendum the proponents for “remain” stressed the economic benefits to the UK of continued EU membership, including the net benefits of additional trade created with other EU countries, immigration of people from other EU countries, and the dominance of London as Europe’s financial center. One estimate of the UK’s net benefits put them at about 10 percent of the UK’s gross domestic product (the value of total UK production of goods and services). Proponents noted that 44 percent of the UK’s exports went to EU countries, and another 16 percent went to countries that have free trade agreements with the EU. Only 20 percent of UK exports went to the United States. The proponents also argued that Britain was small by itself in the world, only about 4 percent of world production, so Britain gained by being part of the much larger EU. While these are solid points in favor of “remain,” they are not emotionally engaging, and the efforts to promote the remain vote were not well delivered.

The proponents of “leave” stressed that Britain needed to quit the EU so it could regain the ability to set its own policies. Probably the top reason to vote “leave” was the desire to control and reduce immigration. In 2015, net immigration increased to 333,000 people, and Britain and other EU countries faced several shocking terrorist attacks. A broader argument in favor of leaving was to reestablish the sovereignty of the British government over laws and activities in Britain. That is, Britain needed to remove itself from the process of “ever closer union” that was shifting more power to bureaucrats in Brussels (the central location for EU administration). And, for some voters,

“leave” was a protest vote against elite politicians who were out of touch with the challenges of regular Britons.

The vote ended one set of controversies but created a new set. What did “leave” mean? That is, after the British exit, what would be the relationship that Britain then has with the EU? The vote resolution said nothing about this. One specific controversial issue was the status of the border between Northern Ireland (part of the United Kingdom) and Ireland. The disappearance of border checks was key to achieving peace in Northern Ireland, and the island of Ireland functions as one economy. Ireland and the EU insisted that there be no reestablishment of any border checks, and Britain agreed.

More broadly, in the overall negotiations that led up to the Brexit agreement, the position of the EU negotiators was clear. Britain could not “cherry pick” features of the overall Britain-EU relationship so that Britain ends up with such a good arrangement that it could encourage some other EU members to leave or to threaten to leave the EU. For Britain, it was more difficult to establish a negotiating position, because there are controversial elements and trade-offs. A full or nearly full break with the EU, called “hard Brexit,” would achieve the goals of reestablishing UK sovereignty and policy control. But it would disrupt many British companies and industries, and many workers would lose their jobs. Beyond the initial disruption, Britain would lose some of the longer-run net benefits of special access to the EU economy. A “soft Brexit” would be less disruptive. For example, Britain could try to shift to a trade agreement with the EU in which Britain was a member of the customs union and accepts many rules of the single market, even though Britain was not formally a member country of the EU. (Norway has an arrangement something like this with the EU.) But then Britain would gain much less sovereignty. It would remain under many EU laws and regulations, but it would have no formal role in enacting or changing them.

Negotiations made slow progress. Britain formally withdrew from the EU on January 31, 2020. The remainder of 2020 was a transition period in which negotiations continued almost to the end. On December 30 the UK

Parliament ratified the EU-UK Trade and Cooperation Agreement (TCA), which came into effect on January 1, 2021. The Conservative government of Boris Johnson had pursued a hard Brexit, and the EU had agreed.

The TCA establishes a free trade area for goods, with no tariffs and no quantitative limits. The UK is no longer part of the EU single market. For goods trade, this means that each side applies its own customs procedures and technical and safety standards, which can be forms of nontariff hindrances to imports. To prevent a hard border on the Irish island, Northern Ireland remains part of the single market. For goods, EU border procedures are applied before the goods enter Northern Ireland. Effectively, there are two trade regimes for the UK, with a quasi-border between Northern Ireland and the rest of the UK. This arrangement is very controversial in Britain, and the government has threatened to unilaterally change it. Such an action could lead to the rest of the agreements between the UK and the EU blowing up.

The TCA does not cover trade in services, and, as of mid-2022, negotiations have made limited progress. Financial services are an important export for Britain, and British banks have lost the passporting rights that are part of the single market.

In addition, with the end of Britain's membership in the single market, each side imposes its own policies and limitations on travel and migration between Britain and the EU.

The UK has used Brexit to reassert sovereignty over its trade policy, its immigration policy, and (to a limited extent) its regulatory policies. What have been the effects? Here are preliminary results from what we know as of mid-2022. First, UK goods exports to the EU were lower in 2021 than they were in 2019, even though exports by other non-EU countries to the EU were higher. And, UK imports from the EU were lower in 2021 than they were in 2019, even though UK imports from non-EU countries were higher. The new nontariff barriers to trade appear to be reducing UK-EU trade in goods. Second, net migration from the EU to the UK declined during 2016-2019 and fell to about zero during 2020-2021. Britain has used Brexit to reduce immigration from the EU, and to tilt its policy toward welcoming more skilled

immigrants from any country. Third, there have been macroeconomic costs to Brexit. During 2016–2019, the years after the referendum vote, real business investment in Britain failed to grow, and it also did not recover in 2021 from the decrease during the COVID-19 recession of 2020. Overall, output and national income appear to be 4–5 percent lower in Britain than they would be without Brexit.

In addition to the examination of immigration contained in [Chapter 15](#) of the book and previewed in the previous section of this introductory chapter, [Chapter 12](#) presents the economics of preferential trade agreements and specifically discusses how the European Union fits into these economics. Britain did not adopt the euro, but as an EU member, Britain was affected by it. We discuss the euro and the euro crisis in several places in the book, including Chapters [16](#), [18](#), [21](#), and [25](#).

Switzerland's Exchange Rate

An exchange rate is the value of a country's currency in terms of some other currency. Exchange rates are often sources of controversy, because they have effects that clearly cross national boundaries. Here is the story of Switzerland's exchange rate, and how Swiss government policy toward the exchange rate between the Swiss franc and the euro became controversial in the United States.

The Swiss Story

The European Union is by far the largest trading partner for Switzerland, taking more than half of Swiss exports during 2000–2011, and still over 40 percent in 2022. It is not surprising that the Swiss government paid attention to the exchange rate between the Swiss franc and the euro. That exchange rate was a major determinant of the ability of Swiss products to compete against products from EU countries in international trade.

From the introduction of the euro in 1999 to late 2009, the exchange rate was in the range of about 1.44 to 1.69 Swiss francs per euro. The Swiss government's policy toward the Swiss franc exchange rate was "managed floating"—mostly to allow nonofficial supply and demand in the foreign exchange market to determine the exchange rate value, but also to be willing to intervene in the market if conditions became disorderly. The Swiss government was generally comfortable with the exchange rate in the range 1.44 to 1.69. Swiss products had reasonable price competitiveness, and the Swiss central bank seldom intervened.

In early 2010 the euro crisis began. The Greek government had admitted to misreporting the sizes of its government budget deficits and government debt. By early 2010 it could no longer borrow and eventually had to be rescued by the EU. The crisis spread to Portugal and Ireland, which also had to be rescued. With tumult in the euro area, investors looked to convert some of their euro-denominated financial investments into something less risky, and Switzerland offers a safe haven. To increase their investments denominated in Swiss francs, they first had to sell euros and buy Swiss francs (paid for with euros) in the foreign exchange market.

The Swiss franc increased in value from 1.45 Swiss francs per euro in March 2010 to 1.20 Swiss francs per euro in June 2011. (Yes, that does look odd, but the lower number means a higher value for the Swiss franc. Welcome to the sometimes confusing world of foreign exchange. As stated, the numbers show a decrease in the value of a euro, which is the same as an increase in the value of the franc.)

At first the Swiss central bank tried to resist the appreciation of the Swiss franc by intervening in the foreign exchange market, selling Swiss francs and buying euros. The Swiss central bank used those euros to buy euro-denominated bonds (e.g., German government bonds), adding to its holdings of official foreign exchange reserve assets. Between March 2010 and June 2010, the Swiss central bank doubled its holding of such reserve assets, from €88 billion to €170 billion. With limited effectiveness of this large intervention, the Swiss central bank then pulled back and allowed the franc to continue to appreciate.

In mid-2011 new fears of deepening and possibly existential crisis in the euro area led investors again to flee from euro investments to Swiss franc investments. Although the Swiss central bank intervened, the franc still appreciated, to 1.03 Swiss francs per euro in early August. Even with about €60 billion of interventions during August and early September, the exchange rate was still 1.10 Swiss francs per euro on September 5.

The macroeconomic performance of the Swiss economy had been deteriorating. The economy's growth rate of real gross domestic product declined during 2010 and the first half of 2011, and it appeared to be about zero for the third quarter. The country's product price inflation rate went into mild deflation (negative inflation) starting in June 2011. The appreciation of the Swiss franc was exacerbating these macro problems. The loss of price competitiveness hurt Swiss exports and encouraged imports into Switzerland. The decline in the Swiss franc prices of imported products added to deflation pressure. The Swiss government decided to respond by changing its exchange rate policy.

On September 6, 2011 the Swiss central bank implemented an innovative one-sided fixed exchange rate, in which the exchange rate value of the Swiss franc would not fall below 1.20 Swiss francs per euro, but could be higher than 1.20. The commitment of the bank was to prevent the Swiss franc from appreciating beyond 1.20. The announcement was remarkably effective—it changed the perceptions of investors, and the exchange rate jumped and then hovered just above 1.20 Swiss francs per euro from September 2011 to April 2012, with no need for intervention by the Swiss central bank. During the period April to September 2012, with some escalation of the euro crisis, the Swiss central bank did intervene successfully to defend the 1.20 limit. With the end of the euro crisis, the exchange rate stayed a little above 1.20 until late 2014.

In late 2014 it became clear that the European Central Bank would soon launch a large quantitative easing in which the Bank would buy large amounts of bonds of the euro area countries, thereby adding massive amounts of liquidity to the euro area economies. Investors again decided it was time to

shift investments out, including to Switzerland. To defend the fixed exchange rate, the Swiss central bank intervened on a large scale. During December 2014 and early January 2015, it added €90 billion to its official reserve holdings, which in total then equaled 74 percent of the value of the country's GDP. This is a very large holding by world standards, and there is some controversy. It is an odd use of so much Swiss national wealth, mostly invested in low-yielding if low-risk investments (the government bonds of a few other countries).

The Swiss government decided to change its exchange rate policy again, but now it had an exit problem. It could not announce its intention in advance, because that would give investors a change to reposition into Swiss franc investments ahead of what would clearly be a Swiss franc appreciation. So, the Swiss central bank announced on January 15 that, effective immediately, it was ending the fixed exchange rate and shifting back to a managed float. There was pandemonium in the foreign exchange market. The Swiss franc rose as high as 0.85 per euro before ending the day at about 1.04 per euro.

Since January 2015 the Swiss central bank has intervened often to sell Swiss francs and buy euros, especially during February 2016–April 2017 and January–December 2020. In mid-2022 its holdings of official foreign exchange reserves equaled about 125 percent of Swiss GDP, an extraordinarily large amount. It managed to keep the exchange rate no lower than 1.00 Swiss franc per euro. By doing so, it managed to maintain the international price competitiveness of Swiss products roughly steady since 2012. To the Swiss government this looked like successful macroeconomic policy, although one that had the opportunity cost of low returns on the foreign bonds held as official international reserve assets.

The United States Government

Many countries are skeptical of exchange rate policies used by other countries, especially if the policies encourage depreciation of the other countries' currencies or prevent appreciation. Member countries of the International

Monetary Fund, the multilateral organization established in 1944 to oversee government policies toward exchange rates and foreign exchange markets, commit not to manipulate their exchange rates to gain an unfair trade advantage. The United States has written its concerns into two U.S. laws, both of which are administered by the U.S. Treasury Department. The 2015 law specifies that Treasury use three numerical criteria to determine if any country that is a major trading partner to the United States is a currency manipulator. The criteria are the size of the country's current account surplus with the rest of the world, persistent foreign exchange market intervention to keep the exchange rate value of the country's currency below its market-clearing level, and the size of the country's trade deficit with the United States. The 1988 law is qualitative. A country that has current account and trade surpluses can be designated a currency manipulator if its exchange rate policy prevents effective balance of payments adjustment or provides the country unfair competitive advantage in international trade.

These laws had seldom been used formally to name a foreign country a currency manipulator (none during 1995–2018). Then toward the end of the Trump administration, China was named in 2019 (using the 1988 law—a clear bending of the qualitative criteria), and Switzerland and Vietnam were named in late 2020 (using both laws).

The laws require that the U.S. Treasury Department enter into negotiations (or “enhanced engagement”) with the foreign country government to end the currency manipulation. In these discussions, the Swiss government could make several points to defend its exchange rate policy. First, the Swiss economy has special features, given its roles as a major international financial center and a safe haven for foreign capital. The large Swiss foreign exchange interventions during 2020 were triggered by large safe-haven financial inflows during the global COVID-19 pandemic crisis. Second, in the face of these financial pressures, the Swiss policy is not used to gain unfair advantage, but rather to prevent a shift toward a disadvantage that would be unfair for Switzerland. Third, the IMF, in its surveillance of its member countries, determined that, given the characteristics of Switzerland, it is a country that should have a current account surplus. Based on its analysis, the IMF

concluded that in 2019–2020 the exchange rate value of the Swiss franc was about correct—it was slightly undervalued in 2019 and slightly overvalued in 2020. And fourth, while the Swiss did have a trade surplus with the United States, it essentially was inconsequential, at about 0.1 to 0.2 percent of U.S. GDP.

In April 2021, the U.S. government dropped its designation of Switzerland as a currency manipulator as defined by the 1988 law, although Switzerland still exceeded the thresholds for the three criteria of the 2015 law. The Swiss government apparently had made its case without making changes to its exchange rate policy.

In the second half of the book, we will explore in depth many of the issues raised in the description of this controversial situation. In [Chapter 16](#) we examine a country’s balance of payments, including trade and current account surpluses and deficits. In [Chapters 18](#) and [19](#) we analyze foreign financial investments and exchange rates. We discuss the IMF in [Chapters 20](#) and [21](#). In [Chapters 22–24](#) we examine how exchange rates and official intervention in the foreign exchange market affect not only a country’s trade balance but also its national production, unemployment, and inflation. And in [Chapters 20](#) and [25](#) we look at why a country would or would not choose to have a fixed exchange rate.

ECONOMICS AND THE NATION-STATE

It should be clear from the four controversies described above that international economics is a special field of study because nations are sovereign. Each nation has its own government policies. For each nation, these policies are almost always designed to serve some group(s) inside that nation. Countries almost never care as much about the interests of foreigners as they do about national interests.

The fact that nations have their sovereignty, their separate self-interests, and their separate policies means that *nobody is in charge of the whole world economy*. The global economy has no global government, benevolent or otherwise. It is true that there are international organizations that try to manage aspects of the global economy, particularly the World Trade Organization, the International Monetary Fund, the United Nations, and the World Bank. And, in a preferential trade area like the European Union, a regional agreement sets rules for the international relations among its member countries. But each country has the option to ignore, defy, or opt out of these global and regional institutions if it really wants to, as Britain did by leaving the European Union.

Among the most important policies that each country can manipulate separately are policies toward the international movement of productive resources (people and financial capital), policies toward government taxation and spending, and policies toward money and exchange rates.

Factor Mobility

In differentiating international from domestic economics, classical economists

stressed the behavior of the factors of production. Labor, land, and capital were seen as mobile within a country, in the sense that these resources could be put to different productive uses within the country. For example, a country's land could be used to grow wheat or to raise dairy cattle or as the site for a factory. But, the classical economists believed, these resources were not mobile across national borders. Outside of war land does not move from one country to another. They also downplayed the ability of workers or capital to move from one country to another.

If true, this difference between intranational factor mobility and international factor immobility would have implications for many features of the global economy. For instance, the wages of French workers of a given training and skill would be more or less the same, regardless of which industry the workers happened to be part of. But this French wage level could be very different from the wage for comparable workers in Germany, Italy, Canada, or Australia. The same equality of return within a country, but differences internationally, was believed to be true for land and capital.

This distinction of the classical economists is partly valid today. Land is the least mobile factor internationally. Workers and capital do move internationally, in response to opportunities for economic gain. Still, there are differences of degree in mobility interregionally and internationally. People usually migrate within their own country more readily than they emigrate abroad. This is true partly because identity of language, customs, and tradition is more likely to exist within a country than between countries. In addition, national governments impose greater limitations on international migration than they do on relocation within the country. Capital is also more mobile within than between countries. Even financial capital, which in many ways is free to move internationally, is subject to a "home bias" in which people prefer to invest within their own country. In our analysis of international trade in the first half of this book, we will generally presume that some key resource inputs (to production of the traded products) cannot easily move directly between countries. We then examine international resource mobility, including immigration, in [Chapter 15](#) and examine aspects of international financial investments in [Chapters 16-21](#).

Different Fiscal Policies

For each sovereign country, its separate government has its own public spending, power to tax, and power to regulate. Governments use these policies to limit international transactions when they use taxes or regulations that reduce imports, exports, immigration, and financial flows. Other aspects of fiscal policy, including subsidies to exports, encourage more international transactions. Differences across countries in tax and regulatory policies can also cause larger flows of funds and products. Banks set up shop in the Bahamas, where their capital gains are less taxed and their books less scrutinized. Shipping firms register in Liberia or Panama, where registration costs little and where they are free from other countries' requirements to use higher-cost national maritime workers. We examine the microeconomic effects of policies toward international trade in [🔗 Chapters 8-14](#) and the macroeconomic effects of different fiscal policies in [🔗 Chapters 22-24](#).



Different Moneys

To many economists, and especially to noneconomists, the principal difference between domestic and international trade and investment is that international transactions often involve the use of different moneys. That is very different from transactions within a country. You cannot issue your own money, nor can your family, nor can the state of Ohio.

The existence of separate moneys means that the value of one money relative to another can change. We could imagine otherwise. If a U.S. dollar were worth exactly 10 Swedish kronor for 10 centuries, people would certainly come to think of a krona and a dime as the same money. But this does not happen. Since the 1970s, the price ratios between the major currencies have been fluctuating by the minute. We must treat the dollar and the krona, for example, as different moneys. And the exchange-rate values can be

contentious, as we saw for Switzerland's franc.

Most countries have their own national money, though some countries share the same money, as do the member countries of the euro area. The supply of each kind of money is controlled by the monetary authority or central bank in charge of that money. Monetary policy affects not only the country using that money but also other countries, even if they use different moneys.

 **Chapters 17-**  **25** explore the special relationships between national moneys.

Chapter Two

The Basic Theory Using Demand and Supply

For centuries people have been fighting over whether governments should allow trade between countries. There have been, and probably always will be, two sides to the argument. Some argue that just letting everybody trade freely is best for both the country and the world. Others argue that trade with other countries makes it harder for some people to make a good living. Both sides are at least partly right.

International trade matters a lot. Its effects on the economic life of people in a country are enormous. Imagine a world in which your country did not trade at all with other countries. It isn't hard to do. Imagine what kind of job you would be likely to get, and think of what products you could buy (or not buy) in such a world. For the United States, for example, start by imagining that it lived without its \$90 billion a year in imported clothing. Americans would have to cut back on clothing purchases because items of clothing produced in the United States would be more expensive. Americans who produce clothing might be pleased with such a scenario. Those who like an ever-changing wardrobe or value access to foreign fashion and design would not. Similar impacts would be felt by producers and consumers in other parts of the economy suddenly stripped of imports like flat-screen televisions and smartphones. On the export side, suppose that Boeing could sell airplanes and American farmers could sell their crops only within the United States and that U.S. universities could admit only domestic students. In each case there are people who gain and people who lose from cutting off international trade. Every one of these differences between less trade and more trade has strong

effects on what career you choose. Little wonder, then, that people are always debating the issue of having less or more trade.

Each side of the trade debate needs a convincing story of just how trade matters and to whom. Yet that story, so useful in the arena of policy debate, requires an even more basic understanding of why people trade as they do when allowed to trade, exporting some products and importing others. If we do not know how people decide what goods and services to trade, it is hard to say what the effects of trade are or whether trade should be restricted by governments.

FOUR QUESTIONS ABOUT TRADE

This chapter and subsequent [Chapters 3–7](#) tackle the issue of how trade works by comparing two worlds. In one world, no trade is allowed. In the other, governments just stand aside and let individual businesses and households trade freely across national borders. We seek answers to four key questions:

1. Why do countries trade? More precisely, what determines which products a country exports and which products it imports?
2. How does trade affect production and consumption in each country?
3. How does trade affect the economic well-being of each country? In what sense can we say that a country gains or loses from trade?
4. How does trade affect the distribution of economic well-being or income among various groups within the country? Can we identify specific groups that gain from trade and other groups that lose because of trade?

Our basic theory of trade says that trade usually results from the interaction of competitive demand and supply. This chapter goes straight to the basic picture of demand and supply. It suggests answers to the four questions about trade, including how to measure the gains that trade brings to some people and the losses it brings to others.

We are embarking on an extended exploration of international trade. The first box in this chapter, “[Trade Is Important](#),” provides information that sets the stage for our journey. The chapter’s second box, “[The Trade Mini-Collapses of 2009 and 2020](#),” shows how trade declined much more than general economic activity during the global financial and economic crisis and global pandemic crisis.

DEMAND AND SUPPLY

Let's review the economics of demand and supply before we apply these tools to examine international trade. The product that we use as an example is motorbikes. We assume that the market for motorbikes is competitive. Although the analysis appears to be only about a single product (here, motorbikes), it actually is broader than this. Demanders make decisions about buying this product instead of other products. Suppliers use resources to produce this product, and the resources used in producing motorbikes are not available to produce other products. What we are studying is actually one product relative to all other goods and services in the economy.

Demand

What determines how much of a product is demanded? A consumer's problem is to get as much happiness or well-being (in economists' jargon, utility) as possible by spending the limited income that the consumer has available. A basic determinant of how much a consumer buys of a product is the person's taste, preferences, or opinions of the product. Given the person's tastes, the price of the product (relative to the prices of other products) also has a major influence on how much of the product is purchased. At a higher price for this product, the consumer usually economizes and reduces the quantity purchased. Another major influence is the consumer's income. If the consumer's income increases, the consumer buys more of many products, probably including more of this product. (The consumer buys more if this product is a *normal good*. This is not the only possibility—quantity purchased is unchanged if demand is independent of income, and quantity goes down if the product is an *inferior good*. In this text we almost always examine only normal goods, as we consider these to be the usual case.)

How much the consumer demands of the product thus depends on a number

of influences: tastes, the price of this product, the prices of other products, and income. We would like to be able to picture demand. We do this by focusing on one major determinant, the product's price. After we add up all consumers of the product, we use a market demand curve like the demand curve for motorbikes shown as D in [Figure 2.1A](#).¹ We have a strong presumption that the demand curve slopes downward. An increase in the product's price (say, from \$1,000 per motorbike to \$2,000) results in a decrease in quantity demanded (from 65,000 to 40,000 motorbikes purchased per year). This is a movement along the demand curve because of a change in the product's price. The increase in price results in a lower quantity demanded as people (somewhat reluctantly) switch to substitute products (e.g., bicycles) or make do with less of the more expensive product (forgo buying a second motorbike of a different color).

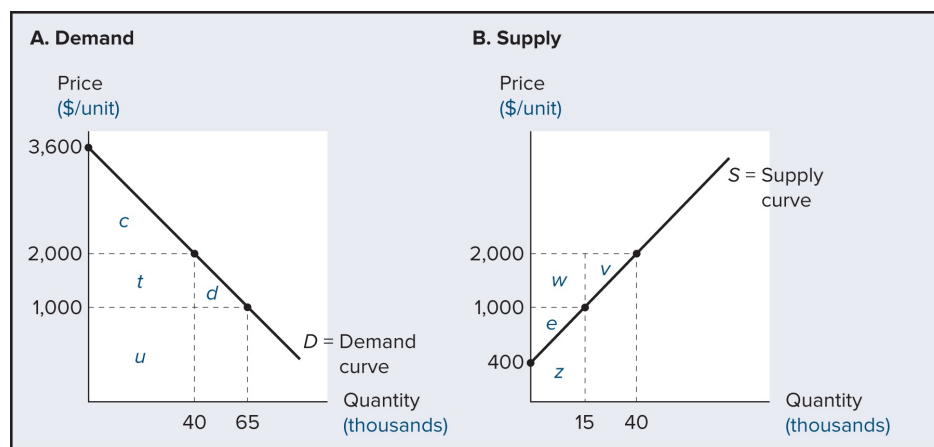


FIGURE 2.1 Demand and Supply for Motorbikes

The market demand curve for motorbikes slopes downward. A lower price results in a larger quantity demanded. The market supply curve for motorbikes slopes upward. A higher price results in a larger quantity supplied.



How responsive is quantity demanded to a change in price? One way to measure responsiveness is by the slope of the demand curve (actually, by the inverse of the slope because price is on the vertical axis). A steep slope indicates low responsiveness of quantity to a change in price (quantity does not change that much). A flatter slope indicates more responsiveness. The slope is a measure of responsiveness, but it can also be misleading. By altering


the units used on the axes, the demand curve can be made to look flat or steep.

A measure of responsiveness that is “unit-free” is **elasticity**, the *percent* change in one variable resulting from a 1 *percent* change in another variable. The **price elasticity of demand** is the percent change in quantity demanded resulting from a 1 percent increase in price. Quantity falls when price increases (if the demand curve slopes downward), so the price elasticity of demand is a negative number (though we often drop the *negative* when we talk about it). If the price elasticity is a large (negative) number (greater than 1), then quantity demanded is substantially responsive to a price change—demand is *elastic*. If the price elasticity is a small (negative) number (less than 1), then quantity demanded is not that responsive—demand is *inelastic*.

In drawing the demand curve, we assume that other things that can influence demand—income, other prices, and tastes—are constant. If any of the other influences changes, then the entire demand curve shifts.

Consumer Surplus


The demand curve shows the value that consumers place on units of the product because it indicates the highest price that some consumer is willing to pay for each unit. Yet, in a competitive market, consumers pay only the going market price for these units. Consumers who are willing to pay more benefit from buying at the market price. Their well-being is increased, and we can measure how much it increases.

To see this, consider first the value that consumers place on the total quantity of the product that they actually purchase. We can measure the value unit by unit. For the first motorbike demanded, the demand curve in  **Figure 2.1A** tells us that somebody would be willing to pay a very high price (about \$3,600)—the price just below where the demand curve hits the price axis. The demand curve tells us that somebody is willing to pay a slightly lower price for

the second motorbike, and so on down the demand curve for each additional unit.

By adding up all of the demand curve heights for each unit that is demanded, we see that the whole area under the demand curve (up to the total consumption quantity) measures the total value to consumers from buying this quantity of motorbikes. For instance, for 40,000 motorbikes the total value to consumers is \$112 million, equal to area $c + t + u$. This amount can be calculated as the sum of two areas that are easier to work with: the area of the rectangle $t + u$ formed by price and quantity, equal to $\$2,000 \times 40,000$, plus the area of triangle c above this rectangle, equal to $(1/2) \times (\$3,600 - \$2,000) \times 40,000$. (Recall that the area of a triangle like c is equal to one-half of the product of its height and base.) This total value can be measured as a money amount, but it ultimately represents the *willingness* of consumers, if necessary, to forgo consuming other goods and services to buy this product.

The marketplace does not give away motorbikes for free, of course. The buyers must pay the market price (a money amount, but ultimately the value of other goods and services that the buyers must give up to buy this product). For instance, at a price of \$2,000 per motorbike, consumers buy 40,000 motorbikes and pay \$80 million in total (price times quantity, equal to area $t + u$).

Because many consumers value the product more highly than \$2,000 per motor-bike, paying the going market price still leaves consumers with a *net gain* in economic well-being. The net gain is the difference between the value that consumers place on the product and the payment that they must make to buy the product. This net gain is called **consumer surplus**, the increase in the economic well-being of consumers who are able to buy the product at a market price lower than the highest price that they are willing and able to pay for the product. For a market price of \$2,000 in  **Figure 2.1A**, the consumer surplus is the difference between the total value to consumers (area $c + t + u$) and the total payments to buy the product (area $t + u$). Consumer surplus thus is equal to area c , the area below the demand curve and above the price line.