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INTERNATIONAL Economics

Seventeenth Edition

THOMAS A. PUGEL

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To my wife Bonnie, the most beautiful woman, you have been my love for nearly half a century.

About the Author

Courtesy of Thomas Pugel

Thomas A. Pugel

Thomas A. Pugel is Professor of Economics and Global Business at the Stern School of Business, New York University, and a Fellow of the Teaching Excellence Program at the Stern School. His research and publications focus on international industrial competition and government policies toward international trade and industry. Professor Pugel has been Visiting Professor at Aoyama Gakuin University in Japan and a member of the U.S. faculty at the National Center for Industrial Science and Technology Management Development in China. He received the university-wide Distinguished Teaching Award at New York University in 1991, and twice he was voted Professor of the Year by the graduate students at the Stern School of Business. He studied economics as an undergraduate at Michigan State University and earned a PhD in economics from Harvard University.

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. To some extent, we may be in a pause to allow regrouping of the economic forces driving globalization. For example, before the crisis, global financial flows may have overexpanded, so a retrenchment is 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 productive resources they own. 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 North American Free Trade Area. 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:

- The largest trade war since the Great Depression began in 2018, triggered by U.S. tariffs (taxes) imposed on imports of steel and aluminum and by unilateral U.S. tariffs imposed on imports from China for what the U.S. government concluded were unfair Chinese practices toward the intellectual property (proprietary technology, patents, and trade secrets) of U.S. companies. It became a war when China, the European Union (EU), Canada, and Mexico responded by imposing tariffs on imports from the United States.
- Instead of U.S. tariffs on their steel exports to the United States, South Korea and Argentina agreed to impose "voluntary" export limits, and the United States imposed quotas on imports of steel from Brazil.
- The United Kingdom voted in 2016 to end its membership in the European Union, setting off the process of British exit or "Brexit."

- The Doha Round of trade negotiations failed to reach an agreement. Instead, the member countries of the World Trade Organization (WTO) reached several narrower agreements. In 2015 more than 50 countries agreed to extend tariff-free trade in information technology hardware to 201 more types of products. In 2015 WTO member countries agreed to phase out export subsidies for agricultural products. In 2017 the Trade Facilitation Agreement, designed to lower the costs created by customs procedures, came into effect.
- Countries continued to impose new nontariff barriers to imports. China reclassified kimchi, a fermented cabbage product, as a pickled product. Subject to strict bacteria limits that the fermented product could not meet, South Korean exports of kimchi to China fell to almost zero. Indonesia adopted regulations requiring that domestically produced products must be at least 80 percent of total sales by modern retail stores in the country.
- In 2015–2016 a wave of complaints by American steel firms that foreign producers were dumping steel in the United States led to the imposition of antidumping duties against these imports. By 2017 nearly all Chinese exports of steel to the United States were impeded by high antidumping duties.
- In early 2018 the U.S. government again imposed countervailing duties and antidumping duties on softwood lumber imported from Canada. Higher lumber prices in the United States added several thousand dollars to the cost of constructing a new house. Canada again lodged complaints about the U.S. actions under the dispute settlement procedures of the WTO and the North American Free Trade Agreement.
- A U.S. government investigation concluded that rising imports of washing machines and solar panels were harming U.S. producers of these products. In early 2018 President Trump decided to offer safeguard protection to each industry in the form of temporary high tariffs.
- The series of WTO cases that began in 2004 about subsidies to Airbus and Boeing for development and production of large civilian aircraft continued to move slowly. The WTO ruled in 2018 that the EU had not yet removed its subsidies to Airbus, opening the way for the United States to request authority to retaliate. The EU was well along in its WTO case similarly alleging that the United States had not yet removed its subsidies to Boeing.
- Indonesia had initiated no antidumping cases before the mid-1990s. By the mid-2010s it was one of the top 10 initiating countries.
- The Paris Agreement came into effect in November 2016, with a goal to keep the rise of the earth's average surface temperature to less than 2°C above the level in the 1800s.
- The population of African elephants continued to decline, a result of increased poaching for tusks (ivory) that are exported, especially to Asian countries, in violation of the global ban on such trade. In 2017 China responded by closing its ivory-carving workshops, leading to reduced Chinese demand for new ivory.
- Global crude oil prices fell from over $100 per barrel in mid-2014 to about $30 per barrel in early 2016, as U.S. crude oil production using hydraulic fracturing and horizontal drilling expanded rapidly. In late 2016 OPEC joined with Russia and several other non-OPEC countries to cut their crude oil production, and the price rose above $70 per barrel in the first half of 2018.

- According to *Euromoney*, in 2018 XTC Markets, a nonbank electronic market-maker, rose to become one of the five largest global foreign exchange dealers, a first for a fintech firm.
- In 2016 the International Monetary Fund added the Chinese yuan to the basket of (now five) currencies that define the value of the Special Drawing Right (SDR). The inclusion of the yuan reflects the large role of China in the global economy.
- Azerbaijan and Kazakhstan devalued the exchange rate value of their currencies in 2015. Egypt and Nigeria devalued their currencies in 2016.
- The United States enacted a large tax cut in late 2017, including a large reduction in the corporate income tax rate. (This U.S. tax cut is the basis for the discussion question in the box on U.S. trade deficits in Chapter 24.)
- In 2015, just a few years after the euro crisis, Lithuania became the nineteenth EU country to adopt the euro in place of its previous national currency (the litas).
- Better late than never, in 2015 the European Central Bank (ECB) began an aggressive quantitative easing (in which the central bank puts very large amounts of money into the banking system by buying very large amounts of government bonds or other securities). By 2017 most euro-area countries were approaching internal balance, with domestic production growing and unemployment falling. The inflation rate of the euro area rose toward the ECB target of close to 2 percent.
- As the euro area generally recovered, Greece remained in a depression, with low domestic production and unemployment of more than 20 percent. Greece received a third bailout program in 2015. Its government debt remained excessive, equal to 180 percent of its gross domestic product (GDP). Severe fiscal austerity (cutting government expenditures and raising taxes) achieved government budget surpluses in 2016 and 2017, but also contributed to the ongoing very weak economy.

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:

- "China shock" research led by David Autor, David Dorn, and Gordon Hanson has examined the rapid growth of U.S. imports from China during the period from the early 1990s to 2007. They found that Chinese imports were concentrated in certain products (e.g., furniture) and that for many of these products U.S. production was concentrated in specific areas (e.g., for furniture, U.S. production was concentrated in North Carolina and Tennessee). Because of these concentrations, the effects of the rising imports were particularly harmful to the affected U.S. workers and communities.
- Shushanik Hakobyan and John McLaren examined the growth of U.S. imports from Mexico following the implementation of the North American Free Trade Agreement. They found product and U.S. production concentration similar to the observations from the China shock research (e.g., increased U.S. imports of clothing and footwear from Mexico and U.S. production of these products concentrated in North Carolina and South Carolina) and similar adverse effects on affected U.S. workers and communities.

- A research study by Mohammad Reza Gharibnavaz and Robert Waschik analyzed the effects of sanctions against Iran just before the 2015 Joint Comprehensive Plan of Action agreement. They concluded that the sanctions were very harmful to Iran but only slightly harmful to the countries imposing the sanctions. Nonparticipating countries had a small gain.
- Immigration has become highly controversial in some countries, and the controversy includes the effects of immigrant workers on the earning of workers who were born and raised in the country (native workers). Recent research by a number of economists has emphasized nuances based on different types of workers (e.g., workers with different skills, including language and communication skills), as well as indirect effects like increases in businesses' capital investments when more workers are available to hire. This research concludes that the overall effects on native workers' earnings are small for levels of immigration seen in the United States and other developed countries. Immigrants probably raise the wages of some types of native workers. But immigrants also probably reduce the wages of any type of native workers (e.g., high school dropouts in the United States) who compete directly with a large group of immigrant workers in the country.

IMPROVING THE BOOK: TOPICS

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

- In his first two years as U.S. president, Donald Trump recast U.S. international trade and immigration policies. This edition interweaves Trump's claims and actions across its chapters. The overview of the trade war that Trump's policy actions started in 2018 opens Chapter 1. This chapter's overview of controversies surrounding immigration (as well as the introduction to the discussion of the economic analysis of immigration in Chapter 15) notes Trump's anti-immigrant rhetoric and policy actions. Trump's imposition of tariffs on U.S. imports of steel and aluminum are used to motivate the economic analysis of tariffs in Chapter 8 and to apply the analysis of shortcomings of the national defense argument in favor of tariffs in Chapter 10. His pressure on South Korea to adopt limits on Korean exports of steel to the United States provides an example of a voluntary export restraint in Chapter 9. The same chapter notes that the Trump administration's pursuit of charges that China has been using unfair practices to force U.S. firms to share their technologies and other intellectual property with Chinese firms is an unusual recent example of the use of Section 301 of the Trade Act of 1974. Trump's imposition in early 2018 of temporary safeguard tariffs to assist U.S. producers of washing machines and solar panels adds to the examples of U.S. safeguard actions listed in Chapter 11. And, a new section in Chapter 12 describes the Trump administration's drive to complete the renegotiation of the North American Free Trade Agreement.
- This edition continues its careful attention to the European Union and the euro area. The major new development incorporated in this edition is Brexit, the 2016 vote in favor of leaving the EU and the process of negotiating and implementing the formal extrication (exit) of Britain from the EU. The new section on Brexit in Chapter 1 surveys a compelling controversy that shows the immediacy of international

economics, and in Chapter 12 the examination of the evolution of the European Union during the past 60 years now concludes with a discussion of Brexit. In addition to Brexit, the book maintains its examination of the 2010–2012 euro crisis. *Euro Crisis* boxes in Chapters 16 and 21 probe the causes of the crisis, and the concluding section of Chapter 25 discusses the benefits and costs of European monetary union, with special attention to the double-edged roles of fiscal policy in the euro area. National fiscal policies are both the principal remaining tool for national governments to address their macroeconomic performance problems and a potential source of instability that can threatened the entire union.

- One outcome of globalization is tight linkage of rates of return to financial assets denominated in different currencies. A key proposition from the economic analysis of international finance is covered interest parity—the rate of return on a foreign-currency financial investment that is hedged against exchange-rate risk should be (almost) equal to the rate of return on a comparable domestic-currency financial investment. For several decades before the global financial and economic crisis, covered interest parity worked well for the major currencies of the world. A new section in Chapter 18 expands on what had been a box in the sixteenth edition. The new section shows the relatively large deviations from covered interest parity that have developed since 2007 and summarizes research examining the reasons that this parity relationship is not as tight as it was before the crisis.
- China continues its rise as a force in the global economy. The presentation of China's global role, including the series of boxes *Focus on China*, continues to be a strength of the text. Chapters 1 and 20 discuss the development of China's controversial policies toward the exchange-rate value of its currency. In the box in Chapter 9, the presentation of China's rising involvement in the dispute settlement process at the World Trade Organization, both as a respondent (alleged violator) and as a complainant, has been updated and rewritten. Among other recent cases, after the WTO ruled in 2014 that China's restrictions on exports of rare earths were a violation of its WTO commitments, China removed the export quotas in 2015. A box in Chapter 15 discusses foreign direct investment into China, including Chinese government policies that are a major part of the Section 301 case noted earlier. The box also indicates some of the recent changes that the Chinese government has made to the lists of industries in which direct investment by foreign firms is encouraged, permitted, restricted, or prohibited.
- Chapter 13 on trade and the environment continues as a unique and powerful treatment of issues of interest to many students. The discussion of global warming has been revised to incorporate data and projections from recent studies. The chapter now incorporates a major new policy development, the Paris Agreement, which came into effect in 2016, with nearly all the world's countries participating. The agreement, by relying on voluntary pledges by countries, is a departure from the unsuccessful Kyoto Protocol. It remains unclear if this approach will be enough to slow and stop global warming. Its chances for success were reduced when President Trump in 2017 announced his intention to withdraw the United States from the agreement.
- 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 international trade in specific products for the United States, China, and Japan; wage rates and productivity levels in the manufacturing sectors of 59 countries; 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 23 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.

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- **Test Bank:** Updated for the seventeenth edition, the test bank offers well over 1,500 questions categorized by level of difficulty, AACSB learning categories, Bloom's taxonomy, and topic.
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- **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.

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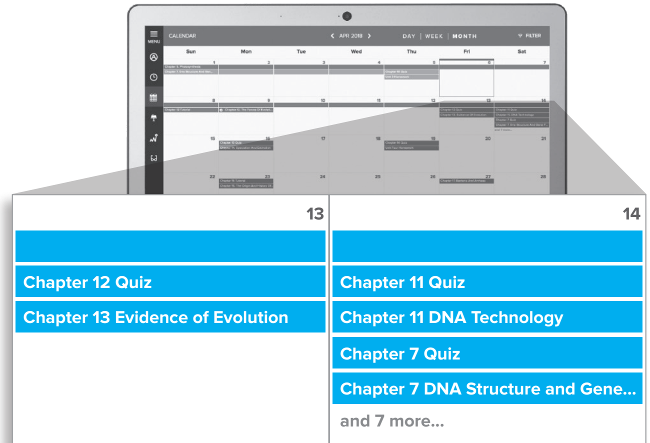

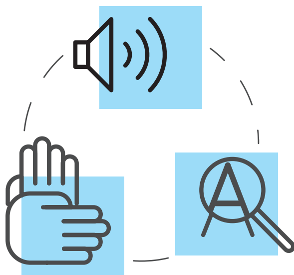

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Chapter **One**

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 Trade War of 2018

By mid-2018, the United States had instigated a trade war. The last time the world had a trade war, in the early 1930s, it did not go well. Instead, it contributed to global losses of the general gains from trade and made the Great Depression worse than it otherwise would have been. How did we get to a new international trade war?

In his election campaign for the presidency, Donald Trump railed against unfair trade with foreign countries and unfair trade agreements such as the North American Free Trade Area (NAFTA). He argued that U.S. trade deficits with China, Mexico, and other countries were clear evidence that the United States was the loser in its trade with each of these countries. He vowed to fight for U.S. interests, including threatening to impose 45 percent tariffs (taxes) on imports from China and to withdraw from NAFTA if the other members, Canada and Mexico, would not renegotiate the agreement. (We discuss tariffs in Chapter 8 and free trade areas in Chapter 12.)

In January 2017, days after his inauguration, President Trump withdrew the United States from the Trans-Pacific Partnership, another free trade agreement that had been signed but not yet ratified by the United States. In 2017, Trump launched investigations into imports of solar panels, washing machines, steel, and aluminum, as well as unfair practices by the Chinese government toward the intellectual property of U.S. firms. With these investigations running in the background, U.S. trade policy was otherwise rather quiet during 2017.

That changed in early 2018. In its investigations of solar panels and washing machines, the U.S. International Trade Commission found that rising imports had harmed U.S. firms in each of these industries. In January, President Trump imposed temporary safeguard tariffs beginning at 30 percent for imports of solar panels and at up to 50 percent for imports of washing machines. (We describe safeguards in Chapter 11.)

With solar panels and washing machines as a prelude, things heated up beginning in March 2018. The investigations of steel and aluminum examined whether or not imports of these products threatened U.S. national security. Let's look at each product.

U.S. steel production had been roughly steady since the mid-1980s. Imports met about a quarter of U.S. use of steel in 2017. Canada, Brazil, South Korea, Mexico, Russia, Turkey, Japan, Germany, and Taiwan were the leading sources of U.S. imports. China was not a leading exporter to the United States because in most steel products China already faced very high import duties; these had been imposed in response to findings that China was dumping steel and that Chinese exporters benefited from government subsidies. (We analyze dumping, antidumping duties, export subsidies, and countervailing duties in Chapter 11.) In recent years U.S. military use of steel was about 3 percent of U.S. production. Employment in U.S. steel production was only about 140,000 workers. In contrast, millions of U.S. workers were employed in U.S. industries (like automobiles, machinery, oil and gas drilling, and construction) that used steel as an important input.

U.S. aluminum production had been declining since 2012, and by 2017 imports met about 60 percent of U.S. use of aluminum. The top countries exporting to the United States were Canada, China, Russia, the United Arab Emirates, Mexico, Argentina, and Bahrain. U.S. military use of aluminum is small, but it requires some high-purity aluminum, which was produced by only one U.S. smelter. U.S. employment in aluminum production was about 58,000 workers.

The U.S. Department of Commerce found that imports of steel and imports of aluminum each threatened national security and recommended actions by the president. In March, President Trump imposed tariffs of 25 percent on steel imports and 10 percent on aluminum imports. He indicated that this was not only good for U.S. security, but also good for U.S. firms and U.S. workers. He provided temporary exemptions for imports from Canada, Mexico, the countries of the European Union (EU), Argentina, Australia, Brazil, and South Korea. Under threat of the U.S. tariffs, South Korea agreed to "voluntarily" limit exports of steel to the United States, Argentina agreed to "voluntarily" limit its exports of steel and aluminum, and Brazil acquiesced to a quota on its exports of steel. (We analyze import quotas and voluntary export restraints in Chapter 9.) Then, on June 1, the U.S. government ended the temporary exemptions and imposed 25 percent tariffs on imports of steel from Canada, Mexico, and the EU countries and

10 percent tariffs on imports of aluminum from these countries and Brazil and South Korea. (Australia, a relatively small exporter, remained exempt from the tariffs.)

Reactions by the exporting countries to the steel and aluminum tariffs led to the first front in the trade war. In April, the Chinese government imposed retaliatory tariffs on about $3 billion of U.S. exports to China, including 25 percent tariffs on pork and seven other products and 15 percent tariffs on 120 products. In June and July, Mexico imposed retaliatory tariffs of 10–25 percent on $3 billion of U.S. exports of pork and 90 other products to Mexico. In June, the European Union imposed retaliatory tariffs (mostly 25 percent) on $3.2 billion of U.S. exports to the EU, and the EU indicated that it was holding in reserve tariffs on an additional $3.8 billion of U.S. exports. In July, Canada imposed retaliatory tariffs of 10–25 percent on $12.6 billion of U.S. exports to Canada.

President Trump set off a global controversy that became a trade war. Let's preview some of the results that could be predicted by the economic analysis of Chapters 8–10. First, consider standard analysis of the domestic or national effects of a U.S. tariff on imports of steel or aluminum. U.S. producers of the product benefit as the product's price rises and domestic production increases. Employment in this industry increases. But U.S. consumers are harmed because they must pay the higher price and buy less. In the case of steel or aluminum, the consumers are other U.S. firms that use the metal in their own production. Higher costs reduce the profitability of these firms. They reduce their production and employment. For products like steel and aluminum, which employ relatively few workers but are used widely in other production, the net effect on national employment is probably negative. What is the overall effect on the national interest of the importing country? For a small country, this is probably the entire story, and we would conclude that overall, the small country loses by imposing a tariff. The losses to domestic users and consumers are larger than the gains to domestic producers and the government (tariff revenue). However, the United States is a large country. The United States could use its importance in the world economy to obtain better prices from foreign exporters, and it might be able to gain from its tariff. But, more than one can play this game. Foreign exporters may fight back, as they did with their retaliatory tariffs. In this case, most if not all countries involved in the trade war are likely to be losers. They are mostly giving up the general gains from trade that we discuss in Chapter 2–6.

We can also wonder about the U.S. justification of national security used in imposing the steel and aluminum tariffs. In fact, by July 2018, Canada, China, the European Union, India, Mexico, Norway, Russia, and Turkey had done just that. Each had filed a complaint with the World Trade Organization (WTO) that national defense was only a pretext for the United States to impose protectionist tariffs to help its steel and aluminum producers. (We discuss the WTO in Chapters 8 and 9.) Even if national security is involved, economic analysis does not generally support the use of tariffs. As we discuss in Chapter 10, U.S. national security concerns can be addressed at lower cost to the country by using targeted government subsidies to support the specific steel and aluminum production capabilities needed for military products.

More broadly, we can use what Trump has said as a candidate and as president and what he did in 2018 to contrast his stance on international trade with what economic analysis says. According to Trump, trade between countries is a zero-sum activity: what one country gains some other country loses. Economic analysis concludes that trade is

a positive-sum activity, and both countries generally gain from trade. For Trump, the United States only gains from trade with another country if it has a trade balance surplus with this country (U.S. exports are larger than U.S. imports). Economic analysis shows that both imports and exports bring benefits to the country. Trump has implied that the U.S. trade balance is about trade with each individual foreign country. Economic analysis says that the trade balance that matters is the country's trade balance with the rest of world collectively. For Trump, the U.S. trade balance is about foreign trade barriers and other unfair government practices. Economic analysis concludes that the country's trade balance is driven by its macroeconomic situation, especially the difference between the country's national saving and its domestic real investment. (We discuss the drivers of the trade balance and current account balance in Chapter 16.)

Let's return to our story of U.S. trade policy. There was a second front in the trade war, one that was geographically narrower but involved more trade. In its investigation, the U.S. Department of Commerce found that the Chinese government had engaged in a range of unfair policies and practices toward U.S. intellectual property (like patents, copyrights, and trade secrets), including:

- The Chinese government required joint ventures for U.S. companies' direct investment in China, leading to forced transfer of technology and other intellectual property to their Chinese partners.
- The Chinese government used the requirement for prior approval of U.S. companies' direct investment in China as another way to force such transfers.
- The Chinese government directed its companies to use their foreign direct investment to obtain foreign technology and other intellectual property.

(We examine foreign direct investment in Chapter 15.)

In March 2018, President Trump acted on the recommendations from the Commerce Department. (We discuss this type of process, a Section 301 case, in Chapter 9.) Unless an agreement could be reached with the Chinese government to resolve the complaints, he threatened to impose 25 percent tariffs on $50 billion of Chinese exports to the United States, and he threatened additional restrictions on Chinese direct investment in the United States, especially Chinese acquisition of U.S. firms. He also brought a complaint to the WTO, alleging Chinese violations of the WTO's intellectual property rules. In a series of four days in early April, (1) the U.S. government issued a list of 1,333 Chinese export products threatened with tariffs; (2) the Chinese government issued a list of 106 U.S. export products that would be hit with retaliatory tariffs; (3) Trump then said that, in response to the threat of Chinese retaliatory tariffs, he was considering tariffs on an additional $100 billion of Chinese exports to the United States; and (4) the Chinese government responded that it would fight back using a range of additional actions.

On July 7, this part of the trade war engaged. The U.S. government imposed 25 percent tariffs on $34 billion of Chinese exports of 818 products to the United States, and the Chinese government retaliated with 25 percent tariffs on $34 billion of U.S. exports of 545 products to China. On August 23 the U.S. government reached $50 billion by imposing 25 percent tariffs on an additional $16 billion of Chinese exports, and the Chinese government retaliated with 25 percent tariffs on an additional $16 billion of U.S. exports. Then, on September 24, the U.S. government retaliated against the Chinese retaliation

by imposing tariffs of 10 percent on an additional $200 billion of Chinese exports to the United States, and the Chinese government retaliated with tariffs of 5-10 percent on about $60 billion of U.S. exports to China.

The story did not end in late 2018. On the first front, in May 2018, the U.S. government opened a new battle by launching an investigation into whether imports of automobiles and automobile parts are a threat to national security. On the second front, it appeared there was more to come in the cycle of retaliation and response. As you read this, you will know more about what happened. Did the war escalate, probably leaving the world worse off? Did national leaders, especially President Trump, find a way to defuse and resolve the conflicts so we have reclaimed more of the gains from trade? Or something else?

Immigration

About 260 million people, 3 percent of the world's population, live outside the country of their birth. For most industrialized countries (an exception is Japan), the percentage of the country's population that is foreign-born is rather high—13 percent for the United States, 22 percent for Canada, 14 percent for Britain and for Germany, 17 percent for Sweden, 28 percent for Australia, and 29 percent for Switzerland—and, for most, this percentage is rising. Many of the foreign-born are undocumented immigrants—one-fourth of the total for the United States. Rising immigration has set off rising controversy.

In 2007 the U.S. Congress considered and rejected a bill to enact comprehensive reform of U.S. policies toward immigration. The bill, backed by President Bush and many congressional leaders, would have shifted U.S. policy toward favoring new immigrants with more education and skills, created a new temporary guest worker program, increased requirements for employers to verify the legal status of their employees, built new fences along the U.S. border with Mexico and added new border guards, and created a complex process for illegal immigrants to gain legal status. After different groups in the United States raised their objections, including conservatives who focused on the latter provision and labeled it an unacceptable amnesty, support for the bill unraveled. Renewed efforts to pass a comprehensive reform of U.S. immigration laws failed to gain traction in Congress in 2013 and 2018.

In his campaign for the presidency in 2016, Donald Trump used his platform to amplify and exploit voters' fears of immigrants. He declaimed as if most immigrants from Mexico and Central America were criminals and most Muslim immigrants were terrorists. He decried that immigrants hurt the United States by taking jobs from American workers.

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. After assuming office, President Trump issued a series of restrictive orders and directives. The third version of an executive order banning travel passed legal review, so the U.S. government ceased issuing visas to people from seven foreign countries, including five Muslim-majority countries. Procedural changes reduced the number of refugees admitted to the United States. The Trump administration in 2018 instituted a policy to forcibly separate immigrating families as they crossed the border with Mexico. A public outcry led to a reversal, but not before about 2,500 children had been taken from their parents. In addition, the administration aggressively increased the deportation of undocumented immigrants.

In the past decade, 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 has encouraged racial profiling.

Anti-immigrant rhetoric and actions have been rising in many European countries as well. 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, Norway, France, the Netherlands, and Sweden have also shifted toward candidates who promise to reduce and restrict immigration. The 2015–2016 surge into the European Union of refugees from wars in the Middle East intensified anti-immigrant rhetoric and actions, including, in 2018, threatening the viability of the German coalition government led by Angela Merkel.

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 industrialized 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 unauthorized, 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 European Union (EU) began (under the name the European Economic Community) as a customs union among six countries. It is now much, much more: 28 countries that cooperate and coordinate across many areas of economic, social, environmental, and security policy. The EU's key economic features 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 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.

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 leave 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 333,00 people, and Britain and other EU countries faced the crisis of large inflows of refugees and 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). Proponents of “leave” also claimed that Britain would be able to keep for its own use the large amount of money that it contributed to the EU budget. 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 does “leave” mean? That is, after the British exit, what is the relationship that Britain then has with the EU? The vote resolution said nothing about this. One specific controversial issue is 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 agrees. But, without border checks, how does Britain gain full control of its borders to set its own trade policies and control immigration? The EU indicated that it might accept Northern Ireland staying in the customs union and the single market for goods and people. But then, the “international” border effectively shifts to being between Northern Ireland and the rest of the United Kingdom. Unionists in Northern Ireland cannot accept that.

More broadly, what should be the ongoing economic relationship between Britain and the EU after Brexit? The key issues for international trade include:

- What tariffs and customs procedures will exist for trade between Britain and the EU?
- Will there be differences in product regulations and standards between Britain and the EU, and how will these apply to trade?
- Will there be new barriers to trade in services? Especially, to what extent can London banks continue to sell financial services to EU firms and residents?
- Will Britain be able to negotiate its own free trade agreements with outside countries? (And, will Britain continue to benefit from the more than 35 free trade agreements that the EU has with other countries?)

There are other important controversial issues. Here are two. What policies will oversee migration between Britain and EU? To what extent will Britain continue to pay the EU, either into the general budget or for specific activities?

The position of the EU negotiators has been clear. Britain cannot “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 has been 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 is a member of the customs union and accepts many rules of the single market, even though Britain is not formally a member country of the EU. (Norway has an arrangement something like this with the EU.) But then Britain gains much less sovereignty. It remains under many EU laws and regulations, but it has no formal role in enacting or changing them, and it probably would be required to continue to pay into the EU budget.

The formal exit of Britain from the EU is scheduled to happen in March 2019, unless the process is extended. Even then, the process of Brexit is probably far from over. Unless Britain crashes out in a very hard Brexit, there are likely to be transition years in which negotiations continue to determine the exact trade and immigration arrangements that replace Britain’s EU membership.

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.

China’s Exchange Rate

An exchange rate is the value of a country’s currency in terms of some other country’s currency. Exchange rates are often sources of controversy, with conflict over the exchange-rate value of China’s currency (the yuan, also called the renminbi) as the most intense in recent decades.

In 1994 the Chinese government switched from a system of having several different exchange rates, each applying to different kinds of international transactions, to an unofficial but unmistakable fixed rate to the U.S. dollar. In fact, the exchange rate was locked at about 8.28 yuan per U.S. dollar from 1997 to 2005. During the Asian crisis of 1997–1998, the U.S. government praised the Chinese government’s fixed exchange rate as a source of stability in an otherwise unstable region.

However, by 2003 the U.S. government had begun to complain that China’s fixed-rate policy was actually unacceptable currency manipulation. In 2004 the U.S. trade deficit (the amount by which imports exceed exports) with China was $161 billion, a substantial part of the total U.S. trade deficit of $609 billion with the entire world. These deficits were headed even higher in 2005, and the pressure from the U.S. government intensified. Bills introduced in the U.S. Congress threatened reprisals, including large new tariffs on imports from China, unless the Chinese government implemented a large increase in the exchange-rate value of the yuan. The European Union also had a large trade deficit with China, and it was also pressuring China to revalue the yuan.

Can keeping the exchange rate steady be manipulation? What this must mean is that the exchange-rate value should have changed but did not. What was the evidence? The bottom-line evidence was that, especially after 2001, the Chinese government continually had to go into the foreign exchange market to buy dollars and to sell yuan to keep the market rate equal to the fixed-rate target. If it had not done so, the strong private