SEVENTH EDITION

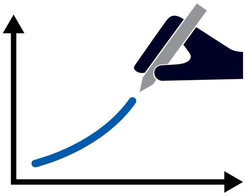
INTERNATIONAL ECONOMICS

James Gerber

Pearson

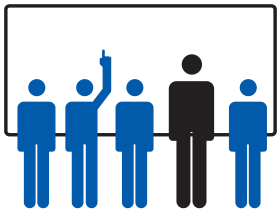
Practice, Engage, and Assess

- **Enhanced eText**—The Pearson eText gives students access to their textbook anytime, anywhere. In addition to note-taking, highlighting, and bookmarking, the Pearson eText offers interactive and sharing features. Students actively read and learn through embedded and auto-graded practice, real-time data-graphs, animations, author videos, and more. Instructors can share comments or highlights, and students can add their own, for a tight community of learners in any class.



- **Practice**—Algorithmically generated homework and study plan exercises with instant feedback ensure varied and productive practice, helping students improve their understanding and prepare for quizzes and tests. Draw-graph exercises encourage students to practice the language of economics.

- **Learning Resources**—Personalized learning aids such as Help Me Solve This problem walkthroughs, Teach Me explanations of the underlying concepts, and Figure Animations provide on-demand help when students need it most.



- **Personalized Study Plan**—Assists students in monitoring their own progress by offering them a customized study plan based on Homework, Quiz, and Test results. Includes regenerated exercises with unlimited practice, as well as the opportunity to earn mastery points by completing quizzes on recommended learning objectives.

DI

- **Digital Interactives**—Engaging assessment activities that promote critical thinking and application of key economic principles. Each Digital Interactive has progressive levels where students can explore, apply, compare, and analyze economic principles. Many Digital Interactives include real time data from FRED® that displays, in graph and table form, up-to-the-minute data on key macro variables. Digital Interactives can be assigned and graded within MyEconLab, or used as a lecture tool to encourage engagement, classroom conversation, and group work.

- **NEW: Math Review Exercises in MyEconLab**—MyEconLab now offers an array of assignable and auto-graded exercises that cover fundamental math concepts. Geared specifically toward principles and intermediate economics students, these exercises aim to increase student confidence and success in these courses. Our new Math Review is accessible from the assignment manager and contains over 150 graphing, algebra, and calculus exercises for homework, quiz, and test use.

$$P = c + dQ_s$$

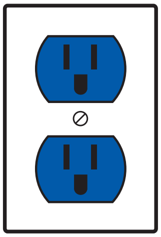
with MyEconLab®

- **Real-Time Data Analysis Exercises**—Using current macro data to help students understand the impact of changes in economic variables, Real-Time Data Analysis Exercises communicate directly with the Federal Reserve Bank of St. Louis's FRED® site and update as new data are available.

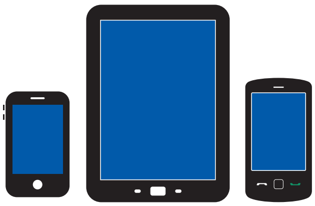
- **Current News Exercises**—Every week, current microeconomic and macroeconomic news articles or videos, with accompanying exercises, are posted to MyEconLab. Assignable and auto-graded, these multi-part exercises ask students to recognize and apply economic concepts to real-world events.

- **Experiments**—Flexible, easy-to-assign, auto-graded, and available in Single Player and Multiplayer versions, Experiments in MyEconLab make learning fun and engaging.

- **Reporting Dashboard**—View, analyze, and report learning outcomes clearly and easily. Available via the Gradebook and fully mobile-ready, the Reporting Dashboard presents student performance data at the class, section, and program levels in an accessible, visual manner.



- **LMS Integration**—Link from any LMS platform to access assignments, rosters, and resources, and synchronize MyLab grades with your LMS gradebook. For students, new direct, single sign-on provides access to all the personalized learning MyLab resources that make studying more efficient and effective.



- **Mobile Ready**—Students and instructors can access multimedia resources and complete assessments right at their fingertips, on any mobile device.

International Economics

SEVENTH EDITION

The Pearson Series in Economics

Abel/Bernanke/Croushore
*Macroeconomics**

Bade/Parkin
*Foundations of Economics**

Berck/Helfand
The Economics of the Environment

Bierman/Fernandez
Game Theory with Economic Applications

Blanchard
*Macroeconomics**

Blau/Ferber/Winkler
The Economics of Women, Men and Work

Boardman/Greenberg/Vining/Weimer
Cost-Benefit Analysis

Boyer
Principles of Transportation Economics

Branson
Macroeconomic Theory and Policy

Brock/Adams
The Structure of American Industry

Bruce
Public Finance and the American Economy

Carlton/Perloff
Modern Industrial Organization

Case/Fair/Oster
*Principles of Economics**

Caves/Frankel/Jones
World Trade and Payments: An Introduction

Chapman
Environmental Economics: Theory, Application, and Policy

Cooter/Ulen
Law & Economics

Downs
An Economic Theory of Democracy

Ehrenberg/Smith
Modern Labor Economics

Farnham
Economics for Managers

Folland/Goodman/Stano
The Economics of Health and Health Care

Fort
Sports Economics

Froyen
Macroeconomics

Fusfeld
The Age of the Economist

Gerber
*International Economics**

González-Rivera
Forecasting for Economics and Business

Gordon
*Macroeconomics**

Greene
Econometric Analysis

Gregory
Essentials of Economics

Gregory/Stuart
Russian and Soviet Economic Performance and Structure

Hartwick/Olewiler
The Economics of Natural Resource Use

Heilbroner/Milberg
The Making of the Economic Society

Heyne/Boettke/Prychitko
The Economic Way of Thinking

Hoffman/Averett
Women and the Economy: Family, Work, and Pay

Holt
Markets, Games, & Strategic Behavior

Hubbard/O'Brien
*Economics**

*Money, Banking, and the Financial System**

Hubbard/O'Brien/Rafferty
*Macroeconomics**

Hughes/Cain
American Economic History

Husted/Melvin
International Economics

Jehle/Reny
Advanced Microeconomic Theory

Johnson-Lans
A Health Economics Primer

Keat/Young
Managerial Economics

Klein
Mathematical Methods for Economics

Krugman/Obstfeld/Melitz
*International Economics: Theory and Policy**

Laidler
The Demand for Money

Leeds/von Allmen
The Economics of Sports

Leeds/von Allmen/Schiming
*Economics**

Lipsey/Ragan/Storer
*Economics**

Lynn
Economic Development: Theory and Practice for a Divided World

Miller
*Economics Today**

Understanding Modern Economics

Miller/Benjamin
The Economics of Macro Issues

Miller/Benjamin/North
The Economics of Public Issues

Mills/Hamilton
Urban Economics

Mishkin
*The Economics of Money, Banking, and Financial Markets**

*The Economics of Money, Banking, and Financial Markets, Business School Edition**

*Macroeconomics: Policy and Practice**

Murray
Econometrics: A Modern Introduction

Nafziger
The Economics of Developing Countries

O'Sullivan/Sheffrin/Perez
*Economics: Principles, Applications and Tools**

Parkin
*Economics**

Perloff
*Microeconomics**

*Microeconomics: Theory and Applications with Calculus**

Phelps
Health Economics

Pindyck/Rubinfeld
*Microeconomics**

Riddell/Shackelford/Stamos/Schneider
Economics: A Tool for Critically Understanding Society

Ritter/Silber/Udell
*Principles of Money, Banking & Financial Markets**

Roberts
The Choice: A Fable of Free Trade and Protection

Rohlf
Introduction to Economic Reasoning

Ruffin/Gregory
Principles of Economics

Sargent
Rational Expectations and Inflation

Sawyer/Sprinkle
International Economics

Scherer
Industry Structure, Strategy, and Public Policy

Schiller
The Economics of Poverty and Discrimination

Sherman
Market Regulation

Silberberg
Principles of Microeconomics

Stock/Watson
Introduction to Econometrics

Studenmund
Using Econometrics: A Practical Guide

Tietenberg/Lewis
Environmental and Natural Resource Economics

Environmental Economics and Policy

Todaro/Smith
Economic Development

Waldman
Microeconomics

Waldman/Jensen
Industrial Organization: Theory and Practice

Walters/Walters/Appel/Callahan/Centanni/Maex/O'Neill
Econversations: Today's Students Discuss Today's Issues

Weil
Economic Growth

Williamson
Macroeconomics

This page intentionally left blank

International Economics

James Gerber

San Diego State University

SEVENTH EDITION

Pearson

New York, NY

For Monica and Elizabeth.

Vice President, Business Publishing: Donna Battista
Director of Portfolio Management: Adrienne D'Ambrosio
Director, Courseware Portfolio Management: Ashley Dodge
Editorial Assistant: Michelle Zeng
Senior Sponsoring Editor: Neeraj Bhalla
Vice President, Product Marketing: Roxanne McCarley
Director of Strategic Marketing: Brad Parkins
Strategic Marketing Manager: Deborah Strickland
Product Marketer: Tricia Murphy
Field Marketing Manager: Ramona Elmer
Product Marketing Assistant: Jessica Quazza
Vice President, Production and Digital Studio, Arts and Business: Etain O'Dea
Director of Production, Business: Jeff Holcomb
Managing Producer, Business: Alison Kalil
Operations Specialist: Carol Melville
Creative Director: Blair Brown
Manager, Learning Tools: Brian Surette
Content Developer, Learning Tools: Lindsey Sloan
Managing Producer, Digital Studio, Arts and Business: Diane Lombardo
Digital Studio Producer: Melissa Honig
Digital Studio Producer: Alana Coles
Digital Content Project Lead: Courtney Kamauf
Full-Service Project Management and Composition: SPi Global
Interior Design: SPi Global
Cover Design: SPi Global
Cover Art: Luciano Mortula/Shutterstock
Printer/Binder: RRD Crawfordsville
Cover Printer: Phoenix

Library of Congress Cataloging-in-Publication Data

Names: Gerber, James, author.
Title: International economics / James Gerber, San Diego State University.
Description: Seventh edition. | Boston: Pearson Education, [2018]
Identifiers: LCCN 2016042070| ISBN 9780134472096 | ISBN 0134472098
Subjects: LCSH: International economic relations. | International economic integration. | International trade. | Commercial policy. | United States—Foreign economic relations.
Classification: LCC HF1359 .G474 2018 | DDC 337—dc23 LC record available at https://lccn.loc.gov/2016042070

10 9 8 7 6 5 4 3 2 1

Pearson

ISBN 10: 0-13-447209-8
ISBN 13: 978-0-13-447209-6

BRIEF CONTENTS

Suggested Readings are available at www.pearsonhighered.com

This page intentionally left blank

CONTENTS

PREFACE

International Economics is designed for a one-semester course covering both the micro and macro components of international economics. The Seventh Edition continues the approach of the first six editions by offering a principles-level introduction to the core theories, together with policy analysis and the institutional and historical contexts of international economic relations. My goal is to make economic reasoning about the international economy accessible to a diverse group of students, including both economics majors and nonmajors. My intention is to present the consensus of economic opinion, when one exists, and to describe the differences when one does not. In general, however, economists are more often in agreement than not.

New to the Seventh Edition

This Seventh Edition of *International Economics* preserves the organization and coverage of the Sixth Edition and adds a number of updates and enhancements. New to this edition:

- All tables and graphs have been updated.
- New case studies are added in Chapter 2 on the Asian Infrastructure and Investment Bank; Chapter 5 on industrial policies targeting clean energy technology; and Chapter 16 on the Worldwide Governance Indicators.
- Chapter 9 on the balance of payments has incorporated the accounting revisions of the IMF and the implementation of the revisions by the U.S. Bureau of Economic Analysis. The changes recommended by the IMF are mostly terminology, but also in the presentation of debits and credits. Chapter 9 also adds a new appendix on the terminology of numbers: billions, thousands of millions, milliards, and trillions.
- The discussion of financial crises in Chapter 12 is presented in terms of vulnerabilities and triggers, following the terminology used by former Fed Chairman Ben Bernanke, among others.
- Chapter 16 has dropped the World Bank's now-dated terminology and focus on the High Performance Asian Economies in favor of a more empirically determined set of high growth, export oriented East Asian economies.
- Chapter 17 is focused on India and China, exclusively.

- The discussion of trade and jobs in Chapters 4, 13, and 17 is more nuanced and reflects the growing challenge to the consensus that trade is not the cause of manufacturing's decline in high-income countries.

Hallmarks of International Economics

Several features of *International Economics* distinguish it from the many excellent texts in the field:

- First, the approach is broader than the theoretical apparatus used by economists. Economic theory is covered and its mastery is essential, but most readers grasp theory more completely when it is presented along with real-world applications. To this end, I have supplemented economic theory with case studies and other content ranging from the role of economic institutions and the analysis of international economic policies to the recent history of the world economy and the challenges facing different geographical regions as they become more economically integrated internationally .
- Second, the objective of covering both the micro and macro sides in a one-semester course necessitates paring back the coverage of theory in order to focus on the central concepts. As all instructors are aware, many theoretical topics are of secondary or tertiary importance, which can pose a problem for students who may lack the needed breadth and depth of understanding to rank topics by their relative importance.
- Third, *International Economics* provides richer historical and institutional detail than most other texts. This material illuminates the relationships between economic theory and policy, and between economics and the other social sciences.
- Fourth, I have organized Part 4 of the book into five chapters, each focused on a geographic area as follows: North America with emphasis on the United States, the European Union, Latin America, East Asia, and India and China. These chapters offer students the chance to broaden their understanding of world trends and to observe the intellectual power of economic theory in practice.

Flexibility of Organization

A text requires a fixed topical sequence because it must order the chapters one after another. This is a potential problem for some instructors, as there is a wide variety of preferences for the order in which topics are taught. The Seventh Edition, like the previous editions, strives for flexibility in allowing instructors to find their own preferred sequence.

Part 1 includes two introductory chapters that are designed to build vocabulary, develop historical perspective, and provide background information about the different international organizations and the roles they play in the world economy. Some instructors prefer to delve into the theory chapters immediately, reserving this material for later in the course. There is no loss of continuity with this approach.

Part 2 presents the micro side of international economics, while Part 3 covers the macro side. These two parts can easily be reversed in sequence if desired.

Part 2 includes six chapters that cover trade models (Chapters 3–5) and commercial policy (Chapters 6–8). A condensed treatment of this section could focus on the Ricardian model in Chapter 3, and the analysis of tariffs and quotas in Chapters 6 and 7. Chapter 8 on labor and environmental standards can stand on its own, although the preceding chapters deepen student understanding of the trade-offs.

Part 3 covers the balance of payments, exchange rates, open-economy macroeconomics, and international financial crises. Chapter 11 on open economy macroeconomics is optional. It is intended for students and instructors who want a review of macroeconomics, including the concepts of fiscal and monetary policy, in a context that includes current accounts and exchange rates. If Chapter 11 is omitted, Chapter 12 (financial crises) remains accessible as long as students have an understanding of the basic concepts of fiscal and monetary policy. Chapter 12 relies most heavily on Chapters 9 (balance of payments) and 10 (exchange rates and exchange rate systems).

Part 4 presents five chapters, each focused on a geographic area. These chapters use theory presented in Chapters 3–12 in a similar fashion to the economics discussion that students find in the business press, congressional testimonies, speeches, and other sources intended for a broad civic audience. Where necessary, concepts such as the real rate of exchange are briefly reviewed. One or more of these chapters can be moved forward to fit the needs of a particular course.

Supplementary Materials

The following supplementary resources are available to support teaching and learning.

- In recognition of the importance of the Internet as a source of timely information, the MyEconLab offers Web links for each chapter of *International Economics*. These links, complete with descriptions of the content available at each site, provide easy access to relevant, current data sources.

Other Supplements

Leonie Stone of State University of New York (SUNY) at Geneseo, has revised the TestGen and Instructor's Manual to bring it up to date with the text. The TestGen is available for download on the Instructor's Resource website. The Instructor's Powerpoints are also available online as an additional resource.

MyEconLab

MyEconLab

MyEconLab has been designed and refined with a single purpose in mind: to create those moments of understanding that transform the difficult into the clear and obvious. With comprehensive homework, quiz, test, and tutorial options, instructors can manage all their assessment needs in one program.

MyEconLab for *International Economics*, Seventh Edition offers the following resources for students and instructors:

- **All end-of-chapter questions** from the text are available in MyEconLab.
- **Personal study plans** are created for each individual student based on performance on assigned and sample exercises.
- **Instant tutorial feedback** on a student's problem and graphing responses to questions.
- **Interactive learning aids**, such as *Help Me Solve This* (a step-by-step tutorial), help the student right when they need it.
- **News articles** are available for classroom and assignment use. Up-to-date news articles and complementary discussion questions are posted weekly to bring today's news into the classroom and course.
- **Real-Time Data Analysis** These exercises allow instructors to assign problems that use up-to-the-minute data. Each RTDA exercise loads the appropriate and most currently available data from FRED, a comprehensive and up-to-date data set maintained by the Federal Reserve Bank of St. Louis. Exercises are graded based on that instance of data, and feedback is provided.
- **An enhanced Pearson eText** available within the online course materials and offline via an app. The enhanced eText allows instructors and students to highlight, bookmark, and take notes.
- **Prebuilt courses** offer a turn-key way for instructors to create a course that includes prebuilt assignments distributed by chapter.
- **Auto graded problems and graphs** for assignments.
- **A powerful gradebook,** flexible and rich with information, including student and class data on assignment performance and time on task.
- **Advanced communication tools** provides students and instructors the capability to communicate through e-mail, discussion board, chat, and ClassLive.
- **Customization options** provide new and enhanced ways to share documents, add content, and rename menu items.
- **Temporary access** for students who are awaiting financial aid; a seventeen-day grace period of temporary access.
- **One place for students to access all of their MyLab courses**. Students and instructors can register, create, and access all of their MyLab courses, regardless of discipline, from one convenient online location: www.pearsonmylab.com.

For more information, please visit www.myeconlab.com**.**

Acknowledgments

All texts are team efforts, even single-author texts. I owe a debt of gratitude to a large number of people. At San Diego State University, I have benefited from the opportunity to teach and converse with a wide range of students. My colleagues in San Diego and across the border in Mexico have been extremely helpful. Their comments and our conversations constantly push me to think about the core economic ideas that should be a part of a college student's education, and to search for ways to explain the relevance and importance of those ideas with greater clarity and precision. Any failure in this regard is, of course, mine alone.

I am deeply grateful to Neeraj Bhalla, Nicole Suddeth, Sree Meenakshi R, and the MyEconLab team.

Finally, my gratitude goes to the numerous reviewers who have played an essential role in the development of *International Economics*. Each of the following individuals reviewed the manuscript, many of them several times, and provided useful commentary. I cannot express how much the text has benefited from their comments.

Mary Acker
Iona College

Jeff Ankrom
Wittenberg University

David Aschauer
Bates College

H. Somnez Atesoglu
Clarkson University

Titus Awokuse
University of Delaware

Mohsen Bahmani-Oskooee
University of Wisconsin, Milwaukee

Richard T. Baillie
Michigan State University

Mina Baliamoune-Lutz,
University of North Florida

Eugene Beaulieu
University of Calgary

Ted Black
Towson University

Bruce Blonigen
University of Oregon

Lee Bour
Florida State University

Byron Brown
Southern Oregon University

Laura Brown
University of Manitoba

Albert Callewaert
Walsh College

Tom Carter
Oklahoma City University

Srikanta Chatterjee
Massey University, New Zealand

Jen-Chi Cheng
Wichita State University

Don Clark
University of Tennessee

Raymond Cohn
Illinois State University

Peter Crabb
Northwest Nazarene University

David Crary
Eastern Michigan University

Al Culver
California State University, Chico

Joseph Daniels
Marquette University

Alan Deardorff
University of Michigan

Craig Depken II
University of North Carolina, Charlotte

John Devereaux
University of Miami

K. Doroodian
Ohio University

Carolyn Evans,
Santa Clara University

Noel J. J. Farley
Bryn Mawr College

Ora Freedman
Stevenson University

Lewis R. Gale IV
University of Southwest Louisiana

Kevin Gallagher
Boston University

Ira Gang
Rutgers University

John Gilbert
Utah State University

James Giordano
Villanova University

Amy Jocelyn Glass
Texas A&M University

Joanne Gowa
Princeton University

Gregory Green
Idaho State University

Thomas Grennes
North Carolina State University

Winston Griffith
Bucknell University

Jane Hall
California State University, Fullerton

Seid Hassan
Murray State University

F. Steb Hipple
East Tennessee State University

Paul Jensen
Drexel University

Ghassan Karam
Pace University

George Karras
University of Illinois at Chicago

Kathy Kelly
University of Texas, Arlington

Abdul Khandker
University of Wisconsin, La Crosse

Jacqueline Khorassani
Marietta College

Sunghyun Henry Kim
Brandeis University

Vani Kotcherlakota
University of Nebraska at Kearney

Corrine Krupp
Michigan State University

Kishore Kulkarni
Metropolitan State College of Denver

Farrokh Langdana
Rutgers University

Daniel Y. Lee
Shippensburg University

Mary Lesser
Iona College

Benjamin H. Liebman
Saint Joseph's University

Susan Linz
Michigan State University

Marc Lombard
Macquarie University, Australia

Thomas Lowinger
Washington State University

Nicolas Magud
University of Oregon

Bala Maniam
Sam Houston State University

Mary McGlasson
Arizona State University

Joseph McKinney
Baylor University

Judith McKinney
Hobart & William Smith Colleges

Howard McNier
San Francisco State University

Michael O. Moore
George Washington University

Stephan Norribin
Florida State University

William H. Phillips
University of South Carolina

Frank Raymond
Bellarmine University

Donald Richards
Indiana State University

John Robertson
University of Kentucky Community College System

Jeffrey Rosensweig
Emory University

Marina Rosser
James Madison University

Raj Roy
University of Toledo

Michael Ryan
Western Michigan University

George Samuels
Sam Houston State University

Craig Schulman
University of Arizona

William Seyfried
Winthrop University

Eckhard Siggel
Concordia University

David Spiro
Columbia University

Richard Sprinkle
University of Texas, El Paso

Ann Sternlicht
Virginia Commonwealth University

Leonie Stone
State University of New York at Geneseo

Carolyn Fabian Stumph
Indiana University, Purdue University, Fort Wayne

Rebecca Summary
Southeast Missouri State University

Jack Suyderhoud
University of Hawaii

Kishor Thanawala
Villanova University

Henry Thompson
Auburn University

Cynthia Tori
Valdosta State University

Edward Tower
Duke University

Ross vanWassenhove
University of Houston

Jose Ventura
Sacred Heart University

Craig Walker
Oklahoma Baptist University

Michael Welker
Franciscan University

Jerry Wheat
Indiana State University

Laura Wolff
Southern Illinois University, Edwardsville

Chong K. Yip
Georgia State University

Alina Zapalska
Marshall University

PART 1

Introduction and Institutions

CHAPTER 1

An Introduction to the World Economy

Learning Objectives

After studying this chapter, students will be able to:

1.1 Discuss historical measures of international economic integration with data on trade, capital flows, and migration.

1.2 Compute the trade-to-GDP ratio and explain its significance.

1.3 Describe three factors in the world economy today that are different from the economy at the end of the first wave of globalization.

1.4 List the three types of evidence that trade supports economic growth.

INTRODUCTION: INTERNATIONAL ECONOMIC INTEGRATION

In August of 2007, a crisis erupted in the housing sector of the United States. At the time, few people realized that the subprime mortgage crisis would become a demonstration of international economic integration or that it would push the world economy to the brink of collapse. The crisis grew through the remainder of 2007 and into 2008, so that by the summer nearly all high-income economies were in deep distress. Contagion from the crisis spread like an epidemic as banks and other financial firms collapsed and solvent firms stopped lending. The scarcity of credit caused difficulties for businesses that could not find financing for their day-to-day operations while, at the same time, consumers cut back on their spending and businesses cut back on new investment. By the end of 2008, economies around the world were in recession, with the notable exceptions of China, India, and the major oil producers.

This episode is the most dramatic instance since the Great Depression of the 1930s of a crisis leading to severe economic recession in many countries around the world. It is, however, only one of several recent examples of crises spilling across national borders. The Russian Crisis of 1998–99, the Asian Crisis of 1997–98, the Mexican Crisis of 1994–95, the Latin American Debt Crisis of 1982–89, and a number of others caused major damage to financial systems, businesses, and households, both in the places where they originated and in many other countries.

The international integration of national economies has brought many benefits to nations across the globe, including technological innovation, less expensive products, and greater investment in regions where local capital is scarce, to name a few. But it has also made countries vulnerable to economic problems that have become more easily transmitted from one place to another. Given that the benefits and costs of international economic integration are surrounded by controversy, it is worth clarifying what we mean by the term *international economic integration,* or *globalization in the economic sphere*. To help us understand these forces better, a historical perspective is also useful.

ELEMENTS OF INTERNATIONAL ECONOMIC INTEGRATION

LO 1.1 Discuss historical measures of international economic integration with data on trade, capital flows, and migration.

LO 1.2 Compute the trade-to-GDP ratio and explain its significance.

LO 1.3 Describe three factors in the world economy today that are different from the economy at the end of the first wave of globalization.

LO 1.4 List the three types of evidence that trade supports economic growth.

Most people would agree that the major economies of the world are more integrated than at any time in history. Given our instantaneous communications, modern transportation, and relatively open trading systems, most goods can move from one country to another without major obstacles and at relatively low cost. For example, most cars today are made in fifteen or more countries after you consider where each part is made, where the advertising originates, who does the accounting, and who transports the components and the final product. Nevertheless, the proposition that today's economies are more integrated than at any other time in history is not simple to demonstrate. It is clear that our current wave of economic integration began in the 1950s, with the reduction of trade barriers after World War II. In the 1970s, many countries began to encourage financial integration by increasing the openness of their capital markets. The advent of the Internet in the 1990s, along with the other elements of the telecommunications revolution, pushed economic integration to new levels as multinational firms developed international production networks and markets became ever more tightly linked.

Today's global economy is not the first instance of a dramatic growth in economic ties between nations, however, as there was another important period between approximately 1870 and 1913. New technologies such as transatlantic cables, steam-powered ships, railroads, and many others led the way, much as they do today. For example, when the first permanent transatlantic cable was completed in 1866, the time it took for a New York businessperson to complete a financial transaction in London fell from approximately three weeks to one day, and by 1914 it had fallen to one minute as radio telephony became possible.

We have mostly forgotten about this earlier period of economic integration, and that makes it easier to overestimate integration today. Instantaneous communications and rapid transportation, together with the easy availability of foreign products, often cause us to lose sight of the fact that most of what we buy and sell never makes it out of our local or national markets. We rarely pause to think that haircuts, restaurant meals, gardens, health care, education, utilities, and many other goods and services are partially or wholly domestic products. In the United States, for example, about 83.4 percent of goods and services are produced domestically, with imports (16.6 percent) making up the remainder of what we consume (2014). By comparison, in 1890 the United States made about 92 percent of its goods and services, a larger share than today, but not radically different.

The question as to whether we are more economically integrated today or some period in the past is not academic. Between the onset of World War I in 1914 and the end of World War II in 1945, the world economy suffered a series of human-made catastrophes that de-integrated national economies. Two world wars and a global depression caused most countries to close their borders to foreign goods, foreign capital, and foreign people. Since the end of World War II, many of the economic linkages between nations have served to repair the damage done during the first half of the twentieth century, but there is no reason to think that events might not cause a similar decoupling in the future.

Understanding international economic integration requires us to define what we mean by the term. Economists usually point to four criteria or measures for judging the degree of integration, which are trade flows, capital flows, people flows, and the similarity of prices in separate markets. The first three points are relatively self-explanatory, while the similarity of prices refers to the fact that integrated economies have price differences that are relatively small and are due mainly to differences in transportation costs. Goods that can move freely from a low-cost to a high-cost region should experience price convergence as goods move from where they are plentiful and cheap to where they are relatively scarcer and more expensive. All of these indicators—trade flows, factor (labor and capital) movements, and similarity of prices—are measures of the degree of international economic integration.

The Growth of World Trade

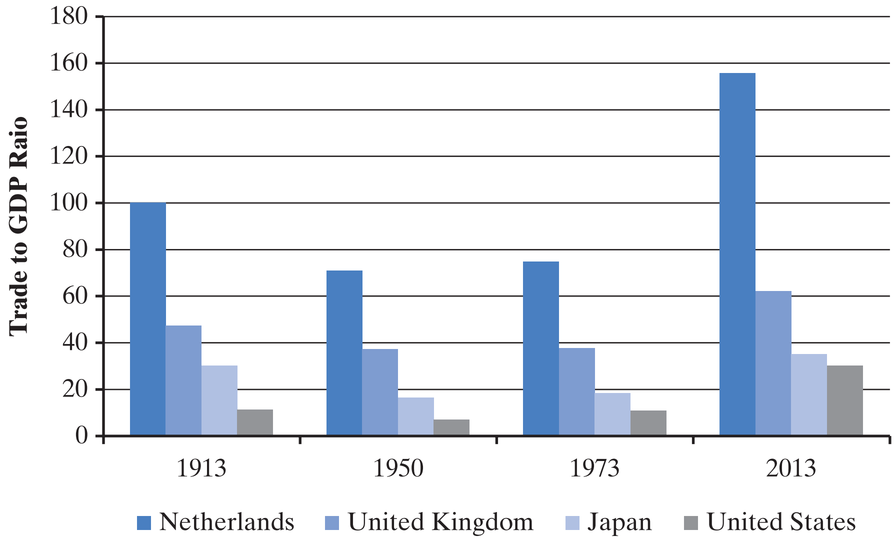
Since the end of World War II, world trade has grown much faster than world output. One way to show this is to estimate the ratio of exports by all countries to total production by all countries. In 1950, total world exports—which are the same as world imports—are estimated to have been 5.5 percent of world **gross domestic product (GDP)**, a measure of total production. Sixty-three years later, in 2013, they were approximately 30 percent of world GDP, nearly six times more important relative to the size of the world economy. One important measure of international trade in a nation's economy is the sum of exports plus imports, divided by the GDP. Specifically, it is the value of all final goods and services produced inside a nation during some period, usually one year. The **trade-to-GDP ratio** is represented as follows:

$$\text{Trade to GDP ratio} = (\text{Exports} + \text{Imports}) \div \text{GDP}$$

The ratio does not tell us about a country's trade policies and countries with higher ratios do not necessarily have lower barriers to trade, although that is one possibility. In general, large countries are less dependent on international trade because their firms can reach an optimal production size without having to sell to foreign markets. Consequently, smaller countries tend to have higher ratios of trade-to-GDP.

Figure 1.1 shows the trade-to-GDP ratio for four countries between 1913 and 2013. The decline in trade between the onset of World War I and 1950 is clearly visible in each country, as is the subsequent increase after 1950. Another pattern shown in Figure 1.1 is the smaller ratios for the United States and Japan, which have the largest populations, and the much higher ratio for the Netherlands, which has the smallest population in the sample. In general, smaller countries trade more than larger ones since they cannot efficiently produce a wide range of goods and must depend on trade to a greater extent. For example, if the Netherlands were to produce autos solely for its own market, it would lack economies of scale and could not produce at a competitive cost, whereas the U.S. market can absorb a large share of U.S. output. Hence, the trade-to-GDP ratio measures the relative

FIGURE 1.1 Trade-to-GDP Ratios for Four Countries, 1913–2013



Data from Maddison, A. (1991). "Dynamic Forces in Capitalist Development" and The World Bank, *World Integrated Trade Solution*, © James Gerber.

importance of international trade in a nation's economy, but it does not provide any direct information about trade policy or trade barriers.

Figure 1.1 gives a historical overview of the decline and subsequent return of international trade after World War II, but it obscures important changes in the composition of trade flows from early in the twentieth century to those at the end of the century. Before World War I most trade consisted of agricultural commodities and raw materials, while current trade is primarily manufactured consumer goods and producer goods (machinery and equipment). Consequently, today's manufacturers are much more exposed to international competition than was the case in 1900. In addition, much of the growth of world trade since 1950 has been accomplished by multinational corporations. With production sites in multiple countries and inputs that pass back and forth between affiliates, multinational corporations have become dramatically important. This trend has been supported and encouraged by the telecommunications revolution and transportation improvements that have lowered the costs of coordinating operations physically separated by oceans and continents. And finally, it has also become possible to coordinate service operations such as accounting and data processing from a great distance. In sum, trade today is qualitatively different than in 1913, and the growth of the trade-to-GDP ratio since 1950 does not tell the whole story.

Capital and Labor Mobility

In addition to exports and imports, factor movements also are an indicator of economic integration. As national economies become more interdependent, labor and capital should move more easily across international boundaries. Labor, however, is less mobile internationally than it was in 1900. Consider, for example, that in 1890 approximately 14.5 percent of the U.S. population was foreign born, while in 2010, the figure was 12.9 percent. In 1900, many nations had open door immigration policies, and passport controls, immigration visas, and work permits were exceptions rather than rules. The movement of people was severely restricted by the two world wars and the Great Depression of the 1930s. In the 1920s, during the interwar period, the United States sharply restricted immigration with policies that lasted until the 1960s, when changes in immigration laws once again encouraged foreigners to migrate to the United States.

On the capital side, measurement is more difficult, since there are several ways to measure capital flows. The most basic distinction is between flows of financial capital representing paper assets such as stocks, bonds, currencies, bank accounts, and flows of capital representing physical assets such as real estate, factories, and businesses. The latter type of capital flow is called **foreign direct investment (FDI)**. To some extent, the distinction between the two types of capital flows is immaterial because both represent shifts in wealth across national boundaries and both make one nation's savings available to another.

When we compare international capital flows today to a century ago, there are two points to keep in mind. First, savings and investment are highly correlated. That is, countries with high savings tend to have high rates of investment, and low savings is correlated with low investment. If there were a single world market in which capital flowed freely and easily, this would not necessarily be the case. Capital would flow from countries with abundant savings and capital to countries with low savings and capital, where it would find its highest returns. Second, a variety of technological improvements increased capital flows in the 1800s, as they are doing today. Transoceanic cables and radio telephony have already been mentioned, but capital flows also increased in the late 1800s because there were new investment opportunities such as national railroad networks and other infrastructure, both at home and abroad.

If we compare the size of capital flows today to the previous era of globalization, flows today are much larger but mainly because economies are larger. Relative to the size of economies, the differences are not great and may even favor the 1870 to 1913 period, depending on what is measured. Great Britain routinely invested 9 percent of its GDP abroad in the decades before 1913, and France, Germany, and the Netherlands were as high at times. For significant periods, Canada, Australia, and Argentina borrowed amounts that exceeded 10 percent of their GDP, a level of borrowing that sends up danger signals in the world economy today. In other words, it is hard to make the argument that national economies have a historically unprecedented level of international capital flows today.

While the relative quantity of capital flows today may not be that much different for many countries, there are some important qualitative differences. First, there are many more financial instruments available now than there were a century ago. These range from relatively mundane stocks and bonds to relatively exotic instruments such as derivatives, currency swaps, and others. By contrast, at the turn of the twentieth century, there were many fewer companies listed on the world's stock exchanges and most international financial transactions involved the buying and selling of bonds.

A second difference today is the role of foreign exchange transactions. In 1900, countries had fixed exchange rates and firms in international trade or finance had less day-to-day risk from a sudden change in the value of a foreign currency. Many firms today spend significant resources to protect themselves from sudden shifts in currency values. Consequently, buying and selling assets denominated in foreign currencies is the largest component of international capital movements. For example, according to the Bank for International Settlements in Geneva, Switzerland, *daily* foreign exchange transactions in 2013 were equal to $5.3 *trillion*. In 1973, at the end of the last era of fixed exchange rates, they were $15 billion.

The third major difference in capital flows is that the costs of foreign financial transactions have fallen significantly. Economists refer to the costs of obtaining market information, negotiating an agreement, and enforcing the agreement as **transaction costs**. They are an important part of any business's costs, whether it is a purely domestic enterprise or a company involved in foreign markets. Due to sheer distance, as well as differences in culture, laws, and languages, transaction costs are often higher in international markets than in domestic ones. Today's lower transaction costs for foreign investment mean that it is less expensive to move capital across international boundaries.

The volatile movement of financial capital across international boundaries is often mistakenly regarded as a new feature of the international economy. Speculative excesses and overinvestment, followed by capital flight and bankruptcies, have occurred throughout the modern era, going back at least to the 1600s and probably earlier. U.S. and world history show a number of such cases. Financial crises are not a new phenomenon, nor have we learned how to avoid them—a fact driven home by the recent subprime mortgage crisis.

Features of Contemporary International Economic Relations

While international economic integration has been rapid, it does not appear to be historically unprecedented. The trade-to-GDP ratio is about 50 percent higher in the U.S. economy than it was in 1890, and manufacturers and service providers are more exposed to international forces. Labor is less mobile than in 1900 due to passport controls and work permits, but capital is more mobile and encompasses a larger variety of financial forms. Prices in many U.S. and foreign markets tend to be similar, although there are still significant differences. In quantitative terms, the differences between today and a hundred years ago may not be as great as many people imagine, but qualitatively, a number of additional features of the world economy separate the first decade of the twenty-first century from the first decade of the twentieth.

Deeper Integration High-income countries have low barriers to imports of manufactured goods. There are some exceptions (processed foodstuffs and apparel), but as a general rule import **tariffs** (taxes on imports) and other barriers such as **quotas** (quantitative restrictions on imports) are much less restrictive than they were in the middle of the twentieth century. As trade barriers came down during the second half of the twentieth century, two other trends began to intensify economic integration between countries. First, lower trade barriers exposed the fact that most countries have domestic policies that are obstacles to international trade. National regulations governing labor, environmental, and consumer safety standards; rules governing investment location and performance; rules defining fair and unfair competition; rules on government "buy-national" programs; and government support policies for specific industries—all have little impact on trade until formal trade barriers start to fall and trade volume increases. These policies were not implemented to protect domestic industries from foreign competition, and as long as tariffs were high and trade flows were limited, they did not matter much to trade relations. Once tariffs fell, however, many forms of domestic policies began to be viewed as barriers to increased trade. Economists sometimes refer to the reduction of tariffs and the elimination of quotas as **shallow integration** and negotiations over domestic policies that impact international trade as **deep integration**. Deep integration is much more contentious than shallow integration and much more difficult to accomplish since it involves domestic policy changes that align a country with rules that are created abroad, or at least negotiated with foreign powers.

A second noticeable trend over the last few decades is that technologically complicated goods such as smart phones and automobiles are made of components produced in more than one country and, consequently, labels such as "Made in China" or "Made in the USA" are less and less meaningful. Low tariffs along with innovations in transportation and communication technologies have enabled firms to locate production of the different components of a sophisticated product in different countries. For example, the hardware for a 3G iPhone is produced in Germany, Korea, Japan, and the United States, and then it is assembled in China. The most valuable share of the hardware is made in Japan, but no one thinks of this device as a Japanese phone. In this case, as in many others, it is not accurate to say the product is made in one particular country since the parts come from all over, and the product is the result of a multinational effort involving firms and workers from many different countries.

These two trends raise new issues that are shaping the world economy in the twenty-first century. The first trend, greater interest in the consequences of different domestic policies, makes trade negotiations more difficult and creates widespread discussion of labor, environmental, and other standards that may affect trade flows. The second trend, greater participation in the production of a single product by firms in multiple countries, leads to concerns about the impact of trade on national economies, employment, and working conditions. National and international dialogues on these issues are a key feature of international economics in the twenty-first century.

Multilateral Organizations At the end of World War II, the United States, Great Britain, and their allies created a number of international organizations to maintain international economic and political stability. Although the architects of these organizations could not envision the challenges and issues they would confront over the next fifty years, the organizations were given significant flexibility, and they continue to play an important and growing role in managing the issues of shallow and deeper integration.

The International Monetary Fund (IMF), the World Bank, the General Agreement on Tariffs and Trade (GATT), the United Nations (UN), the World Trade Organization (the WTO began operation in 1995, but grew out of the GATT), and a host of smaller organizations have broad international participation. They serve as forums for discussing and establishing rules, as mediators of disputes, and as organizers of actions to resolve problems. All of these organizations are controversial and have come under increasing fire from critics who charge that they promote unsustainable economic policies or that they protect the interests of wealthy countries. Others argue that they are unnecessary foreign entanglements that severely limit the scope for national action (Chapter 2 examines this issue in detail). These organizations are attempts to create internationally acceptable rules for trade and commerce and to deal with potential disputes before they spill across international borders; they are an entirely new element in the international economy.

Regional Trade Agreements Agreements between groups of nations are not new. Free-trade agreements and other forms of preferential trade have existed