

ECONOMICS

CANADA IN THE GLOBAL ENVIRONMENT NINTH EDITION

ECONOMICS

CANADA IN THE GLOBAL ENVIRONMENT NINTH EDITION



MICHAEL PARKIN  ROBIN BADE

PEARSON

Toronto

Vice-President, CMPS:	Gary Bennett
Editorial Director:	Claudine O'Donnell
Marketing Manager:	Loula March
Developmental Editor:	Leanne Rancourt
Manager, Project Management:	Avinash Chandra
Manufacturing Manager:	Susan Johnson
Production Editor:	Leanne Rancourt
Copy Editor:	Susan Bindernagel
Proofreader:	Leanne Rancourt
Composer:	Cenveo® Publisher Services
Technical Illustrator:	Richard Parkin
Project Manager, Permissions:	Joanne Tang
Text Permissions:	iEnergizerAptara®, Inc., Phyllis Padula
Photo Permissions:	iEnergizerAptara®, Inc., Lokesh Bisht
Digital Strategist:	Victoria Naik and Kristina Joie
Cover and Interior Designer:	Anthony Leung
Cover Image:	Fotolia

Credits and acknowledgments of material borrowed from other sources and reproduced, with permission, in this textbook appear on the appropriate page within the text and on p. C-1–C-2.

Statistics Canada information is used with the permission of the Minister of Industry, as Minister responsible for Statistics Canada. Information on the availability of the wide range of data from Statistics Canada can be obtained from Statistics Canada's Regional Offices, its World Wide Web site at www.statcan.gc.ca, and its toll-free access number 1-800-263-1136.

If you purchased this book outside the United States or Canada, you should be aware that it has been imported without the approval of the publisher or the author.

Copyright © 2016, 2013, 2010, 2006, 2003, 1997, 1994, 1991 Pearson Canada Inc., Toronto, Ontario. All rights reserved. Manufactured in the United States of America. This publication is protected by copyright and permission should be obtained from the publisher prior to any prohibited reproduction, storage in a retrieval system, or transmission in any form or by any means, electronic, mechanical, photocopying, recording, or likewise. To obtain permission(s) to use material from this work, please submit a written request to Pearson Canada Inc., Permissions Department, 26 Prince Andrew Place, Toronto, Ontario, M3C 2T8, or fax your request to 416-447-3126, or submit a request to Permissions Requests at www.pearsoncanada.ca.

10 9 8 7 6 5 4 3 2 1 [CKV]

Library and Archives Canada Cataloguing in Publication

Parkin, Michael, 1939-, author
Economics / Michael Parkin, Robin Bade. — Ninth edition.

Includes index.

ISBN 978-0-321-93119-1 (bound)

1. Economics—Textbooks. I. Bade, Robin, author II. Title.

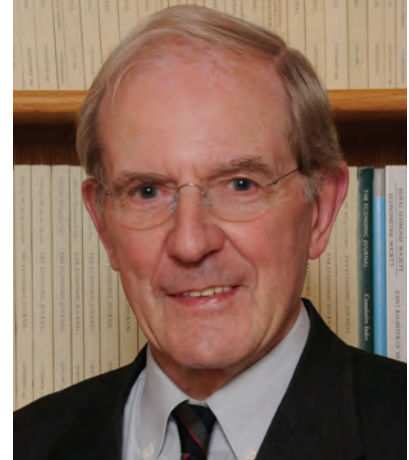
HB171.5.P26 2015 330 C2014-905293-6



TO OUR STUDENTS

ABOUT THE AUTHOR

Michael Parkin received his training as an economist at the Universities of Leicester and Essex in England. He is Professor Emeritus in the Department of Economics at the University of Western Ontario, Canada. Professor Parkin has held faculty appointments at Brown University, the University of Manchester, the University of Essex, and Bond University. He is a past president of the Canadian Economics Association and has served on the editorial boards of the *American Economic Review* and the *Journal of Monetary Economics* and as managing editor of the *Canadian Journal of Economics*. Professor Parkin's research on macroeconomics, monetary economics, and international economics has resulted in over 160 publications in journals and edited volumes, including the *American Economic Review*, the *Journal of Political Economy*, the *Review of Economic Studies*, the *Journal of Monetary Economics*, and the *Journal of Money, Credit and Banking*. He became most visible to the public with his work on inflation that discredited the use of wage and price controls. Michael Parkin also spearheaded the movement towards European monetary union.



Robin Bade earned degrees in mathematics and economics at the University of Queensland and her Ph.D. at the Australian National University. She has held faculty appointments at the University of Edinburgh in Scotland, at Bond University in Australia, and at the Universities of Manitoba, Toronto, and Western Ontario in Canada. Her research on international capital flows appears in the *International Economic Review* and the *Economic Record*. Professor Parkin and Dr. Bade are the joint authors of *Foundations of Economics* (Addison Wesley), *Modern Macroeconomics* (Pearson Education Canada), an intermediate text, and have collaborated on many research and textbook writing projects. They are both experienced and dedicated teachers of introductory economics.



PART ONE**INTRODUCTION 1**

- CHAPTER 1 What Is Economics? 1
CHAPTER 2 The Economic Problem 31

PART TWO**HOW MARKETS WORK 55**

- CHAPTER 3 Demand and Supply 55
CHAPTER 4 Elasticity 83
CHAPTER 5 Efficiency and Equity 105
CHAPTER 6 Government Actions in Markets 127
CHAPTER 7 Global Markets in Action 151

PART THREE**HOUSEHOLDS' CHOICES 177**

- CHAPTER 8 Utility and Demand 177
CHAPTER 9 Possibilities, Preferences, and Choices 201

PART FOUR**FIRMS AND MARKETS 223**

- CHAPTER 10 Organizing Production 223
CHAPTER 11 Output and Costs 247
CHAPTER 12 Perfect Competition 271
CHAPTER 13 Monopoly 297
CHAPTER 14 Monopolistic Competition 323
CHAPTER 15 Oligopoly 341

PART FIVE**MARKET FAILURE AND GOVERNMENT 369**

- CHAPTER 16 Externalities 369
CHAPTER 17 Public Goods and Common Resources 391

PART SIX**FACTOR MARKETS AND INEQUALITY 413**

- CHAPTER 18 Markets for Factors of Production 413
CHAPTER 19 Economic Inequality 439

PART SEVEN**MONITORING MACROECONOMIC PERFORMANCE 465**

- CHAPTER 20 Measuring GDP and Economic Growth 465
CHAPTER 21 Monitoring Jobs and Inflation 489

PART EIGHT**MACROECONOMIC TRENDS 513**

- CHAPTER 22 Economic Growth 513
CHAPTER 23 Finance, Saving, and Investment 541
CHAPTER 24 Money, the Price Level, and Inflation 563
CHAPTER 25 The Exchange Rate and the Balance of Payments 593

PART NINE**MACROECONOMIC FLUCTUATIONS 623**

- CHAPTER 26 Aggregate Supply and Aggregate Demand 623
CHAPTER 27 Expenditure Multipliers 647
CHAPTER 28 The Business Cycle, Inflation, and Deflation 677

PART TEN**MACROECONOMIC POLICY 703**

- CHAPTER 29 Fiscal Policy 703
CHAPTER 30 Monetary Policy 727

The future is always uncertain. But at some times, and now is one such time, the range of possible futures is enormous. The major sources of this uncertainty are economic policy and global macroeconomic forces. There is uncertainty about the way in which international trade policy will evolve as bilateral deals reshape the competitive landscape. There is uncertainty about exchange rate policy as currency fluctuations bring changes in international relative prices. There is extraordinary uncertainty about monetary policy with the Bank of Canada holding interest rates at historical lows in an attempt to stimulate a flagging economy. And there is uncertainty about fiscal policy as provincial budget deficits interacting with an aging population are ever harder to control. In the global economy, there is uncertainty about when, or even whether, a stagnating European economy will start to show life. And there is uncertainty about how fast China, India, and other developing economies will grow.

Since the global financial crisis of August 2007 moved economics from the business report to the front page, a fall in confidence has gripped producers, consumers, financial institutions, and governments.

Even the idea that the market is an efficient allocation mechanism has come into question. Many thoughtful people worry about increasing income inequality, and some political leaders called for the end of capitalism and the dawn of a new economic order in which tighter regulation reined in unfettered greed.

Rarely do teachers of economics have such a rich feast on which to draw. And rarely are the principles of economics more surely needed to provide the solid foundation on which to think about economic events and navigate the turbulence of economic life.

Although thinking like an economist can bring a clearer perspective to and deeper understanding of today's events, students don't find the economic way of thinking easy or natural. *Economics* seeks to put clarity and understanding in the grasp of the student with a careful and vivid exploration of the tension between self-interest and the social interest, the role and power of incentives—of opportunity cost and marginal benefit—and demonstrating the possibility that markets supplemented by other mechanisms might allocate resources efficiently.

Parkin-Bade students begin to think about issues the way real economists do and learn how to explore policy problems and make better-informed decisions in their own economic lives.

The Ninth Edition Revision

Thoroughly updated, intuitive rather than technical, grounded in data and empirical evidence, extensively illustrated with well-chosen examples and photographs, enlivened with applications that focus on issues at play in today's world, focused on learning by doing, and seamlessly integrated with MyEconLab: These are the hallmarks of this ninth edition of *Economics: Canada in the Global Environment*.

This revision builds on the foundation of the previous edition and retains a thorough and careful presentation of the principles of economics, an emphasis on real-world examples and applications, the development of critical thinking skills, diagrams renowned for clarity, and path-breaking technology.

Most chapters have been thoroughly reworked to achieve even greater clarity and to place greater emphasis on applications to current issues. Some sections of chapters have been removed and other sections added to cover new issues, particularly those that involve current policy problems.

Economics in the News, a weekly feature on MyEconLab, appears in the revised text in two ways. First, the Parkin-Bade hallmark chapter-closing *Reading Between the Lines* is rebranded as *Economics in the News*. Second, additional *Economics in the News* boxes appear at appropriate points within chapters.

The aim of the end-of-chapter news feature is to encourage students to apply the tools they have learned in the chapter by analyzing an article from a newspaper or an online news source. The news article connects with the questions first raised in the chapter opener, and the analysis is reinforced with a related end-of-chapter problem.

Shorter, within-chapter *Economics in the News* boxes present brief news clips, relevant data, questions, and worked solutions. These boxes immediately apply a tool just explained and provide hand-held practice and help in approaching an economic analysis of the news.

A second new feature, **At Issue**, shows two sides of a controversial issue and helps students apply the economic way of thinking to clarify and debate the issues.

A third new feature is a full-page end-of-chapter **Worked Problem**. As part of the chapter review, the student has an opportunity to work a multi-part problem that covers the core content of the chapter and consists of questions, solutions, and key figures. This new feature increases the incentive for the student to learn by doing and actively, rather than passively, review the chapter.

Highpoints of the Revision

In addition to the new features that we have just reviewed, we have built on the strengths of the previous edition by substantially revising the following six topics. They are:

- Price discrimination
- Carbon emissions and climate change externalities
- Economic growth and business cycle expansion
- Financial markets
- The exchange rate
- Cycles, inflation, and deflation

Price Discrimination Chapter 13, Monopoly, has revised coverage of price discrimination, which emphasizes the key idea that price discrimination converts consumer surplus into producer surplus and economic profit. To strengthen this insight, we now begin with a brief explanation of the relationship between producer surplus and economic profit. We then use a carefully constructed model of two separated markets to show how discrimination between them can increase producer surplus. We build on this model to show how perfect price discrimination, if it were possible, would grab the entire consumer surplus and convert it to producer surplus. We illustrate the attempt to move toward perfect price discrimination with applications to Microsoft's pricing of Windows and Disney's pricing of tickets to its theme parks.

Carbon Emissions and Climate Change

Externalities Chapter 16, Externalities, gets a thoroughly new treatment of carbon emission and climate change. We begin by contrasting the success story of local air quality in the major cities with the unrelenting rise in atmospheric carbon concentration. We then explain the three methods of coping with environmental externalities: property rights, mandating the use of clean technologies, and taxing or pricing emissions. We explore the ability of each method to achieve an efficient outcome. We also explore the special challenge that arises from the global rather than national scope of carbon emission. The climate change debate appears in an *At Issue*, which contrasts the views of Nicholas Stern and environmental skeptic Bjørn Lomborg.

Economic Growth and Business Cycle Expansion

Chapter 22, Economic Growth, now opens by clarifying the distinction between economic growth and a business cycle expansion. We now

introduce the topic of economic growth by explaining this distinction and illustrating it with the production possibilities frontier *PPF*: a business cycle expansion being a return to the *PPF* and economic growth being an outward shift of the *PPF*.

Financial Markets Chapter 23, Finance, Saving, and Investment, has an expanded section on the global financial crisis and its aftermath that describes the growth of household debt and house prices. The section on real and nominal interest rates is expanded and illustrated with data. The chapter now contains more on the magnitudes of the sources and uses of loanable funds. The section on loanable funds in the global economy is moved to the chapter on the exchange rate and balance of payments.

The Exchange Rate Chapter 25, The Exchange Rate and the Balance of Payments, contains a heavily revised section entitled Arbitrage, Speculation, and Market Fundamentals that explains the powerful forces that equilibrate the foreign exchange market in the short run and the long run. This section includes a discussion of the Big Mac index. An *Economics in the News* examines the forces at work leading to a strong dollar in the summer of 2014. The section on the global loanable funds market is now integrated into this chapter in the section on the balance of payments.

Cycles, Inflation, and Deflation Chapter 28, The Business Cycle, Inflation, and Deflation, is re-titled, reorganized, and amended. The business cycle material is moved to the beginning of the chapter and a new final section describes and explains the problem of deflation that has gripped Japan for most of the 1990s and the 2000s and is feared in Europe at the present time. Coverage of the Phillips curve is retained but condensed.

Many other chapters have been thoroughly reworked to achieve even greater clarity and to place greater emphasis on applications to current issues. And every chapter now contains a new opening vignette linked directly to an *Economics in the News*, an end-of-chapter problem, and online practice.

All the end-of-chapter *Economics in the News* articles have been updated, and the analysis of the news and the linked problems and applications have been appropriately revised.

Features to Enhance Teaching and Learning

The changes that we have described are adjustments to an already powerful teaching and learning package. Here, we briefly review the features retained from the previous edition.

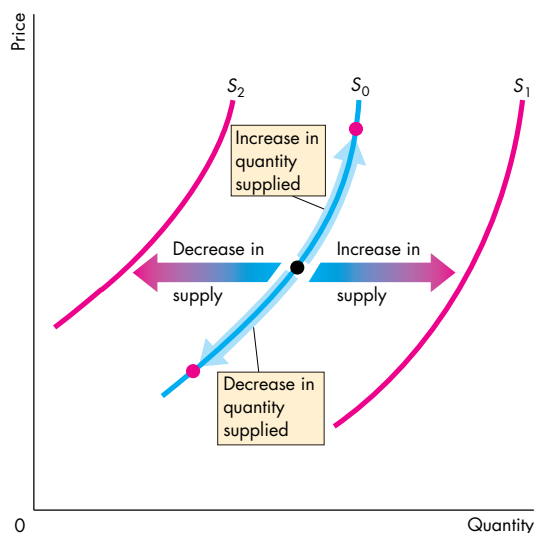
Diagrams That Show the Action

Through the past eight editions, this book has set the standard of clarity in its diagrams; the ninth edition continues to uphold this tradition. Our goal is to show “where the economic action is.” The diagrams in this book continue to generate an enormously positive response, which confirms our view that graphical analysis is the most powerful tool available for teaching and learning economics at the principles level.

Because many students find graphs hard to work with, we have developed the entire art program with the study and review needs of the student in mind.

The diagrams feature:

- Original curves consistently shown in blue
- Shifted curves, equilibrium points, and other important features highlighted in red
- Colour-blended arrows to suggest movement
- Graphs paired with data tables
- Diagrams labelled with boxed notes
- Extended captions that make each diagram and its caption a self-contained object for study and review



Economics in Action Boxes

This feature uses boxes within the chapter to provide data and information that links models to real-world economic activity.

Some of the issues covered in these boxes include the best affordable choice of recorded music, movies, and DVDs; the cost of selling a pair of shoes; how Apple doesn't make the iPhone; taxing carbon emissions; how long a spell of poverty lasts; structural unemployment in Canada; how loanable funds fuel a home price bubble; the Canadian business cycle; and the size of the fiscal stimulus multipliers.

Chapter Openers

Each chapter opens with a student-friendly vignette that raises questions to motivate the student and focus the chapter. This chapter-opening story is woven into the main body of the chapter and is explored in the *Economics in the News* feature that closes each chapter.

In-Text Review Quizzes

A review quiz at the end of each major section enables students to determine whether a topic needs further study before moving on. This feature includes a reference to the appropriate MyEconLab study plan and a new **key terms quiz** to help students further test their understanding.

End-of-Chapter Study Material

Each chapter closes with a concise summary organized by major topics, a list of key terms with page references, a worked problem, and problems and applications. These learning tools provide students with a summary for review and exam preparation.

Interviews with Economists

Each part closes with an overview of the chapters and a teaser of an interview with a leading economist whose work correlates to what the student is learning. These interviews explore the education and research of these prominent economists and their advice for those who want to continue the study of economics. This edition has new interviews with Esther Duflo (MIT) and Raj Chetty (Harvard). The 65 past and present interviews we have conducted are available in full in MyEconLab.

For the Instructor

This book enables you to focus on the economic way of thinking and choose your own course structure in your principles course.

Focus on the Economic Way of Thinking

As an instructor, you know how hard it is to encourage a student to think like an economist. But that is your goal. Consistent with this goal, the text focuses on and repeatedly uses the central ideas of choice; tradeoff; opportunity cost; the margin; incentives; the gains from voluntary exchange; the forces of demand, supply, and equilibrium; the pursuit of economic rent; the tension between self-interest and the social interest; and the scope and limitations of government actions.

Flexible Structure

You have preferences for how you want to teach your course, and we've organized this book to enable you to choose your teaching path. The charts on pp. xix and xx illustrate the book's flexibility. By following the arrows through the charts you can select the path that best fits your preference for course structure. Whether you want to teach a traditional course that blends theory and policy, or one that takes a fast-track through either theory or policy issues, *Economics: Canada in the Global Environment* gives you the choice.

Instructor's Supplemental Resources

The supplements for instructors are:

- Test Bank with TestGen
- PowerPoint Resources
- Instructor's Manual
- Solutions Manual

Test Bank with TestGen The ninth edition Test Bank (Test Item File), with more than 3,000 multiple-choice questions, has been prepared by Jeannie Gillmore of the University of Western Ontario. Jeannie has reviewed and edited all existing questions to ensure their clarity and consistency with the ninth edition and incorporated new questions. The new questions follow the style and format of the end-of-chapter text problems and provide the instructor with a whole

new set of testing opportunities and/or homework assignments. Test Item File questions are available in MyEconLab for instructors to use in a test, quiz, or as homework.

Pearson's TestGen enables instructors to view and edit Test Bank questions, generate tests, and print them in a variety of formats. Powerful search and sort functions make it easy to locate questions and arrange them in any order desired. TestGen also enables instructors to administer tests on a local area network, have tests graded electronically, and have the results prepared in electronic or printed reports. Pearson TestGen is compatible with Windows® or Macintosh® systems. This test bank is also available as a Test Item File in Microsoft Word® and Adobe Acrobat® format.

PowerPoint Resources Our full-colour Microsoft PowerPoint® Presentations for each chapter contain:

- Lecture notes with all the textbook figures animated, tables from the textbook, and speaking notes from the Instructor's Manual
- Large-scale versions of all the textbook figures and tables, animated for instructors to incorporate into their own slide shows
- A set of lecture notes for students, which include animated versions of the textbook figures

The presentations can be used electronically in the classroom or printed to create hard-copy transparency masters. A student version of the lecture notes is also available on MyEconlab.

Instructor's Manual Our Instructor's Manual integrates the teaching and learning resources and serves as a guide to all the supplements. Each chapter contains an overview, a list of what's new in the ninth edition, and ready-to-use lecture notes.

A new user can walk into a classroom armed to deliver a polished lecture. The lecture notes provide an outline of the chapter; concise statements of key material; alternative tables and figures; key terms and definitions; boxes that highlight key concepts, provide an interesting anecdote, or suggest how to handle a difficult idea; and additional discussion questions. The PowerPoint® lecture notes incorporate the chapter outlines and teaching suggestions.

Solutions Manual Our comprehensive Solutions Manual provides instructors with solutions to the Review Quizzes and the end-of-chapter Problems and Applications.

Getting Your Instructor's Resources

Instructors can download supplements from a secure, instructor-only source via the Pearson Canada Higher Education Instructor Resource Centre Web page (www.pearsoncanada.ca/highered). Instructor resources are also available on a DVD.

Instructor's Resource Centre DVD (IRDVD) Fully compatible with Windows and Macintosh, this IRDVD contains Adobe PDF files of the Test Item File, the Solutions Manual, and the Instructor's Manual; PowerPoint resources; and the TestGen. Locate your local Pearson Canada sales representative at <http://catalogue.pearsoned.ca/educator> to request a copy of the IRDVD.

Other Instructor Aids

CourseSmart CourseSmart goes beyond traditional expectations—providing instant, online access to the textbooks and course materials you need at a lower cost for students. And even as students save money, you can save time and hassle with a digital eTextbook that allows you to search for the most relevant content at the very moment you need it. Whether it's evaluating textbooks or creating lecture notes to help students with difficult concepts, CourseSmart can make life a little easier. See how when you visit www.coursesmart.com/instructors.

Learning Solutions Managers Pearson's Learning Solutions Managers work with faculty and campus course designers to ensure that Pearson technology products, assessment tools, and online course materials are tailored to meet your specific needs.

This highly qualified team is dedicated to helping schools take full advantage of a wide range of educational resources by assisting in the integration of a variety of instructional materials and media formats. Your local Pearson Canada sales representative can provide you with more details on this service program.

Pearson Custom Library For enrollments of 25 students or more, you can create your own textbook by choosing the chapters of Parkin-Bade *Economics* that best suit your own course needs. To begin building your custom text, visit www.pearsoncustomlibrary.com.

MyEconLab

The Parkin-Bade 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 homework, quiz, test, activity, and tutorial options, instructors can manage all their assessment needs in one program.

- All of the Review Quiz questions and end-of-chapter Problems and Applications were recreated as assignable auto-graded exercises with targeted feedback and related “Help Me Solve This” tools by Robin Bade, Jeannie Gillmore of the University of Western Ontario, and Sharmistha Nag of Fairleigh Dickinson University, and were reviewed for accuracy by Trevor Collier of the University of Dayton.
- All of the Review Quiz questions and end-of-chapter Problems and Applications are assignable and automatically graded in MyEconLab.
- The Review Quiz questions and end-of-chapter Study Plan Problems and Applications are available for students to work in the adaptive Study Plan.
- The end-of-chapter Additional Problems and Applications are not available to students in MyEconLab unless assigned by the instructor.
- Many of the problems and applications are algorithmic, draw-graph, and numerical exercises.
- Problems and applications that use real-time data continuously update.
- The Custom Exercise Builder enables instructors to create their own problems for assignment.
- The Gradebook records each student's performance and time spent on the Tests and Study Plan and generates reports by student or by chapter.
- Test Bank questions are also assignable for test, quiz, or homework and auto-graded in MyEconLab.

Enhanced Pearson eText and New Interactive Features

New for the ninth edition is an enhanced Pearson eText that integrates directly with MyEconLab's Study Plan, now powered by Knewton Adaptive Learning, and with MyEconLab's Gradebook.

The enhanced Pearson eText is available within the online course materials and offline via an iPad app. The eText also allows instructors and students to highlight, bookmark, and take notes. In addition, instructors can create notes and push them out to students.

The new eText includes videos, animations, and problem-solving tools designed to aid comprehension and bring those moments of discovery that stick in the memory.

The features of the enhanced eText include:

- Embedded MyEconLab Study Plan and assessment
- Figure animations
- Interactive graph-drawing exercises
- More *Economics in the News*
- Worked problems
- Automatic real-time updating
- Key terms quizzes

Embedded MyEconLab Study Plan and

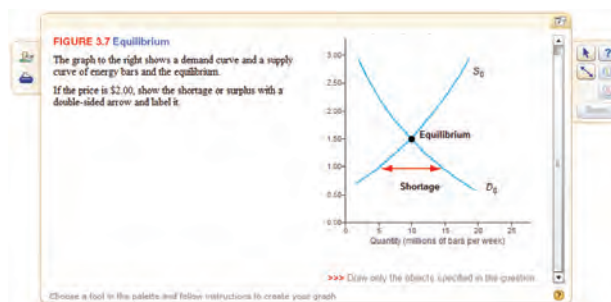
Assessment In the enhanced eText, every Review Quiz question and Study Plan Problem and Application exercise can be worked by the student directly from the eText page on which it occurs. These exercises are auto-graded and feed into MyEconLab's Adaptive Study Plan, where students receive recommendations based upon their performance. Study Plan links provide opportunities for more practice with problems similar to those in the text and give targeted feedback to guide the student in answering the exercises.

Figure Animations Every textbook figure can be worked through using a step-by-step animation, with audio, to help students learn the intuition behind reading and interpreting graphs. These animations may be used for review or as an instructional aid in the classroom.

More Economics in the News Each in-text *Economics in the News* is reinforced through an extended application of the same analysis. These *Economics in the News* problems are auto-graded and feed into MyEconLab's Adaptive Study Plan.

Worked Problems Each chapter concludes with a Worked Problem that consists of questions, solutions, and key figures. These problems can be worked in the enhanced eText directly from the Worked Problem page. As the student works through each problem, feedback and just-in-time learning aids help the student develop proficiency with the concept.

Interactive Draw-Graph Exercises For each major figure, a graph-drawing exercise accompanies the step-by-step animation. The student builds and interprets the key graphs and develops understanding by working a multiple-choice question about the graph. Each graph-drawing exercise is auto-graded and feeds into MyEconLab's Adaptive Study Plan.



Automatic Real-Time Updating Figures labelled *MyEconLab Real-Time Data* update using the most recent data available from the FRED database maintained by the Federal Reserve Bank of St. Louis.

Key Terms Quizzes Key Terms Quiz links provide opportunities for students to check their knowledge of the definitions and uses of the key terms.

Other MyEconLab Features

MyEconLab also includes the following features:

Adaptive Learning MyEconLab's Study Plan is now powered by a sophisticated adaptive learning engine that tailors learning material to meet the unique needs of each student. MyEconLab's new **Adaptive Learning Study Plan** monitors students' performance on homework, quizzes, and tests and continuously makes recommendations based on that performance.


If a student is struggling with a concept such as supply and demand, or having trouble calculating a price elasticity of demand, the Study Plan provides customized remediation activities—a pathway based on personal proficiencies, the number of attempts, or the difficulty of the questions—to get the student back on track. Students will also receive recommendations for additional practice in the form of rich

multimedia learning aids such as videos, an interactive eText, Help Me Solve This tutorials, and graphing tools.

The Study Plan can extrapolate a student's future trouble spots and provide learning material and practice to avoid pitfalls. In addition, students who are showing a high degree of success with the assessment material are offered a chance to work on future topics based on the professor's course coverage preferences. This personalized and adaptive feedback and support ensures that your students are optimizing their current and future course work and mastering the concepts, rather than just memorizing and guessing answers.

You can learn more about adaptive learning at <http://www.myeconlab.com/product-info/adaptive>.

Real-Time Data Analysis Exercises (FRED) Easy to assign and automatically graded, Real-Time Data Analysis exercises communicate directly with the Federal Reserve Bank of St. Louis's FRED site, so every time FRED posts new data, students can see the most recent data. As a result, Real-Time Data Analysis exercises offer a no-fuss solution for instructors who want to make the most recent data a central part of their macro course.

End-of-chapter exercises accompanied by the Real-Time Data Analysis icon  include Real-Time Data versions in MyEconLab.

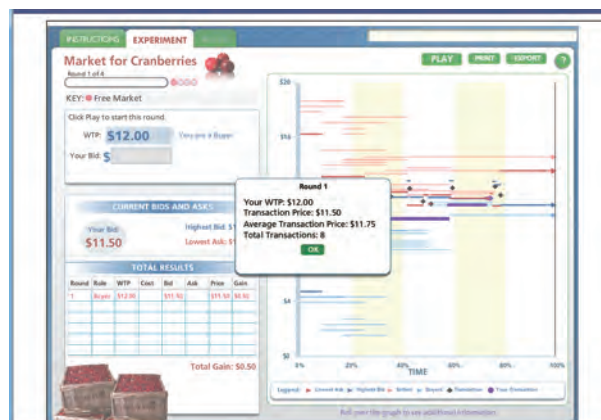
Economics in the News *Economics in the News* is a turnkey solution to bringing current news into the classroom. Updated weekly during the academic year, we upload two relevant articles (one micro, one macro) and provide questions that may be assigned for homework or for classroom discussion.

Current News Each week during the academic year, we upload multi-part microeconomic and macroeconomic exercises, with links to relevant articles, into the MyEconLab assignment manager. These enable instructors to bring current issues and events into the course with easy to assign and auto-graded exercises.

Office Hours Students and instructors can consult the authors using the "Office Hours" links in MyEconLab. The link for students is in Chapter Resources and for Instructors in Instructor Resources/Instructor Tools.

Experiments in MyEconLab Experiments are a fun and engaging way to promote active learning and mastery of important economic concepts. Pearson's Experiments program is flexible and easy for instructors to assign and students to use.

- Available experiments cover competitive market, price floors, price ceilings, taxes, price controls, and public goods.
- Single-player experiments, available to assign, allow your students to play against virtual players from anywhere at any time as long as they have an Internet connection.
- Multi-player experiments allow you to assign and manage a real-time experiment with your class.
- Experiments can be assigned in MyEconLab as homework integrated with pre-questions and post-questions.
- Experiments are auto-graded using algorithms that objectively evaluate a student's economic gain and performance during the experiment.



Digital Interactives A Digital Interactive is a simulation game that immerses the student in an activity that leads to the discovery of a fundamental economic idea or principle. Digital Interactives are designed for use in traditional, online, and hybrid courses, and many incorporate real-time data as well as data display and analysis tools. A Digital Interactive can be presented in class as a visually stimulating, engaging lecture tool, and can be assigned with assessment questions for grading analysis tools.

Learning Catalytics Learning Catalytics is a web-based system for managing the interactive classroom. It is a “bring your own device” platform that supports the peer-instruction teaching method and can also be used to provide the instructor with real-time feedback during class. Instructors can access 18 different question types among which are multiple choice, numerical, sketching, ranking, and highlighting. For more information, visit learningcatalytics.com.

Dynamic Study Modules Dynamic Study Modules, which focus on key topic areas and are available from within MyEconLab, are an additional way for students to obtain tailored help. These modules work by continuously assessing student performance and activity on discrete topics and provide personalized content in real time to reinforce concepts that target each student’s particular strengths and weaknesses.

Each Dynamic Study Module, accessed by computer, smartphone, or tablet, promotes fast learning and long-term retention. Because MyEconLab and Dynamic Study Modules help students stay on track and achieve a higher level of subject-matter mastery, more class time is available for interaction, discussion, collaboration, and exploring applications to current news and events.

Instructors can register, create, and access all of their MyEconLab courses at www.myeconlab.com.

Acknowledgments

We thank our current and former colleagues and friends at the University of Western Ontario who have taught us so much. They are Jim Davies, Jeremy Greenwood, Ig Horstmann, Peter Howitt, Greg Huffman, David Laidler, Phil Reny, Chris Robinson, John Whalley, and Ron Wonnacott. We also thank Doug McTaggart and Christopher Findlay, co-authors of the Australian edition, and Melanie Powell and Kent Matthews, coauthors of the European edition. Suggestions arising from their adaptations of earlier editions have been helpful to us in preparing this edition.

We thank the several thousand students whom we have been privileged to teach. The instant response that comes from the look of puzzlement or enlightenment has taught us how to teach economics.

We thank the management team at Pearson Canada who have built a culture that brings out the best in its editors and authors. They are Jessica Mosher, General Manager Higher Education; Gary Bennett, Vice-President of Cross-Media Production; and Claudine O’Donnell, Editorial Director. Claudine played a major role in shaping this revision and the many outstanding supplements that accompany it. She brings intelligence and insight to her work and is Canada’s preeminent economics editor.

It is a special joy to thank the outstanding editors, media specialists, and others at Pearson Canada who contributed to the concerted publishing effort that brought this edition to completion. They are Joel Gladstone, Program Manager; Avinash Chandra, Lead Project Manager; Leanne Rancourt, Developmental Editor; Victoria Naik, Digital Strategist; Joanne Tang, Project Manager, Permissions; Susan Bindernagel, Copy Editor; and Loula March, Marketing Manager.

Leanne Rancourt was our lifeline. She kept the production process on track, provided outstanding management, and gave our manuscript a most thorough proofread and accuracy check.

Anthony Leung designed the cover and package and yet again surpassed the challenge of ensuring that we meet the highest design standards.

We thank the many exceptional reviewers who have shared their insights through the various editions of this book. Their contribution has been invaluable.

We thank the people who work directly with us. Jeannie Gillmore and Sharmistha Nag provided research assistance and created exercises for MyEconLab. Richard Parkin created the electronic art files and offered many ideas that improved the figures in this book.

Classroom experience will test the value of this book. We would appreciate hearing from instructors and students about how we can continue to improve it in future editions.

Michael Parkin

Robin Bade

London, Ontario, Canada

michael.parkin@uwo.ca

robin@econ100.com



Syed Ahmed, Red Deer Community College
Ather H. Akbari, Saint Mary's University
Doug Allen, Simon Fraser University
Benjamin Amoah, University of Guelph
Torben Andersen, Red Deer College
Terri Anderson, Fanshawe College
Syed Ashan, Concordia University
Fred Aswani, McMaster University
Iris Au, University of Toronto, Scarborough
Keith Baxter, Bishop's University
Andy Baziliauskas, University of Winnipeg
Dick Beason, University of Alberta
Karl Bennett, University of Waterloo
Ronald Bodkin, University of Ottawa
Caroline Boivin, Concordia University
Paul Booth, University of Alberta
John Boyd, University of British Columbia
John Brander, University of New Brunswick
Larry Brown, Selkirk College
Sam Bucovetsky, York University
Bogdan Buduru, Concordia University
Lutz-Alexander Busch, University of Waterloo
Beverly J. Cameron, University of Manitoba
Norman Cameron, University of Manitoba
Emanuel Carvalho, University of Waterloo
Francois Casas, University of Toronto
Alan Tak Yan Chan, Atlantic Baptist University
Robert Cherneff, University of Victoria
Jason Childs, University of New Brunswick, Saint John
Saud Choudhry, Trent University
Louis Christofides, University of Guelph
Kam Hon Chu, Memorial University of Newfoundland
George Churchman, University of Manitoba
Avi J. Cohen, York University
Constantin Colonescu, Grant MacEwan University
Ryan A. Compton, University of Manitoba
Marilyn Cottrell, Brock University
Rosilyn Coulson, Douglas College
Brian Coulter, University College of the Fraser Valley
Stanya Cunningham, Concordia University College of Alberta
Douglas Curtis, Trent University
Garth Davies, Olds College
Ajit Dayanandan, University of Northern British Columbia
Carol Derksen, Red River College
David Desjardins, John Abbott College
Vaughan Dickson, University of New Brunswick (Fredericton)
Livio Di Matteo, Lakehead University
Mohammed Dore, Brock University
Torben Drewes, Trent University
Byron Eastman, Laurentian University
Fahira Eston, Humber College

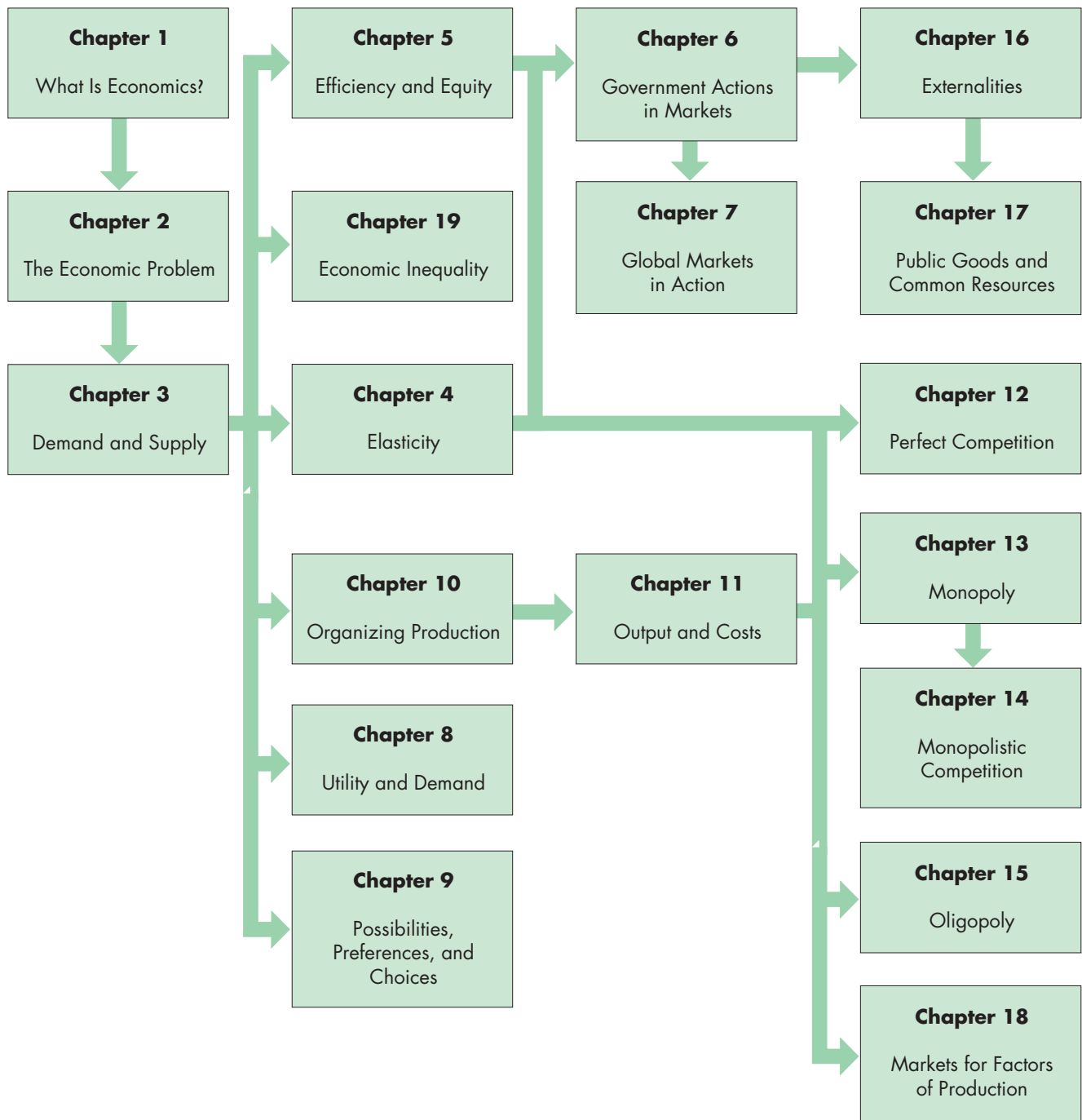
Sigrid Ewender, Kwantlen Polytechnic University
Brian Ferguson, University of Guelph
Len Fitzpatrick, Carleton University
Peter Fortura, Algonquin College
Oliver Franke, Athabasca University
Bruno Fullone, George Brown College
Donald Garrie, Georgian College
Philippe Ghayad, Dawson College and Concordia University
David Gray, University of Ottawa
Sandra Hadersbeck, Okanagan College
Rod Hill, University of New Brunswick
Eric Kam, Ryerson University
Susan Kamp, University of Alberta
Cevat Burc Kayahan, University of Guelph
Peter Kennedy, Simon Fraser University
Harvey King, University of Regina
Patricia Koss, Concordia University
Robert Kunimoto, Mt. Royal University
David Johnson, Wilfrid Laurier University
Cliff Jutlah, York University, Glendon Campus
Michael G. Lanyi, University of Lethbridge
Eva Lau, University of Waterloo
Gordon Lee, University of Alberta
Byron Lew, Trent University
Anastasia M. Lintner, University of Guelph
Scott Lynch, Memorial University
Dan MacKay, SIAST
Leigh MacDonald, University of Western Ontario
Keith MacKinnon, York University
Mohammad Mahbobi, Thompson Rivers University
S. Manchouri, University of Alberta
Christian Marfels, Dalhousie University
Raimo Martalla, Malaspina University College
Perry Martens, University of Regina
Roberto Martínez-Espíneira, St. Francis Xavier University
Dennis McGuire, Okanagan University College
Rob Moir, University of New Brunswick, Saint John
Saeed Moshiri, University of Manitoba
Joseph Muldoon, Trent University
David Murrell, University of New Brunswick, Fredericton
Robin Neill, Carleton University
A. Gyasi Nimarko, Vanier College
Sonia Novkovic, Saint Mary's University
John O'Brien, Concordia University
Arne Paus-Jenssen, University of Saskatchewan
Andrea Podhorsky, York University
Derek Pyne, Memorial University of Newfoundland
Stephen Rakoczy, Humber College
Don Reddick, Kwantlen University College
June Riley, John Abbott College
E. Riser, Memorial University
Roberta Robb, Brock University
Nick Rowe, Carleton University

Michael Rushton, University of Regina
Balbir Sahni, Concordia University
Brian Scarfe, University of Regina
Marlyce Searcy, SIAST Palliser
Jim Sentance, University of Prince Edward Island
Lance Shandler, Kwantlen University College
Stan Shedd, University of Calgary
Chandan Shirvaikar, Red Deer College
Peter Sinclair, Wilfrid Laurier University
Ian Skaith, Fanshawe College
Scott Skjei, Acadia University
Judith Skuce, Georgian College
George Slasor, University of Toronto
Norman Smith, Georgian College
Bert Somers, John Abbott College
Lewis Soroka, Brock University

Glen Stirling, University of Western Ontario
Brennan Thompson, Ryerson University
Irene Trela, University of Western Ontario
Russell Uhler, University of British Columbia
Brian VanBlarcom, Acadia University
Marianne Vigneault, Bishop's University
Jane Waples, Memorial University of Newfoundland
Tony Ward, Brock University
Bruce Wilkinson, University of Alberta
Christopher Willmore, University of Victoria
Andrew Wong, Grant MacEwan University
Peter Wylie, University of British Columbia, Okanagan
Arthur Younger, Humber College Institute of Technology and
Advanced Learning
Ayoub Yousefi, University of Western Ontario
Weiqiu Yu, University of New Brunswick, Fredericton

ALTERNATIVE PATHWAYS THROUGH MICRO CHAPTERS

Micro Flexibility



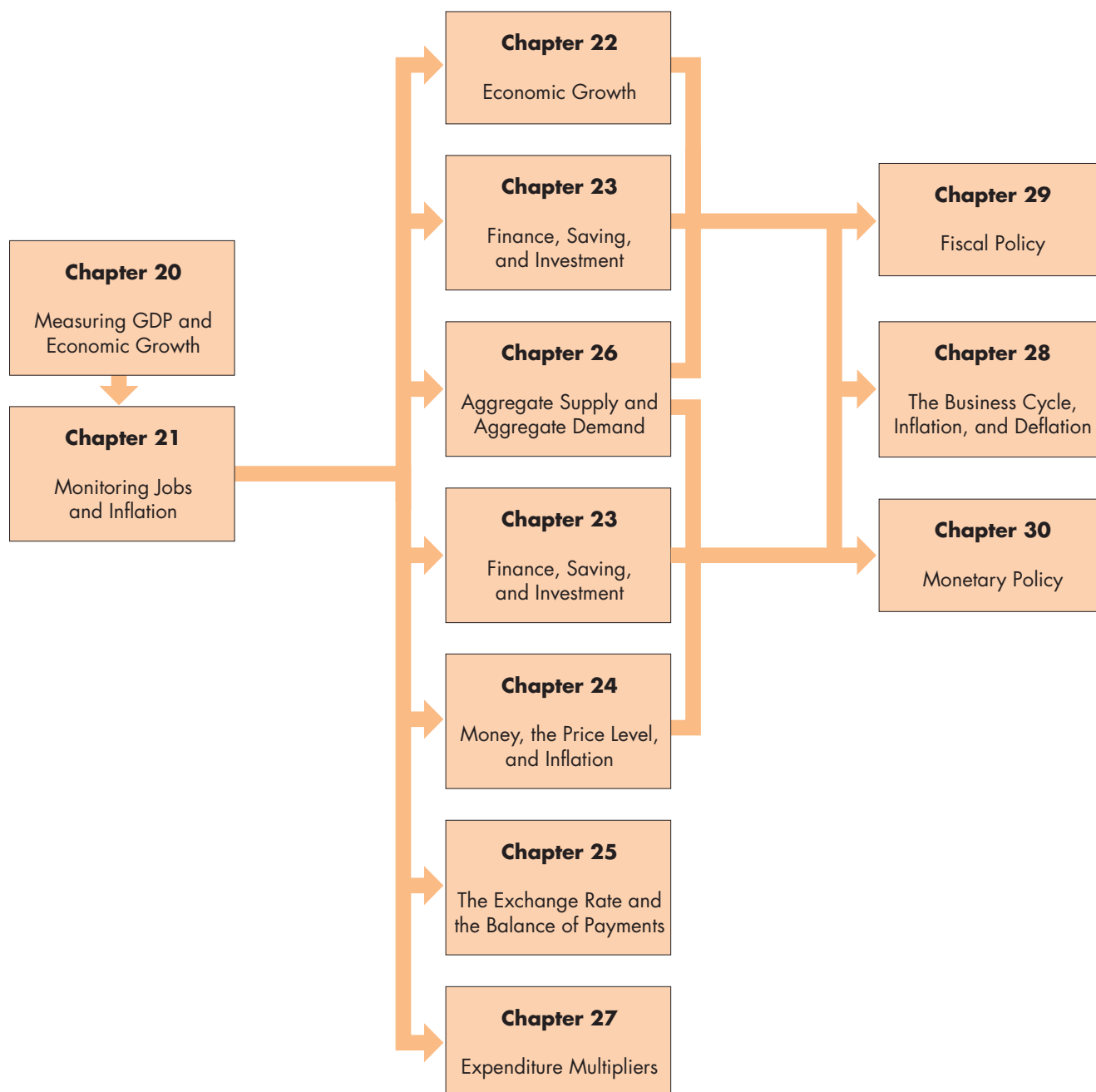
Start here ...

... then jump to any of these ...

... and jump to any of these after doing the prerequisites indicated

ALTERNATIVE PATHWAYS THROUGH MACRO CHAPTERS

Macro Flexibility



Start here ...

... then jump to
any of these ...

... and jump to any of these after
doing the prerequisites indicated

DETAILED CONTENTS



PART ONE INTRODUCTION 1

CHAPTER 1 ♦ WHAT IS ECONOMICS? 1

Definition of Economics	2
Two Big Economic Questions	3
What, How, and For Whom?	3
Do Choices Made in the Pursuit of Self-Interest also Promote the Social Interest?	5
The Economic Way of Thinking	9
A Choice Is a Tradeoff	9
Making a Rational Choice	9
Benefit: What You Gain	9
Cost: What You <i>Must</i> Give Up	9
How Much? Choosing at the Margin	10
Choices Respond to Incentives	10
Economics as Social Science and Policy Tool	11
Economist as Social Scientist	11
Economist as Policy Adviser	11

■ ECONOMICS IN THE NEWS 6, 12

■ AT ISSUE 8

Summary (Key Points and Key Terms), Worked Problem, Study Plan Problems and Applications, and Additional Problems and Applications appear at the end of each chapter.

APPENDIX Graphs in Economics 15

Graphing Data	15
Scatter Diagrams	16
Graphs Used in Economic Models	18
Variables That Move in the Same Direction	18
Variables That Move in Opposite Directions	19
Variables That Have a Maximum or a Minimum	20
Variables That Are Unrelated	21
The Slope of a Relationship	22
The Slope of a Straight Line	22
The Slope of a Curved Line	23
Graphing Relationships Among More Than Two Variables	24
<i>Ceteris Paribus</i>	24
When Other Things Change	25

MATHEMATICAL NOTE

Equations of Straight Lines	26
-----------------------------	----

CHAPTER 2 ♦ THE ECONOMIC PROBLEM 31

Production Possibilities and Opportunity Cost 32

- Production Possibilities Frontier 32
- Production Efficiency 33
- Tradeoff Along the *PPF* 33
- Opportunity Cost 33

Using Resources Efficiently 35

- The *PPF* and Marginal Cost 35
- Preferences and Marginal Benefit 36
- Allocative Efficiency 37

Economic Growth 38

- The Cost of Economic Growth 38
- A Nation's Economic Growth 39

Gains from Trade 40

- Comparative Advantage and Absolute Advantage 40
- Achieving the Gains from Trade 42

Economic Coordination 44

- Firms 44
- Markets 44
- Property Rights 44
- Money 44
- Circular Flows Through Markets 44
- Coordinating Decisions 45

■ **ECONOMICS IN ACTION** 39

■ **ECONOMICS IN THE NEWS** 34, 46

PART ONE WRAP-UP ♦

Understanding the Scope of Economics

Your Economic Revolution 53

Talking with

Esther Duflo 54

PART TWO
HOW MARKETS WORK 55

CHAPTER 3 ♦ DEMAND AND SUPPLY 55

Markets and Prices 56

Demand 57

- The Law of Demand 57
- Demand Curve and Demand Schedule 57
- A Change in Demand 58
- A Change in the Quantity Demanded Versus a Change in Demand 60

Supply 62

- The Law of Supply 62
- Supply Curve and Supply Schedule 62
- A Change in Supply 63
- A Change in the Quantity Supplied Versus a Change in Supply 64

Market Equilibrium 66

- Price as a Regulator 66
- Price Adjustments 67

Predicting Changes in Price and Quantity 68

- An Increase in Demand 68
- A Decrease in Demand 68
- An Increase in Supply 70
- A Decrease in Supply 70
- Changes in Both Demand and Supply 72

■ **ECONOMICS IN THE NEWS** 69, 71, 74

MATHEMATICAL NOTE 76

Demand, Supply, and Equilibrium 76

CHAPTER 4 ♦ ELASTICITY 83

- Price Elasticity of Demand 84
 - Calculating Price Elasticity of Demand 84
 - Inelastic and Elastic Demand 85
 - The Factors that Influence the Elasticity of Demand 86
 - Elasticity Along a Linear Demand Curve 87
 - Total Revenue and Elasticity 88
 - Your Expenditure and Your Elasticity 90
- More Elasticities of Demand 91
 - Income Elasticity of Demand 91
 - Cross Elasticity of Demand 92
- Elasticity of Supply 94
 - Calculating the Elasticity of Supply 94
 - The Factors That Influence the Elasticity of Supply 95
- ECONOMICS IN ACTION 89, 91, 92
- ECONOMICS IN THE NEWS 90, 93, 98

CHAPTER 5 ♦ EFFICIENCY AND EQUITY 105

- Resource Allocation Methods 106
 - Market Price 106
 - Command 106
 - Majority Rule 106
 - Contest 106
 - First-Come, First-Served 106
 - Lottery 107
 - Personal Characteristics 107
 - Force 107
- Benefit, Cost, and Surplus 108
 - Demand, Willingness to Pay, and Value 108
 - Individual Demand and Market Demand 108
 - Consumer Surplus 109
 - Supply and Marginal Cost 109
 - Supply, Cost, and Minimum Supply-Price 110
 - Individual Supply and Market Supply 110
 - Producer Surplus 111
- Is the Competitive Market Efficient? 112
 - Efficiency of Competitive Equilibrium 112
 - Market Failure 114
 - Sources of Market Failure 114
 - Alternatives to the Market 115
- Is the Competitive Market Fair? 116
 - It's Not Fair if the *Result* Isn't Fair 116
 - It's Not Fair if the *Rules* Aren't Fair 118
 - Case Study: A Generator Shortage in a Natural Disaster 118
- ECONOMICS IN ACTION 113
- AT ISSUE 119
- ECONOMICS IN THE NEWS 120

CHAPTER 6 ♦ **GOVERNMENT ACTIONS IN MARKETS** 127

- A Housing Market with a Rent Ceiling 128
 - A Housing Shortage 128
 - Increased Search Activity 128
 - A Black Market 128
 - Inefficiency of a Rent Ceiling 129
 - Are Rent Ceilings Fair? 130
- A Labour Market with a Minimum Wage 131
 - Minimum Wage Brings Unemployment 131
 - Is the Minimum Wage Fair? 131
 - Inefficiency of a Minimum Wage 132
- Taxes 133
 - Tax Incidence 133
 - A Tax on Sellers 133
 - A Tax on Buyers 134
 - Equivalence of Tax on Buyers and Sellers 134
 - Tax Incidence and Elasticity of Demand 135
 - Tax Incidence and Elasticity of Supply 136
 - Taxes and Efficiency 137
 - Taxes and Fairness 138
- Production Quotas and Subsidies 139
 - Production Quotas 139
 - Subsidies 140
- Markets for Illegal Goods 142
 - A Free Market for a Drug 142
 - A Market for an Illegal Drug 142
 - Legalizing and Taxing Drugs 143
- ECONOMICS IN ACTION 130, 138, 141
- AT ISSUE 132
- ECONOMICS IN THE NEWS 144

CHAPTER 7 ♦ **GLOBAL MARKETS IN ACTION** 151

- How Global Markets Work 152
 - International Trade Today 152
 - What Drives International Trade? 152
 - Why Canada Imports T-Shirts 153
 - Why Canada Exports Regional Jets 154
- Winners, Losers, and the Net Gain from Trade 155
 - Gains and Losses from Imports 155
 - Gains and Losses from Exports 156
 - Gains for All 156
- International Trade Restrictions 157
 - Tariffs 157
 - Import Quotas 160
 - Other Import Barriers 163
 - Export Subsidies 163
- The Case Against Protection 164
 - Helps an Infant Industry Grow 164
 - Counteracts Dumping 164
 - Saves Domestic Jobs 164
 - Allows Us to Compete with Cheap Foreign Labour 164
 - Penalizes Lax Environmental Standards 165
 - Prevents Rich Countries from Exploiting Developing Countries 165
 - Reduces Offshore Outsourcing that Sends Good Canadian Jobs to Other Countries 165
 - Avoiding Trade Wars 166
 - Why Is International Trade Restricted? 166
 - Compensating Losers 167
- ECONOMICS IN ACTION 152, 158, 163
- AT ISSUE 166
- ECONOMICS IN THE NEWS 162, 168

PART TWO WRAP-UP ♦

- Understanding How Markets Work
 - The Amazing Market 175
 - Talking with
 - Susan Athey 176

**PART THREE**
HOUSEHOLDS' CHOICES 177**CHAPTER 8 ♦ UTILITY AND DEMAND 177**

- Consumption Choices 178
 - Consumption Possibilities 178
 - Preferences 179
- Utility-Maximizing Choice 181
 - A Spreadsheet Solution 181
 - Choosing at the Margin 182
 - The Power of Marginal Analysis 184
 - Revealing Preferences 184
- Predictions of Marginal Utility Theory 185
 - A Fall in the Price of a Movie 185
 - A Rise in the Price of Pop 187
 - A Rise in Income 188
 - The Paradox of Value 189
 - Temperature: An Analogy 190
- New Ways of Explaining Consumer Choices 192
 - Behavioural Economics 192
 - Neuroeconomics 193
 - Controversy 193
- ECONOMICS IN ACTION 190
- ECONOMICS IN THE NEWS 194

CHAPTER 9 ♦ POSSIBILITIES, PREFERENCES, AND CHOICES 201

- Consumption Possibilities 202
 - Budget Equation 203
- Preferences and Indifference Curves 205
 - Marginal Rate of Substitution 206
 - Degree of Substitutability 207
- Predicting Consumer Choices 208
 - Best Affordable Choice 208
 - A Change in Price 209
 - A Change in Income 211
 - Substitution Effect and Income Effect 212

■ ECONOMICS IN ACTION 210

■ ECONOMICS IN THE NEWS 214

PART THREE WRAP-UP ♦

Understanding Households' Choices

Making the Most of Life 221

Talking with

Steven D. Levitt 222

**PART FOUR
FIRMS AND MARKETS 223****CHAPTER 10 ♦ ORGANIZING
PRODUCTION 223**

- The Firm and Its Economic Problem 224
 - The Firm's Goal 224
 - Accounting Profit 224
 - Economic Accounting 224
 - A Firm's Opportunity Cost of Production 224
 - Economic Accounting: A Summary 225
 - Decisions 225
 - The Firm's Constraints 226
- Technological and Economic Efficiency 227
 - Technological Efficiency 227
 - Economic Efficiency 227
- Information and Organization 229
 - Command Systems 229
 - Incentive Systems 229
 - The Principal–Agent Problem 229
 - Coping with the Principal–Agent Problem 229
 - Types of Business Organization 230
 - Pros and Cons of Different Types of Firms 231
- Markets and the Competitive Environment 233
 - Measures of Concentration 234
 - Limitations of a Concentration Measure 236
- Produce or Outsource? Firms and Markets 238
 - Firm Coordination 238
 - Market Coordination 238
 - Why Firms? 238
- ECONOMICS IN ACTION 232, 235, 237, 239
- ECONOMICS IN THE NEWS 230, 240

CHAPTER 11 ♦ OUTPUT AND COSTS 247

- Decision Time Frames 248
 - The Short Run 248
 - The Long Run 248
- Short-Run Technology Constraint 249
 - Product Schedules 249
 - Product Curves 249
 - Total Product Curve 250
 - Marginal Product Curve 250
 - Average Product Curve 252
- Short-Run Cost 253
 - Total Cost 253
 - Marginal Cost 254
 - Average Cost 254
 - Marginal Cost and Average Cost 254
 - Why the Average Total Cost Curve Is U-Shaped 254
 - Cost Curves and Product Curves 256
 - Shifts in the Cost Curves 258
- Long-Run Cost 260
 - The Production Function 260
 - Short-Run Cost and Long-Run Cost 260
 - The Long-Run Average Cost Curve 262
 - Economies and Diseconomies of Scale 262
- ECONOMICS IN ACTION 252, 263
- ECONOMICS IN THE NEWS 256, 264

CHAPTER 12 ♦ **PERFECT COMPETITION** 271

- What Is Perfect Competition? 272
 - How Perfect Competition Arises 272
 - Price Takers 272
 - Economic Profit and Revenue 272
 - The Firm's Decisions 273
- The Firm's Output Decision 274
 - Marginal Analysis and the Supply Decision 275
 - Temporary Shutdown Decision 276
 - The Firm's Supply Curve 277
- Output, Price, and Profit in the Short Run 278
 - Market Supply in the Short Run 278
 - Short-Run Equilibrium 279
 - A Change in Demand 279
 - Profits and Losses in the Short Run 279
 - Three Possible Short-Run Outcomes 280
- Output, Price, and Profit in the Long Run 281
 - Entry and Exit 281
 - A Closer Look at Entry 282
 - A Closer Look at Exit 282
 - Long-Run Equilibrium 283
- Changes in Demand and Supply as Technology Advances 284
 - An Increase in Demand 284
 - A Decrease in Demand 285
 - Technological Advances Change Supply 286
- Competition and Efficiency 288
 - Efficient Use of Resources 288
 - Choices, Equilibrium, and Efficiency 288
- **ECONOMICS IN ACTION** 281, 283
- **ECONOMICS IN THE NEWS** 285, 287, 290

CHAPTER 13 ♦ **MONOPOLY** 297

- Monopoly and How It Arises 298
 - How Monopoly Arises 298
 - Monopoly Price-Setting Strategies 299
- A Single-Price Monopoly's Output and Price Decision 300
 - Price and Marginal Revenue 300
 - Marginal Revenue and Elasticity 301
 - Price and Output Decision 302
- Single-Price Monopoly and Competition Compared 304
 - Comparing Price and Output 304
 - Efficiency Comparison 305
 - Redistribution of Surpluses 306
 - Rent Seeking 306
 - Rent-Seeking Equilibrium 306
- Price Discrimination 307
 - Two Ways of Price Discriminating 307
 - Increasing Profit and Producer Surplus 308
 - A Price-Discriminating Airline 308
 - Efficiency and Rent Seeking with Price Discrimination 311
- Monopoly Regulation 313
 - Efficient Regulation of a Natural Monopoly 313
 - Second-Best Regulation of a Natural Monopoly 314
- **ECONOMICS IN ACTION** 299, 311
- **ECONOMICS IN THE NEWS** 312, 316

CHAPTER 14 ♦ MONOPOLISTIC COMPETITION	323
What Is Monopolistic Competition?	324
Large Number of Firms	324
Product Differentiation	324
Competing on Quality, Price, and Marketing	324
Entry and Exit	325
Examples of Monopolistic Competition	325
Price and Output in Monopolistic Competition	326
The Firm's Short-Run Output and Price Decision	326
Profit Maximizing Might Be Loss Minimizing	326
Long Run: Zero Economic Profit	327
Monopolistic Competition and Perfect Competition	328
Is Monopolistic Competition Efficient?	329
Product Development and Marketing	330
Product Development	330
Advertising	330
Using Advertising to Signal Quality	332
Brand Names	333
Efficiency of Advertising and Brand Names	333
■ ECONOMICS IN ACTION	325, 331
■ ECONOMICS IN THE NEWS	334

CHAPTER 15 ♦ OLIGOPOLY	341
What Is Oligopoly?	342
Barriers to Entry	342
Small Number of Firms	343
Examples of Oligopoly	343
Oligopoly Games	344
What Is a Game?	344
The Prisoners' Dilemma	344
An Oligopoly Price-Fixing Game	346
A Game of Chicken	351
Repeated Games and Sequential Games	352
A Repeated Duopoly Game	352
A Sequential Entry Game in a Contestable Market	354
Anti-Combine Law	356
Canada's Anti-Combine Law	356
Some Major Anti-Combine Cases	356
■ ECONOMICS IN ACTION	343, 350, 357, 358, 359
■ ECONOMICS IN THE NEWS	353, 360

PART FOUR WRAP-UP ♦

Understanding Firms and Markets	
Managing Change and Limiting Market Power	367
Talking with	
Thomas Hubbard	368

PART FIVE MARKET FAILURE AND GOVERNMENT 369

CHAPTER 16 EXTERNALITIES 369

Externalities In Our Lives 370

- Negative Production Externalities 370
- Positive Production Externalities 370
- Negative Consumption Externalities 370
- Positive Consumption Externalities 370

Negative Externality: Pollution 372

- Private, External, and Social Cost 372
- Establish Property Rights 373
- Mandate Clean Technology 374
- Tax or Cap and Price Pollution 375
- Coping with Global Externalities 378

Positive Externality: Knowledge 379

- Private Benefits and Social Benefits 379
- Government Actions in the Face of External Benefits 380

 ECONOMICS IN ACTION 371, 376, 378, 382

 AT ISSUE 377

 ECONOMICS IN THE NEWS 384

CHAPTER 17 PUBLIC GOODS AND COMMON RESOURCES 391

Classifying Goods and Resources 392

- Excludable 392
- Rival 392
- A Fourfold Classification 392

Public Goods 393

- The Free-Rider Problem 393
- Marginal Social Benefit from a Public Good 393
- Marginal Social Cost of a Public Good 394
- Efficient Quantity of a Public Good 394
- Inefficient Private Provision 394
- Efficient Public Provision 394
- Inefficient Public Overprovision 395
- Two Types of Political Equilibrium 397
- Why Government Is Large and Growing 397
- Voters Strike Back 397

Common Resources 398

- Sustainable Use of a Renewable Resource 398
- The Overuse of a Common Resource 400
- Achieving an Efficient Outcome 401

 ECONOMICS IN ACTION 396, 398, 399, 403

 ECONOMICS IN THE NEWS 404

PART FIVE WRAP-UP

Understanding Market Failure and Government

Making the Rules 411

Talking with

Caroline M. Hoxby 412

**PART SIX**
FACTOR MARKETS AND INEQUALITY 413**CHAPTER 18** ♦ **MARKETS FOR FACTORS OF PRODUCTION 413**

- The Anatomy of Factor Markets 414
 - Markets for Labour Services 414
 - Markets for Capital Services 414
 - Markets for Land Services and Natural Resources 414
 - Entrepreneurship 414
- The Demand for a Factor of Production 415
 - Value of Marginal Product 415
 - A Firm's Demand for Labour 415
 - A Firm's Demand for Labour Curve 416
 - Changes in a Firm's Demand for Labour 417
- Labour Markets 418
 - A Competitive Labour Market 418
 - Differences and Trends in Wage Rates 420
 - A Labour Market with a Union 422
- Capital and Natural Resource Markets 426
 - Capital Rental Markets 426
 - Land Rental Markets 426
 - Nonrenewable Natural Resource Markets 427
- ECONOMICS IN ACTION 420, 429
- AT ISSUE 424
- ECONOMICS IN THE NEWS 421, 430

MATHEMATICAL NOTE

- Present Value and Discounting 432

CHAPTER 19 ♦ **ECONOMIC INEQUALITY 439**

- Measuring Economic Inequality 440
 - The Distribution of Income 440
 - The Income Lorenz Curve 441
 - The Distribution of Wealth 442
 - Wealth or Income? 442
 - Annual or Lifetime Income and Wealth? 443
 - Trends in Inequality 444
 - Poverty 445
- Inequality in the World Economy 446
 - Income Distributions in Selected Countries 446
 - Global Inequality and Its Trends 447
- The Sources of Economic Inequality 448
 - Human Capital 448
 - Discrimination 450
 - Contests Among Superstars 451
 - Unequal Wealth 452
- Income Redistribution 453
 - Income Taxes 453
 - Income Maintenance Programs 453
 - Subsidized Services 453
 - The Big Tradeoff 455
 - A Major Welfare Challenge 455
- ECONOMICS IN ACTION 443, 444, 445, 454
- ECONOMICS IN THE NEWS 456

PART SIX WRAP-UP ♦

- Understanding Factor Markets and Inequality For Whom? 463
- Talking with Raj Chetty 464



PART SEVEN MONITORING MACROECONOMIC PERFORMANCE 465

CHAPTER 20 ♦ MEASURING GDP AND ECONOMIC GROWTH 465

- Gross Domestic Product 466
 - GDP Defined 466
 - GDP and the Circular Flow of Expenditure and Income 467
 - Why Is Domestic Product “Gross”? 468
- Measuring Canada’s GDP 469
 - The Expenditure Approach 469
 - The Income Approach 470
 - Nominal GDP and Real GDP 471
 - Calculating Real GDP 471
- The Uses and Limitations of Real GDP 472
 - The Standard of Living over Time 472
 - The Standard of Living Across Countries 474
 - Limitations of Real GDP 475

■ ECONOMICS IN ACTION 477

■ AT ISSUE 476

■ ECONOMICS IN THE NEWS 478

APPENDIX Graphs in Macroeconomics 480

- The Time-Series Graph 480
 - Making a Time-Series Graph 480
 - Reading a Time-Series Graph 480
 - Ratio Scale Reveals Trend 481
 - A Time-Series with a Trend 481
 - Using a Ratio Scale 481

MATHEMATICAL NOTE

- Chained-Dollar Real GDP 482

CHAPTER 21 ♦ MONITORING JOBS AND INFLATION 489

- Employment and Unemployment 490
 - Why Unemployment Is a Problem 490
 - Labour Force Survey 491
 - Four Labour Market Indicators 491
 - Other Definitions of Unemployment 493
 - Most Costly Unemployment 494
 - Alternative Measures of Unemployment 494
- Unemployment and Full Employment 495
 - Frictional Unemployment 495
 - Structural Unemployment 495
 - Cyclical Unemployment 495
 - “Natural” Unemployment 495
 - Real GDP and Unemployment over the Cycle 496
 - The Changing Natural Unemployment Rate 497
- The Price Level, Inflation, and Deflation 498
 - Why Inflation and Deflation Are Problems 498
 - The Consumer Price Index 499
 - Reading the CPI Numbers 499
 - Constructing the CPI 499
 - Measuring the Inflation Rate 500
 - Distinguishing High Inflation from a High Price Level 501
 - The Biased CPI 501
 - The Magnitude of the Bias 502
 - Some Consequences of the Bias 502
 - Alternative Price Indexes 502
 - Core Inflation 502
 - The Real Variables in Macroeconomics 503

■ ECONOMICS IN ACTION 490, 496

■ ECONOMICS IN THE NEWS 504

PART SEVEN WRAP-UP ♦

- Monitoring Macroeconomic Performance
 - The Big Picture 511
- Talking with
 - David Card 512

**PART EIGHT
MACROECONOMIC TRENDS 513****CHAPTER 22 ♦ ECONOMIC GROWTH 513**

- The Basics of Economic Growth 514
 - Calculating Growth Rates 514
 - Economic Growth Versus Business Cycle Expansion 514
 - The Magic of Sustained Growth 515
 - Applying the Rule of 70 516
- Long-Term Growth Trends 517
 - Long-Term Growth in Canada 517
 - Real GDP Growth in the World Economy 518
- How Potential GDP Grows 520
 - What Determines Potential GDP? 520
 - What Makes Potential GDP Grow? 522
- Why Labour Productivity Grows 525
 - Preconditions for Labour Productivity Growth 525
 - Physical Capital Growth 525
 - Human Capital Growth 526
 - Technological Advances 526
- Is Economic Growth Sustainable? Theories, Evidence, and Policies 529
 - Classical Growth Theory 529
 - Neoclassical Growth Theory 529
 - New Growth Theory 530
 - New Growth Theory Versus Malthusian Theory 532
 - Sorting Out the Theories 532
 - The Empirical Evidence on the Causes of Economic Growth 532
 - Policies for Achieving Faster Growth 532

■ **ECONOMICS IN ACTION** 519, 526, 527■ **ECONOMICS IN THE NEWS** 528, 534**CHAPTER 23 ♦ FINANCE, SAVING, AND INVESTMENT 541**

- Financial Institutions and Financial Markets 542
 - Finance and Money 542
 - Physical Capital and Financial Capital 542
 - Capital and Investment 542
 - Wealth and Saving 542
 - Financial Capital Markets 543
 - Financial Institutions 544
 - Insolvency and Illiquidity 546
 - Interest Rates and Asset Prices 546
- The Loanable Funds Market 547
 - Funds that Finance Investment 547
 - The Real Interest Rate 548
 - The Demand for Loanable Funds 549
 - The Supply of Loanable Funds 550
 - Equilibrium in the Loanable Funds Market 551
 - Changes in Demand and Supply 551
- Government in the Loanable Funds Market 554
 - A Government Budget Surplus 554
 - A Government Budget Deficit 554

■ **ECONOMICS IN ACTION** 545, 548, 549, 552■ **ECONOMICS IN THE NEWS** 556

CHAPTER 24 ◆ **MONEY, THE PRICE LEVEL,
AND INFLATION** 563

- What Is Money? 564
 - Medium of Exchange 564
 - Unit of Account 564
 - Store of Value 565
 - Money in Canada Today 565
- Depository Institutions 567
 - Types of Depository Institutions 567
 - What Depository Institutions Do 567
 - Economic Benefits Provided by Depository Institutions 568
 - How Depository Institutions Are Regulated 568
 - Financial Innovation 570
- The Bank of Canada 571
 - Banker to Banks and Government 571
 - Lender of Last Resort 571
 - Sole Issuer of Bank Notes 571
 - The Bank of Canada's Balance Sheet 571
 - The Bank of Canada's Policy Tools 572
- How Banks Create Money 574
 - Creating Deposits by Making Loans 574
 - The Money Creation Process 575
 - The Money Multiplier 576
- The Money Market 578
 - The Influences on Money Holding 578
 - The Demand for Money 579
 - Shifts in the Demand for Money Curve 579
 - Money Market Equilibrium 580
- The Quantity Theory of Money 582
- ECONOMICS IN ACTION 565, 570, 572, 576, 582
- AT ISSUE 569
- ECONOMICS IN THE NEWS 577, 584
- MATHEMATICAL NOTE**
- The Money Multiplier 586

CHAPTER 25 ◆ **THE EXCHANGE RATE
AND THE BALANCE OF
PAYMENTS** 593

- The Foreign Exchange Market 594
 - Trading Currencies 594
 - Exchange Rates 594
 - Questions About the Canadian Dollar Exchange Rate 594
 - An Exchange Rate Is a Price 594
 - The Demand for One Money Is the Supply of Another Money 595
 - Demand in the Foreign Exchange Market 595
 - Demand Curve for Canadian Dollars 596
 - Supply in the Foreign Exchange Market 597
 - Supply Curve for Canadian Dollars 597
 - Market Equilibrium 598
 - Changes in the Demand for Canadian Dollars 598
 - Changes in the Supply of Canadian Dollars 599
 - Changes in the Exchange Rate 600
- Arbitrage, Speculation, and Market Fundamentals 602
 - Arbitrage 602
 - Speculation 603
 - Market Fundamentals 604
- Exchange Rate Policy 605
 - Flexible Exchange Rate 605
 - Fixed Exchange Rate 605
 - Crawling Peg 606
- Financing International Trade 608
 - Balance of Payments Accounts 608
 - Borrowers and Lenders 610
 - The Global Loanable Funds Market 610
 - Debtors and Creditors 611
 - Is Canadian Borrowing for Consumption? 611
 - Current Account Balance 612
 - Net Exports 612
 - Where Is the Exchange Rate? 613
- ECONOMICS IN ACTION 595, 601, 603, 606, 609, 613
- ECONOMICS IN THE NEWS 614

PART EIGHT WRAP-UP ◆

- Understanding Macroeconomic Trends
- Expanding the Frontier 621
- Talking with
- Xavier Sala-i-Martin 622

**PART NINE**
MACROECONOMIC FLUCTUATIONS 623**CHAPTER 26** ◆ **AGGREGATE SUPPLY AND AGGREGATE DEMAND 623**

Aggregate Supply 624

Quantity Supplied and Supply 624

Long-Run Aggregate Supply 624

Short-Run Aggregate Supply 625

Changes in Aggregate Supply 626

Aggregate Demand 628

The Aggregate Demand Curve 628

Changes in Aggregate Demand 629

Explaining Macroeconomic Trends and Fluctuations 632

Short-Run Macroeconomic Equilibrium 632

Long-Run Macroeconomic Equilibrium 632

Economic Growth and Inflation in the *AS-AD* Model 633The Business Cycle in the *AS-AD* Model 634

Fluctuations in Aggregate Demand 636

Fluctuations in Aggregate Supply 637

Macroeconomic Schools of Thought 638

The Classical View 638

The Keynesian View 638

The Monetarist View 639

The Way Ahead 639

■ **ECONOMICS IN ACTION 630, 633, 634**■ **ECONOMICS IN THE NEWS 640****CHAPTER 27** ◆ **EXPENDITURE MULTIPLIERS 647**

Fixed Prices and Expenditure Plans 648

Expenditure Plans 648

Consumption and Saving Plans 648

Marginal Propensities to Consume and Save 650

Slopes and Marginal Propensities 650

Consumption as a Function of Real GDP 651

Import Function 651

Real GDP with a Fixed Price Level 652

Aggregate Planned Expenditure 652

Actual Expenditure, Planned Expenditure, and Real GDP 653

Equilibrium Expenditure 654

Convergence to Equilibrium 655

The Multiplier 656

The Basic Idea of the Multiplier 656

The Multiplier Effect 656

Why Is the Multiplier Greater Than 1? 657

The Size of the Multiplier 657

The Multiplier and the Slope of the *AE* Curve 658

Imports and Income Taxes 659

The Multiplier Process 659

Business Cycle Turning Points 660

The Multiplier and the Price Level 661

Adjusting Quantities and Prices 661

Aggregate Expenditure and Aggregate Demand 661

Deriving the Aggregate Demand Curve 661

Changes in Aggregate Expenditure and Aggregate Demand 662

Equilibrium Real GDP and the Price Level 663

■ **ECONOMICS IN ACTION 651, 660**■ **ECONOMICS IN THE NEWS 666****MATHEMATICAL NOTE**

The Algebra of the Keynesian Model 668

CHAPTER 28 ♦ THE BUSINESS CYCLE, INFLATION, AND DEFLATION 677

- The Business Cycle 678
 - Mainstream Business Cycle Theory 678
 - Real Business Cycle Theory 679
- Inflation Cycles 683
 - Demand-Pull Inflation 683
 - Cost-Push Inflation 685
 - Expected Inflation 687
 - Forecasting Inflation 688
 - Inflation and the Business Cycle 688
- Deflation 689
 - What Causes Deflation? 689
 - What Are the Consequences of Deflation? 691
 - How Can Deflation Be Ended? 691
- The Phillips Curve 692
 - The Short-Run Phillips Curve 692
 - The Long-Run Phillips Curve 692
- ECONOMICS IN ACTION 680, 690, 693
- ECONOMICS IN THE NEWS 694

PART NINE WRAP-UP ♦

- Understanding Macroeconomic Fluctuations
Boom and Bust 701
- Talking with
Peter Howitt 702

PART TEN MACROECONOMIC POLICY 703

- CHAPTER 29 ♦ FISCAL POLICY 703
- The Federal Budget 704
 - Budget Making 704
 - The Federal Budget in 2013 704
 - The Budget in Historical Perspective 705
- Supply-Side Effects of Fiscal Policy 710
 - Full Employment and Potential GDP 710
 - The Effects of the Income Tax 710
 - Taxes on Expenditure and the Tax Wedge 711
 - Taxes and the Incentive to Save and Invest 712
 - Tax Revenues and the Laffer Curve 713
 - The Supply-Side Debate 713
- Fiscal Stimulus 714
 - Automatic Fiscal Policy and Cyclical and
Structural Budget Balances 714
 - Discretionary Fiscal Stimulus 715
- ECONOMICS IN ACTION 708, 709, 711,
716, 717, 718
- ECONOMICS IN THE NEWS 720

CHAPTER 30 ♦ **MONETARY POLICY** 727

Monetary Policy Objectives and Framework 728

- Monetary Policy Objective 728
- Responsibility for Monetary Policy 729

The Conduct of Monetary Policy 730

- The Monetary Policy Instrument 730
- The Bank's Interest Rate Decision 731
- Hitting the Overnight Loans Rate Target 731

Monetary Policy Transmission 733

- Quick Overview 733
- Interest Rate Changes 733
- Exchange Rate Fluctuations 734
- Money and Bank Loans 735
- The Long-Term Real Interest Rate 735
- Expenditure Plans 735
- Change in Aggregate Demand, Real GDP, and the Price Level 736
- The Bank of Canada Fights Recession 736
- The Bank of Canada Fights Inflation 738
- Loose Links and Long and Variable Lags 739

Extraordinary Monetary Stimulus 741

- The Key Elements of the Crisis 741
- The Policy Actions 742
- Painfully Slow Recovery 742
- Policy Strategies and Clarity 742

■ **ECONOMICS IN ACTION** 740, 743

■ **ECONOMICS IN THE NEWS** 744

PART TEN WRAP-UP ♦

Understanding Macroeconomic Policy

Tradeoffs and Free Lunches 751

Talking with

Pierre Siklos 752

Glossary G-1

Index I-1

Credits C-1