PARKIN

MICROECONOMICS

Thirteenth Edition

MICROECONOMICS

Prepare, Apply, Assess and Develop Employability Skills with MyLab Economics

83%

of students said it helped them earn higher grades on homework, exams, or the course

*Source: 2016 Student Survey, n 10,263

MyLab™ Economics is an online homework, tutorial, and assessment program constructed to work with this text to engage students and improve results. It was designed to help students develop and assess the skills and applicable knowledge that they will need to succeed in their courses and their future careers.

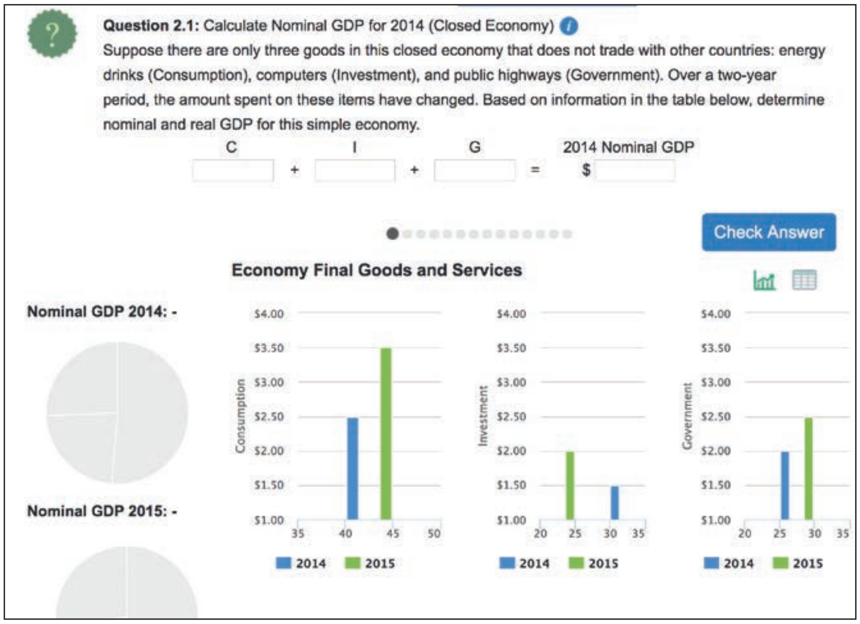
See what students had to say about MyLab Economics:

"Usually when I do homework myself and don't get it I am stuck, but [MyLab Economics] provided the tools necessary to help me learn how to work my way through the trickiest problems."

— Zainul Lughmani,
Binghamton University

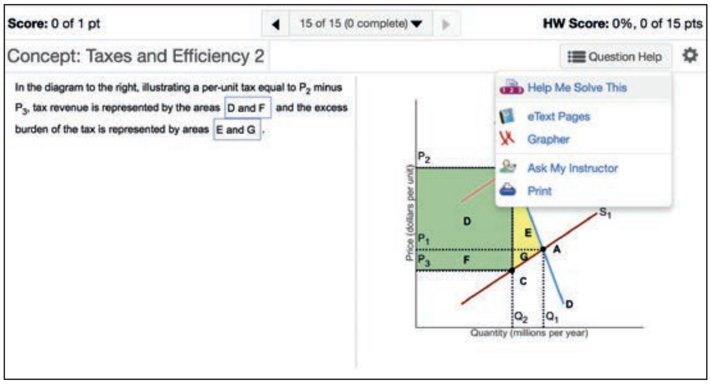
Digital Interactives

Economic principles are not static ideas, and learning them shouldn't be either! Digital Interactives are dynamic and engaging assessment activities that promote **critical thinking** and **application** of key economic principles.



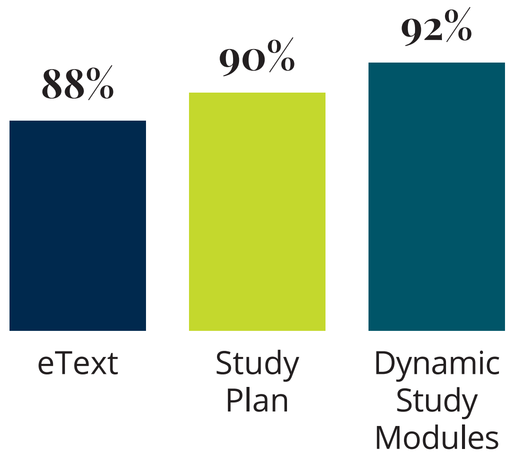
Question Help

MyLab Economics homework and practice questions are correlated to the textbook, and many generate algorithmically to give students unlimited opportunity for mastery of concepts. If students get stuck, Learning Aids including Help Me Solve This and eText Pages walk them through the problem and identify helpful information in the text, giving them assistance when they need it most.



"[MyLab Economics] provides ample practice and explanation of the concepts at hand."

— Heather Burkett, University of Nebraska at Omaha



% of students who found learning tool helpful

Dynamic Study Modules help students study chapter topics effectively on their own by continuously assessing their **knowledge application** and performance in real time. These are available as prebuilt Prepare assignments, and are accessible on smartphones, tablets, and computers.

Pearson eText enhances student learning—both in and outside the classroom. Worked examples, videos, and interactive tutorials bring learning to life, while algorithmic practice and self-assessment opportunities test students' understanding of the material. Accessible anytime, anywhere via MyLab or the app.

The **MyLab Gradebook** offers an easy way for students and instructors to view course performance. Item Analysis allows instructors to quickly see trends by analyzing details like the number of students who answered correctly/incorrectly, time on task, and median time spend on a question by question basis. And because it's correlated with the AACSB Standards, instructors can track students' progress toward outcomes that the organization has deemed important in preparing students to be **leaders.**

87%

of students would tell their instructor to keep using MyLab Economics

For additional details visit: www.pearson.com/mylab/economics

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MICROECONOMICS

THIRTEENTH EDITION

MICHAEL PARKIN
University of Western Ontario

Pearson

New York, NY

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Interior Design: Emily Friel, Integra Software Services
Cover Design: Emily Friel, Integra Software Services
Cover Art: Leonori/Shutterstock; Kukuruxa/Shutterstock
Printer/Binder: LSC Communications, Inc./Kendallville
Cover Printer: Phoenix Color/Hagerstown

Library of Congress Cataloging-in-Publication Data

Cataloging-in-Publication Data is available on file at the Library of Congress.

Pearson

ISBN 10: 0-13-474447-0
ISBN 13: 978-0-13-474447-6

TO ROBIN

Michael Parkin 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 toward European monetary union. Professor Parkin is an experienced and dedicated teacher of introductory economics.

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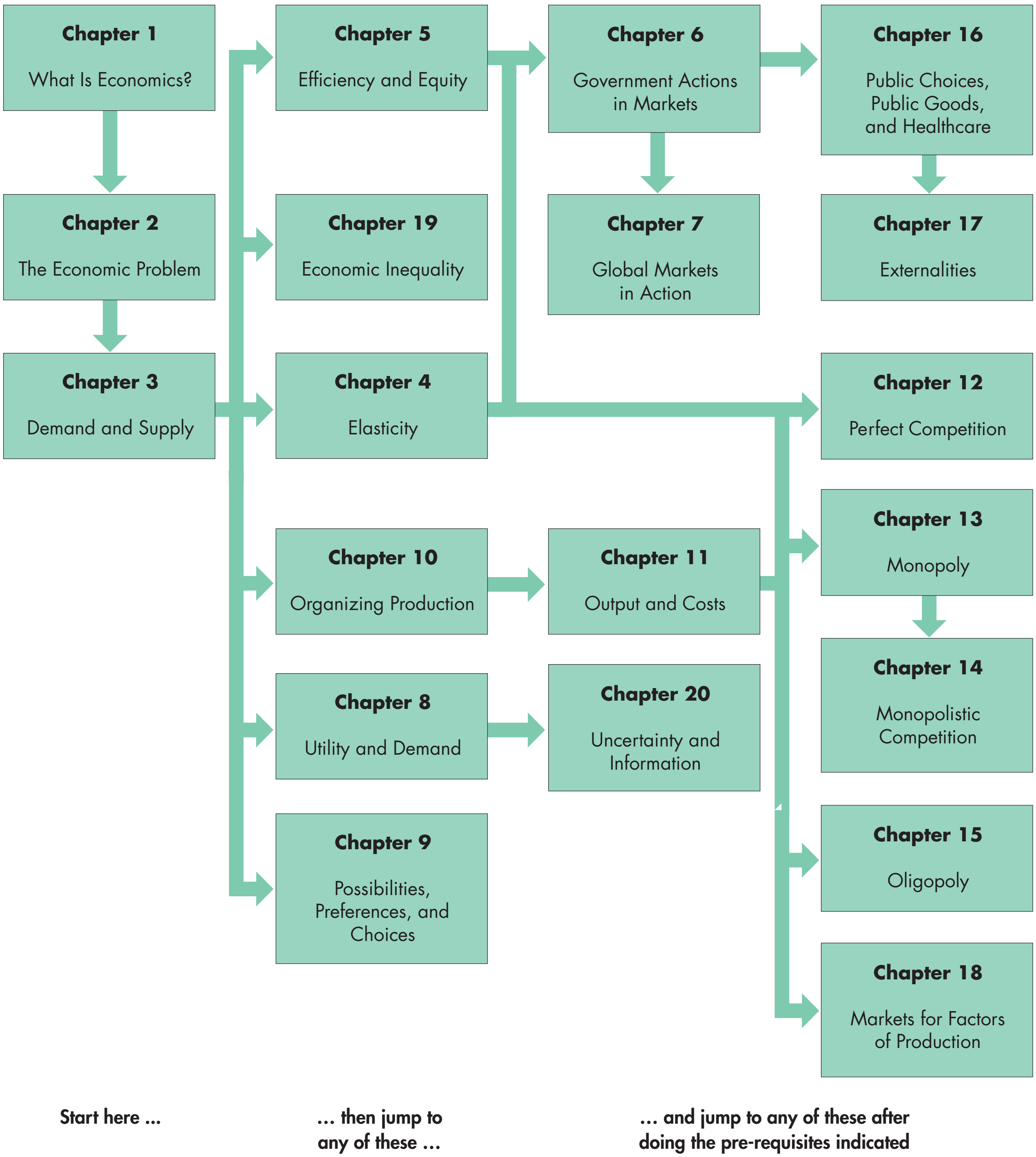
BRIEF CONTENTS

Flexibility



DETAILED CONTENTS

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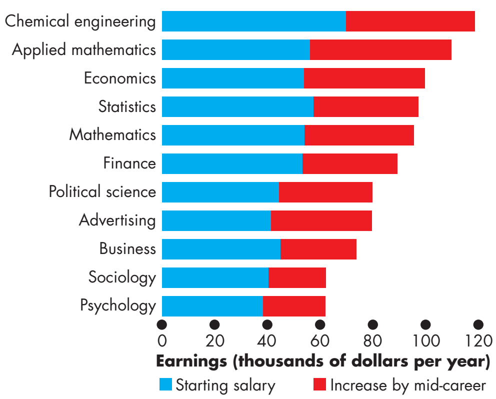
New To This Edition

All data figures, tables, and explanations thoroughly updated to the latest available; four main content changes; 30 new Economics in the News items based on recent events and issues; almost 100 new news-based problems and applications; and all seamlessly integrated with MyLab Economics and Pearson eText: These are the hallmarks of this thirteenth edition of *Microeconomics*.

Main Content Changes

Chapter 1 now contains an entirely new section, "Economists in the Economy", which describes the types of jobs available to economics majors, their earnings compared with majors in other related areas, and the critical thinking, analytical, math, writing, and oral communication skills needed for a successful career in economics.

FIGURE 1.4 Earnings of Economics Majors



Economics majors are not the highest earners—chemical engineers and applied mathematicians earn more—but at $100,000 a year in mid-career, economists earn more than most other majors.

Source of data: American Economics Association, https://www.aeaweb.org/resources/students/careers/earnings

MyLab Economics Animation

Chapter 2 has a new section prompted by the ongoing concern about the rust-belt economy, its causes and cures, which describes and illustrates the changing patterns of production as an economy expands, and explains how technical change and economic growth first shrinks the share of agriculture as manufacturing expands and later shrinks the share of manufacturing as services expand.

Chapter 2 also has an expanded explanation and graphical derivation of the outward-bowed *PPF*.

A revised *At Issue* feature in Chapter 5 on the minimum wage now includes David Neumark's combination of all the most recent empirical studies and Michael Luca's Stanford Institute for Economic Policy Research pioneering study using a huge dataset from online review resource Yelp.

AT **ISSUE**

Does the Minimum Wage Cause Unemployment?

In the United States, the federal government's Fair Labor Standards Act sets the federal minimum wage. In 2017, it was $7.25 an hour, a level set in 2009. Most states have a minimum wage that exceeds the federal minimum.

Does the minimum wage result in unemployment? And if so, how much unemployment does it create?

No, It Doesn't

David Card of the University of California at Berkeley and Alan Krueger of Princeton University conducted a very large and carefully designed telephone survey of more than 400 employers of workers who earn the minimum wage. They say:

- An increase in the minimum wage *increases teenage employment* and *decreases unemployment*.
- Their study of minimum wages in California, New Jersey, and Texas found that the employment rate of low-income workers increased following an increase in the minimum wage.
- A higher wage *increases* employment by making workers more conscientious and productive as well as less likely to quit, which lowers unproductive labor turnover.
- A higher wage rate also encourages managers to seek ways to increase labor productivity.

Yes, It Does

- David Neumark of the University of California, Irvine combined all the most recent studies and says they show that a 10 percent rise in the minimum wage *decreases teenage employment* by between 1 and 3 percent.
- Daniel Hamermesh of the University of Texas, at Austin says that firms anticipated the rise and cut employment *before* the minimum wage goes up.
- Finis Welch of Texas A&M University and Kevin Murphy of the University of Chicago say regional differences in economic growth caused the employment effects that Card and Krueger found.
- Michael Luca of the Stanford Institute for Economic Policy Research used a huge dataset from online review resource Yelp and found that a higher minimum wage rate increases the business failure rate.

Economics in the News

The new *Economics in the News* features are listed at the end of this book. They are all chosen to address current issues likely to interest and motivate the student. An example is the one in Chapter 2 on the Rust Belt.

ECONOMICS IN THE NEWS

Production Possibilities in the Rust Belt

Can President Trump Rescue the Rust Belt?

The Week
March 18, 2017

President Trump promised to reverse the decades-long decline of manufacturing jobs. Can it be done? …

… The region, which stretches from western New York to Pennsylvania, Ohio, Michigan, Indiana, Illinois, and Wisconsin, has been in serious decline since 1979—the year that U.S. manufacturing employment peaked. Over the past four decades, manufacturing jobs have plunged by 7 million as factories have downsized, closed, and outsourced work to low-wage countries such as Mexico and China. …

Trump already claims credit for pressuring several companies, including Carrier, to keep or create jobs in the U.S. … in exchange for various economic incentives. [And he] has floated the possibility of tariffs and import taxes of 20 to 35 percent on products made in Mexico, China, and other countries. …

Will these policies work? Few economists think so: … About 85 percent of the 5 million factory jobs lost between 2000 and 2010 can be blamed on technology and robots, according to a Ball State University study. That's why virtually all economists agree that bringing back millions of lost jobs is unlikely. …

So, are Rust Belt workers doomed? Not necessarily. But economists agree they do need to be retrained for the new manufacturing age, which requires workers who can program and operate computers and robots. The U.S. will need to fill 3.5 million skilled jobs in specialized manufacturing over the next decade, according to a 2016 White House report. …

"Can President Trump Rescue the Rust Belt?" *The Week*, March 18, 2017,Retrieved from: http://theweek.com/articles/686314/president-trump-rescue-rust-belt

ESSENCE OF THE STORY

- The Rust Belt is hurting because manufacturing jobs have fallen by 7 million since 1979.
- President Trump proposes economic incentives to keep or create jobs in the United States and taxes on imports from Mexico and China.
- Few economists think these policies will work because most of the factory jobs lost resulted from new technology and robots.
- Economists say that Rust Belt workers need to be retrained to operate new technologies.

MyLab Economics Economics in the News

News-Based Problems and Applications

Just a sample of the topics covered in the 100 new news-based problems and applications include: Shrinking brick-and-mortar retail and expanding online shopping; fixed price food at the ball game; why tuition is so high; Facebook and Google in mobile ads market; Starburst "All Pink"; La La Land has the worst traffic congestion; and merit pay for teachers.

Solving Teaching and Learning Challenges

To change the way students see the world: this is my goal in teaching economics, in writing this book, and in playing a major role in creating content for MyLab Economics.

Three facts about students are my guiding principles. First, they want to learn, but they are over-whelmed by the volume of claims on their time and energy. So, they must see the relevance to their lives and future careers of what they are being asked to learn. Second, students want to get it, and get it quickly. So, they must be presented with clear and succinct explanations. And third, students want to make sense of today's world and be better prepared for life after school. So, they must be shown how to apply the timeless principles of economics and its models to illuminate and provide a guide to understanding today's events and issues, and the future challenges they are likely to encounter.

The organization of this text and MyLab arise directly from these guiding principles. Each chapter begins with a clear statement of learning objectives that correspond to each chapter section.

The learning resources also arise directly from the three guiding principles, and I will describe them by placing them in five groups:

- Making economics real
- Learning the vocabulary
- Seeing the action and telling the story
- Learning interactively—learning by doing
- MyLab Economics

Making Economics Real

The student needs to see economics as a lens that sharpens the focus on real-world issues and events, and not as a series of logical exercises with no real purpose. *Economics in the News* and *At Issue* are designed to achieve this goal.

Each chapter opens with a student-friendly vignette that raises a question to motivate and focus the chapter. The chapter explains the principles, or model, that address the question and ends with an *Economics in the News* application that helps students to think like economists by connecting chapter tools and concepts to the world around them. All these news exercises are in MyLab with instant targeted feedback and auto-grading and constant uploading of new current exercises.

In many chapters, an additional briefer *Economics in the News* (shown here) presents a short news clip, supplemented by data where needed, poses some questions, and walks through the answers.

ECONOMICS IN THE NEWS

The Market for College Education

Why Is Tuition So High?

Is tuition high because professors are overpaid? Is it high because of cuts in state support for public colleges? A National Bureau of Economic Research study says tuition is high because of the ready availability of federal student aid. The more money students can borrow, the more colleges can charge.

Source: *Inside Higher Ed.*, February 9, 2016

THE DATA

The scatter diagram provides data on college enroll - ments and tuition from 1971 through 2015.

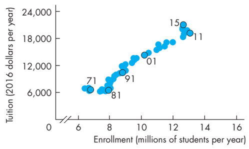


Figure 1 Enrollments and Tuition: 1971–2015

THE QUESTIONS

- What does the scatter diagram tell us?
- Why has college tuition increased? Is it because demand increased or supply decreased?

THE ANSWERS

- The scatter diagram tells us that in most years from 1971 through 2015, both tuition and enrollments increased. In some years, tuition increased and enroll-ments decreased, but those years are few.
- An increase in demand brings a rise in the price and an increase in the quantity.
- Because both the price (tuition) and quantity (enroll-ments) increased, the demand for college education increased.
- A decrease in supply brings a rise in price and a de-crease in the quantity.
- Because the price and the quantity increased in most years, the supply of college education did not decrease.
- The figure shows the market for college education.
- The supply curve of college education, S, slopes upward because the principle of increasing opportu-nity cost applies to college education just as it does to other goods and services.
- In 2001, the demand for college education was D_{2001}. The equilibrium tuition was \$14,000 and 10 million students were enrolled in college.
- Between 2001 and 2015:
  1) Income per person increased
  2) Population increased, and
  3) More new jobs required higher education.
- These (and possibly other) factors increased the demand for a college education. The demand curve shifted rightward to D_{2015}. Equilibrium tuition increased to \$21,000 and the quantity supplied increased to 13 million students.

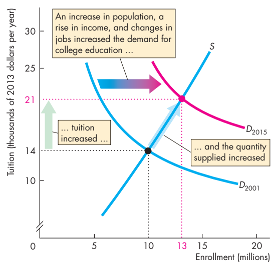


Figure 2 The Market for College Education

MyLab Economics Economics in the News

Seven *At Issue* boxes, one of which is new, engage the student in debate and controversy. An *At Issue* box introduces an issue and then presents two opposing views. It leaves the matter unsettled so that students and the instructor can continue the argument in class and reach their own conclusions.

Economics in Action boxes make economics real by providing 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; the low cost of making and the high cost of selling a pair of shoes; how Apple doesn't make the iPhone; opposing trends in air pollution and carbon concentration; and the size of the fiscal stimulus multipliers.

Interviews with leading economist, whose work correlates to what the student is learning, are the final component of making economics real. These interviews explore the education and research of prominent economists and their advice for those who want to continue studying the subject.

TALKING WITH Esther Duflo*

ESTHER DUFLO is the Abdul Latif Jameel Professor of Poverty Alleviation and Development Economics at the Massachusetts Institute of Technology. Among her many honors are the 2010 John Bates Clark Medal for the best economist under 40 and the Financial Times and Goldman Sachs Business Book of the Year Award in 2011 for her book (with Abhijit Banerjee) *Poor Economics: A Radical Rethinking of the Way to Fight Global Poverty.* Professor Duflo's research seeks to advance our understanding of the economic choices of the extremely poor by conducting massive real-world experiments.

Professor Duflo was an undergraduate student of history and economics at École Normale Supérieure and completed a master's degree at DELTA in Paris before moving to the United States. She earned her PhD in Economics at MIT in 1999.

Michael Parkin talked with her about her work, which advances our understanding of the economic choices and condition of the very poor.

Professor Duflo, what's the story about how you became an economist and in particular the architect of experiments designed to understand the economic choices of the very poor?

When I was a kid, I was exposed to many stories and images of poor children: through my mother's engagement as a doctor in a small NGO dealing with child victims of war and through books and stories about children living all around the world. I remember asking myself how I could justify my luck of being born where I was. I had a very exaggerated idea of what it was to be poor, but this idea caused sufficient discomfort that I knew I had to do something about it, if I could. Quite by accident, I discovered that economics was the way in which I could actually be useful: While spending a year in Russia teaching French and studying History, I realized that academic economists have the ability to intervene in the world while keeping enough sanity to analyze it. I thought this would be ideal for me and I have never regretted it. I have the best job in the world.

The very poor whom you study are people who live on \$1 a day or \$2 a day. … Is \$1 a day a true measure that includes everything these poor people consume?

For defining the poverty line, we don't include the cost of housing. The poor also get free goods, sometimes of bad quality (education, healthcare) and the value of those is also not included. Other than that, yes, it is everything.

Moreover, you have to realize this is everything, taking into account the fact that life is much cheaper in many poor countries because salaries are lower, so anything that is made and consumed locally (e.g., a haircut) is cheaper.

For example, in India, the purchasing power of a dollar (in terms of the real goods you can buy) is about 3 times what it is in the United States. So the poverty line we use for India is 33 cents per day, not a dollar.

All told, you really have to imagine living on under a dollar a day after your rent is paid in Seattle or Denver. Not easy!

… imagine living on under a dollar a day after your rent is paid in Seattle or Denver. Not easy!

Learning the Vocabulary

Learning the vocabulary isn't exciting, but it is the vital first step to every discipline and it needs to be effective and quick. Highlighted key terms simplify this task. Each key term is defined in the sentence in which it it highlighted and appears in an end-of-chapter list and the end-of-book glossary (both with its page number); boldfaced in the index; and in MyLab Economics in an interactive glossary, Flash Card tool, and in an auto-graded Key Terms Quiz with targeted student feedback.

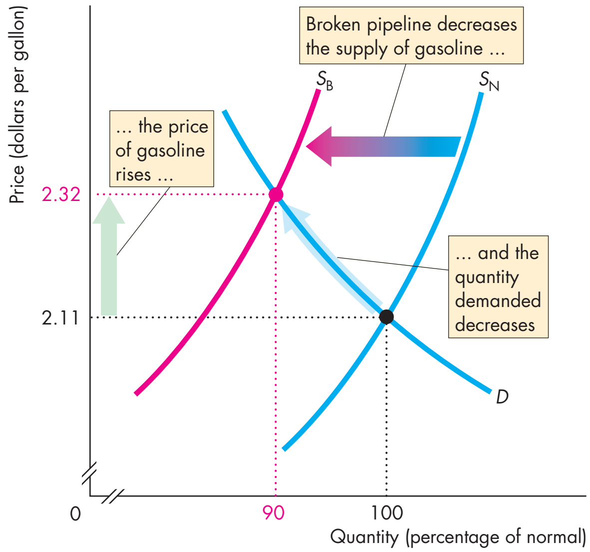
Key Terms MyLab Economics Key Terms Quiz

Change in demand, 62
Change in supply, 67
Change in the quantity demanded, 65
Change in the quantity supplied, 68
Competitive market, 60
Complement, 63
Demand, 61
Demand curve, 62
Equilibrium price, 70
Equilibrium quantity, 70
Inferior good, 64
Law of demand, 61
Law of supply, 66
Money price, 60
Normal good, 64
Quantity demanded, 61
Quantity supplied, 66
Relative price, 60
Substitute, 63
Supply, 66
Supply curve, 66

Showing the Action and Telling the Story

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

Recognizing that some students find graphs hard to work with, I have developed the entire art program with the study and review needs of the student in mind.



The Market for Gasoline

The diagrams feature

- Axes that measure and display concrete real-world data, and where possible and relevant, the most recent data
- Graphs paired with data tables from which curves are plotted
- Original curves consistently shown in blue
- Shifted curves, equilibrium points, and other important features highlighted in red
- Color-blended arrows to indicate movement
- Diagrams labeled with boxed notes that tell the story
- Extended captions that make each diagram and its caption a self-contained object for study and review

Learning Interactively—Learning by Doing

At the end of every chapter section, a *Review Quiz* invites the student to rework the section with questions that cover the key ideas. A parallel set of questions in MyLab Study Plan enable the student to work the questions and get instant targeted feedback.

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, key points, and a key figure. This feature increases the incentive for the student to learn-by-doing and review the chapter actively, rather than passively. The worked problems are also available in MyLab Study Plan along with interactive animations of the problem's key figure.

MyLab™ Economics

Reach Every Student with MyLab Economics MyLab is the teaching and learning platform that empowers you to reach *every* student. By combining trusted author content with digital tools and a flexible platform, MyLab personalizes the learning experience and improves results for each student. Learn more about MyLab Economics. With our new enhanced Pearson eText, students will be able to interact with **Figure Animations** right in line with the text. Each chapter then concludes with a **Worked Problem** that consists of questions, solutions, and a key figure.

Deliver Trusted Content You deserve teaching materials that meet your own high standards for your course. That's why we partner with highly respected authors to develop interactive content and course-specific resources that you can trust — and that keep your students engaged. The **Economics in the News** stories address current issues that are likely to interest and motivate students, and are available to be assigned and auto-graded within MyLab Economics.

Empower Each Learner Each student learns at a different pace. Personalized learning pinpoints the precise areas where each student needs practice; giving all students the support they need — when and where they need it — to be successful.

Teach Your Course Your Way Your course is unique. So whether you'd like to build your own assignments, teach multiple sections, or set prerequisites, MyLab Economics gives you the flexibility to easily create *your* course to fit *your* needs.

Improve Student Results When you teach with MyLab, student performance improves. That's why instructors have chosen MyLab for over 15 years, touching the lives of over 50 million students.

Developing Employability Skills

The economic way of thinking is a foundational skill for citizenship and career. Every feature of the text helps the student develop this skill, repeatedly using its central ideas of tradeoff; opportunity cost; the margin; incentives; the gains from voluntary exchange; the forces of demand, supply, and equilibrium; the pursuit of economic rent; and the tension between self-interest and the social interest.

The new section of Chapter 1, "Economists in the Economy", identifies a further five general skills that are crucial for getting a job and developing a successful career. The table lists these skills and the features of this text that promote them.

CAREER SKILLS AND THE FEATURES THAT PROMOTE THEM

Skill	Feature
Critical thinking	Economics in the News
	At Issue
Analytical skills	The economic way of thinking
	Manipulation of models
	Application of models
	Graphical analysis
Math skills	Math appendices
Writing skills	Review Quiz and end-of-Chapter problems and applications as short-answer written assignments
Oral communication skills	Economics in the News and At Issue as topics for classroom discussion and debate

Table of Contents Overview and Flexibility

You have preferences for how you want to teach your course, and I've organized this book to enable you to choose your teaching path. The chart on p. vi illustrates the book's flexibility. By following the arrows through the chart 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 fasttrack through either theory or policy issues, this text gives you the choice.

Instructor Teaching Resources

The program comes with the following teaching resources.

Supplements available to instructors at www.pearsonhighered.com/irc	**Features of the Supplement**
Instructor's Manual *Microeconomics* Instructor's Manual by Laura A.Wolff, Southern Illinois University	• Chapter-by-chapter overviews • List of what's new in the thirteenth edition • Ready-to-use lecture notes
Solutions Manual *Microeconomics* Solutions Manual by Mark Rush, University of Florida	• Solutions to Review Quizzes • Solutions to the end-of-chapter Study Plan Problems and Applications • Solutions to the end-of-chapter Additional Problems and Applications
Test Bank New questions for the *Microeconomics* Test Bank by Svitlana Malsymenko, University of Pittsburgh, and James K. Self, Lee College Mark Rush, University of Florida, reviewed all questions to ensure their clarity and consistency	• Nearly 7,000 multiple-choice, true/false, short-answer, and graphing questions with these annotations: ■ Difficulty level (1 for straight recall, 2 for some analysis, 3 for complex analysis) ■ Type (Multiple-choice, true/false, short-answer, essay Topic (The term or concept the question supports) AACSB learning standard
Computerized TestGen	• TestGen enables instructors to: ■ Customize, save, and generate classroom tests ■ Edit, add, or delete questions from the Test Item Files ■ Analyze test results ■ Organize a database of tests and student results.
PowerPoints	• Slides include: ■ Lectures with all the textbook figures and tables animated and speaking notes from the Instructor's Manual ■ Large-scale versions of all textbook figures and tables animated, for instructors to incorporate into their own slide shows • A student version of the lectures with animated textbook figures and tables. • Accessibility PowerPoints meet standards for students with disabilities. Features include, but not limited to: ■ Keyboard and Screen Reader access ■ Alternative text for images ■ High color contrast between background and foreground colors

Acknowledgments

I thank my current and former colleagues and friends at the University of Western Ontario who have taught me 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. I also thank Doug McTaggart and Christopher Findlay, co-authors of the Australian edition, and Melanie Powell and Kent Matthews, co- authors of the European edition. Suggestions arising from their adaptations of earlier editions have been helpful to me in preparing this edition.

I thank Rebecca Stein for her thoughtful suggestions and constructive criticism that brought extensive improvement to my treatment of healthcare, public goods, and externalities; Yoram Bauman for careful and helpful reviews of my coverage of environmental externalities; and Sameh Ajlouni of Yarmouk University for spotting an error.

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

It is a special joy to thank the many outstanding people at Pearson who contributed to the concerted publishing effort that brought this edition to completion. Denise Clinton played a major role in the evolution of this text since its third edition, and her insights and ideas can still be found throughout this new edition.

Donna Battista, Vice President, Business Publishing, is hugely inspiring and has provided overall direction to the project.

As ever, Adrienne D'Ambrosio, Director of Portfolio Management, played a major role in shaping this revision and the many outstanding supplements that accompany it. Adrienne brings intelligence and insight to her work and is the unchallengeable pre-eminent economics director. Ashley Bryan, Portfolio Manager, directed the development of this edition. Heather Johnson, Project Manager, oversaw the production and design process, coordinated the photo research program, and worked with rights and permissions advisors. Nancy Freihofer, Content Producer, provided a steady hand throughout the revision process and managed the team of supplements authors.

Digital Content Team Lead Noel Lotz managed a complex and thorough reviewing process for the content of MyLab Economics; and Melissa Honig, Digital Studio Project Manager, ensured that all our media assets were correctly assembled.

Tricia Murphy, Senior Product Marketer, and Carlie Marvel, Senior Field Marketing Manager, provided inspired marketing strategy and direction.

Catherine Baum provided a careful, consistent, and intelligent copy edit and accuracy check, and wrote original news articles for *Economics in the News*. And Heather Johnson with the other members of an outstanding editorial and production team at Integra kept the project on track on a tight schedule.

I thank all of these wonderful people. It has been inspiring to work with them and to share in creating what I believe is a truly outstanding educational tool.

I thank our talented thirteenth edition supplements authors and contributors—Luke Armstrong, Svitlana Maksymenko, Russ McCullough, Alexandra Nica, Jim Self, Laurie Wolff, and Jeannie Shearer. Thanks, also, to Trevor Collier of the University of Dayton for reviewing MyLab exercises.

I especially thank Mark Rush, who yet again played a crucial role in creating another edition of this text and package. Mark has been a constant source of good advice and good humor.

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

I thank the people who work directly with me. Jeannie Shearer provided outstanding research assistance on many topics, including finding news articles and creating MyLab exercises. Richard Parkin created the electronic art files and offered many ideas that improved the figures in this book. Robin Bade managed an ever-growing and ever more complex MyLab database. And Sharmistha Nag helped me to create news-based exercises, and Draw Graph exercises.

As with the previous editions, this one owes an enormous debt to Robin Bade. I dedicate this book to her and again thank her for her work. I could not have written this book without the tireless and selfless help she has given me. My thanks to her are unbounded.

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

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PART ONE **INTRODUCTION**

1 WHAT IS ECONOMICS?

After studying this chapter, you will be able to:

- Define economics and distinguish between microeconomics and macroeconomics
- Explain the two big questions of economics
- Explain the key ideas that define the economic way of thinking
- Explain how economists go about their work as social scientists and policy advisers
- Describe the jobs available to a graduate with a major in economics

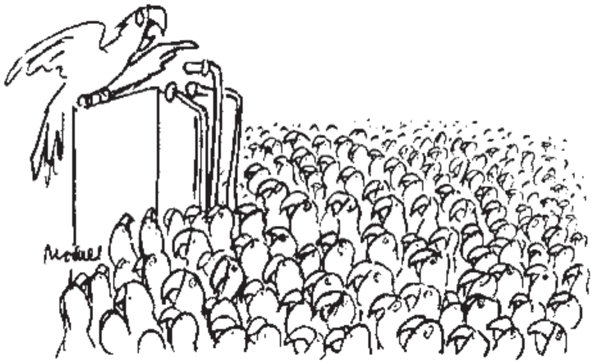
Is economics about money: How people make it and spend it? Is it about business, government, and jobs? Is it about why some people and some nations are rich and others poor?

Economics is about all these things. But its core is the study of *choices* and their *consequences*.

Your life will be shaped by the choices that you make and the challenges that you face. To face those challenges and seize the opportunities they present, you must understand the powerful forces at play. The economics that you're about to learn will become your most reliable guide. This chapter gets you started by describing the questions that economists try to answer and looking at how economists think as they search for the answers.

Definition of Economics

A fundamental fact dominates our lives: We want more than we can get. Our inability to get everything we want is called **scarcity**. Scarcity is universal. It confronts all living things. Even parrots face scarcity!



Not only do I want a cracker—we all want a cracker!

Think about the things that *you* want and the scarcity that *you* face. You want to go to a good school, college, or university. You want to live in a well-equipped, spacious, and comfortable home. You want the latest smartphone and the fastest Internet connection for your laptop or tablet. You want some sports and recreational gear—perhaps some new running shoes, or a new bike. You want much more time than is available to go to class, do your homework, play sports and games, read novels, go to the movies, listen to music, travel, and hang out with your friends. And you want to live a long and healthy life.

What you can afford to buy is limited by your income and by the prices you must pay. And your time is limited by the fact that your day has 24 hours.

You want some other things that only governments provide. You want to live in a safe neighborhood in a peaceful and secure world, and enjoy the benefits of clean air, lakes, rivers, and oceans.

What governments can afford is limited by the taxes they collect. Taxes lower people's incomes and compete with the other things they want to buy.

What *everyone* can get—what *society* can get—is limited by the productive resources available. These resources are the gifts of nature, human labor and ingenuity, and all the previously produced tools and equipment.

Because we can't get everything we want, we must make *choices*. You can't afford *both* a laptop *and* an iPhone, so you must *choose* which one to buy. You can't spend tonight *both* studying for your next test *and* going to the movies, so again, you must *choose* which one to do. Governments can't spend a tax dollar on *both* national defense *and* environmental protection, so they must *choose* how to spend that dollar.

Your choices must somehow be made consistent with the choices of *others*. If you choose to buy a laptop, someone else must choose to sell it. Incentives reconcile choices. An **incentive** is a reward that encourages an action, or a penalty that discourages one. Prices act as incentives. If the price of a laptop is too high, more will be offered for sale than people want to buy. And if the price is too low, fewer will be offered for sale than people want to buy. But there is a price at which choices to buy and sell are consistent.

> **Economics** is the social science that studies the *choices* that individuals, businesses, governments, and entire societies make as they cope with *scarcity* and the *incentives* that influence and reconcile those choices.

The subject has two parts:

- Microeconomics
- Macroeconomics

Microeconomics is the study of the choices that individuals and businesses make, the way these choices interact in markets, and the influence of governments. Some examples of microeconomic questions are: Why are people downloading more movies? How would a tax on e-commerce affect eBay?

Macroeconomics is the study of the performance of the national economy and the global economy. Some examples of macroeconomic questions are: Why does the U.S. unemployment rate fluctuate? Can the Federal Reserve make the unemployment rate fall by keeping interest rates low?

REVIEW QUIZ

1 List some examples of the scarcity that you face.
2 Find examples of scarcity in today's headlines.
3 Find an example of the distinction between microeconomics and macroeconomics in today's headlines.

Work these questions in Study Plan 1.1 and get instant feedback.

MyLab Economics

Two Big Economic Questions

Two big questions summarize the scope of economics:

- How do choices end up determining *what, how,* and *for whom* goods and services are produced?
- Do choices made in the pursuit of *self-interest* also promote the *social interest*?

What, How, and For Whom?

Goods and services are the objects that people value and produce to satisfy wants. *Goods* are physical objects such as smartphones and automobiles. *Services* are tasks performed for people such as wireless service and auto-repair service.

What? *What* we produce varies across countries and changes over time. In the United States today, agriculture accounts for 1 percent of total production, manufactured goods for 19 percent, and services (retail and wholesale trade, healthcare, and education are the biggest ones) for 80 percent. In contrast, in low-income Ethiopia, agriculture accounts for 36 percent of total production, manufactured goods for 17 percent, and services for 47 percent.

Figure 1.1 shows these numbers and also the percentages for China, which fall between those for the United States and Ethiopia.

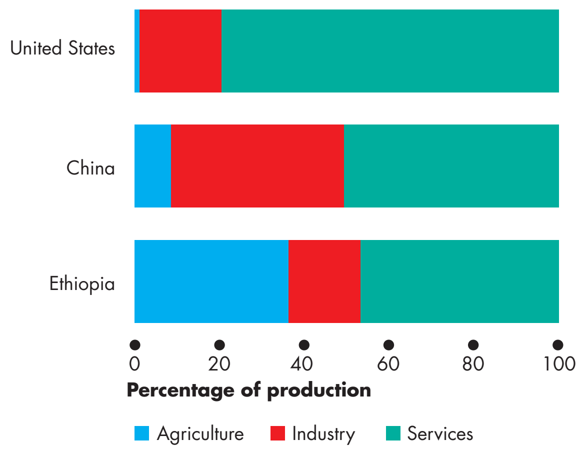
What determines these patterns of production? How do choices end up determining the quantities of smartphones, automobiles, wireless service, auto-repair service, and the millions of other items that are produced in the United States and around the world?

How? *How* we produce is described by the technologies and resources that we use. The resources used to produce goods and services are called **factors of production**, which are grouped into four categories:

- Land
- Labor
- Capital
- Entrepreneurship

Land The "gifts of nature" that we use to produce goods and services are called **land**. In economics, *land* is what in everyday language we call *natural resources*. It includes land in the everyday sense

FIGURE 1.1 What Three Countries Produce



Agriculture and manufacturing are small percentages of production in rich countries such as the United States and large percentages of production in poor countries such as Ethiopia. Most of what is produced in the United States is services.

Source of data: CIA Factbook 2017, Central Intelligence Agency.

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together with minerals, oil, gas, coal, water, air, forests, and fish.

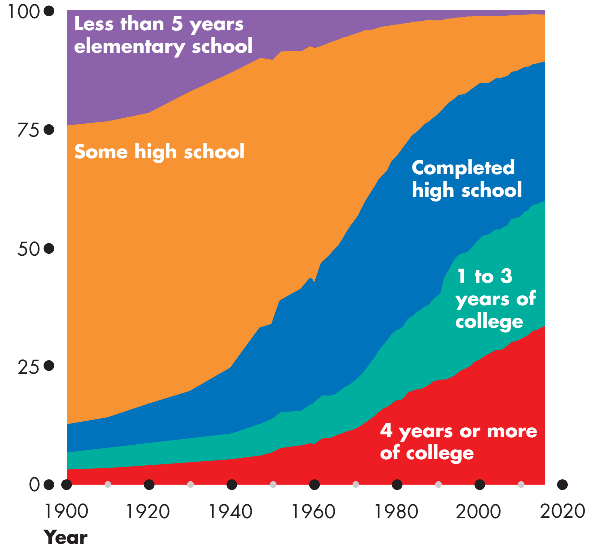
Our land surface and water resources are renewable and some of our mineral resources can be recycled. But the resources that we use to create energy are nonrenewable—they can be used only once.

Labor The work time and work effort that people devote to producing goods and services is called **labor**. Labor includes the physical and mental efforts of all the people who work on farms and construction sites and in factories, shops, and offices.

The *quality* of labor depends on **human capital**, which is the knowledge and skill that people obtain from education, on-the-job training, and work experience. You are building your own human capital right now as you work on your economics course, and your human capital will continue to grow as you gain work experience.

Human capital expands over time. Today, 88 percent of the adult population of the United States have completed high school and 33 percent have a college or university degree. Figure 1.2 shows these measures of human capital in the United States and its growth since 1900.

FIGURE 1.2 A Measure of Human Capital



In 2016, 33 percent of the population aged 25 and older had 4 years or more of college, up from 2 percent in 1900. A further 55 percent had completed high school, up from 12 percent in 1900.

Source of data: U.S. Census Bureau, 2017.

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Capital The tools, instruments, machines, buildings, and other constructions that businesses use to produce goods and services are called **capital**.

In everyday language, we talk about money, stocks, and bonds as being "capital." These items are *financial capital*. Financial capital plays an important role in enabling businesses to borrow the funds that they use to buy physical capital. But financial capital is not used to produce goods and services and it is not a factor of production.

Entrepreneurship The human resource that organizes labor, land, and capital is called **entrepreneurship**. Entrepreneurs are the drivers of economic progress. They develop new ideas about what and how to produce, make business decisions, and bear the risks that arise from these decisions.

What determines how the factors of production are used to produce each good and service?

For Whom? *Who* consumes the goods and services that are produced depends on the incomes that people earn. People with large incomes can buy a wide range of goods and services. People with small incomes have fewer options and can afford a smaller range of goods and services.

People earn their incomes by selling the services of the factors of production they own:

- Land earns **rent**.
- Labor earns **wages**.
- Capital earns **interest**.
- Entrepreneurship earns **profit**.

Which factor of production earns the most income? The answer is labor. In 2016, wages were 54 percent of total income and the incomes from land, capital, and entrepreneurship totaled 46 percent. Labor's share has fallen slightly over the past 20 years.

Knowing how income is shared among the factors of production doesn't tell us how it is shared among individuals. And the distribution of income among individuals is extremely unequal. You know of some people who earn very large incomes: Cam Newton earned $53 million in 2016; and Clayton Kershaw has a $215 million 7-year deal with the LA Dodgers.

You know of even more people who earn very small incomes. Servers at McDonald's average around $7.25 an hour; checkout clerks, cleaners, and textile and leather workers all earn less than $10 an hour.

You probably know about other persistent differences in the incomes people earn. Men, on average, earn more than women; whites earn more than minorities; college graduates earn more than high-school graduates.

We can get a good sense of who consumes the goods and services produced by looking at the percentages of total income earned by different groups of people. The 20 percent of people with the lowest incomes earn about 5 percent of total income, while the richest 20 percent earn close to 50 percent of total income. So on average, people in the richest 20 percent earn more than 10 times the incomes of those in the poorest 20 percent. There is even huge inequality within the richest 20 percent and the top 1 percent earns almost 15 percent of total income.

Why is the distribution of income so unequal?

Economics provides some answers to all these questions about *what, how*, and *for whom* goods and services are produced and much of the rest of this book will help you to understand those answers.

We're now going to look at the second big question of economics: Do choices made in the pursuit of self-interest also promote the social interest?

Do Choices Made in the Pursuit of Self-Interest also Promote the Social Interest?

Every day, you and 325 million other Americans, along with 7.4 billion people in the rest of the world, make economic choices that result in *what, how*, and *for whom* goods and services are produced. These choices are made by people who are pursuing their self-interest.

Self-Interest You make a choice in your **self-interest** if you think that choice is the best one available for you. All the choices that people make about how to use their time and other resources are made in the pursuit of self-interest. When you allocate your time or your budget, you do what makes the most sense to you. You might think about how your choices affect other people and take into account how you feel about that, but it is how *you* feel that influences your choice. You order a home-delivery pizza because you're hungry, not because the delivery person needs a job. And when the pizza delivery person shows up at your door, he's not doing you a favor. He's pursuing *his* self-interest and hoping for a tip and another call next week.

The big question is: Is it possible that all the choices that each one of us makes in the pursuit of self-interest could end up achieving an outcome that is best for everyone?

Social Interest An outcome is in the **social interest** if it is best for society as a whole. It is easy to see how you decide what is in *your* self-interest. But how do we decide if something is in the social interest? To help you answer this question, imagine a scene like that in *Economics in the News* on p. 6.

Ted, an entrepreneur, creates a new business. He hires a thousand workers and pays them $20 an hour, $1 an hour more than they earned in their old jobs. Ted's business is extremely profitable and his own earnings increase by $1 million per week.

You can see that Ted's decision to create the business is in his self-interest—he gains $1 million a week. You can also see that for Ted's employees, their decisions to work for Ted are in their self-interest—they gain $1 an hour (say $40 a week). And the decisions of Ted's customers must be in their self-interest, otherwise they wouldn't buy from him. But is this outcome in the social interest?

The economist's answer is "Yes." It is in the social interest because it makes everyone better off. There are no losers.

Efficiency and the Social Interest Economists use the everyday word "efficient" to describe a situation that can't be improved upon. Resource use is **efficient** if it is *not* possible to make someone better off without making someone else worse off. If it *is* possible to make someone better off without making anyone worse off, society can be made better off and the situation is not efficient.

In the Ted story everyone is better off, so it improves efficiency and the outcome is in the social interest. But notice that it would also have been efficient if the workers and customers had gained nothing and Ted had gained even more than $1 million a week. But would that efficient outcome be in the social interest?

Many people have trouble seeing the outcome in which Ted is the only winner as being in the social interest. They say that the social interest requires Ted to share some of his gain either with his workers in higher wages or with his customers in lower prices, or with both groups.

Fair Shares and the Social Interest The idea that the social interest requires "fair shares" is a deeply held one. Think about what you regard as a fair share. To help you, imagine the following game.

I put $100 on the table and tell someone you don't know and who doesn't know you to *propose* a share of the money between the two of you. If you *accept* the proposed share, you each get the agreed upon shares. If you don't accept the proposed share, you both get nothing.

It would be efficient—you would both be better off—if the proposer offered to take $99 and leave you with $1 and you accepted that offer.

But would you accept the $1? If you are like most people, the idea that the other person gets 99 times as much as you is just too much to stomach. "No way," you say and the $100 disappears. That outcome is inefficient. You have both given up something.

When the game I've just described is played in a classroom experiment, about half of the players reject offers of below $30.

So fair shares matter. But what is *fair*? There isn't a crisp definition of fairness to match that of efficiency. Reasonable people have a variety of views about it. Almost everyone agrees that too much inequality is unfair. But how much is too much? And inequality of what: income, wealth, or the *opportunity* to work, earn an income, and accumulate wealth?

You will examine efficiency again in Chapter 2 and efficiency and fairness in Chapter 5.

Questions about the social interest are hard ones to answer and they generate discussion, debate, and disagreement. Four issues in today's world put some flesh on these questions. The issues are:

- Globalization
- Information-age monopolies
- Climate change
- Financial instability

Globalization The term *globalization* means the expansion of international trade, borrowing and lending, and investment.

When Nike produces sports shoes, people in Malaysia get work; and when China Airlines buys new airplanes, Americans who work at Boeing in Seattle build them. While globalization brings expanded production and job opportunities for some workers, it destroys many American jobs. Workers across the manufacturing industries must learn new skills, take service jobs, which often pay less, or retire earlier than previously planned.

Globalization is in the self-interest of those consumers who buy low-cost goods and services produced in other countries; and it is in the self-interest of the multinational firms that produce in low-cost regions and sell in high-price regions. But is globalization in the self-interest of the low-wage worker in Malaysia who sews your new running shoes and the displaced shoemaker in Atlanta? Is it in the social interest?

ECONOMICS IN THE NEWS

The Invisible Hand

From Brewer to Bio-Tech Entrepreneur

Kiran Mazumdar-Shaw trained to become a master brewer and learned about enzymes, the stuff from which bio-pharmaceuticals are made. Discovering it was impossible for a woman in India to become a master brewer, the 25-year-old Kiran decided to create a bio-pharmaceutical business.

Kiran's firm, Biocon, employed uneducated workers who loved their jobs and the living conditions made possible by their high wages. But when a labor union entered the scene and unionized the workers, a furious Kiran fired the workers, automated their jobs, and hired a smaller number of educated workers. Biocon continued to grow and today, Kiran's wealth exceeds $1 billion.

Kiran has become wealthy by developing and producing bio-pharmaceuticals that improve people's lives. But Kiran is sharing her wealth in creative ways. She has opened a cancer treatment center to help thousands of patients who are too poor to pay and created a health insurance scheme.

Source: Ariel Levy, "Drug Test," *The New Yorker*, January 2, 2012

THE QUESTIONS

- Whose decisions in the story were taken in self-interest?
- Whose decisions turned out to be in the social interest?
- Did any of the decisions harm the social interest?

THE ANSWERS

- All the decisions—Kiran's, the workers', the union's, and the firm's customers'—are taken in the pursuit of self-interest.
- Kiran's decisions serve the social interest: She creates jobs that benefit her workers and products that benefit her customers. And her charitable work brings yet further social benefits.
- The labor union's decision might have harmed the social interest because it destroyed the jobs of uneducated workers.

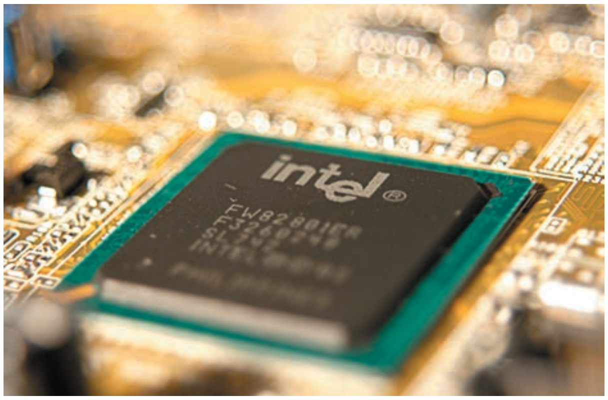
Kiran Mazumdar-Shaw, founder and CEO of Biocon

Information-Age Monopolies The technological change of the past forty years has been called the *Information Revolution*. Bill Gates, a co-founder of Microsoft, held a privileged position in this revolution. For many years, Windows was the only available operating system for the PC. The PC and Mac competed, but the PC had a huge market share.

An absence of competition gave Microsoft the power to sell Windows at prices far above the cost of production. With lower prices, many more people would have been able to afford and buy a computer.

The information revolution has clearly served your self-interest: It has provided your smartphone, laptop, loads of handy applications, and the Internet. It has also served the self-interest of Bill Gates who has seen his wealth soar.

But did the information revolution best serve the social interest? Did Microsoft produce the best possible Windows operating system and sell it at a price that was in the social interest? Or was the quality too low and the price too high?



Climate Change Burning fossil fuels to generate electricity and to power airplanes, automobiles, and trucks pours a staggering 28 billion tons—4 tons per person—of carbon dioxide into the atmosphere each year. These carbon emissions, two thirds of which come from the United States, China, the European Union, Russia, and India, bring global warming and climate change.

Every day, when you make self-interested choices to use electricity and gasoline, you leave your carbon footprint. You can lessen this footprint by walking, riding a bike, taking a cold shower, or planting a tree.

But can each one of us be relied upon to make decisions that affect the Earth's carbon-dioxide concentration in the social interest? Must governments change the incentives we face so that our self-interested choices are also in the social interest? How can governments change incentives? How can we encourage the use of wind and solar power to replace the burning of fossil fuels that brings climate change?

Financial Instability In 2008, banks were in trouble. They had made loans that borrowers couldn't repay and they were holding securities the values of which had crashed.

Banks' choices to take deposits and make loans are made in self-interest, but does this lending and borrowing serve the social interest? Do banks lend too much in the pursuit of profit?

When banks got into trouble in 2008, the Federal Reserve (the Fed) bailed them out with big loans backed by taxpayer dollars. Did the Fed's bailout of troubled banks serve the social interest? Or might the Fed's rescue action encourage banks to repeat their dangerous lending in the future?

We've looked at four topics and asked many questions that illustrate the potential conflict between the pursuit of self-interest and the social interest. We've asked questions but not answered them because we've not yet explained the economic principles needed to do so. We will answer these questions in future chapters.

REVIEW QUIZ

1. Describe the broad facts about *what, how*, and *for whom* goods and services are produced.
2. Use headlines from the recent news to illustrate the potential for conflict between self-interest and the social interest.

Work these questions in Study Plan 1.2 and get instant feedback.

MyLab Economics

AT ISSUE

The Protest Against Market Capitalism

Market capitalism is an economic system in which individuals own land and capital and are free to buy and sell land, capital, and goods and services in markets. Markets for goods and services, along with markets for land and capital, coordinate billions of self-interested choices, which determine what, how, and for whom goods and services are produced. A few people earn enormous incomes, many times the average income. There is no supreme planner guiding the use of scarce resources and the outcome is unintended and unforeseeable.

Centrally planned socialism is an economic system in which the government owns all the land and capital, directs workers to jobs, and decides what, how, and for whom to produce. The Soviet Union, several Eastern European countries, and China have used this system in the past but have now abandoned it. Only Cuba and North Korea use this system today. A few bureaucrats in positions of great power receive huge incomes, many times that of an average person.

Our economy today is a **mixed economy**, which is market capitalism with government regulation.

The Protest

The protest against market capitalism takes many forms. Historically, **Karl Marx** and other communist and socialist thinkers wanted to replace it with *socialism* and *central planning*. Today, thousands of people who feel let down by the economic system want less market capitalism and more government regulation. The **Occupy Wall Street** movement, with its focus on the large incomes of the top 1 percent, is a visible example of today's protest. Protesters say:

- Big corporations (especially big banks) have too much power and influence on governments.
- Democratically elected governments can do a better job of allocating resources and distributing income than uncoordinated markets.
- More regulation in the social interest is needed—to serve "human need, not corporate greed."
- In a market, for every winner, there is a loser.
- Big corporations are the winners. Workers and unemployed people are the losers.

An Occupy Wall Street protester

The Economist's Response

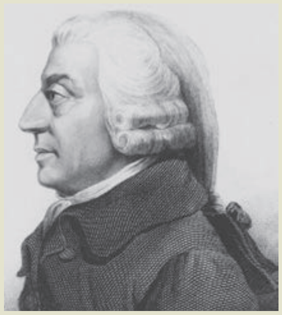
Economists agree that market capitalism isn't perfect. But they argue that it is the best system available and while some government intervention and regulation can help, government attempts to serve the social interest often end up harming it.

Adam Smith (see p. 57), who gave the first systematic account of how market capitalism works, says:

- The self-interest of big corporations is *maximum profit*.
- But an *invisible hand* leads production decisions made in pursuit of self-interest to *unintentionally* promote the social interest.
- Politicians are ill-equipped to regulate corporations or to intervene in markets, and those who think they can improve on the market outcome are most likely wrong.
- In a market, buyers get what they want for less than they would be willing to pay and sellers earn a profit. Both buyers and sellers gain. A market transaction is a "win-win" event.

"It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest."

The Wealth of Nations, 1776


Adam Smith

The Economic Way of Thinking

The questions that economics tries to answer tell us about the *scope of economics,* but they don't tell us how economists *think* and go about seeking answers to these questions. You're now going to see how economists go about their work.

We're going to look at six key ideas that define the *economic way of thinking*. These ideas are

- A choice is a *tradeoff.*
- People make *rational choices* by comparing *benefits* and *costs*.
- *Benefit* is what you gain from something.
- *Cost* is what you *must give up* to get something.
- Most choices are "*how-much*" choices made at the *margin*.
- Choices respond to *incentives*.

A Choice Is a Tradeoff

Because we face scarcity, we must make choices. And when we make a choice, we select from the available alternatives. For example, you can spend Saturday night studying for your next economics test or having fun with your friends, but you can't do both of these activities at the same time. You must choose how much time to devote to each. Whatever choice you make, you could have chosen something else.

You can think about your choices as tradeoffs. A **tradeoff** is an exchange—giving up one thing to get something else. When you choose how to spend your Saturday night, you face a tradeoff between studying and hanging out with your friends.

Making a Rational Choice

Economists view the choices that people make as rational. A **rational choice** is one that compares costs and benefits and achieves the greatest benefit over cost for the person making the choice.

Only the wants of the person making a choice are relevant to determine its rationality. For example, you might like your coffee black and strong but your friend prefers his milky and sweet. So it is rational for you to choose espresso and for your friend to choose cappuccino.

The idea of rational choice provides an answer to the first question: *What* goods and services will be produced and in what quantities? The answer is those that people rationally choose to buy!

But how do people choose rationally? Why do more people choose an iPad rather than a Microsoft Surface? Why has the U.S. government chosen to build an interstate highway system and not an interstate high-speed railroad system? The answers turn on comparing benefits and costs.

Benefit: What You Gain

The **benefit** of something is the gain or pleasure that it brings and is determined by **preferences**—by what a person likes and dislikes and the intensity of those feelings. If you get a huge kick out of "League of Legends," that video game brings you a large benefit. If you have little interest in listening to Yo-Yo Ma playing a Vivaldi cello concerto, that activity brings you a small benefit.

Some benefits are large and easy to identify, such as the benefit that you get from being in school. A big piece of that benefit is the goods and services that you will be able to enjoy with the boost to your earning power when you graduate. Some benefits are small, such as the benefit you get from a slice of pizza.

Economists measure benefit as the most that a person is *willing to give up* to get something. You are willing to give up a lot to be in school. But you would give up only an iTunes download for a slice of pizza.

Cost: What You *Must* Give Up

The **opportunity cost** of something is the highest-valued alternative that must be given up to get it.

To make the idea of opportunity cost concrete, think about *your* opportunity cost of being in school. It has two components: the things you can't afford to buy and the things you can't do with your time.

Start with the things you can't afford to buy. You've spent all your income on tuition, residence fees, books, and a laptop. If you weren't in school, you would have spent this money on tickets to ball games and movies and all the other things that you enjoy. But that's only the start of your opportunity cost. You've also given up the opportunity to get a job. Suppose that the best job you could get if you weren't in school is working at Citibank as a teller earning $25,000 a year. Another part of your opportunity cost of being in school is all the things that you could buy with the extra $25,000 you would have.