

FOUNDATIONS OF
MICROECONOMICS

8TH EDITION

Bade ■ Parkin



 Pearson





FOUNDATIONS OF MICROECONOMICS

delivers a complete, hands-on learning system designed around active learning.

A Learning-by-Doing Approach

The **Checklist** that begins each chapter highlights the key topics covered and the chapter is divided into sections that directly correlate to the Checklist.

The **Checkpoint** that ends each section provides a full page of practice problems to encourage students to review the material while it is fresh in their minds.

Each chapter opens with a question about a central issue that sets the stage for the material.



Why did the price of coffee rise in 2014?

4

Demand and Supply

When you have completed your study of this chapter, you will be able to

- 1 Distinguish between quantity demanded and demand, and explain what determines demand.
- 2 Distinguish between quantity supplied and supply, and explain what determines supply.
- 3 Explain how demand and supply determine price and quantity in a market, and explain the effects of changes in demand and supply.

MyEconLab Big Picture Video

CHAPTER CHECKLIST

CHECKPOINT 4.1

Distinguish between quantity demanded and demand, and explain what determines demand.

Practice Problems

The following events occur one at a time in the market for smartphones:

- The price of a smartphone falls.
 - Producers announce that the price of a smartphone will fall next month.
 - The price of a call made from a smartphone falls.
 - The price of a call made from a land-line phone increases.
 - An increase in memory makes smartphones more popular.
1. Explain the effect of each event on the demand for smartphones.
 2. Use a graph to illustrate the effect of each event.
 3. Does any event (or events) illustrate the law of demand?

In the News

Airline profits soar yet no relief for passengers

MyEconLab Study Plan 4.1
Key Terms Quiz
Solutions Video



EYE on the PRICE OF COFFEE

MyEconLab Critical Thinking Exercise

Why Did the Price of Coffee Rise in 2014?

When a fungus called coffee rust swept through Brazil and other countries of South America in 2014, world coffee production decreased and the price of coffee beans increased.

The table below provides some data on the quantity and price of coffee in 2013 and 2014. What does the data tell us?

It tells us that the quantity of coffee

You can answer this question from the information provided. You know that an increase in demand brings a rise in the price and an increase in the quantity bought, while a decrease in supply brings a rise in the price and a decrease in the quantity bought.

Because the quantity of coffee decreased and the price increased, there must have been a decrease in the sup-

The figure illustrates the global market for coffee in 2013 and 2014. The demand curve D shows the demand for coffee, which we will assume was the same in both years.

In 2013, the supply curve was S_{2013} , the equilibrium price was \$1.04 per pound and the equilibrium quantity traded was 19.4 billion pounds.

In 2014, decreased coffee produc-

FIGURE 4.4

Change in Quantity Demanded Versus Change in Demand

MyEconLab Animation

1 A decrease in the quantity demanded

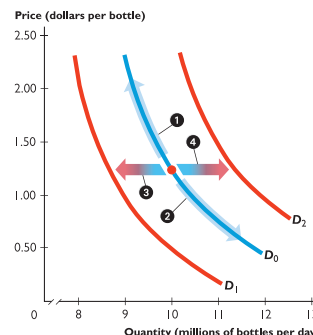
The quantity demanded decreases and there is a movement up along the demand curve D_0 if the price of the good rises and other things remain the same.

3 A decrease in demand

Demand decreases and the demand curve shifts leftward (from D_0 to D_1) if

- The price of a substitute falls or the price of a complement rises.
- The price of the good is expected to fall.
- Income decreases.*
- Expected future income or credit decreases.
- The number of buyers decreases.

*Bottled water is a normal good.



2 An increase in the quantity demanded

The quantity demanded increases and there is a movement down along the demand curve D_0 if the price of the good falls and other things remain the same.

4 An increase in demand

Demand increases and the demand curve shifts rightward (from D_0 to D_2) if

- The price of a substitute rises or the price of a complement falls.
- The price of the good is expected to rise.
- Income increases.
- Expected future income or credit increases.
- The number of buyers increases.

Eye On boxes apply theory to important issues and problems that shape our global society and individual decisions.

Confidence-Building Graphs

use color to show the direction of shifts and detailed, numbered captions guide students step-by-step through the action.

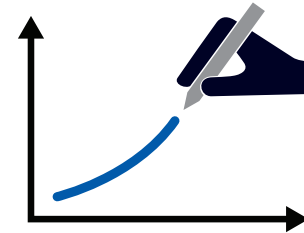
100% of the figures are animated in MyEconLab, with step-by-step audio narration.

Practice, Engage, and Assess



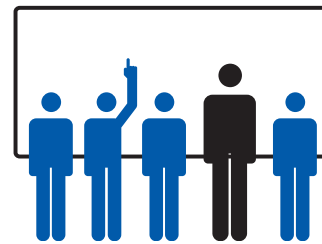
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with MyEconLab[®]

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$$P = c + dQ_s$$



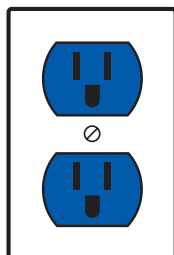
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Foundations of
MICROECONOMICS

Robin Bade

Michael Parkin

University of Western Ontario



EIGHTH EDITION



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To Erin, Tessa, Jack, Abby, and Sophie

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About the Authors

Robin Bade was an undergraduate at the University of Queensland, Australia, where she earned degrees in mathematics and economics. After a spell teaching high school math and physics, she enrolled in the Ph.D. program at the Australian National University, from which she graduated in 1970. 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*.

Robin first taught the principles of economics course in 1970 and has taught it (alongside intermediate macroeconomics and international trade and finance) most years since then. She developed many of the ideas found in this text while conducting tutorials with her students at the University of Western Ontario.

Michael Parkin studied economics in England and began his university teaching career immediately after graduating with a B.A. from the University of Leicester. He learned the subject on the job at the University of Essex, England's most exciting new university of the 1960s, and at the age of 30 became one of the youngest full professors. 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*. His research on macroeconomics, monetary economics, and international economics has resulted in more than 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 is author of the best-selling textbook, *Economics* (Pearson), now in its Twelfth Edition.

Robin and Michael are a wife-and-husband team. Their most notable joint research created the Bade-Parkin Index of central bank independence and spawned a vast amount of research on that topic. They don't claim credit for the independence of the new European Central Bank, but its constitution and the movement toward greater independence of central banks around the world were aided by their pioneering work. Their joint textbooks include *Macroeconomics* (Prentice-Hall), *Modern Macroeconomics* (Pearson Education Canada), and *Economics: Canada in the Global Environment*, the Canadian adaptation of Parkin, *Economics* (Addison-Wesley). They are dedicated to the challenge of explaining economics ever more clearly to a growing body of students.

Music, the theater, art, walking on the beach, and five grandchildren provides their relaxation and fun.



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Preface



Students know that throughout their lives they will make economic decisions and be influenced by economic forces. They want to understand the economic principles that can help them navigate these forces and guide their decisions. *Foundations of Microeconomics* is our attempt to satisfy this want.

The response to our earlier editions from hundreds of colleagues across the United States and throughout the world tells us that most of you agree with our view that the principles course must do four things well. It must

- Motivate with compelling issues and questions
- Focus on core ideas
- Steer a path between an overload of detail and too much left unsaid
- Encourage and aid learning by doing

The Foundations icon with its four blocks (on the cover and throughout the book) symbolizes this four-point approach that has guided all our choices in writing this text and creating its comprehensive teaching and learning supplements.

WHAT'S NEW IN THE EIGHTH EDITION

New in this Eighth Edition revision are: A further fine-tuning of the content; an enhanced focus on outcome-driven teaching and learning; and a further large investment in enhanced digital features to bring economics to life and provide an exciting interactive experience for the student on all platforms and devices.

■ Fine-Tuning the Content

The content of this revision is driven by the drama of the extraordinary period of economic history in which we are living and its rich display of events and forces through which students can be motivated to discover the economic way of thinking. Persistent slow economic growth; increasing concentration of wealth; headwinds from Europe's stagnant economy and the UK decision to leave the economic union (Brexit); ongoing tensions arising from the loss of American jobs to offshore outsourcing and the political popularity of trade protection; a slowing pace of China's expansion; enhanced concern about carbon emission and climate change; relentless pressure on the federal budget from the demands of an aging

population and a sometimes dysfunctional Congress with its associated rising government debt; the dilemma posed by slow, almost decade-long recovery from the global financial crisis and recession and the related question of when and how fast to exit an era of extreme monetary stimulus. These are just a few of these interest-arousing events. All of them feature at the appropriate points in our new edition.

Every chapter contains many small changes, all designed to enhance clarity and currency, and the text and examples are all thoroughly updated to reflect the most recently available data and events.

Because the previous edition's revision was so extensive and well-received, we have limited our interventions and changes in this Eighth Edition to addressing the small number of issues raised by our reviewers and users, ensuring that we are thoroughly up-to-date, and focusing on the new digital tools that we've just described. Nonetheless, some changes that we now summarize are worth noting.

■ Notable Content Changes

In Chapter 1, *Getting Started*, we have added a new section, *Economics as a Life Skill*, which explains how economics is used as a decision tool, the scientific method the subject employs, and economics as an aid to critical thinking. A new *Eye on Your Life* looks at the BLS data on student time allocation (which contains some surprises).

In Chapter 3, *The Economic Problem*, we show explicitly how the outward-bowed production possibilities frontier arises from exploiting comparative advantage.

Chapter 7, *Government Actions in Markets*, has a new section on production quotas, which explains why producers like them and illustrates how a quota expands producer surplus.

Chapter 8, *Taxes*, explains the Flat Tax and Fair Tax proposals and compares their efficiency and equity properties with those of the existing tax code.

In Chapter 10, *Externalities*, we have expanded our discussion of carbon emissions and the global challenge of achieving an efficient use of energy resources.

Chapter 11, *Public Goods and Common Resources*, now uses the efficient provision of transportation infrastructure as its motivating example and discusses the underprovision that results from limited revenue sources.

Chapter 12, retitled *Private Information and Healthcare Markets*, has a new and expanded coverage of the economics of healthcare insurance and services. It identifies the sources of healthcare market failure and describes and compares alternative solutions including Obamacare and the healthcare systems of Canada and Europe.

In Chapter 20, *Economic Inequality*, we have broadened our examination of inequality trends with a focus on the income share of the top one percent—the great compression through the mid-1970s and the great divergence of the past 40 years. We have also expanded our coverage of mobility up and down the income quintiles.

■ Outcome-Driven Teaching and Learning

An overarching revision message is that this text, its customized MyEconLab, and classroom resources are built to support an outcome-driven teaching and learning program in which the principles of economics course strengthens

- Problem solving
- Critical thinking
- Decision making
- Citizenship

Problem solving is central to the *Foundations* story. A Checkpoint at the end of each topic, typically three per chapter, provides a pause and opportunity to check understanding with problems, one of which is driven by a recent news clip, and worked solutions. A series of MyEconLab Solutions Videos then give the student an alternative way of reviewing the solutions to these problems.

Critical thinking is encouraged and supported through a series of interactive exercises in MyEconLab. In each chapter, there is one exercise that is based on the question or issue that opens and motivates the chapter, and a second that builds from an *Economics in Your Life* feature.

■ Enhanced eText

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

The new eText includes:

- A Big Picture Video that motivates and summarizes each chapter and provides an outline answer to the chapter's motivating question.
- A series of Concept Videos that illustrate and explain the key ideas in each section of a chapter. These videos also contain animations and explanations of each figure, which can be played separately.
- A series of Solutions Videos that walk the student through the solutions to the Practice Problems and In the News exercises in each Checkpoint.
- Study Plan links that provide opportunities for more practice with problems similar to those in the text, that give targeted feedback to guide the student in answering the exercises.
- Key Terms Quiz links that provide opportunities for students to check their knowledge of the definitions and uses of the key terms.

THE FOUNDATIONS VISION

■ Focus on Core Concepts

Each chapter of *Foundations* concentrates on a manageable number of main ideas (most commonly three or four) and reinforces each idea several times throughout the chapter. This patient, confidence-building approach guides students through unfamiliar terrain and helps them to focus their efforts on the most important tools and concepts of our discipline.

■ Many Learning Tools for Many Learning Styles

Foundations' integrated print and electronic package builds on the basic fact that students have a variety of learning styles. Students have powerful tools at their fingertips: Within the eText, they can get an immediate sense of the content of a chapter by playing the Big Picture video; learn the key ideas by playing the Concept videos; and get a quick walkthrough of the Checkpoint Practice Problems and In the News exercises with the Solutions videos.

In MyEconLab, students can complete all Checkpoint problems and In the News exercises online and get instant feedback; work with interactive graphs and real-time data graphs; assess their skills by taking Practice Tests; receive a personalized Study Plan; and step-by-step help through the learning aid called "Help Me Solve This."

■ Diagrams That Tell the Whole Story

We developed the style of our diagrams with extensive feedback from faculty focus-group participants and student reviewers. All of our figures make consistent use of color to show the direction of shifts and contain detailed, numbered captions designed to direct students' attention step-by-step through the action.

Because beginning students of economics are often apprehensive about working with graphs, we have made a special effort to present material in as many as three ways—with graphs, words, and tables—in the same figure. In an innovation that seems necessary, but is to our knowledge unmatched, nearly all of the information supporting a figure appears on the same page as the figure itself. No more flipping pages back and forth!

■ Real-World Connections That Bring Theory to Life

Students learn best when they can see the purpose of what they are studying, apply it to illuminate the world around them, and use it in their lives.

Eye On boxes offer fresh new examples to help students see that economics is everywhere. Current and recent events appear in *Eye on the U.S. Economy* boxes; we place current U.S. economic events in global and historical perspectives in our *Eye on the Global Economy* and *Eye on the Past* boxes; and we show how students can use economics in day-to-day decisions in *Eye on Your Life* boxes.

Each chapter-opening question is answered in an *Eye On* box that helps students see the economics behind a key issue facing the world and highlights a major aspect of the chapter's story.

ORGANIZATION

We have organized the sequence of material and chapters in what we think is the most natural order in which to cover the material. But we recognize that there are alternative views on the best order. We have kept this fact and the need for flexibility firmly in mind throughout the text. Many alternative sequences work, and the Flexibility Chart on p. xxxiv explains the alternative pathways through the chapters. In using the flexibility information, keep in mind that the best sequence is the one in which we present the material. And even chapters that the flexibility charts identify as strictly optional are better covered than omitted.

MYECONLAB

MyEconLab

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

- All of the Checkpoint and Chapter Checkpoint Problems and Applications can be assigned and automatically graded in MyEconLab.
- Extra problems and applications, including algorithmic, draw-graph, and numerical exercises can be used for student practice or instructor assignment.
- Test Item File questions can be assigned in quiz, test, or homework.
- The Custom Exercise Builder gives instructors the flexibility 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.

New for the Eighth Edition is an Enhanced Pearson eText, which includes embedded and auto-graded practice, real-time data graphs, animations, videos, and more. Instructors can share comments or highlights, and students can add their own, for a tight community of learners in any class.

With the Pearson eText 2.0 mobile app students can access the Enhanced eText and all its functionality from their computer, tablet, or cell phone. Because the student's progress is synced across all of their devices, they can stop what they're doing on one device and pick up again later on another one—without breaking their stride.

■ Features of the Enhanced eText

Big Picture Videos Big Picture videos, tied to the Chapter Checklist, set the stage for the main concept that will be introduced throughout the chapter. Students can use these videos to prepare for today's lecture or to help them focus on main chapter ideas.

DEMAND and SUPPLY: THE BIG PICTURE

Buyers like a low price, and the lower the price, the greater is the quantity they plan to buy—the **law of demand**.

Sellers like a high price, and the higher the price, the greater is the quantity they plan to sell—the **law of supply**.

Too high a price brings a surplus, and too low a price brings a shortage.

When there is a surplus, the price falls; and when there is a shortage, the price rises—the **law of market forces**.

MyEconLab Concept Video 4.2 SUPPLY

A market has two sides. On one side are the buyers, or demanders, that we've just studied. On the other side of the market are the sellers, or suppliers. We now study the forces that determine suppliers' plans.

Quantity supplied
The amount of any good, service, or resource that people are willing and able to sell during a specified period at a specified price.

The **quantity supplied** of a good, service, or resource is the amount that people are willing and able to sell during a specified period at a specified price. For example, when the price of spring water is \$1.50 a bottle, a spring owner decides to sell 2,000 bottles a day. The 2,000 bottles a day is the quantity supplied of spring water by this individual producer. (As in the case of demand, the quantity supplied is measured as an amount *per unit of time*.)

Many things influence selling plans, and one of them is the price. We look first at the relationship between quantity supplied of a good and its price. To study this relationship, we keep all other influences on selling plans the same, and we ask: Other things remaining the same, how does the quantity supplied of a good change as its price varies? The law of supply provides the answer.

The Law of Supply
The **law of supply** states:

Other things remaining the same, if the price of a good rises, the quantity supplied of that good increases; and if the price of a good falls, the quantity supplied of that good decreases.

So the law of supply states that when all other things remain the same, if the

Concept Videos Concept videos accompany every major section of each chapter and are designed to briefly present the major concepts and graphical tools covered within key sections. Using text, audio, and animation, Concept videos enable students with different learning styles to efficiently study and review key concepts of the chapter.

Animations Every textbook figure includes 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.

Embedded MyEconLab Assessment Every Checkpoint Practice Problem, every In the News problem, and every Study Plan Problem and Application in the enhanced eText can be worked by the student directly from the eText page on which it occurs. These problems are auto-graded and feed into the MyEconLab's Study Plan, where students receive recommendations based upon their performance.

Aqua Springs makes the following four statements about bottled spring water. Which statement best describes the firm's **quantity supplied** in the bottled-water market?

A We would sell more water if the demand for it were greater.

B At a price of \$1 gallon, we plan to sell 2,000 gallons per day.

C We'll switch from plain water to flavored water if flavored is more profitable.

D If we could get a higher price, we'd bottle more water.

Fantastic!

The quantity supplied is the amount of any good, service, or resource that people are willing and able to sell during a specified period at a specified price. So when Aqua Springs says "At a price of \$1 gallon, we plan to sell 2,000 gallons per day," the firm is describing a quantity supplied.

Done

Key Terms Quiz The Key Terms Quiz, accessible from each Checkpoint, allows students to check their understanding of key chapter concepts before moving onto the next section. The Interactive Glossary that supports the enhanced eText provides the key term definition, an example, and related terms.

CHECKPOINT 7.1 MyEconLab Study Plan 7.1 Key Terms Quiz Solutions Video

Explain how a price ceiling works, and why a rent ceiling creates a housing shortage and is inefficient and unfair.

Practice Problems

Figure 1 shows the rental market for apartments in Corsicana, Texas.

1. What is the rent and how many apartments are rented? If a rent ceiling of \$500 a month is set, what is the rent and how many apartments are rented?
2. If the city government imposes a rent ceiling of \$600 a month, what is the rent and how many apartments are rented? If a black market develops, explain how high the black market rent could be.
3. If the city government imposes a rent ceiling of \$600 a month and enforces it, is the housing market efficient? What is the deadweight loss? Is the housing market fair? Explain your answer.

In the News

A gas price ceiling
China has cut the price of natural gas and may install a price ceiling that prohib-

FIGURE 1
Rent (dollars per month)

Quantity (hundreds of apartments)

Solutions Videos Every Checkpoint Practice problem and In the News problem is supported by a Solutions video that provides a step-by-step working of the problem, including graphical analysis. Text, audio, and animation ensure that a student understands how to set-up and solve each of the problems.

■ MyEconLab also includes:

Economics in the News Economics in the News is a turn-key solution to bringing current news into the classroom. Updated daily 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.

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.

Each Digital Interactive has 3 to 5 progressive levels and requires approximately 20 minutes to explore, apply, compare, and analyze each topic.

Digital Interactives can be assigned and graded within MyEconLab, or used as a lecture tool to encourage engagement, classroom conversation, and group work.

Topics include:

Comparative Advantage

Opportunity Cost

Demand & Supply

Elasticity

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

Learning Catalytics Learning Catalytics helps you generate class discussion, customize your lecture, and promote peer-to-peer learning with real-time analytics. As a student response tool, Learning Catalytics uses students' smartphones, tablets, or laptops to engage them in more interactive tasks and thinking.

- NEW! Upload a full PowerPoint® deck for easy creation of slide questions.
- Help your students develop critical thinking skills.
- Monitor responses to find out where your students are struggling.
- Rely on real-time data to adjust your teaching strategy.
- Automatically group students for discussion, teamwork, and peer-to-peer learning.

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.

- Single-player experiments, available to assign, allow your students to play against virtual players from anywhere at anytime so long as they have an internet connection.
- Multiplayer experiments allow you to assign and manage a real-time experiment with your class.
- Pre and post-questions for each experiment are available for assignment in MyEconLab.
- Experiments are auto-graded using algorithms that objectively evaluate a student's economic gain and performance during the experiment.

AACSB and Learning Outcomes All end-of-chapter and Test Item File questions are tagged in two ways: to AACSB standards and to discipline-specific Learning Outcomes. These two separate tagging systems allow professors to build assessments around desired departmental and course outcomes and track results in MyEconLab's gradebook.

Personalized Study Plan The Personalized Study Plan provides recommendations for each of your students based on his or her ability to master the learning objectives in your course. This allows students to focus their study time by pinpointing the precise areas they need to review and allowing them to use customized practice and learning aids—such as videos, eText, tutorials, and more—to get them back on track. The Study Plan also ensures that your students are mastering the concepts, not just guessing the answers.

Using the report available in the Gradebook, you can then tailor course lectures to prioritize the content where students need the most support—offering you better insight into classroom and individual performance.

Dynamic Study Modules Dynamic Study Modules help students study effectively on their own by continuously assessing their activity and performance in real time. Here's how it works: students complete a set of questions with a unique answer format that also asks them to indicate their confidence level. Questions repeat until the student can answer them all correctly and confidently. Once completed, Dynamic Study Modules explain the concept using materials from the text. These are available as graded assignments prior to class, and accessible on smartphones, tablets, and computers.

NEW! Instructors can now remove questions from Dynamic Study Modules to better fit their course.

SUPPORT MATERIALS FOR INSTRUCTORS AND STUDENTS

Foundations of Microeconomics is accompanied by the most comprehensive set of teaching and learning tools ever assembled. Each component of our package is organized by Checkpoint topic for a tight, seamless integration with both the textbook and the other components. In addition to authoring the MyEconLab Study Plan and Assignment problems, PowerPoint resources, and Video scripts, we have helped in the reviewing and revising of the Solutions Manual, Instructor's Manual, and Test Item Files to ensure that every element of the package achieves the consistency that students and teachers need.

■ PowerPoint Resources

We have created the PowerPoint resources based on our 24 years of experience using this tool in our own classrooms. We have created four sets of PowerPoint presentations for instructors. They are:

- Lecture notes with full-color, animated figures, and tables from the textbook
- Figures and tables from the textbook, animated with step-by-step walk-through for instructors to use in their own personal slides
- *Eye On* features
- Alternative micro lecture notes with full-color, animated figures and tables that use examples different from those in the textbook

A student version of the lecture notes is also available on MyEconLab.

■ Instructor's Manual

The Instructor's Manual, written by Luke Armstrong and reviewed by Mark Rush, contains chapter outlines and road maps, additional exercises with solutions, a comprehensive Chapter Lecture resource, and a virtual encyclopedia of suggestions on how to enrich class presentation and use class time efficiently. The Instructor's Manual has been updated to reflect changes in the main text as well as infused with a fresh and intuitive approach to teaching this course. The Instructor's Manual is available for download in Word and PDF formats.

■ Solutions Manual

The Solutions Manual, written by Mark Rush and checked for accuracy by Jeannie Gillmore, contains the solutions to all Chapter Checkpoint Study Plan Problems and Applications, Instructor Assignable Problems and Applications, and the Multiple Choice Quiz. The Solutions Manual is available for download in Word and PDF formats.

■ Three Test Item Files and TestGen

More than 6,000 multiple-choice, numerical, fill-in-the-blank, short answer, essay, and integrative questions make up the three Test Item Files that support *Foundations of Microeconomics*. Mark Rush reviewed and edited the updated and new questions from three dedicated principles instructors to form one of the most comprehensive testing systems on the market. Our questions were written by Carol Dole (Jackson University). The entire set of questions is available for download in Word, PDF, and TestGen formats.

All three Test Item Files are available in test generator software (TestGen with QuizMaster). TestGen's graphical interface enables instructors to view, edit, and add questions; transfer questions to tests; and print different forms of tests. Instructors also have the option to reformat tests with varying fonts and styles, margins, and headers and footers, as in any word-processing document. Search and sort features let the instructor quickly locate questions and arrange them in a preferred order. QuizMaster, working with your school's computer network, automatically grades the exams, stores the results on disk, and allows the instructor to view and print a variety of reports.

■ Instructor's Resource Center

This page on the Pearson Higher Education website (www.pearsonhighered.com/IRC) contains the Instructor's Manual, Solutions Manual, and Test Item Files in Word and PDF formats. It also contains the Computerized Test Item Files (with a TestGen program installer) and PowerPoint resources. It is compatible with both Windows and Macintosh operating systems.

For access or more information, contact your local Pearson representative or request access online at the Instructor Resource Center.

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Working on a project such as this one generates many debts that can never be repaid. But they can be acknowledged, and it is a special pleasure to be able to do so here and to express our heartfelt thanks to each and every one of the following long list, without whose contributions we could not have produced *Foundations*.

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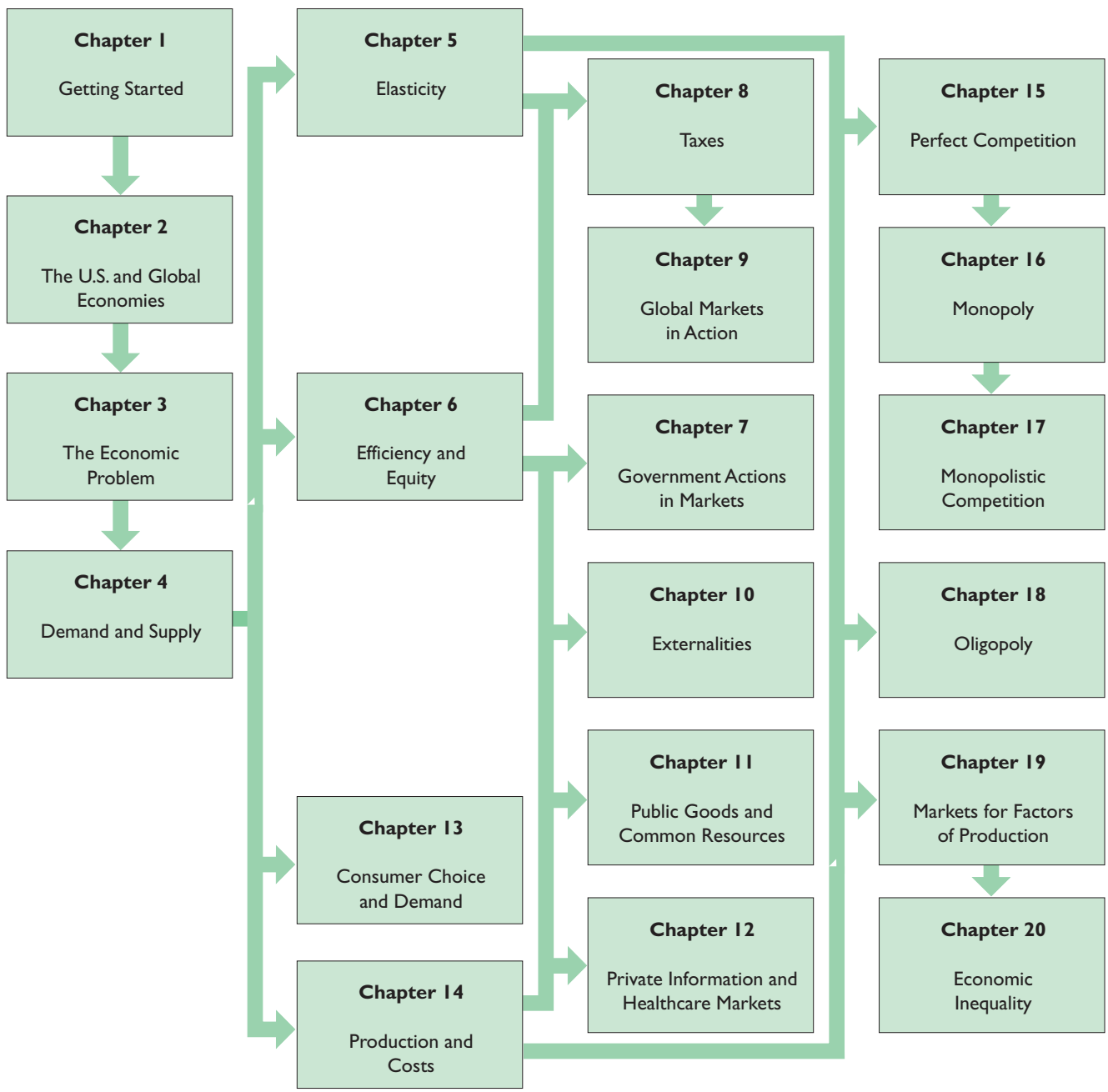
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FOUNDATIONS OF ECONOMICS: FLEXIBILITY CHART

Micro Flexibility



Start here ...

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

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

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You're in school!
Did you make the right decision?

Getting Started

When you have completed your study of this chapter, you will be able to

- 1 Define economics and explain the kinds of questions that economists try to answer.
- 2 Explain the ideas that define the economic way of thinking.
- 3 Explain how economics is useful as a life skill.



CHAPTER CHECKLIST

[MyEconLab](#) Big Picture Video

MyEconLab Concept Video

1.1 DEFINITION AND QUESTIONS

Well, did you make the right decision? Is being in school the best use of your time? You'll soon know how an economist answers this question—for it is an economic question. It arises from the fact that you want more than you can get. You want to be in school. But you also want the time to enjoy your favorite sports and movies, to travel, and to hang out with friends—time that right now you don't have because you've got classes to attend and assignments due. Your time is scarce.

■ Scarcity

Our inability to satisfy all our wants is called **scarcity**. The ability of each of us to satisfy our wants is limited by the time we have, the incomes we earn, and the prices we pay for the things we buy. These limits mean that everyone has unsatisfied wants. The ability of all of us as a society to satisfy our wants is limited by the productive resources that exist. These resources include the gifts of nature, our labor and ingenuity, and the tools and equipment that we have made.

Everyone, poor and rich alike, faces scarcity. A student wants Taylor Swift's latest album and a paperback but has only \$10.00 in his pocket. He faces scarcity. Gwen Stefani wants to spend a week on the set of *The Voice* in L.A., but she also wants to devote time and energy to her successful clothing line. She faces scarcity. The U.S. government wants to increase spending on homeland security and cut taxes. It faces scarcity. An entire society wants improved healthcare, an Internet connection in every classroom, clean lakes and rivers, and so on. Society faces scarcity. Scarcity is everywhere: Even parrots face scarcity!

Faced with scarcity, we must make choices. We must choose among the available alternatives. The student must choose the download or the paperback. Gwen Stefani must choose shooting episodes of *The Voice* or designing her next clothing collection. The government must choose greater security or tax cuts. And society must choose among healthcare, computers, the environment, and so on.

■ Economics Defined

Economics is the social science that studies the choices that individuals, businesses, governments, and entire societies make as they cope with *scarcity*, all the things that influence those choices, and the arrangements that coordinate them.

The subject has two broad parts:

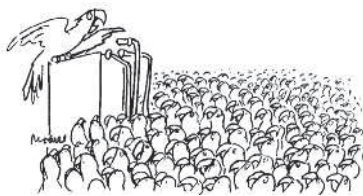
- Microeconomics, and
- Macroeconomics

Microeconomics

Microeconomics is the study of the choices that individuals and businesses make and the way these choices interact and are influenced by governments. Some examples of microeconomic questions are: Will you buy a 3-D TV or a standard one? Will Nintendo sell more units of Wii if it cuts the price? Will a cut in the income tax rate encourage people to work longer hours? Will a hike in the gas tax encourage more people to drive hybrid or smaller automobiles? Is music streaming killing song downloads?

Scarcity

The condition that arises because wants exceed the ability of resources to satisfy them.



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

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Economics

The social science that studies the choices that individuals, businesses, governments, and entire societies make as they cope with *scarcity*, all the things that influence those choices, and the arrangements that coordinate them.

Microeconomics

The study of the choices that individuals and businesses make and the way these choices interact and are influenced by governments.

Macroeconomics

Macroeconomics is the study of the aggregate (or total) effects on the national economy and the global economy of the choices that individuals, businesses, and governments make. Some examples of macroeconomic questions are: Why did production and jobs expand slowly in the United States during 2014 and 2015? Why are incomes growing much faster in China and India than in the United States? Why is unemployment in Europe so high? Why are Americans borrowing more than \$1 billion a day from the rest of the world?

Two big questions define the scope of economics:

- How do choices end up determining *what*, *how*, and *for whom* goods and services get produced?
- When 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 and actions that people value and produce to satisfy human wants. Goods are *objects* that satisfy wants. Sports shoes and ketchup are examples. Services are *actions* that satisfy wants. Haircuts and rock concerts are examples. We produce a dazzling array of goods and services that range from necessities such as food, houses, and healthcare to leisure items such as Blu-ray players and roller coaster rides.

What?

What determines the quantities of corn we grow, homes we build, and healthcare services we produce? Sixty years ago, farm output was 5 percent of total U.S. production. Today, it is 1 percent. Over the same period, the output of mines, construction, and utilities slipped from 9 percent to 7 percent of total production and manufacturing fell from 28 percent to 12 percent. These decreases in output are matched by increases in the production of a wide range of services, up from 58 percent of total production 60 years ago to 80 percent today. How will these quantities change in the future as ongoing changes in technology make an ever-wider array of goods and services available to us?

How?

How are goods and services produced? In a vineyard in France, a hundred basket-carrying workers pick the annual grape crop by hand. In a vineyard in California, a huge machine and a few workers do the same job. Look around and you will see many examples of this phenomenon—the same job being done in different ways. In some stores, checkout clerks key in prices. In others, they use a laser scanner. One farmer keeps track of his livestock feeding schedules and inventories by using paper-and-pencil records, while another uses a computer. In some plants, GM hires workers to weld auto bodies and in others it uses robots to do the job.

Why do we use machines in some cases and people in others? Do mechanization and technological change destroy more jobs than they create? Do they make us better off or worse off?

Macroeconomics

The study of the aggregate (or total) effects on the national economy and the global economy of the choices that individuals, businesses, and governments make.

Goods and services

The objects (goods) and the actions (services) that people value and produce to satisfy human wants.



In a California vineyard a machine and a few workers do the same job as a hundred grape pickers in France.



A doctor gets more of the goods and services produced than a nurse or a medical assistant gets.

For Whom?

For whom are goods and services produced? The answer depends on the incomes that people earn and the prices they pay for the goods and services they buy. At given prices, a person who has a high income is able to buy more goods and services than a person who has a low income. Doctors earn much higher incomes than do nurses and medical assistants, so doctors get more of the goods and services produced than nurses and medical assistants get.

You probably know about many other persistent differences in incomes. Men, on average, earn more than women. Whites, on average, earn more than minorities. College graduates, on average, earn more than high school graduates. Americans, on average, earn more than Europeans, who in turn earn more, on average, than Asians and Africans. But there are some significant exceptions. The people of Japan and Hong Kong now earn an average income similar to that of Americans. And there is a lot of income inequality throughout the world.

What determines the incomes we earn? Why do doctors earn larger incomes than nurses? Why do men earn more, on average, than women? Why do college graduates earn more, on average, than high school graduates? Why do Americans earn more, on average, than Africans?

Economics explains how the choices that individuals, businesses, and governments make and the interactions of those choices end up determining *what*, *how*, and *for whom* goods and services are produced. In answering these questions, we have a deeper agenda in mind. We're not interested in just knowing how many Blu-ray players are produced, how they are produced, and who gets to enjoy them. We ultimately want to know the answer to the second big economic question that we'll now explore.

■ Can the Pursuit of Self-Interest Be in the Social Interest?

Every day, you and 321 million other Americans, along with 7.2 billion people in the rest of the world, make economic choices that result in "*what*," "*how*," and "*for whom*" goods and services are produced.

Are the goods and services produced, and the quantities in which they are produced, the right ones? Are the scarce resources used in the best possible way? Do the goods and services we produce go to those who benefit most from them?

Self-Interest and the Social Interest

Choices that are the best for the individual who makes them are choices made in the pursuit of **self-interest**. Choices that are the best for society as a whole are said to be in the **social interest**. The social interest has two dimensions: *efficiency* and *equity*. We'll explore these concepts in later chapters. For now, think of efficiency as being achieved by baking the biggest possible pie, and think of equity as being achieved by sharing the pie in the fairest possible way.

You know that your own choices are the best ones for you—or at least you *think* they're the best at the time that you make them. You use your time and other resources in the way that you think is best. You might consider how your choices affect other people, but you order a home delivery pizza because you're hungry and want to eat, not because you're concerned that the delivery person or the cook needs an income. You make choices that are in your self-interest—choices that you think are best for you.

Self-interest

The choices that are best for the individual who makes them.

Social interest

The choices that are best for society as a whole.

When you act on your economic decisions, you come into contact with thousands of other people who produce and deliver the goods and services that you decide to buy or who buy the things that you sell. These people have made their own decisions—what to produce and how to produce it, whom to hire or whom to work for, and so on. Like you, all these people make choices that they think are best for them. When the pizza delivery person shows up at your home, he’s not doing you a favor. He’s earning his income and hoping for a good tip.

Can it be possible that when each one of us makes choices that are in our own best interest—in our self-interest—it turns out that these choices are also the best choices for society as a whole—in the social interest?

Adam Smith, regarded as the founder of economic science, (see *Eye on the Past* on p. 18) said the answer is *yes*. He believed that when we pursue our self-interest, we are led by an *invisible hand* to promote the social interest.

Is Adam Smith correct? Can it really be possible that the pursuit of self-interest promotes the social interest? Much of the rest of this book helps you to learn what economists know about this question and its answer. To help you start thinking about the question, we’re going to illustrate it with four topics that generate heated discussion in today’s world. You’re already at least a little bit familiar with each one of them. They are

- Globalization
- The information revolution
- Climate change
- Government budget deficit and debt

Globalization

Globalization—the expansion of international trade and the production of components and services by firms in other countries—has been going on for centuries. But in recent years, its pace has accelerated. Microchips, satellites, and fiber-optic cables have lowered the cost of communication and globalized production decisions. When Nike produces more sports shoes, people in Malaysia get more work. When Steven Spielberg makes a new movie, programmers in New Zealand write the code that makes magical animations. And when China Airlines wants a new airplane, Americans who work for Boeing build it.

Globalization is bringing rapid income growth, especially in Asia. But globalization is leaving some people behind. Jobs in manufacturing and routine services are shrinking in the United States, and some nations of Africa and South America are not sharing in the prosperity enjoyed in other parts of the world.

The owners of multinational firms benefit from lower production costs and consumers benefit from low-cost imported goods. But don’t displaced American workers lose? And doesn’t even the worker in Malaysia, who sews your new shoes for a few cents an hour, also lose? Is globalization in the social interest, or does globalization benefit just some at the expense of others?

The Information Revolution

We are living at a time of extraordinary economic change that has been called the *Information Revolution*. This name suggests a parallel with the *Industrial Revolution* of the 1800s and the *Agricultural Revolution* of 12,000 years ago.

The changes that have occurred during the last 35 years are based on one major technology: the microprocessor or computer chip. The spin-offs from faster



Workers in Asia make our shoes.



Robots fill orders at Amazon.

and cheaper computing have been widespread in telecommunications, music, and the automation of millions of tasks that previously required human decisions. You encounter some of these tasks when you check out at the grocery store or use an ATM. Less visible, but larger in scope, are the robots that assemble cars and move goods around warehouses. Over the next 20 years, more than one third of today's jobs will be done by a new generation of robots.

The computing and robot revolution resulted from people pursuing their self-interest. Gordon Moore, the chip maker who set up Intel, and Bill Gates, who quit Harvard to set up Microsoft, weren't thinking how much easier it would be for you to turn in your essay on time if you had a computer. Moore and Gates and thousands of other entrepreneurs were in pursuit of big rewards. Yet their actions made many other people better off. They advanced the social interest.

But are resources used in the best possible way? Or do Intel and Microsoft set their prices too high and put their products out of reach for too many people? And is it in the social interest for robots to take people's jobs?

Climate Change



Human activity is raising the Earth's surface temperature.

The Earth is getting hotter and the ice at the two poles is melting. Since the late nineteenth century, the Earth's surface temperature has increased about 1 degree Fahrenheit, and close to a half of that increase occurred over the past 25 years.

Most climate scientists believe that the current warming has come at least in part from human economic activity—from self-interested choices—and that, if left unchecked, the warming will bring large future economic costs.

Are the individual energy choices that each of us makes damaging the social interest? What needs to be done to make our choices serve the social interest? Would the United States joining with other nations to limit carbon emissions serve the social interest? What other measures might be introduced?

Government Budget Deficit and Debt



A government budget time bomb is ticking as spending grows faster than tax revenues.

Every year since 2000, the U.S. government has run a budget deficit. On average, the government has spent \$2.3 billion a day more than it has received in taxes. The government's debt has increased each day by that amount. Over the 15 year period from 2000 to 2015, government debt increased by \$12.5 trillion. Your personal share of this debt is \$56,000.

This large deficit and debt is just the beginning of an even bigger problem. From about 2020 onwards, the retirement and healthcare benefits to which older Americans are entitled are going to cost increasingly more than current taxes can cover. With no changes in tax or benefit rates, the budget deficit will increase and the debt will swell ever higher.

Deficits and the debts they create cannot persist indefinitely, and debts must somehow be repaid. They will most likely be repaid by you, not by your parents. When we make our voter choices, we pursue our self-interest. Do our choices serve the social interest? Do the choices made by politicians and bureaucrats in Washington and the state capitals promote the social interest, or do they only serve their own self-interests?

The four issues we've just reviewed raise questions that are hard to answer. We'll return to each of them at various points throughout this text and explain when the social interest is served and when there remain problems to be solved.

CHECKPOINT 1.1

Define economics and explain the kinds of questions that economists try to answer.

[MyEconLab Study Plan 1.1](#)
[Key Terms Quiz](#)
[Solutions Video](#)

Practice Problems

1. Economics studies choices that arise from one fact. What is that fact?
2. Provide three examples of wants in the United States today that are especially pressing but not satisfied.
3. In the following three news items, find examples of the *what*, *how*, and *for whom* questions: “With more research, we will cure cancer”; “A good education is the right of every child”; “Congress raises taxes to curb the deficit.”
4. How does a new Starbucks in Beijing, China, influence self-interest and the social interest?
5. How does Facebook influence self-interest and the social interest?

In the News

1. The Bureau of Labor Statistics (BLS) reports that high-paying jobs in health-care and jobs in leisure, hospitality, and education will expand quickly over the next five years. How does the BLS expect *what* and *for whom* goods and services are produced to change in the next five years?
2. Hewlett-Packard will cut 30,000 jobs and lower its cost by \$2.7 billion a year.
Source: *Fortune*, October 1, 2015

Explain how Hewlett-Packard’s decision made in its self-interest might also be in the social interest.

Solutions to Practice Problems

1. The fact is scarcity—human wants exceed the resources available.
2. Examples would include security from terrorism, cleaner air in our cities, better public schools, and better public infrastructure. (Think of others.)
3. More research is a *how* question, and a cure for cancer is a *what* question. Good education is a *what* question, and every child is a *for whom* question. Raising taxes is a *for whom* question.
4. Decisions made by Starbucks are in Starbucks’ self-interest but they also serve the self-interest of its customers and so contribute to the social interest.
5. Facebook serves the self-interest of its investors, users, and advertisers. It also serves the social interest by enabling people to share information.

Solutions to In the News

1. The BLS expects the quantities of goods and services produced by workers in health-care, leisure, hospitality, and education to increase. For whom they are produced depends on how people’s incomes and the prices of goods and services will change in the next five years. The BLS expects workers in these high-paying jobs and expanding industries will get more of them.
2. Hewlett-Packard’s product prices might fall and benefit its customers. The laid-off workers will find new jobs, some of which might pay higher wages.

MyEconLab Concept Video

1.2 THE ECONOMIC WAY OF THINKING

The definition of economics and the kinds of questions that economists try to answer give you a flavor of the scope of economics. But they don't tell you how economists *think* about these questions and how they go about seeking answers to them. You're now going to see how economists approach their work.

We'll break this task into two parts. First, we'll explain the ideas that economists use to frame their view of the world. These ideas will soon have you thinking like an economist. Second, we'll look at economics both as a social science and as a policy tool that governments, businesses, and *you* can use.

Six ideas define the *economic way of thinking*:

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

■ A Choice Is a Tradeoff

A **tradeoff** is an exchange—giving up one thing to get something else. Because we face scarcity, we must make choices. And when we make a choice, we select from the available alternatives. You can think about choices as tradeoffs. When you choose one thing, you give up something else that you could have chosen.

Think about what you will do on Saturday night. You can spend the 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. When you choose how to spend your Saturday night, you face a tradeoff between studying and hanging out with your friends. To get more study time, you must give up some time with your friends.

■ Cost: What You Must Give Up

The **opportunity cost** of something is the best thing you must give up to get it. You most likely think about the cost of something as the money you must spend to get it. But dig a bit deeper. If you spend \$10 on a movie ticket, you can't spend it on a sandwich. The movie ticket really costs a sandwich. The *cost* of something is what must be given up to get it, not the money spent on it. Economists use the term *opportunity cost* to emphasize this view of cost.

The biggest opportunity cost you face is that of being in school. This opportunity cost has two components: things you can't afford to buy and 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 the things you can't afford to buy because you're in school. You've also given up the opportunity to get a job and buy the things that you could afford with your higher income. Suppose that the

Tradeoff

An exchange—giving up one thing to get something else.

Opportunity cost

The opportunity cost of something is the best thing you must give up to get it.



The opportunity cost of being in school: things you can't buy and do.

best job you could get if you weren't in school is working as a convenience store manager earning \$24,000 a year. Another part of your opportunity cost of being in school is all the things that you would buy with that extra \$24,000.

Now think about the time that being a student eats up. You spend many hours each week in class, doing homework assignments, preparing for tests, and so on. To do all these school activities, you must give up what would otherwise be time spent playing your favorite sport, time watching movies, and leisure time spent with your friends.

The opportunity cost of being in school is the best alternative things that you can't afford and that you don't have the time to enjoy. You might put a dollar value on this cost but the cost is the goods and services and time that you give up, not dollars.

■ Benefit: What You Gain

The **benefit** from something is the gain or pleasure that it brings, measured by what you are *willing to give up* to get it. Benefit is determined by personal *preferences*—by what a person likes and dislikes and the intensity of those feelings. If you get a huge kick out of Madden NFL, that video game brings you a large benefit. And 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 receive 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 for something that brings a large benefit. For example, because being in school brings a large benefit, you're *willing to give up* a lot of time and goods and services to get that benefit. But you're willing to give up very little for something that brings a small benefit. For example, you might be willing to give up one iTunes download to get a slice of pizza.

■ Rational Choice

A basic idea of economics is that in making choices, people act rationally. A **rational choice** is one that uses the available resources to best achieve the objective of the person making the choice.

But how do people choose rationally? The answer is by comparing the *benefits* and *costs* of the alternative choices and choosing the alternative that makes *net benefit*—benefit minus cost—as large as possible.

You have chosen to be a student. If that choice is rational, as economists assume, your benefit from being in school exceeds the cost, so your net benefit is maximized by being in school. For an outstanding baseball player, a high earning potential makes the opportunity cost of school higher than the benefit from school, so for that person, net benefit is maximized by choosing full-time sport. (*Eye on the Benefit and Cost of School* on p. 12 explores these examples more closely.)

The benefit from a choice is determined by the preferences of the person making the choice, so two people can make different rational choices even if they face the same cost. For example, you might like chocolate ice cream more than vanilla ice cream, but your friend prefers vanilla. So it is rational for you to choose chocolate and for your friend to choose vanilla.



The opportunity cost of being in school includes forgone earnings.

Benefit

The benefit from something is the gain or pleasure that it brings, measured by what you are *willing to give up* to get it.

Rational choice

A choice that uses the available resources to best achieve the objective of the person making the choice.