MICROECONOMICS

KARLAN / MORDUCH

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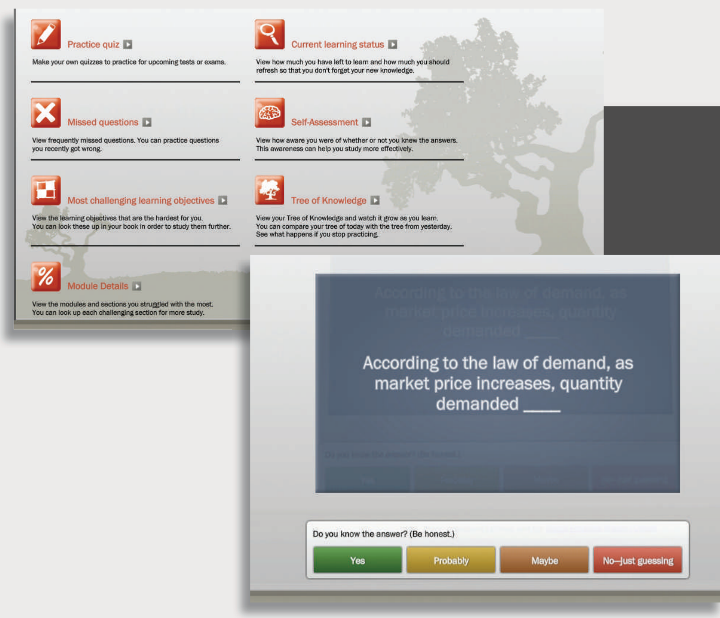

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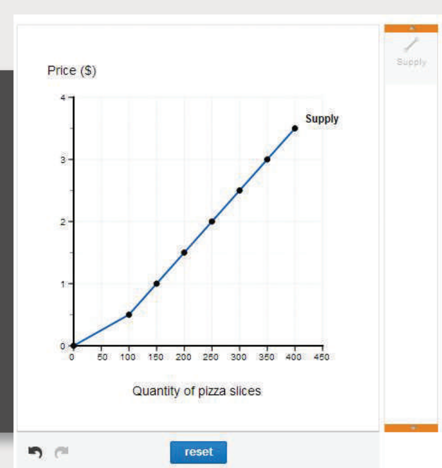

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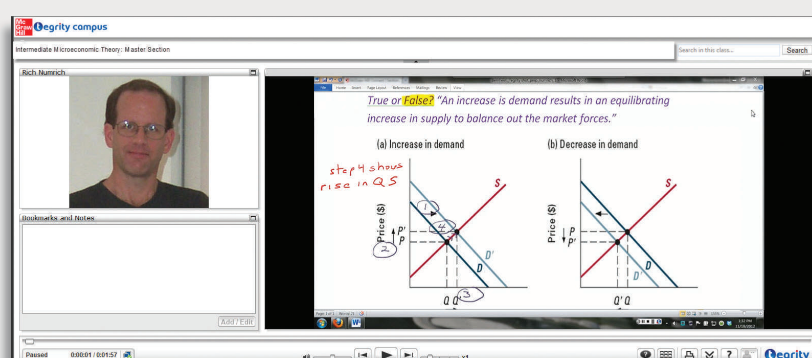

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MICROECONOMICS

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MICROECONOMICS

Dean Karlan
Yale University and Innovations for Poverty Action

Jonathan Morduch
New York University

With special contribution by
Meredith L. Startz
Yale University and Innovations for Poverty Action

MICROECONOMICS

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dedication

We dedicate this book to our families.

–Dean and Jonathan

about the authors

Dean Karlan

Dean Karlan is Professor of Economics at Yale University and President and Founder of Innovations for Poverty Action (IPA). Dean started IPA in 2002, with two aims: to help learn what works and what does not in the fight against poverty and other social problems around the world, and then to implement successful ideas at scale. IPA now works in over 45 countries, with 800 employees around the world. Dean's personal research focuses on using field experiments to learn more about how microfinance works and how to make it work better. His research uses ideas from behavioral economics, and also covers fundraising, voting, health, and education. In recent work, for example, he has studied the impact of microcredit on the lives of the poor, and has worked to create better financial products in the United States to help people manage debt. Dean is also President and cofounder of stickK.com, a start-up that helps people use commitment contracts to achieve personal goals, such as losing weight or completing a problem set on time. Dean is a Sloan Foundation Research Fellow, and in 2007 was awarded a Presidential Early Career Award for Scientists and Engineers. He is coeditor of the *Journal of Development Economics* and on the editorial board of *American Economic Journal: Applied Economics*. He holds a BA from University of Virginia, an MPP and MBA from University of Chicago, and a PhD in Economics from MIT. In 2011, he coauthored *More Than Good Intentions: Improving the Ways the World's Poor Borrow, Save, Farm, Learn, and Stay Healthy.*

Jonathan Morduch

Jonathan Morduch is Professor of Public Policy and Economics at New York University's Wagner Graduate School of Public Service. Jonathan focuses on innovations that expand the frontiers of finance and how financial markets shape economic growth and inequality. Jonathan has lived and worked in Asia, but his newest study follows families in California, Mississippi, Ohio, Kentucky, and New York as they cope with economic ups and downs over a year. The new study jumps off from ideas in *Portfolios of the Poor: How the World's Poor Live on $2 a Day* (Princeton University Press, 2009) which he coauthored and which describes how families in Bangladesh, India, and South Africa devise ways to make it through a year living on $2 a day or less. Jonathan's research on financial markets is collected in *The Economics of Microfinance* and *Banking the World,* both published by MIT Press. At NYU, Jonathan is Executive Director of the Financial Access Initiative, a center that supports research on extending access to finance in low-income communities. Jonathan's ideas have also shaped policy through work with the United Nations, World Bank, and other international organizations. In 2009, the Free University of Brussels awarded Jonathan an honorary doctorate to recognize his work on microfinance. He holds a BA from Brown and a PhD from Harvard, both in Economics.

Karlan and Morduch first met in 2001 and have been friends and colleagues ever since. Before writing this text, they collaborated on research on financial institutions. Together, they've written about new directions in financial access for the middle class and poor, and in Peru they set up a laboratory to study incentives in financial contracts for loans to women to start small enterprises. In 2006, together with Sendhil Mullainathan, they started the Financial Access Initiative, a center dedicated to expanding knowledge about financial solutions for the half of the world's adults who lack access to banks. This text reflects their shared passion for using economics to help solve problems, both in everyday life and in the broader world.

brief contents

preface

We offer this text, *Microeconomics*, as a resource for professors who want to *keep their students engaged* and who have been seeking to *deliver core economic concepts* along with an introduction to *important new ideas* in economic thought. We designed the text to help students see economics as a common thread that enables us to understand, analyze, and solve problems in our local communities and around the world.

Why Do We Teach Economics?

Economics helps us solve problems.

Economic principles can help students understand and respond to everyday situations. Economic ideas are also helping us tackle big challenges, such as fixing our health care system and keeping the government fiscally solvent. We show students how economic ideas are shaping their world, and we provide them with a wide-ranging set of practical insights to help develop their economic intuition.

Engagement with real-world problems is built into the fabric of our chapters, and throughout the text we present economic thinking as a common thread to help solve these. This compelling, problem-solving focus simplifies and streamlines the teaching of basic economic concepts by approaching topics intuitively and in a way that is useful to students. The text imparts to students the *immediacy* of how what they're learning *really matters*. As they read, faculty and students will find content that *breaks down barriers* between what goes on in the classroom and what is going on in our nation and around the world.

By providing a concrete, intuitive approach to introductory concepts, and by keeping the discussion always down-to-earth and lively, we make the learning materials easier to use in the classroom. The chapters are organized around a familiar curriculum while adding empirical context for ideas that students often find overly abstract or too simplified. The innovative, empirical orientation of the book enables us to incorporate intriguing findings from recent studies as well as to address material from such areas as game theory, finance, behavioral economics, and political economy. This approach connects concepts in introductory economics to important new developments in economic research, while placing a premium on *easy-to-understand explanations*.

In every chapter we fulfill three fundamental commitments:

- **To show how economics can solve real-life problems.** This text will engage students by approaching economics as a way of explaining real people and their decisions, and by providing a set of tools that serve to solve many different types of problems. *We show students that economics can make the world a better place*, while challenging them to reach their own conclusions about what "better" really means.
- **To teach principles as analytic tools for dealing with real situations.** The text is centered on examples and issues that resonate with students' experience. Applications come *first*, reinforcing the relevance of the tools that students acquire. Engaging empirical cases are interspersed throughout the content. The applications open up puzzles, anomalies, and possibilities that basic economic principles help explain. The aim is, first and foremost, to ensure that students gain an intuitive grasp of basic ideas.

- **To focus on what matters to students.** Students live in a digital, globalized world. We recognize that they are knowledgeable and care about both local and international issues. *Microeconomics* takes a global perspective, with the United States as a leading example. We remain faithful to the core principles of economics, but we seek to share with students some of the ways that new ideas are expanding the "basics" of economic theory. We recognize and explain the rise of game theory, behavioral economics, and experimental and empirical approaches, in ways that matter to students.

We are excited to offer standalone chapters that dig into some of the new topics in economics, as part of our commitment to teaching economics as a way to help solve important problems. We've watched as topics like political economy, game theory, behavioral economics, and inequality figure more and more prominently in undergraduate curricula with each passing year, and we felt it was important to provide teachers ways to share new ideas and evidence with their students—important concepts that most nonmajors would usually miss. We know how selective teachers must be in choosing which material to cover during the limited time available. In light of this, we've been especially glad to have the guidance we've received from many teachers in finding ways to expose students to some of the newer, and most exciting, parts of economics today.

We promise you will find the discussion and writing style of *Microeconomics* clear, concise, accessible, easy to teach from, and fun to read. We hope that this book will inspire students to continue their studies in economics, and we promise that *Microeconomics* will give them something useful to take away even if they choose other areas of study.

Motivation

Who are we?

Microeconomics draws on our own experiences as academic economists, teachers, and policy advisors. We are based at large research universities, offering advice to NGOs, governments, international agencies, donors, and private firms. Much of our research involves figuring out how to improve the way real markets function. Working with partners in the United States and on six continents, we are involved in testing new economic ideas. *Microeconomics* draws on the spirit of that work, as well as similar research, taking students through the process of engaging with real problems, using analytical tools to devise solutions, and ultimately showing what works and why.

Why have we written this text?

One of the best parts of writing this text has been getting to spend time with instructors across the country. We've been inspired by their creativity and passion and have learned from their pedagogical ideas. One of the questions we often ask is why the instructors originally became interested in economics. A common response, which we share, is an attraction to the logic and power of economics as a social science. We also often hear instructors describe something slightly different: the way that economics appealed to them as a tool for making sense of life's complexities, whether in business, politics, or daily life. We wrote this book to give instructors a way to share with their students both of those ways that economics matters.

Comprehensive and engaging, *Microeconomics* will provide students a solid foundation for considering important issues that they will confront in life. We hope that, in ways small and large, the tools they learn in these pages will help them to think critically about their environment and to live better lives.

Dean Karlan
Yale University

Jonathan Morduch
New York University

economics as a common thread

This text demonstrates how students can use basic economic principles to understand, analyze, and solve problems in their communities and around the world. Several basic pedagogical principles guide the organization of the content and support the implementation of the approach:

- **Concrete teaches abstract.** Interesting questions *motivate the learning of core principles* by showing how they are relevant to students. As often as possible, examples and cases lead into theory.
- **Uses current ideas and media.** The text provides students a view of what is actually going on in the world and in economics *right now*. It is *current in its content, method, and media.*
- **Takes a problem-solving approach.** This text shows economics as a way to explain real people and their decisions, and provides tools that can be used to solve many different types of problems. To complement this problem-solving approach, the authors have taken special care to offer *high-quality end-of-chapter problem sets* that engage students with realistic questions. Smoothly integrated with the chapter text, there are at least two review questions and two problems for each learning objective. Four additional problems for each learning objective also are available in *Connect*.

Four Questions about How Economists Think

The text's discussion is framed by *four questions* that economists ask to break down a new challenge and analyze it methodically. These four questions are explored and then carried throughout *Microeconomics* as a consistent problem-solving approach to a wide variety of examples and case studies so as to demonstrate how they can be used to address real issues. By teaching the *right questions to ask,* the text provides students with a method for working through decisions they'll face as consumers, employees, entrepreneurs, and voters.

Question 1: What are the wants and constraints of those involved? This question introduces the concept of *scarcity*. It asks students to think critically about the preferences and resources driving decision making in a given situation. It links into discussions of utility functions, budget constraints, strategic behavior, and new ideas that expand our thinking about rationality and behavioral economics.

Question 2: What are the trade-offs? This question focuses on *opportunity cost*. It asks students to understand trade-offs when considering any decision, including factors that might go beyond the immediate financial costs and benefits. Consideration of trade-offs takes us to discussions of marginal decision making, sunk costs, nonmonetary costs, and discounting.

Question 3: How will others respond? This question asks students to focus on *incentives,* both their incentives and the incentives of others. Students consider how individual choices aggregate in both expected and unexpected ways, and what happens when incentives change. The question links into understanding supply and demand, elasticity, competition, taxation, game theory, and monetary and fiscal policy.

Question 4: Why isn't everyone already doing it? This question relates to *efficiency*. It asks students to start from an assumption that markets work to provide desired goods and services, and then to think carefully about why something that seems like a good idea isn't already being done. We encourage students to revisit their answers to the previous three questions and see if they missed something about the trade-offs, incentives, or other forces at work, or whether they are looking at a genuine market failure. This question ties in with a range of topics, including public goods, externalities, information gaps, monopoly, arbitrage, and how the economy operates in the long run versus the short run.

Unique Coverage

Microeconomics presents the core principles of economics, but also seeks to share with students some of the ways that new ideas are *expanding* the basics of economic theory. The sequence of chapters follows a fairly traditional route through the core principles. However, the chapters on individual decision making (Part 3) appear before those on firm decisions (Part 4). By thinking first about the choices faced by individuals, students can engage with ideas that more closely relate to their own experiences. In this way, the organization of the text makes core economic ideas more immediately intuitive and better prepares students to eventually understand the choices of firms, groups, and governments. The text proceeds step-by-step from the personal to the public, allowing students to build toward an understanding of aggregate decisions on a solid foundation of individual decision making.

Microeconomics offers several standalone chapters focused on new ideas that are expanding economic theory, which can add nuance and depth to the core principles curriculum:

8 **Behavioral Economics: A Closer Look at Decision Making**

> *"I like that [this chapter] is shorter than most chapters so I can cover it in less time. It makes the introduction of this topic, which is super-engaging to students, more flexible for being worked into a class."* – Jennifer Vincent, *Champlain College*

9 **Game Theory and Strategic Thinking**

> *"… uses very good examples with which the students are likely to be familiar."* –Greg Salzman, *Albion College*

10 **Information**

> *"Excellent introduction to Information Economics—very readable and interesting. The fact that it is presented as an independent chapter is important. [It's] a welcome addition to a principles text."* –Max Grunbaum Nagiel, *Daytona State College*

11 **Time and Uncertainty**

> *"This is a topic that trips students up more than other topics, yet it is very important in terms of thinking about business problems and health economics, and . . . is also the foundation for thinking about interest rates. The [chapter] also brings in a lot of 'gee whiz' facts that relate to the concepts and could make for college dinner table discussions."* –Ashley Hodgson, *St. Olaf College*

22 **Political Choices**

> *"This is a refreshing chapter not seen in many other introductory level textbooks. The analysis is presented clearly and simply enough that the introductory student can understand it."* –Jason Rudbeck, *University of Georgia*

23 **Public Policy and Choice Architecture**

> *"I hope it will intrigue students … it did me!"* –Karla Lynch, *North Central Texas College*

The text's most important commitment is to make sure that students understand the basic analytical tools of economics. Because students sometimes need reinforcement with the math requirements, *Microeconomics* also contains six unique math appendixes that explain math topics important to understanding economics:

APPENDIX A	Math Essentials: Understanding Graphs and Slope
APPENDIX B	Math Essentials: Working with Linear Equations
APPENDIX C	Math Essentials: Calculating Percentage Change, Slope, and Elasticity
APPENDIX D	Math Essentials: The Area under a Linear Curve
APPENDIX E	Using Indifference Curves
APPENDIX F	Math Essentials: Compounding

McGraw-Hill Create™ enables you to select and arrange the combination of traditional and unique chapters and appendixes that will be perfect for *your* course, at an affordable price for *your* students.

modern teaching approach

In addition to the regular chapter features found in almost every textbook, this text includes several unique features that support a modern teaching approach.

Interesting Examples Open Each Chapter

Interesting examples open each chapter. These chapter-opening stories feature issues that consumers, voters, businesspeople, and family members face, and they are presented in an engaging, journalistic style. The examples then take students through relevant principles that can help frame and solve the economic problem at hand. Here is a sample of the chapter-opening features:

- Making an Impact with Small Loans
- The Origins of a T-Shirt
- Mobiles Go Global
- Coffee Becomes Chic
- A Broken Laser Pointer Starts an Internet Revolution
- The Season for Giving
- When Is $20 Not Quite $20?
- Litterbugs Beware
- A Solution for Student Loans?
- Is College Worth It?
- The Fields of California

REAL LIFE

Bazaar competition

Bazaars are often the most vibrant and colorful places in towns and cities around the world. International travelers are sometimes surprised to see massive bazaars that specialize in one very specific type of product, such as fruit, flowers, furniture, or fabric. In many cities, there are huge markets where hundreds and even thousands of vendors all sell exactly the same goods for exactly the same prices.

This tendency may seem perplexing. We sometimes see something similar in the United States: All the auto dealers in town may locate on the same road, for example. Thi[illegible] increases th[illegible] chances of attracti[illegible] stomers who want to test-drive [illegible]

WHAT DO YOU THINK?

Is self-sufficiency a virtue?

Why should the United States trade with other countries? If every other country in the world were to disappear tomorrow, the United States would probably manage to fend for itself. It has plenty of fertile land, natural resources, people, and manufacturing capacity. In fact, many observers consider the value Americans place on self-sufficiency to be a cultural trait.

Based on what you now know about specialization and the gains from trade, what do you think about the value of exchange versus the value of self-sufficiency? Economists tend to line up in favor of free internation[illegible] trade; they argue tha[illegible] trade makes both [illegible]ally better [illegible]

What do you think?

1. Do you agree with any of these objections to free trade? Why? When is self-sufficiency more valuable than the gains from trade?
2. Is the choice between trade and self-sufficiency an either/or question? Is there a middle-of-the-road approach that would address concerns on both sides of this issue?

POTENTIALLY CONFUSING

Some books print the negative sign of elasticity estimates; others do not. Another way to think of an elasticity measure is as an absolute value. The *absolute value* of a number is its distance from zero, or its numerical value without regard to its sign. For example, the absolute values of 4 and −4 are both 4. The absolute value of elasticity measures the "size" of the response, while the sign measures its direction. Sometimes only the absolute value will be printed, when it is assumed that you know the direction of the change.

Special Features Build Interest

- **Real Life—**Describes a short case or policy question, findings from history or academic studies, and anecdotes from the field.
- **From Another Angle—**Shows a different way of looking at an economic concept. This feature can be a different way of thinking about a situation, a humorous story, or sometimes just an unusual application of a standard idea.
- **What Do You Think?—**Offers a longer case study, with implications for public policy and student-related issues. This feature offers relevant data or historical evidence and asks students to employ both economic analysis and normative arguments to defend a position. We leave the student with open-ended questions, which professors can assign as homework or use for classroom discussion.
- **Where Can It Take You?—**Directs students to classes, resources, or jobs related to the topic at hand. This feature shows students how they might apply what they learn in careers and as consumers.
- **Potentially Confusing** and **Hints—**Offer additional explanation of a concept or use of terminology that students may find confusing. Rather than smoothing over confusing ideas and language, the text calls attention to common

misunderstandings and gives students the support they need to understand economic language and reasoning on a deeper level.

- **Concept Check**—Provides an opportunity at the end of each chapter section for students to quiz themselves on the preceding material before reading on. The Concept Check questions are keyed to related learning objectives, providing students with a built-in review tool and study device.

✓CONCEPT CHECK

- ❒ What consumer surplus is received by someone whose willingness to pay is $20 below the market price of a good? **[LO 5.2]**
- ❒ What is the producer surplus earned by a seller whose willingness to sell is $40 below the market price of a good? **[LO 5.3]**
- ❒ Why can total surplus never fall below zero in a market for goods and services? **[LO 5.4]**

Strong Materials Support Learning

The chapters contain most of the standard end-of-chapter features to help students solidify and test their understanding of the concepts presented, as well as a few new ideas that expand on those concepts. The authors have taken particular care with student review and instructor materials to guide high-quality homework and test questions.

- **Summary**—Highlights and emphasizes the essential takeaways from the chapter.
- **Key Terms**—Lists the most important terms from the chapter.
- **Review Questions**—Guide students through review and application of the concepts covered in the chapter. The review questions range from straightforward questions about theories or formulas to more open-ended narrative questions.
- **Problems and Applications**—Can be assigned as homework, typically quantitative. All problems and applications are fully integrated with *Connect® Economics*, enabling online assignments and grading.
- **Quick-scan barcodes**—Provide quick, mobile connection to online resources, relevant articles, videos, and other useful student materials. Readers can scan the QR code included at the end of the chapter with their smartphone, or can access the materials via the Online Learning Center at **www.mhhe.com/karlanmorduch** and within *Connect Economics*.
- **Study Econ app**—Provides student study materials on the go. Chapter summaries, key term flashcards, important graphs, math prep, chapter quizzes, and more are available in a convenient app available for both Android and iOS, downloadable in their respective app stores.
- **Online graphing tutorial**—Presents interactive graphing exercises, intended to help students to develop their graphing and math skills in tandem with relevant economic concepts. Simple margin call-outs indicate where tutorial exercises are available to support chapter concepts. These tutorial exercises are located within *Connect Economics.*

To improve your understanding of consumer, producer, and total surplus, try the online interactive graphing tutorial.

Complete Digital Integration

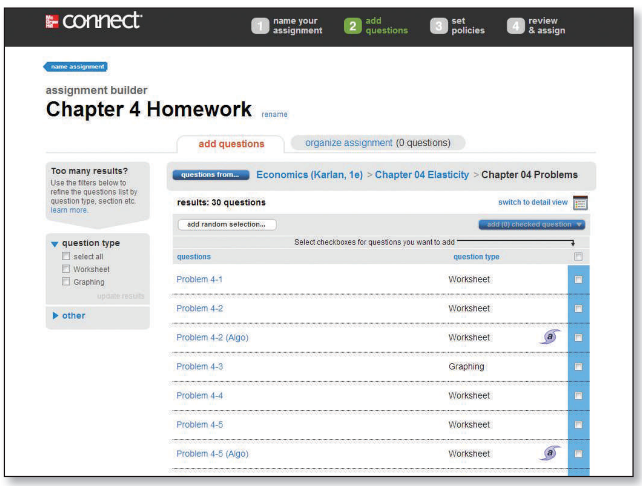
The Karlan and Morduch product has been built from the ground up in print and digital formats simultaneously, enabling *complete digital integration* of the text and related hands-on learning materials. By authoring content in *Connect* during the "manuscript phase," we have been able to rewrite content in the print version if it doesn't "work" in the digital environment—thus providing users with a **total digital solution.** All digital content is tagged to chapter learning objectives, and all homework and tutorial materials are easily available for download or online access. Further, as the following pages show, this text comes with a robust lineup of learning and teaching products, built for simple and reliable usability. **Read on…**

digital solutions

McGraw-Hill *Connect® Economics*

Less managing. More teaching. Greater learning.

Connect Economics is an online assignment and assessment solution that offers a number of powerful tools and features that make managing assignments easier so faculty can spend more time teaching. With *Connect Economics*, students can engage with their coursework anytime and anywhere, making the learning process more accessible and efficient.



Simple assignment management

With *Connect Economics*, creating assignments is easier than ever, so you can spend more time teaching and less time managing. The assignment management function enables you to:

- Create and deliver assignments easily with selectable end-of-chapter questions and test bank items.
- Streamline lesson planning, student progress reporting, and assignment grading to make classroom management more efficient than ever.
- Go paperless with online submission and grading of student assignments.

Smart grading

Connect Economics helps students learn more efficiently by providing feedback and practice material when they need it, where they need it. The grading function enables instructors to:

- Score assignments automatically, giving students immediate feedback on their work and side-by-side comparisons with correct answers.
- Access and review each response; manually change grades or leave comments for students to review.
- Reinforce classroom concepts with practice tests and instant quizzes.

Instructor library

The *Connect Economics* Instructor Library is your repository for additional resources to improve student engagement in and out of class. You can select and use any asset that enhances your lecture.

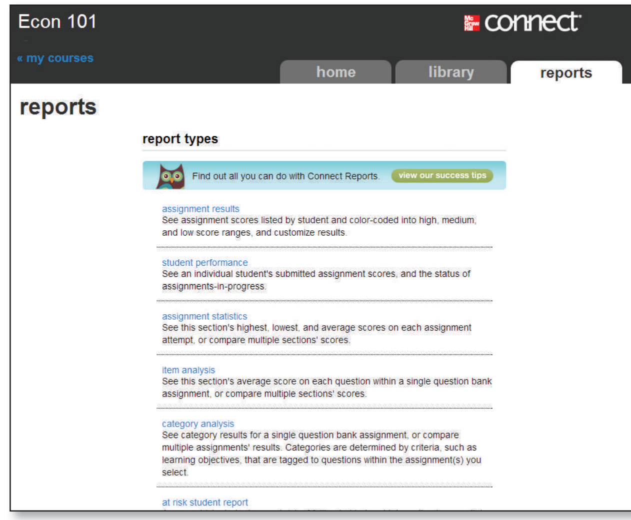
Student study center

The *Connect Economics* Student Study Center is the place for students to access additional resources. The Student Study Center offers students quick access to lectures, practice materials, eBooks, study questions, and more.

Student progress tracking

Connect Economics keeps instructors informed about how each student, section, and class is performing, allowing for more productive use of lecture and office hours. The progress-tracking function enables instructors to:

- View scored work immediately and track individual or group performance with assignment and grade reports.
- Access an instant view of student or class performance relative to learning objectives.
- Collect data and generate reports required by many accreditation organizations like AACSB.



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McGraw-Hill reinvents the textbook learning experience for the modern student with *Connect Plus Economics*. A seamless integration of an eBook and *Connect Economics*, *Connect Plus Economics* provides all of the *Connect Economics* features plus the following:

- An integrated eBook, allowing for anytime, anywhere access to the textbook.
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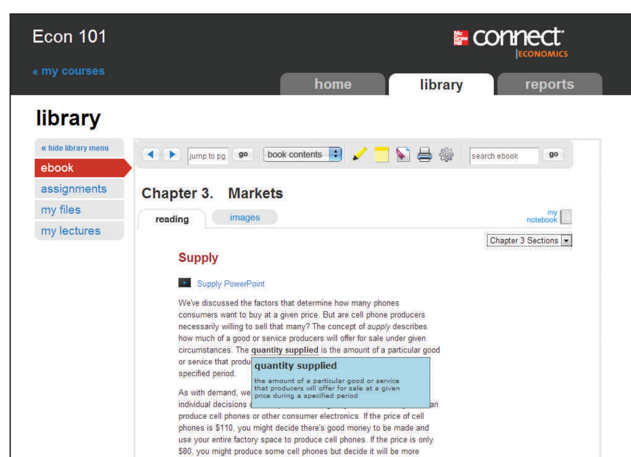
- A powerful search function to pinpoint and connect key concepts in a snap.

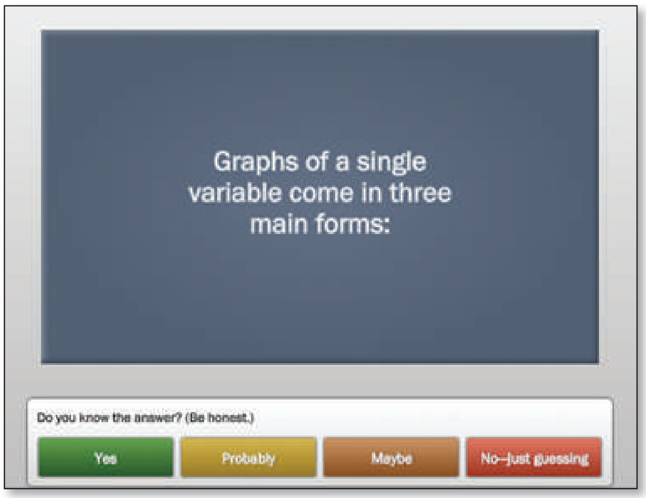


In short, *Connect Plus Economics* and *Connect Economics* offer you and your students powerful tools and features that optimize your time and energies, enabling you to focus on course content, teaching, and student learning. This state-of-the-art, thoroughly tested system supports you in preparing students for the world that awaits.

For more information about *Connect*, go to **www.mcgrawhillconnect.com, or contact your local McGraw-Hill sales representative.**

LearnSmart Advantage

New from McGraw-Hill Education, LearnSmart Advantage is a series of adaptive learning products fueled by LearnSmart, the most widely used and intelligent adaptive learning resource on the market. Developed to deliver demonstrable results in boosting grades, increasing course retention, and strengthening memory recall, the LearnSmart Advantage series spans the entire learning process, from course preparation to the first adaptive reading experience. A smarter learning experience for students coupled with valuable reporting tools for instructors, LearnSmart Advantage is advancing learning like no other products in higher education today. The LearnSmart Advantage suite available with the Karlan/Morduch product is as follows.



LearnSmart

LearnSmart is one of the most effective and successful adaptive learning resources in the market today, proven to strengthen memory recall, keep students in class, and boost grades. Distinguishing what students know from what they don't, and honing in on concepts they are most likely to forget, LearnSmart continuously adapts to each student's needs by building an individual learning path so students study smarter and retain more knowledge. Reports provide valuable insight to instructors, so precious class time can be spent on higher-level concepts and discussion.

LearnSmart Achieve

LearnSmart Achieve is a revolutionary new learning system that combines a continually adaptive learning experience with necessary course resources to focus students on mastering concepts they don't already know. The program adjusts to each student individually as they progress, creating just-in-time learning experiences by presenting interactive content that is tailored to each student's needs. A convenient time-management feature and reports for instructors also ensure students stay on track.

SmartBook

SmartBook is the first and only adaptive reading experience available today. SmartBook changes reading from a passive and linear experience, to an engaging and dynamic one, in which students are more likely to master and retain important concepts, coming to class better prepared. Valuable reports provide instructors insight as to how students are progressing through textbook content, and are useful for shaping in-class time or assessment.

This revolutionary technology suite is available only from McGraw-Hill Education. To learn more, go to **learnsmart.prod.customer.mcgraw-hill.com** or contact your representative for a demo.

Tegrity Campus: Lectures 24/7

Tegrity Campus is a service that makes class time available 24/7 by automatically capturing every lecture in a searchable format for students to review when they study and complete assignments. With a simple one-click start-and-stop process, you capture all computer screens and corresponding audio. Students can replay any part of any class with easy-to-use browser-based viewing on a PC or Mac.

Educators know that the more students can see, hear, and experience class resources, the better they learn. In fact, studies prove it. With Tegrity Campus, students quickly recall key moments by using Tegrity Campus's unique search feature. This search helps students efficiently find what they need, when they need it, across an entire semester of class recordings. Help turn all your students' study time into learning moments immediately supported by your lecture.

To learn more about Tegrity watch a two-minute Flash demo at **http://tegritycampus.mhhe.com.**

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CourseSmart is a new way for faculty to find and review eTextbooks. It's also a great option for students who are interested in accessing their course materials digitally. CourseSmart offers thousands of the most commonly adopted textbooks across hundreds of courses from a wide variety of higher education publishers. It is the only place for faculty to review and compare the full text of a textbook online. At CourseSmart, students can save up to 50% off the cost of a print book, reduce their impact on the environment, and gain access to powerful web tools for learning including full text search, notes and highlighting, and email tools for sharing notes between classmates. Complete tech support is also included with each title. Finding your eBook is easy. Visit **www.CourseSmart.com** and search by title, author, or ISBN.

supplements

All supplements have been developed from the ground up to accompany this text in a completely seamless integration. The following ancillaries are available for quick download and convenient access via the Online Learning Center at **www.mhhe.com/karlanmorduch** and within *Connect*. Instructor resources are password protected for security.

For the Student

Online content offers additional topics or more in-depth coverage. Some of the feature boxes, for example, are presented in short, preview form within chapters, with the full-length version presented online. An online *Guide to Data Sources* provides information about sources of economic data, along with brief exercises that give students opportunities to practice finding relevant data.

Multiple-choice quizzes, created by Greg Randolph at Southern New Hampshire University, allow students to test their knowledge on a chapter before attempting high-stakes homework assignments.

Student PowerPoints, created by Gregory Gilpin at Montana State University, provide a review of each chapter's main points and graphs.

Study Econ mobile app and barcodes

McGraw-Hill is proud to offer a new mobile study app for students learning from Karlan and Morduch's *Microeconomics.* The features of the Study Econ app include flashcards for all key terms, a basic math review, fundamental graphs, customizable self-quizzes, chapter summaries, and common mistakes. Available for the Android and iOS operating systems. For additional information, please refer to the back inside cover of this book. Visit your mobile app stores and download a trial version of the Karlan and Morduch Study Econ app today!

Further taking advantage of new technologies opening the door for improved pedagogy, scanning barcodes (or QR codes) are located near the end of every chapter. For students using smartphones and tablets, these barcodes provide immediate access to even more resources, such as videos relating to the chapter's discussion or news feeds.

For the Instructor

Test bank

Created by Jennifer Vincent at Champlain College. The test bank contains thousands of quality multiple-choice questions. Each question is tagged with the corresponding learning objective, level of difficulty, economic concept, AACSB learning category, and Bloom's Taxonomy objective. All of the test bank content is available to assign within *Connect*. The test bank is also available in EZ Test, a flexible and easy-to-use electronic testing program. Multiple versions of the test can be created and any test can be exported for use with course management systems such as WebCT, BlackBoard, or Page Out. EZ Test Online is a service that gives you a place to easily administer your EZ Test-created exams and quizzes online. The program is available for Windows and Mac environments.

PowerPoint presentations

Created by Gregory Gilpin at Montana State University. The PowerPoint presentations have been carefully crafted to ensure maximum usefulness in the classroom. Each presentation covers crucial information and supplies animated figures that are identical to those in the book. The presentations also contain sample exercises, instructor notes, and more.

Instructor's manual

Elements include:

- **Learning Objectives:** Lists the learning objectives for each chapter.
- **Chapter Outline:** Shows an outline of the chapter organization for a quick review.
- **Beyond the Lecture:** Presents ideas and activities you can use to start discussion and engage students in class, along with team exercises and assignments you can use outside of class, created by Greg Randolph at Southern New Hampshire University.
- **End-of-Chapter Solutions:** Provides answers to all end-of-chapter questions and problems, written by Diana Beck, New York University; Amanda Freeman, Kansas State University; and Victor Matheson, College of the Holy Cross. All end-of chapter answers and solutions have been accuracy checked by Peggy Dalton, Frostburg State University; Laura Maghoney, Solano Community College; and Daniel Lawson, Oakland Community College.

Assurance of Learning Ready

Many educational institutions today are focused on the notion of *assurance of learning*, an important element of some accreditation standards. Karlan and Morduch's *Microeconomics* is designed specifically to support your assurance of learning initiatives with a simple, yet powerful solution. Each test bank question for *Microeconomics* maps to a specific chapter learning outcome/objective listed in the text. You can use our test bank software, EZ Test and EZ Test Online, or in *Connect® Economics* to easily query for learning outcomes/objectives that directly relate to the learning objectives for your course. You can then use the reporting features of EZ Test to aggregate student results in similar fashion, making the collection and presentation of assurance of learning data simple and easy.

AACSB Statement

McGraw-Hill Education is a proud corporate member of AACSB International. Understanding the importance and value of AACSB accreditation, Karlan and Morduch's *Microeconomics* recognizes the curricula guidelines detailed in the AACSB standards for business accreditation by connecting selected questions in the text and the test bank to the six general knowledge and skill guidelines in the AACSB standards.

The statements contained in *Microeconomics* are provided only as a guide for the users of this textbook. The AACSB leaves content coverage and assessment within the purview of individual schools, the mission of the school, and the faculty. While *Microeconomics* and the teaching package make no claim of any specific AACSB qualification or evaluation, we have within *Microeconomics* labeled selected questions according to the six general knowledge and skills areas.

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acknowledgments

Many people helped us create this text. It's said that "it takes a village," but it often felt like we had the benefit of an entire town.

We want to give special acknowledgment to Meredith Startz. Meredith has been a partner in the writing process from the very start. Meredith started working on an Innovations for Poverty Action project on microcredit in the Philippines, and we all quickly realized her passion for conveying to introductory audiences ideas about how economics can make the world a better place. So she came back to the United States and joined us in this project. Perhaps because Meredith's own undergraduate training was not far behind her, she helped us make sure that ideas are clear and accessible to students approaching the material for the first time. Meredith's writing is woven throughout the chapters, and we are delighted to recognize her contributions by adding her name to the title page of the text.

The initial inspiration for the project came from Douglas Reiner, Managing Director for Economics, Finance, and the Decision Sciences at McGraw-Hill, who joined us in crafting a vision for teaching economics as a way to solve problems. Douglas urged us to break down the wall between what happens in the classroom and what's happening in our nation and around the world. He gave us the confidence to draw on examples from the news and recent research, both in the United States and globally, and to lead with those examples as we start each chapter. Douglas encouraged us to share with students our own experience as researchers working on practical solutions to everyday problems and society's bigger challenges.

Ann Torbert, Executive Director of Development, McGraw-Hill, has been an exemplary editor. She helped improve the exposition on each page and kept attention on both the big picture and key details. Ann's grace and professionalism made the text much better and the process much easier.

An energetic group of collaborators helped us to shape content in ways that would be relevant and engaging for a student audience. Ted Barnett steered us through the writing of the macro chapters, helping us offer timely treatment of asset price bubbles and global financial crisis—events that were still unfolding when we were writing the text. Kerry Brennan's creativity and attention to detail made her essential throughout the micro chapters. She has a great eye for slightly offbeat, illuminating examples, many of which made their way into the text in chapter-opening stories and From Another Angle boxes. Melanie Morten and John Loser provided invaluable expertise to the macroeconomics section and helped those sections come to life and connect to students' everyday experience. Andrew Hillis brought a recent-student perspective to bear on the whole project and improved the clarity of presentation for figures throughout the text.

Many other talented individuals contributed on and off throughout this project. We thank Yusuf Siddiquee, Selvan Kumar, Hannah Trachtman, Kareem Haggag, Jennifer Severski, Alex Bartik, Martin Rotemberg, and Doug Parkerson in particular, for keeping an eye out for great stories to use to help explain concepts in fun and engaging ways. We appreciate the careful attention that Andrew Wright gave to every chapter.

We thank Diana Beck (New York University), Victor Matheson (College of the Holy Cross), John Kane (State University of New York–Oswego), and Amanda Freeman (Kansas State University) for their many and varied contributions to text and end-of-chapter content, and also for their willingness to provide feedback at a moment's notice. We are very appreciative of the extensive work done by Peggy Dalton (Frostburg State University) in preparing the *Connect* materials and the work done by Laura Maghoney (Solano Community College) and Daniel Lawson (Oakland Community College) in accuracy-checking it. Special thanks also go to Lisa Gloege (Grand Rapids Community College), David Cusimano (Delgado Community College), Jennifer Pate (Loyola Marymount University), and Amanda Freeman, who helped us accuracy-check the manuscript once it had been typeset. In addition, we thank Peggy Dalton and Russell Kellogg (University of Colorado Denver) for authoring the LearnSmart content, and John Nordstrom (College of Western Idaho) and Christopher Mushrush (Illinois State University) for accuracy-checking it.

We also want to share our appreciation to the following people at McGraw-Hill for the hard work they put into creating the product you see before you: Katie White Hoenicke, Marketing Manager, guided us in communicating the overarching vision, visiting schools, and working with the sales team. Alyssa Lincoln, Development Editor, managed innumerable and indispensable details—reviews, photos, and the many aspects of the digital products and overall package. Lori Koetters, Content Project Manager, performed magic in turning our manuscript into the finished, polished product you see before you. Marianne Musni, Content Project Manager, skillfully guided the digital plan. Thanks, too, to Doug Ruby, Director of Digital Content, Economics, Finance, and ODS; Kevin Shanahan, Digital Development Editor; and Megan Maloney, Digital Development Editor, for their careful shepherding of the digital materials that accompany the text.

Thank You!

This text has gone through a lengthy development process spanning several years, and it wouldn't be the same without the valuable feedback provided by the professors and students who viewed it throughout development. Whether you attended a focus group, a symposium, reviewed the text, or participated in a class test, the authors and McGraw-Hill thank you for sharing your insights and recommendations.

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We are grateful to you all for helping shape our ideas about teaching economics today and for helping turn those ideas into the text you're reading.

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New York University

contents

PART 4
Firm Decisions

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REAL LIFE

FROM ANOTHER ANGLE

WHERE CAN IT TAKE YOU?

WHAT DO YOU THINK?

Part One

The Power of Economics

The two chapters in Part 1 will introduce you to …

the tools and intuition essential to the study of economics. Chapter 1 presents four questions that introduce the fundamental concepts of economic problem solving. We also describe how economists think about data and analyze policies, typically separating how one *wants* the world to look ("normative" analysis) from how the world *actually* works ("positive" analysis).

Chapter 2 presents the ideas of absolute and comparative advantage to explain how people (and countries) can most effectively use their resources and talents. Should you hire a plumber or fix the pipes yourself? Should you become a pop star or an economist? We develop these ideas to show how trade can make everyone better off, on both a personal and a national level.

This is just a start. Throughout the book, we'll use these tools to gain a deeper understanding of how people interact and manage their resources, which in turn gives insight into tough problems of all sorts. Economic ideas weave a common thread through many subjects, from the purely economic to political, environmental, and cultural issues, as well as personal decisions encountered in everyday life. Economics is much more than just the study of money, and we hope you'll find that what you learn here will shed light far beyond your economics classes.

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Chapter 1

Economics and Life

LEARNING OBJECTIVES

LO 1.1 Explain the economic concept of scarcity.

LO 1.2 Explain the economic concepts of opportunity cost and marginal decision making.

LO 1.3 Explain the economic concept of incentives.

LO 1.4 Explain the economic concept of efficiency.

LO 1.5 Distinguish between correlation and causation.

LO 1.6 List the characteristics of a good economic model.

LO 1.7 Distinguish between positive and normative analysis.

MAKING AN IMPACT WITH SMALL LOANS

On the morning of October 13, 2006, Bangladeshi economist Muhammad Yunus received an unexpected telephone call from Oslo, Norway. Later that day, the Nobel committee announced that Yunus and the Grameen Bank, which he founded in 1976, would share the 2006 Nobel Peace Prize. Past recipients of the Nobel Peace Prize include Mother Teresa, who spent over 50 years ministering to beggars and lepers; Martin Luther King, Jr., who used peaceful protest to oppose racial segregation; and the Dalai Lama, an exiled Tibetan Buddhist leader who symbolizes the struggle for religious and cultural tolerance. What were an economist and his bank doing in such company?

Grameen is not a typical bank. Yes, it makes loans and offers savings accounts, charging customers for its services, just like other banks. But it serves some of the poorest people in the poorest villages in one of the poorest countries in the world. It makes loans so small that it's hard for people in wealthy countries to imagine what good they can do: The first group of loans Yunus made totaled only $27. Before Grameen came along, other banks had been unwilling to work in these poor communities. They believed it wasn't worth bothering to lend such small amounts; many believed the poor could not be counted on to repay their loans.

Yunus disagreed. He was convinced that even very small loans would allow poor villagers to expand their small businesses—maybe buying a sewing machine, or a cow to produce milk for the local market—and earn more money. As a result, their lives would be more comfortable and secure, and their children would have a better future. Yunus claimed that they would be able to repay the loan, and that his new bank would earn a profit.

Yunus proved the skeptics wrong, and today Grameen Bank serves more than 8 million customers. The bank reports that 98 percent of its loans are repaid—a better rate than

some banks in rich countries can claim. Grameen also reports steady profits, which has inspired other banks to start serving poor communities on nearly every continent, including recent start-ups in New York City and Omaha, Nebraska.

Muhammad Yunus was trained as an economist. He earned a PhD at Vanderbilt University in Nashville, and then taught in Tennessee before becoming a professor in Bangladesh. When a devastating famine struck Bangladesh, Yunus became disillusioned with teaching. What did abstract equations and stylized graphs have to do with the suffering he saw all around him?

Ultimately, Yunus realized that economic thinking holds the key to solving hard problems that truly matter. The genius of Grameen Bank is that it is neither a traditional charity nor a traditional bank. Instead, it is a business that harnesses basic economic insights to make the world a better place.[1]

In this book, we'll introduce you to the tools economists are using to tackle some of the world's biggest challenges, from health care reform, to climate change, to lifting people out of poverty. Of course, these tools are not just for taking on causes worthy of Nobel Prizes. Economics can also help you become a savvier consumer, successfully launch a new cell phone app, or simply make smarter decisions about how to spend your time and money. Throughout this book, we promise to ask you not just to memorize theories, but also to apply the ideas you read about to the everyday decisions you face in your own life.

economics the study of how people, individually and collectively, manage resources

microeconomics the study of how individuals and firms manage resources

macroeconomics the study of the economy on a regional, national, or international scale

The Basic Insights of Economics

When people think of economics, they often think of the stock market, the unemployment rate, or media reports saying things like "the Federal Reserve has raised its target for the federal funds rate." Although economics does include these topics, its reach is much broader.

Economics is the study of how people manage resources. Decisions about how to allocate resources can be made by individuals, but also by groups of people in families, firms, governments, and other organizations. In economics, *resources* are not just physical things like cash and gold mines. They are also intangible things, such as time, ideas, technology, job experience, and even personal relationships.

Traditionally, economics has been divided into two broad fields: microeconomics and macroeconomics. **Microeconomics** is the study of how individuals and firms manage resources. **Macroeconomics** is the study of the economy on a regional, national, or international scale. Microeconomics and macroeconomics are highly related and interdependent; we need both to fully understand how economies work.

Economics starts with the idea that people compare the choices available to them and purposefully behave in the way that will best achieve their goals. As human beings, we have ambitions and we make plans to realize them. We strategize. We marshal our resources. When people make choices to achieve their goals in the most effective way possible, economists say they are exhibiting **rational behavior**. This assumption isn't perfect. As we'll see later in the book, people can sometimes be short-sighted or poorly informed about their choices. Nevertheless, the assumption of rational behavior helps to explain a lot about the world.

rational behavior making choices to achieve goals in the most effective way possible

People use economics every day, from Wall Street to Walmart, from state capitol buildings to Bangladeshi villages. They apply economic ideas to everything from shoe shopping to baseball, from running a hospital to running for political office. What ties these topics together is a common approach to problem solving.

Economists tend to break down problems by asking a set of four questions:

1. What are the wants and constraints of those involved?
2. What are the trade-offs?
3. How will others respond?
4. Why isn't everyone already doing it?

Underneath these questions are some important economics concepts, which we will begin to explore in this chapter. Although the questions, and the underlying concepts, are based on just a few common-sense assumptions about how people behave, they offer a surprising amount of insight into tough problems of all sorts. They are so important to economic problem solving that they will come up again and again in this book. In this chapter we'll take a bird's-eye view of economics, focusing on the fundamental concepts and skimming over the details. Later in the book, we'll return to each question in more depth.

Scarcity

Question 1: What are the wants and constraints of those involved?

LO 1.1 Explain the economic concept of scarcity.

For the most part, most people make decisions that are aimed at getting the things they want. Of course, you can't always get what you want. People want a lot of things, but they are *constrained* by limited resources. Economists define **scarcity** as the condition of wanting more than we can get with available resources. Scarcity is a fact of life. You have only so much time and only so much money. You can arrange your resources in a lot of different ways—studying or watching TV, buying a car or traveling to Las Vegas—but at any given time, you have a fixed range of possibilities. Scarcity also describes the world on a collective level: As a society, we can produce only so many things, and we have to decide how those things are divided among many people.

scarcity the condition of wanting more than we can get with available resources

The first question to ask in untangling a complex economic problem is, "What are the wants and constraints of those involved?" Given both rational behavior and scarcity, we can expect people to work to get what they want, but to be constrained in their choices by the limited resources available to them. Suppose you *want* to spend as much time as possible this summer taking road trips around the country. You are *constrained* by the three months of summer vacation and by your lack of money to pay for gas, food, and places to stay. Behaving rationally, you might choose to work double-shifts for two months to earn enough to spend one month on the road. Since you are now *constrained* by having only one month to travel, you'll have to prioritize your time, activities, and expenses.

Now put yourself in Muhammad Yunus's shoes, back in 1976. He sees extremely poor but entrepreneurial Bangladeshi villagers and thinks that they could improve their lives with access to loans. Why aren't banks providing financial services for these people? We can apply the first of the economists' questions to start to untangle this puzzle: *What are the wants and constraints of those involved?* In this case, those involved are traditional Bangladeshi banks and poor Bangladeshi villagers.

Let's look at both:

- The banks *want* to make profits by lending money to people who will pay them back with interest. They are *constrained* by having limited funds available to loan or to run branch banks. We can therefore expect banks to prioritize making loans to customers they believe are likely to pay them back. Before 1976, that meant wealthier, urban Bangladeshis, not the very poor in remote rural villages.
- The villagers *want* the chance to increase their incomes. They have energy and business ideas but are *constrained* in their ability to borrow start-up money by the fact that most banks believe they are too poor to repay loans.

Analyzing the wants and constraints of those involved gives us some valuable information about why poor Bangladeshis didn't have access to loans. Banks *wanted* to earn profits and managed their *constrained* funds to prioritize those they thought would be profitable customers. Bangladeshi villagers *wanted* to increase their incomes but couldn't follow up on business opportunities due to *constrained* start-up money. That's good information, but we haven't yet come up with the solution that Dr. Yunus was looking for. To take the next step in solving the puzzle, we turn to another question economists often ask.

Opportunity cost and marginal decision making

Question 2: What are the trade-offs?

LO 1.2 Explain the economic concepts of opportunity cost and marginal decision making.

Every decision in life involves weighing the *trade-off* between costs and benefits. We look at our options and decide whether it is worth giving up one in order to get the other. We choose to do things only when we think that the benefits will be greater than the costs. The potential *benefit* of taking an action is often easy to see: You can have fun road-tripping for a month; bank customers who take out a loan have the opportunity to expand their businesses. The *costs* of a decision, on the other hand, are not always clear.

You might think it *is* clear—that the cost of your road trip is simply the amount of money you spend on gas, hotels, and food. But something is missing from that calculation. The true cost of something is not just the amount you have to pay for it, but also the opportunity you lose to do something else instead. Suppose that if you hadn't gone on your road trip, your second choice would have been to spend that same time and money to buy a big-screen TV and spend a month at home watching movies with friends. The true cost of your road trip is the enjoyment you would have had from owning the TV and hanging out with friends for a month. Behaving rationally, you should go on the road trip only if it will be more valuable to you than the best alternative use for your time and money. This is a matter of personal preference. Because people have different alternatives and place different values on things like a road trip or a TV, they will make different decisions.

Economists call this true cost of your choice the **opportunity cost**, which is equal to the value of what you have to give up in order to get something. Put another way, opportunity cost is the value of your next best alternative—the "opportunity" you have to pass up in order to take your first choice.

opportunity cost the value of what you have to give up in order to get something; the value of your next-best alternative

Let's return to the road trip. Say you're going with a friend, and her plan B would have been buying a new computer, taking a summer class, and visiting her cousins. The opportunity cost of her vacation is different from yours. For her, the opportunity cost is the pleasure she would have had from a new computer, plus whatever benefits she might have got from the course, plus the fun she would have had with her cousins. If she's behaving rationally, she will go with you on the road trip only if she believes it will be more valuable to her than what she's giving up.

Opportunity cost helps us think more clearly about trade-offs. If someone asked you how much your road trip cost and you responded by adding up the cost of gas, hotels, and food, you would be failing to capture some of the most important and interesting aspects of the trade-offs you made. Opportunity cost helps us to see why, for example, a partner at a law firm and a paralegal at the firm face truly different trade-offs when they contemplate taking the same vacation for the same price. The partner makes a higher salary and therefore forgoes more money when taking unpaid time off from work. The opportunity cost of a vacation for the paralegal is therefore lower than it is for the lawyer, and the decision the paralegal faces is truly different.

Economists often express opportunity cost as a dollar value. Suppose you've been given a gift certificate worth \$15 at a restaurant. The restaurant has a short menu: pizza or spaghetti, each of which costs \$15. The gift certificate can be used only at this particular restaurant, so the only thing you give up to get pizza is spaghetti, and vice versa. If you didn't have the certificate, you would be willing to pay as much as \$15 for the pizza but no more than \$10 for the spaghetti.

What is the opportunity cost of choosing the pizza? Even though the price on the menu is \$15, the opportunity cost is only \$10, because that is the value you place on your best (and only) alternative, the spaghetti. What is the opportunity cost of choosing the spaghetti? It's \$15, the value you place on the pizza. Which do you choose? One choice has an opportunity cost of \$10, the other \$15. Behaving rationally, you should choose the pizza, because it has the lower opportunity cost.

A simpler way of describing this trade-off would be simply to say that you prefer pizza over spaghetti. The opportunity cost of spaghetti is higher because to get it, you have to give up something you like more. But putting it in terms of opportunity cost can be helpful when there are more choices, or more nuances to the choices.

For example, suppose the gift certificate could be used only to buy spaghetti. Now what is the opportunity cost of choosing the spaghetti? It is \$0, because you can't do anything else with the gift certificate—your alternative choices are spaghetti or nothing. The opportunity cost of pizza is now \$15 because you'd have to pay for it with money you could have spent on \$15 worth of other purchases outside the restaurant. So even though you like pizza better, you might now choose the spaghetti because it has a lower opportunity cost in this particular situation.

Once you start to think about opportunity costs, you see them everywhere. For an application of opportunity cost to a serious moral question, read the What Do You Think? box "The opportunity cost of a life."

WHAT DO YOU THINK?

The opportunity cost of a life

Throughout the book, What Do You Think? boxes ask for your opinion about an important policy or life decision. These boxes will present questions that require you to combine facts and economic analysis with values and moral reasoning. They are the sort of tough questions that people face in real life. There are many correct answers, depending on your values and goals.

The philosopher Peter Singer writes that opportunity costs can be a matter of life or death. Imagine you are a salesperson, and on your way to a meeting on a hot summer day, you drive by a lake. Suddenly, you notice that a child who has been swimming in the lake is drowning. No one else is in sight.

You have a choice. If you stop the car and dive into the lake to save the child, you will be late for your meeting, miss out on making a sale, and lose $250. The *opportunity cost* of saving the child's life is $250.

Alternatively, if you continue on to your meeting, you earn the $250 but you lose the opportunity to dive into the lake and save the child's life. The *opportunity cost* of going to the meeting is one child's life.

What would you do? Most people don't hesitate. They immediately say they would stop the car, dive into the lake, and save the drowning child. After all, a child's life is worth more than $250.

Now suppose you're thinking about spending $250 on a new iPod. That $250 could instead have been used for some charitable purpose, such as immunizing children in another country against yellow fever. Suppose that for every $250 donated, an average of one child's life ends up being saved. (In fact, $250 to save one child's life is not far from reality in many cases.) What is the opportunity cost of buying an iPod? According to Peter Singer, it is the same as the opportunity cost of going straight to the meeting: a child's life.

These two situations are not exactly the same, of course, but why does the first choice (jump in the lake) seem so obvious to most people, while the second seems much less obvious?

What do you think?

1. In what ways do the two situations presented by Singer—the sales meeting and the drowning child versus the iPod and the unvaccinated child—differ?
2. Singer argues that even something like buying an iPod is a surprisingly serious moral decision. Do you agree? What sort of opportunity costs do you typically consider when making such a decision?
3. What might be missing from Singer's analysis of the trade-offs people face when making a decision about how to spend money?

marginal decision making comparison of additional benefits of a choice against the additional costs it would bring, without considering related benefits and costs of past choices

Another important principle for understanding trade-offs is the idea that rational people make decisions *at the margin*. **Marginal decision making** describes the idea that rational people compare the *additional* benefits of a choice against the *additional* costs, without considering related benefits and costs of past choices.

For example, suppose an amusement park has a $20 admission price and charges $2 per ride. If you are standing outside the park, the cost of the first ride is $22, because you will have to pay the admission price and buy a ticket to go on the ride. Once you are inside the park, the *marginal* cost of each additional ride is $2. When deciding whether to go on the roller coaster a second or third time, then, you should compare only the benefit or enjoyment you will get from one more ride to the opportunity cost of that additional ride.

This may sound obvious, but in practice, many people don't make decisions on the margin. Suppose you get into the amusement park and start to feel sick shortly thereafter. If doing something else with your $2 and 20 minutes would bring you more enjoyment than another rollercoaster ride while feeling sick, the rational thing to do would be to leave. The relevant trade-off is between the *additional* benefits that going on another ride would bring, versus the additional costs. You cannot get back the $20 admission fee or any of the other money you've already spent on rides. Economists call costs that have already been incurred and cannot be recovered **sunk costs**. Sunk costs should not have any bearing on your *marginal* decision about what to do next. But many people feel the need to go on a few more rides to psychologically justify the $20 admission.

sunk costs costs that have already been incurred and cannot be recovered or refunded

Trade-offs play a crucial role in businesses' decisions about what goods and services to produce. Let's return to the example that started this chapter and apply the idea to a bank in Bangladesh: *What are the trade-offs involved in making a small loan?*

- For traditional banks, the opportunity cost of making small loans to the poor was the money that the bank could have earned by making loans to wealthier clients instead.
- For poor borrowers, the opportunity cost of borrowing was whatever else they would have done with the time they spent traveling to the bank and with the money they would pay in fees and interest on the loan. The benefit, of course, was whatever the loan would enable them to do that they could not have done otherwise, such as starting a small business or buying food or livestock.

Based on this analysis of trade-offs, we can see why traditional banks made few loans to poor Bangladeshis. Because banks perceived the poor to be risky clients, the opportunity cost of making small loans to the poor seemed to outweigh the benefits—unless the banks charged very high fees. From the perspective of poor rural villagers, high fees meant that the opportunity cost of borrowing was higher than the benefits, so they chose not to borrow under the terms offered by banks.

Notice that the answer to this question built off the answer to the first: We had to know the wants and constraints of each party before we could assess the trade-offs they faced. Now that we understand the motivations and the trade-offs that led to the situation Dr. Yunus observed, we can turn to a third question he might have asked himself when considering what would happen when he founded the Grameen Bank.

Incentives

Question 3: How will others respond?

LO 1.3 Explain the economic concept of incentives.

You're in the mood for pizza, so you decide to go back to the restaurant with the short menu. When you get there, you discover that the prices have changed. Pizza now costs $50 instead of $15.

What will you do? Remember that your gift certificate is good for only $15. Unless you can easily afford to shell out $50 for a pizza or just really hate spaghetti, you probably won't be ordering the pizza. We're sure that you can think of ways to spend $35 that are worth more to you than your preference for pizza over spaghetti. But what if the prices had changed less drastically—say, $18 for pizza? That might be a tougher call.

As the trade-offs change, so will the choices people make. When the restaurant owner considers how much to charge for each dish, she must consider *how others will respond* to changing prices. If she knows the pizza is popular, she might be tempted to try charging more to boost her profits. But as she increases the price, fewer diners will decide to order it.