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SECOND EDITION



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MACROECONOMICS



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MACROECONOMICS

SECOND EDITION

Dean Karlan

Yale University and Innovations for Poverty Action

Jonathan Morduch

New York University



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MACROECONOMICS, SECOND EDITION

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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 has worked in over 50 countries, with 1,000 employees around the world. Dean's personal research focuses on using field experiments to learn more about the effectiveness of financial services for low-income households, with a focus on using behavioral economics approaches to improve financial products and services. His research includes related areas, such as building income for those in extreme poverty, charitable fundraising, voting, health, and education. Dean is also 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, and in 2015 he founded ImpactMatters, an organization that helps assess whether charitable organizations are using and producing appropriate evidence of impact. Dean is a Sloan Foundation Research Fellow, a Guggenheim Fellow, and an Executive Committee member of the Board of the M.I.T. Jameel Poverty Action Lab. In 2007 he 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 2016 he coauthored *Failing in the Field*, and 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 book, *The Financial Diaries: How American Families Cope in a World of Uncertainty* (written with Rachel Schneider and published by Princeton University Press, 2017), follows families in California, Mississippi, Ohio, Kentucky, and New York as they cope with economic ups and downs over a year. The new work jumps off from ideas in *Portfolios of the Poor: How the World's Poor Live on \$2 a Day* (Princeton University Press, 2009), which Jonathan 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.

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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 40 percent of the world's adults who lack access to banks. This text reflects their shared passion for using economics as a tool to improve one's own life and to promote better business and public policies in the broader world.

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We offer the second edition of this text as a resource for professors who, like us, want to show students that *economics can make a positive impact*—in their own lives and in society as a whole. We designed the text with our own version of a “dual mandate”:

- to *deliver core economic concepts* along with *exciting new ideas* in economic thought and
- to *keep student learners engaged by confronting issues that are important in the world.*

Our intention is that this approach will help students see economics as a tool to better one’s own life, promote better public policies, and run better businesses around the world.

Why Study Economics?

Whenever we’ve been asked why we teach economics, or why students should study the topic, our answer is simple: “*Economics helps make the world a better place.*” It’s unfortunate that economics often has a reputation for being the “dismal science.” We believe fundamentally that *economics is a good thing*. Economic principles can help students understand and respond to everyday situations. Economic ideas also help 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 in important, positive ways, and we provide them with a wide-ranging set of practical insights to help develop their economic intuition.

We have built engagement with real-world problems into the fabric of our chapters, and we present data-driven economic thinking as a way to help solve these problems. Faculty and students will find that our impact-based focus *breaks down barriers* between what goes on in the classroom and what is going on in communities, both at home and around the world.

By keeping the discussion down-to-earth and lively, we aim to make the learning materials easier to use and compelling. The chapters are organized around a familiar curriculum of introductory concepts 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 and 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 four fundamental commitments:

- **Show how economics connects to important ideas and issues in the world.** This text engages 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.
- **Teach principles as evidence-based 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.
- **Appeal to today’s globally engaged students.** Students today live in a digital, globalized world. We recognize that they are knowledgeable and care about both local and international issues. *Macroeconomics* takes a global perspective, with the United States as a leading example. We draw on a world of examples to bring to life topics like how to encourage

fair competition, create jobs, strengthen markets, protect the environment, engage in international trade, and reduce poverty.

- **Provide a balanced, data-driven view.** Economics provides a way to organize insights, integrate data, and enrich worldviews—no matter one’s personal politics. Many topics are uncontroversial; others are hotly debated. Our aim is to provide balanced approaches that help students sharpen and enrich their own understandings of the argument. We do this by focusing on the data and evidence behind the effects we see.

In the second edition of this text, we continue to offer stand-alone chapters that dig into some of the new topics in economics. We’ve watched as topics like behavioral economics, game theory, political economy, and inequality figure more and more prominently in undergraduate curricula with each passing year. We believe it is important to provide teachers with ways to share new ideas and evidence with their students—important concepts that most nonmajors would usually miss.

At the same time, we realize how selective teachers must be in choosing which material to cover in the limited time available. In light of this, we’ve been especially glad for the guidance from many teachers in finding ways to present, in a time- and space-efficient way, some of the newer, and most exciting, parts of economics today. We promise you will find the topics, discussions, and writing style of *Macroeconomics* clear, concise, accessible, easy to teach from, and fun to read.

Motivation

Who are we? Why did we write this text?

Macroeconomics draws on our own experiences as academic economists, teachers, and policy advisors. We are based at large research universities and often work with and advise nonprofit organizations, 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. *Macroeconomics* 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.

One of the best parts of writing this text, promoting its first edition, and revising for the second edition has been the opportunity 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 fellow instructors is why they originally became interested in economics. A common response—one 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.

We also are grateful to the many adopters and near-adopters of the first edition who provided many helpful suggestions for ways to make the second edition an even better resource for instructors and students. As you’ll see in the list of chapter-by-chapter changes that starts on page xxiii, we’ve worked hard to fulfill your expectations and meet that goal.

We hope this product will provide students a solid foundation for considering important issues they will confront in their lives. We hope to inspire students to continue their studies in economics, and we promise this text will give them something useful to take away even if they choose other areas of study. Finally, we hope that, in ways small and large, the tools they learn in these pages and this course will help them to think critically about their environment, to live better lives, and to make an impact on their world.

Dean Karlan
Yale University

Jonathan Morduch
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guided tour of features that benefit student learning

What makes this product different? Here's a quick guided tour of some key features that will engage students as they use the Karlan/Morduch content.

Four questions about how economists think

The text's evidence-based approach is framed by *four questions* that economists ask to break down a new challenge and analyze it methodically. We explore these four questions in Chapter 1 and then carry them throughout. They shape a consistent data-driven and impact-based approach to a wide variety of examples and case studies, demonstrating how the questions 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. Here are the four questions:

- **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 in 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 someone 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, to see whether they missed something about the trade-offs, incentives, or other forces at work, or are looking at a genuine market failure. This fourth question links topics such as public goods, externalities, information gaps, monopoly, arbitrage, and how the economy operates in the long run versus the short run.

Unique coverage

Macroeconomics presents the *core principles* of economics but also seeks to present some of the new ideas that are *expanding* the basics of economic theory. The sequence of chapters follows a fairly traditional route through the core principles. By thinking first about the choices faced by individuals, students become better prepared to 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.

Two changes, based on market feedback, took place in the second edition chapter organization:

- We switched the sequence of two macroeconomic chapters, putting the “Unemployment and the Labor Market” chapter before the “Economic Growth” chapter.
- We added a new “Aggregate Expenditure” chapter.

Beyond its basic coverage of macroeconomic principles, *Macroeconomics* offers content that connects the core curriculum to today’s macroeconomic concerns:

- Chapter 9, “Unemployment and the Labor Market,” and Chapter 13, “Fiscal Policy,” relate macroeconomic principles to some of the most-debated policy choices faced by governments.
- Chapter 14, “The Basics of Finance,” describes how financial markets fit into the overall economy. The chapter gives an overview of the modern financial system (functions, financial products, and the risk-return trade-off), studies the market for loanable funds, and describes how financial markets connect savers and borrowers. The chapter concludes by locating saving and investment within the national accounts approach.
- Chapter 17, “Financial Crisis,” takes a close look at the worst financial crisis in generations. It begins with the economics of financial crises and why things sometimes go wrong in financial markets. The chapter then digs into the details of the Great Recession, including the ways that governments responded through monetary policy and fiscal policy.
- Chapter 19, “Development Economics,” written by authors who have devoted much of their

careers to studying how to reduce global poverty, examines the relationship between economic growth and economic development. The chapter reviews the current state of research in economic development and assesses promising policies, solutions, and innovations for reducing poverty worldwide.


In addition, because students sometimes need reinforcement with the math requirements of the course, *Macroeconomics* contains five unique math appendixes that explain math topics important to understanding economics. **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.

Engaging pedagogical features

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

Boxed features build interest. Four different types of boxed stories add interesting real-world details:


- **Real Life** boxes describe a short case or policy question, findings from history or academic studies, and anecdotes from the field.
- **From Another Angle** boxes show a different way of looking at an economic concept—a different way of



Real Life
Testing models against history


Real Life boxes show how the concept you’re reading about relates to the real world. They are your chance to test models against the data. Often these boxes will describe a situation in which people used an economic idea to solve a business or policy question, or they present interesting research ideas or experiences. Watch for links to online content, such as videos or news stories.

Thomas Malthus, an early nineteenth-century economist, created a model that described the relationship between population growth and food production. The model predicted that mass starvation would occur as populations outgrew food supplies. In his famous work *An Essay on*



From Another Angle
Does ice cream cause polio?

From Another Angle boxes show you a different way of looking at an economic concept. Sometimes they will be a humorous story, sometimes a different way of thinking about a situation, and sometimes just an unusual application of a standard idea. We find that a little bit of weirdness goes a long way in helping us to remember things, and we hope it will work for you too.



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.

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?

thinking about a situation, a humorous story, or sometimes just an unusual application of a standard idea.

- **What Do You Think?** boxes offer a longer case study, with implications for public policy and student-related issues. They present relevant data or historical evidence and ask 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?** boxes direct students to further classes, resources, or jobs related to the topic at hand, to show students how they might apply economics in their careers and as consumers.

In addition, two other types of boxes—**Potentially Confusing** and **Hints**—offer in-depth explanations of a concept or use of terminology. These boxes call attention to common misunderstandings or provide further explanation of tricky concepts. Students appreciate that rather than smoothing over confusing ideas and language, we offer the support they need to understand economic language and reasoning on a deeper level.

Throughout this book, every chapter contains built-in review tools and study devices for student use. **Concept Check questions tied to learning objectives** appear at the end of each major section and prompt students to make sure they understand the topics covered before moving on. **Conclusions** at the end of each chapter sum up the overall lessons learned. **Summaries** give a deeper synopsis of what each learning objective covered. **Key Terms** provide a convenient list of the economic terminology introduced and defined in the chapter.

Also located at the ends of chapters and smoothly integrated with the chapter text are questions and problems for each learning objective:

- **Review Questions** guide students through review and application of the concepts covered in the chapter. These range from straightforward questions about theories or formulas to more open-ended narrative questions.
- High-quality **Problems and Applications** problem sets provide quantitative homework opportunities.

Both sets of content, plus additional Extra Practice Questions, are **fully integrated with Connect[®]**, enabling online assignments and grading.

