

MICROECONOMICS



KARLAN / MORDUCH



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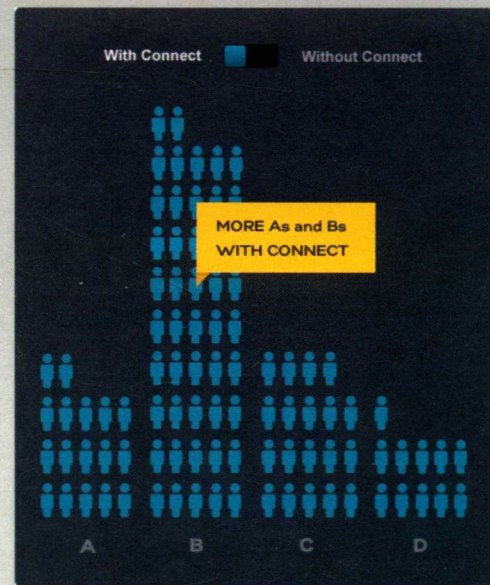
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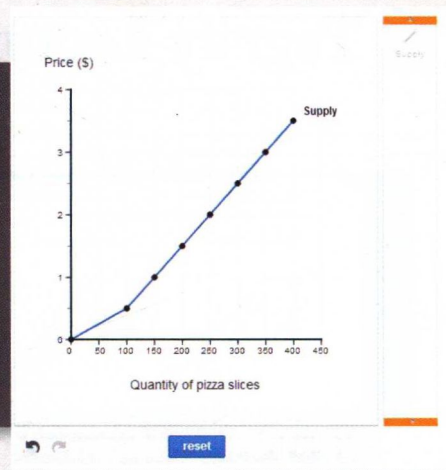
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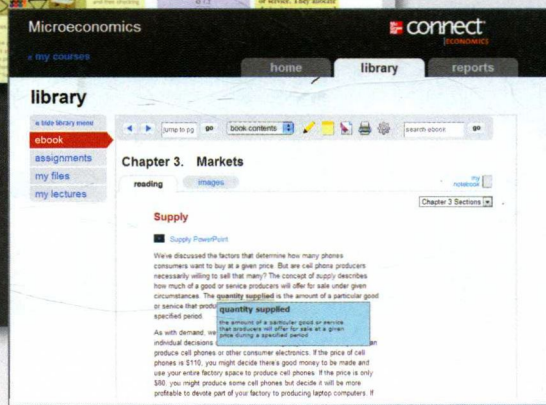
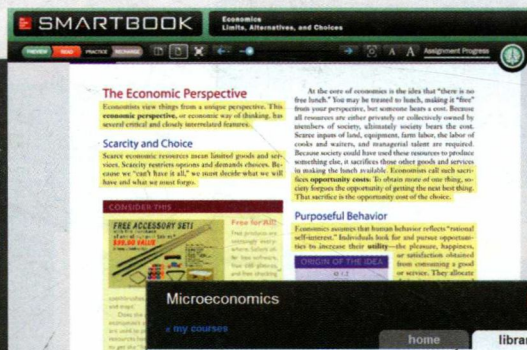
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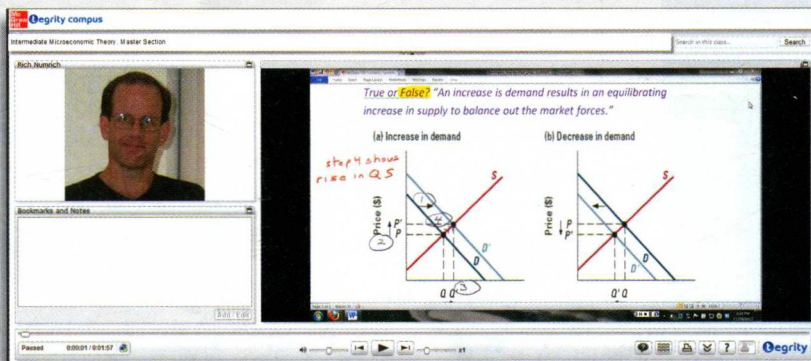
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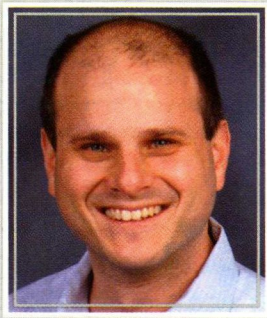
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We dedicate this book to our families.

-Dean and Jonathan

dedication

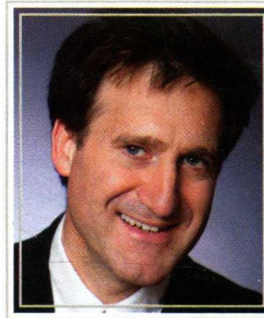
about the authors



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.



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 | <p><i>"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."</i></p> <p style="text-align: right;"><i>—Jennifer Vincent, Champlain College</i></p> |
| 9 Game Theory and Strategic Thinking | <p><i>"... uses very good examples with which the students are likely to be familiar."</i></p> <p style="text-align: right;"><i>—Greg Salzman, Albion College</i></p> |
| 10 Information | <p><i>"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."</i></p> <p style="text-align: right;"><i>—Max Grunbaum Nagiel, Daytona State College</i></p> |
| 11 Time and Uncertainty | <p><i>"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."</i></p> <p style="text-align: right;"><i>—Ashley Hodgson, St. Olaf College</i></p> |
| 22 Political Choices | <p><i>"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."</i></p> <p style="text-align: right;"><i>—Jason Rudbeck, University of Georgia</i></p> |
| 23 Public Policy and Choice Architecture | <p><i>"I hope it will intrigue students . . . it did me!"</i></p> <p style="text-align: right;"><i>—Karla Lynch, North Central Texas College</i></p> |

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. This increases the chances of attracting customers who want to test drive

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 international trade; they argue that trade makes both

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...**

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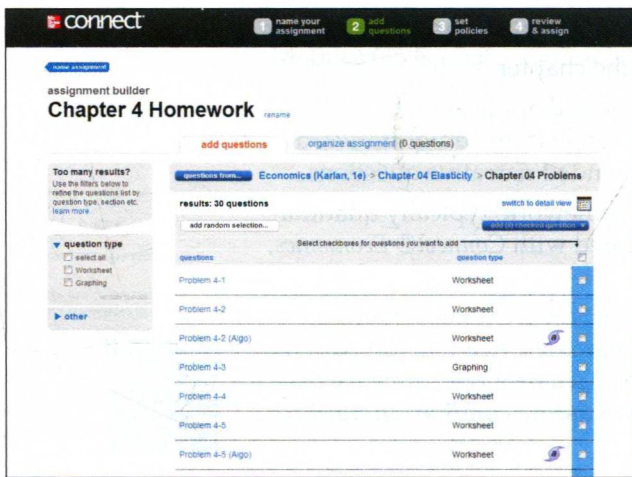


Connect Economics is an online assignment and assessment solution that offers a number of powerful tools and features that make managing assignments easier so faculty can spend more time teaching. With *Connect Economics*, students can engage with their coursework anytime and anywhere, making the learning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

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- 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.