

MICROECONOMICS

Third Edition



Goolsbee


Levitt


Syverson


Examples and Applications

Four carefully crafted feature types prove the practical uses of theory and how to apply it to a variety of situations in business, government, and everyday life.

 **Application** boxes and in-text examples found throughout the text show how useful the microeconomic toolbox is.

 **Figure It Out** exercises are worked-out problems that outline how to identify and use the tools necessary for problem solving. The “*” next to the Figure It Out titles below indicates an online tutorial providing interactive assistance for each step of the problem.

 **Freakonomics** boxes show some surprising ways economic analysis can illuminate not only common phenomena, but also things not normally thought to be within the economist’s purview. New for the Third Edition are in-class activities designed to reinforce the connection between chapter concepts and the Freakonomics story.


 **Make the Grade** boxes offer practical advice for learning microeconomics.

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Microeconomics

THIRD EDITION

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From Austan

To Aden, Addison, and Emmett

From Steve

To the next generation of economists, whose wisdom will shape the future

From Chad

To my wife Genaya and my children Claire, Adam, Victoria, and Gabrielle

From all

And to the University of Chicago, where people don't just study economics, they live it, breathe it, eat it, and sleep it. The world of economics would never be the same without you, and neither would we.

About the Authors



Lumina Foundation

Description

-

Austan Goolsbee is the Robert P. Gwinn Professor of Economics at the University of Chicago Booth School of Business, where he joined the faculty in 1995. From 2009 to 2011, he served in Washington as a Member and then Chairman of the Council of Economic Advisers and the youngest member of the President's Cabinet. He is a past Alfred P. Sloan Fellow and Fulbright Scholar. He earned bachelor's and master's degrees from Yale University and a PhD in economics from Massachusetts Institute of Technology.



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Steven Levitt is the William B. Ogden Distinguished Service Professor of Economics at the University of Chicago, where he directs the Becker Center on Chicago Price Theory. He earned a bachelor's degree from Harvard University and his PhD from Massachusetts Institute of Technology. He has taught at the University of Chicago since 1997. In 2004, Levitt was awarded the John Bates Clark Medal, and in 2006, he was named one of *Time* magazine's "100 People Who Shape Our World." He co-authored a series of books on popular economics starting with *Freakonomics* and is also part of the *Freakonomics* podcast.



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Chad Syverson is the Eli B. and Harriet B. Williams Professor of Economics at the University of Chicago Booth School of Business. He joined the Chicago faculty in 2001. His research spans several topics, with a particular focus on the interactions of firm structure, market structure, and productivity. He is an editor of the *Journal of Political Economy*, has served on multiple National Academies committees, and is a research associate of the National Bureau of Economic Research. He earned bachelor's degrees in economics and mechanical engineering from the University of North Dakota, and a PhD in economics from the University of Maryland.

The Story of Microeconomics: Our Vision

We believe that microeconomics should inspire and excite students with its elegance and usefulness, and that a textbook should support this goal.

The three of us have been friends for a long time. So why would we risk that friendship to embark on such a difficult task as writing a textbook together? We wanted to bring a different perspective to the presentation of intermediate microeconomics. We teach in economics departments and in business schools, and we are active empirical microeconomics researchers. Our experiences made us want to write a textbook that could show students how realistic theory can be if used in practical settings and make clear how economists use data and empirical analysis to test and refine theories.

For all three editions we've provided a visual cue to our approach to microeconomics: We put a Swiss Army knife on the cover of the book. The Swiss Army knife contains many tools that you can use to accomplish many varied tasks. This is how we view microeconomics:

- It introduces tools that are **fundamental** to all forms and extensions of economics, and
- It is extremely **useful** for making decisions in business, government, and everyday life.

We want to help each student grow from someone who has learned some economic principles to someone who can apply the tools of economic analysis to real situations, as economists do. And in envisioning and writing this book we wanted to deal effectively with two questions we hear regularly from students about the micro course:

Do people and firms really act as theory suggests?

All microeconomics texts present the standard tools and theory of economics, and all have examples. However, they often expect students to take on faith that these theories work. They do not always show effectively that these theories can be used in specific and practical ways.

Furthermore, continued reductions in the cost of collecting and analyzing data have led to a radical shift in microeconomics, and current texts have not fully kept up with the dramatic rise of empirical work in applied microeconomics research. Undergraduates and business school students will find microeconomics compelling if it not only explains the theory, but also demonstrates how to use it, and provides real-world data to back it up. We show students the reality behind the theory in our plentiful and up-to-date examples. We have developed and selected events, topics, and empirical studies with a clear eye toward *how* economists use real data to test and refine ideas.

How can someone use microeconomic theory in a practical way?

Students often view the intermediate microeconomics course as abstract and theoretical. Because this course requires a high degree of effort from students, they should know why and how the material they learn will be useful. Without that knowledge, they will be bored and unmotivated. So we wanted to write a book of **useful economics**. When done the right way, economics *is* extremely useful: useful for business, useful for policy, useful for life. Our book shows students how to take the tools they learn and *do* something with them.

The Story of the Third Edition: What's Retained and What's New

We are happy to have heard positive and constructive feedback on the second edition. As such, the overall structure and pedagogical features have been retained, while examples have been thoroughly updated.

A Leaner Text

There's an old joke about someone not having enough time to write a short letter, so they wrote a long one instead. Well, after three editions, we've had enough time to write a shorter book. We figured out where we could slim down the text without losing the essence of the material. All told, this edition is about 10% shorter than the second. We have been able, despite this, to present clearly and fully the core material of a rich microeconomics course. We did not do this by sacrificing any of the real-world, tools-based focus that is the hallmark of the book. Indeed, we hope that by presenting certain things more concisely, we will actually make the material easier to absorb. At the same time, we have also left plenty of flexibility for instructors and students to dive deeper into more specific topics as desired.

Real World, Real Life

Microeconomics provides examples that offer unusual perspectives on the seemingly ordinary. We have been gratified by the overwhelmingly positive response to the many ways in which we integrated real-life, up-to-date, and, above all, interesting examples and *Applications* into our presentation. Instructors especially appreciated our extensive inclusion of empirical examples. All told, we have over 200 examples (20% of them new in this edition), *Applications*, and *Freakonomics* boxes that illustrate how useful the microeconomic toolbox is in illuminating and understanding all aspects of economics and life.



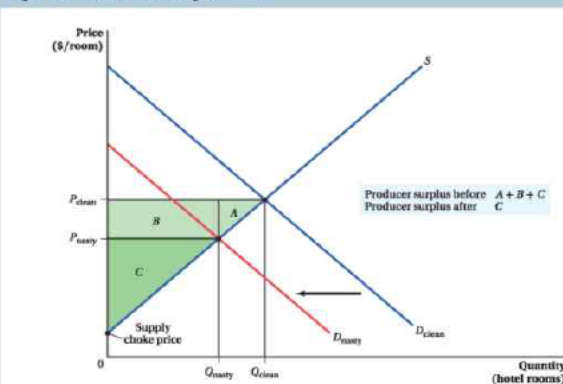
Application: Toxic Algae in Florida

Periodically, warm water temperatures and excess agricultural runoff will cause a bloom of toxic algae, known as a "red tide" (or "green slime"), to form on the Gulf coast of Florida. As a result of increasing water temperatures, the algae blooms have become more frequent over time and sometimes stretch hundreds of miles and persist for multiple months. When they arrive, they smell awful and lifeguards often must wear respirators to avoid getting lung infections. Masses of fish die and wash up on the shores. Thousands of tourists cancel their planned vacations on the Gulf.

When the governor of Florida declares the red tide an official natural disaster, Florida's Economic Development Committee will try to compensate merchants for the damage done by the disaster. They then design surveys to analyze the issue. What they're trying to compute is, simply put, the loss in producer surplus.

To compute the loss, they ought to estimate a supply and a demand curve, and then contemplate any shift in demand. Such a shift is illustrated in **Figure 3.5**. Prices and quantities decrease in response to a red tide event—just as the model suggests. Before the red tide, producer surplus is the area below the equilibrium price and above the supply curve, or $A + B + C$ in the graph.

Figure 3.5 "Red Tide" Damage in Florida



After a toxic algae bloom in Florida, the demand curve for hotel rooms from people visiting the Gulf Coast shifts inward, from D_{clean} to D_{nasty} . During the time when the Gulf's waters are clean, the equilibrium hotel room price and quantity are P_{clean} and Q_{clean} , respectively, and the producer surplus is the total shaded area, $A + B + C$.

Once the waters become nasty, the equilibrium price and quantity fall to P_{nasty} and Q_{nasty} , and the producer surplus is reduced to the area C . The area $A + B$ represents the loss in producer surplus to the local hotels.



Application: Perfect Price Discrimination in Tuition

Although you might not have realized it, you may have experienced something close to perfect price discrimination when you decided to go to college. Families in the United States applying for college financial aid are required to submit the Free Application for Federal Student Aid (FAFSA). This form requires them to report complete information about their family assets and income along with the student's assets and income. While this information is used by the government to determine how much subsidized federal aid a student is eligible for, it also gives the college an almost perfect understanding of each student's willingness to pay. This allows schools to produce an individually tailored financial aid plan that might supplement federal aid. But that is just another way of saying that they charge a different tuition price to each student, depending on how much they think the student can afford.

Economist Ian Fillmore has shown that this price discrimination has huge effects on the market.¹ He estimates the actual tuition paid at selective universities is almost \$1,000 per year higher than it would be if schools couldn't use family financial information to determine financial aid (i.e., the student's effective price). However, as noted above, these price increases are partly counteracted by efficiency gains that (almost) perfect price discrimination allows. Fillmore demonstrates that colleges use high tuition rates paid by students from wealthy and high-willingness-to-pay families to subsidize students from poorer, low-willingness-to-pay families. This allows students from families with fewer financial resources to attend selective schools they would be priced out of if those schools had to charge all students the same price. In the end, whether you are a net gainer or loser from giving colleges your and your family's financial information depends on what exactly that information is. ■

Description

There are four pages as examples. The first page is titled Application: Toxic Algae in Florida, followed by text and a graph in the end. The second page overlapping the first one is titled Application: Perfect Price Discrimination in Tuition followed by text.

Our *Freakonomics* boxes, in particular, show how (in often surprising ways) economic analysis can illuminate not only common phenomena but also things not normally thought to be within the economist's purview.

FREAKONOMICS

How Uber Took the Taxi Industry by Storm

Every time a snowstorm hits New York City, people get a lesson in market equilibrium. Traffic becomes snarled. People's tempers flare. And taxis are virtually impossible to find. Yet riders with ride-sharing companies like Uber can summon one with almost no wait time.

You would think such commuters might be happy that Uber can deliver them home even as the massive New York taxi system fails. But they actually aren't, because in such circumstances Uber prices go up—a lot.

Snowstorms create a supply and demand nightmare for taxi drivers. They are unable to adjust their prices. The city regulates the rate and fare taxis may charge, and to make money, drivers must complete many trips. When road conditions are bad, the accident rate goes up. Often, it's just not worth it for taxi drivers to remain on the streets and many head back to the garage. Demand is high and supply is low. The price needs to rise, but it can't.

Uber, on the other hand, can adjust its prices to match supply and demand. Everyone that wants to ride at the market price can do so because two events occur. Some consumers are not willing to pay the higher price, and they drop out of the market. Some Uber drivers who would not have taken the trip at the regular price do so because the price is high enough to cover their costs.

Today, Uber has learned from the bad publicity it has received for surge pricing but imposes caps so that prices do not rise too high for consumers in critical situations. An insurer that drivers keep driving under such circumstances Uber continues to pay drivers the high rates they'd charge consumers. In other words, Uber takes a loss ride in extreme-weather events, because its expected long-run benefits of the long-run benefits of this price cap outweigh the short-run costs.

That's a different kind of equilibrium.

Joe Mathier, "Uber Prices Are Surging Because of Snow and People Aren't Happy," November 15, 2018, <https://www.foxnews.com/uber-prices-are-surging-because-of-the-snow-and-people-arent-happy/>

Good luck finding a cab when the snow starts falling in New York City.

FREAKONOMICS

Memories of Mutton

You've probably never eaten mutton and you're probably glad. Mutton is the meat of mature sheep. It's stronger in flavor than lamb, gamier, with a considerably chewier consistency. Even mutton's supporters admit that it is an acquired taste. There was a time, however, when more mutton was consumed than turkey, cheese, cocoa, or rice! Why did mutton disappear? The answer is one that you would never guess.

The man who spelled doom for mutton went by the name of Wallace Hume Carothers. Carothers was a small, bespectacled man who lived in Wilmington, Delaware. He didn't care much about mutton; his passion was complex chemical compounds, especially a class of molecules known as polyamides. He worked obsessively, sometimes to the point where he had to be institutionalized. Indeed, his great discovery in February 1935 came shortly after his release from a mental hospital.

Carothers didn't discover a substitute for mutton. Nor did he discover something bad about mutton that drove it out of fashion. Rather, his discovery was nylon.

Nylon was a miracle fabric that revolutionized women's fashion. The demand for nylon skyrocketed. By the 1940s, "nylon riots"—at which hundreds to thousands of women lined up at department stores in the hope of procuring nylon stockings—became commonplace. In a single incident, 40,000 women queued outside a store in Pittsburgh for the chance to buy 1 of only 13,000 pairs of stockings!

More and more women switched to nylon stockings, abandoning wool ones. The demand for wool plunged, driving down its price. In response, farmers raised many fewer sheep. Farmers had never exclusively raised sheep for mutton; they raised them for their wool. Being able to sell the slaughtered animals as mutton simply generated a bit of profit on the side. Fewer sheep meant there was now little mutton to be had. This scarcity might have transformed it into a rare delicacy. For whatever reason, that never happened. Nowadays in the United States, mutton is most commonly reserved for dog and cat food.

The impact of one market on another is exactly what we mean by general equilibrium. But the effects of general equilibrium are not always as subtle as the link between mutton and nylon. Just a few years after nylon was introduced, a new material called polyester hit the streets, which held up better than nylon against water, most chemicals, light, and heat. Nylon's dominance was soon eclipsed by that of polyester, which today is 10 times more prevalent in the marketplace. While mutton lovers may have believed justice was served when nylon fell from its place of preeminence, nylon's decline did not signal the return of mutton. Polyester, like nylon, was a substitute for wool, meaning there was even less mutton to go around.

Goolsbee et al., *Microeconomics*, 3e, © 2020 Worth Publishers
Caro / Marc Meyerbroeker/Newscom

Description

The header of the third and fourth page reads, *Freakonomics*. The third page is titled *How Uber Took the Taxi Industry by Storm* followed by text and an image. The fourth page overlapped by the third page is titled *Mutton* followed by text.

For a complete list of these features, please look at the pages inside the front cover.

Helping Students Succeed

Figure It Out exercises



figure it out 6.3



Go online for interactive, step-by-step help in solving the following problem.

A firm employs 100 workers ($W = \$15/\text{hour}$) and 50 units of capital ($R = \$30/\text{hour}$). At the firm's current input use, the marginal product of labor is 45 and the marginal product of capital is 60. Is the firm producing its current level of output at the minimum cost, or is there a way for the firm to do better? Explain.

Solution:

The cost-minimizing input choice occurs when $MP_L/W = MP_K/R$. We need to determine if this is the case for this firm:

$$MP_L = 45 \text{ and } W = 15, \text{ so } MP_L/W = 45/15 = 3$$

$$MP_K = 60 \text{ and } R = 30, \text{ so } MP_K/R = 60/30 = 2$$

Therefore, $MP_L/W > MP_K/R$. The firm is not currently minimizing its cost.

Because $MP_L/W > MP_K/R$, \$1 spent on labor yields a greater marginal product (i.e., more output) than \$1 spent on capital. The firm would do better by reducing its use of capital and increasing its use of labor. Note that as the firm reduces capital, the marginal product of capital will rise. Likewise, as the firm hires additional labor, the marginal product of labor will fall. Ultimately, the firm will reach its cost-minimizing input choice where $MP_L/W = MP_K/R$.

Description

The example is titled figure it out 6.3. The text below reads, Go online for interactive, step-by-step help in solving the following problem. A firm employs 100 workers ($W = 15$ dollars per hour) and 50 units of capital ($R = 30$ dollars per hour). At the firm's current input use, the marginal product of labor is 45 and the marginal product of capital is 60. Is the firm producing its current level of output at the minimum cost, or is there a way for the firm to do better? Explain.

Paragraph 2. Solution: The cost-minimizing input choice occurs when $MP_L/W = MP_K/R$. We need to determine if this is the case for this firm: $MP_L = 45$ and $W = 15$, so $MP_L/W = 45/15 = 3$, $MP_K = 60$ and $R = 30$, so $MP_K/R = 60/30 = 2$. Therefore, MP_L/W greater than MP_K/R . The firm is not currently minimizing its cost.

Paragraph 3. Because MP_L/W greater than MP_K/R , 1 dollar spent on labor yields a greater marginal product (that is, more output) than 1 dollar spent on capital. The firm would do better by reducing its use of capital and increasing its use of labor. Note that as the firm reduces capital, the marginal product of capital will rise. Likewise, as the firm hires additional labor, the marginal product of labor will fall. Ultimately, the firm will reach its cost-minimizing input choice where $MP_L/W = MP_K/R$.

We have been especially pleased with the overwhelmingly positive responses from instructors *and* students alike to our efforts to help students hone and improve their problem-solving abilities. As we were writing the first two editions, reviewers, focus group participants, and class testers continually told us that their students have difficulty translating what they have learned into the ability to solve problems *using* what they have learned. To address this problem, each chapter has several *Figure It Out* exercises. These detailed, worked-out problems patiently and completely walk students through analyzing exactly what a problem asks them to do, identifying what tools they need to solve the problem, and using those tools to arrive at an answer.

End-of-Chapter Problem Sets

There are over 350 problems, more than in the second edition, 30% of which are new to this edition. There are problems for every chapter section, and they also coordinate with the chapter's *Figure It Out* exercises. If students have worked through the *Figure It Outs*, they will be successful in tackling the solutions to each problem. Each problem set was reviewed by instructors to ensure its validity and usefulness in testing the chapter's coverage.

Make the Grade Essays

A+ make the grade

Holding the rest of the world constant

As you have probably seen in your previous economics courses, economists often use simplifying assumptions in their models to make the world an easier place to understand. One of the most important assumptions we use time and time again in this text is *ceteris paribus*—that is, “all else is equal.” For example, suppose you are contemplating your friend Max’s demand for an ice cream cone and considering how his demand is affected by an increase in the price of an ice cream cone. To see this



Things are not held constant between these two cones.

impact, you need to hold constant everything else that may influence Max’s decision: the amount of money he has, the outside temperature, the prices of other things Max buys, even his preferences for ice cream itself. This “all else equal” assumption then allows you to focus on the factor that you are interested in, the *price* of an ice cream cone.

It is easy to get tripped up on this assumption when you’re asked to dissect an application or an example, so be careful! Don’t read more into a scenario than the facts you are given, and don’t drive yourself crazy by dragging into the problem all kinds of hypothetical situations beyond those provided in the problem you are analyzing (e.g., what if Max is lactose intolerant? what if it’s a cold, windy day? or what if Max just lost his job?).

It is also important to remember that the “all else equal” assumption applies, in addition, to the goods we are considering. When we talk about a particular good, we assume that all units of that good are the same; that is, we hold all the characteristics of the good constant. This means that when we talk about ice cream cones, we are talking about cones of a particular size and quality. Do not think that the price of an ice cream cone has risen if the ice cream inside it is now a premium brand, or if the same ice cream now comes in a chocolate-dipped waffle cone. By introducing either of those changes, you’re changing the nature of the good itself, not just its price. By allowing something other than the cone’s price to change, you would be violating the “all else equal” assumption.

M. Unal Ozmen/Shutterstock; wildarrow/iStock/Getty Images

Description

A subtitle reads, *Holding the rest of the world constant*. The text below reads, As you have probably seen in your previous economics courses, economists often use simplifying assumptions in their models to make the world an easier place to understand. One of the most important assumptions we use time and time again in this text is *ceteris paribus* — that is, open quotes all else is equal. Close quotes For example, suppose you are contemplating your friend Max’s demand for an ice cream cone and considering how his demand is affected by an increase in the price of an ice cream cone. To see this

A photo shows two ice cream cones. The first ice cream is in the form of a dome and the second cone has an ice cream swirl with chocolate sauce on top of it.

Make the Grade essays point out common pitfalls that students may encounter, help them navigate through the finer points of microeconomic theory, and present practical advice on topics that frequently trip up students during homework and tests.

Words and Pictures

Outstanding presentation in an economics text depends on two main factors. We have ensured that our book delivers on each one.

- We use **straightforward and accessible writing** without sacrificing rigor. Powerful, complex, and useful ideas should not be conveyed in abstract, dry, or complicated language.

- Almost as important as a clear verbal explanation is a **clear graphical presentation**. Through color, clear labels, and detailed explanatory captions, each graph complements our words and provides students with a powerful tool for deeper understanding.

How We Deal with Math

Math is a powerful tool for economic analysis, and we want students of every skill level to be able to use it effectively. We have provided a text that will work for a diverse population of students and encourage them to use their math skills to unlock the potential of economic analysis. Our versatile text and its accompanying resources will allow you to use our book in a course with a standard algebraic and geometric focus or in one that relies more on calculus.

Our clear, accessible verbal and graphical presentations are supported by thorough, step-by-step explanations. The whys and wherefores of each step in the mathematical development of concepts are always clearly explained, and allow even math-shy students to easily understand how the use of math can enhance and simplify economic analysis. The main text uses algebra and geometry, but our in-text and online calculus appendices and accompanying resources allow calculus to be integrated easily into our book's presentation of theory, practice, and application.

Math Review Appendix

Most students entering this course will benefit from a math review, whether it is a review of basic algebra or of calculus. A *Math Review Appendix* at the back of the book provides the review necessary to prepare students for the math they will use throughout the text.

Calculus

The calculus is presented in appendices that employ the same conversational tone and intuitive approach as the text and include examples and *Figure It Out* problems (which are often the same as the algebra-based ones in the chapter). In this way, students can see how the calculus analysis buttresses the algebraic analysis. To give students an opportunity to practice what they have learned, each appendix includes problems that require the use of calculus.

To connect the material presented in the chapter with that in the calculus appendices, we have placed marginal notes in the chapter. These notes direct students to the appropriate appendix, and explain specifically how calculus will be used to understand the concepts. We hope these notes will encourage students familiar with calculus to utilize it on their own.

In-text and Online Calculus Appendices (* indicates an online appendix)

Chapter 2:	<i>*The Calculus of Equilibrium and Elasticities</i>
Chapter 3:	<i>*The Calculus of Consumer and Producer Surplus</i>
Chapter 4:	<i>The Calculus of Utility Maximization and Expenditure Minimization *The Mathematics of Utility Functions</i>
Chapter 5:	<i>The Calculus of Income and Substitution Effects *The Calculus of Demand</i>
Chapter 6:	<i>The Calculus of Cost Minimization *The Calculus of Production Functions</i>
Chapter 7:	<i>The Calculus of a Firm's Cost Structure *The Calculus of a Firm's Cost Structure Expanded</i>
Chapter 8:	<i>*The Calculus of Long-Run Competitive Equilibria</i>

Chapter 9: *The Calculus of Profit Maximization*

**Chapter
10:** **The Calculus of Price Strategies*

**Chapter
11:** **The Calculus of Cournot and Differentiated Bertrand Competition Equilibria*

**Chapter
12:** **The Mathematics of Mixed Strategies in Game Theory*

How Our Book Is Organized

Here is a brief snapshot of the chapters in the book with a bit of discussion on particular subjects that received some special attention or might be different from what you would find in other books. We consider [Chapters 1–11](#) the core chapters that most instructors will teach. The remaining chapters, [12–18](#), can be taught independently of one another.

Chapter 1, Adventures in Microeconomics:

We open the book with a brief introductory chapter and a story about the markets for making and for buying coffee to entice and excite students about the study of microeconomics. Through an *Application*, a *Theory and Data* section, and a *Freakonomics* box, we show students right away how microeconomic tools are useful, not just in the study of economics and business, but in everyday life.

Chapter 2, Supply and Demand:

In [Chapters 2](#) and [3](#), we lay a solid foundation by going deeply into supply and demand before moving on to consumer and producer behavior. Most microeconomics texts separate the presentation and the application of this simple yet powerful model. Presenting the entire model at the beginning makes logical sense, and we (and those who have used our book) have experienced success with this approach in classes.

[Chapter 2](#) presents the basics of the supply-and-demand model. Of particular note is the section Key Assumptions of the Supply and Demand Model, which exemplifies the care and clarity with which we develop and explain microeconomic theory.

Chapter 3, Using Supply and Demand to Analyze Markets:

In [Chapter 3](#), we use the supply-and-demand model to analyze extensively consumer and producer surplus, price and quantity regulations, and taxes and subsidies. We believe that the earlier these concepts are introduced and the more completely they are explained, the easier it is to use them throughout the course. [Chapter 3](#) is designed to be flexible: You can pick and choose which topics to cover and emphasize.

Chapter 4, Consumer Behavior:

How do consumers decide what and how much to consume given the enormous variety of goods and services available to them?

We begin this crucial chapter by clearly laying out, in one section, the assumptions we make about consumer behavior. Actual tests among professors consistently showed this approach as being especially helpful for their students.

Chapter 5, Individual and Market Demand:

Here we show how consumer preferences are used to derive market demand. Section 5.3, Consumer Responses to Price Changes: Substitution and Income Effects, takes extra care in explaining this topic, which students often find challenging. Abundant applications and a discussion of pitfalls to avoid make this material particularly accessible and interesting.

Chapter 6, Producer Behavior:

How do companies decide which combination of inputs to use in production, and how does this decision affect production costs?

We begin this chapter by clearly laying out the Simplifying Assumptions about Firms' Production Behavior. Later in the chapter, we devote a complete section to the role technological change plays in firms' productivity over time. Several applications and examples bring this material alive for students.

Chapter 7, Costs:

Cost curves illustrate how costs change with a firm's output level and are crucial in deriving market supply. Because opportunity costs and sunk costs are often difficult concepts for students to master, we take extra care at the start of [Chapter 7](#) to distinguish these concepts and illustrate the role they play in decision making. Our examples engage students so that they can better understand the often challenging concepts in this chapter.

Chapter 8, Supply in a Competitive Market:

This chapter begins our coverage of market structure, and it uses real-life industries such as the Texas electricity industry to explain how competitive markets work. We clearly, carefully, and patiently explain a firm's shutdown decision, a topic that students often find confusing.

Chapter 9, Market Power and Monopoly:

This chapter begins with a thorough discussion of the origins of market power and how having such power affects a firm's production and pricing decisions. We bring the concept of monopolistic market power to life using examples of real firms with near-monopoly power, such as Durkee-Mower, Inc.; the firm that makes Marshmallow Fluff; and Dr. Brown's, a manufacturer of specialty sodas. Abundant applications further engage students' interest.

Chapter 10, Pricing Strategies for Firms with Market Power:

This practical chapter will appeal especially to business students. We thoroughly discuss the many ways in which a firm can take advantage of pricing power, and we clearly describe which pricing strategies are useful in which situations.

Chapter 11, Imperfect Competition:

This chapter looks at oligopolies and monopolistically competitive firms. Unlike perfectly competitive and monopolistic firms, these firms must consider their competitors' actions and strategize to maximize their profits.

Chapter 12, Game Theory:

The tools of game theory can be used to explain strategic interactions among firms and to predict market outcomes. Students will find our game theory analysis (presented in one chapter for better comprehension) easy to follow and understand. Varied topics from penalty kicks in soccer to airlines' responses to threats of entry show the usefulness of game theory not just in business, but also in everyday decision making.