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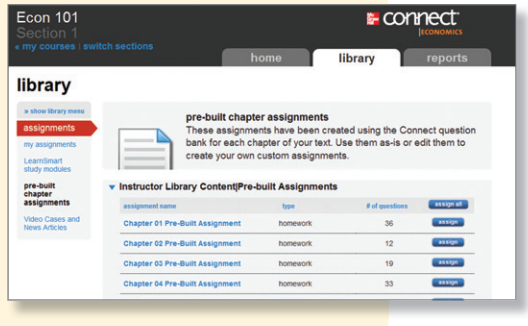

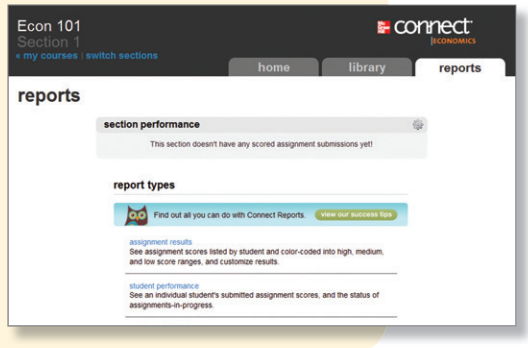

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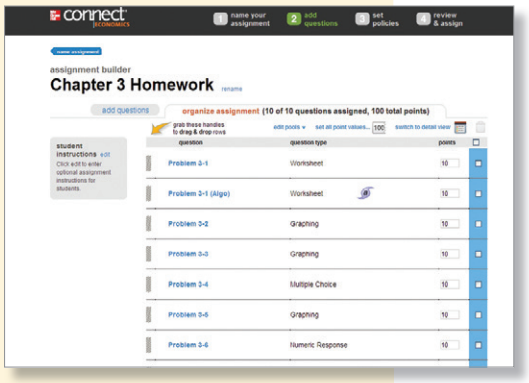

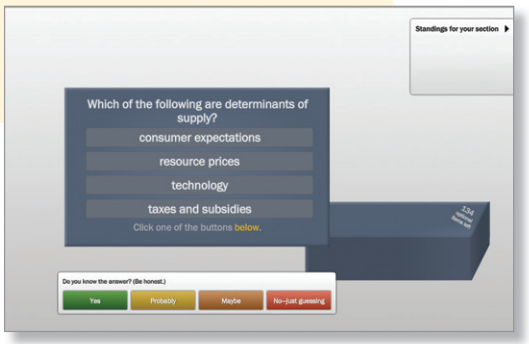

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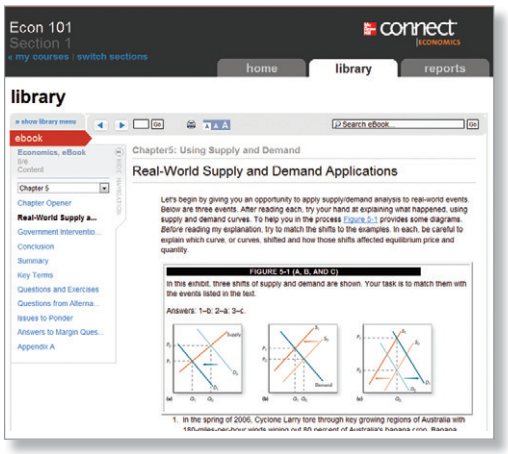

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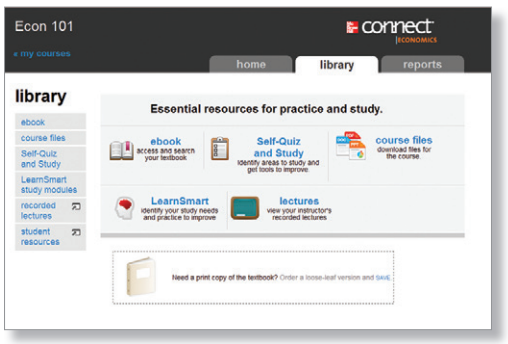

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David C. Colander

Middlebury College

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Dedicated to the memory of
Helen Reiff (1928–2012),
my personal editor and long-time friend.

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About the Author

David Colander is the Christian A. Johnson Distinguished Professor of Economics at Middlebury College. He has authored, coauthored, or edited over 40 books and over 150 articles on a wide range of economic topics.

He earned his B.A. at Columbia College and his M.Phil. and Ph.D. at Columbia University. He also studied at the University of Birmingham in England and at Wilhelmsburg Gymnasium in Germany. Professor Colander has taught at Columbia University, Vassar College, the University of Miami, and Princeton University as the Kelley Professor of Distinguished Teaching. He has also been a consultant to Time-Life Films, a consultant to Congress, a Brookings Policy Fellow, and Visiting Scholar at Nuffield College, Oxford.

He has been president of both the History of Economic Thought Society and the Eastern Economics Association. He has also served on the editorial boards of the *Journal of Economic Perspectives, The Journal of Economic Education, The Journal of Economic Methodology, The Journal of the History of Economic Thought, The Journal of Socio-Economics,* and *The Eastern Economic Journal.* He has been chair of the AEA Committee on Electronic Publishing, a member of the AEA Committee on Economic Education, and is currently the associate editor for content of the *Journal of Economic Education*.

He is married to a pediatrician, Patrice. In their spare time, the Colanders designed and built an oak post-and-beam house on a ridge overlooking the Green Mountains to the east and the Adirondacks to the west. The house is located on the site of a former drive-in movie theater. (They replaced the speaker poles with fruit trees and used the I-beams from the screen as support for the second story of the carriage house and the garage.) They now live in both Florida and Vermont.

Preface for the Instructor

"Imagine . . . a textbook that students enjoy!" That comment, from an instructor who taught at Purdue, was e-mailed to me as I was struggling to write the preface to an earlier edition. That comment still captures what I believe to be the most distinctive feature of the core of this edition. It speaks to students.

An Entire Learning Platform

That comment continues to guide this edition. But because students today learn differently than they did twenty years ago, it does so in new ways. Students today grew up with the Internet and social media that provide them with access to a broad range of digital resources and instant feedback. That changes the way they learn, and if we are to reach them, we have to present material to them in ways that fit their learning style. They want to be able to bring their course with them—to access it anywhere, anytime—at a coffee shop in the afternoon, in their dorm room late at night, or at lunch hour at work. They still want material that speaks to them, but it has to speak to them in their language at the time they want to listen. Modern learning is blended learning in which online presentations, review and testing of material, and feedback are seamlessly blended with the narrative of the text.

The strengths of previous editions translate well in this new environment. Students don't want an automaton. They want a person who speaks to them, even if it is online. They don't differentiate a "virtual" world from a "real" world. Both are real and students seek the same thing in both—the presentation of material that engages them. And that's what I do. I tell stories. I use colloquial language, and I offer material that they read about in the newspaper—today's economic issues. The material speaks to them in ways that they can hear and enjoy.

A guiding principle of this edition has been to reach out to students in the digital language of online communication. To teach modern students effectively, we've got to get their attention and hold it, and digital tools give us that opportunity. That's why I've worked hard in this revision to provide the material that students can engage in a single, seamless, and fully digital product.

Embracing the digital environment has led to some significant pedagogical improvements. All of the content, including end-of-chapter questions, lines up directly with learning objectives. These learning objectives serve as the organizational structure for the material. As a result, within McGraw Hill's online Connect Plus platform, students can learn the core building blocks online with instant feedback; instructors can assess student learning data and know what their students understand, and what they don't. With that information, they can devote class time to those issues with which students are having problems.

The end-of-chapter material has been revised for optimal online delivery: All of the standard questions and problems are auto-gradable and integrated with the eBook experience. Such integration allows students to move seamlessly between homework problems and portions of the narrative to get the information they need, when they need it. This is a significant advance in pedagogy. Now, even professors in large lecture classes can assign questions and exercises at the end of chapters and provide feedback to students at the point of need.

In addition to the standard questions and exercises at the end of every chapter I also provide a set of Issues of Ponder and Alternative Perspective Questions that have no "correct" answer, but instead are designed to get the students to think. In a blended learning environment, these are the questions that can form the basis for rich classroom discussions that engage the students with broad issues as much as the online material engages them with the building blocks. Classes become discussion and thinking time, not regurgitation and repetition time.

I am confident that the combination of the digital tools via Connect Plus, the modern material presented, and the colloquial style I have worked so hard to perfect will engage students in the ninth edition like never before. (Additional information about Connect is presented on p. xv.)

Modern, Not Outdated 1950s Economics

You can have the best online platform and presentation in the world, but if the content isn't relevant or engaging, it serves little purpose. My goal is to present students with the best economics I can. That means that I want to teach *modern economics,* not neoclassical economics (or whatever else the collection of models that developed in the 1950s is called). That doesn't mean that I don't teach the traditional models; it just means that I integrate modern interpretations and insights with them. That approach makes the tone and format somewhat different

from the 1950s' tone and format of many competitors that make it seem as if economics hasn't changed in 60 years.

Why haven't competitors changed? Because it is really, really hard to deviate from the standard template developed in the 1950s. I fully recognize the difficulty. (After all I'm the one who coined the "15 percent rule" for revising textbooks.) I know and accept that if we are going to teach modern economics, it has to involve an evolutionary, not revolutionary, template. But recognizing the importance of the existing template is not a call for laziness and complacency in what we teach; it is a call for creativity. Economics has changed from what it was, and that means the content of the texts has to change as well. Texts that don't embrace that change are becoming more and more out-of-date.

If we are to consider ourselves serious teachers of economics, we can and should be doing whatever we can to teach students modern economics, not some vestige from the past. Over the past decade I have been working on ways to introduce modern economics into the principles course—trying different ideas on my students and colleagues and discovering what works and what doesn't. In the last edition I started to integrate modern economics into the standard principles template, and I continue that integration in this edition after getting useful comments from many of my users about the best way to do it.

One of the biggest problems that many people have pointed out with presenting students with the subtleties of modern economics is that many of their students are, shall we say, less-than-perfect students. I am not unaware of the nature of students—in fact I was one of those far-less-than-perfect students. I am no utopian; I am a realist who recognizes that many, perhaps most, students could care less about how economists think. They are taking the course because it is required, because their parents told them they had to, or because it was what fit in their schedule. That is the reality, and they are the students I'm writing for.

Why do I take this approach? Because I figure that if I can excite these marginal students about economics, I will likely also excite those more perfect, self-motivated students who professors dream of having in class. So my target student is a non-economics major who doesn't especially care about the content they are learning; he or she is much more likely to be concerned with what is going to be on the exam (and sometimes they don't even care about that). I regard this fact as liberating, not confining. It makes it even more important that we teach them modern economics, not a set of models from an outdated template. I want students to know TANSTAAFL, to know the strengths of markets, the weaknesses of markets, the importance of incentives, and why economic policy is so complicated and messy.

How does a teacher excite students who are less than excited about economics? My answer to that question is that you challenge them, you talk to them, you speak a language that they can understand, and you recognize their pain. That's what I try to do. I will fail with many of them, but if I don't try, then I don't deserve to be called a teacher, which in my view is the highest calling an economist can have.

A Student-Friendly Colloquial Style

To reach these less-than-perfect students, I convey ideas in a highly colloquial manner; I don't lecture students, or talk to them in textbookese; I talk to them in conversational English. I strongly believe that most students have the ability to understand economic concepts even though on exams it often appears as if they have serious problems. In my opinion, many of their problems in exams are not conceptual; rather, they are problems of motivation, reading, and math. The economics found in principles courses is not the student's highest priority; it certainly wasn't mine when I was 18. I'm continuously amazed at how many supposedly not-so-good students are conceptually bright. The reality is that most principles books bore this Internet generation. To teach them effectively, we've got to get their attention and hold it.

My colloquial style helps get their attention. It makes them feel that they are getting an additional tutor to back up the professor. This secondary tutor, while a bit of a pain in the ass at times, is at least human. That colloquial style helps with one of the biggest problems in the course—getting students involved with the material.

I get lots of e-mails from students—some ask me if I have sons who share my perverse sense of humor because they'd like to marry them; others tell me that I goofed somewhere in the book. Others complain about their professor—to which I answer the professor is always right. My point is not the content of the e-mails; my point is that students feel comfortable e-mailing and even phoning me. Students hear my voice in the book. It is the only economics textbook that establishes a connection with the student. To toot my own horn (what else are prefaces for?), let me share an e-mail that the publisher received from a friend of theirs (an insider to the publishing business) and that they forwarded to me. It said:

> Dear X, My son is a freshman at The University of X. Like many kids he has grown to be less-and-less a reader until fairly recently. He is in the business school at college and he is wandering in search of an eventual major, like so many. He took the Principles Micro in the Fall and "hated" economics. On Monday he told me that his favorite course is Macro. His instructor is "not so helpful" but he is reading the

book and making straight A's because the book is "so much fun to read" and he is "learning a ton of stuff." He has registered for the WSJ online and reads it every day. He is thinking of pursuing Econ as a major. It is actually the most positive review by an "end user" of a text-book that I've heard in a long time and, although it took me three days to find out the author and publisher (he didn't know; he just liked reading the book), the book is the latest edition of Colander. So: Thanks!

One of the reasons I keep working on this book is that I get a number of letters and e-mails like this one, and it boosts my admittedly already big ego, but what is life if not a big ego trip? (Yes, I recognize that that last statement is not standard textbookese, but I include it here to give you a sense of what I mean by my colloquial style, and to explain to you how I keep the students' attention as I am pounding into them the need to equate marginal cost and marginal benefits.)

Numerous students tell me that they actually break a smile when they read my book, and a few tell me they crack up. Just about everyone tells me that they recognize that the person writing this book is very human—all too human in some people's view. My colloquial style allows me greater flexibility in the material I present to students than most textbook authors have. Because I'm having a conversation with the students, I can explain to them what material is new and is to be read casually rather than to be memorized. Then, elsewhere where I am presenting material that will likely be on their exam, I can tell them that it is time to buckle down and memorize. So my colloquial style allows me to vary the presentation and I take full advantage of it in explaining to students what modern economics is.

Modern Critical Thinking Economics

Modern economics can mean different things to different people, and my interpretation of it centers around critical thinking. Modern economics is economics that is based on the traditional models, but that subjects them to critical thinking, and does not apply the models where they don't fit empirically. It focuses on the real world, rather than on abstract models.

To maintain that critical thinking approach, two principles stand out: (1) institutions and history are important in policy discussions and (2) good economics is open to dealing with all ideas. The mantra of modern critical thinking economics is, "Tell me something I don't already know, using whatever method works." Let me discuss each of these principles briefly.

Institutions and History Are Important to Understand Policy

If one opens up Adam Smith's *Wealth of Nations,* John Stuart Mill's *Principles of Political Economy,* or Alfred Marshall's *Principles of Economics,* one will see economic analysis placed in historical and institutional context. The modern textbook template moved away from that, and in previous editions, I tried to return the principles of economics toward that broader template, presenting models in a historical and institutional context. This edition continues that emphasis on institutions and history. Modern work in game theory and strategic decision making is making it clear that the implications of economic reasoning depend on the institutional setting. To understand economics requires an understanding of existing institutions and the historical development of those institutions. In a principles course we don't have time to present much about history and institutions, but that does not preclude us from letting students know that we know that these issues are important. And that's what I try to do.

When I say that institutions and history are important, I am talking about economic policy. As I stated above, this text and accompanying package is *not* designed for future economics majors. Most principles students aren't going to go on in economics. I write for students who will probably take only one or two economics courses in their lifetime. These students are interested in policy, and what I try to present to them are the basics of modern economic reasoning as they relate to policy questions.

Because I think policy is so important in explaining how to apply economic reasoning, I utilize a distinction made by J.N. Keynes (John Maynard Keynes' father) and Classical economists generally. That distinction is between *theorems*—the deductive conclusions of models—and *precepts*—the considered judgments of economists about the policy implications of the models. I make it clear to students that models do not tell us what to do about policy—they give us theorems. Only when we combine the model's results with our understanding of institutions, our understanding of the social context, and the normative goals one wants to achieve, can we arrive at policy conclusions, which are embodied in precepts.

Openness to Various Views

While I present modern economics, I present it in such a way that it is open to many different points of view. I don't present the material as "the truth" but simply as the conventional wisdom, the learning of which is a useful hurdle for all students to jump over. To encourage students to question conventional wisdom, the end of each chapter includes a set of questions—Questions

from Alternative Perspectives—written by economists from a variety of different perspectives. These include Post-Keynesian, feminist, Austrian, Radical, Institutionalist, and religious questions. The Radical questions come from the Dollars and Sense Collective, a group with whom I've worked to coordinate their readers (www.dollarsandsense.org/bookstore.html) with this text. I also often integrate Austrian ideas into my class; I find that *The Free Market* (www.mises.org) is a provocative resource.

I often pair an article in *The Free Market* with one in *Dollars and Sense* in my assignments to students for supplementary reading. Having students read both radical and Austrian views, and then integrate those views into their own, generally middle-of-the-road, views is, for me, a perfect way of teaching the principles course. (If I have radicals and libertarians in the class, I argue in favor of middle-of-the-road views.) If you like to teach the course emphasizing alternative views, you might want to assign the brief survey of different approaches to economics in the "Preface for the Student" close to the beginning of the course, and then have the students discuss the alternative perspective questions at the end of each chapter.

There are many other ways to teach this open view approach, and for shorter classes, I have students read the various chapters on their own, and then do a presentation or have a discussion in class of how they really feel about various policies. The idea is to engage students about policy and policy debates as part of the course.

Teaching both Models and Critical Thinking

The goal in most principles courses is to teach students economic insights by presenting them a collection of models. Models are central to modern economics. Robert Solow nicely captured its importance when he said that, for better or worse, economics is a modeling science. This means that an important aspect of teaching students modern economics involves introducing them to the modeling approach to understanding the world. But teaching models, in my view, should be along the lines of Alfred Marshall, not Mas-Colell, Whinston, and Green. Marshall emphasized that economics was an approach to problems, not a body of confirmed truths.

In my view, *the modeling method, not the models,* is the most important to an economics class. In my presentation of models, I carefully try to guide students in the modeling method, rather than having them memorize truths from models. I carefully emphasize the limitations of the models and the assumptions that underlie them, and am constantly urging students to think beyond the models. This approach pushes the students a bit harder than the alternative, but it is, in my view, the best pedagogical approach; it is the critical thinking approach.

Changes in This Edition

I strongly believe that content has to be both up to date and relevant. Economic understanding and the economy in which we live are continually evolving. This means that course materials have to continually evolve as well so that they are teaching modern economics. For that reason, you will see many more changes in the text's organization and presentation than you will see in other long-standing principles texts. This is not a "change a few words here and there" revision. This is a substantial revision. They are changes that will keep your teaching fresh and engaging. The first change is obvious: All data, institutional detail and policy discussion had to be brought up to date. But that was only the beginning.

The biggest change in the micro section is how it is organized. The guiding principles were to simplify the presentations so that the text is more accessible, and to get policy discussion up front so that students see the relevance of economics early on. That meant moving the discussions of choice theory, game theory, and behavioral economics to later sections in the text, and moving the discussion of trade policy, market failure, and government failure up earlier in the text.

In revising, I use my students as sounding boards, and one of them reported back to me that "these chapters were a sudden jolt of reality; they were addictive; I couldn't put them down until I had finished them." He had multiple questions, as I suspect most readers will. So, if you want to teach students about the problems currently facing the economy—problems that students read on the Internet and in the newspapers—then this text is for you.

In-Depth Chapter-by-Chapter Discussion of Changes

Major changes include:

Chapter 1, Economics and Economic Reasoning

Deleted the discussion of induction, deduction, and abduction to simplify the presentation.

Chapter 2, The Production Possibility Model, Trade, and Globalization

The discussion of opportunity costs and its relationship to tradeoffs has been clarified. The "combined PPC with trade" diagram has been removed to simplify the discussion. The presentation now includes two simple graphs, each showing the production possibility curve for one country. The discussion allows the identification of a new level of possible consumption based on trade for each country separately.

I changed the discussion of outsourcing so it fits better with the broader term, "globalization." The issues go beyond U.S. companies moving production abroad and include the impact of global competition for U.S. firms, including shutting down U.S. production as well as retooling into more competitive sectors. This sets the stage for an expanded discussion of globalization throughout the text.

Chapter 3, Economic Institutions

I simplified the discussion of evolving economic systems by cutting the discussion of feudalism, mercantilism, and the Industrial Revolution. These topics are covered in the chapter's appendix. I added a discussion of for-benefit corporations, a rising form of business that includes social goods along with profit in their charters. I added a new box, "Who Are the 1 Percent" to include recent conversations in the Occupy Movement.

Chapter 4, Supply and Demand

I focused the discussion of the shift factors of supply on technology, while continuing to list the same four from the eighth edition.

Chapter 5, Using Supply and Demand

I replaced the example of the effect of Cyclone Larry with the more recent example of Hurricane Irene. I moved the discussion of the determination of exchange rates to Chapter 9, "Comparative Advantage, Exchange Rates, and Globalization."

Chapter 6, Describing Supply and Demand: Elasticities

This is Chapter 7 from the eighth edition. I deleted the box, "Calculating Elasticity at a Point," so that students can focus on the calculation using the average between two points. I cut the section "Substitution and Supply" and cut the detailed tables listing estimates of elasticities and provided a few examples. Finally, I eliminated the specific calculations illustrating the advanced topic: effect of shifting supply and demand based on relative elasticities of supply and demand.

Chapter 7, Taxation and Government Intervention

This is eighth edition Chapter 8. It has been updated, but otherwise is similar.

Chapter 8, Market Failure versus Government Failure

This is eighth edition Chapter 21. It has been moved up so policy can be discussed earlier. I added short discussions about the moral hazard problem and screening in the section about informational problems.

Chapter 9, Comparative Advantage, Exchange Rates, and Globalization

This chapter is based on the first part of Chapter 9 in the eighth edition and now incorporates material about exchange rates. Much of the institutional and data discussion about government policy is moved to Chapter 10. I added a number of new concepts to the chapter, including exchange rate determination and the distributional effects of international trade. It discusses how international adjustment are "supposed" to work in theory, but it also discusses how reality often does not quickly adjust, causing complications for economies when trade flows are unequal. It introduces the concept of import-led stagnation as the mirror image of export-led growth.

Chapter 10, International Trade Policy

This chapter looks more closely at trade and trade policy, and is based on portions of the eighth edition Chapter 9.

Chapter 11, Production and Cost Analysis I

This is eighth edition Chapter 12. It has been updated, but otherwise is similar. Some of the graphs have been simplified.

Chapter 12, Production and Cost Analysis II

This is eighth edition Chapter 13 updated. I added a short discussion of for-benefit corporations.

Chapter 13, Perfect Competition

This is eighth edition Chapter 14. I shortened the discussion of the condition for perfect competition, and streamlined the presentation so that the discussion of marginal revenue facing the perfect competitive firm follows immediately from the conditions for perfect competition.

Chapter 14, Monopoly and Monopolistic Competition

This chapter now presents both monopoly and monopolistic competition, drawing material from eighth edition Chapters 15 and 16. This allows for a significantly shortened presentation of antitrust policy that is integrated with the oligopoly chapter. I also added a graphical presentation of how price-discriminating monopolists eliminate welfare loss.

Chapter 15, Oligopoly and Antitrust Policy

This chapter combines the eighth edition Chapter 16 presentation of oligopoly and the Chapter 18 discussion of antitrust policy. I significantly simplified the antitrust portion of the chapter.

Chapter 16, Real-World Competition and Technology

This is eighth edition Chapter 17 updated, but otherwise largely unchanged.

Chapter 17, Work and the Labor Market

This is eighth edition Chapter 19 updated, but otherwise largely unchanged.

Chapter 18, Who Gets What? The Distribution of Income

This is eighth edition Chapter 20 updated, but otherwise largely unchanged. I added a discussion of the effect of globalization on the distribution of income across industries and classes of workers.

Chapter 19, The Logic of Individual Choice: The Foundation of Supply and Demand

This is eighth edition Chapter 10, which is updated.

Chapter 20, Game Theory, Strategic Decision Making, and Behavioral Economics

This is eighth edition Chapter 11 repositioned later in the text.

Chapter 21, Thinking Like a Modern Economist

This is eighth edition Chapter 6, which is updated, but other than being repositioned, it is largely unchanged.

Chapter 22, Behavioral Economics and Modern Economic Policy

This is the same chapter as the eighth edition. It is updated but is largely unchanged.

Chapter 23, Microeconomic Policy, Economic Reasoning, and Beyond

This is the same chapter as the eighth edition. It is updated, but largely unchanged.

Key Pedagogical Features

Learning Objectives

Four or five learning objectives are presented at the beginning of each chapter and are referenced again in the summary and end-of-chapter review questions and exercises to which they relate. The learning objectives (LO) serve as a quick introduction to the material and concepts to be mastered before moving to the next chapter. All of the assignable content within Connect is also organized around learning objectives to make it easier to plan, track, and analyze student performance across learning outcomes.

Margin Comments

Located throughout the text in the margin, these key takeaways underscore and summarize the importance of the material, at the same time helping students focus on the most relevant topics critical to their understanding.

Margin Questions

These self-test questions are presented in the margin of the chapter to enable students to determine whether the preceding material has been understood and to reinforce understanding before students read further. Answers to Margin Questions are found at the end of each chapter.

Web Notes

Jenifer Gamber has updated the Web Notes; this feature extends the text discussion onto the web. Web Notes are denoted in the margin and are housed on the Online Learning Center at **www.mhhe.com/colander9e** and within Connect Plus.

Podcasts

Written and recorded by Robert Guell of Indiana State University, more than 50 three- to five-minute audio clips delve deeper into the concepts. The audio clips (and summaries) occur throughout the text wherever you see the iPod icon in the margin. The podcasts are also housed on the Online Learning Center at **www.mhhe.com/colander9e** and within Connect Plus.

Supplements

McGraw-Hill has established a strong history of top-rate supplements to accompany this text, and this ninth edition strives to carry on the tradition of excellence.

For the Instructor

The following ancillaries are available for quick download and convenient access via the Online Learning Center at **www.mhhe.com/colander9e** and within Connect Plus. Both are password protected for security.

Instructor's Manual

This text boasts one of the strongest Instructor's Manuals on the market. Paul Fisher of Henry Ford Community College worked incredibly hard to maintain the high standard set in previous editions. Elements include:

- *Learning Objectives:* Lists the learning objectives for each chapter for a quick review.

- *Teaching Objectives:* Alerts new professors to common student difficulties with the material and provides help for addressing them.
- *For Professors New to Colander:* Notes some of the names, notations, definitions, and symbols that Colander uses as compared to other products to help professors transition into this product.
- *Problem Sets with Solutions:* Additional questions for each chapter are included here. They are designed to be photocopied and distributed for student use.

Solutions Manual

Prepared by Jenifer Gamber and me, this manual provides answers to all end-of-chapter questions—the Questions and Exercises, Questions from Alternative Perspectives, and Issues to Ponder.

Test Banks

The test bank contains thousands of unique quality questions for instructors to draw from in their classrooms. Brian Lynch of Lakeland Community College and Timothy Terrell of Wofford College worked diligently to make sure that this revised version is clear and useful. Each question is categorized by learning objective, level of difficulty, economic concept, AACSB learning categories, and Bloom's Taxonomy objectives. Questions were reviewed by professors and students alike to ensure that each one was effective for classroom use. All of the test bank content is available for assigning within Connect.

Computerized Test Banks

McGraw-Hill's EZ Test is a flexible and easy-to-use electronic testing program. The program allows you to create tests from text-specific items. It accommodates a wide range of question types and you can add your own questions. 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 Macintosh environmnents.

PowerPoint Presentations

Shannon Aucoin of the University of Louisiana at Lafayette and Edward Gullason of Dowling College worked tirelessly to revise the PowerPoint slide program, animating graphs and emphasizing important concepts. Each chapter has been scrutinized to ensure an accurate, direct connection to the text.

For the Student

Online Learning Center

www.mhhe.com/colander9e

This Online Learning Center provides a number of useful study tools including practice quizzes, a set of study PowerPoints, Web Notes, and web chapters. Premium content is also available for purchase. The premium content contains podcasts and Paul Solman videos, which are downloadable to MP3 devices.

Study Guide

The study guide—written by Jenifer Gamber and me—provides a review of the concepts from each chapter. It gives students options to match a variety of learning styles: short-answer questions, matching terms with definitions, problems and applications, multiple-choice questions, and potential essay questions. To make the guide a true study tool, each answer includes an explanation of why it is correct.

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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.

Student Study Center

The *Connect Economics* Student Study Center is the place for students to access additional resources. The Student Study Center:

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- Adapts automatically to each student, so students spend less time on the topics they understand and more on those they have yet to master.
- Provides continual reinforcement and remediation, but gives only as much guidance as students need.
- Enables you to assess which concepts students have efficiently learned on their own, thus freeing class time for more applications and discussion.

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- Collect data and generate reports required by many accreditation organizations like AACSB.

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People to Thank

Let me conclude this preface by thanking the hundreds of people who have offered suggestions, comments, kudos, and criticism on this project since its inception. This book would not be what it is without their input. So many people have contributed to this text in so many ways that I cannot thank everyone. So, to all the people who helped—many, many thanks. I specifically want to thank the ninth edition reviewers, whose insightful comments kept me on track. Reviewers include:

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Preface for the Student: Alternative Perspectives

This text is written for you, the student. It's meant to give you a sense of what economics is, how economists think, and how they approach policy problems. There's only so much that an introductory course can cover, which means that much is left out. That includes much of the subtlety of economic thinking. So if you have a problem swallowing some of the ideas, and you believe that there's more to the issue than is presented here, rest assured; generally you're right. Hard choices have to be made for pedagogical purposes—issues have to be simplified and presentations curtailed. Otherwise this would be a 1,600-page book and much too heavy to carry around in a backpack.

Economics as a Method of Reasoning, Not the Truth

The approach I use is what would be called mainstream (it presents the conventional wisdom of economists) both because I'm mainstream and because most economists are as well. But pedagogically, I also believe that students learn by questioning—to say, no, that's not right, that's not the way I see things, and then to compare their way of thinking with the conventional way. Despite my being mainstream, I'm by nature also a skeptic, and in terms of pedagogy often find myself in sympathy with Joan Robinson, a famous economist, who argued that "the purpose of studying economics is not to acquire a set of ready-made answers to economic questions, but to learn how to avoid being deceived by economists." So, to encourage questioning everything, I don't present models and insights of economists as the truth (the field of economics is far too complicated to have arrived at a single truth) but as a set of technical hurdles, reasoning processes, and arguments that students should know, and that will help prepare them to deal with economic issues. Economics primarily teaches you how to approach problems; it does not provide definitive answers about what is right and what is wrong. It is a method, not a set of truths.

Alternative Perspectives in Economics

One of the pedagogical choices I made was to concentrate almost exclusively on the mainstream view. I strongly believe that focusing on that view is the best way to teach the course. However, I also believe that students should be aware of the diversity in economics and know that the mainstream view is not the only view out there. In fact, there are probably as many views out there as there are economists. Still, for a majority of economists, the concepts presented are an acceptable pedagogical simplification of the myriad views held by economists.

Some economists, however, might see this presentation as misleading, or as diverting the discussion away from other, more relevant, issues. These economists are generally called nonmainstream or heterodox economists. A heterodox economist is *one who doesn't accept the basic underlying model used by a majority of economists as the most useful model for analyzing the economy.*

In this preface, I will briefly introduce six heterodox economic approaches to give you a sense of how their analyses differ from the mainstream analyses presented. The six heterodox approaches are Austrian, Post-Keynesian, Institutionalist, Radical, feminist, and religious. Below are brief descriptions of each group, written with the help of the team of alternative-perspective economists.

Austrian Economists

Austrian economists believe in methodological individualism, by which they mean that social goals are best met through voluntary, mutually beneficial interactions. Lack of information and unsolvable incentive problems undermine the ability of government to plan, making the market the best method for coordinating economic activity. Austrian economists oppose state intrusion into private property and private activities. They are not economists from Austria; rather, they are economists from anywhere who follow the ideas of Ludwig von Mises and Friedrich Hayek, two economists who were from Austria.

Austrian economists are sometimes classified as conservative, but they are more appropriately classified as libertarians, who believe in liberty of individuals first and in other social goals second. Consistent with their views, they are often willing to support what are sometimes considered radical ideas, such as legalizing addictive drugs or eliminating our current monetary system—ideas that

most mainstream economists would oppose. Austrian economists emphasize the uncertainty in the economy and the inability of a government controlled by self-interested politicians to undertake socially beneficial policy.

One proposal of Austrian economists will give you a flavor of their approach. That proposal is to eliminate the Federal Reserve System and to establish a free market in money—a policy that would leave people free to use any money they want and that would significantly reduce banking regulation. In a sense, their proposal carries the Classical argument in favor of laissez-faire to its logical conclusions. Why should the government have a monopoly of the money supply? Why shouldn't people be free to use whatever money they desire, denominated in whatever unit they want? Why don't we rely upon competition to prevent inflation? Why don't we have a free market in money? Well-known Austrian economists include Peter Boettke, Veronique de Rugy, Mario Rizzo, David Gordon, Israel Kirzner, Peter Leeson, Chris Coyne, Steve Horwitz, Roger Garrison, and Roger Koppl.

Institutionalist Economists

Institutionalist economists argue that any economic analysis must involve specific considerations of institutions. The lineage of Institutionalist economics begins with the pioneering work of Thorstein Veblen, John R. Commons, and Wesley C. Mitchell. Veblen employed evolutionary analysis to explore the role of institutions in directing and retarding the economic process. He saw human behavior driven by cultural norms and conveyed the way in which they were with sardonic wit and penetrating insight, leaving us with enduring metaphors such as the leisure class and conspicuous consumption. Commons argued that institutions are social constructs that could improve general welfare. Accordingly, he established cooperative investigative programs to support pragmatic changes in the legal structure of government. Mitchell was a leader in developing economics as an empirical study; he was a keen observer of the business cycle and argued that theory must be informed by systematic attention to empirical data, or it was useless.

Contemporary Institutionalists employ the founders' "trilogy"—empirically informed evolutionary analysis directed toward pragmatic alteration of institutions shaping economic outcomes—in their policy approach. Examples include indicative planning—a macroeconomic policy in which the government sets up an overall plan for various industries and selectively directs credit to certain industries; and income support programs, including those assuring employment for all willing. Well-known Institutionalists include Greg Hayden, Geoff Hodgson, Anne Mayhew, James Peach, and Ronnie Phillips.

Radical Economists

Radical economists believe substantial equality-preferring institutional changes should be implemented in our economic system. Radical economists evolved out of Marxian economics. In their analysis, they focus on the lack of equity in our current economic system and on institutional changes that might bring about a more equitable system. Specifically, they see the current economic system as one in which a few people—capitalists and high-level managers—benefit enormously at the expense of many people who struggle to make ends meet in jobs that are unfulfilling or who even go without work at times. They see the fundamental instability and irrationality of the capitalist system at the root of a wide array of social ills that range from pervasive inequality to alienation, racism, sexism, and imperialism. Radical economists often use a class-oriented analysis to address these issues and are much more willing to talk about social conflict and tensions in our society than are mainstream economists.

A policy favored by many Radicals is the establishment of worker cooperatives to replace the corporation. Radicals argue that such worker cooperatives would see that the income of the firm is more equitably allocated. Likewise, Radical theorists endorse policies such as universal health care insurance that conform to the ethic of "putting people before profits."

There are a number of centers of Radical thought, including The Political Economy Research Institute, The New School for Social Research, and some campuses of the University of Massachusetts. A good place to find Radical views is the *Dollars and Sense* magazine. Well-known Radical economists include Lourdes Beneria, Sam Bowles, Arthur MacEwan, Robert Pollin, Gerald Epstein, Anwar Shaikh, Michael Reich, Richard Wolff, and Stephen Resnick, as well as a number of feminist economists who would be considered both Radicals and feminists.

Feminist Economists

Feminist economics offers a substantive challenge to the content, scope, and methodology of mainstream economics. Feminist economists question the boundaries of what we consider economics to be and examine social arrangements surrounding provisioning. Feminist economists have many different views, but all believe that in some way traditional economic analysis misses many important issues pertaining to women.

Feminist economists study issues such as how the institutional structure tends to direct women into certain

types of jobs (generally low-paying jobs) and away from other types of jobs (generally high-paying jobs). They draw our attention to the unpaid labor performed by women throughout the world and ask, "What would GDP look like if women's work were given a value and included?" They argue for an expansion in the content of economics to include women as practitioners and as worthy of study and for the elimination of the masculine bias in mainstream economics. Is there such a bias? To see it, simply compare the relative number of women in your economics class to the relative number of women at your school. It is highly likely that your class has relatively more men. Feminist economists want you to ask why that is, and whether anything should be done about it.

The historical roots of feminist economics can be found in the work of such authors as Mary Wollstonecraft, John Stuart Mill, Harriet Taylor Mill, and Charlotte Perkins Gilman. Feminist economics has expanded significantly in the past 25 years and has emerged as an influential body of thought. Well-known feminist economists include Myra Strober, Diana Strassmann, Barbara Bergmann, Julie Nelson, Jane Humphries, Marianne Ferber, Randy Albelda, Nancy Folbre, and Heidi Hartmann.

Religious Economists

Religion is the oldest and, arguably, the most influential institution in the world—be it Christianity, Islam, Judaism, Buddhism, Hinduism, or any of the many other religions in the world. Modern science, of which economics is a part, emphasizes the rational elements of thought. It attempts to separate faith and normative issues from rational analysis in ways that some religiously oriented economists find questionable. The line between a religious and non-religious economist is not hard and fast; all economists bring elements of their ethical considerations into their analysis. But those we call "religious economists" integrate the ethical and normative issues into economic analysis in more complex ways than the ways presented in the text.

Religiously oriented economists have a diversity of views; some believe that their views can be integrated reasonably well into standard economics, while others see the need for the development of a distinctive faith-based methodology that focuses on a particular group of normative concerns centered on issues such as human dignity and caring for the poor.

One religious perspective that is represented by a defined group in the U.S. economics profession is Christianity, and a number of Christian economists have joined together in the Association of Christian Economists (ACE). Its stated goal is "to encourage Christian scholars to explore and communicate the relationship between their faith and the discipline of economics, and to promote interaction and communication among Christian economists." Centers of ACE are Pepperdine University, Calvin College, and Gordon College. Leading Christian economists include Kurt Schaefer, Andrew Yuengert, and Stephen Smith.

Many of the religious alternative perspective questions that we provide in the text are from the Judeo-Christian perspective, the perspective most familiar to U.S. students. However, we intersperse some questions from other religious perspectives, both to show the similarity of views and to encourage students to think in a multicultural framework.

Post-Keynesian Economists

Post-Keynesian economists believe that uncertainty is a central issue in economics. They follow J. M. Keynes' approach more so than do mainstream economists in emphasizing institutional imperfections in the economy and the importance of fundamental uncertainty that rationality cannot deal with. They agree with Institutionalists that the study of economics must emphasize and incorporate the importance of social and political structure in determining market outcomes.

While their view about the importance of uncertainty is similar to the Austrian view, their policy response to that uncertainty is quite different. They do not see uncertainty as eliminating much of government's role in the economy; instead, they see it leading to policies in which government takes a larger role in guiding the economy.

One of their policy proposals that gives you a flavor of their approach is tax-based income policies—policies in which the government tries to directly affect the nominal wage- and price-setting institutions. Under a tax-based income policy, any firm raising its wage or price would be subject to a tax, and any firm lowering its wage or price would get a subsidy. Such a plan, they argue, would reduce the upward pressure on the nominal price level and reduce the rate of unemployment necessary to hold down inflation. Well-known Post-Keynesian economists include Paul Davidson, Jamie Galbraith, Barkley Rosser, John Cornwall, Shelia Dow, Malcolm Sawyer, Philip Arestis, Victoria Chick, Jan Kregel, and Geoff Harcourt.

Consistency of the Various Approaches

A characteristic of almost all heterodox economists of all types is that their analyses tend to be less formal than mainstream analysis. *Less formal* doesn't mean better or

worse. There are advantages and disadvantages to formality, but *less formal* does mean that there's more potential for ambiguity in interpretation. It's easy to say whether the logic in a formal model is right or wrong. It's much harder to say whether the logic in an informal model is right or wrong because it's often hard to see precisely what the logic is. The advantage of an informal model is that it can include many more variables and can be made more realistic, so you can discuss real-world problems more easily with that model. Nonmainstream economists often want to talk about the real world, which is why they use informal models.

Often, after I discuss the mainstream and heterodox approaches, some student asks which is right. I respond with a story told by a former colleague of mine, Abba Lerner:

> "But look," the rabbi's wife remonstrated, "when one party to the dispute presented their case to you, you said, 'You are quite right,' and then when the other party presented their case you again said, 'You are quite right.' Surely they cannot both be right?" To which the Rabbi answered, "My dear, you are quite right!"

The moral of the story is that there's nothing necessarily inconsistent among mainstream and heterodox economists' approaches. Their approaches are simply different ways of looking at the same event. Which approach is most useful depends on what issues and events you are analyzing. The class analysis used by radicals is often more appropriate to developing countries than it is to the United States, and, in analyzing developing countries, many mainstream economists also include class fights in their approach. Similarly, Austrian analysis provides more insight into the role of the entrepreneur and individual in the economy than does mainstream analysis, while Post-Keynesian and Institutionalist analyses are useful when considering major institutional changes.

The distinctions between heterodox and mainstream economists can be overdone. One economist may well fall into two or three different groupings and use a combination of various analyses.

I follow the work of heterodox economists carefully. Their writing is often more interesting than mainstream writing, which can often get rather technical and boring. But in this book, I present primarily mainstream views. I do that because that's what I see as the job of the principles of economics course. My goal, however, is to present those views to you, not to indoctrinate you with those views, and throughout the text I include some challenges to the standard views. At the end of each chapter, I also include some questions that challenge the view presented in the chapter. These questions are written by representatives of different heterodox groups. I also encourage you to look for these other views in your outside reading. The *Dollars and Sense* companion to the book has radical critiques and *Free Market,* an Austrian newsletter found at www.mises.org, has Austrian critiques. There are many other sources and websites for heterodox groups. Exploring these sites and learning about the many different views that are competing in the marketplace for ideas make your economics course more interesting.

A Concluding Thought

There are many ways to explore economics, and in your exploration, this text and accompanying package is only a map. You and your professor determine what you discuss and learn and what path you will take. Ultimately, that's the way it has to be. Most of you are in this course for the grade—college is a way of progressing up the ladder. That's how it was for me. But the process also can be transforming; it can change how you look at issues, how you think, and who you are. The economics courses I took were especially important in determining who I have become.

Much of the principles course is what I call hurdle jumping—calisthenics of the mind. It is a set of mind-strengthening exercises. Separately, each is not especially relevant, but combined, they help turn your weak cranial muscle into a strong muscle better able to handle the problems that life throws at you. So, do the work, even if it seems boring; follow your professor's reasoning, even if you don't agree with what he or she is arguing; and keep thinking. Take advantage of this product's digital tools, even if they aren't required. Read newspapers and try to apply the lessons, deciding when they apply and when they don't. But, in the process, be happy—enjoy the moment because that moment will never be again.

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PART I

Introduction: Thinking Like an Economist

CHAPTER 1 Economics and Economic Reasoning

CHAPTER 2 The Production Possibility Model, Trade, and Globalization

CHAPTER 3 Economic Institutions

CHAPTER 4 Supply and Demand

CHAPTER 5 Using Supply and Demand

Part I is an introduction, and an introduction to an introduction seems a little funny. But other sections have introductions, so it seemed a little funny not to have an introduction to Part I; and besides, as you will see, I'm a little funny myself (which, in turn, has two interpretations; I'm sure you will decide which of the two is appropriate). It will, however, be a very brief introduction, consisting of questions you may have had and some answers to those questions.

Some Questions and Answers

Why study economics?

Because it's neat and interesting and helps provide insight into events that are constantly going on around you.

Why is this book so big?

Because there's a lot of important information in it and because the book is designed so your teacher can pick and choose. You'll likely not be required to read all of it, especially if you're on the quarter system. But once you start it, you'll probably read it all anyhow. (Would you believe?)

Why does this book cost so much?

To answer this question, you'll have to read the book.

Will this book make me rich?

No.

Will this book make me happy?

It depends.

This book doesn't seem to be written in a normal textbook style. Is this book really written by a professor?

Yes, but he is different. He misspent his youth working on cars; he married his high school sweetheart after they met again at their 20th high school reunion, they remain happily married today, still totally in love. Twenty-five years after graduating from high school, his wife went back to medical school and got her MD because she was tired of being treated poorly by doctors. Their five kids make sure he doesn't get carried away in the professorial cloud.

Will the entire book be like this?

No, the introduction is just trying to rope you in. Much of the book will be hard going. Learning happens to be a difficult process: no pain, no gain. But the author isn't a sadist; he tries to make learning as pleasantly painful as possible.

What do the author's students think of him?

Weird, definitely weird—and hard. But fair, interesting, and sincerely interested in getting us to learn. (Answer written by his students.)

So there you have it. Answers to the questions that you might never have thought of if they hadn't been put in front of you. I hope they give you a sense of me and the approach I'll use in the book. There are some neat ideas in it. Let's now briefly consider what's in the first five chapters.

A Survey of the First Five Chapters

This first section is really an introduction to the rest of the book. It gives you the background necessary so that the later chapters make sense. Chapter 1 gives you an overview of the entire field of economics as well as an introduction to my style. Chapter 2 focuses on the production possibility curve, comparative advantage, and trade. It explains how trade increases production possibilities but also why, in the real world, free trade and no government regulation may not be the best policy. Chapter 3 gives you some history of economic systems and introduces you to the institutions of the U.S. economy. Chapters 4 and 5 introduce you to supply and demand, and show you not only the power of those two concepts but also the limitations.

Now let's get on with the show.

chapter 1

Economics and Economic Reasoning

"In my vacations, I visited the poorest quarters of several cities and walked through one street after another, looking at the faces of the poorest people. Next I resolved to make as thorough a study as I could of Political Economy."

—Alfred Marshall

When an artist looks at the world, he sees color. When a musician looks at the world, she hears music. When an economist looks at the world, she sees a symphony of costs and benefits. The economist's world might not be as colorful or as melodic as the others' worlds, but it's more practical. If you want to understand what's going on in the world that's really out there, you need to know economics.

I hardly have to convince you of this fact if you keep up with the news. You will be bombarded with stories of unemployment, interest rates, how commodity prices are changing, and how businesses are doing. The list is endless. So let's say you grant me that economics is important. That still doesn't mean that it's worth studying. The real question then is: How much will you learn? Most of what you learn depends on you, but part depends on the teacher and another part depends on the textbook. On both these counts, you're in luck; since your teacher chose this book for your course, you must have a super teacher.[1]

After reading this chapter, you should be able to:

- **LO1-1** Define economics and identify its components.
- **LO1-2** Discuss various ways in which economists use economic reasoning.
- **LO1-3** Explain real-world events in terms of economic forces, social forces, and political forces.
- **LO1-4** Explain how economic insights are developed and used.
- **LO1-5** Distinguish among positive economics, normative economics, and the art of economics.

What Economics Is

Economics is *the study of how human beings coordinate their wants and desires, given the decision-making mechanisms, social customs, and political realities of the society*. One of the key words in the definition of the term "economics" is *coordination*. Coordination can mean many things. In the study of economics,

[1]This book is written by a person, not a machine. That means that I have my quirks, my odd sense of humor, and my biases. All textbook writers do. Most textbooks have the quirks and eccentricities edited out so that all the books read and sound alike—professional but dull. I choose to sound like me—sometimes professional, sometimes playful, and sometimes stubborn. In my view, that makes the book more human and less dull. So forgive me my quirks—don't always take me too seriously—and I'll try to keep you awake when you're reading this book at 3 a.m. the day of the exam. If you think it's a killer to read a book this long, you ought to try writing one.

coordination refers to how the three central problems facing any economy are solved. These central problems are:

1. What, and how much, to produce.
2. How to produce it.
3. For whom to produce it.

Three central coordination problems any economy must solve are what to produce, how to produce it, and for whom to produce it.

How hard is it to make the three decisions? Imagine for a moment the problem of living in a family: the fights, arguments, and questions that come up. "Do I have to do the dishes?" "Why can't I have piano lessons?" "Bobby got a new sweater. How come I didn't?" "Mom likes you best." Now multiply the size of the family by millions. The same fights, the same arguments, the same questions—only for society the questions are millions of times more complicated. In answering these questions, economies find that inevitably individuals want more than is available, given how much they're willing to work. That means that in our economy there is a problem of **scarcity**—*the goods available are too few to satisfy individuals' desires*.

The coordination questions faced by society are complicated.

Scarcity

Scarcity has two elements: our wants and our means of fulfilling those wants. These can be interrelated since wants are changeable and partially determined by society. The way we fulfill wants can affect those wants. For example, if you work on Wall Street, you will probably want upscale and trendy clothes. In Vermont, I am quite happy wearing Levi's and flannel.

The degree of scarcity is constantly changing. The quantity of goods, services, and usable resources depends on technology and human action, which underlie production. Individuals' imagination, innovativeness, and willingness to do what needs to be done can greatly increase available goods and resources. Who knows what technologies are in our future—nannites or micromachines that change atoms into whatever we want could conceivably eliminate scarcity of goods we currently consume. But they would not eliminate scarcity entirely since new wants are constantly developing.

The quantity of goods, services, and usable resources depends on technology and human action.

So, how does an economy deal with scarcity? The answer is coercion. In all known economies, coordination has involved some type of coercion—limiting people's wants and increasing the amount of work individuals are willing to do to fulfill those wants. The reality is that many people would rather play than help solve society's problems. So the basic economic problem involves inspiring people to do things that other people want them to do, and not to do things that other people don't want them to do. Thus, an alternative definition of economics is: the study of how to get people to do things they're not wild about doing (such as studying) and not to do things they are wild about doing (such as eating all the lobster they like), so that the things some people want to do are consistent with the things other people want to do.

Microeconomics and Macroeconomics

Economic theory is divided into two parts: microeconomic theory and macroeconomic theory. Microeconomic theory considers economic reasoning from the viewpoint of individuals and firms and builds up to an analysis of the whole economy. **Microeconomics** is *the study of individual choice, and how that choice is influenced by economic forces*. Microeconomics studies such things as the pricing policies of firms, households' decisions on what to buy, and how markets allocate resources among alternative ends.

Microeconomics is the study of how individual choice is influenced by economic forces.

As we build up from microeconomic analysis to an analysis of the entire economy, everything gets rather complicated. Many economists try to uncomplicate matters by taking a different approach—a macroeconomic approach—first looking at the aggregate, or whole, and then breaking it down into components. **Macroeconomics** is *the study of the*

Macroeconomics is the study of the economy as a whole. It considers the problems of inflation, unemployment, business cycles, and growth.

economy as a whole. It considers the problems of inflation, unemployment, business cycles, and growth. Macroeconomics focuses on aggregate relationships such as how household consumption is related to income and how government policies can affect growth.

Consider an analogy to the human body. A micro approach analyzes a person by looking first at each individual cell and then builds up. A macro approach starts with the person and then goes on to his or her components—arms, legs, fingernails, feelings, and so on. Put simply, microeconomics analyzes from the parts to the whole; macroeconomics analyzes from the whole to the parts.

Q-1 Classify the following topics as primarily macroeconomic or microeconomic:

1. The impact of a tax increase on aggregate output.
2. The relationship between two competing firms' pricing behavior.
3. A farmer's decision to plant soy or wheat.
4. The effect of trade on economic growth.

Microeconomics and macroeconomics are very much interrelated. What happens in the economy as a whole is based on individual decisions, but individual decisions are made within an economy and can be understood only within its macro context. For example, whether a firm decides to expand production capacity will depend on what the owners expect will happen to the demand for their products. Those expectations are determined by macroeconomic conditions. Because microeconomics focuses on individuals and macroeconomics focuses on the whole economy, traditionally microeconomics and macroeconomics are taught separately, even though they are interrelated.

A Guide to Economic Reasoning

People trained in economics think in a certain way. They analyze everything critically; they compare the costs and the benefits of every issue and make decisions based on those costs and benefits. For example, say you're trying to decide whether a policy to eliminate terrorist attacks on airlines is a good idea. Economists are trained to put their emotions aside and ask: What are the costs of the policy, and what are the benefits? Thus, they are open to the argument that security measures, such as conducting body searches of every passenger or scanning all baggage with bomb-detecting machinery, might not be the appropriate policy because the costs might exceed the benefits. To think like an economist involves addressing almost all issues using a cost/benefit approach. Economic reasoning also involves abstracting from the "unimportant" elements of a question and focusing on the "important" ones by creating a simple model that captures the essence of the issue or problem. How do you know whether the model has captured the important elements? By collecting empirical evidence and "testing" the model—matching the predictions of the model with the empirical evidence—to see if it fits. Economic reasoning—how to think like a modern economist, making decisions on the basis of costs and benefits—is the most important lesson you'll learn from this book.

Economic reasoning is making decisions on the basis of costs and benefits.

The book *Freakonomics* gives examples of the economist's approach. It describes a number of studies by University of Chicago economist Steve Levitt that unlock seemingly mysterious observations with basic economic reasoning. For example, Levitt asks the question: Why do drug dealers on the street tend to live with their mothers? The answer he arrives at is that it is because they can't afford to live on their own; most earn less than $5 an hour. Why, then, are they dealing drugs and not working a legal job that, even for a minimum-wage job, pays over $7.00 an hour? The answer to that is determined through cost/benefit analysis. While their current income is low, their potential income as a drug dealer is much higher since, given their background and current U.S. institutions, they are more likely to move up to a high position in the local drug business (and *Freakonomics* describes how it is a business) and earn a six-figure income than they are to move up from working as a Taco Bell technician to an executive earning a six-figure income in corporate America. Levitt's model is a very simple one—people do what is in their best interest financially—and it assumes that people rely on a cost/benefit analysis to make decisions. Finally, he supports his argument through careful empirical work, collecting and organizing the data to see if they fit the model. His work is a good example of "thinking like a modern economist" in action.

Economic Knowledge in One Sentence: TANSTAAFL

Once upon a time, Tanstaafl was made king of all the lands. His first act was to call his economic advisers and tell them to write up all the economic knowledge the society possessed. After years of work, they presented their monumental effort: 25 volumes, each about 400 pages long. But in the interim, King Tanstaafl had become a very busy man, what with running a kingdom of all the lands and all. Looking at the lengthy volumes, he told his advisers to summarize their findings in one volume.

Despondently, the economists returned to their desks, wondering how they could summarize what they'd been so careful to spell out. After many more years of rewriting, they were finally satisfied with their one-volume effort, and tried to make an appointment to see the king. Unfortunately, affairs of state had become even more pressing than before, and the king couldn't take the time to see them. Instead he sent word to them that he couldn't be bothered with a whole volume, and ordered them, under threat of death (for he had become a tyrant), to reduce the work to one sentence.

The economists returned to their desks, shivering in their sandals and pondering their impossible task. Thinking about their fate if they were not successful, they decided to send out for one last meal. Unfortunately, when they were collecting money to pay for the meal, they discovered they were broke. The disgusted delivery man took the last meal back to the restaurant, and the economists started down the path to the beheading station. On the way, the delivery man's parting words echoed in their ears. They looked at each other and suddenly they realized the truth. "We're saved!" they screamed. "That's it! That's economic knowledge in one sentence!" They wrote the sentence down and presented it to the king, who thereafter fully understood all economic problems. (He also gave them a good meal.) The sentence?

There Ain't No Such Thing As A Free Lunch—TANSTAAFL

Economic reasoning, once learned, is infectious. If you're susceptible, being exposed to it will change your life. It will influence your analysis of everything, including issues normally considered outside the scope of economics. For example, you will likely use economic reasoning to decide the possibility of getting a date for Saturday night, and who will pay for dinner. You will likely use it to decide whether to read this book, whether to attend class, whom to marry, and what kind of work to go into after you graduate. This is not to say that economic reasoning will provide all the answers. As you will see throughout this book, real-world questions are inevitably complicated, and economic reasoning simply provides a framework within which to approach a question. In the economic way of thinking, every choice has costs and benefits, and decisions are made by comparing them.

Marginal Costs and Marginal Benefits

The relevant costs and relevant benefits to economic reasoning are the expected *incremental,* or additional, costs incurred and the expected *incremental* benefits that result from a decision. Economists use the term *marginal* when referring to additional or incremental. Marginal costs and marginal benefits are key concepts.

A **marginal cost** is *the additional cost to you over and above the costs you have already incurred*. That means not counting **sunk costs**—*costs that have already been incurred and cannot be recovered*—in the relevant costs when making a decision. Consider, for example, attending class. You've already paid your tuition; it is a sunk cost. So the marginal (or additional) cost of going to class does not include tuition.

Similarly with marginal benefit. A **marginal benefit** is *the additional benefit above what you've already derived*. The marginal benefit of reading this chapter is the *additional* knowledge you get from reading it. If you already knew everything in this chapter before you picked up the book, the marginal benefit of reading it now is zero.

WWW Web Note 1.1
Costs and Benefits

Marginal Cost and Marginal Benefit

The Economic Decision Rule

Comparing marginal (additional) costs with marginal (additional) benefits will often tell you how you should adjust your activities to be as well off as possible. Just follow the **economic decision rule:**

If the marginal benefits of doing something exceed the marginal costs, do it. If the marginal costs of doing something exceed the marginal benefits, don't do it.

If the marginal benefits of doing something exceed the marginal costs, do it.

If the marginal costs of doing something exceed the marginal benefits, don't do it.

As an example, let's consider a discussion I might have with a student who tells me that she is too busy to attend my classes. I respond, "Think about the tuition you've spent for this class—it works out to about $60 a lecture." She answers that the book she reads for class is a book that I wrote, and that I wrote it so clearly she fully understands everything. She goes on:

Q-2 Say you bought a share of Oracle for $100 and a share of Cisco for $10. The price of each is currently $15. Assuming taxes are not an issue, which would you sell if you need $15?

> I've already paid the tuition and whether I go to class or not, I can't get any of the tuition back, so the tuition is a sunk cost and doesn't enter into my decision. The marginal cost to me is what I could be doing with the hour instead of spending it in class. I value my time at $75 an hour [people who understand everything value their time highly], and even though I've heard that your lectures are super, I estimate that the marginal benefit of attending your class is only $50. The marginal cost, $75, exceeds the marginal benefit, $50, so I don't attend class.

I congratulate her on her diplomacy and her economic reasoning, but tell her that I give a quiz every week, that students who miss a quiz fail the quiz, that those who fail all the quizzes fail the course, and that those who fail the course do not graduate. In short, she is underestimating the marginal benefits of attending my classes. Correctly estimated, the marginal benefits of attending my class exceed the marginal costs. So she should attend my class.

Economics and Passion

WWW Web Note 1.2 Blogonomics

Recognizing that everything has a cost is reasonable, but it's a reasonableness that many people don't like. It takes some of the passion out of life. It leads you to consider possibilities like these:

Economic reasoning is based on the premise that everything has a cost.

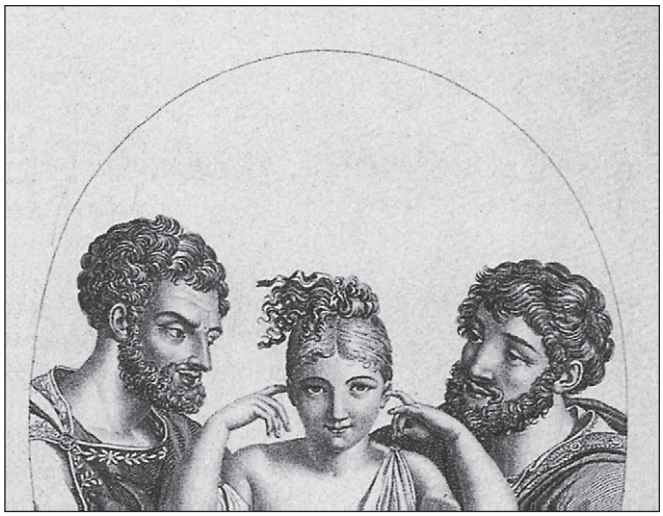
- Saving some people's lives with liver transplants might not be worth the additional cost. The money might be better spent on nutritional programs that would save 20 lives for every 2 lives you might save with transplants.
- Maybe we shouldn't try to eliminate all pollution because the additional cost of doing so may be too high. To eliminate all pollution might be to forgo too much of some other worthwhile activity.
- Providing a guaranteed job for every person who wants one might not be a worthwhile policy goal if it means that doing so will reduce the ability of an economy to adapt to new technologies.
- It might make sense for the automobile industry to save $12 per car by not installing a safety device, even though without the safety device some people will be killed.

You get the idea. This kind of reasonableness is often criticized for being cold-hearted. But, not surprisingly, economists disagree; they argue that their reasoning leads to a better society for the majority of people.

Q-3 Can you think of a reason why a cost/benefit approach to a problem might be inappropriate? Can you give an example?

Economists' reasonableness isn't universally appreciated. Businesses love the result; others aren't so sure, as I discovered some years back when my then-girlfriend

told me she was leaving me. "Why?" I asked. "Because," she responded, "you're so, so . . . reasonable." It took me many years after she left to learn what she already knew: There are many types of reasonableness, and not everyone thinks an economist's reasonableness is a virtue. I'll discuss such issues later; for now, let me simply warn you that, for better or worse, studying economics will lead you to view questions in a cost/benefit framework.



Opportunity costs have always made choice difficult, as we see in the early-19th-century engraving *One or the Other.*

Opportunity Cost

Putting economists' cost/benefit rules into practice isn't easy. To do so, you have to be able to choose and measure the costs and benefits correctly. Economists have devised the concept of opportunity cost to help you do that. **Opportunity cost** is *the benefit that you might have gained from choosing the next-best alternative*. To obtain the benefit of something, you must give up (forgo) something else—namely, the next-best alternative. The opportunity cost is the value of that next-best alternative; it is a cost because in choosing one thing, you are precluding an alternative choice. The TANSTAAFL story in the box on page 7 embodies the opportunity cost concept because it tells us that there is a cost to everything; that cost is the next-best forgone alternative.

Opportunity cost is the basis of cost/benefit economic reasoning; it is the benefit that you might have gained from choosing the next-best alternative.

Let's consider some examples. The opportunity cost of going out once with Natalie (or Nathaniel), the most beautiful woman (attractive man) in the world, is the benefit you'd get from going out with your solid steady, Margo (Mike). The opportunity cost of cleaning up the environment might be a reduction in the money available to assist low-income individuals. The opportunity cost of having a child might be two boats, three cars, and a two-week vacation each year for five years, which are what you could have had if you hadn't had the child. (Kids really are this expensive.)

Opportunity Cost

Examples are endless, but let's consider two that are particularly relevant to you: what courses to take and how much to study. Let's say you're a full-time student and at the beginning of the term you had to choose five courses. Taking one precludes taking some other, and the opportunity cost of taking an economics course may well be not taking a course on theater. Similarly with studying: You have a limited amount of time to spend studying economics, studying some other subject, sleeping, or partying. The more time you spend on one activity, the less time you have for another. That's opportunity cost.

Notice how neatly the opportunity cost concept takes into account costs and benefits of all other options, and converts these alternative benefits into costs of the decision you're now making.

WWW Web Note 1.3
Opportunity Cost

The relevance of opportunity cost isn't limited to your individual decisions. Opportunity costs are also relevant to government's decisions, which affect everyone in society. A common example is what is called the guns-versus-butter debate. The resources that a society has are limited; therefore, its decision to use those resources to have more guns (more weapons) means that it will have less butter (fewer consumer goods). Thus, when society decides to spend $50 billion more on an improved health care system, the opportunity cost of that decision is $50 billion not spent on helping the homeless, paying off some of the national debt, or providing for national defense.