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Economics

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ECONOMICS, ELEVENTH EDITION

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About the Author

Courtesy of David Colander

David Colander is Distinguished College Professor at Middlebury College. He has authored, coauthored, or edited over 40 books and over 200 articles on a wide range of economic topics.

He earned his BA at Columbia College and his MPhil and PhD 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.

Professor Colander 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 American Economic Association 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

Economics is about ideas, not models. The goal of this text is to convey to students the ideas that make up modern economics. The ideas are both about the way the economy works, and about how to design policy to make the economy work better.

How This Book Differs from Others

Ideas are nuanced; models are not. From its beginning, this book has provided a nuanced narrative that emphasizes both ideas and models. Its distinctive features have been its conversational style and its inclusion of different views within mainstream economics. It doesn't offer a cookie cutter presentation of material, but instead offers a blend of logical model building and nuanced discussion of applying the models. The writing style is conversational, designed to allow the student to feel a connection with me—the writer—to make it clear that I am a human being, not a machine. This approach is particularly welcomed as students spend more and more time learning material online.

Even while spending a lot of time online, students seek personal connections. It still makes my day when students whom I've never met in person write me thanking me for making the course fun and for relating to them. I'm delighted with the reception this book has received, and the loyal following who have used, and continue to use, the book.

While the book is consciously mainstream, it differs from most other top books in its tone. It presents economic theory more as a changing heuristic than as an unchanging scientific theory. So, while the discussion of the models is the same as in other books, the discussion of the application of the models is different. I emphasize the difficulties of applying the models while most principles books gloss over them.

Nuanced Economics: Teaching More Than Models

Recent economic pedagogy has shifted away from seeing textbooks as a narrative, to seeing them as a compilation of models that can be presented in separable building blocks or modules. This modularization of the teaching of economic principles involves dividing economic knowledge into learning objectives, sub learning objectives, and sub-sub learning objectives.

This building block approach makes lots of sense as long as one remembers that you also need mortar and architectural blueprints to hold the building blocks together. That mortar and those blueprints are embedded in the text's narrative. Unfortunately, mortar and blueprints don't fit nicely into building block modules captured by learning objectives. Mortar and blueprints require conceptualization that goes beyond the standard models—conceptualization that brings the big picture into focus. And, because there are a variety of architectural blueprints, there is not a single, but a variety of, big pictures; models highlight only one of those blueprints.

The study of such issues is the grist for "big think" economics that characterizes this book where nuance is integrated into understanding, and students see the importance of mortar. Consideration of such issues often goes under the heading of critical thought. To learn to think critically students have to be presented with some questions without definitive answers, but ones upon which, when addressed creatively, economic models can shed light. My book contains lots of such questions.

My approach to models follows the approach Alfred Marshall used back when he first introduced the supply/demand model into the principles course. 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 element of an economic understanding. 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.

When taking a 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 various viewpoints. Let me discuss each of these principles briefly.

Institutions and History Are Important to Understand Policy

If you open up Adam Smith's *Wealth of Nations*, John Stuart Mill's *Principles of Political Economy*, or Alfred Marshall's *Principles of Economics*, you will see economic analysis placed in historical and institutional

context. The modern textbook template moved away from that, and in previous editions, I have 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 these issues are important. And that's what I try to do.

When I say that institutions and history are important, I am talking especially about economic policy. This text and the accompanying supplements are 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 is modern economic reasoning relevant 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 models' results with our understanding of institutions, our understanding of the social context, and our understanding of the normative goals we want to achieve, can we arrive at policy conclusions embodied in precepts.

Openness to Various Views

While I present modern economics, I present it in such a way that is open to many different points of view. I don't present the material as "the truth" but simply as the conventional wisdom. Learning conventional wisdom is a useful hurdle for all students to jump over. To encourage students to question conventional wisdom, at the end of each chapter I include 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 perspectives. Each is described further in the "Distinguishing Features" section that follows the preface. 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 more middle-of-the-road views is, for me, a perfect way to teach the principles course. (If I have a lot of radicals and libertarians in the class, I assign them articles that advocate more middle-of-the-road views.)

Integrating Nuance into the Learning Platform

Changes in technology are changing the medium through which ideas are conveyed and the way students learn. Students today don't know a time without the Internet and social media, which provide them with access to a broad range of digital resources and instant feedback. Technology has changed the way they learn, and if we are to reach them, we have to present material in ways that fit their learning style. They want to be able to access their courses 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, testing of material, and feedback are seamlessly blended with the narrative of the text. This revision is designed to improve what the publisher calls the learning platform in both the content presented and in the delivery of that content.

I think of this book as consisting of both the text and the delivery system for the text. For the book to succeed, the online delivery system has to deliver the material to students in a manner that they can access both online and in the physical book. The new reality of accessing books online has driven important changes in the last edition, and in this edition. Specifically, while the content and pedagogical approach described above remain largely the same, the delivery is different.

In the last two editions the learning platform was refined, and all of the content, including end-of-chapter questions, was made to line up directly with learning objectives. These learning objectives serve as the organizational structure for the material. The learning objectives themselves were broken down into further learning objectives associated with concepts that are presented in bite-sized portions of the text as part of the SmartBook offer.

This now allows students the opportunity to master concepts that support the larger picture no matter how they access it in the Colander learning platform. Within McGraw-Hill's Connect and SmartBook platforms, 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.

In the previous two editions, the end-of-chapter material was also restructured for online delivery: All of the standard questions and problems were made autogradable and integrated with the online 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.

While the new learning platforms made the teaching of the building blocks easier, they presented a challenge for my approach that emphasized the nuance of interpretation as a key element of what students were to learn. That discussion of nuance was scattered throughout the text; it wasn't a building block to be learned in one place. Rather it was mortar to be learned over the course of the entire semester. This learning goal did not come through in the learning platform as strongly as it did in the text itself. While the modular learning platform worked well in teaching a building block approach to models, it didn't work so well helping students understand the context of the models. It provided the building blocks but not the mortar. So the previous versions of my online learning platforms emphasized models a bit more than I would have liked and context a bit less.

The nuance material was still there, but it was not integrated into the learning platform as much as I thought it should be. In previous editions, I did what I could to account for that. Specifically I added aspects of the book that allowed professors who wanted to emphasize nuance to do so. These included two sets of end-of-chapter questions, Issues to Ponder and Questions from Alternative Perspectives, which have no "correct" answer, but instead are designed to get the students to think. In a learning environment that blends both online and in-person experiences, 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.

In this edition I go a step further in integrating nuance into the course. Specifically, I have essentially made nuance its own general learning objective—a learning objective that relates to the entire book. So in addition to the learning objectives specific to individual chapters, there is a general learning objective that is relevant to all chapters. The general learning objective—the mortar that holds the building blocks together—is: *Know that to relate models to the real world, you need to use a nuanced approach.*

For professors who want to include this learning objective in their course, I have written a prologue to the student found on pages P-1 to P-5, just before Chapter 1. In it I discuss the need for context and nuance in applying the models, and introduce students to two methodological tools that philosophers use to move from models to policy positions. This prologue, what you might think of as Chapter 0, serves as the mortar and blueprint to guide students in thinking critically about the models and their application. This short prologue, which can be assigned along with Chapter 1, presents a general discussion of the problem of context and nuance and introduces the general learning objective.

Students are reminded of this general learning objective throughout the book in chapter discussions of nuanced issues, which are highlighted in SmartBook and probes that focus on nuance. I also provide professors with some guidance and suggestions on how to integrate a discussion of values and ethics into the course, along with a list of Connect questions and material in SmartBook that deal with integrating values into the analysis. These are to be found in the Instructor's website for the book. For those who want to emphasize critical thought and nuance in the course, it is much easier to do so than before.

Specific Content Changes to This Edition

Any new edition provides the possibility to update discussions and I have done so throughout the book, both in updating references to events, and in examples. On a mundane level I changed examples and products being discussed. For example, there was an earlier discussion of the supply and demand for CDs, which at one point in the past seemed reasonable. CDs have gone the way of buggy whips, and so the discussion was changed to chocolate, which has a longer shelf life—there will always be demand for 80 percent dark chocolate, at least from me.

I also reviewed all the boxes, eliminating or updating those that were outdated, replacing them with new boxes that capture some of the new ideas being discussed. For example, in Chapter 3 I added a box on polycentric government and the ideas of economist

Elinor Ostrom, and in Chapter 8W I updated the discussion of the farm program.

I did the same with discussions in the text, adding updates where needed. That led to substantial changes in some chapters. For example, President Trump's changing the narrative on trade meant some significant changes in Chapter 10 on trade were needed. I replaced the opening discussion of trade to include Trump's criticism of free trade agreements and updated the discussion of WTO trade negotiations and U.S. trade policy to account for the Trump presidency. The growing importance of platform monopolies and network externalities led to substantial changes in Chapter 14 and the discussion of antitrust policy in Chapter 15. Chapter 17 on labor also was modified to account for developments in the information revolution. I also added discussions of artificial intelligence and deep learning in both the micro and macro chapters. These developments will likely have significant implications for the economy in the coming decade, as AI and deep learning do to mental labor what the Industrial Revolution did to physical labor.

Because of the changing nature of the macro problem facing the economy, macro examples were updated more frequently than micro examples. In this edition the discussion of the macro economy is from the perspective of 2018. The economy is strong, but there is continuing concern that the growth is not sustainable. The monetary policy discussion involved substantial changes since the Fed is no longer using unconventional monetary policy, but is instead trying to unwind its balance sheet as it returns to a conventional monetary policy.

The use of fiscal policy also changed, with the tax cut and spending increase, even as the economy was doing well, showing how politics generally trumps economics in driving fiscal policy. Another change in the macro chapters involved discussions of cryptocurrencies and how they are not currencies, since they don't meet the definition of money, but are instead crypto assets, almost designed to be blown into bubbles. I discuss how blockchain technology might be revolutionary, but the hype around cryptocurrency is more like Tulipmania and how the real revolution in currency is more likely to come through new digital currencies such as M-Pesa.

Finally, there were a number of changes to allow the introduction of nuanced understanding as a separate learning objective. I added a discussion of Adam Smith's impartial spectator tool, and how in assessing policy, one must go beyond how it will benefit oneself, and concentrate on how it can be judged from society's point of view. I encourage students to discuss contentious policy issues with others who approach the issues differently as a way of advancing the discussion.

Enjoy!

In summary, this book differs from others in its distinctive blend of nuance and no-nonsense modeling. Working with models doesn't involve nuance; it involves knowing the models and their assumptions—questions about models are right or wrong—and nuanced discussion of applying the models where there are inevitably gray areas where critical thought is needed. Seeing students navigate this gray area and arrive at a nuanced understanding of economic principles gives me enormous joy. I hope it does for you as well.

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 eleventh edition reviewers, whose insightful comments kept me on track. Reviewers include:

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De Anza College

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I have hired numerous students to check aspects of the book, to read over my questions and answers to questions, and to help proofread. For this edition, these include Reid Smith, Amelia Pollard and Zhewei Yang. I thank them all.

A special thank-you for this edition goes to two people. The first is Jenifer Gamber, whose role in the book cannot be overestimated. She helped me clarify its vision by providing research, critiquing expositions and often improving them, and being a good friend. She has an amazing set of skills, and I thank her for using them to improve the book. The second is Christina Kouvelis, senior product developer, who came into this project and with her hard work, dedication, and superb ability made it possible to get the book done on time. She and Jenifer are two amazing women.

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Finally, I want to thank Pat, my wife, and my sons, Kasey and Zach, for helping me keep my work in perspective, and for providing a loving environment in which to work.

Distinguishing Features

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

This feature extends the text discussion onto the web. Web Notes are denoted within the margins, and are housed within Connect and featured in SmartBook.

Nuance Prologue and Questions

Nuanced aspects of economics are presented throughout the book, and in a Prologue for the Student. In SmartBook, nuance questions have been added that directly relate to applying the models and the problems of integrating values into the analysis. A guide to these questions can be found on the Instructor Resource website.

Issues to Ponder

Each chapter ends with a set of Issues to Ponder questions that are designed to encourage additional economic thinking and application.

Questions from Alternative Perspectives

The end-of-chapter material includes a number of questions that ask students to assess economics from alternative perspectives. Specifically, six different approaches are highlighted: Austrian, Post-Keynesian, Institutionalist, Radical, Feminist, and Religious. Below are brief descriptions of each group.

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.

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 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.

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 economists endorse policies, such as universal health care insurance, that conform to the ethic of "putting people before profits."

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.

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 nonreligious 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.

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.

Supplements

McGraw-Hill has established a strong history of top-rate supplements to accompany this text, and this eleventh edition strives to carry on the tradition of excellence. The following ancillaries are available for quick download and convenient access via the Instructor Resource material available through McGraw-Hill Connect®.

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 more than 5,600 quality multiple choice and true-false questions for instructors to draw from in their classrooms. Jenifer Gamber and I have worked diligently to make sure that the questions are 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.

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Jennifer Rester Savoie of Pearl River Community 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.

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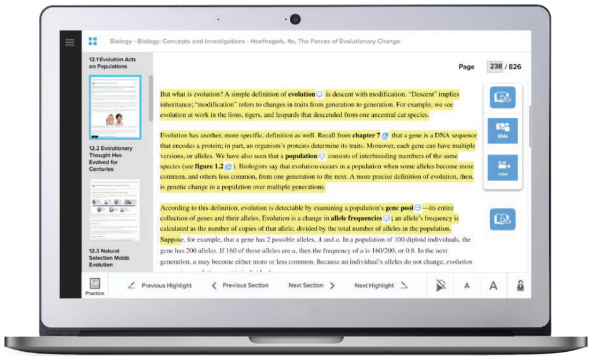

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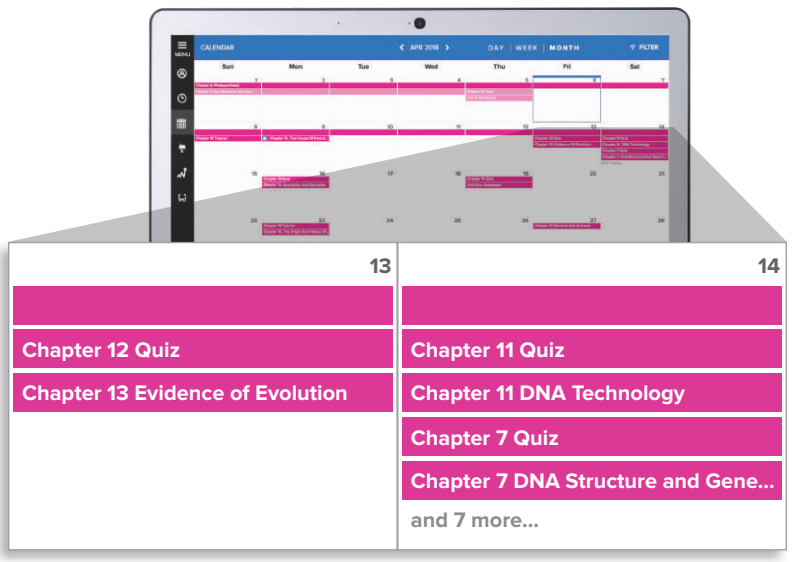

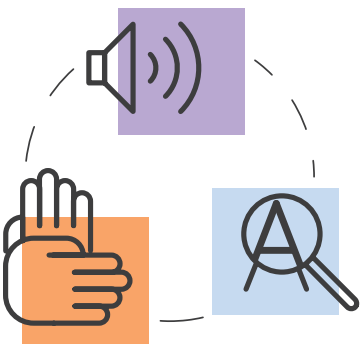

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Brief Contents

TAXES, BUDGETS, AND FISCAL POLICY

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Some Useful Tools in Moving from Models to the Real World

The study of economics is generally divided into two separate fields: positive economics and normative economics. *Positive economics* is the study of what is and how the economy works. It is the science of economics; it follows scientific methodology, focuses on facts and logic, and tries to be as value-free as possible. The majority of any principles of economics course involves teaching you the methods and tools of positive economics. For example, you will learn the supply/demand model and its implications. One of the conclusions of that model is that if supply increases, price will fall. In good positive economics, given the assumptions, that is the only right answer. No in between. No nuance.

Policy makers, however, aren't especially interested in whether price will fall in an abstract model; they are interested in what will happen in the real world. More specifically, they want to know what will be the impact of a particular policy. Is it a good or a bad policy? Policy analysis extends economics into the arena of *normative economics*—the study of the goals of the economy. Normative economics involves an explicit discussion of what is meant by "good" and by "bad" according to the values of a society. Normative economics follows a humanist and philosophical methodology that relies on logical thought experiments, reflection, and discussion among practitioners to move toward a consensus on values. Because normative economics incorporates often poorly understood and highly uncertain values and sensibilities into the analysis, its methodology requires a much more nuanced understanding of how the models relate to reality than scientific methodology provides.

Many economic policy discussions pirouette around the normative difficulties of specifying goals by simply assuming that the goal is to get as much output as possible from as few inputs as possible—the more stuff the better. Sounds reasonable. But what if who gets what, and how he or she gets it, matters (as it generally does)? What if, for example, a policy results in Person A getting an extra 100 stuffs, while Person B loses 50 stuffs? There's more stuff overall, but Person B has less. Person B might not think the policy is fair. So fairness needs to be considered. Alternatively, say Person B needs a kidney or he will die. Person A has an extra one, and so sells her kidney to Person B. While the number of kidneys hasn't changed, they are allocated in a way that keeps more people alive. That's good, right? Not necessarily. Many people find it immoral to sell kidneys. Should such morality guide policy? U.S. society has decided that it should; selling organs is illegal in the United States. Applied policy has to deal with these and hundreds of similar questions of values and morality.

Normative and positive economics are often presented as distinct areas, as if values can be excluded from positive economics. Philosophers have pointed out that, regardless of how hard we try, we can never do purely positive analysis. Values are just too entangled in the way we look at the world—how we interpret data, the assumptions we make, and the emphasis

we give to different lines of reasoning. For example, if you believe that putting a price on something—such as in the kidney example—undermines the relationship among individuals, then the supply/demand model is not the correct model for analyzing the effect of a policy that involves kidneys because the supply/demand model doesn't allow for a consideration of such questions. So, just by using a model you have already made certain implicit moral judgments that influence your policy conclusions.

Even if we could do pure positive economics, as soon as we move into policy analysis, we have to deal with values, and thus must include an explicit consideration of values. Policy involves achieving normatively determined goals. Because policy involves using insights from positive analysis to achieve goals determined in normative analysis, policy analysis cannot be classified as either completely normative or completely positive. It is a bit of both. As you'll soon read in Chapter 1, I place policy in the netherworld between normative and positive economics—in the *art of economics*—the application of the knowledge gained in positive economics to the goals of economics determined in normative economics.

The Tools of Normative Economies

In this prologue I want to introduce you to two tools that economists have developed to deal with questions about integrating values into the analysis. They are the impartial spectator tool and the devil's advocate tool. The **impartial spectator tool** is *a thought experiment in which a person strives to see the world apart from her own position in it.* An impartial spectator basically tries to maintain a neutral position. Doing so is extremely difficult. That's where the devil's advocate tool comes in. The **devil's advocate tool** is *a tool that helps a person take seriously the arguments of people with whom he or she is least likely to agree so that a person can be as impartial as possible.* These two philosophical tools are meant to help economists deal with the nuance inherent in applied policy, and help policy economists arrive at policies that capture society's shared values.

The Impartial Spectator Tool

The impartial spectator tool comes from 18th-century Scottish moral philosopher and economist Adam Smith. In his *Theory of Moral Sentiments* Smith argued that when trying to come to a position on a policy, an economist should not support or reject a policy on the basis of the benefit or cost it will provide himself. Instead, he should decide on the basis of his estimate of whether the policy will benefit society as a whole. Is it a policy that individuals from all walks of life would generally accept if they studied it carefully with an economists' understanding of how the world works? The impartial spectator tool is designed to address such issues.

The impartial spectator tool requires that individuals place themselves behind a veil of ignorance, and from that position ask: Would I support this position if I were in each of the many different positions people hold in the world? Having considered the policy from many different positions, how would I best resolve differences of opinions? The goal is to arrive at what the individual would argue is a reasonable consensus of people from all different walks of life. If done correctly, and if people can really place themselves behind this veil of ignorance, then a person's support for a policy will be disconnected from whether that policy will benefit him or her. For example, a poor person might favor a work requirement on food assistance for healthy individuals, while a rich person might oppose that work requirement.

The Devil's Advocate Tool

Thinking through a problem on its own based on the impartial spectator tool will lead you only so far in arriving at defensible normative goals. To further narrow down the set of normative goals, you also have to subject your values to the strongest challenge possible. You do this with the devil's advocate tool. The devil's advocate tool challenges the policy economist to search out and discuss her views with others who hold different views, and to argue with them, not in order to win the argument, but in order to better understand those opposing positions, and her own. Free and open speech—no safe zones—are central to the devil's advocate tool.

Probably the economist who developed the most nuanced use of these tools was 19th-century British moral philosopher and economist John Stuart Mill. In his book *On Liberty,* which provided the normative foundation to his principles of economics book, he wrote the following:

> He who knows only his own side of the case, knows little of that. His reasons may be good, and no one may have been able to refute them. But if he is equally unable to refute the reasons on the opposite side; if he does not so much as know what they are, he has no ground for preferring either opinion. . . . He must be able to hear them from persons who actually believe them; who defend them in earnest, and do their very utmost for them. He must know them in their most plausible and persuasive form; . . . So essential is this discipline to a real understanding of moral and human subjects, that if opponents of all important truths do not exist, it is indispensable to imagine them, and supply them with the strongest arguments which the most skilful devil's advocate can conjure up. (Mill 1859/1947: 35–36)

Mill's support of the market was based on both deeply held values about the importance of individual freedom, as well as positive analysis. Mill also strongly advocated for women's rights and argued against slavery when many noneconomist elite in British society supported slavery, and saw advocating for women's rights as heresy. Even though Mill strongly favored the market and was considered a laissez-faire advocate, he also favored significant government action to create and maintain the freedom of opportunity for all that he felt was necessary for fair and functioning markets.

Similarly, today, many economists advocate for progressive values and sensibilities in their policies, even as they advocate for the market. Where progressive pro-market economists often disagree with other progressive advocates is in how best to achieve progressive goals. Economists have found that often policies that on the surface are designed to achieve seemingly desirable progressive goals, in practice, end up helping a small group of people quite different than the intended beneficiaries. There are unintended consequences. To avoid these unintended consequences, progressive pro-market economists often see policies designed to protect competition, and to prevent government policy from being captured by vested interests, as the most effective means of achieving progressive goals.

The Importance of Nuance

The material in this course focuses on positive economics—learning the models. But throughout I will also discuss the problems with interpreting, applying, and integrating values into the models. Such discussion will inevitably involve problems of nuance. So as you read, keep in mind the need for nuance and the importance of values whenever you are relating the models you learn to real-world problems.

I consider the need for nuance in applied policy thinking so important that you should consider it a general learning objective that relates to the entire book: *Know that to relate models to the real world, you need to use a nuanced approach.* To ensure that you learn this principle, you will find questions that address issues of nuance incorporated within the end-of-chapter materials. If you're using Connect, you'll be asked nuance questions that are based on that material in SmartBook that addresses this general learning objective. The goal is to keep in focus the issues involved with applying the models and with interpreting the goals of economic policy even as you are learning the models.

Alternative Perspectives in Economics

One of the choices I made when approaching this product was to concentrate almost exclusively on the consensus or mainstream view. I strongly believe that focusing on that mainstream view is the best way to introduce students to economics. However, I also strongly believe that all students should be aware of the diverse views among economists and know that the mainstream view is not the only view out there. Numerous economists see the mainstream presentation as misleading, or as diverting the discussion away from other, more relevant, moral issues. These economists are generally called heterodox economists and are classified into groups, including Austrian, Post-Keynesian, Institutionalist, Radical, Feminist, and Religious economists. (The "Distinguishing Features" section of the preface has a brief description of these groups.)

These heterodox groups fall on various sides of the ideological perspective, and in their work they often raise normative questions that standard economics avoids. Some believe that the conventional analysis is unfair to the market; others believe that the conventional analysis is unfair to government-focused policy. Still others believe that the conventional analysis misses what is truly important in life.

These alternative perspectives are often not presented in principles courses. If the goal were only to teach positive economics, that makes sense. Alternative perspectives distract from the models. But if the goal is also to teach how the models are interpreted and used (which I believe it should be), then leaving out alternative perspectives is problematic because alternative perspectives provide the devil's advocate arguments needed to firm up one's own arguments.

To integrate these alternative perspectives into the course, at the end of every chapter I present a set of questions from alternative perspectives. These questions challenge the conventional economics presented in the text from different perspectives. My suggestion is that you use these questions as devil's advocate's assistants. If you are progressive and somewhat anti-market, focus on answering the Austrian questions. If you are pro-market, focus on answering the Radical questions. If you are STEM focused, look at the Institutionalist and Religious questions. And if you are male, focus on answering the Feminist questions. Alternatively, get a study partner whose policy views are as different from your own as you can find. Work collaboratively with her to study the material—explain what she finds objectionable, and how it differs from what you find objectionable.

Conclusion

Economic policy is a moral endeavor. How to integrate normative issues is a question that economists have struggled with from the beginning of economics. Conventional economics deals with this by focusing on the less value-laden scientific aspects of economics embedded in models. That's what most of the book will teach you. But that leaves students on their own to struggle with adding values back into the analysis to

arrive at a policy conclusion. The goal of this prologue, and of the nuance discussions throughout the text, is to assist you in integrating values back into the analysis so you can arrive at supportable policy positions. In doing so you should:

- ***Be impartial:*** You should think of yourself as an impartial spectator, a position that involves placing yourself in other people's shoes. Analyze the policy from those other perspectives, and see if your answer would remain convincing to you when standing in others' shoes. (If you are poor you might favor progressive taxation, but if you're rich will you also favor them?) If you can't convince yourself standing in other people's shoes, explore why you can't and modify your support for the policy accordingly.
- ***Be skeptical:*** Start with being skeptical of your views and others. Unless you have studied an issue, do not take strong policy stands. Instead be open to arguments from all points of view. Take a firm position on policy only once you have gone through this process of reflection, discussion, and challenge.
- ***Be reasonable:*** Choose a tentative policy position that seems reasonable to you. Think hard about it, doing research of views on all sides. After you have taken a side, to add nuance to the consideration, think hard about how someone could object to your proposal, and develop responses. If you can't develop responses to those objections that satisfy yourself, modify your proposal to account for those objections.
- ***Be creative:*** When there seem to be irreconcilable differences in values about a policy, be creative and see if you can design a policy that avoids the difference in values. Think of how you can come to a solution to the problem you are dealing with. For example, if one person favors a proportional tax and another favors a progressive tax as a matter of policy, is there a way to achieve the equivalence of a progressive tax by other means—for example by making the tax proportional in both income and wealth, rather just in terms of income.
- ***Be humble:*** Present your reasoning to others who are actually in the other shoes, and see if your answer convinces them. If not, explore with them why, and modify your support for the policy accordingly.
- ***Be open to challenge:*** If you can't find individuals representing different views, make the arguments for them, playing the role of the devil's advocate. Challenge the argument at each level.

ECONOMICS

PART I

Introduction: Thinking Like an Economist

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, and 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

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.

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]

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, 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; in Florida I am quite happy in shorts.

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—nanites 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

[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.

about doing (such as eating all the ice cream 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 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.

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

ADDED DIMENSION

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 person took the last meal back to the restaurant, and the economists started down the path to the beheading station. On the way, the delivery person'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 down the sentence and presented it to the king, who thereafter fully understood all economic problems. (He also gave them a good meal.) The sentence?

There **A**in't **N**o **S**uch **T**hing **A**s **A** **F**ree **L**unch—
TANSTAAFL

seemingly mysterious observations with basic economic reasoning. For example, Levitt asked the question: Why do drug dealers on the street tend to live with their mothers? The answer he arrived at was that they couldn't afford to live on their own; most earned less than $5 an hour. Why, then, were they dealing drugs and not working a legal job that, even for a minimum wage job, paid over $7 an hour? The answer to that is determined through cost/benefit analysis. While their current income was low, their potential income as a drug dealer was much higher since, given their background and existing U.S. institutions, they were 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 were 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 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.

Web Note 1.1
Costs and Benefits

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.

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 needed $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

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.

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

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 market 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 earlier Added Dimension box embodies the opportunity cost concept because it tells us that there is a cost to everything; that cost is the next-best forgone alternative.

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

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

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. One of the most useful aspects of the opportunity cost concept is that it focuses on two aspects of costs of a choice that often might be forgotten—implicit costs and illusionary sunk costs. **Implicit costs** are *costs associated with a decision that often aren't included in normal accounting costs.*

For example, in thinking about whether it makes sense to read this book, the *next-best value* of the time you spend reading it should be one of the costs that you consider.

Web Note 1.3
Opportunity Cost

ADDED DIMENSION

Economics in Perspective

All too often, students study economics out of context. They're presented with sterile analysis and boring facts to memorize, and are never shown how economics fits into the larger scheme of things. That's bad; it makes economics seem boring—but economics is not boring. Every so often throughout this book, sometimes in the appendixes and sometimes in these boxes, I'll step back and put the analysis in perspective, giving you an idea from whence the analysis sprang and its historical context. In educational jargon, this is called *enrichment.*

I begin here with economics itself.

First, its history: In the 1500s there were few universities. Those that existed taught religion, Latin, Greek, philosophy, history, and mathematics. No economics. Then came the *Enlightenment* (about 1700), in which reasoning replaced God as the explanation of why things were the way they were. Pre-Enlightenment thinkers would answer the question "Why am I poor?" with "Because God wills it." Enlightenment scholars looked for a different explanation. "Because of the nature of land ownership" is one answer they found.

Such reasoned explanations required more knowledge of the way things were, and the amount of information expanded so rapidly that it had to be divided or categorized for an individual to have hope of knowing a subject. Soon philosophy was subdivided into science and philosophy. In the 1700s, the sciences were split into natural sciences and social sciences. The amount of knowledge kept increasing, and in the late 1800s and early 1900s social science itself split into subdivisions: economics, political science, history, geography, sociology, anthropology, and psychology. Many of the insights about how the economic system worked were codified in Adam Smith's *The Wealth of Nations,* written in 1776. Notice that this is before economics as a subdiscipline developed, and Adam Smith could also be classified as an anthropologist, a sociologist, a political scientist, and a social philosopher.

Throughout the 18th and 19th centuries, economists such as Adam Smith, Thomas Malthus, John Stuart Mill, David Ricardo, and Karl Marx were more than economists; they were social philosophers who covered all aspects of social science. These writers were subsequently called *Classical economists.* Alfred Marshall continued in that classical tradition, and his book, *Principles of Economics,* published in the late 1800s, was written with the other social sciences much in evidence. But Marshall also changed the questions economists ask; he focused on those questions that could be asked in a graphical supply/demand framework.

This book falls solidly in the Marshallian tradition. It presents economics as a way of thinking—as an engine of analysis used to understand real-world phenomena. But it goes beyond Marshall, and introduces you to a wider variety of models and thinking than the supply and demand models that Marshall used.

Marshallian economics is primarily about policy, not theory. It sees institutions as well as political and social dimensions of reality as important, and it shows you how economics ties in to those dimensions.

Often, it isn't because it is an implicit, not normally measured cost. Similarly with firms—owners often think that they are making a profit from a business, but if they add the value of their time to their cost, which economists argue they should, then their profit often becomes a loss. They might have earned more simply by taking a job somewhere else. Implicit costs should be included in opportunity costs. Sunk costs, however, are often included in making decisions, but should not be. These costs are called illusionary sunk costs—costs that show up in financial accounts but that economists argue should not be considered in a choice because they are already spent. They will not change regardless of what the person making the decision chooses. For example, once you have bought a book (that can't be resold), what you paid for that book is sunk. Following economic reasoning, that sunk cost shouldn't enter into your decision on whether to read it. An important role of the opportunity cost concept is to remind you that *the costs relevant to decisions are often different from the measured costs.*

The costs relevant to decisions are often different from the measured costs.

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.

The opportunity cost concept has endless implications. It can even be turned upon itself. For instance, thinking about alternatives takes time; that means that there's a cost to being reasonable, so it's only reasonable to be somewhat unreasonable. If you followed that argument, you've caught the economic bug. If you didn't, don't worry. Just remember the opportunity cost concept for now; I'll infect you with economic thinking in the rest of the book.

Q-4 John, your study partner, has just said that the opportunity cost of studying this chapter is about 1/38 the price you paid for this book, since the chapter is about 1/38 of the book. Is he right? Why or why not?

Economic Forces, Social Forces, and Political Forces

The opportunity cost concept applies to all aspects of life and is fundamental to understanding how society reacts to scarcity. When goods are scarce, those goods must be rationed. That is, a mechanism must be chosen to determine who gets what.

Q-5 Ali, your study partner, states that rationing health care is immoral—that health care should be freely available to all individuals in society. How would you respond?

Economic and Market Forces

Let's consider some specific real-world rationing mechanisms. Dormitory rooms are often rationed by lottery, and permission to register in popular classes is often rationed by a first-come, first-registered rule. Food in the United States, however, is generally rationed by price. If price did not ration food, there wouldn't be enough food to go around. All scarce goods must be rationed in some fashion. These rationing mechanisms are examples of **economic forces,** *the necessary reactions to scarcity*.

One of the important choices that a society must make is whether to allow these economic forces to operate freely and openly or to try to rein them in. A **market force** is *an economic force that is given relatively free rein by society to work through the market*. Market forces ration by changing prices. When there's a shortage, the price goes up. When there's a surplus, the price goes down. Much of this book will be devoted to analyzing how the market works like an invisible hand, guiding economic forces to coordinate individual actions and allocate scarce resources. The **invisible hand** is *the price mechanism, the rise and fall of prices that guides our actions in a market*.

When an economic force operates through the market, it becomes a market force.

Economic reality is controlled by three forces:

1. Economic forces (the invisible hand).
2. Social forces.
3. Political forces.

Social and Political Forces

Societies can't choose whether or not to allow economic forces to operate—economic forces are always operating. However, societies can choose whether to allow market forces to predominate. **Social forces**—*forces that guide individual actions even though those actions may not be in an individual's selfish interest,* and **political forces**—*legal directives that direct individuals' actions*—play a major role in deciding whether to let market forces operate. Economic reality is determined by a contest among these various forces.

Let's consider a historical example in which social forces prevented an economic force from becoming a market force: the problem of getting a date for Saturday night back when people actually dated (or called the pairing off of two individuals a "date"). If a school (or a society) had significantly more heterosexual people of one gender than the other (let's say more men than women), some men would find themselves without a date—that is, men would be in excess supply—and would have to find something else to do, say study or go to a movie by themselves. An "excess supply" person could solve the problem by paying someone to go out with him or her, but that would have changed the nature of the date in unacceptable ways. It would be revolting to the person who offered payment and to the person who was offered payment. That unacceptability is an

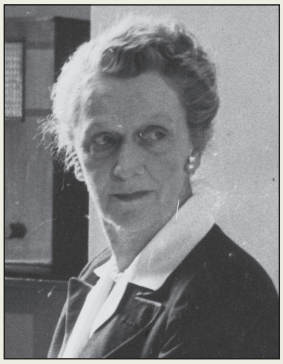
Social, cultural, and political forces can play a significant role in the economy.

REAL-WORLD APPLICATION

Winston Churchill and Lady Astor

There are many stories about Nancy Astor, the first woman elected to Britain's Parliament. A vivacious, fearless American woman, she married into the English aristocracy and, during the 1930s and 1940s, became a bright light on the English social and political scenes, which were already quite bright.

One story told about Lady Astor is that she and Winston Churchill, the unorthodox genius who had a long and distinguished political career and who was Britain's prime minister during World War II, were sitting in a pub having a theoretical discussion about morality. Churchill suggested that as a thought experiment Lady Astor ponder the following question: If a man were to promise her a huge amount of money—say a million pounds—for the privilege, would she sleep with him? Lady Astor did ponder the question for a while and finally answered, yes, she would, if the money were guaranteed. Churchill then asked her if she would sleep with him for five pounds. Her response was sharp: "Of course not. What do you think I am—a prostitute?" Churchill responded, "We have already established that fact; we are now simply negotiating about price."



Lady Astor

One moral that economists might draw from this story is that economic incentives, if high enough, can have a powerful influence on behavior. But an equally important moral of the story is that noneconomic incentives also can be very strong. Why do most people feel it's wrong to sell sex for money, even if they might be willing to do so if the price were high enough? Keeping this second moral in mind will significantly increase your economic understanding of real-world events.

Q-6 Your study partner, Joan, states that market forces are always operative. Is she right? Why or why not?

example of the complex social and cultural norms that guide and limit our activities. People don't try to buy dates because social forces prevent them from doing so.[2]

Often political and social forces work together against the invisible hand. For example, in the United States there aren't enough babies to satisfy all the couples who desire them. Babies born to particular sets of parents are rationed—by luck. Consider a group of parents, all of whom want babies. Those who can, have a baby; those who can't have one, but want one, try to adopt. Adoption agencies ration the available babies. Who gets a baby depends on whom people know at the adoption agency and on the desires of the birth mother, who can often specify the socioeconomic background (and many other characteristics) of the family in which she wants her baby to grow up. That's the economic force in action; it gives more power to the supplier of something that's in short supply.

If our society allowed individuals to buy and sell babies, that economic force would be translated into a market force. The invisible hand would see to it that the quantity of babies supplied would equal the quantity of babies demanded at some price. The market, not the adoption agencies, would do the rationing.[3]

[2]Pairing habits of young adults have changed in ways that have made "dating" somewhat of a historical social convention. The new social conventions that guide such pairing functions do not eliminate the problem of excess individuals, but they do obscure it and create multiple dimensions of "excess." Thinking about how they do so is a useful exercise.

[3]Even though it's against the law, some babies are nonetheless "sold" on a semilegal market, also called a gray market. Recently, the "market price" for a healthy baby was about $30,000. If selling babies were legal (and if people didn't find it morally repugnant to have babies in order to sell them), the price would be much lower because there would be a larger supply of babies. (It was not against the law to sell human eggs in the early 2000s, and one human egg was sold for $50,000. The average price was much lower; it varied with donor characteristics such as SAT scores and athletic accomplishments.)

Most people, including me, find the idea of selling babies repugnant. But why? It's the strength of social forces reinforced by political forces. One can think of hundreds of examples of such social and political forces overriding economic forces.

What is and isn't allowable differs from one society to another. For example, in North Korea, many private businesses are against the law, so not many people start their own businesses. In the United States, until the 1970s, it was against the law to hold gold except in jewelry and for certain limited uses such as dental supplies, so most people refrained from holding gold. Ultimately a country's laws and social norms determine whether the invisible hand will be allowed to work.

People don't charge friends interest to borrow money.

Social and political forces are active in all parts of your life. You don't practice medicine without a license; you don't sell body parts or certain addictive drugs. These actions are against the law. But many people do sell alcohol; that's not against the law if you have a permit. You don't charge your friends interest to borrow money (you'd lose friends); you don't charge your children for their food (parents are supposed to feed their children); many sports and media stars don't sell their autographs (some do, but many consider the practice tacky); you don't lower the wage you'll accept in order to take a job from someone else (you're no scab). The list is long. You cannot understand economics without understanding the limitations that political and social forces place on economic actions.

In summary, what happens in a society can be seen as the reaction to, and interaction of, three sets of forces: (1) economic forces, (2) political and legal forces, and (3) social and cultural forces. Economics has a role to play in sociology and politics, just as sociology and politics have roles to play in economics.

What happens in society can be seen as a reaction to, and interaction of, economic forces with other forces.

Using Economic Insights

Economic insights are based on generalizations, called theories, about the workings of an abstract economy as well as on contextual knowledge about the institutional structure of the economy. In this book I will introduce you to economic theories and models. Theories and models tie together economists' terminology and knowledge about economic institutions. Theories are inevitably too abstract to apply in specific cases, and thus a theory is often embodied in an **economic model**—*a framework that places the generalized insights of the theory in a more specific contextual setting*—or in an **economic principle**—*a commonly held economic insight stated as a law or principle*. To see the importance of principles, think back to when you learned to add. You didn't memorize the sum of 147 and 138; instead, you learned a principle of addition. The principle says that when adding 147 and 138, you first add 7 + 8, which you memorized was 15. You write down the 5 and carry the 1, which you add to 4 + 3 to get 8. Then add 1 + 1 = 2. So the answer is 285. When you know just one principle, you know how to add millions of combinations of numbers.

Web Note 1.4
Hip Hop Economics

Theories, models, and principles are continually "brought to the data" to see if the predictions of the model match the data. Increases in computing power and new statistical techniques have given modern economists a far more rigorous set of procedures to determine how well the predictions fit the data than was the case for earlier economists. This has led to a stronger reliance on quantitative empirical methods in modern economics than in earlier economics.

Modern empirical work takes a variety of forms. In certain instances, economists study questions by running controlled laboratory experiments. That branch of economics is called **experimental economics**—*a branch of economics that studies the economy*

through controlled experiments. These include laboratory experiments—experiments in which individuals are brought into a computer laboratory and their reactions to various treatments are measured and analyzed; field experiments—experiments in which treatments in the real world are measured and analyzed; computer experiments—experiments in which simulated economies are created within the computer and results of various policies are explored; and natural experiments—naturally occurring events that approximate a controlled experiment where something has changed in one place but has not changed somewhere else.

An example of a natural experiment occurred when New Jersey raised its minimum wage and neighboring state Pennsylvania did not. Economists Alan Kruger and David Card compared the effects on unemployment in both states and found that increases in the minimum wage in New Jersey did not significantly affect employment. This led to a debate about what the empirical evidence was telling us. The reason is that in such natural experiments, it is impossible to hold "other things constant," as is done in laboratory and field experiments, and thus the empirical results in economics are more subject to dispute.

While economic models are less general than theories, they are still usually too general to apply in specific cases. Models lead to **theorems** *(propositions that are logically true based on the assumptions in a model)*. To arrive at policy **precepts** *(policy rules that conclude that a particular course of action is preferable),* theorems must be combined with knowledge of real-world economic institutions and value judgments determining the goals for which one is striving. In discussing policy implications of theories and models, it is important to distinguish precepts from theorems.

Theories, models, and principles must be combined with a knowledge of real-world economic institutions to arrive at specific policy recommendations.

Economic analysis changes as technology changes. In recent years, data availability and computational power have increased exponentially, and this has changed the way economists study problems. Economists fresh out of graduate school are much more likely than older economists to "let the data speak," which means to use computing power to look for stable statistical relationships in the data and then use those relationships to guide their policy. Modern economists are highly involved with the development of systems that can perform tasks that people previously believed required human intelligence such as the ability to learn from the past, find meaning, and reason, known as artificial intelligence and deep learning systems. In many ways, the algorithmic approach to problems underlying these systems reflects economists'—such as Herbert Simon and Friedrich von Hayek—theories of how an economy works and how systems process information.

The Invisible Hand Theorem

Knowing a theory gives you insight into a wide variety of economic phenomena even though you don't know the particulars of each phenomenon. For example, much of economic theory deals with the *pricing mechanism* and how the market operates to coordinate *individuals' decisions*. Economists have come to the following theorems:

Q-7 There has been a superb growing season and the quantity of tomatoes supplied exceeds the quantity demanded. What is likely to happen to the price of tomatoes?

> *When the quantity supplied is greater than the quantity demanded, price has a tendency to fall.*
>
> *When the quantity demanded is greater than the quantity supplied, price has a tendency to rise.*

Using these generalized theorems, economists have developed a theory of markets that leads to the further theorem that, under certain conditions, markets are efficient. That is, the market will coordinate individuals' decisions, allocating scarce resources efficiently. **Efficiency** means *achieving a goal as cheaply as possible*. Economists call

this theorem the **invisible hand theorem**—*a market economy, through the price mechanism, will tend to allocate resources efficiently*.

Theories, and the models used to represent them, are enormously efficient methods of conveying information, but they're also necessarily abstract. They rely on simplifying assumptions, and *if you don't know the assumptions, you don't know the theory*. The result of forgetting assumptions could be similar to what happens if you forget that you're supposed to add numbers in columns. Forgetting that, yet remembering all the steps, can lead to a wildly incorrect answer. For example,

If you don't know the assumptions, you don't know the theory.

147
+138
1,608 is wrong.

Knowing the assumptions of theories and models allows you to progress beyond gut reaction and better understand the strengths and weaknesses of various economic theories and models. Let's consider a central economic assumption: the assumption that individuals behave rationally—that what they choose reflects what makes them happiest, given the constraints. If that assumption doesn't hold, the invisible hand theorem doesn't hold.

Presenting the invisible hand theorem in its full beauty is an important part of any economics course. Presenting the assumptions on which it is based and the limitations of the invisible hand is likewise an important part of the course. I'll do both throughout the book.

Economic Theory and Stories

Economic theory, and the models in which that theory is presented, often developed as a shorthand way of telling a story. These stories are important; they make the theory come alive and convey the insights that give economic theory its power. In this book I present plenty of theories and models, but they're accompanied by stories that provide the context that makes them relevant.

Theory is a shorthand way of telling a story.

At times, because there are many new terms, discussing theories takes up much of the presentation time and becomes a bit oppressive. That's the nature of the beast. As Albert Einstein said, "Theories should be as simple as possible, but not more so." When a theory becomes oppressive, pause and think about the underlying story that the theory is meant to convey. That story should make sense and be concrete. If you can't translate the theory into a story, you don't understand the theory.

Economic Institutions

To know whether you can apply economic theory to reality, you must know about economic institutions—laws, common practices, and organizations in a society that affect the economy. Corporations, governments, and cultural norms are all examples of economic institutions. Many economic institutions have social, political, and religious dimensions. For example, your job often influences your social standing. In addition, many social institutions, such as the family, have economic functions. I include any institution that significantly affects economic decisions as an economic institution because you must understand that institution if you are to understand how the economy functions.

To apply economic theory to reality, you've got to have a sense of economic institutions.

Economic institutions sometimes seem to operate in ways quite different than economic theory predicts. For example, economic theory says that prices are determined by supply and demand. However, businesses say that they set prices by rules of thumb—often by what are called cost-plus-markup rules. That is, a firm determines what its costs are, multiplies by 1.4 or 1.5, and the result is the price it sets. Economic

REAL-WORLD APPLICATION

Economists and Market Solutions

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Economic reasoning is playing an increasing role in government policy. Consider the regulation of pollution. Pollution became a policy concern in the 1960s as books such as Rachel Carson's *Silent Spring* were published. In 1970, in response to concerns about the environment, the Clean Air Act was passed. It capped the amount of pollutants (such as sulfur dioxide, carbon monoxide, nitrogen dioxides, lead, and hydrocarbons) that firms could emit. This was a "command-and-control" approach to regulation, which brought about a reduction in pollution, but also brought about lots of complaints by firms that either found the limits costly to meet or couldn't afford to meet them and were forced to close.

Enter economists. They proposed an alternative approach, called cap-and-trade, that achieved the same overall reduction in pollution but at a lower overall cost. In the plan they proposed, government still set a pollution cap that firms had to meet, but it gave individual firms some flexibility. Firms that reduced emissions by less than the required limit could buy pollution permits from other firms that reduced their emissions by more than their limit. The price of the permits would be determined in an "emissions permit market." Thus, firms that had a low cost of reducing pollution would have a strong incentive to reduce pollution by more than their limit in order to sell these permits, or rights to pollute, to firms that had a high cost of reducing pollution and therefore could reduce their pollution by less than what was required. The net reduction was the same, but the reduction was achieved at a lower cost.

In 1990 Congress adopted economists' proposal and the Clean Air Act was amended to include tradable emissions permits. An active market in emissions permits developed, and it is estimated that the tradable permit program has lowered the cost of reducing sulfur dioxide emissions by $1 billion a year while, at the same time, reducing emissions by more than half, to levels significantly below the cap. Other cap-and-trade programs have developed as well. You can read more about the current state of tradable emissions at www.epa.gov/airmarkets.

theory says that supply and demand determine who's hired; experience suggests that hiring is often done on the basis of whom you know, not by market forces.

These apparent contradictions have two complementary explanations. First, economic theory abstracts from many issues. These issues may account for the differences. Second, there's no contradiction; economic principles often affect decisions from behind the scenes. For instance, supply and demand pressures determine what the price markup over cost will be. In all cases, however, to apply economic theory to reality—to gain the full value of economic insights—you've got to have a sense of economic institutions.

Economic Policy Options

Economic policies are *actions (or inaction) taken by government to influence economic actions*. The final goal of the course is to present the economic policy options facing our society today. For example, should the government restrict mergers between firms? Should it run a budget deficit? Should it do something about the international trade deficit? Should it decrease taxes?

I saved this discussion for last because there's no sense talking about policy options unless you know some economic terminology, some economic theory, and something about economic institutions. Once you know something about them, you're in a position to consider the policy options available for dealing with the economic problems our society faces.