Issues in Economics Today

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Robert C. Guell

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Eighth Edition

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Mc Graw Hill Education

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To Susan, Katie, Manny, Angel, Matt, and Lilly

About the **Author**

Dr. Robert C. Guell (pronounced "Gill") is a professor of economics at Indiana State University in Terre Haute, Indiana. He earned a B.A. in statistics and economics in 1986 and an M.S. in economics one year later from the University of Missouri–Columbia. In 1991, he earned a Ph.D. from Syracuse University, where he discovered the thrill of teaching. He has taught courses for freshmen, upper-division undergraduates, and graduate students from the principles level, through public finance, all the way to mathematical economics and econometrics.

Dr. Guell has published numerous peer-reviewed articles in scholarly journals. He has worked extensively in the area of pharmaceutical economics, suggesting that the private market's patent system, while necessary for drug innovation, is unnecessary and inefficient for production.

In 1998, Dr. Guell was the youngest faculty member ever to have been given Indiana State University's Caleb Mills Distinguished Teaching Award. His talent as a champion of quality teaching was recognized again in 2000 when he was named project manager for the Lilly Project to Transform the First-Year Experience, a Lilly Endowment–funded project to raise first-year persistence rates at Indiana State University. He was ISU's Coordinator of First-Year Programs until January 2008, when he happily stepped aside to rejoin his department full time.

Dr. Guell's passion for teaching economics led him to request an assignment with the largest impact. The one-semester general education basic economics course became the vehicle to express that passion. Unsatisfied with the books available for the course, he made it his calling to produce what you have before you today—an all-in-one readable issues-based text.

Brief **Contents**

Table of **Contents**

Preface

This book is designed for a one-semester issues-based general education economics course, and its purpose is to interest the nonbusiness, noneconomics major in what the discipline of economics can do. Students of the "issues approach" will master the basic economic theory necessary to explore a variety of real-world issues. If this is the only economics course they ever take, they will at least gain enough insight to be able to intelligently discuss the way economic theory applies to important issues in the world today.

Until the first edition of this book was published, instructors who chose the issues approach to teaching a one-semester general economics course had to compromise in one of the following ways: they could (1) pick a book that presents the issues but that is devoid of economic theory; (2) pick a book that intertwines the issues with the theory; (3) ask students to buy two books; or (4) place a large number of readings on library reserve.

Each of these alternatives presents problems. If the course is based entirely on an issues text, students will leave with the incorrect impression that economics is a nonrigorous discipline that assumes that all of the issues are relevant to all students in the course. In fact, some issues are not relevant to some students and others are relevant only when the issue makes news. For example, at Syracuse my students never understood why farm price supports were interesting, whereas at Indiana State no student that I have met has ever lived in a rent-controlled apartment. The problem associated with using multiple books is the obvious one of expense. Having multiple reserve readings, still a legitimate option, requires a great deal of time on the part of students, teachers, and librarians and is usually not convenient to students.

The eighth edition of this book meets both student and instructor needs simultaneously. By making the entire portfolio of chapters available for instructors to select and include in a print book as they see fit within McGraw-Hill's CREATE platform, we allow instructors maximum flexibility to design a product that keeps students interested.

HOW TO USE THIS BOOK

Issues in Economics Today includes 8 intensive core theory chapters and 40 shorter issues chapters. The book is designed to allow faculty flexibility in approach. Some colleagues like to intertwine theory and issues while others like to lay the theoretical foundation first before heading into the issues. Some faculty will choose to set a theme for their course and pick issues consistent with that theme while others will let their students decide what issues interest them. There is no right way to use the book except that **under no circumstances is it imagined that the entire book be covered.**

McGraw-Hill CREATE

To address the recommendation that no instructor should assign the entire book to be covered in their course, the eighth edition takes advantage of the capabilities in McGraw-Hill's CREATE platform (www.mcgrawhillcreate.com) to give instructors the flexibility to easily design a print product customized to their issues course: instructors can easily add chapters to their product in the same way someone might add purchases to their cart when online shopping. Once the table of contents is set, the instructor can easily view the net price of their

course text (often much lower once extraneous chapters have been removed). When the product is approved by the instructor, the system will generate an ISBN for the customized product, which can be provided to the bookstore. Once an order is placed, the copies will be printed on demand for each institution. The process is very straightforward; however, a McGraw-Hill representative can assist instructors or build products based on syllabi if required. This workflow makes it feasible for an instructor to revisit their product and make tweaks every time they teach the course. It also makes it a possibility for me to author and make available chapters that address current economic issues in a timely manner as events arise.

Organization of the Issues Chapters

There are 40 issues chapters that I have divided into the following categories: Macroeconomic Issues (Chapters 9–16), International Issues (Chapters 17–20), Externalities and Market Failure (Chapters 22–23), Health Issues (Chapters 24–26), Government Solutions to Societal Problems (Chapters 27–31), Price Control Issues (Chapters 32–34), and Miscellaneous Markets (Chapters 36–48). These groupings will be helpful as you navigate through the Contents looking for a particular topic. To help you decide which issues chapters to cover, see the table on pages xxx–xxxi, entitled "Required Theory Table." It shows at a glance which theory chapters need to be covered before pursuing each of the issues chapters. On pages xxviii–xxix, the table entitled "Issues for Different Course Themes" includes my recommendations for courses that focus on social policy, international issues, election year issues, or business. Within the CREATE platform these different course structures are already assembled into ready-made Express Books to make it easy for you to customize your text according to these themes.

CHANGES TO THE EIGHTH EDITION

Due to the CREATE-delivery of the eighth edition, issues chapters that have previously been hosted on the website have now moved back within the table of contents so instructors can more easily add them to custom products. These chapters include:

- Chapter 21 NAFTA, CAFTA, GATT, WTO: Are Trade Agreements Good for Us?
- Chapter 28 Antitrust
- Chapter 35 Rent Control
- Chapter 39 Head Start
- Chapter 48 The Economics of Terrorism

Furthermore, many instructors have requested with previous editions that we provide assignable material within Connect, McGraw-Hill's online assessment platform. We are happy to report that Connect is now available with the eighth edition including an adaptive reading experience, assignable homework (with additional quantitative and graphing problems beyond what is found at the end of each chapter), test bank content, and a host of instructor resources. For more information, please review the Connect portion of this preface.

Chapter 1: An entire section has been added on modeling economic growth using a production possibilities frontier. Both generalized and specialized growth are depicted in both a world of increasing and constant opportunity cost. In addition, the sources of economic growth are explicated.

Chapter 2: Content and data updates have been made as needed to reflect the most current information available.

Chapter 3: Added to the discussion of substitutes by describing the inclination to use goods already in our possession longer when newer substitutes increase in price. Added an entire section on the determinants of elasticity of supply. Added a description of network goods.

Chapter 5: Content and data updates have been made as needed to reflect the most current information available. Textbox added to illustrate the importance of exit and entry using oil drilling.

Chapter 6: Content and data updates have been made as needed to reflect the most current information available. Added textbox that answers frequently asked questions regarding how particular situations (products made in one year and sold in the next, used cars, equities, and illegal drugs) are handled in GDP accounting.

Chapters 7–9: Content and data updates have been made as needed to reflect the most current information available.

Chapter 10: Content and data updates have been made as needed to reflect the most current information available. Added a section that described the monetary policies of other countries and how the unprecedented actions of the Federal Reserve can be undone when the times comes to do so.

Chapter 11: Content and data updates have been made as needed to reflect the most current information available.

Chapter 12: Content and data updates have been made as needed to reflect the most current information available. Added World Bank measures of debt-to-GDP measures.

Chapter 13: Content and data updates have been made as needed to reflect the most current information available. Added a comparison of home affordability in 2006 vs. 2015 for selected major markets.

Chapter 14: Content and data updates have been made as needed to reflect the most current information available.

Chapter 15: The chapter reshapes the "Japan" chapter from the previous edition to take on the broader question of economic stagnation in the U.S. and other western economies.

Chapter 16: Content and data updates have been made as needed to reflect the most current information available. Extensively revised the section on state and local pension problems using updated information. Focused particular attention on the intractability of the pension problem in Illinois.

Chapters 17–18: Content and data updates have been made as needed to reflect the most current information available.

Chapter 19: Content and data updates have been made as needed to reflect the most current information available. Reference made to ECB stimulus and to Brexit.

Chapter 20: Content and data updates have been made as needed to reflect the most current information available.

Chapter 21: Content and data updates have been made as needed to reflect the most current information available. References also made to the Trans-Pacific Partnership.

Chapter 22: Content and data updates have been made as needed to reflect the most current information available. The impact of the availability of e-cigarettes as substitutes for tobacco is discussed, particularly as it relates to tobacco elasticity.

Chapter 23: Content and data updates have been made as needed to reflect the most current information available. The responsiveness of average temperatures to changes in CO_2 concentrations is also discussed in the context of climate change.

Chapter 24: Content and data updates have been made as needed to reflect the most current information available. Clarifications are included regarding the impact of the PPACA on Medicaid expansions. International comparisons for five-year survival rates of various cancers are included.

Chapter 25: Content and data updates have been made as needed to reflect the most current information available. The Congressional action to address the perpetual "Docfix" is discussed.

Chapter 26: Content and data updates have been made as needed to reflect the most current information available. Issues involving expensive life-saving drugs (Harvoni, Vivitrol, etc.) and their coverage (or lack thereof) by Medicaid are discussed.

Chapter 27: A discussion of class-action lawsuits and the example of Takata airbags was inserted.

Chapter 28: Content and data updates have been made as needed to reflect the most current information available. Significant modifications to the impact of various crime policies on crime was added stemming from a Brennan Center for Justice report that showed diminishing returns to increasing levels of incarceration.

Chapter 29: A discussion of the Apple and Google cases before the EU anti-trust agencies was included.

Chapter 30: Content and data updates have been made as needed to reflect the most current information available.

Chapter 31: Content and data updates have been made as needed to reflect the most current information available. A Pew Charitable Trusts monograph on the state of the middle class is examined. A discussion regarding the economic and political consequences of the shrinking middle class is offered.

Chapter 32: Content and data updates have been made as needed to reflect the most current information available.

Chapter 33: Content and data updates have been made as needed to reflect the most current information available. The textbox on state and local minimum wage statutes is completely redone. The difference, in terms of consequences, between modest and large increases in the minimum wage are examined in the context of efforts to raise wages to $15/hr.

Chapter 34: Content and data updates have been made as needed to reflect the most current information available. The secondary market for tickets is examined through the examples of StubHub, Ticketmaster, and NFL Ticket Exchange.

Chapter 35: No substantive changes.

Chapter 36: Content and data updates have been made as needed to reflect the most current information available. A discussion of the decline in inflation-adjusted K–12 per-student spending is offered.

Chapter 37: Content and data updates have been made as needed to reflect the most current information available. Notes drawing attention to the fact that tuition increases at state institutions or higher education have slowed at the same time that state subsidies to those schools have also

decreased. Attention is also drawn to the fact that young adults in the United States are now no longer the likeliest to have a college education. In fact, the United States is now eighth on that list.

Chapters 38–40: Content and data updates have been made as needed to reflect the most current information available.

Chapter 41: Content and data updates have been made as needed to reflect the most current information available. The reform of the AMT is discussed.

Chapter 42: Content and data updates have been made as needed to reflect the most current information available. Hydraulic Fracturing and directional drilling and the impact of these technologies on the elasticity of supply of crude oil are examined. The impact of these technologies and the increase in U.S. capabilities on OPEC are discussed. Data shows the link between U.S. rig counts and prices is displayed.

Chapter 43: Content and data updates have been made as needed to reflect the most current information available. The relocation of the Rams to L.A. is discussed. The fact that fewer constraints on soccer talent exist is related to the dominating position of Spain's Barcelona and Real Madrid and the Premier League's top five teams.

Chapters 44–46: Content and data updates have been made as needed to reflect the most current information available.

Chapter 47: Content and data updates have been made as needed to reflect the most current information available. Daily Fantasy gambling is discussed.

Chapter 48: More recent terror attacks in France, Belgium, and San Bernardino included.

FEATURES

- *A conversational writing style* makes it easier for students not majoring in economics to connect with the material. The book puts students at ease and allows them to feel more confident and open to learning.
- *Chapter Outline and Learning Objectives* set the stage at the beginning of each chapter to let the student see how the chapter is organized and anticipate the concepts that will be covered.
- *Key Terms* are defined in the margins and recapped at the end of the chapters.
- *Summaries* at the end of each chapter reinforce the material that has been covered.
- *Issues Chapters You Are Ready for Now* are found at the end of each theory chapter, so students can go straight to the issues chapters that interest them once they've mastered the necessary theoretical principles.
- *Quiz Yourself* presents questions for self-quizzing at the end of each chapter.
- *Think about This* asks provocative questions that encourage students to think about how economic theories apply to the real world by putting themselves in the economic driver's seat. For example, one Think about This asks, "Suppose you buy a new car. What is the opportunity cost of doing so?" This feature facilitates active learning so that the students will learn the concepts more thoroughly.
- *Talk about This* includes questions designed to trigger discussion.
- *For More Insight See* sends the students to websites and publications to find additional material on a given topic. Since economic issues are particularly time-sensitive, this

feature not only helps students learn to do research on the web but also keeps the course as fresh and current as today's newspaper.

- *Short Answer Questions* are included so that faculty may ask students questions that will help faculty assess student understanding of complex economic phenomena.

RESOURCES TO SUPPORT LEARNING

The content and reliability of supplements is of primary importance to the users of the book. Because of this, I am personally involved in crafting and checking all of the following ancillaries, which are available for quick download and convenient access via the instructor resource material available through Connect.

Instructor's Manual

In addition to a traditional outline of each chapter's content and updated we references to data sources for each chapter, the Instructor's Manual offers key-point icons to emphasize the importance of particular concepts. Another distinctive feature is that each figure is broken into subfigures with explanations that can be offered at each stage. Solutions to the end of chapter questions are also provided.

Test Bank

The test bank includes 80–200 multiple-choice questions for the core theory chapters and 60–100 multiple-choice questions for the issues chapters. These questions test students' knowledge of key terms, key concepts, theory and graph recognition, theory and graph application, and numeracy, as well as questions about different explanations given by economists regarding particular economic phenomena.

Computerized Test Bank

TestGen is a complete, state-of-the-art test generator and editing application software that allows instructors to quickly and easily select test items from McGraw-Hill's test bank content. The instructors can then organize, edit, and customize questions and answers to rapidly generate tests for paper or online administration. Questions can include stylized text, symbols, graphics, and equations that are inserted directly into questions using built-in mathematical templates. TestGen's random generator provides the option to display different text or calculated number values each time questions are used. With both quick-and-simple test creation and flexible and robust editing tools, TestGen is a complete test generator system for today's educators.

PowerPoint Presentations

An extensive set of editable PowerPoint slides accompany the text to support instructor lectures.

Assurance of Learning Ready

Many education institutions today are focused on the notion of *assurance of learning*, an important element of some accreditation standards. *Issues in Economics Today* supports assurance of learning objectives with a simple, yet powerful solution.

Instructors can use Connect to easily query for learning outcomes/objectives that directly relate to the learning objectives of the course. You can then use the reporting features of Connect to aggregate student results in similar fashion, making the collection and presentation of assurance of learning data simple and easy.

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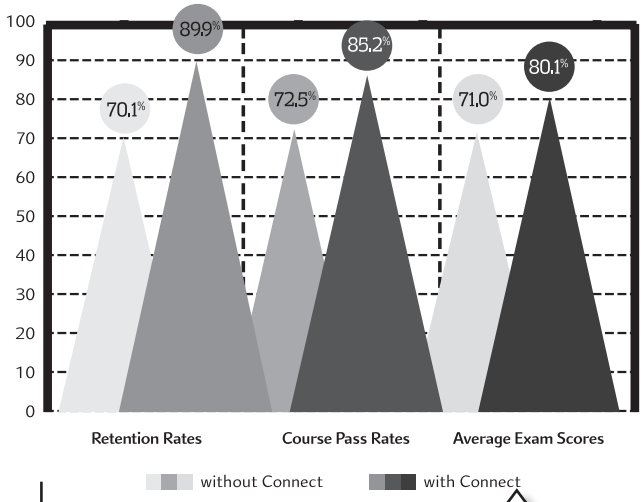

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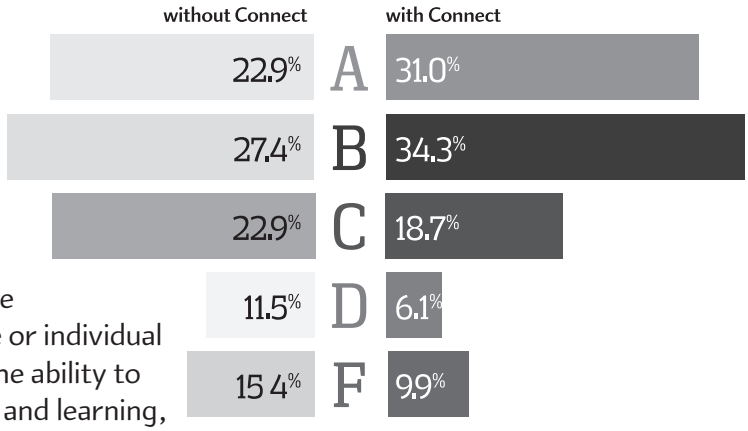

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*Findings based on 2015 focus group results administered by McGraw-Hill Education

AACSB Statement

McGraw-Hill Global Education is a product corporate member of AACSB International. Understanding the importance and value of AACSB accreditation, *Issues in Economics Today* has sought to recognize the curricula guidelines detailed in the AACSB standards for business accreditation by connecting questions in the test bank and end-of-chapter material to the general knowledge and skill guidelines found in the AACSB standards.

It is important to note that the statements contained in *Issues in Economics Today* are provided only as a guide for the users of this text. The AACSB leaves content coverage and assessment within the purview of individual schools, the mission of the school, and the faculty. While *Issues in Economics Today* and the teaching package make no claim of any specific AACSB qualification or evaluation, we have labeled questions according to the general knowledge and skill areas.

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This text would not have been possible but for the efforts of a number of people. I thank Indiana State University and its Department of Economics for their continued support of this project. In particular, I thank my chair, John Conant, for his unflagging support, both moral and material. I am indebted to the personnel of McGraw-Hill Education for their work in gathering and compiling peer reviews. Katie Hoenicke, Senior Brand Manager, Jamie Koch, Product Developer, and Christina Kouvelis, Senior Product Developer, were always encouraging and willing to help at every stage. Finally, I want to thank Kelsey Darin. Kelsey, an undergraduate student at Indiana State, spent countless hours updating each data reference, table, and graph. Her careful and unending attention to detail helped me put together this edition in a way that I will be relying upon for editions to come. She cheerfully completed each task at a time when the University (almost inexplicably) assigned me to chair a department in another college. I will forever be in her debt.

I thank the many participants in McGraw-Hill Symposia who happily offered great insight on the best way to teach interesting issues. Finally, I thank the following peer reviewers whose insight substantially enhanced this book:

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Issues for **Different Course Themes**

Social Policy

22. The Line between Legal and Illegal Goods
24. Health Care
25. Government-Provided Health Insurance: Medicaid, Medicare, and the Children's Health Insurance Program
26. The Economics of Prescription Drugs
30. The Economics of Race and Sex Discrimination
31. Income and Wealth Inequality: What's Fair?
33. Minimum Wage
36. The Economics of K–12 Education
37. College and University Education: Why Is It So Expensive?
38. Poverty and Welfare
47. The Economic Impact of Casino and Sports Gambling

Election Year

9. Fiscal Policy
11. Federal Spending
14. The Recession of 2007–2009: Causes and Policy Responses
15. Is Economic Stagnation the New Normal?
16. Is the (Fiscal) Sky Falling? An Examination of Unfunded Social Security, Medicare, and State and Local Pension Liabilities
17. International Trade: Does It Jeopardize American Jobs?
23. Natural Resources, the Environment, and Climate Change
24. Health Care
27. So You Want to Be a Lawyer: Economics and the Law
28. The Economics of Crime
30. The Economics of Race and Sex Discrimination
33. Minimum Wage
37. College and University Education: Why Is It So Expensive?
40. Social Security

International Issues

12. Federal Deficits, Surpluses, and the National Debt
15. Is Economic Stagnation the New Normal?
17. International Trade: Does It Jeopardize American Jobs?
18. International Finance and Exchange Rates
19. European Debt Crisis
20. Economic Growth and Development
22. The Line between Legal and Illegal Goods
23. Natural Resources, the Environment, and Climate Change
32. Farm Policy
42. Energy Prices

Business Issues

10. Monetary Policy
11. Federal Spending
13. The Housing Bubble
14. The Recession of 2007–2009: Causes and Policy Responses
17. International Trade: Does It Jeopardize American Jobs?
24. Health Care
26. The Economics of Prescription Drugs
34. Ticket Brokers and Ticket Scalping
41. Personal Income Taxes
42. Energy Prices
44. The Stock Market and Crashes
45. Unions
46. Walmart: Always Low Prices (and Low Wages)—Always

Social Justice

14. The Recession of 2007–2009: Causes and Policy Responses
15. Is Economic Stagnation the New Normal?
23. Natural Resources, the Environment, and Climate Change
24. Health Care
25. Government-Provided Health Insurance: Medicaid, Medicare, and the Children's Health Insurance Program
26. The Economics of Prescription Drugs
30. The Economics of Race and Sex Discrimination
31. Income and Wealth Inequality: What's Fair?
33. Minimum Wage
35. Rent Control
36. The Economics of K–12 Education
37. College and University Education: Why Is It So Expensive?
38. Poverty and Welfare
39. Head Start
40. Social Security

Health and Education Policies

11. Federal Spending
16. Is the (Fiscal) Sky Falling?: An Examination of Unfunded Social Security, Medicare, and State and Local Pension Liabilities
23. Natural Resources, the Environment, and Climate Change
24. Health Care
25. Government-Provided Health Insurance: Medicaid, Medicare, and the Children's Health Insurance Program
26. The Economics of Prescription Drugs
30. The Economics of Race and Sex Discrimination
31. Income and Wealth Inequality: What's Fair?
36. The Economics of K–12 Education
37. College and University Education: Why Is It So Expensive?
38. Poverty and Welfare
39. Head Start
40. Social Security

The Most Popular Issues Chosen by Students

14. The Recession of 2007–2009: Causes and Policy Responses
17. International Trade: Does It Jeopardize American Jobs?
22. The Line between Legal and Illegal Goods
23. Natural Resources, the Environment, and Climate Change
24. Health Care
28. The Economics of Crime
30. The Economics of Race and Sex Discrimination
33. Minimum Wage
42. Energy Prices
43. If We Build It, Will They Come? and Other Sports Questions
44. The Stock Market and Crashes
47. The Economic Impact of Casino and Sports Gambling

Required **Theory Table**

Core Theory Required								
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	
					X	X	X	9. Fiscal Policy
					X	X	X	10. Monetary Policy
X								11. Federal Spending
					X		X	12. Federal Deficits, Surpluses, and the National Debt
					X	X	X	13. The Housing Bubble
					X	X	X	14. The Recession of 2007–2009: Causes and Policy Responses
					X	X	X	15. Is Economic Stagnation the New Normal?
					X	X	X	16. Is the (Fiscal) Sky Falling?: An Examination of Unfunded Social Security, Medicare, and State and Local Pension Liabilities
X	X	X						17. International Trade: Does It Jeopardize American Jobs?
	X							18. International Finance and Exchange Rates
X	X				X	X	X	19. European Debt Crisis
	X				X		X	20. Economic Growth and Development
X	X	X						21. NAFTA, CAFTA, GATT, TPP, WTO: Are Trade Agreements Good for Us?
X	X	X						22. The Line between Legal and Illegal Goods
X	X	X	X	X		X		23. Natural Resources, the Environment, and Climate Change
X	X	X						24. Health Care
X	X	X						25. Government-Provided Health Insurance: Medicaid, Medicare, and the Children's Health Insurance Program
X	X	X	X	X				26. The Economics of Prescription Drugs
X	X	X					X	27. So You Want to Be a Lawyer: Economics and the Law
X	X	X						28. The Economics of Crime
	X	X	X	X				29. Antitrust
	X							30. The Economics of Race and Sex Discrimination
X	X					X		31. Income and Wealth Inequality: What's Fair?
X	X	X						32. Farm Policy
X	X	X						33. Minimum Wage
	X	X		X				34. Ticket Brokers and Ticket Scalping
	X	X						35. Rent Control
X						X		36. The Economics of K–12 Education
X	X	X	X	X		X		37. College and University Education: Why Is It So Expensive?
X								38. Poverty and Welfare
X						X		39. Head Start
						X		40. Social Security

Core Theory Required								
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	
						X		41. Personal Income Taxes
	X	X	X					42. Energy Prices
X						X		43. If We Build It, Will They Come? And Other Sports Questions
						X		44. The Stock Market and Crashes
	X	X	X	X				45. Unions
X	X	X	X	X				46. Walmart: Always Low Prices (and Low Wages)—Always
X					X	X	X	47. The Economic Impact of Casino and Sports Gambling
X								48. The Economics of Terrorism

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CHAPTER ONE

Economics: The Study of Opportunity Cost

Learning Objectives

After reading this chapter you should be able to:

LO1 Define the key terms of economics and opportunity cost and understand how a production possibilities frontier exemplifies the trade-offs that exist in life.

LO2 Distinguish between increasing and constant opportunity cost and understand why each might happen in the real world.

LO3 Analyze an argument by thinking economically, while recognizing and avoiding logical traps.

Chapter Outline

This chapter lays the foundation for understanding how to think like an economist. It begins by defining the discipline of economics and its most basic concept: opportunity cost. Opportunity cost is modeled and further explained through the use of a diagram called a production possibilities frontier. A road map to the economy and to the remainder of the book is presented in the form of a circular flow diagram. The chapter continues with a discussion of what "thinking economically" means. To understand this concept, we look at why economists use marginal analysis, explore the difference between positive and normative analysis, and examine economic incentives. We conclude by examining logical traps that obstruct our path to such economic thinking.

Economics and Opportunity Cost

Economics Defined

economics
The study of the allocation and use of scarce resources to satisfy unlimited human wants.

Some define **economics** as a hard requirement for general education or a major; others, a "dismal science"; and still others, the study of the allocation and use of scarce resources to satisfy unlimited human wants. The reality is that economics is all three. It deserves its reputation as a difficult course, its practitioners are always disappointing the public by insisting that there is a cost to everything, and it really is a social science dealing with the fact that humans want more than resources are capable of satisfying.

On another level, the study of economics is the application of complicated jargon and graphs to common sense. You already know a lot of economics. You know, for instance, that choices have consequences; that having more money is more fun than having less; and that even though you are rich relative to a starving refugee, you are less rich than you would like to be. Of course, there are many other economic lessons that you learn simply by being alive. What you do not have is a systematic way of thinking about those economic ideas, and that is what this course and this book provide.

In this book all jargon with special meaning to economists will be in **bold,** with its definition, sometimes also in jargon, close by in the text as well as in the margin. If the definition is in "econ-speak" rather than commonsense English, you will also find an English translation nearby. Two terms in our definition of economics need clarification because they have special meaning to economists. First, you find the word *scarce*. Something is **scarce** when there is not a freely available and infinite source of it. Second, a **resource** is anything we either consume directly or use to make things that we will ultimately consume.

scarce
Not freely available and lacking an infinite source.

resource
Anything that is consumed directly or used to make things that will ultimately be consumed.

There are four basic resources that society can allocate: land, labor, capital, and the entrepreneurship of its people. Any other resource, like oil, steel, or corn, is made available to a society when it allocates one or more of the basic resources to uncover, create, or harvest it.

Choices Have Consequences

In this course and with this book you will be faced with a choice: Do you read and study, or do you sleep and party? This choice illustrates the first and most basic concept of economics: opportunity cost. **Opportunity cost** is the forgone alternative of the choice made.

opportunity cost
The forgone alternative of the choice made.

Translated into English, opportunity cost is "what you would have done had you not done what you did." It is important to keep in mind that the "forgone alternative" is the next best choice. It is not all the things "you could have done had you not done what you did," but it is the best of these alternatives because presumably that is "what you would have done."

If, for example, you decide at some point before finishing your assigned reading to put down this book, you will be implicitly saying that you would rather do something other than read this book. In terms of the course you are taking, the "opportunity cost" of such a poor decision could well be the lower grade that results from lost understanding.

Unfortunately, no matter what you do, you cannot escape opportunity cost. If you stay responsible and continue to read your text, the opportunity cost would be what you would do with the time saved. You are giving up the opportunity to watch something on *Netflix*, play the latest *Call of Duty*, *Halo*, or *Assassin's Creed* game, sleep, or study something else. To you, the preferred one of these would be the opportunity cost of reading the text.

production possibilities frontier
A graph that relates the amounts of different goods that can be produced in a fully employed society.

model
A simplification of the real world that can be manipulated to explain the real world.

As an aside, professors today see many students trying to avoid opportunity cost by multi-tasking. Scanning your Facebook account, reading your English, texting your significant other, or studying your biology during your economics class may seem like you are simply using time that has no opportunity cost. It is not. Students who attempt it frequently miss details, instructions, or concepts when they are only partially tuned in. The opportunity cost of the multi-tasking attempt is the lost understanding that could have been gained had you focused your attention in class.

Modeling Opportunity Cost Using the Production Possibilities Frontier

The Intuition behind Our First Graph

The concept of opportunity cost can be further illustrated by looking at something called a **production possibilities frontier.** This graph, Figure 1.1, is the first of more than 100 that you will see in this book. It is an example of a **model,** a simplification of the real world that we

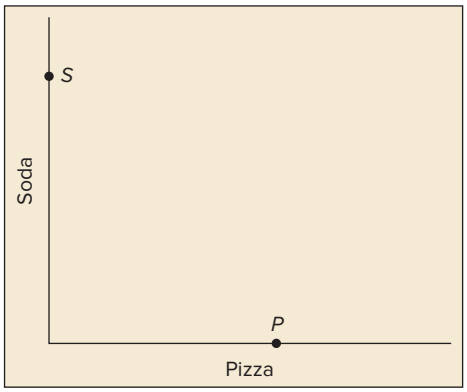


FIGURE 1.1
Production possibilities frontier: the starting point.

simplifying assumption
An assumption that may, on its face, be silly but allows for a clearer explanation.

can manipulate to explain the real world. This particular one relates the amounts of different goods that can be produced in a fully employed society.

Because chalkboards and book pages have only two dimensions, our explanation is limited. This gives us the first opportunity to introduce something called a **simplifying assumption.** A simplifying assumption is one that may, on its face, be silly but allows for a clearer explanation. A good one also has the characteristic that the conclusions that spring from it are valid in its more complicated scenario. For our production possibilities frontier we will make several simplifying assumptions. We will assume that there are only two goods in the world, that these goods are pizza and soft drinks, and that these goods will be produced with a fixed number of resources and fixed technology.

For another simplification, suppose that there are five types of people in the world: (1) those really good at producing pizza but lousy at producing soda; (2) those pretty good at producing pizza and not so good at producing soda; (3) those sort of OK at both; (4) those good at producing soda and not so good at producing pizza; and (5) those really good at producing soda but lousy at producing pizza.

The Starting Point for a Production Possibilities Frontier

If we imagine that our resource is the time of our workers, it can be consumed directly in the form of their leisure or it can be combined with other resources to produce goods and services. This resource is also scarce because there is not an infinite number of people to work, those people can do only so much work, they will not work without being paid, and there is only so much soda that can be produced—even if all the people on the planet devote their lives to the production of soda. Of course this point also holds if we apply the scarce resource to the production of pizza. There is only so much pizza that can be produced even if everyone on the planet is producing pizza. This notion of scarcity gives us a starting point and an ending point for Figure 1.1.

Point *S* in Figure 1.1 represents the situation where all resources are devoted to the production of soda; point *P* represents the situation where all resources are devoted to the production of pizza. In both cases all the resources in the world are devoted to the production of a specific good and production is still limited. It is limited by the ability of people and by the number of people and machines we have to help those people do their jobs. So that it is clear, remember that the production possibilities frontier is giving us a series of choices. We can pick only one of them. We cannot have both *S* sodas and *P* pizzas; thus, it is an either–or situation.

Points between the Extremes of a Production Possibilities Frontier

We can have some soda and some pizza, so many points between *S* and *P* are possible; we need to determine them. To proceed, assume you want something to eat with your soda, and ask yourself what kind of people you would remove from soda production to foster pizza production. Clearly, you would remove those who are not contributing much to the soda production but would contribute greatly to pizza production. That is, those with the attributes of people in group 1 above: really good at pizza, lousy at soda.

Figure 1.2 shows us what happens if we go ahead and move that group. As you see, this increases pizza production to a respectable level while not costing society much soda. Point *X* in Figure 1.2 represents that new soda–pizza combination. There everyone except those whom

FIGURE 1.2 Production possibilities frontier: moving pizza chefs to their rightful place.

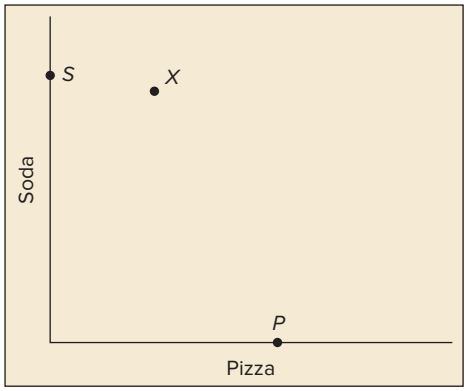
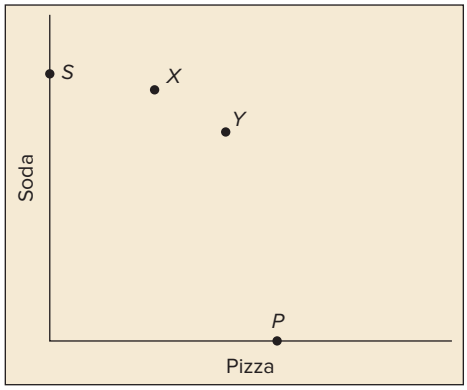


FIGURE 1.3 Production possibilities frontier: moving to even more pizza production.



we will call the "pizza chefs" are still making soda, and the pizza chefs are efficiently cranking out as many pizzas as they can on their own. The thing is, though we gained a great deal of pizza production, we lost some soda production. That's why point *X,* while to the right of point *S,* is also lower than point *S*.

If we continue this process further, we are not blessed with a similar effect. The reason is that if we move toward greater pizza production, we do not have those pizza chefs to call on; instead we have our group 2, who are pretty good at pizza and not so good at soda. What that means is that even though pizza production rises, it does not rise as much as it did before. On top of that, our soda production falls more than it had before because when we moved the pizza chefs, they were "lousy" at soda. Now we are moving workers who are simply not so good at soda. Our soda losses are growing at an increasing rate. Thus we have point *Y* in Figure 1.3.

Going further, point *M* in Figure 1.4 results from moving the workers from group 3 (OK at both) from soda to pizza, point *Z* results from moving group 4 workers to pizza, and point *P* results from moving group 5 workers to pizza.

Connecting points like this creates Figure 1.5: a production possibilities frontier. This curve represents the most pizza that can be produced for any given amount of soda or, interpreted differently, the most soda that can be produced for any given amount of pizza.

FIGURE 1.4 All points on a production possibilities frontier.

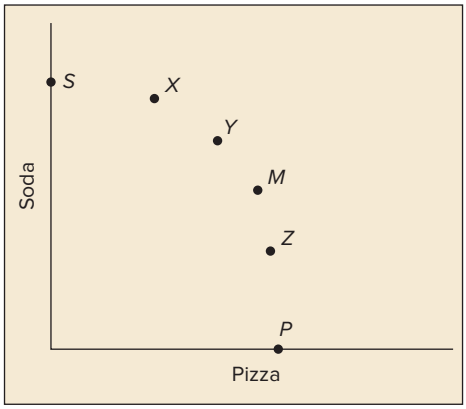
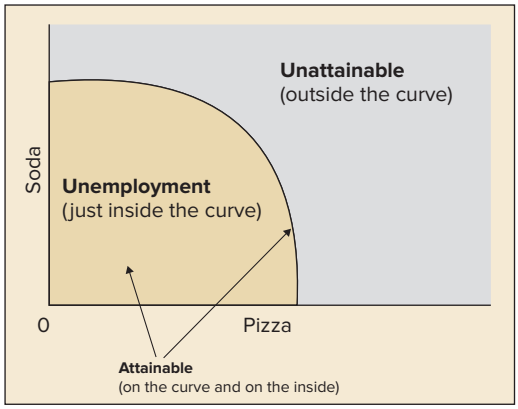


FIGURE 1.5 A fully labeled production possibilities frontier: the case when people are different.



Attributes of the Production Possibilities Frontier

unemployment
A situation that occurs when resources are not being fully utilized.

attainable
Levels of production that are possible with the given resources.

unattainable
Levels of production that are not possible with the given resources.

Of course, if you can produce on the curve, you can produce less than that as well. If you do produce at points inside a production possibilities frontier, there are unemployed resources, or **unemployment** for short. Therefore, all points on or inside the production possibilities frontier are **attainable.**

Conversely, since the production possibilities frontier represents the maximum amount of one good that you can produce for a given level of production of another, those points outside the production possibilities frontier are **unattainable.** This means that currently available resources and technology are insufficient to produce amounts greater than those illustrated on the frontier. On the graph, everything beyond the frontier is unattainable.

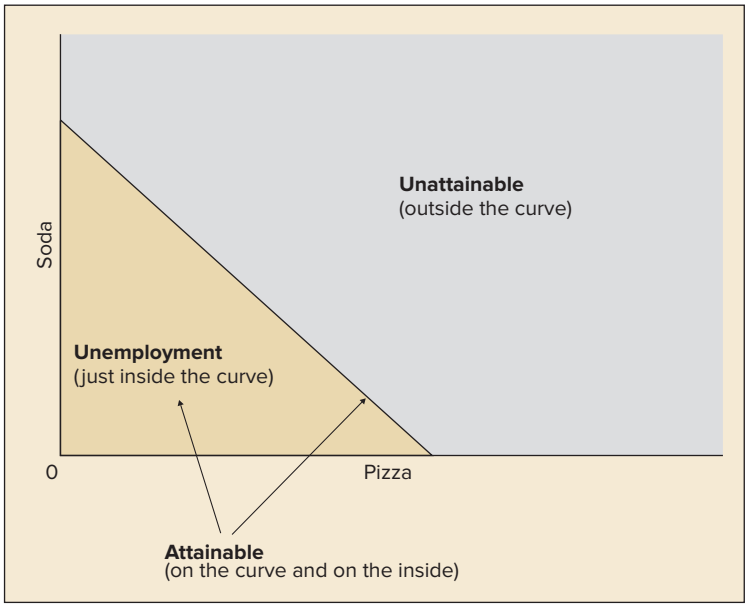
The preceding discussion illustrates something you need to be wary of in this book. Words you think you know may mean something entirely different to economists. Thus far we have at least three such words: *unemployment, frontier,* and *good.* You think of unemployment as the condition of someone wanting a job but not having one. Economists do not disagree but expand that definition to resources other than labor. For example, on the interior of the production possibilities frontier there is unemployment, but that unemployment may be of capital. The word *frontier* is used to describe the boundary of production, not a wooded area with bears to avoid. The word *good*, to an economist, is a generic term for anything we consume. In the example, soda and pizza are goods.

In the soda and pizza example there were people of different talents at soda and pizza production. The pizza chef had far different skills from the soda master. If, on the other hand, everyone were identical in their soda and pizza production capabilities, then points would fall on the line, as seen in Figure 1.6.

Increasing and Constant Opportunity Cost

Figures 1.5 and 1.6 have important similarities and differences. In both, the points on the production possibilities frontier are the most of one good that can be produced for a given amount of the other good. In both, the points on the curve and inside it are attainable and those on the outside of it are unattainable. In both, the opportunity cost of moving from one point

FIGURE 1.6
A fully labeled production possibilities frontier: the case when people are the same.



to another is the amount of one good you have to give up to get another. They differ in one important way, however: whether opportunity cost is increasing or constant.

If the production possibilities frontier is not a line but is bowed out away from the origin, then opportunity cost is increasing. The reason for this is that as we add more resources to the production of pizza, we are using fewer resources to produce soda. Compounding that problem, at each stage as we take the resources away from soda and put them into pizza, we are moving workers who are worse at pizza production and better at soda production than those moved in the previous stage. This means that the increase in pizza production is diminishing and the loss in soda production is increasing. An economist would call this an example of increasing opportunity cost.

If the production possibilities frontier is a straight line that is not bowed out away from the origin, then opportunity cost is constant. If every worker possesses identical skill, though you still have to give up some soda to get pizza, this is not compounded by anything. The resources you put into producing more pizza are just as good as the resources used to get you to that point, and the resources taken away from the soda are similarly just as good as the resources used up to that point. An economist would call this an example of constant opportunity cost.

Economic Growth

How Is Growth Modeled?

We can use the production possibilities frontier to model economic growth. In the top-left frame of Figure 1.7 we see what happens when there is increasing opportunity cost between pizza and soda, and a new process allows more soda to be produced from the same resources when that process doesn't apply to pizza. In the top-center frame the reverse is true: Technological progress allows for greater pizza production but doesn't impact soda. The bottom-left and bottom-center frames show the same thing when there is constant opportunity cost. These four cases show the result of specialized growth, where there is an increase in the ability to produce a particular good because there is an increase in, or an increase in the ability of, resources to produce a particular good that does not generalize to other goods.

When there is generalized growth, that is typically the result of an increase in, or an increase in the ability of, resources to produce all goods. Generalized growth is depicted on the top-right and lower-right frames of Figure 1.7 for when there is increasing and constant opportunity cost, respectively.

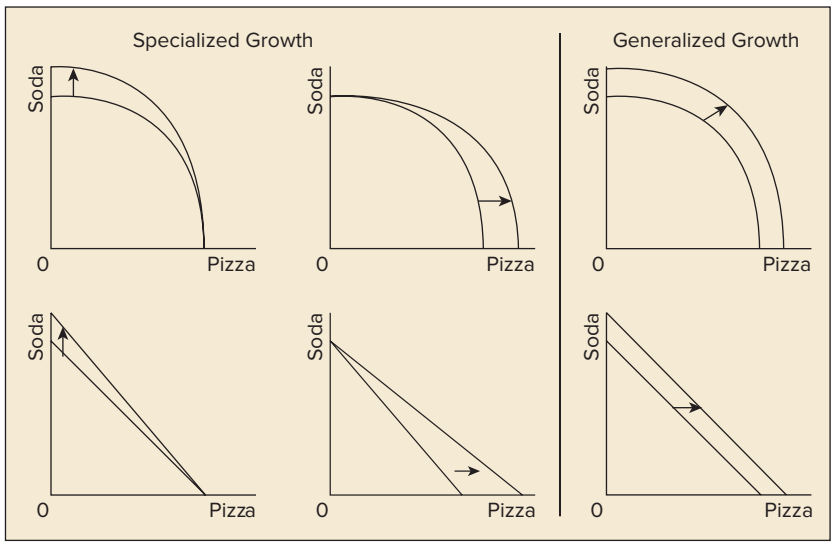


FIGURE 1.7
Modeling Economic Growth.

Sources of Economic Growth

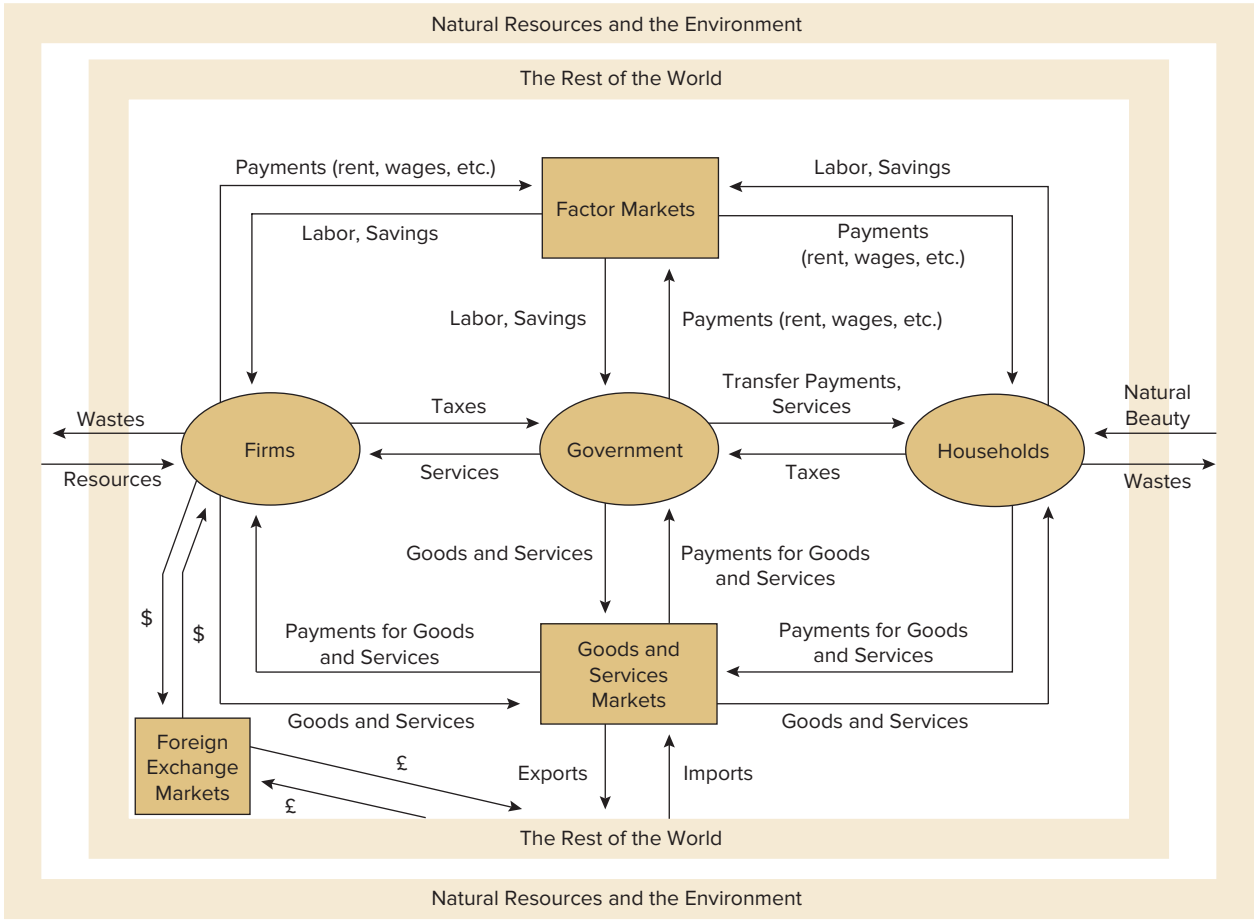
In terms of productive capacity of a society, economic growth results from either an increase in the availability of resources or an increase in the ability of resources to produce goods and services. In the first case, a newly discovered source of energy, or a source of energy that had, under previous technology, not been exploitable would constitute a newly available resource. Reaching not that far back in our history, having women enter the labor force in large numbers during the 1960s through the 1990s increased the availability of labor. In the second case, sometimes the resources remain the same but the ability to utilize them to produce goods and services increases. For instance, when computers and lasers are added to saw mills, the same logs, saw blades, and labor can produce more lumber. That is, technology makes resources more productive. Similarly, education makes labor more productive and can be a source of generalized growth in capacity.

The Big Picture

circular flow model
A model that depicts the interactions of all economic actors.

Now that we have looked at our first "simplified" model of the economy, it's time to get an idea of the "Big Picture." Think of Figure 1.8 as your road map to the book. This **circular flow model** is designed to put all of the pieces that follow in perspective. It has firms, workers, investors, savers, buyers, and sellers all interacting in markets and dealing with government. It

FIGURE 1.8 The Circular Flow Model.



market
Any mechanism by which buyers and sellers negotiate an exchange.

factor market
A mechanism by which buyers and sellers of labor and financial capital negotiate an exchange.

foreign exchange market
A mechanism by which buyers and sellers of the currencies of various countries negotiate an exchange.

goods and services market
A mechanism by which buyers and sellers of goods and services negotiate an exchange.

has humanity taking natural resources from the environment, combining them with domestic and foreign financial and human resources to produce goods and services, and then buying and selling those goods and services in domestic and foreign markets.

Circular Flow Model: A Model That Shows the Interactions of All Economic Actors

The ovals in the diagram represent entities of specific kinds: There are households, firms, and governments. Households provide labor for wages. They use those wages to buy goods and services and pay their taxes. They receive services from government. Some save, some borrow, and many do both. Firms provide wages to households and pay taxes to government while getting labor from their workers and services from the government.

The rectangles in the diagram represent **markets** of various kinds: There are factor markets, foreign exchange markets, and goods and services markets. **Factor markets** are where workers and firms, and borrowers and savers interact to set wages and interest rates. **Foreign exchange markets** are where holders of various currencies interact to facilitate international trade. **Goods and services markets** are where consumers and producers interact to negotiate exchange of goods like cars, and services like dry cleaning.

Surrounding the whole thing are "The Rest of the World" and "Natural Resources and the Environment." The former allows us to explicitly think about foreign trade and foreign exchange while the latter lets us think about the use of natural resources and the implications of economic activity on the environment.

Thinking Economically

Marginal Analysis

One of the central tools of economics is marginal analysis. Economists typically look at problems by analyzing the costs and benefits of various solutions. When people buy something, they have to compare the value of what they purchase to the value of what they give up. When companies produce goods for sale, they have to compare the money they generate from sales to the costs they will incur from the production process. When you clean up your dorm room, you weigh the cleanliness gained against the time required to clean it.

optimization assumption
An assumption that suggests that the person in question is trying to maximize some objective.

marginal benefit
The increase in the benefit that results from an action.

marginal cost
The increase in the cost that results from an action.

net benefit
The difference between all benefits and all costs.

Economists generally make an **optimization assumption.** This is an assumption that suggests that the person in question is trying to maximize some objective. For example, consumers are assumed to be making decisions that maximize their happiness subject to a scarce amount of money. Companies are assumed to maximize profits. People are assumed to clean things until the benefits of cleaning more are not worth the time or effort.

Economists see that all of these problems can be looked at using the same framework. Economists compare the **marginal benefit** of an action with its **marginal cost.** Something is worth doing only if the increase in benefits equals or exceeds the increase in costs. If the marginal benefit of an action steadily decreases and the marginal cost of an action steadily increases, then a person maximizes **net benefit** by doing that action until the marginal benefit equals the marginal cost. This is the essence of marginal analysis, and we will see it in action throughout this book.

Positive and Normative Analysis

When people look at the world they often see things as they are and compare the way things are to the way they think things should be. They see a major league shortstop sign a contract for a quarter of a billion dollars over 10 years while their high school teachers make

less than $40,000 a year. Economists, and social scientists in general, distinguish views of "the way things are" from "the way things should be," calling the former **positive analysis** and the latter **normative analysis.** Although there are economists who utilize both forms of analysis, more economists are comfortable explaining why things are the way they are than are comfortable suggesting the way things should be. Some critics look at this as self-delusion on the part of economists, using the argument that we choose which information to weigh more heavily based on normative beliefs.

positive analysis
A form of analysis that seeks to understand the way things are and why they are that way.

normative analysis
A form of analysis that seeks to understand the way things should be.

Economic Incentives

What kinds of choices we make as individuals and as a society depend on our preferences. Returning to the soda and pizza example, whether we like soda or pizza, or in what combinations we most like them, will have an important impact on what we choose to produce and consume. But also high on the list of things that determine what combinations of things we will produce and consume are **incentives.** Something is an incentive if it influences a decision we make. Some incentives are part of a market, like prices. Others are put on by an outside force like a government, and they can positively reinforce behaviors that are desired or deter behaviors that are not. What this means is that you are still able to produce and consume what you want, but something—perhaps a tax or a government regulation—is encouraging a particular choice. For example, by taxing beer and not soda, the government encourages you to steer toward soda and away from beer.

incentives
Something that influences a decision we make.

On a deeper level, an incentive may motivate you to do something you would not ordinarily do. For instance, many incentives are offered in the tax system. Tax credits and deductions for college tuition are considered incentives that will persuade people to get an education. For many people who would go to college anyway, these are not incentives. However, to some people who were perhaps considering college but had not made a decision, any influence these tax benefits would have on the decision would constitute an incentive.

An important and sometimes unfortunate aspect of incentives is that they create unintended consequences. Taxes are an area where some argue that the unintended consequences can be predicted from the incentives that arise out of programs. If welfare payments were reduced when the recipient found part-time employment, some predict the result that the recipient would not look for part-time employment.

Fallacy of Composition

One of the key traps to thinking economically is assuming that the total economic impact of something is always and simply equal to the sum of the individual parts. The **fallacy of composition** is an important logical trap to avoid because invalid economic conclusions will inevitably be drawn.

fallacy of composition
The mistake in logic that suggests that the total economic impact of something is always and simply equal to the sum of the individual parts.

Outside of economics, cake constitutes a famous illustration of why the fallacy of composition is just that—a fallacy. Imagine a cake. Now imagine the ingredients that go into making the cake. Imagine eating the cake and the satisfaction you get from that. Now compare that level of satisfaction to what you would have if you separately poured flour, sugar, and baking powder down your throat, washed it down with a couple of raw eggs and some cooking oil, and then stuck your head in an oven. The baked combination is obviously better than its individual parts.

As an example within economics, we will learn in Chapter 5 that when many farmers are making high profits, others will want to join in. If they do join in, will all of the old and new farmers be making high profits? We will see that the new farmers' extra production will ultimately drive prices down so far that neither the older nor the newer farmers make money.