

microeconomics

A CONTEMPORARY INTRODUCTION

11e



William A. McEachern



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William A. McEachern

University of Connecticut



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**Microeconomics A Contemporary
Introduction, 11e****William A. McEachern**

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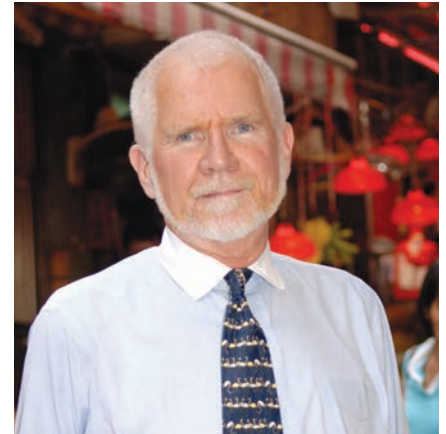
Will McEachern started teaching large sections of economic principles shortly after joining the University of Connecticut. Not long after that, he began offering teaching workshops around the country. And Will created *The Teaching Economist*, now in its third decade, a newsletter that focuses on making teaching more effective and more fun.

His research in public finance, public policy, and industrial organization has appeared in a variety of journals, including *Economic Inquiry*, *National Tax Journal*, *Journal of Industrial Economics*, *Quarterly Review of Economics and Finance*, *Southern Economic Journal*, and *Public Choice*. His books and monographs include *Managerial Control and Performance* (D.C. Heath), *School Finance Reform* (CREUES), and *Tax-Exempt Property and Tax Capitalization in Metropolitan Areas* (CREUES). He has also contributed chapters to edited volumes such as *Rethinking Economic Principles* (Irwin Publishing), *Impact Evaluations of Vertical Restraint Cases* (Federal Trade Commission), *Readings in Public Choice Economics* (University of Michigan Press), and *International Handbook on Teaching and Learning Economics* (Edward Elgar Publishing).

This principles textbook has been translated into Spanish, Chinese, and Bahasa Indonesia, and has been adapted for students in Australia and in India. Will has also written a high school principles textbook, now in its third edition.

Professor McEachern has been quoted in or written for the *Times* of London, *New York Times*, *Wall Street Journal*, *Christian Science Monitor*, *USA Today*, *Challenge Magazine*, and *Reader's Digest*.

Professor McEachern won the University of Connecticut Alumni Association's Faculty Award for Distinguished Public Service as well as the Association's Faculty Award for Excellence in Undergraduate Teaching. He is the only person in UConn history to be awarded both. He was born in Portsmouth, N.H., earned an undergraduate degree with honors from College of the Holy Cross, served three years as a U.S. Army officer, and earned an M.A. and Ph.D. from the University of Virginia.



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Economics has a short history but a long past. As a distinct discipline, economics has been around for only a few hundred years, yet civilizations have confronted the economic problem of scarce resources and unlimited wants for millennia. Economics, the discipline, may be centuries old, but it's new every day, with fresh evidence that refines and extends economic theory. For example, what could be newer than how technological change is reshaping the way we live? In this edition of *Economics: A Contemporary Introduction*, I draw on more than three decades of teaching and research to convey the vitality, timeliness, and relevance of economics.

Lead by Example

Remember the last time you were in unfamiliar parts and had to ask for directions? Along with the directions came the standard comment, “You can’t miss it!” So how come you missed it? Because the “landmark,” so obvious to locals, was invisible to you, a stranger. Writing a principles textbook is much like giving directions. Familiarity is a must, but that very familiarity can cloud the author’s ability to see the material through the fresh eyes of a new student. One could revert to a tell-all approach, but that will bury students in information. An alternative is to opt for the minimalist approach, writing abstractly about good x and good y , units of labor and units of capital, or the proverbial widget. But that shorthand turns economics into a foreign language.

Good directions rely on landmarks familiar to us all—a stoplight, a fork in the road, a white picket fence. Likewise, a good textbook builds bridges from the familiar to the new. That’s what I try to do—*lead by example*. By beginning with examples that draw on common experience, I try to create graphic images that need little explanation, thereby eliciting from the reader that light of recognition, that “Aha!” I believe that the shortest distance between an economic principle and student comprehension is a lively example. Examples should convey the point quickly and directly. Having to explain an example is like having to explain a joke—the point gets lost. Throughout the book, I try to provide just enough intuition and institutional detail to get the point across. But my emphasis is on economic ideas, not economic jargon.

Students show up the first day of class with at least 17 years of experience with economic choices, economic institutions, and economic events. Each grew up in a household—the most important economic institution in a market economy. As consumers, students become well acquainted with fast-food outlets, cineplexes, car dealerships, online retailers, and scores of stores at the mall. Most students have supplied labor to the job market—more than half had jobs in high school. Students also have interacted with government—they know about sales taxes, driver’s licenses, speed limits, public schools, and laws about texting while driving. And students have a growing familiarity with the rest of the world. Thus, students have abundant experience with economics. This rich lode of personal experience offers a perfect starting point. Rather than try to create for students a new world of economics—a new way of thinking, my approach is to build on student experience—on what Alfred Marshall called “the ordinary business of life.” I frequently remind students how much they already know.

This book starts with what students bring to the party. For example, to explain resource substitution, rather than rely on abstract units of labor and capital, I begin with washing a car, where the mix can vary from a drive-through car wash (much capital and little labor) to a Saturday morning charity car wash (much labor and little capital). Down-to-earth examples turn the abstract into the concrete to help students learn and remember. In this edition of *Microeconomics: A Contemporary Introduction*, I add about 160 fresh examples to the exposition, bringing the total number of examples to about 350. Because instructors can cover only a portion of a textbook in the classroom, material should be self-contained and self-explanatory. This gives instructors the flexibility to emphasize in class topics of special interest.

What's New With the Eleventh Edition

If there is one overarching theme with this edition, it's the impact of technological change on all aspects of economic life. From Spotify, to smart apps, to Uber, to bitcoin, to interactive learning software, I underscore how technological change is affecting the way we work, learn, play, and live. This edition builds on previous success with additional examples, more questions along the way, and frequent summaries as a chapter unfolds. By making the material both more natural and more personal, I try to engage students in a collaborative discussion. Chapters have been streamlined for a clearer, more intuitive presentation, with fresh examples, new research findings, revised case studies, and additional exhibits to crystallize key points.

Recent research suggests that students learn best by trying to recall what they have just read. In that spirit, I pose “Checkpoint” questions after each section of a chapter. And to help students grasp the material, I also break down each chapter into at least four sections. As with the previous edition, each chapter includes a relevant case study integrated into the narrative flow, not isolated from the mainstream. New with this edition is an additional case study per chapter available on the companion site at www.cengagebrain.com. Questions at the end of each chapter and after each online case study aid student comprehension.

It goes without saying that I revised all data to reflect the most recent figures available. Time-sensitive examples and discussions have also been updated. To make economic principles richer and more interesting, this edition of *Microeconomics: A Contemporary Introduction* places greater emphasis on recent research. I report on findings from 115 additional studies, nearly all appearing since my previous edition went to press. This brings the total number of studies cited and discussed in this edition to 273. In the following chapter-by-chapter summaries, I will note the number of fresh examples added and the number of new studies reported. I will then sample new material and outline changes to the coverage.

Introductory Chapters: 1–4

As with earlier editions, background material common to both macro- and microeconomics is covered in the first four chapters. Limiting introductory material to four chapters saves precious class time, particularly at those institutions where students may take macro and micro courses in either order (and so must cover introductory chapters twice). New or revised features in the introductory chapters include:

Ch. 1: *The Art and Science of Economic Analysis* I add nine fresh examples and report on three new studies. This chapter provides more detail on the implications of

rational self-interest. For example, a physician who owns a pharmacy prescribes more medication than other physicians, and a physician who owns a nuclear scanner is seven times more likely to prescribe such a scan.

Ch. 2: *Economic Tools and Economic Systems* I add seven fresh examples and report on four new studies. I note that an economy's productive capacity depends not only on the *state of technology* but also on the *level of know-how*. Know-how can boost production even if technology and resources are unchanged. By improved know-how, a steel mini-mill, for example, doubled production with no change in technology or the work force. The significance of know-how carries throughout this revision.

Ch. 3: *Economic Decision Makers* I add four fresh examples and report on three new studies. Unlike other principles books, I discuss the role of cooperatives, such as Sunkist, and the not-for-profit sector more generally, such as the Texas Medical Center, which employs more than 100,000 people, exceeding employment at major corporations such as Apple, Google, and Chevron.

Ch. 4: *Demand, Supply, and Markets* I add eight fresh examples and report on two new studies. In explaining the effect of a price change on quantity demanded, I note that the more important the item is as a share of the consumer's budget, the bigger the income effect. That's why, for example, consumers increase other purchases when the price of gasoline plunges, as happened in 2015.

Microeconomic Chapters: 5–18

Behavioral economics gets more attention in this edition. The presentation also reflects the growing interest in the economic institutions that underpin impersonal market activity. More generally, I try to convey the idea that most microeconomic principles operate like gravity: Market forces exert pressure, whether or not individual economic actors understand them. At every opportunity, I try to turn the abstract into the concrete. Revisions in the microeconomic chapters include:

Ch. 5: *Elasticity of Demand and Supply* I add eight fresh examples and report on eight new studies. Several examples involve technology issues, such as the price elasticity of demand for e-books, how listing prices from lowest to highest by Amazon.com has increased the price elasticity of demand for online products, and how Spotify and free music downloads have cut the demand for Apple's iTunes.

Ch. 6: *Consumer Choice and Demand* I add four fresh examples and report on five new studies. I have two more examples of changing tastes over time and include more coverage of government-subsidized health care.

Ch. 7: *Production and Cost in the Firm* I add six fresh examples and report on five new studies. As an example emphasizing the rate of output, I note that during the launch of the iPhone 6, assembly lines in Zhengzhou, China, were turning out 7,500 phones *per hour*.

Ch. 8: *Perfect Competition* I add six fresh examples and report on two new studies. Voluntary exchange typically makes both sides of a market transaction better off. And competition usually improves product quality. This remains the most theoretical chapter in the book, thick with graphs. I note that markets for some of the million-plus smartphone apps are examples of perfect competition.

Ch. 9: *Monopoly* I add eight fresh examples and report on two new studies, including research showing that stronger patent protection accelerates the introduction of new drugs. I also add a subsection on why some sellers make products "Available for a Limited Time Only."

Ch. 10: *Monopolistic Competition and Oligopoly* I add seven fresh examples and report on five new studies, including research of how automobile brand loyalty is transmitted from one generation to the next, making brand loyalty an even more formidable

barrier to entry. A new subsection discusses why technological change poses difficulties for cartels.

Ch. 11: *Resource Markets* I add three fresh examples and report on four new studies, including one showing that a broadband Internet connection complements skilled labor but substitutes for unskilled labor. Broadband helps skilled workers execute non-routine abstract reasoning, but substitutes for the routine tasks of unskilled workers.

Ch. 12: *Labor Markets and Labor Unions* I add 10 fresh examples and report on six new studies. I have five new subsections on how and why labor unions are in decline, including why they have met with little success organizing high-tech industries.

Ch. 13: *Capital, Interest, Entrepreneurship, and Corporate Finance* I add five fresh examples and report on three new studies. I now discuss *crowdfunding* and define it as a key term.

Ch. 14: *Transaction Costs, Asymmetric Information, and Behavioral Economics* I add 13 fresh examples and report on 11 new studies. Health-insurance providers try to overcome the problem of asymmetric information by marketing their products in ways that will attract healthier customers, such as by offering a free gym membership with each policy. In the discussion of behavioral economics, I note that some insurance companies exploit customer inertia by raising premiums on existing policies even as they make alternative policies more attractive to new buyers.

Ch. 15: *Economic Regulation and Antitrust Policy* I add 12 fresh examples and report on three new studies. A new subsection explains how technological change fosters competition, as with Uber and creative destruction in the taxi industry. Technological change usually makes antitrust policy less relevant.

Ch. 16: *Public Goods and Public Choice* I add eight fresh examples and report on six new studies, including evidence for the budget-maximization hypothesis of public-sector behavior based on a finding that federal bureaus spend down any remaining funds toward the end of the budget year on inefficient projects rather than return any funds to the U.S. Treasury.

Ch. 17: *Externalities and the Environment* I add 10 fresh examples and report on 10 new studies. Among the many harmful effects of air pollution identified in the chapter is the impairment of fetal development as reflected later in life by lower math and language skills. But the chapter is not all doom and gloom. For example, since 1990 the real value of U.S. manufacturing output has grown more than one-third. Yet, thanks to better emission technology, pollution from U.S. factories has fallen by two-thirds.

Ch. 18: *Poverty and Redistribution* I add three fresh examples and report on eight new studies. A century ago, super wealth was usually inherited. Today, it's usually earned. For example, 7 of the 15 richest Americans as of 2014 earned their fortunes from the computer processor and the Internet.

International Chapters: 19–21

This edition reflects the growing impact of the world economy on U.S. economic welfare. International issues are introduced early and discussed often. For example, the rest of the world is introduced in Chapter 1 and profiled in Chapter 3. Comparative advantage and the production possibilities frontier are discussed from a global perspective in Chapter 2. International coverage is woven throughout the text. By comparing the U.S. experience with that of other countries around the world, students gain a better perspective about such topics as unionization trends, antitrust policies, pollution, conservation, environmental laws, research and development, tax rates, the distribution of income, economic growth, productivity, unemployment, inflation, central bank independence, government spending, and federal debt. Exhibits show comparisons across countries of various economic measures—everything from the percentage of paper that gets recycled to Internet

users as a percentage of the population. International references are scattered throughout the book, including a number of relevant case studies.

Again, every effort is made to give students a feel for the numbers. For example, to convey the importance of U.S. consumers in the world economy, I note that Americans represent less than 5 percent of the world's population but buy 38 percent of the diamond jewelry sold worldwide. New or revised features in the international chapters include:

Ch. 19: *International Trade* I add 12 fresh examples and report on eight new studies. People prefer having a choice of products, and international trade helps broaden that choice. Yet another benefit of international trade is that trading partners are less likely to go to war because war with trading partners would involve more economic loss. *Bilateral agreement*, *multilateral agreement*, and *common market* are upgraded to key terms.

Ch. 20: *International Finance* I add three fresh examples and report on two new studies. Foreigners find America an attractive place to invest because U.S. capital markets are the deepest and most liquid in the world. Fiscal problems in eurozone nations such as Greece have taken some of the shine off the euro. I note that arbitrage opportunities are short lived; most are available for less than a second. High-speed computers act on such opportunities instantly.

Ch. 21: *Economic Development* I add 12 fresh examples and report on 18 new studies. Education is valued more in some economies than in others. For example, some teachers in Mexico can legally sell their tenured positions or pass them on to their children.

Student-Friendly Features

In some principles textbooks, chapters are broken up by boxed material, qualifying footnotes, and other distractions that disrupt the flow of the material. Students aren't sure when or if they should read such segregated elements. But this book has a natural flow. Each chapter opens with a few off-beat questions and then follows with a logical narrative. Case studies appear in the natural sequence of the chapter. Students can thus read each chapter from the opening questions to the conclusion and summary. I also adhere to a "just-in-time" philosophy, introducing material just as it's needed to build an argument. Footnotes are used to cite sources, not to qualify or extend material in the text.

This edition is more visual than its predecessors, with more exhibits to reinforce key findings. Exhibit titles convey the central points, and more exhibits now have summary captions. Captions have been edited for clarity and brevity. The point is to make the exhibits more self-contained. Students learn more if concepts are presented both in words and in exhibits.

Additional summary paragraphs have been added throughout each chapter; these summaries begin with the bold-faced identifier "**To Review.**" As noted earlier, each section now is followed by "Checkpoint" questions. Economic jargon has been reduced. Although the number of terms defined in the margin has increased modestly, definitions have been pared to make them clearer and less like entries from a dictionary. In short, economic principles are now more transparent (a textbook should not be like some giant Easter egg hunt, where it's up to the student to figure out what the author is trying to say). Overall, the eleventh edition is a cleaner presentation, a straighter shot into the student's brain.

Color is used systematically within graphs, charts, and tables to ensure that students can easily see what's going on. Throughout the book, demand curves are blue and supply curves are red. Color shading distinguishes key areas of many graphs, and color identifies outcomes in others. For example, economic profit and welfare gains are

always shaded blue and economic loss and welfare losses are always shaded pink. In short, color is more than mere eye candy—it is coordinated consistently and with forethought to help students learn (a dyslexic student once told me she found the book’s color guide quite helpful). Students benefit from these visual cues.

The Support Package

The teaching and learning support package that accompanies *Economics: A Contemporary Introduction* provides instructors and students with focused, accurate, and innovative supplements to the textbook.

Instructor’s Manual The *Instructor’s Manual* provides chapter outlines, teaching ideas, experiential exercises for many chapters, and solutions to all end-of-chapter problems.

Instructor Resources on the Product Support Web Site. This site at www.cengagebrain.com features the essential resources for instructors, password protected, in downloadable format: the *Instructor’s Manual in Word*, the *Teaching Assistance Manual* (discussed next), the online case studies, the test banks, and PowerPoint lecture and exhibit slides.

Teaching Assistance Manual Written and revised by me, the *Teaching Assistance Manual* provides additional support beyond the *Instructor’s Manual*. It is especially useful to new instructors, graduate assistants, and teachers interested in generating more class discussion. This manual offers (1) overviews and outlines of each chapter, (2) chapter objectives and quiz material, (3) material for class discussion, (4) topics warranting special attention, (5) supplementary examples, and (6) “What if?” discussion questions. Appendices provide guidance on (1) presenting material; (2) generating and sustaining class discussion; (3) preparing, administering, and grading quizzes; and (4) coping with the special problems confronting foreign graduate assistants.

Test Banks Thoroughly revised for currency and accuracy, the microeconomics and macroeconomics test banks contain over 6,000 questions in multiple-choice and true-false formats. All multiple-choice questions are rated by degree of difficulty, and are labeled with learning outcomes tags.

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Microsoft PowerPoint Lecture Slides Lecture slides contain tables and graphs from the textbook, and are intended to enhance lectures and help integrate technology into the classroom.

Microsoft PowerPoint Figure Slides These PowerPoint slides contain key figures from the text. Instructors who prefer to prepare their own lecture slides can use these figures as an alternative to the text's PowerPoint lecture slides.

The Teaching Economist Since 1990, I have edited *The Teaching Economist*, a newsletter aimed at making teaching more interesting and more fun. The newsletter discusses imaginative ways to present topics—for example, how to “sensationalize” economic concepts, useful resources on the Internet, economic applications from science fiction, recent research in teaching and learning, and more generally, ways to teach just for the fun of it. A regular feature of *The Teaching Economist*, “The Grapevine,” offers teaching ideas suggested by colleagues from across the country. The latest issue—and back issues—of *The Teaching Economist* are available online at cengage.com/economics/meachern/theteachingeconomist.

Additional Case Studies Online As mentioned earlier, this edition's companion site now includes an additional case study for each chapter followed by a Checkpoint question. To access this material, log into www.cengagebrain.com, search for McEachern, then find the 11th edition.

Aplia Started in 2000 by economist and instructor Paul Romer, more students are currently using an Aplia Integrated Textbook Solution for principles of economics than are using all other web-based learning programs combined. Because the assignments in Aplia are automatically graded, you can assign homework more frequently to ensure your students are putting forth a full effort and getting the most out of your class. Assignments are closely tied to the text and each McEachern Aplia course has a digital edition of the textbook embedded right in the Aplia program. This digital text is now in the Aplia Text format, which gives students the same interactive experience they get on Web sites they use in their personal lives.

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William A. McEachern

The Art and Science of Economic Analysis

1



Bernd Vogel/AGE Fotostock

- *In what way are people who pound on vending machines relying on theory?*
- *Why are comic-strip and TV characters like those in FoxTrot, The Simpsons, and Family Guy missing a finger on each hand? And where is Dilbert's mouth?*
- *Which college majors pay the most?*
- *Why is a good theory like a California Closet?*
- *What's the big idea with economics?*
- *Finally, how can it be said that in economics "what goes around comes around"?*

These and other questions are answered in this chapter, which introduces the art and science of economic analysis.





You have been reading and hearing about economic issues for years—unemployment, inflation, poverty, recessions, federal deficits, college tuition, airfares, stock prices, computer prices, smartphone prices, gas prices. When explanations of such issues go into any depth, your eyes may glaze over and you may tune out, the same way you do when a weather forecaster tries to explain high-pressure fronts colliding with moisture carried in from the coast.

What many people fail to realize is that economics is livelier than the dry accounts offered by the news media. Economics is about making choices, and you make economic choices every day—choices about whether to get a part-time job or focus on your studies, live in a dorm or off campus, take a course in accounting or one in history, get married or stay single, pack a lunch or buy a sandwich. You already know much more about economics than you realize. You bring to the subject a rich personal experience, an experience that will be tapped throughout the book to reinforce your understanding of the basic ideas.

Topics discussed in this chapter include:

- The economic problem
- Marginal analysis
- Rational self-interest
- The scientific method
- Normative versus positive analysis
- Some pitfalls of economic thinking

1-1 The Economic Problem: Scarce Resources, Unlimited Wants

Would you like a new car, a nicer home, a smarter phone, tastier meals, more free time, a more interesting social life, more spending money, more leisure, more sleep? Who wouldn't? But even if you can satisfy some of these desires, others keep popping up. *The problem is that, although your wants, or desires, are virtually unlimited, the resources available to satisfy these wants are scarce.* A resource is *scarce* when it is not freely available—that is, when its price exceeds zero. Because resources are scarce, you must choose from among your many wants, and whenever you choose, you must forgo satisfying some other wants. The problem of scarce resources but unlimited wants exists to a greater or lesser extent for each of the 7.4 billion people on Earth. Everybody—cab driver, farmer, brain surgeon, dictator, shepherd, student, politician—faces the problem. For example, a cab driver uses time and other scarce resources, such as the taxi, knowledge of the city, driving skills, and gasoline, to earn income. That income, in turn, buys housing, groceries, clothing, trips to Disney World, and thousands of other goods and services that help satisfy some of the driver's unlimited wants. **Economics** examines how people use their scarce resources to satisfy their unlimited wants. Let's pick apart

economics

The study of how people use their scarce resources to satisfy their unlimited wants

the definition, beginning with resources, then goods and services, and finally focus on the heart of the matter—economic choice, which results from scarcity.

1-1a Resources

Resources are the inputs, or factors of production, used to produce the goods and services that people want. *Goods and services are scarce because resources are scarce.* Resources sort into four broad categories: labor, capital, natural resources, and entrepreneurial ability. **Labor** is human effort, both physical and mental. Labor includes the effort of the cab driver and the brain surgeon. Labor itself comes from a more fundamental resource: *time*. Without time we can accomplish nothing. We allocate our time to alternative uses: We can *sell* our time as labor, or we can *spend* our time doing other things, like sleeping, eating, studying, playing sports, going online, attending class, watching TV, or just relaxing with friends.

Capital includes all human creations used to produce goods and services. Economists often distinguish between physical capital and human capital. *Physical capital* consists of factories, tools, machines, computers, buildings, airports, highways, and other human creations used to produce goods and services. Physical capital includes the cab driver's taxi, the surgeon's scalpel, and the building where your economics class meets (or, if you are taking this course online, your computer and online connectors). *Human capital* consists of the knowledge and skill people acquire to increase their productivity, such as the cab driver's knowledge of city streets, the surgeon's knowledge of human anatomy, and your knowledge of economics.

Natural resources include all *gifts of nature*, such as bodies of water, trees, oil reserves, minerals, even animals. Natural resources can be divided into renewable resources and exhaustible resources. A *renewable resource* can be drawn on indefinitely if used conservatively. Thus, timber is a renewable resource if felled trees are replaced to regrow a steady supply. The air and rivers are renewable resources if they are allowed sufficient time to cleanse themselves of any pollutants. More generally, biological resources such as fish, game, livestock, forests, rivers, groundwater, grasslands, and soil are renewable if managed properly. An *exhaustible resource*—such as oil or coal—does not renew itself and so is available in a limited amount. Once burned, each barrel of oil or ton of coal is gone forever. The world's oil and coal deposits are exhaustible.

A special kind of human skill called **entrepreneurial ability** is the talent required to dream up a new product or find a better way to produce an existing one, organize production, and assume the risk of profit or loss. This special skill comes from an entrepreneur. An **entrepreneur** is a profit-seeking decision maker who starts with an idea, organizes an enterprise to bring that idea to life, and then assumes the risk of operation. An entrepreneur pays resource owners for the opportunity to employ their resources in the firm. Every firm in the world today, such as Ford, Microsoft, Google, and Facebook, began as an idea in the mind of an entrepreneur.

Resource owners are paid **wages** for their labor, **interest** for the use of their capital, and **rent** for the use of their natural resources. Entrepreneurial ability is rewarded by **profit**, which equals the *revenue* from items sold minus the *cost* of the resources employed to make those items. Sometimes the entrepreneur suffers a loss. Resource earnings are usually based on the *time* these resources are employed. Resource payments therefore have a time dimension, as in a wage of \$10 *per hour*, interest of 6 percent *per year*, rent of \$600 *per month*, or profit of \$10,000 *per year*.

resources

The inputs, or factors of production, used to produce the goods and services that people want; consist of labor, capital, natural resources, and entrepreneurial ability

labor

The physical and mental effort used to produce goods and services

capital

The buildings, equipment, and human skills used to produce goods and services

natural resources

All gifts of nature used to produce goods and services; includes renewable and exhaustible resources

entrepreneurial ability

The imagination required to develop a new product or process, the skill needed to organize production, and the willingness to take the risk of profit or loss

entrepreneur

A profit-seeking decision maker who starts with an idea, organizes an enterprise to bring that idea to life, and assumes the risk of the operation

wages

Payment to resource owners for their labor

interest

Payment to resource owners for the use of their capital

rent

Payment to resource owners for the use of their natural resources

profit

Reward for entrepreneurial ability; sales revenue minus resource cost

1-1b Goods and Services

Resources are combined in a variety of ways to produce goods and services. A farmer, a tractor, 50 acres of land, seeds, and fertilizer combine to grow the good: corn. One hundred musicians, musical instruments, chairs, a conductor, a musical score, and a music hall combine to produce the service: Beethoven's *Fifth Symphony*. Corn is a **good** because it is something you can see, feel, and touch; it requires scarce resources to produce; and it satisfies human wants. The book you are now holding, the chair you are sitting in, the clothes you are wearing, and your next meal are all goods. The performance of the *Fifth Symphony* is a **service** because it is intangible, yet it uses scarce resources to satisfy human wants. Lectures, movies, concerts, phone service, wireless connections, yoga lessons, dry cleaning, and haircuts are all services.

Because goods and services are produced using scarce resources, they are themselves scarce. *A good or service is scarce if the amount people desire exceeds the amount available at a zero price.* Because we cannot have all the goods and services we would like, we must continually choose among them. We must choose among more pleasant living quarters, better meals, nicer clothes, more reliable transportation, faster computers, smarter phones, and so on. Making choices in a world of **scarcity** means we must pass up some goods and services. Exhibit 1 shows the options of one individual facing scarcity. But not everything is scarce. In fact, some things we would prefer to have less of. For example, we would prefer to have less garbage, less spam email, fewer telemarketing calls, and less pollution. Things we want none of even at a zero price are called *bads*, the opposite of goods.

good

A tangible product used to satisfy human wants

service

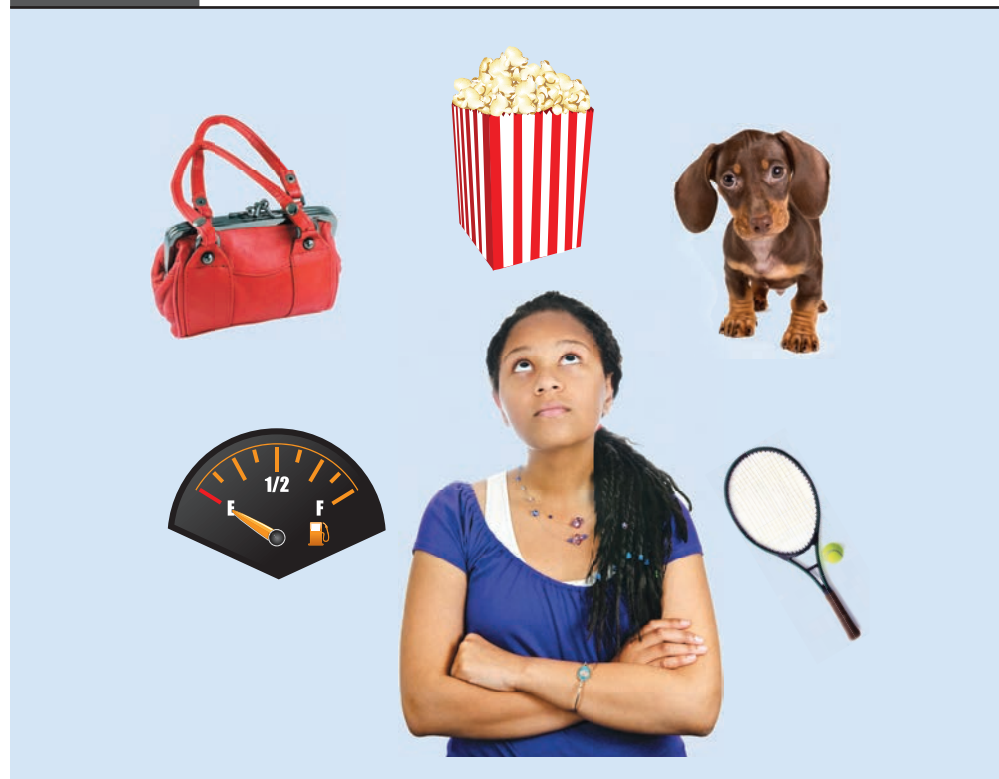
An activity, or intangible product, used to satisfy human wants

scarcity

Occurs when the amount people desire exceeds the amount available at a zero price

EXHIBIT 1

Scarcity Means You Must Choose Among Options



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A few goods and services seem *free* because the amount available at a zero price exceeds the amount people want. For example, air and seawater often seem free because we can breathe all the air we want and have all the seawater we can haul away. Yet, despite the old saying “The best things in life are free,” most goods and services are scarce, not free, and even those that appear to be free come with strings attached. For example, *clean* air and *clean* seawater have become scarce. *Goods and services that are truly free are not the subject of economics. Without scarcity, there would be no economic problem and no need for prices.*

Sometimes we mistakenly think of certain goods as free because they involve no apparent cost to us. Napkins seem to be free at Starbucks. Nobody stops you from taking a fistful. Supplying napkins, however, costs the company millions each year and prices reflect that cost. Some restaurants make special efforts to keep napkin use down—such as packing them tightly into the dispenser or making you ask for them. And Starbucks recently reduced the thickness of its napkins.

You may have heard the expression “There is no such thing as a free lunch.” *There is no free lunch because all goods and services involve a cost to someone.* The lunch may seem free to you, but it draws scarce resources away from the production of other goods and services, and whoever provides a free lunch often expects something in return. A Russian proverb makes a similar point but with a bit more bite: “The only place you find free cheese is in a mousetrap.” Albert Einstein once observed, “Sometimes one pays the most for things one gets for nothing.”

1-1c Economic Decision Makers and Markets

There are four types of decision makers in the economy: households, firms, governments, and the rest of the world. Their interaction determines how an economy’s resources are allocated. *Households* play the starring role. As consumers, households demand the goods and services produced. As resource owners, households supply labor, capital, natural resources, and entrepreneurial ability to firms, governments, and the rest of the world. *Firms, governments, and the rest of the world* demand the resources that households supply and then use these resources to supply the goods and services that households demand. The rest of the world includes foreign households, foreign firms, and foreign governments that supply resources and products to U.S. demanders and demand resources and products from U.S. suppliers.

Markets are the means by which buyers and sellers carry out exchange at mutually agreeable terms. By bringing together the two sides of exchange, markets determine price, quantity, and quality. Markets are often physical places, such as supermarkets, department stores, shopping malls, yard sales, flea markets, and swap meets. But markets also include other mechanisms by which buyers and sellers communicate, such as classified ads, radio and television ads, telephones, bulletin boards, online sites, and face-to-face bargaining. These market mechanisms provide information about the quantity, quality, and price of products offered for sale. Goods and services are bought and sold in **product markets**. Resources are bought and sold in **resource markets**. The most important resource market is the labor, or job, market. Think about your own experience looking for a job, and you’ll already have some idea of that market.

market

A set of arrangements by which buyers and sellers carry out exchange at mutually agreeable terms

product market

A market in which a good or service is bought and sold

resource market

A market in which a resource is bought and sold

1-1d A Simple Circular-Flow Model

Now that you have learned a bit about economic decision makers and markets, consider how all these interact. Such a picture is conveyed by the **circular-flow model**, which describes the flow of resources, products, income, and revenue among economic

circular-flow model

A diagram that traces the flow of resources, products, income, and revenue among economic decision makers

decision makers. The simple circular-flow model focuses on the primary interaction in a market economy—that between households and firms. Exhibit 2 shows households on the left and firms on the right; please take a look.

Households supply labor, capital, natural resources, and entrepreneurial ability to firms through resource markets, shown in the lower portion of the exhibit. In return, households demand goods and services from firms through product markets, shown on the upper portion of the exhibit. Viewed from the business end, firms demand labor, capital, natural resources, and entrepreneurial ability from households through resource markets, and firms supply goods and services to households through product markets.

The flows of resources and products are supported by the flows of income and expenditure—that is, by the flow of money. So let's add money. The demand and supply of resources come together in resource markets to determine what firms pay for

EXHIBIT 2

The Simple Circular-Flow Model for Households and Firms



Households earn income by supplying resources to resource markets, as shown in the lower portion of the model. Firms demand these resources to produce goods and services, which they supply to product markets,

as shown in the upper portion of the model. Households spend their income to demand these goods and services. This spending flows through product markets as revenue to firms.

resources. These resource prices—wages, interest, rent, and profit—flow as *income* to households. The demand and supply of products come together in product markets to determine what households pay for goods and services. This *expenditure* on goods and services flows as *revenue* to firms. Resources and products flow in one direction—in this case, counterclockwise—and the corresponding payments flow in the other direction—clockwise. What goes around comes around. Take a little time now to trace the logic of the circular flows.



CHECKPOINT

Identify and describe the movement of resources and products through the circular-flow model.

1-2 The Art of Economic Analysis

An economy results as millions of individuals attempt to satisfy their unlimited wants. Because their choices lie at the heart of the economic problem—coping with scarce resources but unlimited wants—these choices deserve a closer look. Learning about the forces that shape economic choices is the first step toward understanding the art of economic analysis.

1-2a Rational Self-Interest

A key economic assumption is that individuals, in making choices, rationally select what they perceive to be in their best interests. By *rational*, economists mean simply that people try to make the best choices they can, given the available time and information. People may not know with certainty which alternative will turn out to be the best. They simply select the alternatives they *expect* will yield the most satisfaction and happiness. In general, **rational self-interest** means that each individual tries to maximize the expected benefit achieved with a given cost or to minimize the expected cost of achieving a given benefit. Thus, economists begin with the assumption that people look out for their self-interest. For example, a physician who owns a pharmacy prescribes 8 percent more drugs on average than a physician who does not own a pharmacy.¹ A physician who owns a nuclear scanner (used to look inside the human body) is seven times more likely to recommend a scan than a physician who does not own a nuclear scanner.² And as one more example of self-interest, the *USA Today* weekly football poll asks coaches to list the top 25 teams in the country. It is no surprise that coaches distort their selections to favor their own teams and their own conferences. And, to make their own records look better, coaches inflate the rankings of teams they have beaten.³

Rational self-interest should not necessarily be viewed as blind materialism, pure selfishness, or greed. We all know people who are tuned to radio station WIIFM (What's In It For Me?). For most of us, however, self-interest often includes the welfare of our family, our friends, and perhaps the poor of the world. Even so, our concern for others

rational self-interest

Each individual tries to maximize the expected benefit achieved with a given cost or to minimize the expected cost of achieving a given benefit

¹ Brian Chen, Paul Gertler, and Chuh-Yuh Yang, “Moral Hazard and Economies of Scope in Physician Ownership of Complementary Medical Services,” NBER Working Paper No. 19622 (November 2013).

² Sandeep Jouhar, *Doctored: The Disillusionment of an American Physician* (Farrar, Straus, and Giroux, 2014), p. 96.

³ Matthew Kotchen and Matthew Potoski, “Conflicts of Interest Distort Public Evaluations: Evidence from the Top 25 Ballots of NCAA Football Coaches,” *Journal of Economic Behavior & Organization*, 107 (November 2014): 51–63.

is influenced by our personal cost of that concern. We may readily volunteer to drive a friend to the airport on Saturday afternoon but are less likely to offer a ride if the flight leaves at 6:00 A.M. When we donate clothes to an organization such as Goodwill Industries, they are more likely to be old and worn than brand new. People tend to give more to charities when their contributions are tax deductible and when contributions garner social approval in the community (as when contributor names are made public or when big donors get buildings named after them).⁴ Managers donate more company funds to charitable causes when they own less of the company (and, thus, when their personal cost of contributing is lower).⁵ TV stations are more likely to donate airtime for public-service announcements during the dead of night than during prime time (which is why 80 percent of such announcements air between 11:00 P.M. and 7:00 A.M.). In Asia some people burn money to soothe the passage of a departed loved one. But they burn fake money, not real money.

The notion of self-interest does not rule out concern for others; it simply means that concern for others is influenced by the same economic forces that affect other economic choices. *The lower the personal cost of helping others, the more help we offer.* We don't like to think that our behavior reflects our self-interest, but it usually does. As Jane Austen wrote in *Pride and Prejudice*, "I have been a selfish being all my life, in practice, though not in principle."

1-2b Choice Requires Time and Information

Rational choice takes time and requires information, but time and information are themselves scarce and therefore valuable. If you have any doubts about the time and information needed to make choices, talk to someone who recently purchased a home, a car, or a personal computer. Talk to a corporate official trying to decide whether to introduce a new product, sell online, build a new factory, or buy another firm. Or think back to your own experience in choosing a college. You probably talked to friends, relatives, teachers, and guidance counselors. You likely used school catalogs, college guides, and Web sites. You may have even visited some campuses to meet the admissions staff and anyone else willing to talk. The decision took time and money, and it probably involved aggravation and anxiety.

Because information is costly to acquire, we are often willing to pay others to gather and digest it for us. College guidebooks, stock analysts, travel agents, real estate brokers, career counselors, restaurant critics, movie reviewers, specialized Web sites, and *Consumer Reports* magazine attest to our willingness to pay for information that improves our choices. As we'll see next, *rational decision makers continue to acquire information as long as the additional benefit expected from that information exceeds the additional cost of gathering it.*

1-2c Economic Analysis Is Marginal Analysis

Economic choice usually involves some adjustment to the existing situation, or status quo. Amazon.com must decide whether to add a new line of products. The school superintendent must decide whether to hire another teacher. Your favorite jeans are on sale, and you must decide whether to buy another pair. You are wondering whether to carry an extra course next term. You just finished lunch and are deciding whether to order dessert.

⁴ Dean Karlan and Margaret McConnell, "Hey Look at Me: The Effect of Giving Circles on Giving," *Journal of Economic Behavior & Organization* (forthcoming).

⁵ Ing-Haw Cheng, Harrison Hong, and Kelly Shue, "Do Managers Do Good with Other People's Money?" NBER Working Paper No. 19432 (September 2013).

Economic choice is based on a comparison of the *expected marginal benefit* and the *expected marginal cost* of the action under consideration. **Marginal** means incremental, additional, or extra. Marginal refers to a change in an economic variable, a change in the status quo. *A rational decision maker changes the status quo if the expected marginal benefit from the change exceeds the expected marginal cost.* For example, Amazon.com compares the marginal benefit expected from adding a new line of products (the additional sales revenue) with the marginal cost (the additional cost of the resources required). Likewise, you compare the marginal benefit you expect from eating dessert (the additional pleasure or satisfaction) with its marginal cost (the additional money, time, and calories).

Typically, the change under consideration is small, but a marginal choice can involve a major economic adjustment, as in the decision to quit school and find a job. For a firm, a marginal choice might mean building a plant in Mexico or even filing for bankruptcy. By focusing on the effect of a marginal adjustment to the status quo, the economist is able to cut the analysis of economic choice down to a manageable size. Rather than confront a bewildering economic reality head-on, the economist begins with a marginal choice to see how this choice affects a particular market and shapes the economic system as a whole. Incidentally, to the noneconomist, *marginal* usually means relatively inferior, as in “a movie of marginal quality.” Forget that meaning for this course and instead think of *marginal* as meaning incremental, additional, or extra.

1-2d Microeconomics and Macroeconomics

Although you have made thousands of economic choices, you probably seldom think about your own economic behavior. For example, why are you reading this book right now rather than doing something else? **Microeconomics** is the study of your economic behavior and the economic behavior of others who make choices about such matters as how much to study and how much to party, how much to borrow and how much to save, what to buy and what to sell. Microeconomics examines individual economic choices and how markets coordinate the choices of various decision makers. Microeconomics explains how price and quantity are determined in individual markets—the market for breakfast cereal, sports equipment, or used cars, for instance.

You have probably given little thought to what influences your own economic choices. You have likely given even less thought to how your choices link up with those made by millions of others in the U.S. economy to determine economy-wide measures such as total production, employment, and economic growth. **Macroeconomics** studies the performance of the economy as a whole. Whereas microeconomics studies the individual pieces of the economic puzzle, as reflected in particular markets, macroeconomics puts all the pieces together to focus on the big picture. Macroeconomics sees the forest, not the trees; the beach, not the grains of sand; and the Rose Bowl parade float, not the individual flowers that shape and color that float.

The national economy usually grows over time, but along the way it sometimes stumbles, experiencing *recessions* in economic activity, as reflected by a decline in production, employment, and other aggregate measures. **Economic fluctuations** are the rise and fall of economic activity relative to the long-term growth trend of the economy. These fluctuations, or *business cycles*, vary in length and intensity, but they usually involve the entire nation and often other nations too. For example, the U.S. economy now produces more than four times as much as it did in 1960, despite experiencing eight recessions since then, including the Great Recession of 2007–2009.

To Review: The art of economic analysis focuses on how people use their scarce resources in an attempt to satisfy their unlimited wants. Rational self-interest guides individual choice. Choice requires time and information and involves a comparison of

marginal

Incremental, additional, or extra; used to describe a change in an economic variable

microeconomics

The study of the economic behavior in particular markets, such as that for computers or unskilled labor

macroeconomics

The study of the economic behavior of entire economies, as measured, for example, by total production and employment

economic fluctuations

The rise and fall of economic activity relative to the long-term growth trend of the economy; also called business cycles