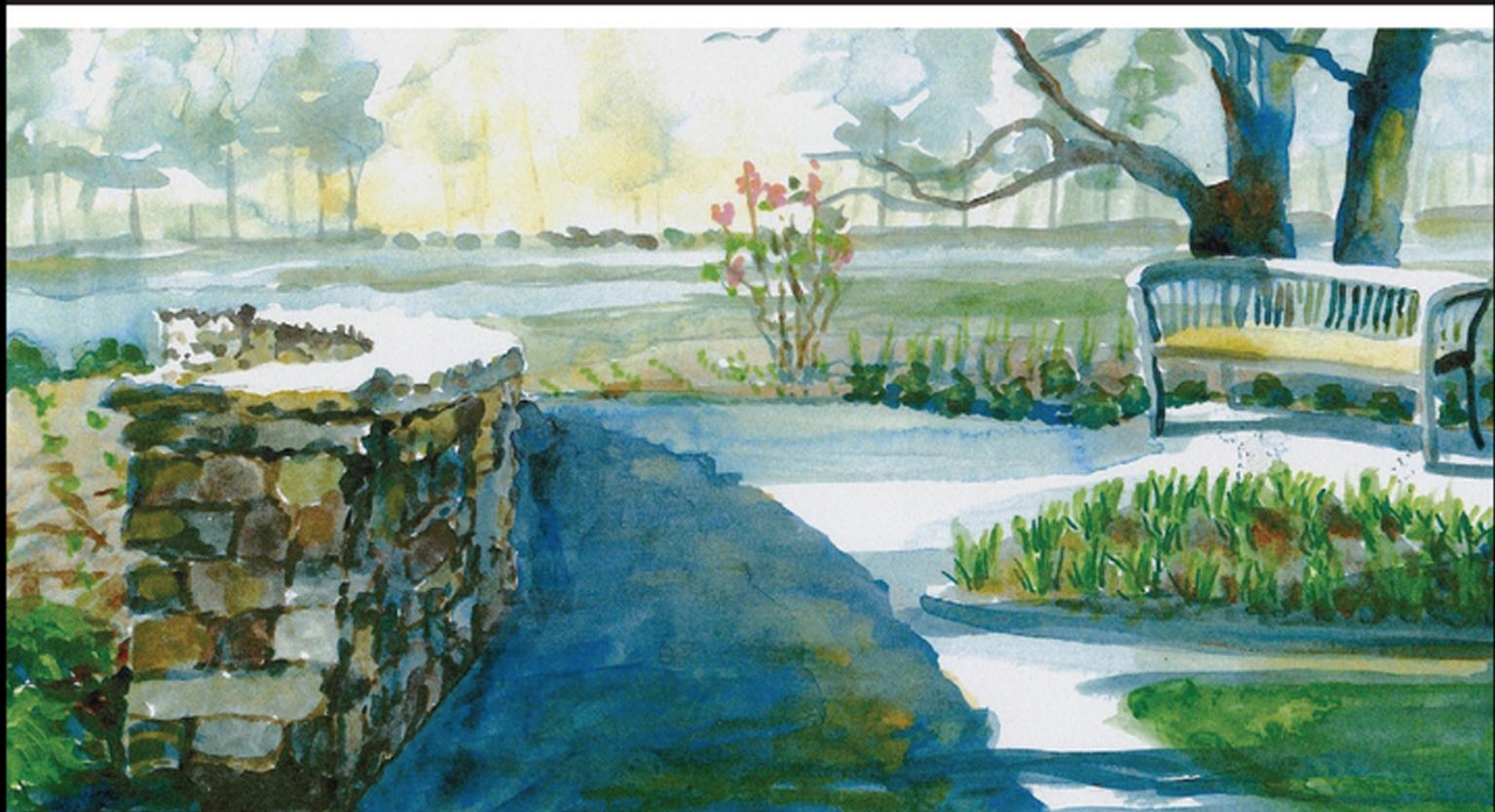


# Economics

Theory and Practice

Eleventh Edition

PATRICK J. WELCH • GERRY F. WELCH



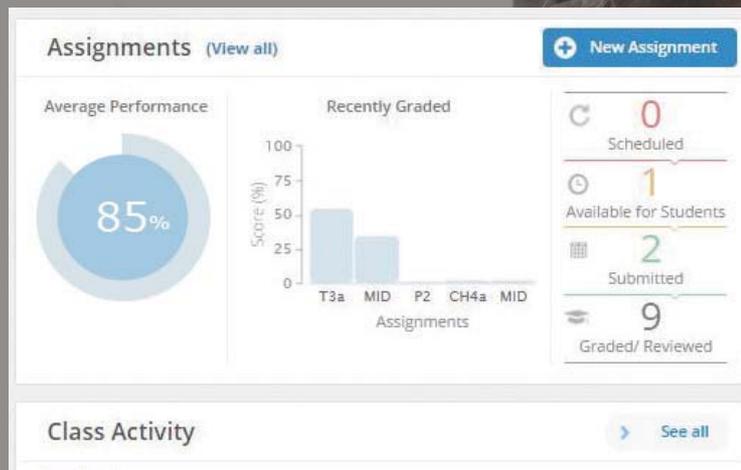
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# ECONOMICS

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# ECONOMICS

**Theory & Practice**

ELEVENTH EDITION

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# TO THE STUDENT

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Dear Student,

Welcome to the study of economics and to the eleventh edition of *Economics: Theory & Practice*. This course may well be among the most valuable you will take for application to and enrichment of your everyday life. We are excited to join you in this learning experience.

What can you expect from this textbook and your course?

- ◆ Economic topics are given a great deal of attention in daily news reports. Unemployment numbers, banking issues, health-care programs, gasoline price changes, the stability of global economies, and so many more topics are frequently featured. This textbook will provide basic information that helps you to understand economic issues in a knowledge-based context.
- ◆ In the first few pages of Chapter 1, you will learn that economics is rooted in scarcity and choice: The scarcity of resources, time, and money forces everyone, including businesses and governments, into making choices, or decisions, about how to use these limited resources, or how to deal with scarcity. Economics introduces us to tools used in decision-making and to thought processes that are valuable in our own problem solving and in thinking through issues.
- ◆ Other than mathematics and parts of the natural sciences, very little in fields of study is indisputable. Instead, in most areas such as economics, the subject matter is gray and lends itself to varied points of view. Every chapter in this textbook has an “Up for Debate” where issues are viewed from different perspectives. For example, the issue of banning the use of cell phones while driving (the Up for Debate in Chapter 11) has both pro and con arguments.
- ◆ Today’s focus on environmental issues is a significant example of the basic economic problem, and the decisions that surround these concerns are perfect examples of the application of the study and tools of economics in our everyday world. Throughout this edition, you will find environmental applications and debates in almost every chapter. This text will make you smarter about thinking through global warming, recycling, carbon emissions, and a host of other green and sustainable issues as well as the new career opportunities they bring.

We have worked to maintain and improve the reputation of this textbook for its student-friendly style. For the student who needs extra support, there is online help. We know that economics has a reputation as a difficult and dense subject area, but we ask that you put this notion aside as you work through this accessible textbook—you will find it most readable and interesting. We are always open to your ideas and questions.

Enjoy!  
Patrick Welch  
Gerry Welch



# PREFACE

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We are pleased to introduce the eleventh edition of *Economics: Theory & Practice*. Over the decades, many students have learned the basic fundamentals of economics through class work and this textbook, and have come to appreciate the relevancy of the field in their everyday life. The study of basic economic principles and institutions is an important endeavor. It enables us to sort through a daily barrage of information to identify issues and understand them in a knowledge-based framework. Basic economics also introduces us to decision-making tools and thought processes that make us smarter about problem solving. And, importantly, economics shows us that choices made at all levels, from personal to global, are based on values and points of view that differ with decision makers and contexts.

*Economics: Theory & Practice* is appropriate for a variety of courses from the one-semester introduction or survey course to the one-semester principles of economics course to the economics refresher in an MBA program. Its balanced coverage of microeconomics and macroeconomics, flexibility in topic coverage order, and the use of appendices and chapter sections to shorten or deepen course material give an instructor a choice of levels and sequences for a course.

Through the 10 editions and now the 11th, *Economics: Theory & Practice* has never lost its focus on student learning, the very foundation of this text. Known as a student-friendly, readable, and understandable textbook, the title has stayed true to its original intention—connecting theory to the practice of economics and the everyday world through examples and applications, debates, and critical thinking cases: some that are classics in the field and others that are fresh and up-to-date.

The eleventh edition of *Economics: Theory & Practice* builds on the substantial changes in the 10th edition with updated and new data, examples, applications, and critical thinking cases. It also continues its emphasis on the environment and green and sustainability issues. We believe that currently there is no better area to illustrate the basic problem of scarcity and choice, to connect economic concepts to the world around us, to understand the process of decision making and its consequences, and to recognize the varying points of view that underlie policy recommendations.

## OBJECTIVES OF THE BOOK

This textbook has three primary objectives: (1) to introduce and survey basic economic concepts and institutions in a way that provides students with a solid understanding of key economic relationships and terms; (2) to give students exposure to economic thinking and an understanding of some fundamental processes used in decision making that can be applied to their own decision making as well as an evaluation of opinions, news reports, and other sources of economic information; and (3) to engage students through a writing style, applications, and examples that connect economics to everyday life.

### **Economic Concepts and Institutions**

*Economics: Theory & Practice*, 11th edition, includes a broad overview of what economists label the principles of macroeconomics and microeconomics. A scan through the Table of Contents provides information about topics that range from supply and

demand, to total spending and economic fluctuations, to the behavior of firms in different market settings, to comparative advantage in international trade.

The text also introduces data and institutions with which students should be familiar to understand the operation of the economy. These range from measures of unemployment and gross domestic product (GDP), to the Federal Reserve, to poverty guidelines, to foreign exchange markets. This institutional information helps to link the conceptual world to the real world and encourages economics to be viewed in a broader perspective.

## FEATURES OF THE BOOK

Several key features of *Economics: Theory & Practice* contribute to the successful teaching and learning of introductory economics.

### **Balance of Macroeconomic and Microeconomic Coverage**

*Economics: Theory & Practice* offers a balanced presentation of macroeconomic and microeconomic topics. The book is divided into four parts: Part One covers basic concepts and definitions, economic systems, and supply and demand. Part Two covers macroeconomics in six chapters. Part Three covers microeconomics in six chapters. Part Four covers international economics.

### **Flexibility in Sequencing of Macroeconomics and Microeconomics**

The text can be used in a macroeconomic–microeconomic sequence by going directly through the chapters, or in a microeconomic–macroeconomic sequence by reversing the order of Parts Two and Three. Basic tools and definitions are covered in Part One, and extreme care has been taken to ensure that Parts Two and Three are independent units and can stand alone. In fact, one author has taught using the text’s micro–macro sequence, and the other with the text’s macro–micro sequence.

### **Flexibility to Shorten Course Coverage**

Instructors who want to shorten material coverage will find it easy to do with *Economics: Theory & Practice*. Entire chapters, such as Chapter 9 on macroeconomic viewpoints and models, Chapter 14 on government and the markets, or Chapter 17 on international finance, can be eliminated because they stand alone. Instructors can also eliminate portions of chapters such as the section on the historical development of the U.S. economy in Chapter 2, price elasticity of demand and supply in Chapter 3, or portions of labor-related topics in Chapter 15. The authors are available to work with text users in fine tuning coverage.

### **Flexibility to Lengthen or Deepen Course Coverage**

Instructors who want to add to course coverage, perhaps for use in a graduate level survey course, can do so in several ways. Instructors can work through all of the chapters in the text, ensuring, for example, that students have complete coverage of anti-trust and government regulation by assigning Chapter 14. Several appendices have also been added to extend coverage: for example, an appendix to Chapter 3 on measuring price elasticity, to Chapter 12 on additional cost calculations, and to Chapter 13 on determining the profit-maximizing price and output in various market structures.

There are also several lengthy footnotes that explain material such as the marginal utility/price rule for maximizing utility that can be included.

### Flexibility in Course Level and Content

*Economics: Theory & Practice* has been used in a variety of courses and course levels over the years. Its flexibility allows the text to be used effectively in basic introductory survey courses, more rigorous one-term principle courses, and even in basic graduate level MBA coursework. The range of traditional core topics combined with up-to-date topics, friendly reading style, flexibility of course coverage, and student aids have contributed to the success of this text for a wide variety of student audiences for over three decades.

### Student Engagement and Learning

*Economics: Theory & Practice* provides examples, applications, issue debates, and critical thinking cases to enable students to connect economic concepts to everyday life: from decision making about a wedding, to driving while using a cell phone, to exploring factors that affect the price of peanut butter, to the global reach of Starbucks. In addition to these connections to everyday life, there are a number of learning aids in each chapter to foster active student learning.

## APPLICATIONS, UP FOR DEBATES, TEST YOUR UNDERSTANDINGS, CRITICAL THINKING CASES, AND OTHER LEARNING AIDS

Each chapter in *Economics: Theory & Practice* provides a set of tools to enhance learning of the material in the chapter and to tie the text to the real world: applications, an up for debate, a critical thinking case, a test your understanding, and study and discussion features.

**Applications:** The applications included with each chapter are lively, relevant, and up-to-date. For example, the issue of future funding of the Social Security system comes through Application 6.2, “How Much Do We Love Granny?” the opportunities for careers in new green labor markets come in Application 15.1, “Go Green,” and Application 5.4, “Unconventional Indicators of Economic Health,” points out some of the studies and factors such as the number of abandoned boats along waterways associated with macroeconomic changes. Other applications deal with the growing export of college educations for foreign students, modern day Luddites, the real cost of smoking, and customer service responses.

**Up for Debate:** Each chapter includes an Up for Debate that shows students the varying perspectives on issues that underlie policy decisions. For example, the Up for Debate in Chapter 11, “Should Drivers Be Banned from Using Cell Phones While Operating a Vehicle?” includes arguments on both the yes and no sides of the issue. Several of the Up for Debates focus on environmental issues: mandatory recycling, nonprice competition and resource waste, banning international trade that may harm the environment, and a possible relationship between environmental damage and economic growth.

**Critical Thinking Cases:** The Critical Thinking Case at the end of each chapter concentrates on a problem/situation designed to strengthen the understanding of economic concepts in the chapter and to develop some critical thinking skills. Questions are included with each case. The cases cover a wide range of issues from the health care allocation dilemma, to the markets for haircuts, to Frederic Bastiat's famous *Petition* that a law be passed to protect French industry from ruinous competition from the sun.

**Test Your Understanding:** The Test Your Understanding in each chapter provides a review of some typically difficult material in the chapter and usually requires some calculations or graphic analysis. For example, in Chapter 3 students tackle a set of events that allows them to strengthen their understanding of supply and demand, and in Chapter 15 students calculate marginal revenue product and graph a labor demand curve.

**Study and Discussion Support:** Each chapter helps students to organize their studies and reinforces student learning through a variety of learning aids. These include objectives for each chapter, margin definitions, a carefully constructed chapter summary, a list of key definitions and concepts, review questions, discussion questions, and a Test Your Understanding.

## NEW TO THE ELEVENTH EDITION

*Economics: Theory & Practice*, eleventh edition, has been thoroughly updated. All data, both macroeconomic and microeconomic, are the latest available at the time of publication. In addition, students can locate even newer data by referring to the sources of the information.

Many changes have occurred in the U.S. macroeconomy in less than a decade. We have been through a recession with high and prolonged unemployment figures, followed by a modest recovery. Substantial budget deficits have created a sizeable federal debt that is now larger than GDP. In the money and banking arena, there was a serious financial crisis in 2007–2009 that brought new legislation, such as Dodd–Frank, that has been complicated and challenged. In addition to these major macro issues, there are concerns about the environment, income distribution, government regulation, and much more. Today, there is an edginess about policy issues and decisions, especially at the federal level. Probably more than ever, it is important that students understand some economic basics.

In keeping with the text's reputation for connecting economic theory to practice, this edition includes new and updated applications, debates, and critical thinking cases to add more recent examples of concepts. Products that consumers have rejected, updated profiles of Starbucks and Kraft, an updated real cost of smoking, connecting diseconomies of scale to poor customer service, and pointing out the power of Janet Yellen's words, are just some of the new changes and updates.

The eleventh edition continues to emphasize environmental examples, issues, and policies throughout the text. Chapter 1, for example, includes recycling, concerns over global warming, the ozone layer, greenhouse gas emissions, sustainability, carbon emissions, energy efficient appliances, and fuel efficiency requirements in the language of the chapter. Other chapters include topics and examples such as environmental damage in planned economies, toxic waste, landfills, and more.

Several Up for Debates provide weighty looks at current environmental debates. Among the questions are the following: Should trade be restricted if it results in environmental damage? Does nonprice competition waste resources? Should St. Louis County, Missouri, impose mandatory trash pickup and recycling?

This edition, similar to the others, helps to make students aware that policy decisions are based on values and information that are not cast in certainty. The up for debates and the critical thinking cases help to illustrate that there is no correct answer in public policy, but rather there usually are many facets to an issue. As students read through the cases on eminent domain or on the allocation of health-care expenditures or the up for debate on government regulation of fuel efficiency requirements, the lack of certainty about positions should become clear.

## **SUPPLEMENTARY MATERIALS**

A dedicated companion website with extensive resources for both students and professors can be found at <http://www.wiley.com/college/welch>. This website includes all of the resources listed here. The student Study Guide includes for each chapter a listing of objectives and terms from the textbook, a study organizer identifying important concepts, a self-test review, computational exercises, and practice examination questions. Answers to the exercises and practice questions are included at the end of the Study Guide. The Test Bank contains approximately 3,000 multiple-choice, true/false, and short essay questions, many requiring students to make computations. A computerized Test Bank containing all test questions from the test bank is also available. This version of the Test Bank allows instructors to customize exams for their courses. The Instructor's Manual provides a teaching overview, which is particularly useful to new instructors, and a sample syllabus giving information about topic coverage, assignments, examinations, and such. Also included for each chapter is a restatement of objectives, teaching suggestions, and recommendations on incorporating the discussion and review questions and critical thinking cases into a course. Suggested answers for the discussion and review questions are also provided. A set of PowerPoint presentations consists of chapter outlines and enlarged versions of all the figures and tables contained in the text. This set can be used to create overhead transparencies for viewing in the classroom, or they can be copied and used as handouts for students.

## **ACKNOWLEDGEMENTS**

We are especially grateful to the reviewers whose invaluable comments and suggestions have helped improve our title over its many editions.

Over the years many editors, book reps, and design staff have worked with creating this textbook that has been a part of the economics textbook publishing world for over three decades. It began with encouragement from Russ Boersma, a sales representative from Dryden Press that was the initial publisher. Through mergers and other decisions the text moved to Harcourt, Brace Jovanovich, and then to John Wiley & Sons. We are grateful to these companies and their staffs for support, good advice, and commitment to this text.

It has been our good fortune to work with a great Wiley staff that is talented and committed to professional excellence. We have appreciated being part of the Wiley team.

Many thanks are due to Mary O’Sullivan—Sponsoring Editor, Nichole Urban—Project Specialist, and Rajeshkumar Nallusamy—Production Editor.

We have also benefitted from the support of many colleagues at St. Louis University and St. Louis Community College who have been generous with their comments and informal reviews. So many students at these two institutions have given us the passion to strive for a textbook that would put basic economics into a context and language that would enable them to carry the relevancy of economics with them far beyond the classroom. Without a doubt, comments about enjoying the text or wanting to take more economics or no longer believing that economics is irrelevant continue to be the impetus to produce this textbook.

Patrick Welch  
Gerry Welch  
October 2015

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# CHAPTER 1

## Introduction to Economics

### CHAPTER OBJECTIVES

Define economics, scarcity and choice, opportunity cost, efficiency, and equity.

Identify the four factors of production and the income return to each type of factor.

Differentiate between economic theory and economic policy, and discuss the components of model building.

Define the tools economists use to express theories and policies.

Use the production possibilities model to illustrate scarcity and model building.

Define the differences between the study of macroeconomics and microeconomics.

Explain how to construct a graph and interpret the illustrated relationship.

### WHAT IS ECONOMICS?

We are always making choices. We constantly choose how to spend our time and our money. We make simple choices like whether to take the time to eat lunch rather than work or whether to spend money for bottled water rather than drink from a water fountain. We make complex choices about careers, where to live, and colleges. And, as members of society, we make choices about voting, supporting public policy issues, recycling, and volunteering to clean up the local park.

Choices are a part of everyday life because our wants exceed our ability to satisfy them. You may want to achieve a high grade point average (GPA) and maintain a job that gives you enough money for clothes, a car, and decent housing during a semester that does not provide enough time for both. People in a community may want a recreation complex, street repairs, an ambulance, and other services

but do not have enough tax dollars to pay for it all. It is this scarcity of time and things and the resulting choices that must be made that bring us to the study of economics.

### Economics

The study of how scarce, or limited, resources are used to satisfy unlimited wants and needs; the study of decision making in a world of scarcity.

**Economics** is the study of how scarce, or limited, resources are used to satisfy people's unlimited wants and needs. In other words, economics is concerned with how people make decisions in a world of scarcity. Much of the study of economics is focused on satisfying people's wants and needs for material "things"—shoes, cars, medical services, entertainment, and the like. And, although happiness, sorrow, beauty, and integrity are not direct concerns of the discipline of economics, we know that often these values underlie the economic decisions that people make. Many of us have given our time and money to a person or cause rather than spend it on ourselves because it gives us greater happiness.

The field of economics is extensive and it is always growing. While you may hear economists voicing opinions about unemployment, inflation, interest rates, poverty, energy, the environment, and international trade, this just scratches the surface. This textbook introduces you to some of the major areas of study in economics, some key institutions and relationships, and some controversial policy issues. A quick glance through the table of contents will give you an idea of the breadth of topics included in the discipline of economics.

Why study economics? What can it do for you? Economics permeates our lives. Many of our own personal decisions are obviously rooted in economics: how we pay next semester's tuition or whether we should take a job halfway across the country. But economics is also at the root of decisions made with far-reaching impacts: what programs to fund in a congressional budget or how much support to provide for concerns over global warming.

A course in economics not only provides valuable information, but it also develops reasoning and analytical skills that enable you to think smarter. Through the study of economics, you will be introduced to important institutions, such as the Federal Reserve and foreign exchange markets, which play a key role in the unfolding of economic events. You will also be introduced to analytical techniques that develop your critical thinking and reasoning skills, enabling you to better understand, for example, why the price of a product you want keeps rising, why the benefits of a job move outweigh its costs, or why you support the position of a candidate for public office.

Once you are armed with economic institutional information and skills—skills you will be developing for the rest of your life—you will be better prepared to evaluate and respond to news reports, promises of aspiring politicians, crises at work, personal decisions, and other situations. In short, an understanding of economics helps make you a better-informed citizen and decision maker and is important for success in your career—be it law, health care, journalism, or anything else.

### Economics and Scarcity

Scarcity is the reason for the study of economics. **Scarcity** means that there are not enough, nor can there ever be enough, goods and services to satisfy the wants and needs of all individuals, families, and societies. Look at your own situation. Do you own the car you would most like to have? Do you have enough money for the concerts, e-reader, and boots you want? Does the recent car insurance bill mean ramen and peanut butter this month? Societies face the same scarcity problem on a larger scale. Money spent for roads is money not available for hospitals or schools. Gasoline and oil used now will not be available in the future.

### Scarcity

Too few goods and services to satisfy all wants and needs.

The root of the scarcity problem is in the definition of economics—that people have limited resources to satisfy their unlimited wants and needs. People seem to continually require more goods and services and to become dissatisfied with what they have. When this psychological drive for more is considered for all members of society, wants and needs become so great in number that they can be viewed as virtually unlimited. For example, your instructor could devote one class period to listing everything everyone in the class wanted both for themselves and for society in general. By the next class period, and in all later periods, the list would increase as students added goods and services originally forgotten or introduced to them throughout the semester. The list would never be completed! Ten years ago the average American did not need a smartphone, 4G capability, organic carrots, a juicer, or an electric car.

All of these unlimited wants and needs cannot be satisfied because the resources available to produce goods and services are limited. These resources include all the people, materials, machinery, and other items that contribute to the production of goods and services. For example, to provide pizzas, a business needs cheese and other ingredients, people to cook and serve, electricity, water, ovens, refrigerators, a manager, and a building. Every resource available for production is limited in amount: There is not an infinite supply of labor, energy, or any other resource.

The problem of limited resources also occurs for individuals. We never seem to have enough money to purchase everything we want and need, and never have enough time to accomplish everything we want to do. Limited resources keep many students from taking a trip over spring break, upgrading a cellphone, or buying a new car instead of repairing an old one. Many students would like to produce a high GPA, work at a part-time job, and enjoy an active social life but cannot achieve all of these due to time constraints.

In recent years, we have become more conscious than ever of our limited resources as we face worldwide environmental issues. We are keenly aware of the limits of air, water, energy, and the ability of the earth to sustain itself. Global warming, holes in the ozone layer, greenhouse gas emissions, fracking for natural gas, and water shortages throughout the world have become topics of regular discussion and concern.

### Scarcity and Choice

Since it is impossible to satisfy all of the wants and needs of individuals, businesses, nonprofits, government units, and societies, decisions must be made about what to satisfy and how to use limited resources. A student, for example, who is pressed by the demands of a job and the need to study for an exam must make a decision about how to use limited available time. A state university that is facing a reduction in funds must make choices about what programs, staff, and services to cut. And, as a society, we must choose the degree to which we will pollute our air and water.

Anytime we make a choice, there are **trade-offs** and consequences. Suppose that a student has \$100 (a limited sum) and wants to use the money for either e-supplements in a tough course or a weekend visit with an old friend. The visit is the trade-off for the course supplements, and the supplements are the trade-off for the visit. In choosing between these, the student will evaluate the consequences of each alternative. The supplement purchase might result in a good grade in a course; the visit might mean renewing a friendship.

In making choices, a decision maker's values play a very important role and underlie most choices. Values are those principles and standards that a person considers to be worthwhile and are the ideals that drive people and organizations. Try the exercise in Table 1.1 to determine your own core values.

#### Trade-off

Giving up one thing for something else.

TABLE 1.1

**Values Exercise**

Each of us has several core values that drive us. They are at the heart of our decisions and the actions that we take. Sometimes it is helpful to identify these core values so that we understand what is at the root of our actions. The following lists some possible values. Circle the five that best represent your core values.

Love	Happiness	Money	Respect
Security	Freedom	Truth	Power
Peace	Health	Learning	Thrift
Honesty	Responsibility	Change	Dependability
Safety	Family	Stability	Artistry
Religion	Friendship	Independence	Creativity
Success	Faith	Cleanliness	Knowledge
Work	Individualism	Authority	Intelligence
Integrity	Education	Community	Analysis

**Value judgment**

The relative importance one assigns to an action or alternative.

Decisions usually involve a **value judgment**, which is the relative importance that a person assigns to an action or alternative. If the student faced with the choice of course supplements or a weekend with a friend decides that a good grade is more important, the course supplements will be purchased with the \$100; if friendship is valued more than a good grade, the student will choose the visit.

Scarcity also forces business owners and managers to make decisions based on value judgments. Companies might have to decide between raises for employees and equipment updates, or whether or not to continue a costly health insurance program at the expense of another need, such as a building renovation. In some business-related choices, employees are highly valued and wage increases are important; in others, stockholder profit is the primary value.

Society faces the same scarcity-related trade-off problem. Take a look around your community to see the value judgments of its residents. Public decisions about how well schools, parks, roads, and fire and police are funded—or not funded—reflect the values of the community. At the national level, balancing a federal budget may require reduced government spending elsewhere and laws that permit gas-guzzling and carbon-emitting vehicles may have future environmental consequences.

Each trade-off made is necessary, because we cannot have everything, and each trade-off reflects the value judgments of the decision makers.

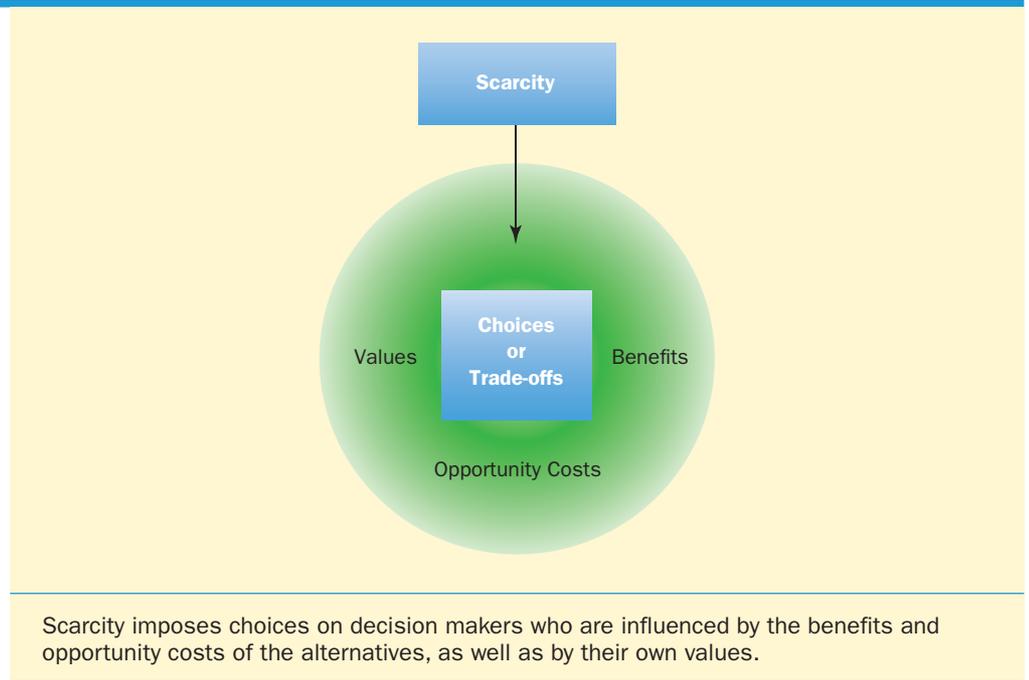
**Opportunity Cost** In making choices, people evaluate both the benefits and the costs of their choices. Because of scarcity, every decision to acquire a good or service or to spend time or money in a certain way has a cost attached to it. Economists call this **opportunity cost**. An opportunity cost is the cost of a purchase or a decision measured in terms of a forgone alternative—that is, what was given up to make the purchase or carry out the decision. Once time or money is devoted to one thing, the opportunity to use that time or money for something else is lost.

Everything that someone can purchase or do has an opportunity cost attached to it. If you spend \$40 to put gas in your car, the opportunity cost of that gas is what was given up to buy it—perhaps a few decent meals. What was the opportunity cost of the last purchase you made? What is the opportunity cost of cutting a class in this course?

**Opportunity Cost**

The cost of a purchase or decision measured in terms of a forgone alternative; what was given up to make a purchase or carry out a decision.

FIGURE 1.1

**Scarcity, Choice, and Influences on Decision Makers**

The opportunity cost of choosing to acquire more shoes or food, rather than supporting an increase in a school tax, could be an inferior education for children in a community. The opportunity cost of balancing a government budget could be forgone educational and health benefits due to reduced spending. Because of scarcity, individuals, families, businesses, and societies make choices based on both the benefits and the opportunity costs of their decisions. Figure 1.1 shows the relationship between scarcity and choice, and the influences on a decision maker.

Application 1.1, “To Work or Not to Work,” deals with the opportunity costs faced by teenagers who work long hours while going to school. What are students trading off to work more and earn more income?

### Efficiency and Equity

In dealing with the basic problem of scarcity—not enough goods and services to satisfy everyone’s wants and needs—there are two important concepts to consider: efficiency and equity.

Efficiency is concerned with using resources effectively or getting the most from scarce resources. **Efficiency** occurs when a given good or service is produced at the lowest possible cost. If all goods and services were produced efficiently, society would experience the greatest possible lessening of the scarcity problem. Producing efficiently does not eliminate scarcity, but it does allow for the production of the maximum amount of goods and services to satisfy unlimited material wants and needs. This is important in a world of scarcity and is a major economic goal.

When is a student efficient? Most students set a goal for a grade, and then need to commit the time to achieve that grade. (While most instructors think this should be

#### Efficiency

Producing a given good or service at the lowest possible cost; getting the most output from resources.

## APPLICATION 1.1



## TO WORK OR NOT TO WORK

After-dinner visits to the mall or the local Starbucks and late night stops at McDonald's reveal that a lot of teenagers spend their evenings working at close-to-minimum-wage jobs. Teens are driven to work late hours, especially during the school week, for various reasons: unemployment for a good family income earner that creates a critical need to contribute to household expenses; escalating car insurance payments from multiple accidents; simply wanting cash for clothes and concerts; or just plain enjoyment from the socialization part of a job.

Understanding the impact of teen employment and long working hours during high school has been the subject of some economic, sociological, and psychological studies. Findings on the positive side of teen employment include learning about the responsibilities of a job and the expectations of an employer, exposure to time management, and interaction with the public. Time at work also means time staying out of trouble.

But what are the costs? Obviously, time spent at work is time given up for studying and engaging in activities that are part of the high school club and athletic

experience, and time not spent with family and friends. In addition, the teen who works long hours may not get the sleep needed to be a productive learner during the school day. In one study, too many work hours often led to higher alcohol use.

There could also be long-run consequences. Those work hours and extra income could mean lower grades, the inability to gain acceptance into a competitive college, and missed opportunities for discoveries about cultural, athletic, and academic interests that ultimately drive and enrich one's life. Also, consider how this affects an economy that increasingly relies on mental rather than physical contributions from its work force for economic growth. One study found that 53 percent of American teens worked in any given week. In some other countries, this was much less: only 18 percent of Japanese students worked.

"There are a lot of benefits to students' working in moderation," says one sociology professor at the University of Minnesota. "But most sociologists and psychologists would say that it's an excessive load for full-time students to work 25 or 30 hours a week if you think it's important for young people to participate in extracurricular activities, develop friendships, and spend time with their families."<sup>a</sup>

<sup>a</sup>Quote and references to studies are from Steven Greenhouse, "Problems Seen For Teenagers Who Hold Jobs", *The New York Times*, January 29, 2001.

an A, in reality it might just be a C!) A student is efficient when this targeted grade is earned using the least amount of time possible. This could result from effective note taking, good study habits, careful textbook reading, and the like. Students who study efficiently have more time for other activities and get the most from their limited resource of time.

Likewise, a society gets the most from its limited resources when efficient techniques of production allow those resources to be used to the fullest. With the aid of good computer software, for example, professionals like architects, accountants, and others can be very efficient. As more household appliances are manufactured to operate with less energy usage, society can stretch its energy resources. Inefficient students waste their time, and an inefficient use of a society's resources wastes those resources. In both cases, the scarcity problem is worsened.

In a world of scarcity, where there are not enough goods and services to satisfy everyone's wants and needs, there is the issue of what is a fair, just, or equitable distribution of goods and services among the members of a society. **Equity**, or justice and fairness, raises two basic questions: Should a fair distribution of goods and services be an economic goal for a society? If it is, how is a fair distribution defined and achieved?

The concept of what constitutes an equitable distribution of goods and services is controversial because it is based on people's value judgments. To some people, equity occurs when goods and services are divided equally. To others, the distribution of goods and services should be made according to people's needs. And to some, equity results when people are rewarded according to what they

### Equity

Justice or fairness in the distribution of goods and services.

**Resources (Factors of Production)**

Persons and things used to produce goods and services; limited in amount; categorized as labor, capital, land, and entrepreneurship.

**Labor**

Physical and mental human effort used to produce goods and services.

**Capital**

Items, such as machinery and equipment, used in the production of goods and services.

**Land**

Productive inputs that originate in nature, such as coal and fertile soil.

**Entrepreneurship**

The function of organizing resources for production and taking the risk of success or failure in a productive enterprise.

contribute to production: Those who contribute more or better resources should receive more. This last view—that people should be rewarded for their contribution to production—is the philosophical basis of a market system. Market and other economic systems are discussed in Chapter 2.

The issue of how to define and achieve equity is not easily resolved because there are so many diverse viewpoints. In the United States, for example, there is a continuing debate over how much the government should provide for those who are in need. This debate has received extensive media coverage in recent years over issues such as health care, tax breaks, welfare payments, and unemployment compensation.

**FACTORS OF PRODUCTION**

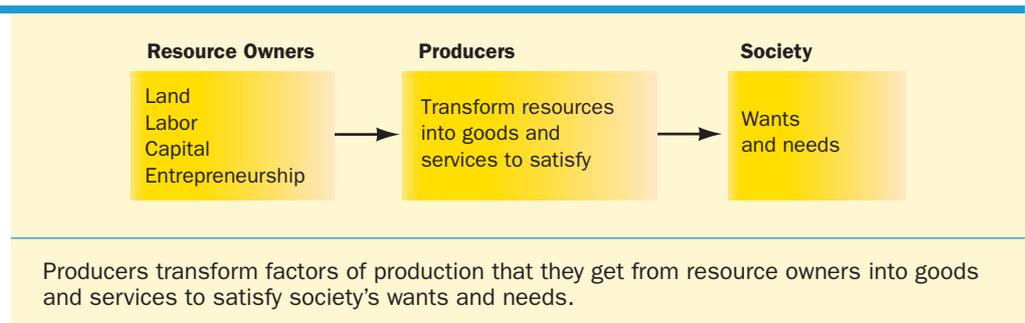
Think about all of the thousands of different types of **resources**, or **factors of production**, that are used to produce goods and services, from the shelving in a big box store, to the skilled hands of a neurosurgeon, to the air filters on a plane. To bring order to a discussion about resources, economists classify them into four groups: labor, capital, land, and entrepreneurship.

- ◆ **Labor** includes all human effort, both physical and mental, going into the production of goods and services. It encompasses the efforts of everyone from lawyers to lifeguards—all who work to produce goods and services.
- ◆ **Capital** includes warehouses, machinery and equipment, computers, office furniture, and all other goods that are used in the production of goods and services.
- ◆ **Land** includes all inputs into production that originate in nature and are not human-made—oil, iron ore, and fertile acreage to name a few.
- ◆ **Entrepreneurship** is the function of organizing or bringing other factors together and taking the risk of success or failure. Without this function, economic activity would not occur. A small business owner usually performs this function and is called an entrepreneur, and in corporations, managers organize and stockholders take the risk.

The relationship between productive resources and society’s material wants and needs is summarized in Figure 1.2.

**FIGURE 1.2**

**Relationship between Resources and Wants and Needs**



## Factors and Income

People who own resources provide them for production because they expect a return. Although the return may be personal satisfaction, such as a positive feeling from community service, most often people expect to be paid, or to receive an income. While money is money, and \$100 received by a worker is no different from \$100 received by the owner of a building, it is helpful to label the incomes received from selling different types of resources. These are

- ◆ **wages**—income for labor,
- ◆ **interest**—income for capital,
- ◆ **rent**—income for land resources, and
- ◆ **profit**—income for carrying out the entrepreneurial function.

While it might appear trivial to give a separate name to the income received by each of the different groups of resources, the distinction can be significant. For example, various legislative and public policy initiatives are aimed at particular income groups. Consider the Social Security program. Payments into this program come from wages as well as income, or profit, earned by the individual entrepreneur. Rent, interest, and corporate profit are incomes that are not part of the Social Security system.

The classification of people into different earning groups has also had interesting social connotations. As the economist Robert Heilbroner put it, “It is not just Labor on the one hand and Land or Capital on the other; it is the Bronx on the one hand and Park Avenue on the other.”<sup>1</sup> In addition, Marxian theory, which is critical of capitalism, is based on the premise that a conflict exists between wage and profit earners that is inherent in capitalistic systems.

## Scarce Resources

How scarce are resources, or factors of production? In the U.S. economy alone, there are over 155 million people working or looking for work, almost a billion acres of farmland, and billions of barrels of petroleum reserves. The list of available resources goes on and on.<sup>2</sup>

While large numbers of resources may be available in an *absolute* sense, they are scarce *relative* to the wants and needs that their use attempts to satisfy. People’s wants always continue to outrun the economy’s ability to satisfy them.

If we cannot solve the scarcity problem, can we ease it? Over the last few decades has the scarcity problem eased or worsened? On the positive side, we have made much progress: Medical advancements have increased life expectancies; technological changes in transportation allow us to travel rapidly; fashionable clothing is available to buyers of all income levels; and we can prepare food, process information, and communicate faster than ever before. In addition, the average person has more belongings and lives in a larger house.

But there is also evidence to suggest that the scarcity problem has worsened. Today, we worry about the availability of clean air and water, while earlier generations thought of these as free and abundant. There is growing concern about our current rates of production and disposal of goods, and the resulting effects on our quality of life, our health, and the earth’s forests, open spaces, and ozone layer. Some people argue that today we are more acutely aware of the limits of our productive capability than we have ever been.

<sup>1</sup> R. L. Heilbroner, *The Limits of American Capitalism*, Harper Torchbook ed. (New York: Harper & Row, 1967), p. 71.

<sup>2</sup> ProQuest Statistical Abstract of the U.S. 2015 Online Edition, Tables 605 and 842; www.eia.gov.

### Wages

Income return to labor.

### Interest

Income return to owners of capital.

### Rent

Income return to owners of land resources.

### Profit

Income return to those performing the entrepreneurial function.

## APPLICATION 1.2



## DOES MONEY BUY HAPPINESS?

In recent decades, much research in the fields of economics and psychology has focused on the ties between money and happiness. And the answer to the question “Does money buy happiness?” is maybe yes, maybe no.

Money allows people to buy more, and better-quality, goods and services. On the surface, it appears that the basic economic problem of scarcity is lessened by having more money, and that this should lead to higher levels of happiness. We might think that people who drive new luxury cars and live in big homes are happier than people who ride a bus and live in a small apartment. A few researchers might say yes, the richer are happier, but many say the opposite, and a few say that happiness is increased very slightly with more money.

Psychologist Richard E. Lucas of Michigan State University thinks there is evidence to answer yes to three interesting happiness questions: Does money make you happier? Does being happier in the first place allow someone to earn more, perhaps through increased creativity or energy? Is there another factor that brings more of both money and happiness?

Happiness is certainly a subjective state of mind influenced by a person’s values, experiences, future prospects, and a host of other factors. There is also a difference between short, even momentary, periods of happiness

and a longer-term level of sustained satisfaction. Winning the lottery or receiving a year-end bonus can provide immediate happiness, but whether or not it will have a sustained impact is another consideration.

There is also some thought that extra money for someone who is very poor might account for higher levels of happiness because it has a greater positive effect on negative circumstances. News stories of families who receive homes built through volunteer efforts or children who attend a summer camp that they could not afford without donors often focus on the intense happiness of the recipients.

So, if there is no evidence to suggest that people who live in Virginia are happier than those who live in Oregon because their average household income is greater (\$67,620 for Virginia and \$56,307 for Oregon in 2013), what does make us happier? A clear answer to this question would certainly land us on the talk show circuit. Professor George Lowenstein of Carnegie Mellon University suggests that people are not good at figuring out what to do with their money and might overestimate the pleasure from something they buy. Professor Daniel Gilbert suggests that human relationships, time with family and friends, and experiences are the key to happiness. And others suggest that altruistic spending is the answer.

Sources: Malcolm Ritter, “Study: Money-Happiness Link Is Complex,” Associated Press, November 26, 2006, [www.sfgate.com](http://www.sfgate.com); Matthew Herper, “Now It’s a Fact: Money Doesn’t Buy Happiness,” *Forbes*, [moneycentral.msn.com](http://moneycentral.msn.com); “The Smiling Professor,” *The New York Times*, April 22, 2008, [www.nytimes.com](http://www.nytimes.com); U.S. Census Bureau, Table H-8. Median Household Income by State: 1984 to 2013, [www.census.gov](http://www.census.gov).

Application 1.2, “Does Money Buy Happiness?,” takes a look at some research on the ties between money and happiness. Many people think that a larger income lessens scarcity by providing more personal opportunities to satisfy wants and, therefore, makes people happier. This may not be the case. After reading this application, how would you answer the question “Does money buy happiness?”

## ECONOMIC THEORY AND POLICY

As households, businesses, and governments go about conducting their economic affairs, it is helpful to have an understanding of some basic economic cause-and-effect relationships. Knowing about the drivers behind consumer behavior and spending and the causes of changing interest rates, income levels, and job growth fosters better decision making. Some economic relationships are complex, and gaining an appreciation for them is important. This task of sorting out and understanding cause-and-effect relationships falls to economic theory.

While theory tells us about relationships, economic policy deals with guidelines and actions. Policy decisions are made at many levels—from an instructor setting a grading policy, to a corporation setting policy about executive salaries, to a city setting its annual budget. When a decision maker sets parameters for actions, policy is made.