PRINCIPLES OF

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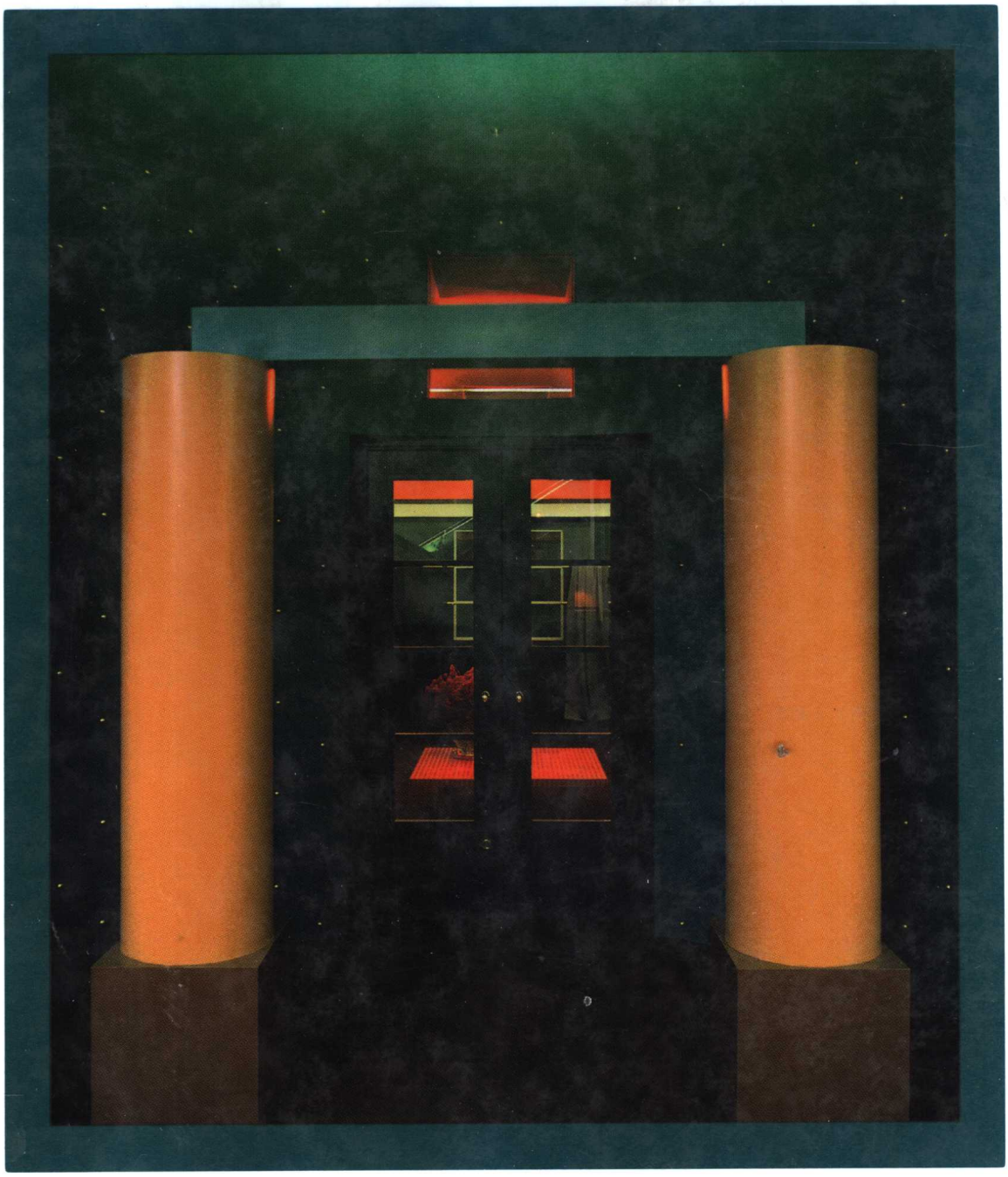

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PRINCIPLES OF

Economics

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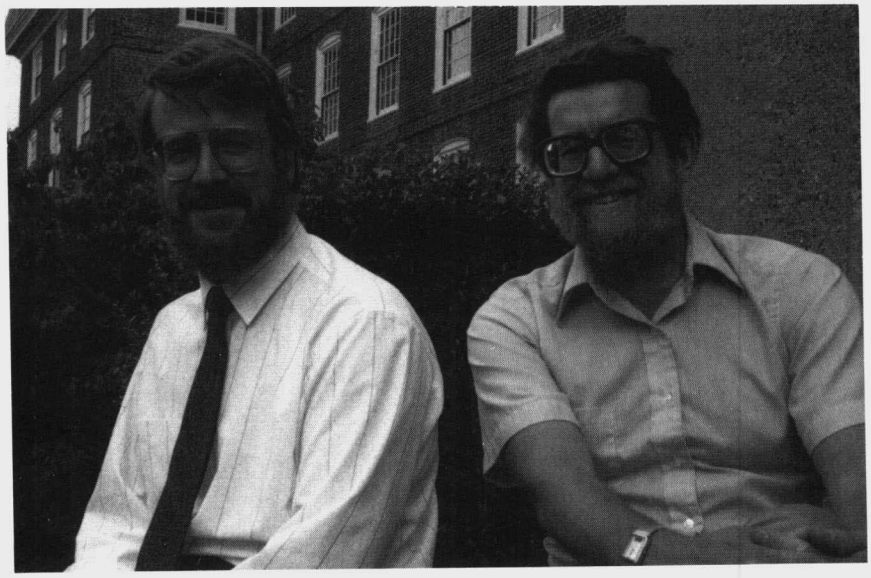

J. Vernon Henderson, Professor of Economics at Brown University, received his PhD from the University of Chicago. He has worked extensively as an economist abroad, in Spain, China, India, Nepal, Brazil, and Canada. Recipient of a Guggenheim Memorial Fellowship, an Earhart Foundation Fellowship, and several National Science Foundation grants, Professor Henderson is a consultant to the World Bank and a research associate for the National Bureau of Economic Research. A frequent contributor to journals such as *American Economic Review, Journal of Political Economy, Journal of Public Economics,* and *Journal of Urban Economics,* he is also the author of *Economic Theory and the Cities* (1985) and *Urban Development: Theory, Fact, and Illusion* (1988). Currently, he is working on issues of industrial location and urban development in developing countries and the impact of fiscal decentralization on resource allocation. Besides his work and his foreign travels, Professor Henderson enjoys playing competitive squash and bringing up his four children, ages six to seventeen.

William Poole, Herbert H. Goldberger Professor of Economics at Brown University, received his PhD from the University of Chicago. From 1982 to 1985, he served as a member of the Council of Economic Advisers to President Reagan. He currently acts as an Adjunct Scholar for both the American Enterprise Institute and the Cato Institute, is a research associate for the National Bureau of Economic Research, a member of the Shadow Open Market Committee and an associate member for the Institute of Fiscal and Monetary Policy, Ministry of Finance, Japan. Professor Poole sits on advisory boards to the Federal Reserve Bank of New York and the Congressional Budget Office. He is a frequent contributor to the *Journal of Finance, American Economic Review,* and the *Journal of Money, Credit, and Banking,* of which he is also an associate editor. His current research is on issues in monetary policy, macroeconomics, and international finance. In addition to teaching, writing, and consulting, Professor Poole also finds time and enthusiasm for competitive sailing, and enjoys photography, travel, woodworking, hiking and camping.

Preface

There is no shortage of introductory economics texts, but there is a shortage of modern, relevant, and well-written ones. We wrote this text so that students could have a pedagogically sound presentation of modern economics. There is an emphasis on data (what economists know) and policy (how government economic policies are created) that is rare in an introductory text. The data are here to give students a basic knowledge of the facts about our world economy and to provide real-life examples. The policy emphasis helps students understand the critical role of government in today's mixed economies. Moreover, evaluation of public policy is the skill that students need most, because that is how they will apply their knowledge of economics when they venture forth from college to join the labor force and participate in a democracy. The objective of this book is to blend economic modeling with a sense of what is important about economies and how and when economic models are applied to the real world. We have written this book with both students and instructors in mind.

For the Student

Material is clearly presented in a lively, informal style. We provide many examples in the text—in the Focus boxes, in the problems, and in the text proper. We are especially mindful of the need for examples in the traditionally dry theory sections. We have avoided ending sections with vague references to how some theory can be applied to real life, made more complex, or extended to lots of other problems. We have tried to make everything in the text understandable, immediately relevant, and sufficiently illustrated, so that students can embark on their own applications and extensions in the problem sets.

The book has a twofold international focus throughout: (1) We emphasize that today the United States is an open economy. Links to the rest of the world are pervasive; they affect public policy not only with respect to trade but also in such areas as banking regulation, international transmission of business cycles and inflation, antitrust policy, the environment, labor markets, and the drug problem. (2) We are well aware that today's students often travel abroad. We emphasize that they need to understand that economic models apply in other cultures but that local laws and institutions also affect market structures and outcomes. Examples of economic behavior from everyday life around the world appear throughout the text. These examples include the problems of Harris tweed weavers, common-property issues for nomads in Central Asia, public-utility regulation in Nigeria, inflation in Brazil, the effects of birth control in Calcutta, and others. Economic applications from developing countries are especially abundant and important because they help students see the universal aspects of economic principles.

For Instructors

We have tried to make teaching easier. We have worked hard to provide clear exposition. We make topics interesting both through hypothetical examples and through highly relevant real-world examples. We want students to be motivated by a desire to understand the world around them. We emphasize the science and facts of economics; we made a conscious decision to keep the book as ideologically balanced as we possibly could. This does not mean that the book is without opinions. Rather, students are taught how to think in economic terms and how to make their own evaluations and form their own opinions. We simply provide them with tools, facts, and an understanding of the complexity of most public-policy issues. Economics is an evolving discipline, even at the introductory level, and it is important that students learn to apply a healthy skepticism to the latest fad theory.

We have blended modern theory into traditional topics. There are chapters and sections and in some

cases appendixes on information economics, corporate finance, public choice, game theory, comparative systems, the permanent income theory of consumption, rational expectations, uncertainty and expectations, growth theory, and others. These may be assigned or ignored as one chooses, without loss of continuity. However, the concepts from these developments in economic theory are blended into the presentation of traditional topics in an informal fashion. Professional economists, as readers of the journal literature, are very familiar with the key concepts from developments in economics over the last quarter-century. These developments give us new insight into the traditional topics—Marshallian price theory and Keynesian and monetarist analysis of aggregate demand. We put aside economics journal literature that must be regarded at this time as speculative, and concentrate on the newer developments that have become an established part of mainstream economics. We weave this body of established newer work into the text while maintaining the traditional presentation of topics. A reader may even be unaware that a concept from game theory or from information economics has been introduced in presenting a traditional analysis. Again, the emphasis is on clarity, intuition, application to everyday life, and consistency in level and style of presentation.

Organization

The text begins with an introductory section (Chapters 1–5). It covers the general topics—from scarcity and the concept of a market economy to the use of diagrams and other tools of economic analysis—that all students need to learn as they begin their study of economics.

The book is organized so that either micro or macro may be taught first. However, as indicated by our chapter placement, we believe that there are advantages to studying micro before macro. The true flavor of economic analysis—the behavior of rational, utility-maximizing, and profit-maximizing economic agents—can only be taught in the context of microeconomics.

After the five introductory chapters, the instructor who wishes to begin with micro may turn either to the consumer (Chapter 6) or to the firm (Chapters 7–9). The treatment of marginal analysis of the firm stands on its own, so that it can be covered before consumer theory. The sections on market structure (Chapters 10–14), factor markets and income (Chapters 15–19), and public policy (Chapters 20–23) can be done in any order. Within those sections, chapters on poverty, the income of nonlabor factors, the environment, public choice, and so on may be used or omitted as desired. In short, each chapter is fairly self-contained, within the constraint that we are building upon concepts.

Within macro, the chapters on Keynesian theory come before those on monetarist theory, but the book is designed so that instructors can take up money first if they prefer. However, we have a strong conviction that a systematic treatment of stabilization policy should be delayed until the student has covered both Keynesian and monetarist analysis. Macro policy today is always conditioned by the effort to walk a narrow line between output growth and inflation. Students cannot appreciate this policy tension without studying both Keynesian theory, with its emphasis on the real economy, and monetarist theory, with its emphasis on the price level.

Microeconomics (Chapters 6–23)

Chapter 6 on consumer theory is designed to be a comprehensive treatment of the consumer. However, the later sections of the chapter can be omitted without loss of continuity. Chapter 7 is a self-contained chapter on the nature of the firm and on corporate finance, again for those who favor a comprehensive treatment or who are teaching students with a focus on business. We recommend that at a minimum students read at least the sections on the nature of firms and choice of form of business organization; they are written clearly with an emphasis on intuition and examples. Chapters 8 and 9 are traditional treatments of cost and production relationships. Chapter 10 is a traditional treatment of perfect competition.

Chapters 11 and 12 on monopoly and oligopoly cover all the traditional topics. But there are two special features to these chapters: (1) We emphasize facts and real-life examples, beyond the usual discussion of scale economies. For example, we discuss the rapid rates of entry and exit of firms, even in stable industries, and the evolution of markets for new products, from the monopoly-inventor in the early years to sales of standardized products in competitive markets in later years. Another example is the actual strategies some firms employ to deter entry of new competitors, to separate markets by means of discriminatory pricing, or to form and enforce cartels and rig prices. (2) We weave in modern theory around traditional topics, such as the application of discriminatory two-part pricing, the application of monopolistic competition in modern markets, and the application of game theory to analyze

the behavior of rival firms. Again, the emphasis is on intuition.

Chapter 13 is a balanced treatment of regulation and antitrust legislation, emphasizing the evolution and application of laws over time and our changing perceptions of what should and should not be regulated. Chapter 14 is a comprehensive overview of the topics in information theory.

Chapters 15–19 thoroughly discuss factor markets, income determination and distribution, human capital, unionization, poverty, and discrimination. These chapters are distinguished by both their heavy reliance on data and the wide range of concepts and topics covered. Again, each chapter is as self-contained as possible. Complex issues, such as poverty, are put in a framework that enables students to make their own evaluations of good public policy. The discussion of unionization is complete and up to date—a review of the history of the movement, an analysis of its place in today's economy, and an emphasis on the positive role of modern unions.

Chapters 20–23 analyze the public sector. Chapter 20 examines externalities and public goods to explain the normative basis for government intervention. Chapter 21 is an unusually comprehensive treatment of environmental issues, emphasizing the role of the life sciences in developing solutions and the global scope of many problems. Environmental issues are a major topic of the 1990s, and most high school students enter college with a heightened awareness. A thorough economic analysis of the subject, connected to real-world issues, is critical to an introductory economics text.

Chapter 22 presents a basic picture of public finance—government revenues and expenditures, as well as the principles of taxation and expenditure. The discussion emphasizes federalism and the history of government growth.

Chapter 23 develops the "why" question of public choice: why do governments behave as they do? The chapter presents voting models, an analysis of elections and the behavior of legislators, and a realistic look at program implementation.

Macroeconomics (Chapters 24–35)

The first three chapters of the macro section (Chapters 24–26) provide an overview of macroeconomics, covering such basic concepts as the national income accounts and the important distinctions between money and financial assets on the one hand and real and nominal output flows on the other hand. The national income accounts are explained not so much for their own sake but rather as part of a framework for macro analysis.

Chapter 26 outlines the major characteristics of business cycles. This chapter reflects our commitment to provide students with a thorough grounding on the purpose of the macro theory that follows. Knowledge of business-cycle regularities is also important for its own sake; students should understand why, for example, new data showing a surge in inventories might lead to a bond-market rally as investors realize that inventories are rising because the economy is weak. This material is essential to understanding the facts that business-cycle theory must explain.

Following the three introductory macro chapters are two chapters on Keynesian theory. The first of these (Chapter 27) covers the Keynesian model of income determination and the basics of the Phillips-curve analysis of inflation. We have consciously put these two topics together in the same chapter to emphasize the integration of output and price determination, as economists always do in microeconomic analysis. The second of the two Keynesian chapters (Chapter 28) covers consumption and investment theory. This chapter explains how a deeper analysis of consumption and investment affects the results of the basic Keynesian model presented in the preceding chapter.

Chapter 29, on money and banking, appears between the Keynesian- and monetary-theory chapters. In a sense, money and banking belongs with the introductory macro chapters, and some instructors may want to cover the topic there. However, money and banking material is also appropriate as an adjunct to discussing macro theory, so we have placed the topic in this section, just ahead of the monetary theory chapters.

Following the two chapters on Keynesian theory and one on money and banking are two chapters on the monetarist theory of business cycles and inflation. Some instructors may prefer to cover these chapters (Chapters 30 and 31) before the Keynesian ones, as monetarist theory is easier in some respects. Also, of course, the quantity theory of money predated the Keynesian theory, and some of Keynes's ideas are best understood as a reaction to quantity-theory ideas.

Although the book is designed so that instructors may take up money first if they prefer, we have a strong conviction that a systematic treatment of stabilization policy should be delayed until the student has covered

both Keynesian and monetarist analysis. Macro policy today is always conditioned by the effort to walk a narrow line between output growth and inflation. Students cannot appreciate this policy tension without studying both Keynesian theory, with its emphasis on the real economy, and monetary theory, with its emphasis on the price level.

The last of the macro-theory chapters (Chapter 32) provides a synthesis of Keynesian and monetarist ideas. Most economists today have borrowed heavily from both Keynesian and monetarist traditions, so it makes good sense to examine them together. Not everyone will agree on the way we have done this, but the discussion should nevertheless serve as a vehicle for the instructor to put a personal stamp on where all the theory leads. This chapter also provides a clear statement of the critical unresolved issue in macroeconomics—uncertainty over the correct theory to explain the slope of the aggregate supply curve. Economists find it difficult to abandon their traditional approach to theory—that markets can be best understood under the assumption that economic agents are rational and well-informed—and yet no such theory (as yet) provides a satisfactory explanation of the business cycle.

Three chapters on economic policy (Chapters 33–35) follow the macro-theory chapters. The theory chapters contain some policy applications to help make the theory come alive, but it is best to delay a thorough discussion of stabilization until after students have macro theory under their belts.

The first of the stabilization chapters (Chapter 33) provides a general introduction to the goals of policy and the problems of lags and uncertainty. A chapter on fiscal policy (Chapter 34) follows; it covers traditional fiscal-policy topics such as the full-employment budget surplus. The chapter also includes material on the federal budget process, Gramm-Rudman, and supply-side fiscal policies.

The analysis of monetary policy (Chapter 35) includes a description of the Federal Reserve's policy process, the relative advantages of money and interest rates as guides to monetary policy, and a discussion of the changing behavior of velocity in the 1980s.

The World Economy (Chapters 36–39)

The last four chapters of the text are devoted to international issues. Of course, international examples and illustrations appear throughout the book, and we have emphasized that economic theory applies to all exchange, which of course includes international trade. The theory of comparative advantage is treated at the very beginning of the book and not simply relegated to a chapter on international trade. Nevertheless, there is a place for separate consideration of international economic issues.

Chapter 36, on international trade, presents the theory of comparative advantage in an explicitly international setting and explores theories of the sources of comparative advantage. Most of the trade chapter, however, is devoted to an analysis of trade barriers—how they work, their costs to consumers, and common arguments for them. International finance (Chapter 37) is inherently a rather specialized topic, and we devote a separate chapter to it. Topics include exchange rates, balance of payments, and international investment.

Chapter 38 takes up the matter of economic growth and development. It examines theories of the growth process, analyzes data from countries that have experienced growth, and studies the impact of growth on a society. It also examines how poor countries develop economically, or fail to do so, and what policies or strategies encourage development and economic growth.

Chapter 39 is the traditional study of comparative systems, focusing particularly on China and the Soviet Union. However, in view of the unusual changes and pressures in the late 1980s and early 1990s, the chapter recognizes that these systems are evolving rapidly.

Learning Aids in the Text

Several elements in the text are specially designed as tools to help students learn:

- **Topics in This Chapter** Every chapter begins with a list of the key concepts introduced in the chapter. It offers a convenient way to both preview and review the chapter's contents.
- **Focus** Real-world events and opinion in these boxed applications show how economic principles operate in everyday life.
- **Public Policy in Action** A special box on a public or controversial issue at the end of most chapters analyzes economic aspects of public life and politics.
- **Key Terms** The definitions of terms comprise a complete learning system. When a term is first introduced, it is printed in boldface in the text. In a nearby box is a formal definition, and the term is also listed at the end of the chapter with other

key terms. Finally, all key terms and their definitions are brought together in the Glossary at the end of the text.

- **Questions and Problems** These unusually lively and pertinent questions and problems were written by Albert E. Parish, Jr., who is also the author of the *Student Workbook*, the *Test Bank*, and the *Instructor's Guide*. Solutions to odd-numbered questions and problems are given at the end of the text; solutions to even-numbered problems are in the *Instructor's Guide*.

Text Supplements

Principles of Economics is supported by several supplements for students and instructors. All print supplements were written by Albert E. Parish, Jr., of Charleston Southern University.

The *Student Workbook* is especially strong. Each chapter offers students a varied menu of activities and learning aids, including a detailed review of the most important equations and graphs from the text. Other features include a brief explanation of important concepts, chapter objectives and summary, and approximately 40 questions and problems of varying difficulty. One or two problems in each chapter require the use of calculus; these are clearly identified. Complete solutions at the end of the chapter help students stay on track.

The *Test Bank* provides approximately 2,500 multiple-choice questions, many with graphs that the students must analyze. The *Test Bank* is available in four formats: IBM, Macintosh, Apple, and a print version. With the computerized versions, instructors can easily edit the questions or add their own, including graphics.

The *Instructor's Guide* consists primarily of the problem solutions not given in the text. It also includes chapter outlines and our rationale for each chapter—why we wrote it as we did.

The Transparencies set pulls together the most important graphs from the text, printed in two colors and ready for use with an overhead projector.

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Our greatest debt, however, as reflected in the dedication to this volume, is to our students and to our families.

J. V. H.
W. P.

Contents in Brief

Introduction to Economics

ONE

The Discipline of Economics

1

"There is no such thing as a free lunch." This statement is one of the most famous in modern economics. Is it correct? Economics is a science, and so you can challenge the claim with evidence. Did you have a "free lunch" last week? Does that lunch qualify as evidence that refutes the claim?

Maybe economists mean something a little different by the term than the ordinary person might. Let's look at a situation in which a free lunch might not be really free. Suppose Joe wants to borrow Sam's car and takes Sam out for a free lunch. This lunch is not really free for Sam, for he must either return the favor by lending his car or go through the pain of saying no to Joe. Here we have the idea of an *exchange*—one lunch exchanged or traded for one Friday night's worth of car use. Economists study exchanges, especially exchanges for money, such as lunches for money and car rentals for money. There are also exchanges *not* involving money: we call exchanges of one good for another barter. **Barter** is the exchange of one good for another good without the use of money. In a modern economy most exchanges involve money—for example, one hamburger for $1.75. Primitive economies rely on barter—for example, two freshly killed wild pigs for one stone ax.

> **Barter** is the exchange of one good for another without the use of money.

But is there no such thing as a *free* lunch? Is there no case on record where someone has eaten a free lunch with no expectation of a return favor or anything else? Of course. We have all had a free lunch with no return favor expected. But "no free lunch" is a little "in" joke for economists. *Somebody* has to pay for your "free" lunch; the lunch is not free for the society as a whole. Certain resources—hamburger meat, wheat for the roll, potatoes for french fries, milk for milk shakes, the labor for preparing the lunch, and so on—are used up when you eat the lunch. Other, less obvious resources go into the preparation of the lunch. Energy, probably gas or electricity, is used to cook the food, and this energy could be used instead to help heat a house in the winter time. And the labor involved is considerable. We tend to forget that

Topics in This Chapter

Scarcity and allocation

Fundamental economic problems
- What to produce
- How to produce it
- Who gets it

Positive and normative economics

The scientific method in economics

The concept of "economic person"

Goods, prices, and markets

Public policy

Organization of the market economy

Microeconomics versus macroeconomics

labor is the most important resource of all, as has been demonstrated by the speed with which nations devastated by war recover if they have skilled labor forces. Thus, when we look at the labor that goes into your free lunch, we need to ask what else can be done with the time of the farmer who grows the food, the time of the truck driver who delivers the food, and the time of the cook who prepares the food. The farmer might grow corn instead of wheat for the hamburger rolls. The truck driver might be a test pilot who can help to put new flight-control electronics in service. The cook might be a carpenter who can spend time building a house instead of preparing food.

How does it happen that people's time is devoted to producing this particular item, your lunch? Why do we have the number of "free" lunches and purchased lunches that we do? Why not more? Why not fewer? Why does the economy not produce more food and fewer cars, or more cars and less food, or more of both? Why does the United States produce food, and cars, and other goods in abundance, while China produces by comparison relatively small amounts of these goods even though its citizens want more than they have? That is, why are material goods abundant in some countries and not in others? Why are some people in a poor country rich and some in a rich country poor? The aim of economics is to answer these types of questions.

The dictionary definition of economics is "the science dealing with the production, distribution, and consumption of wealth." It is often easiest to think of abstract concepts such as production, distribution, and consumption in terms of specific examples. When economists study production, they are interested in "goods": the output from factories (such as cars rolling off Detroit assembly lines), the output from natural resources (such as coal from mines in West Virginia), and services (such as meals in restaurants or lectures in university classrooms). Economists study *how* these goods are produced. Are the firms large or small? Do they have computerized operations? Are goods produced by hand, on assembly lines, or by robots? **Production** is the process of using material and labor inputs to create goods and services.

> **Production** is the process of using material and labor inputs to create goods and services.

What about distribution? **Distribution** refers to who gets what part of a society's output. Suppose we were to add up all the money that firms receive from the goods and services they sell over the course of a year. What happens to that money? Much of it is paid out as wages and salaries to employees. These companies also pay out money to rent land, to buy materials, to pay interest to those who have lent them money, and to pay dividends to their owners. Economists study how the total amount of money these firms pay out is distributed among members of society. Why do some jobs pay very well while other jobs pay very poorly? Who gets the money paid as rent on land, interest on loans, and dividends on stock? If we know who gets what, we can then begin to understand why some people are rich and some are poor.

> **Distribution** is the division of society's output among its members.

Finally, what about consumption? By **consumption** we mean the eating up or using up of something of value, or the enjoyment of services from durable goods. Think of all the various goods and services you buy, and all those your friends buy, and all those you know others buy. There are everyday goods such as food and clothing. We buy shelter services when we pay rent for a house or an apartment. We buy cars, video cassettes, concert tickets, airline travel, and hundreds of other things. Although the dictionary definition of consumption is "using up," the economist's definition is broader. People enjoy the services of lighthouses and famous paintings, neither of which are "used up" by our looking at them, so economists also include the use of these services in the concept of consumption. Why do we buy the precise list of things we do? Why do people in different countries buy different things? Some of the answers are obvious: it is no mystery why people in Norway buy many fewer air conditioners than do people in Florida. But some of the answers are not obvious: why do people in Europe generally drive smaller and more fuel-efficient cars than do people in the United States? Economists study consumption behavior to try to understand why people decide to buy the goods they do. They study why some people decide to save part of their income by putting money into savings accounts and pension funds rather than spending every dollar that comes in.

> **Consumption** is the eating up or using up of something of value, or the enjoyment of services from durable goods.

What to produce, how to produce it, who gets it—all of these involve *choices*. People as consumers choose how to spend their incomes. People as workers

choose what career to pursue and how hard to work. People as firm managers choose what goods their firms produce and how to produce them. People as government officials choose how the government taxes and how tax revenues are spent. Focus 1 provides an unusually clear statement by a government official of the importance of making choices. (Government officials usually prefer to promise high government spending and low taxes—something for nothing, a free lunch—rather than to emphasize the need for choices.) Economists study the choices people make and why.

Economics is a big subject. It is not true that everything worthwhile costs something. Some of the best things in life are free. But some of the best things in life are costly—a university education, for example. Why do goods, such as cars, and services, such as education, cost so much? Why can't they be cheaper? Is someone getting "ripped off"? Economics deals with all these questions. If you care about any of them, you will enjoy this subject.

Scarcity and Resource Allocation

Think of any object you paid money for within the past year—a car, a tank full of gas, ticket to a rock concert, a steak dinner, or whatever. Because you paid money for the good (meaning a thing or service), we will assume that it had value to you. (We will put aside your mistakes: you may also have paid good money for a new-style haircut, only to have your hair butchered.)

Let's consider a lobster dinner. Why are there not more of them available? Why do they cost so much? The number of lobsters in the ocean is limited, and over the years heavy fishing has reduced their numbers. Each lobster boat today must go farther off shore than was necessary in the past, and gathers fewer lobsters in a day than before. Those who trap lobsters must get a high enough price to make it worthwhile to go to sea in search of them.

In economists' jargon, an item is a **scarce good** if valuable resources, such as labor time, fuel, and equipment, must be devoted to the production of the item. Some scarce goods such as art objects cannot be reproduced at all; a reproduction Picasso painting is a different good from an original Picasso. Scarce goods can only be obtained through exchange for other valuable goods. But take note—a scarce good is not the same thing as a rare or uncommon good. The basic idea is that an individual or society must give up something to obtain a scarce good.

The opposite of a scarce good is a free good. An item is a **free good**—that is, not scarce—if it can be obtained free or with no effort. Air is a traditional example of a free good, because we usually think that we do not need to give up anything to obtain air. Air may be a free good, but in many urban areas air that is clean is no longer a free good; to get clean air we must now travel to the countryside, or spend large sums installing pollution control equipment in factories and cars.

Scarce goods require valuable resources for their production.

Free goods require no productive resources and are available in unlimited supply to anyone who wants them.

Scarcity is not a condition that arises only when goods trade for money at certain prices. Communal societies and organizations must also cope with scarcity. Consider a family in which chores are somehow divided among family members without any explicit payment of wages. Don, the father, does the grocery shopping and Diane, the mother, manages the family's finances and pays the bills. The children have certain duties, such as cooking, washing dishes, doing the laundry, cutting the lawn, and cleaning the house. In this example, the products are services—cooking, washing, and so forth. These services are not in unlimited supply or automatic; cleaning the house requires someone's effort—dishes do not wash themselves. All these services require a valuable resource—time—that is scarce. If Kim did not have to cut the lawn, she could do something else with her time—something enjoyable or useful, such as watching television or reading an economics text.

Whether a good is scarce or free is not an inherent characteristic of the good itself. Free goods are available with no expenditure of effort or resources, but the conditions under which we can obtain a good, such as clean air, may change over time. Conditions may also differ from place to place. Ice is a free good in much of Alaska but not in the Sahara Desert. Coconuts may be a free good on a lightly inhabited South Seas island. Because you can pick one up at any time, no one could successfully charge a price for coconuts. Coconuts are not free goods in New York because of