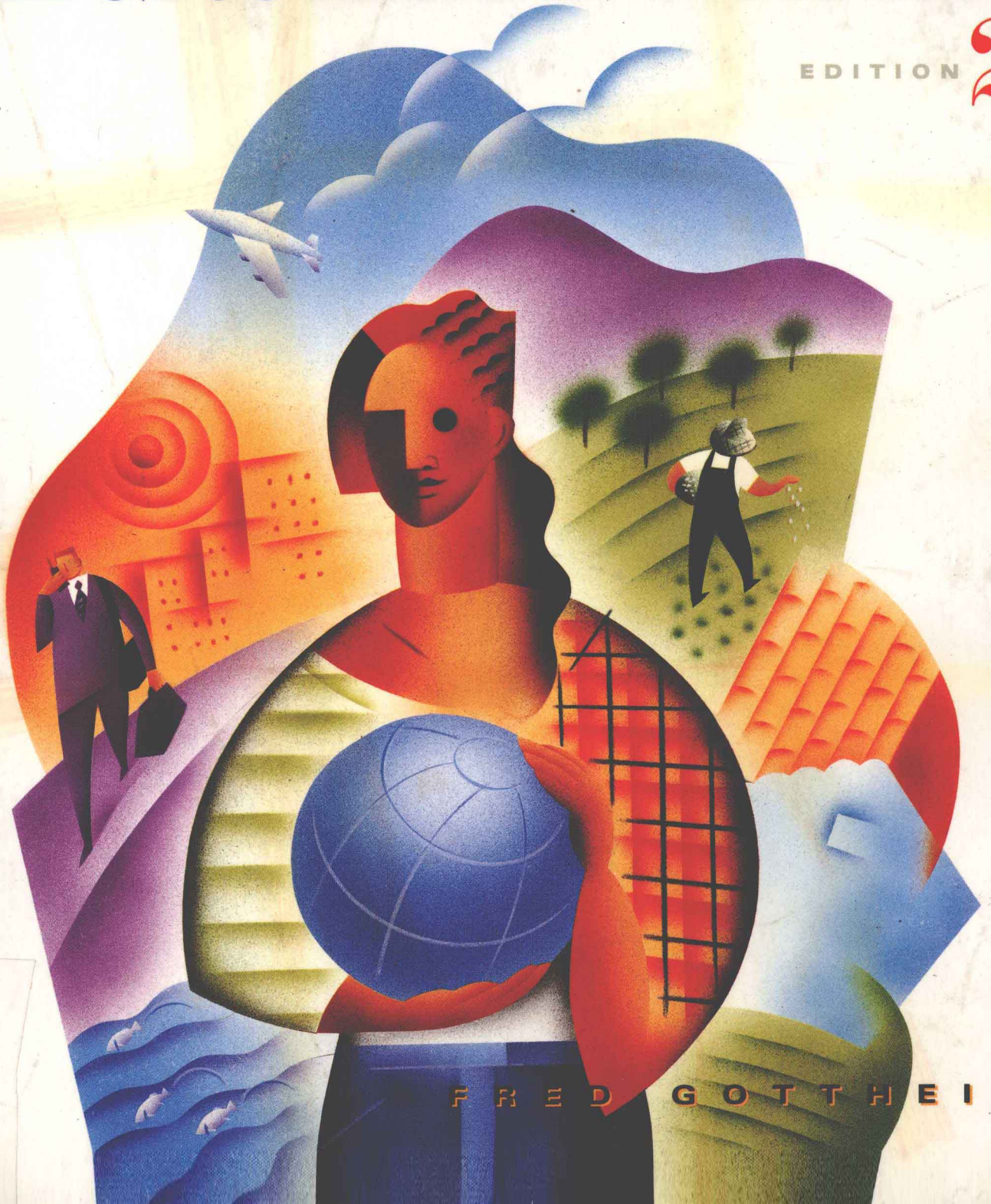


PRINCIPLES OF
MICROECONOMICS

EDITION **2**



FRED GOTTHEIL

E D I T I O N

2

principles of microeconomics

FRED M. GOTTHEIL
UNIVERSITY OF ILLINOIS



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To my wife, Diane

**To my children, Lisa and Joshua,
who grew up together, not just as
sister and brother, but as best friends**

P R E F A C E

At the end of fall semester a few years ago, I told my class of 1,000 Economics 101 students that I wanted to see how much of the course they would be able to recall four months after the final exam. I asked them to take a post-final exam in early April, covering the same material. A few hundred showed up to take the April exam. The results were instructive, and perhaps not too surprising.

These were very bright students. The scholastic entrance requirements to the University of Illinois are quite high. During the semester, they were able to handle the math and graphs without difficulty. Yet, when it came to the April exam—only four months after the final—there was much confusion explaining, and even more graphing, market equilibrium, national income determination, and other basic ideas.

If I ever thought that the analysis offered in lectures and in the textbook is what students really ingest during the semester, that thought was very quickly dispelled.

Why is the half-life of what we teach so short? Are we trying to teach too much? *Is our basic principles course getting away from being an analysis of basic principles?* Have we forgotten that there is an opportunity cost every time we add material to a course or textbook? Are our textbooks more plumbers' manuals on technique than analyses of a social science subject? What do we want our students to know?

I wrote this textbook with these questions in mind. It is written for the student, not for the professor. These are two very different readers. To my surprise, I found it difficult to keep the focus on the student who comes to the material without prior knowledge. It was much easier to write to the professor. Most of my rewriting had to do with correcting the focus. Much of the differences in style, content, and depth of analysis between my text and the others on the market reflects this focus. My preference was to sacrifice the number of topics for depth and to present the basics in as nonthreatening a style as possible. I tried always to keep the analysis within reach of students. Make it real, even personal. Allow them to enjoy the subject matter, not just to think about the coming exam.

We absorb ideas in many ways: through our heads, our hearts, and our innards. An idea that stirs you emotionally has staying power. If you can feel it in your bones, it becomes more than an intellectual exercise. I kept that in mind in every chapter and in every paragraph written. The style is intentionally conversational, but the discussion is always serious. If the story is really understood, it will be remembered. Economists have something to say. That's what my textbook is about.

MICROECONOMIC ANALYSIS

The microeconomics chapters use continuing scenarios. I put the student on an island economy where fish is the staple food and commercial fishing a commonplace economic activity. The student sets up and runs a fishing firm. Fishing is something students can easily visualize and imagine themselves doing. The technology involved is relatively uncomplicated and the product—fish—is familiar and about as close to a homogeneous product as there is. The competition that takes place in the fish market, with price responding to changes in demand and supply, is also very immediate.

The fishing scenario anchors the chapter on supply and demand and several chapters that follow. It is used in analyzing price controls, appears in Chapter 7 on business organization, is the centerpiece in Chapter 8 on costs of production, and appears later in Chapter 9 on maximizing profit. Using this format, the economic concepts build on each other.

In the chapters on price determination, the analysis shifts to the ice-making industry (ice is used by the fishing industry). The student, still in the fishing world of earlier chapters, sees the ice-making firm first as a monopoly. Then, as more firms enter with product differentiation, the monopoly dissolves into monopolistic competition, and finally into perfect competition. In the chapters on factor pricing, the setting changes completely to the coal mining industry in Harlan County, Kentucky. The same coal mining scenario appears in Chapter 15 on wage determination under competitive conditions, in Chapter 16 on monopsony and unions, and finally in Chapter 17 on interest rate determination.

Teaching the $MR = MC$ Rule

The importance of the profit maximization rule of $MR = MC$ cannot be overstated. In most texts, this paramount idea first appears in the context of price determination in perfect competition. It reappears again in each of the market structure chapters. I was never happy with this traditional approach. Why? It forces students to fight their way through to $P = MR = MC = ATC$ while simultaneously trying to grasp marginal revenue analysis and digest the significance of the $MR = MC$ rule. That may seem like a reasonable enough exercise to professors. However, to beginning students and nonmajors—who were probably warned through the grapevine that economics is difficult and boring—this presentation of the material may be ample confirmation. I think there is a better way to introduce one of the most important ideas we teach in microeconomic theory.

In this book, a complete chapter—“Maximizing Profit”—is devoted to the idea. This chapter appears before we discuss the intricacies of market structures and price determination. Profit maximization is followed by Chapter 10, “Identifying Markets and Market Structures,” which examines the outstanding characteristics of each market structure. This allows for an early comparison of market structures. The stage is then set for price determination in each market, *which is done in one chapter*. With the $MR = MC$ rule already thoroughly developed and the various markets described, $MR = MC$ is both the organizing principle of the chapter and the universally applied rule. Price analysis focuses on this one central idea.

USE OF PERSONAL NAMES

I believe that economics is about people. As you read through the chapters, you can't help but see many, many names that personalize the discussion. Claudia Preparata buys fish, Diane Pecknold inherits a tobacco farm, Charles Edwards owns a coal mine, Nick Rudd is in the ice-making business. These, along with over 90 more, are real people. They are all friends of my son Joshua, who died in 1989, at age 19, a victim of lymphoma. The textbook is my way of honoring Josh and honoring as well the beautiful people who were a part of his life.

THE TEXTBOOK'S ACCESSORIES

This edition offers instructors a greatly expanded and improved package of supplements. To learn more about these supplements, visit the Gottheil Economics Web Site (<http://gottheil.swcollege.com/>), contact your South-Western/ITP sales

representative, or call the Preferred Economics Professor Hotline at South-Western College Publishing: 800-327-ECON.

Supplements Sampler

Decide which supplements you really need without foraging through stacks of books. The Supplements Sampler provides a description and sample of the supplements described here.

Supplements Sampler ISBN: 0-324-00223-8

Study Guide: Tools for Success in Economics

A Study Guide is the students' principal *reality check*. Do they really know the material? It must be not only student-friendly, but a companion piece that reflects the text's heart and soul. Too often, study guides are written by individuals whose connection to the text author is via e-mail. The study guide becomes generic. Not so here. David Wishart, professor of economics at Wittenberg University, who wrote the Study Guide, is not only a close friend but an outstanding teacher who began his teaching career working with me in the principles course at Illinois. His Study Guide captures the spirit of the text, making it that much easier for students to use.

The Study Guide, available in a comprehensive version or in macroeconomics and microeconomics versions, explains, reviews, and tests the important principles introduced in every chapter. Featured sections include Chapter in a Nutshell, Concept Check, Am I on the Right Track?, Graphing Tutorials and Graphing Pitfalls, True/False Questions, Multiple Choice Questions, Fill-in-the-Blank Questions, and Discussion Questions.

Comprehensive Version ISBN: 0-538-86822-8

Microeconomics Version ISBN: 0-538-86826-0

Macroeconomics Version ISBN: 0-538-86827-9

Test Bank

Fred Carr of the University of Akron, with my assistance, has thoroughly revised and rewritten the Test Bank. Approximately 95 percent of the more than 6,000 questions are new to this edition. Each chapter contains about 165 multiple choice questions, 25 true/false questions, and up to 10 essay questions.

Microeconomics Test Bank ISBN: 0-538-86825-2

Macroeconomics Test Bank ISBN: 0-538-86828-7

Thomson World Class Learning™ Testing Tools

All of the questions in the printed Test Banks are included in electronic form in this easy-to-use test creation software, compatible with Microsoft Windows. Thomson World Class Test enables users to add or edit questions, instructions, and answers; select questions by previewing the question on the screen; let the system select questions randomly; select questions by question number; view summaries of the test or the test bank chapters; set up the page layout for tests; and print tests in a variety of formats.

In addition, Thomson World Class Test enables instructors to create and administer tests and quizzes online, whether over the Internet, a local area network (LAN), or a wide area network (WAN).

Microeconomics World Class Test ISBN: 0-538-86823-6

Macroeconomics World Class Test ISBN: 0-538-86824-4

Transparency Acetates

A set of approximately 200 full-color transparency acetates has been created from the key graphs and diagrams in the text. I chose the transparencies to illustrate the key ideas in the principles course.

Microeconomics Transparency Acetates ISBN: 0-538-86831-7

Macroeconomics Transparency Acetates ISBN: 0-538-86832-5

PowerPoint Slides and Ready Notes

Ken Long of New River Community College has developed comprehensive PowerPoint slides to accompany each chapter in the text. Many of the slides reproduce the graphs and diagrams in the book. Printed copies for note taking, called Ready Notes, are available for students to purchase.

PowerPoint Slides ISBN: 0-324-00477-X

Microeconomics Ready Notes ISBN: 0-538-86835-X

Macroeconomics Ready Notes ISBN: 0-538-86836-8

Student Tutorial Software

Students may take advantage of two premier packages of tutorial software packages, both available to download at no charge from the Gottheil Economics Web Site (<http://gottheil.swcollege.com/>). In addition, instructors may request the software to network or copy and distribute, or your ITP/South-Western Sales Representative can help you create a package of the textbook and the software. Contact your sales representative for more details.

ECONOMICS GUIDE TUTORIAL SOFTWARE, VERSION 2.0 Robert Brooker of Gannon University has developed Economics Guide Tutorial Software, compatible with Microsoft Windows. Economics Guide software, through the use of a sophisticated testing engine, presents students with an unlimited supply of quizzes over the topics covered in each chapter. Students are able to track and record their progress through each chapter. Economics Guide software is perfect for review or for test preparation.

Economics Guide Tutorial Software ISBN: 0-538-86830-9

SOUTH-WESTERN ECONOMICS TUTORIAL SOFTWARE, VERSION 4.1.2 James T. Doak has developed South-Western Economics Tutorial Software, compatible with Microsoft Windows. The software is organized around the major topics covered in microeconomics and macroeconomics, and each topic provides a series of interactive graphing exercises for students to test their understanding of key concepts. Students are able to track and record their progress through each chapter.

South-Western Economics Tutorial Software ISBN: 0-324-00820-1

Graphing Primer

Among the more difficult challenges students face in an economics course is the use of graphs. The Graphing Primer helps students master the process of creating, interpreting, and understanding graphs.

Graphing Primer ISBN: 0-538-86834-1

CNN Economics Video

The CNN Economics Video provides a variety of brief video clips, taken from CNN programs, to illustrate various aspects of economics.

CNN Video ISBN: 0-538-86839-2

Instructor's Manual

An Instructor's Manual is the one private connection between the classroom instructor and the author. As the text author, I felt it was important to the instructor, particularly the first-time instructor, that I write the manual myself. The manual is a companion piece to the text. It provides ideas on how to approach each chapter, tips on how to present the chapter's material, and alternative illustrations that can be used to explain points of theory and policy. It also discusses how to turn student questions into teaching opportunities. In each chapter of the manual, the corresponding text chapter outline and its key terms are included for easy reference. The manual also provides detailed answers to the many questions that appear at the end of each chapter in the text.

Instructor's Manual ISBN: 0-538-86821-X

Gottheil Economics Web Site (<http://gottheil.swcollege.com/>)

The text has its own support site—the Gottheil Economics Web Site. The site provides updates to the topics discussed in the text and to the addresses given in the Internet applications. Also available are a number of supplements, such as the PowerPoint slides and the student tutorial software, to download. And if you have questions or comments about the book, share them with me through the “Talk to the Author” section. Take a look and come back often to see what new features have been added, or visit the South-Western Economics Resource Center (<http://economics.swcollege.com/>) to discover other teaching resources from South-Western College Publishing.

Economics Alive! CD-ROMs—Interactive Study Guides for Economics

**Willie Belton, Richard Cebula, John McLeod,
Georgia Institute of Technology**

Economics Alive! CD-ROMs, compatible with Microsoft Windows and Macintosh, offer you and your students the high-tech, high-fun way to teach and learn economics. These multimedia CD-ROMs combine interactive lessons, graphing tools, and simulations to bring microeconomic and macroeconomic concepts to life. To learn more about these CD-ROMs, visit the Economics Alive! Web Site (<http://econalive.swcollege.com/>).

Microeconomics Alive! CD-ROM ISBN: 0-538-84650-X

Macroeconomics Alive! CD-ROM ISBN: 0-538-86850-3

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Thomson World Class Learning™ and South-Western's Cyberclass—to create an online course or a Web site for your traditional course. Visit the South-Western Economics Resource Center (<http://economics.swcollege.com/>) or contact your ITP/South-Western sales representative to learn more about these exciting tools.

ACKNOWLEDGMENTS

I am grateful to many people for help and encouragement throughout the development of this textbook. Many came to the project in a strictly professional capacity; most ended up as good friends. I owe them more than they believe is their due. At the beginning, George Lobell was enthusiastic about the idea of the textbook and believed that it would make a difference in the profession. He read many chapters, stayed in close touch, and still does. I thank this textbook for introducing me to George. David Wishart was a dear friend before we started the project, and working together on this textbook added another dimension to our friendship. Jack Calhoun, South-Western's economics editor, sold me on the idea of the team concept of publishing. It was Kurt Gerdenich, the developmental editor at South-Western, who saw this second edition to completion. He contributed significantly to the text's Web sites and its Economic Consultants features. Thomas Sigel carefully managed and helped improve the comprehensive supplements package that accompanies this book. Lisa Lysne has contributed her insight and deftly handled the marketing campaign. Finally, Mike Stratton, Peggy Buskey, and the staff at Lachina Publishing Services played major roles in translating my word-processed drafts and rough sketches into the pleasing book you hold in your hands.

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Birmingham*

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Finally, I want to thank Peter Schran, my colleague and close friend at Illinois, whose advice always made sense although it sometimes took me a while to appreciate it.

Fred Gottheil
University of Illinois

TO THE STUDENT

Economics is a part of your daily life, a part of how you make everyday decisions, a part of the way you think about and understand the world around you. Curious? If you are, this textbook is for you. There are no endless lists of facts here, no dry and obscure examples. Instead, you'll find stories, conversations, explanations, and powerful ideas. These are the tools and techniques that effectively teach economics.

Economics must be real, even personal. To truly understand economics—not just learn economic concepts and terminology, but understand the essence of economic thinking—you

must relate on an emotional level to what you are learning. You must absorb the ideas in this book through your head, your heart, and your innards. Feel the ideas in your bones and relate them to what you know best—your life. Only then will you understand and remember economics, and only with this accomplishment will you enjoy your course in economics.

You will find over the next few months that economics and economists have something important to say about how the world works. And with hard work, at the end of this journey you will be able to meaningfully join this conversation.

To help you along the way, I have included several learning aids in each chapter. Some learning aids demonstrate the relevancy of what you are reading, some teach you how to apply economic concepts to your life, and some test your understanding of the principles presented in the chapter. Look over the next few pages to become familiar with these tools. And enjoy! Economics is an exciting, inspiring, and relevant subject. —*Fred Gottheil*



LEARNING AIDS CONTINUED

CHECK YOUR UNDERSTANDING:

Check Your Understanding features raise questions you should be able to answer if you understand the material. For help, arrows point to the portion of the text that contains the explanation.

MARGIN DEFINITIONS:

Margin Definitions define important vocabulary introduced in the text.

ON THE NET: Economics on the Net margin notes show you where to find and how to use the best economic resources on the Internet. You'll be surprised what lies at your fingertips.

ECONOMIC CONSULTANTS:

Economic Consultants features place you in the role of the economist! Economic Consultants is a fictional economic research and analysis firm run by students. In your role, you need to prepare reports that address fundamental economic issues. Useful Internet addresses are included to help you with your research and analysis.

CHECK YOUR

Why does scarcity force people to make choices in spite of their insatiable wants?

UNDERSTANDING

THE BASICS OF ECONOMIC ANALYSIS

government? (Don't forget, not all economic goods and services are the same!) They consume some of the economy's goods and services, but if they are unemployed, they aren't providing resources. Where, then, do they get the money? How does the model account for retired people? They no longer work, but they continue to consume. Where in the model do we find the economy's exports and imports? Where are savings and investments?

Students! The circular flow model of Exhibit 1 isn't designed as a complete picture of our economic reality. In fact, it ignores a host of major economic institutions and activities.

But these omissions are far from being shortcomings of the model. In fact, they illustrate the model's strength. The model is designed to reflect one basic fact about how the economy works: It shows how money, goods, and services flow between households and firms through resource and product markets.

Most of the economic models analyzed in this text are no more complicated than this circular flow model. Some, like Exhibit 1, are portrayed pictorially, others graphically, and still others take the form of simple algebraic expressions. For example, economists build models of a firm to illustrate how market prices are determined. Other economic models are designed to show how unemployment is determined. Other models illustrate why some nations grow faster than others and why some do not grow at all. Most of these models are expressed graphically. The one thing all of these models have in common is the use of abstraction, that is, the use of simplified assumptions to distill the essence out of the complicated economic realities they study.

Micro- and Macroeconomics

Economists who look at the real world and create simple models to illustrate what they see do not necessarily look at the same things nor do they ask the same kinds of questions. **Microeconomics**, for example, looks at the behavior of individual households and firms. It asks, Why do firms produce what they do? How do they price their goods and services? How do markets work? What distinguishes competitive from noncompetitive markets? How are resource prices such as wage rates, interest rates, and rent determined? How do firms make profits? What determines people's demands for goods and services?

As these questions suggest, the focus of microeconomic analysis is on the individual. Microeconomics most often looks at consumers and producers. The economy is regarded as a composite of interacting individual economic units. To understand how the economy functions, then, requires an understanding of how each of these individual units behaves and interacts.

Macroeconomics, on the other hand, tries to explain a different set of facts about the economy. It focuses attention on the behavior of the economy as a whole. To macroeconomics, the economy is more than a single collection of its individual parts. It has character. It has its own vitality and history. It has an identifiable behavior. The macroeconomic unit of analysis, then, is the economy itself. Then ask, for example, Why do national economies grow? Why do some grow faster than others? What determines a nation's savings, its investments, or its consumption? Why does it experience inflation? Why does it generate unacceptable unemployment? Why does it fluctuate from periods of economic prosperity to periods of economic recession?

Microeconomics
A branch of economics that analyzes individual units and their interactions. It focuses on the behavior of individual households and firms and on the interactions between them.

Macroeconomics
A branch of economics that analyzes the behavior of the economy as a whole.

ECONOMIC RESEARCH AND ANALYSIS BY STUDENTS FOR PROFESSIONALS

Economic Consultants

Computer NET is a series of computers and software. The owners of Computer NET are excited that they do not understand the economics of the computer industry or the economic events that affect the industry.

The owners of Computer NET have approached Economic Consultants to advise. Prepare a report for Computer NET that addresses the following issues:

1. In general, what resources are available?
2. What sources of economic news and analysis are available for the national economy? For the regional economy where you currently are?
3. What economic resources for the computer industry, if any, are available on the Internet?

You may find the following resources helpful as you prepare this report for Computer NET:

- Yahoo! (<http://www.yahoo.com>), Excite (<http://www.excite.com>), and Lycos (<http://www.lycos.com>)
- Research for Economists on the Internet (<http://www.researchfor-economists.com>)
- ERM (<http://www.erm.com>) and News (<http://www.news.com>)
- ERM (<http://www.erm.com>) and News (<http://www.news.com>)

In this report, economic forecasting is similar to meteorological forecasting. Economic analysis is typically conditioned on the assumption of events, just as that is, that everything that remains unchanged, but it usually doesn't. The economists' world is one of uncertainty, and economists cannot take into account unforeseen future events that come to bear on their analysis. Explaining why previous economic forecasts were inaccurate doesn't build confidence. Instead, people think twice about whether economists really know more about the economy than any body else. They do.

In the past fifty years, there has been a continuing, dramatic enrichment of our economic knowledge. New and more sophisticated models have been developed to represent our changing world. Also, the growth of economic data along with the ability to apply modern statistical methods to test models have created a wealth of economic data. In microeconomics, quantitative research on international trade, tax incidence, and market and investment behavior is adding more information to an already rich literature. New theories about uncertainty have given economists new insights into microeconomic questions.

ADDED PERSPECTIVE:

Added Perspective boxed features show how the economic principles introduced in the chapter relate to real-life events. Most Added Perspective features include a question for consideration and Internet addresses for further research.

CHAPTER REVIEW & KEY TERMS:

Chapters end with a Chapter Review, a brief recounting of the principles covered in the chapter with explanation, and Key Terms, a list of the important vocabulary introduced in the chapter.

QUESTIONS & PRACTICE PROBLEMS:

Questions test your understanding of the qualitative concepts covered in the chapter, while Practice Problems test your ability with quantitative techniques. **PRACTICE TEST:** To wrap up the chapter, a Practice Test presents 8-10 multiple choice problems, like those typically found on exams, that address the key principles in the chapter. Answers are found in an appendix at the end of the textbook.

LEARNING AIDS CONTINUED

DEMAND AND SUPPLY

selling to pay the \$6 price. As we see in panel A only 100 people out of the 250 who want fish are willing, among them Faye, Jackie, and Kim. Wayne's thermostat, set at \$5, shows him done. So, too, is the last of the market.

If the supply curve shifts to the left, the equilibrium price rises to \$7 and quantity falls to 75. There are now fewer fish to eat on our. Faye and Jackie are among the 75 willing to pay the \$7 price. Kim's thermostat, still set at \$6, shows her out of the market.

CHAPTER REVIEW

1. Consumers demand reflects people's willingness to buy a good. People supply goods on the presumption that there will be a demand for them.
2. The demand for a good expresses people's willingness to purchase specific quantities at specific prices. The law of demand is the inverse relationship between price and the quantity demanded. As the price of a good decreases, the quantity demanded increases and vice versa.
3. Graphs translate tabular data into quantities demanded at different prices into individual demand curves. Demand curves have negative slopes because price and quantity demanded are inversely related.
4. Market demand curves represent the sum of individual quantities demanded at different prices.
5. Supply involves production activity over a period of time. The market for a good is a time period so short that the quantity supplied cannot be changed to match what price is paid to the supplier. Therefore, quantity supplied is constant through the market day, regardless of price.
6. Market price is determined by the intersection of demand and supply. Because quantity demanded and quantity supplied are equal at the market price, it is also called equilibrium price. If price is above the equilibrium level, an excess supply results and creates competition among suppliers, which drives price down to equilibrium. If price is below the equilibrium level, an excess demand results and creates competition among demanders, which drives price up to equilibrium. There is no excess demand or excess supply at equilibrium. The market clears.
7. In a time period longer than the market day, suppliers can respond to changes in price.

The short run is a time period long enough to allow suppliers to make partial adjustments to production in response to price changes. The long run is a time period long enough to allow suppliers to completely adjust their production to changes in price. The longer the time period, the more flexible the response by suppliers to price changes. Thus, at time period, the supply curve shifts from a vertical line to a flatter, positively sloped line.

Changes in demand and supply cause changes in the equilibrium price. When demand increases (shifting the demand curve to the right), excess demand emerges at the original equilibrium, causing price to rise to a new and higher equilibrium where quantity supplied once again equals quantity demanded. When demand decreases (shifting the demand curve to the left), the excess supply at the original equilibrium causes price to fall to a new and lower equilibrium where quantity supplied once again equals quantity demanded.

Changes in demand are induced by changes in income, changes in tastes, changes in the prices of other goods, changes in expectations about future prices, and changes in population size. Complementary goods have inverse relationships such that an increase in the price of one results in a decrease in the quantity demanded of the others (for example, bread and butter). Substitute goods, on the other hand, have direct relationships among themselves such that an increase in the price of one results in an increase in the quantity demanded of the others (for example, bread and bagels).

Changes in supply cause changes in the equilibrium price. When supply increases (shifting the supply curve to the right), excess supply

INTRODUCTION

- such questions as what determines national economic growth and why unemployment and inflation occur.
- Positive economic statements are statements of fact. For example, "When the price of pop

corn increases, the quantity demanded of popcorn decreases." Normative economic statements are statements expressing value judgments. For example, "The price of popcorn is too high."

KEY TERMS

Natural resources
Economics
Consumer sovereignty
Economic model
Microeconomics

Central problem
Circular flow model
Household
Firm
Macroeconomics
Positive economics
Normative economics
Economic theory

QUESTIONS

1. Does scarcity always require us to make choices? Why or why not?
2. Is the idea of "infinite wants" unreasonable? Can you imagine a situation in which you have everything you want? What about everything you need?
3. What is the difference between renewable and nonrenewable resources?
4. Do you think we should be conserving our resources for future generations? After all, there is only so much of us on earth. List the main arguments you can make in favor of conservation. List arguments opposed to conservation.
5. What do you think would happen to our idea of the economic problem if we discovered a natural resource that could regenerate itself any number of times and could be transformed by labor into good or service? Before answering, make sure you understand what the basic economic problem is.
6. What is economics? Why is economics considered one of the social sciences? What are some of the other social sciences? What do social scientists study?
7. What does *scarcity* mean? Why is the concept central to economics? Give an example.
8. What defines an economic model? In what way is the circular flow model a simplification of reality? Why would economists want to simplify reality?
9. What is the difference between resource markets and product markets? Give examples.
10. Consider these two statements: "Fifteen percent of our people live below the poverty line" and "Ten million people live below the poverty line." Can you distinguish the positive economic statement from the normative economic statement in these two statements? Compose two additional examples of each.
11. Suppose you took through the catalog of abstracts in recent issues and find two that particularly appeal to you. Economic 300, the study of the health care industry, and Economics 305, the study of why economies grow. Which would you take to satisfy the college's requirement for a microeconomics course?
12. Suppose your economics professor predicted that the rate of inflation would be 5 percent by the time you took the first economics exam. Instead, the inflation rate was twice the predicted rate. Would you categorically blame the professor as a poor predictor and, perhaps worse, an unkindhearted economist? Why or why not?
13. Identify each of the following belongs (report in brief, listing in which direction) in the circular flow model: automobiles, rice from General Motors, a new automobile, and a \$100 rebate payment you receive from General Motors.
14. Consumer sovereignty is an integral part of a democratic society. Why?

DEMAND AND SUPPLY

ADDED PERSPECTIVE

Taste matters, especially to the breakfast cereal industry. In 1996, consumers spent almost \$8 billion on breakfast cereals, and cereal manufacturers spent more than \$600 million on advertising. Much of this buying and selling was to children, who are the primary of breakfast cereal. Many consumers, especially parents, buying and cereal products willing on the basis of nutrition.

Not only think that consumers would demand nutrition, but that's the case. In 1996, *Consumer Reports* found that, according to the nutrition labels on popular cereals, the following were the most healthful cereals: General Mills' Cheerios, Kellogg's Raisin Bran, and Post's Raisin Bran. These cereals were high in fiber and low in sugar. Nutritionists and health experts agree that a diet rich in fiber and low in sugar is good for health. However, these cereals are not the most popular. In fact, they are not even in the top 10. The most popular cereals are those that are high in sugar and low in fiber. This is a clear example of the difference between what consumers want and what they buy.

Why? There is a lot of research on this. One study found that children who eat cereal with a lot of sugar are more likely to be overweight. Another study found that children who eat cereal with a lot of fiber are more likely to be healthy. These studies suggest that parents should choose cereal that is high in fiber and low in sugar for their children. However, many parents choose cereal that is high in sugar and low in fiber because it is more popular. This is a clear example of the difference between what consumers want and what they buy.

So, how can parents choose cereal that is high in fiber and low in sugar for their children? One way is to look at the nutrition labels on cereal boxes. The nutrition label tells you how much sugar and fiber are in a serving of cereal. Parents can use this information to choose cereal that is high in fiber and low in sugar for their children. Another way is to look at the ingredients list on cereal boxes. The ingredients list tells you what is in the cereal. Parents can use this information to choose cereal that is high in fiber and low in sugar for their children. These are two ways that parents can choose cereal that is high in fiber and low in sugar for their children.

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PRODUCTION POSSIBILITIES AND OPPORTUNITY COSTS

8. Suppose government economists, on the request of the president, construct a production possibilities curve for the United States. Suppose also that two economists produce a report that the United States might be able to shift its production possibilities curve outward. Which of the following is most likely to be the reason for this?
 - a. The United States has discovered a new source of raw materials.
 - b. The United States has discovered a new technology.
 - c. The United States has discovered a new market.
 - d. The United States has discovered a new source of labor.
9. The production possibilities curve for the United States is shown in the figure. If the United States shifts its production possibilities curve outward, which of the following is most likely to be the reason for this?
 - a. The United States has discovered a new source of raw materials.
 - b. The United States has discovered a new technology.
 - c. The United States has discovered a new market.
 - d. The United States has discovered a new source of labor.

PRACTICE PROBLEMS

1. Fill in an appropriate number (there can be more than one) for the missing number of households in each row and graph the following sets of production possibilities.

Good	Household A	Household B	Household C
Wheat	100	200	300
Corn	200	100	100
2. Graph the following sets of production possibilities and explain why the line of increasing costs is convex.

Good	Household A	Household B	Household C
Wheat	100	200	300
Corn	200	100	100
3. Production costs (in labor hours) of oranges and peaches in Florida and Georgia are shown in the table.

State	Oranges	Peaches
Florida	100	200
Georgia	200	100

 If the states specialize, what should each produce? What's the limit (in terms of absolute and comparative advantage)?
4. Imagine an economy with the following resource base for 1996: 100 units of labor (including entrepreneurs), 100 units of capital, and 100 acres of land. Draw a graph showing the economy's 1996 production possibilities from the following table.

Good	Household A	Household B	Household C
Wheat	100	200	300
Corn	200	100	100

ADDITIONAL RESOURCES FOR STUDENTS

We've put together a few additional resources that you may wish to purchase to help you in your economics class. For additional information and even samples of some of these resources, visit the Gottheil Economics Web Site (<http://gottheil.swcollege.com>). To order any of these items, contact your college bookstore or call the ITP Customer Service Center at 1-800-347-7707.

STUDENT STUDY GUIDE: TOOLS OF SUCCESS IN ECONOMICS:

Explains, reviews, and tests important facts, concepts, and diagrams found in the textbook. Featured sections to enhance learning include Chapter in a Nutshell, Concept Check, Am I on the Right Track?, Graphing Tutorials and Graphing Pitfalls, True/False Questions, Multiple Choice Questions, Fill-in-the Blanks, and Discussion Questions.

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Micro Version ISBN: 0-538-86826-0

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GRAPHING PRIMER: Using graphs in economics is often one of the most difficult aspects of the principles course. This supplement helps you master the processes of creating, interpreting, and understanding graphs. ISBN: 0-538-86834-1

STUDENT TUTORIAL SOFTWARE: These Windows-based software packages enable you to quiz yourself and assess your understanding of key concepts. The software packages are available to download for free at the Gottheil Economics Web Site (<http://gottheil.swcollege.com>).

ISBN: 0-538-86830-9 and 0-324-00820-1

GOTTHEIL ECONOMICS WEB SITE:

(<http://gottheil.swcollege.com>) This support site provides updates to the textbook written by the author. In addition, the Internet applications found in every chapter are repeated and updated periodically. The site also contains learning resources and a "Talk to the Author" section.

SOUTH-WESTERN ECONOMICS RESOURCE

CENTER: (<http://economics.swcollege.com/>)

The South-Western Economics Resource Center presents the latest in high-tech tools available to teach and learn economics. Here's a sample of what you will find:

- *Economics Alive! Student Center*
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by Willie Belton, Richard Cebula, and John McLeod,
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of Technology.

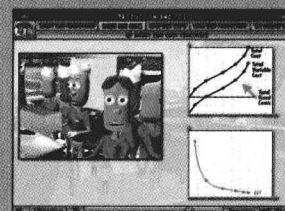
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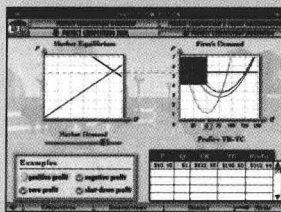
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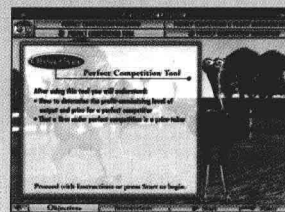
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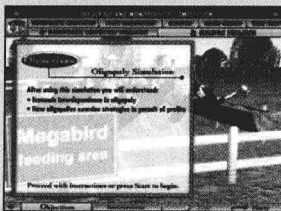
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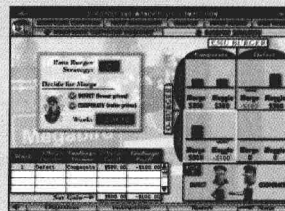
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