SEVENTH EDITION

PRINCIPLES OF ECONOMICS

CASE & FAIR

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PRINCIPLES OF ECONOMICS

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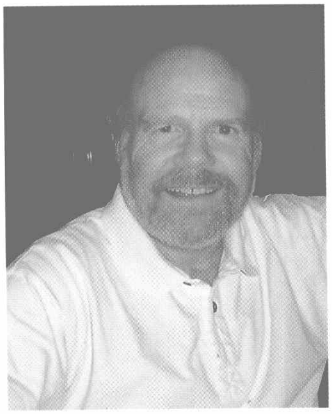


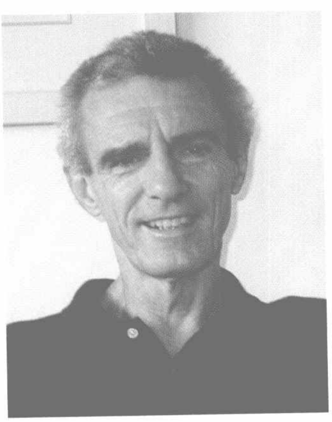
Karl E. Case is the Katharine Coman and A. Barton Hepburn Professor of Economics at Wellesley College, where he has taught for 27 years, and is a Visiting Scholar at the Federal Reserve Bank of Boston.

Before coming to Wellesley, he served as Head Tutor (director of undergraduate studies) at Harvard, where he won the Allyn Young Teaching Prize. He is Associate Editor of the *Journal of Economic Perspectives* and has been a member of the AEA's Committee on Economic Education and was Associate Editor of the *Journal of Economic Education*, responsible for the section on innovations in teaching. He teaches at least one section of the principles course every year.

Professor Case received his B.A. from Miami University in 1968, spent three years on active duty in the Army, including a year in Vietnam, and received his Ph.D. in Economics from Harvard University in 1976.

Professor Case's research has been in the areas of real estate, housing, and public finance. He is author or co-author of five books, including *Principles of Economics*, *Economics and Tax Policy*, and *Property Taxation: The Need for Reform*, and has published numerous articles in professional journals.

He is also a founding partner in the real estate research firm of Fiserv Case Shiller Weiss, Inc., and serves as a member of the Boards of Directors of the Mortgage Guaranty Insurance Corporation (MGIC), Century Bank, and The Lincoln Institute of Land Policy.



Ray C. Fair is Professor of Economics at Yale University. He is a member of the Cowles Foundation at Yale and a Fellow of the Econometric Society. He received a B.A. in economics from Fresno State College in 1964 and a Ph.D. in economics from M.I.T. in 1968. He taught at Princeton University from 1968 to 1974 and has been at Yale since 1974.

Professor Fair's research has primarily been in the areas of macroeconomics and econometrics, with particular emphasis on macroeconometric model building. His publications include *Specification, Estimation, and Analysis of Macroeconometric Models* (Harvard Press, 1984) and *Testing Macroeconometric Models* (Harvard Press, 1994).

Professor Fair has taught introductory and intermediate economics at Yale. He has also taught graduate courses in macroeconomic theory and macroeconometrics.

Professor Fair's United States and multicountry models are available for use on the Internet free of charge. The address is **http://fairmodel.econ.yale.edu**. Many teachers have found that having students work with the United States model on the Internet is a useful complement to even an introductory macroeconomics course.

PREFACE

Since the publication of our sixth edition, the world economic landscape has changed significantly. In the late summer of 2003, the economic situation in the United States and the rest of the world was full of uncertainty. The U.S. economy had experienced a series of tough blows after the new millennium began in 2000. Employment in the United States fell by over three million between 2001 and 2003 after increasing by over 22 million in the previous decade. Nearly 10 million Americans were unemployed in July 2003. Between the beginning of 2000 and the beginning of 2003, the stock market declined continuously, wiping out trillions of dollars worth of wealth and retirement savings. The Standard and Poor's index of 500 stock prices declined by over 45 percent during the period. During the first three quarters of 2001, the total output of the nation fell, marking an official recession.

As the U.S. economy struggled, so too did economies around the world. Africa struggled with the massive and tragic HIV/AIDS pandemic, which continues to devastate its economy. Argentina experienced the near collapse of its economy. Russia, more than a decade after the fall of the Soviet Union, began to grow at a moderate rate. China grew rapidly but is coming under increased criticism for unfair trade practices. While Europe found itself in recession, it was also learning about the strengths and weaknesses of having a fairly new common currency, the euro.

It was also a rough time in other ways. Terrorists destroyed the World Trade Center in New York City on September 11, 2001. U.S. forces played a major role in the invasions of Afghanistan in 2002 and Iraq in 2003. These events and others pushed the federal budget from a surplus in 2001 to a deficit of over $400 billion by mid-2003.

All of this came on the heels of a major collapse of the technology sector of the economy both in the United States and abroad. Between 1991 and 2001, the United States experienced the longest economic expansion in its history. To a large extent it was based on what came to be called the "new economy." The rise of the Internet and the world of cell phones and e-commerce was thought to be a new "industrial revolution," as important as the one that transformed the world beginning in England in the eighteenth and nineteenth centuries. There can be no question that the dawn of the information age and the power of the Internet have changed the economy in ways that we do not yet fully understand. It has led to increased productivity, new products, and the transformation of many markets. But we clearly overdid it. Millions of small firms ran out of cash, new ventures failed to deliver promised profits, and the newfound riches of many successful entrepreneurs disappeared almost overnight. What we do not know is how it will play out in the long run.

How rapidly times change. In writing this seventh edition, we highlight many of these events and the debates surrounding them. It is not our role to forecast future events. It is, rather, our goal in revising the text to set the discussion in an up-to-date world context and to highlight what we do and do not understand about it.

NEW TO THE SEVENTH EDITION

More than one million students have used *Principles of Economics* or one of its split volumes. We have made every effort in this new edition to be responsive to the rapidly changing times, the recommendations we received from over 40 reviewers, and our own teaching experiences. This edition includes three new chapters and new or expanded content in several existing chapters.

THREE NEW CHAPTERS

- *Chapter 16, "Public Finance: The Economics of Taxation,"* provides basic information about the U.S. tax system, the distribution of taxes, tax shifting, the payroll tax, corporate tax, and excess burden. We also cover the 2003 tax cut and provide tables to show the tax rates for individuals, married people, and businesses.

- *Chapter 28, "The Stock Market and the Economy,"* examines the stock market boom of 1995–2000 and the stock market downturn of 2001–2002. The chapter also covers how both the boom and the bust affected GDP.
- *Chapter 34, "Globalization,"* explores the increasing economic interdependence among countries and citizens. We present the arguments for and against free trade, the link between trade and growth rates, the arguments for and against immigration, how developing countries are affected by subsidies and tariffs imposed by European countries and the United States, capital mobility, global warming, and AIDS.

MICROECONOMICS: NEW OR EXPANDED CONTENT

- *Chapter 2, "The Economic Problem: Scarcity and Choice,"* has a new section that uses the production possibilities frontier to illustrate the theory of comparative advantage and demonstrate gains from trade.
- *Chapter 4, "Demand and Supply Applications and Elasticity,"* has new coverage of consumer surplus, producer surplus, and deadweight loss. These new topics and graphs extend the discussion of supply and demand curves by introducing the idea of the efficiency of markets in allocating resources.
- *Chapter 12, "Monopoly and Antitrust Policy,"* includes expanded price discrimination coverage to show how and why firms charge different prices to different groups of buyers.
- *Chapter 13, "Monopolistic Competition and Oligopoly,"* includes expanded coverage of game theory. A new section on repeated games shows how British Airways and Lufthansa respond to each other's price changes. Newly designed payoff matrixes are easier to read and interpret.
- *Chapter 14, "Externalities, Public Goods, Imperfect Information, and Social Choice,"* includes a new section that uses a prisoner's dilemma (from Chapter 13) to illustrate the problems of public goods (the free-rider problem and the drop-in-the-bucket problem).
- *Chapter 15, "Income Distribution and Poverty,"* includes expanded coverage of the minimum wage and uses supply and demand curves to show how an above-equilibrium wage rate affects both the supply of and the demand for workers.

MACROECONOMICS: NEW OR EXPANDED CONTENT

- *Chapter 18, "Measuring National Output and National Income,"* now covers gross national income (GNI), the World Bank's recently adopted measuring system for exchange rates.
- *Chapter 19, "Long-Run and Short-Run Concerns: Growth, Productivity, Unemployment, and Inflation,"* includes expanded coverage of the consumer price index (CPI) bias.
- *Chapter 27, "Macroeconomic Issues and Policies,"* features new coverage of how the Fed targets interest rates and how it selects the interest rate based on the state of the economy; the behavior of the Fed in 2001–2003; the increased expenditures for security and defense after September 11, 2001; deficit targeting from 1980–2003; and the 2003 tax cut.
- *Chapter 33, "Open-Economy Macroeconomics: The Balance of Payments and Exchange Rates,"* has a new section on monetary policy with fixed exchange rates.

RECENT DATA, EXAMPLES, EVENTS, AND TOPICS

Every chart, table, and graph in the book has been revised with the most recent data available. In addition, we have integrated topics that have generated a great deal of attention over the last few years—the jobless economic recovery of 2003, the 2003 tax cut, deflation, the affect of the stock market downturn on GDP, increased spending on security and defense post September 11, 2001, budget deficit, and globalization, to name just a few.

THE FOUNDATION

Despite new chapters and other revisions, the themes of *Principles of Economics, Seventh Edition*, are the same themes of the first six editions. The purpose of this book is to introduce the discipline of economics and to provide a basic understanding of how economies function. This requires a blend of economic theory, institutional material, and real-world applications. We have maintained a balance between these ingredients in every chapter in this book.

The hallmark features of our book are its

1. three-tiered explanations of key concepts (*Stories-Graphs-Equations*),
2. intuitive and accessible structure of microeconomics and macroeconomics chapters, and
3. international coverage.

THREE-TIERED EXPLANATIONS: STORIES-GRAPHS-EQUATIONS

Professors who teach principles of economics are faced with a classroom of students with different abilities, backgrounds, and learning styles. For some, analytical material is difficult no matter how it is presented; for others, graphs and equations seem to come naturally. The problem facing instructors and textbook authors is how to convey the core principles of the discipline to as many students as possible without selling the better students short. Our approach to this problem is to present most core concepts in three ways:

- First, we present each concept in the context of a simple intuitive ***story*** or example in words often followed by a table.
- Second, we use a ***graph*** in most cases to illustrate the story or example.
- And finally, in many cases where appropriate, we use an ***equation*** to present the concept with a mathematical formula.

An example of our approach using stories, graphs, and equations can be found in Chapter 6, "The Production Process: The Behavior of Profit-Maximizing Firms," where we show production functions at a sandwich shop.

A story helps capture student interest. A table provides related data.

A graph illustrates the relationship between the variables in the story and table.

CHAPTER 6 137
The Production Process: The Behavior of Profit-Maximizing Firms

TABLE 6.2 Production Function

(1) LABOR UNITS (EMPLOYEES)	(2) TOTAL PRODUCT (SANDWICHES PER HOUR)	(3) MARGINAL PRODUCT OF LABOR	(4) AVERAGE PRODUCT OF LABOR (TOTAL PRODUCT ÷ LABOR UNITS)
0	0	–	–
1	10	10	10.0
2	25	15	12.5
3	35	10	11.7
4	40	5	10.0
5	42	2	8.4
6	42	0	7.0

PRODUCTION FUNCTIONS: TOTAL PRODUCT, MARGINAL PRODUCT, AND AVERAGE PRODUCT

The relationship between inputs and outputs—that is, the production technology—expressed numerically or mathematically is called a **production function** (or **total product function**). A production function shows units of total product as a function of units of inputs.

production function or **total product function** A numerical or mathematical expression of a relationship between inputs and outputs. It shows units of total product as a function of units of inputs.

Imagine, for example, a small sandwich shop. All the sandwiches made in the shop are grilled, and the shop owns only one grill, which can accommodate only two people comfortably. As columns 1 and 2 of the production function in Table 6.2 show, one person working alone can produce only 10 sandwiches per hour, in addition to answering the phone, waiting on customers, keeping the tables clean, and so on. The second worker can stay at the grill full time and not worry about anything except making sandwiches. Because the two workers together can produce 25 sandwiches, the second worker can produce $25 - 10 = 15$ sandwiches per hour. A third person trying to use the grill produces crowding, but, with careful use of space, more sandwiches can be produced. The third worker adds 10 sandwiches per hour. Note that the added output from hiring a third worker is less because of the capital constraint, *not* because the third worker is somehow less efficient or hard working. We assume that all workers are equally capable.

The fourth and fifth workers can work at the grill only while the first three are putting the pickles, onions, and wrapping on the sandwiches they have made. Then the first three must wait to get back to the grill. Worker four adds five sandwiches per hour to the total, and worker five adds just two. Adding a sixth worker adds no output at all: The current maximum capacity of the shop is 42 sandwiches per hour.

Figure 6.5(a) graphs the total product data from Table 6.2.

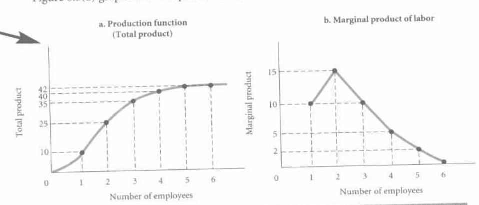
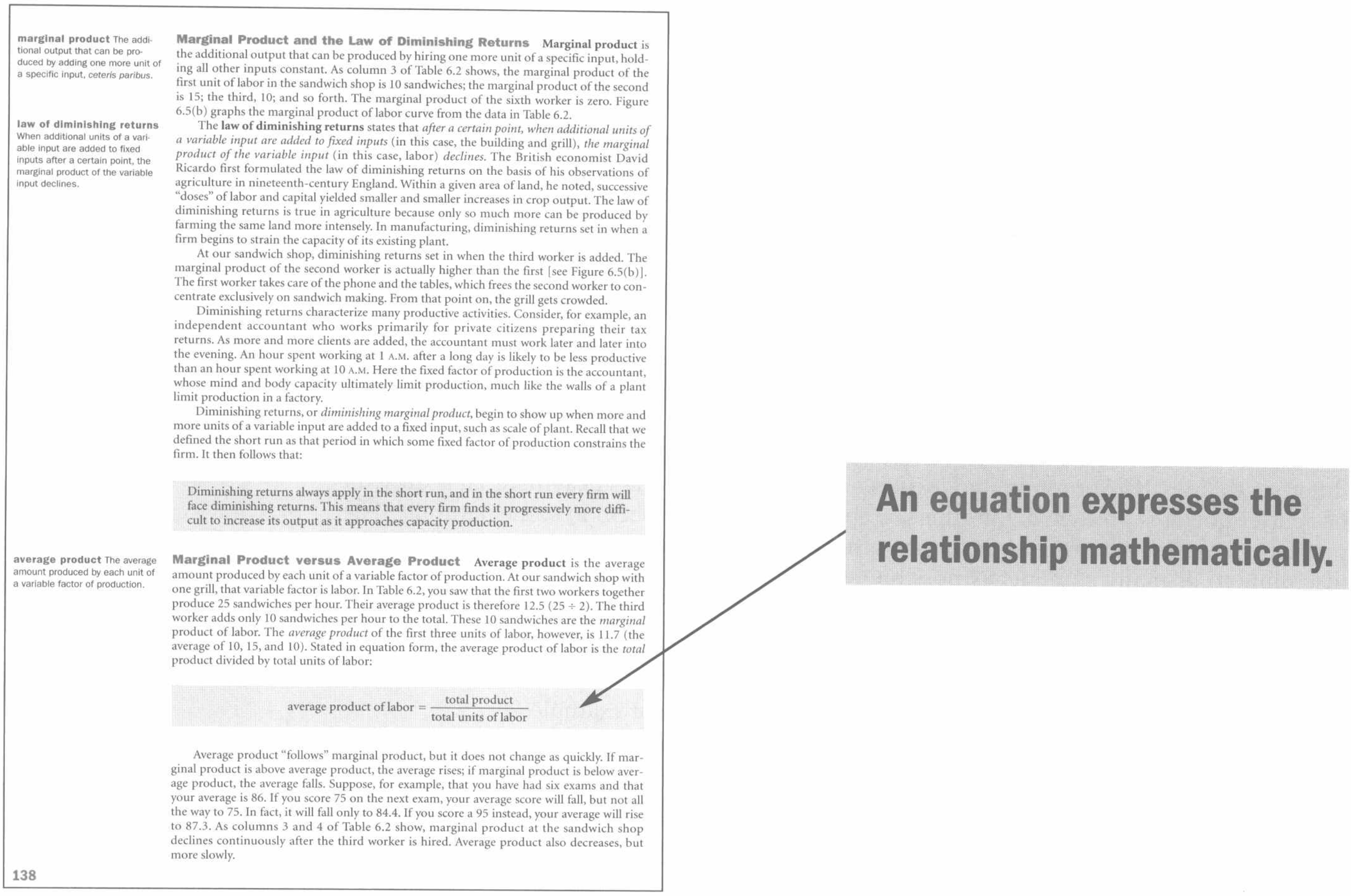


FIGURE 6.5 Production Function for Sandwiches

A *production function* is a numerical representation of the relationship between inputs and outputs. In Figure 6.5(a), total product (sandwiches) is graphed as a function of labor inputs. The *marginal product of labor* is the additional output that one additional unit of labor produces. Figure 6.5(b) shows that the marginal product of the second unit of labor at the sandwich shop is 15 units of output; the marginal product of the fourth unit of labor is 5 units of output.

Companion Website Plus



marginal product The additional output that can be produced by adding one more unit of a specific input, *ceteris paribus*.

law of diminishing returns When additional units of a variable input are added to fixed inputs after a certain point, the marginal product of the variable input declines.

Marginal Product and the Law of Diminishing Returns **Marginal product** is the additional output that can be produced by hiring one more unit of a specific input, holding all other inputs constant. As column 3 of Table 6.2 shows, the marginal product of the first unit of labor in the sandwich shop is 10 sandwiches; the marginal product of the second is 15; the third, 10; and so forth. The marginal product of the sixth worker is zero. Figure 6.5(b) graphs the marginal product of labor curve from the data in Table 6.2.

The **law of diminishing returns** states that *after a certain point, when additional units of a variable input are added to fixed inputs* (in this case, the building and grill), *the marginal product of the variable input* (in this case, labor) *declines*. The British economist David Ricardo first formulated the law of diminishing returns on the basis of his observations of agriculture in nineteenth-century England. Within a given area of land, he noted, successive "doses" of labor and capital yielded smaller and smaller increases in crop output. The law of diminishing returns is true in agriculture because only so much more can be produced by farming the same land more intensely. In manufacturing, diminishing returns set in when a firm begins to strain the capacity of its existing plant.

At our sandwich shop, diminishing returns set in when the third worker is added. The marginal product of the second worker is actually higher than the first [see Figure 6.5(b)]. The first worker takes care of the phone and the tables, which frees the second worker to concentrate exclusively on sandwich making. From that point on, the grill gets crowded.

Diminishing returns characterize many productive activities. Consider, for example, an independent accountant who works primarily for private citizens preparing their tax returns. As more and more clients are added, the accountant must work later and later into the evening. An hour spent working at 1 A.M. after a long day is likely to be less productive than an hour spent working at 10 A.M. Here the fixed factor of production is the accountant, whose mind and body capacity ultimately limit production, much like the walls of a plant limit production in a factory.

Diminishing returns, or *diminishing marginal product*, begin to show up when more and more units of a variable input are added to a fixed input, such as scale of plant. Recall that we defined the short run as that period in which some fixed factor of production constrains the firm. It then follows that:

Diminishing returns always apply in the short run, and in the short run every firm will face diminishing returns. This means that every firm finds it progressively more difficult to increase its output as it approaches capacity production.

average product The average amount produced by each unit of a variable factor of production.

Marginal Product versus Average Product **Average product** is the average amount produced by each unit of a variable factor of production. At our sandwich shop with one grill, that variable factor is labor. In Table 6.2, you saw that the first two workers together produce 25 sandwiches per hour. Their average product is therefore 12.5 (25 ÷ 2). The third worker adds only 10 sandwiches per hour to the total. These 10 sandwiches are the *marginal* product of labor. The *average product* of the first three units of labor, however, is 11.7 (the average of 10, 15, and 10). Stated in equation form, the average product of labor is the *total* product divided by total units of labor:

$$\text{average product of labor} = \frac{\text{total product}}{\text{total units of labor}}$$

Average product "follows" marginal product, but it does not change as quickly. If marginal product is above average product, the average rises; if marginal product is below average product, the average falls. Suppose, for example, that you have had six exams and that your average is 86. If you score 75 on the next exam, your average score will fall, but not all the way to 75. In fact, it will fall only to 84.4. If you score a 95 instead, your average will rise to 87.3. As columns 3 and 4 of Table 6.2 show, marginal product at the sandwich shop declines continuously after the third worker is hired. Average product also decreases, but more slowly.

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MICROECONOMIC STRUCTURE

Although we have chosen to present microeconomics first, we have designed the text so that professors may proceed directly to macroeconomics after teaching the four introductory chapters.

The organization of the microeconomic chapters continues to reflect our belief that the best way to understand how market economies operate—and the best way to understand basic economic theory—is to work through the perfectly competitive model first, including discussions of output markets (goods and services) and input markets (land, labor, and capital), and the connections between them, before turning to noncompetitive market structures such as monopoly and oligopoly. When students understand how a simple perfectly competitive system works, they can start thinking about how the pieces of the economy "fit together." We think this is a better approach to teaching economics than some of the more traditional approaches, which encourage students to think of economics as a series of disconnected alternative market models.

Learning perfect competition first also enables students to see the power of the market system. It is impossible to discuss the efficiency of markets as well as the problems that arise from markets until students have seen how a simple perfectly competitive market system produces and distributes goods and services. This is our purpose in Chapters 5 through 10. Chapter 11, "General Equilibrium and the Efficiency of Perfect Competition," is a pivotal chapter that links simple perfectly competitive markets with a discussion of market imperfections and the role of government. Chapters 12 through 16 cover three noncompetitive market structures (monopoly, monopolistic competition, oligopoly), externalities, public goods, imperfect information, and income distribution as well as taxation and government finance. The accompanying visual gives you an overview of our structure.

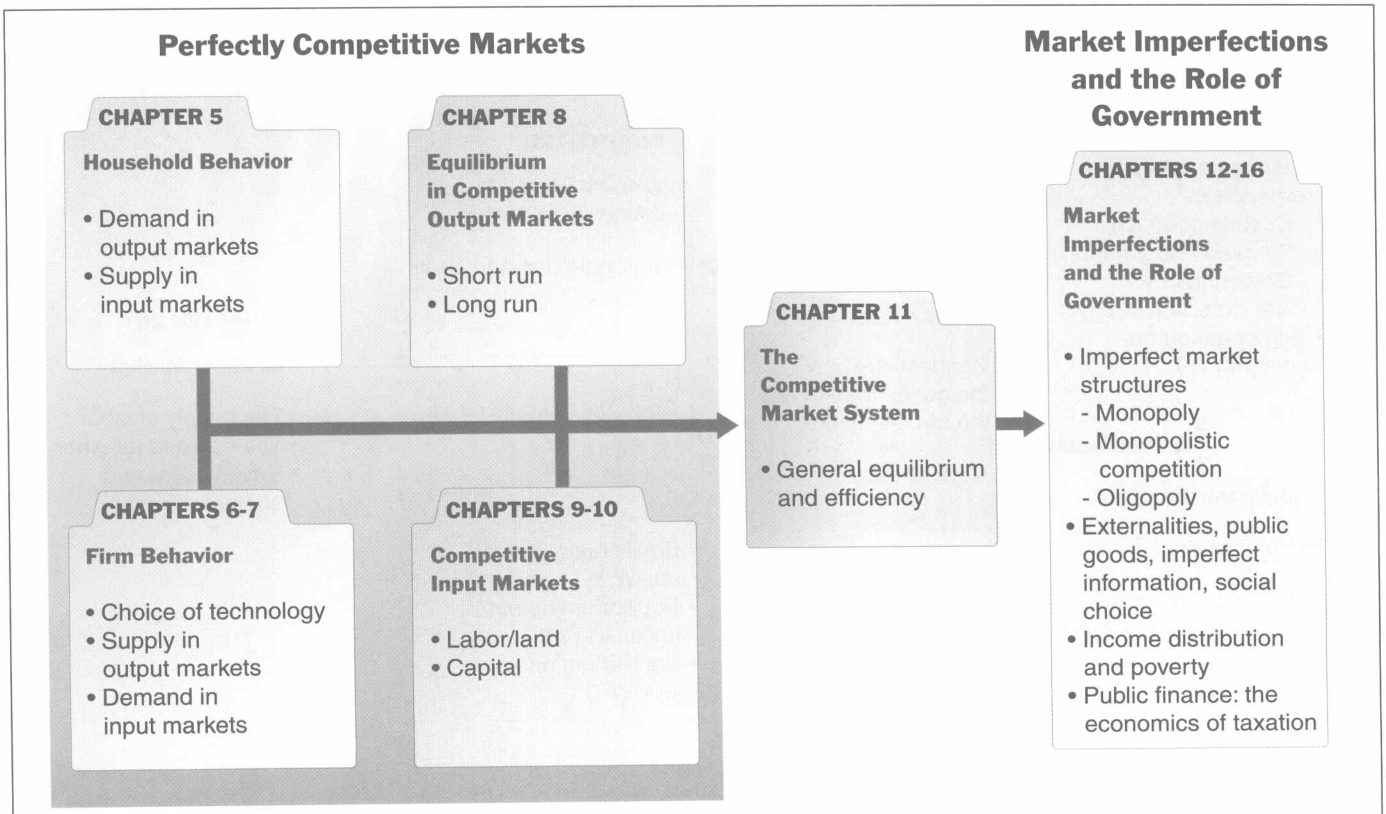


FIGURE 5.2 Understanding the Microeconomy and the Role of Government

MACROECONOMIC STRUCTURE

We remain committed to the view that it is a mistake simply to throw aggregate demand and aggregate supply curves at students in the first few chapters of a principles book. To understand the AS and AD curves, students need to know about the functioning of both the goods market and the money market. The logic behind the simple demand curve is wrong when applied to the relationship between aggregate demand and the price level. Similarly, the logic behind the simple supply curve is wrong when applied to the relationship between aggregate supply and the price level.

Part of teaching economics is teaching economic reasoning. Our discipline is built around deductive logic. Once we teach students a pattern of logic, we want and expect them to apply it to new circumstances. When they apply the logic of a simple demand curve or simple supply curve to the aggregate demand or aggregate supply curve, the logic does not fit. We believe the best way to teach the reasoning embodied in the aggregate demand and aggregate supply curves without creating serious confusion is to build up to them carefully.

In Chapters 20 and 21, we examine the market for goods and services. In Chapters 22 and 23 we examine the money market. We bring the two markets together in Chapter 24, which explains the links between aggregate output (*Y*) and the interest rate (*r*). In Chapter 25, we explain how the aggregate demand curve can be derived from Chapter 24, and introduce the aggregate supply curve. This allows the price level (*P*) to be explained. We then explain in Chapter 26 how the labor market fits into this macroeconomic picture. The accompanying visual gives you an overview of our structure.

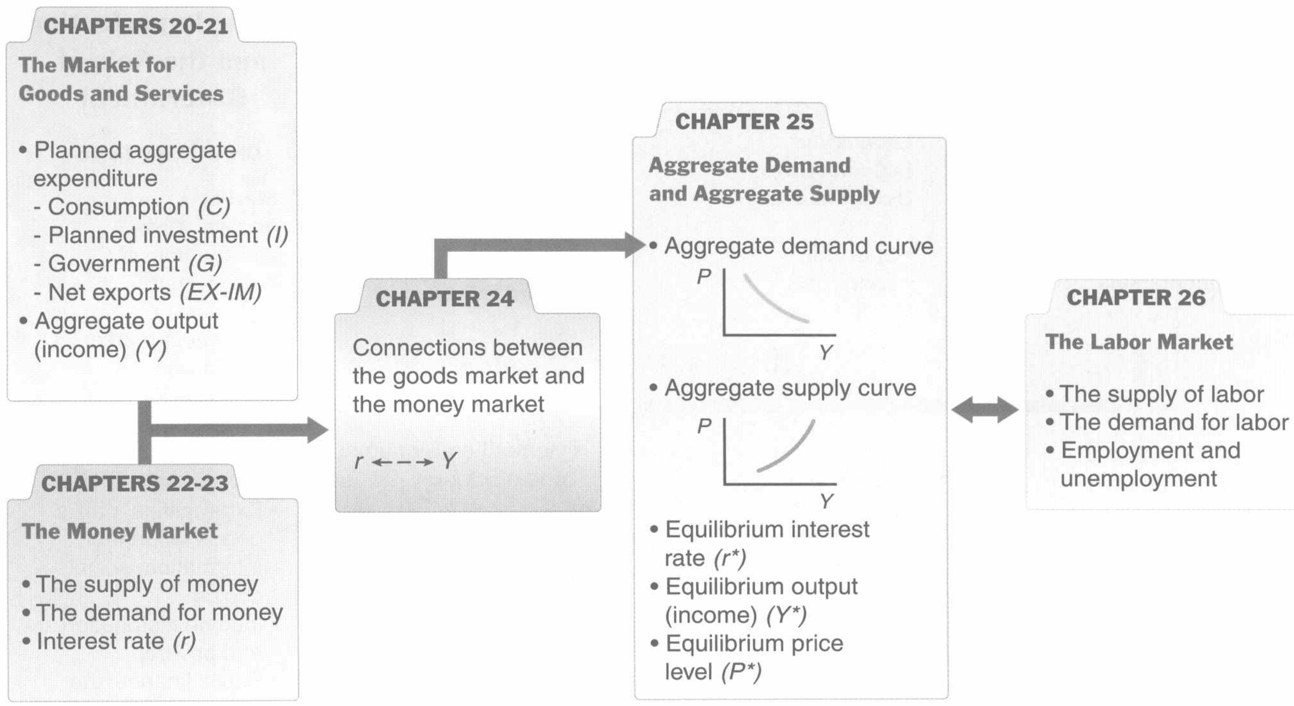


FIGURE 20.1 The Core of Macroeconomic Theory

One of the big issues in the organization of the macroeconomic material is whether long-run growth issues should be taught before short-run chapters on the determination of national income and counter-cyclical policy. In the last two editions we moved a significant discussion of growth up to Chapter 19 and highlighted it. However, while we wrote the major chapter on long-run growth (Chapter 30) so that it can be taught either before or after the short-run chapters, we remain convinced that it is easier to understand the growth issue once a student has come to grips with the logic and controversies of short-run cycles, inflation, and unemployment.

INTERNATIONAL COVERAGE

We have expanded international coverage from previous editions by including a new chapter on globalization (Chapter 34). This chapter covers the increasing economic interdependence among countries and their citizens. We focus on the causes and consequences of increased international trade of goods and services, increased cross-border movements of labor, and expanded international financial flows.

As in previous editions, we continue to integrate international examples and applications in many chapters. All international examples are listed in a table following the book's detailed table of contents. We continue to believe that a complete treatment of open-market macroeconomics should not be taught until students have mastered the logic of a simple closed macroeconomy. For this reason, we have chosen to place the "open-economy macroeconomics" chapter in the final part of the book, entitled "The World Economy." This part also includes the trade chapter, the new globalization chapter, and the economic development chapter.

TOOLS FOR LEARNING

As authors and teachers, we understand the challenges of the principles of economics course. Our pedagogical features are designed to illustrate and reinforce key economic concepts through real-world examples and applications.

NEWS ANALYSIS

The *News Analysis* feature presents a news article that supports the key concept of the chapter and illustrates how economics is a part of students' daily lives. We have included over 30 news articles from various sources, including *The New York Times, The Economist, The Wall Street Journal,* and *The Washington Times.* Select articles include graphs or photos. Students can visit www.prenhall.com/casefair for additional and updated news articles and exercises.

News Analysis

An Economic Recovery for the United States in 2003?

DURING 2001, THE U.S. ECONOMY WAS IN RECESsion. National income declined and employment fell. Employment continued to decline well into 2003. But the end of the war in Iraq, a fall in the price of oil on world markets, and a big tax cut in the United States seemed to many economists to suggest that a recovery from the hard times was beginning. The following article from the *Economist* reflects some guarded optimism.

Despite signs of an economic recovery, 9.4 million people remained unemployed in mid-2003.

Poised for growth?—*Economist*

Is America's economy finally set to shake off its funk? An increasing number of economists on Wall Street and politicians in Washington seem to think so. Many number-crunchers are forecasting a sharp acceleration of economic growth in the summer. John Snow, America's treasury secretary, suggested this week that the economy could be growing by around 4% by the end of 2003, more than double its current rate. After so many false dawns, is this optimism justified?

Financial markets certainly think so. All the big stockmarket indices have risen dramatically. The Dow Jones Industrial Average is now over 9,000, up more than 20% since mid-March; the technology-laden NASDAQ is up almost 30% from three months ago. Financial conditions have loosened across the board. Not only are government bond yields at historic lows, but spreads on corporate bonds have narrowed sharply, making access to capital cheaper and easier for firms of all kinds. A weaker dollar—the greenback has dropped by 8% against the currencies of America's trading partners this year—has also added to the loose financial conditions.

And there is more to come. Judging by recent comments from its top official, America's central bank is highly likely to cut interest rates when its policy-setting Federal Open Market Committee meets on June 24 to 25.

Nor is looser monetary policy the only stimulus on the way. Mr Bush's latest tax package, signed into law on May 28, will undoubtedly give the economy a short-term boost. The huge tax package—worth $350 billion over 10 years if you believe Congress's gimmicks, and costing more than $800 billion over a decade if you take a more realistic view—may not be particularly efficient as a stimulus package. But it is big. Economists at Morgan Stanley reckon the tax cut will add about $160 billion, or 1.5% of GDP, in fiscal stimulus over the next four quarters, bigger than any tax change since the Reagan tax cut in 1981. Of that, around $64 billion will reach Americans quickly in the form of rebate cheques and less tax withheld from their pay.

Add together loose financial conditions and a fiscal boost, and it is hard to imagine that the economy will not improve at all. Lower financing costs are continuing to prop up the housing market and maintain the surge in mortgage refinancings. The weekly tally of mortgage refinancing applications reached a new high of nearly 10,000 last week.

Even in the gloomy labour market, there are glimmers of hope. True, America's jobless rate hit a cyclical peak of 6.1% in May, and weekly unemployment claims are still extremely high. But the employment report released on June 6 was in many ways less bad than expected. Although the economy lost 17,000 jobs in May, the number of private-sector jobs was flat; the drop came in government posts. The number of temporary jobs rose by a healthy 58,000, and a rise in temporary workers is often a sign that firms are thinking of hiring permanent workers again. The latest monthly survey of purchasing managers also suggests that conditions in both the manufacturing and services sector are already improving, although they are far from booming.

A trickier question is whether any rebound will last. Can America's economy expect above-trend growth next year, for instance? There, it is much harder to be optimistic. America's economy still has huge fragilities. Although firms have undergone great adjustments since the excesses of the stockmarket bubble, there is still plenty of spare capacity around, making a sustained investment boom less likely.

Source: June 12, 2003, the Economist.

Visit www.prenhall.com/casefair for updated articles and exercises.

FURTHER EXPLORATION

Integrated in strategic places throughout the text, the *Further Exploration* feature provides students with applications as well as practical and historical information that supports the content of the chapter. The *Further Exploration* in Chapter 1, for example, highlights the various branches of economic study including economic law, international economics, and labor economics. The *Further Exploration* in Chapter 4 discusses how London newspapers and New York restaurants consider elasticity when determining prices. In Chapter 28, the *Further Exploration* shows students how to read a bond table and the stock pages.

Further Exploration

The Drug Wars: A Matter of Supply and Demand

For years a debate has raged between those who favor strategies for reducing the supply of illegal drugs and those who favor strategies designed to reduce the demand for illegal drugs. The president's budget for 2003 contained $19.1 billion dollars for the "war on drugs," and its focus was on supply. Of the total, 67 percent was spent on the supply side: actions to destroy drugs where they are grown; stopping drugs from entering the United States; and efforts to stop domestic distribution. The remaining 33 percent was spent on reducing demand, specifically for things like treatment and prevention.

Clearly if the supply-side efforts are successful, they will drive up the price of drugs on the street. Higher prices mean that fewer people are willing to buy drugs and the quantity demanded drops.

Critics of the supply-side approach argue that programs designed to reduce supply in the past have failed. The reason, they claim, is that the high price of drugs makes it very profitable to produce. Thus, as production from one country is reduced, supply will come from other sources.

You can see the essence of the debate in Figure 1. Supply shifts to the left, and the equilibrium price rises. As the price rises, quantity demanded declines along the demand curve as fewer people are willing to buy drugs, and quantity supplied increases along the supply curve as the higher price spurs new production elsewhere.

What are the alternatives? Some argue that we should shift the focus to reducing the demand for illegal drugs. If successful, the resulting lower price would take the profit out of production and reduce the quantity supplied. You can see this point in Figure 2. Demand shifts to the left, and the equilibrium price falls. As the price falls, the quantity supplied falls, a movement along the supply curve.

A second, perhaps more radical, set of critics argues that legalization is the best solution. Legalization would reduce the cost of production substantially. No longer would it take enormous expenses to smuggle drugs across the border, and sellers would no longer face the risk of prosecution. Legalization would shift the supply curve to the right, substantially reducing the price of drugs on the street. Proponents of legalization argue that it is the very high price of drugs that forces many into criminal activity to support their habits. Opponents of legalization point to the fact that the lower price would lead to a higher quantity demanded and, thus, to more addiction.

Of course the arguments on all sides of this issue are very complex, but the laws of supply and demand put them in a framework that helps clarify the debate.

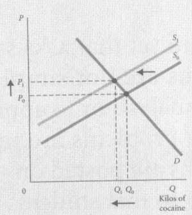


FIGURE 1

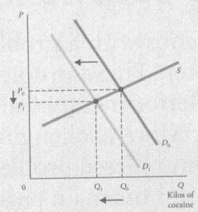


FIGURE 2

GRAPHS

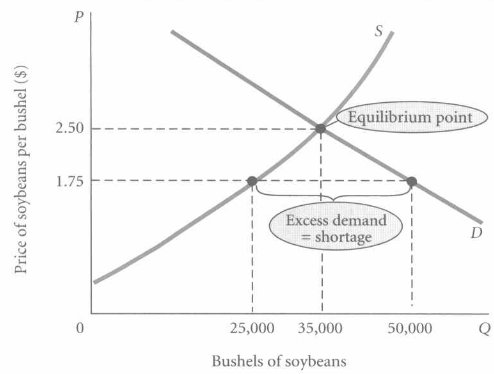
Reading and interpreting graphs is a key part of understanding economic concepts. The Chapter 1 appendix, "How to Read and Understand Graphs," shows readers how to interpret the over 200 graphs featured in the book. We use red curves to illustrate the behavior of firms and blue curves to show the behavior of households. We use a different shade of red and blue to signify a shift in a curve.

Eighty-nine graphs include an Active Graph icon. Students can visit the book's Companion Website (www.prenhall.com/casefair) to access interactive versions of the graphs. See the endpapers of the book for a complete list of all the Active Graphs. These graphs are categorized by level: *Active Graphs Level One* invite students to change the value of variables and shift curves to see the effects in the movements of the graph. *Active Graphs Level Two* ask students to modify graphs based on an economic scenario or question. Students receive an instant response to their answers. If their answer is incorrect, the response will detail how they should have modified the graph.

Companion Website Plus

FIGURE 3.9 Excess Demand, or Shortage

At a price of $1.75 per bushel, quantity demanded exceeds quantity supplied. When *excess demand* arises, there is a tendency for price to rise. When quantity demanded equals quantity supplied, excess demand is eliminated and the market is in equilibrium. Here, the equilibrium price is $2.50, and the equilibrium quantity is 35,000 bushels.



HIGHLIGHTS OF MAJOR CONCEPTS

We have set major economic concepts off from the text in highlighted boxes. These highlights flow logically from the preceding text and into the text that follows. Students tell us that they find these very useful as a way of reviewing the key points in each chapter to prepare for exams.

Change in price of a good or service
leads to
→ Change in *quantity demanded* (**movement along the demand curve**).
Change in income, preferences, or prices of other goods or services
leads to
→ Change in *demand* (**shift of the demand curve**).

RUNNING GLOSSARY

Definitions of key terms appear in the margin so they are easy to spot.

PROBLEM SETS AND SOLUTIONS

Each chapter and appendix ends with a problem set that asks students to think about what they've learned in the chapter. These problems are not simple memorization questions. Rather, they ask students to perform graphical analysis or to apply economics to a real-world situation or policy decision. More challenging problems are indicated by an asterisk. The worked solutions to all even-numbered problems are posted on www.prenhall.com/casefair (select "Student Resources" from the main page) so that students can check their understanding and progress. The solutions to all the problems are available in the Instructor's Manual.

INTEGRATED LEARNING PACKAGE

The integrated learning package for the seventh edition reflects changes in technology and utilizes new ways of disseminating information and resources. A customized website offers a comprehensive Internet package for the student and the instructor.

INTERNET RESOURCES

The Companion Website (www.prenhall.com/casefair) connects students to current news articles that deal with a key economic concept, Internet exercises and activities, and Practice Quizzes that include many graphs from the text. The Practice Quizzes were prepared by Fernando Quijano and Yvonn Quijano. Each chapter contains multiple-choice, true/false, and essay quizzes. These quizzes immediately grade each answer submitted, provide feedback for correct and incorrect answers, and let students e-mail results to their professors.

Also included on the Companion Website under the Student Resources link are the worked solutions to the even-numbered problems that appear at the end of each chapter of the book and current Event articles that help students see how economics affects their daily lives.

For the Instructor:

- *Syllabus Manager.* Allows instructors to create and post syllabi for their students to access. Instructors can add exams or assignments of their own, edit any of the student resources available on the Companion Website, post discussion topics, and much more.
- *Downloadable Supplements.* Instructors can access the book's PowerPoint presentations and Instructor's Manual. Please contact your Prentice Hall sales representative for password information.

COMPANION WEBSITE PLUS FOR INSTRUCTORS AND STUDENTS

Available by using the access code packaged with every new text, Companion Website PLUS uses all of the content of the Companion Website listed previously, along with many additional interactive resources. Companion Website PLUS provides the following for each chapter:

Objectives: Key questions and concepts that should be mastered by the end of the chapter.

Chapter Tutorial: A complete tutorial walk-through of the text material that includes:

- Detailed summaries of key concepts from the text.
- Readiness-assessment quiz tests students' comprehension before they move forward with the chapter material.
- Key figures and graphs from the text. Select key figures, such as the circular flow diagram, are animated to help students visualize the interaction among sectors of the economy.
- Pop-up glossary of key terms helps students master definitions.
- *Test Your Understanding* multiple-choice quizzes help students assess their progress with the chapter concepts.
- Graphing exercises incorporate the Active Graphs and eGraph.

Summary: A review of the chapter concepts ties back to the objective questions.

Homework: Multiple-choice and short-answer assignments, some of which are tied to the interactive resources on the site.

Glossary: A complete list of key terms with expanded explanations helps students retain definitions.

Active Graphs Level One: These graphs support key graphs in the text. These JAVA-based applications invite students to change the value of variables and shift curves to see the effects in the movements of the graph.

Active Graphs Level Two: These graphs ask students to modify graphs based on an economic scenario or question. Students receive an instant response to their answers. If their answer is incorrect, the response will detail how they should have modified the graph.

eGraph and Questions: *eGraph* is an electronic tool that allows students to create precise, colorful graphs using Flash technology. Students can e-mail these graphs to their professor or print and save them. To apply this technology, we have included *Graphing Questions* that require students to analyze information gathered on the Web and then create graphs using the Graphing Tool. Complete answers, with graphs, are included.

RESEARCH NAVIGATOR™

Research Navigator™ is an online academic research service that helps students learn and master the skills needed to write effective papers and complete research assignments. Students and faculty can access Research Navigator™ through an access code found in front of *The Prentice Hall Guide to Evaluating Online Resources with Research Navigator.* This guide can be shrinkwrapped, at no additional cost, with *Economics, Seventh Edition,* by Case and Fair. Once you register, you have access to all the resources in Research Navigator™ for six months.

Research Navigator™ includes three databases of credible and reliable source material:

- EBSCO's ContentSelect™ Academic Journal database gives you instant access to thousands of academic journals and periodicals. You can search these online journals by keyword, topic, or multiple topics. It also guides students step by step through the writing of a research paper.
- *The New York Times* Search-by-Subject™Archive allows you to search by subject and by keyword.
- Link Library is a collection of links to websites, organized by academic subject and key terms. The links are monitored and updated each week.

ONLINE COURSE OFFERINGS

ONEKEY FOR ALL YOU AND YOUR STUDENTS NEED TO SUCCEED

OneKey is Prentice Hall's exclusive new resource for instructors and students. OneKey gives you access to the best online teaching and learning tools–all available 24 hours a day, 7 days a week. OneKey means all your resources are in one place for maximum convenience, simplicity and success. All of the student and faculty resources, including the interactive resources available on the Companion Website PLUS, are available in the OneKey specific to each of the platforms below plus your students get access to an interactive ebook and PH Grade Assist–Prentice Hall's new graded homework assignment manager.

ONEKEY FOR COURSECOMPASS

This customizable, interactive online course-management tool, powered by Blackboard, provides the most intuitive teaching and learning environment available. Instructors can communicate with students, distribute course material, and access student progress online. For further information, please visit our website at http://www.prenhall.com/coursecompass or contact your Prentice Hall sales representative.

ONEKEY FOR WEBCT

Developed by educators, WebCT provides faculty with easy-to-use Internet tools to create online courses. Prentice Hall provides content and enhanced features to help instructors create a complete online course. Please visit our website at www.prenhall.com/webct for more information or contact your local Prentice Hall sales representative.

ONEKEY FOR BLACKBOARD

Easy to use, Blackboard's simple templates and tools make it easy to create, manage, and use online course materials. Prentice Hall provides content, and instructors can create online courses using the Blackboard tools, which include design, communications, testing, and course management tools. Please visit our website at www.prenhall.com/blackboard for more information or contact you local Prentice Hall sales representative.

TECHNOLOGY SUPPLEMENTS FOR THE INSTRUCTOR

The following technology supplements are designed to make teaching and testing flexible and easy.

INSTRUCTOR'S RESOURCE CD-ROM

The Instructor's Resource CD-ROM contains all faculty and student resources that support this text. Instructors have the ability to access and edit the Instructor's Manual, TestGen-EQ, and PowerPoint presentations via this CD-ROM. Instructors can search by key term or chapter for a resource, open a file, or export a file to their own computer.

TESTGEN-EQ

Test Item File 1 and 2 appear in print and as computer files that may be used with this new TestGen-EQ test-generating software. This test-generating program permits instructors to edit, add, or delete questions from the test banks; edit or create; analyze test results; and organize a database of tests and student results. This new software allows for flexibility and ease of use. It provides many options for organizing and displaying tests, along with a search and sort feature. *Principles of Economics, Seventh Edition*, is supported by a comprehensive set of six test-item files. These test-item files are described in detail under the "Print Supplements" section of this preface.

POWERPOINT LECTURE PRESENTATIONS

The PowerPoint presentations, by Fernando Quijano and Yvonn Quijano, offer summaries and reinforcement of key text material. Many graphs "build" over a sequencing of slides so that students may see the step-by-step process of economic analysis. Instructors can create full-color, professional-looking presentations and customized handouts for students. The PowerPoint presentations are included in the Instructor's Resource CD-ROM and are downloadable from www.prenhall.com/casefair. Outlines of the presentations to be used for class note taking can also be found on the Companion Website PLUS.

PRINT SUPPLEMENTS

Principles of Economics, Seventh Edition, has a comprehensive print supplement package for the student and instructor.

STUDY GUIDES

Two comprehensive study guides, one for microeconomics and one for macroeconomics, have been prepared by Thomas Beveridge of North Carolina State University. These study aids reinforce the textbook and provide students with additional applications and exercises. Each chapter contains the following elements:

- *Point-by-Point Chapter Objectives.* A list of learning goals for the chapter. Each objective is followed up with a summary of the material, learning tips for each concept, and practice questions with solutions.
- *Practice Tests.* Approximately 20 multiple-choice questions and answers.
- *Application Questions.* A series of questions that require students to use graphic or numerical analysis to solve economic problems.

- *Solutions.* Worked-out solutions to all questions in the Study Guide.
- *Comprehensive Part Exams.* Exams to test the students' overall comprehension, consisting of multiple-choice and application questions. Solutions to all questions are also provided.

INSTRUCTOR'S MANUALS

Two instructor's manuals—one for *Principles of Microeconomics* and one for *Principles of Macroeconomics*—have been completely revised by Anthony Lima of California State University, Hayward. The manuals are designed to provide the utmost teaching support for instructors. They include the following:

- Detailed *chapter outlines* include key terminology, teaching notes, and lecture suggestions.
- *Topics for Class Discussion* provide topics and real-world situations that help make economic concepts resonate with students.
- *Teaching Tips* provide tips for alternative ways to cover the material or brief reminders on additional help to provide students. These tips can include suggestions for exercises or experiments to complete in class.
- *Extended Applications* include exercises, activities, and experiments to help make economics relevant to students.
- *Video Guide* provides summaries, teaching notes, and discussion questions and answers for the videos that accompany the book.
- *Solutions* to all problems in the book.

SIX TEST BANKS

The seventh edition test banks include approximately 11,500 questions. The test banks have been thoroughly revised, accuracy checked, and reviewed. To ensure the highest level of quality, a team of checkers carefully examined the content for accuracy, consistency with the text, and overall functionality for the purpose of testing student knowledge of the material. These accuracy checkers were David Boudreaux of George Mason University, Monica Cherry of St. John Fisher College, Timothy Duy of the University of Oregon, John Erkkila of Lake Superior State University, Sang Lee of Southeastern Louisiana University, Joshua Lewer of West Texas A&M University, and Robert Whaples of Wake Forest University.

To help instructors select questions more quickly and efficiently, we have used the skill descriptors of fact, definition, conceptual, and analytical. A question labeled *fact* tests a student's knowledge of factual information presented in the text. A *definition* question asks the student to define an economic term or concept. *Conceptual* questions test a student's understanding of a concept. *Analytical* questions require the student to apply an analytical procedure to answer the question.

To aid instructors in building tests, each question is also keyed by degree of difficulty as easy, moderate, or difficult. *Easy* questions involve straightforward recall of information in the text. *Moderate* questions require some analysis on the student's part. *Difficult* questions usually entail more complex analysis.

The test banks include questions with tables that provide students must analyze to use in solving for numerical answers. They also contain questions based on the graphs that appear in the book. The questions ask students to interpret the information presented in the graph. There are also many questions in the test banks that require students to sketch out a graph on their own and interpret curve movements.

THREE TEST BANKS FOR MICROECONOMICS

Microeconomics Test Bank 1 Prepared by Tori Knight of Carson-Newman College, this test bank includes over 2,500 questions. Types of questions include short-answer, multiple-choice, and true/false. This test bank is available in a computerized format using TestGen-EQ test generating software.