

# 微观经济学 原理

第2版

(美) Robert H. Frank 著  
Ben S. Bernanke

Principles of Microeconomics  
Second Edition



清华经济学系列英文版教材

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# 出版说明

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为了适应经济全球化的发展趋势,满足国内广大读者了解、学习和借鉴国外先进的管理经验和掌握经济理论的前沿动态,清华大学出版社与国外著名出版公司合作影印出版一系列英文版经济管理方面的图书。我们所选择的图书,基本上是已再版多次、在国外深受欢迎、并被广泛采用的优秀教材,绝大部分是该领域中较具权威性的经典之作。在选书的过程中,我们得到了很多专家、学者的支持、帮助和鼓励,在此表示谢意!清华经济学系列英文版教材由清华大学经济管理学院和北京大学经济学院朱宝宪、杨炘、李明志、钟笑寒、姚志勇等老师审阅,在此一并致谢!

由于原作者所处国家的政治、经济和文化背景等与我国不同,对书中所持观点,敬请广大读者在阅读过程中注意加以分析和鉴别。

我们期望这套影印书的出版对我国经济科学的发展能有所帮助,对我国经济管理专业的教学能有所促进。

欢迎广大读者给我们提出宝贵的意见和建议;同时也欢迎有关的专业人士向我们推荐您所接触到的国外优秀图书。

清华大学出版社经管事业部  
2003. 11

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世纪之交,中国与世界的发展呈现最显著的两大趋势——以网络为代表的信息技术的突飞猛进,以及经济全球化的激烈挑战。无论是无远弗界的因特网,还是日益密切的政治、经济、文化等方面的国际合作,都标示着21世纪的中国是一个更加开放的中国,也面临着一个更加开放的世界。

教育,特别是管理教育总是扮演着学习与合作的先行者的角色。改革开放以来,尤其是20世纪90年代之后,为了探寻中国国情与国际上一切优秀的管理教育思想、方法和手段的完美结合,为了更好地培养高层次的“面向国际市场竞争、具备国际经营头脑”的管理者,我国的教育机构与美国、欧洲、澳洲以及亚洲一些国家和地区的大量的著名管理学院和顶尖跨国企业建立了长期密切的合作关系。以清华大学经济管理学院为例,2000年,学院顾问委员会成立,并于10月举行了第一次会议,2001年4月又举行了第二次会议。这个顾问委员会包括了世界上最大的一些跨国公司和中国几家顶尖企业的最高领导人,其阵容之大、层次之高,超过了世界上任何一所商学院。在这样高层次、多样化、重实效的管理教育国际合作中,教师和学生与国外的交流机会大幅度增加,越来越深刻地融入到全球性的教育、文化和思想观念的时代变革中,我们的管理教育工作者和经济管理学习者,更加真切地体验到这个世界正发生着深刻的变化,也更主动地探寻和把握着世界经济发展和跨国企业运作的脉搏。

我国管理教育的发展,闭关锁国、闭门造车是绝对不行的,必须同国际接轨,按照国际一流的水准来要求自己。正如朱镕基总理在清华大学经济管理学院成立十周年时所发的贺信中指出的那样:“建设有中国特色的社会主义,需要一大批掌握市场经济的一般规律,熟悉其运行规则,而又了解中国企业实情的经济管理人才。清华大学经济管理学院就要敢于借鉴、引进世界上一切优秀的经济管理学院的教学内容、方法和手段,结合中国的国情,办成世界第一流的经管学院。”作为达到世界一流的一个重要基础,朱镕基总理多次建议清华的MBA教育要加强英语教学。我体会,这不仅因为英语是当今世界交往中重要的语言工具,是连接中国与世界的重要桥梁和媒介,而且更是中国经济管理人才参与国际竞争,加强国际合作,实现中国企业的国际战略的基石。推动和实行英文教学并不是目的,真正的目的在于培养学生——这些未来的企业家——能够具备同国际竞争对手、合作伙伴沟通和对抗的能力。按照这一要求,清华大学经济管理学院正在不断推动英语教学的步伐,使得英语不仅是一门需要学习的核心

课程,而且渗透到各门专业课程的学习当中。

课堂讲授之外,课前课后的大量英文原版著作、案例的阅读对于提高学生的英文水平也是非常关键的。这不仅是积累相当的专业词汇的重要手段,而且是对学习者思维方式的有效训练。

我们知道,就阅读而言,学习和借鉴国外先进的管理经验和掌握经济理论动态,或是阅读翻译作品,或是阅读原著。前者属于间接阅读,后者属于直接阅读。直接阅读取决于读者的外文阅读能力,有较高外语水平的读者当然喜欢直接阅读原著,这样不仅可以避免因译者的疏忽或水平所限而造成的纰漏,同时也可以尽享原作者思想的真实表达。而对于那些有一定外语基础,但又不能完全独立阅读国外原著的读者来说,外文的阅读能力是需要加强培养和训练的,尤其是专业外语的阅读能力更是如此。如果一个人永远不接触专业外版图书,他在获得国外学术信息方面就永远会比别人差半年甚至一年的时间,他就会在无形中减弱自己的竞争能力。因此,我们认为,有一定外语基础的读者,都应该尝试一下阅读外文原版,只要努力并坚持,就一定能过了这道关,到那时就能体验到直接阅读的妙处了。

在掌握大量术语的同时,我们更看重读者在阅读英文原版著作时对于西方管理者或研究者的思维方式的学习和体会。我认为,原汁原味的世界级大师富有特色的表达方式背后,反映了思维习惯,反映了思想精髓,反映了文化特征,也反映了战略偏好。知己知彼,对于跨文化的管理思想、方法的学习,一定要熟悉这些思想、方法所孕育、成长的文化土壤,这样,有朝一日才能真正“具备国际战略头脑”。

以往,普通读者购买和阅读英文原版还有一个书价的障碍。一本外版书少则几十美元,多则上百美元,一般读者只能望书兴叹。随着全球经济合作步伐的加快,目前在出版行业有了一种新的合作出版的方式,即外文影印版,其价格几乎与国内同类图书持平。这样一来,读者可以不必再为书价发愁。清华大学出版社这些年在这方面一直以独特的优势领先于同行。早在1997年,清华大学出版社敢为人先,在国内最早推出一批优秀商学英文版教材,规模宏大,在企业界和管理教育界引起不小的轰动,更使国内莘莘学子受益良多。

为了配合清华大学经济管理学院推动英文授课的急需,也为了向全国更多的MBA试点院校和更多的经济管理学院的教师和学生提供学习上的支持,清华大学出版社再次隆重推出与世界著名出版集团合作的英文原版影印商学教科书,也使广大工商界人士、经济管理类学生享用到最新最好质优价廉的国际教材。

祝愿我国的管理教育事业在社会各界的大力支持和关心下不断发展、日进日新;祝愿我国的经济建设在不断涌现的大批高层次的面向国际市场竞争、具备国际经营头脑的管理者的勉力经营下早日中兴。

赵纯均 教授

清华大学经济管理学院院长  
全国工商管理硕士教育指导委员会副主任



# DEDICATION

For Ellen

R. H. F.

For Anna

B. S. B.



# ABOUT THE AUTHORS

## ROBERT H. FRANK

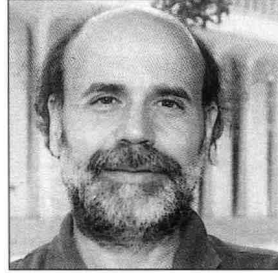


Professor Frank received his B.S. from Georgia Tech in 1966, then taught math and science for two years as a Peace Corps volunteer in rural Nepal. He received his M.A. in statistics and his Ph.D. in economics in 1972 from the University of California at Berkeley. He is the H. J. Louis Professor of Eco-

nomics at Cornell University's Johnson Graduate School of Management. During a leave of absence from Cornell he served as chief economist for the Civil Aeronautics Board (1978–1980), a Fellow at the Center for Advanced Study in the Behavioral Sciences (1992–1993), and Professor of American Civilization at l'École des Hautes Études en Sciences Sociales in Paris (2000–2001).

Professor Frank is the author of a best-selling intermediate economics textbook—*Microeconomics and Behavior*, Fifth Edition (McGraw-Hill/Irwin, 2003). He has published on a variety of subjects, including price and wage discrimination, public utility pricing, the measurement of unemployment spell lengths, and the distributional consequences of direct foreign investment. His research has focused on rivalry and cooperation in economic and social behavior. His books on these themes include *Choosing the Right Pond: Human Behavior and the Quest for Status* (Oxford University Press, 1985) and *Passions Within Reason: The Strategic Role of the Emotions* (W.W. Norton, 1988). He and Philip Cook are coauthors of *The Winner-Take-All Society* (The Free Press, 1995), which received a Critic's Choice Award and appeared on both the *New York Times* Notable Books list and the *Business Week* Ten Best list for 1995. His most recent general-interest publication, *Luxury Fever* (The Free Press, 1999), was named to the Knight-Ridder Best Books list for 1999. He was awarded an Andrew W. Mellon Professorship (1987–1990), a Kenan Enterprise Award (1993), and a Merrill Scholars Program Outstanding Educator Citation (1991). Professor Frank's introductory microeconomics course has graduated more than 5,000 enthusiastic economic naturalists over the years.

## BEN S. BERNANKE



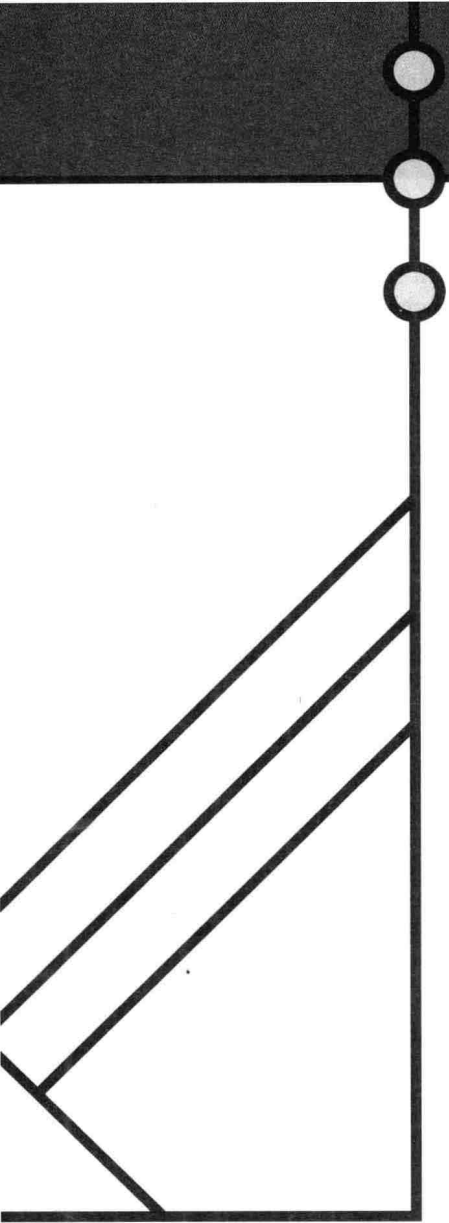
Professor Bernanke received his B.A. in economics from Harvard University in 1975 and his Ph.D. in economics from MIT in 1979. He taught at the Stanford Graduate School of Business from 1979 to 1985 and moved to Princeton University in 1985, where he is the Howard Har-

rison and Gabrielle Snyder Beck Professor of Economics and Public Affairs, and where he served as Chairman of the Economics Department. He has consulted for the Board of Governors of the European Central Bank and other central banks, and he served on a U.S. State Department Committee that advises the Israeli government on economic policy. He is a member of the American Academy of Arts and Sciences, Fellow of the Econometrics Society, and a Research Associate for the National Bureau of Economic Research. He has been a visiting scholar at the Federal Reserve System in Boston, Philadelphia, and New York, and he was recently named to the Board of Governors of the Federal Reserve.

Professor Bernanke's intermediate textbook, with Andrew Abel, *Macroeconomics*, Fourth Edition (Addison-Wesley, 2001) is a best seller in its field. He has written more than 50 scholarly publications in macroeconomics, macroeconomic history, and finance. He has done significant research on the causes of the Great Depression, the role of financial markets and institutions in the business cycle, and measuring the effects of monetary policy on the economy. His two most recent books, both published by Princeton University Press, are *Inflation Targeting: Lessons from the International Experience* (with coauthors) and *Essays on the Great Depression*. He is the editor of the *American Economic Review* and has been the coeditor of the *NBER Macroeconomics Annual* and of *Economics Letters*. He has served as associate editor for the *Journal of Financial Intermediation*, the *Quarterly Journal of Economics*, the *Journal of Money, Credit, and Banking*, and the *Review of Economics and Statistics*. Professor Bernanke has taught principles of economics at both Stanford and Princeton.



# PREFACE

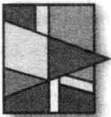


**I**n recent years, innovative texts in mathematics, science, foreign languages, and other fields have achieved dramatic pedagogical gains by abandoning the traditional encyclopedic approach in favor of attempting to teach a short list of core principles in depth. The enthusiastic reactions of users of the first edition of this book confirm that this less-is-more approach affords similar gains in introductory economics. Although recent editions of a few other texts have paid lip service to this new approach, ours is by consensus the most carefully thought out and well-executed text in this mold. Avoiding excessive reliance on formal mathematical derivations, it presents concepts intuitively through examples drawn from familiar contexts. It relies throughout on a well-articulated short list of core principles, which it reinforces repeatedly by illustrating and applying each in numerous contexts. It asks students periodically to apply these principles to answer related questions, exercises, and problems.

The text encourages students to become “economic naturalists,” people who employ basic economic principles to understand and explain what they observe in the world around them. An economic naturalist understands, for example, that infant safety seats are required in cars but not in airplanes because the marginal cost of space to accommodate these seats is typically zero in cars but often hundreds of dollars in airplanes. Such examples engage student interest while teaching them to see each feature of their economic landscape as the reflection of an implicit or explicit cost-benefit calculation.

Our second edition incorporates several significant pedagogical improvements. Based on extensive reviewer feedback, it offers (1) even more streamlined coverage of the cost-benefit approach in the introductory chapter; (2) exercises that are more closely tied to the examples; (3) for important or difficult concepts, expanded narrative explanations that are more accessible to average students; and (4) expanded coverage of several key topics (see below). The result is a revision that is even more clutter-free, engaging, and pedagogically effective than its predecessor.

## FEATURES

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- **Core Principles Emphasized:** A few core principles do most of the work in economics. By focusing almost exclusively on these principles, the text ensures that students leave the course with a deep mastery of them. In contrast, traditional encyclopedic texts so overwhelm students with detail that they often leave the course with little useful working knowledge at all.
  - **Economic Naturalism Introduced in Micro:** Our ultimate goal is to produce “economic naturalists”—people who see each human action as the result of an implicit or explicit cost-benefit calculation. The economic naturalist sees mundane details of ordinary existence in a new light and becomes actively engaged in the attempt to understand them. Some representative examples:
    - Why do auto manufacturers no longer make cars without heaters?
    - Why are whales, but not chickens, threatened with extinction?
    - Why do movie theaters give student discounts on the price of admission but not on the price of popcorn?



ECONOMIC  
NATURALIST

- **Active Learning Stressed:** The only way to learn to hit an overhead smash in tennis or to speak a foreign language is through repeated practice. The same is true for learning economics. Accordingly, we consistently introduce new ideas in the context of simple examples and then follow them with applications showing how they work in familiar settings. At frequent intervals, we pose exercises that both test and reinforce the understanding of these ideas. The end-of-chapter questions and problems are carefully crafted to help students internalize and extend core concepts. Experience with our first edition confirms that our text really does prepare students to apply basic economic principles to solve economic puzzles drawn from the real world.
- **Modern Microeconomics:** Economic surplus, introduced in Chapter 1 and applied repeatedly thereafter, is more fully developed here than in any other text. This concept underlies the argument for economic efficiency as an important social goal. Rather than speak of trade-offs between efficiency and other goals, we stress that maximizing economic surplus facilitates the achievement of *all* goals. **Common decision pitfalls** identified by 2002 Nobel Laureate Daniel Kahneman and others—such as the tendency to ignore implicit costs, the tendency not to ignore sunk costs, and the tendency to confuse average and marginal costs and benefits—are introduced early in Chapter 1. The book devotes a chapter to the economics of information, making available in intuitively accessible form key insights that earned the 2001 Nobel Prize in economics for George Akerlof, Joseph Stiglitz, and Michael Spence.
- **Web site:** The site was developed by Scott Simkins of North Carolina A & T State University, an expert in the growing field of economics education on the World Wide Web. The ambitious web site contains a host of features that will enhance the principles discussed in the classroom, including dynamic graphs, email updates, microeconomic experiments, current news articles, information about the text, an eLearning session, and more.

## IMPROVEMENTS

- **Introductory Material Shortened and Refined:** The material from the first edition's Chapters 1 and 2 has been reworked and condensed into one chapter in an effort to launch these important concepts as clearly and efficiently as possible. From the very beginning, the focus is on how rational people make choices among alternative courses of action.
- **Separate Chapter on Elasticity Added:** The material covered in this chapter (Chapter 4) was covered in parts of two separate chapters in the first edition (Chapters 5 and 6). The new combined chapter streamlines the presentation by making use of definitions and formulas common to both the supply and demand sides. The chapter also adds several new applications and graphical summaries of key relationships.
- **Cost Curve Coverage Added:** Responding to reviewer feedback, we added an introduction to average total cost and average variable cost curves in Chapter 6. To make the presentation as simple and uncluttered as possible, no single diagram ever portrays more than three cost curves at once, and most employ only two. While this treatment remains faithful to our belief that full-blown coverage of production functions and cost curves is ill-advised

at the principles level, it also provides substantially greater teaching flexibility. For example, it enables instructors to portray profits and losses graphically (Chapters 6, 8, and 9) and to discuss a firm's shutdown condition in diagrammatic terms (Chapter 6). It also facilitates an enriched discussion of the invisible hand process by which profit and loss signals drive resource allocation in competitive markets (Chapter 8).

- **Strategic Theory Accessible:** Chapter 10, "Thinking Strategically," includes many examples of how simple elements of game theory can be used not only to illuminate the interactions among oligopolists and other imperfectly competitive firms, but also to shed light on common patterns of human social interaction. This chapter
  - opens with an account of how the producers of a Robert DeNiro film lost several hundred thousand dollars by shooting most of the film before negotiating with the singer who was slated to appear in the final scene.
  - introduces the important Nash equilibrium concept through a series of intuitively accessible examples.
  - includes an extended discussion of the important prisoner's dilemma and strategies that have been developed for solving it.
  - deals with ultimatum bargaining games and unselfish human behavior.
- **Discussion of Labor Markets and Income Redistribution Streamlined:** Chapter 13 now contains material from the chapters on "Labor Markets" (13) and "Income Redistribution" (16) in the first edition. The new chapter is half the combined length of the earlier chapters, accomplished in part by eliminating examples, in part by trimming topic coverage. Sections on monopsony and comparable worth from the original Chapter 13 and sections on utilitarianism, tax policy and occupational choice, progressive consumption taxation, and redistribution and cost-benefit analysis from the original Chapter 16 have been deleted.
- **Discussion of International Trade Expanded:** The first edition had a brief section on international trade at the end of Chapter 3 on comparative advantage. This material has been expanded to an entire chapter (16) on trade. Because international trade involves important micro principles and policy issues, students will benefit greatly from this expanded coverage earlier in the book.

## THE CHALLENGE

The world is a more competitive place now than it was when we started teaching in the 1970s. In arena after arena, business as usual is no longer good enough. Baseball players used to drink beer and go fishing during the off-season, but they now lift weights and ride exercise bicycles. Assistant professors used to work on their houses on weekends, but the current crop can be found most weekends at the office. The competition for student attention has grown similarly more intense. There are many tempting courses in the typical college curriculum, and even more tempting diversions outside the classroom. Students are freer than ever to pick and choose.

Yet many of us seem to operate under the illusion that most freshmen arrive with a burning desire to become economics majors. And many of us do not yet seem to have recognized that students' cognitive abilities and powers of concentration are scarce resources. To hold our ground we must become not only more selective in what we teach, but also more effective as advocates for our discipline. We must persuade students that we offer something of value.

A well-conceived and well-executed introductory course in economics can teach our students more about society and human behavior in a single term than virtually any other course in the university. This course can and should be an intellectual adventure of the first order. Not all students who take the kind of course we envisioned when writing this book will go on to become economics majors of course. But many will, and even those who do not will leave with a sense of admiration for the power of economic ideas.

A salesperson knows that he or she often gets only one chance to make a good first impression on a potential customer. Analogously, the principles course is often our only shot at persuading students to appreciate the value of economics. By trying to teach them everything we know—rather than teaching them the most important things we know—we too often squander this opportunity.

## SUPPLEMENTS

We continue to believe that an ancillary package is most useful if each element in it is part of a well-considered whole, and here, as with the first edition, we've tried hard to coordinate all the elements. We have also worked hard to improve each element within the package—for example, the PowerPoints are more extensive and more sophisticated, the Instructor's Manual now provides more help than before, the Test Banks are larger and the questions more closely tied to the textbook, the Study Guide sends students to the web site more often, the web site itself is more extensive and more accessible, and the DiscoverEcon Tutorial Software is more student-friendly than ever and now allows instructors e-submission capability and easy syllabus linking. Finally, we listened to you about what, in the first edition, needed work and tried to make it better.

## FOR THE INSTRUCTOR

**Instructor's Manual:** Prepared by Margaret Ray at Mary Washington College, this manual will be extremely useful for all teachers, but especially for those new to the job. In addition to such general topics as Using the Web Site, Economic Education Resources, Innovative Ideas, and Tips for Teaching, there will be, for each chapter, An Overview, An Outline, Core Principles, Important Concepts, Teaching Objectives, Web Site Applications, In-Class Activities, More Economic Naturalists, Answers to Textbook Problems, Sample Homework, and a Sample Reading Quiz.

**Test Bank:** Prepared by Sheryl Ball at Virginia Polytechnic Institute, this manual contains nearly 3,000 multiple-choice questions categorized by Teaching Objective (from the Study Guide); Learning Level (knowledge, comprehension, application, analysis); Type (graph, calculation, word problem); and Source (textbook, Study Guide, website, unique).

**Computerized Test Bank:** The print test bank is also available in the latest Diploma test-generating software, ensuring maximum flexibility in test prepa-

ration, including the reconfiguring of graphing exercises. This Brownstone program is the gold standard of testing programs. It is available in both a Windows and Macintosh format.

**PowerPoints:** Prepared by Steve Smith and Jeff Caldwell at Rose State, these slides contain all of the illustrations in the textbook, along with a detailed, chapter-by-chapter review of the important ideas presented in the textbook. These teachers have done PowerPoints for many books at both the principles and intermediate level.

**Overhead Transparencies:** These more than 150, four-color acetates contain all the illustrations presented in the textbook.

**Instructor's CD-ROM:** This remarkable Windows software program, which contains the complete Instructor's Manual, Computerized Test Bank, PowerPoints, and a full set of lecture notes for principles of microeconomics, prepared by Bob Frank for his successful introductory course at Cornell University, also allows the instructor to create presentations from any of the materials on the CD or from additional material that can be imported.

**Online Learning Center ([www.mhhe.com/economics/frankbernanke2](http://www.mhhe.com/economics/frankbernanke2)):** For teachers there are, among other things, an online newsletter called "Teaching Using the Web"; the Instructor's Manual; the PowerPoints; Economics on the Web, an annotated set of URLs/links to sites of interest to economists; a graphing library; and a description of what's on the student site along with some optional material from the book.

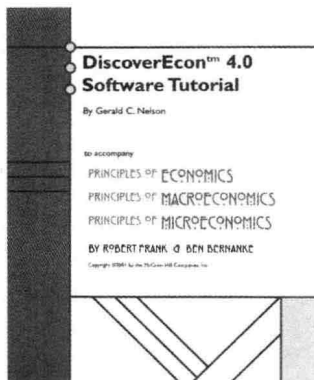
## FOR THE STUDENT

**Study Guide:** Written by Jack Mogab and Bruce McClung at Southwest Texas State University, this book provides the following elements for each chapter: a Pretest; a Learning Objective Grid; a Key Point Review with Learning Tips; some Self-Tests (Key Term Matching, Multiple Choice, Problems) with answers; and an extension of the guide to the web site, where students may practice with graphing.

**Online Learning Center ([www.mhhe.com/economics/frankbernanke2](http://www.mhhe.com/economics/frankbernanke2)):** For students there are such useful and exciting features for the book as a whole as Interpreting the News—articles and summaries of relevant articles with analysis and discussion questions; a Math Tutor—help for those whose math skills are rusty; email updates—periodic sending of information/study tips; the Glossary from the textbook; and Economics on the Web—annotated URLs useful for economics students. Additionally, for each chapter there is an Electronic Learning Session that opens with a brief recap of the chapter followed by a test with answers and analysis; next is a set of study sessions based on Economic Naturalist Exercises; Graphing Exercises; PowerPoints; and Key Terms; and this is finally followed by a second quiz, with answers and analysis.







**DiscoverEcon CD-ROM:** Created by Gerald Nelson of the University of Illinois, DiscoverEcon is the best-selling academic economics software available. It is available as a CD or an online version. This widely class-tested software is Windows-based and text-specific. The software is available either in a standard CD format or via the Web by using a unique student pass code packaged free with each new book. Its many features include, for each chapter,

- **Multiple-choice test questions:** The user chooses the number of questions in the test; the software selects randomly from the question bank for the chapter.
- **Two Web questions:** Students working online can access Web addresses directly through their browsers. Students without Web access can simply ignore these questions.
- **Match the terms:** This exercise challenges the student to match randomly selected key glossary terms with their appropriate glossary explanation.
- **Essay questions**

In addition, the software features

- **New e-submission capability:** Instructors may now set up their courses for e-submission so that all exercise results for each student can be viewed and downloaded to other Windows applications (Web-based version only).
- **Easy syllabus linking:** For those instructors using a course management system, specific pages in DiscoverEcon can be linked to specific parts of the course web site. This makes navigation and therefore self-assessment easier than ever for both student and instructor.
- **The opportunity to experiment with graphs,** those seen in the classroom and the textbook. The software includes *movies* (graphs are drawn step-by-step with explanatory text appearing as the graph is constructed); *interactive graphs* (students change a parameter and see how the graph changes); and *interactive exercises* (students interpret a graph based on concepts presented in the text and in the software).

**BusinessWeek Edition** Your students can subscribe to 15 weeks of *Business Week* at a specially priced rate. Students will receive a pass code card shrink-wrapped with their new text. The card directs students to a web site where they enter the code and then gain access to *BusinessWeek's* registration page to enter address info and set up their print and online subscription as well.

**Wall Street Journal Edition** Your students can subscribe to the *Wall Street Journal* for 15 weeks at a specially priced rate. Students will receive a "How to Use the WSJ" handbook plus a pass code card shrink-wrapped with the text. The card directs students to a web site where they enter the code and then gain access to the WSJ registration page to enter address info and set up their print and online subscription, and also set up their subscription to Dow Jones Interactive online for the span of the 15-week period.

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