



清华经济学系列英文版教材

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宏观经济学原理

Principles of Macroeconomics Fourth Edition

罗伯特·H·弗兰克 (Robert H. Frank)
(美) 著
本·S·伯南克 (Ben S. Bernanke)

第4版

清华大学出版社

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北京

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Principles of Macroeconomics, 4e

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出 版 说 明

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前沿动态的需要,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,基本上已是再版多次、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。在本书的审阅过程中,我们得到了清华大学李明志老师的支持、帮助和鼓励,在此表示谢意!

我们根据国内的教学实际,删去了本书的第2章“比较优势”、第3章“供给和需求”、第15章“汇率和开放经济”和第16章“国际贸易和资本流动”。为了便于读者对原书进行索引,我们对原版图书进行删节的同时仍采用了原书的页码,因此读者在阅读过程中可能会发现有跳页的现象,而且文中提到的页码或内容有可能已被删掉而无法找到。由此给读者带来的诸多不便,我们深表歉意。

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。

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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。正如朱镕基同志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,朱镕基同志多次建议清华的 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,在企业和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



DEDICATION

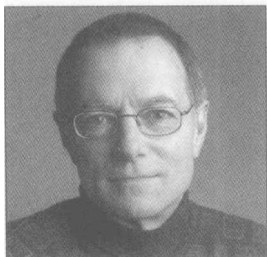
For Ellen

R. H. F.

For Anna

B. S. B.

ROBERT H. FRANK



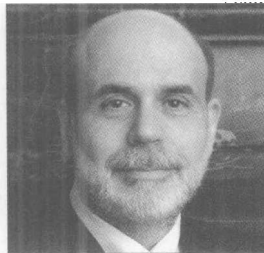
Professor Frank is the Henrietta Johnson Louis Professor of Management and Professor of Economics at the Johnson Graduate School of Management at Cornell University, where he has taught since 1972. His “Economic View” column appears regularly in *The New York Times*. After receiving

his B.S. from Georgia Tech in 1966, he taught math and science for two years as a Peace Corps Volunteer in rural Nepal. He received his M.A. in statistics in 1971 and his Ph.D. in economics in 1972 from The University of California at Berkeley. During leaves of absence from Cornell, he has served as chief economist for the Civil Aeronautics Board (1978–1980), a Fellow at the Center for Advanced Study in the Behavioral Sciences (1992–93), and Professor of American Civilization at l’École des Hautes Études en Sciences Sociales in Paris (2000–01).

Professor Frank is the author of a best-selling intermediate economics textbook—*Microeconomics and Behavior*, Seventh Edition (Irwin/McGraw-Hill, 2008). 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, which include *Choosing the Right Pond* (Oxford, 1995), *Passions Within Reason* (W. W. Norton, 1988), and *What Price the Moral High Ground?* (Princeton, 2004), *The Economic Naturalist* (Basic Books, 2007), and *Falling Behind* (The University of California Press, 2007), have been translated into 15 languages. *The Winner-Take-All Society* (The Free Press, 1995), co-authored with Philip Cook, received a Critic’s Choice Award, was named a Notable Book of the Year by *The New York Times*, and was included in *BusinessWeek*’s list of the 10 best books of 1995. *Luxury Fever* (The Free Press, 1999) was named to the *Knight-Ridder* Best Books list for 1999.

Professor Frank has been awarded an Andrew W. Mellon Professorship (1987–1990), a Kenan Enterprise Award (1993), and a Merrill Scholars Program Outstanding Educator Citation (1991). He is a co-recipient of the 2004 Leontief Prize for Advancing the Frontiers of Economic Thought. He was awarded the Johnson School’s Stephen Russell Distinguished Teaching Award in 2004 and the School’s Apple Distinguished Teaching Award in 2005. His introductory microeconomics course has graduated more than 7,000 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 was named the Howard Harrison and

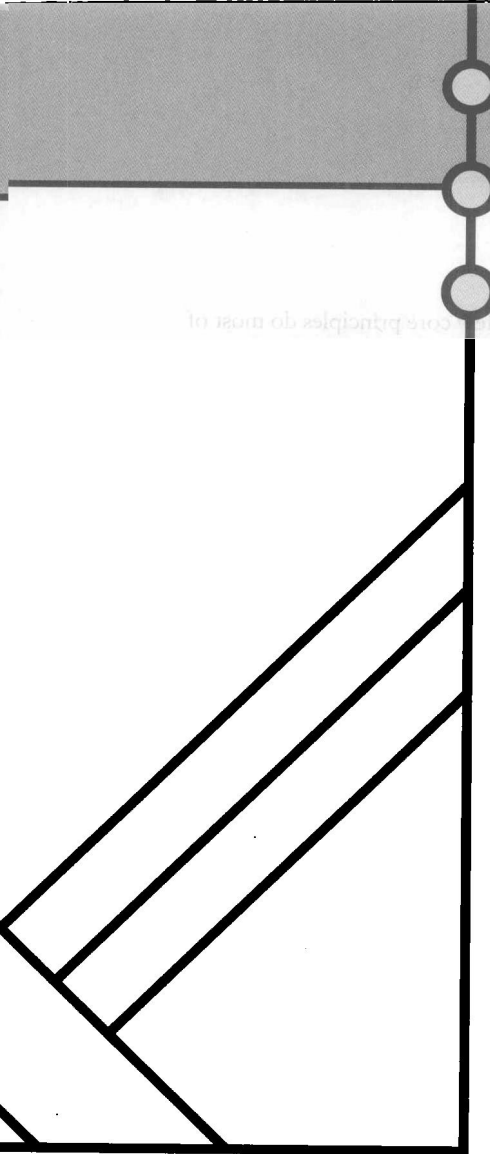
Gabrielle Snyder Beck Professor of Economics and Public Affairs, and where he served as Chairman of the Economics Department.

Professor Bernanke was sworn in on February 1, 2006, as Chairman and a member of the Board of Governors of the Federal Reserve System. Professor Bernanke also serves as Chairman of the Federal Open Market Committee, the System’s principal monetary policymaking body. He was appointed as a member of the Board to a full 14-year term, which expires January 31, 2020, and to a four-year term as Chairman, which expires January 31, 2010. Before his appointment as Chairman, Professor Bernanke was Chairman of the President’s Council of Economic Advisers from June 2005 to January 2006.

Professor Bernanke’s intermediate textbook, with Andrew Abel, *Macroeconomics*, Sixth Edition (Addison-Wesley, 2008) is a best seller in its field. He has authored 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.

Professor Bernanke has held a Guggenheim Fellowship and a Sloan Fellowship, and he is a Fellow of the Econometric Society and of the American Academy of Arts and Sciences. He served as the Director of the Monetary Economics Program of the National Bureau of Economic Research (NBER) and as a member of the NBER’s Business Cycle Dating Committee. In July 2001, he was appointed Editor of the *American Economic Review*. Professor Bernanke’s work with civic and professional groups includes having served two terms as a member of the Montgomery Township (N.J.) Board of Education.

PREFACE



Although many millions of dollars are spent each year on introductory economics instruction in American colleges and universities, the return on this investment has been disturbingly low. Studies have shown, for example, that several months after having taken a principles of economics course, former students are no better able to answer simple economic questions than others who never even took the course. Most students, it seems, leave our introductory courses without having learned even the most important basic economic principles.

The problem, in our view, is that these courses almost always try to teach students far too much. In the process, really important ideas get little more coverage than minor ones, and everything ends up going by in a blur. Many instructors ask themselves, “How much can I cover today?” when instead they should be asking, “How much can my students absorb?”

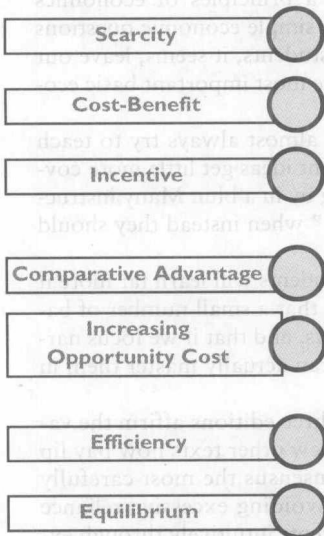
Our textbook grew out of our conviction that students will learn far more if we attempt to cover much less. Our basic premise is that a small number of basic principles do most of the heavy lifting in economics, and that if we focus narrowly and repeatedly on those principles, students can actually master them in just a single semester.

The enthusiastic reactions of users of our first three editions affirm the validity of this premise. Although recent editions of a few other texts now pay lip service to the less-is-more approach, ours is by consensus the most carefully thought-out and well-executed text in this mold. Avoiding excessive reliance on formal mathematical derivations, we present concepts intuitively through examples drawn from familiar contexts. We rely throughout on a well-articulated list of seven core principles, which we reinforce repeatedly by illustrating and applying each principle in numerous contexts. We ask students periodically to apply these principles themselves to answer related questions, exercises, and problems.

Throughout this process, we encourage 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. Scores of such examples are sprinkled throughout the book. Each one, we believe, poses a question that should make any normal, curious person eager to learn the answer. These examples stimulate interest while teaching students to see each feature of their economic landscape as the reflection of one or more of the core principles. Students talk about these examples with their friends and families. Learning economics is like learning a language. In each case, there is no substitute for actually speaking. By inducing students to speak economics, the economic naturalist examples serve this purpose.

For those who would like to learn more about the role of examples in learning economics, Bob Frank’s lecture on this topic is posted on YouTube’s “Authors @ Google” series (<http://www.youtube.com/watch?v=QaINVxeIKEE> or search “Authors @ Google Robert Frank”).

FEATURES



- **An emphasis on seven core principles:** As noted, a few core principles do most of the work in economics. By focusing almost exclusively on these principles, the text assures 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.
 - 1 **The Scarcity Principle:** Having more of one good thing usually means having less of another.
 - 2 **The Cost-Benefit Principle:** Take no action unless its marginal benefit is at least as great as its marginal cost.
 - 3 **The Incentive Principle:** Cost-benefit comparisons are relevant not only for identifying the decisions that rational people should make, but also for predicting the actual decisions they do make.
 - 4 **The Principle of Comparative Advantage:** Everyone does best when each concentrates on the activity for which he or she is relatively most productive.
 - 5 **The Principle of Increasing Opportunity Cost:** Use the resources with the lowest opportunity cost before turning to those with higher opportunity costs.
 - 6 **The Efficiency Principle:** Efficiency is an important social goal because when the economic pie grows larger, everyone can have a larger slice.
 - 7 **The Equilibrium Principle:** A market in equilibrium leaves no unexploited opportunities for individuals but may not exploit all gains achievable through collective action.
- **Economic naturalism:** Economic naturalist examples typically invoke a more aggregative perspective in macroeconomics, but still entail explicit or implicit cost-benefit calculations. In macro, for example, the economic naturalist might ask questions like these:
 - Why has investment in computers increased so much in recent decades?
 - Why does news of inflation hurt the stock market?
 - Why did Japan build roads that nobody wants to use?
- **Active learning stressed:** The only way to learn to hit an overhead smash in tennis 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 three editions confirms that this approach really does prepare students to apply basic economic principles to solve economic puzzles drawn from the real world.
- **Modern Macroeconomics:** Recent developments have renewed interest in cyclical fluctuations without challenging the importance of such long-run issues as growth, productivity, the evolution of real wages, and capital formation. Our treatment of these issues is organized as follows:

- A three-chapter treatment of long-run issues followed by a modern treatment of short-term fluctuations and stabilization policy, emphasizing the important distinction between short- and long-run behavior of the economy.
- Consistent with both media reporting and recent research on monetary policy rules, we treat the interest rate rather than the money supply as the primary instrument of Fed policy.
- The analysis of aggregate demand and aggregate supply relates output to inflation, rather than to the price level, sidestepping the necessity of a separate derivation of the link between the output gap and inflation.
- This book places a heavy emphasis on globalization, starting with an analysis of its effects on real wage inequality and progressing to such issues as the benefits of trade, the causes and effects of protectionism, the role of capital flows in domestic capital formation, and the links between exchange rates and monetary policy.

IMPROVEMENTS

- **Modular presentation:** Part 2, “Macroeconomics: Data and Issues,” is a self-contained group of chapters that covers measurement issues. This allows instructors to proceed to either the long run (Part 3, “The Economy in the Long Run”) or the short run (Part 4, “The Economy in the Short Run”) first with no loss of continuity.
- **Integrated discussion of labor markets:** Labor market trends in employment, wages, and unemployment are now covered together in Chapter 6.
- **Greater attention to the connections between financial markets and money:** Chapter 9 brings together information on financial intermediaries, bond and stock markets, and money so that students can make the connections among stock markets, bond markets, commercial banks, and money.
- **Improved discussion of output gaps and Okun’s Law:** The output gap is now written as $Y - Y^*$ so that when actual output is below potential output, the output gap is a negative number. This allows us to develop Okun’s Law as a negative relationship between the output gap and cyclical unemployment.
- **Improved presentation of the simple Keynesian model:** We present the simple Keynesian model through examples that are developed both graphically and numerically.
- **Strengthened coverage of monetary policy:** We reorganized the material so that the institutional details of the Federal Reserve are discussed at the beginning of Chapter 12, followed by the effects of Federal Reserve policy on planned aggregate expenditure. The money market is still discussed, but now instructors who wish to skip this material can easily do so. In addition, the effects of monetary policy are summarized using logic chains that students can easily understand. Finally, the relationship between output gaps and monetary policy that we discuss using the simple Keynesian model is used to motivate the Fed’s monetary policy rule.

- **Refinements of the presentation of Aggregate Demand and Aggregate Supply:** Chapters 13 and 14 work together to give students a thorough understanding of both the theory and application of the AD-AS model. In Chapter 13, we develop carefully the reasoning behind the *AD* curve and the *AS* curve. In particular:
 - We develop the *AD* curve by tracing the effects of the Fed's monetary policy rule on short-run spending and output. We have eliminated any discussion of price-level effects on output and focused entirely on the relationship between inflation and short-run spending.
 - The *AS* curve is now an upward-sloping curve with inflation on the vertical axis. This provides the advantage of placing inflationary expectations at the center of the story of how the economy's self-correcting mechanism works and how Federal Reserve credibility affects short-run and long-run equilibrium.
 - We provide students with a series of examples that show how the *AD* curve and the *AS* curve work together to determine short-run equilibrium and how the economy adjusts to long-run equilibrium.

In Chapter 14, we apply the AD-AS model to macroeconomic policy. Specifically, we examine monetary policy with a focus on whether or not the Fed should accommodate spending shocks and inflation shocks and discuss supply-side effects of fiscal policy with a focus on how changes in marginal tax rates can affect labor supply and hence potential output. Finally, we use what students have learned to address important current topics such as anchored inflationary expectations, central bank independence, and inflation targeting.

- **Chapter learning objectives:** Students and professors can be confident that the organization of each chapter surrounds common themes outlined by five to seven learning objectives listed on the first page of each chapter. These objectives, along with AACSB and Bloom's Taxonomy Learning categories, and connected to all Test Bank questions and end-of-chapter material to offer a comprehensive, thorough teaching and learning experience.
- **Assurance of learning ready:** Many educational institutions today are focused on the notion of assurance of learning, an important element of some accreditation standards. *Principles of Macroeconomics, 4e* is designed specifically to support your assurance of learning initiatives with a simple, yet powerful, solution.

You can use our test bank software, EZTest, to easily query for Learning Objectives that directly relate to the objectives for your course. You can then use the reporting features of EZTest to aggregate student results in a similar fashion, making the collection and presentation of assurance of learning data simple and easy.

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 now 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 most 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 FOR THE INSTRUCTOR

McGraw-Hill's Homework Manager Plus™: McGraw-Hill's Homework Manager Plus is a complete, Web-based solution that includes and expands upon the actual problem sets found at the end of each chapter. It features enhanced technology that provides a varied supply of auto-graded assignments and graphing exercises, tied to the learning objectives in the book. McGraw-Hill's Homework Manager can be used for student practice, graded homework assignments, and formal examinations; the results are easily integrated with your course management system, including WebCT and Blackboard.

Instructor's Manual: Prepared by Louis D. Johnston of the College of Saint Benedict | Saint John's University, this expanded manual will be extremely useful for all teachers. In addition to such general topics as Using the Web Site, Economic Education Resources, and Innovative Ideas, there will be for each chapter: An Overview, Core Principles, Important Concepts Covered, Teaching Objectives, Teaching Tips/Student Stumbling Blocks, More Economic Naturalists, In-Class and Web Activities, Annotated Chapter Outline, Answers to Textbook Problems, Sample Homework, and a Sample Reading Quiz.

Test Banks: Prepared by William J. Brennan of the University of Minnesota-Mankato, this manual contains more than 2,000 questions categorized by chapter learning objectives, AACSB learning categories, and Bloom's Taxonomy objectives. The test bank is available in the latest EZTest test-generating software, ensuring maximum flexibility in test preparation.

PowerPoints: Prepared by Carol Swartz of the University of North Carolina-Charlotte, these slides contain a detailed, chapter-by-chapter review of the important ideas presented in the textbook, accompanied by animated graphs and slide notes.



Instructor's CD-ROM: This remarkable Windows software program contains the complete Instructor's Manual with solutions to the end-of-chapter problems, Solman Videos, Computerized Test Banks, PowerPoints, and the complete collection of art from the text.

Online Learning Center (www.mhhe.com/fb4e): The contents of the IRCD are also available on the textbook's Web site for quick download and convenient access for professors anytime.

SUPPLEMENTS FOR THE STUDENT

Study Guide: Revised by Louis D. Johnston of the College of Saint Benedict | Saint John's University, this book contains for each chapter a pre-test; a "Key Point Review" that integrates the learning objectives with the chapter content; a self-test with matching and multiple choice problems; and an Economic Naturalist case study that helps students apply what they learned.

Online Learning Center (www.mhhe.com/fb4e): For students there are such useful features as the Glossary from the textbook; Graphing Exercises; a set of study PowerPoints; and practice quizzes.

Premium Content: The Online Learning Center now offers students the opportunity to purchase premium content. Like an electronic study guide, the OLC Premium Content enables students to take self-grading quizzes for each chapter as well as to download Frank and Bernanke-exclusive iPod content including podcasts by the authors, narrated lecture slides, Paul Solman videos—all accessible through the student's MP3 device. In the chapter, when you see an iPod icon, there is a podcast that correlates to that material. The label EN stands for Economic Naturalist, and the number represents the chapter number.



EN 2

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A NOTE ON THE WRITING OF THIS EDITION

Ben Bernanke was sworn in on February 1, 2006, as Chairman and a member of the Board of Governors of the Federal Reserve System. From June 2005 until January 2006, he served as chairman of the President's Council of Economic Advisers. These positions have allowed him to play an active role in making U.S. economic policy, but the rules of government service have restricted his ability to participate in the preparation of the fourth edition.

Fortunately, we were able to enlist the aid of Louis D. Johnston of the College of Saint Benedict | Saint John's University to take the lead in revising the macro portions of the book and to assist Robert Frank in revising the micro portions of the book. Ben Bernanke and Robert Frank express their deep gratitude to Louis for the energy and creativity he has brought to his work on the book. He has made the book a better tool for students and professors.

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