

Second Edition

R. Glenn Hubbard

Money, the Financial System, and the Economy

Second Edition

R. Glenn Hubbard
Columbia University

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Money, the Financial System, and the Economy

Second Edition

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Preface

Thinking About the Book

When I studied money and banking as an undergraduate in 1979, the course emphasized real-world topics: Why is inflation high (as it was in those days), and where does it come from anyway? Why does a boom in the stock or bond market excite news commentators, and how are prices of stocks and bonds determined in the first place? What do banks do with my money? Like me, students often come to this course expecting to learn simple answers to such questions. The answers were not simple in 1979, and they are more complex in the late 1990s. Today's students face an even greater challenge: trying to understand the organization of U.S. financial markets and institutions and the Federal Reserve System in the face of domestic and global change.

Having taught money and banking courses to undergraduate and graduate students for 10 years, I was frustrated that existing books simply stressed the current organization of the financial system and failed to give students a coherent framework for understanding new regulations and events. Adding to my dissatisfaction was the way these texts included new developments: They simply increased the number of topics to be covered during an already crowded term. Even with all this material, students still lacked the tools to predict the effects of changes to the financial system.

A Better Approach

My goal in writing this text is to present to students underlying economic explanations for why the financial system is organized as it is and to show them the interconnection of the financial system and the economy. With this presentation, the student learns a paradigm for interpreting events, not a laundry list of facts that quickly becomes outdated. I wanted to go beyond the traditional approach and teach students how to apply the theory that they learn in the classroom to the practice of the real world. To achieve this goal, I have built

three advantages into this text: (1) a framework for understanding, evaluating, and predicting; (2) a contemporary economic approach; and (3) integration of international material throughout the book.

Framework of the Text: Understand, Evaluate, Predict. The framework underlying all discussion in this text has three levels: First, the student learns to *understand* economic analysis. “Understanding” refers to the development of economic intuition for organizing concepts and facts. Second, economic analysis is used to *evaluate* current developments and the financial news, challenging the student to use financial data and to think critically about interpretations of current events. Finally, the student uses economic tools and principles to *predict* future events, applying economic analysis to anticipate the effects of changes in the economy and the financial system.

This presentation offers students a way to think critically about developments in financial markets and institutions and in monetary institutions and policy. Students then can interpret current events as the logical outcome of principles. For example, in Parts II, III, and IV, which examine the roles of financial markets and institutions in the economy, I repeatedly use the concepts of risk-sharing, liquidity, and information services demanded of and supplied by the financial system to explain such topics as how different financial arrangements bring together borrowers and savers (Chapters 3, 12, and 13), how they respond to changes in regulation (Chapter 15), why they differ in different countries (Chapter 16), and how their functioning affects the macroeconomy (Chapter 27).

A Contemporary Approach. Throughout this text, I incorporate recent research in a way that is accessible to students. Current research on monetary policy, financial institutions, and inflation is used to develop a general model for how monetary policy affects the economy (Chapter 26). The examination of credit crunches (Chapter 27) integrates the economic role of financial institutions in a simple macro model. Efficient markets are covered early (Chapter 10) to lay a groundwork for the discussion of information problems in financial markets (Chapters 11, 12, 13, and 27).

Integration of International Topics. Students today are keenly interested in the workings of the international financial system and in differences in financial systems across countries. Therefore international applications have been integrated throughout the text. For example, international comparisons of financial systems and international constraints on central bank decision making are discussed concurrently with events in the United States (Chapter 22). Separate, optional chapters on exchange rates (Chapter 8), international banking (Chapter 16), and the international monetary and financial system (Chapter 22) appear where they fall naturally. Instructors who wish to omit these topics or cover them later in the course can easily do so.

New Developments in the Second Edition

I established four objectives in revising the content of the second edition.

The first is a thorough change in the structure of the discussion of interest rate determination in Chapter 6. While I wanted to maintain the first edition's emphasis on lending and borrowing decisions by individuals, businesses, and governments, I believed that the analysis would be more useful if it linked those decisions to bond price determination as well. This revised treatment offers the instructor the ability to connect determinants of nominal interest rates and bond prices and offers the student opportunities to visualize and understand the relationship between interest rates and bond prices. Graphs relating the two methods accompany the description and the analysis. The revised chapter also highlights for the student the difference between nominal and real interest rates. I have written the chapter flexibly so that an instructor who prefers to cover bond price determination first and interest rate determination afterward can do so, or either model can be used independently of the other.

Second, the framework of risk sharing/liquidity/information, which was so successful in linking diverse topics in the first edition, has been expanded in the new edition. I believe that this framework is successful because it helps students understand what services financial markets and institutions provide—and why—and how markets and institutions evolve over time. In the second edition, I have expanded the applications of the framework to relate developments in financial markets and institutions, regulation, and macroeconomic model building to economic principles.

Third, the second edition streamlines the analysis in the macroeconomic model building and policy chapters (Chapters 23–28). The text clarifies links between individual decisions of households and businesses that were emphasized earlier in the book and aggregate outcomes for output, interest rates, and the price level. These clarifications make it easier for students to see how shocks to the economy affect aggregate variables and how the economy responds to public policy. Chapters 23–28 offer a balanced and contemporary treatment of alternative models and stress areas of agreement among models. To make the models come alive for students and to demonstrate their predictive power, I added more applications to the chapters in Part VI that allow the students to interpret the theory behind economic events.

Fourth, I wanted to maintain the sense of dynamism in the financial system introduced in the text through examples and boxed features. To achieve this, all of the *Moving from Theory to Practice* news spreads have been updated to include significant financial events that have occurred over the past year or so and analyses of these events that reinforce the chapter theory. Similarly, the *Using the News* sections, in which students observe patterns in reported financial data, have been updated. Examples describing new developments in markets, institutions, and public policies are cited liberally throughout each chapter.

I made these content changes on the basis of economic events, reactions of my own and other students, suggestions from users of the first edition, and reviewer comments.

In addition to these content revisions, each chapter was thoroughly rewritten to improve the organization and to make the theory more accessible for students. Students reading the new edition should find the writing style clearer and easier to read than that of the first edition. I scrutinized the text design, graphs, and layout to make the appearance more inviting and to be sure that each graph or table functioned optimally to represent economic relationships and trends.

The second edition allows significant flexibility for use in undergraduate courses in two-year and four-year institutions and in graduate courses in economics, finance, and public policy. The *Instructors' Resource Manual* describes several alternate paths through the text. Some sample course sequences include the following:

General Money and Banking Course: Chapters 1–7, 10–15, 17, 19, 22, 27

General Course with International Topics: Chapters 1–8, 10–17, 19–23, 27

Financial Markets and Institutions: Chapters 1–15, 8–9 (optional), 16

Monetary Institutions and Policy: Chapters 1–3, 13, 14, 17–21, 22 (optional)

Monetary Economics: Chapters 13–15, 17–21, 22 (optional), 23–28

Putting the Book to Work: Chapter Pedagogy

The features of this text are intended to help the student learn to view the financial system and the economy as an economist does. As much as possible, I have tried to place the student in the role of decision maker. In addition, I use real-world situations through the text so that students see the usefulness of economic analysis in interpreting events.

Chapter Openers. The episode that begins each chapter shows students the real-world relevance and application of the material. The opening scenario is followed by an overview of the topics to be studied in the chapter. The chapter opener provides the student with an application to consider as the chapter develops its themes.

Checkpoints. These features test students' understanding by applying the chapter's economic approach to real-world situations. They address such issues as why some firms in cyclical industries don't rely on debt (p. 262) and how one can discern the Fed's goals from its actions (p. 513). These study aids help students prepare to answer the end-of-chapter exercises.

Consider This. I have drawn these topical illustrations of the chapter's economic approach from current events or research. Included are discussions of whether there is discrimination in bank lending (p. 322), the possibility of a deposit insurance crisis in Japan (p. 390), and whether tax cuts stimulate aggregate demand (p. 651).

Other Times, Other Places. These features extend the chapter's economic approach to historical events or to developments in other countries. Examples include learning about money from Moscow cab drivers (p. 22), similarities in the development of money market mutual funds in the United States and Japan (p. 379), and how the conduct of monetary policy responds to political pressures (p. 545).

Using the News. These excerpts present data from *The Wall Street Journal* and other sources. Students learn not only how to read and interpret such information, but also how to use it for predicting changes within the financial system and the economy.

Case Studies. Many chapters conclude with detailed descriptions of recent events that extend the theory in the chapter. These longer applications are developed from recent events, adding to the currency of the revision. Included are discussions of what happened in the Orange County derivatives crisis (p. 216), whether the U.S. banking industry is in decline (p. 362), how leading nations conduct monetary policy (p. 549), and how monetary policy affects aggregate demand (p. 685).

Moving from Theory to Practice. In my experience, students are especially interested in applying the economic tools that they acquire to analyze events and policy developments in the news. To help students learn how to read news about the financial system and the economy critically, I have included an application feature at the end of each chapter. It consists of an actual news article (often from *The Wall Street Journal*) followed by a section that uses the chapter's economic principles to evaluate the argument of the article. Articles deal with both domestic and international situations, including the effects of the Fed's "soft landing" policy on U.S. bond prices and interest rates (p. 136), an evaluation of the U.S. Treasury's decision to issue indexed bonds (p. 166), the increasing importance of mutual funds in the United States (p. 302), and the debate in 1996 over whether the Fed should emphasize growth or inflation (p. 750).

Summary Tables. These pedagogical aids present easy-to-understand explanations of the causes and effects of changes within the financial system and the economy. They frequently use small analytical diagrams to reinforce relationships visually.

Process Diagrams. Because many students learn visually, the text has many process diagrams that illustrate the underlying economic forces that shape events, institutions, and markets. For example, I introduce a basic diagram in Chapter 3 (p. 38) showing that savers and borrowers value risk-sharing, liquidity, and information services. The basic diagram, shown there, is modified and repeated so that students internalize the model and can begin to make predictions based on it.

Analytical Graphs. To aid students in seeing the principles and factors underlying events in the financial system and the economy, I use color functionally in analytical graphs. For example, on p. 145, the initial conditions are consistently indicated by blue curves, and the final state by red curves. A blue-to-red shift arrow highlights the curves' movement, and beige "shock" boxes are numbered, allowing students to follow the sequence of events easily by referring to the numbers in the captions that accompany the graphs. These captions explain the economic factors fully so that students do not have to search for explanations within the text.

End-of-Chapter Summary. An aid for exam review, this feature presents the key terms and concepts and summarizes the main points of the chapter.

End-of-Chapter Exercises. Each chapter concludes with three types of exercises: *Review Questions* test students' recall of concepts and events. *Analytical Problems* give students a chance to apply the chapter's economic approach to specific cases and events. *Data Questions* ask students to collect data from specific sources in the library and use them to evaluate an economic argument. I have provided numerous questions to give the instructor maximum flexibility in making assignments.

Content and Organization

The text's consistent theoretical approach and thorough coverage of contemporary events, institutions, and data offer students a well-balanced picture of the interactions among money, the financial system, and the economy. Within each part, the presentation develops economic models and then offers applications and analysis to help the student understand, evaluate, and predict financial events. Although related economic models are used throughout the book, instructors can easily use individual parts and chapters of the book independently. It is not necessary to cover the chapters in sequence.

Part I: Introduction (Chapters 1–3). This introduction to the text includes the reasons for using an economic approach to studying money, financial markets and institutions, and the economy (Chapter 1); the role of money within the financial system (Chapter 2); and an overview of the role played by different elements of the financial system in matching savers and borrowers and providing risk-sharing, liquidity, and information services (Chapter 3).

Part II: Interest Rates (Chapters 4–7). In Part II, we focus on how interest rates are determined. The student observes how the decisions of thousands of individual lenders and borrowers in the United States and around the world set the market interest rates that we read about in the newspaper. (Later, in Part V, we explore how decisions of the Federal Reserve affect interest rates.) Chapter 4 explains what interest rates are, how they are measured, and where students

can obtain information about interest rates to inform their financial decisions. Chapter 5 looks at how savers compare interest rates and returns on assets to allocate their savings in a portfolio, or collection of assets. Chapters 6 and 7 are the key analytical chapters. Chapter 6 studies how decisions about lending and borrowing determine bond prices and market interest rates in the United States and the international capital market. Chapter 7 extends the analysis to encompass the hundreds of interest rates that are reported each business day. That chapter examines how differences in risk, liquidity, information costs, taxation, and maturity affect interest rates.

Part III: Financial Markets (Chapters 8–11). Whereas Part II concentrated on interest rates and the bond market, these chapters extend the analysis to encompass financial markets more broadly. Chapter 8 investigates the market for foreign exchange, focusing on how exchange rates are determined and how movements in exchange rates and interest rates are related. In Chapter 9, we examine the operation of derivative markets, look at the services they provide, and study why market prices fluctuate. Chapters 10 and 11 consider how financial markets evaluate and communicate information. In Chapter 10, we theorize why prices of stocks, bonds, foreign exchange, and derivative instruments contain information about assets' fundamental value for savers and borrowers. We also check whether the evidence from financial markets supports the theory. Chapter 11 examines the costs that are imposed on financial markets by asymmetric information and observes how financial markets respond to information problems.

Part IV: Financial Institutions (Chapters 12–16). Part IV continues to use the concepts of risk sharing, liquidity, and information to explain why and how financial institutions and instruments evolve. Chapter 12 explains how the provision of risk-sharing, liquidity, and information services results in the development of different financial institutions. Chapter 13 examines the activities of banking firms and concludes with an analysis of how banks have exploited transactions and information cost advantages to enter new lines of business. Chapter 14 analyzes the development and current organization of the U.S. banking industry (and banking industries in other countries) and summarizes economic arguments for and against regulation. Chapter 15 examines financial regulation using a model of crisis, regulation, financial innovation, and regulatory response. This chapter also offers an up-to-date description of the regulatory debate in the aftermath of the passage of the Federal Deposit Insurance Corporation Improvement Act of 1991, in the wake of the debates over the Community Reinvestment Act, and surrounding the passage of the Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994. Chapter 16 focuses on banks' provision of risk-sharing, liquidity, and information services in international transactions and introduces students to Euromarkets and global trends.

Part V: The Money Supply Process and Monetary Policy (Chapters 17–22). This part opens the discussion of the links between the financial system and the macroeconomy. It begins with the money supply process, focusing on the role of the Fed, banks, and the nonbank public in determining the monetary base and the money multiplier (Chapter 17). Next is an optional chapter on the determinants of changes in the monetary base (Chapter 18). Chapter 19 analyzes the organization of the Fed and offers comparisons with the central banks of other countries. Chapter 20 introduces the tools of monetary policy and offers a simple graphical analysis of the reserves market so that students can apply their understanding. The conduct of monetary policy and contemporary developments in Fed procedures are explored in Chapter 21. Chapter 22, an optional chapter, examines constraints on the conduct of monetary policy in an open economy using the model of exchange rate determination that was introduced in Chapter 8.

Part VI: The Financial System and the Macroeconomy (Chapters 23–28). The final part studies the impact of monetary policy on the macroeconomy. Chapter 23 explains the demand for money based on the determinants of portfolio allocation and discusses the measurement of money. For those instructors who wish to use the *IS-LM* model, Chapter 24 presents a modern development of the model using the full-employment output line and a synthesis of the models of lending and borrowing, portfolio allocation, and money demand that were developed earlier in the book. For instructors who wish to use the aggregate demand-aggregate supply model, Chapter 25 intuitively derives the *AD* curve and presents a modern development of aggregate supply and the *AS* curve in the short run and the long run. Chapter 26 provides a concise treatment of short-run economic impacts of monetary policy, with analysis of competing approaches and empirical evidence. Chapter 27 expands the analysis of the role of financial institutions in macroeconomic models, including the debate over the extent to which a credit crunch worsened the 1990–1991 recession. Chapter 28 uses the *AD-AS* framework to analyze determinants of inflation in the short run and the long run.

Supplements

Study Guide. The updated and expanded *Study Guide* by Christopher Erickson and Elliott Willman of New Mexico State University is carefully coordinated with the main text and contains chapter overviews, a summary of key points, completion exercises, multiple-choice and true-or-false questions, and analytical problems. New to this edition are two mid-term exams and two final exams that enable students to test their cumulative understanding of the material. A glossary of terms is also new to this edition.

Instructor's Resource Manual and Test Bank. The updated and expanded *Instructor's Resource Manual* by Anthony Patrick O'Brien of Lehigh University contains chapter outlines, solutions to end-of-chapter questions and problems in the main text, essay and discussion questions, references to MacNeil-Lehrer videos, and a set of transparency masters of key images. The *Test Bank* portion of the manual contains 2000 multiple-choice questions, more than 600 of which are new to this edition. Each question is coded according to level of difficulty and includes a text page reference. Instructors may obtain the *Instructor's Resource Manual and Test Bank* from their Addison-Wesley representative.

Computerized Testing. This supplement provides test items on 3½-inch diskettes (IBM and Windows versions) so that instructors can edit them and create their own problem sets and examinations. It is available free to adopters and may be obtained from the local Addison-Wesley representative.

MacNeil-Lehrer Business Reports Video Library. Noted reporter Paul Solmon presents high-interest news stories about the economy and the financial system. The local Addison-Wesley representative will assist interested instructors in obtaining the videos.

PowerPoint Lectures. New to this edition, David Macpherson of Florida State University has prepared PowerPoint lectures including key content and images as well as lecture notes. This new feature may be obtained from the local Addison-Wesley representative.

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R.G.H.

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Russell L. Carson Professor of Economics and Finance and Senior Vice Dean at the Graduate School of Business at Columbia University, Glenn Hubbard received his B.A. and B.S. from the University of Central Florida and A.M. and Ph.D. in economics from Harvard University, where he was honored with both National Science Foundation and Alfred P. Sloan Foundation fellowships.

Hubbard served as deputy assistant secretary of the U.S. Treasury Department in Washington, D.C., during the Bush administration.

Hubbard has published numerous articles—on financial economics, public finance, macroeconomics, industrial organization, energy economics, and public policy—in such journals as *American Economic Review*; *Annales d'Economie et de Statistique*; *Brookings Papers on Economic Activity*; *European Economic Review*; *Journal of Business*; *Journal of Financial Economics*; *Journal of Industrial Economics*; *Journal of Law and Economics*; *Journal of Money, Credit, and Banking*; *Journal of Political Economy*; *Management Science*; *National Tax Journal*; *Quarterly Journal of Economics*; *Rand Journal of Economics*; and *Review of Economics and Statistics*. He has been a research consultant for the Federal Reserve Board, the Federal Reserve Bank of New York, the Internal Revenue Service, the Social Security Administration, the U.S. Department of the Treasury, the U.S. International Trade Commission, the National Science Foundation, and the World Bank. Hubbard has also advised numerous private financial institutions on developments in public policy and regulation.

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