The Financial System & The Economy 3e

Principles of Money & Banking



Burton & Lombra



The Financial System & The Economy

Principles of Money & Banking
3rd Edition

Maureen Burton

California State Polytechnic University—Pomona

Ray Lombra

Pennsylvania State University—University Park





The Financial System & The Economy: Principles of Money & Banking, 3rd Edition Maureen Burton and Ray Lombra

Vice President/Team Leader:

Michael P. Roche

Acquisitions Editor: Michael Worls

Developmental Editor: Bob Sandman

Marketing Manager:

Lisa L. Lysne

Production Editor: Chris Hudson

Manufacturing Coordinator: Sandee Milewski

Media Development Editor: Peggy Buskey

Media Production Editor: Pamela Wallace

Compositor:

Pre-Press Company, Inc.

Printer:

R.R. Donnelley & Sons Willard Manufacturing Division

Internal and Cover Designer:

Christy Carr

Cover Image: @PhotoDisc. Inc.

COPYRIGHT © 2003 by South-Western, a division of Thomson Learning. Thomson LearningTM is a trademark used herein under license.

Printed in the United States of America 2 3 4 5 05 04 03 02

For more information contact South-Western, 5191 Natorp Boulevard, Mason, Ohio 45040. Or you can visit our Internet site at: http://www.swcollege.com

ALL RIGHTS RESERVED.

No part of this work covered by the copyright hereon may be reproduced or used in any form or by any means-graphic, electronic, or mechanical, including photocopying, recording, taping, Web distribution or information storage and retrieval systems-without the written permission of the publisher.

For permission to use material from this text or product, contact us by Tel (800) 730-2214 Fax (800) 730-2215 http://www.thomsonrights.com

Library of Congress Cataloging-in-Publication Data

ISBN: 0-324-07182-5

Burton, Maureen.

The financial system and the economy: principles of money and banking / Maureen Burton, Ray Lombra.—3rd ed.

Includes bibliographical references and index. ISBN 0-324-07182-5 (alk.

paper)

1. Finance. 2. Money. 3. Banks and banking. 4. Financial institutions. 5. Financial services industry. I. Lombra, Raymond E. II. Title. HG173.B872002 2001054152 332.1-dc21

511/

About the Authors

Maureen Burton

Maureen Burton received a B.A. from the University of Missouri at Columbia in 1971, an M.A. from California State University, Fullerton in 1979, and a Ph.D. from the University of California at Riverside in 1986. All were in economics. She taught at Chaffey College from 1984 to 1987 and has taught at Cal Poly Pomona since 1987, where she is a full professor and has served as Department Chair and Coordinator of the Graduate Program in economics. In addition to other publications, she has co-authored an introductory text, *Economics* (1987), with S. Craig Justice, and a financial markets and institutions text, *An Introduction to Financial Markets and Institutions* (2003), with Reynold Nesiba and Ray Lombra. Her main areas of research are monetary theory and financial markets.

Ray Lombra

Born in Hamden, Connecticut, Ray Lombra received a B.A. in economics from Providence College in 1967 and an M.A. and Ph.D. from Penn State University in 1971. He served as a senior staff economist at the Board of Governors of the Federal Reserve System from 1971–1977 and specialized in financial markets analysis and the formulation and implementation of monetary policy. He joined the faculty of Penn State University in 1977, and has taught money and banking at the undergraduate level and monetary theory and policy at the graduate level for 25 years. He is a winner of the College distinguished teaching award for innovations and instruction and is the author and editor of 5 books and over 80 scholarly publications. Articles on monetary policy; the determination of interest rates, stock prices, and exchange rates; financial innovation; globalization; and expectations formation have appeared in leading journals including the *Quarterly Journal of Economics*, the *Journal of Money*, *Credit and Banking*, the *Journal of Monetary Economics*, and the *Review of Economics and Statistics*.

iv

To my husband, Al Gagnon,
To my daughter, Suzanne Zehntner, and
To my sisters, Mary McCarthy, Judy Burton, and Rosemarie Evans
Maureen Burton

To my wonderful children—Sherri, Brian, and Todd Ray Lombra

Preface

xxii

xxiii

Introduction to the Text

The financial system has undergone significant changes in recent years. Transformations have been driven by technological advances, deregulation, and globalization. Flexible exchange rates and the growth of international trade have escalated the development of currency markets. Financial institutions have entered nontraditional venues. Laws forbidding the mergers of banks, securities firms, and insurance companies have been overturned. Mega-mergers have occurred that have altered the scope, size, and activities of financial institutions. Changes in information and computer technologies have fostered the development of new financial instruments and products as well as new and creative ways to hedge and manage risks in a globalized environment. Managers of financial institutions must now make decisions in this new and dynamic milieu where technological innovations are the driving force.

In the early 2000s, financial market participants face new challenges as they continue to adapt to the changing political and economic environment. Even before the September 11, 2001 terrorist attacks on the World Trade Center and the Pentagon, falling stock prices raised global uncertainty while rates of economic growth among key industrialized countries slowed. The terrorist attacks further threatened the economic health of financial institutions and markets. Controversy continues over monetary policy and the Fed's response to the events of September 11, which included massive injections of reserves into the banking system, coordinated decreases in interest rates, and a currency swap agreement with the newly created European Monetary System.

Given this climate, the motivation for developing this text is twofold. First, we wish to capture the ongoing changes in the financial system, particularly with regard to technology and globalization. Second, and most importantly, we seek to present an analytical framework that enables students to understand and anticipate changes in the financial system and the accompanying changes in financial markets and institutions.

Intended Audience

The text is intended for an introductory undergraduate course in money and banking or financial markets analysis taught in either an economics or finance department. It may also be suitable for use in a financial markets course in an M.B.A. program.

Contents of the Text

The Financial System & The Economy, 3rd edition, covers the traditional material found in a money and banking text and incorporates many of the recent changes and controversies within the financial services industry.

In addition, there are several unique features to this edition including:

- greater focus on technological change and its effects on the financial system
- superior coverage of the securities industry and newly created financial holding companies

- new coverage of the efficient markets hypothesis
- expanded coverage on equity and debt markets, securities firms, and the growing use of derivatives and securitizations
- discussion of how the Fed's modus operandi has dramatically changed in recent years

The 3rd edition continues to have a clear and engaging writing style and strong intuitive approach. It avoids encyclopedic overload and seeks a balance between policy, theory, and institutions. Students will find it easy to understand and enjoyable to read. The text makes use of many examples and analogies to illustrate how financial innovation, technological and structural change, and globalization affect the financial environment. Much attention is paid to how and why institutions evolve. Graphs are used sparingly and equations are used even more sparingly.

Financial markets are evolving at a rapid pace due to changes in technology, regulations, and globalization. We do not focus on isolated facts regarding the current state of the financial system. Instead we emphasize how the current state evolved and where it is likely to be heading. We erect an analytical framework that allows students to unravel the dynamics and intricacies of the financial system.

Chapter features include examples, historical and international perspectives, and projections about the future that bring the material to life for students. Professors often view the examples that come along at the end of a lecture as a means to tie up loose ends. We view the examples and illustrations as the nails in the wall on which we hang the analysis; our experience suggests it is the realworld dimension to the text and examples that stays with students well beyond the lecture and indeed beyond the course.

A sample of topics covered in these features includes recent mega-mergers among financial institutions, changes in the payments mechanism due to technology, the new U.S. currency, the implicit guarantee of government-sponsored enterprise securities, buying and selling stocks over the Internet, the causes of the Asian crisis, Europe's new single currency, how price expectations are formed, the collapse of Barings Bank and Orange County, the current Federal Reserve Board, the use of intermediate targets since 1970, and the bailout of Long-Term Capital Management, among others.

The text contains annotated suggested readings that give the students some idea about how the readings relate to the material in the chapters. In addition, the suggested readings sections contain Internet addresses that pertain to the financial system.

Internet addresses also appear throughout the body of the text to direct students to sites relevant to the topics being discussed. Some chapters have review and analytical questions and problems that direct the student to go to an Internet address to locate and analyze financial market data. Internet applications and interactive quizzes can be found at the Web site for the text, http://burton.swcollege.com/.

New Chapters

Three new chapters have been added to the 3rd edition. The first is Chapter 9, "Market Efficiency." This chapter rounds out the discussions in Part II on financial prices by presenting the efficient markets hypothesis to demonstrate how prices of all financial instruments (and interest rates) are related. In addition, the chapter shows how the flow of funds among sectors changes in response to changes in financial prices that alter spending, saving, borrowing, and lending behavior among spending units.

xxiv

The other new chapters—Chapter 16, "Securities Firms, Mutual Funds, and Financial Conglomerates," and Chapter 18, "The Debt Markets"—were written to satisfy the need for additional coverage as financial institutions and financial markets evolve, particularly since the Gramm—Leach—Bliley Act became law.

Finally, the two chapters in the 2nd edition on the financial aspects of the behavior of the household, business, government, and rest-of-the-world sectors were combined into one chapter.

Organization of the Text

The Financial System & The Economy, 3rd edition, is organized in six parts.

Part I consists of a six-chapter introduction. The student is introduced to the economy, money and credit, financial intermediaries, the circular flow, the Federal Reserve System, and financial markets and products.

Part II consists of four chapters that focus on how interest rates and exchange rates (financial prices) are determined. In addition, a new chapter has been added on market efficiency that covers the efficient markets hypothesis and the flow of funds among sectors.

Part III consists of six chapters on financial institutions and the forces that shape them. The roles of technology, competition, globalization, and regulation are emphasized in a discussion of how institutions evolve. The chapters on financial innovation and financial instability have been updated. A new chapter has been added on securities firms, mutual funds, and financial conglomerates.

Part IV offers four chapters that focus on financial markets including the stock market; the debt markets; the forward, futures, and options markets; and the international financial system. As noted earlier, the chapter on debt markets is new to this edition.

Part V presents four chapters that cover monetary theory including the money supply process; the demand and supply of money and credit; the financial aspects of the behavior of households, firms, governments, and foreign sectors; and the aggregate demand and supply model.

Part VI consists of four chapters that analyze monetary policy in an increasingly globalized environment and focus on the formulation of monetary policy by the Fed Open Market Committee and subsequent execution of the policy directive by the Trading Desk of the New York Fed. The role of the Fed watcher and the growing need for international coordination are also analyzed.

This text is designed to be flexible. After completing Part I, the instructor can emphasize financial prices (Part II), financial institutions (Part III), financial markets (Part IV), monetary theory (Part V), or monetary policy (Part VI), depending on the focus of the class. In parts that are not being emphasized, chapters may be skipped.

Pedagogical Features of the Text

In addition to presenting the material in a clear and concise manner, we have incorporated the following pedagogical tools to enhance the student's understanding.

• Learning Objectives at the beginning of each chapter tell the student where the chapter is heading and what questions will be answered by studying the chapter.

- Recap sections are interspersed throughout each chapter to summarize analytical material the student should know before moving forward, and also to check if the student has mastered the preceding material.
- Highlighted features include:
 - A Closer Look boxes, which delve more deeply into the topic being discussed and provide enhancement material.
 - Looking Out boxes, which add relevant international material that emphasizes the interrelationships of global financial systems.
 - Looking Back boxes, which provide historical background on the foundations of current economic circumstances.
 - Looking Forward boxes, which make projections about possible future situations within the arena of the financial system and economies.
- Cracking the Code features show students how to interpret the financial pages
 of daily newspapers, including stock, bond, Treasury bill, mutual fund, and
 foreign exchange quotes, and futures and options prices.
- **Key Terms** are boldfaced in the text where they are defined and are listed at the end of each chapter. They also appear in the margins with definitions.
- Summary of Major Points features are chapter summaries intended to reinforce the chapter content and aid in studying for exams and quizzes, as well as provide another check for students to make sure they have not missed any important concepts.
- End-of-chapter materials include:
 - Annotated Suggested Readings that direct the student to related material and include relevant information available on the Internet.
 - Review Questions, Analytical Questions, and Internet Exercises. Questions marked with an icon can be answered with a short answer or number. Instructors may choose to use these objective questions in larger sections.

Supplements to the Text

The Financial System & The Economy offers a comprehensive and well-crafted supplements package for both students and instructors. Contact your Thomson Learning/South-Western Sales Representative for more details, or visit the Burton Web site at http://burton.swcollege.com/.

- Study Guide (ISBN: 0-324-12073-7). The study guide provides chapter outlines and review questions to reinforce learning. Features include Highlights in Detail; Terms and Concepts with definitions; Fill-in Questions by topic; True/False, Multiple Choice, and Essay Questions; and Problems, all with answers at the end of each chapter. Answers to True/False Questions, Essay Questions, and Problems include detailed explanations.
- Instructor's Manual (ISBN: 0-324-12074-5). This manual includes chapter summaries, teaching tips, and solutions to all end-of-chapter questions.
- Test Bank (ISBN: 0-324-12076-1). The test bank contains multiple choice questions for each chapter.
- ExamView Testing Software—Computerized Testing Software (ISBN: 0-324-12077-X). This testing software contains all of the questions in the printed test bank. The program is an easy-to-use test creation software compatible with Microsoft Windows. Instructors can add or edit questions, instructions, and answers, and select questions by previewing them on the screen, selecting them randomly, or selecting them by number. Instructors can also create and

xxvi

administer quizzes online, whether over the Internet, a local area network (LAN), or a wide area network (WAN).

Microsoft PowerPoint™ Slides. These user-friendly slides can serve as a lecture enhancement tool for instructors and a study aid for students. They are available on the text Web site at http://burton.swcollege.com/.

Acknowledgments

Many people have made important contributions to this text. Special thanks go to Mike Worls and Bob Sandman, editors at South-Western College Publishing who were always supportive, creative, and helpful. The text's production editor, Chris Hudson, did a first-rate job. All of our editors provided immediate answers, support, and assistance. We are glad to have the opportunity to work with such professionals.

Other people also deserve special recognition. Dr. Bryan Taylor, president of Global Financial Data in Los Angeles, read much of the manuscript, answered numerous questions, provided data, and gave invaluable criticisms and suggestions. Professor Emeritus George Galbreath and Professor James Sutton, both of California State Polytechnic University, Pomona, offered their expertise throughout the project. We are also grateful to our families for their comfort, support, and understanding during the creation of this text.

We are indebted to many current and former students who have assisted in myriad ways. Roberto Ayala, Adam DeAvilan, Patrick Flynn, and Benton Wolverton provided valuable research assistance.

We would also like to thank the following reviewers, whose comments were greatly appreciated:

Kathryn G. Marshall, Ohio State University Wm. Stewart Mounts, Jr., Mercer University Christopher J. Niggle, University of Redlands Jerome Picard, Mount Saint Mary College Richard T. Selden, University of Virginia William H. Wells, Merrimack College

Brief Contents

Part One Introduction 1 1 Introduction and Overview 3

- 2 Principles of Money 23
- 3 The Role of Money and Credit 41
- 4 Analysis of the Financial System and the Economy 61
- 5 The Overseer: The Federal Reserve System 81
- 6 Financial Markets, Instruments, and Market Makers 105

Part Two Financial Prices 127

- 7 Interest Rates and Bond Prices 129
- 8 The Structure of Interest Rates 151
- 9 Market Efficiency 175
- 10 How Exchange Rates Are Determined 195

Part Three Financial Institutions 223

- 11 An Introduction to Financial Intermediaries and Risk 225
- 12 Commercial Banking Structure, Regulation, and Performance 251
- 13 Financial Innovation 277
- 14 Financial Instability and Strains on the Financial System 303
- 15 Regulation of the Banking System and the Financial Services Industry 325
- 16 Securities Firms, Mutual Funds, and Financial Conglomerates 349

Part Four Financial Markets 375

- 17 The Stock Market 377
- 18 The Debt Markets 405
- 19 Forward, Futures, and Options Agreements 433
- **20** The International Financial System 461

Part Five Monetary Theory 485

21 The Fed, Depository Institutions, and the Money Supply Process

487

22 The Demand for Real Money Balances and Market Equilibrium

- 23 Financial Aspects of the Household, Firm, Government, and Rest-of-the-World Sectors 545
- 24 Aggregate Demand and Aggregate Supply 573

Part Six Monetary Policy 597

- 25 The Challenges of Monetary Policy 599
- 26 The Process of Monetary Policy Formulation 621
- 27 Policy Implementation 639
- 28 Monetary Policy in a Globalized Financial System 659



Contents

Preface xxii

PART ONE: Introduction 1

Chapter 1 Introduction and Overview 3

What This Book Is About 4.

Economic and Financial Analysis of an Ever Changing System

Finance in Our Daily Lives 6

Introducing the Financial System 7

More on Financial Intermediaries 9

Depository Institutions and Other Types of Intermediaries 11

The Federal Reserve System 12

The Role of Policy: Changing Views 14.

Summary of Major Points 17

Chapter 2 Principles of Money 23

Conceptualization: A Key Building Block 24

Defining Money 24

The Monetary Aggregates and Domestic Nonfinancial Debt 25

A Closer Look: Money, Exchange, and Economic Development 27

The Monetary Aggregates 27

A Closer Look: Money and Other Financial Claims 29

Domestic Nonfinancial Debt 30

The Economy and the Aggregates 31

The Ongoing Evolution of the Payments System: The Role of Computer and Telecommunications Technologies 32

Looking Back: United States Gets New Currency 33

A Closer Look: Forget Your Checkbook 35

Looking Out: Computer and Telecommunications Technologies and the International Financial System 36

Summary of Major Points 36

Chapter 3 The Role of Money and Credit 41

Money and Credit Matter 42

The Demand for and Supply of Money 42

viii ix The Demand for Money 42
Cracking the Code: Graphical Analysis 43
The Supply of Money 44
Money and Interest Rates 46
How Credit Matters: A First Approximation 50
A Closer Look: Recent Innovations in Credit Extension 51
Money, Credit, and the Economy 52
Looking Back: A Brief History of U.S. Currency 53
Are Money and Credit All That Matter? 54
Money and Credit Flows: First Fiddle or Second Fiddle 54
Cracking the Code: Calculating the Inflation Rate 55
Summary of Major Points 55

Chapter 4 Analysis of the Financial System and the Economy 61

The Trees versus the Forest 62

Spending, Saving, Borrowing, and Lending 62

A Typical Household 63

A Typical Firm 63

From J. P. and APEI to the Economy as a Whole: Aggregation

The Circular Flow of Income, Expenditures, and Funds 65

The Product Market 67
The Factor Market 69
The Financial System 70

A Closer Look: Interest Rates: Which Theory Is Correct? Reconciling Stocks and Flows 72

Maximization: Plans, Revisions, and Actions 74
Summary of Major Points 76

Chapter 5 The Overseer: The Federal Reserve System 81

Unraveling the Fed's Mystique 82
Organizational Structure of the System 82
Looking Back: Early Attempts at Establishing a Central Bank 83
A Closer Look: The Board of Governors 84
The Fed's Functions 87
Formulation and Implementation of Monetary Policy 87
Supervision and Regulation of the Financial System 88

Facilitation of the Payments Mechanism 89

Operation as Fiscal Agent for the Government 89

The Fed's Major Policy Tools 90

Open Market Operations 90

The Discount Rate and Discount Rate Policy 91

Reserve Requirements 92

Looking Out: The Eurosystem: Europe's Central Bank 93

Who Does What within the Fed 94

The Federal Reserve System: An Independent Watchdog, Convenient Scapegoat, or Cunning Political Animal? 95

Looking Out: Central Bank Independence and Macroeconomic Performance 97

Summary of Major Points 98

Chapter 6 Financial Markets, Instruments, and Market Makers 105

Game Talk 106

Introducing Financial Markets 106

Major Financial Market Instruments 108

Money Market Instruments 109

Cracking the Code: Treasury Bills 110

Capital Market Instruments 114

The Role of Market Makers 116

A Closer Look: Following the Financial News 117

Why Market Makers Make Markets 118

Market Making and Liquidity 119

Substitutability, Market Making, and Market Integration 119

Summary of Major Points 121

PART TWO: Financial Prices 127

Chapter 7 Interest Rates and Bond Prices 129

The Present versus the Future 130

The Time Value of Money 130

Compounding and Discounting 131

Compounding: Future Values 131

Discounting: Present Values 132

Interest Rates, Bond Prices, and Present Values 133

Fluctuations in Interest Rates and Managing a Bond Portfolio 135

The Determinants of Interest Rates 136

x xi Changes in the Demand for Loanable Funds 136

Changes in the Supply of Funds 138

Inflation and Interest Rates 140

The Cyclical Movement of Interest Rates 142

Summary of Major Points 144

Appendix 7A: The Inverse Relationship between Bond Prices and Interest Rates: The Case of Consols 147

Chapter 8 The Structure of Interest Rates 151

From One Interest Rate to Many 152

The Role of Term to Maturity in Interest Rate Differentials 152

The Yield Curve 152

The Expectations Theory 154

Determining Interest Rate Expectations 159

Tying the Determinants of Expectations to the Changing Shape and Level of Yield Curves 160

Some Necessary Modifications to the Expectations Theory 161

A Closer Look: The Segmented Market Hypothesis 163

The Role of Credit Risk and Taxes in Interest Rate Differentials 164

Credit Risk 164

Taxability 166

Summary of Major Points 168

Chapter 9 Market Efficiency 175

Stocks Rise 32 Percent While Bonds Fall 10 Percent: Can These Price Movements Be Explained? 176

How Expected Rates of Return Affect the Prices of Stocks and Bonds 176

Stocks 177

Bonds 177

The Formation of Price Expectations 180

The Efficient Markets Hypothesis: Rational Expectations Applied to Financial Markets 182

A Closer Look: Implications of the Efficient Markets Hypothesis 183

Looking Back: The Historical Pattern of Surplus and Deficit Sectors 185

The Flow of Funds among Sectors 186

Looking Forward: The Implications of a Growing Government Surplus 188

Pulling It All Together 189

Summary of Major Points 189

Chapter 10 How Exchange Rates Are Determined 195

The More Things Change, the More Things Stay the Same 196
Defining Exchange Rates 196

Cracking the Code: How Movements in the Exchange Rate Affect the Dollar Price of Foreign Goods 197

Determining Exchange Rates 197

The Demand for Dollars in the Foreign Exchange Market 198

Cracking the Code: Finding the Yen/Mark Exchange Rate 199

The Supply of Dollars in the Foreign Exchange Market 200

Cracking the Code: The Cost of an IBM Computer in Japan 201

Changes in Supply and Demand and How They Affect the Exchange Rate 202

Cracking the Code: The Foreign Exchange Market 203

A Closer Look: Purchasing Power Parity 206

Defining the Balance of Payments and Its Influence on the Exchange Rate, the Financial System, and the U.S. Economy 208

The Current Account 208

The Capital Account 209

Looking Out: The Path to a Single European Currency 210

The Balance of Payments and the Exchange Rate 211

The Causes and Consequences of Dollar Exchange Rate Movements in the 1980s 211

Looking Back: The Gold Standard 212

The Effects of Policy on Interest Rates and Exchange Rates since 1990 213

Summary of Major Points 215

PART THREE: Financial Institutions 223

Chapter 11 An Introduction to Financial Intermediaries and Risk 225

Are All Financial Intermediaries More or Less Alike? 226 Common Characteristics 226

A Closer Look: FIs as Firms 227