



# Money, Banking, & Financial Markets

ROGER LEROY MILLER  
DAVID VANHOOSE

# Money, Banking, & Financial Markets

**Roger LeRoy Miller**

Institute for University Studies  
Arlington, Texas

**David VanHoose**

Department of Economics  
University of Alabama

**SOUTH-WESTERN**  
  
**THOMSON LEARNING**™

Australia • Canada • Denmark • Japan • Mexico • New Zealand • Phillipines  
Puerto Rico • Singapore • South Africa • Spain • United Kingdom • United States

Publisher/Team Director: Jack Calhoun  
Acquisitions Editors: Keri Witman and Mike Worls  
Senior Developmental Editor: Jan Lamar  
Senior Marketing Manager: Lisa Lysne  
Senior Production Editor: Ann Borman  
Manufacturing Coordinator: Charlene Taylor  
Internal Design: Ann Borman and Doug Abbott  
Cover Design: Doug Abbott  
Cover Images: PhotoDisc  
Copy Editor: Pat Lewis  
Indexer: Bob Marsh  
Compositor: Parkwood Composition  
Printer: Quebecor World, Taunton, MA

COPYRIGHT © 2001 by South-Western College Publishing, a division of Thomson Learning. The Thomson Learning logo is a registered trademark used herein under license.

**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, or information storage and retrieval systems – without the written permission of the publisher.

Printed in the United States of America

2 3 4 02 01

For more information contact South-Western College Publishing, 5101 Madison Road, Cincinnati, Ohio, 45227. Or you can visit our Internet site at <http://www.swcollege.com>

For permission to use material from this text or product contact us by

- telephone: 1-800-730-2214
- fax: 1-800-730-2215
- web: <http://www.thomsonrights.com>

**Library of Congress Cataloging-in-Publication Data**

Miller, Roger LeRoy.

Money, banking, and financial markets / Roger LeRoy Miller, David VanHoose.  
p.cm.

Includes bibliographical references and index.

ISBN 0-324-01562-3 (alk. paper)

1. Money. 2. Banks and banking. 3. Financial institutions. I. VanHoose, David, 1957–  
II. Title.

HG221 .M6463 2000

332.1—dc21

00-029728

This book is printed on acid-free paper.

# To the Instructor

A course in money, banking, and financial markets is challenging for both students and instructors. Our key objective in writing *Money, Banking, and Financial Markets* was to provide the student reader with a sophisticated, yet accessible understanding of the subject matter while simultaneously providing the instructor with an up-to-date and sensibly organized presentation of the full range of topics appropriate for a thoroughly modern course. We have aimed to achieve this two-part objective in several ways:

- Fully integrated coverage of international financial markets and the global economy is a fundamental characteristic of the text.
- Cutting-edge developments in information technology and their economic and financial implications are examined throughout.
- Current-interest features underlining the real-world relevance of the study of money, banking, and financial markets appear in each chapter.
- Frequent margin references to Internet resources are included, along with end-of-chapter Online Application questions.
- The more than 200 graphs for this textbook are the best in any text in this area. All lines and curves are color coded in a consistent manner, and we have provided full explanations underneath or alongside each graph or set of graphs.
- A student CD-ROM is packaged with every copy of the text. This free supplement links the student to an Internet site containing a discussion of the Gramm-Leach-Bliley Financial Modernization Act, individual sections of the legislation, and summaries of their implications. The CD also links the student to recent articles on topics relating to banking, financial markets, international finance, and monetary policy. Furthermore, it includes direct links to key Web sites relating to each of these topic areas.



## **Complete Coverage**

### **of Money, Banking, and Financial Markets**

---

We feel that we have covered all of the essential elements of money, banking, and financial markets in the pages that follow. These include:

- The forms, functions, and evolution of money and the emergence of digital cash

- Domestic and international financial markets and the role of electronic trading
- Interest rate risk, foreign exchange risk, and derivative securities
- Portfolio choice, international interest rate parities, and market efficiency
- Financial institutions, the economics of banking, and issues in bank management
- Depository institution regulation in a rapidly changing environment
- The money supply process and the implications of electronic money
- The Federal Reserve and its role in U.S. and global payment systems
- The linkage between day-to-day Federal Reserve policymaking and aggregate economic activity
- Intermediate monetary policy targets, rules versus discretion, and policy credibility
- Conducting monetary policy with an interest rate target
- International dimensions of monetary policy

### Full Global Integration Throughout

This means that *Money, Banking, and Financial Markets* is the first text in this field to fully integrate global economics and finance, starting from Chapter 1. The student is introduced to world issues in the field from the outset. Every chapter that follows continues this integration within whatever topic area the chapter addresses.

Of course, some chapters focus exclusive attention on international topics. Examples are chapters entitled "A Single World Marketplace?—International Financial Market Integration," "Foreign Exchange Markets," and "Central Banks in the World Economy—International Aspects of Monetary Policy."

### The Importance of New Information Technologies

Nearly forty years ago, banks and other financial institutions were among the first to perceive the dramatic cost efficiencies and potential revenue enhancements that could be obtained if managers could find a way to integrate emerging information technologies into the daily grind of their business. Only a few of the most significant uses of computers were readily noticeable to retail customers, however—automated teller machines networks, automated telephone account information and transfer services, and the like. The true banking information technology revolution took place largely out of sight to the general public, in the "back offices," as financial institutions increasingly became interconnected through automated clearing houses, large-value payment systems, and interbank funds markets.

Today, however, the information technologies in financial markets are visible to all. Internet brokers are transforming retail stock trading in the United States, and wireless online banking is now commonplace in several European nations. Students know these changes are under way, and they want to learn more about their potential effects. A fundamental objective of this text is to provide students with the background they need to understand the implications of emerging cybertechnologies for money, banking, and financial markets.

## A Flexible Structure

Most instructors are likely to find that there is more in this text than they can cover in a single semester. This is not an accident. In the end, the content of any economics course should reflect an instructor's professional decisions taking into account student backgrounds and departmental and college curricula. This is particularly true of a course within the broad field of money, banking, and financial markets. There are at least three separate types of courses that one could teach using this text:

**1. A Strong Banking/Financial Markets Orientation** (Core Units: 1, 2, 3, and 4). After covering the subjects in Unit 1, this course would include a detailed examination of all of the material in Units 2, 3, and 4. Material from Chapters 19 and 20 in Unit 5 would be covered. Depending on time constraints, the instructor could then touch on basic measurement issues and fundamental theories covered in Chapters 21 through 23, thereby providing students with sufficient background to touch on two or three selected chapters from Unit 6.

**2. A Strong Money/Macro Orientation** (Core Units: 1, 4, 5, and 6). After surveying all of Unit 1 and chapters 4, 6, and 9 in Unit 2, a course with this slant would cover the essential aspects of banking markets and regulation in Chapters 11, 12, and 14 in Unit 3. It would then cover the bulk of the chapters contained in Units 4, 5, and 6.

**3. A Balanced Orientation:** This course would attempt to strike a balance. It would cover both Units 1 and 2 and a more equalized (in terms of banking/financial markets versus macro-money content) sampling of selected chapters from remaining units of the text, depending on the specific objectives of the instructor.

## Features that Teach and Reinforce

---

In our view, real-world applications should be a key aspect of a textbook in money, banking, and financial markets. To motivate student learning, we have included examples drawn from nations throughout the world. Four types of features are incorporated and referred to throughout the text:

## Global Focus

Money, banking, and financial markets can no longer be considered a closed-economy subject. Events in the U.S. economy, banking system, and financial markets affect nations around the globe and vice versa. Knowledge and understanding of some of the global issues in money and banking are not only exciting to read about, but also important. We have included among others the following:

- A Banking System that Prohibits Charging an Interest Rate
- Could the Mob's Currency of Choice Become the Euro?
- Online Banking from Helsinki to Vienna
- Defining "Canadian" Banking Markets
- Russians Reject Rubles
- Is Gold Worth Its Weight?

## Cyber Focus

The integration of emerging information technologies into banking and other financial services and the effects on financial markets dominate today's financial news. Understanding how these developments affect institutions and markets is now a central subject of the study of money, banking, and financial markets. A few of the topics covered include:

- U.S. Insurers Go to the Web
- Does E-Trading Mean Even More Efficient Markets?
- Credit Union Managers Embrace the Internet
- Removing Humans from the Lending Process
- Is This the End of Sticky Prices?

## Policy Focus

Because policy is in the news so much, we felt it appropriate that there be a special feature concerned with just policy issues. These features cover a wide variety of topics including:

- New Fiat Moneys or Simply Tax Evasion?
- E-Cash and Money Laundering
- Are Currency Speculators Really "The Bad Guys"?
- Have Consumers Benefited from ATM Surcharges?
- The FDIC Quietly Prepares for a Megafailure
- Is Cash Really an Obsolescent Technology?

## Management Focus

Businesspeople and individuals managing their personal finances must keep abreast of the most recent developments in money, banking, and financial markets, which continually present both opportunities and challenges. To acquaint students with the variety of monetary, banking, and financial issues faced by managers, we have included features on topics such as the following:

- Smart Cards for Kids
- Did You Really Win So Much?
- How Some Banks Provide Their Customers with Risk Management Tools on the Net
- Why Are There so Few Agricultural-Based Futures?
- Who's to Blame When Customers Lose Money Trading Stocks?
- The Americanization of Deutsche Bank

## Critical Thinking Exercises

Critical thinking is an important aspect of every college student's education. We make sure that students are introduced to critical-thinking activities by ending each Focus feature with critical-thinking questions called "For Critical Analysis." The suggested answers to these critical-thinking questions are included in the Instructor's Manual.

## Accessing the Internet: The World Wide Web

Most students, particularly those taking intermediate-level economics courses, are familiar with how to use the Internet. We provide three important features for them:

**MARGIN URLs:** Throughout the text, placed appropriately, there is a feature entitled "On the Web." A relevant URL is presented.

**CHAPTER-ENDING ON-LINE APPLICATIONS:** At the end of every chapter is an extensive Internet exercise which takes the student to a particular URL and then asks him or her to engage in an application.

## Key Pedagogy

Learning cannot occur in a vacuum. We have made sure that students using this text have an ample number of pedagogical devices that will help them master the material.



**FUNDAMENTAL ISSUES AND ANSWERS WITHIN THE TEST OF EACH CHAPTER** A unique feature of *Money, Banking, and Financial Markets* is the inclusion of five to seven fundamental issues at the beginning of each chapter. Within the text itself, but offset so as not to be a distraction from a student's reading, the fundamental issues are repeated with the appropriate answers. Students will find these questions and answers invaluable when reviewing the readings and studying for quizzes and examinations.

**VOCABULARY IS EMPHASIZED** Because vocabulary is often a stumbling block, we have boldfaced all important vocabulary terms within the text. Immediately in the margin these boldfaced terms are defined. They are further defined in the end-of-text glossary.

**CHAPTER SUMMARY** The chapter summary is a numbered point-by-point formatting that corresponds to the chapter-opening fundamental issues, further reinforcing the full circular nature of the learning process for each chapter.

**QUESTIONS AND PROBLEMS** Each chapter ends with 10 questions and problems. Suggested answers are provided in the Instructor's Manual.

**SELECTED REFERENCES AND FURTHER READING** Appropriate references for materials in the chapter are given in this section.

## The Supplements

---

*Money, Banking, and Financial Markets* is supported by the strongest set of supplements currently available.

### Web Site

The Web Site is a key feature of *Money, Banking, and Financial Markets*. It contains Internet applications, downloadable supplements, updates, and more.

### Study Guide

The Study Guide, which was written by Jim Lee of Texas A & M, is designed to facilitate active learning by students. It provides summaries of chapter contents and lists of the key terms for students to look for and define in their own words as they read the text. To assist students in testing their understanding of the material, the Study Guide also includes 20 multiple-choice and 10 short-answer questions per chapter.

## Instructor's Manual with Test Bank

The Instructor's Manual, written by Frank Falero of California State University at Bakersfield, is designed to simplify the teaching tasks that instructors face. For each chapter it offers an overview of the chapter, a brief outline built upon chapter headings in the text, and answers to end-of-chapter questions. The Test Bank includes between 30 and 60 multiple-choice questions per chapter, along with the correct answers.

## Power Point Slides

For many instructors, multimedia presentations have become an indispensable part of the teaching-learning process. A complete set of power point slides is available for adopters of this text.

## Acknowledgements

---

We benefited from an extremely active and conscientious groups of reviewers of the manuscript for this first edition of *Money, Banking, and Financial Markets*. At times they were tough and demanding, but the rewrites of the manuscript improved accordingly. To the following reviewers, we extend our sincere appreciation for the critical nature of your comments that we think helped make this a better text.

Stuart Allen  
University of North Carolina at  
Greensboro

Peter T. Calcagno  
Wingate University

David B. Culp  
Slippery Rock University

Andrew J. Dane  
Angelo State University

Edward Day  
University of Central Florida

Frank Falero  
California State University,  
Bakersfield

David W. Findlay  
Colby College

Edward N. Gamber  
Lafayette College

Reza G. Hamzaee  
Western Missouri State College

Kathy A. Kelly  
University of Texas at Arlington

Michael S. Miller  
DePaul University

James E. Payne  
Eastern Kentucky University

Douglas K. Pearce  
North Carolina State University

Roy Van Til  
University of Maine at Farmington

Lester D. Taylor  
University of Arizona

Of course, no textbook project is done by the authors alone. We wish to thank our former and current editors, Keri Witman and Mike Worls, for their past and ongoing guidance. In particular, we owe tremendous gratitude to our developmental editor, Jan Lamar, who has provided invaluable feedback and guidance. Our production team of Ann Borman and Doug Abbott put together an excellent design and never let us fall behind. The copyeditor, Pat Lewis, worked her magic to make the book read more smoothly.

We anticipate revising this text for years to come and therefore welcome all comments and criticism from students and professors alike.

R.L.M.  
D.D.V.

# Contents in Brief

## **Unit I: Introduction 1**

- 1 Money—An Introduction 2
- 2 Banking in the New Cyberworld 35
- 3 Financial Markets, Instruments, and Institutions 66

## **Unit II: Financial Markets, Instruments, and Institutions 99**

- 4 Interest Rates 100
- 5 A World Market?—International Financial Integration 127
- 6 Foreign Exchange Markets 153
- 7 Finding the Best Mix of Financial Instruments—  
The Theory of Portfolio Choice 184
- 8 Managing Risks in the Global Economy—Duration and Derivatives 206
- 9 Efficient Markets and International Interest Parity 239
- 10 Financial Institutions 271

## **Unit III: Depository Financial Institutions 299**

- 11 Depository Financial Institutions 300
- 12 Understanding How Banking Markets Work—  
The Economics of Depository Institutions 330
- 13 The Business of Banking—  
Depository Institution Management and Performance 365
- 14 Foundations of Depository Institution Regulation 399
- 15 Economic Consequences of Depository Institution Regulation 432

## **Unit IV: Central Banking, Monetary Policy, and the Federal Reserve System 467**

- 16 Why Money and Banking Go Together—  
Depository Institutions and Money 468
- 17 Central Banking and the Federal Reserve System 497
- 18 The Federal Reserve and the Financial System 527

## **Unit V: Monetary Policy and the Economy 557**

- 19 How Much Money Do People Want to Hold?—The Demand for Money 558
- 20 Day-to-Day Monetary Policy—Fed Operating Procedures 592
- 21 How Do We Know How We're Doing?—  
The Macroeconomic Environment 627
- 22 The Self-Regulating Economy—Classical Monetary Theory 659
- 23 Money and Business Cycles—Essentials of the Keynesian System 689
- 24 Is There a Trade-off between Unemployment and Inflation?—  
Different Views on How Monetary Policy Affects the Economy 659

**Unit VI: Monetary Policy 761**

25	What Should the Fed Do?—Objectives and Targets of Monetary Policy	762
26	Rules versus Discretion in Monetary Policy	795
27	What the Fed Does—Interest Rate Targeting and Economic Activity	826
28	Policy Making in the World Economy— International Aspects of Monetary Policy	859

# Contents

To the Instructor xix

## Unit I Introduction

---

### Chapter 1

#### Money—An Introduction 2

Objectives of This Book and How They Relate to You	3
The Globalization of Money, Banking, and Financial Markets	4
Money and Banking in the Digital Age	5
Money: Its Functions, Forms, and Evolution	6
Defining and Measuring the Amount of Money in Circulation	23
Can Money Be Defined in a Digital Economy?	30

Chapter Summary • Questions and Problems • Online Application •  
Selected References and Further Reading pp. 32–34

**Policy Focus:** New Fiat Monies or  
Simply Tax Evasion? 12

**Global Focus:** Will Gold Be the  
Russian Savior? 21

**Policy Focus:**  
Get Rid of the Penny 25

### Chapter 2

#### Banking in the New Cyberworld 35

E-Cash: The Future Is Now	36
Regulatory Issues of Electronic Money	49
Electronic Money and Monetary Policy	57

Chapter Summary • Questions and Problems • Online Application •  
Selected References and Further Reading pp. 63–65

**Management Focus:**  
Smart Cards for Kids 43

**Global Focus:** More Smart-  
Card Use in Europe 44

**Policy Focus:** E-Cash and  
Money Laundering 62

### Chapter 3

#### Financial Markets, Instruments, and Institutions 66

Saving and Investment in a Global Economy	67
Financial Markets and Instruments	68
The Cybertrading Revolution and Its International Ramifications	79
Domestic and International Financial Intermediation	85
Financial Institutions	91

Chapter Summary • Questions and Problems • Online Application •  
Selected References and Further Reading pp. 96–98

**Cyber Focus:** Funding a  
Startup via the Net 81

**Global Focus:** IMF Bailouts  
and Moral Hazard 88

**Cyber Focus:** U.S. Insurers  
Go to the Web 93

## Unit II

# Financial Markets, Instruments, and Institutions 99

---

### Chapter 4

#### Interest Rates 100

- Calculating Interest Yields 101
- The Risk Structure of Interest Rates 108
- The Term Structure of Interest Rates 111
- Nominal versus Real Rates of Interest 118
- Interest Rates in an Interdependent World 120
- Key Interest Rates in the Global Economy 121

**Chapter Summary · Questions and Problems · Online Application · Selected References and Further Reading pp. 124–126**

**Management Focus:** Did You Really Win So Much? 105

**Policy Focus:** Treasury Inflation-Protection Securities 119

**Policy Focus:** When the Fed Changes “the” Interest Rate, Watch Out 123

### Chapter 5

#### A World Market?—

#### International Financial Integration 127

- International Money and Capital Markets 128
- Cybertechnologies and International Financial Integration 136
- Vehicle Currencies 143
- Banking around the Globe 145

**Chapter Summary · Questions and Problems · Online Application · Selected References and Further Reading pp. 150–152**

**Policy Focus:** The Origin of Capital Controls 141

**Global Focus:** Should American Citizens Worry about the Euro? 146

**Global Focus:** A Banking System That Prohibits Charging an Interest Rate 147

### Chapter 6

#### Foreign Exchange Markets

- Exchange Rates and the Market for Foreign Exchange 154
- The Demand for and Supply of Currencies and the Equilibrium Exchange Rate 159
- Measuring the Overall Value of a Currency: Effective Exchange Rates 165
- Composite Currencies 170
- Purchasing Power Parity 172

**Chapter Summary · Questions and Problems · Online Application · Selected References and Further Reading pp. 181–183**

**Policy Focus:** Are Currency Speculators Really “the Bad Guys”? 158

**Global Focus:** Could the Mob’s Currency of Choice Become the Euro? 166

**Global Focus:** How the Big Mac Index Looks Anyway 180

## Chapter 7

### Finding the Best Mix of Financial Instruments — The Theory of Portfolio Choice 184

- Financial Instrument Portfolios 185  
 Fundamental Determinants of Portfolio Choice 187  
 The Gains from Domestic and International Diversification 193  
 Explaining Risk Premiums in Financial Markets—  
 Alternative Perspectives 200  
 Chapter Summary • Questions and Problems • Online Application •  
 Selected References and Further Reading pp. 203–205

**Cyber Focus:** Banks Move  
 Online to Provide Cash  
 Management Services 190

**Management Focus:** How  
 Some Banks Provide Their  
 Customers with Risk Manage-  
 ment Tools on the Net 193

**Global Focus:** What  
 Happens When You Cannot  
 Sell Your Foreign Assets? 200

## Chapter 8

### Managing Risks in the Global Economy— Duration and Derivatives 206

- Interest Rate Risk, Duration, and Derivative Securities 207  
 Forward and Futures Contracts 214  
 Options 221  
 Swaps 227  
 Derivative Risks and Regulation 229  
 Cybertechnologies and Derivatives Trading 232  
 Chapter Summary • Questions and Problems • Online Application •  
 Selected References and Further Reading pp. 236–238

**Global Focus:** Betting on the  
 Future of Cocoa 218

**Management Focus:** Why  
 Are There So Few Agricultural-  
 Based Futures? 235

## Chapter 9

### Efficient Markets and International Interest Parity 239

- The Rational Expectations Hypothesis 240  
 Efficient Markets 246  
 Financial Instrument Prices in Efficient Markets 248  
 The Forward Exchange Market and Covered Interest Parity 252  
 Foreign Exchange Market Efficiency 260  
 Chapter Summary • Questions and Problems • Online Application •  
 Selected References and Further Reading pp. 268–270

**Cyber Focus:** Does E-Trading  
 Mean Even More Efficient  
 Markets? 247

**Management Focus:** Can  
 You Make a Killing in the  
 Stock Market? 252

**Cyber Focus:** Making Foreign  
 Exchange Markets More  
 Efficient 261



**Chapter 10**  
**Financial Institutions 271**

Introduction 272  
Securities Market Institutions 273  
Insurance Institutions 277  
Pension Funds 281  
Government Credit Agencies 284  
Finance Companies 286  
Mutual Funds and Hedge Funds 287  
Depository Financial Institutions 290  
The Trend toward Overlapping Functions  
of Financial Institutions 292

**Management Focus:**  
Who's to Blame When  
Customers Lose Money  
Trading Stocks? 275

**Global Focus:**  
Pension Liabilities Skyrocket  
in Europe 285

**Policy Focus:** Has the Federal  
National Mortgage Associ-  
ation Gone Crazy? 286

Chapter Summary · Questions and Problems · Online Application ·  
Selected References and Further Reading pp. 296–298

**Unit III Depository Financial Institutions 299**

---

**Chapter 11 Depository Financial Institutions 300**

The Origins and Global Development of  
Depository Institutions 301  
Commercial Banks 310  
Savings Institutions 320  
Credit Unions 325

**Policy Focus:** President  
Andrew Jackson versus the  
Second Bank of the United  
States 306

**Global Focus:** The Check  
May Not Be in the Mail 317

**Cyber Focus:** Credit Union  
Managers Embrace the  
Internet 327

Chapter Summary · Questions and Problems · Online Application ·  
Selected References and Further Reading pp. 328–329

**Chapter 12**  
**Understanding How Banking Markets Work—**  
**The Economics of Depository Institutions 330**

Depository Institution Revenues, Costs, and Profits 331  
A Competitive Theory of Banking 336  
Imperfect Competition in Banking? 356  
Worldwide Competition in Banking? 358

**Management Focus:**  
Removing Humans from the  
Lending Process 335

**Policy Focus:** Have  
Consumers Benefited from  
ATM Surcharges? 344

**Global Focus:** Online  
Banking from Helsinki to  
Vienna 360

Chapter Summary · Questions and Problems · Online Application ·  
Selected References and Further Reading pp. 361–364