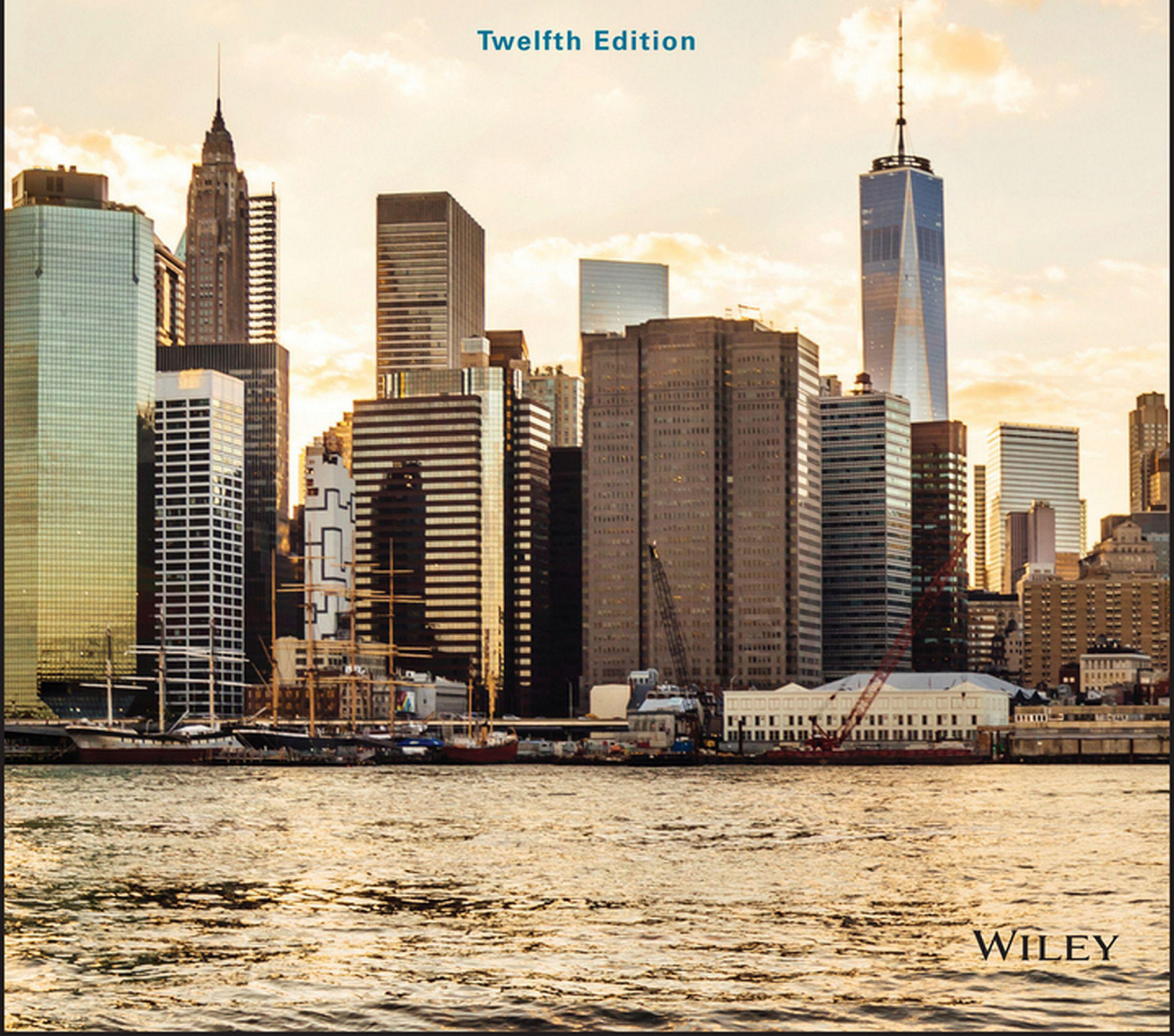
DAVID S. KIDWELL | DAVID W. BLACKWELL | DAVID A. WHIDBEE | RICHARD W. SIAS

FINANCIAL INSTITUTIONS, MARKETS, AND MONEY

Twelfth Edition



WILEY

Financial Institutions, Markets, and Money

TWELFTH EDITION

Financial Institutions, Markets, and Money

David S. Kidwell
University of Minnesota

David W. Blackwell
Texas A&M University

David A. Whidbee
Washington State University

Richard W. Sias
University of Arizona

WILEY

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Preface

WHY READ THIS BOOK?

TO THE STUDENT

We hope you are as excited about taking a course on financial institutions and markets as we were about writing the book. The core topics covered in the book are at the heart of what happens every day in the financial sector of the economy. When you have finished the course, reading the *Wall Street Journal*, the *Financial Times*, or the business section of the *New York Times* will be a piece of cake. Your friends, family, and fellow students will marvel at your insights into the financial system.

In the book, we stress fundamental concepts with an emphasis on understanding how things work in the real world. We hope that we have captured the vibrancy and excitement created by the dramatic changes taking place in the U.S. financial system. The global financial crisis of 2007–2008 and the longest and most severe recession since the Great Depression of the 1930s continue to radically reshape the financial system.

Our goal is to provide a book that can guide you to a confident mastery and understanding of the U.S. financial system in an interesting and, hopefully, entertaining manner. The book is your passport to linking your classroom experience to what is happening in the economy and financial markets. What you learn will be applicable to your business career or in managing your personal financial affairs.

TO THE FACULTY

The focus of the twelfth edition of *Financial Institutions, Markets, and Money* is the same as that of the previous editions: to provide a balanced introduction to the operation, mechanics, and structure of the U.S. financial system. On the other hand, the financial landscape has changed markedly as a result of the global financial crisis of 2007–2008. The ongoing changes in the regulatory and operating environments of financial institutions continue to require major updates of nearly every chapter in the book. Though changes abound, the core coverage in the book still emphasizes financial institutions, markets, and instruments. Special attention is given to the Federal Reserve System and the impact of monetary policy on interest rates. We discuss how financial institutions manage risk caused by interest rate and economic changes.

Finally, while the book is still written to give the reader a historical perspective on regulations and the development of financial institutions and markets, this edition has focused on updating the examples and the impacts of the new regulatory and operating environment.

Teacher Friendly. In revising the book, we are mindful of the demands on faculty who are asked to do more with less. We want to help make your course on financial institutions and

markets as successful as possible. To that end, we worked hard to write in a clear and understandable manner. Also, we put much effort into updating and improving features such as Learning by Doing applications. Finally, we provide first-rate teaching and learning aids such as the instructor's manual, test bank, study guide, and PowerPoint presentations that accompany each chapter.

The Book's Evolution. Our book, like the financial system, has had to adapt to the rapidly changing economic environment. When we published our first edition, the existing textbooks were primarily descriptive, merely describing the activities of financial institutions, or they were de facto money and banking texts, primarily focused on the banking system and monetary policy. In our first edition, we broke new ground by emphasizing both financial institutions and markets, and how monetary policy affected financial institutions. At that time, our "free-market" approach to regulation, which emphasized market-oriented rather than government-imposed solutions to problems, was not mainstream and, to some, was considered controversial.

As technology, regulation, and financial innovation changed the financial landscape, our book has had to evolve. In subsequent editions, we increased our emphasis on how interest rates are determined and on the structure of interest rates. We also increased our emphasis on the risks faced by financial institutions and on how institutions manage these risks using financial markets. Over the years, we expanded our coverage of financial markets, and now, for example, the book has separate chapters on equity markets, mortgage markets, derivatives markets, and international markets.

The Competitive Edge. Our approach to the topic made our book very successful in the early editions, and it continues to be successful today. Imitation is the sincerest form of flattery, and we have seen a number of imitators of our approach, which, apart from the wide use of this book, is the best evidence of its appeal to both students and faculty.

Our *competitive edge*, however, comes from our adherence to the approach for the book that was set in the first edition. First, we stress the mastery of fundamental material, placing an emphasis on how things really work in a market context. Second, we have a balanced coverage of the U.S. financial system, with strong emphasis on both institutions *and* markets. Third, we continually update the book to reflect major new developments in the financial system or to highlight changing trends. Finally, we focus on writing a book *for the students*, our most important audience, which facilitates learning and makes the study of financial institutions and markets an enjoyable experience.

Let Us Hear from You. We thank the faculty who adopted our book and the students who purchased our book. As you go through your course, we hope that we live up to our promise of providing a clear, concise, well-written, and academically sound text on the U.S. financial system. If you find a mistake or have concerns about a particular section, we would like to hear from you. Contact us via our e-mail addresses, which are listed at the end of the preface.

WHY THIS EDITION IS BETTER THAN PREVIOUS ONES

We believe this edition of the book is better than the eleventh edition for a number of reasons. Apart from the customary detailed updating of facts and exhibits throughout the book, the material has been painstakingly updated to match the many changes in the rules and regulations. In this edition, especially in the chapters on financial markets, we continue our emphasis on how to read and interpret actual financial data, such as that reported in the *Wall Street Journal* or the *Financial Times*. We have also substantially revised the chapter contents

to reflect the impact of the global financial crisis that began in 2007 and whose impacts continue to be felt today.

PEDAGOGICAL FEATURES

This section summarizes the pedagogical features and highlights additions or improvements in the twelfth edition.

Chapter Opening Vignette. Each chapter begins with an opening vignette that describes a real company or business situation. The vignettes illustrate concepts that will be presented in the chapter and are also meant to heighten student interest and demonstrate the real-life relevance of the chapter material.

Learning Objectives. The opening vignette is accompanied by a set of learning objectives that identify the most important material for students to understand while reading the chapter. At the end of the chapter appears a feature, "Summary of Learning Objectives," highlighting the relevant chapter content.

Learning by Doing. Chapters with quantitative content now have more in-text examples. These chapters include a student application: Learning by Doing. These applications contain quantitative problems with step-by-step solutions that provide guidance on how to approach similar problems. By including several exercises in each chapter where applicable we provide students with additional practice to hone their problem-solving skills.

Do You Understand? Each chapter includes several "Do You Understand?" exercises that consist of questions at the end of a major section. These questions check student understanding of critical concepts in the material just covered, or ask students to apply what they have just read to real-world situations. To give students feedback on these questions, we include the answers on the book's website (discussed later) and in the Instructor's Manual.

People & Events. Each chapter includes at least one People & Events box. The People & Events boxes describe current or historical real-world situations to emphasize the applicability of one or more key concepts developed in the chapter. The majority of the People & Events boxes have either been replaced or substantially revised. In the twelfth edition, the People & Events boxes continue to be particularly focused on the impacts of the financial crisis and the 2007–2009 recession, the effect on financial institutions and markets, and the continuing slow recovery.

Exhibit Captions. Where appropriate we provide captions for the exhibits to inform students of the exhibits' main points.

Summary of Learning Objectives. At the end of each chapter, you will find summaries of the key chapter content relevant to each of the Learning Objectives.

Key Terms. We include a list of key terms at the end of each chapter. The terms appearing in the list are printed in boldface in the chapter. The definitions of all key terms appear in the glossary at the end of the book.

Questions and Problems. Each chapter ends with a set of questions and problems. Because students rely heavily on example questions and problems with solutions as a learning device, we have increased the number of end-of-chapter questions and problems. We have placed

particular emphasis on increasing the number of quantitative problems or questions to correspond with the enhanced quantitative content as appropriate to the chapter. The answers to questions and problems are in the Instructor's Manual.

Glossary. The book contains an easy-to-use glossary defining the Key Terms listed at the end of each chapter.

SUMMARY OF CONTENTS AND MAJOR CHANGES

All chapters in the book have been updated to reflect recent events. A major change in the book is an increase in the quantitative content. We have noted that employers are increasingly expecting students to be well versed in problem-solving skills. As a result, we have increased the computational skill level, while maintaining our historic strength of being a conceptually focused book. Our goal is to provide students and instructors with a book that strikes a balance between helping students understand key financial and economic concepts and providing them with the necessary problem-solving skills. Below we summarize the contents and major changes to the twelfth edition.

Part 1: The Financial System. **Chapter 1**, providing an overview of the U.S. financial system, has been *updated to* reflect ongoing changes in the financial system resulting from the 2007–2008 global financial crisis. A new People & Events insert was added on systemically risky banks and a new section was added on the importance of ethics in the modern financial system. We have updated **Chapter 2** about the Federal Reserve System and its impact on interest rates. We provide data on Federal Reserve payments to the Treasury and data on the growth of electronic payments. We also update the impact of the financial system bailout on the Fed's balance sheet and the Fed's increase in regulatory power from the 2010 Regulatory Reform Act, including its power to manage systemic risk in the financial system. We outline the challenges faced by Janet Yellen, Chairperson of the Fed, in today's environment. **Chapter 3** focuses on how the Fed conducts monetary policy. The chapter contains a discussion of the Treasury Department's role in financing the expenditures made by the federal government, how the Treasury Department conducts fiscal policy, and the Treasury's role in stabilizing the economy. We included a broader discussion of the effectiveness of fiscal spending in this edition.

Part 2: How Interest Rates Are Determined. **Chapter 4** discusses the role of interest rates in the economy and how interest rates are determined. The discussion of the real rate of interest and the impact of inflationary expectations on the level of interest rates is included. The calculation of realized real rate of returns and the phenomenon of negative interest rates are presented. A new People & Events on different inflation measures has been added as well as a quantitative example of the relationship between interest rates and currency values. **Chapter 5** focuses on the determinants of bond prices and interest rate risk. The level of interest rates is added as another variable that impacts bond price volatility. A closed form version of the duration equation is now included and the duration matching example has been extensively updated. The strategic impact of choosing portfolio duration in relation to the investment horizon is now included. A new People & Events insert highlights the impact of the Volcker rule on bond market liquidity. **Chapter 6** explores the reasons that interest rates vary among financial products on any given day and over the business cycle. More discussion of forecasting interest rates has been included.

Part 3: Financial Markets. The chapters in this part have been revised to reflect the post-crisis financial environment, while maintaining their focus on the fundamental roles and functioning of the various markets. **Chapter 7** focuses on the economic role of money

markets in the economy, the characteristics of money market instruments, and major participants. The chapter contains a discussion of the impact of the financial meltdown on the money markets and the actions that the Fed took to stabilize the markets. The discussion of bankers' acceptances was shortened as their usage has continued to decline. **Chapter 8** analyzes the debt securities sold in the capital markets. A new opener in this chapter describes the impact of the Detroit bankruptcy. Additional discussion of the U.S. government's debt levels has also been added. **Chapter 9** explains how the mortgage markets work and describes the major mortgage market instruments. The chapter includes a thorough discussion of the government's takeover of the mortgage market that occurred in the aftermath of the subprime mortgage crisis and the failures of Fannie Mae and Freddie Mac. A new discussion of the pros and cons of eliminating the agencies is included. The definitions of Alt-A and subprime mortgages are now included and an example of a sequential pay CMO is provided. **Chapter 10** examines the market for equity securities. The chapter updates the changing structure and global consolidation of secondary markets, including the NYSE's hybrid system and the increased competition between the markets. The impact of the JOBS Act on capital raising and a synopsis of the retail brokerage industry has been added. An insert on high-speed trading and the demise of Knight Capital is included. Material on short sales, order types, equity valuation and risk has been moved to an appendix available online. **Chapter 11** describes the most important markets for financial derivatives. We have updated the example of hedging a bank's funding costs with futures and have updated the discussion of swaps. **Chapter 12** examines international financial markets, including foreign exchange and international money and capital markets. The chapter includes a discussion of the functions of foreign exchange markets and the determination of exchange rates, including how purchasing power parity affects exchange rate expectations. The discussion of the Greek crisis has been updated as well.

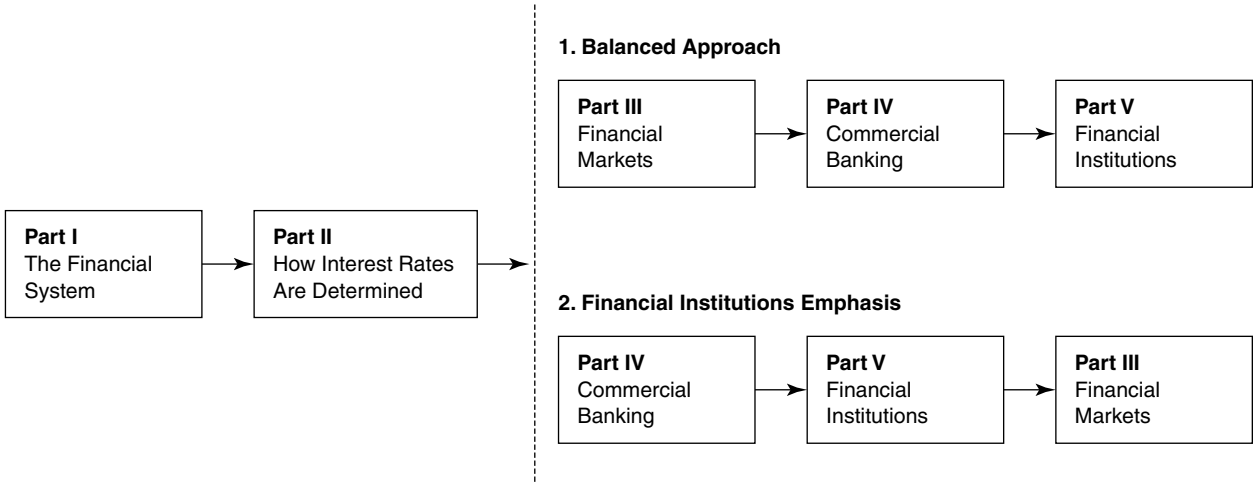
Part 4: Commercial Banking. Although the basic functions of commercial banks have not changed, the environment has been dramatically altered. **Chapter 13** has been updated and revised to reflect recent changes in the banking industry. The chapter continues to provide coverage of bank earnings and performance. **Chapter 13** now provides comprehensive coverage of commercial bank operations and how those functions are reflected in a bank's financial statements in a single chapter. **Chapter 14** covers international banking. The chapter updates the overseas operations of U.S. banks, foreign banking activities in the U.S., international banking trends, and U.S. international banking regulations. A new discussion of the LIBOR scandal has been added. **Chapter 15** focuses on the regulation of financial institutions and has been revised significantly to reflect the aftermath of the financial crisis of 2007–2008. **Chapter 15** also discusses the too-big-to-fail issue, safety and soundness regulation, and the intent behind the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010. The new edition contains information on depository insurance reserves and statements by the FDIC concerning the impact of the Dodd-Frank bill on their regulatory responsibilities. The capital requirements and definitions have been updated and include the requirements on systemically risky institutions.

Part 5: Financial Institutions. The chapters in Part 5 discuss the activities and risks of nonbank financial institutions, including thrifts and finance companies, insurers and pension funds, investment banks, and investment companies before wrapping up with a chapter on the risks of financial institutions. **Chapter 16** discusses thrift institutions and finance companies. The chapter was updated and revised to reflect recent changes in those industries. Where appropriate, the chapter has been shortened and streamlined for readability and the discussion of stock versus mutual ownership structures has been shortened. GE's recent divestment of most of its finance company operations is discussed. **Chapter 17** presents insurance companies and pension funds. The chapter updates industry performance but

still includes the impacts of the financial crisis, including a discussion of American International Group (AIG). The inclusion of large global insurers as systemically risky institutions is discussed. The impact of the 2010 Patient Protection and Affordable Care Act (so-called Obamacare) are updated from the prior edition. Quantitative examples addressing insurance company capital and profitability were added to the chapter in the last edition and are retained in the updated version. **Chapter 18** covers investment banks. During the financial crisis of 2007–2008, investment banks were "forced" (or "pressured") to adopt commercial bank charters and come under the regulation of the Federal Reserve System. The chapter chronicles these events. The chapter offers a section on private equity firms and an expanded discussion of investment banks' trading and asset management operations, broker-dealer functions, and prime brokerage functions. Bankers' fees and their fee structure have been updated in this version. Additional information about Social Security is also provided. In the last edition, **Chapter 19** on investment companies had a major reorganization with a greater focus on the most important investment companies—open-end mutual funds and exchange-traded funds. We have maintained this focus in the newer edition. As before, discussions of the Morningstar Equity Style and Debt Style boxes are included. The chapter provides a detailed discussion of ETFs, REITs, and hedge funds. **Chapter 20** "Risk Management in Financial Institutions" was a new chapter in the last edition. As before the chapter includes coverage on liquidity, credit, and interest rate risks. The chapter also includes an in-depth discussion of managing credit risk at the individual loan level and the loan portfolio level. It explains how credit derivatives such as swaps and futures are used to limit institutional risks. A discussion of the pros and cons of rate sensitivity and duration gaps has been added.

ORGANIZATION OF THE BOOK

We organized this book to reflect a balanced approach to both financial markets and institutions, which reflects a typical course outline. However, depending on individual preference and course emphasis, there are alternative ways to organize the course, and our book is written to allow for a reorganization of the chapters for professors who wish to give primary focus to either institutions or markets. The only suggested constraint in our flexible design is that Parts 1 and 2 should be assigned first, because they provide the conceptual foundation and vocabulary for the financial system regardless of subsequent topic emphasis. The following diagram shows the balanced approach and an alternative sequence that emphasizes financial institutions:



ANCILLARY PACKAGE

In the twelfth edition, we offer updated ancillary materials that will help both the students and the instructors optimize learning and teaching.

INSTRUCTOR'S MANUAL

The Instructor's Manual contains a wealth of useful teaching aids, including chapter-by-chapter learning objectives, key points and concepts, answers to end-of-chapter questions and problems, and an outline of changes from the previous edition.

TEST BANK

The Test Bank, which includes at least 75 examination questions per chapter and has been updated to reflect the textbook's greater emphasis on numeric problems. It consists of true/false, multiple-choice, and essay-type questions. A *Computerized Test Bank* is also available, which consists of content from the Test Bank provided within a test-generating program that allows instructors to customize their exams.

POWERPOINT PRESENTATIONS

The PowerPoint presentations have been updated to reflect the updates within this revision. These chapter presentations are available on the companion website. The presentation for each chapter provides bulleted lecture notes and figures, tables, and graphs selected from the text, ready for classroom presentation. Instructors with the full version of PowerPoint have the ability to customize the lectures to reflect their personal course notes.

STUDENT PRACTICE QUIZZES

Student Practice Quizzes have been prepared to help students evaluate their individual progress throughout the chapter. Each quiz contains 15 multiple-choice questions of varying difficulty so students can review key concepts and build test-taking confidence chapter by chapter.

WEBSITE MATERIALS

A companion website for this text is located at www.wiley.com/college/kidwell. Here you can find the resources listed above as well as answers to the Do You Understand? questions found in each of the chapters of the text. There are additional supplemental materials available on the companion website as well. First is a chapter titled "History of the Financial System," which long-time users of the book will recall from previous editions. Second, the website contains technical notes on the deposit expansion process for instructors who wish to go into more detail about how to measure changes in the money supply resulting from Fed policy actions. We provide a set of Internet Exercises for each chapter online. These exercises direct students to websites from which they can obtain additional information about the chapter's topic or analyze data that illustrate key points from the chapter.

ACKNOWLEDGMENTS

As with any textbook, the authors, owe an enormous debt of gratitude to many people. First, we thank the reviewers who have contributed valuable suggestions for this twelfth edition:

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Robert L. Porter, Quinnipiac University

We also appreciate the many thoughtful comments we have received from reviewers over the previous eleven editions. Although their names are too numerous to list here, we are nonetheless grateful for their efforts and credit them with helping the book to remain a success.

At John Wiley & Sons, we are grateful to Emily McGee, Acquisitions Editor, who provided many helpful suggestions and much support, guidance, and motivation. We also applaud the efforts of Nichole Urban, Project Specialist, for her diligence in guiding the manuscript through the production process. In addition, we appreciate the efforts of Arun Surendar, Production Editor, and many others.

Dr. Timothy Manuel, the Rudyard B. Goode Professor of Finance at the University of Montana, updated all 20 chapters of this edition of the text. His work included updating the text itself plus all of the data in the text and exhibits and updating the People & Events inserts. Dr. Manuel has taught financial markets, investments, derivatives, and international finance over the last 29 years. He has won numerous teaching awards over his career. His research interests are in corporate finance, ethics, teaching pedagogy, markets, and curriculum internationalization. Any questions or comments on this edition should be addressed to Dr. Manuel via email at tim.manuel@business.umt.edu.

We gratefully acknowledge those who assisted us in revising and updating several of the book's key chapters. In particular, James McNulty of Florida Atlantic University and Lanny Martindale of Texas A & M University provided extensive and very helpful reviews of most of the chapters in this edition. Finally, and most importantly, we thank our families and loved ones for their encouragement and for tolerating our many hours at the writing table. To all, thank you for your support and help.

David S. Kidwell
Minneapolis, Minnesota
david@dskidwell.com

David W. Blackwell
College Station, Texas
dblackwell@mays.tamu.edu

David A. Whidbee
Pullman, Washington
whidbee@wsu.edu

Richard W. Sias
Tucson, Arizona
sias@eller.arizona.edu

Contributed by
Timothy Manuel
Missoula, Montana
tim.manuel@business.umt.edu

About the Authors

DAVID S. KIDWELL

Dr. David S. Kidwell is Professor of Finance and Dean Emeritus at the Curtis L. Carlson School of Management at the University of Minnesota. He holds an undergraduate degree in mechanical engineering from California State University at San Diego, an MBA from California State University at San Francisco, and a PhD in finance from the University of Oregon.

Before joining the University of Minnesota, Dr. Kidwell was Dean of the School of Business Administration at the University of Connecticut. Prior to joining the University of Connecticut, he held endowed chairs in banking and finance at Tulane University, the University of Tennessee, and Texas Tech University. He was also on the faculty at the Krannert Graduate School of Management, Purdue University, where he was twice voted the outstanding undergraduate teacher of the year. Dr. Kidwell has published research in the leading journals, including *Journal of Finance*, *Journal of Financial Economics*, *Journal of Financial and Quantitative Analysis*, *Financial Management*, and *Journal of Money, Credit, and Banking*.

Dr. Kidwell has been a management consultant for Coopers & Lybrand and a sales engineer for Bethlehem Steel Corporation. He is an expert on the U.S. financial system and is the author of more than 80 articles dealing with the U.S. financial system and capital markets. Dr. Kidwell has participated in a number of research grants funded by the National Science Foundation to study the efficiency of U.S. capital markets, and to study the impact of government regulations upon the delivery of consumer financial services.

Dr. Kidwell served on the board of the Schwan Food Company. He is the past secretary-treasurer of the board of directors of AACSB, the International Association for Management Education. He is a past member of the boards of the Minnesota Council for Quality, the Stonier Graduate School of Banking, and the Minnesota Center for Corporate Responsibility. He has also served as an examiner for the 1995 Malcolm Baldrige National Quality Award, on the board of directors of the Juran Center for Leadership in Quality, and on the board of the Minnesota Life Insurance Company.

DAVID W. BLACKWELL

Dr. David W. Blackwell is the James W. Aston/RepublicBank Professor of Finance and Associate Dean for Graduate Programs at Texas A&M University's Mays Business School. Prior to joining Texas A&M, Dr. Blackwell worked several years as a consultant with PricewaterhouseCoopers LLP and KPMG LLP. Before his stint in the Big 4, Dr. Blackwell served on the faculties of the University of Georgia, the University of Houston, and Emory University. He was also a visiting professor at the University of Rochester.

Dr. Blackwell's areas of expertise include corporate finance, commercial bank management, and executive compensation. His publications have appeared in the leading scholarly journals of finance and accounting such as *Journal of Finance*, *Journal of Financial Economics*,

Journal of Financial and Quantitative Analysis, *Financial Management*, *Journal of Financial Research*, *Journal of Accounting Research*, and *Journal of Accounting and Economics*.

While in the Big 4, Dr. Blackwell consulted on a broad range of litigation matters including securities, breach of contract, and intellectual property infringement cases. He also consulted on matters involving securities and business valuation, corporate governance, and executive compensation. In addition, Dr. Blackwell has delivered executive education seminars in corporate finance and management of financial institutions for Halliburton, IBM, Kaiser Permanente, Chemical Bank, Southwire Company, Georgia Bankers Association, Warsaw Institute of Banking, Bratislava Institute of Banking, and the People's Construction Bank of China (PRC).

Dr. Blackwell earned his PhD in finance in 1986 and his BS in economics in 1981, both from the University of Tennessee, Knoxville. He is a past president of the Southern Finance Association, and a former associate editor of the *Journal of Financial Research*.

DAVID A. WHIDBEE

Dr. David A. Whidbee is an associate professor of finance and the Associate Dean for Faculty Affairs and Research in the College of Business at Washington State University. He received his PhD in Finance from the University of Georgia and his MBA and BS in finance from Auburn University. Dr. Whidbee has worked as a financial analyst in the Chief Economist's Office at the Federal Home Loan Bank Board and, subsequently, the Office of Thrift Supervision (OTS). While on the staff at these regulatory agencies, he performed research and analysis on the thrift industry and prepared congressional testimony concerning the problems the industry faced in the late 1980s.

In 1994, he joined the faculty at California State University, Sacramento, where he taught commercial banking and financial markets and institutions. In 1997, he left Cal State Sacramento to join the faculty at Washington State University, where he continues to teach commercial banking and financial markets and institutions. Dr. Whidbee's primary research interests are in the areas of financial institutions and corporate governance. His work has been published in several outlets, including the *Review of Financial Studies*, *Journal of Business*, *Journal of Accounting and Economics*, *Journal of Banking and Finance*, *Journal of Corporate Finance*, *Financial Management*, the *Financial Analysts Journal*, and the *Journal of Financial Services Research*. In addition, he has presented his research at numerous academic and regulatory conferences.

RICHARD W. SIAS

Dr. Richard W. Sias is the Tyler Family Chair in Finance and head of the Department of Finance at the Eller College of Management at the University of Arizona. He holds an undergraduate degree in finance, insurance, and real estate from California State University, Sacramento, and a PhD in finance from the University of Texas. Prior to joining the Eller College, Dr. Sias served as the Gary P. Brinson Chair of Investment Management at Washington State University. He has also taught courses at Bond University in Australia and Cesar Ritz College in Switzerland.

Dr. Sias's research interests primarily focus on investments. He currently serves on the Editorial Board of the *Financial Analysts Journal* and has published numerous articles in the leading finance journals, including the *Journal of Financial Economics*, *Journal of Finance*, *Review of Financial Studies*, *Journal of Business*, *Financial Analysts Journal*, *Journal of Banking and Finance*, *Journal of Investment Management*, *Financial Review*, *Journal of Financial Research*, *Journal of Business Research*, *Review of Quantitative Finance and Accounting*, *Journal of Investing*, and *Advances in Futures and Options Research*.

Dr. Sias has also garnered a number of teaching and research awards and is member of the CFA Institute's Approved Speakers List, which provides him an opportunity to link his academic work with portfolio management in practice. In addition, Dr. Sias's work has been the focus of a number of popular press outlets, including articles in *Forbes*, *U.S. News and World Report*, and the *New York Times*.

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PART III FINANCIAL MARKETS 189

PART 1

THE FINANCIAL SYSTEM

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CHAPTER **ONE**

An Overview of Financial Markets and Institutions

THIS BOOK IS ABOUT THE financial system, which consists of financial markets and institutions. The basic role of the financial system is to channel money from individuals and businesses that have more money than they need and route these funds to those who need money now. Businesses need money to invest in productive assets to expand their business, and consumers have a myriad of items they buy on credit, such as automobiles, personal computers, and iPhones. Money is the lubricant that makes an industrial economy run smoothly. Without money, the numerous financial transactions that businesses and consumers take for granted would grind to a halt.

Banks are a critical player in the financial system. Banks provide a place where individuals and businesses can invest their money to earn interest at low risk. Banks take these funds and redeploy them by making loans to individuals and businesses. Banks are singled out for special treatment by regulators and economists because most of what we call money in the economy is represented by deposits and checking accounts issued by banks. Thus, banks are the principal caretaker of the payment system because most purchases are paid by writing a check or making an online payment against a bank account.

The most powerful institutional player in the financial system is the Federal Reserve System (called the Fed). Its powers come from the Fed's role as the country's central bank—the institution that controls the nation's money supply. The Fed's primary responsibility is to stabilize the economy by conducting monetary policy by managing the money supply and interest rates.

William Whitehurst/Getty Images

The financial system is like a huge money maze—funds flow to borrowers from lenders through many different routes at warp speed. The larger and more efficient the flow, the greater the economic output and welfare of the economy.

Finally, the financial system is of great interest to politicians and government officials. Its health has a major impact on our economic well-being. The collapse of the financial system can be the harbinger of a recession or worse. For example, the 2008 financial crisis and near collapse of the global financial system resulted in the most severe economic recession since the Great Depression of the 1930s. This book is your road map to understanding the financial system and the many financial issues that will affect your personal and professional life. ■

CHAPTER PREVIEW

Chapter 1 presents an overview of the financial system and how it facilitates the allocation of money throughout the economy. The chapter begins by describing the role of the financial system, defining surplus and deficit spending units, and describing characteristics of financial claims. It then explains how surplus and deficit spending units are brought together directly in financial markets or indirectly with the help of financial intermediaries. The chapter then identifies the types of financial institutions and markets that exist in the United States and the benefits they provide to the economy. We then discuss the five key risks faced by financial institutions: credit risk, interest rate risk, liquidity risk, foreign exchange risk, and political risk. The chapter closes with a high-level discussion of the regulation of the financial system. ■

LEARNING OBJECTIVES

1. Explain the role of the financial system and why it is important to individuals and to the economy as a whole.
2. Explain the ways that funds are transferred between surplus spending units (SSUs) and deficit spending units (DSUs).
3. Discuss the major differences between money and capital markets.
4. Explain the concept of informational asymmetry and the problem it presents to lenders.
5. Identify the major risks that financial institutions must manage.
6. Discuss the two main reasons that the financial sector is so highly regulated.
7. Understand the importance of ethical behavior in financial services.

1.1 THE FINANCIAL SYSTEM

The financial system consists of *financial markets* and *financial institutions*. **Financial markets** are just like any market you have seen before, where people buy and sell different types of goods and haggle over prices. Financial markets can be informal, such as a flea market in your community, or highly organized, such as the gold markets in London or Zurich. The only difference is that in financial markets, people buy and sell financial instruments such as stocks, bonds, and futures contracts rather than pots and pans. Financial market transactions can involve huge dollar amounts and can be incredibly risky. The dramatic changes in fortunes that occur from time to time because of large price swings make financial markets newsworthy.

Financial institutions are firms such as commercial banks, credit unions, insurance companies, pension funds, mutual funds, and finance companies that provide financial services to consumers, businesses, and government units. The distinguishing feature of these firms is that they invest their funds in financial assets, such as business loans, stocks, or bonds, rather than in real assets, such as manufacturing facilities and equipment. Financial institutions dominate the financial system worldwide, providing an array of financial services to

large multinational firms and most of the financial services used by consumers and small businesses. Overall, financial institutions are far more important sources of financing than securities markets.

A PREVIEW OF THE FINANCIAL SYSTEM

Let's look at an example of how the financial system gathers money and channels it to those who need money. Suppose that Bob, who is a business major, receives an $8,000 scholarship loan for college at the beginning of the school year, but he needs only $3,000 of it right away. After checking out deals at different banks, Bob decides to deposit the $8,000 in the bank near campus: $3,000 in a checking account and $5,000 in a certificate of deposit (CD) that pays 2 percent interest and matures just as the spring semester begins. (CDs are debt instruments issued by banks that pay interest and are insured by the federal government.) Bob buys the CD because the interest rate is competitive, and the maturity date matches the time when Bob has to buy books and pay his tuition.

At the same time that Bob bought his CD, the bank received a loan request from Tony, who owns a local pizza shop near campus. Tony wants to borrow $25,000 to expand his home delivery service. The interest rate on the loan is 5 percent, which is a competitive rate and payable in 5 years. The money for Tony's loan comes from Bob and other persons who recently bought CDs from the bank. After careful evaluation, the bank decides to make the loan to Tony because of his good credit rating and because it expects the pizza parlor to generate enough cash flows to repay the loan. Tony wants the loan because the additional cash flows (profits) will increase the value of his pizza parlor. During the same week, the bank made loans to other businesses whose qualifications were similar to Tony's and rejected a number of loan requests because the applicants had low credit scores or the proposed projects had low rates of return.

From this example, we can draw some important inferences about the financial system:

- If the financial system is *competitive*, the interest rate the bank pays on CDs will be at or near the highest rate that you can earn on CDs of similar maturity and risk. At the same time, the pizza parlor and other businesses will have borrowed at or near the lowest possible interest cost, given their risk class. Competition among banks for deposits will drive CD rates up and loan rates down.
- Banks and other depository institutions, such as insurance companies, gather money from consumers in small dollar amounts, aggregate it, and then make loans in much larger dollar amounts, like the loan to Tony. Savings by consumers in small dollar amounts are the origin of much of the money that funds large business loans.
- An important function of the financial system is to allocate money to the most productive investment projects in the economy. If the financial system is working properly, only projects with high-risk adjusted rates of return are funded, and those with rates below their opportunity costs are rejected.
- Finally, banks are profit-making organizations, and the bank in our example has earned a tidy profit from the deal. The bank borrowed money at 2 percent by selling CDs and lends money to the pizza parlor and other businesses at 5 percent. Banks and other lenders earn much of their profits from the spread between lending and borrowing rates. This difference is called the *Net Interest Margin*.

BUDGET POSITION

Let's look in more detail at how money is channeled from lenders to borrowers. We begin with some basic facts.

TABLE 1.1
2014 Flows of funds by sector, $ Bill

Sector	2014 Net Lending[a] (Borrowing)
Households & NPOs	**$844.3**
Nonfinancial Business	**–309.1**
State & Local Govt	**–235.1**
Federal Govt	**–559.6**
Financial Sectors	**96.4**
Foreign Sector	**166.2**

[a] Net Lending is lending net of borrowing; negative numbers represent net borrowing or borrowing net of lending.

Data source: http://www.federalreserve.gov/releases/Z1/Current/z1.pdf.

In any economy, all economic units can be classified into one of the four groups: (1) households, (2) business firms, (3) governments (local, state, and federal), and (4) foreign investors (nondomestic households, businesses, and government units). Each type of unit has different income sources and spending patterns. And just like you, every economic unit must operate within a budget constraint imposed by the unit's total income for the period. For a budget period such as a year, an economic unit can have one of three budget positions:

1. *Balanced budget*: Income and expenditures are equal.
2. *Surplus budget*: Income for the period exceeds expenses; these economic units have money to lend and are called **surplus spending units (SSUs)**.
3. *Deficit budget*: Expenditures for the period exceed revenues; these economic units need to borrow money and are called **deficit spending units (DSUs)**.

As depicted in Table 1.1, households are the principal SSUs in the economy, but some businesses, state and local governments, and foreign investors and their governments periodically run surplus budgets. Taken as a group, businesses are a principal DSU in the economy, along with the federal government, but households, state and local governments, and foreigners at times borrow money to finance their purchases of homes, automobiles, and high-definition television sets.

FINANCIAL CLAIMS

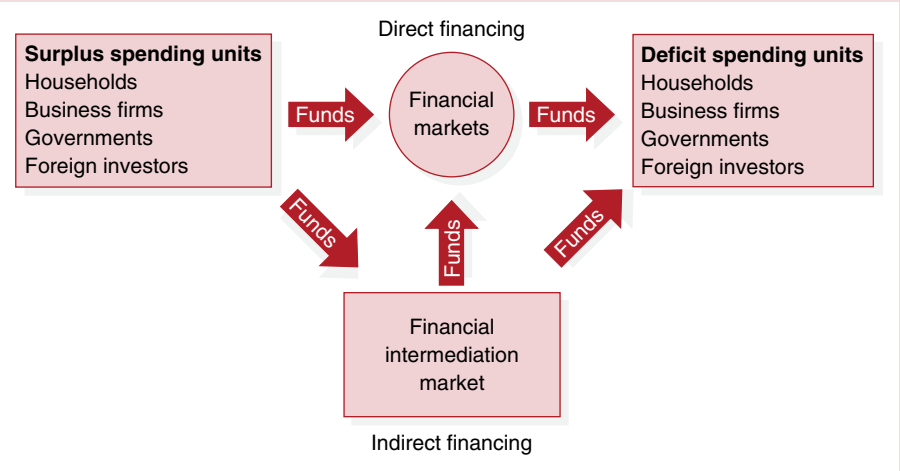
One problem facing the financial system is the mechanism to transfer funds from SSUs to DSUs. Fortunately, the solution is simple. The transfer can be accomplished by the DSU selling an IOU that the SSU is willing to buy. An IOU is a written promise to pay a specific sum of money (called the principal) plus a fee for the use of the money (called interest) and to have the use of the money over a period of time (called the maturity of the loan).

Promises to pay are called IOUs only in Western cowboy movies. In the real world, IOUs are called **financial claims**. They are claims against someone else's money at a future date. Financial claims also go by different names, such as *securities or financial instruments*; the names are interchangeable. Finally, note that financial claims (IOUs) are liabilities for borrowers (DSUs) and are simultaneously assets for lenders (SSUs), which illustrates the two faces of debt. That is, total financial liabilities and equity outstanding in the economy must equal total financial assets.

HOW FUNDS FLOW THROUGH THE FINANCIAL SYSTEM

In the financial system, how does money move from SSUs (whose income exceeds their spending) to DSUs (whose spending exceeds their income)? The arrows in Exhibit 1.1 show schematically that there are two basic mechanisms by which funds flow through the financial system: (1) **direct financing**, where funds flow directly through *financial markets* (the route at the top of the diagram), and (2) **indirect financing** (financial intermediation), where funds flow indirectly through *financial institutions* in the financial intermediation market (the route at the bottom of the diagram). The reason that financial institutions are often called **financial intermediaries** is because they are middlemen, facilitating transactions between SSUs and DSUs.

EXHIBIT 1.1
Transfer of Funds from Surplus to Deficit Spending Units



The role of the financial system—financial institutions and markets—is to facilitate the flow and efficient allocation of funds throughout the economy. The greater the flow of funds, the greater is the accommodation of individuals' preferences for spending and saving. An efficient and sound financial system is a necessary condition to having a highly advanced economy like the one in the United States.

Regardless of the financing method, the goal is to bring the parties together at the least possible cost and with the least inconvenience. An *efficient financial* system is important because it ensures that the economy's scarce resources finance the investments that promise the best return and thus generate economic growth. Thus, if the financial system works properly, firms with the most promising investment opportunities receive funds and those with inferior opportunities receive no funding. In a similar manner, consumers who need (or desire) an item they cannot currently pay for can borrow from their future income to purchase items now, thus smoothing out their consumption over time.

1.2 FINANCIAL MARKETS AND DIRECT FINANCING

Financial markets perform the important function of channeling funds from people who have surplus funds (SSUs) to businesses (DSUs) that need money. The top route in Exhibit 1.1 shows the flow of funds for direct financing. In direct financing, DSUs borrow

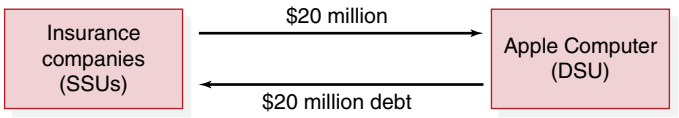
money *directly* from SSUs in financial markets by selling them securities in exchange for money. Typical financial instruments bought and sold in the direct financial markets are stocks and bonds.

For most large business firms, direct financial markets are wholesale markets in which the minimum transaction size is $5 million or more. These markets are often the cheapest way to raise large amounts of capital. Many of these transactions involve selling securities to the public. The government imposes information requirements on the sale of securities to the public and borrowers often use specialized bankers to help market the issue. These characteristics often add to the cost to raise money through public issues and may not be cost-effective for smaller financing amounts. The major buyers and sellers of securities in the direct financial markets are commercial banks, other financial institutions, large corporations, the federal government, and some wealthy individuals.

DIRECT FINANCING EXAMPLE

Suppose that Apple Computer (a DSU) needs $20 million to build a new manufacturing facility and decides to fund it by selling long-term bonds with a 15-year maturity. Let's say that Apple contacts a group of insurance companies, which have expressed an interest in buying Apple's bonds. The insurance companies will buy the bonds only after determining that they are a sound investment and are priced fairly for their credit risk. Likewise, Apple will sell its bonds to the insurance companies only after shopping the market to be sure it's getting a fair deal.

The flow of funds between the insurance companies (the SSUs) and Apple Computer (the DSU) is shown below:



As you can see, Apple sells its bonds directly to the insurance group for $20 million and then gets to use the money for 15 years. For the use of the money, Apple pays the bondholders interest because the bonds are a liability. For the insurance companies, the bonds are an asset that pays interest to them. Life insurers must pay claims when an insured client dies. These claims tend to be long term and predictable. Thus, many life insurance firms invest in long term bonds because the long term bonds with steady payments are a good match for their line of business.

OVERVIEW OF INVESTMENT BANKING

Two important players that deliver critical services in the direct credit markets are investment banking firms and large money center banks. **Investment banks** are firms that specialize in helping businesses sell *new* debt or equity in the financial markets. In addition, once the securities are sold, they provide a variety of broker-dealer services (buying and selling securities) for securities that have already been issued. Historically, the largest and most powerful investment banks were located in the Wall Street area of Manhattan in New York City. They are known for their willingness to take risk, creating new financial products through innovation, and their high executive salaries.

Money center banks are large commercial banks usually located in major financial centers who are major participants in the financial markets. Some examples include JP Morgan Chase, Citicorp, Bank of America, and Wells Fargo Bank. These powerful firms are the flagship banks for the U.S. economy and provide funds and business loans to large multinational corporations. Money center banks are highly regulated by the Federal Reserve Bank to ensure that they take prudent risks with both their investment and loan portfolios.

Money center banks may also have a large retail banking presence, providing consumers with personal and mortgage loans, checking and savings accounts, and credit cards.

HISTORICAL PERSPECTIVE

Banks have always desired to provide investment banking services to their customers and regulators, and many economists have expressed their doubts about whether commercial banks should engage in such a risky activity. Historically, banks provided a safe haven for savings and transaction balances and they deployed these funds into business and consumer loans, taking prudent risks. Following the Great Depression, commercial banks were barred from engaging in investment banking activities. Without going into detail, the 1929 stock market crash was followed by widespread bank failures and a devastating depression. At the time, it was believed that excessive risk taking by commercial banks resulted in the large number of bank failures. Economists and politicians concluded that it was too risky for commercial banks to engage in investment banking and that the Great Depression was in part caused by the misbehavior of Wall Street and commercial banks. As a result, Congress passed the Glass–Steagall Act of 1933, which separated commercial banking from investment banking.

Beginning in the 1980s, bank regulators began to gradually allow money center banks to engage in investment banking activities. The passage of the Financial Services Modernization Act in 1999 allowed large financial service firms to engage in a broad range of financial activities. There were two reasons for this change: (1) the 1980s and 1990s were marked by a significant amount of deregulation in the economy and (2) more recent research indicated that risk in the banking system was not the primary cause of the Great Depression. By 2007 money center banks were well-established players in the investment banking markets.

INVESTMENT BANKING TODAY

In 2008, the financial system suffered a significant meltdown, which resulted in the worst financial crisis since the 1930s. The trigger point came in 2007, when banks and other mortgage lenders experienced a large number of defaults in the subprime mortgage market, which was a market for high-risk mortgage loans. These defaults caused numerous failures among banks, thrifts, and investment banks that held large portfolios of mortgage loans. The financial storm became more ominous with the failure of Bear Sterns and Lehman Brothers during 2008. Shortly thereafter, the remaining Wall Street investment banks were forced by regulators to merge with large money center banks, such as Merrill Lynch's merger with Bank of America. Goldman Sachs was forced to become a bank regulated by the Fed. The thrust of this regulatory action was to rein in excess risk taking by Wall Street investment banks and money center banks and thus stabilize them financially and reduce the risk of failures that could potentially destabilize the nation's economy.

Today, investment banking and its risks reside inside the banking system and are subject to strict oversight by the Federal Reserve Bank. We suspect that sometime in the future investment banks will reemerge as nonbank financial firms free of some of the strict banking regulations of the Fed. Because of investment banks' involvement in the 2008 market collapse, however, they will be subject to much more oversight and regulation than in the past, and their primary regulator for most activities will be the Fed. Now let's look at the types of services that investment banks provide to consumer and business firms.

INVESTMENT BANKING SERVICES

Bring New Securities to Market. When management decides to expand a firm, they usually have a specific capital project in mind, such as building a new manufacturing facility. One important service that investment banks offer is to help firms bring their new debt or equity

securities to market. There are three distinct tasks involved. First is *origination*, which is all the work necessary to prepare a security issue for sale. During the origination, the investment banker may also help the client determine the feasibility of a capital project and the amount of money that must be raised. Second is *facilitation*, which is the process whereby an investment banker helps a firm sell its new security issue in the direct financial markets. The most common type of facilitation is to have the banker *underwrite* the deal. The term underwrite means to take on the risk. The typical underwriting arrangement is called a firm commitment in which the investment banker assumes the risk of buying a new issue of securities from the issuing corporation at a guaranteed price. The guaranteed price is important to the issuer because the corporation needs a certain amount of money to pay for the investment project, and anything less than this amount is a serious problem. The banker then has the responsibility to resell the issue to the final investors. The resale process is called *distribution*, and it occurs immediately after the securities are bought from the issuer. Distribution is the marketing and sales of securities to institutional and individual investors. This sale is called a *primary market sale* where new securities are created to raise cash. Even though an investment banker is used to facilitate the process, this method is still considered a form of direct financing.

Trading and Brokerage Services. Once financial claims have been issued, they may be resold to other investors in an aftermarket or a *secondary market*. There are two types of market participants who facilitate these transactions. **Brokers** help bring buyers and sellers together by acting as "matchmakers." If a sale occurs, the broker receives a commission for their services. The commission can be a percentage of the dollar amount sold or a flat fee. Also note that brokers never own the securities they trade (buy or sell) so they are not subject to the risk of a change in price in the underlying security.

In contrast, **dealers** "make markets" for securities by carrying an inventory of securities from which they stand ready to either buy or sell at quoted prices. Dealers make profits by trading from their inventory *and* as a matchmaker. Most large investment banks have a significant portion of their overall business devoted to "brokerage" activities, with some part focused on wholesale sales to large institutional investors and another part devoted to retail sales devoted to consumers and small businesses. Under new regulations created after the financial crisis, commercial banks may not hold securities for the bank's own account but may do so to limit risk arising from related customer transactions.

HOW CONSUMERS ACCESS FINANCIAL MARKETS

Except for the wealthy, individuals do not generally participate in the direct financing because of the wholesale nature of these markets. That is, the transaction amounts are simply too large for most people to handle. Direct market participants are seasoned professionals who make their living trading in these markets, and most of us would be no match for them in making a deal. Individuals gain access to the financial markets indirectly by transacting with financial intermediaries, such as commercial banks or mutual funds, or through retail channels with investment banking firms.

DO YOU UNDERSTAND?

1. What is the role of the financial system?
2. What are financial claims?
3. Explain what is meant by the term *direct financing*.
4. What are investment banks, and what services do they provide?

PEOPLE & EVENTS

A Brief Examination of the Causes and Effects of the Global Financial Crisis of 2007 and 2008

Over 2.5 million jobs were lost in the United States in a year, stocks plunged around 40 percent, wiping out large portions of investors' retirement savings, many large financial institutions were on the brink of bankruptcy, and a second Great Depression seemed imminent. Since the end of the "Great Recession" as it is now called the economy has continued to struggle to recover. What caused the crisis? The reasons are numerous. Many Asian currencies depreciated sharply in the late 1990s leading to large-scale debt defaults. Since then, many developing economies built up large "war chests" of foreign currency reserves, mostly in the form of U.S. dollars, to protect the value of their currencies. A significant amount of this money was placed in developed economies, much of it invested in safe, low-risk assets. Over time, the flow of money into the United States, coupled with growth of the domestic money supply, led to an extended period of low interest rates. Low interest rates fuel excessive borrowing and U.S. private sector debt rose from $22 trillion (222 percent of GDP) in 2000 to $41 trillion (294 percent of GDP) in 2007. Home prices increased more rapidly than incomes over the period. From 2000 to 2006, home value increased over $5.3 trillion in relation to aggregate household income. To fund the burgeoning demand for mortgages, banks and others created mortgage-backed securities which were sold to financial institutions. With the boom in housing and with Congress encouraging lenders to make credit available to lower-income borrowers (often called subprime borrowers), credit standards on new mortgages eroded. The government insures many mortgages and the quasi-government agencies, Fannie Mae and Freddie Mac, purchased mortgages and then sold mortgage-backed securities. Because of the perceived government backing of mortgages and because credit ratings agencies did not believe that a national drop in home prices would occur, most mortgage-backed securities had high credit ratings and many buyers of these securities did very little credit investigation to understand their true risks. By 2006, many mortgage originators granted loans to borrowers who were not able to repay. As defaults increased and investors realized that many homes were unaffordable, home prices dropped nationally. Highly levered Wall Street banks such as Lehman Brothers with a 30:1 debt to equity ratio either failed or were on the brink of failure and required government assistance or outright bailouts. Large nationwide mortgage lenders such as Countrywide Financial and Washington Mutual were bought out by large banks with the government's blessing. A series of liquidity crises ensued requiring Federal Reserve intervention into money market mutual funds, mortgage-backed securities and commercial paper markets. In hindsight lax regulatory oversight of financial institutions allowed banks and others to take on too much risk. It also became apparent that institutions relied too heavily on statistical modeling that used unrealistically low probabilities of risky events in making their investment decisions.

The effects of the crisis will continue for many years. As consumer demand declined and unemployment rose, governments increased debt financing, and as a result, total global public and private debt levels are at all-time highs. This will continue to put pressure on governments to raise taxes and curtail necessary spending on infrastructure, defense and other priorities which in the long term is likely to curtail global growth. In the United States, the high debt levels may reduce the government's ability to offset future financial crises, and because the level of borrowing requires foreign financing, it increases our exposure to foreign financial crises. With reduced U.S. demand for global goods and services, many emerging economies have had to increase their own debt levels and this may well result in the next financial crisis.

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1.3 TYPES OF FINANCIAL MARKETS

As one would expect, many different types of financial claims are issued in the primary markets by financial intermediaries and other economic units such as the federal government and large corporations. And it is no surprise that these claims are bought and sold in a large number of markets. In this and the following sections, we shall briefly describe the different types of financial markets and the more important financial instruments.

PRIMARY AND SECONDARY MARKETS

Financial claims are initially sold by DSUs in **primary markets**. All financial claims have primary markets. An example of a primary market transaction is IBM Corporation raising external funds through the sale of new stock or bonds.

People are more likely to purchase a primary financial claim if they believe that they will not have to hold it forever (in the case of most common stock) or until its maturity date (in the case of bonds). **Secondary markets** are like used-car markets; they let people exchange "used" or previously issued financial claims for cash at will. Secondary markets provide liquidity for investors who own primary claims. Securities can be sold only once in a primary market; all subsequent transactions take place in secondary markets. The New York Stock Exchange (NYSE) is an example of a well-known secondary market.

Marketability. An important characteristic of a security to investors is its marketability. **Marketability** is the ease with which a security can be sold and converted into cash. A security's marketability depends in part on the cost of trading and the search for information. When these costs are lower, the security's marketability is greater. Because secondary markets make it easier to sell securities, their presence increases a security's marketability.

Liquidity. A term closely related to marketability is **liquidity**. Liquidity is the ability to convert an asset into cash quickly without loss of value. In common usage, the two terms are often used interchangeably, but they are different. Liquidity implies that when a security is sold, its value will be preserved. Marketability does not carry this implication.

EXCHANGE AND OVER-THE-COUNTER MARKETS

Once issued, a financial claim (security) can be traded in the secondary market on an organized security exchange, such as the NYSE, or it may be traded in electronic markets. Trades made through an exchange are usually made on the floor of the exchange or through its computer system. Organized security exchanges provide a physical meeting place and communication facilities for members to conduct their transactions under a specific set of rules and regulations. Only members of the exchange may use the facilities, and only securities listed on the exchange may be traded. The NYSE is the largest securities exchange for stocks. The Chicago Board of Trade (CBOT) and the Chicago Mercantile Exchange (CME) are the largest futures exchanges. The latter two merged in 2007 to become the CME Group.

Securities not listed on an exchange are bought and sold in the **over-the-counter (OTC) market**. The OTC market differs from organized exchanges because the market has no central trading place. Instead, investors can execute OTC transactions by visiting or telephoning an OTC dealer or by using a computer-based electronic trading system linked to the OTC dealer. Traditional stocks traded over the counter have been those of small and relatively unknown firms, most of which would not qualify to be listed on a major exchange. However, electronic trading has become much more important in recent years, and many OTC stocks

are issued by high-profile firms, especially technology firms. An increasing number of exchange or OTC listed stocks are traded directly between institutional buyers and sellers via Electronic Communication Networks or ECNs such as Bloomberg Tradebook or CitiCross.

PUBLIC AND PRIVATE MARKETS

Public markets are organized financial markets where securities registered with the Securities and Exchange Commission (SEC) are bought and sold to individual and institutional investors. Public markets are highly regulated by the SEC to ensure that the issuer follows all legal registration requirements and fully discloses an investment's risk. Individual investors gain access to public markets through the retail division of commercial and investment banks. An example of a public market transaction is buying or selling of stock through your broker on the New York Stock Exchange.

The SEC has broad responsibility for overseeing the securities industry and it indirectly regulates all primary and secondary markets where securities are traded. Its primary regulatory responsibility is to protect investors of modest means from unscrupulous investment practices. Thus, the SEC focuses on ensuring that investors receive timely and accurate information and that the investment's risk is fully disclosed. The SEC offers no protection from investing in a bad deal or poor investment judgment as long as the investment's risk has been accurately disclosed. Most corporations want access to the public markets because they are wholesale markets where issuers can sell their securities at wholesale pricing, resulting in the lowest possible funding cost for large issues. The downside for corporations selling in the public markets is the high cost of complying with SEC regulations and the public information hassle that goes with it. The Financial Industry Regulatory Authority (FINRA) is a trade group that overseas day-to-day market activity of exchanges, trading activity, and actions of brokers and dealers in most securities' markets. FINRA is subject to SEC oversight.

In contrast to public markets, a private market involves direct transactions between two parties. There is very little regulation in the private markets compared to public market transactions. Transactions in private markets are called **private placements**. Investors in the private markets are considered sophisticated investors who require little protection, or it is presumed that they have the means to hire adequate investment counsel. In private markets, a company contacts investors directly and negotiates a deal to sell them the entire security issue. Larger firms may be equipped to handle these transactions themselves. Smaller firms are more likely to use the services of an investment bank to help locate investors, negotiate the deal, and handle the legal aspects of the transaction. Major advantages of a private placement are the speed at which funds can be raised, the low transaction cost, and not having to make as much information publicly available. The disadvantage is that privately placed securities cannot legally be sold in the public markets for a certain time because they lack SEC registration, although they can be traded among selected accredited investors. As a result, private placement securities are less marketable than a comparable registered security. Evidence also indicates that issuers may have to pay higher interest rates on privately placed debt than on similar public issues.

FUTURES AND OPTIONS MARKETS

Markets also exist for trading in futures and options. Perhaps the best-known futures markets are the Chicago Mercantile Exchange and the Chicago Board of Trade. The Chicago Board Options Exchange is a major options market. Futures and options are often called *derivative securities* because they derive their value from some underlying asset. Futures contracts are contracts for the future delivery of assets such as securities, foreign currencies, interest rates, and commodities. Corporations use these contracts to reduce (hedge) risk exposure caused by fluctuation in interest rates, foreign exchange rates, or commodity prices. Options contracts call for one party (the option writer) to perform a specific act if called on to do so by the option buyer or owner. Options contracts, like futures contracts, can be used

to hedge risk. Futures and options contracts are discussed in more detail in Chapter 11. Most commodity futures contracts are regulated by the Commodity Futures Trade Commission (CFTC), whereas financial futures and options are regulated by the SEC.

FOREIGN EXCHANGE MARKETS

The foreign exchange market is the market in which foreign currencies are bought and sold and is the world's largest market by daily trading volume with trading volume over $5 trillion per day. Foreign currencies such as the British pound, the Japanese yen, the euro, and the Swiss franc are traded against the U.S. dollar or are traded against other foreign currencies. Foreign currencies are traded either for spot or forward delivery over the counter at large commercial banks or investment banking firms. Futures contracts for foreign currencies are traded on organized exchanges such as the Chicago Mercantile Exchange. The spot market is where currency, commodities, or financial instruments are sold for cash and delivered immediately. In contrast, in forward markets dealers agree to deliver these financial claims at a fixed price at a future date.

INTERNATIONAL AND DOMESTIC MARKETS

Financial markets can be classified as either domestic or international markets depending on where they are located. Important international financial markets for U.S. firms are the short-term Eurodollar market and the long-term Eurobond market. In these markets, domestic or overseas firms can borrow or lend large amounts of U.S. dollars that have been deposited in overseas banks. These markets are closely linked to the U.S. money and capital markets.

1.4 THE MONEY MARKETS

Money markets are markets in which commercial banks and other businesses adjust their liquidity position by borrowing, lending, or investing for short periods of time. The Federal Reserve System conducts monetary policy in the money markets, and the U.S. Treasury uses them to finance its day-to-day operations. Also, in the money markets, businesses, governments, and sometimes individuals borrow or lend funds for short periods of time—from 1 to 120 days. Exhibit 1.2 shows the amount of various money market securities outstanding.

EXHIBIT 1.2
Major Money Market Instruments Outstanding (March 2015)

Instrument	$ Billions
The U.S. Treasury bills	1,476.5
Short-term municipal securities	38.1
Large, negotiable CDs	1,927.1
Commercial paper	952.1
Federal funds and security repurchase agreements	3,756.3

Money market instruments have maturities of less than 1 year; some have active secondary markets, and all have low default risk. Business firms and wealthy individuals use money market instruments to adjust their liquidity positions.

Source: Board of Governors, Federal Reserve System, Flow of Funds Accounts; Monthly Statement of the Public Debt of the United States.

The money market consists of a collection of markets, each trading a distinctly different financial instrument. In the simplest terms, the money markets are a wholesale market (minimum $1 million) for financial claims that have characteristics very similar to money. Money market instruments typically have short maturities (usually 90 days or less), are generally highly liquid (active secondary markets), and have low risk of default. There is no formal organized exchange for the money markets. Central to the activity of the money markets are the dealers and brokers who specialize in one or more money market instruments. The major money market instruments are discussed below.

TREASURY BILLS

Treasury bills are direct obligations of the U.S. government and thus are considered to have no default risk. They are sold weekly and have maturities that range from 3 months to 1 year. Financial institutions, corporations, and individuals buy these securities for their liquidity and safety of principal.

NEGOTIABLE CERTIFICATES OF DEPOSIT

Negotiable certificates of deposit (NCDs) are large-denomination time deposits of the nation's largest commercial banks. Unlike other time deposits of most commercial banks, NCDs may be sold in the secondary market before their maturity. Only the larger banks sell NCDs.

COMMERCIAL PAPER

Commercial paper is the unsecured promissory note (IOU) of a large business. Commercial paper typically has maturities ranging from a few days to 120 days and does not have an active secondary market. Corporations and finance companies are the major issuers of commercial paper.

FEDERAL FUNDS

Technically, **federal funds** are bank deposits held with the Federal Reserve bank. Banks with deposits in excess of reserves they are required to hold may lend those excess reserves—called *fed funds*—to other banks. The bank that acquires the fed funds may use them to cover a deficit reserve position or can use the funds to make consumer or business loans. Fed funds loans are typically for 1 day or for over a weekend. At a more practical level, you may think of the fed funds market as the market in which banks make short-term unsecured loans to one another, and the fed funds interest rate is the interbank lending rate.

1.5 THE CAPITAL MARKETS

Individuals own real assets to produce income and wealth. Thus the owner of a machine shop hopes to profit from the sale of products from the shop, and the owner of a factory hopes to earn a return from the goods produced there. Similarly, owners of apartments, office buildings, warehouses, and other tangible assets hope to earn a stream of future income by using their resources to provide services directly to consumers or to other businesses. These assets are called capital goods; they are the stock of assets used in production. **Capital markets** are where capital goods are financed with stock or long-term debt instruments. Compared to money market instruments, capital market instruments are less marketable; default risk levels vary widely between issuers and have maturities ranging from over 1 to 30 years.

EXHIBIT 1.3
Selected Capital Market Instruments Outstanding (March 2015)

Instrument	$ Billions
The U.S. government securities	
Treasury notes	8,256.7
Treasury bonds	1,607.6
Inflation-indexed notes and bonds	1,075.1
State and local government bonds	2,907.9
Corporate bonds	11,702.2
Corporate stock (at market value)	36,834.8
Mortgages	13,463.5

Capital market instruments are used to finance real assets that produce income and wealth. They are bought and sold in the direct credit markets and typically have maturities greater than 1 year. Financial institutions are the connecting link between the money and capital markets.

Source: Board of Governors, Federal Reserve System, Flow of Funds Accounts; Monthly Statement of the Public Debt of the United States.

Financial institutions are the connecting link between the short-term money markets and the longer-term capital markets. These institutions, especially those that accept deposits, typically borrow short term and then invest in longer-term capital projects either indirectly through business loans or directly into capital market instruments. We will now briefly describe the major capital instruments. Exhibit 1.3 shows the amounts outstanding for selected capital market instruments.

COMMON STOCK

Common stock represents an ownership claim on a firm's assets. Also referred to as *equity securities*, stock differs from debt obligations in that equity holders have the right to share in the firm's profits. The higher the firm's net income, the higher is the return to stockholders. On the other hand, stockholders must share in any of the losses that the company may incur. And in the event of bankruptcy, creditors and debt holders have first claim on the firm's assets. Most stock market transactions take place in the secondary markets.

CORPORATE BONDS

When large corporations need money for capital expenditures, they may issue bonds. **Corporate bonds** are thus long-term IOUs that represent a claim against the firm's assets. Unlike equityholders' returns, bondholders' returns are fixed; they receive only the amount of interest that is promised plus the repayment of the principal at the end of the loan contract. Even if the corporation turns in an unexpectedly phenomenal performance, the bondholders receive only the fixed amount of interest agreed to at the bonds' issue. Corporate bonds typically have maturities from 5 to 30 years, and their secondary market is not as active as for equity securities.

MUNICIPAL BONDS

Municipal bonds are the long-term debt obligations of state and local governments. They are used to finance capital expenditures for things such as schools, highways, and airports. The most distinguishing feature of municipal bonds is that their coupon income is exempt

from federal income taxes. As a result, individuals or companies that are in the highest income tax brackets purchase municipal bonds. Although the bonds of large municipalities have secondary markets, most municipal bonds have limited secondary markets and thus are not considered liquid investments.

MORTGAGES

Mortgages are long-term loans secured by real estate. They are the largest segment in the capital markets in terms of the amount outstanding. More than half of the mortgage funds go into financing family homes, with the remainder financing business property, apartments, buildings, and farm construction. Mortgages by themselves do not have good secondary markets. However, a large number of mortgages can be pooled together to form new securities called *mortgage-backed securities*, which have an active secondary market.

DO YOU UNDERSTAND?

1. What are primary and secondary markets?
2. What are private placements?
3. How do money and capital markets differ?
4. What is the over-the-counter market and how does it differ from an exchange?

1.6 FINANCIAL INTERMEDIARIES AND INDIRECT FINANCING

As we mentioned earlier, many business firms are too small to sell their debt or equity directly to investors. They have neither the expert knowledge nor the money it takes ($1 million or more) to transact in wholesale markets. When these companies need funds for capital investments or for liquidity adjustments, their only choice may be to borrow in the *indirect* market from a financial institution. These financial institutions act as intermediaries, converting financial securities with one set of characteristics into securities with another set of characteristics. The bank's conversion of Bob's CD into a loan for Tony's pizza is an example of this conversion process. This process is called **financial intermediation**.

In indirect financing, a financial institution—an intermediary—stands between the SSU and the DSU. This route is shown at the bottom of Exhibit 1.1. The hallmark of indirect financing is that the financial intermediary transforms financial claims in a way that makes them attractive to both the SSUs and the DSUs. For indirect financing to take place, the DSU must be willing to issue a security with a denomination, maturity, and other security characteristics that match exactly the desires of the SSU. Unless both the SSU and the DSU are satisfied, the transfer of money will not take place.

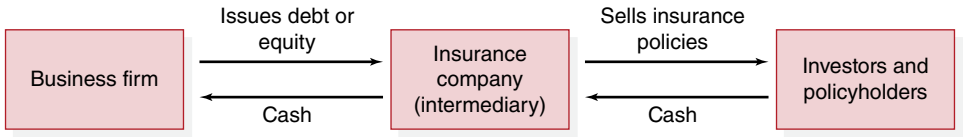
INDIRECT FINANCING EXAMPLES

At the beginning of the chapter, we worked through an example of indirect financing. In that situation, Bob, a college student, had $5,000 to invest for 3 months. A bank sold Bob a 3-month consumer CD for $5,000, pooled this $5,000 with the proceeds from other CDs,

and used the money to make small-business loans, one of which was a $25,000 loan to the pizza parlor owner. Following is a schematic diagram of that transaction:

The bank raises money by selling services such as checking accounts, savings accounts, and consumer CDs and then uses the money to make loans to businesses or consumers.

On a larger scale, insurance companies provide much of the long-term financing in the economy through the indirect credit market. Insurance companies invest heavily in corporate bonds and equity securities using funds they receive when they sell insurance policies to individuals and businesses. Here is the schematic diagram for intermediation by an insurance company:



Notice an important difference between the indirect and direct financial markets. In the direct market, as securities flow between SSUs and DSUs, the form of the securities remains unchanged. In the indirect market, however, as securities flow between SSUs and DSUs, they are repackaged and thus their form is changed. In the example above, money from the sale of insurance policies becomes investments in corporate debt or equity. By repackaging securities, financial intermediaries tailor a wide range of financial products and services to meet the needs of consumers, small businesses, and large corporations. Their products and services are particularly important for smaller businesses that do not have access to direct financial markets.

THE ECONOMICS OF FINANCIAL INTERMEDIATION

Financial intermediaries are firms that operate to make a profit. They buy financial claims (held as assets), such as business loans, consumer installment loans, and corporate bonds from DSUs. These claims have characteristics designed to meet the needs of the DSUs that buy them. Financial intermediaries finance the purchase of these financial claims by selling financial claims (IOUs) on themselves that are held as assets by others, assets such as checking and saving accounts, life insurance policies, and mutual fund shares to SSUs. These financial claims have characteristics that are attractive to SSUs.

To earn profits, financial intermediaries buy financial claims from DSUs whenever the income generated by the financial claims covers all of their borrowing and production costs. In the example about Bob presented earlier, the local bank charged the pizza shop owner 5 percent for the business loan, and the bank's cost of money for the CDs averages 2 percent. Thus, the bank's gross interest rate margin is 3 percent (5 – 2) from which the bank has to cover the cost of manufacturing the loan, its overhead expenses, and the risk of not being paid back (default risk).

One question we might ask is, "Why don't consumers or businesses 'manufacture' their own banking services and pocket the profits?" Banks and other financial intermediaries are middlemen, and who needs a middleman? To understand why financial intermediaries exist, we need to understand the role of two important *market imperfections*—transaction costs and information costs. Let's turn to a discussion of transaction costs.

TRANSACTION COSTS

By **transaction costs**, we mean all fees and commissions paid when buying or selling securities, such as search costs, cost of distributing securities to investors, cost of SEC registration, and the time and hassle of the financial transaction. In general, the greater the transaction cost, the more likely it is that a financial intermediary will provide the financial service. Banks and other financial intermediaries are experts in reducing transaction costs. Much of the cost savings come from economies of scale and from the use of sophisticated digital technology.

As a percentage of the deal, transaction costs are particularly high when dealing with consumers and small businesses because the dollar amount of the transactions is small. The transaction costs of selling securities in small dollar amounts are often prohibitively expensive. As a result, financial intermediaries are almost always able to produce financial services at a lower cost than can individuals or small businesses. This is not always true for larger firms that have sufficient size to capture economies of scale and access to sophisticated technology. These large firms transact primarily in the direct credit markets for most of their financial service needs.

Let's look at an example to illustrate why financial intermediaries enjoy a comparative cost advantage over individuals and small businesses when producing financial services. Let's say that Tony, the pizzeria owner, learns that the bank is willing to loan him the $25,000; however, he thinks that the 5 percent loan rate is too high. Thus, Tony seeks an individual investor who might offer a lower loan rate. Suppose that you have money to invest and are looking for some investment opportunities. You do not know Tony personally, but you have frequented the pizza shop when you were in college. You are currently a business consultant, but not a financial expert. To keep the example simple, we assume that the loan is for 1 year and your profits are earned from the gross interest rate spread, which is $750 ($25,000 × 0.03).

Let's look at the basic transactions needed to make the loan and the bank's costs and your costs:

- **Loan contract.** You hire a lawyer to draw up a loan agreement: cost $600. The bank hires a topflight lawyer who draws up an airtight contract that is used at all the bank's branches: cost $3.00 per contract.
- **Credit reports.** You purchase an "economy" credit report to help you evaluate the firm's creditworthiness: cost $550. To ensure that your analysis is correct, you hire a neighbor who is the credit manager of a small manufacturing firm for $200: total cost $750 ($550 + $200). The bank uses an expensive and sophisticated credit scoring model that generates a credit report and a recommended decision: cost $10 per credit report.
- **Monitoring the loan.** You gather the data and your neighbor reviews the quarterly financials for $200. The bank has a computer automated system for monitoring monthly loan payments and quarterly financials: the bank's cost for the year $25.

The total cost for the loan transaction score card looks like this:

Transaction Task	Bank Cost ($)	Your Cost ($)
• Loan contract	3.00	600.00
• Credit report	10.00	750.00
• Monitoring loan	25.00	200.00
Total cost	38.00	1,550.00

If you took the deal, you would lose $800 (i.e., $750 in gross interest spread – $1,550 in processing costs). Though the bank's automated systems were expensive, the bank can spread the cost over a large number of loans. Thus, the bank's transaction costs, through a combination

of scale economies, technology, and expertise, are much lower than you can generate as an individual. The bank's cost advantage is $1,512 (i.e., $1,550 – $38). We conclude, therefore, that because financial intermediaries can reduce transaction costs substantially, they can provide loans and other financial services for people like Tony and Bob at favorable prices.

ASYMMETRIC INFORMATION

The presence of transaction costs explains some of the reasons why financial intermediaries play such an important role in financial markets. Financial intermediaries are major contributors to *information production*. They are especially good at selling information about a borrower's credit standing. The need for information about financial transactions occurs because of asymmetric information. **Asymmetric information** occurs when buyers and sellers do not have access to the same information; sellers usually have more information than buyers. This is especially true when the seller owns or has produced the asset to be sold to the buyer.

The classic asymmetric information situation is when you buy a used car from an individual. Clearly, the seller (the car's current owner) knows a lot more about the car's condition and problems than you do. Sellers typically are also reluctant to divulge a list of problems to potential buyers. The typical seller's response when asked about the car's quality is to claim, "She is a beauty." The key to reducing or solving the problem of asymmetric information is to gather more information. In the case of a used car, you can ask to test drive the car or, better yet, you can hire a skilled mechanic to examine the car.

For financial transactions, *asymmetric information* refers to the fact that issuers of securities (the borrowers) know more than investors (the lenders) about the credit quality of the securities being issued. As you might expect, informational asymmetry is larger for loans to consumers and small businesses because little information is publicly available. Informational asymmetry is much less of a problem for large public corporations because so much information is readily available.

Adverse Selection.

Asymmetric information problems occur in two forms: adverse selection and moral hazard. **Adverse selection** problems occur *before* a financial transaction takes place. For example, say that the owner of a woodworking shop goes to a local bank for a business loan. The company is in financial trouble and may fold unless the owner is able to secure a loan for working capital. What is the owner to say when asked if he can repay the loan? He needs the money, and divulging the truth may jeopardize his chances to get the loan.

The adverse selection problems are more severe for small businesses and consumers because of the lack of publicly available information. Small businesses or consumers who need to borrow money will paint a positive picture about their financial situation. It's human nature. Ironically, firms or consumers with the most severe financial problems also have the greatest incentive to lie and "cook the books" to get a loan. The key to the deadlock is to gather more information about a business's or individual's credit situation. However, gathering additional information is not free. The bank must decide if the cost of gathering additional information is warranted. Loan pricing is particularly difficult when you don't know who is a good or bad credit risk. Let's assume for a moment that a bank lacks reliable information. If the bank sets the loan rate too high, the good credit risks will look elsewhere, leaving only bad borrowers. If the loan rate is too low, the bank will be inundated with borrowers of low credit standing, and the bank stands a good chance of losing more money on the bad credit risks than it will earn on its good borrowers. As a result, if reliable information is not available at a reasonable cost, the banker may decide not to make any loans to businesses or consumers in a particular market. This condition is known as a **market failure**.

Moral Hazard.

Moral hazard problems occur *after* the transaction (loan) takes place. They occur if borrowers engage in activities that increase the probability that the borrower will default. In other words, the loan's default risk is much higher than the lender was led to

believe at the time the loan was made. Let's return to our example of the woodworking shop owner who requested a loan for additional working capital. Let's say that the bank made the loan. Rather than using the money for working capital, however, the owner takes half the money and puts 10 percent down to buy a new high-tech machine that will increase his shop's operating efficiency, design capability, and (he hopes) sales. But it's a lot of money for one machine, and the monthly payments are large given current sales. Clearly, the large monthly payment, which is a fixed cost, increases the loan's default risk above the original deal. The business owner may do this because he gets the gain if the firm makes more money and he does not have to pay the bank any more. The bank's risk of a loan default has increased and it does not share in any profit increase.

PROTECTION AGAINST MARKET FAILURES

If good solutions are not available for adverse selection and moral hazard problems, lenders will decrease the number of loans they make in a particular market. In the extreme case, the market will fail. Financial institutions have become specialists in the production of additional information. With respect to adverse selection, banks are specialists in the origination of loans and determining a borrower's creditworthiness. For example, for consumer credit and small-business loans, banks have developed sophisticated credit-scoring models to determine prospective borrowers' creditworthiness. The customer fills out the credit application; the information is then scanned into a data bank, and in a matter of seconds, the credit risk profile is displayed along with a credit recommendation. If the recommendation is to grant credit, the bank then verifies critical data; most of the verification can be automated by computer search. Thus, through the use of technology, banks have dramatically reduced adverse selection costs and have achieved significant economies of scale.

Moral hazard problems occur after the money is lent. Business loan contracts are detailed documents designed to provide incentives for borrowers to behave in a manner consistent with the intent of the loan contract. For example, the contract may spell out a series of performance measures with rewards and/or penalties conditional on the firm's performance over time. The performance measures are typically financial ratios. For example, if the firm's current ratio declines below 1.5, the loan rate increases 0.5 percent. Loan contracts can also be very restrictive: They can prohibit certain asset purchases or require that expenses be reduced by a certain percentage by some date. Banks have developed expertise in monitoring loan contracts and reducing costs through technology, thus achieving significant economies of scale.

CONCLUSIONS

Banks and other financial institutions have become experts in reducing transaction and information costs. Examples include originating new security issues, evaluating credit risk, writing restrictive loan contracts, and monitoring bond and loan contracts. If financial institutions are unable to find satisfactory solutions to transaction and information cost problems, lenders will make fewer loans to individuals and small businesses. Transaction and information costs are usually largest for individuals and small businesses, and as a result, they typically find it more economical to access the credit markets using the services of a financial intermediary. For large businesses, transaction and information costs tend to be much lower, and these firms do most of their financial transactions in the direct credit markets. Finally, as you read through the book, we will point out common adverse selection and moral hazard problems and how financial intermediaries try to mitigate their effects.

TYPES OF INTERMEDIATION SERVICES

In "transforming" direct financial claims into indirect ones, financial intermediaries perform five basic intermediation services.

Denomination Divisibility. Financial intermediaries are able to produce a wide range of denominations—from $1 to many millions. They can do this by pooling the funds of many individuals and investing them in direct securities of varying sizes. Of particular importance is their acceptance of deposits from individuals who typically do not have money balances large enough to engage in the wholesale transactions ($1 million or more) found in direct financial markets.

Currency Transformation. Many U.S. companies export goods and services to other countries, but few individuals living in the United States are willing to finance the overseas activities of these companies by buying direct financial claims denominated in a foreign currency. Financial intermediaries help to finance the global expansion of U.S. companies by buying financial claims denominated in one currency and selling financial claims denominated in other currencies.

Maturity Flexibility. Financial intermediaries are able to create securities with a wide range of maturities—from 1 day to more than 30 years. Thus, they are able to buy direct claims issued by DSUs and issue indirect securities with precisely the maturities (usually shorter) desired by SSUs. For example, savings and loan associations obtain funds by issuing passbook accounts and savings certificates and investing the funds in long-term consumer mortgages.

Credit Risk Diversification. By purchasing a wide variety of securities, financial intermediaries are able to spread risk. If the securities purchased are less than perfectly correlated with each other, the intermediary is able to reduce the fluctuation in the principal value of the portfolio.

Liquidity. For most consumers, the timing of revenues and expenses rarely coincides. Because of this, most economic units prefer to hold some assets that have low transaction costs associated with converting them into money. Many of the financial commodities produced by intermediaries are highly liquid. For example, a checking account permits consumers to purchase an asset or repay a debt with minimal transaction cost.

Financial intermediaries, therefore, tailor the characteristics of the indirect securities they issue to the desires of SSUs. They engage in one or more distinct types of intermediation: (1) denomination intermediation, (2) currency intermediation, (3) risk intermediation, (4) maturity intermediation, and (5) liquidity intermediation. They provide these and other services to earn a profit. SSUs and DSUs use these services as long as the cost of doing so is less than providing the services for themselves through the direct credit markets.

SSUs' or DSUs' choice between the direct credit market and the intermediation market depends on which market best meets their needs. Typically, consumers whose transactions are limited in dollar amount find that the intermediation market is most cost-effective for at least a portion of their funds. Economic units that deal in large dollar amounts (wholesale transactions) can switch back and forth between the two markets, selecting the market that offers the most favorable overall cost. For example, many large businesses take out loans from commercial banks, an intermediation transaction, and also raise money by selling commercial paper in the direct credit market.

DO YOU UNDERSTAND?

1. Explain what is meant by the term *indirect financing* and how it is related to *financial intermediation*.
2. Explain the concept of asymmetric information and illustrate it through a discussion of a business loan to a small company.
3. What is moral hazard and how does it apply to a corporate bond issue sale?
4. Thrift institutions specialize in what type of intermediation service?

1.7 TYPES OF FINANCIAL INTERMEDIARIES

Many types of financial intermediaries coexist in our economy. Although different, financial intermediaries all have one function in common: they purchase financial claims with one set of characteristics from DSUs and sell financial claims with different characteristics to SSUs.

Exhibit 1.4 shows the major financial intermediaries in our economy and their long-term growth rates between 1980 and 2015. During this period, the assets of all financial intermediaries totaled $66.0 trillion, and their assets grew at a compound annual rate of 8.1 percent. This rate of growth was faster than the economy as a whole, which grew at 5.4 percent. The largest financial intermediaries in the U.S. economy are commercial banks, but the fastest growing intermediaries are private pension funds (15.0 percent annual growth rate) and government pension funds (14.6 percent annual growth rate). The rapid growth of financial intermediaries reflects the growth in indirect securities issued and the increase in the proportion of funds being channeled through the intermediation market.

Financial intermediaries are classified as (1) deposit-type institutions, (2) contractual savings institutions, (3) investment funds, or (4) other types of intermediaries. Exhibit 1.5 lists the major types of financial institutions and their balance sheet accounts. Notice that both their assets and liabilities are financial claims. A nonfinancial firm like Ford Motor Company

EXHIBIT 1.4
Size and Growth of Major Financial Intermediaries

		March 2015		1980		
Intermediary	Rank	Total Assets ($ Billions)	% of Total	Total Assets ($ Billions)	% of Total	Annual Growth Rate (%)
Commercial banks	1	14,737.0	22.3	1,482.00	35.1	6.7
Mutual funds	2	12,903.8	19.5	513.00	12.1	9.6
Government pension funds	3	9,226.0	14.0	76.30	1.8	14.6
Private pension funds	4	8,629.5	13.1	62.00	1.5	15.0
Government-sponsored enterprises	5	6,353.5	9.6	195.10	4.6	10.4
Life insurance companies	6	6,316.8	9.6	464.20	11.0	7.7
Money market funds	7	2,609.9	4.0	196.80	4.7	7.6
Casualty insurance companies	8	1,586.3	2.4	182.00	4.3	6.3
Finance companies	9	1,502.1	2.3	196.70	4.7	5.9
Credit unions	10	1,102.9	1.7	68.40	1.6	8.2
Savings institutions	11	1,041.0	1.6	791.60	18.7	0.8
Total		66,008.8	100.0	4,228.10	100.1	8.1
GDP		17,693.3		2,788.00		5.4

Commercial banks are the largest and most important financial intermediaries in the U.S. economy. Since 1980, private pension funds, government pension funds, and government-sponsored enterprises have been the fastest growing. The rapid growth of financial intermediaries, especially those involved in investment, reflects the tremendous wealth generated by the U.S. economy and the growing proportion of funds being channeled into the intermediation market.

Source: Board of Governors, Federal Reserve System, Flow of Funds Accounts (http://www.federalreserve.gov/releases/). Debt of the United States. GDP is from the Bureau of Economic Analysis.

EXHIBIT 1.5
Primary Assets and Liabilities of Financial Intermediaries

Type of Intermediary	Assets (Direct Securities Purchased)	Liabilities (Indirect Securities Sold)
Deposit-type institutions		
Commercial banks	Business loans Consumer loans Mortgages	Checkable deposits Time and savings deposits Borrowed funds
Thrift institutions	Mortgages	NOW accounts and savings deposits
Credit unions	Consumer loans	Share accounts Time and savings deposits
Contractual savings institutions		
Life insurance companies	Corporate bonds Corporate stock	Life insurance policies
Casualty insurance companies	Municipal bonds Corporate bonds Corporate stock	Casualty insurance policies
Private pension funds	Corporate stock Government securities Corporate bonds	Pension fund reserves
State and local government pension funds	Corporate stock Government securities Corporate bonds	Pension fund reserves
Investment funds		
Mutual funds	Corporate stock Government securities Corporate bonds	Shares in fund
Money market funds	Money market securities	Shares in fund
Other financial institutions		
Finance companies	Consumer loans Business loans	Commercial paper Bonds
Federal agencies	Government loans	Agency securities

This exhibit presents a summary of the most important assets and liabilities issued by the financial institutions discussed in this book. Notice that deposit-type institutions hold liability accounts that are payable upon demand. This makes liquidity management a high priority for these firms.

Source: Board of Governors, The Federal Reserve System, Flow of Funds Accounts.

also holds financial liabilities (e.g., long-term debt), but the primary assets held are real assets like the plant and equipment. As you read through this section, you should carefully follow along and note the asset and liability holdings of each institution as shown in Exhibit 1.5.

DEPOSIT-TYPE INSTITUTIONS

Deposit-type financial institutions are the most commonly recognized intermediaries because most people use their services on a daily basis. Typically, deposit institutions issue a variety of checking or savings accounts and time deposits, and they use the funds to make

consumer, business, and real estate loans. The interest paid on deposit accounts is usually insured by one of several federally sponsored insurance agencies. Thus, for practical purposes, the deposits are devoid of any risk of loss of principal. Also, these deposits are highly liquid because they can be withdrawn on very short notice, usually on demand.

As the 2008 financial crisis worsened, Congress raised the federal deposit insurance limits at depository institutions from $100,000 to $250,000. The increase was designed to bolster ebbing public confidence in the banking system. For a brief period, all insurance limits were lifted. The insurance limit was last increased in 1980. The proportion of insured deposits in the banking system had fallen from an 82 percent peak in 1991 to 62 percent at the end of 2007. The action to reinforce money market funds was precipitated when a multibillion-dollar fund closed and liquidated its assets.

Commercial Banks. Commercial banks are the largest and most diversified intermediaries on the basis of range of assets held and liabilities issued. As of March 2015, commercial banks held over $14.2 trillion in financial assets. Their liabilities are in the form of checking accounts, savings accounts, and various time deposits. The Federal Deposit Insurance Corporation (FDIC) insures bank deposits up to a maximum of $250,000. On the asset side, commercial banks make a wide variety of loans in all denominations to consumers, businesses, and state and local governments. In addition, many commercial banks have trust departments and leasing operations. Because of their vital role in the nation's monetary system and the effect they have on the economic well-being of the communities in which they are located, and because of the government's deposit insurance liability, commercial banks are among the most highly regulated of all financial institutions.

Thrift Institutions. Savings and loan associations and mutual savings banks are commonly called *thrift institutions*. They obtain most of their funds by issuing checking accounts (NOW accounts), savings accounts, and a variety of consumer time deposits. They use these funds to purchase real estate loans consisting primarily of long-term mortgages. They have traditionally been the largest providers of residential mortgage loans to consumers. In effect, thrifts specialize in maturity and denomination intermediation because they borrow small amounts of money short term with checking and savings accounts and lend long term on real estate collateral. The FDIC insures deposits in thrifts in amounts up to $250,000.

Credit Unions. Credit unions are small, nonprofit, cooperative, consumer-organized institutions owned entirely by their member-customers. The primary liabilities of credit unions are checking accounts (called *share drafts*) and savings accounts (called *share accounts*); their investments largely consist of short-term installment consumer loans, particularly auto loans. Credit union share accounts are federally insured to a maximum of $250,000. Credit unions are organized by consumers having a common bond, such as employees of a given firm or union. To use any service of a credit union, an individual must be a member. The major regulatory differences between credit unions and other depository institutions are the common bond requirement, the restriction that most loans are to consumers, and their exemption from federal income tax and anti-trust laws because of their cooperative nature.

CONTRACTUAL SAVINGS INSTITUTIONS

Contractual savings institutions obtain funds under long-term contractual arrangements and invest the funds in the capital markets. Firms in this category are insurance companies and pension funds. These institutions are characterized by a relatively steady inflow of funds from contractual commitments with their insurance policyholders and pension fund participants. Thus, liquidity is usually not a problem in the management of these institutions. They are able to invest in long-term securities, such as bonds, and, in some cases, in common stock.

Life Insurance Companies. Life insurance companies obtain funds by selling insurance policies that protect against loss of income from premature death or retirement. In the event of death, the policyholder's beneficiaries receive the insurance benefits, and with retirement the policyholder receives the benefits. In addition to risk protection, many life insurance policies provide some savings. Because life insurance companies have a predictable inflow of funds and their outflows are actuarially predictable, they are able to invest primarily in higher-yielding, long-term assets, such as corporate bonds and stocks. Life insurance companies are regulated by the states in which they operate and, compared to deposit-type institutions, their regulation is less strict.

Casualty Insurance Companies. Casualty insurance companies sell protection against loss of property from fire, theft, accident, negligence, and other causes that can be actuarially predicted. Their major source of funds is premiums charged on insurance policies. Casualty insurance policies are pure risk-protection policies; as a result, they have no cash surrender value and thus provide no liquidity to the policyholders. As might be expected, the cash outflows from claims on policies are not as predictable as those of life insurance companies. Consequently, a greater proportion of these companies' assets are in short-term, highly marketable securities. To offset the lower return typically generated by these investments, casualty companies have substantial holdings of equity securities. Casualty insurance companies also hold municipal bonds to reduce their taxes.

Pension Funds. Pension funds obtain their funds from employer and employee contributions during the employees' working years and provide monthly payments upon retirement. Pension funds invest these monies in corporate bonds and equity obligations. The purpose of pension funds is to help workers plan for their retirement years in an orderly and systematic manner. The need for retirement income, combined with the success of organized labor in negotiating for increased pension benefits, has led to a remarkable growth of both private pensions and state and local government pension funds since World War II. Because the inflow into pension funds is long term, and the outflow is highly predictable, pension funds are able to invest in higher-yielding, long-term securities and typically hold significant amounts of equity securities.

INVESTMENT FUNDS

Investment funds sell shares to investors and use these funds to purchase direct financial claims. They offer investors the benefit of both denomination flexibility and default-risk intermediation. The uses of funds attracted by investment funds are shown in Exhibit 1.5.

Mutual Funds. Mutual funds sell equity shares to investors and use these funds to purchase stocks or bonds. The advantage of a mutual fund over direct investment is that it provides small investors access to reduced investment risk that results from diversification, economies of scale in transaction costs, and professional financial managers. The value of a share of a mutual fund is not fixed; it fluctuates as the prices of the stocks in its investment portfolio change. Most mutual funds specialize within particular sectors of the market. For example, some invest only in equities or debt, others in a particular industry (such as energy or electronics), others in growth or income stocks, and still others in foreign investments.

Money Market Mutual Funds. A money market mutual fund (MMMF) is simply a mutual fund that invests in money market securities, which are short-term securities with low default risk. These securities sell in denominations of $1 million or more, so most investors are unable to purchase them. Thus, MMMFs provide investors with small money balances the opportunity to earn the market rate of interest without incurring a great deal of financial risk.

Most MMMFs offer check-writing privileges, which make them close substitutes for the interest-bearing checking accounts and savings accounts offered at most depository institutions. This advantage is limited, however, in that most MMMFs restrict the amount or frequency of withdrawals, and the federal government does not insure the funds.

Money market funds invest in short-term securities such as Treasury and agency securities, bank certificates of deposit (CDs), asset-backed commercial paper, and other highly liquid securities with low default risk. Money market mutual funds differ from money market deposit accounts, which are offered by banks, thrifts, and credit unions. The latter are interest-bearing bank accounts insured up to $250,000 by the federal government and, as a practical matter, are free of risk. Money market fund shares carry the default risk of the individual securities that comprise the fund portfolio. The failure of one fund during the financial crisis panicked investors and the U.S. Treasury had to temporarily guarantee losses on MMMFs to stem customer withdrawals from funds.

OTHER TYPES OF FINANCIAL INTERMEDIARIES

Several other types of financial intermediaries purchase direct securities from DSUs and sell indirect claims to SSUs.

Finance Companies. Finance companies make loans to consumers and small businesses. Unlike commercial banks, they do not accept savings deposits from consumers. They obtain the majority of their funds by selling short-term IOUs, called **commercial paper**, to investors. The balance of their funds comes from the sale of equity capital and long-term debt obligations. There are three basic types of finance companies: (1) consumer finance companies specializing in installment loans to households, (2) business finance companies focused on loans and leases to businesses, and (3) sales finance companies that finance the products sold by retail dealers. Finance companies are regulated by the states in which they operate and are also subject to many federal regulations. These regulations focus primarily on consumer transactions and deal with loan terms, conditions, rates charged, and collection practices.

Federal Agencies. The U.S. government acts as a major financial intermediary through the borrowing and lending activities of its agencies. Since the 1960s, federal agencies have been among the most rapidly growing of all financial institutions. The primary purposes of federal agencies are to reduce the cost of funds and increase the availability of funds to targeted sectors of the economy. The agencies do this by selling debt instruments (called *agency securities*) in the direct credit markets at or near the government borrowing rate, then lending those funds to economic participants in the sectors they serve. Most of the funds provided by federal agencies support agriculture and housing because of the importance of these sectors to the nation's well-being. It is argued that these and other target sectors in the economy would not receive adequate credit at reasonable cost without direct intervention by the federal government.

DO YOU UNDERSTAND?

1. Why do casualty insurance companies devote a greater percentage of their investments to liquid U.S. government securities than do life insurance companies?
2. What are credit unions and how do they differ from a commercial bank?
3. Why have mutual funds grown so fast compared to commercial banks?
4. For a consumer, what is the difference between holding a checking account at a commercial bank and holding a money market mutual fund?