Bank Management

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Timothy W. Koch
S. Scott MacDonald

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Bank Management, Eighth Edition

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Dedication

To Susan, Michala and Andy for all the joys of family.
Timothy W. Koch

To my family, Becky, Cassy, Erin, Jeff and Weston for their never-ending support and encouragement.
S. Scott MacDonald

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Preface

The world of banking has changed dramatically since 2007 when many large financial institutions around the world failed and were bailed out by their central governments. The United States and global economies subsequently fell into recession. Millions of Americans lost their jobs, and household net worth plummeted with the decline in housing and the value of investments. The ongoing recovery continues to be slow and painful for many. Not surprisingly, the reputations of many banks and the banking industry in general have suffered. Yet, if done correctly, banking is a critical driver of economic activity and a noble profession. It involves the processing of payments, accepting deposits and making loans, safekeeping documents and valuable items, providing guarantees and performance bonds, offering cash management, brokerage and insurance services, and providing securities underwriting and market-making services.

So, what caused a breakdown in the financial services industry leading to the recent financial crisis? In 2011, the National Commission on the Causes of the Financial and Economic Crisis in the United States published a report that said both senior management at large financial institutions and key government officials ignored warning signals and inadequately managed risks; and that the crisis was avoidable.[1] It attributed the crisis to: (1) risky lending via subprime mortgages; (2) trading activities at large institutions; (3) unregulated derivatives markets; and (4) problems with lending via repurchase agreements, among other factors. In response, the U.S. Congress passed the Dodd–Frank Wall Street Reform and Consumer Protection Act in June 2010 (commonly labeled the Dodd–Frank Act), which has produced and continues to produce numerous changes in the regulation of financial firms. The global crisis has similarly brought about changes in regulations at financial firms in other industrialized countries.

One of the most unusual results of the crisis and subsequent pressures from the new regulatory environment is that the largest institutions appear to be benefiting financially more than smaller institutions. For example, from 2000 to 2013, the five largest banks in the United States increased their share of total U.S. banking assets from 27.5 percent to 46.6 percent.[2] In addition, regulators have been slow to charter new banks, and many smaller bank managers and owners routinely protest that the impact of new consumer regulations is to reduce lending and raise their deadweight costs, thereby making it more difficult to compete with other organizations.

How did we get where we are today? Commercial banks in the U.S. started as firms that focused on payment processing, the storage of financial documents and valuable items, and eventually moved into lending to individuals and businesses. They were largely unregulated until the Great Depression when more than 600 banks failed from 1921–1929. From 1930 to 1933, more than 9,000 banks suspended operations. With lack of confidence in the financial system, customers attempted to convert bank deposits to cash, thereby creating "runs on banks." The Banking Act of 1933, now commonly labeled the Glass–Steagall Act, established the Federal Deposit Insurance Corporation (FDIC) responsible for insuring customer deposits at banks. It also separated commerce from banking activities. As such, commercial banks focused on accepting deposits, making loans and holding the

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[1]*The Financial Crisis Inquiry Report*, Final Report of the National Commission on the Causes of the Financial and Economic Crisis in the United States, Public Affairs, January 2011.

[2]Pierce, Hester and Robert Greene, "The Decline of U.S. Small Banks (2000–2013)," www.mercatus.org, February 24, 2014.

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loans in portfolio. Investment banks focused on making markets, underwriting securities, and facilitating mergers and acquisitions. As large firms grew in size, they moved into other types of financial businesses. The Bank Holding Company Act formally identified businesses in which commercial bank holding companies might engage after receiving regulatory approval. Over time, Congress authorized commercial banks to move into investment banking, insurance underwriting, and other once-prohibited services, deeming the risks acceptable. Many large investment banks similarly made loans and held large amounts of the loans and securities in portfolio funded largely by short-term repurchase agreements. Then, the global financial crisis hit.

In 2008, the United States lost more than 2.5 million jobs. Large private firms once thought to be the leaders of growth are now principally owned by federal governments. Quasi-private agencies, such as the Federal National Mortgage Association (FNMA) and Federal Home Loan Mortgage Corporation (FHLMC), are effectively owned by the U.S. government. Lehman Brothers failed. Other large financial institutions effectively failed and were collapsed into stronger, surviving institutions. Thus, Bank of America acquired Countrywide and Merrill Lynch. JPMorgan Chase acquired Bear Stearns and Washington Mutual. Wells Fargo acquired Wachovia. Goldman Sachs and Morgan Stanley, once premier investment banks, converted to financial (bank) holding companies to get access to borrowings from the Federal Reserve. Other noncommercial banks, such as American Express, The Hartford, GE Capital, and MetLife also became financial holding companies so that they could borrow from the Federal Reserve. In 2014, Congress still had not decided what to do with Fannie Mae and Freddie Mac, who then dominated the mortgage market. From 2008 to 2010, governments flooded the markets with liquidity, recognizing that many credit markets were no longer functioning effectively. Asset securitizations dried up as the originate-to-distribute model fell out of favor. Financial institutions, businesses, and individuals started and continue to deleverage by which they pay down debt. While economic growth eventually turned positive, the pace has been slow relative to historical norms.

Given the extreme problems of financial institutions and general atmosphere of fear, the U.S. Congress authorized a Troubled Asset Relief Program (TARP)—Capital Purchase Program through which the federal government bought preferred stock in qualifying financial institutions. While this helped stabilize large financial institutions, the global economy still suffered. By 2009, the Obama administration and Congress had approved a massive stimulus plan involving tax cuts and increased government spending in an effort to jump-start consumer and business spending. Importantly, the policies were designed to raise consumer and business spending and confidence, which had eroded with recent events. Governments in China, the United Kingdom and throughout the industrialized world implemented similar types of stimulus plans.

Today, the banking industry across the world has permanently changed. Investment banks, as traditionally structured, no longer exist as independent organizations. The Dodd–Frank Act imposes a wide range of new regulations that continue to be developed and implemented. Given excessive financial leverage, governments in the industrialized world approved Basel III, which served to increase capital requirements at banks. As such, the nature of bank risk taking has changed. Lending decisions have been refocused on a borrower's ability and willingness to repay, because the model of originating and then selling loans broke down. Finally, the financial industry is again consolidating.

This book examines the impacts of the changing competitive environment on commercial banks, banking services, and to a lesser degree the entire financial services industry. Upon completing the book, the reader will better understand how banks make a profit and the risks associated with managing a bank's balance sheet. It will address the mechanics of and issues associated with making loans, buying and selling securities,

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competing for deposits, accessing purchased liabilities, and building the capital base. It also addresses related activities involving securitization and the use of financial derivatives. In response to issues raised during the financial crisis, it demonstrates the consequences of making bad loans, operating with excessive leverage, and inadequate liquidity. The analysis provides a framework for developing effective strategies to ensure the proper balance between management's profit targets and allowable risk taking.

Audience

Bank Management is designed for use in upper division undergraduate or master's level banking and financial institutions courses at universities, as well as training programs for professional bankers. As prerequisites, students should be familiar with elementary accounting, basic interest rate and bond pricing concepts, and basic macroeconomics. The book is well suited for broad-based instructional purposes in bank training programs, because it emphasis how decisions are made and the consequences of different types of decisions. For someone new to banking, the book describes the range of banking activities and demonstrates how bank managers make financial decisions. For practitioners, it presents traditional decision models and explains how decisions in one area affect performance and opportunities in other areas. This book therefore provides a comprehensive view of balance sheet management with an emphasis on the trade-offs between profitability and risk.

About *Bank Management*

The book focuses on decision making and offers a unique approach to understanding commercial bank management. Key chapters address the specific aspects of an issue or problem, explain how a financial model or decision framework applies, and then demonstrate the application of the model or framework using sample data analysis. The reader not only observes how certain factors influence credit, investment, funding, and pricing decisions, but also develops an appreciation of the trade-offs between return and risk. Several Microsoft Excel templates, which include various models and applications using sample data, are available to users. End-of-chapter cases, questions, and problems provide an opportunity to test the reader's understanding of important issues and data analysis.

After reading *Bank Management,* the reader should have a solid foundation in the key issues confronting managers today, a familiarization with the basic financial models that are used to formulate decisions, and an understanding of the strengths and weaknesses of data analysis. The text and numerous applications help the reader to recognize the trade-offs involved in making financial decisions and to develop the logical thought processes needed to reach reasonable conclusions.

New Features of the Eighth Edition

The eighth edition of the book builds on the topics and features of earlier editions, with several important changes:

- A complete regulatory update has been applied throughout the book. In particular, the book examines the many programs evolving from the financial crisis that focus on providing liquidity to the banking system as well as key provisions of the Dodd–Frank Act and Basel III. Included are discussions of the Troubled Asset Relief Program (TARP–CPP), the Temporary Liquidity Guarantee Program (TLGP), and the

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Term Securities Lending Facility (TSLF). It discusses recent decisions of the Consumer Financial Protection Bureau (CFPB) and their implications, as well as other provisions of the Dodd–Frank Act.

- It examines the role that periodic stress testing under the reglators' Comprehensive Capital Analysis and Review (CCAR) plays in influencing bank capital decisions.
- A complete discussion of the changing landscape of the financial services industry—including the evolution of investment banks, mortgage lenders and life insurance companies.
- An analysis of the subprime mortgage crisis, its impact on financial institutions and the economy, and regulatory responses.
- A discussion of the originate-to-distribute model and reasons it is out of favor.
- A description of credit default swaps, how firms use them to hedge and speculate, as well as a discussion of the role they played in increasing financial leverage and risk to financial institutions and the financial system.
- A summary of Citigroup's holding company structure and financial data.
- A detail analysis and comparison of various tradition and non tradition banking business models using data from Goldman Sachs Group, Goldman Sachs Bank, Mutual of Omaha Bank and BWW Bank of North America.
- An updated and comprehensive evaluation of commercial bank performance and the impact this has on the analyst's job in evaluating performance; a direct comparison of PNC Bank's financial performance in 2013 versus peer institutions as well as important contrasts with the performance of community banks.
- An evaluation and comparison of PNC Bank's financial performance before, during and after the financial crisis of 2008–2009.
- An analysis of the Dodd–Frank Act impact on not allowing banks to rely exclusively on credit ratings when making security investment decisions.
- New data and analysis on international banking and the role and size of U.S. banking institutions abroad, as well as the ownership and composition of foreign banking institutions in the United States.
- This book remains the only text that focuses on cash-flow analysis as part of the lending decision. It introduces a comprehensive procedure for generating cash-based income statements, explains how to interpret the results, and provides an approach to forecasting a potential borrower's future performance.

Organization of the Book

While the unifying theme of the book is risk management, the material is divided into six parts. As a lead-in to each chapter, the text will describe a current issue or provide an example of a key topic discussed in the chapter. This introduction reinforces the risk focus by emphasizing that although managers make both good and bad decisions, the consistent application of finance theory and models should lead to a better understanding of the trade-off between risk and return.

Part I, Overview of the Banking Industry and Regulation, provides background information related to bank management, the regulatory environment, and current banking trends. Initially, it provides a critique of the multitude of factors influencing the financial crisis of 2008–2010. It examines the organizational structure of small banks and large bank holding companies and describes different models of banking including a discussion of industrial loan companies. It describes the current regulatory environment including key provisions

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of the Dodd–Frank Act and Basel III and explains the impact of government policies to provide emergency liquidity and stress test financial performance and viability.

Part II, Evaluating Bank Performance, examines the basic risk and return features of banks and how analysts evaluate performance. Chapter 3 introduces bank financial statements and presents the traditional DuPont model for evaluating bank performance using financial ratios from the Uniform Bank Performance Report (UBPR) to analyze the strengths and weaknesses of bank performance over time and versus peer institutions. It provides the foundation and building blocks for understanding how banks make a profit and the trade-offs involved in balancing credit risk, liquidity risk, market risk, operational risk, reputational risk, legal risk, and solvency risk. Chapter 4 documents recent strategies and trends in controlling noninterest expense relative to noninterest income to help meet efficiency objectives. Chapter 5 documents differences in nontraditional banking organizations by focusing on the performance of Goldman Sachs, Mutual of Omaha Bank, and BMW Bank, organizations that were once purely an investment bank, insurance company, and automobile manufacturer/finance company, respectively.

Part III, Managing Interest Rate Risk, demonstrates how banks measure and manage interest rate risk. Chapter 6 provides background information on the pricing of securities, total return analysis to investors, and the determinants of interest rates. Chapter 7 introduces GAP analysis and the use of earnings sensitivity analysis to assess the potential impact of interest rate and balance sheet changes on net interest income. Chapter 8 describes duration gap analysis and the use of sensitivity analysis to assess the potential impact of interest rate and balance sheet changes on the economic value of stockholders' equity. The discussion emphasizes the impact of embedded options and the necessity behind incorporating sensitivity analysis to assess the impact of such options on profits and risk. Attention is paid to the possible impact of rising rates on bank earnings and risk. Chapter 9 describes the basic features of financial futures, forward contracts, interest rate swaps, and interest rate caps and floors and explains how banks use them to both hedge and speculate. Emphasis is directed toward understanding the models, data output, and strategies to improve performance.

Part IV, Managing the Cost of Funds, Capital, and Liquidity, describes the features of bank liabilities, regulatory capital requirements, and overall liquidity analysis. It presents a procedure for estimating the marginal cost of funds that is used in making investment decisions and pricing assets. It also explains how banks meet legal reserve requirements and manage cash assets, and it develops a model for estimating liquidity needs and planning for temporary cash deficiencies as well as longer-term liquidity needs. A key section describes the importance and nature of contingency funding plans at banks. Chapter 12 documents risk-based capital requirements and outlines strategies for obtaining new external capital. It introduces features of Basel III that will alter the largest institutions' capital requirements starting in 2015 and smaller institutions' capital requirements at later dates. Finally, it describes federal government stress-testing efforts to evaluate the adequacy of bank capital.

Part V, Managing Credit Risk, addresses how banks manage credit risk. It initially describes basic credit analysis principles and the characteristics of different types of loans. Subsequent chapters present a procedure for estimating a business borrower's cash flow from operations and the basic credit scoring models applied to individual borrowers. Considerable emphasis is placed on interpreting financial statements and generating cash flow estimates to determine repayment prospects. Given the recessionary environment of 2008 and beyond, some of the discussion focuses on the deterioration of asset quality at banks and the potential impacts on loan workouts. As part of credit risk management practices, the discussion introduces credit default swaps and explains how they may be used to speculate and hedge credit risk.

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Part VI, Managing the Investment Portfolio and Special Topics, describes the role of fixed-income securities in helping a bank meet profit and risk objectives. In response to Dodd–Frank Act provisions, it discusses how banks should now use information provided by credit rating agencies in making investment decisions. It identifies the basic objectives of a bank's investment portfolio and the nature of investment policy guidelines, and explains the basic features of taxable and tax-exempt securities that banks buy. It then introduces various strategies related to choosing security maturities, the composition between taxable and tax-exempt securities, and purchases or sales timed to take advantage of the business cycle. It explains the impact of embedded options on security pricing and the risk-return trade-off to investors of callable bonds and mortgage-backed securities with significant prepayment risk. The final chapter describes recent trends in global banking activities and the management of foreign exchange risk.

Each chapter of *Bank Management* concludes with a series of discussion questions and problems that require the student to apply the decision models introduced in the chapter. Excel templates can be used to generate and address additional problems as well as provide a useful tool for future analysis.

Web Site

The product-support Web site, located at www.cengagebrain.com, contains the PowerPoint slide presentation, Instructor's Manual, and Spreadsheet Templates.

Instructor's Manual and Test Bank

A comprehensive Instructor's Manual and Test Bank accompany *Bank Management* and can be found on this title's companion website at www.cengagebrain.com. These supplements provide teaching objectives and outlines for each chapter and offer detailed answers to end-of-chapter questions and problems. Finally, multiple choice questions are provided, with answers.

Lecture Presentation Software

Microsoft PowerPoint™ presentations are also available on the companion Web site to those professors who wish to incorporate multimedia in the classroom. This multimedia presentation allows the student to explore the almost unlimited number of different financial situations that banks face on a daily basis. Furthermore, it provides the instructor a method by which he or she can integrate a financial analysis spreadsheet template directly into the class presentation. Many tables and diagrams are featured in the lecture software package.

Spreadsheet Template

Microsoft Excel templates are available for those who wish to use microcomputers to perform and extend the data analysis presented in the book. The templates provide a generic decision model for applications related to analyzing bank performance and key financial ratios, and cash flow from operations for nonfinancial firms. The templates also provide a full range of decision models with data for key problems and cases in the text. Students can use the templates to analyze historical balance sheet and income statement data and conduct "what if" analysis. This allows the user to quickly examine a range of outcomes rather than just simple, static solutions. The templates cover topics including bank performance analysis, duration analysis, risk-based capital requirements and planning, credit analysis, and customer profitability analysis.

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Dr. Koch's research and writing focuses on bank risk management, performance analysis, the pricing of financial futures and fixed-income securities, and public finance. He has published in a wide range of academic journals, including the *Journal of Finance, Journal of Financial & Quantitative Analysis, Journal of Money, Credit and Banking, Journal of Futures Markets, National Tax Journal, Journal of Banking and Finance, Journal of Economics and Business, Journal of Fixed Income, Journal of Financial Research, Journal of Macroeconomics, Journal of Portfolio Management,* and the *Municipal Finance Journal*. He has served as Treasurer of the Financial Management Association and President of the Eastern Finance Association and Southern Finance Association. He recently completed a book, *Community Banking: From Crisis to Prosperity*, that focuses on strategies for community banks to thrive in the future.

S. Scott MacDonald is President and CEO of the Southwestern Graduate School of Banking (SWGSB) Foundation, Director of the Assemblies for Bank Directors, and Adjunct Professor of Finance at the Edwin L. Cox School of Business, Southern Methodist University. He received his B.A. degree in economics from the University of Alabama and his Ph.D. from Texas A&M University. Dr. MacDonald joined the Southern Methodist University faculty in 1997 and took over as director of the SWGSB Foundation in 1998. Prior to joining SMU, he was an Associate Professor of Finance and Director of the Texas Tech University School of Banking.

Dr. MacDonald spends the majority of his time working directly with the financial services industry: serving as Director of the Southwestern Graduate School of Banking; conducting bank director education programs through the Assemblies for Bank Directors and the new Certified Community Bank Director program; serving as a frequent speaker, seminar leader and strategic planning facilitator; and working as a consultant to various banking organizations. Dr. MacDonald has also served as an expert resource witness before the Texas state senate; a past chairman of the board of directors of a Texas Financial Institution; and as a past board member of the North Texas Chapter of the Risk Management Association.

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Dr. MacDonald is the author of articles in academic journals such as the *Journal of Financial Economics,* the *Journal of Business,* the *Journal of Futures Markets,* the *Review of Futures Markets, Quarterly Journal of Business and Economics,* and the *Journal of Money, Credit and Banking.* He is also the author of professional curriculum materials for industry-sponsored seminars and schools in the financial services industry, as well as the recipient of numerous teaching and research awards.

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1 Banking and the Financial Services Industry

More than 75 years ago, the Glass–Steagall Act created three separate lines of business within the financial services industry—commercial banking, investment banking, and insurance. The Act's primary purpose was to separate commerce from banking in order to reduce conflicts of interest among business managers and encourage the smooth functioning of markets. At that time, commercial banks primarily accepted demand deposits and made loans to businesses. Investment banks were largely involved in underwriting securities, which helped governments and businesses sell newly issued bonds and stocks to the public, facilitated mergers and acquisitions among companies, and helped individuals buy and sell securities. Insurance companies, in turn, accepted premiums and underwrote insurance policies for individuals and businesses. The McFadden Act of 1927 let states write their own rules regarding the extent to which a commercial bank could branch within and outside its home state, and the Bank Holding Company Act of 1956 limited banks to specific types of business activities.

Commercial banks have long been one of the most highly regulated businesses in the United States. In order to start a bank, investors must select an experienced management team and board of directors and have a business plan that explains the bank's business strategy and justifies why a new bank is needed. The group must then present its plan to bank regulators for approval. A newly formed commercial bank can choose to obtain a charter from either its home-state bank regulator or the federal government via the Office of Comptroller of the Currency (OCC).[1] This dual chartering process fosters competition among regulators in terms of how much regulation they impose on a commercial bank. To the extent that one regulator is perceived to be more lenient than another, groups will gravitate to the one with the more "lax" oversight. Having a large number of banks to regulate, in turn, better justifies the regulator's existence. Thus, the chartering process has created a system of many small banks that operate in limited geographic markets and only a few large institutions that operate across the United States and globally.

For many years, the United States dominated global financial and economic activity. Large U.S. financial firms, located predominantly in New York City (Wall Street),

[1]The Office of Thrift Supervision (OTS) chartered savings and loans prior to the financial crisis, but this agency was folded into the OCC by the Dodd–Frank Act of 2010.

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aggressively expanded into new lines of business with new product offerings, financial innovations (e.g., the use of derivatives, which allowed firms to dramatically alter their risk management practices), and new delivery methods. Many firms expanded their operations throughout the world in product and service areas far beyond traditional lending and deposit gathering. The economic power of the United States grew even more because the U.S. dollar served as the currency of choice for global transactions and central bank reserves. Economic policymakers, politicians, and regulators followed three basic tenets to achieve sustained economic growth: the pursuit of free trade, deregulation of financial services, and macroeconomic stability. As a result, U.S. firms grew accordingly.

Not surprisingly, other countries followed suit. In October 1986, the United Kingdom deregulated its financial institutions and markets to better compete with Wall Street firms. London subsequently became a booming financial center with a concentration of global financial services businesses. Many of the world's largest institutions, such as HSBC (formerly the Hongkong and Shanghai Banking Corporation) and the Royal Bank of Scotland (RBS), were headquartered in London and developed extensive global operations. Japan, China, Singapore, Russia, and many other emerging markets developed their own successful stock exchanges. These actions produced long periods of sustained economic growth. Then, things changed with the financial crisis that appeared in 2007.

Global Financial Crisis of 2007–2009

Beginning in mid-2007, the U.S. and global economies began to weaken following a series of crises related to problem mortgages and other loans and the resulting difficulties this situation created for financial institutions that played a role in these markets.[2] In order to help more borrowers qualify for mortgages, and motivated by the search for greater fee income, many lenders designed home loans that did not require borrowers to make sufficiently large monthly principal and interest payments. For example, in many cases, home mortgage loans were purposely designed for, and made to, individuals whose income was insufficient for making the minimum payments that would eventually pay off the loan. The expectation was that either incomes would increase over time or the property value would rise sufficiently to cover future payments. In addition, many lenders originated mortgages with the intent to sell them soon after loan closings (the process was labeled the *originate-to-distribute (OTD)* approach), such that the loan originator did not retain the credit risk. If the loan went bad, the buyer of the mortgage would bear the loss and not the mortgage originator.

As home prices started to decline, many institutions involved in housing finance began to realize losses from home mortgage defaults. Initially, several small mortgage banks failed. Following these failures, national mortgage lenders, such as Countrywide and Washington Mutual, began to experience large waves of borrowers defaulting on their loans. Many of these borrowers were high risk because their incomes did not cover the payment amount that would have repaid the obligated principal and interest. Such borrowers were labeled "*subprime*" borrowers and the questionable mortgages carried names like interest-only (IO), Alt A, or option adjustable-rate mortgages (option

[2]Mortgages are associated with loans secured by residential or commercial real estate. Obtaining a mortgage is how most individuals and businesses finance the purchase of property.

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ARMs).[3] Some of these mortgages offered the borrower an extremely low initial teaser rate, such as 1.5 percent, as well as the option to pay each month only the interest calculated at this low rate. The monthly interest payment did not even cover the contractual "principal-plus-interest" required to pay off the mortgage. The result was that the outstanding loan balance increased each month (a phenomenon labeled "negative amortization"). With the sustained drop in housing prices, institutions throughout the world were soon reporting large asset write-downs in which they formally recognized that loans on their balance sheets were worth much less than the amounts reported. These write-downs, in turn, depleted the lenders' capital and forced them to either sell assets or obtain external capital (new equity and subordinated debt) to replace capital lost from the write-downs. Many of the largest institutions reacted by restricting credit availability to businesses and individuals. Even when loans were made, the terms were increasingly strict, requiring higher down payments and the elimination of teaser rates.

This situation led to a dramatic restructuring of financial markets and institutions throughout the world as many foreign-based institutions bought the bad mortgages originated in the United States. In March 2008, Bear Stearns collapsed and was absorbed by JPMorgan Chase. This event was followed by the failure of Lehman Brothers and the effective failures of Countrywide, Washington Mutual, and Wachovia, which were absorbed by Bank of America, JPMorgan Chase, and Wells Fargo, respectively. Given the interconnected nature of financial markets, many healthy participants were unwilling to lend to any firm at any price because they could not accurately assess the risk of loss in the near-term. Liquidity largely disappeared.

In order to address the crisis, the U.S. government took the following actions from September through December of 2008:

- Placed two government-sponsored enterprises (GSEs), Fannie Mae and Freddie Mac, into conservatorship—thereby effectively making them fully operated by the U.S. government. These firms supported the housing market and origination of mortgages. Banks that owned preferred stock issued by these firms wrote the value of their investments down to zero.
- Loaned American International Group (AIG) over $150 billion, effectively taking ownership of the insurance company.
- Insured money market mutual funds against default.
- Authorized Bank of America to acquire Merrill Lynch.
- Approved Goldman Sachs, Morgan Stanley, MetLife and American Express to convert to bank holding companies (BHCs) over a weekend.
- Authorized the Federal Reserve to purchase commercial paper directly from companies such as General Electric.
- Increased Federal Deposit Insurance Corporation (FDIC) deposit coverage per account for domestic deposits to $250,000 and provided unlimited coverage for noninterest-bearing business deposits. The increase to $250,000 was temporary through 2009, but was extended so that this coverage amount exists currently.

[3]Subprime mortgages are loans made to borrowers with low credit scores and thus exhibit a higher-than-average risk of default. These mortgages are referred to as "exotic" mortgages and are discussed later in detail. As the name suggests, IOs required a borrower to repay only interest until some future date. Alt A loans were also called low-documentation or no-documentation loans because the lender did not collect information on the borrower's income or outstanding debt to other lenders when deciding whether to approve the loan. Option ARMs allowed borrowers to select how much they wanted to repay each month from a very low amount that might be just a portion of the interest owed to a fully amortizing amount. One lender called these loans "Pick-a-Pay" loans. Each of these types of loans is generally riskier than traditional mortgage loans.

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- Passed the Troubled Asset Relief Program (TARP)–Capital Purchase Program (CPP), which allowed financial institutions to sell preferred stock to the U.S. Treasury.
- Purchased $125 billion of preferred stock in nine large U.S. banks under the TARP–CPP program.
- Loaned large amounts to large U.S. financial institutions through the Federal Reserve discount window and via other liquidity facilities with the intent of providing liquidity and unfreezing financial markets.
- Authorized large financial institutions and nonfinancial firms to sell bonds that were FDIC-insured.
- Allowed hedge funds to borrow from the Federal Reserve.

During this time, large institutions were less willing to make unsecured loans to other institutions because they did not know which institutions were really solvent. In response, interbank interest rates, such as the London Interbank Offer Rate (LIBOR), rose sharply, and the spread between LIBOR and Treasury rates reached record highs.[4] Many institutions stopped new commercial and consumer lending, eliminated home equity lines, and tightened terms on renewals. Governments around the world lowered interest rates, which did not solve the asset and liquidity problems. Governments subsequently kept pumping liquidity into the system—"helicopter money," as Milton Friedman called it—trying to stimulate lending and spending. In short, credit markets were not functioning normally. The U.S. and other countries fell into recession.

Clearly, the banking system relies on confidence. During the events of 2007–2009, confidence eroded—effectively creating an environment where institutions were hesitant to take on credit risk. Government policymakers pursued two avenues to shore up confidence and induce large institutions to start lending. First, they used TARP funds to assist both healthy and problem institutions. The intent behind the government's action of buying stock in banks was to help banks clean up their balance sheets and start lending. Unfortunately, many banks simply wrote down more problem assets, thereby offsetting the newly raised capital with charge-offs, or used the funds to buy problem institutions. For example, PNC Bank announced the purchase, with government assistance, of National City Bank for approximately $4 billion—at the same time that it accepted almost $8 billion in preferred stock funding from the Treasury.

Fundamentally, the U.S. government was trying to find a floor for housing values. Exhibit 1.1 documents the drop in the average price of a home from the peak price to the lowest price from January 2006 to December 2013 for several large U.S. metropolitan areas. While most communities experienced housing price declines of less than 20 percent from their peak prices in 2005 or 2006 to their lows in 2010–2011, home price declines in Las Vegas, Miami, and Phoenix approached 51 percent to 62 percent. Dallas and Denver fared the best with only single-digit losses. Not surprisingly, foreclosures reached historically high levels in markets that experienced a sharp run-up in housing prices later followed by sharp declines. To help keep people in their homes, the U.S. Congress and the FDIC promoted loan modifications for troubled home-loan borrowers. In essence, they were encouraging lenders to forbear on foreclosures in which people

[4]Following the financial crisis, bank regulators in the United Kingdom, European Union (EU), and United States charged many large institutions with 'fixing' LIBOR to their advantage. LIBOR is a benchmark rate for banks that lend unsecured funds to other institutions. It is based on a daily survey of rates collected by the British Bankers' Association. The accusation was that many of the surveyed institutions intentionally provided quotes that benefited their in-house derivatives traders or specific positions that were tied to LIBOR pricing. Many of these banks have paid substantial fines for their roles in the LIBOR fixing.

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EXHIBIT 1.1 **Maximum Decline in Average Prices of Existing Homes across Selected Metropolitan Areas from Peak Prices Through December 2013**

Metropolitan Area	Peak Price Index Date	Lowest Price Index Date	Duration (Days)	Maximum decline from peak	Annualized Percent Change from Peak
NV-Las Vegas	Aug-2006	Mar-2012	2039	–61.7%	–17.1%
AZ-Phoenix	Jun-2006	Sep-2011	1918	–55.9%	–15.5%
FL-Miami	Dec-2006	Apr-2011	1582	–51.2%	–16.5%
MI-Detroit	Dec-2005	Apr-2011	1947	–49.3%	–12.7%
FL-Tampa	Jul-2006	Feb-2012	2041	–48.0%	–11.6%
FL-Tampa	Jul-2006	Feb-2012	2041	–48.0%	–11.6%
CA-San Francisco	May-2006	Mar-2009	1035	–46.1%	–21.6%
CA-San Diego	Nov-2005	Apr-2009	1247	–42.3%	–16.0%
CA-Los Angeles	Sep-2006	May-2009	973	–41.9%	–20.2%
GA-Atlanta	Jul-2007	Mar-2012	1705	–39.5%	–10.7%
IL-Chicago	Sep-2006	Mar-2012	2008	–39.1%	–9.0%
MN-Minneapolis	Sep-2006	Mar-2011	1642	–38.2%	–10.6%
DC-Washington	May-2006	Mar-2009	1035	–33.9%	–14.5%
WA-Seattle	Jul-2007	Feb-2012	1676	–32.9%	–8.7%
OR-Portland	Jul-2007	Mar-2012	1705	–30.8%	–7.9%
NY-New York	Jun-2006	Mar-2012	2100	–27.1%	–5.5%
OH-Cleveland	Jul-2006	Feb-2012	2041	–23.7%	–4.8%
NC-Charlotte	Aug-2007	Jan-2012	1614	–20.2%	–5.1%
MA-Boston	Sep-2005	Mar-2009	1277	–20.1%	–6.4%
TX-Dallas*	Jun-2007	Feb-2009	611	–7.1%	–11.2%
CO-Denver	Aug-2006	Feb-2009	915	–6.2%	–14.3%

*The price index for Dallas, as of December 2013, exceeded its peak price in February 2009.

Source: S&P/Case-Shiller 20-City Composite Home Price Index, January 2006–December 2013, http://us.spindices.com/indices/real-estate/sp-case-shiller-20-city-composite-home-price-index.

would lose their homes due to their failure to make promised principal and interest payments. Any drop in foreclosures brings the supply of housing closer to demand and thereby slows the decline in housing values.

Impact on Banks and the Banking Environment

A credit crisis affects every individual and business because it ultimately affects the overall U.S. and global economy. Still, the impact varies across institutions and geographic markets. Generally, the problems with mortgage defaults and declining home prices are greatest in geographic markets that experienced the greatest run-up in prices during boom times. These markets are largely those with favorable demographic trends evidenced by rising populations. Areas with slower growth, such as much of middle and rural America, did not experience a housing boom and did not, therefore, experience high rates of foreclosures. Similarly, while many of the largest banks that operate in national and international markets realized large losses from the problem mortgage assets, smaller banks operating only in local markets generally did not. These smaller banks typically target loans to small businesses, individuals, and the agricultural industry

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and hold these loans in portfolio. Consequently, they largely avoided the problems faced by the largest institutions: subprime mortgages, private-label mortgage backed securities, loans to private equity firms involved in leveraged buyouts, credit default swaps, and speculative real estate loans. However, many small banks took significant losses on commercial real estate loans and some were forced to write down investments in preferred stock issued by Fannie Mae and Freddie Mac.[5]

One result of the financial crisis was a dramatic change in the structure and operations of U.S. banks. By the end of the TARP implementation, the federal government owned stock in many U.S. firms. The nature of competing firms also changed substantially. At the beginning of 2008, the United States was home to five of the largest global investment banks: Bear Stearns, Goldman Sachs, Lehman Brothers, Merrill Lynch, and Morgan Stanley. By the end of the year, only Goldman Sachs and Morgan Stanley were independent—and they had converted to BHCs (actually *financial holding companies*, which are discussed later in the chapter). Similarly, the TARP program continues to reduce the number of independent commercial banks as it encourages consolidation for the banks with TARP preferred stock outstanding. The federal government's bailout of AIG further demonstrated how federal assistance was provided to large insurance companies, as well as to automakers, including General Motors and Chrysler, and Ford, and firms such as GE. Not surprisingly, the federal government has been accused of choosing "winners" and "losers" in this context throughout the financial crisis.

Many individuals who did not speculate on housing during the early 2000s argued against the federal government bailout of Wall Street speculators at taxpayer expense. From August 2007 through April 2010, the Federal Reserve provided direct loans, guarantees, and lines of credit to a variety of financial institutions exceeding $1 trillion, which Bloomberg estimated provided $13 billion in income to the recipients.[6] When the federal government put Fannie Mae and Freddie Mac into conservatorship, it added over $5 trillion to debts for which taxpayers were responsible. Where does the financing come from? Clearly, the financial burden will be borne by future generations in the form of higher interest rates on Treasury borrowing and ultimately higher taxes.

The global impact is also significant. When foreign governments and policymakers examined U.S. actions, they saw large budget deficits, large trade deficits, failing financial institutions, and uncertainty about the value of the dollar. Asset write-downs and loan charge-offs in the U.S. led to similar problems in other countries with the fortunes of all inevitably linked. In late 2008, the governments of Great Britain, Germany, and Iceland purchased stock in large financial institutions in their home countries and frequently guaranteed these same firms' debt. Unfortunately, these guarantees forced the government of Iceland to effectively go bankrupt in October 2008, because it was unable to pay off its debts. These circumstances were repeated in many other countries as problem loans produced significant losses and declining bank capital.

This chapter analyzes the operations of banks and compares them generally with those of other financial services firms. It describes how banks differ in terms of the geographic and product markets in which they operate and in terms of their customer focus and delivery channels for offering financial services. In doing so, it examines different banking business models that reflect different ownership structures and market strategies.

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[5]Fannie Mae and Freddie Mac were GSEs that carried Aaa ratings because the federal government was perceived (incorrectly) to guarantee dividend and interest payments on their preferred stock. As noted, Fannie Mae and Freddie Mac are now under conservatorship of the federal government.

[6]See Ivry, Bob, Bradley Keoun, and Phil Kuntz, "Secret Fed Loans Gave Banks $13 Billion Undisclosed to Congress," November 27, 2011, www.bloomberg.com/news/2011-11-28.

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How Do Banks Differ?

For many years, the United States has had a multi-tiered commercial banking system including global banks, super-regional banks, and community banks. The biggest firms, such as Bank of America, Citigroup, and JPMorgan Chase, represent global institutions with a wide array of products and services for government, business, and individual customers. They effectively combine commercial and investment banking and often offer a wide range of insurance and other financial services as well. Super-regional banks are smaller in size and market penetration, but have extensive operations in specific regions of the country. These banks generally have limited global operations and offer fewer nontraditional banking services. While they may do some investment banking, they typically target niche markets. Within this group, Wells Fargo, PNC, and U.S. Bancorp are among the dominant players today. The final tier consists of banks that operate in limited geographic markets within the United States. Some of these banks, such as BB&T and, offer many different types of financial products and services and are expanding across the United States and have every intent to become national banks. Others are much smaller and generally compete in limited trade areas, such as the same state or county. This latter group is commonly labeled community banks and are typically much smaller in size. In general, community banks focus on lending to small commercial businesses, individuals, and firms involved in agriculture. They grow at modest rates such that the bulk of their funding comes from deposits held by the same businesses and individuals. Community banks focus on the importance of relationships between bank employees, customers, and shareholders. In fact, many community banks have a strong linkage between owners, managers, and employees because they operate as S Corporations or mutuals and allow employee ownership via employee stock ownership plans (ESOPs).[7] Finally, most community banks emphasize that they make decisions locally such that customers do not have to wait for someone located out of market to make the final decision regarding whether or not a loan is made.

The recent credit crisis has sharply altered the banking landscape. Many regulators and analysts expect the number of independent banking organizations to fall sharply given the loan problems associated with subprime and other mortgages and commercial real estate. Among the largest institutions, the U.S. no longer has any "pure" (large) investment banks. Bear Stearns and Lehman Brothers effectively failed; Merrill Lynch was sold to Bank of America, and both Goldman Sachs and Morgan Stanley converted to BHCs. Chapter 17 documents how similar events occurred globally as foreign governments bought stock in (bailed out) the largest banks in their home countries and saw others merge. Clearly, banking assets are increasingly concentrated in fewer distinct organizations.

Trends in the Structure of U.S. Banks

During the past 20 years, the number of distinct U.S. banking organizations has declined. The banking industry has consolidated as managers seek economies of scale and scope and use technology to offer products and services to a wide range of customers across different geographic markets. Exhibits 1.2 and 1.3 document changes in the number of FDIC-insured banking organizations and the assets under their control. The FDIC insures commercial bank deposits and serves as one of the major bank regulatory organizations. An independent bank is one that operates as a single organization that accepts deposits and makes loans. It is not organized as part of a holding company and typically

[7]Koch (2014) provides a detailed description of community banks and their operations and presents strategies they should follow to thrive in the future.

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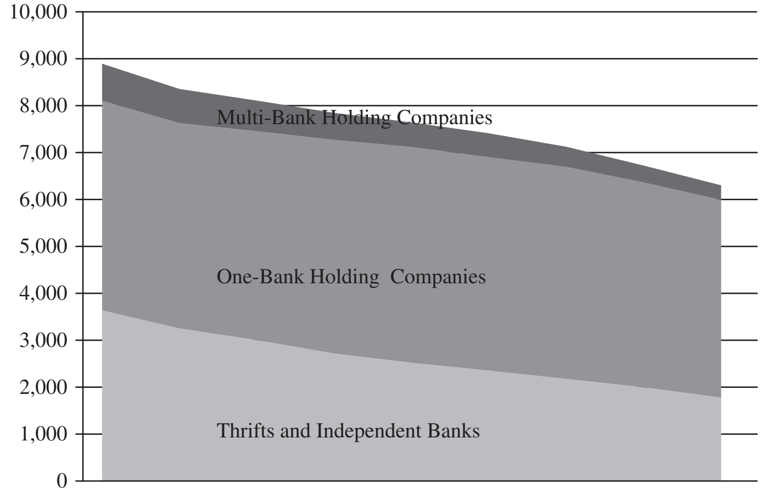
EXHIBIT 1.2 **Number of FDIC-Insured Banking Organizations 1997–2013**



	Dec-97	Dec-99	Dec-01	Dec-03	Dec-05	Dec-07	Dec-09	Dec-11	Dec-13
Multi-Bank Holding Companies	789	731	652	576	524	509	429	359	312
One-Bank Holding Companies	4,468	4,372	4,449	4,551	4,597	4,547	4,517	4,364	4,210
Thrifts and Independent Banks	3,636	3,253	3,005	2,717	2,520	2,354	2,176	1,998	1,779

*Includes thrifts owned by unitary thrift holding companies or multi-thrift holding companies.

Source: FDIC Quarterly Banking Profile, Fourth Quarter 2013, www.fdic.gov.

offers services in a limited geographic market, such as a city or county, and thus is generally small compared with other financial services companies. At the end of 2013, the U.S. had 1,779 independent banks and thrifts in operation. Thrifts are firms regulated by the OCC and were initially organized to emphasize mortgage lending to individuals. The exhibits demonstrate that more firms operate as one-bank holding companies and that multi-bank holding companies control the majority of the banking system's assets.

Bank Holding Companies. A bank holding company is essentially a shell organization that owns and manages subsidiary firms. Any organization that owns controlling interest in one or more commercial banks is a **bank holding company (BHC).**[8] Control is defined as ownership or indirect control via the power to vote more than 25 percent of the voting shares in a bank. Prior to the enactment of interstate branching, the primary motivation behind forming a BHC was to circumvent restrictions regarding branching and the products and services that banks could offer. Today, the primary motives are to minimize costs and broaden the scope of products the bank can offer. The holding company obtains financing from stockholders and creditors and uses the proceeds to buy stock in other companies, make loans, and purchase securities. The holding company is labeled the

[8]A BHC does not have to be a financial services holding company as defined by federal legislation. See the description of financial services holding companies that follows.

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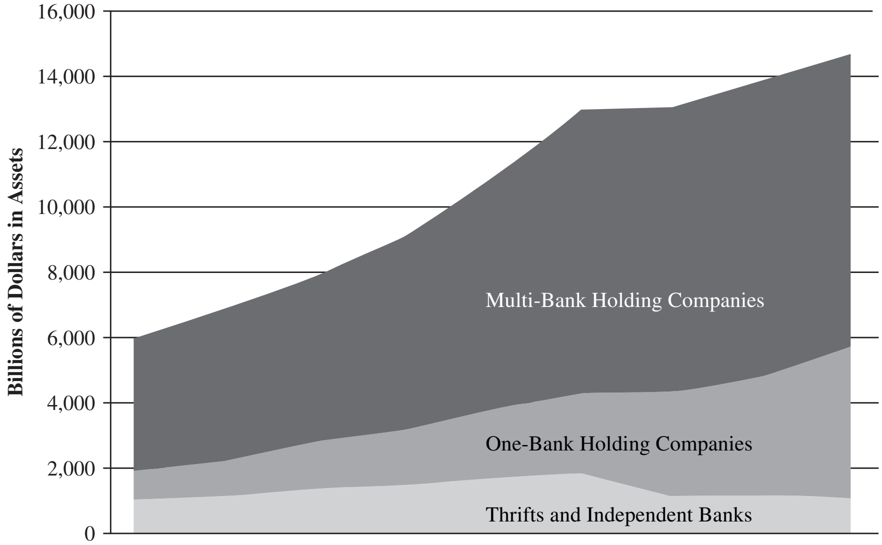
EXHIBIT 1.3 Asset of FDIC-Insured Banking Organizations 1997–2013



	Dec-97	Dec-99	Dec-01	Dec-03	Dec-05	Dec-07	Dec-09	Dec-11	Dec-13
Multi-Bank Holding Companies	4,062	4,642	5,063	5,873	7,053	8,719	8,732	9,062	8,979
One-Bank Holding Companies	907	1,070	1,374	1,694	2,056	2,409	3,173	3,600	4,604
Thrifts and Independent Banks	1,075	1,172	1,433	1,508	1,771	1,907	1,182	1,230	1,140

Includes thrifts owned by unitary thrift holding companies or multi-thrift holding companies.

Source: FDIC Quarterly Banking Profile, Fourth Quarter 2013, www.fdic.gov.

parent organization and the operating entities are the *subsidiaries*. If the parent owns at least 80 percent of a subsidiary's stock, it files a consolidated tax return.

One-bank holding companies (OBHCs) control only one bank and typically arise when the owners of an existing bank exchange their shares for stock in the holding company. The holding company then acquires the original bank stock. *Multi-bank holding companies (MBHCs)* control at least two commercial banks. Large organizations generally form OBHCs or group a number of independent banks in an MBHC because they want to control a bank and provide traditional banking services. More importantly, many of these organizations want to combine the bank's capabilities with the financial activities of their nonbank subsidiaries in order to better compete nationwide.

Exhibits 1.2 and 1.3 demonstrate that over 4,200 OBHCs operated in the U.S. at year-end 2013 and controlled more than $4.6 trillion in assets—or roughly $1.1 billion per holding company. The MBHC structure differs slightly. The substantive difference is that the parent corporation owns more than one commercial bank subsidiary. Prior to the advent of interstate banking, this enabled the banking organization to compete in different geographic markets. Even within this structure, operating styles may vary. Some MBHCs operate as closely knit units with the management of each subsidiary bank reporting daily to key personnel either at the lead bank or the parent company. In this case, the subsidiaries are effectively branches. Important decisions must be approved by authorities outside the local community, so that local bank officers have

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