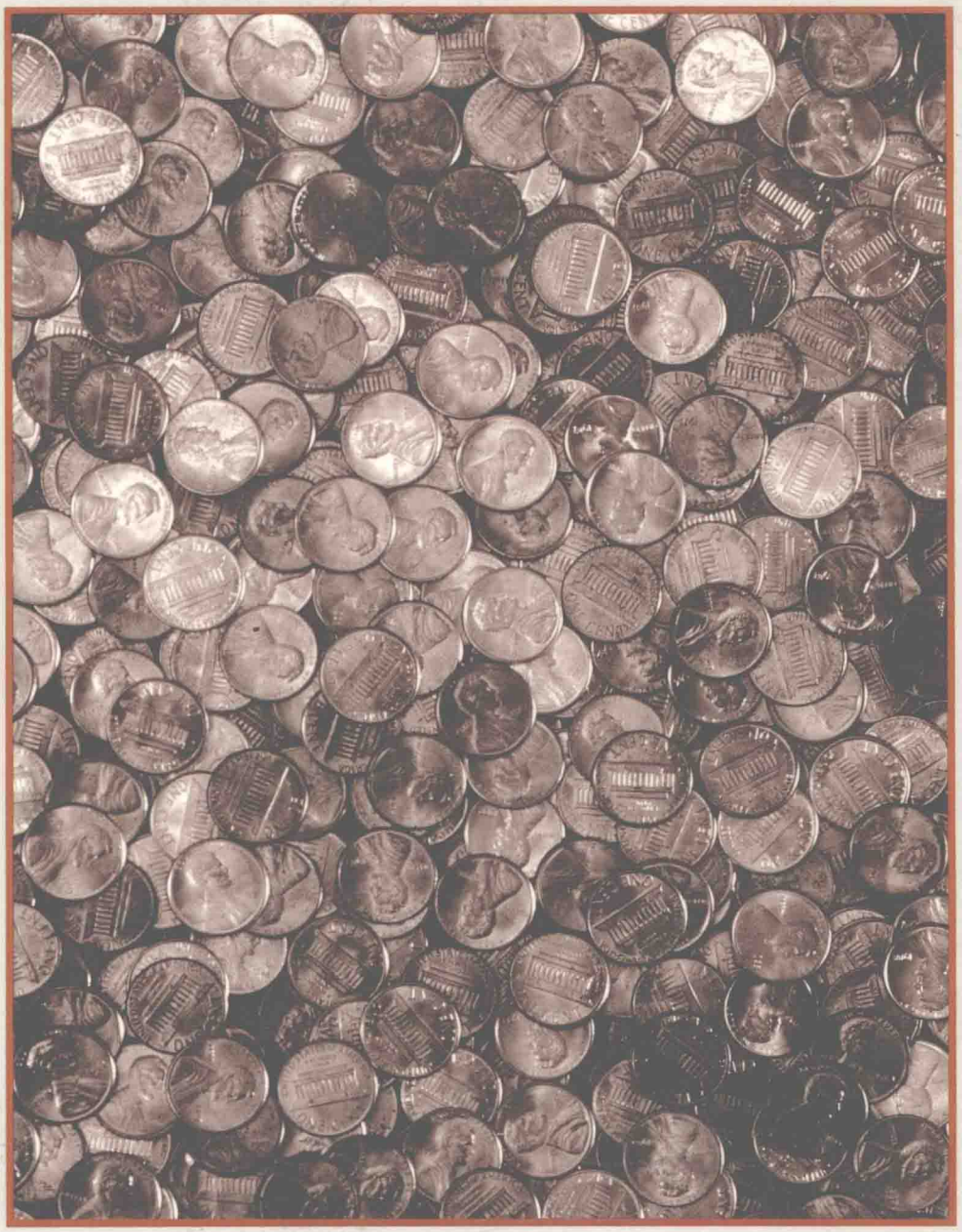
Bank Management and Regulation

A BOOK OF READINGS



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PREFACE

The 1990s have begun with the United States banking industry under siege. At home, the value of bank charters is being eroded by increased competition among banks as well as nonbank financial firms, while abroad, barriers to entry and competition from Japanese and European "universal" banks have reduced United States banks' share of the global market for financial services. Indeed, only one United States banking organization is among the top ten in the world today, compared to seven out of ten at the beginning of the 1970s.

The fluidity and dynamics of today's banking markets render standard textbooks virtually obsolete. It may take years for a textbook to be written, produced, and published. As a result, both teachers and students of banking are frequently confronted with descriptions of banking problems and market structures that are out-of-date. Our objective in compiling this book of readings was to provide a supplement to regular banking texts that comprises up-to-date articles describing today's banking markets and issues.

The publications issued by the twelve regional Federal Reserve Banks are excellent sources of well-written, topical, and up-to-date banking articles. These articles are written by Federal Reserve staff economists with the objective of making current banking issues intelligible and interesting to the general public without foregoing economic and analytical rigor. As such, they provide the core of this book of readings. The Federal Reserve articles are supplemented by a number of other articles, including a chapter from the 1991 Treasury Report, *Modernizing the Financial System–Recommendations for Safer, More Competitive Banks*. This mammoth piece of research clearly lays out the challenges facing the United States banking industry in the 1990s and a key chapter from that Report on deposit insurance reform and risk-related premiums was chosen to be featured in our book.

Our selection of readings has been divided into five sections reflecting the current debate over bank management, strategy, and regulation.

In Part I, the readings examine what it is that is special about banks; that is, why banks (and thrifts) are singled out from nonfinancial firms for detailed regulatory attention. Collectively, these readings identify three sources of bank specialness: (1) the provision of highly liquid deposits (the medium of exchange), (2) the provision of credit services or loans

to firms that do not have adequate access to the capital markets, and (3) the key role banks play in transmitting monetary policy actions from the Federal Reserve (central bank) to the rest of the economy.

Part II analyzes the cost performance of the banking industry. This issue naturally leads to an examination of the sources of static and dynamic efficiency in banking and, in particular, whether there are economies of scale and scope. If such economies exist, then the current trend toward full nationwide banking in the United States will mean a shrinking number of banks and an industry increasingly dominated by larger banks. If, however, such economies are limited, or nonexistent, small banks will be able to survive profitably alongside the largest banks.

In Part III the articles analyze issues relating to the micro-financial management of banks. Because of the nature of bank (and thrift) asset portfolios, banks are subject to at least three sources of risk: (1) *credit risk* (arising from their asset portfolios), (2) *interest rate risk* (arising from the greater interest-rate sensitivity of their asset portfolios relative to their liability portfolios), and (3) *liquidity risk* (arising from the greater liquidity of their liability portfolios relative to their asset portfolios). This raises important management issues, including the monitoring, pricing, and control of such risks, especially if a bank is to survive and prosper. In addition, banks are taking increased positions in off-balance sheet activities such as futures, swaps, options, loan commitments, and letters of credit. While these items are *below-the-bottom line* in balance sheet terms, they still give rise to cash-flow risks, such that losses off-the-balance sheet can cause a bank to fail in a similar manner to on-balance sheet credit, interest-rate, and liquidity risks. In the context of this wide array of on- and off-balance sheet activities, the question of bank capital adequacy and management becomes paramount. In particular, insufficiently capitalized banks risk future insolvency and failure. Thus, capital adequacy is not only important for bank managers and owners but also for regulators such as the FDIC, who guarantee bank deposits and potentially bear the insolvency costs of inadequately capitalized banks.

In Part IV we analyze the changing competitive structure of the banking industry. Two very pronounced trends have been the explicit and implicit erosion of geographic boundaries and activity boundaries. This has allowed banks to diversify their cash flows geographically as well as to engage in a wide array of nonbank activities through their holding companies or direct subsidiaries. However, the gains from diversification not only depend on the correlation of cash flows from different activities but also on the optimal selection of the scale or proportion of such activities undertaken. Thus the potential gains from diversification may not be achieved in practice. Another aspect of competition has been to induce banks to increasingly take on a financial contracting "technology" traditionally found in the securities industry. In particular, rather than acting as asset transformers (i.e., originating and holding loans to maturity), banks are now commonly securitizing their loan assets. In securitizing assets a bank originates, packages, and then *sells* loans, often in the form of securities, to outside investors. In acting in this manner banks are operating more like "brokers" rather than traditional asset transformers. Yet another aspect of increased competition in the United States has been the challenges from Japanese and European banking rivals. Foreign banks have made inroads into United States banking markets both at the wholesale and retail levels, while at the same time United States banks are facing regulatory and economic barriers to entry into foreign markets. This has raised questions as to whether Congress should adopt more restrictive regulation of foreign banks coming to the United States, such as treating them on a reciprocal basis rather than offering them equal or national treatment as is done at present. Reciprocal treatment would regulate potential foreign entrants into the United States in a manner similar to the way in which United States banks are regulated when entering, or trying to enter, specific foreign markets such as Europe.

In Part V, the articles are targeted at the issue of the optimal regulation of bank risk. If banks are left unregulated, bank runs and panics may impose enormous costs on the economy and the special functions of banks may be seriously impeded. On the other hand, too much regulation imposes regulatory "taxes" on the firms in the industry and/or, if this regulation is misdirected, it can actually encourage risk-taking and "moral hazard" behavior by a subset of banks. Increasing attention has been placed on the *moral hazard* problem and the mispricing of risk in the banking industry. The core of the problem is the current deposit insurance arrangement under which bank regulators cannot adequately charge for (nor adequately restrain) increased risk-taking by equity holders (owners). In addition, depositors (who are covered by the insurance) do not have adequate incentives to impose market discipline on riskier banks. Many solutions to the moral hazard problem have been proposed, ranging from imposing risk-based deposit insurance premiums on banks to adopting more transparent market-value accounting standards. If risk fails to be priced properly, the social benefits of deposit insurance and the so-called "safety net" may be swamped by moral hazard risk and its attendant social costs.

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CONTENTS

PART I

THE THEORY OF BANKING AND ITS REGULATION

Banks are operating in a dramatically changing environment characterized by a bewildering array of new financial products. As a result, market participants have access to a growing list of alternatives to conventional bank loan and deposit contracts. In addition, a number of forces have combined to make regulatory reform of the banking industry inevitable. The mounting number of bank failures, for example, seriously threatens the solvency of the bank insurance fund. Bank regulation, however, may have exacerbated the problem. Laws against interstate banking have limited the ability of banks to diversify geographically. Flat-rate deposit insurance premiums combined with a "too big to fail" policy have diminished the market's capacity to discipline risk-taking banks. At the same time, the ability of U.S. commercial banks to compete domestically and globally may be seriously impaired by those regulations which constrain the kinds of products banks can produce and how they can deliver those products.

To understand the changing nature of the banking industry we must first understand what banks do. At a very fundamental level, banks are financial institutions that act as intermediaries between savers and borrowers. As financial intermediaries, banks provide an alternative to the capital markets in which participants contract directly with each other when savers purchase securities (either bonds or stock) directly from borrowers. In the banking market, savers purchase securities (i. e., deposits) from banks, and banks in turn purchase securities (i.e., loans) from borrowers. But when do market participants use the capital markets and when do they use the intermediated markets? And when do market participants choose banks over other financial intermediaries (e.g., finance companies, mutual funds, and insurance companies)? Only by answering these questions can we understand the nature of the banking firm, its management challenges, and the evolution of the banking industry over time. In this part's first article, "Bank Loans and Marketable Securities: How Do Financial Contracts Control Borrowing Firms?", Mitchell Berlin examines the nature of banking by comparing the securities issued in the capital markets with those issued by banks. Berlin explains that financial intermediaries exist because they reduce transactions costs. Moveover, he notes that the

key to understanding the difference between banks and most other financial intermediaries is one particular transaction cost, the cost of monitoring borrowers.

As Berlin points out, banks assume a very important function in the market: Savers delegate to banks the responsibility for monitoring borrowers (i.e., banks become "delegated monitors"). To discharge this responsibility, banks issue a unique liability—a bank deposit. These features not only make banks special but also give them a key role in the transmission of monetary policy. In the next article, Kenneth Spong discusses why the notion that banks are special is critical to an understanding of why we regulate them so strictly. Bank regulation, however, requires balancing the need for a stable financial system with the benefits of an efficient and competitive banking industry. As reflected in Part I's last article, "History of Banking Regulation," also by Kenneth Spong, the resolution of this balancing act has varied over time. Spong's historical perspective provides the appropriate context in which to view the current dilemma over reregulating the financial services industry.

ARTICLE 1

Bank Loans and Marketable Securities: How Do Financial Contracts Control Borrowing Firms?

*Mitchell Berlin**

INTRODUCTION

Even a close observer of today's financial markets may be bewildered by the ever-changing array of new financial contracts and the shifting fortunes of traditional intermediaries. But behind all this change, the same basic problem is being solved over and over again by savers, borrowers, and the financial specialists who serve them. Market participants are seeking the most efficient way to transfer the savings of households to firms who need funds. This happens whenever a saver decides whether to deposit her funds in a bank or to call her broker to purchase securities for her portfolio. The same is true when a firm chooses whether to take out a bank loan or to sell securities to the public.

These particular choices—the saver's choice between deposits and securities and the firm's choice between bank loans and securities—have

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been a hot topic in the business press in recent months. The reason is that some firms that used to rely primarily on commercial loans have begun to sell securities directly to the public. The growth of the markets for commercial paper, medium-term notes, and low-grade bonds has raised questions about the preeminent role of commercial banks as intermediaries between savers and businesses.[1] This has excited the interest of crystal ball gazers seeking to decipher long-term trends and economic theorists seeking to explain the roles of bank lending and the direct sale of securities in financial markets.

Banking theorists have been hard at work on this problem in recent years. The kinds of questions that these economists ask are: What functions do intermediaries perform that individual security holders can't perform themselves? Why do some firms seek bank loans while others sell bonds to the public? Why do many firms secure finance through a mixture of bank loans and marketed securities? How do these different types of financial contracts control the behavior of firms?

One basic theme of recent research is that the answers to these questions begin with a simple observation: it is too costly for investors who are not intimately involved in the day-to-day running of the firm, firm *outsiders*, to stay informed about developments inside the firm. In turn, they are unable to influence the firm to prevent mismanagement. Banks arise to fill this gap; they play the part of *delegated monitors* to keep a check on the behavior of firm *insiders*, the managers who run the firm on a day-to-day basis.

[1]For popular accounts of the changing role of banks in financial markets see, for example, "The World is Their Oyster," *The Economist* (March 16, 1985) p. 20, and "The Consumer is Sovereign," *The Economist* (March 22, 1986) p. 20. For a description and analysis of the low-grade bond market, see J.G. Loeys, "Low-Grade Bonds: A Growing Source of Corporate Funding," this *Business Review* (November-December 1986) pp. 3-12, and the references therein.

BANKS AND OTHER FINANCIAL INTERMEDIARIES

Depository Intermediaries Reduce Transactions Costs. Depository intermediaries like savings and loans, mutual funds, and banks link ultimate borrowers, especially firms, and ultimate savers, the households of the economy. While borrowers and savers might seek each other out and strike deals without going through intermediaries, traditional banking theory says that this will be a groping and inefficient process.

To see the difficulties, consider what a typical saver would have to do to invest her money in some firm without using an intermediary. First, she would have to locate a firm that needs money and determine whether this firm is creditworthy. Then, she and the firm would have to bargain over how much money she will invest, for how long, and at what rate of return. She would probably prefer to buy securities with small denominations that pay off quickly so that her money isn't all tied up. The firm, on the other hand, would most likely rather sell just a few large securities, and it may need money for a project that will not pay off until sometime far in the future. Suppose the firm and the saver overcome all of these problems and actually strike a deal. Then she still has to keep a close watch on the firm until she is paid back.

This account, of course, is very unrealistic. But it does illustrate the notion of *transactions costs*, that is, the time, trouble, and expense of transacting business.[2] More likely than not, these costs are so large that the deal will never be made. The firm will simply make a best guess about the types of securities that can be sold. And the saver will either buy securities that don't meet her needs or refuse to buy securities at all. Thus, transactions costs are a barrier between savers and firms.

[2]See George Benston and Clifford W. Smith, "The Transactions Cost Approach to the Theory of Financial Intermediation," *Journal of Finance* (May 1976) pp. 215-232, for a discussion of banks as institutions that minimize transactions costs.

One way to bridge this barrier is with an intermediary, such as a bank. Our saver can put her money in the bank, which then invests the funds in a portfolio of borrowers' IOUs. In effect, intermediaries perform a number of functions that match borrowers and savers. They buy large securities, while offering savers small accounts—a function called "size transformation." They hold securities that are hard to sell, while offering savers immediate access to their savings—known as "liquidity transformation." By holding a large portfolio of the securities of many firms, they allow even small savers to diversify. Finally, they *monitor* the firms in their portfolio. Monitoring includes not only keeping track of each firm's financial condition, but also supervising firms and enforcing loan contracts.

But Not All Intermediaries Act Like Banks. Like banks, other intermediaries such as mutual funds and money market mutual funds overcome many transactions costs. They assemble diversified portfolios of securities and sell different size shares that are readily transformed into cash. But, unlike banks, mutual funds perform only part of the monitoring function. While they collect and interpret information about the firms in their portfolio, they do not supervise firm managers or negotiate and enforce loan contracts. Thus, a single transactions cost, the cost of monitoring firms, is key to understanding the difference between bank lending and other types of intermediation.[3]

In fact, recent economic theories of financial intermediation consider the cost of monitoring to be the key to understanding the difference between bank loans and all marketable securities, whether held by intermediaries like mutual funds or by individuals. Recent economic theory views bank loans and marketable securities as alternative methods of controlling the behavior of borrowing firms, each with its own advantages and disadvantages (see A SELECTED BIBLIOGRAPHY, p. 18). By making a full account of these advantages and disadvantages, the theory of financial intermediation attempts to explain the role of both banks and securities in financial markets.[4]

THE TROUBLES WITH SECURITIES MARKETS

Insiders, Outsiders, and "Agency Problems." "Agency problems" don't just arise in securities markets, they crop up any time people expect somebody else to do something for them. When someone hires a lawyer to represent him in court or pays a mechanic to fix his carburetor, the lawyer and the mechanic are both *agents*. They are supposed to act on someone else's behalf. Problems may arise, though, because the agents have their own interests to think about. The lawyer may do a shoddy job because he wants to concentrate on a more important case. And the mechanic's bill may include a charge for repairs to a fuel pump that was working perfectly when the car was brought in. In other words, agents may well pursue their own interests whenever they can get away with it, even at the expense of their delegated responsibilities.[5]

In securities markets, firms are agents of the bondholders who lend them money. Bond-

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[3]Many of the statements made about banks in this article are also true of insurance companies, which monitor private placements—nonmarketable bonds usually held by a small number of investors. Insurance companies have longer term assets and liabilities than do banks.

[4]This article emphasizes the asset services provided by banks. A second strand of the recent literature views banks as providers of liquidity insurance—that is, the ability to obtain funds quickly—to risk-averse savers. See Charles J. Jacklin, "Banks and Risk Sharing: Instabilities and Coordination," Working Paper No. 185, Center for Research in Security Prices, University of Chicago (June 1986), for a review of this literature. In addition, deposits are insured up to $100,000 by federal deposit insurance agencies, another attractive feature for risk-averse savers.

[5]Michael Jensen and William Meckling, "Theory of the Firm: Managerial Behavior, Agency Costs, and Capital Structure," *Journal of Financial Economics*, (1976) pp. 305-360, is the seminal article on agency costs in a finance setting. See Oliver Hart and Bengt Holmstrom, "The Theory of Contracts," in Truman Bewley (ed.) *Advances in Economic Theory*, Cambridge, Cambridge University Press (forthcoming), for a review of the principal-agent literature.

holders expect the firm to make prudent decisions so that the loan can be repaid. Likewise, firm managers are agents of the stockholders who own the firm. Stockholders expect the managers to run the firm as profitably as possible. If bondholders and stockholders have up-to-date and detailed information about what's going on inside the firm, they should have a fairly easy time controlling the behavior of their agents. But more often than not, firm outsiders know much less about how the firm is managed and how its projects are going than do managers inside the firm.[6]

Insiders have more information than bondholders about the firm's current revenues and about the future of long-term investments. Therefore, they can better assess whether the bondholders will be repaid in full or not. Managers are also in a much better position than stockholders and bondholders to know if the firm is being run efficiently, that is, if costs are being kept down to a minimum and if people in the organization are exerting all their effort. In addition, many complex and uncontrollable factors affect firm performance besides management decisions. When a firm performs badly, outsiders often can't tell what is at fault: bad management or bad luck.

Without firsthand information, lenders and stockholders cannot be sure that their agents will faithfully discharge their responsibilities. The firm's managers have strong reasons to report results that serve their own purposes instead. They may understate the revenues of the firm to reduce payments to stockholders. They may exaggerate the probable returns to troubled projects to avoid having these projects liquidated or to avoid the blame for mistakes. And since efficiency requires considerable effort, self-interested managers may choose to take it easy rather than work their hardest, or to indulge themselves with perks. Expensive vacations masquerading as business trips and three-martini "business" lunches that last all afternoon are well-known examples.

Of course, investors do have several second-hand sources of information, such as rating agencies, trade newspapers, and investment analysts. But each investor will ask himself if the gains are worth the time and money required to collect information. For investors who do not have substantial amounts of money invested in any one firm, the answer will be "no." Even if an investor does take the trouble to become informed, he must decide whether or not to use his knowledge to take an active role in supervising the firm. Unless the investor has a very large stake in a firm, he is likely to make a hasty decision to buy or sell the firm's securities, rather than take on the full-time job of attempting to control the behavior of firm insiders. The same is true of intermediaries like mutual funds, which assemble a diversified portfolio by investing relatively small amounts in particular firms. In general, the holders of marketable securities have little incentive to monitor firms to keep a check on agency problems.

In fact, even though each investor may be acting rationally when he chooses not to monitor, too little monitoring will often result. This is possible because monitoring is an example of what economists call a *public good*.[7] When an investor supervises the firm, all other investors benefit whether they monitor or not. But each investor will ignore the benefits he provides for others when he decides whether monitoring is worth the time and trouble. Thus, every investor may decide that his personal gains from monitoring are too small, even when the total gains to all investors are quite large. Everyone would be better off if someone chose to monitor, yet no one may be willing to do so. In this sense, too little monitoring occurs in securities markets.

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[6]This paper emphasizes the agency problem between outsiders and insiders, but there is an extensive literature on the conflicts of interest between stockholders and bondholders. See Smith and Warner (cited in A Selected Bibliography) for an account of this conflict of interest.

[7]See Stiglitz (cited in A Selected Bibliography) for a more complete discussion.

Contracts Inside and Outside the Firm Are Alternatives to Monitoring. Since securities markets are plagued by agency problems and inadequate incentives to monitor firms, why is anyone willing to purchase any firm's securities? Part of the answer is that the use of managerial compensation schemes and the incentive features of bond contracts can reduce (but not eliminate) agency problems.

Stockholders, through their board of directors, design reward schemes that tie top managers' compensation to the performance of the firm. A typical example is an incentive payment linked to measures of success like divisional sales or profits. Also, managers are given options to purchase stock, so that they have a direct stake in increasing the value of the firm.[8] But the interests of managers and stockholders can't be aligned perfectly, because managers receive only a share of the firm's revenues, while they exert most of the effort needed to produce these revenues. As long as they receive only a portion of the proceeds, managers will still expend too little effort.

Many common features of bond contracts are designed to reduce firm insiders' ability to misrepresent the firm's current and prospective performance. Unlike shares of stock, bonds require the firm to pay a fixed return to investors, usually broken up into a number of coupon payments. These payments are usually made to a trustee, who services the contract on behalf of bondholders. And if a firm misses a payment, bondholders can place the firm in default. In addition, bonds contain covenants that require the firm to satisfy a number of conditions or face default. Some covenants require the firm to meet minimum values for certain financial ratios—such as the ratio of working capital to total assets or the equity-debt ratio—to prove that its financial condition is healthy. If the firm cannot meet these ratios, it is often an early signal that the firm may not be able to make payments to bondholders.[9]

The threat of default ensures that firm management will make every effort to repay bondholders whenever possible, which reduces bondholders' need to monitor the firm's revenues. And covenant restrictions give bondholders the legal right to intervene to protect their investment when the firm appears to be in trouble. More often than not, firms will take steps quickly to remedy any breach of covenant restrictions. In more extreme cases, however, the firm may undergo reorganization. And in the worst cases, the firm's assets may be liquidated and distributed to its bondholders.

But Bond Contracts Tend to Be Inflexible. While bond contracts protect investors against losses when a firm is in trouble, the price of that protection is inflexibility. A firm with a healthy future may not be able to make payments because of temporary factors beyond the control of management; for example, a recession may cause a decline in demand for the firm's products that will soon abate. Or a firm might breach a covenant because of an unforeseeable change in business conditions. For instance, a firm might fall below its working capital floor because of an unexpected increase in production costs. Yet, the firm may well be capable of reducing its costs given sufficient time.

In these cases, both managers and investors would benefit if managers could request some breathing space to recover and respond. But when no investor is willing to monitor the firm, the firm's managers cannot easily convince investors that a reprieve is not being used merely to delay the day of reckoning. Thus, opportunities for a timely renegotiation of the contract

[8] Anthony Saunders, "Securities Activities of Commercial Banks: The Problems of Conflicts of Interest," this *Business Review* (July-August 1985) pp. 17-26, describes the incentive effects of managerial compensation schemes and the discipline imposed upon management by the marketplace.

[9] See Smith and Warner (cited in A Selected Bibliography).

will often be lost. Instead, with the threat of default in mind, managers will attempt to fulfill the terms of the contract, even when this means cutting back on projects that are fundamentally profitable.

In the worst possible scenario, managers may be unable to comply with the terms of the contract, and a viable firm with severe, but temporary, problems may go bankrupt. Not only can this result in lost future earnings, but the firm's managers and investors are forced to spend precious time and money in expensive bankruptcy and reorganization proceedings. Although investors may need the threat of bankruptcy to motivate the management to run the firm efficiently, spending the time and money to act on this threat benefits neither the firm nor its investors. Everyone (except the lawyers) would do better to reduce the likelihood of unnecessary bankruptcies.[10]

The inflexibility of bond contracts is not such a problem for large firms with long histories in established markets. It is relatively easy to design covenants that will not prove overly burdensome when sales revenues are stable and when the firm's usual balance sheet ratios are well-known. On the other hand, firms in new markets or markets undergoing significant changes are likely to have unstable income and expenses. Such firms will view inflexible bond contracts as a straitjacket and will seek a more flexible alternative.[11]

BANKS ACT AS DELEGATED MONITORS

Bank Loans Are a More Flexible Substitute for Securities. Firms can borrow funds from households yet avoid many of the problems of direct borrowing by taking out a bank loan. By borrowing from a bank, the firm replaces many small lenders with a single lender. Since the bank makes large investments in firms, it will be more willing to monitor and renegotiate contracts than would a group of individual investors.

When a firm cannot make interest payments on time or when its balance sheet indicates trouble, a banker's first response is to take a closer look at the firm's condition. If he finds that the firm's longer term prospects are good, the banker may offer to reschedule interest payments or waive temporarily some covenant. To make sure that good money is not being thrown after bad, however, the banker must stand ready to respond quickly to further declines in the firm's health. It is the bank's willingness to monitor that allows it to be flexible without taking on excessive risks.

By monitoring, the banker is also better able to determine whether the firm's managers are acting efficiently. While it is clearly impossible (and undesirable) for the banker to become involved routinely in detailed management decisions, the bank's watchful eye can reduce the occurrence of serious managerial abuses. In this sense, one can think of the bank as setting a minimum standard of managerial effort.

But Bank Loans Don't Replace All Securities. Although bank loans offer some real advantages over marketable securities, there are good reasons why we see a mix of bank loans and securities in financial markets. The first is that a little monitoring may go a long way, because monitoring is a public good. While it is true that a bank must have a substantial stake in a firm—or else it will act much like other small security holders—it doesn't follow that the bank needs to hold all of the firm's debt. As long as the bank is closely monitoring the firm, the firm's other investors also benefit, even if they remain passive.

Since bank supervision ensures that managers exert at least some minimum amount of effort, the firm's other investors know that the average level of effort is higher than it would be without

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[10]See Brian C. Gendreau and Scott S. Prince, "The Private Costs of Bank Failure: Some Historical Evidence," this *Business Review* (March-April 1986) pp. 3-16.

[11]See Berlin and Loeys (cited in A Selected Bibliography). In addition, some firms may be too small to bear the underwriting fees and other costs of marketing their own securities directly. These firms really have no alternative to bank loans.

monitoring. Indeed, bank supervision also benefits the firm, because investors will be willing to pay a higher price for the firm's securities if they know that managers are being watched. When a firm takes out a bank loan, in effect, it hires the bank to certify that the firm is behaving efficiently (see EMPIRICAL EVIDENCE THAT BANKS ARE DELEGATED MONITORS).[12]

The firm's other investors also benefit from the bank's ability to renegotiate contract terms. In troubled times, a firm will often meet with a committee of its largest lenders to adjust its contracts. This committee invariably includes the firm's bankers, who represent both their own depositors and, indirectly, the firm's other bondholders. While the bank and other bondholders don't always have identical interests, everyone gains when a basically healthy firm avoids premature liquidation.[13]

[12]See Gorton and Haubrich, and Stiglitz (cited in A Selected Bibliography).

[13]Michelle White, "Economics of Bankruptcy: Liquidation and Reorganization," Working Paper No. 239, Salomon Brothers Center for the Study of Financial Institutions, New York University (1981), provides a good discussion of the differing interests of banks and bondholders.

The second reason why bank loans do not replace securities is that a bank, after all, is a firm much like any other firm. When savers lend to firms indirectly through a bank, they have not found a magic wand that makes agency problems disappear. The bank itself is an agent of its depositors, delegated to monitor on their behalf. Bank insiders know more than depositors about the bank's current revenues, about problem areas in the loan portfolio, and about the efficiency of bank management. Bank insiders have the same reasons as any other firm insiders to misrepresent results and to take advantage of perks. Since most depositors are unlikely to monitor their bank, they must have some device to control the behavior of bank insiders.

In fact, interest-earning deposits are a particularly simple type of debt contract that requires the bank to pay a return to its depositors. As in other debt contracts, the threat of bankruptcy gives the banker a powerful motive both to monitor the firms in its portfolio and to make required payments to depositors. Yet, this arrangement shares the vices of other debt contracts: inflexibility and the potential for a costly, premature liquidation of the *bank's* assets. When a bank fails, depositors may lose their

Empirical Evidence That Banks Are Delegated Monitors

Recent empirical tests in Christopher James, "Some Evidence on the Uniqueness of Bank Loans," *Journal of Financial Economics* (forthcoming) are largely consistent with the view that banks act as delegated monitors. James finds that when a firm announces a public debt offering, the firm's stock price falls. This is not surprising, because bondholders must be paid before stockholders can receive any payments. Yet, when a firm announces that it has signed a loan commitment with a bank, the firm's stock price rises. This is true despite the fact that banks, like bondholders, have priority over shareholders. This price rise may indicate that stockholders believe that the bank will supervise firm managers.[a]

While this suggests that the market believes that banks play a special role, it does not *prove* that the market believes that banks are delegated monitors. For instance, an alternative hypothesis consistent with the evidence is that loan commitments raise the value of the firm by providing insurance against credit rationing or future increases in borrowing costs. Also, James finds that announcements of private placements lead to a decline in the borrowing firm's stock price. This is troublesome for the view that banks are delegated monitors, because the institutions that hold private placements—primarily insurance companies—have many similarities to banks.

[a]Eugene Fama, "What's Different About Banks?" *Journal of Monetary Economics* 15 (1985) pp. 29-36, uses a different approach and also finds evidence consistent with the theory of the bank as a delegated monitor.

funds and borrowing firms may be forced to engage in a costly search for alternative lenders. These costs must be weighed against the gains from having a delegated monitor.

If there were no bank regulation, this would be the whole story. But regulators monitor banks quite closely and enforce a weighty system of legal rules and restrictions. By monitoring bank behavior, regulators can reduce agency problems and reduce the likelihood of bank failures. In addition, regulators are often quite flexible in applying regulations to banks in difficulty. In this sense, bank regulators may be thought of as the bankers' bankers.[14]

On the other hand, bank regulations have a strong element of inflexibility, because they must apply to thousands of banks and cannot be tailored routinely to the needs or capabilities of any one bank. A bank will neither seek nor be granted an exception unless the bank is in serious trouble. While at least some of these regulations may be necessary for the stability of the banking system, their inflexibility must be reckoned alongside the other costs of intermediated finance.

Bank Diversification Reduces Agency Costs. While the agency costs of indirect lending help to explain why bank loans don't always replace direct securities, they also seem to pose a paradox. If depositors place their funds with banks to avoid the agency costs of direct lending, but simply end up with another agent who is difficult to monitor, how can bank loans ever be an improvement over direct lending?

Unlike the very best paradoxes, this one disappears upon further reflection. The problems of debt finance arise when a borrower with basically healthy prospects cannot make current payments. If the borrower has many separate projects in different markets, however, it is very unlikely that all projects will go bad at once, unless the borrower is particularly inefficient or inept. Similarly, if a bank faithfully monitors a large portfolio of loans that includes different firms in many different markets, the probability of many firms facing troubles at once is quite small. And this probability falls as the bank's portfolio grows larger and more diversified.[15]

Even with diversification, the threat of bankruptcy forces the bank to monitor. If a bank is lackadaisical about the soundness of its loan portfolio, then many loans are likely to go bad and the bank will be unable to pay its depositors. But as long as the bank does monitor, the revenues from a large loan portfolio will tend to be stable. By monitoring, the bank reduces the likelihood of bankruptcy for its borrowing firms, and by holding a diversified portfolio, it lowers its own probability of bankruptcy. Thus, indirect lending through a delegated monitor that is well diversified actually reduces the wasted time and effort of premature bankruptcy proceedings.

SUMMARY AND OUTLOOK

Recent economic theory has provided new insights into the particular role banks play in credit markets and the essential differences between bank loans and marketed securities. When a firm requires outside finance, lenders either must monitor the firm's affairs or provide incentives for firm insiders to run the firm efficiently. Marketed securities do provide such incentives, but security holders will seldom be willing to bear the costs of monitoring the firm. By depositing their funds in a bank, savers hire an agent to make loans and monitor the investments on their behalf.

The goal of the theory of financial intermediation is to provide insights into the role of intermediaries and other contractual alternatives in credit markets. But these theoretical inquiries

[14]The deposit insurance system also reduces the costs of bank failures, because the failing bank's assets usually are purchased by another bank, or the bank is simply merged with another. Thus, most depositors lose nothing, and the costs to borrowing firms are substantially reduced.

[15]See Diamond, and Boyd and Prescott (cited in A Selected Bibliography).

may also interest crystal ball gazers who want to know whether marketable securities will increasingly replace bank loans as a source of funds for business.

Many observers have claimed that technological improvements have lowered the costs to individual security holders of obtaining and processing information about firms. In particular, the largest firms are watched closely by many market specialists, and individual investors may have found that the cost of purchasing and interpreting this information in a timely fashion is decreasing. In fact, the larger firms have reduced their reliance on bank loans, and money center banks that have traditionally specialized in providing services to larger firms have shifted away from commercial lending.[16] Should information costs continue to fall, the theory predicts that more firms will rely primarily on marketed securities.

At the same time, the theory provides a counterweight to predictions that banks' commercial lending will soon become a thing of the past. Since diversification reduces the agency costs of intermediated lending, greater opportunities to diversify loan portfolios should increase the efficiency of bank lending. Thus, the theory suggests that relaxed interstate banking restrictions should enhance banks' ability to compete in credit markets. Also, firms in unsettled markets and firms entering new markets should continue to rely primarily on bank loans, because bond contracts are too inflexible. Finally, since bank monitoring benefits all security holders, even firms that sell securities will continue to borrow through a mixture of bank loans and direct securities.

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[16]See "Top 10 Business Loans Decline Again," *American Banker* (June 24, 1986) pp.1-38.