

COMMERCIAL BANK INFORMATION:  
IMPLICATIONS FOR THE STRUCTURE OF BANKING\*

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## ABSTRACT

### Commercial Bank Information: Implications for the Structure of Banking

The asymmetric information banks possess about borrowers and banks' role in the payments system determine the "specialness" of banks and their unique regulatory treatment. Much of the informational advantage of banks in lending, I argue, comes from their role in payments -- their unique access to the information in commercial checking accounts. I argue further that this information is primarily of value in lending to small and medium size borrowers-- but not large borrowers. The information banks derive from checking accounts of small and medium commercial firms is relatively complete and comprehensible while remaining exclusive. Similar information on large borrowers is not nearly as comprehensive; large borrowers do business in many locations and, under current law, banks cannot branch widely enough to capture a large borrower's full checking business. As a consequence, the market for loans to large borrowers is quite competitive. The final step in the argument is that small banks lend to small borrowers and large banks to large borrowers. Large banks are not efficient lenders to small borrowers because of managerial diseconomies of scale, which arise from asymmetric information within the banking firm. This helps to explain the relatively weak profitability of large banks compared to smaller banks, and the slow pace of the consolidation of the banking system. The traditional rationale for regulation of smaller banks remains in place, although it has disappeared for large banks.

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INTRODUCTION

The banking system, as we all know, processes payments. To the alert banker, these payments are potentially immensely valuable bits of information that, properly understood, form a mosaic that can help make comprehensible the financial status of firms making and receiving these payments.<sup>1</sup> This information is particularly valuable in bank lending to smaller firms. The checking account of a small firm sheds a clear light on its revenues and expenses because the firm's cash flows are easily comprehensible and are typically completely documented within one account. By contrast, one checking account of a large, nationwide firm with thousands of employees is relatively uninformative, because the firm has a complicated cash flow dispersed geographically among many banks. Thus the finances of a smaller business are more fully revealed to its banker through its bank account than those of a large business.

Recent theories about credit markets and banking have centered on information and information flows. The fundamental proposition is that information is crucial to bankers both in determining risk premiums which set the price of credit, and in collecting loans, ensuring that lenders are repaid as much as possible within the terms of the loan contract. Moreover, information asymmetries -- that is, the fact that some economic actors have informational advantages over others -- make comprehensible the ubiquity of the loan contract (Townsend (1979), Diamond (1984), Lacker (1990)). At base, the idea is that loan contracts are the simplest possible contract for lenders as long as they are fulfilled -- they only become complicated when the borrower may fail to repay. As such, the form of outside finance requiring the least information is the loan.

In particular, asymmetric information that banks possess about borrowers

has been the foundation of modern theories of commercial banking that justify the "special" character of banks and the unique regulatory treatment that banks receive.<sup>2</sup> According to this analysis, banks are the best lenders because they can most easily monitor loans to maximize repayment in those cases where full repayment of the loan becomes doubtful. The most incisive analysis of the informational advantage of banks begins with a seminal paper by Fischer Black (1975). Black argued that banks have an informational advantage in lending to households because the banks have access to the household checking accounts.<sup>3</sup> Eugene Fama (1985) extended this analysis to firms in a paper that is worth quoting at length in this regard:

"Black (1975) suggests that banks have a cost advantage in making loans to depositors. The ongoing history of a borrower as a depositor provides information that allows a bank to identify the risks to loans to depositors and to monitor the loans at lower cost than other lenders. The inside information provided by the ongoing history of a bank deposit is especially valuable for making and monitoring the repeating short-term loans (rollovers) typically offered by banks. Information from an ongoing deposit history also has special value when the borrower is a small organization (or individual) that does not find it economical to generate the range of publicly available information needed to finance with outside debt or equity.

"Two facts tend to support these arguments. First, banks usually require that borrowers maintain deposits (often called compensating balances). Second, banks are the dominant suppliers of short-term inside debt. The inside debt or private placements offered by insurance and finance companies (which do not have the monitoring information provided by ongoing deposit histories) are usually much longer-term than bank loans." (p. 38)

Although Fama's discussion suggests that this analysis applies to all types of borrowers at banks, I argue that much of this informational advantage of banks applies only to small and medium size borrowers--but not large borrowers.<sup>4</sup> The information banks derive from checking accounts of small and medium commercial firms is relatively complete and comprehensible while remaining exclusive. As I show below, many small commercial accounts transact between 50 and 300 credits and debits monthly, so that a lending officer can relatively easily grasp the contours of the customer's commercial activity.

Similar information on large borrowers is not nearly as comprehensive; large borrowers do business in many locations and, under current law, banks cannot branch widely enough to capture a large borrower's full checking business. Even if banks could do so, the complexity of a large borrower's cash management limits the information's comprehensibility.

The hypothesis that checking accounts give banks an edge in lending to small borrowers I call the "checking account hypothesis." While checking accounts are not the main source of information banks use about their clients, they are the sole clear edge that banks have over nonbank lenders and that local banks have over out-of-state bank lenders. As a consequence of this informational edge, local banks are able to make better use of other information that any local lender could collect, which discourages competition from nonbank lenders. With larger borrowers, banks lack this edge, and as a consequence have faced sharp competition from nonbank lenders.

The informational advantage that a loan officer has about a loan creates a credibility problem within the bank, which makes loans to small firms hard to administer. In a large bank, a loan officer may be able to attribute less risk to loans than they actually possess, setting aside too little of earnings for loan losses and thereby show higher profits than is deserved. This problem is likely to be greater the larger the bank. Technically speaking, there is a

managerial diseconomy of scale for small loans. In theoretical terms, banks have an agency problem of the type first discussed by Jensen and Meckling (1976), caused by the outside owners having to monitor the behavior of the bank managers. Thus large banks have continued to rely on large borrowers for much of their business, although this lending business has not been highly profitable. This helps to explain the relatively weak profitability of money center banks compared to smaller banks, and the slow pace of the consolidation of the banking system.

The informational advantage that small banks have with small borrowers also carries with it a liability. This liability is that small banks' asset portfolios will be illiquid. This is because there is a "lemons" problem: any time a buyer knows less about the loan being bought than the seller, the buyer must be concerned that the seller is selling this particular loan because the seller knows that it is a worse than average risk.<sup>5</sup>

These problems associated with asymmetric information are at the core of the most coherent rationale for deposit insurance, due to Diamond and Dybvig (1983). They assume that bank loans are illiquid, for the reasons we have been discussing. Households, on the other hand, prefer liquid assets. Depository intermediaries are able to transform illiquid loans into liquid transactions accounts because under normal conditions, the liquidity needs of the economy are highly predictable. However, this transformation is unstable: the belief that too many depositors will withdraw their deposits is self-fulfilling, since withdrawals force the liquidation of the illiquid assets, which reduces the value of the bank's assets and generates the failure of the bank that the depositors fear. Deposit insurance helps prevent these destabilizing panics.<sup>6</sup>

If loans are liquid, on the other hand, an unusual demand on the part of depositors to liquidate their deposits will be met simply by selling off the loans. This will be possible when large banks have no asymmetric information about their loans. If loans can be securitized or sold, then the thesis of loan

illiquidity is false. In recent years, large quantities of loans have in fact been securitized or sold. But with the important exception of mortgage loans, these liquid loans have been those made by large banks (Gorton and Haubrich, 1988). Thus large banks have liquid assets, and may not need deposit insurance.<sup>7</sup>

Thus, from this perspective, large banks may not need deposit insurance. Ironically, under the too-big-to-fail doctrine, large banks obtain more complete deposit protection than small banks.

The banking industry is often analyzed as if there were but a single type of bank. In practice, however, it is useful to distinguish between at least two archetypes: one, the money center banks that seek to compete nationally and internationally (an example being Citibank), and the other, the small, home town banks of "Main Street." In considering the future of the banking system, we need to think through which theories, and which policy prescriptions, apply to each of the two kinds of banks.

For example, while a large bank may be able to split loan and deposit functions under a "narrow bank" regulation without undue harm to either operation, a small bank may find the added administrative costs prohibitive. To take another example, large banks have recently been able to securitize a very wide variety of products, including commercial loans, auto loans, and credit card loans; by contrast, most small commercial banks have generally only securitized mortgages. Thus large banks have more liquid assets as a result of securitization, while small banks may find only a proportion of their portfolios have become more liquid.

Finally, large banks have easier access to capital markets than do small banks. In the short run, policies that require greater capital for banks may have the effect of raising borrowing costs for small borrowers and may have

important local impacts on economic activity.

I begin by setting forth the theory of how banks gain and use information from checking accounts. Then I will discuss some of the empirical evidence on checking accounts and on banking profitability that lends support to these ideas. Finally, I will set forth positive and normative implications of the theory.

## I. The Theory of Bank Information

Banks use information both to make commitments for new loans and to monitor existing loans. Banks obtain the information they use, in part, from the checking accounts of their loan customers (Black (1975), Fama (1985), Nakamura (1990a)). This information is particularly valuable in making decisions about troubled loans.

Take as an example a gas station which is the lone seller at a good intersection, earning above average returns due to market power.<sup>8</sup> One day, a rival opens up across the street, offering gasoline at a lower price. The incumbent gas station owner can choose to meet the price, staying in business but earning little profit, or to enter into a price war, with the victor able to charge higher prices thereafter. In the absence of debt, the gas station owner can be presumed to make this decision so as to optimize the value of the gas station. But with debt, some of the cost of losing the price war may be borne by the lender, while the profits from winning will go entirely to the station owner. Technically speaking, the debtor is subject to moral hazard -- the debtor may be induced by equity maximization to engage in behavior that harms the lender. If lenders know they cannot prevent such behavior, then they must raise the risk premiums they charge on loans. In this way, the borrower pays for the economic costs of moral hazard through higher interest rates.

An informed lender may be able to prevent or limit suboptimal risky



behavior on the part of troubled borrowers, by declaring the loan in default due to covenant violations (Berlin and Loeys, 1988), or by using the threat of default to induce behavior that the lender prefers -- a loan workout (Nakamura, 1990a). In particular, if the lender observes that the gasoline station's outlays for gasoline rise compared to revenues, the lender may be alerted to the existence of a price war. More importantly, the lender may be able to estimate the costliness of the price war and thus the probability that the station owner will win the war. Unless the probability of a victory in the price war is high, the bank may use the threat of foreclosure to prevent the price war or require the borrower to take other steps that shore up the loan.

It might be argued that the information in the bank account is easily transferred to nonbank lenders -- in our example, a nonbank lender can simply require the gas station owner to pass along bank statements or set up a lockbox to collect all checks sent to the gas station. There are several disadvantages to these procedures, which raise the costs of the alternative lender. First, the information may not be timely--the bank statements will go to the nonbank lender later, and in the meantime the gas station may have committed itself to the price war. Moreover, the information may be incomplete. A monthly statement may allow the gas station owner to hide actions taken to conserve cash during the price war, for example. Second, these procedures require a duplication of recordkeeping costs that the bank must incur in any case. Moreover, these procedures require that the confidential information in the checking account to be passed on to an additional party. The bank and the nonbank lender must both be privy to it, which makes the information more public knowledge. This may make the gas station more vulnerable to defeat in the price war. Third, the gas station owner may delay sending the checking account information to the nonbank lender during the price war. Finally, the bank is privy to information about other checking accounts in the same locality which may be useful in evaluating

the borrower. For example, the bank may know something about the financial status of the other gas station owner.

Bank lenders thus have an advantage vis-a-vis alternative lenders in providing risky loans. Banks are better able to price loans and to administer them as a consequence. Moreover, a bank derives market power over the borrower from possessing superior information: potential competitors are less likely to try to bid business away because the bank will allow the competitor to bid away borrowers who the bank knows are riskier, while the bank will compete vigorously to keep borrowers who are safer than they appear (Sharpe 1990). Banks in markets with free entry may well earn smaller rents from their existing customer base if a reputation for low rates helps attract new customers. But in concentrated local markets, banks may well earn large rents. Market power derived from information thus leads to an expectation that banks as an industry may be able to earn monopoly rents that can pay for special industry wide taxes, such as interest-free reserve requirements (Fama (1985), James (1987)).

The negotiations that typify loan workouts and default declarations are more easily conducted by a single lender than by a group of lenders. In general, with a single lender it is less costly to write loans with more restrictive covenants as these covenants can be renegotiated as needed (Berlin and Mester, 1991). Thus small banks are less likely to be lenders to large borrowers, even though small banks can syndicate large loans. This is because the practice of syndication changes the nature of the loan.

Information-based market power is a double-edged sword, because it makes the loans illiquid. Banks may thus need protection from unwarranted fears about bank safety. Banks themselves may be subject to moral hazard (Nakamura (1990b)), which may require special regulation and oversight. And banks may have limited access to capital markets. For these reasons banks may wish they had more liquid

assets.

All these implications follow from the fundamental notion that banks are possessors of information about borrowers that is not common knowledge. The "checking account hypothesis" suggests that banks are the best monitors of small borrowers because they have access to important exclusive information on the finances of borrowers.

A key issue is how comprehensible and comprehensive the borrower's checking account is likely to be. A checking account that has relatively few deposits and debits per month will be relatively easy to interpret by a loan officer, and will offer an important window into the borrower's business if it represents all of the borrower's business. On the other hand, if a checking account has a large number of deposits and debits, or if the borrower has multiple checking accounts with different banks, then the information contained in it will be harder to interpret and less informative.<sup>9</sup>

A related issue, particularly within the context of the American banking system, is that branching regulations have effectively prevented the formation of nationwide banks -- unlike, for example, the case in Canada. As a consequence, a bank is unable to provide full banking services to a firm with offices and factories scattered over a number of states across the country. Instead, corporate cash management has often involved multiple banking relationships, with cash ultimately being concentrated at a single location for financial management. In this case, no single bank has a complete picture of the firm's transactions.

This suggests that banks may be relatively easily replaced in the market for large loans by alternative financial institutions, because banks have no special informational advantage in lending to large borrowers. To the extent

that large banks lend to relatively large firms, large banks cannot rely on the Diamond and Dybvig argument to justify receiving deposit insurance.

Why do large banks lend to large borrowers? If small borrowers are where the profits are, why don't large banks lend to small borrowers? The main reason is that there are managerial diseconomies of scale that are founded on the type of informational asymmetries that we have found for small borrowers.<sup>10</sup> This informational asymmetry makes it harder within a large bank effectively to supervise lending to small firms, particularly at a geographical distance. The problem is that corporate headquarters may not be able to assess whether loan officers at a distant branch or subsidiary are accurately classifying problem loans and adequately writing off risks in the portfolio. As a consequence, setting proper incentives for managers may be more costly and less efficient than if the branch or subsidiary were a bank functioning on its own.

Some large banks have grown through amalgamation of small banks. Banc One, for example, until its recent acquisition of a large bank holding company in Texas, expanded primarily by acquiring small banks with strong market niches in the midwest. The banks that Banc One has acquired become part of a multi-bank holding company and preserve much of their identity as local lenders. However, there is some evidence that when local lenders are acquired by large multibank holding companies, they do less local lending. Alton Gilbert and Michael Belongia (1988) show that when rural banks, which tend to be small banks making small local, agricultural loans, are acquired by large bank holding companies, their portfolios become more diversified. This suggests that small scale lending by large banks may be relatively less efficient due to managerial diseconomies of scale.<sup>11</sup>

Another answer is that earlier in the postwar period, there was relatively little competition for the loan business of the largest firms. During the early 1950s, for example, Citibank was able to raise its domestic interest spread from

1.9 to 3.5 percent by increasing its corporate loans from 16 to over 40 percent of its domestic earning assets (Cleveland and Huertas (1985)). As a consequence, the annual real rate of return on Citibank stockholders' equity was 5.4 percent during these years. Since then, financial innovations, the growth and spread of knowledge about corporate finance, and improved electronic communication, record keeping and computation, have all contributed to reducing the profit margins from lending to large businesses. Large business lending in the United States has become close to the textbook paradigm of perfect competition. Thus large money center and regional banks invested in a franchise that has increasingly paid small rents. It is thus not surprising to find, as Boyd and Graham (1991) do, that large banks have failed in disproportionate numbers in the 1970s and 1980s. With most of their historical customer links being with large firms, it is difficult for large banks to increase rapidly their loans to small firms. If large banks attempt to invade the turf of small banks, they will generally find profits meager, precisely because of the "lemons" problems: the borrowers they will successfully pry away from small banks will generally be the riskier ones.

## II. Empirical evidence

In this section I present empirical evidence that bears on the theory I have outlined. I begin by pointing out that large banks process a lot of large debits, which results in very high turnover rates. The average dollar at a money center bank turns over many times a day. Economies of scale in electronic funds transfers permit corporate treasurers to manage their cash actively. By contrast, turnover at small banks is much slower. I then examine commercial accounts at small banks and show that the amount of debit activity is relatively modest. This lends credence to the "checking account hypothesis" by showing that commercial checking accounts at small banks are readily comprehensible.

The connection between these commercial checking accounts and lending is underscored by data from the Survey of Small Business Finance, analyzed by Elliehausen and Wolken (1990), which show that small and medium size businesses typically obtain their checking accounts and credit lines from local banks. Laderman, Schmidt, and Zimmerman (1991) perform a clever test of this connection, showing that rural banks without branches specialize more in agricultural lending than rural banks with branches.

I then review a study by Hannan (1991) that shows that small loans bear higher interest rates in concentrated markets, which suggests that bankers have better information about small loans. And I discuss Preece and Mullineaux's (1991a) evidence that banks do not have an informational advantage over nonbank lenders in lending to large borrowers.

A study by Bernanke and Lown (1991) suggests that small banks do not have as good access to capital markets as large banks.

Finally, I present evidence that large banks lend primarily to large borrowers, and small banks to small borrowers

Turnover rates -- the ratio of debits to deposits in checking accounts -- give us some insight into the complexity of cash management at large banks. Unfortunately, the available data on turnover does not distinguish between commercial accounts and personal accounts. We do have some data on the proportion of commercial checking accounts and personal checking accounts at a sample of banks. Functional Cost Analysis data from the Federal Reserve Board, which unfortunately only refers to small banks, show that as bank size rises from under \$50 million to over \$200 million, the proportion of commercial checking accounts in total checking accounts remains relatively unchanged. If this can be extrapolated to larger banks, this implies that the difference in turnover is due to more activity in commercial checking accounts at larger banks.

Turnover data show striking qualitative differences between small banks and large banks. A dollar of deposits at a bank with assets of less than \$1 billion, as can be seen in Table 1, turned over between 46 and 110 times a year in 1990 -- once or twice a week. By sharp contrast, large banks with assets greater than \$1 billion had annual turnover rates of 511 to 1764 -- roughly an order of magnitude greater. Large banks have turnover rates of 2 to 6 times per day.

Thus as we shift from banks with deposits of \$500 million to banks with deposits of \$5 billion, the bank's processed debits rise from \$5 billion per month to \$400 billion. This order-of-magnitude shift does not occur as we rise from \$50 million to \$500 million, or \$5 billion to \$50 billion. There is a qualitative shift between banks under \$1 billion or over \$3 billion that is greater than for other size categories.

Also, interestingly, the pace of change of turnover has been diverging over time. In Table 2, we examine banks sorted by size of asset in 1980. We then look at the increase in turnover rate for these banks and we see that, cumulatively, banks with assets of less than \$1 billion in 1980 doubled their turnover rates by 1990. On the other hand, banks with assets of more than \$1 billion had their turnover rates roughly quadrupled. It thus appears that cash management practices at small banks have changed less dramatically than at large banks.

What does a representative small bank commercial checking account look like? The best source of information is the Federal Reserve's Functional Cost Analysis program, which has data since 1971 on commercial checking accounts of participating banks (the program is generally limited to smaller banks with assets less than \$1 billion). Unfortunately, over the years the rate of participation in this part of the program has diminished dramatically, from 164 banks in 1971 to 15 in 1989, as participation in the program as a whole has fallen off from about a thousand banks to 206.

The general picture that emerges from Table 3 is that the average commercial checking account at a small bank has roughly 30-50 checks per month written against it, receives between 50 and 100 checks, and has deposits about once or twice a week. The average balance is between \$5,000 and \$20,000.

Thus a bank loan officer can, by examining the 500 or so checks written annually against an average account, figure out the business's payroll, including salaries of key personnel, and the amounts paid for the business's supplies. By examining roughly 50 or 100 deposits, the bank loan officer can get a picture of the seasonal pattern of the business's receipts. Finally, by examining the thousand or so transit checks, the officer can determine who the business's major customers are.

Bank loan officers typically rely on summary data on a business's checking business, which is part of analyzing the profitability of the bank's entire relationship to the borrower. This alone gives the bank an edge over other lenders. Most loan officers and bankers spend the bulk of their time getting information about local businesses by calling on business executives in their service area. But the existence of detailed checking account data undoubtedly increases the candor of these conversations.

Cash management at small banks is relatively simple, while that at large banks is an order of magnitude more complex. Even if a large bank performed all the banking services for a large firm, it would find analyzing the data within the firm's accounts substantially more complex than for a small firm. But in general, large firms have multiple relationships with banks. A survey of large corporations, conducted in 1971 (Conference Board, 1971), shows how complex these relationships can be. Of 161 corporations, only 8 dealt with fewer than 10 banks. The majority dealt with more than 50 banks, with 59 dealing with more than 100. These multiple banking relationships are a natural extension of having



to conduct a multinational business when banks are restricted from branching across state or country lines. Subsequent surveys by Greenwich Associates confirm the complexity of large corporations' banking relationships.

With these large businesses, a local bank has little or no advantage in monitoring over an insurance company or an out-of-state bank. Thus, insurance companies, investment banks, and other financial intermediaries have been able to lend to large corporations, through private placements, commercial paper, and other types of loan facilities. And out-of-state banks have been able to set up loan production offices to lend to large businesses, even though they cannot offer checking services to these businesses.

In sharp contrast, small business borrowers typically depend primarily on banks within their local market areas for their general credit borrowing. One reason for local banks to specialize in lending to small businesses is that these businesses tend to use local bank facilities for checking. If checking facilities were not important to lending to small borrowers, banks could freely set up loan production offices where they could not establish branches and branching restrictions would not limit bank lending to small firms.

Collateralized borrowing to small firms, such as mortgage borrowing, need not be local. Where standardized procedures can be set up which minimize the need to monitor the collateral, nonbank financial intermediaries can lend to small businesses.<sup>12</sup> However, collateralized borrowing is limited by the secure collateral a borrower can establish. Moreover, the credit monitoring of banks may be viewed as a fundamental role in the life of the firm. Fama (1990) points out that most of a firm's contracts involves fixed future obligations which are contingent on the firm's viability. These contracts include labor contracts and supply agreements as well as formal debt contracts. The bank can then be viewed as a monitoring specialist which monitors on behalf of all these creditors.

Of small and medium sized firms (defined as firms with less than 500 employees<sup>13</sup>) surveyed in the 1988-89 National Survey of Small Business Finance, most used one local bank, located within one mile of the firm (Elliehausen and Wolken, 1990). Indeed, ninety percent of all respondents obtained their checking services from a bank or thrift located within twelve miles of the firm.

My thesis is that the local bank checking account is an important additional source of information for loan monitoring. The National Survey shows that of the firms that had lines of credit, most received them from banks located close by -- most within two miles of the firm. Thus it appears likely from the survey that, as anecdotal evidence suggests, most borrowers give their checking account business to their lender.<sup>14</sup>

Laderman, Schmidt, and Zimmerman (1991) test some implications of this hypothesis. They argue that banks located in rural (urban) areas should be more specialized in agricultural (nonagricultural) loans if they are located in states that restrict branching. If a bank cannot have branches, then a bank located in a rural area cannot have an urban branch, and vice versa. Thus it will be more restricted in its lending opportunities, if the checking account hypothesis is correct. If checking accounts were not important, then banks in states that restrict branching could establish loan production offices that are not branches and thus achieve loan diversification. This test is particularly relevant because agricultural loans tend to be small.

They find that where branching is restricted, rural banks specialize more heavily in agricultural loans and urban banks specialize away from agricultural loans. Not incidentally, when average farm size is smaller, rural banks tend to have portfolios more concentrated in agriculture. This lends further support to the proposition that checking account services are more important in monitoring loans to smaller firms.

In the presence of asymmetric information, local concentration may have two effects on lending. First, banks in concentrated markets will have relatively more complete information about their markets. The detailed information banks can glean from checking accounts will then be more meaningful and thus more profitable. Second, less competition implies higher profit margins. Note that since only local banks can provide bank services, it is local concentration that should matter.

Timothy Hannan (1991) presents evidence that borrowers borrowing small amounts (less than \$100,000) pay higher interest rates in concentrated banking markets. The estimated increase in interest rates from the least to the most concentrated markets are economically significant, ranging from 50 to 239 basis points depending on the time period and type of loan. There is some evidence that when larger amounts are borrowed interest rates also rise with concentration, but the magnitudes are smaller and estimates are more uncertain. He also presents evidence that local markets matter -- i.e., that the metropolitan area a bank is located in has an important effect on the average loan rate.

Where there are few banks in an area, small borrowers appear to pay higher interest rates. The effect is less clear for large borrowers, suggesting that larger borrowers are not as restricted to borrowing from local banks.

Diana Preece and Donald Mullineaux (1991a, 1991b) present evidence that banks do not have an informational advantage vis-a-vis nonbank lenders in lending to large borrowers. They examine announcements of loan agreements from the Wall Street Journal from 1980 to 1987, and find that nonbank loan agreements lead to excess stock returns as do bank loan agreements. In fact, the excess returns are greater for nonbank loan agreements than for bank loan agreements. These findings are for large loans: the range of loan size is \$2 million to \$4 billion

for banks and from \$4 million to \$150 million for nonbanks. The median bank loan is \$50 million; a bank with assets of less than \$1 billion would not be allowed to make a loan of this size, and it would be extremely rare for such a bank to lead the syndication of a loan of that size.

They also find evidence that the number of lenders is an important variable in increasing excess returns. This suggests that flexibility of loan agreements is important in the value of new loans to borrowers. An alternative interpretation is that multi-lender loan agreements result in more information leakage, so that the value of multi-lender loan agreements is partially embedded in security prices before the agreements are made public. Either interpretation argues that loans made by a single lender are different from multi-lender loans.

John Boyd and Stanley Graham (1991) present evidence that return on assets is higher for banks with asset size less than \$1 billion than for banks with asset size more than \$1 billion and that the same holds true for return on equity, although the evidence is less dramatic. Indeed, the evidence from return on assets is that banks with less than \$100 million in assets had a greater return than banks with larger assets and, at least prior to 1983, banks with assets of less than \$25 million had higher returns on assets than banks with assets of \$100 million or more.

These results are particularly striking because cost studies for this same period showed economies of scale for banks up to about \$50 million in assets (1984 data, in Humphrey, 1990). Thus banks with assets of less than \$25 million were earning higher returns on assets despite having higher costs of funds on average.<sup>15</sup>

So far, I have argued that banks have an informational advantage in lending to small borrowers that banks do not have in lending to large borrowers. This is advantageous to small banks, particularly in markets with few banks, because

it permits banks to earn excess returns. However, this advantage comes at a cost: the asymmetric information that small banks possess about borrowers makes these assets less liquid and also tends to limit these banks' access to capital markets.

Indeed, the profit advantage of small banks is less evident when return on equity is considered, because small banks generally have higher equity-assets ratios than large banks. One rationale for this difference is that small banks have less access to capital markets and thus must hold greater capital as a hedge against losses. If small banks make loans with relatively more proprietary information, then capital markets may have a hard time distinguishing sound small banks capital issues from "lemons".

Ben Bernanke and Cara Lown (1991) present evidence that bear on this. In an analysis of the possibility that lack of capital has reduced bank lending in the recent recession, Bernanke and Lown examine correlations between levels of bank capital prior to the recession and rates of growth of lending during the recession. Their results show that lower bank capital levels are associated with lower rates of growth of lending across states. They also examine individual bank data for the State of New Jersey, corroborating at the bank level the results at the state level. For our purposes, the key result is that weakly capitalized small banks (less than \$1 billion in assets) appear to have contracted their lending relative to strongly capitalized small banks more than weakly capitalized large banks relative to strongly capitalized large banks.

My interpretation of the Bernanke and Lown results is that smaller banks face more imperfect capital markets than do large banks. The reason that smaller banks face more imperfect capital markets is, no doubt, twofold: the smaller size of capital issues at smaller banks causes greater relative transactions costs in capital markets and smaller banks have greater information problems than do larger banks.

The illiquidity of bank loans which is at the heart of the Diamond and Dybvig (1983) model of bank runs has been challenged by the existence of loan sales. If banks have asymmetric information about loans, banks will not be able to sell them. Indeed, Gorton and Haubrich (1988) have argued that the explosive growth of the loan sales market implies that loans are not illiquid. But loan sales have been largely restricted to very large banks that specialize in this market. The top twenty five banks in the loan sales market account for close to 90 percent of all loan sales (Table 4).

We have argued that all banks have a greater informational advantage in lending to small borrowers than to large borrowers. We have also presented evidence that small banks have higher rates of return on assets, but less access to capital markets and less ability to securitize or sell assets. A key link between the two is that small banks lend to small borrowers, and large banks to large borrowers. What accounts for this? It is clear why small banks lend to small borrowers. Legal lending limits restrict small banks from making large loans. For example, national banks are forbidden to lend more than 15 percent of capital and surplus to a single borrower. In practice, this generally implies that a loan must be less than 1 percent of a bank's assets. On the other hand, large banks can, and do, make small loans. But these loans are a very small proportion of large banks' overall loan portfolio -- and constitute a small proportion of all small loans.

Table 5 presents evidence that small banks make small loans and large banks make large loans. It presents data for 1988, taken from the Survey of Terms of Bank Lending, on the size<sup>16</sup> of commercial and industrial loans (including construction and land development loans but not mortgages) made by different size banks. A stratified sample of banks lists loans made during a specific week during a quarter. It can be seen that small loans (defined as loans of less than

\$1 million that are not part of commitments larger than \$1 million) account for an important proportion of the loans of banks with less than \$1 billion in assets. Of course, banks with assets less than \$100 million will generally not be permitted to make loans larger than \$1 million. However, although loans of \$1 million and more can be made by banks with assets of more than \$100 million, in fact, banks with asset sizes up to \$1 billion devote most of their portfolios to loans of less than \$1 million.

For banks with assets of more than \$3 billion, their lending business is overwhelmingly dominated by loans of more than \$1 million. In fact, the portfolios of banks of asset size class 3 are very different from those of asset size 5 compared to the difference between banks of asset size 5 and 7.

We have argued that loans of \$1 million and larger are relatively liquid.<sup>17</sup> Given this, Table 5 shows that banks with assets of \$3 billion or more have loan portfolios that are fully liquid. Thus these banks are unlikely to need deposit insurance in order to prevent panics. It will still be true that these banks will need access to a back-up source of liquidity, such as a lender of last resort, because it may take time to liquefy the loan portfolio (the loans may be liquid but the market for them may lack immediacy and depth during a panic).

A second empirical issue is to what extent small borrowers in fact turn to small banks for their borrowing. If large banks account for the bulk of small loans, then it would appear unlikely that they were inefficient lenders to small borrowers.

The data in the Survey of Terms of Bank Lending represents a stratified sample of banks. We approximate the universe by blowing up the banks of different asset sizes using the amounts of commercial and industrial loans (including in the definition construction and land development loans) from call report data. The data in Table 6 thus represents the proportion of loans of different sizes<sup>18</sup> made by banks of different size. Small banks (assets of less

than \$1 billion) dominate the lending of loans less than \$1 million: they account for over 72 percent of all such loans. Banks with assets more than \$3 billion account for roughly 10 percent of these loans. These results show that small borrowers do turn to small banks for their loans, buttressing the argument that managerial diseconomies of scale make large banks inefficient originators of loans to small firms.

In sharp contrast, small banks make few large loans; they account for only 12 percent of loans larger than \$1 million. Banks with assets of \$3 billion or more account for 71 percent of these large loans.

### III. Implications for the Structure of Banking

The propositions I have outlined shed light on three major sets of issues on the structure of banking. First, they suggest that the consolidation of the banking industry is likely to be slower than many observers have predicted. Second, the propositions suggest that publicly guaranteed deposit insurance may be an inappropriate form of government intervention at large banks, and that the too-big-to-fail doctrine should not be an element of deposit insurance policy. And third, they suggest that narrow banking will tend to make lending to small firms less efficient and may harm the long term growth prospects of the economy.

I will take these arguments in order.

The forces in favor of consolidation of the banking industry are, in fact, rather weak. The key arguments in favor of consolidation are, one, that there are important economies of scale in banking, so that consolidation will result in lower cost, more efficient operation, and two, that larger banks are able to diversify their asset portfolios and that small banks cannot, so that small banks must bear unnecessary risk.

The first argument derives its force from the claim that large firms have



been able to achieve very low cost operation in some key areas of banking through large scale. For example, during the 1970s, Citibank developed an ability to process checks at very low cost (Cleveland and Huertas, 1985). Another example is credit card processing, for which there appear to be substantial economies of scale (Pavel and Binkley, 1987, and Ausubel, 1990).

However, a careful review of empirical studies of scale economies in banking (Humphrey, 1990) shows that economies of scale are important only for banks below \$50 million in assets.<sup>19</sup> Moreover, if small banks do process information about borrowers more intensively than do large banks, these result in higher interest earnings and lower loan losses. But these revenue enhancements will not show up in cost studies as increased measured output, while the greater costs associated with them will: More intensive information processing appears as an extra cost and thus as an inefficiency in these studies; since smaller firms do more information processing, this will show up as a diseconomy of scale.

Hence the scale economies may be overstated. The smallest banks may appear to be inefficient partly because their output is understated.

One argument in favor of increasing the size of banks is to obtain greater portfolio diversification. It has been argued that small banks are inherently riskier than large banks because of the narrow base of lending that the small banks do. Thus a local economic slowdown -- perhaps the failure or relocation of a single firm -- might lead to a small bank's failure. Small banks can reduce their risk of failure by increasing their equity capital, but doing so results in a diluted return on equity.

If small banks perceive this as a crucial problem, they may choose to spread risk by merging into larger banks or bank holding companies. But this

will also be inefficient if there are significant managerial diseconomies of scale. An alternative and more efficient solution might be to develop financial instruments that hedge local geographical risk.

There are now increasing numbers of traded securities that reflect local geographic risk. These include securitized mortgages and loans, equities, and state and municipal debt. Combinations of these traded securities might be designed to reflect broad movements in regional markets. In this way the small banks might be able to hedge much of their local area risk while remaining independent.

In addition, it is possible that the special informational role of banks may cushion small banks from local shocks more than large banks. The failure rate of large bank holding companies in Texas, for example, was greater than the failure rate of small banks. One reason for this may have been that small banks are able to earn excess returns from their strong customer relationships to help them earn their way out losses, because their local competitors are also weakened by the local shock, while large banks face the loss of many of their customers to out-of-state banks if the banks attempt to raise prices. Again, in Texas, funds from out-of-state banks were available but only for loans larger than \$1 million.

If interstate branching legislation is written so as to make opening or buying branches as simple as opening a Macdonald's or a 7-11, then it is possible that banks will establish branches to follow their multilocation customers so that national businesses will be able to do all their banking with a single bank. This could give loan officers for national firms the informational advantages that are now only available for local firms.

However, there are stumbling blocks that would mitigate any impact this might have. First, many firms use local banks at non-headquarters locations

because these local banks are able to provide them with valuable local information and otherwise facilitate relationships with suppliers and customers in the local area (Beehler, 1978). This is not a role that a new branch can easily step into.

Second, even if a bank is the sole banker for a large firm, the cash flows of the firm may prove too complex for a loan officer to find meaningful. This is particularly true of multinational firms.

The current environment for bank regulation is one in which regulators have been very permissive about bank consolidation. In the past, mergers like the proposed merger between BankAmerica and Security Pacific would have been unlikely to win regulatory approval. I believe that this change reflects a two-fold attitude toward such mergers: first, that bank profitability is low and that therefore concerns about market power are misplaced (and even that a little market power might be good for the banking industry) and second, that for large banks market competition is provided across state and national boundaries.

The analysis which I have presented suggests that this attitude is proper with respect to large borrowers. But it is not necessarily correct with respect to small borrowers. If large banks have managerial diseconomies of scale for small loans, then consolidation of the banking industry will tend to raise costs of borrowing for small firms.

Recent studies including Hannan (1991), Boyd and Graham (1991), Elliehausen and Wolken (1990), Sharpe (1991), and Calem and Carlino (1991) all emphasize the effect of local market concentration on the interest rates of small loans and deposits. Thus market power may differ greatly depending upon the line of business.

Publicly guaranteed deposit insurance has become a public issue, now that

the publicly guarantee has been drawn upon for savings and loans associations, and threatens to be drawn upon again for commercial banks. The checking account hypothesis has particular relevance to deposit insurance, as it provides a very strong rationale for the liquid-liabilities-and-illiquid-assets combination which rationalizes deposit insurance.

Now it is recognized that publicly guaranteed deposit insurance coverage distorts incentives of banks. An efficiently regulated banking system must find a means to minimize the distortions caused by deposit insurance as well as minimizing the cost of panics. The theory and data we have discussed imply that panics pose a threat primarily to small banks. This argues that deposit insurance may be crucial only to small banks, and that regulations be designed to minimize the extension of public guarantees to large banks.

Under the too-big-to-fail doctrine, however, uninsured depositors at large commercial banks are de facto fully insured. As a consequence, large commercial banks enjoy more complete deposit insurance coverage than small banks. Yet the arguments laid out thus far show that, in fact, large banks do not need deposit insurance. That is, the rationale that banks suffer from an illiquid asset portfolio, and therefore are vulnerable to self-fulfilling runs, does not apply to large banks since large banks have portfolios that are relatively liquid. Moreover, it appears that large banks could relatively easily make their accounting more transparent to the market, as their assets and liabilities are to a large extent traded in secondary markets. Thus these large banks could observably and frequently mark their portfolios to market, as mutual funds do, reducing the role of regulators.

If there is a rationale for protecting large banks, it has to do with protecting the international payments mechanism, and concerns about the functioning of the electronic payments networks, such as Fedwire and CHIPS. This suggests that these networks may require some kind of insurance scheme or

reconciliation mechanism for large bank failures, but there seems to be little justification for folding this into the deposit insurance system.

The checking account hypothesis also suggests that large banks will face intense competition in the market for large loans and large firm finance. As a consequence, failure rates at these institutions is likely to remain high. Thus the cost of the too-big-to-fail doctrine is likely to increase rather than diminish. Removing deposit insurance protection from large banks will tend to force these banks to raise additional capital or leave the banking business.

In sum, the development of financial market has made large banks liquid and thus no longer in need of deposit insurance. However, the same logic does not hold true for small banks.

One proposal for reducing the cost of deposit insurance is so-called narrow banking. Under narrow banking, commercial banks would split their operations into two pieces: a deposit bank and a lending bank. The deposit bank would be required to invest in riskfree assets, such as US Treasury issues -- in essence, a 100 percent reserve system. The lending bank would be allowed to invest in risky assets, such as commercial loans, but would have to fund these assets with uninsured deposits, debt and equity.

In its broadest form, this proposal simply requires a bank to collateralize fully its insured deposits. Deposit insurance, in such a system, need only guard against outright fraud. This proposal can thus encompass a bank that maintains an ability to use information in deposit accounts in monitoring risky lending. In effect, however, the proposal would deprive small banks of deposit insurance, as it requires small banks to fund loans entirely from nondeposit, that is, uninsured sources.

If small banks use uninsured deposits to fund their risky lending, then the small banks will still face the possibility of self-fulfilling runs. They will

be in exactly the position of banks modelled by Diamond and Dybvig. On the other hand, if the small banks attempt to fund risky lending via capital markets, they will face capital market imperfections due to their asymmetric information about their loan portfolios.

Narrow banking thus would raise costs for small banks and thus make finance more costly to small firms. If it is judged that the costs of deposit insurance to small banks outweigh the benefits of a system of many small banks, then narrow banking may be desirable.

An alternative might be to exempt small banks from the narrow banking proposal, and to continue to supply deposit insurance to small banks. Under this system, "narrow" banks would pay a very small deposit insurance premium, just enough to provide a small insurance against fraud. Small banks exempt from narrow banking would pay a larger deposit insurance premium, but would benefit by being able to fund loans out of insured deposits.

#### IV. Summary

In this paper, I have argued that large banks -- defined as banks with more than \$3 billion in assets -- are different in kind from small banks. Large banks no longer hold illiquid assets as a large proportion of their portfolios and as such are not endangered by the self-fulfilling bank panics whose possibility justifies deposit insurance. This is because large banks no longer have an informational advantage in lending to large borrowers.

Large banks are, in fact, at a relative disadvantage in making loans to small commercial borrowers, because of managerial diseconomies of scale. The same information asymmetries that render small loans illiquid create agency problems within a large organization making such loans.

Large banks face sharp competition for lending to large firms, and so the prospects for large banks are uncertain. Only those large banks that are

exceptionally agile and well-managed are likely to survive. Reducing deposit insurance protection, which will speed the winnowing out of inefficient large banks, will likely increase the rewards to more efficient large banks and enable them to grow more rapidly. The first step in this direction should be the end of the too-big-to-fail doctrine.

Small banks, on the other hand, continue to need deposit insurance. Narrow banking for small firms would be tantamount to removing deposit insurance protection and would increase the cost of funds for small firms.

#### FOOTNOTES

1. Information about households from personal checking accounts is useful in making consumer loans to those households, as discussed by Black.

2. In these models, banks act on behalf of depositors to monitor borrowers, a role known as delegated monitoring. This monitoring can take place for all loans (ex ante monitoring) in a mechanism formalized by Diamond (1984) or for loans that fail (ex post monitoring) in a mechanism formalized by Townsend (1979). We discuss below briefly why this leads to the bank's having illiquid assets. Diamond and Dybvig (1983), also discussed below, formalize why deposit insurance may be the optimal regulatory response to a bank's having illiquid assets and liquid liabilities.

3. The low cost of decentralized data services makes possible a fulfillment of Black's vision for consumer lending in "relationship banking." Rosenberg and Davidson (1988) argue that relationship banking can be built upon a foundation of computer-based customer profiles that "contain detailed information on a customer's current and historical relationship with the bank." (p. 31)

4. A number of economists and bankers have suggested this idea to me at seminars and in discussions, but Charles Jacklin was the one who convinced me.

5. George Akerlof originated this analysis, which is known technically as "adverse selection." Adverse selection can result in the complete failure of markets. For example, suppose banks wish to sell loans. The banks who hold loans know whether the loans are likely to be repaid or not. If the potential buyers cannot tell which loans are good or bad, then the sellers will maximize their profits by selling only those loans that are worth less than the selling price. But then buyers will refuse to buy. Reducing the price at which loans sell may not equate supply with demand, because as the price falls, the average quality of loans offered worsens.

6. According to this logic, there is no public policy rationale for deposit insurance as a means of preventing rational depositor runs. In a rational run, depositors withdraw funds from undercapitalized, risky banks. If such banks are viable, they will be able to withstand runs by liquidating assets, by raising equity or by borrowing from other institutions using as security their liquid assets. A "lender of last resort" with the power to issue currency may be necessary to ensure that the banking system as a whole has adequate liquidity. If bank assets are liquid, then the lender of last resort need not bear the risk of the run, because the bank assets will be secure collateral.

7. This is incomplete evidence, as loans remaining in the portfolio may be less liquid than loans that have been sold, and the liquidity of loans may rest on the bank's reputation for honesty rather than on the existence of public information about the quality of the loan (Berger and Udell, 1992).

8. I am indebted to Charles Jacklin for this example.

9. It might be argued that the bank has better information about large borrowers because the large number of transactions in the account provides more data points. However, for monitoring purposes, possession of complete information, rather than a sample of information may well be crucial. In particular, during loan workouts, the bank typically forces a less risky business plan on the



borrower (see Nakamura, 1990a); a borrower with multiple checking accounts may take actions with some other bank's checking account which are in violation of the agreement. Joseph Haubrich (1991) has argued that the information that is crucial in ex post monitoring is information which rules out states of nature, rather than information which simply changes probability distributions. Having the universe of data, rather than simply a sample, is more likely to rule out states of nature.

10. Gorton and Rosen (1991) argue that management problems such as these are endemic in banking. Mester (1991) finds empirical evidence of management problems at mutual, but not stock, savings and loan associations. See Mester (1989) for an overview of theory and empirical work in this area. Formally, my argument requires two elements, an "agency" problem in which managers can gain by hiding information from owners, and a scale argument that the degree of the inefficiency varies with the length of the firm's managerial hierarchy. The latter argument is made in a more general context by McAfee and McMillan (1989).

11. There are alternative interpretations of this result. It is possible that the rural banks have a lower cost of funds as a consequence of becoming part of the large bank holding company and that the response of agricultural loans to the decrease in cost of funds is less than that of other loans. It might also be the case that the rural bank is diversifying by swapping loans with other members of the bank holding company.

12. Nonbank lenders, according to Elliehausen and Wolken (1990), play important roles in lending to small businesses in leasing and motor vehicle loan markets.

13. More than three-fourths of the firms surveyed had fewer than 10 employees and sales of less than \$1 million.

14. One reason that the lending office may be located somewhat further away than the checking office is that the borrower may go to the main branch of the bank for a loan, while maintaining the checking account at the nearest branch.

15. For a more pessimistic view of the prospects for small banks, see Shaffer (1989).

16. Loan size is determined by the maximum of the actual loan amount or the loan commitment of which it is a part. The idea is that a large borrower may take down a small part of a large commitment, but we do not wish to categorize this as a small loan.

17. Note that these results are also qualitatively true if we believe that only loans larger than \$3 million are liquid.

18. Loan size is classified by the maximum of the loan amount or the dollar amount of the commitment under which the loan is made.

19. There do appear to be small but statistically significant economies of scale at large banks, which would be consistent with the anecdotal evidence cited above. See Evanoff and Israelevich (1991) for a discussion.

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Table 1  
Annual Turnover Rates  
by Size of Bank

Year	<u>Bank Size</u>							Big NYC
	1	2	3	4	5	6	7	
1980	100.5	62.5	127.4	200.2	323.4	592.1	NA	903.0
1981	50.2	92.7	116.9	296.6	304.2	659.7	1657.5	981.1
1982	107.0	95.6	141.5	398.4	317.7	785.0	1125.0	1178.1
1983	146.8	95.4	104.1	254.0	445.3	750.1	1528.7	1493.5
1984	72.9	94.0	127.5	273.8	421.9	980.6	1129.5	1613.9
1985	70.0	93.6	125.3	247.6	462.5	1024.2	1240.8	1693.2
1986	67.8	69.4	93.5	263.8	495.9	1134.3	1308.7	1881.1
1987	38.7	69.7	97.7	268.5	550.5	1470.6	1360.4	2171.7
1988	40.4	67.6	102.2	238.5	570.8	1473.0	1364.1	2348.9
1989	42.2	78.5	104.2	331.0	724.1	1401.5	1628.0	2954.7
1990	45.5	68.9	110.2	510.6	890.0	1430.6	1763.7	3630.8

Bank sizes:

- 1: Total assets < \$ 100 million
- 2: \$ 100 million # Total assets < \$ 300 million
- 3: \$ 300 million # Total assets < \$ 1 billion
- 4: \$ 1 billion # Total assets < \$ 3 billion
- 5: \$ 3 billion # Total assets < \$ 10 billion
- 6: \$ 10 billion # Total assets < \$ 30 billion
- 7: \$ 30 billion # Total assets

Note: Turnover = Debits/Deposits

Debits = Checks drawn, direct withdrawals, transfers

Deposits = Demand deposits of individuals, partnerships, corporations, states, and political subdivisions

Source: Survey of Debits to Demand and Savings Deposits Accounts, Federal Reserve Board.  
Consolidated Report of Condition, Federal Reserve Board.

Table 2  
Percent Change in Turnover  
by Size of Bank

	<u>Bank Size</u>						
	1	2	3	4	5	6	Big NYC
From 1980							
to							
1981	15	29	34	44	26	23	9
1982	38	45	58	98	54	51	31
1983	36	49	45	107	79	71	65
1984	44	60	57	123	95	93	79
1985	48	52	75	144	135	104	88
1986	36	41	92	158	164	120	108
1987	28	58	103	203	194	163	140
1988	22	62	107	203	201	181	160
1989	52	85	141	311	295	237	227
1990	102	78	142	383	400	270	302

Bank sizes:

- 1: Total assets < \$ 100 million
- 2: \$ 100 million # Total assets < \$ 300 million
- 3: \$ 300 million # Total assets < \$ 1 billion
- 4: \$ 1 billion # Total assets < \$ 3 billion
- 5: \$ 3 billion # Total assets < \$ 10 billion
- 6: \$ 10 billion # Total assets < \$ 30 billion
- 7: \$ 30 billion # Total assets

Note: Bank sizes as of 1980; note that there were no surveyed banks with more than \$30 billion in assets as of that date.

Source: Survey of Debits to Demand and Savings Deposits Accounts, Federal Reserve Board.  
Consolidated Report of Condition, Federal Reserve Board.



Table 4

Loan Sales by Banks with Most Loan Sales  
(percent of all bank loan sales)

	1986 IVQ	1987 IVQ	1988 IVQ	1989 IIQ	Bank Average Asset Size in Billion \$ 1989 IIQ
Top 10 Banks	59.8 %	77.9 %	91.6 %	84.7 %	\$ 60.8
Top 50 Banks	77.8 %	87.6 %	93.2 %	94.0 %	\$ 22.8

Loans are loans originated by the bank and sold or participated to others. Data include any loan made directly by the bank except residential mortgage loans, consumer loans, renewals or rollovers of loans previously sold with no new funds advanced, repos, and sales of loans reported as borrowings. Data originally from Federal Regulatory Report of Condition.

Data Source: American Banker, Top Numbers 1990, p. 34.



Table 5

What Size Loans do Large and Small Banks Make?  
Loan Size Distribution for Each Bank Size Category  
(percent)

		<u>Loan Size</u>						Loans < 1mil	Loans > 1mil
		1	2	3	4	5	6		
Bank Size	1	49	24	16	5	6	0	89	11
	2	22	22	28	16	11	0	72	28
	3	11	12	17	29	29	2	41	59
	4	6	7	10	18	27	32	23	77
	5	1	1	3	7	20	68	5	95
	6	0	1	2	5	18	74	3	97
	7	0	0	1	3	13	83	1	99

Bank sizes:

- 1: Total assets < \$ 100 million
- 2: \$ 100 million # Total assets < \$ 300 million
- 3: \$ 300 million # Total assets < \$ 1 billion
- 4: \$ 1 billion # Total assets < \$ 3 billion
- 5: \$ 3 billion # Total assets < \$ 10 billion
- 6: \$ 10 billion # Total assets < \$ 30 billion
- 7: \$ 30 billion # Total assets

Loan sizes\*:

- 1: Loan size < \$ 100,000
- 2: \$ 100,000 # Loan size < \$ 300,000
- 3: \$ 300,000 # Loan size < \$ 1 million
- 4: \$ 1 million # Loan size < \$ 3 million
- 5: \$ 3 million # Loan size < \$ 10 million
- 6: \$ 10 million # Loan size

\*The loan size to which a loan is assigned is the larger of the actual loan amount or the commitment of which the loan is a part.

Note: Loans are commercial and industrial loans greater than \$1,000. Includes advances of funds, takedowns under revolving credit agreements, notes written under credit lines, renewals, bank's portion of loan participation, commercial, industrial, construction, and land development loans. Excludes purchased loans, open-market paper, accounts receivable loans, loans made by international division of bank, and loans made to foreign businesses.

Source: Quarterly Terms of Bank Lending to Business, Federal Reserve Board.

Table 6  
Who Makes Large and Small Loans?  
Distribution of Banks Making Loans for Each Loan Size  
(percent)

		<u>Loan Size</u>						Loans < 1mil	Loans > 1mil
		1	2	3	4	5	6		
Bank Size	1	45	26	14	3	2	0	27	1
	2	23	28	29	13	5	0	26	3
	3	16	20	23	29	17	0	20	8
	4	12	17	21	27	24	12	18	17
	5	3	6	9	17	28	39	7	33
	6	1	2	4	8	16	29	3	23
	7	0	1	1	3	8	20	1	15

Bank sizes:

- 1: Total assets < \$ 100 million
- 2: \$ 100 million # Total assets < \$ 300 million
- 3: \$ 300 million # Total assets < \$ 1 billion
- 4: \$ 1 billion # Total assets < \$ 3 billion
- 5: \$ 3 billion # Total assets < \$ 10 billion
- 6: \$ 10 billion # Total assets < \$ 30 billion
- 7: \$ 30 billion # Total assets

Loan sizes\*:

- 1: Loan size < \$ 100,000
- 2: \$ 100,000 # Loan size < \$ 300,000
- 3: \$ 300,000 # Loan size < \$ 1 million
- 4: \$ 1 million # Loan size < \$ 3 million
- 5: \$ 3 million # Loan size < \$ 10 million
- 6: \$ 10 million # Loan size

\*The loan size to which a loan is assigned is the larger of the actual loan amount or the commitment of which the loan is a part.

Note: Loans are commercial and industrial loans greater than \$1,000. Includes advances of funds, takedowns under revolving credit agreements, notes written under credit lines, renewals, bank's portion of loan participation, commercial, industrial, construction, and land development loans. Excludes purchased loans, open-market paper, accounts receivable loans, loans made by international division of bank, and loans made to foreign businesses.

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