

Small Borrowers and the Survival of the Small Bank: Is Mouse Bank Mighty or Mickey?

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Small banks—those having less than \$1 billion in assets—account for 97 percent of all banks in the United States, but only about 33 percent of banking assets. These small banks are subject to many disadvantages compared with their bigger brethren, who can have more diversified portfolios, make larger loans, benefit from economies of scale in check processing and other automation technology, offer wider branch networks and more diverse services to their customers, and acquire capital more easily on public markets. As a consequence, it's often projected that small banks

will disappear rapidly somewhere in the not-too-distant future.

That future in which larger banks monopolize the U.S. banking system has not arrived, and it appears little, if any, closer than in the past. While the number of small banks has fallen by 1000 or so in the past 30 years, there are still many of them (Table 1). Why haven't small banks disappeared as so many have predicted?

One reason is that small banks appear best able to lend to local small businesses (here "small" businesses are defined as businesses that have less than \$10 million in annual receipts and borrow less than \$3 million from all sources). This is because small banks have the

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TABLE 1

Number of Banks by Asset Size

(Size Categories Adjusted
for Inflation, 1990 \$)

Size	1960	1975	1990
less than \$100 million	12031 (91%)	11809 (82%)	9247 (75%)
\$100 million- 1 billion	1040 (8%)	2327 (16%)	2710 (22%)
\$1 billion- 10 billion	136 (1%)	230 (2%)	326 (3%)
more than \$10 billion	10 (0.1%)	17 (0.1%)	47 (0.4%)

Bank Assets Held by Banks of Different Sizes

(Size Categories Adjusted
for Inflation, assets in billions 1990 \$)

Size	1960	1975	1990
less than \$100 million	269 (25%)	405 (19%)	359 (11%)
\$100 million- 1 billion	270 (25%)	570 (27%)	651 (21%)
\$1 billion- 10 billion	337 (31%)	621 (30%)	1037 (34%)
more than \$10 billion	198 (19%)	490 (24%)	997 (33%)

Data in parentheses are percents of total for each year.
Source: Call Reports

ability to closely monitor these firms, and their tight organizational structures enable them to effectively use the resulting informational advantage.¹ Before we discuss that, however, we look at some of the reasons that small banks have to envy large banks. To do so, we investigate the daydreams and competitive concerns of Ms. M. Mouse, the chief executive officer of Mouse Bank in Cheeseburgh, PA, a bank with roughly \$200 million in assets.

DO LARGE BANKS HAVE ALL THE ADVANTAGES?

First, Ms. Mouse longs to have a more diversified portfolio.² During the recession, Cheeseburgh's chief employer, Cheeseburgh Quarry, laid off a dozen workers and fell behind on its loan repayments, causing her many sleepless nights. If only Mouse Bank were a big

¹Another reason small banks remain numerous is that in general banks have not yet been allowed to branch across state lines. Instead they can cross state lines only as bank holding companies by setting up separate banking subsidiaries. Moreover, as we shall see below, there are some reasons that bank holding companies might prefer small bank subsidiaries to remain independent even when laws permit the subsidiary to become a branch of the main bank. But even if we treat bank holding companies as a single banking organization rather than counting them as separate banks, there is little indication that small banks are rapidly disappearing. See, for example, Boyd and Graham (1991); and Paul Calem's article on geographic deregulation in this issue.

²Diamond (1984) argues that a fully diversified bank, with appropriate use of hedges, could be more or less risk free, even though the individual loans the bank makes are inherently risky. Diamond's theory, which assumes that risk in the bank portfolio is costly, implies that if diversification were the only relevant variable, banks would be as large as possible in order to diversify risk as much as possible. Laderman, Schmidt, and Zimmerman (1991) show that where branching is restricted, banks in rural areas specialize more heavily in agricultural loans and banks in urban areas specialize more heavily in nonagricultural loans, which suggests that branch locations geographically limit lending and portfolio diversification.

bank, she thinks, then when Cheeseburgh was in recession, other borrowers, say in Hong Kong or Atlanta, would be paying on time and keeping the bank's profits steady.

In addition, Mouse Bank's costs of handling a transaction are twice as large as Money Bank's. Tellers are encouraged to chat with customers to encourage good relations, and many customers still have passbook savings accounts, which means that the tellers have to go back and forth to the passbook stamping machine instead of being able to handle all transactions at their stations. Ms. Mouse knows it would be more technologically efficient to turn her check handling over to a big bank that could fully automate the process, but her customers expect a lot of personal service, which would not be practical if the checks were being handled automatically outside of the bank. For example, her good customers expect to be warned when their accounts are close to being overdrawn and to be able to expedite a transfer of funds when special circumstances arise.

The lack of more extensive automation also affects her costs of complying with regulations. If more of Mouse Bank were automated, it would be easier for her to comply with the myriad bank regulations. Her compliance expenditures are substantially greater as a share of assets than those of her larger competitors.³

She wishes she had more branches, too, because she knows that some of her neighbors bank with Everywhere Bank, the super-regional bank that has opened a branch in Cheeseburgh. Everywhere Bank offers branches statewide, which is useful to commuters and to businesses with multiple plants, offices, or stores. As Paul Calem's article on branch banking in the May/June 1993 issue of this *Business Review* points out, branch banks offer customers greater con-

³Thakor and Beltz (1993) present survey evidence that smaller banks pay relatively higher costs to comply with consumer protection regulations.

venience. As a result, depositors are often willing to accept lower interest rates on their accounts at these banks.

She wishes she didn't have to keep her bank's capital level so high. Mouse Bank has \$20 million in equity capital—the bank's original stock issue plus retained profits—for a 10 percent capital-asset ratio. Most of this money belongs to Ms. Mouse, her sister, and her Uncle Rodney, and she would prefer that her family's eggs weren't all in one basket. But she knows that when Cheeseburgh hits hard times, as it has recently, the high capital ratio keeps the bank from losing its best customers. Money Bank and Everywhere Bank have much lower capital ratios, but they can more readily raise additional funds by issuing stock or subordinated debt, since they are publicly traded companies monitored by Moody's and Standard and Poor's bond raters.⁴ If worse came to worst, Money Bank and Everywhere Bank could force shareholders to add to the banks' capital by making rights offerings.⁵ She couldn't do the same thing with Mouse Bank, since she knows that her family couldn't raise much extra cash.

⁴It is well known that small banks have higher capital-asset ratios than large banks. See, for example, evidence in Boyd and Graham (1991). One reason for this is that obtaining new outside capital is more expensive for small banks should they have losses. For example, obtaining a bond rating, which enables a borrower to more easily get outside capital, involves a minimum cost of thousands of dollars above and beyond interest payments and fees. These payments and fees are proportionately less for a large bank than for a small bank. Thus, small banks like to have larger capital cushions against losses.

⁵Bank public debt issue is called subordinated debt because it has a lesser claim on bank assets than do checking and savings deposits. In a rights offering, shareholders are given the right to buy additional shares at a price below the market value. The rights offering results in a dilution of stock value, as old shares become worth less than they were. In general, all shareholders will exercise their rights, as any shareholder who doesn't will suffer the dilution without recompense.

Finally, if Mouse Bank were a bigger bank it could make larger loans. In general, commercial banks are not permitted to make loans to a single entity that represent more than 10 percent of capital. When Cheeseburgh Quarry wanted to borrow \$4 million to invest in a new gravel loading system, Mouse Bank had to refer the loan to Money Bank, Mouse Bank's correspondent in Philadelphia, because making the loan would have meant exceeding Mouse Bank's \$2 million ceiling on loans to a single borrower.⁶ Loan limits exist, in part, to ensure that banks have diversified portfolios, and it may well be to Mouse Bank's advantage that it couldn't lend more to Cheeseburgh Quarry. But Mouse Bank remains limited in the choice of loans it can make on its own, compared to a larger bank, and may well be prevented from making some large loans that offer good returns and actually reduce risk.

One factor that does work in her favor is deposit insurance. Because of deposit insurance, depositors with less than \$100,000 are fully insured. As a result, her depositors can be as confident about the safety of their deposits as the depositors at Money Bank and Everywhere Bank, despite the fact that more current information about the larger banks is available, since their credit standing is reviewed by bond rating services. Deposit insurance is crucial to her bank's existence.

A second advantage is that Mouse Bank pays less interest because its deposits are in checking and small savings accounts; Money Bank pays more interest because it funds loans with large time deposits in competition with nonbank financial institutions. Thus operating costs per dollar of deposit decrease with bank size, but total cost, including interest payments,

is more or less flat, as lower operating costs at larger banks are offset by higher interest costs.

With deposit insurance and lower interest expense, and despite some disadvantages, Mouse Bank earns a higher return on assets, and just as high a return on equity, as do Money Bank and Everywhere Bank. So while Ms. Mouse is usually fairly modest about her own abilities, she often wonders whether she might do better than Money Bank and Everywhere Bank if she were running a larger bank.

Academic research suggests that she probably would not, for small banks are recurrently found to outperform large banks. The average bank with assets below \$1 billion had superior returns compared with banks with assets above \$1 billion (Table 2).

TABLE 2

Profitability of U.S. Banks
Return on Assets and Return on Equity
(percent)

Size	Period		
	1980-83	1984-87	1988-90
less than \$25 million	1.01 10.7	.86 9.0	n.a. n.a.
\$25 million-100 million	1.07* 13.0*	1.02* 12.3	.72 8.2
\$100 million-1 billion	.88 12.4	.98 13.9*	.82* 10.9*
more than \$1 billion	.54 12.5	.69 8.8	.54 10.0

⁶In a correspondent banking relationship a larger bank performs a variety of services for a smaller bank, including payment, credit, and advisory, and the smaller bank maintains a deposit balance at the larger bank.

Data are taken from Boyd and Graham (1991).
*Best for this time period and profitability measure.

SMALL BANKS HAVE INFORMATION ADVANTAGES

Perhaps this profit advantage arises from the fact that small-bank presidents like Ms. Mouse know more about what is going on in their towns than anyone else—partly because customers seeking loans reveal a lot of information to the loan officers and partly because Mouse Bank is able to make effective use of this information and of the information inherent in checking and savings account activities of the bank's local customers. Consequently, Ms. Mouse knows who's saving money and who isn't and which businesses are making money and how much.⁷ For example, when Loan Officer Katt at Mouse Bank hears a rumor that Harvest Drug may be in trouble, he can check Harvest Drug's checking account to see if Harvest Drug's sales receipts have fallen off. If so, Mr. Katt can set up informal or, if need be, formal meetings with the store's management to review the store's loans.

Looking at Harvest Drug's bank accounts not only allows Mr. Katt to quietly check up on how the business is doing, but it's also extremely useful in helping Mr. Katt get accurate information from Mr. Harvest. Mr. Harvest knows that Mr. Katt has access to a lot of confidential financial information, both about Mr. Harvest and about other businesses in the town and the surrounding area—so Mr. Harvest is always aware that Mr. Katt would easily catch any lie. A similar line of reasoning ensures that when Mr. Katt talks to Ms. Mouse about how his loan portfolio is doing, he is always frank—Ms. Mouse has a legendary knowledge of Cheeseburgh business. In turn, this allows Ms. Mouse to extend to her loan officers much greater freedom than large branch banks like Everywhere Bank and large money center banks like Money Bank can extend to theirs.⁸

Ms. Mouse knows that a nonbank lender would not have access to the kind of day-to-day information she and her officers can extract from checking and savings accounts. So she doesn't worry about direct competition from nonbanks.

She also doesn't worry about Money Bank, which has an extensive branch network in Philadelphia and its nearby suburbs, but does not have a branch in Cheeseburgh. It lends to large commercial borrowers. Because Money Bank lacks deposit relationships with Cheeseburgh businesses, Ms. Mouse knows that it can't evaluate them nearly as well as her bank can.

On the other hand, Everywhere Bank's branch in Cheeseburgh is very much on Ms. Mouse's mind. Everywhere Bank offers something Ms. Mouse can't: branches located across the state and affiliates outside the state. As a consequence, Mouse Bank has lost some customers Ms. Mouse would very much like to have: active business leaders who make use of Everywhere Bank's extensive branch network. Moreover, it seems likely to Ms. Mouse that sooner or later Everywhere Bank will be allowed to consolidate its regional banking system into a single bank with interstate branches.

But these advantages are offset by the way Everywhere Bank tends to make small loans. If a loan doesn't quite fall within their strict guidelines, the loan officer has to request an exception; and when an exception fails, the loan officer gets in very hot water. As a result, the Cheeseburgh branch of Everywhere Bank has only a small share of the town's loan business, and Ms. Mouse feels that Everywhere Bank does not seriously threaten her bread-and-butter small loan business.

⁸Technically speaking, Mouse Bank is better at delegated monitoring than is a larger bank. In Diamond's theory (1984) banks possess "inside" (that is, nonpublic) information about lenders. To Diamond's theory we have to append a notion that monitoring of loan officers within the bank becomes more difficult as the bank becomes larger.

⁷See Nakamura (1990) for evidence.

So when Ms. Mouse thinks about the wider scheme of things, she realizes that her bank has every reason to thrive. Mouse Bank earns a higher return on lending because Ms. Mouse has better information, and she has better information in part because she has access to confidential information from the checking accounts at her bank and in part because of her long history of lending in Cheeseburgh. Because Mouse Bank is so respected as the business leader in Cheeseburgh, new firms come to it for advice. As old customers retire and businesses grow large or fail, Mouse Bank continues to attract most of the new commercial accounts in Cheeseburgh, and thus keeps gaining access to new information about new businesses in the area.

While Ms. Mouse considers expanding into neighboring towns, she will satisfy her desire for wider horizons gradually in order to maintain the informational advantage she has built up in banking in Cheeseburgh and the surrounding area. From the perspective of the student of banking, Ms. Mouse is right to be cautious. (See *Small Bank Holding Companies: The Best of Both Worlds?*)

INFORMATION AND MONITORING: MODERN BANKING THEORY

Much recent work in the theory of banking focuses on how banks use information in lending. One theory focuses on the edge that banks have as lenders because they can look at borrowers' checking accounts (Nakamura 1990, 1993a,b). This information is most valuable with small commercial loans. The second stage of the argument is that large banks are not good at making small commercial loans because they lack the flexibility and good internal information flows found at smaller banks. Thus small banks do have a strength in small commercial lending, which offsets the various advantages that larger banks have.

A foundation stone of this theory is that borrowers do not always have the right incentives to repay loans (Nakamura, 1991). Any ongoing firm makes commitments to several parties: for example, lenders, landlords, customers, suppliers, and employees. When a firm gets into trouble and income dries up, the firm is forced to renege on its promises to at least some of these parties. Who gets paid will depend on the power any given party has to

Small Bank Holding Companies: The Best of Both Worlds?

Is there some way to combine the strengths of the small bank in lending with some of the advantages of size available to large banks, such as their ability to diversify, obtain capital, and automate? One approach would be to create a network of largely independent banks that were subsidiaries of a large bank holding company. Indeed, some bank holding companies have attained much of their growth by trying to provide as much independence in traditional bank lending as possible to the small banks that they have acquired, while gaining the capital funding advantages and other economies of scale associated with a large network of banks.^a For example, some of these holding companies see informational gains to maintaining a local board of directors at small bank subsidiaries, gains that would be lost if the small banks were amalgamated as branches of one large bank, even though amalgamation would reduce administrative costs. Yet the holding company form implies some degree of loss of control for the small bank subsidiary. Decisions at headquarters, based on overall company strategic considerations, may contravene what would be preferred by the individual subsidiary. As a consequence most small banks have remained independent.

^a See, for example, the Harvard Business School case entitled, "Banc One Corporation, 1989."

enforce payment.⁹ Employees may leave a firm if wages are not paid promptly, for example. A supplier may stop supplying materials until previous shipments are paid for. A landlord may evict a tenant for failing to make lease payments. When a loan is guaranteed by collateral, the lender may be able to seize the collateral. Otherwise a lender's only real line of defense is to closely monitor the borrower and threaten to deny future loans or force bankruptcy, threats that are potent only as long as the borrower has some possibility of returning to a sound footing and so wants to avoid the consequences of having these threats carried out.

In *collateralized lending*, the borrower promises to give up a valuable asset if he or she defaults on loan payments. The classic examples of collateralized loans are mortgages and auto loans. If a borrower defaults, the lender can seize the house or auto and resell it. And because the lender has recourse to the collateral, the borrower has a strong incentive to repay the loan in full. As Jeffrey Lacker (1991) points out, for collateralized lending to work well, the property must be more valuable to the borrower than the amount borrowed. The collateral then becomes a way to enforce payment because the borrower loses more by giving up the collateral than by refusing to repay the loan.

In *monitored lending*, the lender must closely watch the borrower's financial condition. If it begins to deteriorate, the lender must step in actively and defend its own interest by threatening to refuse future loans or force bankruptcy. This means that the lender must be vigilant and must have access to as much infor-

mation as possible about the financial condition of the borrower.

Monitored lending is what banks do better than nonbanks because banks are better able than other potential lenders to obtain information about the financial condition of borrowers. In collateralized lending, the lender must watch the value of the collateral, but generally the economic status of the borrower is of less concern. As a consequence, banks compete only with other banks for monitored lending, but they must compete with many nonbanks (like finance and mortgage companies) for collateralized lending.¹⁰

One reason why banks, large and small, may have an intrinsic advantage as monitoring lenders compared with other financial intermediaries is that the access to borrowers' transactions obtained through their checking accounts gives banks additional ability to monitor loans. This gives institutions legally permitted to issue checking accounts a unique edge. The direct deposit of paychecks into a bank account gives a bank a current record of employment and income.¹¹ The ongoing deposit history that banks have of the businesses they lend to gives them a unique ability to monitor sales.¹² Checking account information can be used to enforce covenants in a timely manner, and banks are better able to administer loan workouts outside of bankruptcy as a consequence.¹³

¹⁰See Nakamura (1993b) for a further discussion of the difference between collateralized and monitored lending. Lacker (1990,1991) discusses collateralized lending and Diamond (1984) discusses monitored lending.

¹¹Black (1975) proposed that when households borrow from banks, their checking accounts provide useful information in assessing the riskiness of loans to the households.

¹²Fama (1985) extended Black's argument to business lending.

¹³Nakamura (1990) presents evidence from bank loan manuals as well as theory.

⁹Sentiment, the degree of relationship and obligation felt by the parties, also may play a role. Unless a bank has an unusually close relationship with a borrower, parties with more regular contact with the borrower (employees, for example) are likely to have more powerful sentimental ties than loan officers.

Checking accounts should be of most value for monitoring small businesses.¹⁴ The main checking account of a small single-location business provides readily accessible information that the lender can easily interpret. By contrast, large multilocation businesses in the United States typically use multiple accounts at a number of different banks.¹⁵ As a result, no one bank has a clear view of the detailed activity of the multilocation business. Moreover, the complicated character of the financial transactions of a large business makes it very difficult for any lender to interpret all the information in its transactions.

In a related vein, when a small bank does business within a community of depositors who transact frequently with one another, checking and savings accounts can provide information about local economic conditions that may not be available in a timely fashion from any other source. This information is most valuable, again, in lending to small businesses with primarily local customers.

Not only do small banks have an informational advantage, their loan officers are able to make better use of such information than are loan officers at large banks. For example, loans at many large banks are reviewed using standardized, objective criteria that do not bring into consideration all the special information that may be available to a loan officer.¹⁶ This

objective review is necessary because, otherwise, loan officers at large banks may be tempted to abuse their lending powers. For example, a loan officer at a large bank might find it easier to conceal a loan that has gone bad because the large bank's senior management has much more in its purview and can't follow loans as closely. From the loan officer's perspective, taking steps against a troubled loan could be a double-edged sword. Doing so might save the loan, but it would also be an admission that the borrower has gotten into trouble and, perhaps, that the loan shouldn't have been made in the first place. This loan officer might be tempted to ignore the first signs of trouble with a loan and hope that nothing happens until the loan officer is transferred to a better position. Then, whoever takes over the loan may be unable to show that the loan was bad to begin with. This situation is less likely to happen at small banks because the senior management is closer to the loans and can more easily assign blame for loan losses.¹⁷

This theory suggests that large banks may cope with their decreased capacity for monitoring their loan officers by having each officer use more rigid criteria to make loans, on average. Large banks also appear to have their loan officers make fewer but larger loans on average. This may reflect differences in the ability to use information, as these larger loans are made to large borrowers about whom more public information is available, and the small number of loans is easier to supervise.¹⁸

¹⁴See Nakamura (1993a,b) for this viewpoint.

¹⁵A survey of large corporations in 1971 found that of 161 corporations, 59 had dealings with more than 100 banks and a majority had relationships with more than 50 (Conference Board, 1971). Only eight had relationships with fewer than 10 banks. Subsequent studies and anecdotal evidence confirm that these multiple relationships are ongoing. In recent Congressional testimony, for example, an Occidental Petroleum manager said that the company used 43 financial institutions in its banking business.

¹⁶Udell (1989) discusses the formal loan review as a means for monitoring loan officer performance.

¹⁷I make this argument in Nakamura (1993a,b). See McAfee and McMillan (1989) for a discussion of the difficulties that hierarchies encounter in monitoring. Mester (1991) applies this idea to mutual savings and loans.

¹⁸Data from the Federal Reserve's Functional Cost Analysis show that among small banks reporting in the survey, loan officers at larger banks handle fewer loans. Anecdotal evidence suggests that this finding applies as well to large banks.

In practice, large and small banks do tend to specialize in loans of different sizes as this theory suggests. In 1988, for example, banks with assets less than \$1 billion made three-fourths of all bank loans smaller than \$1 million, while banks with assets more than \$1 billion made nine-tenths of all bank loans larger than \$1 million (Table 3).

The fact that a small bank possesses special “inside” information about its loans gives it an advantage in making small loans. But sometimes its reliance on that information can be a

drawback. Recent banking theory explores the negative side, too. It’s easy for “outsiders” who lack this special information to become nervous about whether the loans are, in fact, going to be good and that makes the loans illiquid.¹⁹ No one would buy small loans from a small bank that faced a temporary liquidity problem because the buyer couldn’t tell for sure if the

¹⁹See Gorton and Haubrich (1991) for a discussion of the market for loan sales, which is mostly restricted to large loans made by large banks.

TABLE 3

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

Bank Size* (Assets)	Share of Small Loans Loans < \$1 mil	Share of Large Loans Loans > \$1 mil
less than \$100 million	27	1
\$100 to \$300 million	26	3
\$300 million to \$1 billion	20	8
\$1 to \$3 billion	18	17
\$3 to \$10 billion	7	33
\$10 to \$30 billion	3	23
\$30 billion +	1	15

*The table shows 1988 data to avoid distortions that might result from the 1989-90 downturn. 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. Totals may not add to 100 percent due to rounding.

Note: Loans are commercial and industrial loans greater than \$1000. 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.

loans were good ones. Large loans at large banks are less troubled by (but not free of) this problem because more public information is available about the borrowers. As a consequence, a rumor that a small bank is in trouble could easily be self-confirming, leading to a run on deposits that the bank could not meet because even the good loans the bank has made could be sold only at a substantial loss. That is why small banks typically have high capital-to-asset ratios and also why deposit insurance is particularly crucial for small banks: by assuring depositors that their money is safe, a high capital-to-asset ratio and deposit insurance relieve the small bank of the risk of failure caused by a bank run.

SMALL BANKS' EARNINGS COMPARED TO LARGE BANKS'

Even when banks specialize in the size of loans they seem best suited to make—that is, small banks making small loans and large banks, large ones—small banks appear to be doing better. The data show that banks with less than \$1 billion in assets earn higher interest income per dollar of assets than larger banks (Table 4). This accords with evidence (in Table 2) 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. However, the smallest banks—those with assets of less than \$25 million—generally do not earn the highest net returns because their noninterest costs tend to be higher than those of larger banks.

Why don't large banks do as well at lending to large firms as small banks do at lending to small firms? One reason could be that small banks are better monitors than large banks, even for the loans large banks are best suited to make.

But another reason is that small banks have the advantage of less competition. Timothy Hannan (1991) provides evidence that small loans pay higher interest rates in concentrated banking markets, but the evidence on large loans is inconclusive. This suggests that greater returns are likely to be derived from small loans than from large loans. Many small banks, like Mouse Bank, have an informational advantage in their home markets that comes from their deposit business. Small banks need fear competition in small business lending only from other local banks, because only other local banks can offer deposit accounts to their customers. A bank with branches an hour's drive from Cheeseburgh is simply not a competitive threat to Mouse Bank because Cheeseburgh business owners are not willing to do their banking that far away.²⁰ By contrast, the deposit business of large banks, such as Money Bank and Everywhere Bank, does not give them as big of an advantage in lending. Money Bank's large business customers can go to banks headquartered in San Francisco or Chicago for loans. So small banks more often have market niches in which competition is limited, and as argued by Paul Calem in this issue, these market niches will probably survive interstate branching.

One concern is that small banks may be earning higher returns because they may be riskier than large banks. Since deposit insurance makes risk-taking cheaper, greater risk would result in higher returns to the bank's owners at the potential expense of higher losses to the deposit insurance fund.²¹ But this doesn't

²⁰Elliehausen and Wolken (1990) document that almost all small businesses obtain their checking services from a bank or thrift located within 12 miles of the firm.

²¹Until 1993, banks with riskier portfolios paid the same deposit insurance premiums as other banks. When this is true, much of the cost of the greater downside risk is absorbed by the deposit insurer, while the greater upside risk

TABLE 4

Interest Income as Percent of Assets**(Adjusted for Loan Losses and Taxes)**

Size of Bank in Dollars

Date	Less Than 100 Million	100 Million to 1 Billion	1 Billion to 10 Billion	Greater than 10 Billion
1984	9.52	9.43	8.88	9.12
1985	8.80	8.65	7.97	7.95
1986	7.81	7.60	7.00	6.85
1987	7.50	7.43	6.84	6.06
1988	7.74	7.76	7.47	7.62
1989	8.36	8.45	8.17	8.01
1990	8.31	8.26	7.76	8.09
1991	7.99	7.68	6.93	6.84
1992	7.09	6.53	5.88	5.69
1993	6.18	5.94	5.38	5.28
AVERAGE	7.93	7.77	7.23	7.15

Source: Call Reports

seem to be the case, since small banks fail no more often than large banks.²²

Overall, the data suggest that small banks have less competition as lenders and are better able to use their knowledge to make profitable loans. One of the ongoing challenges for any thriving bank is to continue to provide quality service to small businesses as the bank increases in size.

The natural process of growth that any business undergoes is, for small banks, clearly double-edged. As a bank ages, its best custom-

benefits the bank's equity holders. Since the beginning of 1993, the riskier banks pay more for deposit insurance, but most analysts believe that the spread between the highest and lowest premium rate is too small, so that deposit insurance still provides an implicit subsidy to riskier banks.

²²See Boyd and Runkle (1993).

ers also grow—and, in the process, become less profitable to the bank as their funding options expand. The growing bank must keep on its toes to continue to attract risky new borrowers who, troublesome as they are, may ultimately be its best hope for a profitable future.

CONCLUSION

As long as the deposit insurance system remains in place, it appears likely that small banks will play an important role in the U.S. economy. A central role of small banks is providing funds to small businesses. Small banks are able to efficiently provide funds to small businesses because they can use the information derived from checking accounts to monitor loans. Also, the small bank has short managerial lines of command and communication, which permits it to use information effectively.

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ANNOUNCEMENT:

Information and Screening in Real Estate Finance: A Special Issue of the *Journal of Real Estate Finance and Economics*

Co-sponsored by the Federal Reserve Bank of Philadelphia

The issue of racial discrimination in mortgage lending has recently received widespread publicity. A central paradox for researchers, policymakers, and the public is how such discrimination can persist when nationwide mortgage banking firms can readily enter local mortgage markets and when laws such as the Fair Housing Act and the Community Reinvestment Act have been written to prevent discrimination. On March 3-4, 1994, the Federal Reserve Bank of Philadelphia and the *Journal of Real Estate Finance and Economics* co-sponsored a research conference at the Bank on "Information and Screening in Real Estate Finance." Six research papers were presented and discussed, and five groups of investigators presented reports on current research.

The November 1994 issue of the *Journal of Real Estate Finance and Economics* includes an introduction to information issues in real estate finance by Leonard Nakamura and William Lang and the papers presented at the conference: "List Price Signaling and Buyer Behavior

in the Housing Market," John Knight, C.F. Sirmans, and Geoffrey Turnbull; "Bias in Estimates of Discrimination and Default in Mortgage Lending: The Effects of Simultaneity and Self-Selection," Anthony Yezer, Robert Phillips, and Robert Trost; "Borrower and Neighborhood Racial and Income Characteristics and Financial Institution Mortgage Application Screening," Michael Schill and Susan Wachter; "Performance of Residential Mortgages in Low- and Moderate-Income Neighborhoods," Edwin Mills and Luan' Sende Lubuele; "Race, Redlining, and Residential Mortgage Loan Performance," James Berkovec, Glenn Canner, Stuart Gabriel, and Timothy Hannan; and "Wimp or Tough Guy: Sequential Default Risk and Signaling with Mortgages," Timothy Riddiough and Steve Wyatt.

The discussants at the conference, whose comments are also published in the issue, were Chester Spatt, Jan Brueckner, Loretta Mester, John Duca, Dennis Capozza, and Daniel Quan.