THE EFFECTS OF INTERSTATE BANKING ON SMALL BUSINESS LENDING

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The findings and recommendations stated in this report are those of the author and do not necessarily represent the positions and policies of the U.S. Small Business Administration.

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EXECUTIVE SUMMARY

This study investigates how bank acquisitions influence the willingness of a banking organization to lend to small businesses. The concern that bank consolidation may reduce credit availability to small businesses is related to several factors. First, during the period since bank loan data were first reported by loan size, a period with significant bank consolidation, bank holdings of large business loans have grown more rapidly than small business loans. Second, small business loans have grown more rapidly at small than at large banks. Third, the portfolio share of small business loans tends to be inversely related to the size of institution.

Most of the data for this study are taken from two sources, the Consolidated Reports of Condition and Income (Call Reports) and the National Information Center (NIC) data base. Bank balance sheet and income statement information, as well as some bank structure information, is taken from the Call Reports. The NIC structure file is the primary source for the identification and dating of mergers, acquisitions, bank failures, and de novo bank entry. Data are checked for inconsistencies with respect to the classification and timing of structure changes, with any errors corrected as necessary.

The bank sample includes all FDIC-insured commercial and state-chartered savings banks in the United States for which complete data are available. The data set is organized by bank observations and by the two subperiods between the three Call Reports containing the small business loan survey data: June 1993, June 1994, and June 1995. These surveys report small business loan data in three size categories: loans $100,000 or less, loans more than $100,000 through $250,000, and loans more than $250,000 through $1 million. In order to minimize problems with reporting errors, this study uses only the $250,000 or less and $1 million or less loan categories as the definitions of small business loans.

The statistical estimation is based on a specification that attempts to explain the growth in a bank's small business loan portfolio, controlling for bank-specific characteristics, regional banking market characteristics, and regional economic activity. By including banks that made no merger acquisitions, banks with a change in ownership, and banks that did make merger acquisitions during the subperiod in the same equation, one can test for differences in the growth in small business loan portfolios across these bank categories.

The primary findings of the study are:

A. Tendencies

- The bulk of the shrinkage in the number of banks has occurred among the smaller banks
- De novo entry has offset little of this consolidation
- The shrinkage in the number of banks has occurred across most Federal Reserve Districts
- No simple pattern exists between the degree of shrinkage and the share of small banks in a district
- The most prevalent type of merger involves the combination of two (or more) small banks
- In roughly half the mergers, the acquirer has a small business loan portfolio share greater than that of the target
- In approximately one-half the mergers, the surviving bank increased its holdings of small business loans during the period immediately following the merger

B. Results from statistical estimation

1. Change in Ownership without merger

The implications of a change in ownership for small business lending seems to be sensitive to the relative degree of small business lending specialization of the acquired bank. If the bank was quite involved in the small business loan market prior to the change in ownership, the effect is likely to be detrimental to credit availability to its small business loan customers.

2. Bank mergers

The degree to which the acquirer bank was committed to small business lending prior to the merger, as well as the acquirer's size, is an important determinant of the willingness of the surviving bank to lend to small businesses subsequent to the merger. The evidence for merger acquisitions is consistent with a preferred habitat hypothesis in which banks seek to partially offset any merger-related shock to their small business loan portfolio share subsequent to a merger in order to reestablish their preferred degree of specialization in small business lending.

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I. Introduction

Over the past ten years, the banking industry has experienced significant shrinkage, with the number of commercial and savings banks declining by nearly 30 percent from the end of 1985 to the end of 1995. With the recent adoption of the Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994, the movement towards nationwide banking should accelerate the ongoing consolidation in the banking industry. The primary benefit of this legislation will be the amelioration of the local effects on credit availability of regional or sector-specific shocks to bank capital, as bank consolidation leads to increased geographic diversification by banks. However, the increased concentration of banking assets could also introduce potential problems for the longer term. A major public policy concern stemming from the significant consolidation in the banking industry is what, if any, impact it will have on the availability of loans to small businesses.

Following the recent period of rapid bank consolidation, several studies have raised concerns that such consolidation may reduce credit availability to small businesses. The perception that large banks, made large in part by acquisitions, will not be responsive to the needs of small businesses is related to several factors. First, during the period since bank loan data were first reported by loan size in the June 1993 Call Reports, a period with significant bank consolidation, bank holdings of large business loans have grown more rapidly than small business

loans. Second, small business loans have grown more rapidly at small than at large banks. Third, the portfolio share of small business loans relative to total assets tends to be inversely related to the size of institution, measured by total assets. While none of these factors provides a direct link between bank mergers and reductions in small business lending, they are sufficiently suggestive to require further investigation.

The weaker growth in smaller-sized business loans could be attributed to many factors. For example, it could reflect the stage of the business cycle, insofar as the timing or magnitude of fluctuations in economic activity over the business cycle differs for small firms compared to larger firms. Similarly, the data could reflect a pattern of weaker economic growth in regions or sectors of the economy dominated by small businesses during this particular time period. On the other hand, this period also coincides with radical changes transforming the banking industry. In particular, because the degree to which banks tend to participate in the market for small business loans may differ by bank size, the consolidation in the banking industry also may play an important role.

Much of the concern about the consolidation effects on bank lending arises because small business borrowers traditionally have relied on banks to satisfy their credit needs. While large borrowers increasingly gain direct access to national credit markets by issuing commercial paper and bonds, small business borrowers continue to be bank dependent. Because small

businesses traditionally have relied on small banks to provide a significant amount of their financing, these borrowers are particularly sensitive to changes in the structure of the banking industry.

As the banking sector consolidates through purchases of many of the smaller banks, the impact of limitations on borrower concentration, which have guaranteed that the business lending of small banks would be specialized in small business loans, will be mitigated. As larger banks that are not constrained by borrower concentration lending limits purchase small and medium-sized banks with large portfolio shares of small business loans, the availability of small business loans may become threatened.

On the other hand, since small business lenders have accumulated a stock of private information about their small business customers, small business lending could be a profitable line of business for an acquiring bank, even if it is not currently an area of emphasis. If this is so, we may have little to fear regarding reduced credit availability to small businesses. However, if the information is not easily transferred, or if small business loans are uneconomical given the overhead costs of many larger institutions, over time the acquirer may jettison this acquired line of business. It remains an open question how readily other existing banks or de novo banks would fill the consequent void. In addition, it is possible that other sources of credit to small businesses will become available if bank consolidation leads to a reduction in

small business credit availability. However, it is likely that, at the very least, there will be transitional problems.

Recent research on the impact of bank mergers on small business lending has produced mixed results. While some studies have found that small business loans tend to decrease following an acquisition, others have found no relation between bank mergers and the volume of small business lending. This study investigates how acquisitions influence the willingness of a banking organization to lend to small businesses. By relying on a comprehensive data base that includes all commercial and savings banks that acquired other such banks, as well as a control group that includes all commercial and savings banks that made no acquisitions during the same time period, and by controlling for differences in geographic location, local economic conditions, and bank-specific characteristics, the analysis should be able to isolate the effects of bank acquisitions from other factors that might impact small business lending by banks.

While bank size is inversely related to the portfolio share of a bank's small business lending, this study finds that the degree to which the acquirer bank was committed to small business lending prior to the merger, as well as the acquirer's size, is an important determinant of the willingness of the surviving bank to lend to small businesses subsequent to the merger. While much of the public attention has focused on large banks with little interest in small business lending acquiring smaller banks that

tend to be much more specialized in small business lending, the most prevalent type of merger involves the combination of two (or more) small banks. Furthermore, in roughly half the mergers, the acquirer has a small business loan portfolio share greater than that of the target. Thus, one should not automatically conclude that acquisitions will necessarily reduce bank credit to small businesses. In approximately one-half the mergers, the surviving bank increased its holdings of small business loans during the period immediately following the merger. However, this is more likely to occur if the acquirer has a greater portfolio share of small business loans than the target, as the acquirer bank alters its small business loan portfolio share to reestablish a portfolio share closer to its premerger value.

Because small banks are limited by borrower concentration limits from making large loans, mergers of small banks should relax this constraint and enable the surviving bank to make larger loans. Even so, the merger of two (or more) small banks often results in additional small business lending. This is particularly true if the acquirer was relatively active in the small business lending market prior to the merger.

II. Overview of Bank Mergers

Even before the Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994, many individual states had eased restrictions on interstate (as well as intrastate) banking. The resulting merger and acquisition activity stimulated a number of

studies on the effects of bank consolidation. These studies compared the lending behavior of banks affiliated with multibank holding companies and those that were not, and for those so affiliated, compared the behavior of those in the same state as the headquarters with those outside the state. However, most such studies have limited relevance for specific questions regarding small business lending, being restricted to Call Report data on total loans. Only since 1993:II have data on small business loans been included in the Call Reports.

Alternatively, studies using survey data have provided relevant evidence, for example finding that larger banks or multi-office banks tend to be less involved in small business lending (for example, Nakamura 1994; Leeth, Scott, and Dunkelberg 1987). In addition, Berger, Kashyap and Scalise (1995), using primarily data from the Survey of Terms of Bank Lending, provide evidence directly related to the bank consolidation issue, predicting further contractions in small business lending by banks as a result of the consolidation. Unfortunately, it is often difficult to generalize based on survey data that are typically specialized or quite limited in scope, especially compared to results based on the entire portfolio of bank assets for all banks in the country.

More recently, studies using the small business loan data in the Call Reports have begun to appear. A number of these studies (for example, Berger and Udell 1996; Keeton 1995; Peek and Rosengren 1995) find evidence that, in fact, small businesses are

likely to suffer from reduced bank credit availability as the banking sector consolidates. On the other hand, Whalen (1995) finds little difference between subsidiaries of out-of-state holding companies compared to independent banks or banks affiliated with in-state holding companies, although this does not directly test for the effect of a change in structure (a change in ownership or a merger) on small business loans.

Strahan and Weston (1996) do explicitly test for the effect of mergers on small business lending and conclude that bank consolidation is unlikely to have an adverse effect on small business credit availability. However, these results may be quite sensitive to the selection of the control group against which behavior is compared. Rather than using the behavior of the set of banks not involved in mergers as the benchmark, they randomly select one nonmerger bank with the same volume of assets to match with each acquirer bank in their sample. Using such a thin control group could make the results susceptible to idiosyncratic characteristics of just a few banks in the control group.

Thus, to date, the evidence is still rather preliminary and suggestive rather than definitive. However, by expanding the sample to include the first three years of the small business survey data and using the entire set of banks not involved in mergers as the control group, the power of the tests using this enhanced data set should be greatly improved. Given the forecasts for the extent of the consolidation (for example, Nolle

1995), the lack of a consensus among initial findings raises issues that should be of concern to policymakers and thus warrants further investigation with a more comprehensive data set that may able to shed more light on some of the outstanding issues.

A. Motivations for Mergers

The combination of technological change, financial market deregulation, the growth of nonbank financial firms, and the increased direct access to capital markets by nonfinancial firms has increased competitive pressures on banks. The relaxation of product and geographical restrictions further contributed to the structural change and evolution of the banking industry that have included a wave of bank consolidation. Given these pressures, many banks hoped to improve their performance and reduce costs through acquisitions. While Cornett and Tehranian (1992) find evidence that merged banks outperform the industry and Whalen (1994) finds evidence that intracompany consolidation produces positive abnormal returns, Pilloff (1996) does not find evidence of merger-related performance improvements or abnormal returns in the aggregate. However, he does find evidence in cross sectional data that suggests that certain bank characteristics may be associated with subsequent performance improvements. While the bulk of the evidence provides little support for the hypothesis that bank mergers produce increased efficiency and profitability (for example, Rhoades 1994; Savage 1993), Hughes, Lang and Mester

(1996) conclude that the relaxation of restrictions on the geographic expansion of banking organizations will likely increase efficiency and profitability.

Alternatively, diversification of earnings (across both products and geographic regions) in order to decrease risk, increasing size to benefit from an implicit "too big to fail" regulatory policy, and increasing market share and market power may motivate mergers, although current evidence indicates these incentives have not been important contributors to the merger wave (for example, Laderman 1995). Still, even if banks are unlikely to benefit greatly from increases in efficiency and profits, the economy in general may benefit. For example, it has been argued that increased interstate branching and banking is likely to increase consumer convenience (Calem 1993) and stimulate economic activity (for example, Jayaratne and Strahan 1995; Krol and Svorny 1996).

Still another possible incentive for banks to merge, one that has received relatively little attention, is the limit on borrower concentration. Both banks' internal guidelines and varying federal and state laws and regulations limit the size of loan that a bank can make to a single borrower, measured relative to the bank's capital. The Office of the Comptroller of the Currency (OCC) limits loans by national banks to a single borrower to no more than 15 percent of the bank's unimpaired capital and surplus, for loans not fully secured by marketable collateral. For fully collateralized loans, the limit is 25

percent. The lending limits for state-chartered banks vary substantially by state, with differences in the lending limit, in the definition of a single borrower, and in the exceptions for fully collateralized loans. Moreover, even though state laws often are more liberal than the requirements for national banks, many banks follow self-imposed limits that are lower than those required by regulators.

The purpose of the lending limits is to ensure that a bank is sufficiently diversified that problems at a few of its major borrowers would not severely impair the bank's capital. While lending limits are a sensible way to prevent lending concentrations that could impair the safety and soundness of a bank, an additional consequence of the lending limits is that they prevent small banks from making large loans. Over the years, the combination of lending limits and regulations that limited mergers and branching created a clientele effect, whereby small banks were forced to focus their business lending on small business loans. In many geographic regions, such a market structure likely would have emerged even in the absence of regulation, because of the prevalence of small businesses that valued personal lending relationships. However, in regions where the demand disproportionately was for larger loans, even a plethora of small banks could do little to satisfy this loan demand.

In any case, we have not yet attained a level of bank consolidation that would produce a shortage of viable lenders to

small business. However, recent evidence does, on balance, suggest that as restrictions on geographical diversification are eliminated, potential problems for small business credit availability will be an important issue. It is possible that other sources of credit to small businesses will become available if bank consolidation leads to a reduction in small business credit availability.[1] However, it is likely that, at the very least, there will be transitional problems.

B. Recent Patterns in Banking Consolidation

The two years for which we have small business loan data have also been years of substantial consolidation in the banking industry. The number of commercial and savings banks operating in the United States has shrunk significantly, from 11,507 institutions in June 1993 to 10,538 institutions in June 1995.[2] The details of the shrinkage are shown in Table 1, which shows the sources of the changes in the number of banks by asset classes. All of the decline in institutions has occurred among those with less than $100 million in assets, which fell from 8113 institutions in June of 1993 to 7062 institutions in June of 1995. In contrast, each of the larger asset classes experienced a net increase in the number of commercial and savings banks over this two-year period.

The reduction in smaller institutions occurred primarily as a result of asset growth pushing banks into larger asset classes (both through internal growth and through acquisitions) and being

the target banks in mergers. Of the 1,051 reduction in institutions with under $100 million in assets, 731 of the institutions disappeared as a result of mergers of nonfailed banks. The bulk of the rest moved to a higher asset class through asset growth (527 institutions), dwarfing the number of institutions entering the class from shrinkage of larger institutions (65) and from new institutions created by de novo entry (86).[3] Because the wave of bank failures had ebbed by the beginning of our sample, failures account for the termination of only 15 banks in this asset class. The "other" category (accounting for an addition of 71 institutions in this asset category) is composed mainly of institutions that shift to or from an Office of Thrift Supervision charter, newly chartered banks formed from one or more other institutions (and, thus, not included in the de novo category), and, in a few instances, institutions that undergo a voluntary liquidation.

In each of the larger asset classes, the major reason for the net increase in the number of banks in the class is asset growth that moves banks into the class from smaller size classes. On the other hand, asset shrinkage accounts for only a small net reduction in the number of banks in these larger size classes. Mergers and asset growth from the class into larger asset classes account for the majority of reductions in the number of banks in a given asset class. However, while 278 of the institutions in the $100 to $300 million asset class are merger targets during this two-year period, mergers account for a total of only 159

terminations among the three largest asset classes. Not surprisingly, de novo entry and charter conversions account for few changes in the number of banks in the asset classes above $300 million.

The top portion of Table 2 shows the patterns of changes in the number of commercial and savings banks during the June 1993 to June 1995 period, disaggregated by Federal Reserve District. Each district experienced a decline in the number of banks. Mergers are the dominant cause of the shrinkage, with de novo entry and the positive net conversions from Office of Thrift Supervision charters doing little to offset the shrinkage.

The lower portion of the table shows the percent shrinkage and the percent of banks acquired through mergers during this two-year period, as well as the shares of banks with assets less than $100 million and less than $300 million, all calculated using the number of banks in June 1993 as the base. While nearly two-thirds of merger targets have assets less than $100 million and about 85 percent have assets less than $300 million (see below), it does not appear that having a large number (or share) of small banks in a district necessarily leads to a higher rate of decline in the number of banks or a higher rate of banks being merged in that district. Among the six districts with more than 1,000 banks (the same set as those having the highest shares of small banks, each with over 90 percent of their banks having assets less than $300 million), only two districts have an above average rate of decline in the number of banks and three have an

above average rate of banks being acquired through mergers.

Thus, no simple pattern across districts emerges with respect to the number of banks or the share of small banks in a district, compared to the degree of shrinkage or the share of banks merged in a district. While criminals may rob banks because "that's where the money is," bank acquisitions through mergers are not occurring disproportionately in the districts where the small banks are. This suggests that there may be an economic rationale for the relatively large numbers (and share) of small banks in particular Federal Reserve Districts, perhaps related to the district having a relatively large number of smaller firms, and thus a larger proportion of loan demand being composed of smaller loans.[4]

The important points here seem to be that during this period, the bulk of the shrinkage has occurred among the smaller banks, that de novo entry has offset little of this consolidation, that the shrinkage in the number of banks has occurred across most Federal Reserve Districts, and that there is no simple pattern between the degree of shrinkage and the share of small banks in a district, with this latter point suggesting that many banks may be (and intend to remain) small banks by choice. Large numbers of quite small banks remain, and a number of studies have concluded that small banks may have little to fear from a wave of bank consolidation (for example, Calem 1994; Moore 1995; Nakamura 1994; Robertson 1995), although the Robertson (1995) prediction that it is the mid-sized rather than

the small banks that are most likely to disappear through bank consolidation is not borne out by our tables for this particular period.

III. Overview of Small Business Lending

A major public policy concern stemming from the significant consolidation in the banking industry is what, if any, impact it will have on the availability of loans to small businesses. Small business borrowers traditionally have relied on banks to satisfy their credit needs. While large borrowers increasingly gain direct access to national credit markets by issuing commercial paper and bonds, small business borrowers continue to be bank dependent. Thus, these borrowers are particularly sensitive to changes in bank regulation or in the structure of the banking industry.

One reason for concern has been that during a period with significant bank consolidation, loans to small businesses have grown less rapidly than loans to large businesses.[5] Table 3 provides the growth rates of domestic business loans held by commercial and savings banks in the United States, categorized by type and size of loan. Because data by size of bank loan are available only since the second quarter of 1993, and then only once per year in the second quarter Call Reports, the table provides growth rates only for two years, 1993:II to 1994:II and 1994:II to 1995:II.[6] In each year, large business loans (defined as commercial and industrial (C&I) loans and nonfarm,

nonresidential (commercial) real estate loans exceeding $1 million in size) grew substantially, with growth rates of 8.64 percent in the year ending in 1994:II and 12.56 percent in the subsequent year.

The growth rate of domestic large business loans at U.S. banks exceeded both the growth in total domestic loans and the growth in their total domestic assets in each of these years. In contrast, domestic small business loans (defined as $1 million or less in size) declined by 0.65 percent in the year ending 1994:II, and grew by 7.31 percent in the year ending 1995:II. Loans $250,000 or less in size exhibit even lower growth rates, shrinking by 11.32 percent in the year ending 1994:II and growing by only 5.63 percent in the year ending 1995:II.

When business loans held by banks are split into C&I loans and commercial real estate loans, it can be seen that the real estate loan component has grown less rapidly than commercial and industrial loans. When these loans are disaggregated by size, this pattern continues to hold for loans larger than $1 million and for loans $250,000 or less. However, for loans $1 million or less, real estate loans grew faster in the year ending 1994:II and the growth rates were essentially identical for C&I and commercial real estate loans for the year ending 1995:II.

The weaker growth in smaller business loans could be attributed to many factors. For example, it could reflect the stage of the business cycle, insofar as the timing or magnitude of fluctuations in economic activity over the business cycle

differs for small firms compared to larger firms. Similarly, the data could reflect a pattern of weaker economic growth in regions and sectors dominated by small businesses during this particular time period. On the other hand, this period also coincides with radical changes transforming the banking industry. In particular, because the degree to which banks tend to participate in the market for small business loans may differ by bank size, the consolidation in the banking industry also may play an important role.

Many small businesses traditionally have relied on small banks to provide a significant amount of their financing. As noted earlier, the limits on borrower concentration have the effect of restricting business lending by small banks primarily to small business loans. As the banking sector consolidates, through purchases of many of the smaller banks, the impact of the limitations on borrower concentration, which have guaranteed that a subset of banks would specialize in small business loans, will be mitigated. As larger banks that are not constrained by borrower concentration lending limits purchase small and medium-sized banks with large portfolio shares of small business loans, they have the option of shedding this line of business. To the extent that the surviving banks choose not to continue the lending relationships with small businesses maintained by the banks that they acquire, the availability of small business loans may become an important public policy issue.

Figure 1 illustrates the changes in the distribution of

loans by bank asset size. For total domestic business loans in 1993:II, banks with $3 billion or more in assets accounted for 59.9 percent of business loans. But by 1995:II, that share had grown to 64.3 percent. In contrast, the shares of total business loans held by banks with less than $500 million in assets declined from 23.1 percent to 20.4 percent during the same period.

This pattern of growing concentration of business lending at the larger institutions is present for small, as well as total, business loans. Between 1993:II and 1995:II, banks with $3 billion or more in assets increased their share of bank business loans under $1 million from 33.3 percent to 34.7 percent and, for loans under $250,000, from 26.0 percent to 30.7 percent. Much of this increase came at the expense of the smaller banks that play a much more important role in the market for smaller loans. Between 1993:II and 1995:II, banks with under $500 million in assets experienced a decline from 46.6 percent to 45.8 percent of the market for bank loans under $1 million and a decline from 57 percent to 52.8 percent of the market for bank loans under $250,000.

An important question concerns the extent to which the declining importance of small banks in providing credit to small businesses is related to a change in the focus of these small banks or to shrinkage in the number of small banks and their share of total bank assets. Figures 2a and 2b highlight the importance of small business lending to small banks. Figure 2a

uses the $1 million threshold to define small loans and Figure 2b uses the lower threshold of $250,000. Figure 2a indicates that for banks with assets less than $300 million, roughly one-sixth of their domestic assets are in small business loans, and, at banks with assets less than $100 million, virtually all of their business loans are for amounts of $1 million or less, consistent with the loan concentration limits that are likely to be binding on most small banks. For larger banks, business loans of $1 million or less account for a smaller percentage of assets and total business lending, with the shares declining sharply as larger asset classes are considered. For example, for banks with $3 billion or more in assets, business loans of $1 million or less account for only about 5 percent of assets and a little over 20 percent of total business loans.

Figure 2b repeats the information in Figure 2a for business loans $250,000 or less. For banks with assets less than $100 million, approximately 13 percent of domestic assets and nearly 80 percent of domestic business loans are $250,000 or less, as of 1993:II. However, as bank size increases, these percentages decline sharply. Even for banks with assets between $100 and $300 million, less than 60 percent of their business loan volume is composed of loans $250,000 or less. For the largest banks, those with assets of $3 billion or more, loans $250,000 or less are only about 10 percent of business loans and 2 percent of total assets.

For the question at hand, however, the interesting

comparison is over time rather than across asset classes. It appears that the reduction in the share of business loans $1 million or less in size held by smaller banks shown in Figure 1 is not due to a decline in the emphasis on small business lending by these banks. Any reduction in the shares of business loans of $1 million or less relative to total business loans at the smaller banks has been minor between 1993:II and 1995:II (and rising slightly as a share of assets). However, Figure 2b does show evidence of declines in the share of loans of $250,000 or less at smaller banks.

The strong correlation between size of institution and the share of business loans that are small is potentially important if it reflects a willingness to engage in small business lending. The extent to which large acquiring banks retain the portfolios of small loans at target banks will be affected by the motivation for the acquisition. Are the acquiring banks most interested in low-cost core deposits, an increased market share, a more balanced geographic coverage of the franchise, or expertise in particular lines of business, including the accumulated stock of private information about small loan customers at these small banks? That is, are acquirers after the asset side or the liability side of the acquired bank's balance sheet, and if the former, the wholesale or retail lines?

Since small business lenders have accumulated a stock of private information about their small business customers, small business lending could be a profitable line of business for an

acquiring bank, even if it is not currently an area of emphasis. If this is so, we may have little to fear regarding reduced credit availability to small businesses. However, if the information is not easily transferred, if small business loans are uneconomical given the overhead costs of many larger institutions, or if small business loans are the focus of small lenders only because of an artificial constraint on loan concentration that is relaxed by the increase in size associated with making an acquisition, over time the (now unconstrained, or at least less constrained) acquirer may jettison this acquired line of business.

Table 4 shows growth rates of domestic assets and loans by bank asset size for each of the two one-year subperiods between the second quarter Call Reports that contain small business loan data. Each category contains only those banks that are in the particular size class at the beginning of the subperiod and are still reporting (in any size class) at the end of the one-year subperiod. By constructing growth rates based on a fixed set of banks, the table avoids the distortions that occur from a comparison of the sum of assets or loans in a bank asset size category at the beginning and end of the period.[7] For example, if one compares total small business loans at banks with assets less than $100 million in 1993:II to total small business loans at banks with less than $100 million in assets in 1994:II, small business loans ($1 million or less) decline by 2.37 percent. However, the data in Table 4 show a 11.73 percent increase. The

difference that arises when one compares period totals for a bank asset size class rather than the totals for a fixed set of banks reflects the absence from the end-of-period total of banks that are acquired or fail during the period, or that grew sufficiently to shift them to a larger asset class. Of course, the end-of-period total would also include the addition of banks that shrank by enough to move them into this asset class. Such distortions would affect all asset classes, although the smaller asset classes would likely be affected most.

One of the most striking results in Table 4 is that the largest banks had a growth rate of only 1.84 percent for business loans of $1 million or less between 1993:II and 1994:II. This occurred even though a number of the largest banks acquired smaller institutions engaged in small business lending during this period. In contrast, banks with assets less than $100 million increased their loans of $1 million or less by 11.73 percent. The pattern is also striking for loans of $250,000 or less. While banks with less than $100 million in assets increased these loans by 1.60 percent, all other bank asset size classes shrank such loans, with the total for all banks shrinking by 7.30 percent.

The bottom panel of Table 4 shows the same information for the second subperiod, 1994:II to 1995:II. Overall, total domestic bank assets grew by 10.07 percent, roughly the same growth rate as in the previous year. However, domestic loan growth was much stronger in the latter period, particularly at

the largest institutions. While banks with assets less than $100 million increased their total loans by 12.33 percent in the first subperiod and 13.81 percent in the second subperiod, banks with more than $3 billion in assets had total loan growth rates of 9.65 percent in the first subperiod and 17.55 percent in the second subperiod. Thus, the increase in loan growth rates from the first to the second subperiod was much sharper at larger banks. While large business loans at banks with more than $3 billion in assets grew more rapidly than their small business loans, nonetheless loans of $1 million or less at these largest banks still grew by 14.97 percent during the second subperiod. Despite this more rapid growth of small business loans at the largest institutions (compared to the first subperiod), the growth rate still lagged the 16.01 percent by banks with assets less than $100 million.

In part, differences in loan growth by size of institution may reflect regional differences in the size composition of banks, as well as in local loan demand. The information contained in Table 5 highlights the differences across Federal Reserve Districts both in the number and size composition of banks and in the volume of large compared to small loans. The total number of banks as well as the percentage of small institutions varies substantially across Federal Reserve Districts. For example, in the Northeast in districts such as Boston (1) and New York (2), banks with assets under $100 million account for less than one-third of the banks. In contrast, in

western districts such as Districts 9 (Minneapolis) and 10 (Kansas City), banks with assets under $100 million account for over 85 percent of the banks in the district.

The middle panel of Table 5 shows that the composition of loans by size also differs greatly across Federal Reserve Districts. For example, loans $1 million or less account for only 25 percent of domestic business loans in District 2 (New York), but account for 71 percent of loans in District 10 (Kansas City). They show similar patterns for the share of business loans $250,000 or less, accounting for only 11.5 percent of loans in District 2, but nearly 50 percent of loans in District 10. Such regional differences in the composition of loans by size and the composition of institutions by asset size class indicate that policies that affect small business lending will also have very uneven effects across geographical regions of the country. In general, larger loans and larger institutions are relatively more prevalent along the coasts and smaller loans and smaller institutions are more prevalent in the interior of the country.

The lower panel in Table 5 shows that the growth rates of business loans from 1993:II to 1995:II have differed greatly across different geographical regions of the country. Loan growth has generally been the weakest in the Northeast, with only Districts 2 (New York) and 3 (Philadelphia) showing declines in total business loans. While District 1 (Boston) had an increase in total loans, it was only for loans greater than $1 million, and, along with New York and Philadelphia, accounted for the only

districts that had declines in business loans with a size of $1 million or less. The districts with the largest increases in total domestic business loans were Districts 5 (Richmond), 10 (Kansas City) and 11 (Dallas). While most of the increases were for loans greater than $1 million, all three districts have a large number of small banks and small loans, and their business loans with a size of $1 million or less grew. However, in every district with positive total business loan growth, large business loans grew more rapidly than small business loans.

IV. Data Sources and Limitations

Most of the data for this study are taken from two sources, the Consolidated Reports of Condition and Income (Call Reports) and the National Information Center (NIC) data base. Bank balance sheet and income statement information, as well as some bank structure information, is taken from the Call Reports. However, the primary source for the bank structure information is the NIC structure file. This includes the information on bank type, mergers, acquisitions, bank failures, and de novo institutions.

A. Bank Selection

The starting point for this study will be the set of all banks that file quarterly Call Reports. This set of banks is then reduced to the sample of all FDIC-insured commercial and state-chartered savings banks in the United States. Thus,

special purpose entities such as private banks, industrial banks, cooperative banks, trust companies, nonbank banks, credit unions, credit card banks, bridge banks, and workout entities are removed.

The data sets used in this study are organized by bank observations and by the two subperiods between the three Call Reports containing the small business loan survey data: June 1993, June 1994, and June 1995. The first subperiod refers to the June 1993 to June 1994 period and the second subperiod refers to the June 1994 to June 1995 period. When a merger of banks occurs, the transaction is viewed from the perspective of the acquirer, not the target, since it is the behavior of the surviving bank subsequent to the merger that is of interest. In addition, in order to compare and evaluate bank behavior during the subperiod, end-of-subperiod data are required, and these data are available only for those institutions that are still reporting as separate entities at that time, that is, the acquirers and not the merger targets. This approach allows acquirer bank behavior to be compared with a large control group (all other banks not making acquisitions during a particular one-year subperiod), so that the results are not particularly sensitive to idiosyncratic characteristics of a few banks.

The set of observations will include banks making no acquisitions, banks that are acquired by a bank holding company but not merged into another institution (a change in ownership), and the surviving banks from acquisitions that do result in

mergers. The number of merger observations will reflect the number of acquirers, not the number of acquired institutions. A bank that acquires three institutions during a subperiod, either at the same time or sequentially, will account for a single observation during that subperiod, since only one of the four banks involved in the mergers, the surviving bank, still reports data as of the end of the subperiod.

This set of banks is further refined to eliminate observations with missing or incomplete data (further details are provided below). In particular, a bank must report both at the beginning of the subperiod and at the end of the subperiod, with the two subperiods defined as June 30, 1993, to June 30, 1994, and June 30, 1994, to June 30, 1995. Thus, a bank may be included in one subperiod but not in the other. Furthermore, for the merger analysis, if a bank acquires one or more institutions that do not file a Call Report or for which only incomplete data can be obtained, the acquiring bank is deleted from the sample, because an accurate comparison of balance sheet data between the beginning and end of the subperiod cannot be made for the consolidated bank. However, in order to limit the number of acquirers that must be deleted from the sample, data will be used for any acquired institution that files a bank Call Report, not just commercial and savings banks, for the construction of the force-merged data for the consolidated banks. That is, if a commercial or savings bank acquires a cooperative bank, the cooperative bank's Call Report data will be used to calculate the

beginning-of-period consolidated bank balance sheet.

B. Identification and Dating of Acquisitions

i. Mergers

Various regulatory authorities use different numbering systems for identifying banks. Thus, two sets of identification numbers can (and do) provide conflicting information regarding the identification of the acquirer and target in some merger transactions. There are cases when two banks, A and B, merge, with the FDIC allocating Bank A's certificate number to the surviving bank and the Federal Reserve allocating Bank B's identification number to the surviving bank. This suggests that the allocation of the "acquirer" label in some instances may not be clear cut. This study uses the Federal Reserve bank identification numbers, although those mergers in which the FDIC and the Federal Reserve numbering systems disagree as to the identity of the surviving entity are flagged.

For merger cases, the file must be as complete as possible and the merger acquisition must be correctly dated. To check the completeness of the NIC transformations file, the list of banks filing Call Reports is compared quarter by quarter. In each quarter, the set of banks no longer filing a Call Report is identified. This set of banks is then compared to the set of banks appearing in the transformations table for that quarter. Any bank no longer reporting but not included in the transformations table is flagged and investigated to determine

the reason for termination to be sure that it was, in fact, not acquired and merged into another institution. In addition, the transformations table entries are checked against the list of terminated banks as a further accuracy check. Any discrepancies are then investigated, with most of the discrepancies (both bank terminations missed by the transformations table and entries in the table for banks not terminated) found to be due to differences in the dating of the event, rather than to the omission of the event from the tables.

The following procedure is used to check inconsistencies in NIC transformation dates. The first check uses information on the last Call Report filed by banks acquired in mergers. The assumption is that the acquisition quarter is the quarter following the date of the last Call Report filed by the acquired bank. This should be the case for the merger acquisition of a nonfailing bank. However, for a failed or failing bank acquisition, the merger target may fail to file its last report. An investigation of a large sample of such cases indicated that a failed bank often does not file its last Call Report if it is acquired during the first month of the quarter following what should be its last filing. On the other hand, if the failed bank is acquired in the second or third month of the quarter, it usually will file that last Call Report. This is consistent with the requirement that a bank file its Call Report within 45 days after the end of the quarter. Unfortunately, this check cannot be done for instances in which the acquired institution does not

file a bank Call Report (for example, a Savings and Loan Association).

The procedure that was used to verify and correct (if necessary) the NIC transformation and merger dates was as follows:

1. All banks that disappeared from the bank Call Reports from one quarter to the next were investigated. Possible reasons for a bank terminating without being the target bank in a merger include a voluntary liquidation, depositor payoff, or a charter conversion causing the bank to become an Office of Thrift Supervision regulated institution. These instances are not relevant to this study. However, if the bank was, in fact, acquired in a merger, NIC was checked to verify that the acquisition was included.

2. For banks acquired in a merger that filed Call Reports, the date of the last Call Report filed was compared with the date of the NIC transformation. If the transformation date was not in the quarter immediately following the last Call Report filed, the transformation was deemed an exception.

3. For failed banks, the NIC date was considered correct if the exception was a situation in which the transformation occurred one quarter late. If the exception was anything other than a one quarter delay, the case was investigated further to determine whether data errors had occurred.

4. For discrepancies among mergers not involving failures, a number of the exceptions can be traced to the timing of the

merger. If the merger date was the first day of a quarter or, in some instance, just very early in the quarter, the transformation often appeared to be one quarter late and entered the list of exceptions. In that case, the date needs to be pushed back to the prior quarter, because the actual consolidation of the Call Report data for the two banks occurred on the last day of the previous quarter. That is, if the target bank last filed a Call Report on March 31, and the NIC date was July 1, it would appear that the data would be consolidated in the Call Report dated September 30. However, in many instances, the data were consolidated in the June 30 Call Report. Therefore, for purposes of this study, the effective date of the merger was recorded as the date of the first consolidated Call Report, even if this predated the formal merger date.

Even after eliminating those merger observations for which data are incomplete, a number of further refinements were necessary. First, a particular problem for affiliate mergers was that when a holding company decided to consolidate its independent banks, it may designate any one of the banks as the surviving bank, with the selection often based on the location or charter type of the designated bank. When the asset size and portfolio compositions (especially with respect to small loans) differed substantially across affiliates, which particular bank was identified as the surviving entity could cause the change in the portfolio shares due to the merger to provide quite different impressions of the effects of the merger. For example, if one of

smaller banks was designated as the acquiring bank, the merger may cause the small business loan share of its portfolio to shrink substantially, while if a larger bank affiliate was the survivor, the merger may increase its small business loan share. Thus, it may be more difficult to obtain precise estimates in the regression analysis below for the set of affiliate mergers compared to the set of nonaffiliate mergers.

Second, if the acquirer was a de novo bank in the early stages of its life or a shell bank set up by a holding company for the purpose of absorbing that holding company's acquisitions, the use of beginning-of-period data for comparison purposes may be uninformative. Since the acquirer was not yet a mature, fully-operational bank, its portfolio composition would not be representative of its desired ratios once the bank was fully operational.

Thus, it is important to identify and eliminate such institutions from the sample of acquirers. The assumption employed was that the set of acquirers should not include de novo banks in the first two years of operations. The identification of de novo banks was complicated by the fact that de novo entry did not account for all of the instances in which a bank entered the set of commercial and savings banks. Charter changes and new entities formed from the acquisition and merger of all or part of existing institutions also accounted for a large number of new commercial and savings banks.

The procedure for identifying de novo banks to be removed

the set of commercial and savings banks to obtain the set of to be used in the analysis was as follows:

1. Identify the set of commercial and savings banks that t file Call Reports two years prior to the start of the two eriods of interest (prior to 1991:II for the 1993:II to :II subperiod and prior to 1992:II for the 1994:II to 1995:II riod).

2. Retain those institutions that had NIC start dates prior pril 1, 1991, and April 1, 1992 (the beginning of the second er). The assumption was that these institutions had gone a change in charter and were not de novo banks.

3. Using the NIC transformation tables, retain those itutions that made an unassisted acquisition on their first of operations. The assumption was that these institutions formed from fully operational institutions and thus did not the characteristics of de novo banks.

4. Using the NIC transformation tables, identify those itutions that made an assisted acquisition on the first day perations. While such institutions were not typical de novo , because much of the loan portfolio of the target bank was by the FDIC, the loan portfolio and loan growth rates atypical during the initial quarters of the bank's ence. Consequently, this set of banks was omitted from the sample to be analyzed.

5. The remaining institutions were potential de novo banks. final check, the assets, loans, deposits and leverage ratios

the initial quarters of the bank's existence were analyzed to ge whether they conformed to the typical pattern of a de novo k. For example, if initial quarter assets were quite large, initial leverage ratio was not particularly high with a sequent decline, or initial loans were not particularly low ative to assets, it was unlikely that the bank was a de novo ity. If a bank did not appear to conform to the de novo bank file, it was investigated further using the FDIC and OCC files determine if a coding error had occurred in the NIC file. If could be determined that the bank was not a de novo (for mple, being composed primarily of assets from a prior existing titution), it was included in the sample of banks to be lyzed.

Many of the shell banks were included in the set of de novo ks. However, it is possible that a holding company might set a shell bank more than two years prior to the acquisition for ch it was formed. To identify such instances, banks with few ets and loans that make large acquisitions were investigated determine whether the banks were, in fact, fully operational titutions prior to the acquisitions.

Change in Ownership with No Merger

Ownership changes that were not associated with bank mergers e also identified. They are of interest because even if a k is left to operate as a separate entity, its behavior may nge as a result of a change in ownership. To identify titutions that have been acquired but left independent, the

lowing steps were taken.

1. Identify all institutions with changes in their bank ding company identifier (BANK9347) from July 1, 1993, to June 1995.

2. Remove those institutions for which the change in 9347 was from zero (indicating no bank holding company filiation) to a single-bank holding company. Presumably, these titutions formed a holding company and were not acquired by ther organization.

3. Remove institutions for which the change in BANK9347 was zero, since some banks have decided to close their holding pany.

4. Further investigate those institutions with multiple nges in BANK9347 that did not make sense. Update BANK9347 for se institutions using NIC data.

One explanation for a bank acquired by a multibank holding pany being allowed to continue operating as an independent ity was that, in many instances, legal restrictions prevented h a merger if the acquired bank was in a different state than other banks in the acquiring holding company. However, in instances, this restriction was not present and, while left operate as an independent entity initially, the acquired bank subsequently merged into another affiliate of the acquiring ding company. This two-step acquisition and merger procedure plicated the classification of mergers between the affiliate nonaffiliate categories. When a bank was acquired but only

later merged with other banks in the acquiring holding company, the transformation was recorded as an affiliate merger. However, if little time had passed between the acquisition by the holding company and the subsequent merger into an affiliate, it would seem that it may be more appropriate to treat the transformation as a nonaffiliate merger. In any case, the distinction was noted for the empirical analysis.

C. Classification

Banks must be classified into categories for two different types of acquisitions. First, a bank may be acquired and merged into an existing bank. Second, a bank may be acquired by a holding company, but left to operate as an independent entity that continues to file its own Call Report. For the set of acquisitions that resulted in a merger, the data were set up to view the transaction from the perspective of the acquiring bank, because only the consolidated (surviving) bank reports data as of the end of the subperiod. The set of acquiring banks were divided into four categories. This was done for each of the two subperiods (1993:II-1994:II and 1994:II-1995:II) between the June Call Reports that collect the information on small business lending. Note that a given bank may be in one category for the first subperiod and in a different category for the second subperiod. The four categories of banks are:

1. Banks that reported at the beginning and the end of the subperiod and made no acquisitions during the subperiod.

2. Acquirer banks that reported at the beginning and the end of the subperiod and were involved only in affiliate mergers with the target banks being whole nonfailed, nonbridge banks for which bank Call Report data were available for all acquired entities.

3. Acquirer banks that reported at the beginning and the end of the subperiod and were involved in at least some nonaffiliate mergers (as well as possibly making affiliate mergers), with none of the acquired entities being failed institutions, bridge banks or partial acquisitions, and for which bank Call Report data were available for all acquired entities.

4. Acquirer banks that merged, but with data for the acquirer and/or target entities that were incomplete or missing. This would be the case if the acquirer did not report both at the beginning and at the end of the subperiod, or if at least one acquired entity either did not report at the beginning of the period, was a partial acquisition, or was an entity such as a Savings and Loan for which bank Call Report data were not available.[8] In addition, merger acquisitions that included as a target a failed or bridge bank were included in this category, since such acquisitions can best be characterized as partial acquisitions.

A distinction was made between affiliate and nonaffiliate mergers because what the acquirer did with the acquired portfolio of loans in the two instances may differ. Furthermore, distinctions were made between merger acquisitions of whole

nonfailed banks and acquisitions that should be viewed as partial acquisitions. If the acquiring bank did not acquire the entire bank, the force merging of balance sheet data of the target with the acquirer would not be appropriate. The set of partial acquisitions would include banks that failed, were bridge banks, or were split up so that pieces of the bank were acquired by more than one entity. In the case of failed banks, for example, the FDIC typically retained a portion of the acquired bank's assets, with only the remainder transferred to the acquiring bank. With bridge banks, while the bank to be acquired has typically been "cleaned up," all assets may not be transferred or the acquirer may be allowed to "put" some of the loans back to the FDIC over an extended period following the merger. Finally, it is important to distinguish between those banks for which we have data and those that do not file bank Call Reports, such as Savings and Loan Associations. We can force merge the balance sheet data for the acquirer and acquired only if we have consistent bank Call Report data for each institution.

Because the merger data set was viewed from the perspective of the acquirer, all acquisitions by a particular bank within a subperiod were aggregated. Thus, if Bank A acquired three separate banks at different times within a subperiod, the series of mergers would be recorded as a single observation and the data for all four banks would be force-merged as of the beginning of the subperiod for comparison with the end-of-period data for the surviving (consolidated) bank. Similarly, if a sequence of

merger acquisitions occurred within one of the one-year subperiods, the sequence was compressed into a single transaction. For example, if Bank A was acquired and merged into Bank B in 1993:III, which was in turn acquired and merged into Bank C in 1994:I, the 1994:II portfolio data for the surviving (consolidated) Bank C must be compared to the sum of the 1993:II data for Bank A, Bank B, and Bank C.

D. Small Loan Data

Despite the importance of the small business lending market to banks and borrowers alike, few data about these loans were available in the past. Recently, however, the Congress has been concerned about the effect of credit contractions on small businesses. As a result of FDICIA, federal bank regulators now are required to collect information annually on small business loans, beginning with the second-quarter 1993 bank Call Reports. Banks are asked for data on two types of nonfarm business loans--nonfarm, nonresidential real estate loans and commercial and industrial loans--in three size categories: loans $100,000 or less, loans more than $100,000 through $250,000, and loans more than $250,000 through $1 million. While this information is quite informative about the pattern of small business lending, it must be interpreted with caution. First, the size of the loan, rather than the size of the business borrower, is used to define "small business lending." Second, because it is a new survey, it is likely that numerous reporting errors may have been made by

banks, in some instances the result of a misinterpretation of the question.

Size of business rather than size of loan is obviously a preferred measure. Presumably this question was asked in terms of size of loan for Call Report purposes to minimize the cost to banks of complying with the question, since loan size would be readily available, but size of business would require examining each loan file. Scanlon (1981) found that loan size did serve as a good proxy for borrower size for very large loans and for very small loans, but less so for the middle range. One might be concerned that when large firms make a partial takedown of a loan commitment or draw on a large credit line, it would be counted as a small loan. However, this survey asks questions in terms of "original amounts" of loans, carefully defined to ascertain the size of the total credit granted to the firm rather than a particular bank's share of a participated or syndicated credit, or the size of a particular draw against a line of credit or commitment.[9]

Because this is a new survey, bank answers may have suffered from being on the early portion of a learning curve. In fact, Berger and Udell (1996) find inconsistencies between the small business survey data in the Call Report and the Survey of Terms of Bank Lending data. In particular, they find that banks answering the question as to whether all or substantially all of their nonfarm, nonresidential real estate loans and commercial and industrial loans had original amounts of $100,000 or less may

have answered in terms of number of loans rather than volume of loans, as intended. However, this explanation accounts for only a portion of the general underreporting of original amounts found by Berger and Udell (1996). Furthermore, the underreporting is much more important for the smaller loan sizes.

For this study, the problems have been minimized by using only the $250,000 or less and the $1 million or less loan categories as the definitions of small business loans; the small loan data have also been scrutinized, identifying what appear to be egregious errors. In particular, the small loan data have been checked by calculating the average size of small business loans in each size category for each bank to ensure that it did not exceed the maximum size of the loan category and by comparing the total reported small business loans to the total loans reported for both C&I loans and nonfarm, nonresidential real estate loans for each bank. In addition to eliminating from the sample those banks with missing small loan data, three other banks were omitted from the sample: two banks that reported small business loans in excess of 101 percent of their total business loans and one bank that reported small business loan shares on the three consecutive June Call Reports that were clearly inconsistent with the underlying data.

V. An Analysis of Merger Activity

A. Patterns in Merger Activity

Table 6 shows the composition of our sample by bank asset

size and by merger category, as defined above, for each one-year subperiod. Because the table is in terms of surviving banks, if a merger acquisition has been made, bank asset size refers to the size of the acquirer. Furthermore, if a bank makes more than one merger acquisition during a given subperiod, it still accounts for a single observation. The empirical analysis below includes three of the categories: those commercial and savings banks making merger acquisitions of affiliate institutions, those banks making merger acquisitions that include at least some nonaffiliate institutions, and those banks making no merger acquisitions during the subperiod under consideration. The two one-year subperiods include 257 banks (118 in the first subperiod and 139 in the second) that make one or more affiliate acquisitions during one of the subperiods, with a bank that makes acquisitions in each subperiod being counted twice, once in each subperiod. There are 347 (165+182) observations of banks that make at least some nonaffiliate acquisitions, with 318 making only nonaffiliate acquisitions and 29 making a mixture of affiliate and nonaffiliate acquisitions. However, the bulk of the observations (20,430) are of banks that make no merger acquisitions during a given subperiod.

Table 7 shows the merger patterns based on asset size classes for both acquirer and target institutions, with each observation representing an acquirer-target merger pair. The table shows 524 acquisitions in the first subperiod and 632 acquisitions in the second. The much larger number of merger

observations here compared to the previous table reflects the fact that a large number of banks made multiple acquisitions during the one-year subperiods that are the basic time unit for the analysis, with the number of merger acquisitions for a single acquirer during a single one-year subperiod ranging as high as 22 institutions. That is, if a particular bank acquires three banks through mergers during a given one-year subperiod, the transactions appear as three separate observations in the table, unlike the previous table that included only a single observation per acquiring institution, regardless of the number of merger acquisitions made by that institution during a given subperiod.

While the data are displayed by asset class, the table can still provide a good idea of the extent to which large banks are merging with smaller target banks. In each subperiod, the largest single cell reflects the number of acquisitions with both the acquirer and target institutions being in the smallest asset size class, less than $100 million. Over 60 percent of the acquired banks are in this smallest asset class and over 85 percent have less than $300 million in assets. At the same time, less than one-quarter of the acquirers are in the largest asset class, although roughly half have assets in excess of $500 million. By looking at the relative number of mergers above and below the diagonal, it is clear that few (27) mergers occur with the acquirer residing in an asset class smaller than that of its target.

B. The Effect of Mergers on the Small Business Loan Portfolio Share of Acquirers

The typical pattern that one might expect to see between acquiring banks and their targets would be an acquirer that is larger than its target, with the target, being smaller, having a larger percentage of small business loans in its portfolio than the acquiring bank. Surprisingly, Panel 1 of Table 8a shows that slightly less than one-half of the bank merger observations in the sample (293 of 599) actually fit this description. This panel shows the set of mergers used in the regression sample (described below) disaggregated along two dimensions: the relative asset size of the acquirer compared to that for the bank(s) it acquires during one of the one-year subperiods and the ratio of small business loans ($1 million or less in size) to assets (portfolio share) of the acquirer compared to that for the bank(s) it acquires.[10] For example, the top left cell contains the 293 observations in which the acquirer is larger than its merger target(s) and the acquirer has a smaller portfolio share of small business loans than is the case for its target(s). Thus, for this set of banks, the act of merging the two (or more) banks will cause the post-merger small business loan portfolio share of the surviving bank to rise above its premerger value.

Panel 1 shows that, as one might expect, most observations (over 90 percent, 544 of 599) are accounted for by the two cells in the first column, in which the acquirer is larger than its target(s). And, it is not surprising that the small number of

"atypical" observations in the second column are dominated by affiliate mergers (40 of the 55), where the holding company has a certain degree of latitude in determining which of the affiliates is designated the surviving bank. While the designation is not entirely arbitrary, it may be influenced by such factors as the preferred geographical location for the bank headquarters or the type of charter (when charters differ across affiliates), rather than the size or the primary emphasis among lines of business of the affiliate that may be more important in determining bank behavior.

Looking across rows rather than columns, only in slightly more than half (311 of 599) of the observations is the target's small business loan portfolio share larger than that of the acquirer. Thus, in nearly half the cases (288 of 599), the merger will, at least initially, lower rather than raise the small business loan portfolio share of the surviving bank, compared to its premerger share. To the extent that the surviving bank was at, or near, its desired portfolio share of small business loans and has a desire to return to that share in the longer run, it would raise rather than lower its small business lending subsequent to the merger. Given the large share of observations with an acquirer having a larger small business loan portfolio share than its target(s), it is not clear that bank consolidation necessarily will reduce small business lending.

Much of the concern with mergers has arisen from the fear

that large banks with relatively few small business loans will acquire small banks with a relatively greater emphasis on small business lending, but will not maintain the small business lending relationships that the target banks have established with small firms that are dependent on bank credit. Panel 2 of Table 8a shows how the pattern of mergers differs by the size of the acquirer when the target bank is small. In each case, the acquirer is larger than the target and the target has assets less than $100 million.

The primary acquirers of these small banks are other small banks, with only 25 percent of the mergers shown in Panel 2 having an acquirer with more than $300 million in assets. When the acquirer is also a bank with less than $100 million in assets (but still larger than the target), the acquirer has a larger small business loan portfolio share than the target in 56 percent of the mergers (92 of 165). Even in the larger acquirer asset classes, the acquirer frequently has a larger small business loan portfolio share than the smaller target, with 57 percent (80 of 141) of the acquirers in the $100 to $300 million asset class having larger small business loan portfolio shares than their target(s) and 35 percent (34 of 98) of the acquirers with over $300 million in assets having a larger small business loan portfolio share than their targets.

Using the same merger categories as in Table 8a, Table 8b contains information on the change in the small business loan portfolio share of the surviving (acquirer) banks subsequent to

the merger. Interestingly, for three of the four cells in Panel 1, the observations are roughly evenly split between those acquirers with a positive change in their small business loan portfolio share subsequent to the merger and those with a subsequent decline in their small business loan portfolio share. The lone exception is the upper right-hand cell, which suffers from having such a small number of observations and, in any case, contains observations that might be deemed to be atypical insofar as the average size of the targets is larger than that of the acquirer.[11] And, even though the targets in this cell are larger than their acquirer, they still have a small business loan portfolio share that is larger than that of the acquiring bank. Thus, on the surface, there appears to be little correlation between whether the merger raises or lowers the acquirer's small business loan portfolio share initially and the direction of the subsequent change in the share.

Panel 2 of Table 8b shows how the patterns of small business lending subsequent to mergers differ by the size of the acquirer when the target bank is small. When the acquirer is also a bank with less than $100 million in assets (but still larger than the target), whether the merger initially raises or lowers the acquirer's small business loan portfolio share, substantially more of the surviving banks subsequently increase their small business loan portfolio share than decrease it. Even in the larger acquirer asset classes, the relative proportions of acquirers that increase their small business loan portfolio share

subsequent to the merger is similar whether it is the acquirer or the target that has the larger premerger small business loan portfolio share. However, the proportion of acquirers that subsequently increase their portfolio share declines as acquirer size increases. That proportion declines from more than two-to-one for acquirers with assets less than $100 million, to just over 50 percent for the $100 to $300 million asset size class, to only 44 percent for the largest asset size class.

Tables 8a and 8b highlight that some of the concerns about mergers may not be well founded. First, in nearly half the cases, the acquirer had a larger small business loan portfolio share than its target(s). Second, most merger acquisitions of small banks is by small, not large, banks. Third, in roughly half the commercial and savings bank mergers over the two-year period under consideration here, the portfolio share of small business loans of the acquirer rose rather than fell during the period immediately subsequent to the merger. Finally, only when the acquirer is large is the small business loan portfolio share of the acquirer more likely to decline than to rise immediately following the merger.

VI. Methodology

A. Is There a Preferred Habitat for Small Business Lending?

A major concern with the current wave of bank consolidation is that it might result in decreased availability of credit to small businesses. The idea that acquirer institutions in mergers

will be less inclined than their targets to lend to small businesses, or perhaps that this unique line of business would be less emphasized in the larger consolidated institution, implies that particular types of institutions tend to emphasize lending to small businesses. In the absence of such preferred habitat behavior, bank consolidation should pose no problem for the availability of bank credit for small businesses. As long as small business lending remains profitable, the large number of banks should provide an ample pool of potential lenders. However, if most small business lending is done by smaller local lenders, and only certain lenders can profitably operate this line of business, consolidation could potentially cause a significant change in the terms or the availability of small business loans made by banks.

The choice of preferred habitats by a bank may be evolutionary. As banks grow, either internally or through acquisitions, they evolve, with most banks engaging in different activities as they become larger, at each stage specializing in activities in which their size provides them with comparative advantages in certain types of banking activities. For example, trading operations, derivatives activity, international operations, and national credit card operations are generally conducted by the largest institutions, since certain activities require economies of scale and scope for the bank to effectively provide the service. And, because smaller banks tend not to provide such services, they may be at a competitive disadvantage

in attracting the business of larger loan customers. Thus, as banks become larger, the portfolio share of their small business lending may be reduced, because the additional activities that they can efficiently provide as a larger institution are expanded.

A specialization in small business lending may occur by choice or because regulatory restrictions or institutional impediments restrict some banks from engaging in other activities. The most obvious regulatory restriction that might cause a preferred habitat in small business lending is the limit on borrower concentrations. To ensure that banks are adequately diversified, state and federal laws restrict the size of loan issued to any particular borrower. For example, national banks have a lending limit to any one borrower of 15 percent of bank capital, and many banks have lower internal limits. The primary purpose of these restrictions is to limit the possibility that problems with a few loans could imperil the solvency of the entire bank. An additional consequence of these restrictions intended to promote diversification is that they create a preferred habitat in small business lending for many small banks.

Table 5 shows that 70 percent of all commercial and savings banks have less than $100 million in assets. Figures 2A and 2B show that virtually all of the business loan volume at these banks are composed of loans of $1 million or less in size, and over 70 percent are represented by loans of $250,000 or less. Because the United States has an unusually large number of small

ks that can make only small loans due to loan concentration trictions, small businesses may have been subsidized by a ucture that encouraged small banks.

Entry restrictions, branching restrictions, deposit interest e limits, and subsidized deposit insurance, on top of islated preferred habitats for small banks, have the potential cause substantial subsidization of small business credit. If ll business loans are made only because of this unique bination of industrial organization and regulations that moted many small banks that were not allowed to make large ns, a wave of consolidation that eliminated small banks might stantially reduce the number of institutions with a cialization in small business lending. If so, consolidation t substantially reduces the number of small banks will reduce subsidy to small businesses in much the same way that changes preferential real estate tax laws reduced the supply of mercial real estate loans.

The implication of an induced preferred habitat for small ness loans solely due to lending concentration restrictions ld result in the following empirically testable hypotheses:

. Constrained small banks that are acquired but allowed to continue to operate independently would not reduce their small business lending as a result of being acquired, since the borrower concentration limit would be unaffected.

. Mergers of very small banks that result in a consolidated bank still not big enough to make large loans (loans greater

than $1 million), would cause no change in small business lending.

3. The merger acquisition of a constrained small bank by a much larger unconstrained bank would result in less small business lending, and a smaller share of small business lending for the consolidated bank compared to the weighted average for the two banks prior to the merger.
4. The merger of two unconstrained large banks would have no systematic effect on small business lending or on the share of loans to small businesses.

While a regulatory-induced explanation for a preferred habitat in small business lending is possible, it could also be due to the voluntary choice of a bank to specialize in small business lending. Because small business lending may require a management structure and an information system that fosters the establishment of lending relationships, banks whose loan officers are long-time residents of the community and are given the flexibility to make independent loan assessments may be better able to establish and cement lending relationships.

Imperfect information makes open-market credit instruments imperfect substitutes for bank loans as a source of credit for many firms, especially smaller firms where most information is private, and make long-term bank lending relationships valuable. Banks acquire much of this private information through financial relationships and, in particular, through repeated banking and

lending transactions. In fact, most small and medium-sized firms establish financial services relationships with local commercial banks, and these banks often serve as their primary sources of credit (Elliehausen and Wolken 1990). For small firms, establishing lending relationships increases the availability of credit (Petersen and Rajan 1994) and may make the lender less likely to require collateral (Berger and Udell 1995). And, small firms typically concentrate their borrowing among a few banks (Petersen and Rajan 1994).

While banking relationships have been shown to be valuable for larger firms that do have access to national credit markets (see, for example, Slovin, Sushka and Polonchek 1993), the considerations described above ensure that lending relationships will be particularly valuable to smaller firms. This suggests that small banks may be able to earn rents from their ability to efficiently collect information about local small firms that may not fit cleanly into a credit scoring model. Thus, smaller banks may have a comparative advantage in servicing the needs of small firms in their locality and may be able to profitably exploit such lending relationships, especially since it takes time for a small firm to establish a major new lending relationship, with the new lender slowly acquiring the stock of private information about the firm that serves as the foundation of the relationship. In fact, evidence indicates that small banks often tend to be more profitable than larger banks (for example, Boyd and Graham 1991; Nakamura 1994).[12]

While a strong negative correlation exists between bank size and the portfolio share of small business loans, this does not imply that the small business loan share is necessarily a strict function of size, with all smaller banks and no larger banks having a relatively strong presence in the small business loan market. For example, institutions that are highly centralized, that have rigid underwriting standards, and prefer to securitize rather than hold loans may be less suited to small business lending, regardless of their size. At the same time, large banks that successfully decentralize and provide significant autonomy to their loan officers may be able to compete more effectively than small institutions. For example, as of June 30, 1994, among the top 25 lenders to small business (by volume of business loans of $1 million or less) are a number of large banks with over 40 percent of their business loans being $1 million or less in size, including First Union National Bank, National Westminster Bank, Key Bank of New York, Norwest Bank, Key Bank of Washington, and Nationsbank of South Carolina (Peek and Rosengren 1995).

The preferred habitat specialization hypothesis is consistent with large banks accounting for a large percentage of small business lending, as shown in Figure 2A. In fact, Panel 1 of Table 8a shows that in nearly half of the merger observations with the acquiring bank being larger than the (average size of) its target(s), the acquirer has the larger share of small business loans. Furthermore, the differences across Federal Reserve Districts with respect to the size composition of banks

and the relative shares of small compared to large business loans shown in Table 5 suggest that the nature of loan demand in some districts may be such that banks have little incentive to grow in order to release the borrower loan concentration constraints. For example, to the extent that a region's economy is composed of smaller firms with few larger firms, the bulk of local loan demand would be for smaller loans. Each of these observations, as well as the evidence on the relative profitability of smaller banks, is consistent with a bank having a preferred habitat in small business lending that is due to voluntary specialization rather than to a regulatory restriction.

The specialization motivation for preferred habitat behavior implies the following testable implications:

1. In a merger, the acquirer's share of small business loans rather than its asset size would better indicate the willingness of an acquirer to lend to small businesses. The consolidated bank would likely conform to the management expertise of the acquirer's management whose specialization (or lack of specialization) in small business lending would be reflected in their portfolio share of small business loans prior to the merger. Thus, given the initial shock to the small loan portfolio share of the acquirer due to the merger, the surviving bank would likely expand or contract small business lending and its small business loan portfolio share in order to offset, at least partially, the initial shock, reverting back toward its premerger small business

loan portfolio share.

2. Banks acquired (but left independent) by multibank holding companies, whose promotion opportunities for loan officers and management structure may encourage the movement of loan officers and centralized decision making, may be less likely to lend to small businesses because of the increased difficulty in fostering lending relationships.
3. Affiliate mergers are less likely to disrupt lending relationships than nonaffiliate mergers. Thus, other things equal, smaller declines in small business lending might be expected.

B. Equation Specification

The primary focus of this study is the effect of bank consolidation on small business lending. The analysis is based on a specification that attempts to explain the growth in a bank's small business loan portfolio, calculated over a one-year period corresponding to the subperiods between the June Call Reports, controlling for bank-specific characteristics, regional banking market characteristics, and regional economic activity. By including banks that made no merger acquisitions, banks with a change in ownership, and banks that did make merger acquisitions during the subperiod in the same equation, one can test for differences in the growth in small business loan portfolios across these bank categories.

The base regression is of the form:

$$\Delta\left(\frac{SBL}{Assets}\right)_i = b_0 + \beta_1 X_{1,i} + \beta_2 X_{2,i} + \beta_3 X_{3,i} + \varepsilon_i ,$$

where SBL refers to the volume of small business loans (defined either as those business loans $1 million or less in value or as those business loans $250,000 or less in value) at bank i and X_1, X_2, and X_3 are vectors of explanatory variables. In addition to the dependent variable shown, the change in bank i's small-business-loan-to-asset ratio (portfolio share) between the beginning and the end of the one-year subperiod, three other dependent variables are considered, the small-business-loan-to-total-loan ratio, the change in the bank's small business loans scaled by its assets $((SBL_t - SBL_{t-1})/Assets_{t-1})$, and the change in the bank's small business loans scaled by its total loans $((SBL_t - SBL_{t-1})/Loans_{t-1})$. For banks that made a merger acquisition during the subperiod, the changes are calculated as the difference between the value of the consolidated (force-merged) data at the beginning of the subperiod and the value at the end of the subperiod for the surviving (consolidated) bank.

The first vector of explanatory variables, X_1, contains measures indicating whether a bank had a change in ownership during the subperiod (but remained independent) or made one or more merger acquisitions during the subperiod. In the latter instance, the vector also includes variables indicating the impact effect of the merger on the acquirer's small business loan portfolio share and the relative size of the acquirer compared to the average size of its targets (larger or smaller).

Specifically, this vector contains a (0,1) dummy variable that has a value of one if the bank had an ownership change (but was left independent) during the subperiod and zero otherwise, and four pairs of merger-related variables. Each pair contains a (0,1) dummy variable and a measure of the impact effect on the small business loan portfolio share of the acquiring bank due to the merger (calculated as the portfolio share for the force-merged beginning-of-subperiod data for the consolidated bank minus the beginning-of-subperiod portfolio share of the acquirer (premerger).

The four pairs of merger-related variables correspond to the partition of the set of acquirer banks in Panel 1 of Table 8a. The first dummy variable has a value of one if the impact effect of the merger was to raise the beginning-of-subperiod small business loan portfolio share of the acquirer and the acquirer was larger than the average size of its targets, and zero otherwise. The other three dummy variables correspond to the cases in which the acquirer's small business loan portfolio share rises due to the merger and the acquirer is smaller than the average size of its targets, the acquirer's small business loan portfolio share falls and the acquirer is larger than the average size of its targets, and the acquirer's small business loan share falls and the acquirer is smaller than the average size of its targets. The other four variables are calculated by interacting each of these four dummy variables with the variable measuring the difference in the small business loan portfolio share of the

acquiring bank due to the merger (the forced-merged consolidated bank portfolio share minus the premerger portfolio share of the acquirer, each measured as of the beginning of the subperiod).

The second set of explanatory variables, X_2, contains measures of regional banking market characteristics and economic activity. To control for general geographical differences in bank structure and the composition of firms (for example, differences in the relative proportions of small versus large banks and small versus large firms), this vector contains a set of (0,1) dummy variables for Federal Reserve Districts (not shown in the tables). To further control for differences in economic activity that might affect loan demand, this vector also contains the contemporaneous and one lagged value of the state employment growth rate for the state in which the bank is headquartered. To control for possible differences between urban and rural locations, the vector contains a (0,1) dummy variable with a value of 1 if the bank's headquarters is in a metropolitan statistical area and zero otherwise. Finally, this vector contains two four-firm concentration ratios, one for bank deposits and one for small business loans (defined as $1 million or less in size), calculated for the state in which the bank is headquartered.

The third set of explanatory variables, X_3, contains measures of bank-specific characteristics. These include a (0,1) dummy variable that has a value of one if the bank is a member of a multibank holding company and zero otherwise, the logarithm of

the bank's beginning-of-subperiod assets, three measures of bank health, and the ratio of the bank's domestic loans to its domestic assets. The three measures of bank health are the beginning-of-subperiod leverage ratio, the beginning-of-subperiod ratio of nonperforming loans (defined as the sum of loans past due 90 days or more and nonaccruing loans) to total loans, and the annualized return on assets measured over the six-month period prior to the beginning of the subperiod.

VII. Empirical Results

The regression results are based on a pooled sample that combines observations from both of the one-year subperiods. It includes all commercial and savings bank observations for affiliate and nonaffiliate mergers and changes in ownership, as well as the "clean bank" sample, those banks that neither made an acquisition nor experienced an ownership change during one of the one-year subperiods. This latter group of observations serves as a control against which to measure the behavior of banks that made acquisitions and banks that did experience a change of ownership during the sample period.

Ideally, the merger sample would be partitioned into the four cells shown in Panel 1 of Table 8a. However, because of the relatively small number of observations in the second column of the panel, the specifications discussed in the text make no distinction between those mergers with acquirers that are larger than the average size of their target(s) and those that are

smaller than their targets. Given the variety of interesting dimensions across which one might want to make distinctions, the challenge is to partition the data set in ways that highlight the most important and interesting distinctions. The small numbers of observations in the two cells in the second column of Panel 1 of Table 8a made it impossible to make meaningful hypothesis tests once these cells were further partitioned by characteristics such as bank size or small business loan portfolio shares, distinctions that were deemed to be more important for the analysis. However, Appendix Tables A1 and A2 contain the results with the full specification corresponding to the four cells contained in Panel 1 of Table 8a.

The first set of regression results, contained in Table 9a, is based on the classification of mergers corresponding to the two rows in Panel 1 of Table 8a. In addition to the change in ownership variable and the other nonmerger explanatory variables, each equation contains four merger-related variables, one pair corresponding to each row of the panel. Each pair contains a constant term and a measure of the difference in the acquirer's small business loan portfolio share (measured relative to assets) due to the force-merging of the acquirer and its target(s). The difference variable is constructed as the small business loan portfolio share for the force-merged beginning-of-subperiod data for the consolidated bank minus the beginning-of-subperiod small business loan portfolio share of the acquirer (premerger). Furthermore, each equation contains a set of Federal Reserve

District dummy variables (not shown in the table) to control for differences across districts in the composition of banks and in loan demand.

Four alternative dependent variables are considered: the change in the portfolio share of small business loans ($1 million or less) measured relative to total assets, the change in the portfolio share of small business loans measured relative to total loans rather than to assets, the change in small business loans divided by total assets, and the change in small business loans divided by total loans. The signs of the portfolio share variables are affected by the growth rate of small business loans relative to that of the scale variable in the denominator (assets or loans), having a positive sign if small business loans grow faster (or shrink more slowly) than does the scale variable (assets or loans). On the other hand, the two variables measuring the scaled change in the volume of small business loans will have the same sign as the change in small business loans, being positive only if the volume of small business loans in the bank's portfolio increased. As will be seen, the results do appear to be sensitive to the specification of the dependent variable.

The estimated equation shown in the first column of the table indicates that the change in the portfolio share of small business loans relative to assets is sensitive both to a change in ownership with the acquired bank left independent and to mergers. The results indicate that a change in ownership results

in a reduction of .315 percentage points in the small business loan portfolio share of the bank, other things equal.

For those merger observations that result in an initial rise in the small business loan portfolio share of the acquirer (the acquirer has a small business loan portfolio share smaller than that of its target(s)), the (0,1) dummy variable has a significant positive estimated coefficient and the rise in the small business loan portfolio share has a significant negative estimated coefficient. Thus, for such mergers that result in an initial rise in the acquirer's small business loan portfolio share in excess of 1.91 (=.615/.322) percentage points, the net effect is to shrink the small business loan portfolio share of the acquirer subsequent to the merger (that is, the end-of-subperiod value for the consolidated bank will be lower than the force-merged value of the portfolio share measured at the beginning of the one-year subperiod). Alternatively, the estimates can be interpreted as indicating that this set of banks, on average, offsets 32.2 percent of the initial merger-related jump in their small business loan portfolio share by the end of the one-year subperiod in which the merger occurs. Thus, it appears that banks do tend to partially adjust their small business loan portfolio share subsequent to an acquisition in order to move back toward their premerger share, consistent with the preferred habitat hypothesis.

For those observations in which the merger results in an initial fall in the small business loan portfolio share of the

acquirer (the portfolio share of the acquirer is greater than that of its target(s)), both the (0,1) dummy variable and the fall in the small business loan portfolio share have negative estimated coefficients, although only that on the share fall difference variable is significant. Keeping in mind that the share difference variable has a negative value for this set of mergers, for initial declines in the portfolio share in excess of .83 (=.440/.527) percentage points, the acquirers tend to increase their small business loan portfolio share subsequent to the merger, offsetting, on average, 44.0 percent of the initial decline in the share. Again, this provides strong support for the hypothesis that banks tend to revert to their preferred habitat in small business lending following a shock that moves them away from their desired degree of specialization.

While the evidence of a reversion in the small business loan portfolio share of the acquirer is strong whether the impact effect of the merger is to raise or lower the share, acquirers tend not to adjust their portfolio share all the way back to its premerger value by the end of the one-year subperiod. This partial adjustment likely reflects a combination of factors. First, the full adjustment to the shock may take longer than the period included within the one-year subperiod, especially in light of the fact that some of the mergers occur very near the end of the subperiod. Second, the premerger portfolio share of the acquirer may no longer reflect the desired degree of specialization. For example, the increase in size associated

with the merger may reduce the desired portfolio share, to the extent that larger banks tend to hold smaller portfolio shares of small business loans, or, in some instances, the merger itself may have been part of an effort by the acquirer to change its degree of specialization in small business loans, rather than representing a shock to the portfolio share to be offset by subsequent actions.

As for the other explanatory variables, only six have significant estimated effects. Both employment growth and lagged employment growth have significant estimated effects, although of opposite signs. Bank size (the logarithm of total assets) has a significant negative effect. Not only do larger banks tend to have, on average, a smaller portfolio share of small business loans, but they tend to have the share grow more slowly (shrink faster). In addition, a higher leverage ratio, a larger share of nonperforming loans, and a higher loans-to-assets ratio each slow the growth in the small business loan portfolio share.

The equation specification presented in the second column of Table 9a differs only in the construction of the dependent variable, with the rise or fall in the portfolio share now measured in terms of the ratio of small business loans to total loans instead of relative to total assets. In this specification, the change in ownership variable is not significant, although it still has a negative estimated effect, and the merger variables have a lower degree of significance, with only the share rise difference variable having a significant

(negative) effect. Among the other explanatory variables, seven are significant. Employment growth, lagged employment growth, the logarithm of assets, and the nonperforming loans ratio again have significant effects of the same sign as in column 1. In addition, both concentration ratios and the multibank holding company dummy variable each now have significant effects of the same sign as the insignificant coefficients in column 1, while the loans-to-assets ratio now has an estimated coefficient that is insignificant and opposite in sign to that in column 1.

Column 3 contains the specification with the third alternative dependent variable, the change in the volume of small business loans scaled by total assets. Here, the change in ownership variable has a negative effect that is significant, as in column 1. Each of the four merger-related variables has an estimated coefficient that is significant and of the same sign as in column 1, again indicating that acquirers have a strong tendency to partially offset the impact effect of a merger on their small business loan portfolio shares. With respect to the other explanatory variables, employment growth, lagged employment growth, the logarithm of assets, the leverage ratio, the nonperforming loans ratio, and the loans-to-assets ratio are significant as in column 1, although the sign on the loans-to-assets ratio coefficient is now positive. In addition, compared to column 1, the dummy variables for being in an urban location (positive) and being in a multibank holding company (negative) are now significant.

The final column of the table contains the results from the fourth dependent variable specification, the change in the volume of small business loans scaled by total loans. While the change in ownership variable has a negative coefficient, it is not significant, as in column 2. Furthermore, none of the merger-related variables are significant, although both the share rise difference variable and the share fall difference variable have negative estimated effects, the latter being almost significant at the 5 percent level, suggesting a tendency for acquirers to offset the initial effect of the merger on their small business loan portfolio share. Employment growth, lagged employment growth, the urban location dummy variable, the logarithm of assets, the leverage ratio, the nonperforming loans ratio, and the loans-to-assets ratio each have significant effects as in column 3, although that for the loans-to-assets ratio is of the opposite sign. In addition, the return on assets has a significant positive effect and the multibank holding company dummy variable no longer has an effect that is significant.

In summary, the Table 9a results show a consistent negative impact of ownership changes and a tendency for acquirers to offset the merger-related shock to their small business loan portfolio share, although the effects are stronger when the scaling variable for the dependent variable is total assets rather than total loans. The use of total assets as the scaling variable is preferred, insofar as it indicates the degree of involvement by a bank in small business lending in the context of

total on-balance-sheet operations.

While scaling by loans can indicate the emphasis on small business lending within the loan portfolio, the resulting ratio can be quite misleading and is quite sensitive to the asset portfolio choices made by banks. Because of borrower concentration limits, most business loans of small banks are restricted to the small loan category. Thus, the small business loans to total loans ratio will be large if most loans are business loans rather than other types of loans such as one- to four-family mortgages or consumer loans, even if the bank makes very few loans. Thus, if the bank chooses not to specialize in small business lending and holds mostly securities in its asset portfolio, the small business loans to total loans ratio will still indicate that the bank does specialize in small business lending. In addition, this ratio is sensitive to differences in banks' portfolio shares of one- to four-family mortgage loans (for example, savings banks compared to commercial banks), or the composition of their mortgage lending between whole loans and mortgage securities. While scaling by assets does not avoid all of the problem, it does give an indication of how important small business loans are in the overall portfolio of the bank and, in any case, the loans-to-assets ratio is used as a control variable in the estimated equations.

With respect to the other explanatory variables, employment growth, lagged employment growth, the logarithm of assets, and the nonperforming loans ratio are always significant and of the

same sign across all four specifications. While not always significant, the estimated coefficients on the four-firm concentration ratio for deposits and the dummy variable for being an affiliate of a multibank holding company have the same sign across all four specifications. The dummy variable for being in an urban location and the four-firm concentration ratio for small business loans have negative effects in the first two columns and positive signs in the last two columns, suggesting that the effect is sensitive to whether the dependent variable is measured as the change in the portfolio share or as the change in the volume of small business loans scaled by assets or loans. The leverage ratio, the return on assets, and the loans-to-assets ratio, while sometimes significant, do not have estimated effects of the same sign across the four specifications.

Table 9b contains the same four specifications as in Table 9a, but using $250,000 rather than $1 million as the upper limit for defining small business loans. Compared to Table 9a, this table has fewer significant coefficients on the change in ownership and the merger-related variables. In particular, the only significant coefficients appear in the last two columns that have measures of the change in the volume of small business loans rather than the change in the portfolio share. In fact, except for the coefficients on the share fall difference variable, all but one of the coefficients in the first two columns are of the sign opposite that for the corresponding coefficients in the third and fourth columns. For the equations with the change in

the volume of small business loans as the dependent variable, the change in ownership does have a negative effect, significant only in the third column, and all four of the share difference variables have negative effects. Those for the share rise difference are both large and significant, indicating that acquirers tend to shrink small business lending subsequent to a merger with targets that have a larger portfolio share of small business loans. While the estimated coefficients for the merger impact on the small business loan portfolio share when target banks have a lower portfolio share than the acquirer (share fall difference) are negative, they are quite small and not statistically significant, indicating little tendency for these acquirers to increase their small business lending to offset the initial merger-induced decline in their portfolio share of small business loans.

The two employment growth variables and the logarithm of assets again have significant effects in each equation, although the sign of the bank size variable is positive in the portfolio share specifications and negative in the change-in-volume specifications. This suggests that, unlike in the prior table, other things equal, larger banks tend to increase their small business loan portfolio shares more than smaller banks, although it is still the case that the change in the volume of small business loans, scaled by either assets or loans, tends to be less than that for smaller banks. This is consistent with larger banks tending to have much smaller portfolio shares than smaller

banks, so that a relatively small increase in the volume of small business loans (relative to total assets or loans) could still raise the portfolio share.

As noted earlier, the relatively small number of merger observations in some of the cells limits the range of tests that can provide meaningful statistics. However, Appendix tables contain results from sensitivity tests on the data. These include specifications corresponding to Tables 9a and 9b with the two-way split of the merger sample contained in Panel 1 of Table 8a (Tables A1 and A2), as well as specifications that distinguish between observations in the first subperiod and the second subperiod (Table A3) and between nonaffiliate and affiliate merger observations (Table A4).

The next four tables contain sensitivity tests for the results in Tables 9a and 9b. Tables 10a and 10b split the sample into the set of banks with assets less than $100 million and those with assets above $100 million. Tables 11a and 11b split the sample of banks into those with a portfolio share of small business loans relative to assets greater than 10 percent and those with a share less than 10 percent. A problem with each of these specifications is that they split the merger observations into even smaller cells, in some instances making it more difficult to obtain standard errors small enough to produce significant coefficients on the merger-related variables and making the results even more sensitive to differences in specification.

Table 10a presents the results for the pair of specifications scaled by assets with the sample partitioned into two subsets: banks with assets less than $100 million and banks with assets greater than $100 million. Small business loans are defined as those domestic business loans $1 million or less in size. Assets are measured as of the beginning of the subperiod, reflecting the premerger size of the banks that make an acquisition during the subperiod. Given the discussion above, one might expect to find that much of the effect of mergers would occur for smaller banks that make acquisitions, with the added size easing the constraint on borrower concentrations and allowing the surviving bank to reduce its degree of specialization in small business lending.

For both sets of banks, the change in ownership variable has a negative effect, although it is significant only in the first equation. The patterns among the merger-related variables are quite interesting, with all eight of the estimated coefficients significant for the set of banks with less than $100 million in assets and none of the eight coefficients significant for the set of banks with more than $100 million in assets. Those acquirers whose portfolio share of small business loans is increased by the merger tend to offset that initial increase, although the estimated effects for the set of larger banks are much smaller and not significant at the 5 percent level (although they are both significant at the 10 percent level).

On the other hand, when the merger decreases the small

business loan portfolio share of the acquirer, smaller banks have a strong tendency to offset that initial decline by increasing their small business loans, while the estimates indicate that larger banks have no such tendency. In fact, the estimated effects are small positive, rather than negative, values with very small t-statistics.

Overall, these results suggest that acquisitions by larger banks may, in fact, have a detrimental effect on small business lending, with those acquirers tending to offset some of any initial positive merger shock to their small business loan portfolio share, but not acting to rebuild their small business lending if the initial impact of the merger is to decrease the portfolio share.

The results in Table 10b for the $250,000 or less small business loan category are not as sharp. Only two of the four coefficients on the share rise difference and none of the four coefficients on the share fall difference are significant. Thus, the evidence suggests that acquirers experiencing a positive merger shock to their small business loan portfolio share tend to reduce the volume, but not necessarily the portfolio share, while those experiencing a negative shock tend not to increase their small business lending in order to offset the shock.

Table 11a again partitions the sample, this time by the size of the ratio of small business loans to assets, with the split occurring at the level of 10 percent. The portfolio share is measured as of the beginning of the subperiod, with that for

nks making acquisitions during the subperiod referring to their merger share. Again, the table shows only the results for the ir of specifications scaled by assets.

One of the most striking results in this table is the sharp fference between the estimated effects for the change in nership between the two sets of banks. For the set of banks h the higher small business loan portfolio share, the change ownership results in a reduction in small business lending, the effect is statistically significant. Yet for banks with all business loan portfolio shares below 10 percent, the effect also significant, but positive, indicating that these banks nd to increase small business lending subsequent to their quisition by a different holding company. Thus, the plications of a change in ownership for small business lending ems to be sensitive to the relative degree of small business nding specialization of the acquired bank. If the bank was ite involved in the small business loan market prior to the nge in ownership, the effect is likely to be detrimental to edit availability to its small business loan customers. On the her hand, if the bank had little involvement in this market ior to the change in ownership, it is likely to become more volved subsequent to its acquisition.

As for the merger-related variables, all four of the share difference coefficients are negative, as are three of the r share fall difference coefficients, indicating that banks do hibit a tendency to offset the initial effect of the merger on

small business loan portfolio shares. For acquirers whose portfolio share rises due to the acquisition of targets that have larger portfolio shares, the offset is larger for the set of acquirers with a portfolio share less than 10 percent. That is, those acquirers with relatively less specialization in small business lending prior to the merger appear to make a stronger effort to reduce their small business lending concentration subsequent to the merger in order to offset part of the initial merger-induced rise in their small business loan portfolio share.

For acquirers whose portfolio share falls due to the acquisition of targets that have smaller portfolio shares, the offset is larger for the set of acquirers with a portfolio share greater than 10 percent. That is, those acquirers that tend to specialize to a greater degree in small business lending tend to make a greater effort to increase their small business lending subsequent to the merger in order to offset about half of the initial merger-related decline.

When small business loans are defined as those loans of $250,000 or less, shown in Table 11b, a similar pattern emerges for the change in ownership effect. However, the share rise difference coefficient is significant only in the fourth equation and has a negative value only in the final two equations for the set of banks with a portfolio share less than 10 percent. This indicates that only those acquirers that choose not to specialize in small business loans have a strong tendency to decrease that lending in response to a merger-induced increase in their small

business loan portfolio share. On the other hand, all four of the share fall difference coefficients are negative, although only one is significant.

To the extent that acquirer banks do react to the impact effect of the merger on their small business loan portfolio share, that response may not be linear. Furthermore, the estimated effect (and its significance level) may be dominated by observations with very small values for the share difference variables that represent primarily noise rather than a meaningful shock to which an acquirer might react. The specifications in Table 12 split the merger observations into three size classes of impact effects on the portfolio shares, both for positive shocks and for negative shocks. The ranges are merger-induced changes in the small business loan portfolio share less than 2 percentage points in absolute value, between 2 and 5 percentage points, and greater than 5 percentage points. For ease of presentation, the nonmerger-related explanatory variables in the estimated equation have not been included in the table.

For small business loans $1 million or less in value, shown in the first two columns of the table, none of the merger-related variables associated with the two smaller classes (less than 2 percentage points and 2 to 5 percentage points) have significant coefficients. However, for merger impact effects on the acquirer's small business loan portfolio share greater than 5 percentage points, each of the four merger-related variables have significant coefficients. In particular, the share rise

difference and share fall difference coefficients are each negative and much larger than in the earlier specifications, more than offsetting the initial impact in each case. This evidence indicates that, as one might expect, it is the larger shocks to which banks react.

The results are not as sharp for the $250,000 or less definition of small business loans contained in the third and fourth columns of the table. Only two of the share difference coefficients are significant, both in the fourth column. When the merger-induced decline in the portfolio share is less than 2 percentage points, acquirers respond by further decreasing the volume of their small business loans, rather than offsetting the initial decline. However, when the merger-induced rise in the portfolio share is greater than 5 percentage points, acquirers do shrink the volume of their small business lending in order to offset the shock.

The specifications in Table 13 make distinctions among the acquirers and targets with respect to their degree of specialization in small business lending that are absolute, based on having a portfolio share that is larger or smaller than 10 percent. In contrast, the previous tables emphasized a relative distinction--whether acquirers had a lower (share rise) or higher (share fall) portfolio share than their targets. As in Table 12, the nonmerger-related variables were included in the estimated equations, but for ease of presentation are not shown in the table. Each equation contains a separate set of estimated

effects for banks with small business loan portfolio shares less than 10 percent and for those banks with a portfolio share greater than 10 percent. Further distinctions are then made for target banks, separating the set of mergers into those with targets having small business loan portfolio shares greater than 10 percent and those having portfolio shares less than 10 percent.

For those banks with portfolio shares less than 10 percent that acquire banks with portfolio shares greater than 10 percent, the share difference coefficient is negative in each instance and significant in three of the four equations. Consistent with the earlier evidence, these acquirers exhibit a strong tendency to partially offset the initial merger-related increase in their small business loan portfolio shares during the period immediately following the merger.

On the other hand, when both acquirers and targets have portfolio shares less than 10 percent, only one of the share difference coefficients is significant. However, it is negative and indicates a complete offset of the initial change in the portfolio share. The lack of stronger evidence of offsetting behavior in this instance is not particularly surprising. First, neither the acquirers nor the targets exhibit much interest in small business lending. Second, since both the acquirers and targets have portfolio shares less than 10 percent, the portfolio share differences due to the merger are mostly very small, and, in any case, are a mixture of positive and negative values.

For the set of banks that have the greater degree of cialization in small business lending (portfolio shares ater than 10 percent), the constant term indicates the average ferential in the value of the dependent variable relative to set of banks with portfolio shares less than 10 percent. ee of the four coefficients are negative and three of the four significant. Among the acquirer banks in this set, those t acquire targets with portfolio shares less than 10 percent d to increase their small business lending subsequent to the ger. All four of the share difference coefficients are ative, although only the two for the $1 million or less inition of small business loans are significant. Thus, those ks that are more specialized in small business lending that uire banks that are not do appear to seek to at least tially reestablish their higher degree of specialization.

When both the acquirers and targets have portfolio shares ater than 10 percent, the share difference coefficient is ative in three of the four equations, although it is nificant only in the first two columns. Thus, for the broader inition of small business loans, acquirers tend to offset the act effect of mergers on their small business loan portfolio res, whether that impact is positive or negative. The effect much smaller than that in which the portfolio share of the get is less than 10 percent, or when the acquirer portfolio re is less than 10 percent and the target share is greater n 10 percent. With this subset of mergers with both acquirers

and targets having portfolio shares greater than 10 percent, some will have positive share differences and some will have negative share differences, and many of the impact effects will be small, although with a possible range of from 10 to 100 percent, some can be (and are) relative large.

In summary, it appears that the evidence is consistent with a preferred habitat hypothesis in which banks seek to partially offset any merger-related shock to their small business loan portfolio share subsequent to a merger in order to reestablish their preferred degree of specialization in small business lending. However, this does not necessarily imply that mergers will result in a reduction in small business lending by banks. While that is the case when the acquirer has little interest in small business lending and the target has a large small business loan portfolio share, an acquirer that does specialize in small business lending is also likely to increase its small business lending subsequent to acquiring a target with a much smaller portfolio share.

A problem with the results presented so far is that the equations identify only those effects that occur within the one-year subperiod in which the merger occurs. Thus, if banks adjust to an acquisition or merger over time, such specifications may identify only the impact effects and miss any subsequent adjustment. However, because this data base contains data for two one-year subperiods, equations can be estimated for the sample of banks that undergo ownership changes or that make

acquisitions in the first subperiod, but that experience no structure changes in the second subperiod, in order to allow for a longer period of adjustment following the ownership change or merger acquisitions.

Table 14 contains the results for such a specification corresponding to that in Tables 9a and 9b. The changes in the dependent variables are now calculated over the full two years, rather than over a single one-year subperiod. The set of observations are those banks included in the first subperiod (experiencing an ownership change but left independent, making one or more acquisitions, or making no acquisitions during the first subperiod) that neither make acquisitions nor experience ownership changes during the second subperiod. This reduces the sample to less than 9,200 observations, with only 278 change-in-ownership observations and 194 merger observations.

The results for this specification are not as sharp as for the separate one-year subperiods. In part, this may be related to the small business loan data being less reliable due to it being based on the first small business loan survey (see, for example, Berger and Udell 1996). Reporting errors by respondents unfamiliar with this new survey would introduce measurement errors into both the dependent variables and the merger-related explanatory variables, producing large reported standard errors on the coefficient estimates, biasing downward the calculated t-statistics. None of the four change in ownership coefficients are significant, and only one is negative. While three of the

four share rise difference coefficients are negative, indicating that acquirers tend to reduce small business lending in response to a merger-induced rise in their small business loan portfolio share, none are significant. Similarly, three of the four share fall difference coefficients are negative, with that in the first equation significant, indicating that acquirers tend to increase small business lending in response to a merger-induced fall in their small business loan portfolio share.

Table 15 contains results for equations corresponding to those in Table 13. Again, the significance levels of the estimated coefficients on the change in ownership and the merger-related variables are much weaker when the changes in small business loans are calculated over the two-year period rather than over the two separate one-year subperiods. As was the case in Table 13, the change in ownership coefficient is positive for banks with small business loan portfolio shares less than 10 percent and negative for banks with portfolio shares greater than 10 percent, although only two of the eight coefficients are significant.

For banks with a portfolio share less than 10 percent that acquire targets with portfolio shares greater than 10 percent, only two of the four share difference coefficients are negative, and none of the four are significant. If, instead, the targets have portfolio shares less than 10 percent, all four share difference coefficients are negative, but only one is significant. For banks with a portfolio share greater than 10

percent that acquire targets with portfolio shares greater than 10 percent, three of the four share difference coefficients are negative, but none are significant. If, instead, the targets have a portfolio share less than 10 percent, the share difference coefficients are negative for the $1 million or less definition of small business loans, with one coefficient being significant, and positive for the $250,000 or less definition of small business loans, with neither being significant.

VIII. Conclusion

The consolidation wave occurring in the banking industry has raised concerns of reduced availability of credit to small businesses. While conventional wisdom assumes that most mergers consist of larger banks with relatively few small business loans acquiring smaller target banks that primarily lend to the small business sector, the reality is quite different. In almost half the acquisition observations in this study, the acquirer had a larger portfolio share of small business loans than its target(s).

Subsequent to a merger, surviving banks do tend to revert towards the premerger small business loan portfolio share of the acquirer. Thus, if the acquirer is an active small business lender that has chosen to focus on relationship lending to smaller borrowers, the acquisition could increase the small business lending of the consolidated institution. However, if the acquirer has not focused on small business lending, the

merger is more likely to reduce credit extended to small businesses from the consolidated institution. While larger institutions do tend to have a smaller portfolio share of small business loans, large institutions that have focused on small business lending are likely to maintain that focus. Thus, when considering the implications of bank acquisitions on small business lending, the portfolio share of small business lending of the acquirer may be as important as the acquirer's size.

A similar result is obtained for the change in ownership for banks that are not merged into another bank, with the effect of a change in ownership on small business lending being sensitive to the relative degree of small business lending specialization of the acquired bank. If the bank was quite involved in the small business loan market prior to the change in ownership, the effect is likely to be detrimental to credit availability to its small business loan customers. On the other hand, if the bank had little involvement in this market prior to the change in ownership, it is likely to become more involved subsequent to its acquisition.

From a public policy standpoint, mergers are not unequivocally bad for the small business borrower. Bank consolidation may increase the availability of small business credit to the extent the acquiring bank specializes in small business lending and the target bank does not. However, it is possible that in some geographic locations, consolidation will result in few, if any, banks with a small business focus. While

small business lenders are likely to respond eventually to profitable lending opportunities in the area, some borrowers may be hurt during the transition, given the time it takes a small firm to establish a new lending relationship. This highlights both the need for antitrust authorities to consider small business credit in their competitive analysis for proposed mergers and the potential role for government programs to ease credit disruptions during the adjustment process.

IX. References

Berger, Allen N., Anil K. Kashyap and Joseph M. Scalise. 1995. "The Transformation of the U.S. Banking Industry: What a Long, Strange Trip It's Been." Brookings Papers on Economic Activity, No. 2, pp. 55-218.

Berger, Allen N. and Gregory F. Udell. 1995. "Relationship Lending and Lines of Credit in Small Firm Finance." Journal of Business, Vol. 68, pp. 351-82.

Berger, Allen N. and Gregory F. Udell. 1996. "Universal Banking and the Future of Small Business Lending." In Anthony Saunders and Ingo Walter, eds., Universal Banking: Financial System Design Reconsidered. Irwin Professional Publishing, Chicago, pp. 558-627.

Boyd, John H., and Stanley L. Graham. 1991. "Investigating the Banking Consolidation Trend." Federal Reserve Bank of Minneapolis Quarterly Review, Spring, pp. 3-15.

Calem, Paul S. 1994. "The Impact of Geographic Deregulation on Small Banks." Federal Reserve Bank of Philadelphia Business Review, November/December, pp. 17-31.

Calem, Paul S. 1993. "The Proconsumer Argument for Interstate Branching." Federal Reserve Bank of Philadelphia Business Review, May/June, pp. 15-29.

Carlino, Gerald A., and Robert H. DeFina. 1996. "Does Monetary Policy Have Differential Regional Effects?" Federal Reserve Bank of Philadelphia Business Review, March/April, pp. 17-27.

Cole, Rebel A., and John D. Wolken. 1996. "Bank and Nonbank Competition for Small Business Credit: Evidence from the 1987 and 1993 National Surveys of Small Business Finances." Federal Reserve Bulletin, November, pp. 983-95.

Cornett, Marcia M., and Hassan Tehranian. 1992. "Changes in Corporate Performance Associated with Bank Acquisitions." Journal of Financial Economics, Vol. 31, April, pp. 211-34.

Elliehausen, Gregory E., and John D. Wolken. 1990. "Banking Markets and the Use of Financial Services by Small and Medium-Sized Businesses." Staff Studies No. 160, Board of Governors of the Federal Reserve System, September.

Hanweck, Gerald A. 1992. "Interstate Banking, Bank Expansion and Valuation." In R. Alton Gilbert, ed., The Changing Market for Financial Services, Proceedings of the 15th Annual Economic Policy Conference of the Federal Reserve Bank of St. Louis.

Hughes, Joseph P., William Lang and Loretta J. Mester. 1996. "Safety in Numbers? Geographic Diversification and Bank Insolvency Risk." Federal Reserve Bank of Philadelphia Economic Research Division Working Paper No. 96-14, May.

Jayaratne, Jith, and Philip E. Strahan. 1995. "The Finance-Growth Nexus: Evidence from Bank Branch Deregulation." Federal Reserve Bank of New York Research Paper no. 9513, June.

Kane, Edward J. 1996. "De Jure Interstate Banking: Why Only Now?" Journal of Money, Credit, and Banking, forthcoming.

Keeton, William R. 1995. "Multi-Office Bank Lending to Small Businesses: Some New Evidence." Federal Reserve Bank of Kansas City Economic Review, 2nd Quarter, pp. 45-57.

Krol, Robert, and Shirley Svorny. 1996. "The Effect of the Bank Regulatory Environment on State Economic Activity." Regional Science and Urban Economics, Vol. 26, pp. 531-41.

Laderman, Elizabeth. 1995. "The Rhyme and Reason of Bank Mergers." FRBSF Weekly Letter, No. 95-39, November 17.

Leeth, J. D., J. A. Scott, and W. C. Dunkelberg. 1987. "Branch Banking, Market Concentration, and the Competition for Small Firm Business." Proceedings of Conference on Bank Structure and Competition, Federal Reserve Bank of Chicago, May.

McLaughlin, Susan. 1995. "The Impact of Interstate Banking and Branching Reform: Evidence from the States." Federal Reserve Bank of New York Current Issues in Economics and Finance, May.

Moore, Robert R. 1995. "Does Geographic Liberalization Really Hurt Small Banks?" Federal Reserve Bank of Dallas Financial Industries Studies, December, pp. 1-12.

Nakamura, Leonard I. 1994. "Small Borrowers and the Survival of the Small Bank: Is Mouse Bank Mighty or Mickey?" Federal Reserve Bank of Philadelphia Business Review, November/December, pp. 3-15.

Nolle, Daniel E. 1995. "Banking Industry Consolidation: Past Changes and Implications." Comptroller of the Currency Economic & Policy Analysis Working Paper 95-1, April.

Peek, Joe, and Eric S. Rosengren. 1995. "The Effects of Interstate Branching on Small Business Lending." In Proceedings of The 31st Annual Conference on Bank Structure and Competition: The New Tool Set, Federal Reserve Bank of Chicago, pp. 314-31.

Petersen, Mitchell A., and Raghuram G. Rajan. 1994. "The Benefits of Lending Relationships: Evidence from Small Business Data." Journal of Finance, Vol. 49, March, pp. 3-38.

Pilloff, Steven J. 1996. "Performance Changes and Shareholder Wealth Creation Associated with Mergers of Publicly Traded Banking Institutions." Journal of Money, Credit, and Banking, Vol. 28, August, Part 1, pp. 294-310.

Rhoades, Stephen A. 1994. "A Summary of Merger Performance Studies in Banking, 1980-93, and an Assessment of the 'Operating Performance' and 'Event Study' Methodologies." Board of Governors of the Federal Reserve System Staff Study No. 167, July.

Robertson, Douglas. 1995. "Are Banks Converging to One Size." Federal Reserve Bank of Philadelphia Working Paper No. 95-29, December.

Savage, Donald T. 1993. "Interstate Banking: A Status Report." Federal Reserve Bulletin, Vol. 79, December, pp. 1075-89.

Scanlon, M. 1981. "Relationship Between Commercial Bank Size and Size of Borrower." Studies of Small Business Finance, Interagency Task Force on Small Business Finance.

Slovin, Myron B., Marie E. Sushka, and John A. Polonchek. 1993. "The Value of Bank Durability: Borrowers as Bank Stakeholders." Journal of Finance, Vol. 48, March, pp. 247-67.

Strahan, Philip E., and James Weston. 1996. "Small Business Lending and Bank Consolidation: Is There Cause for Concern?" Federal Reserve Bank of New York Current Issues in Economics and Finance, March.

Whalen, Gary. 1995. "Out-of-State Holding Company Affiliation and Small Business Lending." Comptroller of the Currency Economic & Policy Analysis Working Paper 95-4, September.

Whalen, Gary. 1994. "Wealth Effects of Intraholding Company Mergers: Evidence from Shareholder Returns." Comptroller of the Currency Economic & Policy Analysis Working Paper 94-4, May.

X. Endnotes

1. Based on data from the National Survey of Small Business Finances, Cole and Wolken (1996) find that banks did experience a slight reduction in market share (2 percentage points) to nonbanks between 1987 and 1993. Still, even though the percentage of small businesses obtaining credit from banks declined from 44.0 percent to 36.8 during this period, the share for nonbanks remained at about 32 percent. Given the substantial number of banks that either failed or experienced severe problems during this period, likely disrupting historical lending relationships with small businesses, one could argue that it is surprising that the decline was not much more dramatic. And, it is possible that with the recovery in bank capital ratios, any reduction may be temporary. In fact, Cole and Wolken (1996) suggest that the growth in bank lending since the 1993 survey may have already offset much of the 1987 to 1993 decline.

2. This recent consolidation is a continuation of a process that has been ongoing for some time. For a discussion of the erosion of regulations restricting geographical expansion of banking organizations and the patterns of earlier bank consolidation, see, for example, Berger, Kashyap and Scalise (1995), Hanweck (1992), Kane (1996), McLaughlin (1995), Nolle (1995), and Savage (1993).

3. Newly chartered banks that make an acquisition on their first day of operations are not counted as de novo banks. Rather than being "start-ups," they are deemed to reflect the continuing operations of preexisting banks, and thus are included in the "other" category.

4. See, for example, Carlino and DeFina (1996) for a discussion of the role of such regional differences in the mix of large and small borrowers on the effectiveness of monetary policy.

5. The small business loan data in the Call Reports are categorized by size of loan, rather than the size of the business borrower. However, for small loan sizes, it is likely that using the size of the loan to define small business lending is satisfactory (see below). The loan size categories are $100,000 or less, $250,000 or less, $1 million or less, and greater than $1 million.

6. Because the 1993:II Call Reports were the first to report data on small business loans, one should keep in mind that calculations based on those data may be less credible than those from later surveys. Being on the early part of the learning curve, bank respondents apparently made numerous reporting errors, in part related to incorrectly interpreting the questions (see, for example, Burger and Udell 1996).

7. Because the sample of banks over which the growth rates are constructed differs from that in Table 3, the growth rates reported in the final column (Total) of Table 4 will differ from the corresponding growth rates reported in Table 3.

8. Institutions regulated by the Office of Thrift Supervision do file Thrift Financial Reports quarterly. However, these data are not reported on a consistent basis with the bank Call Reports and are thus not used in this study.

9. The "original amount" of a loan is the size of the loan at origination, rather than its current size, unless the latter is larger. For a line of credit or loan commitment, it is the size of the line of credit or loan commitment when most recently approved, extended, or renewed. For loan participations and syndications, it is the entire amount of the credit originated by the lead lender.

10. If an acquirer merges with more than one target during a subperiod, target size is measured as the average asset size of the targets acquired during the subperiod. Similarly, the target small business loan portfolio share in that case is calculated as the ratio of the sum of small business loans held by the targets to the sum of target assets.

11. In fact, half the observations in this cell are affiliate mergers. As noted above, there are a number of reasons unrelated to small business lending that may motivate a holding company to select the particular bank to be designated as the acquirer when consolidating affiliates. The nine nonaffiliate merger observations in this cell are more evenly split, with four exhibiting a positive and five a negative change in portfolio share subsequent to the merger.

12. The tendency for smaller banks to have a higher return compared to larger banks is less pronounced for the return on equity than for the return on assets, not surprising given that larger banks tend to be more leveraged, and has been less so more recently, probably reflecting the increased importance of fee income at larger banks as they move more activity off balance sheet. In fact, Nakamura (1994, Table 4) shows that the ratio of interest income as a share of assets at smaller banks continued to exceed that at larger banks, at least through the end of his sample in 1993.

Table 1
Accounting for the Change in the Number of Commercial and Savings Banks by Asset Class

		Asset Class					
		<$100mil	$100-300mil	$300-500mil	$500mil-3 bil	>$3 bil	Totals
1	Banks in class June 93	8,113	2,273	436	499	186	11,507
2	Less: Failed 93-94	10	4	2	0	0	16
3	Less: Acquired 93-94	343	117	21	37	6	524
4	Less: Other 93-94	11	3	0	5	1	20
5	Less: Grew 93-94	244	102	58	16	N/A	N/A
6	Less: Shrank 93-94	N/A	36	21	10	2	N/A
7	Plus: De Novo 93-94	34	1	0	0	0	35
8	Plus: Other 93-94	58	32	6	4	4	104
9	Plus: Grew 93-94	N/A	241	94	69	16	N/A
10	Plus: Shrank 93-94	36	22	9	2	N/A	N/A
11	Banks in class June 94	7,633	2,307	443	506	197	11,086
12	Less: Failed 94-95	5	4	1	0	0	10
13	Less: Acquired 94-95	388	161	45	42	8	644
14	Less: Other 94-95	9	3	2	0	1	15
15	Less: Grew 94-95	283	119	51	19	N/A	N/A
16	Less: Shrank 94-95	N/A	29	16	9	4	N/A
17	Plus: De Novo 94-95	52	2	1	2	0	57
18	Plus: Other 94-95	33	15	1	15	0	64
19	Plus: Grew 94-95	N/A	278	114	61	19	N/A
20	Plus: Shrank 94-95	29	17	8	4	N/A	N/A
21	Banks in class June 95	7,062	2,303	452	518	203	10,538

	District												
	1	2	3	4	5	6	7	8	9	10	11	12	Totals[a]
	Boston	NewYork	Philadelphia	Cleveland	Richmond	Atlanta	Chicago	St.Louis	Minneapolis	KansasCity	Dallas	SanFrancisco	
Banks in District June 93	367	350	306	493	634	1,360	1,997	1,192	1,101	1,870	1,160	677	11,507
Less: Failed 93-94	2	0	0	0	1	0	0	0	0	0	3	9	16
Less: Acquired 93-94	18	12	21	32	44	52	79	42	26	125	50	23	524
Less: Other 93-94	5	3	1	0	1	1	0	0	1	2	0	7	21
Plus: De Novo 93-94	1	1	2	2	1	4	8	5	1	3	0	7	35
Plus: Other 93-94	3	7	7	23	10	8	28	5	2	5	5	2	105
Banks in District June94	346	343	293	486	599	1,319	1,954	1,160	1,077	1,750	1,112	647	11,086
Less: Failed 94-95	3	0	0	0	0	0	0	0	0	0	0	7	10
Less: Acquired 94-95	15	21	23	12	53	90	126	50	59	109	56	30	644
Less: Other 94-95	1	2	3	3	0	2	3	1	1	0	0	2	18
Plus: De Novo 94-95	1	3	2	2	5	9	13	6	3	4	1	8	57
Plus: Other 94-95	1	10	4	13	4	7	11	5	0	1	9	2	67
Banks in District June95	329	333	273	486	555	1,243	1,849	1,120	1,020	1,646	1,066	618	10,538
Percent Shrinkage	10.4	4.9	10.8	1.4	12.5	8.6	7.4	6.0	7.4	12.0	5.1	8.7	8.4
Percent Acquired	9.0	9.4	14.4	8.9	15.3	10.4	10.3	7.7	7.7	12.5	9.1	7.8	10.2
Percent <$100 mil Assets	30.5	31.1	36.6	58.2	59.1	69.8	70.2	76.5	87.0	80.6	77.8	55.5	70.5
Percent <$300 mil Assets	71.9	59.1	75.2	84.6	86.8	90.4	91.2	95.1	97.5	96.8	95.4	80.9	90.3

[a] The totals for the "Other" categories differ from the totals in Table 1 because this category now also includes banks that shift their headquarters from one district to another. There are four such instances.

Table 3
Growth in Domestic Assets and Loans, by Type and Size, U.S. Commercial and Savings Banks
Growth Rates (Percent)

	1993:II to 1994:II	1994:II to 1995:II
Total Domestic Assets	6.46	4.99
Total Domestic Loans	6.91	11.76
Total Domestic Business Loans	4.65	10.42
C&I	4.90	13.36
Real Estate	4.25	5.74
Total Domestic Large Business Loans(> $1mil)	8.64	12.56
C&I	9.06	16.49
Real Estate	7.74	4.06
Total Domestic Small Business Loans ($1 million or less)	-0.65	7.31
C&I	-2.29	7.31
Real Estate	1.15	7.32
Total Domestic Small Business Loans ($250,000 or less)	-11.32	5.63
C&I	-9.67	6.45
Real Estate	-13.56	4.48

Source: Bank Call Reports.

Figure 1 Distribution of Domestic Business Loans by Bank Asset Size, U.S. Commercial and Savings Banks

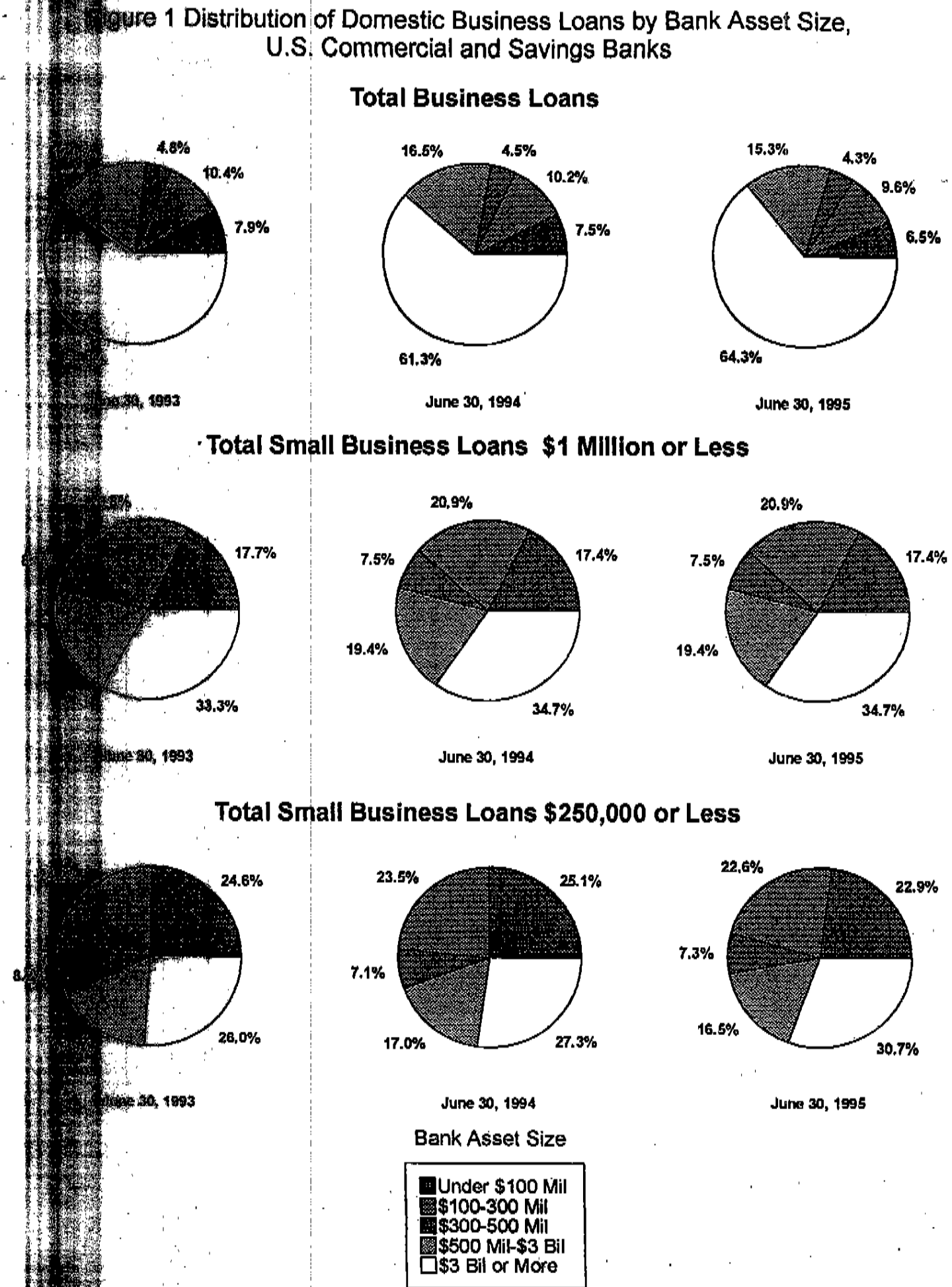
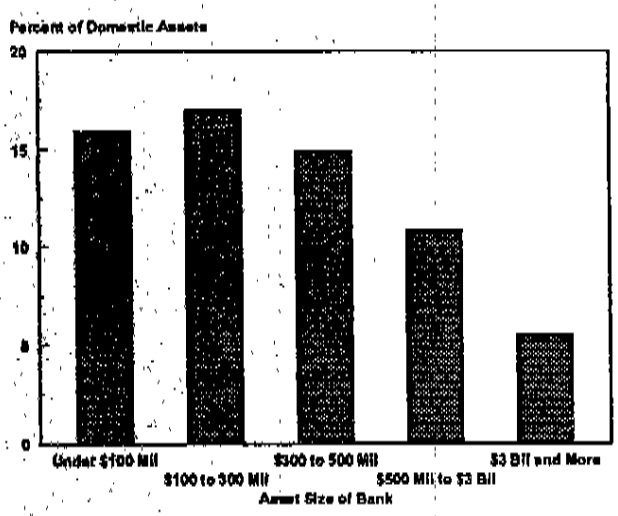
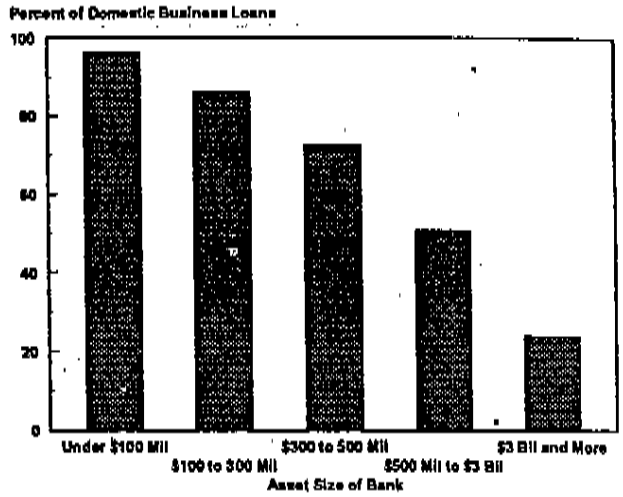


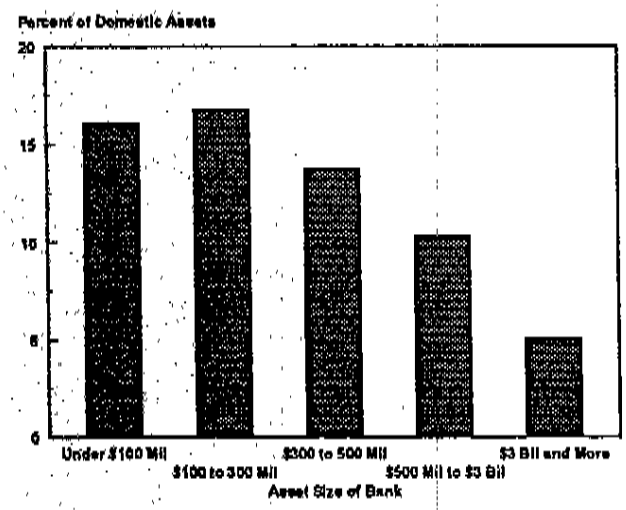
Figure 2a The Importance of Small Business Loans to Banks, by Bank Asset Size

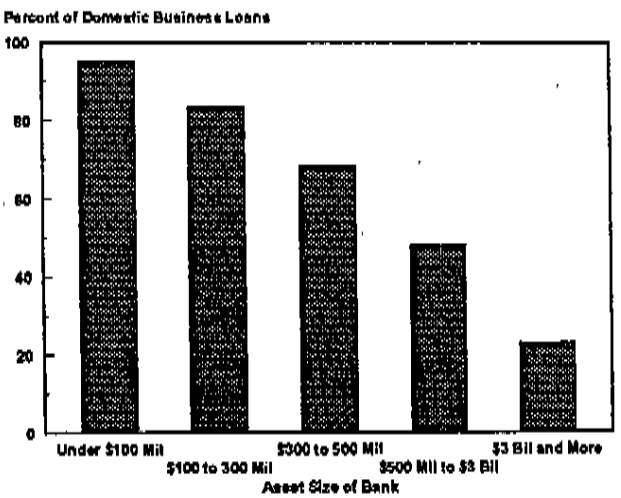
Small Business Loans $1 Million or Less
As of June 30, 1993



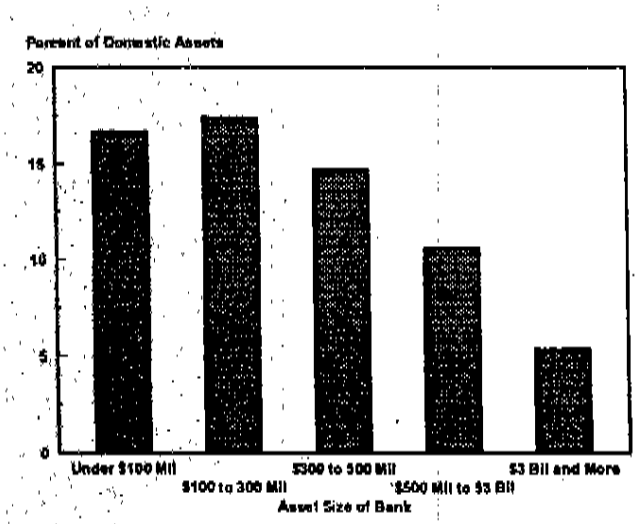


As of June 30, 1994





As of June 30, 1995



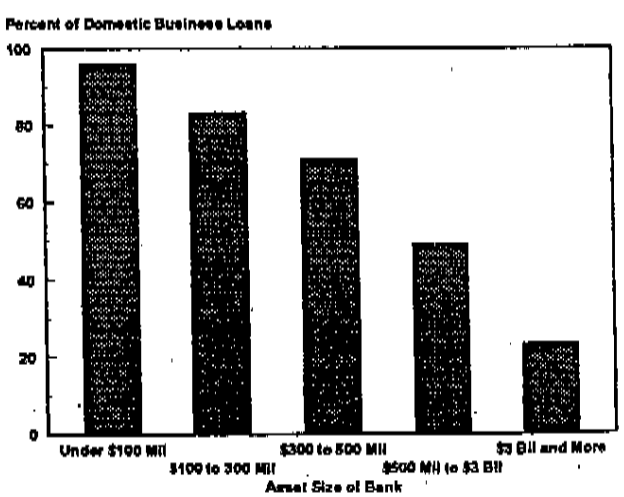
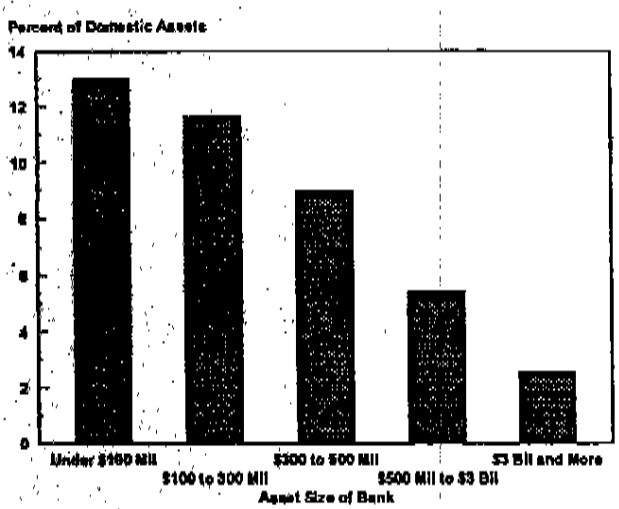
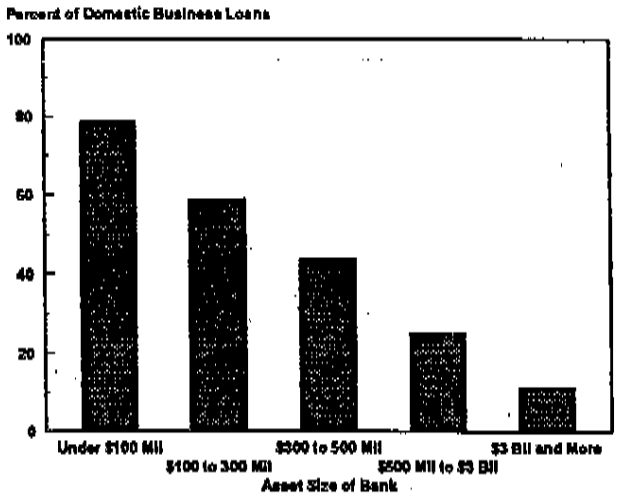


Figure 2b The Importance of Small Business Loans to Banks, by Bank Asset Size

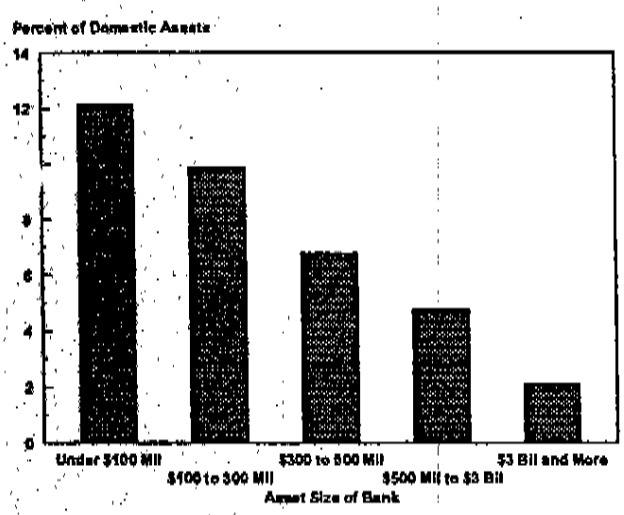
Small Business Loans $250,000 or Less

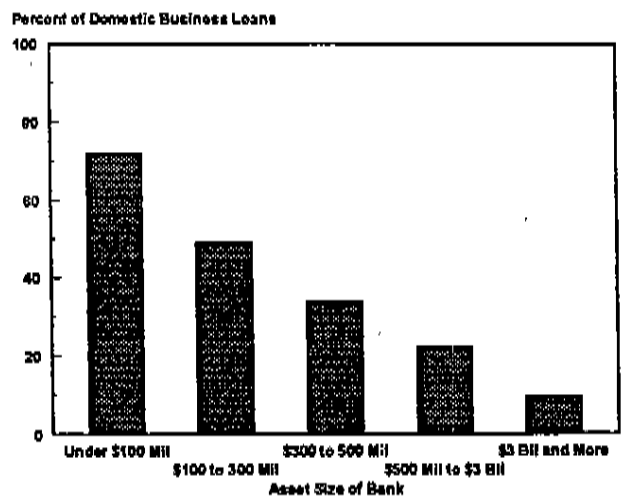
As of June 30, 1993



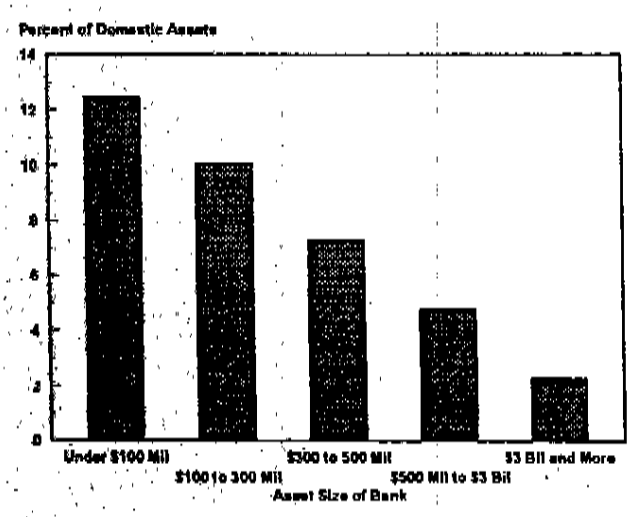


As of June 30, 1994





As of June 30, 1995



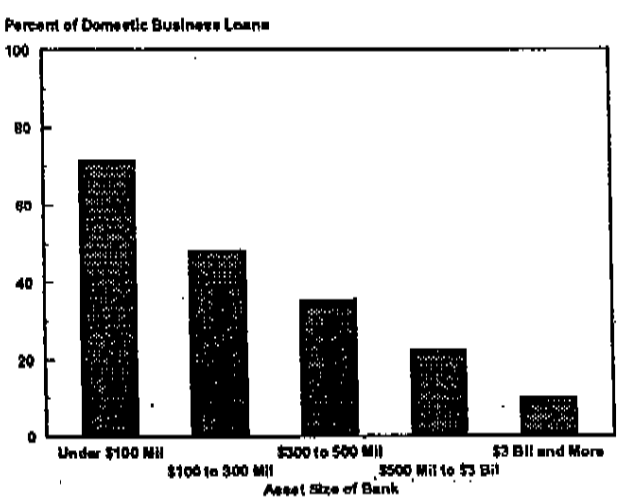


Table 4

Growth in Domestic Assets and Loans, by Bank Asset Size, U.S. Commercial and Savings Banks

Growth Rates (percent): 1993:II to 1994:II

	<$100mil	$100-300mil	$300-500mil	$500mil-3 bil	>$3 bil	Total
Total Domestic Assets	8.15	7.47	9.87	10.64	10.80	10.09
Total Domestic Loans	12.33	9.75	10.71	12.25	9.65	10.39
Total Business Loans	13.50	9.62	6.58	9.77	7.51	8.80
C&I	10.93	5.37	3.51	8.53	8.74	8.41
Real Estate	16.31	13.38	13.17	11.15	5.74	9.42
Total Large Business Loans(>$1mil)	58.89	42.41	33.79	16.96	9.69	12.28
C&I	48.94	26.02	24.32	16.82	10.70	11.92
Real Estate	66.44	55.69	41.19	17.12	6.95	13.06
Total Small Business Loans ($1 million or less)	11.73	4.37	-0.70	2.80	1.84	4.10
C&I	9.71	2.25	-3.37	0.26	0.69	2.21
Real Estate	13.97	6.27	1.84	5.54	3.33	6.18
Total Small Business Loans ($250,000 or less)	1.60	-11.82	-19.80	-4.77	-9.14	-7.30
C&I	3.85	-8.33	-14.68	-5.45	-9.31	-5.69
Real Estate	-1.28	-15.57	-25.62	-3.75	-8.82	-9.49

Growth Rates (percent): 1994:II to 1995:II

	<$100mil	$100-300mil	$300-500mil	$500mil-3 bil	>$3 bil	Total
Total Domestic Assets	8.99	9.86	9.22	16.53	8.66	10.07
Total Domestic Loans	13.81	14.10	12.73	21.84	17.55	17.34
Total Business Loans	16.12	13.15	12.66	17.17	17.46	16.68
C&I	16.08	13.14	14.32	18.67	19.89	18.83
Real Estate	16.15	13.16	11.36	15.51	11.90	13.18
Total Large Business Loans(>$1mil)	18.33	20.91	12.56	16.76	18.20	17.95
C&I	22.58	19.69	18.72	21.43	21.06	21.05
Real Estate	15.52	21.72	8.25	11.14	10.26	11.02
Total Small Business Loans ($1 million or less)	16.01	11.64	12.71	17.61	14.97	14.80
C&I	15.84	12.06	12.40	15.40	14.75	14.41
Real Estate	16.19	11.27	12.97	19.82	15.26	15.22
Total Small Business Loans ($250,000 or less)	11.96	7.72	11.08	14.24	16.75	12.62
C&I	13.09	9.38	12.20	13.33	16.48	13.31
Real Estate	10.44	5.76	9.72	15.55	17.25	11.64

Source: Bank Call Reports.

Table 5
Number of Commercial and Savings Banks and Volume of Domestic Business Loans by Federal Reserve District (Levels as of June 30, 1993)

	District												
	1	2	3	4	5	6	7	8	9	10	11	12	Total
	Boston	NewYork	Philadelphia	Cleveland	Richmond	Atlanta	Chicago	St.Louis	Minneapolis	KansasCity	Dallas	SanFrancisco	
Total Banks	367	350	306	493	634	1,360	1,997	1,192	1,101	1,870	1,162	677	11,507
Percentage Shares by Bank Asset Size:													
< $100mil	30.5	31.1	36.6	58.2	59.1	69.8	70.2	76.5	87.0	86.6	77.8	55.5	70.5
$100-300mil	41.4	28.0	38.6	26.4	27.6	20.6	21.0	18.5	10.4	10.3	17.7	25.4	19.8
$300-500mil	10.1	11.4	8.2	6.3	4.9	3.7	4.4	2.3	1.3	1.4	2.0	6.4	3.8
$500mil-3 bil	14.4	19.1	12.4	6.5	5.0	4.3	3.5	2.1	1.0	1.6	2.1	8.4	4.3
$3 bil or more	3.5	10.3	4.2	2.6	3.3	1.6	1.0	0.6	0.3	0.2	0.5	4.3	1.6
Total Domestic Business Loans($mil)	49,151	126,191	33,760	51,242	62,851	76,335	100,301	29,851	19,454	25,291	35,443	107,655	717,635
Percentage Shares by Loan Size:													
> $1 million	60.7	75.4	55.9	60.4	55.2	49.6	53.4	33.4	35.0	29.3	51.0	61.4	57.0
≤$1 million	39.3	24.6	44.1	39.6	44.8	50.4	46.6	66.6	65.0	70.7	49.0	38.6	43.0
≤$250,000	21.0	11.5	23.6	23.5	28.3	31.8	26.7	46.2	47.9	49.4	34.5	18.7	25.3
Growth Rates, 1992:II to 1993:II (annualized percentage)													
Total Domestic Business Loans	7.18	-1.17	-4.85	10.52	13.68	11.49	10.72	11.04	8.71	12.46	12.46	5.83	7.50
By Loan Size:													
> $1 million	11.90	-1.49	-4.41	14.62	19.97	15.28	17.38	19.87	11.35	27.91	19.21	8.81	10.58
≤$1 million	-0.54	-0.19	-5.40	3.95	5.39	7.63	2.57	6.34	7.27	5.40	4.98	0.90	3.26
≤$250,000	-8.33	-4.75	-10.33	-2.18	-3.26	0.64	-3.89	0.91	-0.49	-1.29	-2.57	-7.09	-3.21

Table 6
Commercial and Savings Banks Classified by Merger Activity and by Domestic Asset Classes
(Number of Banks)

July 1, 1993 to June 30, 1994
(Asset Size as of June 30, 1993)

		Bank Asset Size					
Acquisition Category	Missing Asset Data	<$100mil	$100-300mil	$300-500mil	$500mil-3 bil	>$3 bil	Total
Only affiliate acquisitions		41	34	14	15	14	118
Some nonaffiliate acquisitions		64	36	14	34	17	165
Excluded acquisitions	10	42	46	23	42	35	198
No acquisitions		7,600	2,035	362	359	111	10,467
Incomplete bank data	120	359	123	23	40	6	671
Total	130	8,106	2,274	436	490	183	11,619

July 1, 1994 to June 30, 1995
(Asset Size as of June 30, 1994)

		Bank Asset Size					
Acquisition Category	Missing Asset Data	<$100mil	$100-300mil	$300-500mil	$500mil-3 bil	>$3 bil	Total
Only affiliate acquisitions		42	40	13	29	15	139
Some nonaffiliate acquisitions		57	51	9	42	23	182
Excluded acquisitions	9	27	23	8	26	33	126
No acquisitions		7,101	2,026	361	363	112	9,963
Incomplete bank data	107	402	170	48	41	8	776
Total	116	7,629	2,310	439	501	191	11,186

Table 7
Merger Activity by Commercial and Savings Banks by Asset Size
(Number of Banks)

July 1, 1993 to June 30, 1994
(Asset Sizes as of June 30, 1993 for Acquirer and Acquired)

	Asset Size of Acquirer					
Asset Size of Acquired	<$100mil	$100-300mil	$300-500mil	$500mil-3 bil	>$3 bil	Total
<$100 mil	122	90	31	69	31	343
$100-300mil	5	12	12	43	45	117
$300-500mil		1	3	8	8	20
$500mil-3 bil	1		4	5	28	38
>$3 bil				1	5	6
Total	128	103	50	126	117	524

July 1, 1994 to June 30, 1995
(Asset Sizes as of June 30, 1994 for Acquirer and Acquired)

	Asset Size of Acquirer					
Asset Size of Acquired	<$100mil	$100-300mil	$300-500mil	$500mil-3 bil	>$3 bil	Total
<$100mil	126	117	18	81	41	383
$100-300mil	8	21	9	60	57	155
$300-500mil	2	3	2	14	25	46
$500-3 bil			1	17	22	40
$3 bil				1	7	8
Total	136	141	30	173	152	632

Table 8a
Number of Mergers by Relative Size and Relative Small Business Loan Portfolio Shares of Acquirers and Targets

Panel 1

	Asset Size[a]		
Small Business Loans / Assets	Acquirer>target(s)	Acquirer<target(s)	Total Observations
Acquirer<target(s)[b]	293	18	311
Acquirer>target(s)[b]	251	37	288
Total Observations	544	55	599

Panel 2

	Acquirer > Target(s) and Target Asset Size < $100 million[a]		
Small Business Loans / Assets	Acquirer < $100 million	Acquirer: $100-300 million	Acquirer>$300 million
Acquirer < target(s)[b]	73	61	64
Acquirer > target(s)[b]	92	80	34
Total Observations	165	141	98

[a] If an acquirer merges with more than one target during a subperiod, target size is measured as the average asset size of the targets acquired during the subperiod.

[b] If an acquirer merges with more than one target during a subperiod, the target small business loan portfolio share is calculated as the ratio of the sum of small business loans held by the targets to the sum of target assets.

Table 8b
Subsequent Changes in Small Business Loan Shares by Relative Size and Relative Shares of Acquirers and Targets

Panel 1

Small Business Loans Assets	Asset Size[a] Acquirer>target(s)		Acquirer<target(s)	Total Observations
Acquirer<target(s)[b]				
	Number positive	151	6	157
	Number negative	142	12	154
Acquirer>target(s)[b]				
	Number positive	134	19	153
	Number negative	117	18	135

Panel 2

Small Business Loans Assets	Acquirer > Target(s) and Target Asset Size < $100 million[a] Acquirer < $100 million		Acquirer: $100-300 million	Acquirer>$300 million
Acquirer < target(s)[b]				
	Number positive	51	32	28
	Number negative	22	29	36
Acquirer > target(s)[b]				
	Number positive	60	42	15
	Number negative	32	38	19

[a] If an acquirer merges with more than one target during a subperiod, target size is measured as the average asset size of the targets acquired during the subperiod.

[b] If an acquirer merges with more than one target during a subperiod, the target small business loan portfolio share is calculated as the ratio of the sum of small business loans held by the targets to the sum of target assets.

Table 9a
Determinants of the Change in Small Business Loans (≤ $1mil)
1993:II to 1994:II and 1994:II to 1995:II

	$\Delta\left(\frac{SBL}{Assets}\right)$	$\Delta\left(\frac{SBL}{Loans}\right)$	$\frac{\Delta SBL}{Assets}$	$\frac{\Delta SBL}{Loans}$
Constant	4.726**	5.403**	5.299**	13.691**
	(11.81)	(8.50)	(10.82)	(14.96)
Δ Ownership	-.315*	-.108	-.377*	-.144
	(2.36)	(0.51)	(2.31)	(0.47)
Share rise	.615*	.348	.731*	.680
	(2.20)	(0.79)	(2.14)	(1.06)
Share rise difference	-.322**	-.190*	-.258*	-.227
	(3.20)	(1.96)	(2.09)	(1.62)
Share fall	-.527	.086	-.697*	.433
	(1.89)	(0.19)	(2.04)	(0.68)
Share fall difference	-.440**	-.107	-.394**	-.215
	(6.50)	(1.39)	(4.75)	(1.94)
Employment growth	.206**	.398**	.128**	.249**
	(6.32)	(7.71)	(3.22)	(3.14)
Lagged employment growth	.182**	.158**	.358**	.632**
	(6.11)	(3.33)	(9.80)	(9.26)
Urban location	-.109	-.070	.792**	1.504**
	(1.91)	(0.78)	(11.31)	(11.49)
Concentration ratio-deposits	.001	.022**	.003	.006
	(0.24)	(2.84)	(0.51)	(0.56)
Concentration ratio-small loans	-.004	-.025**	.004	.002
	(0.85)	(3.51)	(0.68)	(0.24)
MBHC	-.080	-.317**	-.207**	-.194
	(1.31)	(3.26)	(2.77)	(1.39)
Log (assets)	-.176**	-.385**	-.494**	-.930**
	(6.82)	(9.38)	(15.63)	(15.73)
Leverage ratio	-.039**	.011	-.024*	-.051*
	(4.16)	(0.77)	(2.09)	(2.39)
Nonperforming loans/loans	-.118**	-.068**	.327**	-.549**
	(8.22)	(3.00)	(18.68)	(16.79)
Return on assets	-.035	.009	.049	.283**
	(1.19)	(0.19)	(1.37)	(4.23)
Loans/assets	.026**	.003	.018**	.023**
	(13.85)	(1.08)	(8.03)	(5.29)
Number of Observations	20,710	20,710	20,710	20,710
R^2	.026	.014	.050	.041
SSR	266,473	671,646	399,037	1,393,250
SER	3.589	5.699	4.392	8.203

Notes: Each equation also includes a set of Federal Reserve District dummy variables. Absolute values of t-statistics are in parentheses.

* Significant at the 5 percent level.
**Significant at the 1 percent level.

Table 9b

Determinants of the Change in Small Business Loans (≤ $250,000)

1993:II to 1994:II and 1994:II to 1995:II

	$\Delta\left(\frac{SBL}{Assets}\right)$	$\Delta\left(\frac{SBL}{Loans}\right)$	$\frac{\Delta SBL}{Assets}$	$\frac{\Delta SBL}{Loans}$
Constant	3.970**	6.414**	5.182**	12.350**
	(6.16)	(6.02)	(7.53)	(12.99)
Δ Ownership	.038	.586	-.370*	-.237
	(0.18)	(1.65)	(2.13)	(0.75)
Share rise	.661	.843	1.086**	2.342**
	(1.57)	(1.25)	(3.19)	(3.98)
Share rise difference	.258	.114	-.490**	-.577**
	(1.53)	(0.72)	(3.60)	(4.09)
Share fall	.081	.486	.466	1.187
	(0.18)	(0.62)	(1.26)	(1.69)
Share fall difference	-.174	-.073	-.103	-.088
	(1.47)	(0.55)	(1.08)	(0.74)
Employment growth	-.506**	-.877**	-.318**	-.613**
	(9.66)	(10.13)	(7.50)	(7.94)
Lagged employment growth	.340**	.602**	.512**	.855**
	(7.07)	(7.57)	(13.16)	(12.05)
Urban location	2.405**	4.396**	-.040	.005
	(26.10)	(28.86)	(0.53)	(0.04)
Concentration ratio-deposits	.066**	.139**	.009	.014
	(8.44)	(10.70)	(1.45)	(1.20)
Concentration ratio-small loans	-.088**	-.175**	.000	.002
	(12.34)	(14.78)	(0.01)	(0.21)
MBHC	.158	.159	-.219**	-.242
	(1.61)	(0.98)	(2.76)	(1.67)
Log (assets)	.518**	.925**	.488**	.985**
	(12.44)	(13.43)	(14.48)	(16.04)
Leverage ratio	.007	.031	-.008	-.002
	(0.44)	(1.24)	(0.67)	(0.10)
Nonperforming loans/loans	.023	.175**	.212**	.341**
	(0.98)	(4.60)	(11.37)	(10.03)
Return on assets	-.477	-.697**	.040	.318**
	(10.10)	(8.93)	(1.04)	(4.57)
Loans/assets	.051**	.046**	.004	-.017**
	(16.81)	(9.26)	(1.54)	(3.80)
Number of Observations	20,697	20,697	20,697	20,697
R^2	.184	.192	.037	.037
SSR	689,256	1,884,410	451,627	1,499,730
SER	5.775	9.548	4.674	8.518

Notes: Each equation also includes a set of Federal Reserve District dummy variables. Absolute values of t-statistics are in parentheses.

* Significant at the 5 percent level.

**Significant at the 1 percent level.

Table 10a

Determinants of the Change in Small Business Loans by Bank Asset Categories, (≤ $1mil)
1993:II to 1994:II and 1994:II to 1995:II

	Bank Asset Size < $100mil		Bank Asset Size > $100mil	
	$\Delta\left(\frac{SBL}{Assets}\right)$	$\frac{\Delta SBL}{Assets}$	$\Delta\left(\frac{SBL}{Assets}\right)$	$\frac{\Delta SBL}{Assets}$
Constant	3.005**	1.133	3.195**	4.521**
	(4.63)	(1.36)	(4.02)	(5.37)
Δ Ownership	-.372*	-.326	-.154	-.461
	(2.35)	(1.60)	(0.62)	(1.76)
Share rise	1.451**	1.769**	.249	.452
	(2.77)	(2.62)	(0.72)	(1.21)
Share rise difference	-.480**	-.422*	-.265	-.285
	(3.14)	(2.15)	(1.92)	(1.95)
Share fall	1.141*	1.662**	.263	.237
	(2.51)	(2.85)	(0.70)	(0.60)
Share fall difference	-.648**	-.577**	.073	.069
	(7.64)	(5.29)	(0.58)	(0.52)
Employment growth	-.157**	.060	-.332**	.320**
	(4.09)	(1.22)	(5.43)	(4.92)
Lagged employment growth	.122**	.304**	.307**	.464**
	(3.42)	(6.61)	(5.59)	(7.98)
Urban location	.014	1.043**	.287*	.142
	(0.21)	(12.12)	(2.57)	(1.20)
Concentration ratio-deposits	.002	-.005	.005	.016
	(0.33)	(0.63)	(0.58)	(1.66)
Concentration ratio-small loans	-.003	.013	-.010	.013
	(0.55)	(1.84)	(1.24)	(1.53)
MBHC	-.053	-.045	-.110	-.443**
	(0.72)	(0.47)	(0.98)	(3.72)
Log (assets)	.005	-.122*	-.070	-.334**
	(0.11)	(1.96)	(1.30)	(5.82)
Leverage ratio	-.048**	-.014	.006	-0.18
	(4.60)	(1.04)	(0.27)	(0.81)
Nonperforming loans/loans	.096**	.314**	-.173**	-.329**
	(5.79)	(14.79)	(6.02)	(10.82)
Return on assets	-.051	-.052	-.025	.292**
	(1.53)	(1.21)	(0.42)	(4.56)
Loans/assets	-.026**	.024**	-.025**	.006
	(1.80)	(8.40)	(6.97)	(1.49)
Number of Observations	14,669	14,669	6,041	6,041
R^2	.022	.047	.030	.061
SSR	184,750	304,828	80,294	90,261
SER	3.552	4.563	3.654	3.874

Notes: Each equation also includes a set of Federal Reserve District dummy variables. Absolute values of t-statistics are in parentheses.

* Significant at the 5 percent level.
**Significant at the 1 percent level.

Table 10b

Determinants of the Change in Small Business Loans by Bank Asset Categories, (≤ $250,000) 1993:II to 1994:II and 1994:II to 1995:II

	Bank Asset Size < $100mil		Bank Asset Size > $100mil	
	$\Delta\left(\frac{SBL}{Assets}\right)$	$\frac{\Delta SBL}{Assets}$	$\Delta\left(\frac{SBL}{Assets}\right)$	$\frac{\Delta SBL}{Assets}$
Constant	15.697**	6.329**	15.252**	1.073
	(33.70)	(7.32)	(11.60)	(1.10)
Δ Ownership	-.004	-.421*	-.174	-.129
	(0.01)	(1.99)	(0.43)	(0.43)
Share rise	.294	.713	1.248*	.550
	(0.34)	(0.96)	(2.40)	(1.43)
Share rise difference	.079	-.406*	-.380	-.392*
	(0.33)	(1.96)	(1.46)	(2.04)
Share fall	.382	.905	.620	.047
	(0.96)	(1.54)	(0.95)	(0.10)
Share fall difference	-.160	-.106	.404	.022
	(1.19)	(0.91)	(1.54)	(0.11)
Employment growth	-.453**	-.203**	-.765**	-.613**
	(7.63)	(3.96)	(7.56)	(8.19)
Lagged employment growth	.157**	.406**	.760**	.772**
	(2.84)	(8.51)	(8..37)	(11.50)
Urban branch	2.406**	.036	2.394**	-.255
	(23.32)	(0.40)	(12.94)	(1.86)
Concentration ratio-deposits	.058**	.004	.066**	.023*
	(6.40)	(0.55)	(4.49)	(2.08)
Concentration ratio-small loans	-.076**	.009	-.095**	-.021
	(9.05)	(1.26)	(7.46)	(2.23)
MBHC	.279*	-.229*	.186	-.245
	(2.46)	(2.34)	(1.00)	(1.78)
Log (assets)	1.629**	-.651**	1.084**	.079
	(21.86)	(10.09)	(12.09)	(1.19)
Leverage ratio	.065**	-.019	-.166**	.031
	(4.07)	(1.39)	(4.66)	(1.16)
Nonperforming loans/loans	.029	-.237**	.125**	-.165**
	(1.14)	(10.77)	(2.62)	(4.68)
Return on assets	-.620**	.039	-.219*	.094
	(11.95)	(0.88)	(2.19)	(1.27)
Loans/assets	.041**	.009**	.073**	-.007
	(11.91)	(3.06)	(12.44)	(1.65)
Number of Observations	14,666	14,666	6,031	6,031
R^2	.205	.027	.159	.037
SSR	438,896	328,438	218,414	119,568
SER	5.476	4.737	6.032	4.463

Notes: Each equation also includes a set of Federal Reserve District dummy variables. Absolute values of t-statistics are in parentheses.

*Significant at the 5 percent level.

**Significant at the 1 percent level.

Table 11a

Determinants of the Change in Small Business Loans by Small Business Loan Share (≤ $1mil) 1993:II to 1994:II and 1994:II to 1995:II

	Small Business Loans/Assets > $10%		Small Business Loans/Assets < $10%	
	$\Delta\left(\frac{SBL}{Assets}\right)$	$\frac{\Delta SBL}{Assets}$	$\Delta\left(\frac{SBL}{Assets}\right)$	$\frac{\Delta SBL}{Assets}$
Constant	7.577**	8.522**	1.214**	3.694**
	(11.81)	(10.82)	(7.75)	(7.44)
Δ Ownership	-.678**	-.755**	.583**	.487*
	(3.74)	(3.39)	(3.53)	(2.46)
Share rise	.848*	.938	.183	.358
	(2.09)	(1.80)	(0.64)	(1.04)
Share rise difference	-.335*	-.170	-.356**	-.395**
	(2.28)	(0.95)	(3.25)	(3.01)
Share fall	-.428	-.722	-.119	.109
	(1.18)	(1.62)	(0.24)	(0.19)
Share fall difference	-.488**	-.438**	-.099	.345
	(6.07)	(4.43)	(0.21)	(0.61)
Employment growth	-.241**	-.171**	-.162**	-.111*
	(5.20)	(3.05)	(4.23)	(2.42)
Lagged employment growth	.199**	.439**	.111**	.145**
	(4.72)	(8.50)	(3.17)	(3.46)
Urban location	.171*	.977**	.186**	.345**
	(2.18)	(10.06)	(2.64)	(4.06)
Concentration ratio-deposits	.009	.008	-.011	-.008
	(1.31)	(0.92)	(1.85)	(1.12)
Concentration ratio-small loans	-.005	.008	.007	-.011
	(0.83)	(1.02)	(1.38)	(1.66)
MBHC	-.202*	-.405**	.196**	.306**
	(2.38)	(3.90)	(2.67)	(3.48)
Log (assets)	-.322**	-.789**	-.129**	-.208**
	(7.85)	(15.66)	(4.86)	(6.55)
Leverage ratio	-.072**	-.020	-.011	-.006
	(4.49)	(1.03)	(1.32)	(0.53)
Nonperforming loans/loans	.157**	.461**	-.035	.071
	(7.53)	(18.04)	(2.21)	(3.74)
Return on assets	.033	.213**	-.135**	-.178**
	(0.69)	(3.67)	(4.76)	(5.23)
Loans/assets	.046**	.017**	.001	.010**
	(14.09)	(4.18)	(0.65)	(4.27)
Number of Observations	13,120	13,120	7,590	7,590
R^2	.036	.071	.025	.029
SSR	216,740	326,559	45,166	64,670
SER	4.069	4.994	2.444	2.974

Notes: Each equation also includes a set of Federal Reserve District dummy variables. Absolute values of t-statistics are in parentheses.

* Significant at the 5 percent level.

**Significant at the 1 percent level.

Table 11b

Determinants of the Change in Small Business Loans by Small Business Loan Share (≤ $250,000)
1993:II to 1994:II and 1994:II to 1995:II

	Small Business Loans/Assets > $10%		Small Business Loans/Assets < $10%	
	$\Delta\left(\frac{SBL}{Assets}\right)$	$\frac{\Delta SBL}{Assets}$	$\Delta\left(\frac{SBL}{Assets}\right)$	$\frac{\Delta SBL}{Assets}$
Constant	12.073**	14.333**	-1.828**	-3.268**
	(9.16)	(12.10)	(2.83)	(9.13)
Δ Ownership	-.742*	-.788*	.971**	.338*
	(2.15)	(2.54)	(3.95)	(2.52)
Share rise	.892	.096	.338	-.697
	(0.87)	(0.21)	(0.89)	(5.38)
Share rise difference	.550	.083	-.044	-.634**
	(1.55)	(0.26)	(0.27)	(7.18)
Share fall	.156	1.449*	1.224*	.077
	(0.21)	(2.15)	(2.09)	(0.24)
Share fall difference	-.055	-.199	-1.695**	-.038
	(0.36)	(1.44)	(3.49)	(0.14)
Employment growth	-.590**	-.510**	-.424**	-.085**
	(6.85)	(6.59)	(7.18)	(2.66)
Lagged employment growth	.633**	.842**	.094	.104**
	(7.95)	(11.78)	(1.74)	(3.54)
Urban location	3.007**	-.162	1.738**	.107
	(20.49)	(1.23)	(16.07)	(1.81)
Concentration ratio-deposits	.094**	.028*	.041**	-.005
	(7.16)	(2.36)	(4.63)	(0.96)
Concentration ratio-small loans	-.114**	.005	-.069**	.004
	(9.65)	(0.43)	(8.63)	(0.95)
MBHC	-.279	-.662**	.685**	-.003
	(1.71)	(4.51)	(6.22)	(0.06)
Log (assets)	1.199**	1.475**	.356**	.282
	(13.60)	(18.63)	(8.43)	(12.25)
Leverage ratio	.077*	-.058*	-.040**	-.002
	(2.52)	(2.11)	(2.77)	(0.27)
Nonperforming loans/loans	-.013	-.376**	.061*	-.080**
	(0.33)	(10.25)	(2.50)	(6.01)
Return on assets	-.650**	.257**	-.373**	-.068**
	(7.18)	(3.16)	(7.91)	(2.65)
Loans/assets	.068**	.017**	.051**	.012**
	(10.47)	(2.89)	(16.38)	(7.34)
Number of Observations	10,062	10,062	10,635	10,635
R^2	.188	.079	.227	.042
SSR	454,135	366,399	219,951	65,223
SER	6.728	6.043	4.554	2.480

Notes: Each equation also includes a set of Federal Reserve District dummy variables. Absolute values of t-statistics are in parentheses.

* Significant at the 5 percent level.
**Significant at the 1 percent level.

...ficients of the Change in Small Business Loans by Merger Impact Effect on the Small Business ...folio Share
...1994:II and 1994:II to 1995:II

	≤ $1 million		≤ $250,000	
	$\Delta\left(\frac{SBL}{Assets}\right)$	$\frac{\Delta SBL}{Assets}$	$\Delta\left(\frac{SBL}{Assets}\right)$	$\frac{\Delta SBL}{Assets}$
	-.324*	-.390*	.036	.366*
	(2.43)	(2.39)	(0.17)	(2.11)
...se(<2%)	.111	.327	-1.482*	1.155*
	(0.27)	(0.64)	(2.48)	(2.39)
...se difference(<2%)	-.120	-.043	1.112	-.759
	(0.27)	(0.08)	(1.66)	(1.49)
...fall(<2%)	.824	.758	.461	1.572**
	(1.63)	(1.23)	(0.63)	(2.66)
...fall difference(<2%)	.703	.926	.546	-1.661*
	(1.46)	(1.57)	(0.64)	(2.46)
...rise (2 to 5%)	.806	1.104	.535	1.188
	(0.55)	(0.61)	(0.19)	(0.53)
...rise difference(2 to 5%)	-.167	-.279	-.409	.356
	(0.36)	(0.50)	(0.47)	(0.51)
...fall (2 to 5%)	.833	2.078	-2.589	-3.431
	(0.46)	(0.95)	(0.82)	(1.34)
...fall difference(2 to 5%)	.090	.586	1.604	1.422
	(0.16)	(0.85)	(1.03)	(1.81)
...rise (>5%)	8.170**	16.654**	-2.804	4.905
	(2.78)	(4.64)	(0.60)	(1.30)
...rise difference (>5%)	-1.431**	-2.396**	.237	-1.091*
	(3.59)	(4.92)	(0.35)	(1.99)
...fall(>5%)	-7.452**	-7.193**	4.549	1.042
	(5.60)	(4.42)	(1.55)	(0.44)
...fall difference(>5%)	-1.147**	-1.067**	.237	-.052
	(8.00)	(6.08)	(0.80)	(0.22)
	.028	.052	.185	.037
	265,854	398,155	688,749	451,355
	3.586	4.388	5.774	4.674

...Each equation also includes the same set of additional explanatory variables included in the ...previous tables. Absolute values of t-statistics are in parentheses.

...significant at the 5 percent level.
...significant at the 1 percent level.

Table 13

Determinants of the Change in Small Business Loans by Small Business Loan Portfolio Shares of Acquirers and Targets

1993:II to 1994:II and 1994:II to 1995:II

	≤ $1 million		≤ $250,000	
	$\Delta\left(\frac{SBL}{Assets}\right)$	$\frac{\Delta SBL}{Assets}$	$\Delta\left(\frac{SBL}{Assets}\right)$	$\frac{\Delta SBL}{Assets}$
Portfolio Share < 10%				
Δ Ownership	.534*	.500	1.073**	.293
	(2.21)	(1.69)	(3.45)	(1.12)
Target share > 10%	.627	1.199	.008	1.591**
	(1.21)	(1.88)	(0.01)	(2.91)
Share difference-target share > 10%	.364*	.447*	.148	-.748**
	(2.06)	(2.07)	(0.63)	(3.99)
Target share < 10%	.473	1.134*	-.925*	1.007**
	(1.12)	(2.18)	(2.22)	(3.00)
Share difference-target share < 10%	.279	.936	-1.010*	.165
	(0.57)	(1.57)	(2.46)	(0.50)
Portfolio share > 10%				
Constant	-.446**	.465**	.145	-1.139**
	(7.59)	(6.42)	(1.59)	(15.57)
Δ Ownership	-.642**	-.796**	-.887**	-.872**
	(4.03)	(4.07)	(3.00)	(3.67)
Target share > 10%	.066	.094	.636	-.394
	(0.31)	(0.37)	(1.36)	(1.05)
Share difference-target share > 10%	-.164**	-.168*	.251	-.071
	(2.78)	(2.32)	(1.93)	(0.68)
Target share < 10%	1.287*	1.721*	.962	1.071
	(2.50)	(1.98)	(1.04)	(1.44)
Share difference-target share < 10%	-.774**	-.484**	-.187	-.201
	(7.56)	(3.86)	(1.06)	(1.42)
R^2	.031	.053	.186	.051
SSR	265,072	398,096	687,838	445,026
SER	3.581	4.388	5.770	4.643

Notes: Each equation also includes the same set of additional explanatory variables included in the earlier tables. Absolute values of t-statistics are in parentheses.

* Significant at the 5 percent level.
**Significant at the 1 percent level.

Table 14
Determinants of the Change in Small Business Loans
1993:II to 1995:II

	≤ $1 million		≤ $250,000	
	$\Delta\left(\frac{SBL}{Assets}\right)$	$\frac{\Delta SBL}{Assets}$	$\Delta\left(\frac{SBL}{Assets}\right)$	$\frac{\Delta SBL}{Assets}$
Constant	8.657**	12.303**	1.182	12.291**
	(11.12)	(9.09)	(1.11)	(9.93)
Δ Ownership	.081	.459	.154	-.183
	(0.29)	(0.95)	(0.41)	(0.42)
Share rise	1.234*	1.836	.544	1.531
	(2.10)	(1.79)	(0.71)	(1.73)
Share rise difference	-.238	-.568	.565	-.560
	(1.12)	(1.54)	(1.87)	(1.59)
Share fall	-1.194	-1.021	-.410	-.308
	(1.94)	(0.96)	(0.43)	(0.28)
Share fall difference	-.508**	-.190	-.065	.145
	(3.34)	(0.72)	(0.24)	(0.45)
Employment growth 1994-95	.004	.270	.149	.137
	(0.04)	(1.59)	(1.11)	(0.88)
Employment growth 1993-94	-.048	-.289	-.079	-.219
	(0.51)	(1.75)	(0.60)	(1.45)
Employment growth 1992-93	.083	.741**	.264*	.485**
	(0.85)	(4.36)	(1.98)	(3.13)
Urban location	-.096	2.021**	1.995**	.206
	(0.89)	(10.67)	(13.38)	(1.19)
Concentration ratio-deposits	.003	.005	.054**	.005
	(0.33)	(0.32)	(4.08)	(0.35)
Concentration ratio-small loans	-.006	.014	-.062**	.023
	(0.62)	(0.86)	(5.01)	(1.59)
MBHC	-.152	.112	.123	-.367
	(1.28)	(0.84)	(0.76)	(1.94)
Log (assets)	-.379**	-1.252**	.375**	-1.196**
	(7.43)	(14.12)	(5.36)	(14.73)
Leverage ratio	-.080**	-.051	.030	-.060*
	(4.55)	(1.67)	(1.27)	(2.16)
Nonperforming loans/loans	-.171**	-.529**	-.037	-.336**
	(6.71)	(11.93)	(1.04)	(8.26)
Return on assets	.025	.079	-.409**	.109
	(0.46)	(0.85)	(5.57)	(1.28)
Loans/assets	-.049**	.039**	.016**	.008
	(13.48)	(6.22)	(3.27)	(1.43)
Number of Observations	9,169	9,169	9,164	9,164
R^2	.046	.065	.112	.051
SSR	187,030	564,882	349,249	471,322
SER	4.524	7.862	6.183	7.183

Notes: Each equation also includes a set of Federal Reserve District dummy variables. Absolute values of t-statistics are in parentheses.

* Significant at the 5 percent level.
**Significant at the 1 percent level.

Table 15

Determinants of the Change in Small Business Loans by Small Business Loan Portfolio Shares of Acquirers and Targets

1993:II to 1995:II

	≤ $1 million		≤ $250,000	
	$\Delta\left(\frac{SBL}{Assets}\right)$	$\frac{\Delta SBL}{Assets}$	$\Delta\left(\frac{SBL}{Assets}\right)$	$\frac{\Delta SBL}{Assets}$
Portfolio Share < 10%				
Δ Ownership	1.106*	1.610	1.169*	.262
	(2.20)	(1.89)	(1.99)	(0.39)
Target share > 10%	.929	2.893	-.516	1.850
	(0.91)	(1.63)	(0.41)	(1.26)
Share difference-target share > 10%	.008	.657	.264	.435
	(0.02)	(1.12)	(0.62)	(0.86)
Target share < 10%	-.293	.204	-1.577	1.181
	(0.31)	(0.12)	(1.81)	(1.17)
Share difference-target share < 10%	-.496	-.516	-1.999**	-.354
	(0.31)	(0.19)	(2.62)	(0.40)
Portfolio share > 10%				
Constant	-.663**	1.283**	-.521**	-1.612**
	(5.93)	(6.59)	(5.64)	(9.56)
Δ Ownership	-.345	-.203	-.428	-.263
	(1.03)	(0.35)	(0.87)	(0.46)
Target share > 10%	.017	-.283	.915	-1.543
	(0.04)	(0.35)	(1.07)	(1.56)
Share difference-target share > 10%	.071	.205	.517	.007
	(0.47)	(0.77)	(1.60)	(0.02)
Target share < 10%	-1.165	-1.427	.891	.660
	(1.05)	(0.74)	(0.51)	(0.32)
Share difference-target share < 10%	-.768**	-.408	.213	.144
	(4.01)	(1.23)	(0.59)	(0.35)
R^2	.052	.070	.117	.061
SSR	185,906	562,220	347,371	465,984
SER	4.511	7.846	6.169	7.145

Notes: Each equation also includes the same set of additional explanatory variables included in the previous table. Absolute values of t-statistics are in parentheses.

* Significant at the 5 percent level.

**Significant at the 1 percent level.

APPENDIX

This appendix contains four tables that indicate the sensitivity of the regression results contained in the text tables to alternative specifications. The first two tables, Tables A1 and A2, contain the full specification with the two-way classification of the merger observations consistent with Panel 1 of Table 8a. These regressions correspond to those in Tables 9a and 9b that contain the abbreviated specification. The results for the change in ownership variable are similar to those in Tables 9a and 9b.

With respect to the merger-related variables in Table A1 for the $1 million and less definition of small business loans, as one might expect, the significance levels are generally lower with the doubling of the number of explanatory variables. Still, five of the eight estimated coefficients in the first equation are significant. With respect to the particular coefficients of interest, the share rise and share fall difference variables, 14 of the 16 estimated coefficients are negative, providing results consistent with those in the text that indicate that acquirers have a tendency to partially offset the initial shock to their small business loan portfolio share subsequent to the merger. The results in Table A2 for the $250,000 and less loan size also are similar to those in the corresponding table, Table 9b.

The Table A3 equations are specified so that the estimated

effects for the second subperiod are measured as differentials. Thus, the base coefficient reflects the effect of the variable in the first subperiod and the sum of coefficients on the two corresponding variables for the first and second subperiods measures the absolute effect of the variable in the second subperiod. The t-statistics for the estimated effects on the second-subperiod variables indicate whether the second-subperiod effect differs significantly from that for the first subperiod.

The second subperiod constant term is positive and significant in each specification, indicating that small business loan growth tends to be greater during the second subperiod, even after allowing for differences across subperiods in the other control variables. The differential effect of the change in ownership variable is always positive, although it is significant only in the first column. Among the merger-related variables, only that for the share fall difference has significant differential effects (first and fourth columns), with the effect more than offsetting the first subperiod effect in the fourth column.

Table A4 shows the results obtained from partitioning the set of merger observations into affiliate and nonaffiliate mergers for the pair of specifications with the dependent variable scaled by assets. Only two of the 16 affiliate merger-related coefficients are significant, with both having estimated coefficients that more than offset the effects estimated for the nonaffiliate mergers. The interesting result here is that the

share rise difference and share fall difference variables tend to exhibit a stronger offsetting effect for the set of nonaffiliate mergers than for affiliate mergers.

Table A1

Determinants of the Change in Small Business Loans (≤ $1mil)

1993:II to 1994:II and 1994:II to 1995:II

	$\Delta\left(\frac{SBL}{Assets}\right)$	$\Delta\left(\frac{SBL}{Loans}\right)$	$\frac{\Delta SBL}{Assets}$	$\frac{\Delta SBL}{Loans}$
Constant	-4.726**	5.399**	5.292**	13.684**
	(11.82)	(8.50)	(10.81)	(14.95)
Δ Ownership	-.316*	-.109	-.372*	-.142
	(2.37)	(0.51)	(2.28)	(0.46)
Share rise-large acquirer	.366*	.449	.654	.661
	(1.99)	(0.97)	(1.88)	(0.99)
Share rise difference-large acquirer	-.287**	-.182	-.184	-.186
	(2.60)	(1.68)	(1.36)	(1.19)
Share rise-small acquirer	1.488	-3.043	1.491	.702
	(0.92)	(1.41)	(0.75)	(0.23)
Share rise difference-small acquirer	-.572	.052	-.625	-.245
	(1.72)	(0.19)	(1.54)	(0.62)
Share fall-large acquirer	-.164	.392	-.690	.603
	(0.55)	(0.83)	(1.89)	(0.89)
Share fall difference-large acquirer	-.349**	.042	-.504**	-.213
	(3.93)	(0.41)	(4.63)	(1.46)
Share fall-small acquirer	-4.062**	-1.108	-2.686*	2.416
	(4.20)	(0.65)	(2.27)	(0.99)
Share fall difference-small acquirer	-.851**	-.337*	-.453**	-.406
	(6.46)	(2.13)	(2.81)	(1.77)
Employment growth	.206**	.399**	.138**	.249**
	(6.34)	(7.72)	(3.24)	(3.35)
Lagged employment growth	.183**	.160**	.357**	.633**
	(6.13)	(3.37)	(9.78)	(9.26)
Urban location	.109	.073	.791**	1.502**
	(1.91)	(0.80)	(11.30)	(11.48)
Concentration ratio-deposits	.001	.022**	.003	.006
	(0.20)	(2.86)	(0.49)	(0.55)
Concentration ratio-small loans	-.004	-.025**	.044	.002
	(0.84)	(3.51)	(0.68)	(0.25)
MBHC	-.078	-.320**	-.202**	-.190
	(1.28)	(3.30)	(2.70)	(1.36)
Log (assets)	.176**	.385**	.494**	.929**
	(6.81)	(9.38)	(15.61)	(15.72)
Leverage ratio	-.039**	.011	-.024*	-.051*
	(4.19)	(0.76)	(2.08)	(2.39)

Table A1
CONTINUED

	$\Delta\left(\frac{SBL}{Assets}\right)$	$\Delta\left(\frac{SBL}{Loans}\right)$	$\frac{\Delta SBL}{Assets}$	$\frac{\Delta SBL}{Loans}$
Nonperforming loans/loans	.116**	.008**	.326**	.548**
	(6.13)	(2.99)	(18.62)	(16.76)
Return on assets	-.035	.010	.048	.283**
	(1.19)	(0.21)	(1.35)	(4.22)
Loans/assets	.026**	.003*	.018**	.023**
	(13.85)	(1.10)	(8.02)	(5.28)
Number of Observations	20,710	20,710	20,710	20,710
R^2	.027	.014	.050	.041
SSR	266,269	671,381	398,867	1,393,090
SER	3.588	5.698	4.392	8.208

Notes: Each equation also includes a set of Federal Reserve District dummy variables. Absolute values of t-statistics are in parentheses.

* Significant at the 5 percent level.
**Significant at the 1 percent level.

Table A2

Determinants of the Change in Small Business Loans (≤ $250,000)

1993:II to 1994:II and 1994:II to 1995:II

	$\Delta\left(\frac{SBL}{Assets}\right)$	$\Delta\left(\frac{SBL}{Loans}\right)$	$\frac{\Delta SBL}{Assets}$	$\frac{\Delta SBL}{Loans}$
Constant	-4.005**	-6.449**	-5.163**	-12.323**
	(6.21)	(6.05)	(9.89)	(12.96)
Δ Ownership	.038	.579	-.371*	-.244
	(0.18)	(1.63)	(2.13)	(0.77)
Share rise-large acquirer	-.790	.950	.955**	2.279**
	(1.81)	(1.36)	(2.70)	(3.67)
Share rise difference-large acquirer	.466*	.258	-.327*	-.466**
	(2.40)	(1.45)	(2.08)	(2.94)
Share rise-small acquirer	-3.419	-4.867	.107	-1.474
	(1.52)	(1.36)	(0.06)	(0.46)
Share rise difference-small acquirer	.089	-.030	-.768*	-.636
	(0.21)	(0.07)	(2.21)	(1.64)
Share fall-large acquirer	.049	-.680	.450	.935
	(0.10)	(0.82)	(1.15)	(1.27)
Share fall difference-large acquirer	-.163	-.007	-.096	-.051
	(1.17)	(0.04)	(0.86)	(0.36)
Share fall-small acquirer	.405	1.688	.632	3.766
	(0.28)	(0.68)	(0.55)	(1.71)
Share fall difference-small acquirer	-.163	-.043	-.101	.024
	(0.64)	(0.15)	(0.49)	(0.09)
Employment growth	.505**	.897**	.318**	.613**
	(9.65)	(10.13)	(7.49)	(7.94)
Lagged employment growth	.339**	.603**	.512**	.856**
	(7.06)	(7.58)	(13.15)	(12.07)
Urban location	2.404**	4.394**	-.040	.008
	(26.09)	(28.84)	(0.54)	(0.06)
Concentration ratio-deposits	.066**	.139**	.009	.014
	(8.45)	(10.72)	(1.45)	(1.23)
Concentration ratio-small loans	-.088**	-.175**	.000	.002
	(12.34)	(14.89)	(0.01)	(0.19)
MBHC	.158	.153	-.220**	-.247
	(1.60)	(0.94)	(2.76)	(1.70)
Log (assets)	.520**	.925**	-.487**	.985**
	(12.48)	(13.44)	(14.45)	(16.94)
Leverage ratio	.007	.031	-.008	-.002
	(0.48)	(1.26)	(0.64)	(0.09)

Table A2
CONTINUED

	$\Delta\left(\frac{SBL}{Assets}\right)$	$\Delta\left(\frac{SBL}{Loans}\right)$	$\frac{\Delta SBL}{Assets}$	$\frac{\Delta SBL}{Loans}$
Nonperforming loans/loans	.023	.175**	-.212**	-.341**
	(1.00)	(4.58)	(11.36)	(10.66)
Return on assets	-.478**	-.696**	.040	.320**
	(10.12)	(8.91)	(1.04)	(4.59)
Loans/assets	.051**	.047**	.004	.017**
	(16.85)	(9.34)	(1.57)	(3.76)
Number of Observations	20,697	20,697	20,697	20,697
R^2	.184	.193	.037	.037
SSR	688,996	1,883,690	451,508	1,499,190
SER	5.774	9.547	4.674	8.517

Notes: Each equation also includes a set of Federal Reserve District dummy variables. Absolute values of t-statistics are in parentheses.

* Significant at the 5 percent level.
**Significant at the 1 percent level.

Table A3
Determinants of the Change in Small Business Loans by Subperiod
1993:II to 1994:II and 1994:II to 1995:II

	≤ $1million		≤ $250,000	
	$\Delta\left(\frac{SBL}{Assets}\right)$	$\frac{\Delta SBL}{Assets}$	$\Delta\left(\frac{SBL}{Assets}\right)$	$\frac{\Delta SBL}{Assets}$
First subperiod				
Constant	4.610**	5.154**	4.614**	4.714**
	(11.49)	(10.49)	(7.16)	(9.03)
Δ Ownership	-.649**	-.667**	-.317	-.578*
	(3.42)	(2.87)	(1.04)	(2.34)
Share rise	.431	.658	-.700	1.250**
	(1.10)	(1.37)	(1.20)	(2.64)
Share rise difference	-.161	-.300	.360	-.578**
	(1.12)	(1.71)	(1.62)	(3.20)
Share fall	-1.192**	-.795	.453	.667
	(2.69)	(1.56)	(0.61)	(1.16)
Share fall difference	-.656**	-.314*	-.063	.214
	(6.37)	(2.49)	(0.35)	(1.46)
Second subperiod difference from first subperiod				
Constant	.227**	.315**	1.461**	1.089**
	(2.88)	(3.27)	(11.54)	(10.62)
Δ Ownership	.659*	.569	.682	.383
	(2.48)	(1.75)	(1.60)	(1.11)
Share rise	-.387	.175	.204	-.284
	(0.71)	(0.26)	(0.25)	(0.43)
Share rise difference	-.315	.082	-.236	.206
	(1.57)	(0.33)	(0.70)	(0.75)
Share fall	1.075	.207	.883	.328
	(1.93)	(0.30)	(0.96)	(0.44)
Share fall difference	.389**	-.130	-.190	-.549**
	(2.84)	(0.78)	(0.80)	(2.84)
Employment growth	.115**	.002	.033	.082
	(2.67)	(0.04)	(0.47)	(1.47)
Lagged employment growth	.083	.220**	-.256**	.069
	(1.93)	(4.18)	(3.71)	(1.24)
Urban location	-.107	.795**	2.423**	-.026
	(1.87)	(11.35)	(26.38)	(0.35)
Concentration ratio-deposits	-.000	.001	.059**	.004
	(0.01)	(0.21)	(7.57)	(0.65)
Concentration ratio-small loans	-.002	.006	.077**	.008
	(0.40)	(1.17)	(10.69)	(1.45)
MBHC	-.080	-.203**	.175	-.204**
	(1.31)	(2.72)	(1.79)	(2.58)
Log (assets)	-.178**	-.498**	-.502**	-.501**
	(6.87)	(15.74)	(12.08)	(14.90)

Table A3
CONTINUED

	≤ $1million		≤ $250,000	
	$\Delta\left(\frac{SBL}{Assets}\right)$	$\frac{\Delta SBL}{Assets}$	$\Delta\left(\frac{SBL}{Assets}\right)$	$\frac{\Delta SBL}{Assets}$
Leverage ratio	-.041**	-.026*	-.004	-.016
	(4.37)	(2.29)	(0.28)	(1.33)
Nonperforming loans/loans	.114**	.323**	.037	.262**
	(7.99)	(18.46)	(1.60)	(10.86)
Return on assets	-.026	.058	-.437**	.069
	(0.89)	(1.61)	(9.25)	(1.80)
Loans/assets	-.026**	.018**	-.049**	.003
	(13.97)	(7.87)	(16.31)	(1.04)
Number of Observations	20,710	20,710	20,697	20,697
R^2	.027	.051	.190	.043
SSR	266,131	398,677	684,282	448,727
SER	3.586	4.391	5.758	4.660

Notes: Each equation also includes a set of Federal Reserve District dummy variables. Absolute values of t-statistics are in parentheses.

* Significant at the 5 percent level.
**Significant at the 1 percent level.

Table A4

Determinants of the Change in Small Business Loans by Affiliate/Nonaffiliate Status
1993:II to 1994:II and 1994:II to 1995:II

	≤ $1 million		≤ $250,000	
	$\Delta\left(\frac{SBL}{Assets}\right)$	$\frac{\Delta SBL}{Assets}$	$\Delta\left(\frac{SBL}{Assets}\right)$	$\frac{\Delta SBL}{Assets}$
Constant	4.709**	5.289**	3.961**	5.193**
	(11.77)	(10.80)	(6.14)	(9.95)
Δ Ownership	-.315*	-.382*	.039	-.373*
	(2.36)	(2.34)	(0.18)	(2.14)
Nonaffiliate				
Share rise	.734**	1.001*	.942	1.120**
	(2.16)	(2.41)	(1.79)	(2.63)
Share rise difference	-.383**	-.482**	.344	-.560**
	(3.02)	(3.10)	(1.58)	(3.18)
Share fall	.036	.763	.103	.059
	(0.09)	(1.59)	(0.16)	(0.11)
Share fall difference	-.388**	-.568**	-.518*	-.219
	(3.18)	(3.80)	(2.36)	(1.24)
Affiliate difference from nonaffiliate				
Share rise	.359	-.783	.732	.071
	(0.63)	(1.11)	(0.87)	(0.10)
Share rise difference	.166	.594*	-.221	.170
	(0.80)	(2.33)	(0.65)	(0.61)
Share fall	-1.229*	-.053	.037	.791
	(2.20)	(0.08)	(0.04)	(1.06)
Share fall difference	-.115	.230	.458	.179
	(0.78)	(1.27)	(1.75)	(0.85)
Employment growth	-.205**	-.127**	-.506**	-.318**
	(6.29)	(3.20)	(9.66)	(7.51)
Lagged employment growth	.182**	.359**	.339**	.512**
	(6.10)	(9.81)	(7.06)	(13.16)
aUrban location	.109	.792**	2.405**	.039
	(1.91)	(11.31)	(26.10)	(0.53)
Concentration ratio-deposits	.001	.003	.066**	.009
	(0.26)	(0.54)	(8.43)	(1.45)
Concentration ratio-small loans	.004	.003	-.088**	.000
	(0.88)	(0.62)	(12.35)	(0.01)
MBHC	-.072	-.204**	.165	-.224**
	(1.17)	(2.72)	(1.67)	(2.80)
Log (assets)	-.176**	-.494**	-.515**	-.489**
	(6.80)	(15.61)	(12.45)	(14.49)
Leverage ratio	-.039**	-.023*	.007	-.008
	(4.15)	(2.05)	(0.44)	(0.67)
Nonperforming loans/loans	-.117**	-.328**	.023	-.212**
	(8.20)	(18.73)	(1.60)	(11.39)

Table A4
CONTINUED

	≤ $1 million		≤ $250,000	
	$\Delta\left(\frac{SBL}{Assets}\right)$	$\frac{\Delta SBL}{Assets}$	$\Delta\left(\frac{SBL}{Assets}\right)$	$\frac{\Delta SBL}{Assets}$
Return on assets	-.035 (1.19)	.048 (1.33)	.477** (10.10)	.040 (1.04)
Loans/assets	-.026** (13.84)	.018** (8.02)	.051** (16.78)	.004 (1.54)
Number of Observations	20,710	20,710	20,697	20,697
R^2	.026	.050	.184	.037
SSR	266,394	398,868	689,077	451,589
SER	3.589	4.392	5.775	4.675

Notes: Each equation also includes a set of Federal Reserve District dummy variables. Absolute values of t-statistics are in parentheses.

* Significant at the 5 percent level.
**Significant at the 1 percent level.