Federal Reserve Bank of St. Louis Supervisory Policy Analysis Working Paper

Working Paper No. 2002-07

Financial Condition of Community Banks

R. Alton Gilbert Federal Reserve Bank of St. Louis Research Department

and

Gregory E. Sierra Banking Supervision and Regulation Federal Reserve Bank of St. Louis

June 2002

The views expressed in this paper are those of the authors, not necessarily those of the Federal Reserve Bank of St. Louis or the Federal Reserve System.

Despite the consolidation of the banking industry in recent years, community banks continue to be a relevant portion of the banking industry. We identify community banks as those with assets less than \$1 billion.¹ As of the fourth quarter of 2001, 85 percent of all banks had total assets less than \$1 billion. Community banks are an important source of credit for small businesses, as they make a disproportionate share of small business loans.² While community banks accounted for about 15 percent of banking assets in the second quarter of 2001, they held about 40 percent of the number of business loans outstanding of less than \$1 million. Furthermore, there is evidence that the failure of community banks can have adverse effects on local economic activity.³ The condition of community banks is especially relevant for an assessment of the risk of loss by the deposit insurance fund, since the failure rates and FDIC loss rates on bank failures are inversely related to bank size (Shibut, 2001).

We examine the condition of commercial banks in the United States, with emphasis on community banks. Since community banks specialize in providing financial services to households and small businesses, trends in measures of the condition of community banks often differ from these trends for larger banks, which serve other types of customers. To highlight the differences between the condition of community banks and larger banks, this article presents evidence on the condition of banks in various size categories since the early 1990s.

¹ It is common to identify community banks in terms of the amount of their assets. For instance, the Gramm Leach Bliley Act of 1999 identifies community financial institutions (banks and savings and loan associations) as those with total assets of less than \$500 million. The *American Banker* uses a definition of a community bank that includes total assets of \$1 billion; see page 6 of the 27 March 2002 issue. In a discussion of the condition of community banks, Governor Susan Bies of the Federal Reserve Board refers to data for banks with total assets less than \$1 billion (Bies, 2002).

 $^{^{2}}$ See Berger, Demsetz and Stahan (1999) for a survey of the literature on the effects of consolidation of the banking industry, including the role of small banks in lending to small businesses.

As the data in this article are quickly out of date, a data appendix to this article on the web site of the Federal Reserve Bank of St. Louis will include the most current data for the tables and figures presented here. In the past the condition of banks has varied substantially among regions of the United States (Federal Deposit Insurance Corporation, 1997). Although the tables in this paper are not presented by geographic region, the data appendix on the web site will include current data on the measures of bank condition in the nine U.S. Census divisions.

WHY IS THE CONDITION OF THE BANKING INDUSTRY IMPORTANT?

Before examining indicators of the condition of the banking industry, we consider why this information about banks—in particular community banks—may be relevant for the performance of the economy. First, deterioration in the condition of banks can have an adverse effect on the pace of economic activity. Next, the deterioration in the condition of community banks alone may have an adverse economic impact.

Lown, Morgan, and Rohatgi (2000) examine the impact of changes in the credit standards of banks on the growth of bank loans and the pace of economic activity. Their evidence is based on a survey of changes in the standards that relatively large banks apply in their lending decisions.⁴ Lending standards include collateral requirements and the minimum credit rating and maximum leverage requirements of borrowers. Figure 1 indicates that relatively large banks relaxed their credit standards for commercial and

³ See Gilbert and Kochin (1989). For a study that draws the opposite conclusion from data for Texas, see Clair, O'Driscoll and Yeats (1994).

industrial (C&I) loans during most of the period from 1993 through 1997 but began tightening their standards in early 2000. The percentage of banks reporting that they tightened standards fell sharply in the survey conducted in April 2002.

Lown, Morgan, and Rohatgi (2000) present evidence that changes in the percentage of banks that report tightening their credit standards for C&I lending affect the growth rate of bank lending and some measures of economic activity. If deterioration in the financial condition of banks induces them to tighten their lending standards, the deterioration in bank condition could have adverse effects on the pace of economic activity through a tightening of credit standards.

The period of the 1980s and early 1990s is especially important for an analysis of the effects of bank condition on the performance of the economy. Several hundred banks failed during these years, and many of the banks that avoided failure were subject to close supervision as problem banks during at least part of this period. Supervisors usually require the banks with substantial loan problems to increase their capital ratios, and these problem banks often attempt to increase their capital ratios by reducing their assets (Peek and Rosengren, 1995b and 1996, and Curry, et al, 1999).

Several studies report evidence of a credit crunch in the 1980s and early 1990s. In a credit crunch, large numbers of banks simultaneously restrict their lending. Banks may restrict their lending because increases in problem loans undermine their capital adequacy. Some customers of the banks that reduce their supply of loans do not have access to credit from alternative sources on terms similar to those under which their banks had provided credit to them in the past. In a credit crunch the decline in the supply

⁴ The sample of banks for the Senior Loan Officers Opinion Survey on Bank Lending Practices is selected from among the largest banks in each Federal Reserve District. As of 2001, large banks are identified as

of bank loans is large enough to reduce the pace of economic activity. Studies in the credit crunch literature draw different conclusions about the magnitude of the effect of the credit crunch on the pace of economic activity (Berger and Udell, 1994; Bernanke and Lown, 1991; Hancock, Laing, and Wilcox, 1995; and Peek and Rosengren, 1995a).

One of the charges by bankers during the credit crunch period was that a tightening of standards by supervisors for judging a bank safe and sound forced many banks to reduce their lending. Berger, et al. (2001) recently re-examined the credit crunch episode to determine whether there was evidence of a tightening of supervisory standards. They find evidence consistent with increasing toughness of supervisory standards for safe and sound banking during the credit crunch period (1989-1992) and a decline in the toughness of supervisory standards during the following boom period in bank lending (1993-1998). They conclude, however, that these changes in supervisory standards had only small effects on bank lending. The Implication of Berger, et al. (2001) is that the reduction in the supply of bank credit during the credit crunch period reflected primarily the deterioration in the condition of banks rather than a tightening of supervisory standards.

The studies cited in this section do not attempt to isolate the effects of the condition of community banks on the pace of economic activity. The Senior Loan Officer Opinion Survey on Bank Lending Practices, the source of information on the terms of lending used by Lown, Morgan and Rohatgi (2000), includes only large banks. Although several of the studies of the credit crunch include data for small banks (Bernanke and Lown, 1991; Berger and Udell, 1994; and Berger, Kyle, and Scalise, 2001), the authors do not attempt to determine the effects on real economic activity that

those with total domestic assets of \$20 billion or more.

they could attribute to restrictions in the supply of credit by small banks. An argument that deterioration in the condition of community banks has adverse effects on real economic activity must be based on the role of community banks in lending to small businesses, which tend to have fewer borrowing options than larger businesses, and the possible adverse effects of individual bank failures on economic activity in the communities where the failed banks had offices.

TRENDS IN THE CONDTION OF BANKS

Tables 2 through 7 present trends in the condition of banks in various size groups since 1991. Each bank is assigned to one of the five size groups each quarter based on its total assets that quarter. The five size groups are not indexed over time for inflation; the minimum and maximum asset size for the banks in each group in these tables remain fixed over time. One reason for using size groups fixed in nominal dollars is that the banks with assets below \$300 million are subject to different reporting requirements than larger banks.

Table 1 presents the number of banks in each size group in each period. The largest changes over time involve the banks in the smallest and largest size groups. Since 1991 there has been a large reduction in the number of banks with total assets less than \$300 million, and the number of banks in the largest group (total assets in excess of \$20 billion) more than doubled. These changes reflect consolidation of the banking industry and internal growth of banks, which moved them into the larger size groups.

INSERT TABLE 1 ABOUT HERE

Nonperforming Loans

Table 2 presents our first measure of problem loans: the percentage of total loans that are nonperforming. Nonperforming loans are those loans that bank managers report as past due 90 days or more, or classify as nonaccrual. Banks stop accruing interest due on loans as current income when they classify the loans as nonaccrual.

Nonperforming loan ratios of community banks (the first two columns of Table 2) increased modestly during recent quarters. In contrast, the nonperforming loan ratios of banks with total assets in excess of \$10 billion began rising during the 1990s and in recent quarters have risen substantially above the average nonperforming loan ratios of community banks. For banks in each size group, however, nonperforming loan ratios in recent quarters remain far below the nonperforming loan ratios for banks of comparable size during 1991, the last year of a recession.

INSERT TABLE 2 ABOUT HERE

Charge-off of Loan Losses

Another measure of problem loans is the percentage of total loans charged off as losses. A charge-off of a loan as a loss reflects a more serious problem than reporting it as past due or nonaccrual because for most banks only part of the loans that they report as nonperforming will eventually be charged off. Table 3 presents the net charge-off rate for total loans.

In interpreting the patterns in Table 3, it is important to recognize seasonal patterns in charge-off rates. Among the banks in each group with total assets less than \$10 billion, charge-off rates rose from the third quarter to the fourth quarter in each of the

years 1999 through 2001. For the banks in these size categories, therefore, it is more appropriate to compare the charge-off rates in the fourth quarter of 2001 to the rates in the fourth quarter of 2000 rather than compare them to the charge-off rates in the third quarter of 2001.

INSERT TABLE 3 ABOUT HERE

Net charge-off rates rose slightly among community banks during 2001. The net charge-off rates among banks with total assets above \$1 billion, in contrast, began to rise during the 1990s and have risen during recent quarters to levels substantially above those for community banks. Charge-off rates among banks in each size group remain below the levels during 1991.

One challenge in interpreting changes in net charge-off rates over time is that these changes may reflect to some extent changes over time in supervisory standards. Supervisors have authority to influence the magnitude and timing of charge-offs of loan losses by banks. Berger, et al. (2001) find some evidence of changes in supervisory standards over time, but these changes in standards had only a small effect on bank lending.

Problem Commercial and Industrial Loans

Since losses on C&I loans are often important causes of serious financial problems in banks, Tables 4 and 5 present average nonperforming loan ratios and net charge-off rates for C&I loans. Nonperforming C&I loan ratios declined substantially during the economic recovery from the 1990-1991 recession through around 1997 for banks in each size group (Table 4). Trends in the nonperforming C&I loan ratios of community banks and larger banks diverged after 1997: rising among the banks with total

assets above \$1 billion but not among the community banks. Nonperforming C&I loan ratios rose slightly during 2001 among banks with assets between \$300 million and \$1 billion, but continued to decline among the banks in the smallest size group. During 2001, nonperforming C&I loan ratios were lower among community banks than among larger banks.

INSERT TABLE 4 ABOUT HERE

The quarterly pattern of net charge-off rates on C&I loans (Table 5) indicates the tendency for the banks in each size group to concentrate their charge-offs in the fourth quarter of the year. Although charge-off rates on C&I loans rose in recent quarters among community banks, their charge-off rates are substantially lower than those for larger banks.

INSERT TABLE 5 ABOUT HERE

Much of the increase in problem C&I loans among banks with total assets in excess of \$20 billion can be attributed to their involvement in syndicated lending.⁵ A syndicated loan, identified as a loan included in the Shared National Credit program of the federal bank supervisors, is any loan or loan commitment that exceeds \$20 million and is shared by three or more nonaffiliated institutions. Syndicated loans are classified in one of four categories (substandard, doubtful, loss or special mention) if during routine examinations regulators determine that a relatively high risk of default or other credit concerns exist. The percentage of syndicated loans with adverse classifications has been increasing during recent years.⁶

⁵ Bies (2002) discusses the influence of a loosening of credit standards by large banks during the mid-1990s on the rise in problem loans at large banks and the deterioration in the quality of shared national credits during recent years.

⁶See http://www.federalreserve.gov/Releases/SNC/.

Coverage and Equity Ratios

The financial health of banks depends not only on the magnitude of their problem loans, presented in Tables 2 through 5, but also on the capacity of the banks to absorb loan losses, illustrated in Tables 6 and 7. Interpretation of the patterns in Tables 6 and 7 requires information about bank accounting practices for nonperforming loans and for loan losses. When a bank charges off a loan as a loss, it reduces its loans and reduces an account called the "allowance for loan and lease losses" by the amount of the loan charged off as a loss. The bank increases the dollar amount of its allowance for loan and lease losses by incurring an expense called "provision for loan and lease losses." In other words, the allowance for loan and lease losses represents the accumulation of all provisions for loan and lease losses less all charge-offs to the account. Since provisions are expenses, increases in provisions reduce net income. As with any expense, provisions for loan and lease losses reduce a bank's equity.

Under the principles of bank accounting, loans reported as nonperforming have not yet been charged off as losses. When a bank charges a nonperforming loan off as a loss, it no longer reports the loan as nonperforming. An increase in nonperforming loans increases the chances that a bank will have larger charges against its allowance for loan and lease losses in the future. Banks often increase their allowances for loan and lease losses through larger provisions in anticipation of future losses on nonperforming loans.

A measure of the adequacy of a bank's allowance to absorb future loan losses is the ratio of the allowance to the amount of nonperforming loans, commonly called the "coverage ratio." An allowance greater than nonperforming loans suggests that even if all of a bank's nonperforming loans were charged off as losses, its allowance would be

adequate to absorb the charge-offs. In addition, banks with coverage ratios above unity are less likely to need relatively large provisions for loan and lease losses in the future, to offset loan losses charged against the allowance, than the banks with coverage ratios below unity.

INSERT TABLE 6 ABOUT HERE

Table 6 presents the percentage of assets among banks in each size group with coverage ratios of unity or higher. An increase in this percentage increases the protection of bank equity from charge-offs of nonperforming loans. These percentages were relatively low in 1991 for banks in each size group but increased rapidly in the early 1990s. During recent quarters this percentage has declined for banks in each size group, with the largest declines among the banks with assets in excess of \$20 billion. As recently as the third quarter of 2000, almost all of the assets among these large banks were held by the banks with coverage ratios in excess of unity. The average percentage for 2001, in contrast, was just above 80 percent.

The measure of the adequacy of allowances for loan losses in Table 6 has also declined during recent quarters among community banks, and this measure is lower for community banks than for larger banks. This contrast of coverage ratios implies that if the loss rate on nonperforming loans was the same on average among the banks in each size group, the allowances for loan losses would tend to be less adequate to absorb losses (i.e., to avoid reductions in equity) among community banks than among larger banks.

Capacity of banks to absorb losses also depends on their equity. Table 7 indicates that banks in each size group have maintained relatively high ratios of equity to total assets during recent quarters. As of the end of 2001, the equity ratios for banks in each

size class were at or near their highest levels since 1991. The banking system has substantial equity available to absorb losses that banks may incur because of large increases in their provisions for loan and lease losses.

INSERT TABLE 7 ABOUT HERE

Assessment of Patterns in Banks' Accounting Information

Overall the accounting numbers in Tables 2-7 indicate that loan quality has diminished during recent quarters, more so for larger banks than for community banks. Community banks have maintained lower nonperforming loan and charge-off ratios than larger banks. Community banks, however, have slightly smaller buffers in their allowances for loan losses available to absorb loan losses than do larger banks. The percentage of assets at community banks with coverage ratios greater than unity, however, is still high relative to the early 1990s. This higher level indicates that community banks have more adequate buffers of allowances for loan losses now than during the early 1990s. Banks in each of the five size groups on average currently have ratios of equity to total assets that are high relative to the period since the early 1990s, large enough to absorb substantial losses. In sum, the analysis based on Tables 2-7 suggests that bank condition has weakened recently but is still good. Whether the trend of diminishing loan quality continues to undermine the condition of banks hinges in part upon the performance of the U.S. economy.

SIMULATION OF AN EARLY WARNING MODEL

Each of the financial ratios in Tables 2-7 provides limited information about the condition of banks, and some of the ratios provide conflicting signals. For instance,

Table 6 shows declining ratios of reserves for loan losses relative to nonperforming loans, whereas Table 7 shows rising ratios of equity to total assets. Early warning models provide a means of condensing several measures of bank condition into an index number that weights financial ratios by their contribution to the prediction of financial distress by banks in future periods. The output of early warning models can be interpreted as estimates of the probability that banks will fail or experience some other form of distress in a future period. Supervisors use early warning models to identify banks that warrant closer supervision. One can also use early warning models to derive measures of the performance of the banking industry (Gilbert, Meyer and Vaughan, 2001).

The Federal Reserve uses a system for bank surveillance called the System for Estimating Examination Ratings (SEER). One of the models used in this surveillance system is called the SEER risk rank model, which Fed staff estimated to predict bank failures for the years 1985 through 1991. The coefficients of this model have not been updated since 1991 because the rate of bank failure has been substantially lower since the early 1990s. Recent research indicates that "freezing" the coefficients of this model after 1991 has not undermined its relevance as an early warning model. Gilbert, Meyer and Vaughan (2002) report that predictions of downgrades in supervisory ratings to problem status that can be derived from the SEER risk rank model are almost as accurate as the predictions derived from an alternative model that is estimated each year to predict downgrades of supervisory ratings. An advantage of using a model with fixed coefficients, like the SEER risk rank model, is that estimates of the probability of failure derived from the model provide a fixed standard over time for gauging the condition of banks.

The criteria for putting a bank supervised by the Federal Reserve on the "watch list" (closer supervision) include an estimate of the probability of failure from the SEER risk rank model of 2 percent or more. Figure 2 plots the percentage of banks with estimated probability of failure above this threshold for two groups of bank: community banks (assets less than \$1 billion) and large banks (assets greater than or equal to \$1 billion). Calculation of the percentages plotted in Figure 2 gives equal weight to each bank in these two groups.

INSERT FIGURE 2 ABOUT HERE

Although both community banks and large banks experienced declines in the percentage of banks with failure probability above two percent during the 1990s, community banks currently have a larger percentage of banks with failure probabilities above 2 percent. The percentage of community banks with failure probabilities of 2 percent or higher (which declined from almost 30 percent in 1986 to about 3 percent in 1994) rose above 6 percent in 2001. The rise in this percentage during recent years indicates deterioration in the condition of community banks. The 6.5 percent of banks with failure probabilities above 2 percent in the fourth quarter of 2001 is comparable to the level in early 1993 but still far below its level during the 1991 recession. On the other hand, the percentage of large banks with failure probabilities above 2 percent in the most recent quarters. While the financial ratios in Tables 2-5 suggest that community banks are in better condition than larger banks, the surveillance data indicate that the percentage of banks that warrant relatively close supervision is higher for community banks than for larger banks.

REACTIONS OF SUPERVISORS TO LOAN QUALITY PROBLEMS

If problem loans rise high enough to threaten substantial losses relative to a bank's loan loss reserves and equity, the supervisor of the bank will downgrade its rating to problem status and impose an enforcement action on the bank. Most enforcement actions are agreements between problem banks and their supervisors about the actions that are necessary to restore the banks to safe and sound condition.⁷

Supervisors identify the banks that warrant enforcement actions through regularly scheduled on-site examinations. The Federal Deposit Insurance Corporation Improvement Act of 1991 requires supervisors to examine each bank every 12 to 18 months. Supervisors assess six components of safety and soundness during these on-site examinations—capital protection (C), asset quality (A), management competence (M), earnings strength (E), liquidity risk (L) and sensitivity to market risk (S), awarding a grade of 1 (best) through 5 (worst) to each component. Examiners then use these six scores to award a composite CAMELS rating, also expressed on a 1 through 5 scale. Table 8 interprets each of the five composite CAMELS ratings. Supervisors give CAMELS composite scores of 1 or 2 to the banks they consider to be safe and sound, and they give CAMELS composite scores of 3, 4 or 5 to problem banks. Supervisors monitor the problem banks closely and discipline them through enforcement actions. Banks tend to respond to downgrades of their CAMELS ratings to problem status and enforcement actions by reducing the growth rates of their assets and loans (Peek and Rosengren, 1995a,b and 1996, and Curry, et al. 1999).

⁷ Some enforcement actions are cease and desist orders of courts that require bank management to cease actions that threaten the solvency of the banks. See Gilbert and Vaughan (1998) for information about enforcement actions.

The CAMELS rating of a bank at a given point in time reflects the results of an examination conducted sometime during the prior 18 months. Figure 3 indicates the extent to which examiners identified problems in exams conducted during each quarter since 1991. For the line labeled "Community Banks," the denominator is the number of community banks that entered the quarter rated CAMELS 1 or 2 and were subject to examinations begun during the quarter. The numerator is the number of these banks that were rated CAMELS 3, 4 or 5 on the exams begun during the quarter. This line indicates the rate at which the community banks initially rated as safe and sound were downgraded to problem status during each quarter. The line labeled "Large Banks" is calculated for comparable changes is CAMELS ratings for the large banks examined each quarter. The quarterly downgrade rate for community banks was about 9 percent in 1991 and fell below 2 percent in the mid-1990s. Downgrade rates for both community banks and large banks rose temporarily to about 4 percent during some quarters of 1998 through 2000. While the downgrade rates for both groups of banks have been higher in recent quarters than during the mid-1990s, the downgrade rates for both groups of banks remain low relative to the rates of the early 1990s.

INSERT FIGURE 3 ABOUT HERE

ACCESS TO CURRENT DATA

The data in this article are quickly out of date. To provide an on-going picture of the condition of community banks, our Bank will maintain the most current data in each table and figure in the data appendix to this article on its web page. In addition, the web page will provide the data in Tables 2 through 7 for the banks in each of the nine Census

divisions with total assets below \$ 10 billion. In the past the deterioration in the condition of banks was concentrated in a few states, and this tendency for an uneven geographic concentration of distress among banks is likely to prevail in the future.⁸

CONCLUSIONS

The condition of most community banks, identified as banks with total assets below \$1 billion, has remained sound through the recent recession. There is some evidence, however, of a rise in problem loans among community banks as a group during recent quarters. For instance, the percentage of total loans that were nonperforming began to rise at community banks during 2001. In contrast, the nonperforming loan ratio for banks with assets above \$1 billion began rising after 1997. The condition of banks in each size group, however, remains much stronger than during the prior recession period, which ended in 1991. Trends in the ratings that supervisors have assigned to the banks examined during recent quarters are not consistent with the view that examiners have been detecting a systematic deterioration in the condition of community banks. Simulation of a surveillance model used by the Federal Reserve, in contrast, yields results that are consistent with the view that community bank condition has deteriorated to a greater extent than the condition of large banks.

Several studies conclude that a deterioration in the condition of banks can have adverse effects on economic activity. Some of this evidence is relevant for the effects of the condition of community banks on economic activity. These studies of the "credit crunch" focus on the late 1980s and early 1990s. The condition of the banking industry

⁸ See Federal Deposit Insurance Corporation (1997) for information on the geographic distribution of bank failures during the 1980s and early 1990s.

in the United States remains much stronger than during the late 1980s and early 1990s. The current relatively strong condition of U.S. commercial banks (both community banks and larger banks) suggests that the state of the banking industry is not a hindrance to U.S. economic activity.

REFERENCES

- Data from Thomson Financial/Sheshunoff Services. Cited in *American Banker*, 27 March 2002, p. 6.
- Berger, Allen N., Rebecca S. Demsetz, and Philip E. Strahan. "The Consolidation of the Financial Services Industry: Causes, Consequences, and Implications for the Future," *Journal of Banking and Finance* (February 1999), pp. 135-94.
- Berger, Allen N., Margaret K. Kyle, and Joseph M. Scalise. "Did U.S. Bank Supervisors Get Tougher during the Credit Crunch? Did They Get Easier during the Banking Boom? Did it Matter to Bank Lending?" in Frederic S. Mishkin, ed. *Prudential Supervision: What Works and What Doesn't*? The University of Chicago Press, 2001.
- Berger, Allen N., and Gregory F. Udell. "Did Risk-Based Capital Requirements Allocate Bank Credit and Cause a 'Credit Crunch' in the United States?" *Journal of Money, Credit and Banking* (August 1994, Part 2), pp. 585-628.
- Bernanke, Ben S. and Cara Lown. "The Credit Crunch," *Brookings Papers on Economic Activity* (2, 1991), pp. 205-39.
- Bies, Susan S. Governor, Federal Reserve Board, "Current Challenges of Community Banks," Remarks at Ohio Bankers Day Conference, Ohio Department of Commerce, Columbus, Ohio, March 21, 2002.
- Clair, Robert T., Gerald P. O'Driscoll, Jr., and Kevin J. Yeats. "Is Banking Different? A Reexamination of the Case for Regulation," *Cato Journal* (Winter 1994), pp. 345-58.
- Curry, Timothy J., John P. O'Keefe, Jane Coburn, and Lynn Montgomery. "Financially Distressed Banks: How Effective are Enforcement Actions in the Supervisory Process?" *FDIC Banking Review* (October 1999), pp. 1-18.
- Federal Deposit Insurance Corporation. *History of the Eighties, Lessons for the Future,* Washington, 1997.
- Gilbert, R. Alton, and L.A. Kochin. "Local Economic Effects of Bank Failures," *Journal of Financial Services Research* 3 (December 1989): 333-345.

, Andrew P. Meyer and Mark D. Vaughan. "Could a CAMELS Downgrade Model Improve Off-Site Surveillance," Federal Reserve Bank of St. Louis *Review* (January/February 2002), pp. 47-63.

and _____. "How Healthy is the Banking System? Funneling Financial Data into Failure Probabilities," Federal Reserve Bank of St. Louis *Regional Economist* (April 2001), pp. 12-13.

, and Mark D. Vaughan. "Does the Publication of Supervisory Enforcement Actions Add to Market Discipline?" *Research in Financial Services: Public and Private Policy*, 1998, *10*, pp. 259-80.

Hancock, Diana, Andrew J. Laing, and James A. Wilcox. "Bank Capital Shocks: Dynamic Effects on Securities, Loans and Capital," *Journal of Banking and Finance* (1995), pp. 661-77.

- Lown, Cara S., Donald P. Morgan, and Sonali Rohatgi. "Listening to Loan Officers: the Impact of Commercial Credit Standards on Lending and Output," Federal Reserve Bank of New York *Economic Policy Review* (July 2000), pp. 1-16.
- Peek, Joe, and Eric S. Rosengren. "Bank Regulatory Agreements and Real Estate Lending," *Real Estate Economics* (Spring 1996), pp. 55-73.

_____, and _____. "Bank Regulation and the Credit Crunch," *Journal of Banking and Finance* (June 1995a), pp. 679-92.

, and _____. "Bank Regulatory Agreements in New England," New England Economic Review (May/June 1995b), pp. 15-24.

Shibut, Lynn. (2001). "Should Bank Liability Structure Influence Deposit Insurance Pricing?" Working Paper 02-1, Division of Research and Statistics, Federal Deposit Insurance Corporation.

		Total assets o	of banks, millio	ons of dollars	
		\$300 to	\$1,000 to	\$10,000 to	Over
Period	Up to \$300	\$1,000	\$10,000	\$20,000	\$20,000
1991	10980	631	321	29	18
1992	10525	635	324	30	19
1993	10055	630	320	31	23
1994	9558	637	326	31	26
1995	8988	644	334	41	28
1996	8536	658	331	41	31
1997	8171	675	306	30	37
1998	7797	692	309	24	41
1999 Q1	7604	675	313	28	44
1999 Q2	7549	684	311	29	47
1999 Q3	7480	702	308	30	46
1999 Q4	7401	737	309	29	46
2000 Q1	7361	728	292	33	44
2000 Q2	7309	736	291	36	44
2000 Q3	7203	736	295	37	43
2000 Q4	7118	748	307	35	45
2001 Q1	7022	771	305	34	44
2001 Q2	6947	786	306	30	47
2001 Q3	6889	811	312	34	44
2001Q4	6798	835	312	31	47

Table 1: Number of banks b	by asset	class	and	date.
----------------------------	----------	-------	-----	-------

Note: The number of banks in each size class by date includes all banks with total assets (call report item rcfd2170) greater than zero. For annual observations, the number of banks equals the average number of the prior four quarters. Size class is determined on a quarterly basis.

	Т				
		Total assets of	of banks, millio	ons of dollars	
		\$300 to	\$1,000 to	\$10,000 to	Over
Period	Up to \$300	\$1,000	\$10,000	\$20,000	\$20,000
1991	2.03	2.42	3.27	3.92	5.67
1992	1.63	1.92	2.55	3.13	4.80
1993	1.35	1.54	1.79	1.76	2.70
1994	1.07	1.05	1.12	1.32	1.61
1995	1.03	0.99	1.06	1.12	1.35
1996	1.00	0.96	1.14	1.00	1.01
1997	0.92	0.84	1.07	1.12	0.91
1998	0.94	0.80	1.03	1.10	0.94
1999 Q1	0.98	0.82	0.99	1.19	0.98
1999 Q2	0.95	0.75	0.88	1.28	0.93
1999 Q3	0.93	0.78	0.87	1.31	0.99
1999 Q4	0.82	0.72	0.82	1.16	1.00
2000 Q1	0.87	0.73	0.85	1.14	1.01
2000 Q2	0.86	0.71	0.82	1.17	1.05
2000 Q3	0.86	0.77	0.85	1.22	1.09
2000 Q4	0.85	0.77	0.90	1.31	1.24
2001 Q1	0.92	0.82	1.00	1.31	1.32
2001 Q2	0.98	0.86	1.02	1.28	1.40
2001 Q3	1.03	0.92	1.09	1.43	1.48
2001Q4	1.01	0.91	1.03	1.35	1.62

Table 2: Percentage of total loans that are nonperforming.

Note: Percentage of nonperforming loans equals total nonperforming loans divided by total loans. Nonperforming loans are those loans that bank managers classify as 90-days or more past due or nonaccrual in the call report. Precisely, total nonperforming loans equals the sum of call report items rcfd1403 and rcfd1407. Total loans equals call report item number rcfd2122. Where just an annual number is given, the number reported is the ratio of the annual numbers. Bank size group is determined on a quarterly basis.

	Total assets of banks, millions of dollars				
	Up to	\$300 to	\$1,000 to	\$10,000 to	Over
Period	\$300	\$1,000	\$10,000	\$20,000	\$20,000
1991	1.14	1.52	2.04	1.93	2.28
1992	0.83	1.18	1.57	1.50	1.65
1993	0.54	0.72	0.93	1.01	1.09
1994	0.41	0.47	0.62	0.79	0.45
1995	0.42	0.53	0.91	0.82	0.39
1996	0.43	0.63	1.00	0.95	0.35
1997	0.41	0.50	1.22	1.27	0.52
1998	0.46	0.60	1.13	1.01	0.63
1999 Q1	0.22	0.38	0.83	0.96	0.57
1999 Q2	0.27	0.33	0.72	1.01	0.51
1999 Q3	0.28	0.33	0.68	1.16	0.57
1999 Q4	0.42	0.52	0.78	1.07	0.68
	0.40		0.04		0 = 4
2000 Q1	0.19	0.39	0.64	0.98	0.54
2000 Q2	0.31	0.32	0.52	1.09	0.54
2000 Q3	0.29	0.36	0.61	1.17	0.57
2000 Q4	0.41	0.46	0.79	1.48	0.97
2001 Q1	0.20	0.30	0.67	1.44	0.73
2001 Q1 2001 Q2	0.20	0.30	0.87	1.26	0.73
2001 Q2 2001 Q3	0.20	0.39	0.89	1.52	1.09
2001Q3	0.54	0.56	1.40	1.42	1.09
200104	0.52	0.00	1.40	1.42	1.43

Table 3: Percentage of total loans charged off as losses.

Note: Charge-offs are measured on a net basis—loans charged off as losses minus recoveries on loans preciously charged off. This table does not trace the condition of the same groups of banks over time. Instead, each bank is put into one of these five size groups each quarter, based on its total assets that quarter. The percentage of loans charged off as losses each quarter (net of recoveries on loans previously charged off as losses) is calculated by summing net charge-off for all banks in the size group and dividing by the sum of their total loans. Quarterly percentages are multiplied by four to raise them to annual rates.

		Total assets o	of banks, millio	ons of dollars	
		\$300 to	\$1,000 to	\$10,000 to	Over
Period	Up to \$300	\$1,000	\$10,000	\$20,000	\$20,000
1991	4.17	3.18	3.74	4.34	5.34
1992	3.61	2.53	2.77	3.58	3.87
1993	2.83	1.89	1.74	1.79	2.10
1994	2.24	1.20	0.98	1.19	1.23
1995	2.07	1.10	0.98	0.98	1.19
1996	2.07	1.24	0.90	0.72	0.86
1997	1.95	1.12	0.83	0.61	0.73
1998	2.06	1.15	0.90	0.83	0.89
1999 Q1	2.27	1.16	1.01	0.97	1.00
1999 Q2	2.19	1.06	1.00	1.28	0.99
1999 Q3	2.13	1.20	1.07	1.14	1.15
1999 Q4	1.79	1.05	0.91	1.18	1.17
2000 Q1	1.92	1.09	1.04	1.21	1.27
2000 Q2	1.90	1.13	1.15	1.30	1.43
2000 Q3	1.91	1.22	1.23	1.35	1.57
2000 Q0	1.78	1.18	1.33	1.56	1.74
0004 04	1.40	4.04	4 50	4.04	4.05
2001 Q1	1.40	1.31	1.53	1.64	1.95
2001 Q2	1.47	1.32	1.58	1.65	2.24
2001 Q3	1.54	1.40	1.72	1.90	2.39
2001Q4	1.46	1.27	1.62	2.02	2.73

Table 4: Percentage of commercial loans that are nonperforming.

Note: Percentage of nonperforming commercial loans equals total nonperforming commercial loans divided by total commercial loans. Nonperforming commercial loans are those commercial loans that bank managers classify as 90-days or more past due or nonaccrual in the call report. Precisely, nonperforming commercial loans equals the sum of call report items rcfd1252, rcfd1253, rcfd1255, rcfd1256, rcon1223, rcon1224, rcon1607, and rcon1608. Total commercial loans equals call report item number rcfd1766. Where just an annual number is given, the number reported is the ratio of the fourth quarter numbers. Bank size group is determined on a quarterly basis.

		Total assets o	of banks, millio	ons of dollars	
	Up to	\$300 to	\$1,000 to	\$10,000 to	Over
Period	\$300	\$1,000	\$10,000	\$20,000	\$20,000
1991	3.13	2.53	2.59	1.97	2.57
1992	2.29	1.97	1.37	1.23	1.17
1993	1.52	0.86	0.90	0.77	0.53
1994	1.16	0.47	0.33	0.26	0.16
1995	1.14	0.70	0.22	0.36	0.26
1996	1.07	0.70	0.40	0.17	0.10
1997	1.05	0.64	0.26	0.41	0.29
1998	1.24	0.75	0.64	0.47	0.56
1999 Q1	0.46	0.31	0.30	0.39	0.46
1999 Q2	0.77	0.23	0.40	0.41	0.55
1999 Q3	0.62	0.36	0.68	0.47	0.60
1999 Q4	1.16	0.79	0.90	0.73	0.72
2000 Q1	0.30	0.31	0.41	0.40	0.55
2000 Q2	0.65	0.46	0.47	0.60	0.69
2000 Q3	0.63	0.44	0.83	0.62	0.69
2000 Q4	1.12	0.88	1.08	1.12	1.33
2001 Q1	0.35	0.36	0.60	0.95	0.99
2001 Q2	0.58	0.69	1.07	0.82	1.29
2001 Q3	0.66	0.81	1.06	1.00	1.59
2001Q4	1.23	1.10	2.90	1.45	2.69

Table 5: Percentage of commercial loans charged off as losses.

Note: Charge-offs are measured on a net basis—loans charged off as losses minus recoveries on loans preciously charged off. This table does not trace the condition of the same groups of banks over time. Instead, each bank is put into one of these five size groups each quarter, based on its total assets that quarter. The percentage of loans charged off as losses each quarter (net of recoveries on loans previously charged off as losses) is calculated by summing net commercial loan charge-off for all banks in the size group and dividing by the sum of their total commercial loans. Quarterly percentages are multiplied by four to raise them to annual rates.

Because of changes in the call report in 2001, the charge-off rate on commercial and industrial loans for banks with total assets below \$300 million for 2001 are not exactly comparable to those for previous years. Prior to Q1 2001, the ratio displayed equals the charge-off rate for commercial and industrial loans and "other loans". The numbers down the column "Up to \$300" should be comparable, however, because in no time period did "other loans" of banks under \$300 million exceed three percent of the sum of commercial and industrial and "other loans." The charge-off rate in 2001 is comparable for banks across size classes.

		Total assets o	of banks, millio	ons of dollars	
		\$300 to	\$1,000 to	\$10,000 to	Over
Period	Up to \$300	\$1,000	\$10,000	\$20,000	\$20,000
1991	55.05	49.74	42.46	31.53	19.48
1992	66.57	64.02	66.07	55.85	34.39
1993	72.34	76.40	81.65	84.33	53.15
1994	77.86	86.16	93.04	91.41	97.80
1995	77.65	84.02	87.53	95.45	94.35
1996	75.87	81.90	89.21	92.10	98.86
1997	77.34	86.04	89.87	87.36	100.00
1998	76.62	86.34	88.40	85.49	97.71
1999 Q1	76.03	86.29	89.55	87.80	97.54
1999 Q2	76.51	86.41	90.59	91.00	98.19
1999 Q3	76.88	86.68	90.35	91.45	97.63
1999 Q4	78.83	88.56	90.50	93.78	96.93
2000 Q1	77.43	86.34	90.62	90.77	98.68
2000 Q2	77.74	87.25	88.19	93.88	98.76
2000 Q3	77.48	84.45	87.28	89.46	98.91
2000 Q4	78.32	84.42	84.16	92.66	92.14
2001 01	74.20	02.04	05 1 /	02 50	02.02
2001 Q1	74.38	82.91 81.53	85.14	92.50	83.23
2001 Q2	73.29		85.15	88.05	79.30
2001 Q3	70.77	78.75	80.83	83.14	76.78
2001Q4	71.68	78.89	82.83	89.05	82.18

Table 6: Percentage of assets at banks whose allowance for loan and
lease losses exceeds their nonperforming loans.

Note: Each bank is classified by whether the ratio of its allowance for loan and lease losses to nonperforming loans is greater than one. The allowance for loan and lease losses is the sum of call report items rcfd3123 and rcfd3128. Total nonperforming loans equals the sum of call report items rcfd1403 and rcfd1407. For each size category, the sum of all assets held by banks where this ratio is greater than one is divided by the sum all assets held by banks in the class.

		Total assets o	of banks, millio	ons of dollars	
		\$300 to	\$1,000 to	\$10,000 to	Over
Period	Up to \$300	\$1,000	\$10,000	\$20,000	\$20,000
1991	8.88	7.78	7.29	6.27	5.2
1992	9.22	8.31	8.13	7.41	6.6
1993	9.72	8.88	8.74	8.00	7.3
1994	9.66	9.08	8.55	8.49	6.9
1995	10.60	9.62	9.22	8.53	7.1
1996	10.57	9.81	9.44	8.30	8.1
1997	10.85	10.25	9.95	9.33	8.3
1998	10.89	9.97	10.59	10.23	8.2
1999 Q1	10.36	9.41	9.83	8.87	7.9
1999 Q2	10.32	9.39	9.76	8.32	7.9
1999 Q3	10.39	9.62	9.67	8.74	8.4
1999 Q4	10.30	9.65	9.79	8.48	8.7
2000 Q1	10.04	9.37	9.16	8.58	8.0
2000 Q2	10.28	9.43	8.94	9.32	8.1
2000 Q3	10.57	9.67	9.42	9.50	8.4
2000 Q4	10.86	10.04	9.62	9.58	8.4
2001 Q1	10.55	9.85	9.38	9.45	8.2
2001 Q2	10.68	9.94	9.65	10.18	8.2
2001 Q3	10.94	10.19	9.99	10.64	8.8
2001Q4	10.82	10.21	10.30	11.13	9.3

Table 7: Total equity as a percentage of total assets.

Note: For each size category, the sum of equity held by banks with average assets greater than zero is divided by average assets. Size category is determined on a quarterly basis. Equity equals call report item rcfd3210. Average assets on a year-to-date basis is derived from call report item rcfd3368.

Table 8: What are CAMELS Composite Ratings?

"CAMELS" is an acronym for six components of safety and soundness—capital protection (C), asset quality (A), management competence (M), earnings strength (E), liquidity risk (L), and sensitivity to market risk (S). Supervisors assign a grade of 1 (best) through 5 (worst) to each component. They use these six component scores to award a CAMELS composite rating, also expressed on a 1 through 5 scale.

The following is a brief description of the individual CAMELS composite ratings. Supervisors view a bank with a rating of 1 or 2 as safe and sound. When it is downgraded to a 3 or worse, it is considered a problem bank.

Safe	CAMELS Composite Rating	Description
and Sound	1	Financial institutions with a composite 1 rating are sound in every respect and generally have individual component ratings of 1 or 2.
	2	Financial institutions with a composite 2 rating are fundamentally sound. In general, a 2-rated institution will have no individual component ratings weaker than 3.
Problem Bank Status	3	Financial institutions with a composite 3 rating exhibit some degree of supervisory concern in one or more of the component areas.
	4	Financial institutions with a composite 4 rating generally exhibit unsafe and unsound practices or conditions. They have serious financial or managerial deficiencies that result in unsatisfactory performance.
	5	Financial institutions with a composite 5 rating generally exhibit extremely unsafe and unsound practices or conditions. Institutions in this group pose a significant risk the deposit insurance fund and their failure is highly probable.

Source: Federal Reserve Commercial Bank Examination Manual

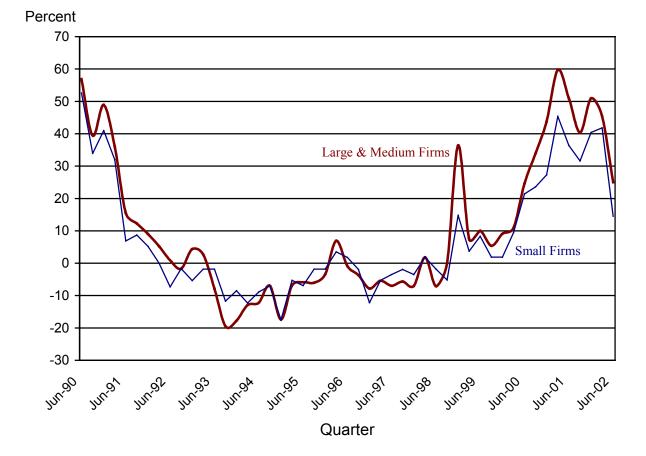
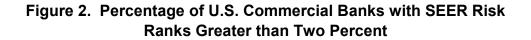
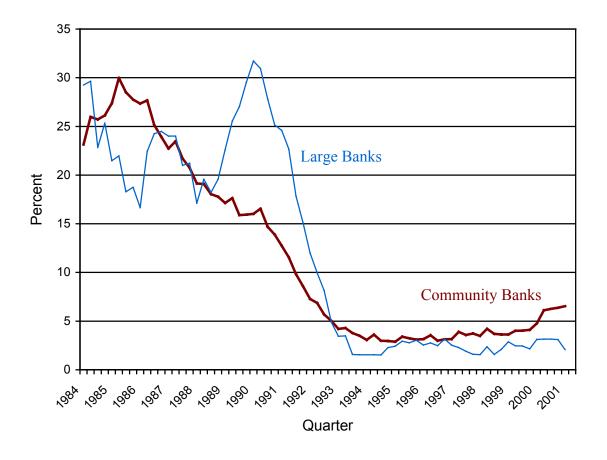


Figure 1. Net Percentage of Domestic Respondents Tightening Standards for C&I Loans





Note: Community banks are banks with less than \$1 billion in total assets, and large banks are banks with assets greater than or equal to \$1 billion.

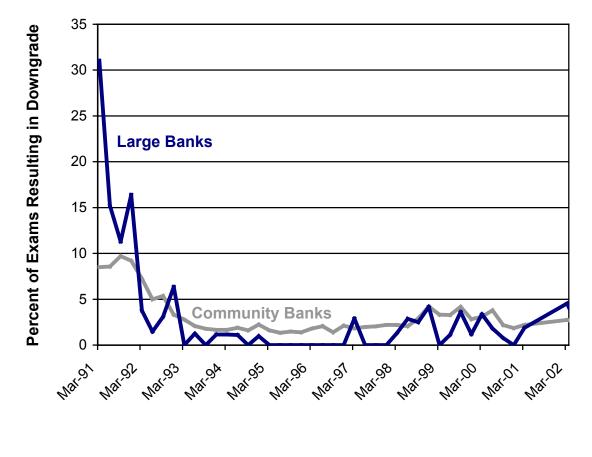


Figure 3. Net CAMELS Downgrades from CAMELS 1 or 2 to CAMELS 3, 4 or 5

Quarter

Note: Community banks are banks with less than \$1 billion in total assets, and large banks are banks with assets greater than or equal to \$1 billion.