The Financial Condition of U.S. Banks: How Different Are Community Banks?

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This article examines the condition of U.S. commercial banks of various sizes since the early 1990s, with an emphasis on differences between the condition of community banks and larger banks. There is evidence that deterioration in the condition of banks has adverse effects on the pace of economic activity. One reason for examining the condition of banks of different size, rather than the condition of the entire banking industry, is that community banks account for a disproportionate share of bank loans to small businesses. In addition, failures of community banks account for a disproportionate share of losses to the deposit insurance funds.

Despite the consolidation of the banking industry in recent years, community banks continue to constitute a relevant portion of the banking industry. We identify community banks as those with less than $1 billion in assets.[1] As of the fourth quarter of 2001, 85 percent of all banks had total assets less than $1 billion. 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.[2] 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 bank failure rates and Federal Deposit Insurance Corporation (FDIC) loss rates on bank failures have been inversely related to bank size (Shibut, 2001).

As the data presented in Tables 1 through 7 in this article are quickly out of date, see the web site of the Research Division of the Federal Reserve Bank of St. Louis for the most current data. In the past the condition of banks has varied substantially among regions of the United States (FDIC, 1997). Although the tables in this article are not presented by geographic region, the data appendix on the web site includes 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 discuss the evidence that this information may be relevant for the performance of the economy. Lown, Morgan, and Rohatgi (2000) examine how changes in the credit standards of banks have affected 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. Lown, Morgan, and Rohatgi (2000) present evidence that changes in the percentage of banks that report tightening their credit standards for commercial and industrial (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, then adverse effects on the pace of economic activity could result. However, this possible result cannot be inferred for community banks because all of the banks included

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[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. *American Banker* uses a definition of a community bank that includes total assets of $1 billion; see p. 6 of the March 27, 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 Strahan (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.

[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).

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

in that terms of lending survey are substantially larger than community banks.

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 were subject to close supervision during at least part of this period. Supervisors usually require banks with substantial loan problems to increase their capital ratios, and these banks often attempt to increase their capital ratios by reducing their assets (Peek and Rosengren, 1995b and 1996; 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. An increase in problem loans may induce banks to restrict their lending. Some bank customers who are denied credit do not have access to credit from alternative sources on terms similar to those provided to them in the past. In a credit crunch, the decline in the supply 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).

How relevant the evidence from the credit crunch period is for other periods depends on what caused banks to reduce the supply of credit. If banks reduced lending because of the deterioration in their condition, we may conclude that a similar deterioration in their condition in the future would induce a similar restriction on bank lending. One of the charges by bankers during that period, however, was that bank supervisors had tightened standards for judging a bank to be in satisfactory condition, forcing many banks to reduce their lending. If that charge is correct, the evidence of the credit crunch period would not be relevant for considering how a deterioration in the condition of banks would affect the supply of loans. Berger et al. (2001) recently reexamined the credit crunch episode to determine whether there was evidence of a tightening of supervisory standards. They find evidence that the toughness of supervisory standards for satisfactory banking condition increased during the credit crunch period (1989-92) and declined during the following boom period in bank lending (1993-98). They conclude, however, that these changes in supervisory stan-

dards 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. 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 attribute the effects on real economic activity 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 CONDITION OF 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, in many cases, moved banks into the larger size groups.

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.

Nonperforming Loans

Table 2 presents our first measure of problem loans: the percentage of total loans that are non-

Table 1

Number of Banks by Asset Class and Date

Period	Total assets of banks (millions of dollars)				
	Up to $300	$300 to $1,000	$1,000 to $10,000	$10,000 to $20,000	Over $20,000
1991	10,980	631	321	29	18
1992	10,525	635	324	30	19
1993	10,055	630	320	31	23
1994	9,558	637	326	31	26
1995	8,988	644	334	41	28
1996	8,536	658	331	41	31
1997	8,171	675	306	30	37
1998	7,797	692	309	24	41
1999:Q1	7,604	675	313	28	44
1999:Q2	7,549	684	311	29	47
1999:Q3	7,480	702	308	30	46
1999:Q4	7,401	737	309	29	46
2000:Q1	7,361	728	292	33	44
2000:Q2	7,309	736	291	36	44
2000:Q3	7,203	736	295	37	43
2000:Q4	7,118	748	307	35	45
2001:Q1	7,022	771	305	34	44
2001:Q2	6,947	786	306	30	47
2001:Q3	6,889	811	312	34	44
2001:Q4	6,798	835	312	31	47

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.

performing. 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 2001. In contrast, the nonperforming loan ratios of banks with total assets in excess of $10 billion began rising during the late 1990s and during 2001 rose 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 the 1990-91 recession.

Charge-Off of Loan Losses

The trend and level of loan charge-offs can also help in the assessment of asset quality. A high level of charge-offs, per se, does not indicate a weak portfolio because the charged-off assets are no longer on the books. However, recent charge-offs can be informative about the assets that remain on the books because the remaining assets may have been originated under similar circumstances or at about the same time. 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

Table 2

Percentage of Total Loans That Are Nonperforming

Period	Total assets of banks (millions of dollars)				
	Up to $300	$300 to $1,000	$1,000 to $10,000	$10,000 to $20,000	Over $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
2001:Q4	1.01	0.91	1.03	1.35	1.62

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. When an annual number alone is given, it is the mean of quarterly numbers. Bank size group is determined on a quarterly basis.

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 with the rates in the fourth quarter of 2000 rather than compare them with the charge-off rates in the third quarter of 2001.

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 1991 levels. Although the weakness in the economy has been accompanied by increasing net charge-offs and asset quality recently has fallen only slightly,

the recent upward trend in charge-offs has not yet reversed.

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 the 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

Losses on C&I loans are often important causes of serious financial problems in banks. Tables 4 and

Table 3

Percentage of Total Loans Charged Off as Losses

| Period | Total assets of banks (millions of dollars) | | | | |
	Up to $300	$300 to $1,000	$1,000 to $10,000	$10,000 to $20,000	Over $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
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:Q2	0.28	0.40	0.87	1.26	0.84
2001:Q3	0.34	0.39	0.89	1.52	1.09
2001:Q4	0.52	0.56	1.40	1.42	1.49

NOTE: Charge-offs are measured on a net basis—loans charged off as losses minus recoveries on loans previously charged off. 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.

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 after the 1990-91 recession through 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 banks with total assets above $1 billion but not among 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 banks in the smallest size group. During 2001, nonperforming C&I loan ratios were lower among community banks than among larger banks.

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.

Coverage and Equity Ratios

The financial health of banks depends not only on the magnitude of their problem loans (Tables 2 through 5), but also on the capacity of the banks to absorb loan losses (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

Table 4

Percentage of Commercial Loans That Are Nonperforming

Period	Total assets of banks (millions of dollars)				
	Up to $300	$300 to $1,000	$1,000 to $10,000	$10,000 to $20,000	Over $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:Q4	1.78	1.18	1.33	1.56	1.74
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
2001:Q4	1.46	1.27	1.62	2.02	2.73

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 non-accrual 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. When an annual number alone is given, it is the mean of the quarterly numbers. Bank size group is determined on a quarterly basis.

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 that was 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 when they anticipate 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

Table 5

Percentage of Commercial Loans Charged Off as Losses

Period	Total assets of banks (millions of dollars)				
	Up to $300	$300 to $1,000	$1,000 to $10,000	$10,000 to $20,000	Over $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
2001:Q4	1.23	1.10	2.90	1.45	2.69

NOTE: Charge-offs are measured on a net basis—loans charged off as losses minus recoveries on loans previously charged off. 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-offs 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 2001:Q1, the ratio displayed equals the charge-off rate for commercial and industrial loans and "other loans." The numbers in the column "Up to $300" should be comparable before and after 2001:Q1, however, because in no time period did "other loans" of banks under $300 million exceed 3 percent of the sum of commercial and industrial and "other loans." The charge-off rate in 2001 is comparable for banks across size classes.

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 losses charged against their allowance, than banks with coverage ratios below unity.

Table 6 shows the percentage of assets among banks with coverage ratios of unity or higher. An increase in this percentage bolsters the protection of bank equity from charge-offs of nonperforming loans. These percentages were relatively low in 1991 but increased rapidly in the following years. During recent quarters, this percentage has declined for banks in each size group, with the largest declines among 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 banks with coverage ratios in excess of unity. The average percentage for 2001, in contrast, was just above 80 percent.

The coverage ratios for loan losses (shown in Table 6) have also declined during recent quarters among community banks, and this measure is lower for community banks than for larger banks. This

Table 6

Percentage of Assets at Banks Whose Allowance for Loans and Lease Losses Exceeds Their Nonperforming Loans

Period	Total assets of banks (millions of dollars)				
	Up to $300	$300 to $1,000	$1,000 to $10,000	$10,000 to $20,000	Over $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:Q1	74.38	82.91	85.14	92.50	83.23
2001:Q2	73.29	81.53	85.15	88.05	79.30
2001:Q3	70.77	78.75	80.83	83.14	76.78
2001:Q4	71.68	78.89	82.83	89.05	82.18

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 total assets held by banks where this ratio is greater than one is divided by the sum of total assets held by banks in the class.

contrast implies that if the loss rate on nonperforming loans were the same on average among the banks in each size group, then 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.

The capacity of banks to absorb losses also depends on the amount of equity those banks hold. 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 group 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 and unexpected decreases in asset quality.

Assessment of Patterns in Bank Accounting Information

Overall, the accounting numbers in Tables 2 through 5 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, although they have slightly smaller buffers to absorb loan losses than do larger banks. Yet, the percentage of assets at community banks with coverage ratios greater than unity is still

Table 7

Total Equity as a Percentage of Total Assets

Period	Total assets of banks (millions of dollars)				
	Up to $300	$300 to $1,000	$1,000 to $10,000	$10,000 to $20,000	Over $20,000
1991	8.88	7.78	7.29	6.27	5.24
1992	9.22	8.31	8.13	7.41	6.66
1993	9.72	8.88	8.74	8.00	7.37
1994	9.66	9.08	8.55	8.49	6.91
1995	10.60	9.62	9.22	8.53	7.16
1996	10.57	9.81	9.44	8.30	8.10
1997	10.85	10.25	9.95	9.33	8.35
1998	10.89	9.97	10.59	10.23	8.27
1999:Q1	10.36	9.41	9.83	8.87	7.93
1999:Q2	10.32	9.39	9.76	8.32	7.97
1999:Q3	10.39	9.62	9.67	8.74	8.44
1999:Q4	10.30	9.65	9.79	8.48	8.76
2000:Q1	10.04	9.37	9.16	8.58	8.03
2000:Q2	10.28	9.43	8.94	9.32	8.10
2000:Q3	10.57	9.67	9.42	9.50	8.41
2000:Q4	10.86	10.04	9.62	9.58	8.44
2001:Q1	10.55	9.85	9.38	9.45	8.25
2001:Q2	10.68	9.94	9.65	10.18	8.27
2001:Q3	10.94	10.19	9.99	10.64	8.87
2001:Q4	10.82	10.21	10.30	11.13	9.32

NOTE: For banks in each size category, the sum of equity is divided by the sum of total assets. Equity equals call report item rcfd3210, and total assets is derived from call report item rcfd3368.

high relative to the early 1990s, indicating that community banks have more adequate buffers of allowances for loan losses now than during that time. Banks in each of the five size groups, on average, currently have high ratios of equity to total assets relative to those in the early 1990s—large enough to absorb substantial losses. In sum, the analysis based on Tables 2 through 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 through 7 provides limited information about the condition of banks, and some of the ratios provide conflicting signals. For instance, Table 2 shows rising nonperforming loan ratios, 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 how much each measure contributes to the prediction of a bank's financial distress. We use the output from the SEER risk-rank model as a means of condensing several measures of bank condition into one signal.

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. The SEER risk-rank model estimates the probability, ranging from 0 to 100 percent, that

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Table 8

What Are the SEER Failure-Prediction Variables?

This table lists the independent variables used in the SEER (System to Estimate Examination Ratings) risk-rank model. The signs indicate the hypothesized relationship between each variable and the likelihood of failure in the next two years. For example, the negative sign for the net-income (ROA) ratio indicates that an increase in earnings reduces the likelihood of failure, all other things equal. We use the median of failure probabilities estimated by the SEER risk-rank model as an index of the overall health of community banks and large banks.

	Variable	Effect on failure probability
Credit risk	Loans past due 30-90 days/total assets	+
	Loans past due 90+ days/total assets	+
	Nonaccrual loans/total assets	+
	Other real estate owned (OREO)/total assets	+
	Residential real estate loans/total assets	–
	Commercial and industrial loans/total assets	+
Leverage risk	Tangible capital/total assets	–
	Net income/average assets (ROA)	–
Liquidity risk	Investment securities/total assets	–
	Large time deposits/total assets	+
Control variable	Natural log of total assets	–

NOTE: + indicates that higher levels of the variable lead to higher probabilities of failure; – indicates the opposite.
Table adapted from Cole, Cornyn, and Gunther (1995).

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a bank will fail within the next two years. The model uses data from banks that failed during the period from 1985 to 1991 to provide a statistical relationship between bank failures and financial data. This relationship is used to estimate a quarterly SEER risk rank for each bank using current data from the call report.[5] The independent variables of the SEER risk-rank model (which are described in Table 8) capture credit risk, leverage risk, liquidity risk, and size. Although the model's parameters are derived from data during the 1985 to 1991 period, the model is validated annually and has been shown to perform about as well as other surveillance models whose parameters are reestimated each period (Gilbert, Meyer, and Vaughan, 2002). For more details on the SEER risk-rank model, see Cole, Cornyn, and Gunther (1995). One can use early warning models to derive measures of the performance of the banking indus-

try, as we do here (Gilbert, Meyer, and Vaughan, 2001). Since community banks have had different risk profiles and higher failure rates in the past than larger banks, we look at each group's median SEER risk rank separately.

Figure 1 plots the median failure probability for two groups of banks: community banks (assets less than $1billion) and large banks (assets greater than or equal to $1 billion). The median failure probability declined in the 1990s for both community banks and large banks. During more recent years, the median SEER risk rank of community banks has risen but stands only about 4 basis points higher than that of larger banks. The median SEER risk-rank level of both groups is still far below the level during the 1990-91 recession.

REACTIONS OF SUPERVISORS TO LOAN QUALITY PROBLEMS

If the dollar amount of problem loans rises high enough to threaten substantial losses relative to a

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[5] The reader can find this description of the SEER risk-rank model and how it's used as a regulatory monitoring tool in the *Federal Reserve Commercial Bank Examination Manual*.

Figure 1

Median SEER Risk Rank of U.S. Commerical Banks
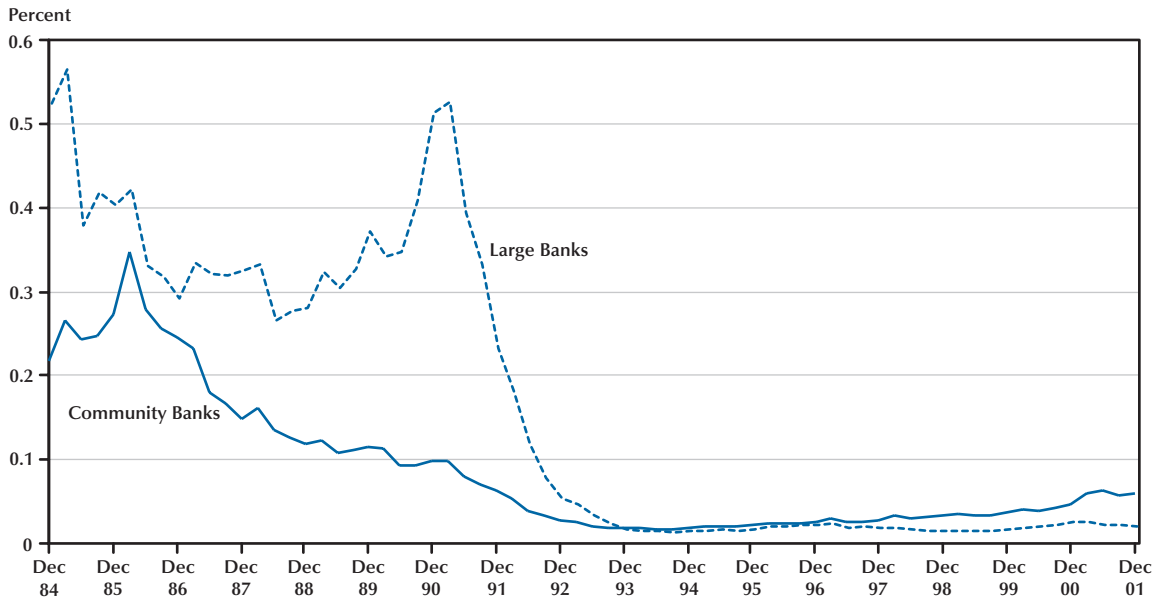
Percent

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. Data are quarterly.

bank's loan loss reserves and equity, the supervisor of the bank may downgrade its rating and impose an enforcement action on the bank. Most enforcement actions are agreements between banks in unsatisfactory condition and their supervisors about the actions that are necessary to restore the banks to satisfactory condition.[6]

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 bank condition 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 9 interprets each of the five

composite CAMELS ratings. Supervisors give CAMELS composite scores of 1 or 2 to the banks they consider to be in satisfactory condition, and they give CAMELS composite scores of 3, 4, or 5 to unsatisfactory banks. Supervisors monitor the unsatisfactory banks closely and discipline them through enforcement actions. Banks tend to respond to a CAMELS ratings downgrade to unsatisfactory 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).

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 2 indicates the extent to which examiners identified problems during exams conducted each quarter since 1991. For the line labeled "Community Banks," the denominator is the number of community banks that entered the quarter rated as CAMELS 1 or 2 and were subject to examinations begun during the quarter. The numerator is the number of these banks that were rated as 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 being in satisfactory condition were downgraded

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[6] 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.

Table 9

What Are CAMELS Composite Ratings?

"CAMELS" is an acronym for six components of bank condition—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 being in satisfactory condition. When it is downgraded to a 3 or worse, it is considered an unsatisfactory bank.

	CAMELS composite rating	Description
Satisfactory	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.
Unsatisfactory	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 to the deposit insurance fund, and their failure is highly probable.

SOURCE: *Federal Reserve Commercial Bank Examination Manual.*

to unsatisfactory status during each quarter. The line labeled "Large Banks" is calculated for comparable changes in 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 current downgrade rates for both groups of banks remain low relative to the rates of the early 1990s.

ACCESS TO CURRENT DATA

The data in this article are updated quarterly. To provide an on-going picture of the condition of community banks, the Federal Reserve Bank of St. Louis will maintain on its web page the most current data in each table in the data appendix to this article.

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.[7]

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 con-

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[7] See FDIC (1997) for information on the geographic distribution of bank failures during the 1980s and early 1990s.

Figure 2

Percentage of Banks with CAMELS Downgrades from 1 or 2 to 3, 4, or 5
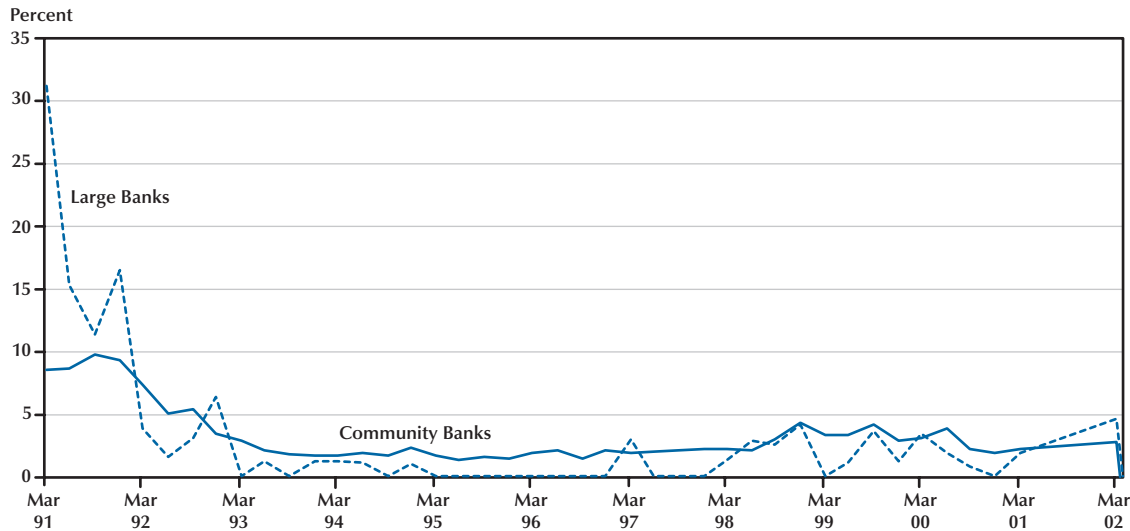
NOTE: Community banks are banks with less than $1 billion in total assets, and large banks are banks with assets greater than or equal to $1 billion. Data are quarterly.

trast, 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 recession that ended in 1991. The rate of downgrades (see Figure 2) suggests that examiners are not detecting a systematic deterioration in the condition of community banks.

Several studies conclude that a deterioration in the condition of banks can have adverse effects on economic activity, and some of this evidence is relevant for community banks. These studies of the "credit crunch" focus on the late 1980s and early 1990s, however, and the present condition of the banking industry in the United States remains much stronger than it was during that time. The current relatively strong condition of U.S. commercial banks (both community banks and larger banks) suggests, therefore, that the state of the banking industry is not a hindrance to U.S. economic activity.

REFERENCES

Berger, Allen N.; Demsetz, Rebecca S. and Strahan, Philip E. "The Consolidation of the Financial Services Industry: Causes, Consequences, and Implications for the Future." *Journal of Banking and Finance*, February 1999, *23*(2-4), pp. 135-94.

_____; Kyle, Margaret K. and Scalise, Joseph M. "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?* Chicago: University of Chicago Press, 2001.

_____ and Udell, Gregory F. "Did Risk-Based Capital Allocate Bank Credit and Cause a 'Credit Crunch' in the United States?" *Journal of Money, Credit, and Banking*, August 1994, *26*(3, Part 2), pp. 585-628.

Bernanke, Ben S. and Lown, Cara S. "The Credit Crunch." *Brookings Papers on Economic Activity*, 1991, *0*(2), pp. 204-39.

Bies, Susan S. "Current Challenges of Community Banks." Federal Reserve Board Remarks at Ohio Bankers Day Conference, Ohio Department of Commerce, Columbus, Ohio, 21 March 2002.

Clair, Robert T.; O'Driscoll, Gerald P. Jr. and Yeats, Kevin J. "Is Banking Different? A Reexamination of the Case for Regulation." *Cato Journal*, Winter 1994, *13*(3), pp. 345-58.

Cole, R.; Cornyn, B. and Gunther, J. FIMS: A New Monitoring System for Banking Institutions. *Federal Reserve Bulletin*, January 1995, pp. 1-15.

Curry, Timothy J.; O'Keefe, John P.; Coburn, Jane and Montgomery, Lynn. "Financially Distressed Banks: How Effective Are Enforcement Actions in the Supervisory Process?" *FDIC Banking Review*, October 1999, *12*(2), pp. 1-18.

Federal Deposit Insurance Corporation. *History of the Eighties, Lessons for the Future*. Washington, DC: 1997.

Gilbert, R. Alton and Kochin, Levis A. "Local Economic Effects of Bank Failures." *Journal of Financial Services Research*, December 1989, *3*(4), pp. 333-45.

_____; Meyer, Andrew P. and Vaughan, Mark D. "Could a CAMELS Downgrade Model Improve Off-Site Surveillance?" Federal Reserve Bank of St. Louis *Review*, January/February 2002, *84*(1), 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 Vaughan, Mark D. "Does the Publication of Supervisory Enforcement Actions Add to Market Discipline?" in George G. Kaufman, ed., *Research in Financial Services: Public and Private Policy*. Vol. 10. Stamford, CT: JAI Press, 1998, pp. 259-80.

Hancock, Diana; Laing, Andrew J. and Wilcox, James A.

"Bank Capital Shocks: Dynamic Effects on Securities, Loans and Capital." *Journal of Banking and Finance*, June 1995, *19*(3-4), pp. 661-77.

Lown, Cara S.; Morgan, Donald P. and Rohatgi, Sonali. "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, *6*(2), pp. 1-16.

Peek, Joe and Rosengren, Eric S. "Bank Regulatory Agreements and Real Estate Lending." *Real Estate Economics*, Spring 1996, *24*(1), pp. 55-73.

_____ and _____. "Bank Regulation and the Credit Crunch." *Journal of Banking and Finance*, June 1995a, *19*(3-4), pp. 679-92.

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

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

Thomson Financial/Sheshunoff Services. Cited in *American Banker*, 27 March 2002, p. 6.