

Economic Commentary

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Loan Quality of Bank Holding Companies

by Gary Whalen

Like most types of depository institutions, commercial banks operate with a high degree of financial leverage; that is, their equity typically is small relative to their total assets. As a result, the loan quality and solvency of commercial banks are inextricably related. For this reason banking regulators, who are charged with preserving the safety and soundness of the nation's banking system, are concerned with bank loan quality; businesses and households, who supply banks with investable funds, share these concerns.

Loan quality is largely a function of the financial health of a bank's borrowers. Because of the recession, disinflation, persistently high interest rates, and heavy corporate and consumer reliance on debt, it has become increasingly difficult for many classes of borrowers to repay their bank loans. The resulting deterioration in loan quality at many banks is the subject of this *Economic Commentary*, which explores recent changes in loan quality at a cross-section of 60 regional bank holding companies located in 12 states.¹ The article identifies the factors responsible for variations in loan quality across holding companies and discusses the impact of changes in loan quality.

Indicators of Loan Quality

Two indicators of a holding company's loan quality are used in this study—net

loan charge offs and nonperforming loans. **Net charge offs** are the total amount of loans judged to be uncollectible in a given year, minus any recoveries of loans previously charged off.² **Nonperforming loans**, which include nonaccrual loans, renegotiated loans, and loans with principal and/or interest payments contractually past due 90 days or more, are a second indicator of loan quality. Nonperforming loans imply that there has been some deterioration in the financial condition of the borrower. Thus, total nonperforming loans give some indication of future net loan charge off levels. However, not all nonperforming loans are subsequently charged off. More importantly, nonperforming loan totals also provide insight on the short-run earnings impact of problem loans. Slower payback of principal and/or interest payments on nonperforming loans imply lower bank earnings.

Since net charge off and nonperforming loan levels increase with an institution's loan volume, it is necessary to transform each indicator into an associated loan quality ratio—dividing each measure by a holding company's average total loans—before analyzing loan quality across banks and/or over time. The means, standard deviations, and ranges of these ratios for the 60 sample companies since 1979 are shown in table 1. The

2. Recoveries average 15 to 22 percent of annual gross loan charge offs at bank holding companies.

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The views stated herein are those of the author and not necessarily those of the Federal Reserve Bank of Cleveland or of the Board of Governors of the Federal Reserve System.

or borrow funds in national money markets. Strong capital positions and the ability to raise funds without paying excessive risk premiums might be essential for survival in the future as deregulation proceeds and competition intensifies.

To obtain insight on this issue, the 1982 net charge off ratio and the 1981 nonperforming loan ratio were correlated with several indicators of holding company performance—percent change in net interest margin, return on assets, growth in income per share, and market value per share of equity relative to earnings per share (see table 3). The latter performance measure is particularly useful for analysis, because it reflects the value that investors place on an institution's accounting earnings.

The correlations confirm the intuitive notion that deterioration in loan quality adversely affects holding company performance. Specifically, higher loan loss and nonperforming loan ratios are associated with smaller percentage increases in net interest margins, lower return on assets, slower growth in earnings per share, and lower price-earnings ratios.

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Table 3 Loan Quality Ratios vs. Measures of Performance

Performance measures	Loan quality ratios	
	Net charge offs/average net loans, 1982	Nonperforming loans/average net loans, 1981
Percent change, net interest margin, 1981-82	-0.05	-0.13
Return on average assets, 1982	-0.41*	-0.17
Rate of growth, earnings per share, 1978-82	-0.27*	-0.28*
Market price per share of equity/earnings per share ^a	-0.13	-0.18

* Significant at 5 percent level, two-tail test.
a. Average of year-end 1982 and 1983:1Q data.

graphic, could be related to a holding company's loan quality. Such diversification should reduce charge offs. Holding company size is used as a crude proxy for both types of diversification. The size variable exhibits the anticipated indirect relationship to the net charge off ratio. However, the correlation is statistically weak.

The quality of holding company loans should be related to the condition of the local economy (which, of course, depends on the national economy). The unemployment rate in the headquarters' state of each sample company was used as an indicator of local economic conditions. As expected, this variable was positively correlated with the net charge off ratio. The implication of this finding is that the level of holding company loan losses and nonperforming loans in the future will depend critically on the timing and strength of the incipient economic recovery.

Loan Quality and Bank Performance

The impact of loan quality levels on holding company performance is of interest for several reasons. Sustained high levels of loan losses and nonperforming loans can negatively affect a company's earnings, making it more difficult and/or more expensive for organizations to augment their capital positions over time

holding company equity, the 1981 net charge off ratio, the 1981 nonperforming loan ratio, and the percentage change in total loans in 1981. All four of these variables are positively correlated with 1982 charge offs, the first three significantly.

Net charge off ratios also can be influenced by holding company loan composition. Total loans are divided into four categories in the annual reports of holding companies—commercial and industrial, real estate construction, real estate mortgage, and consumer. Thus, four loan composition ratios can be constructed by dividing each subtotal by total loans. Both the commercial and industrial loans and the real estate construction loan ratios are positively correlated with holding company net charge offs. The real estate mortgage loan and consumer loan ratios are negatively correlated with holding company loan losses. This finding is somewhat surprising, as consumer loans have been viewed as increasingly risky since the 1979 changes in federal bankruptcy laws.

The rate sensitivity of a holding company's loan portfolio also can affect its loan quality. The unprecedented volatility of interest rates in recent years has exposed banking organizations to considerably more interest-rate risk than in the past. Many organizations have responded by transferring as much of the increase in interest-rate risk as possible to borrowers through the use of short-term fixed-rate and floating-rate loans. However, because some borrowers might be unable to deal with interest-rate risk, this tactic may serve to increase a company's credit risk while decreasing its exposure to interest-rate changes. The positive, significant correlation between the loan quality ratio and the rate-sensitive loan ratio suggests that credit risk was substituted for interest-rate risk. However, this relationship might weaken in the future if interest rates trend lower and exhibit more stable behavior.

The extent of holding company diversification, both product line and geo-

Table 1 Indicators of Holding Company Loan Quality
Values in percent; numbers in parentheses represent median value of ratio

	Ratio ^a						
	1	2	3	4	5 ^b	6	7
1979							
Mean	0.38 (0.31)	c	36.7 (26.7)	74.4 (71.9)	8.56 (6.91)	3.3 (2.7)	c
Standard deviation	0.25	c	30.4	24.1	6.45	2.5	c
Range	0.05-1.3	c	4.4-146.4	31.0-144.1	1.79-36.98	0.4-1.5	c
1980							
Mean	0.46 (0.39)	1.73 (1.50)	40.6 (34.5)	80.7 (82.1)	7.37 (5.62)	4.0 (3.0)	15.0 (13.0)
Standard deviation	0.42	1.01	37.7	20.4	6.20	4.3	10.3
Range	0.06-3.1	0.3-5.8	4.4-281.1	17.9-145.2	0.31-37.44	0.4-33.0	1.0-61.4
1981							
Mean	0.39 (0.33)	2.10 (1.91)	32.2 (29.4)	80.7 (78.7)	7.35 (5.99)	3.1 (2.8)	17.3 (15.3)
Standard deviation	0.22	1.20	17.8	22.4	4.68	1.7	10.2
Range	0.07-1.1	0.5-5.4	5.7-98.8	32.0-129.5	1.64-24.76	0.5-10.6	2.5-43.7
1982							
Mean	0.58 (0.45)	na	44.5 (34.8)	78.0 (77.0)	5.21 (5.09)	4.7 (3.7)	na na
Standard deviation	0.42	na	20.4	17.0	1.91	3.5	na
Range	0.3-2.7	na	20.7-108.2	38.9-113.4	1.42-9.58	2.1-23.9	na

a. Explanation of ratio numbers:

1. Net charge offs/average net loans
2. Nonperforming loans/average net loans
3. Net charge offs/reserves for loan losses
4. Net charge offs/provision for loan losses
5. Net operating income plus provision for loan losses/net charge offs
6. Net charge offs/equity
7. Nonperforming loans/equity

b. These figures represent the number of times net operating income plus provision for loan losses could absorb net charge offs.

c. Because the reporting requirement for nonperforming loans was changed after 1979, the 1979 and 1980 nonperforming loan figures are not comparable.

median values of these ratios are shown in parentheses; unlike the means, they are not distorted by extreme values of the ratios being examined.

The mean value of the net charge off ratio (ratio 1, table 1) has been above the 1979 mean in every year in the 1980-82 interval. The mean ratios have not steadily increased over the period. After an increase in 1980, the mean charge off ratio declined slightly in 1981. However, this decline was reversed in 1982. The 1982 average charge off ratio is sharply above the level of each of the three previous years. Still, the 1982 average remains below the peak level recorded

during the 1974-75 downturn.³

The median levels of the net charge off ratio exhibit similar behavior, although they are below the mean level in each year. As already noted, this indicates that several holding companies typically experience high (relative to their peers) loan losses in any one year. The rather large size of the standard deviation and the range of the net charge off ratio in every year also sug-

3. Net charge off ratios peaked in the 0.60 percent to 0.65 percent range in the 1974-75 recession; see Robert E. Norton, "Loan Losses Not Expected to Harm Bank Earnings," *American Banker*, vol. 147, no. 129 (July 6, 1982).

gests that annual loan loss levels vary considerably across companies.

Examination of the mean level of the nonperforming loan ratio (ratio 2, table 1) over time reveals that problem loans generally have increased over the 1980-81 interval. While 1982 nonperforming loan data are not yet available for the companies in this sample, analysts expect this upward trend to continue, with this ratio being in the 3 percent to 5 percent range by the fourth quarter of the year.⁴ Since nonperforming loan levels tend to be related to realized loan losses with some lag, this finding suggests that net loan charge offs might increase rather than decrease in the future. Once again, the standard deviations and ranges show considerable variation in nonperforming loan levels across banks.

While the ratios discussed here give some indication of holding company loan quality, it is possible, and perhaps more appropriate, to look at other ratios in which net charge offs and nonperforming loans are related to various measures that reflect the ability of banks to cover actual and prospective loan losses.

The first line of defense for a bank or a bank holding company against anticipated loan losses is the valuation reserve for loan losses. These reserves exist because banks have been permitted to deduct amounts from taxable income for prospective loan losses (the provision for loan losses) in excess of their realized net loan charge offs in any particular year.⁵ At the end of the year, a banking organization's net loan losses are "charged" against its loan-loss reserves rather than against its current earnings. An organization's earnings thus remain insulated from its loan losses, as long as its net loan charge offs in any year are

4. See Norton, "Loan Losses Not Expected to Harm Bank Earnings."

5. The annual change in a bank's loan-loss reserves is the difference between its provision for loan losses and its net charge offs. When the former exceeds the latter, reserves increase and vice versa.

less than its total loan-loss reserves.⁶

This discussion suggests that net charge offs should be compared not only with a holding company's total volume of loans but also with its reserves for loan losses (ratio 3, table 1). Over the past four years, loan-loss reserves in general have been sufficient to absorb realized loan losses. Like the net charge off ratio, the mean value of net charge offs relative to loan-loss reserves has not increased steadily over time, but it was higher in 1982 than in the three previous years. Again, a great deal of variation in this ratio is apparent across holding companies in every year. This ratio is very high for several institutions in any one year. This explains the larger size of the mean relative to the median. However, in 1982 the minimum and maximum values of this ratio are both above their respective levels in 1981, and the range is narrower. This finding, along with the decrease in the size of the standard deviation relative to the mean, suggests that loan quality became a bigger problem for many of the sample companies in 1982.

Examining net charge offs in relation to a holding company provision for loan losses (ratio 4, table 1) indicates whether holding companies have been able to effect a net increase in their loan-loss reserves in any given year, despite their charge offs. A company's loan-loss reserves increase as long as this ratio is less than 100 percent.

6. Because banks were permitted to charge a provision for loan loss against income in excess of actual loan losses, there was an incentive to inflate this expense (and loan-loss reserves) to decrease their tax liability. To prevent this, gradually declining maximum loan-loss reserves ratios (loan-loss reserves divided by average loans) were established for banks by the Tax Reform Act of 1969. However, the scheduled reduction for 1982 was postponed for one year by the Economic Recovery Tax Act of 1981. The 1969 act also stipulated that, beginning in 1988, permissible bank loan-loss reserves ratios would depend on their average actual loan-loss experience over the recent past. For a discussion of bank loan-loss practices and pertinent regulations, see Stuart A. Schweitzer, "Bank Loan Losses: A Fresh Perspective," *Business Review*, Federal Reserve Bank of Philadelphia, September 1975.

Even though loan losses generally increased after 1979, net charge offs have remained below holding company provisions for loan losses. The mean value of this ratio for the sample companies was 80.7 percent in 1980 and 1981, and it even declined slightly in 1982. The median value behaved similarly. Thus, most sample holding companies evidently were able to boost their loan-loss reserves over the 1979-82 interval. Again, considerable variation in this ratio is apparent, but the variation does not appear to be increasing much over time.

Loan-loss reserves are intended to absorb anticipated loan losses. If losses are unexpectedly severe, a company then can use its current earnings to absorb loan losses. So-called loan coverage ratios indicate a company's ability to utilize its earnings for this purpose. The mean and median values of such a ratio (ratio 5, table 1) have declined steadily since 1979. However, earnings available to cover loan losses at a typical holding company remain five times greater than 1982 charge offs.

Equity capital is the final defense against unusually large loan losses. In ratios 6 and 7, net charge offs and nonperforming loans, respectively, are divided by holding company equity. The mean value of ratio 6 declined in 1981 compared with the two previous years, but increased in 1982. Variability also appears to have increased in 1982 relative to previous years. The mean value of ratio 7 has increased over the 1980-81 interval, and it should be even higher in 1982 if estimates of nonperforming loan levels prove correct. Since variability remained relatively unchanged in 1981, the increase in this mean from 1980 to 1981 seems to indicate that nonperforming loans rose at virtually all of the sample companies rather than simply being much higher at only a few companies. The larger means of these last two ratios relative to their counterparts (ratios 1 and 2, which have a loan-volume measure in the denominator) graphically illustrate the high degree of financial leverage

Table 2 Loan Quality Ratios vs. Potential Determinants

Determinants	Net charge offs/average net loans, 1982
Standard deviation, quarterly rate of return on share of equity, 1980:1Q-1981:1VQ	0.29*
Net charge offs/average net loans, 1981	0.52*
Nonperforming loans/average net loans, 1981	0.46*
Percent change in net loans, 1981-80	0.12
Commercial and industrial loans/average net loans, 1981	0.22
Real estate construction loans/average net loans, 1981	0.31*
Real estate mortgage loans/average net loans, 1981	-0.28*
Consumer loans/average net loans, 1981	-0.13
Rate-sensitive loans ^a /average net loans	0.30*
Holding company total assets, 1982	-0.14
State unemployment rate (average), 1982	0.21

* Significant at 5 percent level, two-tail test.
a. Rate-sensitive loans are loans with maturities of less than one year plus floating-rate loans.

utilized by depository institutions, indicating why loan quality is of great concern to regulators, consumers, and the business sector alike.

Measured Loan Quality

Each holding company's loan quality is a product of several factors—its preference for risk, its loan portfolio composition, and the state of the local economy, among others. Correlating possible explanatory variables with each holding company's 1982 net charge off ratio helps to identify the most important forces influencing loan quality.

Companies that attempt to earn higher returns by taking on more risk may experience higher loan losses. Several variables are used in table 2 as risk-posture proxies—the standard deviation of the quarterly rate of return on a share of