

District Agricultural Banks Ride High in the Saddle

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As a result of the rebound in the farm economy since the mid-1980s, agricultural banks are among the most profitable and highly capitalized banks in the United States. Thus, these banks have not figured prominently in the maelstrom that has recently characterized much of the nation's banking sector.

This article reviews the status of agricultural banks in the Eighth Federal Reserve District, compares their financial position with nonagricultural banks of similar size and examines factors that have contributed to their increased profitability relative to nonagricultural banks.

Agricultural Bank Characteristics

To be characterized as an agricultural bank, a bank must have a relatively high percentage of its loans classified as agricultural real estate and production loans.¹ Generally, agricultural banks (hereafter farm banks) are small banks located in rural areas; approximately 93 percent of Eighth District farm banks have assets of less than \$100 million. Because of this, the peer group of banks for comparison purposes are small, nonfarm banks with total assets of less than \$100 million.

Table 1 lists characteristics of Eighth District farm banks and their peer group for the years 1985-91.² As of June 30, 1991, 492 commercial banks in the Eighth District were classified as farm banks (about 12 percent of the U.S. total of 4,053). The typical District farm bank has about \$39 million in assets, slightly less than the average District nonfarm bank.

District farm and small, nonfarm banks, despite similar asset sizes, differ in some important ways. For example, Eighth District farm banks generally have lower loan-to-deposit ratios and a larger percentage of their assets in government securities; this may signify a less-aggressive lending posture. Furthermore, District farm banks have somewhat larger (equity) capital-to-asset ratios. Equity capital is crucial because it cushions bank losses.

Table 1
Agricultural and Small, Nonagricultural Banks in the Eighth Federal Reserve District, 1985-91¹

Assets ²	Agricultural	Nonagricultural
Cash	0.9%	1.0%
Securities	37.6	32.1
Loans	48.7	52.9
Liabilities²		
Deposits	97.4%	97.4%
Equity Capital²	9.3%	8.7%
Miscellaneous		
Asset size (millions)	\$38.66	\$41.16
Loan-to-Deposit Ratio	55.1%	59.4%
Number of Banks	492	528

¹District data includes all lenders within the boundaries of the map shown on the inside front cover of this publication. Except for number of banks, ratios are the average of the years 1985 to 1991 (June 30 data). Number of banks measured as of June 30, 1991; nonagricultural banks defined as those with assets less than \$100 million.

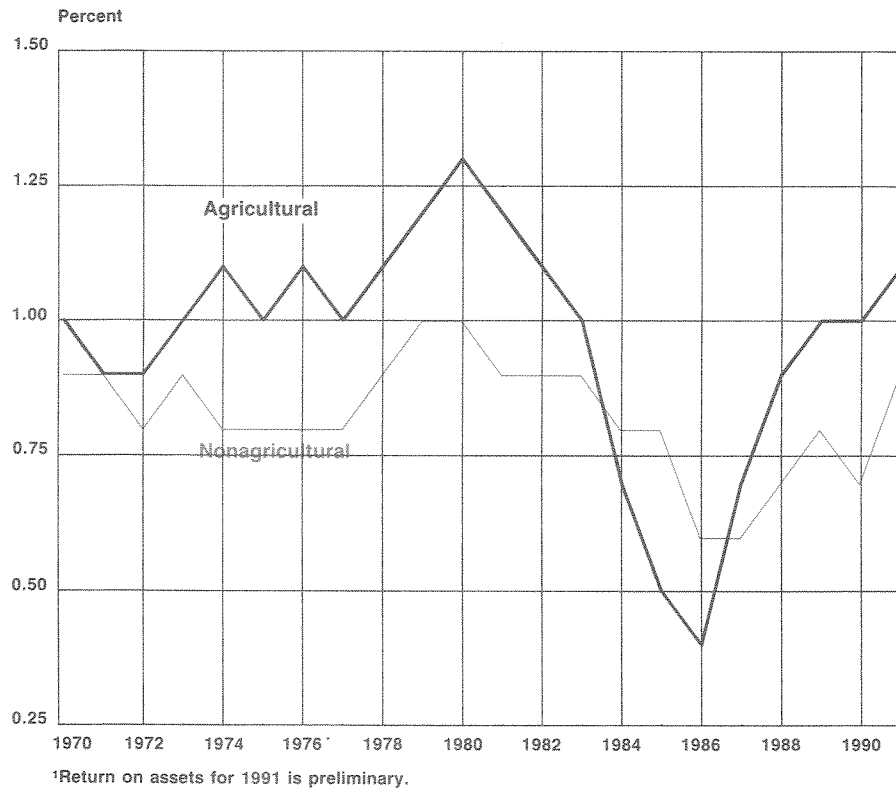
²Categories of assets defined as a percent of total assets; deposits defined as a percent of total liabilities; equity capital expressed as a percent of total assets. Variables measured from FDIC Call Report data.

The Farm Economy and the Health of Farm Banks

Although farm banks tend to possess certain market niches that give them distinct advantages over nonfarm banks, the farm bank must withstand the instability of the agricultural sector. A case in point is the farm debt crisis of the early- and mid-1980s. This crisis had its roots in the 1970s, as farmland values rose dramatically, largely for reasons unrelated to the income they could generate. When farmland values began to fall because of declining inflation, rising real interest rates and the 1981-82 worldwide recession, farmers who borrowed against the increasing equity of their principal asset (land) found themselves in a precarious position. Clearly, the farm debt crisis underscored the linkage between the financial well-being of farmers and the health of agricultural banks.

Figure 1 shows the rate of return on average assets (ROA) at U.S. farm banks and other small banks over the period 1970 to 1991.³ ROA is a ratio that measures how well management employs a bank's assets to earn income. Except during down-

Figure 1
Return on Assets at U.S. Agricultural and Nonagricultural Banks¹



turns in the farm economy, ROA at farm banks is generally higher than at nonfarm banks. From 1980 to 1986, ROA at farm banks declined sharply because of the financial distress facing the agricultural sector. In fact, beginning in 1984, nonfarm banks began to post higher ROA numbers as return on assets declined sharply at farm banks. Subsequently, many farm banks began to fail.

With the passing of the farm debt crisis, farm banks have resumed their superior ROA performance relative to small, nonfarm banks. In 1990, ROA at farm banks averaged 1 percent (the industry benchmark), which was unchanged from 1989. Small nonfarm banks, on the other hand, saw their ROA decline in 1990 to 0.7 percent from 0.8 percent in 1989. Both types of banks saw improvement in 1991, as ROA at farm banks was an estimated 1.1 percent while at nonfarm banks it was an estimated 0.9 percent.

Eighth District Farm Banks vs. Nonfarm Banks

Table 2 provides an overview by state of farm and nonfarm banks located in the Eighth District.⁴

Table 2 shows that, generally speaking, farm banks performed better than their nonfarm counterparts.

A closer examination of table 2 shows that a consistent pattern emerges between farm and nonfarm banks. For example, farm banks in District states generally have higher ROAs, return on average equity ratios (ROEs), and total equity capital as a percent of total assets compared to small, nonfarm banks.⁵ In fact, District farm banks' ROA averages 20 percent higher than that of nonfarm banks, while farm banks' ROE averages 16 percent higher than that of nonfarm banks. Meanwhile, the average District farm banks' capital-to-asset ratio is about 4 percent larger than that of nonfarm banks.

Some exceptions exist. For instance, Mississippi farm banks' ROA (1.27 percent) is slightly lower than at nonfarm banks (1.34 percent). In addition, Mississippi nonfarm banks have a higher capital-to-asset ratio than do farm banks. Tennessee farm banks—as of June 30, 1991—had substantially lower ROA and ROE ratios than did nonfarm banks, a significant exception. This may be an aberration as ROA at farm banks for the period 1985 to 1990 averaged 1.16 percent, while at nonfarm banks the average was 1.11 percent. For ROE, the comparable numbers for farm and non-

Table 2
Agricultural and Small, Nonagricultural Bank Performance Measures¹

State	ROA	ROE	Net Interest Margin	Interest Income	Interest Expense	Net Non-Interest Margin	Loan Loss Provision	Banks with Negative Earnings	Non-performing Loans	Weak Banks ²	Capital-Asset Ratio	Number of Banks
Arkansas												
Agriculture	1.23	12.38	4.31	9.76	5.44	1.97	0.44	2	1.91	0	10.02	108
Nonagriculture	1.05	12.02	4.46	9.89	5.43	2.21	0.56	4	1.41	1	8.81	103
Illinois												
Agriculture	1.12	11.81	4.02	9.69	5.67	1.97	0.42	5	1.88	0	9.62	129
Nonagriculture	0.84	9.42	4.03	9.73	5.70	2.06	0.78	17	1.69	1	8.83	92
Indiana												
Agriculture	0.99	10.47	4.33	10.04	5.71	2.13	0.52	2	1.94	1	9.55	21
Nonagriculture	0.78	8.29	4.08	9.61	5.53	2.23	0.66	4	1.34	0	9.56	33
Kentucky												
Agriculture	1.13	12.21	4.30	10.04	5.74	2.14	0.42	3	1.38	0	9.40	67
Nonagriculture	0.89	9.74	4.38	10.09	5.71	2.38	0.63	13	1.79	0	9.15	79
Mississippi												
Agriculture	1.27	13.98	4.63	10.11	5.48	2.13	0.37	1	1.90	0	9.28	24
Nonagriculture	1.34	13.34	4.60	10.11	5.51	1.99	0.55	1	1.92	0	10.22	22
Missouri												
Agriculture	1.15	13.06	4.26	9.93	5.66	1.95	0.61	4	1.73	1	9.03	122
Nonagriculture	0.68	8.45	4.31	10.04	5.73	2.37	0.79	21	1.61	2	8.14	142
Tennessee												
Agriculture	0.43	4.88	4.38	10.19	5.81	2.77	0.86	2	2.36	0	9.02	21
Nonagriculture	0.60	6.71	4.61	10.31	5.70	2.72	0.86	15	1.87	2	8.98	57

¹See shaded insert for description of performance ratios; also, see footnote 2. Ratios measured as of June 30, 1991.

²A bank whose total nonperforming loans exceed its total capital (excluding loan-loss reserve).

farm banks (during the same period) were 13.10 percent and 13.17 percent, respectively.

Examining table 2 further reveals that asset performance measures at farm and nonfarm banks in District states are contradictory. Nonfarm banks in the District (except in Kentucky and Mississippi) had a smaller percentage of their loans classified as nonperforming than farm banks. Nevertheless, farm banks—with the exception of Tennessee—have lower ratios of loan loss provisions (funds set aside to cover future expected loan and lease losses) to average assets. Moreover, District farm banks have on average a 25 percent lower loan loss provision ratio (which directly reduces earnings). This provides a reason as to why farm banks have relatively higher ROAs.

In contrast to the relatively better profitability of farm banks is nonfarm banks' generally good performance regarding net interest margin (NIM)—the difference between interest income and interest expense divided by average earning assets. Fluctuations in interest rates that are *unanticipated* not only affect a bank's NIM (an "income risk"), but they also pose an "investment risk" because they can affect the value of a bank's assets, liabilities and net worth. As a result, banks try to limit their exposure to interest rate risk by employing variable interest rate loans or other repricing methods.

For the most part, District nonfarm banks have slightly higher interest income ratios and slightly lower interest expense ratios. Although both measures show relatively little variation between the two types of institutions, the average net interest margin is somewhat higher for nonfarm banks than it is for farm banks.

A final performance measure listed in table 2 is the net noninterest margin (NNIM). NNIM is one indicator of a bank's operating efficiency because it reflects bank overhead costs (see shaded insert). Since noninterest expense normally exceeds noninterest income, NNIM is usually negative. Therefore, since NNIM is reported here as a positive number (that is, multiplied by -1), higher NNIMs, which indicate a larger spread between noninterest expense and income, reduce bank earnings. Consistent with their relatively better profitability performance, farm banks—except for those in Mississippi and Tennessee—have lower NNIM measures on average than nonfarm banks.

Are Farm Banks Safer Than Nonfarm Banks?

Farm banks have traditionally been a stable lot, as failures at farm banks were a relatively rare event prior to the 1980s. In 1982, however, 11 farm banks failed. This number jumped to 32 in

1984 and then increased to 68 in 1985. Since peaking at 69 in 1987, the number of U.S. farm bank failures have dropped sharply, totaling eight in 1991.

Table 2 reports the number of District farm and nonfarm banks that have negative earnings and those which are classified as "weak." Out of 492 District farm banks, a total of 19—or less than 4 percent—reported negative earnings in the second quarter of 1991. Conversely, nearly four times as many (75), or nearly 14 percent, small, nonfarm banks in the District had negative earnings during the same period. Most of the banks with negative earnings were located in Missouri, Illinois, Kentucky and Tennessee (66 of the 75 banks).

A second measure of financial soundness is the number of weak banks. A weak bank is defined as one whose total nonperforming loans exceed its total capital; this measure is sometimes used as a warning of future failure. By this standard, District farm banks also look relatively strong, as only two banks—one in Indiana and one in Missouri—are classified as weak. Meanwhile, six nonfarm banks are classified as weak.

Although not listed, alternative measures of financial stability are the new risk-based capital measures (see shaded insert). As of June 30, 1991, there were no farm banks in the Eighth District with a deficient risk-based capital measure. In contrast, a total of seven small, nonfarm banks failed to meet the 7.25 percent requirement, while five failed to meet the 3.625 percent standard. Kentucky and Tennessee were the only District states that did not have at least one nonfarm bank with a deficient risk-based capital measure.

Farm banks—even small, nonfarm banks—are currently well-positioned regarding risk-adjusted capital requirements. This is because smaller banks tend to have larger portfolios of government securities (low-risk) and relatively fewer off-balance sheet items (for example, standby letters of credit), which are deemed a higher risk. Consequently, smaller banks are in a position to undertake lending opportunities not afforded to larger banks that suffer from higher-risk portfolios (for example, commercial real estate loans).

Summary

Although the health of the agricultural banking sector is linked to the general health of the farm economy, Eighth District farm banks, similar to U.S. farm banks, tended to outperform their peer group of small, nonfarm banks as of June 1991. As a result, farm banks, having recovered from the farm debt crisis of the early- and mid-1980s, appear capable of successfully competing with their small, nonfarm counterparts.

Ratio Definitions

Return on average assets ratio (ROA)

An indicator of how well management is employing the bank's assets to earn income; ROA is calculated by dividing a bank's net income by its average annual assets.

Return on average equity ratio (ROE)

An indicator to shareholders of the bank's return on their investment; ROE is calculated by dividing a bank's net income by its average annual equity capital.

Net interest margin (NIM)

An indicator of how well interest-earning assets are being employed relative to interest-bearing liabilities; the NIM is calculated by dividing the difference between interest income and interest expense by average earning assets. Interest income comprises the interest and fees realized from interest-earning assets, and includes such items as interest and points on loans. Interest expense includes the interest paid on all categories of interest-bearing deposits, the expenses incurred in purchasing federal funds and selling securities under agreements to repurchase and interest paid on capital notes. Average earning assets rather than average assets are used in the NIM.

Net noninterest margin (NNIM)

An indicator of a bank's operating efficiency and its ability to generate income from noninterest-earning assets; the NNIM is calculated by subtracting noninterest expense (overhead) from noninterest income and dividing by average assets. Noninterest expense is the sum of the costs incurred in the bank's day-to-day operations, which includes employee salaries and benefits. Noninterest income includes income from fiduciary (trust) activities or service charges on deposit accounts.

Loan and lease loss provision ratio

An indicator of expected loan and lease losses; the loan and lease loss provision ratio (usually termed loan loss provision ratio) is calculated by dividing the provision for loan and lease losses by average assets. The provision for loan and lease losses is an income statement account that reduces a bank's current earnings.

Nonperforming loan and lease loss ratio

An indicator of current and future loan problems; the nonperforming loan ratio is calculated by dividing loan and lease financing receivables that are 90 days or more past due or in nonaccrual status by total loans.

Risk-based capital ratios

Two risk-based capital measures have been established to control for credit risk across banks. One ratio comprises Tier 1 capital divided by risk-adjusted assets (a minimum of 3.625 percent) and the other comprises total capital (Tier 1 + Tier 2) divided by risk-adjusted assets (a minimum of 7.25 percent). As of December 31, 1992, the Tier 1 capital requirement will increase to 4 percent and the total capital requirement will increase to 8 percent. Tier 1 capital consists of common stock and its related surplus, undivided profits and capital reserves (retained earnings), noncumulative perpetual preferred stock and its related surplus, minority interests in consolidated subsidiaries and mortgage servicing rights (the FDIC definition of eligible intangible assets) less net unrealized loss on marketable equity securities. Tier 2 capital consists of allowable subordinated debt and limited life preferred stock, cumulative preferred stock, mandatory convertible debt, the allowable portion of the loan and lease loss allowance and agricultural loss deferral. Risk-adjusted assets are computed by attaching weights of 0, 20, 50 and 100 percent to on- and off-balance sheet assets and subtracting disallowed intangible assets, reciprocal capital holdings, the excess portion of the allowance for loan and lease losses and the allocated transfer risk reserve.

FOOTNOTES

¹An agricultural bank is defined as a bank whose ratio of farm loans to total loans exceeds the unweighted average of this ratio at all banks. As of June 1991, the ratio stood at roughly 16.5 percent.

²Since this is strictly an intra-District comparison of farm and nonfarm banks, the criteria for determining a farm bank is applied using Eighth District banking data. Accordingly, this ratio may differ from the national average because of the greater concentration of farm banks in the Eighth District relative to the United States.

³Figure 1 shows year-end data from the Board of Governors of the Federal Reserve System. Thus, ROA is

measured here using total assets and contrasts with the definition of ROA used throughout the remainder of this paper (see shaded insert).

⁴June 30, 1991, data is used to calculate loan and asset ratios because most farm loans are taken out by then and then paid off in the third and fourth quarters. Thus, June 30 data avoids the problems of "window dressing" and the omission of some loans; see footnote 2.

⁵Since farm banks tend to have higher equity capital than nonfarm banks, farm banks must also have proportionately more net income than nonfarm banks to have higher ROEs (see shaded insert). This is a crucial distinction.