

# ECONOMIC COMMENTARY

## The Financial Distress in American Farming

by Michael Bryan and Gary Whalen

### The Best of Times and the Worst of Times

The late 1960s and the 1970s were, by most conventional measures, profitable years for American farmers. The domestic economy experienced relatively strong growth. Farm incomes were also greatly influenced by international demand for U.S. food exports.

The events that encouraged export demand over that period included world economic growth, a falling dollar exchange rate, and liberalized trade agreements between the United States and many foreign nations, particularly the Soviet Union.

Between 1971 and 1981, U.S. exports of agricultural products rose from \$7.7 billion to \$43.3 billion, or from 12 percent to 26 percent of gross farm incomes. This represents an increase from 0.7 percent of U.S. gross national product (GNP) to 1.5 percent of GNP over the 10-year period. A decade of increasing agricultural demand propped up farm prices and incomes. In the 1970-1979 subperiod, the cash received directly from agricultural sales (farm marketings) averaged nearly an 11 percent annual rate of increase.

Farm wealth also increased over the decade as the value of farm real estate, which constitutes roughly 75 percent of total farming assets, tripled. Growing net income, expectations of increasing inflation, and low real interest rates, in conjunction with the land-related wealth gains gave farmers the incentive and the means to assume greater debt loads. As a percentage of farm equity,

farm debt rose from approximately 13 percent in 1960 to near 20 percent throughout the 1970s.

Things got worse after 1979. Crop surpluses, a worldwide recession, dollar appreciation, and domestic food price supports severely undermined the competitive position of U.S. food exports.

Between 1981 and 1984, U.S. food exports fell 21 percent to \$34.3 billion, representing only 0.9 percent of GNP. Record domestic food production in 1981 and 1982 in turn generated enormous accumulations of farm product inventories. Farmers' expenses increased greatly during the early 1980s as rising real interest rates combined with large debts. In 1980, the index of prices paid by farmers exceeded the prices paid to farmers for the first time in 40 years; it has remained so for five consecutive years. After allowing for government supports and adjusting for expenses and decreases in purchasing power, the average level of farm income in 1983 was at its lowest in over 45 years.

Like most businesses, U.S. farmers are able to offset a temporary slowdown in cash flow by borrowing against accumulated wealth. Unfortunately, depressed farm incomes, declining inflation, and a flood of farm land sales in 1982 produced the first decline in farm land prices since 1930 (chart 1).

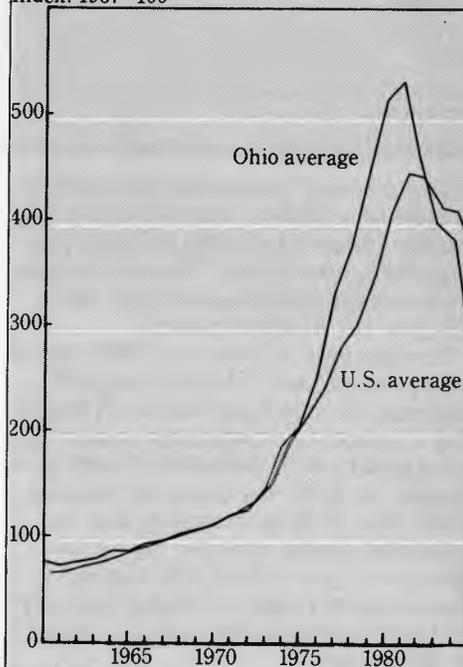
Since 1982, U.S. farm acreage prices have fallen approximately 18 percent. When we consider only the acreage prices in "corn belt" states, such as Ohio, the farm land price declines have been all the more dramatic (about 34 percent in Ohio over the 1982-1985 period). Unable to borrow further, because of low incomes and rapidly eroding wealth, many farmers slipped into insolvency in 1984 and farm bankruptcies rose to record levels.

### The Singular Struggle of the Family Farm

Financial distress has not been equally distributed across the farming community (table 1). As a group, farms with

Chart 1 Farm Real-Estate Acreage Prices, 1960-1985

Index: 1967=100



SOURCE: U.S. Department of Agriculture.

relatively high annual sales, specifically farms with annual sales in excess of \$500,000 have remained profitable throughout the 1980s, despite the fact that these farms also averaged relatively high debt-to-equity ratios (near 58 percent in 1983 compared against an average farm debt-to-equity ratio of only about 27 percent).

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

**Table 1 Percentage Distributions of Farm Income, Assets, and Debt**  
As of January 1, 1984

	Size of farm by sales classification in dollars			Total
	500,000 and over	499,000-40,000	39,999 and under	
Number of farms	1.0	27.1	71.9	100.0
Farm assets	10.7	60.4	28.8	100.0
Farm debt	18.2	61.4	20.4	100.0
Farm equity	8.7	60.2	31.1	100.0
Total incomes	18.5	26.0	55.5	100.0
Farm incomes	61.4	45.1	-6.5	100.0
Nonfarm incomes	1.7	18.5	79.8	100.0
<b>Ratios</b>				<b>Average</b>
Debt/equity	57.5	27.9	17.9	27.4
Income/equity	16.5	3.3	13.7	7.7
Income/debt	28.6	11.9	76.5	28.2

SOURCE: Economic Indicators of the Farm Sector: Income and Balance Sheet Statistics, 1983.

The primary reason for profitability in spite of a proportionately heavy debt burden appears to be the efficiency of large farm operations. These farms generate a disproportionately high sales volumes per dollar of assets.<sup>1</sup>

For example, at year-end 1983, farms with sales of over \$500,000 annually represented only 1 percent of all farms and 11 percent of total farm assets, but generated over 61 percent of direct farm income. In 1983, the worst of the post-World War II farm income years, the income-to-equity ratio for farms with sales in excess of \$500,000 was twice that of the average U.S. farm (16.5 percent compared against only 7.7 percent for all farms).

The farm income crisis has also been avoided in large measure by very small farms, specifically those farms with annual sales of less than \$40,000. These farms have been insulated from the financial pinch because of their relatively low rates of indebtedness. Small farm operations, which account for 72 percent of all farms and that own 29 percent of all farm assets, owe only 20 percent of all farm debt. Further,

1. See Emanuel Melichar pg. 10. "The Incidence of Financial Stress in Agriculture." Agricultural Seminar of the Congressional Budget Office, November 21, 1984. Federal Reserve Board.

while these farms have generally experienced farming income losses since 1981, their total incomes are primarily generated from non-farming sources. When non-farming income is included, the income-to-equity ratio of farms with sales under \$40,000 was still 13.7 percent in 1983. On average, neither the small nor the large farm has quite experienced the severity of the financial problems suggested by industry data.

The farm financial crisis is more accurately a middle-sized farm financial crisis, that is, those farms with annual sales between \$40,000 and \$500,000. This group, often referred to as the "family" farm, represents 27 percent of all farms. Farmers in this category owned 60 percent of all farm assets. In 1983, their total return on equity was a mere 3.3 percent.

### Farm Debt: The Borrower's Perspective

The total volume of farm debt outstanding at the end of 1984 was approximately \$213 billion. After growing at an average annual rate of over 13 percent per year from 1976 to 1982, total debt outstanding fell in both 1983 (-0.5%) and 1984 (-1.5%). Fifty-two percent of the debt outstanding in 1984 is categorized as real estate debt. This proportion has been relatively stable over the last 10 years.

At present, the ratio of farm debt to total farm assets is 21 percent. This aggregate debt-to-asset ratio suggests that farm debt levels are relatively modest. However, if the distribution of farm debt among borrowers is examined more closely, the reason that current levels of farm indebtedness are causing distress and worrying farm lenders and policymakers becomes readily apparent: the bulk of outstanding farm debt is owed by heavily indebted farmers.

Department of Agriculture estimates reveal that 18 percent of farm operators with debt-to-asset ratios over 40 percent owe 56 percent of all outstanding farm debt (as of January 1, 1984). Almost one-quarter of outstanding farm debt is owed by 7 percent of farmers with debt-to-assets ratios of 70 percent or higher. Farmers with debt-to-assets

ratios of 40 percent or higher are characterized as heavily indebted, because such a ratio implies losses for farmers earning the average rate on farm assets (2 percent) and paying the average rate on farm debt (11 percent). Thus, leverage ratios above 70 percent imply extreme financial pressure for the average farmer.

Further, almost two-thirds of all outstanding farm debt is owed by farmers within the family-size farm classification.<sup>2</sup> Almost 26 percent of all outstanding debt is owed by 136,000 operators of family-size farms with debt-to-assets ratios between 40 percent and 70 percent. Twenty percent of total farm debt is owed by roughly 90,000 operators of such farms with leverage ratios of 70 percent or more.

Since operators of family-size farms have generally been unable to earn the farm income of larger farms or the non-farm income of smaller farms over the 1980-1983 interval, it is quite likely that many of the heavily indebted farmers in this group will find it difficult, or even impossible, to service their existing debt or to postpone liquidity problems by further indebtedness. It appears that most farmers who will be forced out of business over the next several years will probably come from this class.

### Commercial Banks and Farm Debt

Persistent farm financial difficulties eventually create similar problems for all types of farm lenders. However, given space limitations, only the recent farm lending experience of commercial banks will be examined in detail. In general, similar changes in loan quality are evident for all categories of farm lenders over the recent past.

Commercial banks hold roughly \$50 billion, or slightly more than 23 percent of total outstanding farm debt, the second largest share behind the Farm Credit System with 32 percent.<sup>3</sup>

Almost \$40 billion of this total is categorized as non-real estate debt. This amounts to 39.2 percent of outstanding non-real estate debt, the largest share of any farm lender.

The farm lending behavior of banks over the past several years has generally been quite different than that of

2. In 1985, the USDA redefined the family size farm category to include farms with annual sales of \$50,000 to \$500,000. The debt figures reported here reflect the new definition.

other farm lenders. With the exception of the Farmers Home Administration (FmHA), the farm lender of last resort, banks are the only lender to exhibit growth in outstanding farm loans in every year over the 1982-1984 interval. Further, banks are the only lending group to show rates of farm loan growth in excess of the percentage change in total outstanding farm debt in every year over this period. As a result, the share of outstanding farm debt held by banks has risen about three percentage points since 1982.

Banks may have increased farm lending at this time for a number of reasons. Non-farm loan demand was relatively weak around the recession trough that occurred in November 1982. In addition, banks were able to attract large amounts of funds into newly authorized money market deposit accounts.

While the \$50 billion farm loan total is considerable, it should be noted that farm loans constitute only 4 percent of total loans made by commercial banks. A large proportion of farm loans are held by relatively small banks that have farm loan ratios substantially higher than 4 percent.

Bank type	1979	1980	1981	1982	1983	1984
AG banks <sup>a</sup>	0.21	0.32	0.43	0.69	0.93	1.22
Other small banks	0.30	0.39	0.40	0.61	0.66	0.60
<b>Farm loan ratios of small banks, percent</b>	<b>1979</b>	<b>1980</b>	<b>1981</b>	<b>1982</b>	<b>1983</b>	<b>1984</b>
1 to 4	0.28	0.37	0.38	0.63	0.80	0.59
25 to 29	0.24	0.33	0.41	0.62	0.88	1.11
50 to 54	0.19	0.36	0.37	0.77	1.07	1.42
70 to 74	0.12	0.33	0.42	0.53	0.96	1.97

a. These are banks with farm loan ratios above the national average for all banks.  
SOURCE: Board of Governors of the Federal Reserve System.

Nearly 5,000 commercial banks have farm loan ratios greater than 17 percent, which is the average farm loan ratio for all commercial banks as of year-end 1984. These institutions account for roughly 60 percent of all commercial bank farm loans. Over 2,400 of these banks holding 29 percent of total farm loans are located in just five states (Iowa, Illinois, Kansas, Minnesota and Nebraska).

3. Individuals and other lenders held 23%, the Farmers Home Administration holds 12%, life insurance companies hold 6% and the Commodity Credit Corporation holds 4%.

Approximately 4,000 commercial banks, have more than 25 percent of their loan portfolio in agricultural loans and account for approximately half of all farm loans held by commercial banks.<sup>4</sup>

Available data indicate that farm financial difficulties have already caused bank loan quality, particularly agricultural bank loan quality, to worsen. This is reflected in relatively high agricultural loan loss rates in 1984.

In the United States, net charge offs of farm loans were 2.2 percent of farm loans outstanding at year-end. In California, 6.1 percent of outstanding farm loans were charged off. The high charge offs in California have not had a severe impact on the financial health of a large number of California banks because, in this state, the bulk of farm loans are held by very large institutions with relatively low percentages of their portfolios devoted to farm loans.

In the predominantly agricultural states of Missouri, Iowa and Nebraska, the average agricultural loan loss rate was 2.8 percent. Additional perspective on the impact of declining agricultural loan quality on commercial banks can be obtained by examining total loan charge-off rates at agricultural and other similar-sized banks over a period of time (table 2).

Beginning in 1981, the charge-off rate at agricultural banks rose above that of similar-sized institutions and continued to rise to a level roughly double that of the latter group in 1984. If one examines the charge-off rates of small banks broken down by agricultural loan ratio, the impact of declining farm loan quality becomes even more clear. The average 1984 charge-off ratio for small banks appears to vary directly with the level of farm lending.

Despite the relatively high levels of farm loan charge offs, data suggest that many banks continue to have considerable amounts of problem farm loans in their portfolios. This implies more loan losses, lower bank earnings, and possibly an increase in bank failures in the future.

4. Banks with farm loan ratios above 25% traditionally have been defined as agricultural banks by analysts. In March 1985, the Federal Reserve Board decided that banks with farm loan ratios exceeding the national average (calculated using the most currently available Report of Condition

At the end of 1984, 2.6 percent of the farm loans held by banks were past due 30 to 90 days but still accruing interest. An additional 5.1 percent of farm loans were non-performing (past due 90 days or more, nonaccrual, or renegotiated loans). Thus, more than 7 percent of farm loans, totaling roughly \$3 billion, were delinquent at the end of 1984.

Bank type	1982	1983	1984
AG banks <sup>a</sup>	4.9	5.2	6.2
Other small banks	5.2	4.6	4.7
<b>Farm loan ratios of small banks, percent</b>	<b>1982</b>	<b>1983</b>	<b>1984</b>
1 to 4	4.9	4.6	4.7
25 to 29	5.0	5.4	6.5
50 to 54	4.7	5.7	6.4
70 to 74	3.4	4.3	6.3

a. These are banks with farm loan ratios above the national average for all banks.  
SOURCE: Board of Governors of the Federal Reserve System.

Examination of the trend of the ratio of delinquent loans to total loans at agricultural and other small banks further highlights the influence of recent farm financial difficulties on bank lenders (see table 3). The ratios show worsening credit quality for small agricultural banks, with the deterioration strongly related to the degree of bank involvement in farm lending.

Additional insight on the impact of worsening farm loan quality on bank soundness can be obtained by looking at banks where past due and nonperforming (i.e. delinquent) loans exceed capital, because such banks are likely to ultimately fail.

At the end of 1984, 613 banks in the U.S., roughly 4 percent of all banks, had delinquent loans greater than their capital. These banks collectively held \$2 billion of farm loans, which amounts to about 7 percent of their total loans. Data for states with more than 20 such banks in 1984 appear in table 4.

Data for Iowa, Kansas, Minnesota, Missouri, Montana and Nebraska suggest that declining agricultural loan quality is largely responsible for the poor financial condition of a considerable number of banks. The loan figures

data) would be treated as agricultural banks under the new simplified discount window borrowing procedure. This decision effectively provides an alternative definition of banks categorized as agricultural.

in table 4 also make it clear that many of the banks that are in trouble because of declining agricultural loan quality are relatively small. For example, the 33 Iowa banks that are in difficulty collectively hold less than \$300 million in agricultural loans.

**Table 4 Banks with Delinquent Loans Exceeding Capital**  
As of December 31, 1984

State	Number of banks	Percent of all banks in state	Farm loans	
			Millions of dollars	Percent of loans
U.S.	613	4	2,198	7
California	45	10	66	1
Colorado	36	8	117	11
Illinois	22	2	45	11
Iowa	33	5	292	44
Kansas	28	4	160	43
Louisiana	40	13	63	3
Minnesota	33	4	174	27
Missouri	32	5	160	24
Montana	20	12	126	24
Nebraska	22	5	117	58
Oklahoma	37	7	96	6
Tennessee	23	8	32	7
Texas	54	3	56	3

Agricultural banks are an increasing percentage of failing banks. In 1983, only five of the 45 banks that failed were agricultural banks. In the first half of 1984, eight of the 43 banks that failed were agricultural banks; in the second half, it was 17 of 35. Ten other failing institutions had more than 10 percent of their portfolio in farm loans. In the first

five months of 1985, 18 of the 32 institutions closed were agricultural banks.

Undeniably, the failure rate of agricultural banks is accelerating and is likely to remain high in 1985.

However, the financial fallout attributable to agricultural bank failures is likely to be limited. The main reason for this view is the relatively small size of the typical failing agricultural bank.

In 1984, the average deposit size of the agricultural banks closed was roughly \$16 million. In 1985, it was \$18 million. In 1984 and 1985, only three very small failed agricultural banks have required deposit payouts by the Federal Deposit Insurance Corporation (FDIC). In virtually all other cases, the deposits and portions of the assets of the disappearing agricultural bank were simply transferred to, or have been assumed by, another institution. Thus, customers of failing agricultural banks generally were not deprived of banking services and have not experienced losses when their institution was closed.<sup>5</sup>

Because of the small size of the failing agricultural banks and the method of disposition, the large number of failures does not necessarily imply that large costs will ultimately be born by the FDIC.

### Outlook

The financial outlook of family farms in the foreseeable future is not encour-

aging. Farm exports are expected to remain weak as long as the value of the dollar does not decline from its current plateau. Even if the exchange rate were to substantially decline in the near term, recent increases in foreign agricultural production capacity may prevent significant U.S. agricultural export gains. Further, government payments to farmers in 1985 are likely to be greatly reduced from 1984 levels, and production expenses, particularly from debt sources, should remain high.

Farm aid bills have been debated in several states. However, the farm aid proposals offered at the state level should provide only marginal relief given the enormous magnitude of the financial problems in the farming industry.

It is becoming increasingly clear that the structure of American farming is undergoing a wrenching adjustment to a new environment. As a consequence, the family farm and the small agricultural bank may be in jeopardy. This agricultural transition, similar to that which is also reshaping the contours of a number of U.S. manufacturing industries, imposes heavy burdens on the individuals, institutions, and localities directly involved. However, because the number of farms and banks bearing the burden of the transition are relatively small when viewed from an industry perspective, the overall impact these adjustments will have on the national economy and on the financial system will probably be minor.

5. The FDIC used the modified payout approach for two agricultural banks in 1984. In such cases, uninsured depositors may ultimately lose a portion of their funds.

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