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The farm credit crunch

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PERSPECTIVES

A review from  
the Federal Reserve Bank  
of Chicago

NOVEMBER/DECEMBER 1985

The financial stress in agriculture  
The Farm Credit System: Looking  
for "the proper balance"  
Lean years in agricultural banking  
An ag banker's views  
Policy options for agriculture  
Simulating some options

## Crisis in agriculture

The agricultural sector is nearing its fifth year of financial downturn, with little relief in sight. No area in the United States has been harder hit than the midwestern heartland that includes the Seventh Federal Reserve District, served by the Federal Reserve Bank of Chicago. **ECONOMIC PERSPECTIVES** examines in this issue the financial situation of agriculture and the prospects for farmers, bankers, and policy makers.

Much of the material in this issue was originally presented at the Chicago Fed's Conference on Bank Structure and Competition on May 2, 1985. The authors have since substantially revised and updated their contributions; Rebecca Bertinetti, who has produced the annual volumes of the Proceedings of the Bank Structure Conference for a number of years, ably reworked and edited these papers for **ECONOMIC PERSPECTIVES**.

### **ECONOMIC PERSPECTIVES**

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# The financial stress in agriculture

*Gary L. Benjamin*

The financial problems that now grip U.S. agriculture have received a great deal of publicity in recent months. Typically, the publicity has attempted to capture the human emotions and sufferings of those most caught up in the financial stress. Movie and media accounts of the tragedy and of the emotional scars of farm bankruptcies and foreclosure sales have portrayed one of the very real aspects of the unusually tough times facing farmers and all of agriculture. But such accounts rarely dwell on the causes and the extent of the problems. The following article focuses on these issues, giving particular emphasis to the extent of the problem among U.S. farmers and farm lenders.

## **How the problems arose**

The problems in agriculture today, judging with the clarity of hindsight, have deep roots in the excesses of farmers and their lenders that were created by the inflationary environment of the 1970s. In that unusually prosperous era for U.S. agriculture, farmers' production and investment decisions were often made, and willingly financed by creditors, on the assumption that inflation would continue and that foreign markets for U.S. grains and soybeans would continue to grow at the phenomenal 10 percent annual rate of that decade. Resource use patterns changed dramatically. Substantial acreage previously used for pasture or held out of production—under government programs to sop up the excess production capacity of U.S. agriculture—came into grain and row crop production in an effort to capitalize on the booming export markets. New land was cleared for crop production and use of production-enhancing chemicals expanded more rapidly, as did double-cropping and irrigation where feasible. Livestock production in the Midwest shifted more quickly toward capital intensive confinement facilities (such as hog farrowing and finishing facilities and cattle feedlots) or to other geographic regions where land values were less influenced by the potential for crop production.

With the swelling optimism created by inflation in that decade, bidding on farmland became very aggressive and was virtually unaffected by the rapidly rising interest rates in the late 1970s. In the 12 years leading up to the 1981 peak, farmland values rose at a compound annual rate of 12 percent. Since real estate accounted for roughly three-fourths of all farm sector assets, the surge in land values generated huge equity gains for farmers and other land owners.

Fortified by growth both in earnings and equity that outstripped inflation, farmers invested more freely in machinery and equipment, buildings and structures, and in land improvements such as irrigation, land clearing, tiling, and terracing in the 1970s. Lulled by the same security, lenders were willing to finance a growing proportion of the increased farm operating expenses, farmland purchases, and capital investments. As a result, farm debt also grew very rapidly in the 1970s, virtually matching the three-fold increase in farm asset values.

Unfortunately for many in agriculture, the realities of the 1980s have not matched the expectations of the 1970s. Export markets for U.S. agricultural commodities, instead of growing at a sustained rate, have shrunk. This, coupled with widespread drought problems in 1980 and again in 1983, has had significant repercussions for the earnings of most crop farmers. Several factors contributed to the downturn in exports, including the sharply rising value of the dollar, slow economic growth abroad, expanded agricultural production in other areas of the world, and the realignment of trade patterns that has followed from the heavy foreign debt burdens of several countries.

Livestock producers have also experienced adversities in the 1980s. Growth in domestic per capita meat consumption has slowed sharply in recent years. In part, the slowing reflects an aging population and the tendency

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of older people to consume less meat. It also reflects consumers' response to dietetic concerns that have arisen in recent years. Red meat producers have been especially hard hit by the slower growth in meat consumption.

The unexpected realities of the 1980s encompass far more than just internal changes in agricultural markets. In particular, an unbalanced mix of a tight monetary policy and a stimulative fiscal policy since 1979 contributed significantly to the changing realities for agriculture in the 1980s. So too did the stepped-up moves toward financial market deregulation. These factors dramatically altered trade patterns in world markets by contributing to the turnaround from the downtrending value of the dollar in the 1970s to the uptrending dollar so far this decade. These factors also contributed significantly to a surge in inflation-adjusted interest rates and an altering of terms on farm loans. Maturities on farm loans became shorter. The use of fixed-rate loans diminished as lenders moved toward variable-rate farm loans and/or more frequent rate renegotiations. The changing terms of farm loans, in the face of very high interest rates so far this decade, added considerably to the cash outflows of many farmers. Indeed, to an unknown extent, the financial stress among many farmers today reflects their being saddled with annual debt service requirements that could have been considered at best only a remote possibility when the debt contracts were negotiated in the 1970s.

The changes of the 1980s, while encompassing far more than just agricultural markets, are nevertheless vividly reflected in measures of farm sector earnings and farm asset values (Table 1). Indicative of the boom conditions of the previous decade, net cash farm income, adjusted for inflation, in the 1970s averaged 27 percent higher than in the 1960s. But so far this decade, real net cash farm income has averaged 22 percent lower than in the 1970s and the lowest since the early 1960s. Total net farm income has fallen even more sharply so far this decade while averaging the lowest since the Great Depression. Because of the decline in earnings, a growing contingent of farmers face the problem of having insufficient cash inflows to meet family living requirements and simultaneously meet annual debt service requirements. Cash flow shortages are most acute among highly leveraged farmers who rely

**Table 1**  
**Real farm sector earnings surged**  
**in the 1970s, but are down sharply**  
**in the 1980s**

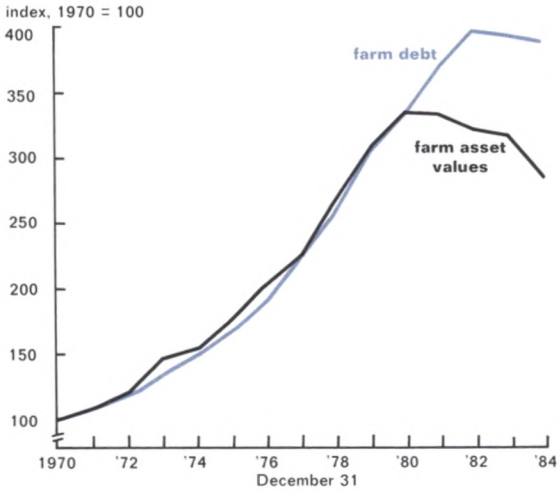
Annual averages	Net cash income	Total net income
	<i>(billion dollars)</i>	
1960-64	\$18.0	\$15.7
1965-69	19.3	16.0
1970-74	24.8	21.3
1975-79	22.4	17.7
1980-84	18.3	12.0

mostly on farm earnings for their livelihood. They are less severe among the many, and typically smaller, farmers whose livelihood is also supported by off-farm earnings.

Traditional measures of farm sector earnings encompass income returns to labor, management, and capital. Over time, the share of sector earnings attributable to labor and management has declined with the decrease in the number of farmers and the coincident substitution of capital for labor and management. While the share of farm sector earnings attributable to capital has increased, the decline in total sector earnings has nevertheless resulted in a considerable decline in the income return to farm capital. The lower income return to capital, and the growing pessimism regarding any near-term recovery, have triggered a sharp drop in farm asset values (Figure 1). Forthcoming revisions in U.S. Department of Agriculture estimates are likely to show that the value of farm sector assets has retreated by about a sixth since peaking in the early 1980s. The most pronounced decline has been in land values, which nationwide are off 19 percent since 1981. The extent of the decline varies widely among states, with the sharpest declines occurring in the western Corn Belt and the southern Plains states. Among the five states of the Seventh Federal Reserve District, land value declines since the 1981 peak range from nearly 20 percent in Michigan to more than 45 percent in Iowa.

The decline in farm asset values adds significantly to the financial stress in agriculture. All farmland owners have suffered a substantial decline in net worth in the past few years. At the beginning of 1985, equity in farm sector assets, adjusted for inflation, was off 33 percent

Figure 1  
**After strong gains in 1970s, farm debt remains high, but asset values are down**

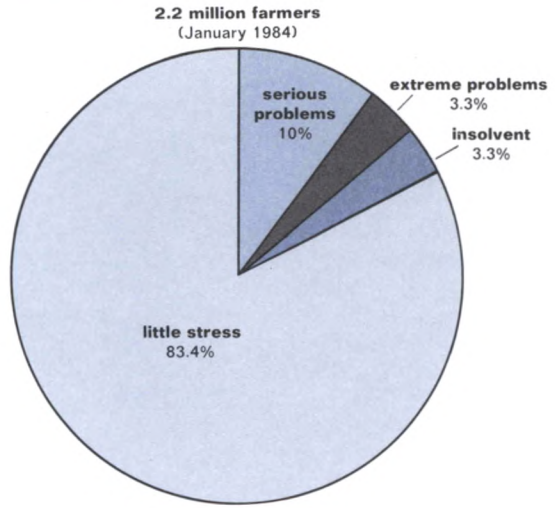


from the 1980 peak and the lowest since 1973. At a minimum, this erosion in farm sector equity has undermined the credit-worthiness of agriculture. Moreover, for highly leveraged farmers who are simultaneously faced with cash-flow shortages, the erosion in equity has undermined the value of the collateral that secures their debts and has accelerated the small, but growing, number of farmers headed toward technical insolvency. Because these farmers owe a proportionately large share of the outstanding farm debt, the stress in agriculture extends deeply into farm lenders.

### The extent of the problem among farmers

A recent study by the USDA<sup>1</sup> is the most thorough analysis to date of the extent of the financial stress among farmers. The USDA study focused on various degrees of debt leveraging by farmers, as well as cash flow patterns for various sizes and types of farms. The study concluded that as of early 1984 the majority (83 percent) of the nation's 2.2 million farm operators were relatively free of financial stress. However, the remaining 17 percent of the farmers were identified as falling within three classes of financial vulnerability. Slightly over 3 percent were estimated to be technically insolvent, with debts exceeding assets. Another 3.3 percent having cash short-falls and debt/asset ratios of .7 to 1.0 were regarded as

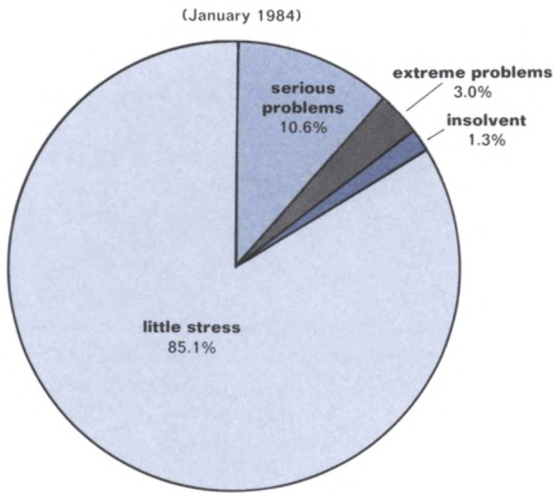
Figure 2  
**Distribution of farmers by degree of financial stress**



having "extreme financial problems" and likely to become technically insolvent if recent conditions were to last another two years. A third category, comprising 10 percent of all operators, was regarded as having leverage and cash shortfall burdens sufficient to warrant a "serious financial problems" label. These farmers were considered to be in danger of reaching insolvency in about four years if recent conditions were to prevail (Figure 2).

In addition to considering the financial vulnerability of all farm operators, the USDA study also focused on a subgroup that might be more representative of family-size commercial farms—those with annual sales of \$50,000 to \$500,000. In concentrating on this group of some 680,000 operators (37 percent of all farmers), the study was able to abstract from the large number of small operators that typically rely on non-farm earnings to overcome financial shortfalls in farm operations. Also abstracted from the family-size commercial operator analysis were the few very large farms that, although often highly leveraged, usually are able to generate positive cash flows because of superior management skills, scale economies, or the specialty nature of the farm operations. The analysis suggested that in early 1984, more than a fourth of all family-size commercial farms fell within the three classes of financial vulnerability. About 4.5 percent were considered technically insolvent, 5 percent were re-

Figure 3  
**Distribution of farm operator assets by farmers with varying degrees of financial stress**

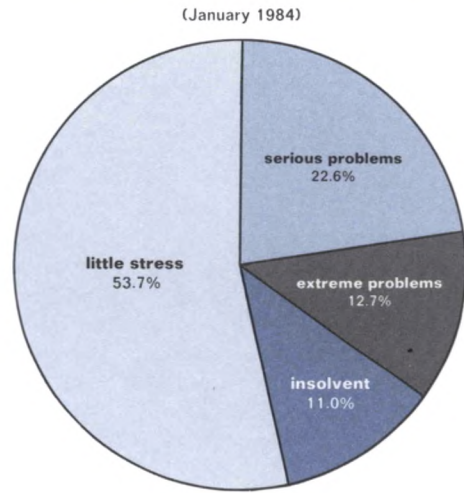


garded as having “extreme financial problems,” and nearly 17 percent were considered to face “serious financial problems.”

To understand the extent of the problem among farmers, it is also helpful to consider the amount of assets owned, and the amount of debt owed, by financially vulnerable farmers. The available evidence suggests that financially vulnerable farmers own a proportionate share of farm assets owned by all farm operators but they owe a larger share of the farm operator debt. Roughly 15 percent of the operator-owned farm assets as of early 1984 was owned by farmers who were in the three classes of financial vulnerability (Figure 3). By comparison, such farm operators apparently owed more than 45 percent of the outstanding farm operator debt (Figure 4). Translating these findings into dollars is difficult, in part because of varying estimates of the distribution of total farm sector assets and debt between farm operators and landlords. By some accounts, however, the findings imply that financially vulnerable farm operators owned about 10 percent of the \$1 trillion in farm sector assets as of early 1984 and that they owed more than 40 percent of the \$215 billion in outstanding farm sector debt at that time.

The 10 percent share of all farm sector assets owned by financially vulnerable farm operators might not initially seem alarming. However, in the context of the adjustments that

Figure 4  
**Distribution of farm operator debt by farmers with varying degrees of financial stress**



financially vulnerable farmers need to make to ease their financial stress, the 10 percent share is considerable. When faced with cash inflows insufficient to service debt requirements, financially stressed farmers and their lenders must consider options for liquidating farmers’ assets in order to pay debts down to levels that are compatible with the farmers’ reduced earnings. Unfortunately, the markets for farm assets, even in the best of times, are not sufficient to handle the amount of asset liquidation needed to quickly overcome the financial stress. For instance, only about 3 percent of farm real estate assets change ownership annually. This suggests that even with strong markets, it would take more than 3 years to complete the transfer of the roughly 10 percent or more of the farm sector assets that need to be transferred from financially vulnerable farmers to financially strong owners. It would take even longer when markets for farm assets are weak, as has been the case in recent years. Forcing the equivalent of more than 3 years’ worth of asset transfers from financially weak farmers—along with normal transfers that would be expected to continue because of retiring farmers, estate settlements, and so forth—into a short period of time could potentially be very destabilizing to markets for farm real estate and other farm assets. Because of this, many observers point out that agriculture needs an extended period of time to make the adjustments

of financially stressed farmers in a manner as orderly as possible.

The USDA study summarized above pertains to conditions as of early 1984. Since then, farm asset values have declined considerably and farm earnings have continued at depressed levels. If the analysis were to be updated, presumably it would show that the proportion of farm operators considered to be financially vulnerable has risen and that the debts of those farmers would constitute an increased share of total farm sector debt. A number of observers, using various degrees of analytical rigor and focusing on various geographic regions, have attempted to gauge the current magnitude of the problem. Rough generalizations from these attempts suggest that a fourth to a third of the farm operators may now be regarded as financially vulnerable and that these operators owe more than 60 percent of farm operator debt, or about 55 percent of total farm sector debt.

Despite these efforts, definitive estimates of the extent of the financial stress among farmers and the amount of farm debt they owe are hard to pin down. Reflecting this, a new study released in late July by the USDA<sup>2</sup> found that as of the first of this year, some 19 percent of all farm operators, accounting for 62 percent of farm operator debt, had debt/asset ratios (40 percent or more) that are typically considered to result in financial stress under current conditions in agriculture. This proportion of farm operators was notably less than has been suggested in other studies. Moreover, the new USDA study found that a considerable portion of the highly leveraged farmers, even among those that were technically insolvent, had cash flows more than sufficient to meet operating expenses, current principal and interest payments, and family living requirements. In excluding those highly leveraged farmers that had positive cash flows, the new USDA study concluded that 13 percent of all farm operators, accounting for 45 percent of farm operator debt, were encountering significant financial stress as of early 1985.

The above findings, relative to other studies, provide a tempering interpretation of the extent of the current financial problems of farmers. Yet the new USDA study still depicts a somber view. In focusing just on farmers' cash flows, regardless of their individual debt/asset ratios, the new study found that half of all farm

operators, accounting for 64 percent of farm operator debt, were facing negative cash flows. Even among the more typical commercial family farm operators, some 43 percent had negative cash flows. If cash flows do not improve, financial stress will likely increase.

### **The extent of the problem among lenders**

Estimates of the amount of debt that is owed by financially vulnerable farmers are far from precise, yet it is clear that such debt represents a considerable share of the more than \$210 billion in total outstanding farm sector debt. It is therefore not surprising that the financial stress among farmers has become very apparent among lenders that serve farmers.

The credit needs of farmers have long been supplied by a variety of sources, ranging from banks to institutions in the cooperative Farm Credit System, to agencies of the federal government, and life insurance companies. In addition there is a catch-all category identified as "individuals and others."

The cooperative Farm Credit System (FCS) for several years has been the single largest institution serving the borrowing needs of farmers. The FCS is a borrower-owned cooperative that lends almost exclusively to farmers and farmer cooperatives. The system comprises 12 Federal Land Banks that provide farm real estate loans to farmers; 12 Federal Intermediate Credit Banks, which work primarily with local Production Credit Associations (PCAs) in providing short- and intermediate-term loans to farmers; and 12 Banks for Cooperatives and a Central Bank for Cooperatives that finance farmer cooperatives. The FCS's lending operations are funded primarily through the sale of securities. The components of the FCS that lend to farmers—the Federal Land Banks and the FICBs/PCAs—accounted for nearly a third of the outstanding farm debt at the end of 1984 (Table 2). FLBs were by far the dominant farm mortgage lender while FICBs/PCAs ranked a distant second to banks in non-real estate farm debt.

Banks accounted for 23 percent of outstanding farm debt at the end of 1984. Banks provide both real estate and non-real estate loans to farmers, but their most significant role is in non-real estate lending to farmers, where

*(Continued on page 12)*

## The Farm Credit System: Looking for "the proper balance"

*George D. Irwin*

The Farm Credit System (FCS) was devised by Congress to enable agricultural borrowers nationwide to participate in the management of a credit system serving their unique needs. The FCS has traditionally been a strong and reliable source for agricultural loans; however, the current economic stress in farming has affected its loan portfolio and its operations. The FCS has responded in part by adjusting some current programs and by focusing attention on proposed structural changes as well.

### **FCS structure**

The Farm Credit System is composed of 12 Federal Land Banks and more than 400 Federal Land Bank Associations, 12 Federal Intermediate Credit Banks and 370 Production Credit Associations, and 13 Banks for Cooperatives, supported by several service organizations (Figure 1).<sup>1</sup>

The twelve farm credit districts cover the United States and Puerto Rico (Figure 2). Each district includes a district Farm Credit Board, a Federal Land Bank (FLB) and its Federal Land Bank Administration (FLBA), a Federal Intermediate Credit Bank (FICB) and its affiliated Production Credit Associations (PCAs), and a Bank For Cooperatives (BC). The districts are designated by numbers and by the names of headquartering cities.<sup>2</sup>

The Federal Land Banks are a major source of mortgage loans, accounting for about 40 percent of the farm mortgage loan volume. The policies of each bank are determined by its Farm Credit Board, which is authorized to exercise all powers necessary to carry out bank business. The banks, once owned by the government, are now wholly owned by the federally chartered, affiliated FLBAs, which are in turn owned by the borrowers in the district

(borrowers are required to buy capital or participation certificates, which are retired when their loans are paid in full). The FLBAs originate business and are the point of contact with the public.<sup>3</sup>

The production credit associations provide eligible applicants with short- and intermediate-term loans. PCAs may make both secured and unsecured loans to agricultural producers for any reason. FICBs make loans to the PCAs, over which they have some supervisory responsibility, and to commercial banks and other financing institutions.<sup>4</sup> The FICBs are owned by the PCAs and other financing institutions with which they do business. PCAs are owned by their borrowers who are required to purchase stock in them as a provision to obtaining loans. PCAs provide about 20 percent of all non-real estate farm debt.

The Banks for Cooperatives provide more than 60 percent of the funds borrowed by U.S. farm cooperatives. Like the other components of the system, BCs are owned by the borrowers in the district, in this case cooperatives. They provide loans to allow a cooperative to establish and maintain an efficient operation to carry on the business of its members.<sup>5</sup>

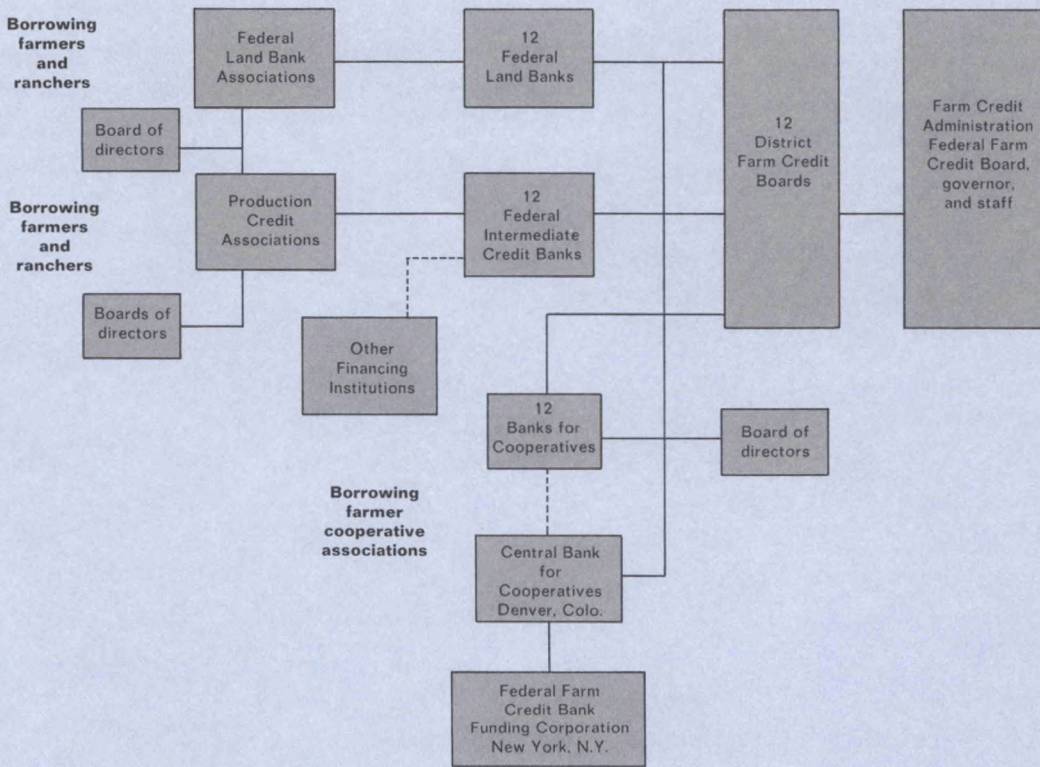
The FCS obtains capital through retained earnings, and through the requirement that borrowers own stock in the associations from which they borrow. Most of its funds for loans come from the sale of Federal Farm Credit Banks Consolidated Systemwide Bonds in the national financial markets. These bonds are the joint obligation of the 37 Farm Credit

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Figure 1  
Farm credit system



Banks; capital, however, is actually dispersed among the 37 banks and 802 associations. While these securities have no government guarantee, they have long been regarded as a quality investment.

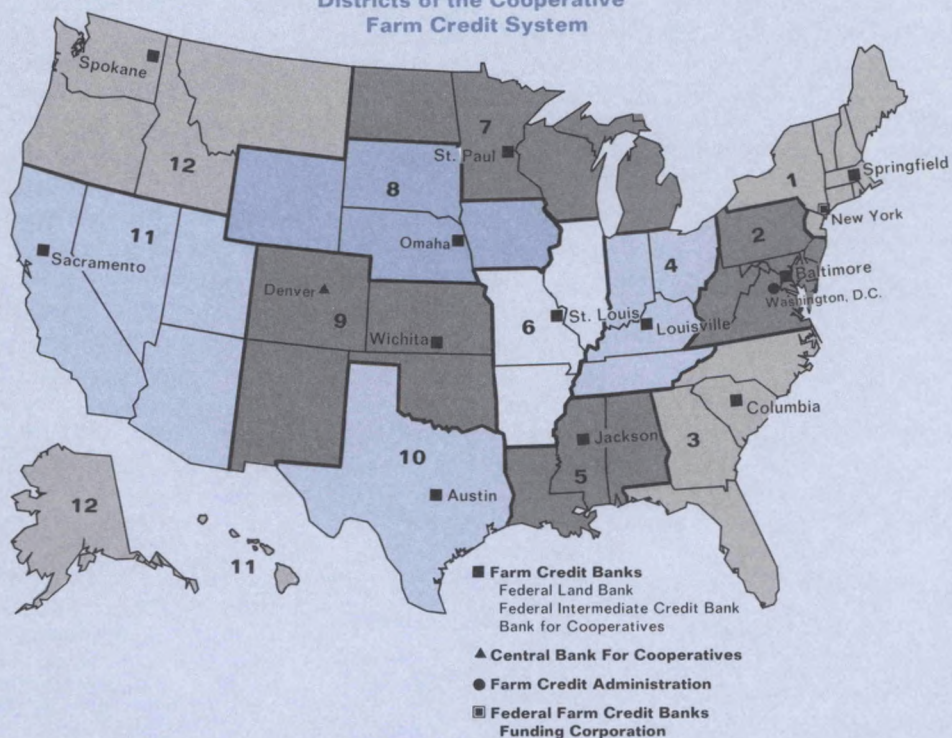
### Reflections of financial stress

Although the cooperative FCS is conservatively leveraged, it inevitably is reflecting the current problems in the farm sector. Systemwide loan losses reached \$261 million in 1983 and \$428 million in 1984. Eleven PCAs have been liquidated in the past two years, and over 50 were merged. At year-end 1984, \$1.8 billion of

the \$80.6 billion in loans outstanding was not accruing interest, and another \$5.1 billion was otherwise nonperforming. Some \$542 million in acquired property was being held by the FCS.

Several concerns have arisen in light of these figures. The first is the optimal degree of centralization versus decentralization in the FCS. Loan stress has tended to be geographically concentrated in areas that experienced the greatest gain in asset values during the demand boom of the 1970s and in areas experiencing several successive years of adverse weather conditions. Consequently, the FCS institutions

Figure 2  
**Districts of the Cooperative  
 Farm Credit System**



in those areas have been weakened and some have failed. This problem is related to the conflict between the need for capital mobility within the system and the local nature of the ownership of stock. Despite their effort to ensure local autonomy in lending, lender-borrowers in the individual districts have become especially aware that, because of the structure of the system, they lack risk control over lenders in other districts with whom they are jointly liable. With many separate pools of capital, but with joint bank liability to protect systemwide securities, conflict develops in trying to provide assistance to distressed financial institutions. This is illustrated by the objections of some farmers and bankers to the recent proposal for rescuing the ailing Federal Intermediate Credit Bank of Omaha, a plan that would be fi-

nanced largely by funds from the system's other banks.<sup>6</sup>

Another area of concern is competitive pricing. When nonperforming loans must be carried by higher overall interest rates, PCAs lose their ability to compete with the more liquid commercial banking sector. The passthrough of costs of nonperforming loans leads to noncompetitive loan pricing and the loss of the most desirable customers.

Since 1972, most lending has been done on a variable interest rate, which transfers risk from the system to borrowers. However, this too leads to problems in competition, because as the level of interest rates has increased, so has customer demand for implementation of rate caps, fixed rate programs, or other options available from competing institutions.

In addition, although lower new money costs would ordinarily lead to a drop in the billing rate, average cost pricing produces only a partial reflection of changes in new money cost. At the same time, because of the absence of a Federal guarantee, investors in the system must be reassured that their earnings, after provision for losses, are stable, reliable, and growing. The proper balance between the long-term need for access to investors' funds and the immediate relief of borrower stress is a major management problem.

Finally, borrowers may leave for a reason that has never before been tested—the risk of loss of their equity investment in association stock should the association fail.

As the period of economic stress continues, the FCS must contend as well with a third concern, the cross-payment phenomenon. In the beginning years of economic adversity, borrowers may make payments to the short-term lender by refinancing against mortgage security, or the mortgage lender's payments may be included in the operating line of credit. Both procedures keep loans in performing status and delay recognition of or response to problems. In time, the capacity to market cross-payments runs out, and the financial statistics deteriorate rapidly.

A final consideration is that the system could suffer as a result of adverse rumors. The underlying liquidity of the FCS has resulted from its high financial rating and its agency status in financial markets, which enables it to issue securities whenever funds are needed to support loan volume. In order to maintain public confidence, the FCS may need to incur the cost of additional liquidity.

### **Coping with the stress**

A few steps have been taken recently as a result of the difficulties created by the transition from the expansionist 1970s to the relatively austere 1980s. For example, in the past year we have seen a significant number of association mergers. Joint management of banks now exists or is

planned in 11 of the 12 districts. A number of districts have plans for or are involved in joint management of short-term and real estate lending at the association level. The system has also developed a joint services corporation called Farmbank Services, a jointly owned Farm Credit Leasing Services Corporation, and a central organization to lobby Congress, called the Farm Credit Council. A centralized mechanism for management of capital, liquidity, lending risk, planning and other functions has been established. It is called the Farm Credit Corporation of America.

Other considered changes would require changes in the law, including the ability to merge institutions where now only joint management is permitted. Though in recent years the FCA has clearly taken a hands-off regulatory posture, proposed legislation would also permit the FCA to exercise powers like those of other financial regulators.

The immediate concern of the FCS relates to managing the current difficulties and to correcting any practices that may have contributed to them, rather than to the system's fundamental financial soundness. While the structural problems of the Farm Credit System will always be different from those of commercial banking, the effects of the recent financial stress in agriculture demonstrate that there is a growing degree of commonality. Indeed, they are affected by the same forces, and there is certainly substantial interdependence. The measures outlined above will contribute to the FCA's efforts to balance the interests of healthy borrowers, troubled borrowers, investors, and the Farm Credit institutions, to ensure that agriculture continues to have in the FCS a reliable source of financing and financial services.

<sup>1</sup>Warren F. Lee and others, *Agricultural Finance* (The Iowa State University Press, 1980).

<sup>2</sup>Ibid.

<sup>3</sup>Ibid.

<sup>4</sup>Ibid.

<sup>5</sup>Ibid.

<sup>6</sup>Ibid.

<sup>6</sup>"Rescue Planned for Farm Bank by Loan Agency," *Wall Street Journal*, July 15, 1985.

**Table 2**  
**Distribution of farm debt by lender**

	% of farm real estate debt <u>(\$112B)</u>	% of nonreal estate farm debt <u>(\$101B)</u>	% of all farm debt <u>(\$213B)</u>
Banks	9.1	39.2	23.4
Farm Credit System			31.9
FICBs/PCAs		18.6	
FLBs	44.0		
Federal Govt. Agencies			17.3
FmHA	9.0	15.5	
SBA		2.3	
CCC		8.8	
Life insurance companies	11.1		5.8
Individuals/Others	<u>26.8</u>	<u>15.7</u>	<u>21.5</u>
	100	100	100

they accounted for 39 percent of the \$100 billion in such outstandings.

Federal government agencies, following sharply accelerated growth since the mid-1970s, accounted for 17 percent of outstanding farm debt at the end of 1984. These government agencies, the Farmers Home Administration, the Commodity Credit Corporation, and the Small Business Administration, all provide some degree of subsidized credit to eligible farmers. The Farmers Home Administration provides both real estate and non-real estate loans to farmers and accounted for 12 percent of all outstanding farm debt. In addition, the FmHA provides guarantees on loans made by commercial lenders to farmers. The Small Business Administration, although no longer actively engaged in farm lending, still accounts for a minor share of the outstanding non-real estate farm debt, representing disaster loans made in the late 1970s and early 1980s.

The Commodity Credit Corporation's role in farm lending is largely a function of that agency's role in supporting prices of several farm commodities, chiefly grains, cotton, and soybeans. Farmers who participate in the government price support programs for those commodities are entitled to pledge their crops as collateral for a non-recourse loan from the CCC. Farmers' use of this source of financing tends to fluctuate widely, depending on the relationship between market prices and the amount of loan per bushel (the loan rate) that

a farmer can receive from the CCC. When market prices are at or below the loan rate, farmers make extensive use of the CCC loan program. Conversely, high market prices encourage farmers to sell their grain rather than put it under loan with the CCC.

Other lender classifications include life insurance companies—whose farm mortgage lending accounts for 6 percent of all outstanding farm debt—and a “catch all” category identified as “individuals and others”—which accounts for 22 percent of farm debt. Much of the farm real estate debt held by individuals and others represents seller financing on farm real estate transactions. Merchant and dealer credit—including the financing provided by farm equipment manufacturers—is an important component of the non-real estate lending by individuals and others. In addition, farm loans provided by individuals and others includes financing provided by families and friends of farmers as well as by organizations such as savings and loans and local credit organizations, for which separate estimates are not maintained.

Without a doubt, all farm lenders have been affected by the financial stress confronting farmers. Because of differences in the availability of data, however, the effects can be documented much more easily for some lenders than others. Very little is known, for example, about the extent of problems among lenders included in the “individuals and others” category.<sup>3</sup> On the other hand, there is considerable evidence on the emerging problems at banks, the FmHA, the Farm Credit System and, to a lesser extent, life insurance companies. Among these lenders, the FmHA probably has the most extensive farm loan portfolio problems, a distinction related to the FmHA's role as a lender of last resort for farmers (Table 3). Delinquent farm loans held by the FmHA as of mid-1985 approximated \$6.4 billion, equivalent to more than a fifth of the FmHA's total portfolio of farm loans. These latest readings reflect a vast deterioration from 6 years earlier when delinquent farm loans held by the FmHA amounted to only \$400 million, or 3 percent of its then outstanding portfolio of farm loans.

A number of measures depict the deterioration in farm loan portfolios held by banks. For example, a new reporting requirement implemented for most banks in 1984 suggests that net charge-offs of farm loans—mostly loans to

**Table 3**  
**Delinquencies in farm loan portfolio held by FmHA**

	Amount delinquent		% delinquent 3 years or more
	Million dollars	As % of outstandings	
1977	\$213	3%	22%
1978	288	3	24
1979	417	3	24
1980	823	4	20
1981	1,588	7	21
1982	2,928	12	31
1983	4,125	16	35
1984	5,390	21	53
1985	6,388	22	N.A.

farmers not secured by real estate—by banks nationwide totaled between \$850 and \$900 million in 1984 (Table 4). Among the banks completing the reports, net charge-offs of *farm loans* in 1984 represented 2.2 percent of the year-end portfolio of all such loans at those banks. The ratio of net charge-offs to outstandings varied widely by state, with banks in California reporting by far the highest proportionate charge-offs (6.1 percent). In states covered by the Seventh Federal Reserve District, net charge-offs of farm loans as a percent of outstandings ranged from a low of 0.9 percent among banks in Michigan and Wisconsin to a high of 2.9 percent among reporting banks in Iowa. Iowa ranked third to Missouri and

**Table 4**  
**Net charge-offs of farm loans at banks in 1984**

	Million dollars	As % of farm loans
United States	\$850	2.2%
7th District states	200	2.1
Illinois	5.1	1.9
Indiana	16	1.2
Iowa	115	2.9
Michigan	5	.9
Wisconsin	12	.9
Other selected states		
California	238	6.1
Kansas	48	2.1
Minnesota	53	2.3
Missouri	45	3.0
Nebraska	75	2.5

California in relative charge-offs of farm loans in 1984.

An insight into the deterioration over time that has hit banks because of the financial stress in agriculture can be gained from a comparison of overall performance measures between agricultural banks and other small banks (Figure 5).<sup>4</sup> Among agricultural banks nationwide, net charge-offs of all loans have risen dramatically in the 1980s. In 1984, net charge-offs of all loans at agricultural banks were equivalent to 1.22 percent of total loans outstanding at those banks at year end. That was about 6 times the relative level of charge-offs recorded annually by agricultural banks in the 1970s and it was double the charge-off rate reported by other small banks. A similar pattern is evident in the sharp rise in the annual provision for loan losses at agricultural banks so far this decade (Figure 6).

With the surge in the annual provision for loan losses, earnings at agricultural banks have declined sharply. In 1984, net income after taxes at agricultural banks nationwide fell to 9 percent of equity capital. That contrasts sharply with the 1970s and early 1980s when net return to equity at agricultural banks annually ranged between 13 and 16 percent. It also contrasted with the 12 percent net income return to equity achieved by small, non-agricultural banks in 1984 and it marked the second consecutive year out of the past 12 in

**Figure 5**  
**Annual net charge-offs of all loans at banks as a percent of total loans**

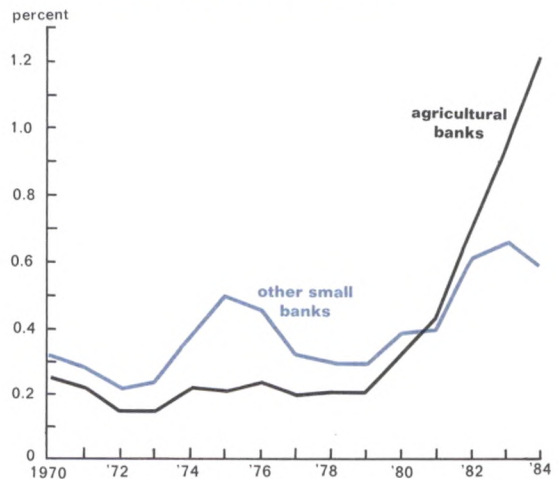
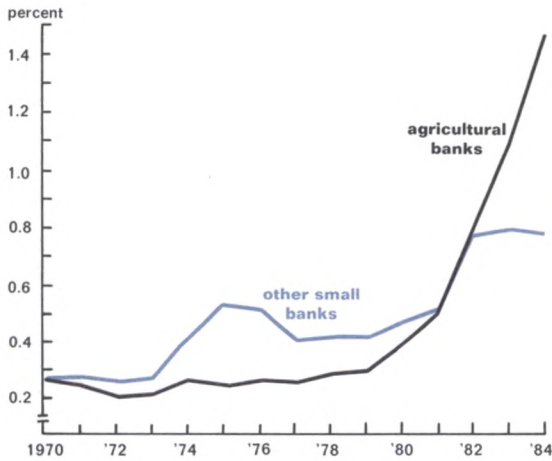


Figure 6  
Annual provision for loan losses at banks as a percent of total loans

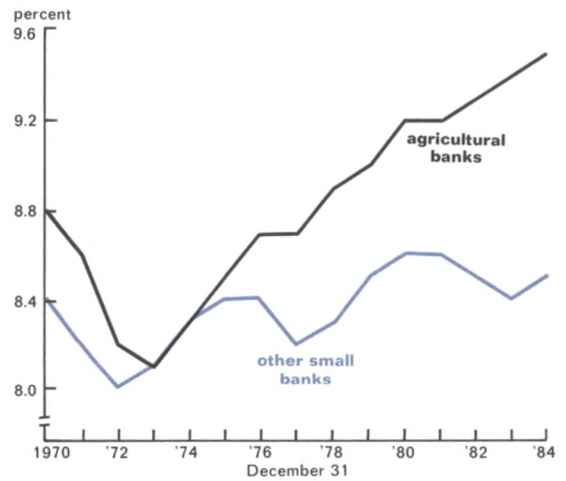


which relative earnings at small, non-agricultural banks surpassed those of agricultural banks.

In conjunction with the decline in earnings, the proportion of agricultural banks with negative earnings has risen sharply. Last year, 12 percent of the agricultural banks nationwide reported negative earnings, up from the more typical 1 to 2 percent of the banks that reported losses in the 1970s and early 1980s (Table 5).

Despite the recent downturn in earnings, agricultural banks have continued to add to their very favorable capital positions. At the end of 1984, capital accounts at agricultural banks nationwide were equivalent to 9.5 percent of total assets of those banks (Figure 7). This new high was up from a capital ratio of 9.0 percent for agricultural banks at the end of

Figure 7  
Capital as a percent of assets at banks



1979 and it was a full percentage point above the capital ratio for small, non-agricultural banks at the end of 1984. The strong capital position of agricultural banks, along with the tendency of most deposits at agricultural banks to be covered by FDIC insurance, gives substantial assurance that agricultural banks can weather the financial problems in agriculture.

### Performance of FCS also wanes

Of the private lenders serving farmers, the FCS may be the most vulnerable to the financial problems among farmers. That could be the case because the bulk of its assets (90 percent) are in loans to farmers or farm-related businesses and the bulk of its funding is obtained from the sale of its securities to investors in national and international markets. While performance measures for the FCS have deteriorated considerably in recent years, the system, overall, achieved positive earnings in 1984 and it remains well capitalized by industry standards.

Net loan charge-offs among the 37 banks in the FCS reached \$122 million in 1984, sharply above the levels of prior years (Table 6). FLBs accounted for more than \$90 million of the total charge-offs, with FICBs accounting for an additional \$22 million. In addition, charge-offs at PCAs reached \$285 million in 1984, equivalent to 1.6 percent of outstanding

Table 5  
Percentage distribution of agricultural banks by rate of return to equity

	Negative	0 to 4%	5 to 14%	15%, plus
1970	1	5	66	28
1975	2	5	55	40
1980	1	2	42	55
1984	12	9	60	19

**Table 6**  
**Loan charge-offs and provision for loan losses among banks of the Farm Credit System and PCAs**

	1981	1982	1983	1984
<b>Net loan charge-offs</b>				
Million dollars				
37 banks*	13	13	8	122
PCAs	N.A.	159	237	285
As % of outstandings				
37 banks*	.02	.02	.01	.16
PCAs	N.A.	.74	1.21	1.59
<b>Provision for loan losses</b>				
Million dollars				
37 banks	104	75	39	155†
PCAs	101	110	189	214
As % of outstandings				
37 banks*	.13	.09	.05	.20†
PCAs	.45	.51	.96	1.19

\*Comprised of 12 FLBs, 12 FICBs, 12 BCs, and 1 central BC.  
 †Includes \$33 million in allowances for loan losses transferred from local associations to a Federal Land Bank.

farm loans held by PCAs at year-end. Interestingly, the charge-off rate for PCAs in 1984 was about midway between the charge-off rate on farm loans by all banks (2.2 percent) and the charge-off rate on all loans by agricultural banks (1.22 percent).

Similarly, annual provisions for loan losses have increased steadily in recent years within the FCS. The 37 banks of the FCS set

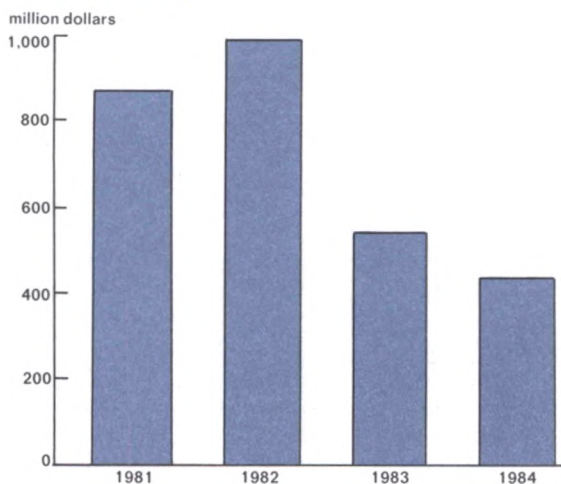
aside \$121 million in provision for loan losses last year, with \$71 million of the total coming from FLBs and another \$41 million coming from FICBs. In addition, the allowance for loan losses of one Federal Land Bank was increased by a \$33 million transfer from local FLB associations within that bank's district. Among PCAs in 1984, the provision for loan losses rose to \$214 million, extending the consistent uptrend that has been evident the past four years.

With the uptrend in provision for loan losses, earnings among the institutions in the FCS have steadily declined. Net earnings of the combined 37 banks fell to less than \$450 million in 1984, down from nearly \$1 billion two years earlier (Figure 8). PCAs in 1984 experienced a net loss of \$11 million, in sharp contrast to the net earnings of \$250 to \$300 million recorded in 1981 and 1982 (Figure 9).

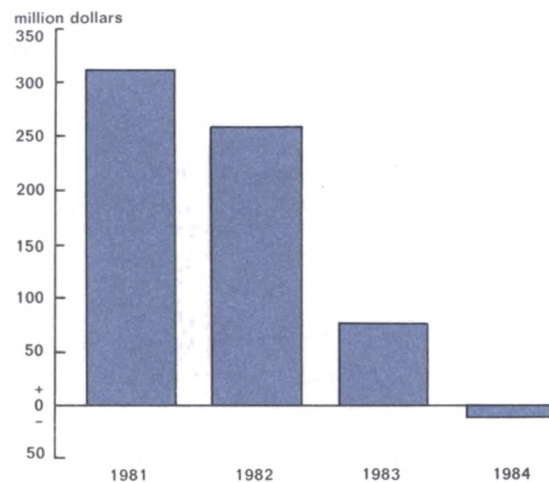
While earnings in the FCS have eroded in recent years, the system remains well capitalized. As of the end of 1984, the 37 banks in the FCS had more than \$9.2 billion in capital, up from \$6.2 billion at the end of 1980 (Table 7). The increase pushed capital to the equivalent of nearly 12 percent of outstanding loans (versus 9.3 percent at the end of 1980) and nearly 11 percent of total assets.

By industry norms, the capital of the FCS would be considered most adequate. Nevertheless, the FCS faces a major challenge in that

**Figure 8**  
**Net earnings of the 37 banks in the Farm Credit System**



**Figure 9**  
**Net earnings of Production Credit Associations**



**Table 7**  
**Capital accounts of the 37 banks**  
**in the Farm Credit System**

	1980	1981	1982	1983	1984
In billion dollars					
Stock & certificates	N.A.	4.56	4.98	5.06	5.14
Surplus	N.A.	2.90	3.60	3.91	4.10
Total	6.19	7.47	8.58	8.97	9.24
As % of loans	9.3	9.8	10.9	11.3	11.9

its capital and its problem loans are unevenly distributed among the 37 banks within the system. The future viability of the FCS may largely hinge on its ability to mobilize its capital and its problem loans to achieve proportionate distributions within the system. Recent actions that transferred the bad loans of one FICB to a newly formed FCS entity that was capitalized by all 37 banks within the FCS offer hope that the system will successfully meet the challenges that lie ahead.

### 1985 another rough year for lenders

1985 is clearly shaping up as another year of declining performance for agricultural lenders. Preliminary figures for the first quarter show that net charge-offs of farm loans by banks nationwide were up more than 65 percent from the same period in 1984. A first quarter report for the 37 banks in the FCS shows that relative to the same period a year ago, net loan charge-offs were up by a multiple of 2.5 and that net earnings were down nearly a fifth. Moreover, the volume of problem loans is still rising rather than diminishing with the increased charge-offs. As of March 31, nonperforming loans at agricultural banks nationwide constituted 4.5 percent of the total loans at those banks, up from 3.5 percent a year earlier.<sup>5</sup> Similarly, the FCS reported having

nearly \$1.6 billion in nonaccrual loans as of the end of March, up from \$1.4 billion at the end of 1984. In light of the first quarter results and the increased volume of problem loans, it seems clear that the performance measures for banks and the FCS in 1985 will show considerable deterioration from last year's measures.

<sup>1</sup> U.S. Department of Agriculture, "The Current Financial Condition of Farmers and Farm Lenders," Agriculture Information Bulletin No. 490, March, 1985.

<sup>2</sup> U.S. Department of Agriculture, "Financial Characteristics of U.S. Farms, January 1985," Agriculture Information Bulletin No. 495, July 1985.

<sup>3</sup> Several ad hoc reports, however, have alluded to the increased aging of accounts receivable among firms that sell inputs to farmers and to the increased frequency with which farm real estate has reverted back to previous owners because of the inability of recent buyers to meet their land contract payments.

<sup>4</sup> The following discussion draws heavily from the work of Emil Melichar of the Board of Governors of the Federal Reserve System. Melichar defines agricultural banks as banks with a farm loan-to-total loan ratio in excess of the unweighted average of these ratios at all banks. "Other small banks" is defined as banks with less than \$500 million in assets and having a below-average ratio of farm loans to total loans. The average of the ratios of farm loans to total loans among all banks is about 17 percent.

Under this definition, there are roughly 5,000 agricultural banks nationwide. These banks are quite small, with total assets averaging just over \$30 million. The involvement of agricultural banks in lending to farmers is extensive. Farm loans account for 37 percent of the total loans at these banks.

<sup>5</sup> The bulk of the nonperforming loans represents loans with interest delinquent 90 days or more and still accruing and questionable loans that are no longer accruing interest.



# Lean years in agricultural banking

George M. Gregorash and James Morrison

*Then the cows that were ugly in appearance and thin-fleshed began to eat up the seven cows that were beautiful in appearance and fat . . . and the thin ears of grain began to swallow up the seven fat and full ears of grain.*

*Genesis 41: 3-7*

There is by now little doubt that the problems of agriculture have adversely affected the performance of rural banks. Since 1982 agriculturally oriented banks have experienced increasing levels of loan losses and problem loans, resulting in greatly reduced earnings rates. As disturbing is the fact that in recent quarters, ag bank performance has continued to deteriorate while other banking sectors have shown considerable improvement.

Historically, agricultural banks have outperformed industry averages with high earnings, high capitalization, and low levels of problem assets. Present economic conditions have imperiled this record. Nationally, failures of ag banks have risen from 13 percent of all failures in 1983 to 32 percent in 1984—and this proportion continues to rise.<sup>1</sup>

Not only are the ag-related credit problems unprecedented by any measure of recent experience, but they are also ill-timed for the predominantly small agricultural banks. Increasing credit problems, combined with deregulation of consumer deposit rates and increased competition, have presented great challenges to the management of these community banks.

But how serious is the ag bank situation and what are the implications of continued problems at these banks for systemic bank soundness?

## Focus on the heartland

As one of the principal financing sources for farming, agricultural banks reflect the changing status of American agriculture. Measuring the impact of ag problems on banks, however, requires that additional consideration be given to the structure, asset diversification, and relative capitalization of these firms. These considerations vary widely in different

regions of the country. For example, while recent ag-related credit losses at commercial banks have been most severe in California, where 6 percent of the outstanding ag loans at banks in the state were written off in 1984 compared to 2 percent nationwide, the impact of these losses on banks has presented less of a problem because most of the losses were incurred at the large banks, where ag loans constitute a relatively small portion of those banks' total portfolios.<sup>2</sup>

Modest levels of ag lending or a larger portion of farm borrowers with secondary sources of income has left the banks in the Southeast somewhat less vulnerable to the effects of present agricultural difficulties.<sup>3</sup> Similarly, banks in the Northeast and Southwest (with the exception of Texas) have reported that agricultural credit problems are contained or relatively modest in terms of their impact on bank soundness.

What remains is the traditional heartland of America, encompassing the Midwest and Plains states. Both this region's extensive reliance on agriculture and ag-related business, and its heavy emphasis on the troubled corn, wheat, and soybean sectors have raised concern regarding the continued vitality of its banking system.

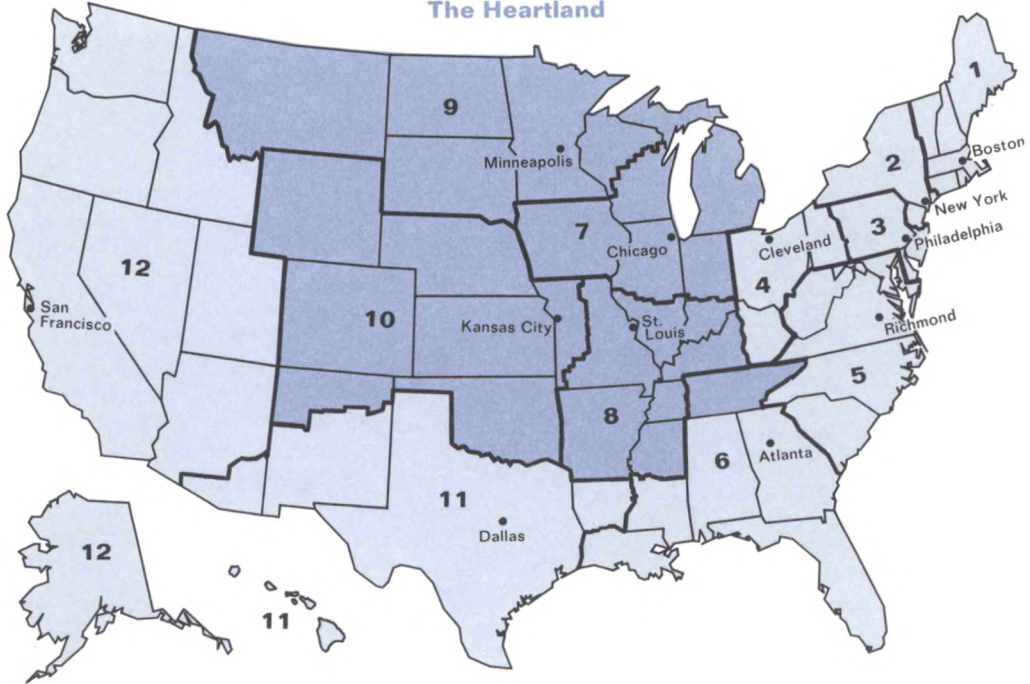
The following statistics compare the performance of agricultural and nonagricultural banks in the heartland, herein defined as the area comprising the Chicago, Kansas City, Minneapolis, and St. Louis Federal Reserve Districts<sup>4</sup> (Figure 1). While the statistics illustrate a dramatic decline in ag bank performance and a somber near term outlook, they also point to some of the underlying strengths these ag banks possess.

In terms of banking, this four district area is notable not only for its location at the epicenter of the farm banking problem, but also

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Figure 1  
The Heartland



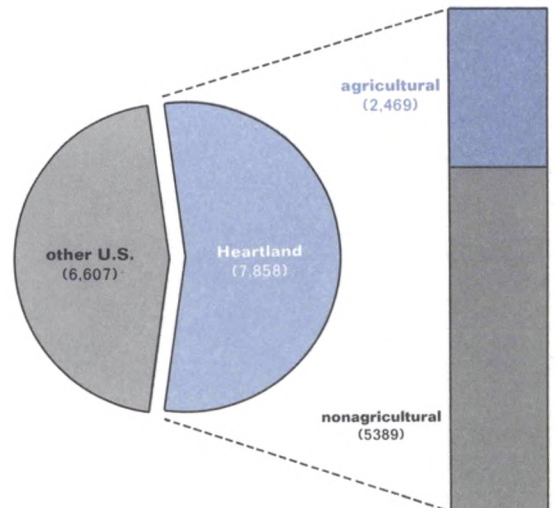
for its large number of banks. Although the region accounts for less than 25 percent of the nation's banking assets, it holds over 50 percent of the nation's commercial banks (Figure 2). A significant portion of these banks are agriculturally oriented.

There is no standard definition of what constitutes an ag bank, but for purposes of comparison, ag banks are herein defined as those banking firms with non-real estate farm loans equal to or exceeding 30 percent of their total loan portfolios.<sup>5</sup> Using this criterion, approximately one third of the heartland's 7,858 banks are agriculturally oriented. In terms of asset size, ag banks in the region are most heavily represented in the less than \$25 million category. Few ag banks in the area exceed \$50 million in assets (Figure 3). Due to their small size, these banks, while representing 17 percent of the U.S. commercial banks, hold less than 3 percent of U.S. banking assets.

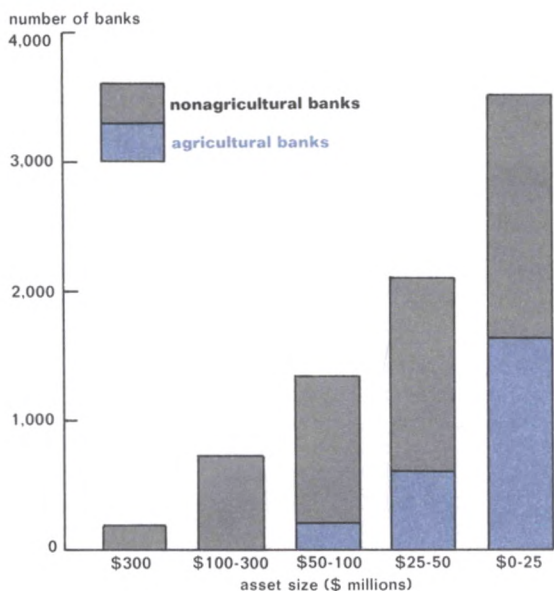
The concentration of ag banks in the region varies considerably by state, with the largest number of ag banks domiciled in Iowa, Nebraska, Kansas, Minnesota, and Illinois. On a percentage basis, Iowa, Nebraska, and

the Dakotas hold the largest proportions of ag banks, in each case exceeding 65 percent of the state's banks (Figure 4).

Figure 2  
Distribution of U.S. commercial banks



**Figure 3**  
**Distribution of banks by asset size—**  
**Heartland**



But to conclude that the agricultural problems affect only these institutions understates the problem. In those states most heavily dependent on agriculture, bank performance

measures have deteriorated even for those banks not defined as ag banks, reflecting the spillover effect on local merchants and consumers. These deteriorations are, however, not comparable in degree to the ag bank declines.

### Root of the problem

The problems of the farm banks are a direct reflection of the region's embattled economic base. Plummeting farm earnings have resulted directly in increased farm loan charge-offs and uncollected interest on delinquent loans, while also resulting indirectly in reduced overall economic activity. Direct agricultural lending is a significant component of bank lending in the region. Roughly one third of the region's banks have 30 percent or more of their loans outstanding to agriculture while another 30 percent of banks hold some ag loans (Figure 5).

One needs only to compare the recent loan loss history of the region's ag banks with others to appreciate the degree of losses already recognized. While ag banks' loan loss rates relative to loans outstanding were slightly lower than the region's non-ag banks in 1980, by 1984 the ratio had multiplied over five-fold. In 1984 alone, the region's ag banks had writ-

**Figure 4**  
**Segregation of banks by state**

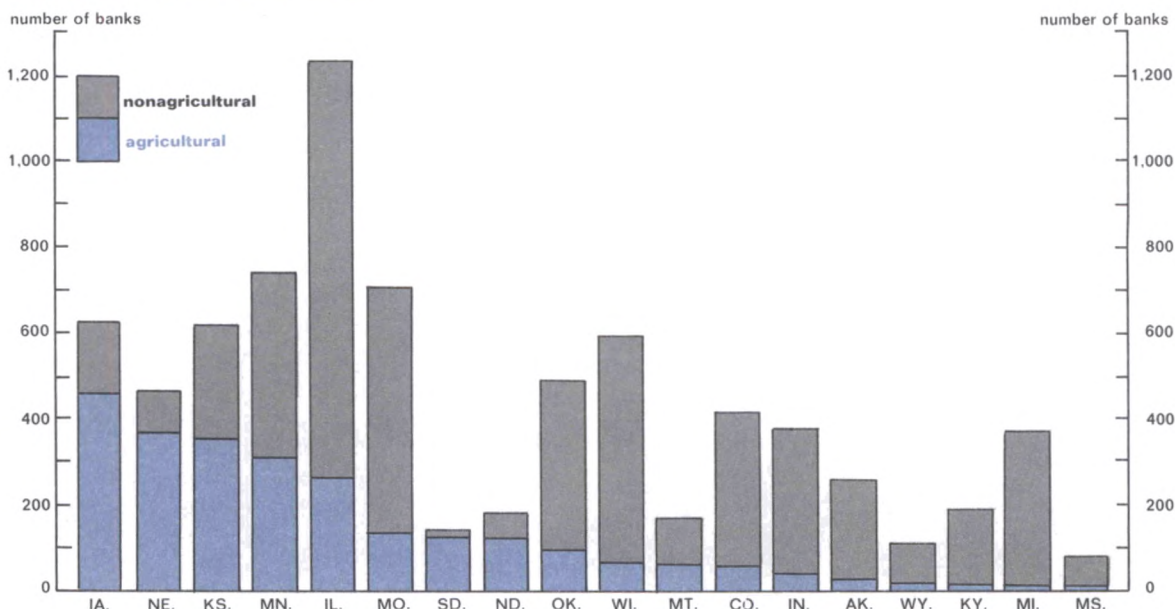
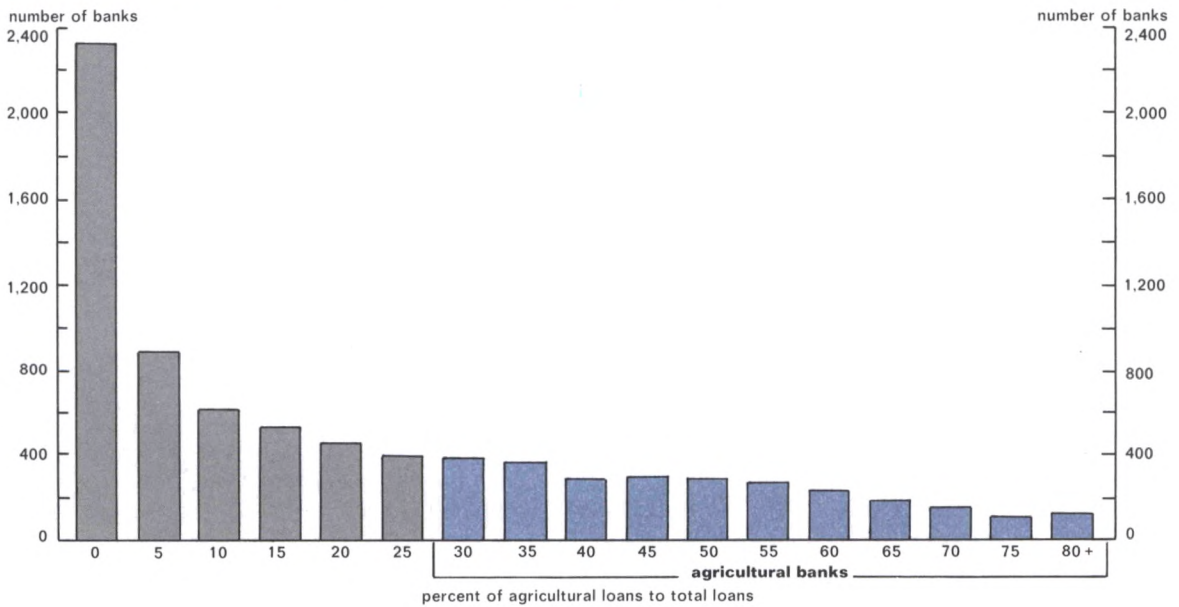


Figure 5  
Ratio of agricultural loans to total loans in Heartland banks



ten off 1.6 percent of their loans, double the rate of non-ag banks for that year (Figure 6).

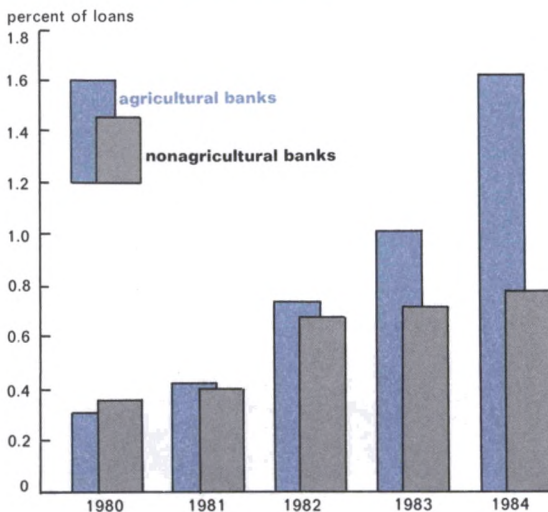
Increased losses were widespread among the ag banks. In 1980 slightly more than 8 percent of the region's ag banks had loan losses exceeding 1.1 percent of loans. In 1984 this

percentage of banks had risen to more than 41 percent (Figure 7).

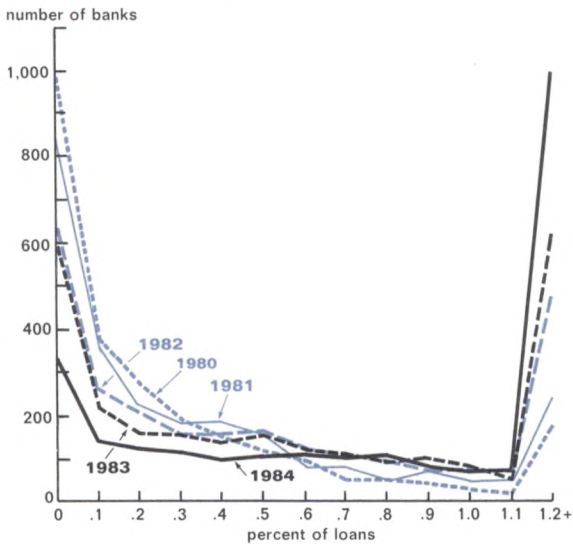
Despite the unprecedented levels of loan losses already taken, the degree of distress in the ag bank portfolios—as measured by the level of nonperforming loans relative to total loans outstanding—continues to increase, portending continued high rates of loan loss. The level of nonperforming loans at the region's ag banks rose from under 3 percent of loans in 1983 to 4 percent at year-end 1984, while at the non-ag banks, nonperforming levels moderated slightly from 3 percent to 2.8 percent (Figure 8). Preliminary data for the first quarter of 1985 indicate that these divergent trends are continuing. In some ag areas, the ratio of nonperforming assets to loans has risen by as much as one full percentage point in the first quarter alone. Although first quarter data may reflect some seasonal effects, clearly the credit problems at ag banks show no sign of abating.

Responding to the declining quality of their loan portfolios, ag bankers in the region have enlarged loan loss reserves. In 1980, ag banks in the region held reserves, on average, of .93 percent of loans. At year-end 1984, the ratio of reserves to loans had risen to 1.37 percent. Despite this significant increase, present

Figure 6  
Net loan losses—Heartland



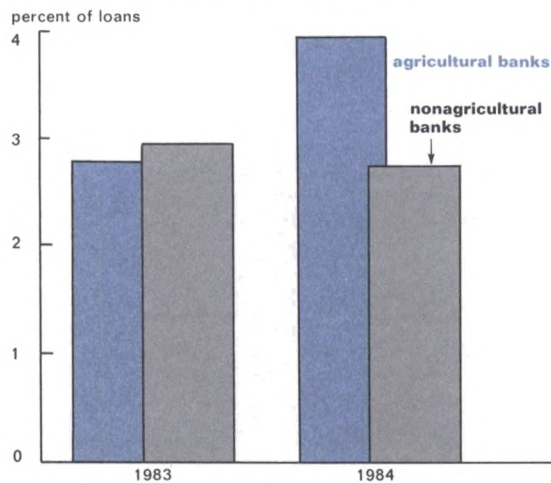
**Figure 7**  
**Loan losses—frequency distribution**  
 (2,469 agricultural banks)



reserves represent lesser relative coverage of losses recently incurred and, more importantly, of the nonperforming assets that are currently outstanding.

The impact of credit problems on ag bank performance has been striking. Provision expenses needed to minimize the growing disparity between reserve levels and problem loans—particularly in the face of high direct

**Figure 8**  
**Nonperforming assets—Heartland**



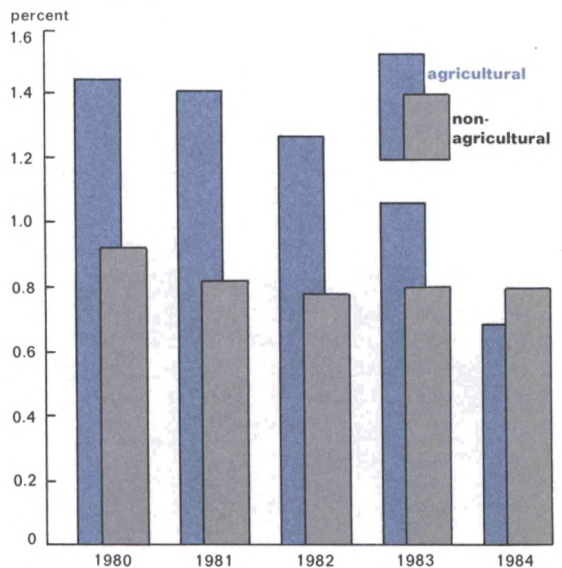
write-offs—have consumed ag bank revenues and greatly diminished ag bank profitability.

**Withering profits**

Reflecting the drag on revenues of non-performing assets and the costs of replenishing loan loss reserves, the average of ag banks' return on assets in 1984 declined 50 percent from its 1980 level (Figure 9). Similar to the loan loss experience, earnings declines among the ag bank population were widespread (Figure 10). Adverse trends are evident both in ag bank net interest margins and loan loss provisions (Figure 11). This contrasts with the performance of the region's non-ag banks, where improving margins (driven by increasing loan demand) have more than offset more modest increases in loan loss provisions.

Although certainly a negative trend, the ag bank earnings declines appear somewhat less alarming when viewed in the context of these banks' historically superb earnings performance. Despite the decline in ag bank ROAs in 1984, the group's average rate was still only modestly lower than that of non-ag banks in the region. The ability of the banks to remain profitable (in the aggregate) despite high charge-off levels is testament to the strong underlying profit capacity of these firms.

**Figure 9**  
**Return on assets—Heartland**  
 (7,858 banks)



## An ag banker's views

C. Robert Brenton

As a banker from the heartland of the country, an area that has spawned a very large, sophisticated, high-tech international agribusiness, I wonder how many understand either the nature or the extent of the recent changes and problems we have witnessed in the agricultural sector, and whether anyone can predict what the future will bring as a result of these changes. The recent economic damage has been substantial; here in Iowa, land prices have plummeted as much as 50 to 60 percent, a number of rural banks have closed, PCAs have frozen stock, and losses have been incurred by ag-related businesses large and small.

When, several months ago, Neil Harl from Iowa State University said that many farmers with debt-to-asset ratios of over 40 percent were in difficulty, I thought he was being an alarmist, but I don't think so now. Early in January, 1985, the Ag Banking Division of the American Bankers Association conducted a survey that showed that 41 percent of its farm borrowers lost money in 1984. It also estimated that 37 percent of its farm borrowers would have negative net farm incomes in 1985. In addition, *The Wall Street Journal* recently reported that earnings of the huge Farm Credit System, which holds about 37 percent of the nation's \$212 billion farm debt, have plunged by 50 percent over the past two years. Last year its Production Credit Associations sustained their first overall loss in the System's history.

Sociologist Paul Lasley of Iowa State University predicted at a recent governor's conference that "The current agriculture crisis is likely to change the face of rural America, leaving it with fewer people, fewer businesses, and more dependent on government aid."

Most would agree that great changes are in store for the world food production

process. These changes result from evolutionary processes and not from a single event. While the changes have occurred gradually, adjustment to them could place additional strain on an already financially troubled sector.

One area of change is in the market for agricultural products. Thirty years ago, we sold relatively little corn, soybeans, and other agricultural products outside the United States. Now 40 percent of our corn and soybean sales are in foreign markets. Another change is the percentage of people living in rural areas. In the year 1900, 59.5 percent of the United States' population was classified as farmers. Now, farmers number less than 3 percent of the population.

Technology has also had a tremendous effect. Back when I was a small boy, one good man could pick 100 bushels of corn in a day, and now one average man can pick 100 bushels in 30 seconds. Few people realize the magnitude of the impact of technology on agriculture unless they have been personally exposed to it.

It is difficult to predict the full effect of technology in agriculture, not just in the United States, but around the world. Someday, foreign countries will catch up technologically in agriculture, as they have in the auto and steel industries, and recently even in some high-tech businesses. The largest seed company in the world, Pioneer Hi-Bred International, Inc., now predicts that it will soon have more seed business out of the United States than in.

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C. Robert Brenton is president and joint chief executive officer of Brenton Banks, Inc., a bank holding company of sixteen banks operating in forty-two locations in Iowa, and is past president of the American Bankers Association. This paper is adapted from a talk delivered on May 2, 1985, at the Federal Reserve Bank of Chicago's Conference on Bank Structure and Competition. The views are those of the author, and do not necessarily reflect the views of the Federal Reserve Bank of Chicago or the Federal Reserve System.

Though the United States' food industry stretches nationwide and food production makes up 20.3 percent of our gross national product, most of the current economic disaster seems to be centered in the Midwest. I am a member of an informal group of Midwestern bankers, led by state banking associations in conjunction with the American Bankers Association, that has voiced several concerns about the effects of the current stress on their institutions. First, we feel that at best, quite a number of farmers in the next few years are not going to make it. This will lead to more trouble for banks and other financial institutions. Forty banks have closed so far this year, the majority of them in rural areas. This pace will certainly continue for several more years. (It should be noted, however, that with a few exceptions, these banks were sold and quickly recapitalized.) Our group also recognizes the need to work toward market-determined world food and agricultural prices, but is concerned that this be done gradually or the impact on agribusiness will be drastic, and perhaps unmanageable. Any phase-down of farm programs must therefore be spread over a number of years. Furthermore, the group believes that government, businesses, and farmers must work closely together in order to compete in worldwide food production, and to develop stronger and more successful international sales efforts.

For farmers, lenders, and agriculture-related businesses to survive this period of stress, several actions must be taken.

—Farmers Home Administration programs must continue to be funded.

—Bank regulators must, within the limits of prudence, allow banks that are well run

to absorb their losses over a period of time and to rebuild earnings.

—Deregulation of banks must continue so that they can compete with their less regulated competitors.

—Legislation should allow banks to use Capital Certificates similar to those the thrift industry has been using to augment capital during this period of stress.

—The Federal Reserve should be ready to be of greater assistance to rural banks and other agricultural lenders, if necessary, through development of helpful programs.

—Congress and the Administration should develop a safety net program something like the Reconstruction Finance program of the 1930s. The cooperative Farm Credit System has, in fact, proposed legislation along these lines to support the Federal Land Banks and other farm real estate lenders, and in turn, the farmers.

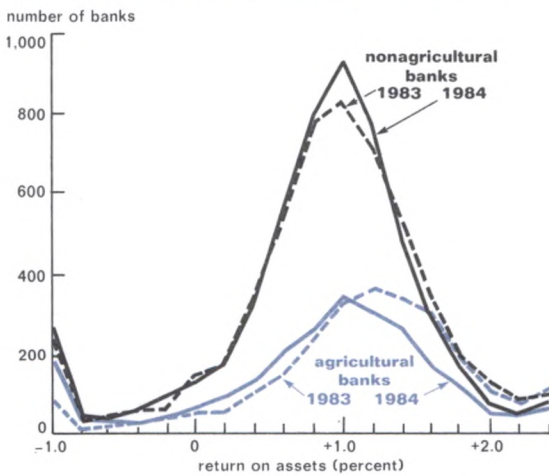
While the amount of land that will end up in lenders' hands because of foreclosures is still uncertain, there appears to be a potentially massive problem. Land constitutes some 75 to 80 percent of farm assets, and land values have dropped as much as 50 to 60 percent. Substantial problems would certainly be created in any industry if the value of its major asset were to drop so precipitously.

As we ag bankers are coming up for air a third time and as county and state-wide tax collections are beginning to suffer, bankers and economists in other sectors are finally beginning to see that we have a problem that requires some attention. The agribusiness is a huge, vastly complicated, global business. As it changes, measures such as those outlined above need to be taken in the banking system and in the financial world to minimize the shock and to allow those who wish to survive to do so.

Although in aggregate, ag bank earnings remain acceptable if no longer outstanding, the degree of decline has not been equally distributed. In terms of the relative percentage of banks registering losses in 1984, ag banks surpassed their non-ag counterparts, reversing what in 1980 was a quite favorable comparison (Figure 12).

Further, the decline in ag bank profitability would be more pronounced were it not for tax credits utilized in recent years. Virtually no ag banks in the region relied significantly on tax credits to augment income in 1980. In 1984, by contrast, over 15 percent of ag banks utilized significant<sup>6</sup> tax credits, again rising to exceed non-ag levels (Figure 13).

Figure 10  
Return on assets—frequency distribution



While the recent earnings performance of the region's agricultural banks is sobering, near term earnings prospects appear equally somber. In view of the continuing weakness in the loan portfolios and the uncertainty regarding the continued ability to recognize tax benefits, one must look beyond current earnings to other, more enduring strengths when assessing ag bank prospects and soundness.

### Buffer stocks

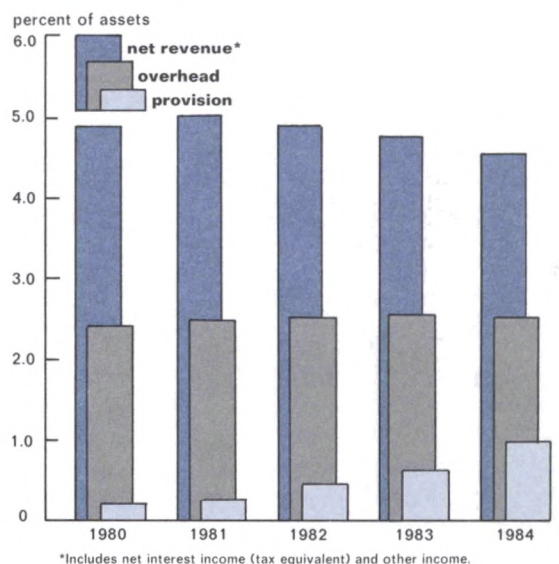
The viability of any banking organization is, in the first instance, a product of its current and potential earnings capacity. When earnings falter and prospects are clouded, one must look to the firm's capital base as the buffer to absorb prevailing losses and maintain depositor confidence.

Strong capital levels are a great fundamental strength of the region's agricultural banks. Both the traditional conservatism of ag bankers and the extended period of healthy profits in the 1970s have facilitated strong ag bank capitalization. Further, despite reduced earnings, ag banks in the region have continued to increase capital ratios during the 1980s through modest growth and low relative dividend payouts. While the most predominant value of primary capital in relation to assets was 8 percent at the region's non-ag banks at year-end 1984, the most predominant level at the ag banks was 9 percent (Figure 14).

The significance of strong ag bank capitalization is most apparent when capital is related to the quality of bank assets. Though the ratio of nonperforming assets relative to loans at the ag banks at year-end 1984 was more than one percentage point higher than that at the non-ag banks, when related to bank capital, the ratio was virtually identical (Figure 15). Hence, the relative level of unencumbered capital of ag banks has declined only to parity with non-ag banks.

The outlook is somewhat less sanguine when consideration is given to the additional leverage held in the agriculturally oriented bank holding companies. Although their underlying bank subsidiaries may be well capitalized, the additional leverage of the holding companies may result in considerably lower consolidated capitalization. According to year-end 1984 bank holding company data for the Chicago Federal Reserve District *only*, the 313 agriculturally oriented bank holding companies<sup>7</sup> in the district hold aggregate debt averaging 47 percent of parent equity. Hence *consolidated* capitalization, on average, would be approximately one third lower than underlying subsidiary capital. Further, the distribution of leverage levels is widely disbursed, as

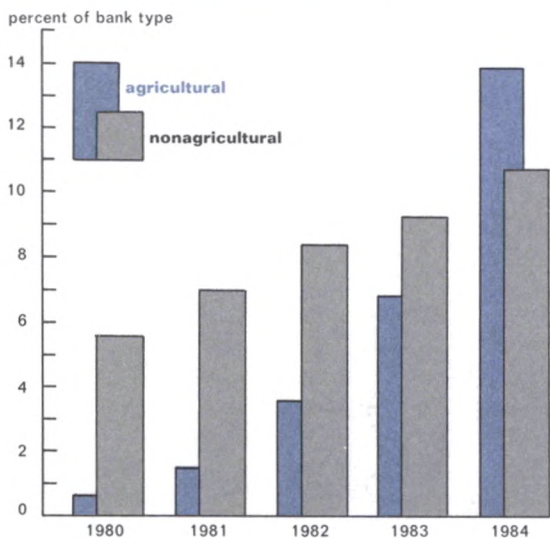
Figure 11  
Earning analysis—Heartland agricultural banks



\*Includes net interest income (tax equivalent) and other income.



Figure 12  
Percent of banks with net losses



nearly one third of the District's ag BHCs have no debt (Figure 16).

The debt of ag BHCs principally consists of notes held by prior shareholders and by bank financings. Most small bank holding companies rely solely on their bank subsidiaries for dividends to service such debt. Bank dividends may be constrained by statutory limitations or regulatory actions if underlying bank performance warrants. As such, cash flow difficulties may surface at BHCs where high parent debt, lower relative subsidiary capitalization, and poor earnings performance coincide. In some cases, refinancing or debt restructuring may be required.

### Passion and intellect

Inevitably the problems of present day agriculture evoke comparisons to the agricultural banking crises of the 1920s. Declining commodity prices and land values, increasing foreclosure rates, and an intensifying climate of tension and uncertainty are features unfortunately common to both periods.

However, equally compelling differences can be cited. Many of the differences, in fact, result from programs whose origins lie in the events and lessons of the twenties and thirties. In the case of banks, federal deposit insurance stands as a bulwark of confidence for depos-

itors. The importance of insurance cannot be overstated during a period of stress such as this. By reassuring depositors, federal deposit insurance prevents isolated bank insolvencies from compounding into a widespread liquidity-driven catastrophe such as that of the 1920s. To further insure adequate liquidity for the farm sector, the Federal Reserve in March, 1985, revised and extended its seasonal leading program. The Federal Reserve noted that there were few if any signs to indicate that agricultural banks generally would experience any unusual shortfall of liquidity. The action was taken, nevertheless, to have in place a means to offset any unforeseen liquidity strains that might arise in local areas or for individual banks, thus threatening the necessary flow of credit to farmers.<sup>8</sup>

Direct farm programs, although certainly not panaceas, provide additional external support. The federal loan programs of the Farmers Home Administration have lessened the direct exposure of banks to some of the most troubled ag credit. More recently, the loan guarantee provisions of the federal "Debt Restructuring and Assistance Program" have provided some measure of assistance. Although none of these initiatives will eliminate farm and farm bank stress, they do distinguish present reality from the noninterventionist approach of the pre-1930 era.

Figure 13  
Significant tax credits—Heartland  
(7,858 banks)

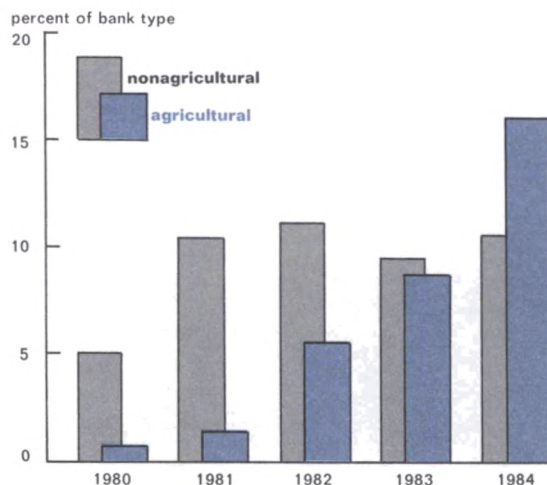
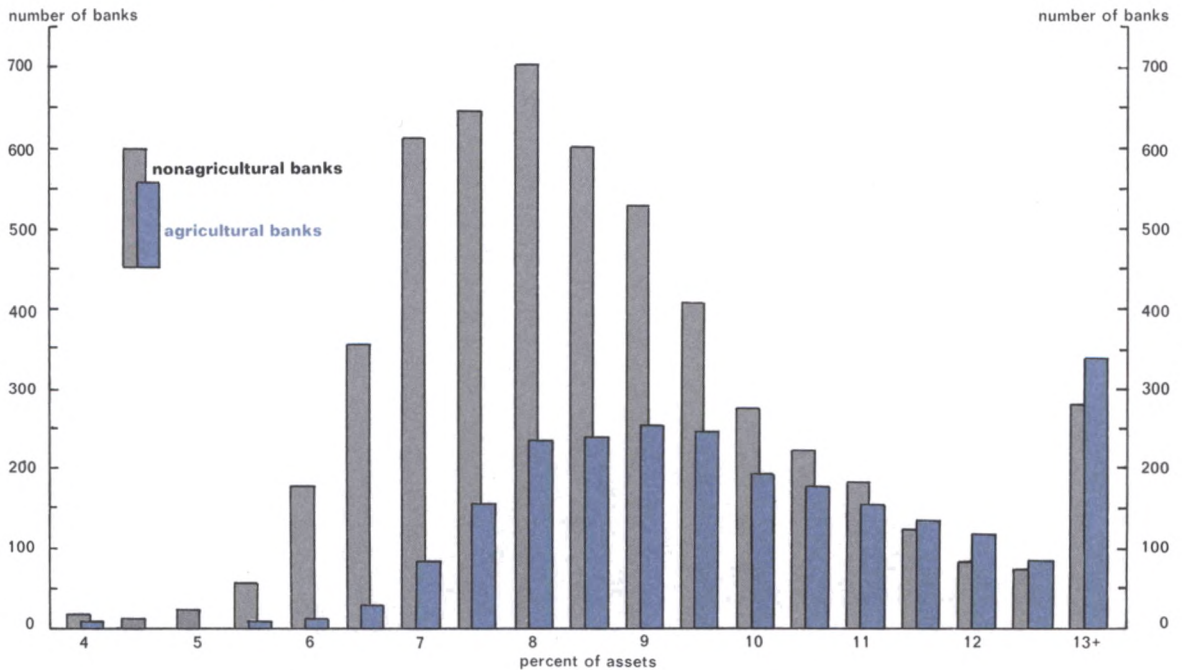


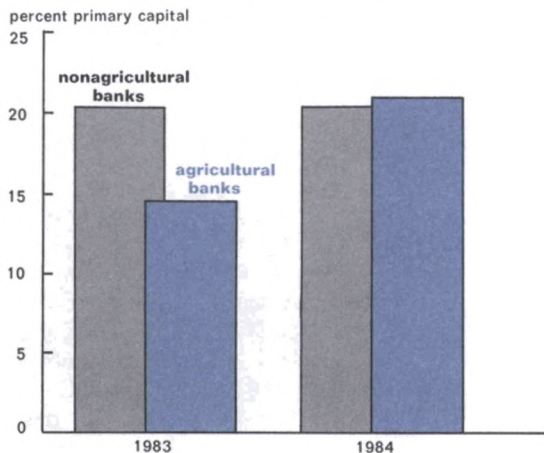
Figure 14  
Primary capital/assets—1984



A more apt similarity for the present agricultural trauma can be found closer to home—if not geographically, at least chronologically. Present difficulties in U.S. energy and mining concerns reflect many of the same

maladies as agriculture—heavy investment during the boom times of the 70s followed by reduced demand, a strong U.S. dollar and reduced inflationary expectations. Some of the more troubled energy and mining sectors in Texas, Oklahoma, and the Mountain States sit on the periphery of the heartland, and in some cases overlap ag bank market areas. This is a hard irony for those institutions that attempted to insulate themselves from exposure to one industry by diversifying into the other.

Figure 15  
Nonperforming assets—Heartland



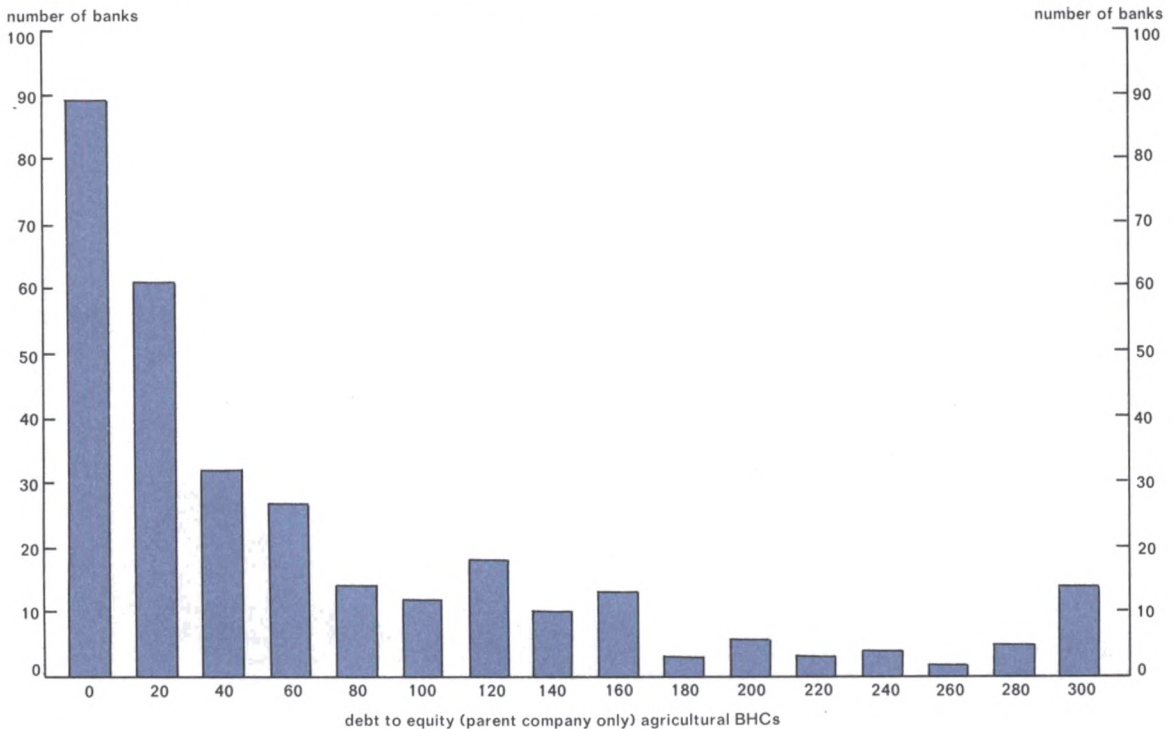
Still, while adjustments may be shared by other sectors and may pale in comparison with the debacle of the 20s, hard times in America's farm belt remain all too much a reality. Calm deliberation and cooperative effort are most critical at this time to contain the problem and limit its effects. Although some external support exists, the majority of the burden will continue to be borne by agricultural banks and their communities.

Some key pressure points:

● **Funding—**

Over 80 percent of ag bank assets are funded by local deposits or bank equity. This great

Figure 16  
**Parent leverage—Seventh District agricultural BHCs**



strength allays fears of a massive systemic liquidity crisis. Ag banks may focus their attention more fully on addressing credit issues and cleansing their portfolios forthrightly without fearing the caprice of Tokyo debt traders or news flashes in London. Local depositors, however, should be reassured and made aware of the risks—and protections—their accounts hold.

● **Forbearance—**

The massive reversal of agricultural fundamentals has required extraordinary cooperation on the part of lenders, borrowers, and others. Markets for farmland and equipment can, at best, be categorized as unsettled. Continued, prudent forbearance on the part of *ag bankers* is essential to permit an orderly adjustment to the new economics of agriculture. *Bank regulators*, recognizing this, have instructed examiners to consider carefully this factor in order to avoid exacerbating the problem. This policy does not necessarily result in a reduced volume of loans deemed to present an unusual amount of risk (referred to as classified loans)—failing

to recognize risk levels would not make the problems go away and would ultimately undermine the reliability of the examination process—but does result in the tolerance of a higher level of classified loans so long as the bank is making its collection decisions and otherwise servicing the loans in an informed, prudent manner and the overall risk position is supported by an adequate reserve and equity capital base. Some *ag BHC debt holders* may also find refinancing and debt restructuring a viable approach to bridge temporary shortfalls.

● **Fortification—**

The financial strengths of the agricultural banking system have already been demonstrated through the prudence and conservatism shown during better times. This character must continue. With present prospects for agricultural recovery uncertain, the choice between disinvestment and perseverance—flight or fight—for agricultural bankers has never been more difficult or more important. Community ag bankers have attributed past strengths to local ownership and local man-

agement. The ability of the agricultural banks to fortify and thereby serve as a buffer between local depositors and the risks of present day agriculture will greatly influence the future vitality of the farms and communities of the heartland that they serve.

## Conclusion

Although stresses will continue, the overall soundness of the agricultural banking system remains secure, resting on the twin pillars of strong capital and stable deposits.

The stresses, however, do not fall equally on all firms and increasing numbers of troubled farm banks are an unmistakable reality. As stresses mount, bank failures will most likely continue to rise and will undoubtedly exceed past experience. Due to the large number of small banks heavily affected by ag conditions, the increase in problem banks and bank failures may appear quite dramatic, but due to the ag banks' modest relative size and principally local and insured funding, there is little likelihood of a pyramiding transmission of problems into the banking system as a whole. Absent a profoundly severe and protracted period of agricultural stress, resolution of the banking problems that do occur in the region can be accomplished through traditional supervisory methods and mergers.

With little prospect of near-term improvement in the agricultural economy, however, agricultural banks will call mightily on their underlying strengths as the painful adjustments in agriculture proceed. Not unlike that of the farmers they finance, the ability of individual ag bankers to weather the lean years is in large part a reflection of the degree to which provision was made for these times during the years of plenty—combined with their ability to husband present capital and human resources.

*And let them collect all the foodstuffs of the . . . good years . . . and the foodstuffs must serve as a supply for the land.*

Genesis 41: 35-36

<sup>1</sup> K. Keplinger and others, "Agricultural Banks in the Southeast: How Are They Faring?" *Economic Review*, (Federal Reserve Bank of Atlanta, May, 1985).

<sup>2</sup> Statement of J. Charles Partee, member of the Board of Governors of the Federal Reserve System, before the Subcommittee on Financial Institutions of the Committee on Banking, Housing and Urban Affairs, April 26, 1985, (*Federal Reserve Bulletin*, June, 1985) p. 436.

<sup>3</sup> K. Keplinger, *Economic Review*, May 1985.

<sup>4</sup> All data, unless otherwise noted, are derived from the reports of income and condition. (FFIEC Forms 031-034). All data for the four-district area exclude Continental Illinois National Bank and Trust Company of Chicago and First National Bank of Chicago.

<sup>5</sup> Ag loans in this study are derived from Call Report data, schedule RC-C, line 3, loans to farmers, and do not include real estate loans secured by farmland. Real estate loans secured by farmland, on average, total less than 1 percent of loans at "non-ag" banks and approximately 5 percent of loans at ag banks in this region. As such, the omission does not appear material to the general conclusions of the study.

<sup>6</sup> Nonperforming loans include loans past due 90 days or more, nonaccrual loans, and restructured loans.

<sup>7</sup> Significant tax credits are defined as tax credits that represent 0.10 or more relative to average assets on an annual income statement.

<sup>8</sup> Ag BHCs are defined as BHCs with subsidiary banks that, when combined, meet the 30% test used to define ag banks. All data are derived from FR Y-9 and Y-6 reports.

<sup>9</sup> J. Charles Partee, *Federal Reserve Bulletin*, June, 1985, p. 437.

# Policy options for agriculture

*Michael D. Boehlje*

Many farmers currently face severe financial stress resulting in asset liquidations, problems in obtaining credit, and even bankruptcy.<sup>1</sup> An important issue in policy analysis is the applicability of traditional farm policy approaches to the current situation. This is a particularly relevant issue because the 1983 Payment in Kind (PIK) program was one of the largest and most expensive government transfer programs for agriculture in recent history, and yet many farms are still facing severe financial problems. Financial management strategies and enhanced farm and off-farm income can relieve the stress for some farms, but those with high leverage ratios (for example, 70 percent or greater) will likely not be able to obtain sufficient relief from various financial and farm management strategies to stave off asset liquidation or default. Adjustment to a new financial and economic environment may require government assistance.

Much of the past public assistance to farmers in financial stress has been in the form of price and income supports. Such a policy response may not only be an extremely high-cost alternative, but if improperly implemented, might result in disincentives to adjust resource use in agriculture to the slower growth in demand for its products. Most analysts believe that agriculture must adjust to its excess production capacity and lower values for some agricultural resources, particularly land.<sup>2</sup> If this is the case, then a public policy that impedes that adjustment will not only be very costly, but may result in long-term dependence on government assistance, as well as continued government interference.

While higher incomes would contribute to a healthier agricultural sector, the current financial stress problem in agriculture is too complex to be relieved solely by improved income. In fact, most agricultural support will go to large farms, whereas farms of all sizes are exhibiting stress. Other means for enhancing the income of agriculture, through subsidizing and promoting exports, devaluing the dollar, expanding domestic consumption including bio-mass production and fuel use, and converting grainland to grassland also only focus on

one dimension of today's financial crisis in agriculture. A broader perspective and a broader set of policies is required to solve today's "farm problem."

Given the financial stress faced by the agricultural sector, the appropriate policy response is a relevant question. In order to evaluate alternative policy options, selected policy options can be quantitatively analyzed using microeconomic simulation models (see Box). The results from this process lead to the conclusion that measures other than the traditional farm income and price support programs may provide a greater chance of survival for financially troubled firms.

## Policy options

**Bankruptcy.** Public policy currently encompasses a set of rules to resolve severe financial stress problems—the bankruptcy rules. Although bankruptcy may involve immediate liquidation of the assets and a discharge of farm debt,<sup>3</sup> it can also involve restructuring and rehabilitating the business under Chapters 11 or 13 of the bankruptcy law. Farmers cannot be forced into an involuntary bankruptcy. A farmer who chooses Chapter 11 (or possibly Chapter 13) bankruptcy proceedings becomes a "debtor in possession." Generally the farmer continues to manage and operate the farm, possibly under the surveillance of a creditors' committee.<sup>4</sup> A trustee to manage the property is appointed only in rare cases, so the farmer can continue to operate the farm as long as he follows an acceptable debt reduction plan.

The bankruptcy rules specify how the private sector will share financial losses in case of a default by a creditor, but two fundamental issues remain. First, should the private sector—the creditor, the debtor, and others who

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have done or are doing business with the debtor absorb the full loss, or should the public sector share part of this loss through some type of government transfer payment program? And second, and probably more important, who in the private sector under the current provisions should typically be required to absorb the majority of the loss? Because of the extensive use of merchant and dealer credit, the bankruptcy rules likely transfer the major losses from the production sector and the lending institutions to the input supply firms, which are only involved peripherally in financial management decisions. A fundamental question can be raised as to the equitability of this sharing of the financial losses due to debtor default.

**Debt moratorium** is a second, rather blunt policy instrument that might be used to respond to the current financial stress in agriculture. This alternative would deny the use of foreclosure procedures against farmers who cannot make their principal and interest payments, cancel or defer interest and principal payments for a specified time, write down a portion or all of the debt, deny deficiency judgments for those who cannot make their payments, or combinations of the above. Most debt moratorium proposals include a limited period in which debt obligations need not be met, but they do not eliminate the commitment to repay debt. Consequently, a key to the success of such proposals is that the financial condition of the firm and the industry will improve sufficiently in the intervening period so that the obligations can be repaid. Debt moratoriums were used with limited success in the 1930s to relieve the financial pressure faced by farmers.

The major direct cost of a debt moratorium is the income foregone by the lenders during the moratorium period. But in addition to this cost, there is serious concern about the implications of such programs on the long-run performance of the financial markets. Lenders who feel their earnings flow may be interrupted by future moratoriums will likely judge that there is more financial risk in credit extension and would expect to be compensated for that risk through higher rates of interest. Furthermore, some borrowers would no longer be able to obtain credit even if they have adequate collateral because a debt moratorium has ne-

gated the value of collateral in the credit extension decision.

**Loan guarantees.** Another possible public policy response is the provision of loan guarantees from a federal or state agency to indemnify the lending institution from default on the part of a borrower. Such a program is currently available from the Farmers Home Administration and additional funding could be made available for this program. To be an effective solution, a loan guarantee program must be combined with other alternatives such as systematic asset or liability restructuring to reduce the debt obligation or increase the cash flow of the business. Properly structured, a loan guarantee program may provide the time necessary to implement more permanent solutions and to protect the resource markets from collapsing in the process. Without a long-term solution, a loan guarantee program might be perceived as simply a "lender bailout." A variation of the loan guarantee program would offer the lender a federal or state bond in exchange for the loan; such a program transfers the responsibility for collection, as well as the debt obligation, to the government, and quite likely would result in higher cost than the traditional Farmers Home Administration, Small Business Administration, or other government guarantee.

**Debt restructuring.** A proposal that has received wide-spread attention recently is that of federally assisted debt restructuring. In fact, most of the current legislative proposals are variations of the debt restructuring theme. The premise of this approach is that providing additional time to repay the principal would reduce annual obligations, thus enabling some farmers to cover their lower principal and interest payments. For those who still cannot meet their debt obligations, restructuring would provide additional time to rearrange the financial structure of their businesses, including possibly the sale of assets. Most restructuring proposals involve the potential of a write-down of the debt as a condition to obtaining a federal or state guarantee.<sup>3</sup> For many producers who are facing financial stress, such a program may not be a permanent solution, but the first step in a long-run plan to adjust the asset and liability structure of the business so that the firm can survive.

### Simulating some options

The consequences of interest rate buy-downs and lengthening repayment terms along with asset restructuring on individual firms can be illustrated using a representative cash grain farm and a representative hog farm. The cash grain farm comprises 435 acres of row crop land and has total assets valued at \$925,000; the hog farm is a farrow-to-finish operation consisting of 425 acres of land and total assets valued at \$965,000. Different financial structures for both farms are reflected through debt-to-asset ratios of 33, 50, and 67 percent. Additional assumptions used in the analyses are summarized in Table 1. The financial consequences of various policy options were simulated over a 10-year period using the Iowa State University financial planning model, which was econometrically estimated using farm record data from the Iowa Farm Business Association for the years 1964-1982.

The primary indicators of financial stress employed in these analyses are the debt-service-coverage ratio (DSCR) and its three-year moving average (ADSCR). The DSCR is defined as the firm's income net of family living expenditures, income taxes, and production expenses other than interest and rental payments on leased land divided by the firm's annual debt service obligation including interest on all

loans and principal payments on intermediate and long-term loans plus land rent. A DSCR of less than 1.0 in any year indicates that the firm has insufficient net income after taxes and family living expenses to meet its annual debt service obligation. An ADSCR of less than 1.0 indicates that the firm's payments problem is more persistent and less likely to be the result of a single "bad" year.

The results of the analyses are summarized in Tables 2 and 3. These results indicate that the risk of illiquidity is generally greater for the representative cash grain farm than for the hog farm for all initial leverage positions or financial policies considered. For the more highly leveraged cash grain farm (50 or 67 percent debt) and the highly leveraged hog farm (67 percent debt), the probability of failure as measured by the ADSCR is very high—exceeding 90 percent in the base run. The interest rate buy-down policy is marginally effective in reducing the probability of failure for the 67 percent leveraged hog farm, but a large reduction in the probability of failure for this highly leveraged hog farm and the 67 and 50 percent leveraged cash grain farms is attained only with the asset restructuring plan.

**Table 1**  
Parameter values for the representative farm analyses

Model	Asset value increase			Loan Terms		
	Current assets	Intermediate assets	Fixed assets	Current	Intermediate	Long-term
	(------ percent -----)					
Base	0	0	1.9	1 yr. @ 14%	1 yr. @ 14%	25 yr. @ 12%
Interest rate buy-down	0	0	1.9	Interest rate on current and intermediate debt reduced to 10% in initial year of planning horizon, 14% thereafter; rate on long-term debt 9% for first 4 years, 12% thereafter		
Reduced repayment rate	0	0	1.9	<i>Principal</i> payments on long-term (real estate) debt reduced by 25% for first 4 years; payments in later years correspondingly higher		
Asset restructuring	0	0	1.9	1 yr. @ 14%	1 yr. @ 14%	Leased

**Table 2**  
**Results of representative cash grain farm analyses**

Model	Probability of debt service coverage ratio less than 1.0		Probability of 3-yr. average debt service coverage ratio less than 1.0		Terminal equity	
	In any annual observation <sup>1</sup>	In any model period <sup>2</sup>	In any annual observation <sup>3</sup>	In any model period <sup>4</sup>	Average	Range
	----- percent -----				----- dollars -----	
<b>33 percent debt</b>						
Base	29	82	17	54	799,882	694,205 - 870,590
Interest rate buy-down	20	74	8	28	829,710	737,406 - 899,907
Reduced repayment rate	25	80	15	48	799,884	695,353 - 870,089
Asset restructuring	1	14	0	0	899,926	795,843 - 1,003,493
<b>50 percent debt</b>						
Base	92	100	98	100	492,140	303,645 - 601,114
Interest rate buy-down	73	100	86	100	555,656	399,273 - 644,419
Reduced repayment rate	89	100	98	100	494,277	306,523 - 602,366
Asset restructuring	8	26	0	0	668,697	565,691 - 770,827
<b>67 percent debt</b>						
Base	100	100	100	100	86,230	(174,998) - 245,512
Interest rate buy-down	100	100	100	100	221,428	22,062 - 347,560
Reduced repayment rate	100	100	100	100	90,083	(171,144) - 249,365
Asset restructuring	37	68	10	34	423,182	320,195 - 515,061

- <sup>1</sup> The proportion of 500 observations (10 x 50 runs) of the DSCR with a value of less than 1.0.  
<sup>2</sup> The proportion of 50 model runs in which the value of the DSCR fell below 1.0 at least once in the 10-year model period.  
<sup>3</sup> The proportion of 400 observations (8 years x 50 runs) of the ADSCR with a value of less than 1.0.  
<sup>4</sup> The proportion of 50 model runs in which the value of the ADSCR fell below 1.0 at least once in the 10-year model period.

**Table 3**  
**Results of representative hog farm analyses**

Model	Probability of debt service coverage ratio less than 1.0		Probability of 3-yr. average debt service coverage ratio less than 1.0		Terminal equity	
	In any annual observation <sup>1</sup>	In any model period <sup>2</sup>	In any annual observation <sup>3</sup>	In any model period <sup>4</sup>	Average	Range
	----- percent -----				----- dollars -----	
<b>33 percent debt</b>						
Base	6	20	0	0	1,11,006	867,765 - 1,370,145
Interest rate buy-down	4	14	0	0	1,146,494	907,841 - 1,405,283
Reduced payment rate	5	22	0	0	1,112,778	868,737 - 1,373,140
Asset restructuring	1	1	0	0	1,360,227	975,307 - 1,788,137
<b>50 percent debt</b>						
Base	20	68	10	36	777,407	524,976 - 1,000,256
Interest rate buy-down	15	56	5	18	837,039	595,862 - 1,069,931
Reduced payment rate	19	66	8	28	779,718	526,846 - 1,004,210
Asset restructuring	3	20	0	0	1,119,841	756,990 - 1,607,309
<b>67 percent debt</b>						
Base	49	96	55	92	440,866	127,390 - 653,342
Interest rate buy-down	39	88	36	80	524,589	252,516 - 732,026
Reduced payment rate	48	94	52	90	443,196	130,835 - 656,769
Asset restructuring	6	12	0	0	849,383	485,483 - 1,430,565

- <sup>1</sup> The proportion of 500 observations (10 x 50 runs) of the DSCR with a value of less than 1.0.  
<sup>2</sup> The proportion of 50 model runs in which the value of the DSCR fell below 1.0 at least once in the 10-year model period.  
<sup>3</sup> The proportion of 400 observations (8 years x 50 runs) of the ADSCR with a value of less than 1.0.  
<sup>4</sup> The proportion of 50 model runs in which the value of the ADSCR fell below 1.0 at least once in the 10-year model period.



For the representative farms of lower leverage, the 33 percent debt cash grain farm and the 50 percent debt hog farm, the probability of failure in the base run is much lower than for comparable firms of higher leverage. For these firms, the interest rate buy-down policy reduces the probability of failure by one-half relative to the base run, the asset restructuring policy completely eliminates the probability of failure, and the reduced repayment rate policy is of intermediate effectiveness in reducing the probability of failure. Finally, the 33 percent debt hog farm is well insulated from the financial stress affecting the firms of higher leverage cate-

gories; this lower leverage hog farm is free of the risk of failure as defined by the ADSCR in the base scenario and in all policy scenarios.

The impact of the policy scenarios on average terminal net worth is consistent for both representative farm types across all initial debt levels. The reduced repayment rate policy results in essentially no change in average terminal net worth relative to the base scenario, the interest rate buy-down policy causes a moderate increase in terminal net worth, and the asset restructuring policy results in the greatest gain in equity over the 10-year period.

**Interest rate subsidies.** As a consequence of the severe problems faced by agriculture because of high interest rates, various proposed policy responses include interest rate buy-downs or subsidies that focus on reducing this component of the cost structure for farmers. However, a preferred alternative to interest rate buy-downs for agriculture would be a fiscal policy that reduces the size of the government deficit and the demands of the federal government on the capital markets. Such policy would result in lower market rates on interest throughout the U.S. economy and would, through a reduction in the foreign exchange value of the dollar, increase export demand for agricultural commodities.

**Asset leasebacks.** As suggested earlier, much of the current asset restructuring involves liquidation of real estate and other capital items for cash, but there is only so much liquidity in rural communities, and cash liquidations frequently result in substantial liquidation losses. Other means of liquidation must be investigated and could be facilitated by public policy.

For example, lending institutions might be encouraged to take the title of real property in lieu of debt obligations, and then lease this property to the original debtor. This arrangement would keep the property off the market and thus reduce the chance of resource markets being depressed further. In addition, by leasing the property to the original operator, the

lender can convert a nonperforming asset into one that generates at least some rate of return in the form of rental payments. To reduce the possibility that the lender must tie up its liquidity in such assets, a government program could be implemented to provide funds to the lender in the amount of the assets taken back in lieu of debt.

One of the purposes of a leaseback program is to stabilize resource values. A critical issue today is whether the public sector should play a role in asset liquidations in the form of regulating, monitoring or facilitating the process. Legitimate concerns have been expressed about the attitudes of some lenders who are encouraging cash sales of assets without recognition of the implications for the producer or the asset markets. Collateral values are declining, in part because of forced sales of assets for cash into a market where there is limited buying power. We need to be much more innovative in the liquidation process, and we need to evaluate whether public policy can assist in this area.

**Recapitalization** is another alternative that might involve public policy. In many cases, the financial structure of the business could be significantly improved through an infusion of equity from outside the firm, either by a debt holder exchanging his obligation for an equity position in the firm, or an outside investor providing additional funds to reduce indebt-

edness. An equity infusion may at first glance appear unlikely. In some cases, however, family members may be willing to provide such an infusion or an investor might be willing to contribute capital funds for a larger-than-proportionate share of the ownership of the firm or to take advantage of the tax shelter available from operating losses. A third source of an equity infusion is the lender. If the firm has current cash flow problems because of high leverage and aggressive growth, but also has strong management and the potential for reasonable future earnings, the lender may minimize losses or increase the chances for recovery by converting debt obligations into equity.

The role of public policy in this area of outside equity infusions or recapitalization may be one of reassessing current legislation that discourages these arrangements. Many states have passed laws that restrict or prohibit outside equity investments in agriculture. Alternatively, a government-financed venture capital entity might be formed to make the necessary equity capital infusion into agriculture under terms that are more acceptable to both farmer and investor. Such an arrangement could be financed with state revenue bonds or federal funding. An institution similar to the Agricultural Development Banks used in many Third World countries, involving a combination of public and private sector funding, might be a viable institutional innovation in the U.S. capital markets at the present time.

**Information** to facilitate the adjustment process, including programs to facilitate the merger of business firms, to retrain and relocate people, and to disseminate the best information on adjustment strategies and resource availability could be provided through public policy. However, it appears that such programs would be an inadequate response to the current financial stress problem in agriculture.

## Conclusions

A significant number of farmers are suffering financial stress. Given the complex nature of the problem, a public policy approach that focuses only on one characteristic of that problem will probably be ineffective. Specifically, price and income support programs, which have been the major component of agricultural policy in the past, may be quite inef-

fective in solving the current problem and may, in fact, compound and contribute to long run financial problems in agriculture.

Alternative policy options appear better targeted to the problem. While spiraling farm debt suggests that debt restructuring is the answer to the current financial stress, a restructuring of agricultural assets remains the key to a long-term solution. Results of both firm level and aggregate analyses indicate that asset restructuring through sale-leasebacks is preferable to interest rate buy-downs or liability restructuring in reducing financial stress for individual farm firms and the industry. Rearranging liabilities is not a permanent solution to the current financial stress, because even with more time to repay, many farmers will not be able to service their debt with current or expected interest rates, productivity, and input and commodity prices. However, debt restructuring is an important mechanism for buying time to implement more permanent solutions. Asset restructuring, including liquidation, debt reductions, and equity infusions, will be required to improve the long-term survivability of many farm businesses. The aggregate analyses indicate that a general reduction in interest rates and more rapid growth in exports would significantly reduce the financial stress that the U.S. agricultural sector is now facing.

One of the key objectives of any public policy to alleviate financial stress should be to protect the resource markets from collapsing. Stabilizing resource values is critical to maintaining the stability of the agricultural production sector and rural communities. But using government intervention to stabilize resource values at levels that are not supportable in the long run by market prices can result in very high government expenditures, inefficient resource allocation, and higher consumer prices for food products.

The agricultural sector has suffered significant wealth losses. An important public policy concern is how those losses will be shared among the various members of the private sector, and between the public sector and the private sector. A related concern is how to minimize the losses. What may be needed is a public sector contingency plan that can provide a safety net in case the farm economy continues to be stagnant or the resource markets begin to collapse. A strategy of doing nothing today

could, if the financial condition of agriculture continues to deteriorate, very easily result in irresistible political and economic pressures later to implement drastic options, such as a general and extended debt moratorium or significant increases in commodity support prices. But inappropriate action now may interfere with the long-run adjustments in resource values and utilization that must occur in order that the United States retain an efficient and financially sound agricultural sector.

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<sup>1</sup> The first article in this publication, "The Financial Stress In Agriculture," by Gary Benjamin,

provides a discussion of the causes, extent and nature of the current financial stress in the farm sector.

<sup>2</sup> "Financial Stress in Agriculture," Summary of presentations at a workshop on October 22, 1984, at the Kansas City Federal Reserve Bank.

<sup>3</sup> Bankruptcy Act, Chapter 7, Public Law No. 95-593. 92 Stat. 2549, 1978.

<sup>4</sup> J. W. Looney, "The Bankruptcy Reform Act of 1978 and the Farmer: A Survey of Applicable Provisions," *South Dakota Law Review*, vol. 35, 1980, pp. 509-27.

<sup>5</sup> Harl, Neil E., "Restructuring Debt In Agriculture," Department of Economics, Iowa State University, Ames, Iowa. May, 1984.

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