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# **The 1987 Agricultural Recovery: A District Perspective**

**T**HE agricultural economy showed signs of a strong recovery in 1987. This resurgence came after five years of rising farm bankruptcies, falling land values and commodity prices, declining exports and low farm incomes. Just over one year ago, the U.S. Department of Agriculture (USDA) expected that many of these indicators would continue to decline or show only modest improvement.

This article examines the factors behind last year's farm sector recovery. It briefly describes the recent farm crisis and the improvements that took place in the nation and the Eighth Federal Reserve District.<sup>1</sup> Thus far, the farm recovery has been heavily dependent on government aid, and stronger market conditions are needed if the agricultural sector is to fully recover.

## **FROM BOOM TO BUST**

The 1970s were boom years for U.S. agriculture. Farm income, exports and land values all regis-

tered sharp and largely unexpected gains due to the expansion of international agricultural trade early in the decade. Expectations that food scarcity would remain a long-term world problem, pushing commodity prices and farm income to new highs, drove farmland values to ever higher levels.

In the early 1980s, however, it became evident that farm exports would decline and that farm income growth would fall short of earlier expectations. From 1980 to 1986, farmers lost \$293 billion in equity as farm real estate values declined to reflect the lower earning potential. Moreover, as crop prices fell by 14.4 percent from 1980 to 1986, many farmers were unable to meet their debt obligations. Furthermore, they could not pay off their loans by selling their land because the debt on the land frequently exceeded the new, lower market values. As a result, many farmers went bankrupt.

Farm lenders also were hurt when the farmland they used as loan collateral was no longer sufficient to cover the loan balance. As farmers de-

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<sup>1</sup>The Eighth Federal Reserve District comprises all of Arkansas and parts of Illinois, Indiana, Kentucky, Mississippi, Missouri and Tennessee. Because of data limitations, this article uses the entire states of Arkansas, Kentucky, Missouri and Tennessee to represent the District when farm income and crop production are discussed. Since comprehensive bank data are available, the entire District is assessed in the discussion of agricultural lending.

faulted on loan payments, lenders incurred losses on the repossessed land. The cooperative Farm Credit System (FCS), which had profits of almost \$2 billion from 1982 to 1984, lost more than \$4.6 billion from 1985 to 1987. Fifty agricultural banks failed from 1982 to 1984, but 202 failed from 1985 to 1987.<sup>2</sup> Losses were not restricted to farmers and their lenders alone; other rural businesses such as farm equipment and automobile dealers faced lower demand for their products as a result of lower farm-related income.

## THE RECOVERY

The stage was set for the farm sector recovery in 1986 when good weather conditions resulted in abundant yields of major crops for most parts of the country. The high levels of production in conjunction with government support payments resulted in improved financial performance for farmers. Crop conditions in 1987 again were favorable, and the farm sector began to show indications that the worst was over.

### *Farm Finances*

The strongest evidence of recovery in farm finances is provided by real net farm income, a comprehensive measure of farm profitability.<sup>3</sup> Because of gains over the past two years (see chart 1), real net farm income has returned to the levels that prevailed before the boom of the early 1970s. These recent gains were both large and unanticipated, making them particularly noteworthy.<sup>4</sup>

Table 1 presents the income statement of the farm sector since 1980. It indicates that, while farm receipts actually fell in 1986 and 1987, net farm income rose because of rising government payments and falling farm expenses. From 1984 to 1987, farmers cut expenses by 17 percent, or \$24

billion. Expenses have fallen for three main reasons. First, farmers removed 69 million acres (17 percent of all "readily usable" cropland) from production in order to participate in government farm programs in 1987. As acreage was reduced, farmers needed fewer inputs. Second, prices for inputs such as livestock feed, credit, chemicals and fertilizers fell. Finally, farmers reduced their rates of usage of many inputs on the acreage they did farm.

Consider credit, for example. Since 1983, total farm debt has declined by more than \$50 billion to \$141 billion in 1987. This reduction occurred through a combination of actions by individuals and debt restructuring and write-offs by farm lenders. Because of falling interest rates and reduced debt levels, farm interest expense fell by \$7 billion, or 32 percent, from 1983 to 1987.

### *Rising Farmland Values*

Strength in farmland values is one of the most widely reported indicators of the farm sector recovery. The USDA estimates that after falling for five straight years, the value of farm real estate appreciated by 3.1 percent in 1987.<sup>5</sup> The combination of stabilizing farm asset values and lower debt levels (shown in chart 2) has strengthened the farm sector's balance sheet. Last year was the first in the past seven in which farm equity increased; it regained more than \$34 billion of the \$293 billion of equity lost earlier.

### *Increased Farm Exports*

Like other farm sector indicators, agricultural exports increased in 1987, after falling generally since 1981. The volume of farm exports grew by 18 percent in 1987 to more than 129 million metric tons (mmt). Because of lower prices, however, the

<sup>2</sup>Agricultural banks are those with an agricultural loan to total loan ratio greater than the average loan ratio for all commercial banks in the United States. At the end of 1987, the average ratio was 15.7 percent.

<sup>3</sup>Net farm income is calculated as the difference between gross farm income (including government payments and inventory changes) and total expenses (including interest payments and depreciation). Net farm income is generally regarded as a long-term measure of a farm business' viability because it includes the influence of depreciation and adjusts for inventory changes.

<sup>4</sup>At the end of 1986, the USDA anticipated that net farm income would continue to grow by 14 percent from \$28 billion in 1986 to \$32 billion in 1987 (not adjusted for inflation). These esti-

mates of the initial level and growth of income were too low. Farm income for 1986 later was revised from \$28 billion to \$37.5 billion. The projection for income growth in 1987 also proved too low, as income now is forecast to have grown by 20 percent to a new record of \$45 billion in 1987.

<sup>5</sup>U.S. Department of Agriculture, *Agricultural Resources* (April 14, 1988).

Chart 1

## U.S. Real Net Farm Income

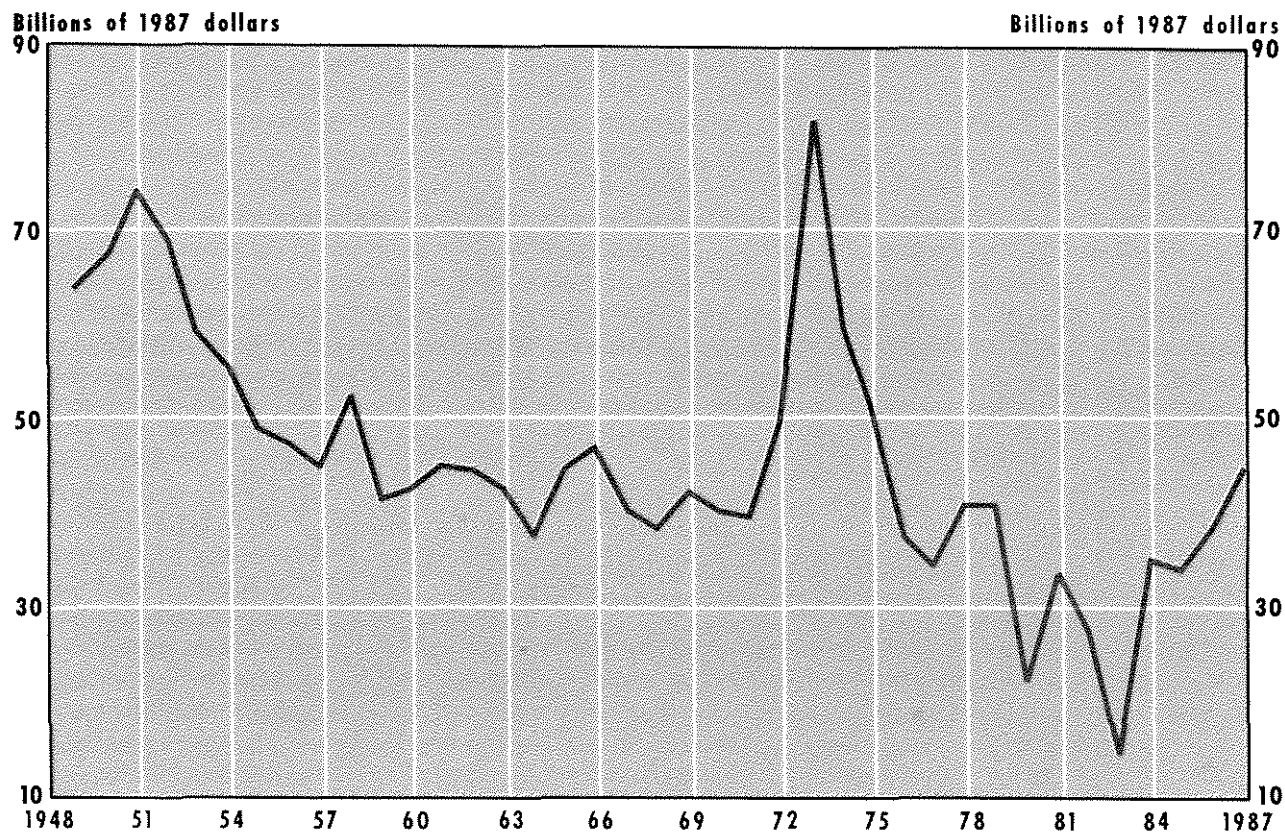


Table 1

## Farm Sector Income Statement (billions of dollars)

	1980	1981	1982	1983	1984	1985	1986	1987 <sup>1</sup>
Farm receipts	\$142.0	\$144.1	\$147.1	\$141.1	\$146.7	\$149.2	\$140.2	\$138
Government payments	1.3	1.9	3.5	9.3	8.4	7.7	11.8	17
Total farm income <sup>2</sup>	149.3	166.3	163.5	153.1	174.7	166.0	159.5	163
Total expenses	133.1	139.4	140.0	140.4	142.7	133.7	122.1	119
Net farm income	16.1	26.9	23.5	12.7	32.0	32.3	37.5	45

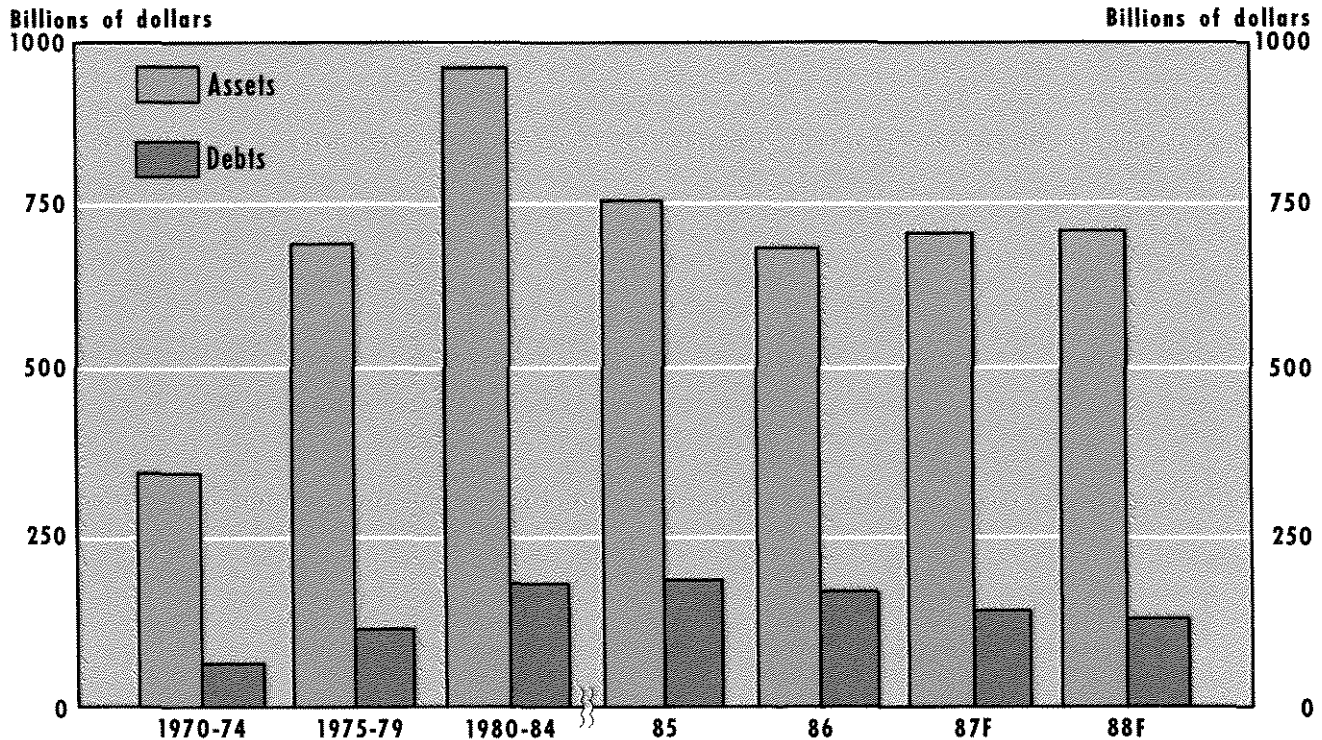
<sup>1</sup>Values for 1987 are forecasts.

<sup>2</sup>Total net farm income includes the value of inventory changes. Net farm income totals may not add due to rounding. Data are not adjusted for inflation.

SOURCE: *Agricultural Outlook* (March 1988), p. 54, table 32

Chart 2

## Farm Sector Balance Sheet



NOTE: F=forecast.

Source: Agricultural Outlook (Jan.-Feb. 1988), p.25.

value of agricultural exports rose by only 6 percent to \$28 billion in 1987.<sup>6</sup>

### *Agricultural Lenders*

Because of higher farm income, conditions at agricultural banks and the Farm Credit System improved in 1987. Delinquent farm loans at agricultural banks declined from 8.1 percent of farm loans in 1985 to 6.4 percent in 1986 and to 4.0 percent at the end of 1987.<sup>7</sup> The average return on assets at agricultural banks also improved, rising from .43 percent in 1986 to .69 percent in 1987. Although loan performance and earnings improved, agricultural banks continued to fail; there

were 32 failures in 1984, 68 in 1985, 65 in 1986 and 69 in 1987. The volume of farm loans by all commercial banks at the end of 1987 was only .7 percent lower than one year earlier. This represents a slowing in the decline of farm lending by banks. Farm loans had declined by approximately 6 percent in both 1985 and 1986. In 1987, farm real estate loans grew by 14.1 percent while farm operating loans fell by 6.7 percent.

Improvement at the FCS was also significant. Although the FCS lost \$17 million in 1987, this was much smaller than its \$1.9 billion loss in 1986 or its \$2.7 billion loss in 1985. Losses for 1987 had been projected to reach \$1.3 billion. Farm loan

<sup>6</sup>U.S. Department of Agriculture, *Agricultural Outlook* (March 1988), p. 52, table 30.

<sup>7</sup>The farm loan delinquency rate used here expresses the total of farm loans classified as past due 30 days or more and farm loans in nonaccrual status as a percentage of total farm loans outstanding.

volume fell 9.8 percent in 1987 after falling 16.6 percent in 1986. Additionally, the FCS made progress by reducing its portfolio of problem loans. Nonaccrual and other high-risk loans fell from \$12.8 billion in 1986 to \$9.5 billion in 1987. Nationally, the rate of nonperforming loans, which increased from 14.5 percent in 1985 to 22.6 percent in 1986, recovered to 20.1 percent in 1987.<sup>8</sup>

The congressional rescue plan for the FCS, known formally as the Farm Credit System Amendments of 1987, was a significant development for District farm lenders. The bill gave the FCS government loan guarantees as well as access to the U.S. Treasury to help support weak FCS districts. In exchange, however, Congress issued more liberal guidelines for handling farm foreclosures by the FCS and the Farmers Home Administration. It also mandated that the FCS be restructured from its current 12 districts to a minimum of six districts to reduce operating expenses. The St. Louis and Louisville districts initially discussed a merger but have not proceeded past the initial stages.

To gain support from the nation's agricultural bankers, the bill also created a secondary market for farm real estate loans known as "Farmer Mac." This secondary market may prove to be an important influence on farm real estate lending. In the past, commercial banks have made only a small share of farm real estate loans (less than 10 percent) because these loans have long maturities. A secondary market for these loans would allow commercial banks to be more competitive in making farm real estate loans. The stronger competition, while desirable for farm borrowers, may make the recovery of the FCS more difficult.

## THE GOVERNMENT'S INFLUENCE ON THE FARM SECTOR

Any discussion of the U.S. farm economy must include the pervasive influence of federal intervention in agricultural markets. Government programs directly affect the market prices and production of supported crops, while indirectly influencing the price and production levels of non-supported crops. Furthermore, government programs have a strong effect on farmland values

because they influence the income potential of crop production. Increasingly, farmers' decisions are based on expectations of government payment levels rather than on signals from competitive market prices. The crop programs, in turn, directly affect the cost structure of livestock producers.

Large price support payments to farmers are the most obvious form of government subsidy. These payments are an important and controversial influence on the farm income gains of recent years. Direct payments rose from \$11.8 billion in 1986 to \$17 billion in 1987 and accounted for more than 37 percent of net farm income. Such payments represented less than 7 percent of net farm income from 1975 to 1979.

Direct government payments affect farmland values in at least two ways. First, crop price supports boost the income derived from crops, thereby increasing the value of the land. Second, under the relatively new Conservation Reserve Program (CRP), farmers make bids to the USDA to take land out of production for 10 years in exchange for guaranteed annual payments. The lowest bids are accepted until the targeted level of acreage retirement is obtained. Thus, CRP increases land values by reducing the supply of land. Furthermore, the certainty of these payments serves to strengthen farmland prices. The CRP has contracted to remove 22.5 million acres of highly erodible land from production since the program began in 1986. By 1990, the program is projected to remove more than 40 million acres of farmland.<sup>9</sup> In 1986, that amount represented 10 percent of total U.S. cropland.

The expansion of farm exports also was influenced by government policy. The volume of agricultural exports grew by 20 mmt. in 1987. Approximately 16 mmt. of this growth came from grain exports. The Export Enhancement Program (EEP), created by the Food Security Act of 1985, was a major factor behind the grain export increase. The EEP addresses the problem that U.S. prices for many commodities have been above world prices due to U.S. price support programs and to subsidized commodity sales by the European Economic Community. The EEP gives government-owned commodities to U.S. exporters to allow them to sell at competitive prices. The

<sup>8</sup>The FCS rate of nonperforming loans is calculated as the sum of restructured, nonaccrual and other high-risk loans expressed as a percentage of gross loans outstanding at the end of the year. This rate is not comparable to the commercial bank delinquency rate.

<sup>9</sup>U.S. Department of Agriculture, *Agricultural Resources* (September 1987), p. 5.



**Table 2**  
**Cash Receipts from Farming in 1985**  
**(dollar amounts in millions)**

<b>Crops</b>	<b>District</b>		<b>United States</b>	
Soybeans	\$1,846	31.5%	\$11,305	15.2%
Tobacco	1,091	18.6	2,722	3.7
Corn	898	15.3	16,821	22.6
Rice	451	7.7	1,114	1.5
Wheat	264	4.5	7,927	10.7
Cotton	364	6.2	3,729	5.0
Sorghum	341	5.8	1,970	2.6
Other Crops	603	10.3	28,825	38.7
<b>CROP TOTAL</b>	<b>\$5,858</b>	<b>49.0</b>	<b>\$74,413</b>	<b>51.6</b>
<b>Livestock</b>				
Cattle + Calves	\$1,825	29.9%	\$29,057	41.6%
Poultry + Eggs	1,691	27.7	10,904	15.6
Dairy	1,017	16.7	18,063	25.9
Hogs	959	15.7	9,029	12.9
Other Livestock	609	10.0	2,727	3.9
<b>LIVESTOCK TOTAL</b>	<b>\$6,101</b>	<b>51.0</b>	<b>\$69,780</b>	<b>48.4</b>
<b>FARM TOTAL</b>	<b>\$11,959</b>		<b>\$144,193</b>	

NOTE: The crop and livestock totals are expressed as percentages of the farm total.

SOURCE: USDA, Economic Indicators of the Farm Sector: National Financial Summary, 1986, and Agricultural Statistics Services of the four states.

USDA estimated that the EEP was responsible for export sales of 20 mmt. of grain in 1987.<sup>10</sup>

## **EIGHTH DISTRICT AGRICULTURE**

The agricultural economy of the Eighth Federal Reserve District is best described by comparing it to the agricultural sector of the nation. In table 2, cash receipt data from 1985 indicate that, in both the District and the nation, livestock and crop production each account for roughly half of all farm receipts. Differences appear, however, when individual crop and livestock categories are examined.

Soybeans make up a much larger share of crop sales in the District (31.5 percent) than in the nation (15.2 percent). Corn, however, is slightly less important in the District (15.3 percent of crop sales) than in the nation (22.6 percent). The nation's large share of "other crops" (38.7 percent)

reflects the importance of vegetables, fruits, nuts and other crops that make relatively small contributions to District agricultural output. Finally, tobacco represents a much larger share of cash receipts in the District than in the nation.

The District's livestock enterprises also vary from the national picture. Both poultry and hog production make up larger shares of production in the District than in the nation, while cattle and dairy production account for smaller shares.

Table 3 provides the same breakdown of cash receipts for the four states used to represent the District. Arkansas is notable as the nation's largest producer of rice and broilers. Kentucky is the nation's second-largest tobacco producer, and tobacco is the most important farm industry in the state. The large share held by "other livestock" is due to the state's large horse industry which is the second-most-valuable farm product after tobacco. Missouri data reflect the state's "corn-belt" heri-

<sup>10</sup>U.S. Department of Agriculture, *Agricultural Outlook* (January-February 1988), p. 28.

**Table 3**  
**1985 Cash Receipts (dollar amounts in millions)**

Crops	Arkansas		Kentucky		Missouri		Tennessee	
Soybeans	\$ 589	40.5%	\$ 259	16.4%	\$ 754	42.8%	\$ 244	23.1%
Tobacco	0	0.0	858	54.2	11	0.6	222	21.0
Corn	12	0.8	324	20.5	434	24.6	128	12.1
Rice	422	29.0	0	0.0	29	1.6	0	0.0
Wheat	58	4.0	34	2.1	146	8.3	26	2.5
Cotton	195	13.4	0	0.0	58	3.3	111	10.5
Sorghum	118	8.1	14	0.9	169	9.6	40	3.8
Other Crops	61	4.2	94	5.9	162	9.2	286	27.1
<b>CROP TOTAL</b>	<b>\$1,455</b>	<b>44.4%</b>	<b>\$1,583</b>	<b>53.9%</b>	<b>\$1,763</b>	<b>47.8%</b>	<b>\$1,057</b>	<b>51.4%</b>
<b>Livestock</b>								
Cattle + Calves	\$ 250	13.7%	\$ 395	29.2%	\$ 754	39.2%	\$ 426	42.6%
Hogs	92	5.0	138	10.2	571	29.7	158	15.8
Poultry + Eggs	1,330	72.9	24	1.8	221	11.5	116	11.6
Dairy	113	6.2	270	20.0	352	18.3	282	28.2
Other Livestock	40	2.2	525	38.8	26	1.4	18	1.8
<b>LIVESTOCK TOTAL</b>	<b>\$1,825</b>	<b>55.6%</b>	<b>\$1,352</b>	<b>46.1%</b>	<b>\$1,924</b>	<b>52.2%</b>	<b>\$1,000</b>	<b>48.6%</b>
<b>FARM TOTAL</b>	<b>\$3,280</b>		<b>\$2,935</b>		<b>\$3,687</b>		<b>\$2,057</b>	

SOURCE: Agricultural Statistics Services of the four states.

tage with its heavy reliance on corn, soybeans, cattle and hogs. Tennessee, with the smallest farm output of the four states, has an important tobacco industry and large greenhouse and vegetable industries which account for the large share held by "other crops."

### ***Crop Production in 1987***

In many respects, the 1987 crop year is a repeat of the previous year. Favorable planting conditions in both years enabled farmers to plant and harvest crops much earlier than usual. In both years, the southern portions of the District experienced periods of dryness that lowered crop yields below initial expectations while northern portions enjoyed sufficient moisture to produce record or near-record yields.

In general, crops that are harvested early, such as corn and cotton, fared better than late-season crops, such as soybeans, because of nearly ideal growing conditions early in the year. Table 4 indicates crop yields in the four states. It shows record cotton yields in Arkansas, Missouri and Tennessee that were far above both the 1986 and the recent average yields. These record cotton yields are attributed to the early planting, favorable rains

and ideal harvest conditions. Another early crop, wheat, also produced large yields.

Corn yields in Missouri, although slightly under the record levels of 1986, were well above the average yields of the past three years. In Kentucky, the corn yields set a new record, while in Tennessee, they exceeded the previous year's and the recent average yields.

Soybeans, the District's most valuable crop, had been expected to produce large yields based on the early planting and the initial progress of the crop. Dry weather in late July and August in southern parts of the District, however, reduced yields. In Arkansas, Kentucky and Tennessee, soybean yields were below their recent average yields; only in Arkansas were soybean yields above last year's level. Late season dryness also affected Missouri soybean farmers but not to the extent of farmers to the south. The Missouri soybean yield was below 1986 levels but above the recent average yield. Similarly, tobacco yields in Kentucky and Tennessee were higher than in 1986, but below yields in recent years.

### ***Livestock Production in 1987***

Production of cattle and calves in the District fell by 1.9 percent in 1987. Nationally, the decline

**Table 4**  
**Eighth District Crop Yields<sup>1</sup>**

Arkansas				Kentucky			
Crop	1987	1986	1984-86 average	Crop	1987	1986	1984-86 average
Cotton	762	602	667	Corn	104	92	98
Rice	5,250	5,300	5,033	Soybeans	25	32	32
Sorghum	72	62	69	Tobacco	2,125	2,050	2,238
Soybeans	22	20	24	Wheat	49	33	35
Wheat	41	41	39				

Missouri				Tennessee			
Crop	1987	1986	1984-86 average	Crop	1987	1986	1984-86 average
Corn	113	116	102	Corn	91	74	89
Cotton	830	588	598	Cotton	701	567	555
Sorghum	85	81	78	Soybeans	23	25	27
Soybeans	32	32.5	29	Tobacco	1,782	1,682	1,936
Wheat	46	33	38				

<sup>1</sup>Crop yields are measured as bushels per acre for corn, sorghum, soybeans and wheat and as pounds per acre for cotton, rice and tobacco.

SOURCE: Agriculture Statistics Services of the four states.

was .5 percent. Most of the decline came in Missouri, the District's largest cattle producer where production was off by 3.4 percent. In Arkansas, cattle production increased by 3.9 percent. District hog production declined by .2 percent, but this was due to a 23.4 percent decline in Tennessee. Hog production was up 8.1 percent in Arkansas, 9.3 percent in Kentucky and 2.7 percent in Missouri. Nationally, production increased 5.2 percent.

The largest increase in meat production came from poultry. Arkansas, the nation's leading producer of broilers, posted a 14.4 percent increase in broiler production. District broiler production was up 14.1 percent; nationally, broiler output grew 9.5 percent in 1987.

### *District Farm Income Growth*

District farm income data are available with a one-year lag. In general, however, they closely correspond to national farm income trends. Chart 3 plots movements in the close relationship between real net farm income in the United States and the District. The large increase in national farm income last year suggests that District farm income also increased sharply in 1987.

The sources of farm income growth in the District also follow a similar pattern as those in the

country. In 1986, government farm payments accounted for 27 percent of District net farm income, up from 20 percent in 1985. In 1987, the national figure jumped to 38 percent from 32 percent in 1986; the District level of government support is likely to have increased as well.

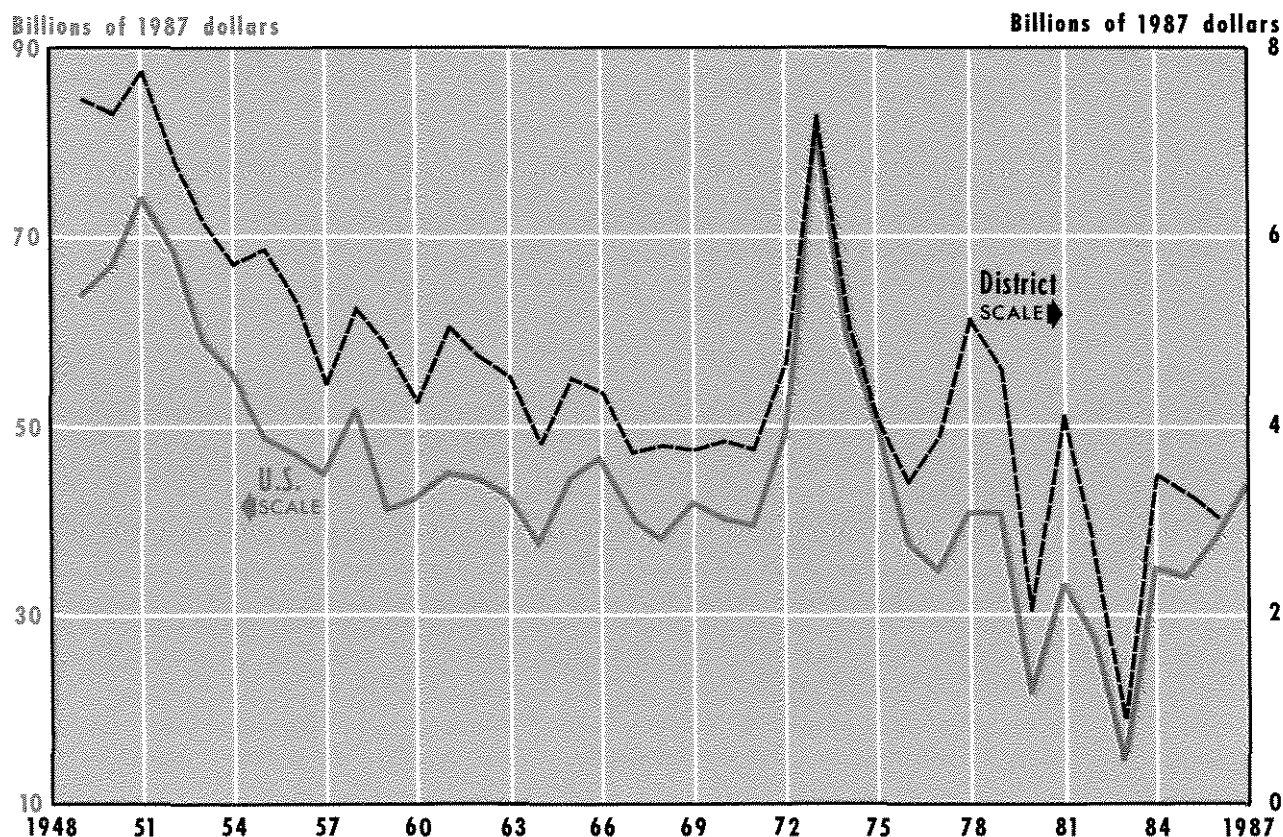
The financial position of District farmers was also strengthened by a recovery in the market for farmland. Farmland values increased in three of the four District states for the year ending February 1988. The average value of farmland increased 1.7 percent in Arkansas, 3.6 percent in Missouri and 9.1 percent in Tennessee. In Kentucky, land values fell .6 percent. In the previous year, values had fallen in all of the states except Tennessee.

### *District Agricultural Lenders*

Agricultural bank performance improved significantly in 1987 both in the nation and in the District. Nationally, agricultural bank profitability improved in 1987 for the first time since 1980. In the District, agricultural banks' return on assets rose from .71 in 1986 to .83 in 1987. The improved profitability is attributable to reduced losses and lower farm loan delinquency rates. Losses at District agricultural banks fell from 1.6 percent of all loans in 1986 to 1.0 percent in 1987. Farm loan



Chart 3  
**U.S. and District Real Net Farm Income**



delinquencies fell from 6.6 percent in 1985 to 5.4 percent in 1986 and to 3.5 percent in 1987.

As the delinquency rate has fallen, so too has the number of vulnerable agricultural banks. Vulnerable banks are those for which the volume of delinquent loans exceeds primary capital. At the end of 1985, there were 18 vulnerable agricultural banks in the District. This fell to 11 in 1986 and to six at the end of 1987. The number of banks with negative earnings also fell in 1987 after rising in 1986. There were 62 banks with losses in 1985, 73 in 1986 and 39 in 1987.

Despite combined losses in 1987, the performance of the Farm Credit Banks of St. Louis and Louisville improved in 1987.<sup>11</sup> The combined losses of the two Farm Credit System banks fell from \$228.0 million in 1986 to \$6.7 million in 1987. Large reductions in the banks' provisions for loan losses and lower losses on property owned account for the improved results.

Loan volumes at FCS lenders also continued to decline in 1987 but at a slower rate than in recent years. Total loans at the two FCS lenders fell 14.2 percent in 1987 after falling 19.8 percent in 1986.

<sup>11</sup>There are two FCS districts in the Eighth Federal Reserve District. The Farm Credit Banks of St. Louis cover the states of Arkansas, Illinois and Missouri, while the Farm Credit Banks of Louisville cover the states of Indiana, Kentucky, Ohio and Tennessee. In 1987, the St. Louis district had a combined net income of \$18.4 million and the Louisville district had losses of \$25.1 million.

The rate of nonperforming loans rose from 16.8 percent in 1985 to 26.0 percent in 1986, then declined to 24.6 percent in 1987.

## SUMMARY

During much of the 1980s, the agricultural community was hit hard by large losses of farmers' equity due to farmland depreciation, farm bankruptcies, farm lender losses and a general decline in many rural economies. Over the past year, however, the farm sector appears to have become more stable as evidenced by rising farm income, falling loan delinquency rates and firming land values.

The recent restructuring of the farm sector will help the recovery continue. These adjustments include lower use of credit, reduced problem debt, general cost-cutting by farmers, lower farmland values and more internationally competitive pricing of farm commodities. Much of the farm sec-

tor's recovery, however, is the result of a sharp rise in government payments and subsidies. The continuing presence of government support programs will profoundly influence the future of the recovery in both the nation and the Eighth District.

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