FEDERAL RESERVE BANK OF CHICAGO

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FARM EQUIPMENT SALES continued sluggish in the latter months of 1983, in marked contrast to the upturn that analysts had been expecting. Reports from the Farm and Industrial Equipment Institute (FIEI) show that unit retail sales of such items as self-propelled combines, small balers, forage harvesters, mower conditioners, and corn heads in the fourth quarter ranged from 22 to 42 percent below year-earlier levels. The only positive note was an early fall spurt that pushed fourth-quarter unit sales of farm tractors with 40 or more horsepower 8 percent above the year-before pace. Despite the poor overall performance in the fourth quarter, industry analysts believe that 1984 will bring an upturn in farm equipment sales.

The poor fourth quarter results capped a dismal 1983 and extended the steep downturn that began in late 1979. Unit sales of mower conditioners and small balers posted nominal increases in 1983. But unit sales of all other items of farm equipment covered in the FIEI reports posted sharp declines last year. Unit retail sales of farm tractors with 40 horsepower or more were off 7.5 percent from the year before, despite a marked pickup in sales of larger two-wheel drive tractors. Unit sales of self-propelled combines, forage harvesters, windrowers, corn heads, and grinder-mixers were down 20 to 27 percent. Relative to the strong performance in 1979, last year's unit sales of items covered by the FIEI were off anywhere from about 45 percent (for mower conditioners) to nearly 70 percent (for corn heads).

Farm equipment sales in the five states included in the Seventh Federal Reserve District have roughly paralleled the national downtrend since 1979. In 1983, unit retail sales of farm tractors in the District states were down 13 percent from the year before and 56 percent from 1979. Combine sales were off 17 percent from the year before and 59 percent from four years earlier. The District states account for about a fifth of the tractor sales nationwide and nearly a third of the unit sales of self-propelled combines.

Unit Sales of Farm Equipment in the U.S.

				Percent change	
	1979	1982	1983	1982-83	1979-83
Tractors, 40 plus HP					
Two-wheel drive					
40-99 HP	65,000	41,134	38,083	– 7.4	–41.4
100-139 HP	40,932	18,711	14,502	–22.5	–64.6
140 HP or more	21,603	10,536	13,652	+29.6	–36.8
Four-wheel drive	11,455	6,763	5,099	–24.6	–55.5
Total	138,990	77,144	71,336	– 7.5	–48.7
Self-propelled combines	32,246	16,205	12,751	–21.3	–60.5
Balers (bales under 200#)	18,750	8,905	9,037	+ 1.5	–51.8
Forage harvesters	12,451	5,145	4,091	–20.5	–67.1
Mower conditioners	25,600	13,981	14,261	+ 2.0	–44.3
Windrowers	8,615	4,162	3,047	–26.8	–64.6
Grinder-mixers	11,673	5,176	4,018	–22.4	–65.6
Corn heads	22,374	9,294	6,830	–26.5	–69.5

SOURCE: Farm and Industrial Equipment Institute.

The prolonged downturn in farm equipment sales reflects the financial stress among farmers in recent years—especially highly leveraged farmers—compounded in 1983 by drought and government farm programs that lowered the harvested acreage of principal crops by nearly 17 percent from the year before. The downturn is vividly reflected in annual gross capital expenditures on machinery and equipment in the farm sector. During the decade of the 1970s, such expenditures rose at a compound annual rate of 12.5 percent, peaking at nearly $12 billion in 1979. But following that peak, the combination of high interest rates, depressed commodity prices—due to bumper harvests in 1981 and 1982 and sagging export markets—and periodic droughts and acreage restrictions have caused a downturn. By 1982, annual capital expenditures by farmers on machinery and equipment had fallen to $8.1 billion—the lowest since 1976—and a further decline no doubt occurred last year.

Inventories of farm equipment in the hands of dealers and manufacturers declined slightly last year but remain large relative to past and prospective sales. As of the end of December, inventories of farm tractors with 40 or more horsepower were down 8 percent from the year before. Combine inventories were down 6 percent from the year before. Inventories of mower conditioners and grinder-mixers were down 17 and 13 percent, respectively, from the year before while those for corn heads, small balers, windrowers, and forage harvesters were down 22 percent to 30 percent. Despite the cutbacks, inventories remain large relative to the depressed level of sales. Reflecting this, the year-end inventory of farm tractors with 40 or more horsepower was equivalent to over 92 percent of the units sold in 1983. Combine inventories at the end of last year slightly exceeded the number sold throughout 1983. While not evenly distributed, the inventories are sufficient to accommodate an upturn in sales. As a result, production schedules at many manufacturers may not rise appreciably until an upturn in farm equipment sales is confirmed.

Prospects for this year foreshadow an upturn in farm equipment sales but there is considerable uncertainty about the extent of the upturn. A December survey by the FIEI of its member firms showed considerable variations in forecasted unit sales for 1984. The consensus, however, projected that sales of farm tractors with 40 or more horsepower would rise to 78,900 units this year, up about 11 percent from last year's outturn. Larger tractors, especially four-wheel drives, were expected to pace the rise. Reflecting expectations for a rebound in crop acreage, the projected level of combine sales, at 17,250 units would represent a rise of 35 percert from 1983. Corn heads were expected to record an even larger increase. For forage harvesters, windrowers, and mower conditioners, the unit sales increases projected for 1984 are 2 to 13 percent while for small balers the consensus points to a slight decline from actual 1983 sales.

Analysts note several factors that are likely to contribute to an upturn in farm equipment sales, including stable-to-declining interest rates and the pent up demand that has developed during the sharp downturn in equipment sales the past four years. But the major factors underpinning the anticipated rise are the improved farm earnings of 1983 and the expectations of a sharp recovery in 1984 crop acreage.

Measures of net cash income and net realized income (excluding inventory adjustment) in the farm sector rose substantially to new highs in 1983. This will undoubtedly contribute to some pickup in capital expenditures by farmers. But the gains in farm earnings in 1983 were distributed more unevenly than is typically the case, leaving many farmers still facing considerable financial stress. Moreover, initial forecasts for 1984 point to likely declines in these measures of net sector earnings, dampening somewhat the enthusiasm for this year's recovery in farm equipment sales.

The extent of this year's increase in crop acreage will be sizeable, also contributing to an upturn in farm equipment sales. However, recent evidence seems to be suggesting that the rise may not be sufficient to pull 1984 crop acreage back to the level of two years ago as many analysts had originally expected. A recent report from the USDA on farmers' planting intentions indicates that only about two-thirds of the acreage removed from production in 1983 will come back on stream this year. Moreover, the recent decision to extend the enrollment period for 1984 government crop programs to March 16, in conjunction with lower than expected crop prices, may further undermine the chances of the 1984 crop acreage returning to the levels of two years ago.

Gary L. Benjamin

MILK PRODUCTION continued to rise in 1983, reaching a record high of 140 billion pounds. Increases in the number of dairy cows as well as output per cow contributed to the fifth consecutive annual increase in milk production. The rise in milk production has been accompanied by a record level of Commodity Credit Corporation (CCC) purchases of excess dairy products. The persistent excess supply of milk prompted the introduction of dairy legislation in late 1983 that reduced support prices and instituted a paid diversion program for dairy farmers. Sign-up for the voluntary paid diversion program, however, was considerably less than anticipated, casting doubt about the program's effectiveness in reducing the excess supply of milk and the burdensome cost of the dairy support program.

Output per dairy cow rose to 12,587 pounds in 1983, up 2 percent from the previous year. This record level of output per cow was accompanied by a 1 percent year-to-year increase in the number of dairy cows to 11.1 million head in 1983. These factors boosted 1983 milk production 3 percent above the previous year's level.

Trends in District states varied somewhat from the nation. While the number of milk cows was virtually unchanged, higher output per cow resulted in a 3 percent increase in milk production in the five District states last year. The year-to-year increases ranged from less than 1 percent in Indiana to 5 percent in Michigan.

Milk price received by farmers in 1983 averaged $13.56 per hundredweight, little changed from the previous year. However, adjusting for the two 50-cent assessments imposed during the year—one starting in April and the other in September—lowered the effective milk price by almost 4 percent from the previous year's level. Although the decline in the effective milk price was partially offset by the rise in milk production, preliminary indications point to a decline in 1983 cash receipts to dairy farmers of almost 1 percent from the previous year.

In order to maintain the support price of milk in the face of excess production, the CCC purchases manufactured dairy products. Since 1980, the milk equivalent of CCC purchases as a percent of total milk marketings by dairy farmers has nearly doubled, reaching 12 percent in 1983. In fiscal 1983, which ended in September, the milk-equivalent of the CCC net purchases totaled a record high 16.6 billion pounds at a cost of $2.5 billion. To contain the burgeoning costs of the dairy support program, legislation was enacted in December that laid the groundwork for a program to cut support prices and pay dairy farmers to reduce production.

The legislation replaced the two 50-cent deductions in effect in 1983 with a 50-cent per hundredweight cut in the milk support price and a 50-cent deduction per hundredweight marketed to help defray the cost of the paid diversion program. While this leaves the effective milk price received by dairy producers unchanged, the price support cut will translate to lower retail prices and a boost in consumer purchases of dairy products.

The paid diversion program for dairy producers began on January 1. The legislation calls for the payment of $10 per hundredweight for reduced marketings of between 5 and 30 percent of farmers' base production. The base production for the 15-month program is determined as either 1982 production with the first quarter's output counted twice or the average of 1981 and 1982 adding the first quarter of each year's production twice.

Sign-up for the paid diversion program was considerably below USDA expectations. USDA figures indicate that only about 12 percent of all dairy producers enrolled in the program, contracting to reduce their milk output by almost 23 percent from their base level. In District states, 15 percent of the dairy farmers enrolled in the program with the proportion ranging from 11 percent in Indiana to 22 percent in Iowa. District farmers who enrolled in the program agreed to reduce milk production by 21.5 percent from their base.

Although total enrollment and diversion figures for the program suggest that milk production this year might be down as much as 5 percent from 1983, the actual reduction in output is likely to be substantially less. Many of the producers enrolled in the program marketed less milk in 1983 than in their base period and will be paid for production cuts undertaken prior to the new program. Marketings by this group in 1983 totaled 28.6 billion pounds, almost 4 billion pounds less than their base production. Therefore, to meet the contracted level of reduction, participating dairy producers must cut 1983 output by only 3.5 billion pounds in 1984. A cut of this magnitude would represent a 2.5 percent drop from 1983 milk production, assuming dairy farmers not in the program hold their production at last year's level.

However, with the January 1 numbers of milk cows on farms and dairy heifers held for replacement virtually unchanged from a year ago, there is no indication that non-participants are poised to reduce the number of cows milked in 1984. Moreover, the effective milk price received by dairy farmers is at about the same level as in the fourth quarter of 1983 when milk output registered a 3 percent year-to-year gain. With the effective milk-feed price ratio no lower than in late 1983 and likely to improve this year, there appears to be little indication that non-participants are contemplating a reduction in milk output.

The outlook for milk production is still uncertain. While the paid diversion program's effect on milk production will be considerably less than had been anticipated, the response of non-participants is still unknown. Longer-term considerations may come to play an important role in shaping the production plans of those outside of the program. Current USDA projections of milk production for the fiscal year that began in October point to a 2 percent decline from year-ago levels. Although commercial use is expected to show a 2 percent increase, CCC net removals are still projected to total 11.4 billion pounds for the fiscal year. If projected removals remain slightly above half that level at the end of the program, the current legislation calls for additional 50-cent reductions in the milk support price in April and July 1985. As the expiration date of the paid diversion plan approaches, dairy farmers will have to reappraise their situation in light of a potential $11.60 per hundredweight milk support price.

Peter J. Heffernan

Selected agricultural economic developments

Subject	Unit	Latest period	Value	Percent change from Prior period	Percent change from Year ago
Farm finance					
Total deposits at agricultural banks†	1972-73=100	December	287	– 0.3	+10
Total loans at agricultural banks†	1972-73=100	December	299	+ 0.2	+ 7
Production credit associations					
Loans outstanding					
United States	mil. dol.	January	18,327	– 2.2	– 6
Seventh District states	mil. dol.		N.A.	N.A.	N.A.
Loans made					
United States	mil. dol.	January	2,983	+ 2.8	– 5
Seventh District states	mil. dol.		N.A.	N.A.	N.A.
Federal land banks					
Loans outstanding					
United States	mil. dol.	January	48,014	–0.1	+ 2
Seventh District states	mil. dol.		N.A.	N.A.	N.A.
New money loaned					
United States	mil. dol.	January	379	+44.3	+ 7
Seventh District states	mil. dol.		N.A.	N.A.	N.A.
Interest rates					
Feeder cattle loans††	percent	4th Quarter	13.68	+ 0.6	– 8
Farm real estate loans††	percent	4th Quarter	13.33	+ 0.4	–11
Three-month Treasury bills	percent	2/23-2/29	9.20	+ 3.4	+16
Federal funds rate	percent	2/23-2/29	9.62	+ 2.2	+14
Government bonds *(long-term)*	percent	2/23-2/29	12.16	+ 3.6	+16
Agricultural trade					
Agricultural exports	mil. dol.	December	3,499	+ 0.6	+21
Agricultural imports	mil. dol.	December	1,335	– 3.7	+ 9
Farm machinery sales[p]					
Farm tractors	units	January	7,466	+ 9.6	+ 1
Combines	units	January	1,086	– 9.7	–40
Balers	units	January	278	+62.6	–29

†Member banks in Seventh District having a large proportion of agricultural loans in towns of less than 15,000 population.

††Average of rates reported by District agricultural banks at beginning and end of quarter.

[p]Preliminary.

N.A. - Not available.

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