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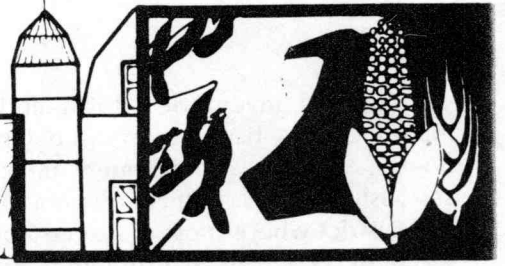
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FEDERAL RESERVE BANK OF CHICAGO

# AGRICULTURAL



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# LETTER

**FARM TRACTOR AND EQUIPMENT SALES** slumped further in recent months, extending the downturn that began in late 1979. Preliminary estimates from the Farm and Industrial Equipment Institute indicate that unit retail sales of farm tractors with 40 or more horsepower through November of this year were down a fourth from the same period in 1981 and down 45 percent from the strong pace of three years ago. Unit retail sales of 4-wheel drive tractors through November were down 31 percent from the same period a year ago and down 42 percent from the record level of three years ago. Retail sales of 2-wheel drive tractors over 100 horsepower were off 32 percent from last year and were only half the 1979 level. Combine sales through November were down 44 percent from last year and down 54 percent from 1979's level.

Relative to a year ago, the downturn in farm equipment sales has steepened in recent months. Year-to-year declines in unit retail sales of tractors with 40 or more horsepower widened from 9 percent in the first quarter to 29 percent in the second quarter and 30 percent in the third quarter. For the latest two months, October and November, the decline was 34 percent. Combine sales also deteriorated as the year progressed. Unit retail sales of combines were down 38 percent from the year before in the first quarter, 41 percent in the second quarter, 44 percent in the third quarter, and 48 percent for October and November.

The downturn in farm equipment sales is evident not only for farm tractors and combines, but also for most categories of equipment. Through November, unit retail sales of balers producing bales of less than 200 pounds were down over a third from the year before. However, unit retail sales of such balers have been in a pronounced downtrend since 1973. Mower-conditioner sales declined a fourth, while forage harvester sales were down about a third from the year-earlier level. Unit sales of manure spreaders were down 11 percent.

Sales in District states, an important market for farm equipment manufacturers, were about as dismal last year as for the country as a whole. Tractor sales were down 24 percent for January-October from the same period a year ago, while unit sales of combines were off 48 percent. (Figures on November sales for individual

## Trends in unit sales and inventories of farm tractors

	Units sold Jan.-Oct. 1982		Ending October inventory	
	Number (thou.)	Change* (percent)	Number (thou.)	Change* (percent)
Two-wheel drive (by horsepower rating)				
40-59	16.3	-15	12.3	-26
60-79	11.5	-22	11.0	-22
80-99	8.1	-19	7.7	- 5
100-119	5.4	-34	7.4	- 3
120-139	10.8	-30	13.5	+ 5
140-159	1.0	-72	2.3	+ 9
160-179	5.0	-19	9.0	+46
180 and over	2.8	-15	5.2	+54
total	61.0	-24	68.5	- 4
Four-wheel drive	5.7	-29	6.0	-13
All farm tractors	66.7	-25	74.6	- 4

\*From year earlier.

states are not yet available). Year-to-year comparisons indicate that unit retail sales of forage harvesters and manure spreaders were more dismal in the District than nationwide, while unit retail sales of mower conditioners and balers were somewhat better. Sales lagged year-earlier levels in all District states, but the rate of decline varied. Tractor sales were down the most in Iowa, Michigan, and Wisconsin, while combine sales were off the most in Michigan and Wisconsin.

Dealers' and manufacturers' inventories are at burdensome levels with respect to the low sales. The unsold inventory of farm tractors at the end of October was down 4 percent from the year before, but equivalent to 91 percent of the tractors sold over the preceding 12 months. In other words, tractors were on hand to cover 11 months of sales at the rate of the previous 12 months. The inventory of 2-wheel drive tractors was equivalent to 92 percent of the units sold in the previous 12 months, while the inventory of 4-wheel drive tractors was equal to 82 percent of the previous year's sales. The inventory of combines was down 7 percent from the year before, and equivalent to over 11 months of sales. Inventories of balers, forage harvesters, mower-conditioners, and manure spreaders were above the equivalent of the last 12 months of sales. The inventory of forage harvesters, for example, was 165 percent of the last 12 months of sales.

To hold inventories down and minimize costs, manufacturers have resorted to lengthy plant shut-downs. As a result, employment and payrolls have been seriously affected, particularly in a number of areas of the District where most of the equipment is manufactured. According to government reports, the number of production workers employed in the farm machinery and equipment industry in October was down a fourth from the year before and down over a third from three years earlier. Manufacturers have also tried numerous campaigns to bolster sales, including discounts, rebates, lower interest rates on financing, or waivers of a portion of the interest payments.

The decline in farm equipment sales apparently has led to the demise of some farm equipment dealers but not as many as might be expected, given the prolonged downturn. According to the Farm Equipment Manufacturers Association, 426 dealers closed their doors in 1981 and another 249 did so in the first half of 1982. These closings included bankruptcies, retirements, and other reasons. There is no historical information for determining a normal pattern of closings. However, the total number of farm equipment dealers in North America approaches 10,000. Therefore, the recent closings represent about 5 percent, a small percentage in view of the prolonged slump in farm equipment sales. Nevertheless, declining sales volumes, profit margins, and employment levels are no doubt affecting most farm equipment dealers.

The three-year slump in farm equipment sales stems from several factors. However, overriding factors include high interest rates and low farm earnings. Cash receipts from farm marketings have risen less than 8 percent since 1979, while production expenses have increased slightly more than a fifth. Net realized farm income is off nearly 30 percent from the level of three years ago. Moreover, adjusted for inflation, the earnings picture is even more pessimistic. The average real purchasing power of net farm earnings for the last three years, on a per farm basis, was the lowest since the early 1960s. High interest rates also contributed to the downturn in farm equipment sales. Although interest rates have declined substantially in recent months, they remain high by historical standards. For example, interest rates charged by rural commercial banks in 1982 averaged more than 50 percent higher than in 1979 and more than double interest rates charged in the mid-1970s. These high rates have sharply increased the cost of financing capital equipment purchases.

For the year ahead, despite some positive factors, little, if any, improvement in farm equipment sales is expected. Increases in prices of farm tractors and equipment have moderated, averaging less than 6 percent over the past year. The increases would no doubt be even less if the numerous discounts, rebates, and low-

### The downturn in farm equipment unit sales in District states paralleled that for the nation

	Unit retail sales (January-October 1982)			
	District states		United States	
	Number (thou.)	Change* (percent)	Number (thou.)	Change* (percent)
Tractors <sup>1</sup>	13.3	-24	66.6	-25
Combines	3.3	-48	12.2	-43
Balers	1.7	-24	8.4	-36
Grinder mixers	1.4	-26	4.0	-20
Forage harvesters	1.5	-30	4.6	-30
Mower conditioners	3.2	-23	13.1	-25
Manure spreaders	3.4	-14	9.0	-11
Corn heads	3.7	-50	6.7	-45

\*From year earlier.

<sup>1</sup>With 40 or more horsepower.

<sup>2</sup>Producing bales under 200 pounds.

SOURCE: Farm and Industrial Equipment Institute.

cost dealer financing options were considered. Direct government payments to crop farmers, who tend to be the big buyers of farm equipment, will be higher through the spring of this year, reflecting advances on deficiency and acreage diversion payments to those farmers who sign up for 1983 programs. The advance payments ease the cash-flow squeeze faced by many crop farmers. Also, the administration intends to initiate a payment-in-kind (PIK) program, which would make grain available to farmers to sell in exchange for additional acreage diversion. If production is significantly reduced as a result of these measures, then grain prices could improve accordingly. Further declines in interest rates, if they occur, could stimulate purchases of farm equipment.

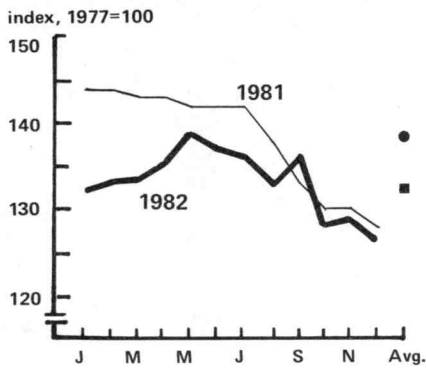
In spite of these supportive elements, the depressed farm earnings picture will likely remain a dominant factor in holding capital expenditures by farmers in check for some time. Analysts see little likelihood of an improvement in farm earnings this year, making 1983 the fourth consecutive year of low farm earnings. Total cash receipts may rise slightly this year compared with last year. Crop receipts may be down from the year-earlier level, while cash receipts to livestock producers may improve over the year-ago level. However, further advances in production costs may offset the higher gross receipts, thereby preventing any significant rise in net farm earnings. Heavy participation by farmers in the feed grain and wheat programs may also have a retarding effect on farm equipment sales, particularly if the PIK program leads to smaller plantings of major crops. Most industry analysts believe that the downturn in sales will level off in the next few months. But no upturn of consequence is expected before late 1983.

Jeffrey Miller

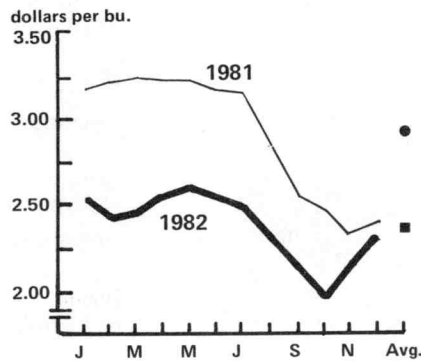
### 1982 In Perspective

#### Farm Commodity Prices

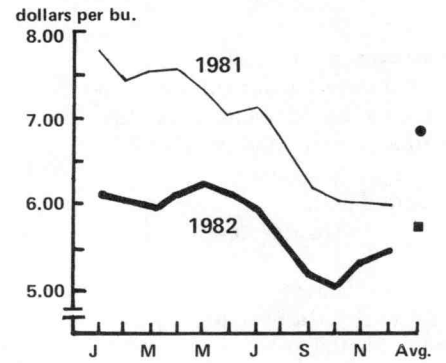
All commodities



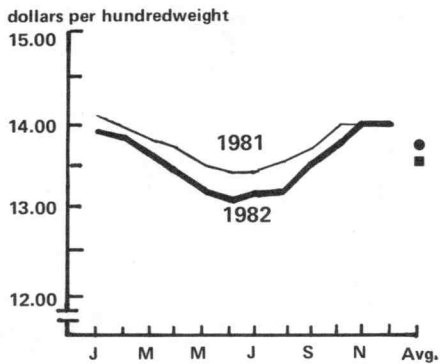
Corn



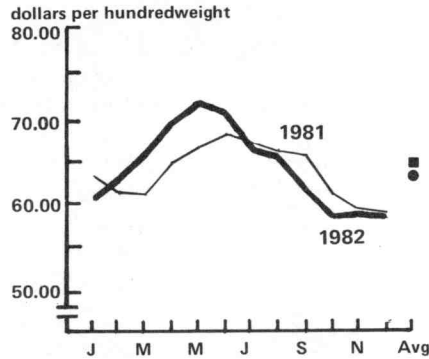
Soybeans



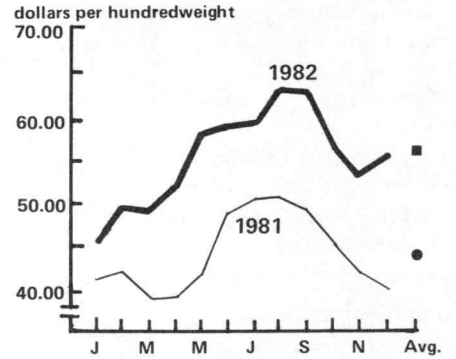
Milk



Cattle



Hogs



● Annual average, 1981  
■ Annual average, 1982

	Units	1972	1977	1979	1980	1981	1982 <sup>P</sup>
<b>Farm Sector Income and Expenses</b>							
Cash receipts	bil. dol.	61.1	96.2	131.7	139.5	143.5	142.0
Crops	bil. dol.	25.5	48.6	63.1	71.7	75.0	73.0
Livestock	bil. dol.	35.6	47.6	68.6	67.8	68.5	69.0
Gross income	bil. dol.	71.0	108.6	151.3	154.9	166.8	163.0
Production expenses	bil. dol.	52.1	90.2	119.0	130.5	141.6	144.0
Net farm income							
Current dollars	bil. dol.	18.9	18.4	32.3	20.1	25.1	19.0
1967 dollars	bil. dol.	15.1	10.2	14.9	8.1	9.2	6.6
<b>Farm Sector Balance Sheet (year-end)</b>							
Assets	bil. dol.	394.8	736.3	1,004.8	1,091.0	1,091.8	1,070.0
Real estate	bil. dol.	267.3	554.7	755.9	830.0	823.8	789.1
Other	bil. dol.	127.5	181.6	248.9	261.0	268.0	280.9
Claims	bil. dol.	394.8	736.3	1,004.8	1,091.0	1,091.8	1,070.0
Real estate debt	bil. dol.	35.1	63.3	85.4	95.5	105.6	110.0
Nonreal estate debt	bil. dol.	29.8	59.4	80.4	86.4	96.1	105.0
Total debt	bil. dol.	64.9	122.7	165.8	182.0	201.7	215.0
Equity	bil. dol.	329.9	613.6	839.0	909.0	890.1	855.0
Debt-to-asset ratio	percent	16.4	16.7	16.5	16.7	18.5	20.1

<sup>P</sup>Preliminary.

## Selected agricultural economic developments

Subject	Unit	Latest period	Value	Percent change from	
				Prior period	Year ago
<b>Farm finance</b>					
Total deposits at agricultural banks†	1972-73=100	December	261	+ 0.2	+ 8
Total loans at agricultural banks†	1972-73=100	December	279	- 0.9	+ 5
Production credit associations					
Loans outstanding					
United States	mil. dol.	November	20,463	- 4.1	- 4
Seventh District states	mil. dol.	November	4,243	- 4.2	- 5
Loans made					
United States	mil. dol.	November	2,321	+14.3	+ 1
Seventh District states	mil. dol.	November	443	+11.5	- 2
Federal land banks					
Loans outstanding					
United States	mil. dol.	November	47,206	+ 0.3	+ 9
Seventh District states	mil. dol.	November	11,265	+ 0.2	+ 9
New money loaned					
United States	mil. dol.	November	309	+11.7	-50
Seventh District states	mil. dol.	November	63	+ 5.3	-58
Interest rates					
Feeder cattle loans††	percent	3rd Quarter	16.38	- 5.0	-10
Farm real estate loans††	percent	3rd Quarter	16.15	- 3.5	- 5
Three-month Treasury bills	percent	12/30-1/5	7.97	+ 0.5	-30
Federal funds rate	percent	12/30-1/5	10.21	+15.5	-21
Government bonds ( <i>long-term</i> )	percent	12/30-1/5	10.44	- 0.5	-25
<b>Agricultural trade</b>					
Agricultural exports	mil. dol.	September	2,388	- 4.2	-25
Agricultural imports	mil. dol.	September	1,298	- 4.3	+ 1
<b>Farm machinery sales<sup>P</sup></b>					
Farm tractors	units	November	5,019	-30.5	-29
Combines	units	November	1,723	-42.8	-50
Balers	units	November	265	-50.1	-19

†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.

<sup>P</sup>Preliminary.

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