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FRB CHICAGO

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Farm sector income

The USDA recently completed its latest annual review of farm sector income estimates for the past few years and the forecast for this year. The resulting revisions to the historical estimates were modest, reconfirming that 1987 was a banner year for farm sector earnings. Prospects for this year, however, are mixed. The revised estimates show that net cash farm income rose 11 percent last year to a record high of $57.1 billion. Total net farm income, a measure which incorporates both cash and noncash earnings and expenses, rose 23 percent to a record $46.3 billion. For this year, net cash farm income is expected to hold close to last year's level. But total net farm income is expected to decline considerably because of a large drought-related cut in farm inventories.

While at times confusing, the two commonly used measures of farm sector earnings are useful since they entail somewhat different interpretive benchmarks. The net cash measure relates strictly to the farming business of farm operators. It is a cash-based concept with respect to the timing of both earnings and expenses. The bulk of the cash earnings for a given year represent receipts from farm commodities marketed during that year, regardless of the year in which the output was produced. For crops, cash market receipts also include the value of commodities put under CCC price support loans that year, net of the value of any such loans redeemed. Other cash earnings arise from government payments to farmers (both in cash and "in-kind") and from various miscellaneous activities such as custom work, equipment rental, or farm-related recreational earnings. For interpretive purposes, the net cash income measure is a barometer of the net cash returns to farm operators' labor, management, and capital that can be used to make capital investments, add to savings, repay debts, or maintain living standards.

The total net farm income measure is an accrual-based measure that combines the farm business of farm operators with certain asset-based benefits and expenses that some farm operator households have through close ties with the farm business. For interpretive purposes, it is important to note that the gross earnings for the farm business component of this measure relate to the value of production in a given year, regardless of the year that production is consumed or marketed. As such, the total net income measure adjusts cash farm earnings by including a noncash credit that reflects the value of change in farm commodity inventories held by farmers. Since this noncash earnings credit can be either positive or negative, it is often a key factor underlying year-to-year changes in total net income.

With respect to the asset-based benefits that some farm operator households derive from their close ties to the farming business, gross earnings for the total net income measure also include noncash credits to reflect the value of home consumption of self-produced foods and the rental value of farm operator dwellings. In recent years, the value of these credits has been declining because of the reduced value of farm real estate and the continuing decline in the number of farm operator households.

The farm business expense components included in the total net income measure combines cash expenses of production, as well as noncash expenses for such things as depreciation and accidental damage to farm capital and perquisites given to farm labor. In addition, a modest amount of household-related cash and noncash expenses are included to cover such things as depreciation, interest, taxes, repairs, and insurance that relate specifically to the household dwelling.

The revised 1987 farm sector earnings estimates, when adjusted for inflation, are still quite favorable, but by

Net farm sector earnings

	1984	1985	1986	1987	1988*
	(----------billion dollars----------)				
Gross earnings	174.9	166.2	159.8	169.8	167.5
Cash (farm)	155.2	156.8	152.0	160.4	165.5
Crop marketings**	69.5	74.2	63.6	61.9	67.0
Livestock marketings	73.0	69.8	71.5	76.2	78.0
Government payments	8.4	7.7	11.8	16.7	15.0
Other	4.4	5.0	5.1	5.6	6.0
Value of inventory change	6.3	−2.4	−2.8	−0.6	−7.0
Other noncash earnings	13.4	11.8	10.6	10.0	9.0
Total expenses	142.7	134.0	122.3	123.5	127.5
Cash (farm)	116.6	110.2	100.6	103.3	107.5
Other	26.1	23.8	21.7	20.2	20.0
Net cash farm income	38.7	46.6	51.4	57.1	57.5
Total net farm income	32.2	32.3	37.5	46.3	40.5

*Midpoint of ranges forecast by USDA.
**Includes net CCC price support loans of $-0.8 billion in 1984, $11.8 billion in 1985, $8.3 billion in 1986, and $0.2 billion in 1987.

Farm production expenses edged up last year

	1984	1985	1986	1987 Amount	1987 Change
	(----------billion dollars----------				)
Farm-origin inputs	32.8	30.3	28.9	31.1	8
Feed	19.9	18.0	16.2	16.1	-1
Livestock	9.5	9.0	9.7	12.0	23
Seed	3.4	3.4	3.0	3.0	0
Manufactured inputs	21.5	21.0	17.0	16.8	-1
Fertilizer & pesticides	12.2	12.3	10.3	10.0	-3
Fuel, oil, & electricity	9.3	8.7	6.7	6.8	2
Other operating inputs	31.4	30.7	29.8	31.4	5
Labor expenses	9.7	9.8	9.9	10.7	9
Repairs & maintenance	6.4	6.4	6.4	6.5	2
Marketing, storage, etc.	4.0	4.1	3.7	3.8	5
Other	11.3	10.4	9.8	10.3	5
Overhead expenses	56.9	51.9	46.7	44.2	-5
Interest	21.1	18.7	16.9	15.5	-8
Capital consumption	23.1	20.8	18.9	17.3	-8
Taxes & net rent	12.7	12.4	10.8	11.3	5
Total production expenses	142.7	134.0	122.3	123.5	1

no means a record. For example, in terms of the purchasing power of 1982 dollars, net cash farm income last year was the highest in 12 years and the sixth highest on record since the mid 1950s. Compared to the annual average during the 1981-84 period of stressed farm earnings, real net cash farm income last year was up more than a third. But relative to the annual averages that prevailed during the export-boom years of 1972-75 and the war-boom years of 1945-54, real net cash farm income was still off nearly 20 percent last year.

Last year's continued rise in farm sector earnings stemmed from a large rise in livestock marketing receipts and another boost in direct government payments to farmers. These two factors far overshadowed a slight upturn in production expenses. Direct government payments to farmers rose $4.9 billion last year to $16.7 billion. Receipts from all livestock, dairy, and poultry marketings rose nearly $4.7 billion to $76.2 billion, paced by higher prices for cattle and hogs. Total crop receipts declined slightly, from $63.6 billion in 1986 to $61.9 billion last year. However, receipts from open-market crop sales, which excludes net CCC loans, actually rose last year. In 1986, net CCC price support loans added $8.3 billion to total crop receipts. Last year, net CCC loans added less than $0.2 billion as farmers utilized the advantages of PIK certificates to redeem about as many CCC loans as were granted. Therefore, open-market crop sales rose $6.4 billion last year to $61.7 billion.

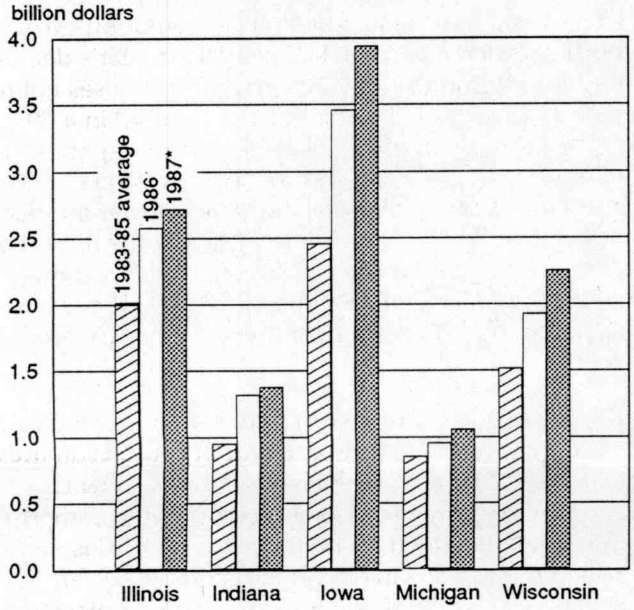
Farm production expenses, after recording sharp declines the previous two years, edged up last year. The recently revised estimates show that total farm production expenses, which includes both cash and noncash charges, rose a modest $1.2 billion to $123.5 billion. A rise of $2.7 billion in cash expenses, to $103.3 billion for the year, accounted for all of the increase. The biggest increases last year occurred in livestock and labor expenses, up 23 and 9 percent, respectively. In contrast, interest and capital consumption expenses both declined 8 percent last year. Last year's declines for interest and capital consumption expenses culminated in five-year slides that have resulted in a 29 percent drop in both of these expense categories. The extended decline in interest expenses reflects a reduction in outstanding farm debt and lower interest rates. For capital consumption expenses, which cover depreciation and accidental loss damages to farm capital, the five-year slide mostly reflects the curtailed capital purchases by farmers over the past several years.

The USDA's latest review of farm sector income estimates provided the first breakout of those estimates by individual states. The new estimates show that farm sector earnings among the five states comprising the Seventh Federal Reserve District have closely paralleled the nationwide trend in recent years. At $11.4 billion, net cash farm income for the five-state region last year was up 11 percent from the year before and up 46 percent from the 1983-85 average. Farm earnings in Iowa have led the increase in recent years, up 60 percent from the 1983-85 average. In comparison, the rise in net cash earnings of Michigan farmers has been the smallest among District states, 23 percent relative to the 1983-85 average. The strong rise in earnings for Iowa farmers reflects the larger proportion of hog and cattle farmers in that state who benefited considerably from higher commodity prices and lower feed costs the past couple of years.

Prospects for farm earnings are somewhat mixed for this year and next. Farm sector earnings for both years will be strongly influenced by this year's drought. But the drought affects will be somewhat diverse, and the timing in which those affects are captured in the two common measures of net farm earnings will differ. With respect to the net cash income measure, the drought will significantly reduce the quantity of 1988 crops that will be marketed both this year and next. But cash receipts from crop marketings are likely to rise because of drought-enhanced crop prices and marketings out of the large stocks harvested in earlier years and still under the control of farmers. Based on trends through September, it appears that crop prices this year will average about 20 percent higher than in 1987. Sizable year-over-year price gains will likely continue in the early part of next year.

It is always difficult to know how farmers will allocate their crop marketings (both from stocks and the 1988 harvest) between this year and next. However, USDA analysts are projecting that cash receipts from crop marketings, including net CCC loans, will rise some $4

Net cash farm earnings have risen in all District states



SOURCE: USDA
*Preliminary

to $6 billion this year. The rise in open-market sales of crops is expected to be even larger since net CCC loans are projected to fall to a negative $2 billion this year. Livestock receipts are also expected to rise somewhat, perhaps by $1 to $3 billion. These gains are likely to be about offset by a decline in government payments to farmers and a rise in cash expenses, particularly for feed. Net cash farm income for 1988 is therefore expected to range between $55 and $60 billion, close to last year's high level.

Projections of net cash farm income for next year are still very tentative. Yet, various drought-related affects will still be apparent. Feed costs will remain high, at least in the early part of next year. And because the drought will pull carryover stocks down to much lower levels, acreage set-aside requirements under 1989 price support programs will be relaxed considerably. The resulting increase in planted acreage, along with higher-priced crop inputs, will likely trigger a sizable rise in cash expenses for crop farmers next year. Cash receipts from crop marketings will likely remain high, at least in the early part of next year. But crop receipts could drop below year-earlier levels in the second half of next year if expanded acreage and better growing conditions foreshadow a rebuilding of carryover stocks and lower crop prices.

For the total net income measure, the incorporation of an inventory adjustment to make gross earnings reflect the value of production in a given year will likely result in different "bottom-line" trends for this year and next. In years of a drought, the value of inventory change as calculated by the USDA is accentuated by both the drought losses to crop production as well as by the drought's affect in raising prices. The positive or negative sign applied to this earnings component is determined by the change in the physical quantity in inventory at year end, irrespective of prices. The change in the physical quantity in inventory is then multiplied by average prices during the year to calculate the value of change in inventories. Since a major drought tends to reduce the end-of-year physical crop inventory and simultaneously raise the average crop prices for the year, the value of change in inventories is often a large negative for the year of the drought. The reverse often happens the year after a drought when expanded production leads to an increase in physical year-end inventory and a large positive value for the inventory change. While providing a useful measure that reflects the value of production in a given year, the inclusion of an inventory adjustment in the net farm income measure can sometimes mask the trends occurring in farm sector cash earnings and expenses.

This aspect of the total net income measure is clearly reflected in the USDA projections for 1988. The USDA is projecting that total net income will range somewhere between $38 and $43 billion this year, foreshadowing a decline from last year of some $3.3 to $8.3 billion. All, if not most , of this decline will be accounted for by the value of the inventory change, which is projected to range from $-6.0 to $-8.0 billion in 1988. Compared to the $-0.6 billion inventory change for last year, the value of inventory change projected for this year would translate into a decline of $5.4 to $7.4 billion in total net farm income for 1988, even if all other components were held constant.

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Selected Agricultural Economic Indicators

	Latest period	Value	Percent change from Prior period	Year ago	Two years ago
Receipts from farm marketings *($ millions)*	May	10,702	-9.2	-6	-2
Crops*	May	3,965	-8.1	6	20
Livestock	May	6,321	-4.4	-5	8
Government payments	May	416	-51.6	-60	-76
Real estate farm debt outstanding *($ billions)*					
Commercial banks	December 31	14.5	2.6†	14	27
Federal Land Banks	December 31	32.7	-6.9†	-13	-27
Life insurance companies	March 31	9.66	-2.4†	-7	-17
Farmers Home Administration	December 31	10.1	0.1†	-3	-3
Nonreal estate farm debt outstanding *($ billions)*					
Commercial banks	December 31	29.1	-5.0†	-7	-18
Production Credit Associations	December 31	9.17	-6.1†	-15	-35
Farmers Home Administration	December 31	16.0	-1.1†	-2	-4
Interest rates on farm loans *(percent)*					
7th District agricultural banks					
Operating loans	July 1	11.24	1.6†	2	-5
Real estate loans	July 1	10.63	1.4†	2	-6
Commodity Credit Corporation	October	8.12	1.6	8	42
Agricultural exports *($ millions)*	July	2,623	-2.0	10	54
Corn *(mil. bu.)*	July	126	-5.5	-6	178
Soybeans *(mil. bu.)*	July	29	0.4	-46	11
Wheat *(mil. bu.)*	July	120	-7.0	-28	8
Farm machinery sales[p] *(units)*					
Tractors, over 40 HP	August	3,468	-4.7	-34	29
40 to 139 HP	August	2,561	-7.0	-17	7
140 HP or more	August	907	2.7	-58	203
Combines	August	378	1.9	-49	-77

*Includes net CCC loans.
†Prior period is three months earlier.
[p]Preliminary

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