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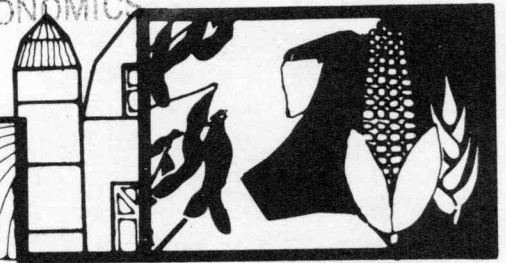
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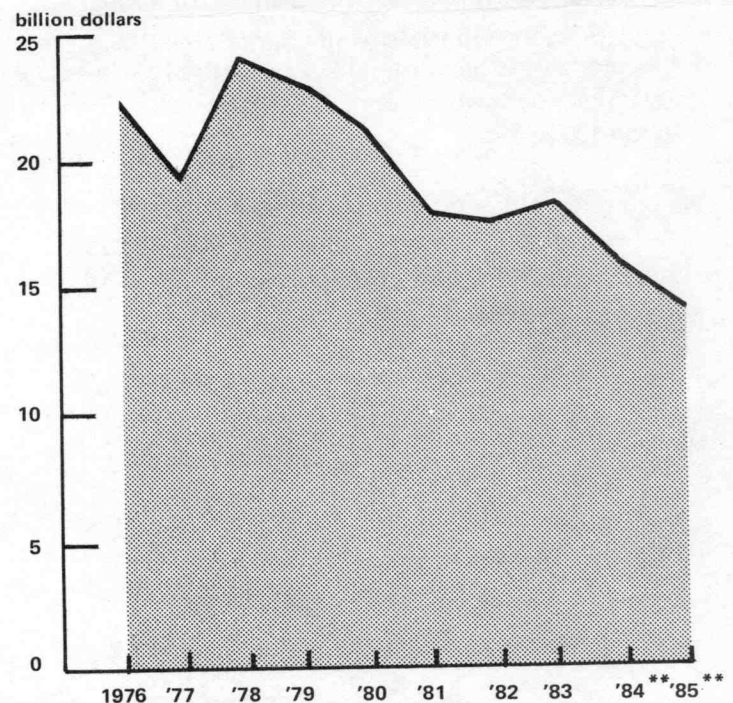
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FINANCIAL STRESS AMONG FARMERS during the 1980s has grown in terms of incidence and severity. The difficulties have arisen from a high level of debt servicing costs during a period of low income. A rapid increase in the level of debt to finance expansion during the 1970s exposed many farm borrowers to an escalation of debt costs as interest rates jumped sharply in the 1980s. The difficulties associated with these changes have coincided with generally low farm earnings over the last four years. Asset values have declined in response to the lower earnings, aggravating the financial stress of highly leveraged borrowers and eroding the equity of the farm sector.

Farm income, after a sharp jump in the 1970s, has exhibited a downward trend through the 1980s. The decline is largely attributable to reversals of the favorable conditions that prevailed during the 1970s. Farm exports, which contributed to the higher earnings of the 1970s, have fallen off during the 1980s as growth in world demand slowed perceptibly and as a variety of factors undermined the competitive advantage the United States had held in reaching world markets. Moreover, periodic droughts in the 1980s have affected large areas of the United States, at times depressing both crop and livestock farmers' income. In addition, rising production expenses through much of the period, particularly the cost of servicing debt, have been a drain on sector income.

The combination of these factors has resulted in a generally declining trend for both net cash income and net farm income through the 1980s. Net cash income, which measures the difference between gross cash income and cash expenses, represents the amount of income available to farmers to purchase assets, retire loans, and cover other annual expenditures including those of the farm household. This measure of farm income, after adjusting for inflation to reflect changes in real purchasing power, has been on a downtrend since 1978. The only exception to this trend was 1983 when a huge volume of government payments, including PIK

Net cash income of the farm sector has been trending downward during 1980s*



* Deflated by GNP implicit price deflator, 1972=100.

** Mid-point of forecast range.

commodities, and lower production expenses due to acreage reductions contributed to a 4.5 percent year-to-year gain in real net cash income. However, current forecasts for 1984 and 1985 suggest a continuation of the downtrend in net cash income of the farm sector. Comparing the first half of the 1980s, using the mid-point of the 1984 forecast range, with earlier decades shows that real net cash income may average more than 20 percent below the boom period of the 1970s and just slightly below the average of the 1960s.

The trend in net farm income during the 1980s has been more erratic. Net farm income is quite variable because it is a conceptual measure of the income generated by a given year's production, whether it is sold, fed or placed in inventory. In addition to cash accounts, the

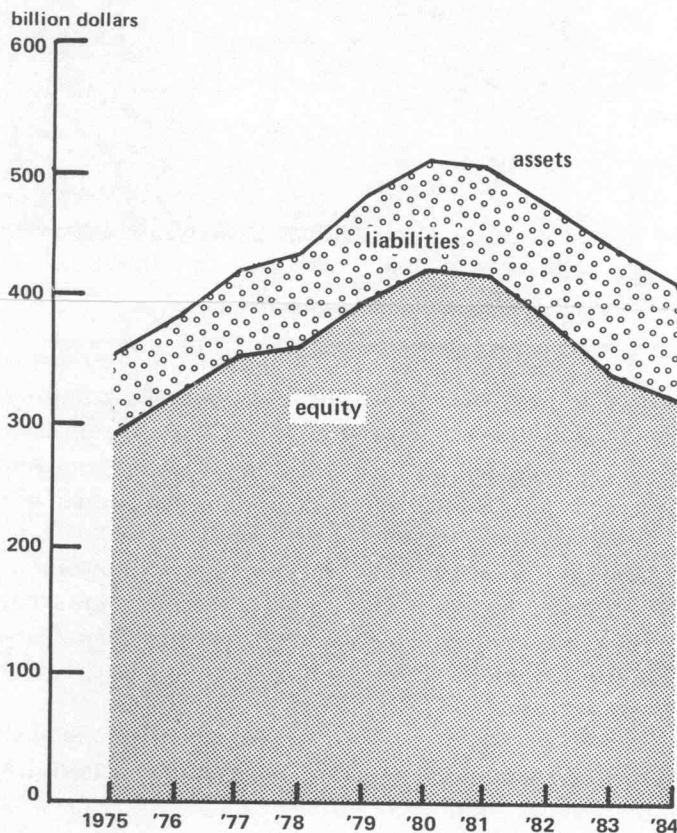
net farm income measure includes depreciation and benefits to hired labor as expense items and nonmoney income—such as the value of home consumption of farm products and the imputed rental value of farm dwellings—as revenue items. However, the most significant factor contributing to the differences between the two measures in recent years has been the adjustment for the value of the change in inventories included in gross farm earnings. The adjustment is calculated by determining the change in physical inventories, which can be positive or negative, and multiplying that value by the average annual price. The resulting figure, negative when stocks have been drawn down and positive when replenished, is then included in the determination of that year's revenue. After adjusting for inflation, average net farm income through the first half of the 1980s has been more than a third lower than the 1970s average and almost a fourth lower than average net farm income in the 1960s.

Farm debt, after expanding rapidly during the late 1970s and early 1980s, declined in 1983 and may register another decline in 1984. During the rapid growth period of the last half of the 1970s, farm debt grew at a com-

pound annual rate of 15 percent. Farm debt continued to expand at a compound annual rate of almost 9.5 percent from 1979 through 1982 and then declined 1 percent in 1983. The increased debt carried by the agricultural sector combined with high interest rates to push annual farm interest expenses to a range of \$20 to \$23 billion in recent years, up from about \$6 billion in the mid-1970s. The high level of debt and interest expenses during a period of depressed farm earnings has given rise to the financial stress prevalent in the agricultural sector.

The use of debt financing—financial leverage—accentuates growth in owner equity if the return on assets exceeds the cost of debt. However, when the rate of return on assets falls below the cost of debt, financial leverage results in slower growth in owner equity and, at sufficiently high levels of leveraging can result in a negative return to equity. Studies at the Board of Governors of the Federal Reserve System show that income from farm sector assets, in constant dollars, averaged about \$17 billion during the first four years of the 1980s. This was down about a third from the annual average of the 1970s but roughly consistent with the levels that had prevailed in earlier non-boom periods. However, the income from assets in the early 1980s was insufficient to cover the farm sector's escalating interest bill, resulting in a modest loss in the sector's equity. Simultaneously, a far more pronounced loss in the farm sector's real equity was occurring as land and other asset prices declined in reaction to the lower income from assets. Overall, the Board studies estimate that the total real rate of return to farm sector assets (including both an income return and the return from real capital gains or losses) have averaged a negative 3.4 percent in recent years. In conjunction with the farm sector's leveraged position and a real rate of interest on its debt of 4.5 percent, this has resulted in an erosion of real farm sector equity at an annual rate of about 5.3 percent in recent years.

Declining asset values and growing debt have eroded farm equity*



* All values deflated by GNP implicit price deflator, 1972=100.

The high rate of erosion in farm equity is not indicative of the financial circumstances of all farmers. Many producers have continued to earn positive returns on equity during the 1980s, while others have seen their equity eroded at a rate much faster than the sector average. Numerous factors account for these extremes, but the degree of financial leverage is among the most important. Most analysts point to farmers operating with debt-to-asset ratios greater than 40 percent as the group most susceptible to financial stress. That point of demarcation is chosen because such levels of financial leverage, combined with the sector average income from assets and the average cost of farm debt, yields a nega-

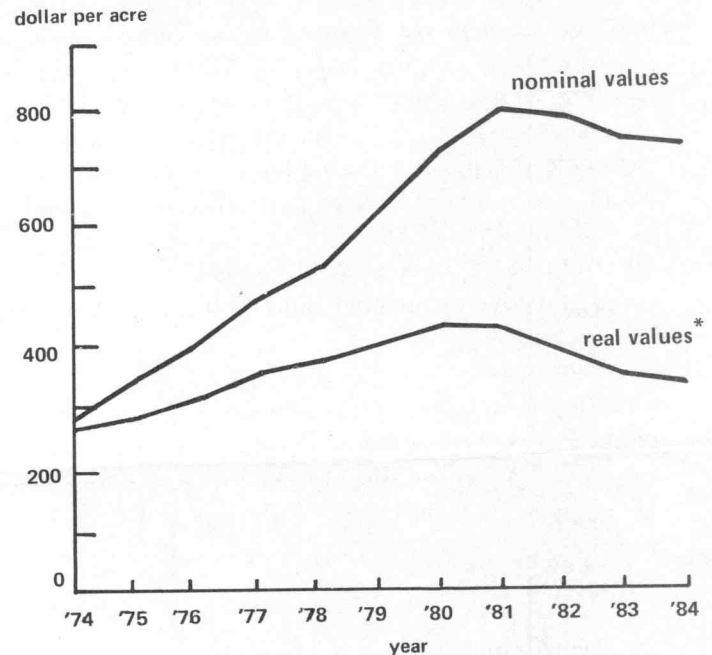
tive rate of income return to equity. Current estimates suggest that about 19 percent of all farm operators fall in the high leverage group and that these operators account for 22 percent of the farm sector's assets and 64 percent of its debt.

The incidence of financial stress among farm operators with high debt-to-asset values, however, is tempered by a number of factors. Federal Reserve studies have indicated that many of these operations have relied on off-farm earnings to supplement income and service debt. This is particularly true among farms with annual sales of less than \$40,000 which account for nearly three-fourths of all farm operators and about half of those with debt-to-asset ratios of .4 or higher. At the other extreme, the 1 percent of all farms that have annual sales of \$500,000 or more tend to be very profitable. The Federal Reserve study found that these farms generate an average rate of income return to assets of 18 percent, well above the average interest rate of about 10 percent paid on outstanding debt. With the exception of operations carrying a large amount of newly acquired debt at high interest rates, most farms in this largest sales group are likely earning high rates of income return to equity. This leaves a core group of about 9 percent of all farm operators which is highly leveraged and does not rely on either off-farm income or high rates of return on assets to generate positive income returns on equity. These farm operators, with sales between \$40,000 and \$499,000, account for about a tenth of the farm sector's assets and carry more than a third of the sector's debt.

Farmland prices during the 1980s have fallen due to the low returns to assets during the period. Farmland prices during the 1970s were bid increasingly higher as farm income grew rapidly and producers came to expect continued gains. Between 1972 and the end of the decade farmland values nationwide jumped 175 percent. After adjusting for inflation, the real gain in land values was still an impressive 67 percent over the period.

However, as agricultural exports declined in the 1980s and surplus production pressured prices and incomes lower, farmland values began to fall. Between 1980 and 1983, farmland capital losses erased more than a third of the real capital gains realized during the 1970s boom. The decline in land values, which has continued through 1984, has occurred as the market adjusts the prices of assets to reflect lower income and expectations of gains in income that are not as bright as those held in the 1970s. This adjustment process has proved quite painful for many farmers as the real capital gains on farm assets that had been factored into land prices during the

Average farmland values in the U.S.



* Adjusted by GNP implicit price deflator.

1970s gave way to real capital losses in the 1980s and weakened balance sheet positions for many farmers.

The drop in land values during the 1980s has aggravated the financial difficulties of many farmers. The rapid decline in farm asset values has pushed many operators into the 40 percent or above debt-to-asset category, the group most susceptible to financial distress, or severely eroded their equity forcing them to liquidate their businesses. USDA estimates indicate that the proportion of all farm operators with debt-to-asset ratios above 40 percent increased by 45 percent between 1980 and 1984.

The current financial difficulties in the farm sector, particularly those of highly leveraged farmers, are likely to continue in 1985. Expected further declines in income next year will place additional pressure on the debt servicing abilities of some highly leveraged farmers and contribute to further declines in land values. With farm sector asset values likely to drop faster than farm debt next year, a rising sector average debt-to-asset ratio implies additional entrants into the financially stressed group. The adjustment process currently underway will likely entail additional declines in asset values, a reduction and restructuring of farm debt, and further erosion in farm operator equity during the coming year.

Peter J. Heffernan

Selected Agricultural Economic Indicators

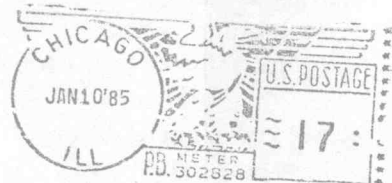
	Latest period	Value	Percent change from		
			Prior period	Year ago	Two years ago
Prices received by farmers (1977=100)					
Crops (1977=100)	November	137	- 0.7	+ 1	+ 7
Corn (\$ per bu.)	November	131	- 5.1	- 2	+14
Oats (\$ per bu.)	November	2.59	- 2.3	-18	+22
Soybeans (\$ per bu.)	November	1.66	- 4.6	- 1	+19
Wheat (\$ per bu.)	November	6.05	- 0.5	-23	+13
Livestock and products (1977=100)	November	3.43	0	- 3	- 1
Barrows and gilts (\$ per cwt.)	November	142	+ 2.2	+ 4	+ 2
Steers and heifers (\$ per cwt.)	November	48.10	+ 8.6	+26	-10
Milk (\$ per cwt.)	November	61.40	+ 3.7	+ 8	+ 6
Eggs (¢ per doz.)	November	14.10	+ 0.7	+ 1	+ 1
Prices paid by farmers (1977=100)	November	61.3	+10.8	-20	+ 7
Production items	November	164	0	+ 1	+ 4
Feed	November	153	0	- 1	+ 3
Feeder livestock	November	123	- 1.6	-14	+ 6
Fuels and energy	November	152	+ 1.3	+ 1	- 6
Producer prices (1967=100)	November	200	- 0.5	- 2	- 6
Agricultural machinery and equipment	November	292	+ 0.2	+ 2	+ 3
Fertilizer materials	November	337	- 0.2	+ 3	+ 6
Agricultural chemicals	November	231	- 1.2	+ 3	- 1
Consumer prices (1967=100)	November	452	- 1.2	- 2	- 3
Food	November	315	0	+ 4	+ 7
	November	304	- 0.1	+ 4	+ 6
Production or stocks					
Corn stocks (mil. bu.)	October 1	722	N.A.	-77	-67
Soybean stocks (mil. bu.)	September 1	175	N.A.	-49	-31
Beef production (bil. lbs.)	November	1.9	-11.8	- 1	N.A.
Pork production (bil. lbs.)	November	1.3	- 6.0	-10	N.A.
Milk production (bil. lbs.)	November	10.6	- 3.5	- 4	N.A.

N.A. Not applicable



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