Staff Papers Series

Staff Paper P85-34 September 1985

THE CRISIS IN AGRICULTURE

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I. INTRODUCTION

The contemporary crisis in rural America has many roots, but four can be singled out for particular emphasis.

1) Generational change has given us a population in which the majority has no personal recollection of the history of past financial crises.

2) Decision-making in agriculture has been dominated for four decades by a preoccupation with capital gains and "rent seeking", and a neglect of cash-flow and profit seeking. Farm land values rose almost without interruption from the mid-1930's to 1981.

3) Well-publicized world food shortages in the 1960's and 1970's created a belief in a virtually unlimited export demand for U.S. food products.

4) There was an inadequate understanding of the degree to which the United States was being integrated into the world economy, and of its transformation from a creditor into a debtor nation.

These four roots of rural crisis were fed by tax and fiscal policies that stimulated over-investment in land, buildings, and equipment capital, and by monetary policies that contributed to real rates of interest that in the 1970's were the lowest and in the 1980's have been the highest in more than a century. From 1973 to 1981 the real rate of interest on Federal Land Bank mortages (the nominal rate minus the inflation rate) was negative in 18 of the 32 quarters. In effect, gasoline was poured on the fire of anticipated capital gains.

From 1971 to 1981 farm land values rose four-fold nationally and increased 4.5 to 5.5 fold in major grain-producing areas of the Mid-West and Great Plains. The turn-around from 1981 to 1985 has exceeded any previous four-year decline in land values in the Grain Belt for which we have records.

Nationally, from 1981 to 1985 farm land values fell 19 percent in nominal (i.e. current) dollars. In real terms (current dollars deflated with the CPI index), the decline from 1981 to 1985 was 29 percent. In the Corn Belt, Lake States, and Northern Plains declines were much more severe. In nominal dollars, from 1981 to 1985 land values in Iowa fell 47 percent. In real purchasing power (1967=100), the decline was 54 percent. Real declines in the Lake States from 1981 to 1985 were 42 percent for Minnesota, 37 percent for Wisconsin and 30 percent for Michigan (USDA, 1985, A). Declines on this scale have wiped out asset values and credit capacity to an extent that fully justifies the use of the term crisis to describe the agricultural situation.

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*Paper prepared for the 15th Annual Managers' Conference, National Rural Electric Cooperative Association, Pittsburgh, Pennsylvania, Aug. 19-22, 1985.

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II. THE DETERIORATING SHOCK-ABSORBING CAPACITY OF AMERICAN AGRICULTURE

The dominant problem facing agricultural producers in the mid-1980's is survival. Historically, the great strength of a farm structure composed of many relatively small units was the ability to absorb economic or weather-induced crises by suppressing family levels of living. When labor was a major input in farming, the willingness of producers to tolerate low labor returns measured their shock-absorbing capacity. Until the 1960's, labor remained the largest single input cost in U.S. farming. Faced with economic adversity, large shocks could still be absorbed by underrewarding labor (Table 1).

Survival characteristics have changed drastically for farms. Underrewarding the labor input no longer offers much shock absorbing capacity. The labor share of input cost is too small, averaging 13 to 14 percent in the 1980's for U.S. farming as a whole. In many cash-crop operations, the proportion is substantially lower.

Some shock absorbing capacity exists in the possibility of varying fertilizers and chemical inputs, but together they accounted for only about 10 percent of the cost of total farm inputs in 1983. Taxes and interest costs are also significant, but in 1975-83 they were at about the same levels of relative importance as they were in 1910-20, i.e. averaging about 8 to 9 percent of the cost of total inputs.

The only two large items of input costs that can be varied in the 1980's to absorb economic shock are land costs, at about 25 percent of total costs, and mechanical and machinery expenses, which in 1983 accounted for one-third of total input costs.

In contemporary agriculture, capacity to absorb shock depends critically on a reduction in land and machinery costs. The severity of this reduction is acute in regions in which agriculture is primarily focused on field crops of bread grains, feed grains, oil seeds or cotton. These were the regions in which land value increases were the greatest in the 1970's. The psychological effect of this shattering of expectations gives the rural crisis of the 1980's one of its most distinctive characteristics.

The largest fraction of current farm input costs is accounted for by mechanical equipment and farm machinery. Any attempts to cushion the shock of economic reverses in farming by reducing current expenditures must focus on this class of inputs. This is also occurring. Bankruptcy and merger activity are prominent among farm machinery manufacturers, and farm machinery dealers are going out of business throughout the farm belts. Tractor manufacturers in the U.S. in 1983 operated at only 22 percent of capacity, and combine manufacturers at 14 percent of capacity (USDA, 1984, p. 31). In 1949, there were 1492 farm equipment dealers in Minnesota and South Dakota; in 1984, only 600 were still in business (Austin, 1985).

TABLE 1: U.S., PERCENTAGE DISTRIBUTION OF FARM INPUTS[a/]

YEAR	LABOR	FARM REAL ESTATE	MECH. AND MACHINERY	AGR. CHEM.	FEED, SEED, LIVESTOCK PURCH.	TAXES, INT.	MSCL.
			PERCENTAGE OF TOTAL 1935-39 WEIGHTS				
1910	53.4	20.2	8.5	1.7	3.2	8.3	4.7
1915	51.6	19.8	9.8	1.6	3.0	9.3	4.9
1920	50.0	18.5	11.8	2.1	3.9	8.8	4.9
1925	48.9	17.8	12.0	2.3	4.6	9.7	4.7
1930	46.2	17.7	14.1	2.8	4.4	10.4	4.4
1935	47.0	19.2	12.9	2.7	4.1	9.7	4.4
1939	42.8	18.4	14.7	3.4	6.2	10.3	4.2
			1947-49 WEIGHTS				
1939	54.4	17.0	10.1	1.9	6.5	7.0	3.1
1945	48.0	15.8	14.3	3.2	8.2	7.4	3.1
1950	38.1	16.7	20.3	4.7	9.4	7.5	3.3
1955	32.0	16.4	23.3	6.2	10.7	7.9	3.5
			1957-59 WEIGHTS				
1955	32.2	19.4	24.0	4.4	9.0	7.7	3.2
1960	26.5	19.4	25.0	5.8	10.9	8.6	3.8
1965	20.4	19.7	24.9	9.1	12.5	9.4	4.0
			1967-69 WEIGHTS				
1965	23.2	23.6	26.8	5.3	6.7	10.8	3.5
1970	19.0	23.0	28.3	8.0	7.4	10.8	3.5
1975	16.7	21.8	31.5	8.8	7.1	10.8	3.3
1976	16.0	21.6	31.3	9.6	7.4	10.5	3.6
			1976-78 WEIGHTS				
1975	17.1	24.1	33.0	8.0	6.2	8.3	3.2
1980	13.8	23.6	33.5	11.0	6.9	7.8	3.7
1983	12.8	25.2	32.5	9.6	6.9	8.5	4.6

a/ National Economics Div., Economic Research Service, U.S. Dept. of Agriculture, Washington, D. C., Feb. 1985.

The rural farm economy, in short, is consuming capital. Income to labor and management has fallen to levels that cannot maintain family investment in human capital. The education and motivation of the next generation of farmers is being impaired, in ways that defy measurement but that could prove to be the most critical impairment of the capital stock of agriculture.

Undermaintenance of building and machinery capital is widespread. This can be tolerated for a short time, but it will eventually be reflected in a failure to keep abreast of new developments in technology. If undermaintenance continues, rising costs and falling productivity are inevitable.

Absorbing shock by under-rewarding labor and undermaintaining physical capital are the most obvious responses to the current financial crisis. A less visible but potentially more damaging response is to exploit the resource base through a neglect of soil and water conservation. Current data to document this form of capital exhaustion are fragmentary, and subject to wide regional variation. The areas suffering most acutely in the current crisis include areas of the Corn Belt and Great Plains that are highly susceptible to water and wind erosion. This fact suggests that long run impairment of land and water capital is one of the greatest risks imposed by the traumatic fall in farming profitability in the past four years.

These forms of absorbing shock by exhausting capital involve individual farms and families. A larger dimension of the process of "eating the seed corn," or living off of capital, involves the deterioration of rural communities. The most obvious consequence of the wipe-out of land values is a parallel wipe-out of the property tax base. This is a lagged effect, and the full impact has not yet been felt.

Land value declines of 40 to 50 percent can only mean a reduced capacity to support public services in rural areas, and an increased burden on non-farm property. Most states in the areas of greatest farm distress have extensive programs of state aids to local governments, to maintain approximate equality of access to education, health care and welfare. A sharp increase in the cost of these state aids to rural governments is sure to occur. This will probably be the first and most tangible way in which the cost of the wipe-out of capital in farm land will be transmitted to non-farm and urban taxpayers.

This much can be measured. What cannot be measured is the deterioration in the quality of life in rural communities. The support base for non-governmental institutions will be reduced as surely as is the tax base for schools and roads. Churches, clubs, voluntary professional associations and related institutions making up the stock of rural social capital are threatened. It is this aspect of the process of absorbing shock by consuming capital that is most worrisome in its long-run implications.

III. THE CENTRAL ISSUE OF EXCESS PRODUCTION

The aspects of the consumption of capital noted above are the symptoms of distress. The primary cause is overproduction. There has been widespread unwillingness to face this issue squarely. Throughout history, and for the majority of the world's population today, the farm problem has been one of too little food, not too much. Dramatic reports of food shortages, malnutrition and famine are daily reminders of the existence in major populations of food needs without effective demand. In the United States farm and non-farm people alike have misinterpreted this need as evidence of potential export markets.

This misinterpretation is reinforced by the entire information system available to agriculture. Increasing the volume of physical output has been an almost universal goal of the agricultural universities, experiment stations, and extension activities serving agriculture in the public sector. This has been even more characteristic of private firms and information services supplying inputs or information to agriculture or marketing its products. Agribusiness interests benefit directly from a high volume of farm output, and typically avoid or oppose any discussion of production controls.

The strangled nature of public discussion of alternative ways to reduce farm output has encountered even greater political opposition during the current crisis. This has been due to doctrinal and ideological positions taken by the present administration of the federal government. The evaporation of hopes of salvation through expanded foreign markets occurred at the peak of a rejection of any programs involving greater governmental participation in production controls. Given the number, distribution, and relatively small scale of American farms, no power short of governmental action or brutal price declines could hope to bring down output on the scale needed. This administration has opted for price declines, although its conviction is wavering.

The prospect for the next three years is for delay, a death-bed conversion, and election-bred efforts at the last minute to introduce dramatic programs to reduce output. The ill-conceived and disastrously expensive PIK program of 1983-4 is unfortunately the only model on which to base a forecast of probable political responses to the present crisis.

The prospect is further confused by a persistent failure to distinguish between the problem of too many farmers, and the problem of too much land and capital committed to production. For at least forty years the problem of increasing the farmers' income has been viewed simplistically as a problem of too many farmers. The solution has been personalized by focusing on the withdrawal of labor and the elimination of farm firms.

It is arguable that the withdrawal of labor has gone far enough. Excessive labor costs are not propelling the present crisis, and it will not be resolved by eliminating farmers. The more critical question is what will be done with the land of the farmers who leave or are forced out. Wiping out farm firms will leave untouched the problem of too much land in production, and may even make it worse. The farm firms that are being wiped out in the 1980's are not concentrated at the margins of cultivation, nor are they grouped at the bottom end of the scale of farm sizes. Their land will remain in production, in any scenario that rests on output control by commodity price declines.

Some program of land use control must be embedded in any prescription for the solution to the farm problem of the 1980's. The debate, when focused, is between a system that achieves restrictions on production by creating private firms large enough to internalize the cost of control, and a system that attempts control through some combination of regulations on land use and marketing that involve a substantial element of public authority. It will be a service to the entire economy to bring this issue squarely into the center of the current discussions of farm policy.

Either alternative involves elements that are distasteful, and uncertainty that cannot be reduced to calculable risk. The broad issue is clear enough. Do we want production control in agriculture to be achieved by firms big enough to pass on the cost of control through the price system in the form of higher food prices? Or is the public interest best served by controls achieved by the selective use of tax revenues to bring about an orderly withdrawal of productive resources from agriculture, while maintaining reserve capacity that can serve as insurance against unexpected shocks?

IV. WHY BE CONCERNED ABOUT FARM PROBLEMS?

For the nation as a whole, the farm population in 1983 was 5,788,000, or 2.46 percent of the U.S. population. This tremendously understates the significance of the farm sector in the total economy. The most direct measure of this understatement is provided by the cost of food.

The proportion of total disposable personal income spent on food in the United States is one of the lowest in the world, at 15.1 percent in 1984. This includes total food and non-alcoholic beverages. Beverages alone vary from 3 to 4 percent of total expenditure, and the most important of these (coffee, tea, cocoa) are imported. If we deduct consumer expenditure on imported food and beverages, only 12 to 13 percent of consumer disposable income is spent on food of domestic U.S. origin. This makes the consumers' cost of the nutritional content of the U.S. food supply the lowest in the world, in terms of the proportion of consumer income that must be surrendered to obtain it. The most obvious reason why city people have an interest in what happens on the farm concerns the cost of food (USDA, 1985, B).

Food costs since the 1960's have gone up less than any of the other major components of the Consumer Price Index (CPI). Using 1967 as 100, the CPI for the US as a whole stood at 322.2 in June 1985, while food and beverage costs stood at 300.6. In virtually every month of the past 4 years the cost of food has gone up less than the federal rate of inflation, and thus has served as a brake on inflation.

This record of a stable and low-cost food supply has been achieved by a group of relatively small to medium scale farm businesses that have combined high technology with a high level of management and a low rate of return, to labor, capital and land. This has been possible because farm businesses have been the outstanding example of worker-managed firms. They have received a part of their reward through their equity in the business. This has been sufficient to hold labor and capital in agriculture at rates of return that are well below the returns required if farming were organized on industrial lines, with wage labor.

Most importantly, farm firms have been small enough to be flexible, and quick to adapt to change. Although agriculture historically has been regarded as a tradition-bound industry, the outstanding feature of American agriculture is the rapidity with which it has modernized its capital stock and its pro-production techniques. Given the heavy hand or tradition in agriculture, it would not have been surprising to find agriculture lagging in the race to achieve productivity gains. In fact, productivity gains in agriculture have consistently outrun productivity gains in industry for the past half-century. In the period from 1948 to 1981, the annual rate of increase in productivity in U.S. agriculture per manhour worked was over 6.0 percent; in manufacturing it was under 3.0 percent. This is the basic explanation of the continued low cost of the American food supply (Table 2).

Table 2

Estimated Trend Labor Productivity Growth By Sectors in the United States 1948-1981[a/]

Private Business Sectors	Average Annual Trend Productivity Growth[b/]	
	1948-68	1968-81
	(% per year)	
Service Producing	3.0	1.5
Goods Producing	3.0	2.1
Manufacturing	2.9	2.8
Farming	6.0	6.3
Private Business Sector as a Whole	3.3	1.8

a/ Charles S. Morris, "The Productivity 'Slowdown': A Sectoral Analyses", Economic Review, Federal Reserve Bank of Kansas City, April 1984, p. 13.

b/ Trend productivity growth is defined as the growth in output per manhour worked if all resources in the economy were fully employed at desired levels (Morris, p. 4).

It is this system that is threatened. If worker-managers on farms must face a future in which they do not share in the ownership of their productive resources, and become instead salaried workers or wage laborers, then the labor and management cost of food production must increase. Similarly, if capital in agriculture is no longer owned by the labor force, then its rate of return must rise. The consequence of a conversion to an industrial-type structure of asset ownership in agriculture will be an increase in the cost of food. The only offsetting development that could prevent this would be an increase in productivity in an industrial-type agriculture that would offset the higher cost of labor and capital. This does not seem likely. The history of large-scale, industrial-type farms in field crop production is a history of rigidity, slowness to adapt, and a deterioration in the work ethic. This has been true of both socialist and capitalist attempts to develop "factories in the fields." Some initial economies of size have been achieved, but the systems have quickly succumbed to bureaucratic ridigity.

The principal reason for the ridigity of large-scale agricultural firms is the difficulty of devising management rules for production activities that cannot be concentrated in space, or in time. Where production activity can be concentrated, as in poultry production or livestock feeding, some success has been achieved with industrial-type organization in food production. Concentration on this scale is not possible with the major food and feed crops. This throws the advantage to a production system made up of relatively small-scale units, led by managers who can take risks and make quick decisions in adapting to climate and markets.

It should be noted that the examples of successful large-scale units in agriculture (poultry, livestock feeding, dairying, fruit and vegetable crops) are almost all dependent either on cheap labor, cheap feed, or subsidized water, or all three. The industrial or corporate model for agricultural production has been most applicable for types of production that could be concentrated in space, and for regions that could benefit from cheap immigrant labor or from large-scale off-farm internal migration. Industrial-type farming in America to date has been concentrated in the Atlantic and Gulf Coast states, the Southwest, and the states bordering the Pacific. It is not characteristic of the major food and feed grain producing areas.

V. BEYOND THE FARM CRISIS

A dual structure of American agriculture is emerging, in which the majority of the number of farms are small to modest in size, and are essentially part-time enterprises. In 1983 over 53 percent of all units classified as farms by the Census of Agriculture involved operators who also engaged in off-farm work. Those working off-farm 100 days or more were 43 percent of all operators, and those who operated farms but listed their principal occupation as other than farming were 45 percent of the total (U.S. Dept. of Commerce, 1984).

The majority of U.S. farm households now use the income from off-farm work to substitute for the shock-absorbing capacity they once achieved by their willingness to work for low labor returns on farms. For them, diversification has meant off-farm jobs, not a wider variety of crops or livestock enterprises. They are risk-spreading, in a way that takes advantage of the very low labor requirements in some types of contemporary production.

Farm households with off-farm income have a high probability of surviving the farm crisis of the 1980's. Small farms are not the problem sector. The critical problem concerns farms of average to large size. They hold most of the farm debt, are the most highly leveraged (have the highest debt-to-asset ratios), and are most directly affected by price declines and loss of export markets for farm commodities. It is these farms whose capital stock, and the capital represented by the communities they support, is being impaired to a degree that constitutes a national problem. It seems simplistic in the extreme to argue that the national interest will be served by a further reduction in the number of these farms.

An implicit assumption underlying a belief that reducing the number of farms and farmers will contribute to a solution of the farm crisis is that there are further substantial gains in efficiency to be achieved by farm size enlargement. This assumption rests on weak data. The extensive studies on farm size and structure undertaken by the U.S. Department of Agriculture in 1979-80 concluded that in the major wheat producing states in 1974 the average cropland per farm was approximately twice the acreage at which 95 percent of all economies of size could be achieved. Average crop acres per farm in Corn Belt states were 10 to 30 percent greater than needed to achieve the 95 percent level in technical economies. The pattern was similar in Texas and Mississippi cotton farms. Reviewing these data, J. B. Penn concluded that for the major field crops (wheat, barley, corn, soybeans, sorghum, cotton) "most primary farms are of a size where most of the technical economies can be obtained". (Penn, 1981, pp. 53-54).

The farm crisis of the 1980's differs from previous crises in many ways. One of the most significant is that it is not most acute in areas where farm sizes are too small to be economic. The structure of American agriculture is basically sound, but it is seriously threatened. The origin of this threat lies largely outside of the agricultural sector. It originated in macroeconomic policies that generated inflation and unrealistic expectations in the 1970's, and dashed these expectations by a preference for interest-rate instead of tax policy to control inflation in the 1980's.

These policies raised credit costs, choked back exports, and precipitated a deflation in the agricultural sector that ranks with a scale of destruction of capital values that other nations have only experienced in time of war. It can in truth be regarded as a delayed response to the inflation that was guaranteed by the decision in the 1960's to engage in the Viet Nam war without raising taxes to hold back demand. Agriculture, heavy industry, and the export sector are now paying the cost of that mistaken decision.

The mistake was nation-wide. It does not seem unreasonable to argue that the cost of repairing that mistake should also be assumed at the national level. The argument should not be couched in terms of the merits of further subsidies to a class of producers believed or not believed to be deserving. Instead, it should rest on the value to the nation of maintaining a stock of human and physical capital in an agriculture that has served it well.

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