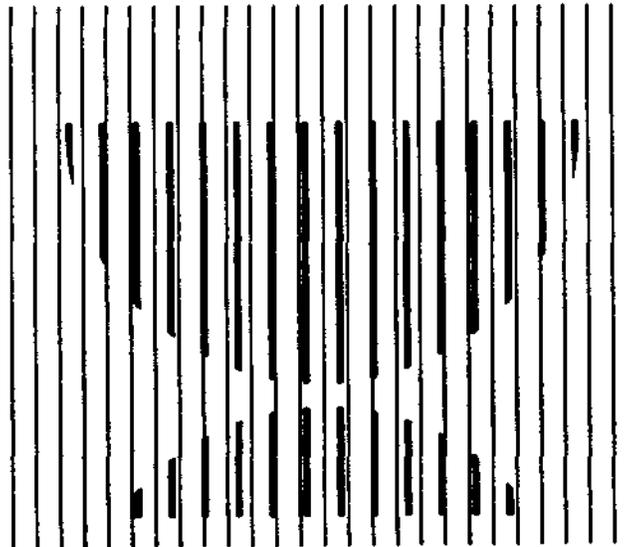


CBO STAFF MEMORANDUM

**THE IMPLICATIONS OF PROJECTED DECLINES IN FARM INCOME
FOR THE AGRICULTURAL SECTOR AND FOR FARM POLICY**

JUNE 1990



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This staff memorandum was prepared in response to requests for additional information about farm income. The memorandum is designed to complement information contained in the recent publication, *The Outlook for Farm Commodity Program Spending, Fiscal Years 1990-1995*.

The memorandum was prepared by David Trechter and Roger Hitchner of the Natural Resources and Commerce Division.

In a recent Congressional Budget Office (CBO) study, *The Outlook for Farm Commodity Program Spending, Fiscal Years 1990-1995*, inflation-adjusted net farm income was projected to be \$28.3 billion in 1995.¹ This represents a decline of \$7.7 billion from the 1988 level. The objectives in this memorandum are (1) to discuss how such a decline could affect the farm population, (2) to summarize CBO's farm income projections, and (3) to expand on the possible policy implications of the farm income projections.

INTERPRETING THE CBO INCOME PROJECTION

A statement that appeared in the CBO study has caused some comment and controversy, at least in Washington. The paragraph in question appears on page xvii of the summary of the report and reads as follows:

If real incomes for agricultural producers were to fall by the projected amounts, a substantial decline in the number of farms could result. Average real net farm income per farm in 1988 was \$16,364. With a projected real net farm income of \$28.3 billion for the sector in 1995, maintaining the 1988 level of average net farm income would require that nearly 500,000 farms leave the sector. Such an exodus would be substantially greater than that observed during the 1980s, a period widely considered to have been financially the worst one for farmers since World War II. However, most of the decline in farm income is expected to be offset by increases in off-farm income. This is a continuation of a long-term trend in which an ever greater proportion of the farm population has become increasingly dependent upon off-farm employment for their financial well-being. But even with higher off-farm income, the total income of farm families declines in real terms during the projection period.

The intent of this paragraph was not to suggest that CBO believes that the net decline in farms between 1988 and 1995 will be half a million farms. The decision to leave farming is a very complex one, and CBO does not attempt to predict the number of farmers that will leave the sector.

Calculating the number of farms that would have to leave agriculture to keep real farm income per farm constant over time is simply one way of expressing the projection. This procedure does, however, exaggerate the impact on farm numbers since all of the adjustment to lower aggregate farm income takes the form of fewer farms. Another way of expressing the results is to say that total real net farm income would decline by 21 percent between 1988 and 1995. This does not mean that

1. The consumer price index, 1982 = 100, was used to calculate inflation-adjusted values.

income received by each farm would fall by 21 percent, which would imply that the number of farms remained at the 1988 level. It is unlikely that either average, inflation-adjusted income per farm or the number of farms will remain the same; both will probably decline.

HOW THE FARM SECTOR MIGHT RESPONDE TO LOWER REAL INCOMES

If aggregate net farm income does fall, farmers might respond in several ways. Farm families might adapt to lower incomes, increase the number of hours worked away from the farm, or they might leave the sector. The response of a given family depends upon its financial condition and local or national job opportunities.

Adapt to Lower Incomes

Probably the first reaction of many farmers to downward pressure on incomes would be to tighten their belts. Both farm and family living expenses might be affected. The models used by CBO to project farm expenses, driven as they are by expected acres planted and inflation, do not adequately capture changes farmers make in their production methods or consumption decisions. Yet, given the economic pressures suggested by the CBO projection and the increasing environmental pressures that farmers are facing, consumption and production could change significantly in coming years.

Farmers as a whole may currently be in a better position to tighten their belts as a means of coping with a decline in income than they have been for some time. The 1980s were a very difficult decade for agriculture. One of the few beneficial outcomes of the 1980s was a dramatic reduction in farm debt. Farm debt in 1982 peaked at nearly \$200 billion and by 1988 had fallen to less than \$140 billion, a 30 percent decline. In inflation-adjusted dollars the decline was even more dramatic, a 40 percent fall from 1982 levels. The sector's debt-to-asset ratio has declined from a peak of more than 22 percent in 1985 to a projected 16 percent in 1989, despite a large fall in the value of farmers' principal asset--land. Lower debt loads, restructured loans, and lower interest rates all contribute to the increased financial strength of the sector. In addition, net farm income in 1987 and 1988 was relatively high, providing many farmers with some financial cushion.

Seek Opportunities Off the Farm

Farmers seek off-farm employment for many reasons. For some families off-farm employment is a stabilizing and supplementing source of income. For others, the off-farm job is the primary source of income and farming is more a lifestyle choice than a business. For still others, off-farm jobs provide the resources to expand a small farm into one of sufficient size to be economically viable. Whatever the motives, it is clear is that the farm sector has become increasingly dependent upon off-farm

income for its financial well-being. Since 1970, total off-farm income has averaged more than 55 percent of all the income received by farm families, meaning that average off-farm earnings exceed those generated by the farm. The degree of dependence on off-farm earnings is greatest for smaller farms. For farms with sales of \$40,000 per year or less, off-farm income averaged nearly 95 percent of total farm family earnings over the 1970-1988 period.

For farms on which the primary source of income is the off-farm job, a decline in farm income could have a relatively minor impact on the family's financial situation. These families would be less likely to leave agriculture because of declining real farm income. For full-time farmers, spending more time at off-farm jobs could entail a significant reorganization of their economic activities. Such farmers might, for example, have to sell some of their farm assets in order to have the time to hold down the off-farm job that enables them to remain in farming, although at a reduced level.

Leave the Farm

Finally, there will almost certainly be fewer farms by 1995 than there are now. Farm numbers declined nearly continuously from 1945 to 1988; the average rate of attrition was 1.3 percent per year. Continuing this trend would result in a reduction of about 200,000 farms by 1995.

We are all familiar with the wrenching consequences of farm failures: the havoc created in the lives of those who go out of business and the reverberations often felt on the Main Streets of nearby towns. It is also true, however, that the departure of some farms has allowed remaining farms to increase in size. With larger farms, farmers have been able to realize the full benefit of technological advances and improve their incomes.

Evidence of the effect of farm exits on the incomes of those who remain in the sector is provided by trends in real net farm income. Real aggregate net farm income was nearly the same in 1988 as in 1960, but the farm population declined by nearly 70 percent, meaning real net farm income per capita more than tripled. If off-farm earnings are included, farm income per capita nearly quadrupled during this period. In comparison, real personal income per capita in the United States, a measure of the income received by households before taxes, did not quite double during this same period. As a result of these differential growth rates, the real income (including off-farm earnings) per capita of those in the agriculture sector is now essentially equal to personal income per capita for the country as a whole. In the 1960s, real income per capita in agriculture averaged less than 70 percent of personal income per capita.

In addition, many of those who leave the sector are also made better off. The motives for departure are of primary importance to this discussion. The long-run historical decline in farm numbers reflects two fundamental trends: rapid increases

in the productivity of the farm sector, and attractive job opportunities outside of the farm sector. These two trends have created a "pushme-pullme" effect in agriculture. Productivity advances, when coupled with a relatively fixed level of demand, mean that downward pressures on commodity prices are the rule rather than the exception. Lower commodity prices often translate into lower farm incomes. Such circumstances have pushed some farmers off the farm, an event that is often dramatic, heartrending, and newsworthy.

While it is difficult to quantify, the pull of off-farm employment opportunities may be of greater importance in the demographic changes affecting the farm sector. Much of the decline in the farm population is the result of the individual decisions of the sons and daughters of farmers who have decided to follow some vocation other than farming. These decisions are usually not dramatic, not heartrending, and not newsworthy.

SUMMARY OF CBO'S INCOME PROJECTION

The degree of concern one might have about the potential responses of the farm community to lower net farm income depends, to a large extent, on the believability of the income projections themselves. The next section, therefore, briefly discusses the major components of the CBO income projections.

Revenue

Revenue for the sector can be divided into receipts from crop sales and livestock sales. The interrelationships between these major components of farm revenue are important. Much of the output from crop producers serves as input for livestock producers. Thus, an increase in the price of feed grains or fodder crops (alfalfa and hay) that improves the financial standing of crop producers is an increase in livestock producers' costs of doing business and may diminish their financial standing. However, a significant number of agricultural producers have one foot in the crop subsector and the other in the livestock subsector. For example, roughly 40 percent of domestically produced feed grains never leave the farm. For such farmers, a change in feed prices may leave their net income position unchanged. As a general rule, however, economic changes, such as high commodity prices, that benefit the crop subsector work to the detriment of livestock producers. Likewise, low crop prices would tend to affect crop producers adversely but would be a boon to the livestock subsector.

Projected Receipts for Crop Producers. The crop subsector can be further divided into program and nonprogram crops. Program crops, as the name implies, benefit directly from federal programs: corn, other feed grains such as sorghum and barley, wheat, rice, cotton, and, in some senses, soybeans. Nonprogram crops are, in essence, everything else. Federal programs indirectly benefit some nonprogram crops

by reducing competition in these markets. Specifically, federal programs limit the ability of participants to shift acreage into nonprogram crops.

Program crop producers receive income from the market and from government payments. Market receipts for program crops over the 1989-1995 period are projected to increase modestly, at an average rate of 2.1 percent per year. CBO projects market receipts of \$42.6 billion for program crops in 1995, an increase of about 15 percent from 1988 levels. Over this period, market demand and production are projected to be in relative balance so stocks neither increase dramatically nor fall from current levels. Corn prices remain in the \$2.10 to \$2.25 per bushel range and wheat prices in the \$2.85 to \$3.05 per bushel range. In short, market conditions for program crops are projected to be somewhat less bullish than recently but better than during the surplus conditions of the mid-1980s.

Direct government payments to program crop producers are projected to remain in the \$9 billion to \$10 billion range through 1995. Deficiency payments make up the bulk of direct payments. Deficiency payments are calculated as the difference between a legislatively determined target price and the average market price for a crop, multiplied by the product of a fixed, historically based yield per acre and the number of acres eligible for payments. With CBO's assumption of constant target prices and program yields, and minor changes in market prices and eligible acres, it is not surprising that direct government payments do not change much during the projection period.

Thus, total receipts for program crop producers increase somewhat during the projection period, at least in nominal terms. Given an expected inflation rate of slightly more than 4 percent, real receipts for program commodities fall from \$43.5 billion in 1988 to \$32.4 billion in 1995 (in 1982 dollars).

Nonprogram crops include fruits, vegetables, hay, tobacco, sugar, potatoes, and many others. In 1988, market receipts from these crops were nearly as great as those of program crops. Demand for many of these products is projected to grow at a relatively strong rate during the 1989-1995 period. For example, vegetable receipts are projected to be more than 22 percent greater in 1995 than in 1989, roughly keeping pace with inflation. The future returns for many of these crops may be influenced quite strongly by consumer concerns about chemical residues and environmental and conservation policies.

Projected Receipts for Livestock Producers. Market receipts for livestock producers were at record high levels in 1988 and 1989. Indeed, their receipts have been above long-term trend levels for the entire decade of the 1980s. Buoyant growth in the receipts of poultry and, for the past two years, cattle producers has been responsible for the sector's relatively strong showing. CBO's outlook for the livestock subsector is less optimistic as the baseline shows receipts, in nominal terms, falling from the 1989 peak of \$83.2 billion to \$80.0 billion by 1995.

The decline in livestock receipts reflects several factors. The baseline includes a slowdown in the very rapid expansion of poultry receipts that occurred during the 1980s. This implies that the market penetration of poultry through such new products as the chicken sandwiches that most fast food chains now offer will slow. Another significant factor in falling livestock receipts is the assumption that dairy support prices will continue to be based on the formula contained in the 1985 farm bill. This provision causes the support price to decline by \$0.50 per hundredweight (cwt) if expected government removals exceed 5 billion pounds on a milk-equivalent basis. Under this assumption, the dairy support price falls from \$10.10 per cwt in 1990 to \$8.60 per cwt in 1993 and remains at this level through 1995.

The future demand for livestock products will also be significantly affected by consumers' perceptions about these products. It is difficult to predict the future strength of consumers' concerns about such things as cholesterol, animal rights, and hormone residues. Each of these issues could present the livestock industry with difficult challenges in coming years.

Expenses

Total farm expenses are composed of cash expenses such as outlays for seed, feed, fertilizer, interest payments, and wages paid to workers; and of noncash expenses, mostly depreciation of equipment and buildings.

Cash expenses depend on such things as the amount of acreage in production, the expected rate of increase in the prices of purchased inputs, and--because they affect decisions about how much fertilizer and other inputs to use--the expected returns in farming. In the current projection, cash expenses remain fairly constant through 1991, as falling feed costs offset increases in the cost of other inputs, and then increase from 1991 through 1995. Over the period, nominal cash expenses are expected to be 12 percent higher in 1995 (\$128.1 billion) than they were in 1988 (\$114.4 billion).

During the most of the 1980s, depreciation of the capital stock in agriculture exceeded investments in new capital, reflecting the difficulties agriculture experienced during the decade. For example, the value of farm machinery and vehicles peaked at \$102 billion in 1982 and fell by 26 percent to \$75 billion in 1988. Some recapitalization is projected to occur in coming years, causing noncash expenses, specifically depreciation, to increase. Noncash expenses are projected to increase from slightly less than \$21 billion in 1988 to nearly \$24 billion in 1995.

Income of the Agriculture Sector

When the various parts of receipts and expenses are put together, nominal net farm income is projected to increase modestly in the near term and decline in later years.

In real terms, net farm income declines by more than 20 percent during the 1988-1995 period. This direction of change is consistent with the trend in real net farm income over the 1960-1988 period, though the rate of decline in CBO's projection is much steeper. Because it starts from a relatively high level, real net farm income in CBO's projection returns to trend only in 1994.

SOME POSSIBLE POLICY IMPLICATIONS OF THE BASELINE PROJECTIONS

An obvious question that follows from what some perceive as the pessimism of the CBO projection is, 'Should this projection elicit a policy response and if so, what policies might be appropriate?' CBO does not make specific policy recommendations, and none will be offered here. However, the results of our study do point to some general policy implications.

First, existing federal programs do not directly address many of the components of farm income that are primarily responsible for the projected decline in real net farm income, increasing costs, and declining livestock receipts. Further, to the extent that changes in federal programs increase returns to program crop growers by bolstering market prices (increasing loan rates or acreage reduction requirements, for example), there would be an adverse effect on livestock producers. Some proposed legislation would allow target prices to increase at somewhat below than the inflation rate. Preliminary analysis by CBO indicates that, if enacted, such a proposal would increase income for the sector over the 1991-1995 period by more than \$6 billion compared with baseline levels. Virtually all of the increase would be from government transfers that would be received by program crop producers.

Second, there are significant distributional issues that should be considered if federal programs are used to increase incomes in the farm sector. The CBO study concluded that, at least through 1988, efforts to make the distribution of farm program benefits more equitable (via tightened definitions of who is eligible for farm program benefits, and lower ceilings on the amounts that can be received) appear to have had little or no effect. Other recent work in this area tells us that the 60,000 farms receiving the largest payments in 1987 constituted 3.6 percent of all farms, received about 42 percent of all direct payments, and received average payments that exceeded \$75,000. Moreover, average net cash income for this group was \$95,000 and they had an average net worth of nearly \$750,000.² Thus, a very large proportion of benefits is received by relatively well-to-do people.

Third, most analysts would agree that perhaps the most legitimate role for agricultural policy is to provide countercyclical assistance. In other words, federal

2. See James Duncan Shaffer and Gerald W. Whittaker, "Average Farm Incomes: They're Highest Among Farmers Receiving the Largest Direct Government Payments," *Choices*, (Second Quarter 1990), pp. 30-31.

policy may be useful in offsetting declines in income that are caused by temporary phenomena such as unexpected weather events or temporary policy changes by trading partners. The ability and wisdom of trying to use policy to offset long-run trends is less certain. Many would argue that no sector, including agriculture, should depend on government transfers for its long-term financial well-being.

Finally, the analysis may have implications for rural development policy. It used to be argued that farm policy was rural development policy. It is much harder to make that case today. Farmers make up only about 8 percent of the rural population, and only about 30 percent of all nonmetropolitan counties are classified as agriculturally dependent by the Department of Agriculture.³ Further, as noted, most families in the farm sector depend on off-farm earnings for more than half of their total income. Farms with sales of less than \$40,000--accounting for more than 70 percent of all farms--are, on average, almost totally dependent on off-farm earnings for their financial well-being. All of these facts suggest, paradoxically, that providing employment opportunities off the farm could be the most efficient means of maintaining the "farm" population. The difficulty, of course, is to develop the mix of social and economic policies that will attract and keep employers in rural areas.

3. A farm dependent county is one in which 20 percent or more of total labor and proprietary income came from farming during the 1975-1979 period. See Lloyd D. Bender and others, The Diverse Social and Economic Structure of Nonmetropolitan America, Department of Agriculture, Rural Development Research Report Number 49 (September 1985).