

## Impact of Government Payments to Farmers Varies by Level of Profitability & Household Income

High levels of government payments to the U.S. farm sector have forestalled a significant drop in national farm income in recent years. The high levels of assistance have generated debate about the appropriate way to address the downturns in the agricultural economy and the effect of direct payments on the distribution of farms and farm households by economic well-being. At the farm level, payments generally boost both profitability and household income. But are the gains even across different levels of farm profitability and household income?

Working with farm-level data from the 1999 Agricultural Resource Management Study (the most recent available), USDA's Economic Research Service (ERS) sought to determine 1) what the level of farm profitability and household income would have been without the program payments and 2) how the payment gains are distributed across different levels of farm profitability and household income.

ERS addressed these questions by comparing the distributions of farms by farm profitability and household income calculated with and without government payments for farms participating in direct payment programs. The issue of distribution involves the structure of agriculture (farm numbers by various characteristics). The differential effects of government payments on economic well-being can affect the structure of the sector.

Distribution refers to the clustering of farms along the range of a measure, such as profits or incomes, and can be used to focus attention on a particular portion of the farm population, such as those with low household income. In 1999, individual farm profitability (measured here by return on assets—ROA) varied from over 20 percent to below -20 percent. About half of farms were clustered at an ROA between 1 percent and -6.4 percent. Farm household income varied from over \$250,000 to below -\$50,000. About half of the farms fell in the range of \$21,000 to \$73,000.

The range in profit levels across farms results from differences in management, weather, enterprise mix, and prices. Factors affecting profits, along with differences in off-farm income, also determine a farm household's level of income.

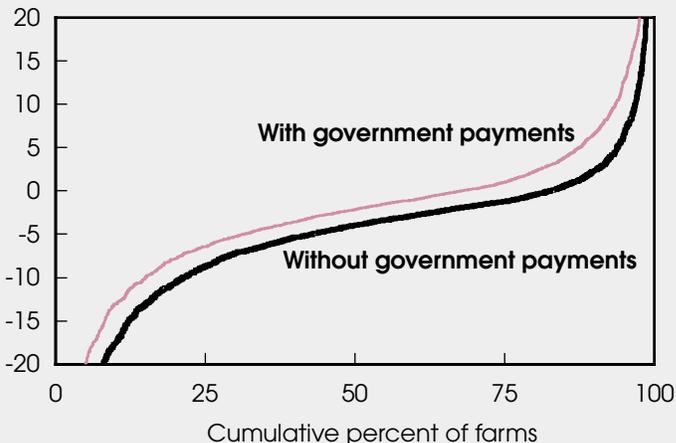
The 1999 rate of return on assets and level of household income include government payments. To determine what the return on assets would have been without government payments, the payments are subtracted from farm pretax net income and the remainder is divided by farm business assets. To determine the impact of government payments on household income, the payments are subtracted from farm pretax net income and the result is added to off-farm income. (If farm business income is shared with more than one household, the revised farm business income is divided among households.) This is, of course, a simplification of the effects of government payments. It does not, for example, take into account any adjustments that a farmer might have made in his/her operation in the absence of government payments.

ERS found that at the median (above which 50 percent of the observations lie), direct payments increased the rate of return on

### Government Payments Boost Farm Profitability. . .

#### Rate of return on assets

Percent

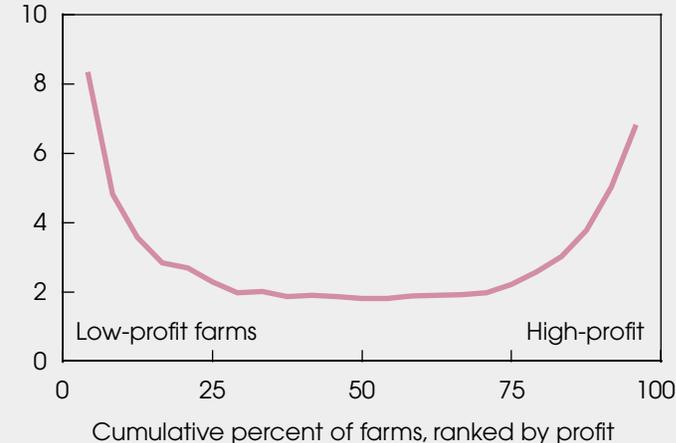


Example: seventy-five percent of farms have a rate of return on assets (including government payments) below 1 percent. Return on assets equals net economic returns divided by assets.

### . . . with Low- and High-Profit Farms Enjoying the Largest Gains from Payments

#### Percentage-point gain in rate of return on assets

Percent



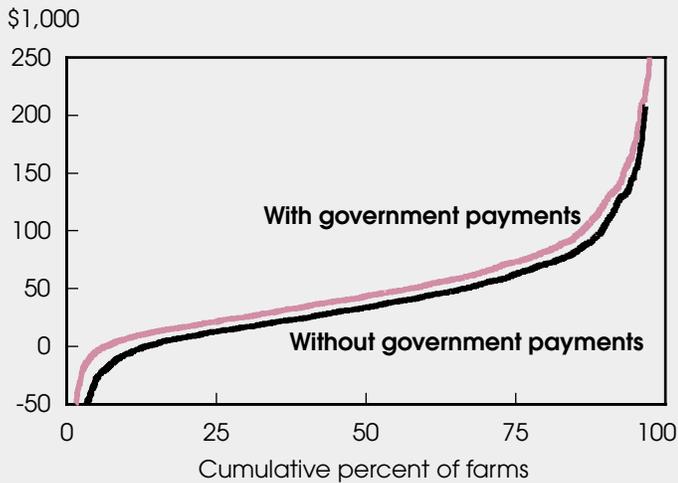
Example: the rate of return for the 10 percent of farms with the lowest profit and the 10 percent with the highest profit increases more than 4 percent when government payments are included.

Based on data from 1999 USDA Agricultural Resource Management Study.

Economic Research Service, USDA

**Government Payments Boost Household Income. . .**

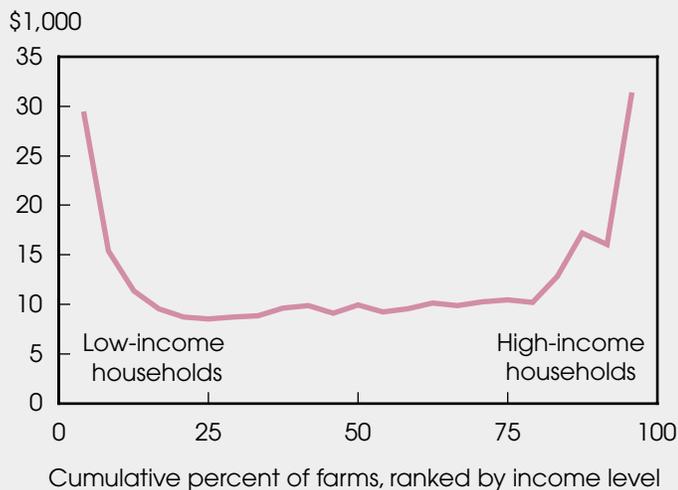
**Farm household income**



Example: seventy-five percent of farms, have household income (including government payments) below \$73,000.

**. . .with Low- and High-Income Farms Enjoying the Largest Gains from Payments**

**Gain in farm household income**



Example: government payments increase farm household income by at least \$15,000 for the 10 percent of farms with the lowest household income and the 10 percent with the highest household income. Based on data from 1999 USDA Agricultural Resource Management Study.

Economic Research Service, USDA

assets by nearly 2 percentage points to -2.1 percent. Median household income increased by almost \$10,000 to \$43,500.

As indicated above, farms vary in their profitability, and the effects of direct government payments were evaluated across the distribution of farms by profitability levels. The least profitable farms enjoyed a 10-percentage-point increase in the rate of profits. Moving toward more profitable farms, the effect quickly declines to 2 percentage points and holds at that level throughout the middle of the distribution; here, profits remained negative despite the effect of payments. In the upper third of the distribution by profit, which includes those farms that would have shown a profit even in the absence of payments, the gain in profit rates begins to climb toward 7 percentage points for the most profitable farms.

In other words, direct payments influenced the highest and lowest ends of the distribution in a similar way, boosting returns disproportionately for farms that had low and high rates of return relative to other farms. Toward the middle of the distribution, direct payments had less influence on farm profits, reflecting lower payments relative to the level of farm assets.

Similarly, the effect of direct payments on distribution of farms by household income is concentrated in those with the lowest and highest measured levels of well-being. The level of income corresponding to the poorest households (negative to approximately \$17,000 total earnings) increased by up to \$30,000. This high improvement dropped off quickly, settling near \$10,000 for a large portion of farms in the middle of the distribution. As household incomes approached the highest levels (\$80,000 and above), the effect of direct payments began to increase and was similar to levels achieved for poor households.

This analysis raises questions about the capacity of counter-cyclical direct payment programs to effectively address the needs of those encountering financial stress. These programs accounted for a large portion of the direct payments from 1998 to 2000 and were triggered by either low prices (loan deficiency payments) or congressional action (primarily market loss assistance) during this period. The effects of these programs were not directly proportional to need, going disproportionately to profitable farms and to households with high income levels. Although the payments sharply improved the financial standing of the worst-off program participants, the absolute level of improvement quickly leveled off for farms in the mid-range levels of profitability and household income.

The effects described here are most likely unintended because farm programs were not designed to be proportional to hardship at the farm business or household level. The results shown here have implications for the structure of agriculture. In that respect, the effects of direct payments may differ from what some policy-makers prefer. **AO**

*Jeffrey Hopkins (202) 694-5584  
jhopkins@ers.usda.gov*