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Growing Farm Size and the Distribution of Farm Payments

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Commodity program payments shifted sharply to higher income households between 1989 and 2003. While Congress made important changes to program design in the 1996 and 2002 farm bills, this shift was not caused by change in design. Instead, changes in payment flows resulted from structural changes in farming that are driving production to very large family farms. We expect those structural changes to continue, because larger farms appear to be more profitable and because many more operators of smaller farms are nearing retirement age. In consequence, in the absence of any fundamental changes to commodity policy, commodity payments will continue to shift to higher income households.

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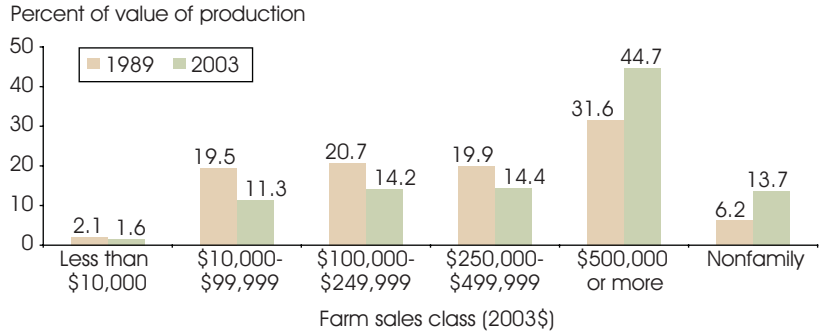
Agricultural Production Is Shifting to Larger Farms

The trend to larger farms is sectorwide.

Family-operated farms continue to account for most U.S. agricultural production. The share of production held by nonfamily farms has grown over time, but still accounted for just 14 percent of the value of production in 2003 (fig. 1). A more striking shift is toward very large family farms (sales of at least $500,000, in 2003 dollars), which accounted for nearly half (45 percent) of production in 2003, up from 32 percent in 1989. The number of those very large family farms also grew—from 39,700 in 1989 to 66,700 in 2003. Meanwhile, the share of production on smaller family farms ($10,000-$250,000 in sales) fell from 40 percent in 1989 to 26 percent in 2003.

Figure 1

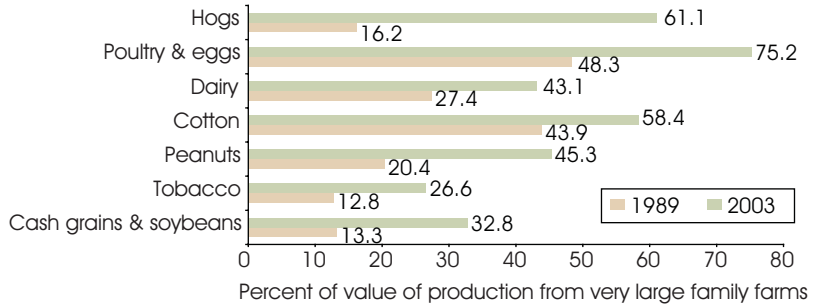
Agricultural production is shifting to larger farms



Source: USDA, 1989 Farm Costs and Returns Survey and 2003 Agricultural Resource Management Survey.

Figure 2

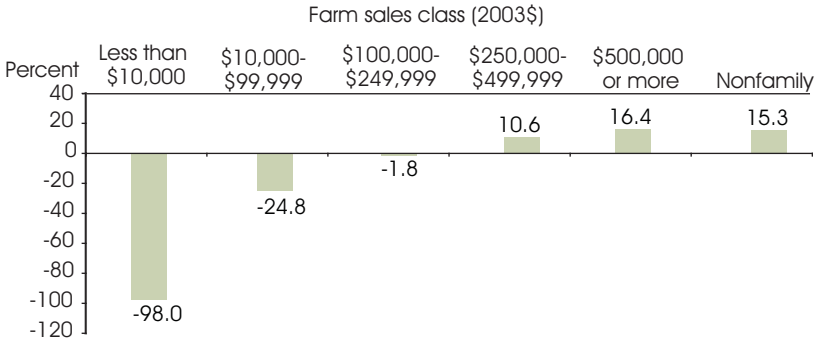
Crop and livestock production is shifting to very large family farms (sales of $500,000 or more in 2003$)



Source: USDA, 1989 Farm Costs and Returns Survey and 2003 Agricultural Resource Management Survey.

Figure 3

Operating profit margin by size of farm, 2003



Source: USDA, 2003 Agricultural Resource Management Survey.

The trend to larger farms is sectorwide. The shift to larger livestock operations is well-documented and pronounced. For example, family farms with at least $500,000 in production value held 61 percent of hog production and 75 percent of poultry and egg production in 2003, up from 16 percent and 48 percent in 1989 (fig. 2). But important shifts are also occurring in crop production, where very large family farms hold rapidly growing shares of production in cash grains and soybeans, tobacco, cotton, and peanuts, crops traditionally covered by commodity programs and farm legislation.

We assess changes since 1989 because we have accurate and comparable data on farm production, farm household incomes, and farm payments starting in 1989. But changes in farm structure were clearly occurring before that time; the census of agriculture shows ongoing shifts of production to larger farms in the 1970s and 1980s, continuing after the dramatic decline of farm numbers that had occurred between 1935 and 1975 had run its course. We expect these changes in farm structure to continue, for two broad reasons.

Many small farm operators are nearing retirement. Among the principal operators of smaller commercial farms, those with sales between $10,000 and $250,000, the share who are age 65 or older has risen sharply since 1989, suggesting that many are near retirement and not simply transferring the farm to younger operators. More specifically, over 30 percent of operators in the $10,000-$99,999 sales class were at least 65 years old by 2003, versus 13 percent of the operators of very large family farms.

Larger farms realize higher profits, on average (fig.3). Margins (the ratio of operating profit[1] to gross farm income) were negative, on average, for farms with sales below $250,000 in 2003, and they rose steadily as farm sales increased. The pattern (losses among small farms, and a strong relation between margins and farm size) holds in earlier years, and suggests that there are strong financial pressures driving production toward larger enterprises.

[1]Net farm income plus interest payments, minus the opportunity cost of operators' unpaid labor and management time.

Commodity Program Payments Are Shifting to Larger Farms

Federal commodity programs have traditionally provided support to producers of selected commodities, principally grains and oilseeds. With production of "program commodities" shifting to larger farms, commodity payments are also shifting in that direction, since payments are linked to planting and yield histories.

Commodity payments include all commodity and disaster assistance payments, and exclude environmental payments, such as payments received under the Conservation Reserve Program (CRP) or the Environmental Quality Incentives Program (EQIP). Commodity payments reflect a farm's production history for certain commodities. Specific programs have applied to dairy, peanut, and tobacco production, while broader programs have applied to field crops such as barley, corn, cotton, oats, rice, sorghum, soybeans, and wheat. Payments are tied to the amount of a farm's cropland that has been enrolled in programs, as well as yield histories. As a result, farms that produce higher volumes of program commodities generally receive higher payments.

High-value crops, as well as fed cattle, hogs, and poultry, are not supported by traditional government price and income support programs, although they do receive disaster assistance and occasionally may benefit from an ad hoc support program. Consequently, farms that produce such commodities receive substantial commodity payments only if they also produce program commodities or have a history of producing them. Because production of fed cattle, hogs, poultry, and high-value crops tends to occur on very large farms, farms in that sales category have traditionally drawn relatively small shares of total commodity payments.

However, as production of traditional program commodity crops shifted to very large farms, commodity payments also shifted sharply (fig. 4). Farms with less than $250,000 in production value (2003$) received 63 percent of commodity payments in 1989; by 2003, they received 43 percent of payments. But farms with at least $500,000 of production received 32 percent of all commodity payments in 2003, up from 13 percent in 1989.

Operators of the Largest Farms Have Higher Incomes

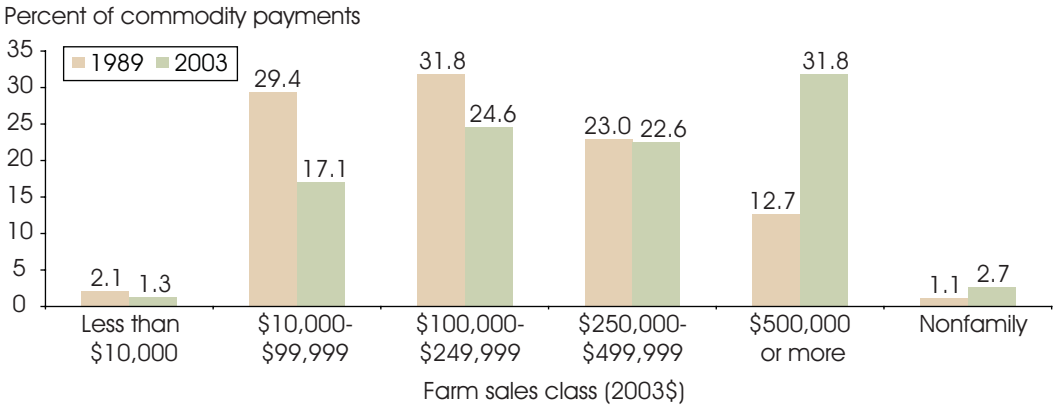
Farm households are not, in general, poor. Mean household income among all U.S. farm operator households was $68,500 in 2003, which compares favorably to the nationwide mean household income of $59,100 (for more on how household incomes are distributed, see Economic Brief No. 7, *Economic Well-Being of Farm Households*). Moreover, mean incomes do not vary sharply with farm size among smaller farms, those with sales below $250,000. Operators of the smallest farms, those with less than $10,000 in sales, derive almost all of their household income from off-farm work and from unearned income, such as Social Security, pensions, and financial investments. About 75 percent of those operators report negative incomes from farming, but those losses are offset by enough off-farm income to raise their household incomes above the national average. Households that operate farms with annual sales up to $250,000 frequently combine a financially viable farm business with off-farm employment to generate household incomes that match or exceed national averages.

About the Data

Data on farms and farm operator households were obtained from USDA's Agricultural Resource Management Survey (ARMS) and its predecessor, the Farms Costs and Returns Survey (FCRS). The FCRS first reported comparable data in 1989, so we used that year as our starting point. Our classification sorts family farms among five sales classes, and assigns all nonfamily farms to a sixth class. Income data for all U.S. households were obtained from the U.S. Census Bureau's Current Population Reports, Series P-60. We accounted for changes in farm product prices by converting all farm sales figures to 2003 dollars, using the Producer Price Index for Farm Products, and we converted all household income figures to 2003 dollars using the Consumer Price Index (CPI-U), in order to account for changes in the purchasing power of incomes.

Figure 4

Government commodity payments are shifting to larger farms



Source: USDA, 1989 Farm Costs and Returns Survey and 2003 Agricultural Resource Management Survey.

By 2003, half of commodity payments went to households with income above $75,772.

However, operators of very large family farms realize much higher incomes, on average, and as production shifts to those farms, it also shifts to much higher-income farm households. The principal operators of very large family farms reported a mean household income of $214,200 in 2003, well above the mean across all family farms, and well above the mean of $102,400 reported by principal operators in the next largest size class ($250,000-$500,000).

Commodity Payments Are Shifting to Higher-Income Households

In 1989, half of commodity payments went to principal operators whose households earned more than $45,808 (in 2003 dollars), and half went to principal operators whose households had incomes below that figure (table 1). To further summarize the distribution of payments in 1989, one quarter went to households earning more than $94,784 (also in 2003 dollars), while 10 percent went to households with incomes above $189,149.

Since then, payments have shifted sharply to higher-income farm households. By 2003, half of commodity payments went to households with income above $75,772. One quarter went to households earning more than $160,142, and 10 percent of payments went to households earning more than $342,918.

Because household incomes did not rise sharply with farm sales among operators of farms with less than $500,000 in sales, shifts in production to larger farms within these size classes did not shift commodity payments to noticeably higher income households. Rather, the apparent shift in commodity payments to higher income households is being driven by shifts of production to the largest class of farms (over $500,000 in sales), whose households have substantially higher incomes.

These shifts have far outpaced the growth in overall U.S. incomes. Between 1989 and 2003, median U.S. household income grew by just 1 percent, from $42,892 (2003 dollars) to $43,318. The median U.S. household income in 1989 was near the median of the farm payments distribution ($45,808). This was not so by 2003.

In the last two decades, incomes have grown most rapidly at the upper levels of the income distribution; at the 90th percentile (10 percent of households earn more), U.S. income grew by 10 percent between 1989 and 2003. The incomes of households receiving most commodity payments have grown even more sharply than this. In short, commodity payments are being shifted, through structural change, toward relatively high-income households.

Table 1—Commodity Payments Are Shifting to Higher-Income Households

	1989	1991	1997	2003	1989-2003 change
	Household Income (2003$)				*Percent*
Commodity Payments Distribution					
50th percentile (median)	45,808	47,121	55,607	75,772	65.4
75th percentile	94,784	98,657	122,868	160,142	69.0
90th percentile	189,149	196,442	250,092	342,918	81.3
All U.S. Households					
50th percentile (median)	42,892	40,686	42,425	43,318	1.0
90th percentile	107,580	103,394	112,589	118,200	9.9

Note: Half of commodity payments go to households with incomes higher than the 50th percentile; a quarter go to households with incomes higher than the 75th percentile, and a tenth go to households with income higher than the 90th percentile.

See also . . .

Farm Structure briefing room, ERS website, www.ers.usda.gov/Briefing/FarmStructure/

Carol A. Jones, Hisham El-Osta, and Robert Green. *Economic Well-Being of Farm Households*, U.S. Dept. Agr., Econ. Res. Serv., EB-7, March 2006.