Special Article

Higher Cropland Value from Farm Program Payments: Who Gains?

Real estate accounts for more than three-quarters of total U.S. farm assets. Portions of that value are increasingly attributable to two factors: direct government payments and urban influence. While some regions and farmland owners benefit more than others from higher farmland values, renters and new purchasers of land pay higher land costs.

Direct government payments went to about 43 percent of the nation's farms in 2000. Urban influence affects the value of an estimated 17 percent of U.S farmland. Through appreciated land values, both factors may increase the fixed cost of agricultural production without any corresponding increase in productivity and, in many cases, without directly increasing the wealth of currently active farmers. Persons or entities that do not operate the land (i.e., nonoperator owners) own substantial proportions of farm real estate and gain if the value increases. On the other hand, operators who lease farmland may end up having to pay higher rental costs which largely reflect their receiving some government payments.


USDA photo: Ken Hammond

Direct Payments Augment Farm Income & Cropland Values

The value of agricultural land depends largely on expected future earnings. Like the value of any income-earning asset, land value increases as expected long-term earnings increase. In land markets, farmland buyers pay a higher price to acquire land that is expected to yield a larger stream of income, regardless of whether the source of that income is market-based agricultural production, nonagricultural use, or government payments. Although the principal goal of agricultural commodity programs is to augment the income of farm operators, economists have widely recognized an important side effect—that direct government payments increase farmland values.

The effect on farmland values is particularly strong when the eligibility to receive farm commodity program payments is attached to specific land, with the eligibility to receive payments transferring with ownership of that land. To the extent that expectations of receiving farm commodity program payments are bid into the price of land, current owners of land on which payments are made capture a portion of all future program benefits through land value appreciation. These benefits accrue both to farm operators who own all or part of the cropland they operate (owner-operators) and to nonoperators who own cropland (nonoperator owners). To realize the full benefits of higher land values, however, landowners must sell the land.

Direct government payments to agriculture totaled $22.9 billion in 2000, rising to nearly 40 percent of net cash farm income from less than 4 percent in 1980. About 8 percent of these payments occurred under conservation and miscellaneous programs, while 92 percent related to commodity programs and disaster relief. Most current farm commodity related payments are tied to cropland that has a history of previous enrollment in annual commodity programs.

Government commodity program payments to farmland owners and operators during 2000 came primarily through four sources:

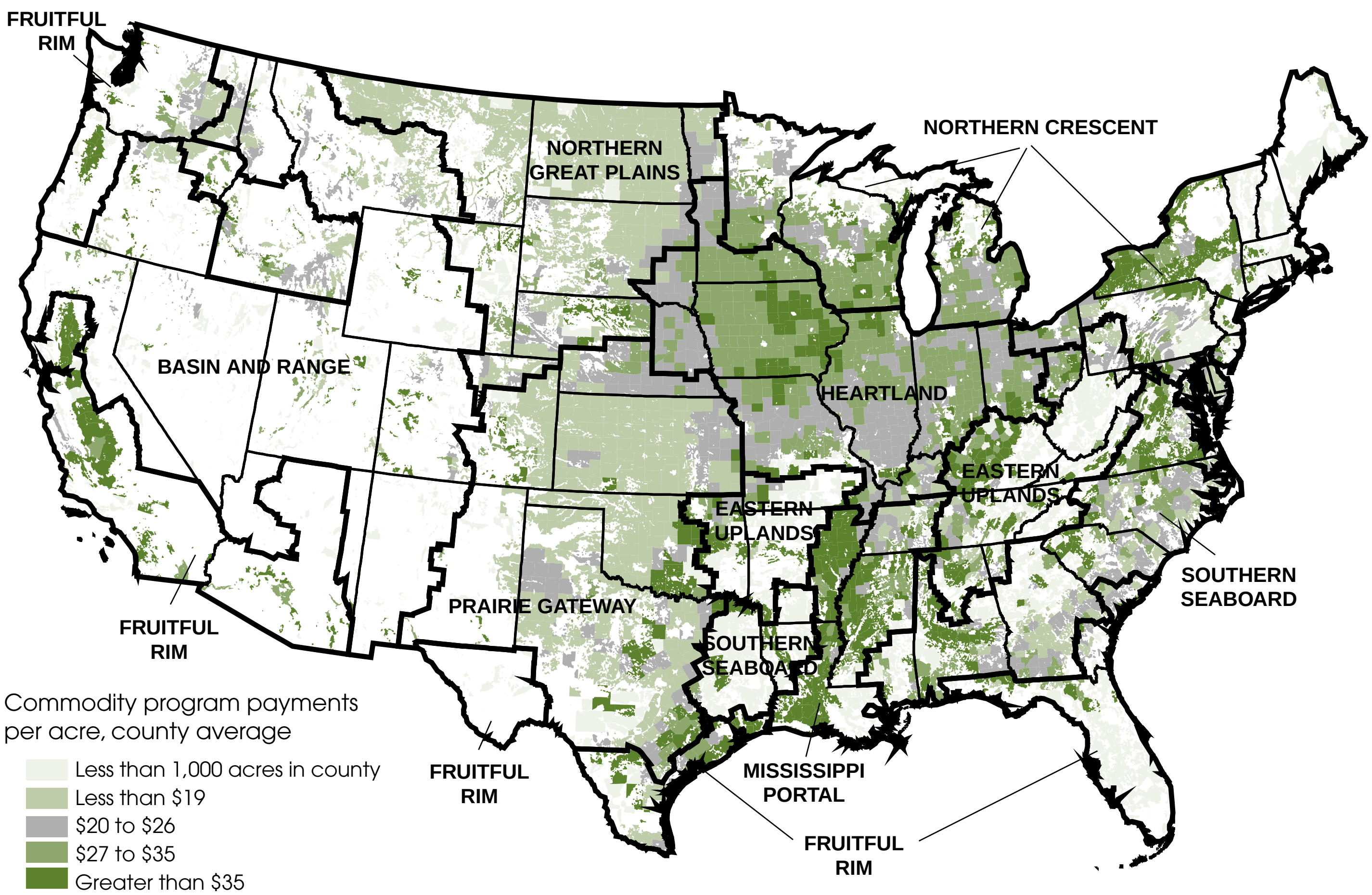
1) production flexibility contracts (PFCs) authorized under the 1996 Farm Act;
2) market loss assistance (MLA);
3) disaster or emergency payments; and
4) marketing loan benefits in the form of loan deficiency payments (LDPs) and marketing loan gains from commodities placed under Market Assistance Loan programs.

In 2000, only about one-third of all farms (730,000 out of 2,136,865) received government payments through these four commodity related sources.

Historically, these commodity-related payments go primarily to owners and operators of land that produce or produced one or more of eight crops: wheat, corn, soybeans, sorghum, cotton, rice, barley, and oats. Most increases in land value due to direct program payments are associated with cropland previously or currently planted to these eight major program crops.

The degree to which farm commodity program payments affect cropland values depends partly on the form in which the pay-

Farm Commodity Program Payments Vary Regionally



Based on acres in program crops from 1997 Census of Agriculture. Excludes conservation program payments.

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ments are made. For instance, production flexibility contract payments (PFCPs) are tied to ownership of cropland with a history of enrollment in commodity programs. Consequently, landowners may be able to capture relatively larger proportions of PFCP benefits. But LDPs depend on current production and commodity market prices. Because LDPs are paid on each unit produced, farm operators have an incentive to increase production through greater use of fertilizer, herbicides, and other inputs. As a result, input suppliers capture a share of LDP benefits, and consequently, LDPs may have a lesser effect on cropland values than PFCPs and other decoupled, lump-sum payments.

Government payments made under environmental programs such as the Conservation Reserve Program and Wetlands Reserve Program also affect farmland values, but through a fundamentally different process, and are not included in this discussion.

Considering All the Factors In Program Payments' Impact

Various factors determine the ultimate effect of farm commodity payments on cropland values. First, farm commodity program payments per acre vary geographically, depending on program differences among dominant crops and relative productivity of the land (historic base program yield and/or current yield). A number of counties do not produce any eligible crops, and thus do not receive any farm commodity payments. Regions receiving the largest amount of such payments in 2000 were the Heartland, Prairie Gateway, Northern Crescent, Northern Great Plains, and Mississippi Portal. These five regions together received approximately 85 percent of farm commodity related payments.

Second, a dollar of farm commodity program payments does not increase cropland values by the same amount as a dollar of market-based earnings. Landowners' and buyers' expectations about certainty and stability of an income source will directly affect the degree to which that income is translated into cropland value through the capitalization process. If uncertainty exists as to whether farm commodity program payments will endure, the current value of expected future payments (the basis of farmland value attributable to commodity program payments) will be significantly discounted. This means associated cropland values will be lower than if there were complete assurance that programs would continue indefinitely. The long-term existence of farm commodity programs (over 50 years) has created expectations among landowners that programs will persist in some form and level.

The effect of farm commodity program payments on the capitalized values of associated cropland also depends on the agronomic flexibility of producers in specific regions to grow alternative crops (the ability of producers to adjust output in response to changes in government programs), and on the region's relative economic advantages in production of program commodities.

Another factor that affects the impact of commodity program payments on cropland value is that only the portion of payments that landowners "capture" will be capitalized. Many government program payments are distributed among landlords and tenants in accordance with the terms of the rental arrangement. For instance, surveys conducted in South Dakota and Nebraska for USDA's Economic Research Service during the mid-1980s indicated that the bulk of share rental arrangements was 33-66 or 25-75, meaning that landlords received just one-third or one-quarter of gross receipts.

The split between landlords and tenants varies by crop grown and region of the country. However, these relative shares are often traditional, having been worked out and established over long periods of time. Though relative shares change over time, they do so infrequently, and most likely do not move substantially up and down with the vagaries of farm commodity program payments. Nonetheless, in some cases a landlord may adjust his net return by changing his relative contribution to inputs while leaving revenue shares unchanged. Also, anecdotal evidence indicates that some landowners have increased the share of farm commodity payments they "capture" by converting share rental arrangements to cash rent leases in which they can more easily adjust the rental rate. In some cases, landowners have discontinued share rental arrangements, themselves becoming the operator, in order to directly receive the program payments. These "farm operators" then hire their previous share rental tenants to plant, cultivate, and harvest the crops as custom operators.

Cash rental arrangements exceed share rentals in many areas. Under cash rental arrangements, farm commodity program payments are distributed directly to the farm operator. Landlords can capture a share of those payments by raising the annual cash rent. However, even cash rents are considered "sticky upward," as well as "sticky downward," meaning that cash rental rates often change proportionately less than do net returns from sales and from commodity program payments. The implication, again, is that landowners are unlikely to capture all the value of future commodity program payments through appreciation in the value of cropland.

Farm commodity program payments in 2000 included an unusually large share of LDPs (34 percent). As a consequence, the year 2000 set of farm commodity-related payments may have less effect on cropland values than previous payment sets. As mentioned earlier, LDPs would be expected to have relatively less effect on cropland values than other payments, particularly in the near term.

Gainers from Cropland Appreciation

Farm commodity program payments have the highest proportional effect in the Heartland, accounting for 24 percent of the market value of farmland. The effect is similar in the Prairie Gateway region (23 percent) and the Northern Great Plains (22 percent). Farm commodity program payments accounted for 16 percent of market value for the Mississippi Portal region, and 8 percent for the Northern Crescent.

An estimated $62 billion of the market value of cropland in program crops is attributable to the effect of farm commodity payments enhancing land prices. The Heartland accounts for $40 billion, or nearly two-thirds of the enhanced market value, due to the large acreage of program crops, the relatively high agricultural value of Heartland cropland, and the relatively high proportional effect of farm commodity payments on farmland values in the region. For comparison, the estimated total market value of U.S. cropland (from which one of the eight principal program crops was harvested) was $312 billion as of January 1, 2001. The Heartland accounted for $167 billion, followed by the Prairie Gateway at $42 billion.

Procedures Used to Derive Cropland Values

The value of farmland attributable to farm commodity program payments was derived from statistical analysis of farmland value data (excluding the value of buildings) obtained from the 2000 Agricultural Resource Management Study. The farmland values used were average value per acre of farms that received government payments from the principal farm commodity programs. County average farmland values were combined with county-level information on factors influencing farmland values.

Hedonic land price regressions permitted the calculation of the average amount that county farmland values increased for each additional dollar of farm commodity program payment received by farm operators in that county, while simultaneously accounting for differences in soil quality, urban influence, availability of irrigation, and other factors. The analysis was conducted separately for the five production regions receiving the largest total amounts of commodity program payments. The resulting coefficients were applied to commodity program payments received in each county to estimate the percentage of the total farmland value in each region attributable to the payments. To get a ballpark estimate for the U.S., lesser effects of 10 percent of the market value of farmland were assumed for the remaining regions, based on research indicating that commodity program payments in these regions were not a principal determinant of cropland value.

Heartland and Prairie Gateway Account for Much of the Cropland Value Attributable to Commodity Program Payments

		Cropland value attributable to commodity program payments					
Region	Total value of land harvested in eight program crops[1]	Percent of region value in the previous column	Estimated value attributable to payments	Owned by farm operators		Owned by nonoperator landlords	
	$ billion	*Percent[2]*	*$ billion*	*Percent[3]*	*$ billion*	*Percent*	*$ billion*
Heartland	167.3	24.0	40.2	37	14.9	63	25.3
Prairie Gateway	41.7	23.0	9.4	35	3.3	65	6.1
Mississippi Portal	17.3	16.0	2.7	25	0.7	75	2.0
Northern Great Plains	11.3	22.0	2.5	47	1.2	53	1.3
Fruitful Rim	21.6	10.0	2.2	47	1.0	53	1.2
Northern Crescent	26.0	7.5	1.9	47	0.9	53	1.0
Southern Seaboard	18.2	10.0	1.8	47	0.8	53	1.0
Eastern Uplands	4.6	10.0	0.5	61	0.3	39	0.2
Basin and Range	4.2	10.0	0.4	39	0.2	61	0.2
U.S.	312.3	19.7	61.6	38	23.3	62	38.3

1. Eight program crops are wheat, corn, soybeans, sorghum, cotton, rice, barley, and oats. 2. Based on 2000 Agricultural Resource Management Study data, except 10 percent assumed for Fruitful Rim, Southern Seaboard, Eastern Uplands, and Basin and Range regions. 3. Based on 2000 Agricultural Resource Management Study data for farms receiving commodity program payments.

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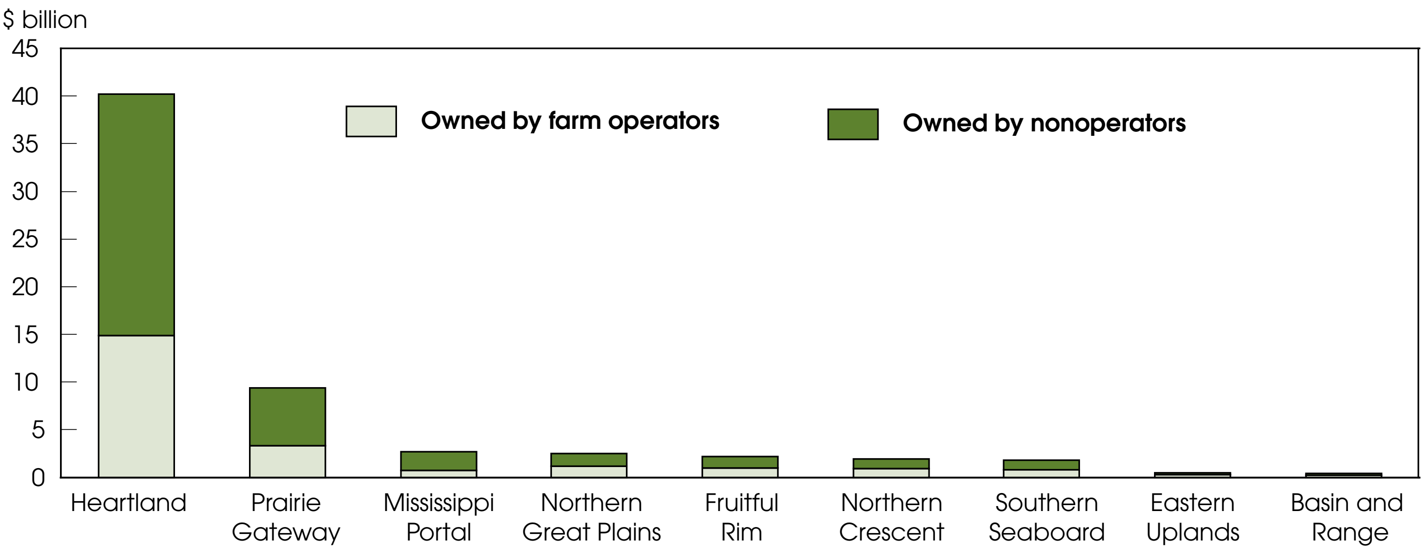
Nonoperators Own Much of the Cropland Value Attributable to Commodity Program Payments



Includes only cropland in commodity program crops. Based on analysis of data from the 2000 Agricultural Resource Management Study.

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Regardless of whether cropland value increases are due to increased farm commodity program payments, urban influence, or some other factor, not all farm operators benefit from the increased wealth associated with higher cropland values. Since potential capital gains, whether from commodity program payments or urban influence, would accrue to farmland owners, farm operators will not benefit from increased cropland values unless they own all or part of the land they operate.

In 1999, only about 58 percent of farmers owned all of the land they operated (full owners). For the other 42 percent, renting cropland was a key means of gaining access to a necessary input into the agricultural production process. On average for these latter farmers, rented farmland accounted for about 45 percent of total land operated per farm. About 18 percent of operators rented more than three-fourths of the land they farmed. Seven percent of operators were full tenants, meaning they owned none of the land they operated. Full tenants do not benefit at all from the capital gains generated by increased farmland values, and part-owners benefit only in proportion to the land they own.

Who are the nonoperator owners that benefit from farmland value appreciation? While the characteristics of farm operators are well documented, much less is known about the characteristics of nonoperator landlords. Landowner responses to USDA's 1999 Agricultural Economics and Land Ownership Survey provide some clues. As a group, nonoperator-owners are older than owner operators. More than 55 percent of nonoperator-owners

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Among Nonoperator Owners, Those Age 65 and Older Own More than 60 Percent of the Group's Farmland

Age of owner	Owners: Nonoperator owners	Owners: Owner-operators	Acres: Nonoperator owners	Acres: Owner-operators
	Percent		*Percent*	
Under 50 years	16	33	10	32
50 to 64 years	29	38	27	37
65 years and over	55	29	63	30
U.S.	100	100	100	100

Source: *Agricultural Economics and Land Ownership Survey (1999)*, USDA.

Economic Research Service, USDA

are age 65 or older, compared with 29 percent of owner-operators. From the other end of the age spectrum, 16 percent of nonoperator-owners are under age 50, while 33 percent of owner-operators are under age 50.

Though it is not possible to determine definitively, it also appears that many nonoperator owners are retired farmers, their survivors, or others formerly directly associated with agricultural production. In 1999, 29 percent of all nonoperator owners lived on the farm they rented out or on another farm, and another 28 percent lived within 5 miles. Only 10 percent lived 150 or more miles away. The vast majority (85 percent) lived within 50 miles of the land they rented out.

The strong association with active agriculture is even more pronounced for nonoperator owners 65 years or older. In 1999, 31 percent of these still lived on a farm. Forty-four percent lived within 5 miles of the land they rented out, while only 15 percent lived 150 or more miles away. Nearly 38 percent described themselves as retired from farming. About 36 percent were female, compared with 24 percent male and 40 percent couples with joint ownership.

Among owner operators, those who gain the most from cropland value appreciation are likely the same as those that receive the largest commodity-related government payments. The General Accounting Office (GAO), in a June 2001 report drawing on USDA data, concluded that "large wheat and corn farms run by older operators tend to receive larger farm payments." Over 85 percent of farm payments in recent years have gone to farms with gross agricultural sales of over $50,000. More than half of that amount went to the largest farms—those with sales of $250,000 or more. The emphasis of major farm program payments on historic or current levels of production and the abundance of acres planted to corn and wheat mean that operators planting these crops generally have received larger payments.

Similarly, older farm operators have generally received larger payments than younger ones. Younger operators tend to have smaller farms and produce less of the crops for which payments are generally made. Farmers age 55 and older, who operate more of the larger farms and who are the largest demographic group, received 38 percent of the payments, compared with 6 percent going to operators under age 35.

Policy Considerations

Appreciated farmland values are a double-edged sword for American farmers. From the perspective of many farm operators, farmland value increases are favorable. Farm real estate value contributes to financial stability. In addition, farm real estate is often the principal source of collateral for farm loans, enabling many farm operators to finance the purchase of additional farmland and equipment or to finance current operating expenses. Some 53 percent of the total farm-sector debt of $183.6 billion at the end of 2000 was farm real estate debt—either mortgages for purchase of farmland or short- or intermediate-term debt secured by farmland. Many farm operators consider farmland as a retirement instrument, funded by the capital gains that may accrue upon sale.

But from another perspective, those same increases in cropland value reduce the ability of beginning farmers to buy cropland. If cropland is purchased after expectations of a stream of commodity program payments are already bid into its price, the purchaser, whether a beginning farmer or an expansion buyer, will not (economically speaking) receive the benefits of future commodity program payments (even though they will directly receive payments). The new purchasers will have "paid" for the right to receive those future government payments through the elevated market price of the cropland. Or, from the other perspective, the seller will have captured the present value of future expected commodity program payments through the appreciated market price received for the cropland. In addition, the new buyer will incur additional financing costs because of the higher price of the cropland. Such increases in the costs of acquiring land, which are unrelated to the inherent productivity of cropland, may increase the fixed cost of agricultural production and offset some of the benefits of higher government payments.

Program payments and their impact are part of the current debate on the next farm bill. Part of this debate focuses on the implications of recent increases in cropland values and what might happen to these values if direct payments are reduced or dropped. The current set of farm commodity program payments has added nearly $62 billion to U.S. farmland values. This added value is unrelated to inherent agricultural productivity, yet adds to the fixed cost of agricultural production for some producers. The effect is particularly strong in the Heartland, where farm commodity payments add $40 billion to the market value of cropland, nearly two-thirds of the effect nationwide. However, owner-operators own only about 40 percent of farmland. Nonoperator landlords own more than $38 billion in land value attributable to commodity program payments nationwide, with over $25 billion, or nearly two-thirds, concentrated in the Heartland. AO

Charles Barnard (202) 694-5602; Richard Nehring; James Ryan; Robert Collender;
Bill Quinby also contributing cbarnard@ers.usda.gov

For more information:

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