



Tim McCabe, USDA

Government Payments To Farmers Contribute To Rising Land Values

Direct government payments are usually intended to benefit farm operator families. Critics of payment programs nonetheless contend that, since government payments are usually attached to land, this addition to farm income contributes to rising rental rates and, in turn, to higher land values. The “bidding” of government payments into higher rents and land values generally benefits farmland owners. While a share of the payments accrues to tenants and sharecroppers, farmers who rent a large share of acreage they operate face increased rental rates. This raises their fixed costs and increases the risk of operating losses if commodity prices and government payments decline.

Some government payments to farmers also translate into income for merchants who provide seed, fertilizer, machinery, and other production inputs. Lenders benefit from the improved repayment capacity of farm borrowers and reduced risk on farm loan portfolios. Other indirect benefits accrue as local economic multipliers create ripple effects from the additional income throughout the rural community.

This article describes the interaction between government payments and land values and identifies groups in the community—landowners and others—who are likely to benefit directly or indirectly from program payments. A simple model illustrates the impact of government payments on farmland values, followed by a discussion of government payment impacts on local economies and farm lenders.

Payments Raise Income & Land Values

The value of agricultural land depends largely on its expected future earnings from farming. Because government payments contribute to farm income, they indirectly support farmland values. In competitive local land markets, land buyers pay a higher price to acquire land that conveys an expected stream of government payments.

Payments are generally attached to the land, so the rights to receive payments transfer with land ownership. Current landowners capture most of the expected future program benefits through land value appreciation. Although landowners must sell the land to fully realize the ben-

efits of higher land values, they realize a partial benefit from the increase in equity against which they can borrow and from higher rental rates.

Farmland values change to reflect the present value of expected future net returns to land through a process called capitalization. As government payments become a component of expected future returns, they are incorporated into land values through capitalization. The benefits of higher expected future returns accrue to current owners of land on which payments are made, including both farm owner-operators and nonoperator landlords.

Government payments generally improve the balance sheets of recipients by decreasing income risk associated with land ownership, increasing the value of farm assets, and reducing the need to acquire debt. Government payments may affect the debt side of farmers’ balance sheets by reducing the need for financing of capital asset purchases, and, depending on the timing of receipt of payments, lessening the amount of credit needed for seasonal production financing. Countercyclical direct program payments tend to stabilize income, minimize the impact of catastrophic market losses, and reduce financial risk for both farm operators and the lenders providing them credit.

The impact of income from any source—including government payments—on land values depends on whether that income is viewed as permanent or transitory. This distinction hinges on landowners’ degree of certainty that the income source will be there in the future. Even though production flexibility contract payments (PFCPs) may have been viewed as transitory payments when authorized by the 1996 Act, subsequent emergency assistance and a 70-year history of government involvement in agriculture have generated the expectation that future support will be available when needed.

During 1981-86, high interest rates, a strong dollar, and declining exports contributed to rising uncertainty about the future profitability of farming, leading to a 31-percent nationwide decline in the total value of farm real estate assets. But land values in recent years have been

relatively robust—especially in areas reliant on production of program commodities—despite concerns about low commodity prices and the future direction of farm programs.

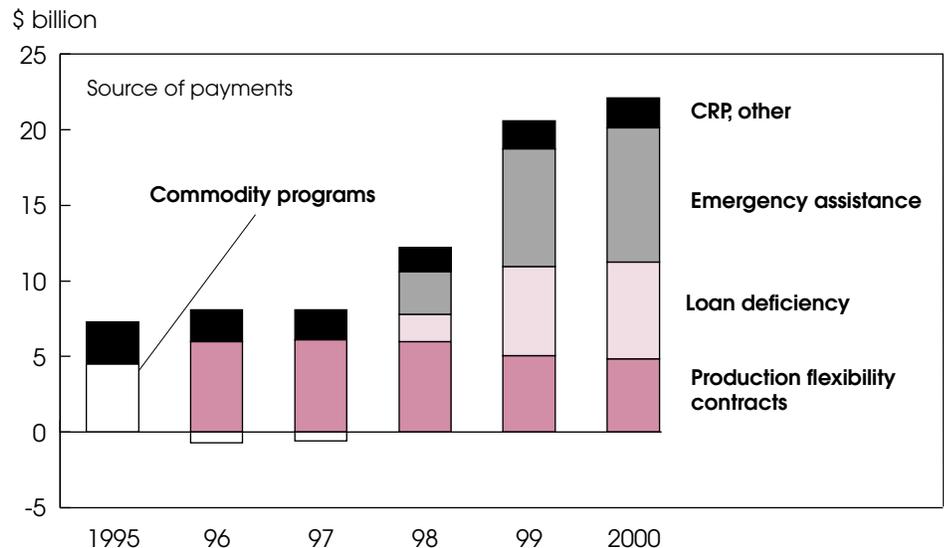
Bankers in the Chicago Federal Reserve District (Iowa and parts of Illinois, Indiana, Michigan, and Wisconsin) report that land values in the district rose 6 percent overall in the year ending January 1, 2001, despite a slowdown in the rate of increase in the last three quarters. The gain may confirm that after several years of emergency assistance to offset the effects of low commodity prices, landowners and land purchasers view government payments as a near-permanent solution to future commodity price declines, and that Midwest farmland owners remain confident that government intervention to maintain farm incomes will continue for the foreseeable future. This apparent confidence suggests that landowners view government payments as transitory only in the sense that they might be reduced if market prices and returns on commodity sales improve dramatically.

Comparing Benefits to Landowners & Tenants

For many operators, renting land to farm is a key strategy to expand the size of the farm business without incurring additional debt. About 42 percent of farmers rented land in 1999. On average, rented farmland accounted for about 45 percent of total land operated per farm, but about 18 percent of operators rented more than three-fourths of the land they farmed while 7 percent were full tenants—i.e., they owned none of the land they operated. Depending on the extent that government payments lead to higher rental rates and higher land values, operators farming mostly rented acreage may receive little benefit.

PFCP checks are sent to landlords and tenants according to the terms of the lease agreement. In a series of panel discussions held in early 1997 under the auspices of USDA's Economic Research Service, professional farm managers indicated that PFCPs were almost immediately captured by landowners and reflected in rental rates and land values. According to

Emergency Assistance and Loan Deficiency Payments Pushed Direct Government Payments to Historical High in 2000



Previous high for total payments was \$16.7 billion in 1987.

In 1996-97, return of commodity program overpayments exceeded gross outlays.

Economic Research Service, USDA

panelists, the process was clear in cash lease situations, where the lease terms negotiated between tenant and landlord reflect the expected contribution of PFCPs to the renter's income. Given the intense competition for leased land in many areas, tenants operating on cash leases found their lease rates being bid up until the landowner had captured most of the tenant's share of the PFCP.

Landowners' capture of PFCPs through farmland rents is less straightforward when tenants operate land under share rental arrangements. Under the 1996 Farm Act, crop-share leases are routinely reviewed by county committees and USDA personnel to check for compliance with local practices regarding division of PFCPs between landlords and share-rent tenants. Farm manager panelists perceived that the payments were intended to be shared proportionally according to crop shares. But landlords did have some leeway to adjust terms of share leases to circumvent this requirement and to capture more of the PFCP benefits.

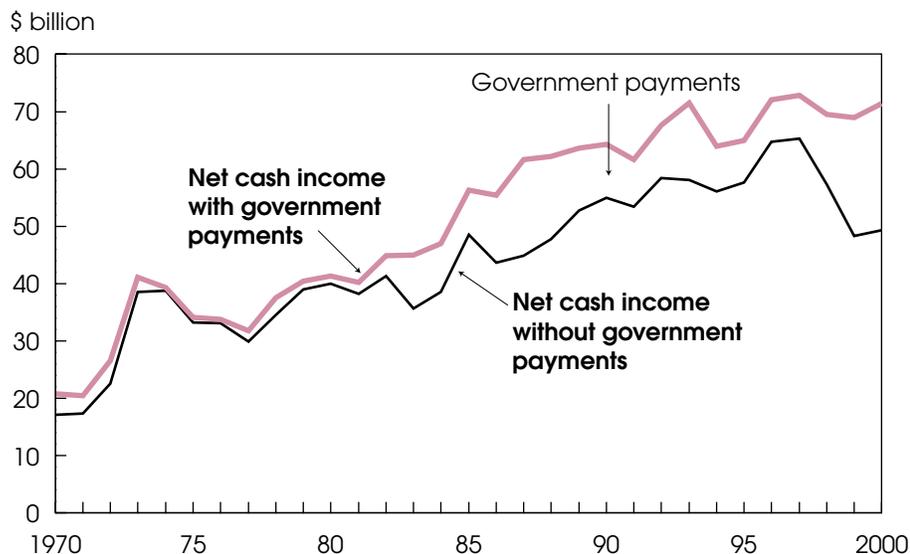
For example, panelists reported that some landlords reduced their share of expenses or retained a larger crop share to gain additional compensation that was equiva-

lent to the amount of the tenant's share of the PFCP. Such lease changes generally take place over time and are subject to review, but panelists indicated that an increasingly larger share of payment benefits would likely accrue to landlords. However, in areas where competition for rental land was less intense, tenants retained a greater proportion of their PFCP.

Farm manager panelists reported that longer term changes in lease arrangements were occurring as landlords attempt to capture a greater share of PFCPs. In some instances, share leases were being converted to cash leases. In other cases, to eliminate questions as to who should receive the PFCPs, landlords simply quit renting out their farmland and used paid labor—sometimes the previous tenant—to provide custom work (labor and equipment) for the same tasks that had previously been carried out under the share lease. The landowner would also pay input suppliers for custom application of needed inputs. As a result of these adjustments, PFCP benefits to share-rent tenants are expected to be minimal in areas where competition for rental land is more intense.

Policy

Government Payments Amounted to Almost One-Third of Net Cash Income to Farm Operators and Landowners in 2000



Economic Research Service, USDA

No follow-up panel discussions have been held to assess the degree to which these adjustments have played out, but USDA data generally support the observations of the 1997 panelists. Cash lease income to nonoperator landlords increased by 17 percent from 1996 through 2000, while share-rent income declined 38 percent. Moreover, the portion of nationwide nonoperator landlord income from cash leases increased from 47 percent to 57 percent between 1996 and 2000, suggesting a shift from share leases to cash leases.

The degree to which government payments affect rental agreements and land values depends on how much additional expense is incurred to become eligible for the payment. Under legislation prior to the 1996 Act, deficiency payments—paid when season-average market prices fell below predetermined target prices—were based on an operation's historic acreage and yields of program commodities. These were effectively lump-sum payments that provided little incentive to increase production (and costs), because a recipient could do little to increase recorded program base acres and yields. Because qualifying for a payment depended on market conditions and prices and entailed additional costs to maintain mandated set-aside acreage, deficiency pay-

ments flowed to the landowner through higher rents and land values.

Production flexibility contract payments—authorized under the 1996 Act—are based on previous participation in annual commodity programs, and are tied to ownership of farmland instead of production of commodities. Where deficiency payment levels depended in large part on commodity market prices, PFCPs—although declining over 7 years—are predetermined for a known time horizon. The payments were intended to benefit those deriving income from farming, and are attached to the land rather than the farm operator. Although the Secretary of Agriculture was directed to protect the interests of tenants and sharecroppers, modifications in both rental rates and lease types resulted in landowners capturing most of the PFCP benefits.

Loan deficiency payments (LDPs) provide a per-unit revenue floor for most program commodities. While these payments are available only for program commodities during periods of relatively low prices, they provide a per-unit revenue floor, reducing any further down-side price risk for these commodities. Since they are paid on each unit produced, they give

farmers an incentive to increase production, incurring greater expenses for fertilizer, herbicides, and other production inputs. By shifting a small share of payment benefits to input suppliers, LDPs have a lesser effect on land values than PFCPs and other lump-sum payments.

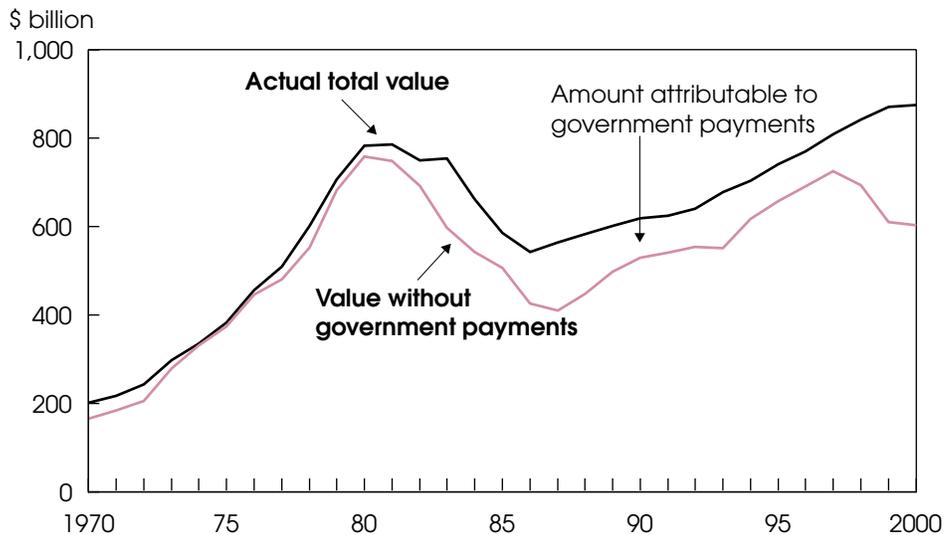
Environmental programs such as the Conservation Reserve Program and Wetlands Reserve Program require payment recipients to incur some expense in maintaining enrolled land in a conserving use. Since payments are made on land that is environmentally sensitive but not necessarily agriculturally productive, they may represent a return—certain for a number of years—that is higher than earnings the land could generate in production. But in removing land from production, they reduce the supply of available land and exert upward pressure on rental rates.

Land Values Without Program Payments

The impact of government payments on farmland values can be illustrated using a simple income capitalization modeling approach. Assuming that net income from all sources—e.g., market sales or government payments—is reflected in land values, the ratio of net income to real estate value is the discount rate at which income is capitalized into land values. This calculated discount or capitalization rate can then be used to estimate land values in the absence of government payments. This simple model is based on assumptions that should generate the largest “reasonable” contribution of government payments to land values and therefore indicate a projected lower limit on land values without government payments.

The ratio of farm-sector net cash income (measured in USDA farm-sector accounts as net cash income accruing to farm operators, contractors, and nonoperator landlords) to farm real estate value measures an implied discount rate, uniquely determined for each year. Applying the discount rate to annual net income excluding government payments generates a new land value that would exist if farmland values depended solely on earnings from market sales. Results suggest that in the absence of government payments, total value of U.S. farmland would have been

U.S. Farm Real Estate Value Would Have Been Lower Without Government Payments



Economic Research Service, USDA

about 4 percent lower at most during 1972-81 and no more than 19 percent lower during 1982-89. This gap between total U.S. land value with and without government payments decreased to about 13 percent during 1990-97, and rose to 25 percent during 1998-2001.

While these findings are consistent with those from more extensive prior studies, several caveats apply. This approach assumes that future income expectations are based entirely on current income, and that expectations change annually and are immediately reflected in current land values. The approach also assumes that government payments contribute dollar-for-dollar to net income (no program participation costs are estimated), and that all net income has the same impact on land values regardless of whether the source is market sales or government payments. Perhaps most importantly, farmland value is based solely on future expected farm income and has no value in nonagricultural uses such as recreation or residential or commercial development.

Most previous studies that have examined the effect of past government payments on cropland values have analyzed limited geographic areas or addressed the issue from the perspective of a single commodity. Those studies bracket the effect of

government payments at between 7 percent and 38 percent of cropland value, with differences attributable to variation in program commodity studied, reference date of the study, region, and estimation method.

A 1990 study by USDA's Economic Research Service (ERS) took a more longrun perspective by estimating changes in cropland values after producers have had time to adjust inputs, outputs, and technology to a drop in income from government payments. The study used a computable general equilibrium model—where all sectors adjust simultaneously—to specifically address the issue of U.S. cropland values in the absence of farm programs. The model results indicate that longrun equilibrium cropland values would be 15-20 percent lower in the absence of government payments.

A more recent ERS study evaluated the impact of government commodity programs on cropland values at the time of implementation of the 1996 Act. The percentage of cropland value accounted for by farm program payments was estimated. Results indicate that the responsiveness of cropland values to changes in government payments varies widely across the U.S. For example, elimination of government payments would have lowered land values

by 69 percent in parts of the Northern Plains, and by about 30 percent throughout much of the Corn Belt. Other areas with a relatively high share of land values attributable to government payments were in north central Texas, southern Georgia, coastal North Carolina, and the Great Plains.

Other Businesses Benefit From Farm Payments

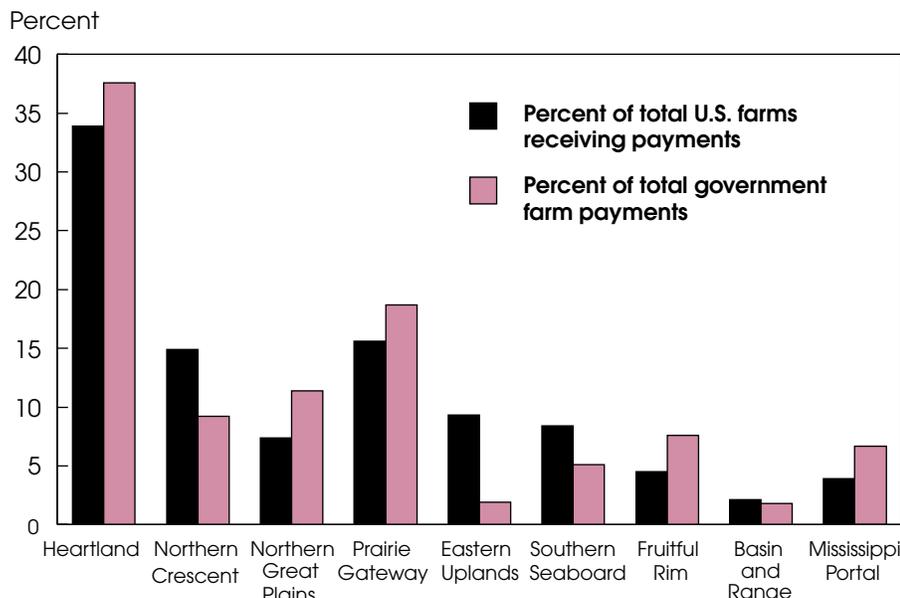
Farm program payments indirectly affect the incomes of rural businesses other than farms, primarily through farm business and household spending in the local area. When farmers use government payments, or credit obtained on the basis of those payments, to purchase farm inputs and equipment locally, they infuse the economy with additional funds, contributing to the revenues of other local businesses and to the maintenance or creation of local jobs. Such local economy spillovers are sometimes called economic multiplier effects.

The magnitude of local economy spillovers from government payments depends upon a number of factors, including design of farm programs and whether or not program payments are spent within the community. If farm program payments are spent in the community where the enrolled land is located, then economic spillovers will benefit the local economy. LDPs, for example, have greater local economywide effects than lump-sum payments because they tend to be spent locally on additional inputs, especially in agriculturally dependent areas (see article on page 27).

One avenue of seepage from the local economy is farm payments that go to landlords who live outside the area. The more that landowners, in general, are able to capture increases in government payments through increased rents and farmland values, the more likely that payments to absentee landlords will escape the local economy. According to data from the Agricultural Economics and Land Ownership Survey, more than one-third of landlords live on the farm they rent to others but one-fourth live at least 150 miles away from their land.

Policy

The Heartland Received More Direct Farm Payments Than Any Other Region in 1999



Economic Research Service, USDA

Farm programs benefit financial institutions that service the farm sector by augmenting farmers' cash-flows. Cash-flows determine the ability of farm owners and operators to repay borrowed money. Government payments to farmers increase the size and reduce the risk of cash-flows associated with farming, and also support the value of farmland serving as collateral for many farm loans.

Larger and more reliable cash-flows benefit farm lenders and give financial institutions a vested interest in the continuation of farm programs. Cash-flow characteristics are key to a lender's determination of how much can prudently be loaned to a farm business. PFCs and other fixed payments that increase the size of total cash-flows from farmland are received by eligible farmers regardless of production or price risks they face. LDPs and other countercyclical payments not only increase the overall size of cash-flows, but also reduce their riskiness because the cash-flows then increase in years of low market prices.

By increasing and stabilizing farm cash-flows, government payments enable lenders to offer farmers credit on more attractive terms than they otherwise could. This feedback mechanism may well encourage farmers to increase their use of debt and to hold more financial assets. Financial institutions also profit from those farmers and farmland owners who receive government payments but don't borrow, because their demand for savings, trust, and transactions accounts rises as farm-sector wealth and cash-flows increase.

Policy Considerations

Government payments benefit farm operators, but they are largely attached to the land. Consequently, government payments accrue mainly to landowners, in the short run through rising rental rates and in the longer term through capitalization of future program benefits into land values.

Many other businesses in local economies may benefit as increased spending by farm payment recipients adds to income and employment through economic multiplier effects. Lenders share in the benefits due to improved repayment capacity of farm borrowers and reduced risk in farm loan portfolios.

Program payments and their impacts will be part of the upcoming debate on the farm bill that will replace current legislation expiring in 2002. Direct government payments exceeded \$22 billion in 2000 (including nearly \$9 billion in emergency assistance), and represented almost 31 percent of net cash income to farm operators, contractors, and landlords. Many farm groups are calling for continuation of payments near this record level. **AO**

James Ryan (202) 694-5586, Charles Barnard, and Robert Collender jimryan@ers.usda.gov

Ken Erickson also contributed to this article.

Upcoming Reports—USDA's Economic Research Service

The following reports are issued electronically at 3 p.m. (ET) unless otherwise indicated.

July

- 11 *World Agricultural Supply and Demand Estimates (8:30 a.m.)*
- 12 *Cotton and Wool Outlook (4 p.m.)***
*Oil Crops Outlook (4 p.m.)***
*Rice Outlook (4 p.m.)***
- 13 *Feed Outlook (9 a.m.)***
*Wheat Outlook (9 a.m.)***
- 19 *Agricultural Outlook**
- 24 *Foreign Agricultural Trade of the United States (FATUS)/ U.S. Agricultural Trade Update*
- 25 *Livestock, Dairy, and Poultry Situation and Outlook (4 p.m.)*

*Release of summary, 3 p.m.

**Available electronically only

Identifying the goals of U.S. farm policy

In an upcoming issue of *Agricultural Outlook*