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Provisions and Potential Impacts of the
Average Crop Revenue Election (ACRE) Program

by

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Provisions and Potential Impacts of the Average Crop Revenue Election (ACRE) Program

By Kent Olson and Matt DalSanto
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ABSTRACT: The Average Crop Revenue Election (ACRE) program is a new, optional safety net for farmers provided by Congress in the Food, Conservation, and Energy Act of 2008 (commonly called the farm bill). Choosing this new safety net is not an obvious choice. Farmers who choose to elect this program also must accept a 20% reduction in direct payments and a 30% reduction in marketing assistance loan rates. In this paper, we describe the general provisions and calculations of the ACRE and counter-cyclical payment (CCP) programs and present our estimates of potential payments under the two programs.

If prices are expected to remain at or above the ACRE price guarantee, CCP is the best choice since government payments are expected to be lower under the ACRE program—as shown in the first price scenario. However, if national market prices fall sufficiently, the ACRE program becomes the best choice since ACRE payments will be higher—as shown in the third price scenario. The national market price does not have to be much lower for ACRE to be the preferred choice—as shown for wheat-soybean farms in the third price scenario.

It is essentially impossible to describe simple rules of thumb or breakeven prices to help farmers decide whether to sign up for ACRE or stay with CCP. This difficulty is due to several factors: the complexity of the program rules, the requirement to sign up all program crops on a farm, the potential government payment for only one crop even though direct payments and loan rates are cut for all crops, the uncertainty of future prices and yields, and the variation in how an individual farm's yields vary in relationship to its state yields.

Provisions and Potential Impacts of the Average Crop Revenue Election (ACRE) Program

By Kent Olson and Matt DalSanto
November 2008

The Average Crop Revenue Election (ACRE) program is a new, optional safety net for farmers provided by Congress in the Food, Conservation, and Energy Act of 2008 (commonly called the farm bill). The ACRE program will be available starting with the 2009 crop year as an alternative to receiving counter-cyclical payments. ACRE is based on changes in crop revenue; counter-cyclical payments (CCP) are based only on changes in crop prices. Direct payments (DPs) and loan deficiency payments (LDPs) will remain in both programs.

At first, farmers may find this safety net based on crop revenue (that is, both prices and yield) appealing as an alternative to the safety net based on crop prices only. Choosing this new safety net is not, however, an obvious choice. Farmers who choose to elect this program also must accept a 20% reduction in direct payments and a 30% reduction in marketing assistance loan rates. Choosing ACRE is an irrevocable election meaning a farmer cannot go back to the counter-cyclical payments even if future market conditions make the counter-cyclical payment larger than the ACRE payment. The choice greatly hinges on whether commodity prices will stay at or near current levels or decrease—even if they don't drop all the way to levels seen even just two years ago. The choice also depends on the variability of the individual farm's yields and that farm's State yields. As described more fully in the next section, before the government will write a check to an individual farmer, a revenue loss must occur both at the state level and on an individual farm. So the strength of the relationship between an individual farm's revenue and its state revenue is also critical to a farmer's choice of ACRE. These complexities essentially take away any possibility to develop simple decision rules or breakeven prices for farmers to make the decision to choose ACRE.

In the next section, we describe the general provisions and calculations of the ACRE and CCP programs. In the subsequent section, we present our estimates of potential payments under the two programs. Some concluding comments are presented at the end of the paper.

ACRE Program Payments

The ACRE program is based on the level and changes in individual farm yields, State yields, and national marketing year prices. An individual farm's yields are used to determine whether a farm is eligible for an ACRE payment, but the State yield and the national price are used to determine the payment amount. All of the crops on a farm (that are listed as covered crops in the farm bill) have to be signed up for the ACRE program. Payments, however, are made on an individual crop basis; that is, one or more crops may receive ACRE payments in a certain year while others do not.

Before a payment can be made under the ACRE program, two revenue tests need to be made: (1) a State level revenue loss and (2) an individual farm revenue loss. First, for each covered commodity, the actual State revenue for the crop year has to be less than the ACRE program guarantee for that crop year. Second, in order to receive a payment, an individual farmer's actual farm revenue has to be less than that farm's ACRE benchmark revenue. Both of these losses have to occur for a farmer to be able to receive a payment.

An individual farm may have a devastating loss but receive no ACRE payment if the State level revenue does not drop enough (or does not drop at all). Alternatively, a State may have a large loss in revenue due to, say widespread drought in the State, and many farms may receive an ACRE payment due to individual losses, however, other individual farms will not receive an ACRE payment if their yield does not suffer.

Also, farms in one State may receive ACRE payments because both the individual and State revenue tests are met. But farms just across the border in another State may not receive payments because their State does not fail the revenue test even though these neighboring individual farms also suffer sufficient individual revenue losses.

State Revenue Test

If actual State revenue is less than the State ACRE guarantee for a covered commodity, the farms in that State are potentially eligible for an ACRE payment for that covered commodity.

The actual State revenue for a particular year is the actual State yield times the national average market price. The actual State yield is the quantity produced divided by the acres planted to that crop—not the harvested acreage. The national average market price is the maximum of the national average market price and that crop's loan rate.

Actual State Revenue =
actual state yield * national average market price

Actual state yield =
quantity produced / acres planted to crop

National average market price =
Maximum of nat'l average market price or loan rate

The State revenue guarantee for a particular year is 90% of the benchmark State yield times the ACRE program guarantee price for that particular year. The benchmark State yield is the Olympic average¹ of the 5 most recent annual State average yields using National Agricultural Statistics Service (NASS) data. The ACRE program guarantee price is the simple average of the national average market price for the most recent two years. Thus, the State revenue guarantee will vary from year. However, for the 2010-2012 crop years, the ACRE guarantee cannot change more than 10% from the guarantee for the preceding crop year.

State ACRE guarantee =
 $0.9 * \text{benchmark State yield} * \text{ACRE program guarantee price}$

Benchmark State yield =
Olympic average of 5 most recent State yields

ACRE program guarantee price =
simple average of the national average market price
for the most recent 2 years

Individual Farm Revenue Test

If actual farm revenue is less than the Farm ACRE Benchmark Revenue for a covered commodity, the farm is potentially eligible for an ACRE payment for that covered commodity.

An individual farm's actual farm revenue is the actual farm yield times the national average market price for that crop year.

¹ An Olympic average is the simple average of the remaining three yields in this case after removing the highest and lowest yields from the list of the most recent 5 yields. For example, if the most recent 5 State corn yields are 146, 159, 174, 161, and 165, the Olympic average of these yields is 161.67 which is the simple average of 159, 161, and 165 after throwing out 146 and 174.

$$\text{Actual Farm Revenue} = \text{actual farm yield} * \text{national average market price}$$

An individual farm's ACRE benchmark revenue is the sum of (1) the Olympic average farm yield for the most recent 5 years times the ACRE program guarantee price for the applicable year and (2) the crop insurance premium required to be paid by the farmer.

$$\begin{aligned} \text{Farm ACRE Benchmark Revenue} = & \\ & (\text{Olympic average farm yield for most recent 5 years} * \\ & \text{ACRE program guarantee price for applicable crop year}) \\ & + (\text{crop insurance premium required to be paid by farmer}) \end{aligned}$$

Estimation of ACRE Payment

If the two revenue tests show losses at both the State and individual farm levels, a specific farm's ACRE payment will be the (1) minimum of (a) the difference between the State ACRE program guarantee and the actual State revenue (but not less than zero) or (b) 25% of the ACRE program guarantee times (2) 0.833 (0.85 for 2012) times (3) the farm acreage planted times (4) the farm's five-year Olympic average yield divided by the benchmark State yield. This farm-to-State yield adjustment is made to reflect differences in productivity within a State.

$$\begin{aligned} \text{ACRE Payment Amount} = & \\ & \{ \text{Minimum of (ACRE program guarantee} - \text{actual State revenue)} \text{ or} \\ & \quad 0.25 * \text{ACRE program guarantee} \} \\ & * \{ 0.833 \text{ (or } 0.85 \text{ for } 2012) * \text{farm acreage planted} \} \\ & * \{ \text{Olympic average farm yield for 5 most recent crop years} / \text{benchmark State yield} \} \end{aligned}$$

Counter-Cyclical Payments (CCP)

The counter-cyclical program is essentially the same in the new farm bill as it was in the previous farm bill. The only differences are that some prices and rates are changed from the previous bill. These changes do not affect the major crops in Minnesota.

A counter-cyclical payment (CCP) is made if the national seasonal average market price is less than the target price minus the direct payment rate. These target prices and direct payments are the same in the 2002 and 2008 Acts for corn, soybean, and wheat except the target prices for wheat and soybean will increase in 2010 (Table 1). The CCP is calculated as the target

price minus the direct payment minus the higher of the national season average market price or the loan rate. For example, a corn farmer will receive a CCP if the national seasonal market price falls below \$2.35 which is the target price of \$2.63 minus the direct payment of \$0.28. For corn, the maximum CCP per bushel is \$0.40 per bushel which is the difference between \$2.35 and the loan rate of \$1.95. The total CCP for a farmer is the product of that year's CCP per bushel, the farm's payment yield, and 85% of the farm's acreage base.

| Table 1. Direct payments, target prices, and loan rates for corn, soybean, and wheat in the 2002 and 2008 Acts. | | | |
|---|----------------------------|--------------------------|-----------------------|
| | Direct payment (\$/bushel) | Target price (\$/bushel) | Loan rate (\$/bushel) |
| Corn | 0.28 | 2.63 | 1.95 |
| Soybean | 0.44 | 5.80* | 5.00 |
| Wheat | 0.52 | 3.92* | 2.75* |

*Target prices will increase to \$6.10 for soybean and \$4.17 for wheat starting with the 2010 crop. The loan rate for wheat will increase to \$2.94 in 2010.

Cyclical Payments for each commodity crop are calculated as the product of the CCP Rate, the Payment Yield, and 85% of the Base Acreage. The CCP Rate is calculated as the Target Price minus the Direct Payment (DP) Rate minus the maximum of the Market Price and the Loan Rate. If the sum of the DP Rate and the Market Price exceeds the Target Price, then a payment is not made.

$$CCP_i = (CCP Rate)_i \times (Payment Yield)_i \times [(Base Acres)_i \times 0.85]$$

$$\text{where } (CCP Rate)_i = \max\{0, R_i\}$$

$$R_i = (Target Price)_i - (DP Rate)_i - \max\{(Price)_i, (Loan Rate)_i\}$$

Direct Payments

Direct payments (DPs) are paid to farmers of covered crop commodities on the basis of the direct payment specified in the Act, 85% of their base acres for the crop, and their payment yield for the crop. The payment is made regardless of current production levels, market conditions, and price levels. Under the ACRE program, the DP rate is reduced by 20%.

$$DP_i = (DP Rate)_i \times (Payment Yield)_i \times [(Base Acres)_i \times 0.85]$$

Loan Deficiency Payments

Under the Marketing Assistance Loan Program, farmers can take a loan at harvest at the loan rate set in the Act. This program is designed to provide farmers the cash needed to pay bills without having to sell their product at typically low harvest prices. These are nonrecourse loans so farmers have the option to either pay back the loan plus interest costs or forfeit the crop pledged as collateral to the CCC. Farmers have the option to choose, and usually do choose, to receive a loan deficiency payment (LDP) in place of taking the loan. If the local county market price is below the national loan rate, the local LDP is the difference between the local market price and the national loan rate. If the market price is above the loan rate, no LDPs are available. Under the 2002 Act, the receipt of the LDP was not conditioned on the sale of the commodity; thus, the commodity could be held and sold at prices higher than the price used to determine the LDP received.

LDPs are calculated as the product of (1) the difference between the Loan Rate and the local price, (2) the payment yield, and (3) the normal acreage. If the local price exceeds the loan rate, no LDP is issued. Under the ACRE program, the loan rate is reduced by 30%.

$$LDP_i = \max\{0, [(Loan\ Rate)_i - (Price)_i]\} \times (Payment\ Yield)_i \times (Normal\ Acres)_i$$

Data and Analysis Methods

The farmer's choice between the CCP and ACRE programs is evaluated on the basis of the potential total government payment (TGP) which is a simple summation of DP, CCP (or ACRE) and LDP. Since so many related variables can affect final payment levels, the expected values of potential payments provide a more accurate view of the impact of choosing CCP versus ACRE compared to make estimates on only a few sets of yields and prices.. To estimate the expected payments, the program rules described above and the data described in this section below are incorporated into an Excel© using the add-in program, @Risk© (Palisade Corporation, 2006).

We use the historical yield data from seventeen farms in Minnesota (Table 2). This individual farm data was coupled with historical national prices and State yields and rules for the CCP, ACRE, DP and LDP programs. For the example farms in Cottonwood, Faribault, Goodhue,

and Pipestone, each farm's actual acreage was used for the cropping mix. For the example farms in Pennington and Polk, we had data on total planted acreage but not individual crop acreage, so we divided the total acreage into half soybean and half wheat since very little corn is historically grown in these two counties. The example farms had other crop and livestock enterprises, but we focused only on the corn, wheat, and soybean crops for this analysis.

| Table 2. Location, acreage, and yields of example farms | | | | | |
|---|---------------------------|---|---------------------------------------|--|--|
| County and farm number | Location within Minnesota | Average crop acreage, 2002-2005 (acres) | Average corn yield, 2002-2005 (bu/ac) | Average soybean yield, 2002-2005 (bu/ac) | Average wheat yield, 2002-2005 (bu/ac) |
| Corn and soybean farms: | | | | | |
| Cottonwood 1 | Southwest | 1052 | 171 | 40 | -- |
| Cottonwood 2 | Southwest | 886 | 168 | 44 | -- |
| Cottonwood 3 | Southwest | 1041 | 170 | 46 | -- |
| Faribault 1 | South Central | 1043 | 182 | 51 | -- |
| Faribault 2 | South Central | 340 | 186 | 55 | -- |
| Goodhue 1 | Southeast | 149 | 158 | 39 | -- |
| Goodhue 2 | Southeast | 754 | 168 | 41 | -- |
| Goodhue 3 | Southeast | 1300 | 180 | 43 | -- |
| Pipestone 1 | Southwest | 472 | 147 | 44 | -- |
| Pipestone 2 | Southwest | 170 | 164 | 49 | -- |
| Pipestone 3 | Southwest | 764 | 168 | 47 | -- |
| Wheat and soybean farms: | | | | | |
| Pennington 1 | Northwest | 1976 | -- | 25 | 45 |
| Pennington 2 | Northwest | 1653 | -- | 26 | 52 |
| Pennington 3 | Northwest | 1758 | -- | 21 | 41 |
| Polk 1 | Northwest | 1663 | -- | 34 | 61 |
| Polk 2 | Northwest | 1612 | -- | 26 | 48 |
| Polk 3 | Northwest | 469 | -- | 26 | 49 |

Historical state yields and national crop prices were obtained from National Agricultural Statistics Service (NASS) data. Future yields were projected based on deviations from the yield trend estimated through the standard statistical procedure of ordinary least squares (OLS). The statistical distributions of yields and prices including the correlations between yields and prices

were estimated from the historical data and incorporated into the analysis to allow for the joint movements of price and yield.

If the acreage planted for a farm in a given year was missing, the missing acreage value was estimated as the simple average of the planted acreage in the preceding and subsequent years. If there was only acreage data available in subsequent years, the missing value was estimated as the subsequent year's value.

If some yield data for a specific farm was missing, its value was estimated as the expected yield estimated from a standard statistical regression on the years we had available.

The actual payment yields for commodity crops were not available so, based on historical data, payment yields for individual example farms were assumed to be 93.5% of the average yields for the 1998-2001 seasons.

For each example farm, the base acreage for a commodity crop was assumed equal to the average planted acreage for the crop in the 1998-2001 seasons.

Four price scenarios of expected national prices and ACRE guarantee prices were used to estimate potential government payments under the CCP and ACRE programs (Table 3). The first scenario (P1) has the national market price higher than the ACRE guarantee price. While the actual prices are lower than current levels, this price scenario provides a fairly accurate look at the farmers' choice if the future national price were higher than the ACRE guarantee. In the second scenario (P2), the national prices are the same as in the first scenario, but the ACRE guarantee prices are higher and closer to the market projections. This scenario reflects what might happen in 2009 if national prices stabilized at higher levels for the 2008 crop thus raising the ACRE guarantee price for the 2009 crop. The third price scenario (P3) depicts the conditions if national prices dropped drastically but under ACRE rules, the ACRE guarantee prices would not decrease in the first year of the drop in national prices. The fourth scenario (P4) reflects the results if market prices and ACRE guarantee prices returned to the average levels in 2001-2005. This scenario is unlikely to occur in the near term, but it is an interesting look at how the CCP and ACRE programs would compare if national prices were actually below the target prices for these crops. In scenarios P1 and P2, the national marketing year price estimates was from the projections for 2007 made in late 2006 by the Food and Agricultural Policy Research Institute (FAPRI). In scenario P3, the national price was from FAPRI's projection made in 2005. For each of the projections, the national price was assumed to have a mean equal to the projected price

and the same standard deviation and correlation with other prices and yields based on historical data.

Table 3. Price scenarios used in the analysis

| | Corn | Soybeans | Wheat |
|--|------|----------|-------|
| P1 – Current situation with guarantee prices lower than market prices | | | |
| P1 - National Price | 3.97 | 10.30 | 6.68 |
| P1 - ACRE Guarantee Price | 3.52 | 8.42 | 5.46 |
| P2 – Guarantee prices closer to market prices | | | |
| P2 - National Price | 3.97 | 10.30 | 6.68 |
| P2 - ACRE Guarantee Price | 3.95 | 10.07 | 7.09 |
| P3 – Market prices fall steeply below currently estimated guarantee prices | | | |
| P3 - National Price | 2.20 | 5.25 | 3.39 |
| P3 - ACRE Guarantee Price | 3.52 | 8.42 | 5.46 |
| P4 – Both market prices and guarantee prices are at 2001-05 average levels | | | |
| P4 - National Price | 2.15 | 5.73 | 3.31 |
| P4 - ACRE Guarantee Price | 2.15 | 5.73 | 3.31 |

As noted at the beginning of this section, the @Risk program© (Palisade, 2006) is used to conduct a Monte Carlo simulation within Microsoft Excel© with draws for price and yield coming from the distributions described above. Each farm’s average crop revenue, resulting government payment, and the variation in those revenues are estimated. To establish an accurate distribution of potential results, up to 10,000 statistical estimates of prices and yields are taken from the statistical relationships. These estimates or draws are used to calculate crop revenue and potential government payments under the rules of the CCP and ACRE programs.

RESULTS

Using the historical information for each of the 17 farms described above and national and state price and yield information, the expected total government payments are estimated for each of the price scenarios (Table 4).

Table 4. Expected total government payments (TGP) with Counter-cyclical Payments (CCP) and the Average Crop Revenue Election (ACRE) programs for the four price scenarios (\$/farm)

| County & Farm | Price scenario 1 | | Price scenario 3 | | Price scenario 3 | | Price scenario 4 | |
|--------------------------------|------------------|--------|------------------|--------|------------------|---------|------------------|--------|
| | CCP | ACRE | CCP | ACRE | CCP | ACRE | CCP | ACRE |
| Corn and soybean farms | | | | | | | | |
| Co1 | 23,036 | 18,602 | 23,036 | 20,801 | 51,121 | 85,253 | 50,389 | 20,208 |
| Co2 | 19,704 | 15,807 | 19,704 | 16,755 | 45,542 | 74,706 | 43,560 | 16,731 |
| Co3 | 25,177 | 20,334 | 25,177 | 22,561 | 57,880 | 96,406 | 55,732 | 21,957 |
| Fa1 | 21,435 | 17,540 | 21,435 | 20,964 | 49,796 | 94,641 | 47,076 | 19,662 |
| Fa2 | 8,018 | 6,546 | 8,018 | 7,547 | 19,609 | 35,360 | 19,201 | 7,157 |
| Go1 | 4,116 | 3,316 | 4,116 | 3,616 | 8,051 | 11,167 | 7,787 | 3,529 |
| Go2 | 16,109 | 13,114 | 16,109 | 15,192 | 36,251 | 62,155 | 35,032 | 14,502 |
| Go3 | 27,819 | 22,474 | 27,819 | 26,009 | 68,371 | 132,411 | 66,550 | 25,069 |
| Pi1 | 12,020 | 9,691 | 12,020 | 10,869 | 26,024 | 41,503 | 24,232 | 10,599 |
| Pi2 | 5,214 | 4,186 | 5,214 | 4,554 | 11,113 | 16,670 | 10,658 | 4,503 |
| Pi3 | 14,846 | 11,892 | 14,846 | 12,884 | 14,846 | 79,142 | 39,822 | 13,040 |
| Wheat and soybean farms | | | | | | | | |
| Pe1 | 24,028 | 20,072 | 24,028 | 33,277 | 40,968 | 101,925 | 37,341 | 25,749 |
| Pe2 | 25,354 | 21,056 | 25,354 | 33,444 | 41,233 | 93,245 | 38,211 | 26,241 |
| Pe3 | 22,121 | 18,331 | 22,121 | 27,724 | 36,868 | 78,891 | 33,595 | 22,744 |
| Po1 | 31,976 | 25,971 | 31,976 | 39,971 | 52,281 | 107,538 | 48,601 | 32,234 |
| Po2 | 21,175 | 17,673 | 21,175 | 31,201 | 35,369 | 85,328 | 32,525 | 23,038 |
| Po3 | 6,499 | 5,625 | 6,499 | 10,299 | 9,819 | 27,589 | 10,357 | 7,289 |

With price expectations set at similar relative levels as they are now (P1), TGP is greater for each farm under CCP compared to the ACRE program. Since expected prices are well above the target prices and loan rates set in the farm bill, the only payments under CCP was direct payments. Under the ACRE program, the example farms do have a small expected ACRE payment which average 1% of TGP. However, the expected ACRE payment is less than the required 20% decrease in direct payments. Thus, under this price scenario of the expected national price being higher than the ACRE guarantee price, expected TGP is greater under the CCP program for each farm. This is easily seen in the indices of the ACRE TGP compared to the CCP TGP (Table 5 and Figure 1).

Table 5. Indices of expected total government payments (TGP) with Counter-cyclical Payments (CCP) set to 100 for each farm

| County & farm | Price Scenario 1 | | Price Scenario 2 | | Price Scenario 3 | | Price Scenario 4 | |
|--------------------------------|------------------|------|------------------|------|------------------|------|------------------|------|
| | CCP | ACRE | CCP | ACRE | CCP | ACRE | CCP | ACRE |
| Corn and soybean farms | | | | | | | | |
| Co1 | 100 | 81 | 100 | 90 | 100 | 167 | 100 | 40 |
| Co2 | 100 | 80 | 100 | 85 | 100 | 164 | 100 | 38 |
| Co3 | 100 | 81 | 100 | 90 | 100 | 167 | 100 | 39 |
| Fa1 | 100 | 82 | 100 | 98 | 100 | 190 | 100 | 42 |
| Fa2 | 100 | 82 | 100 | 94 | 100 | 180 | 100 | 37 |
| Go1 | 100 | 81 | 100 | 88 | 100 | 139 | 100 | 45 |
| Go2 | 100 | 81 | 100 | 94 | 100 | 171 | 100 | 41 |
| Go3 | 100 | 81 | 100 | 93 | 100 | 194 | 100 | 38 |
| Pi1 | 100 | 81 | 100 | 90 | 100 | 159 | 100 | 44 |
| Pi2 | 100 | 80 | 100 | 87 | 100 | 150 | 100 | 42 |
| Pi3 | 100 | 80 | 100 | 87 | 100 | 533 | 100 | 33 |
| Wheat and soybean farms | | | | | | | | |
| Pe1 | 100 | 84 | 100 | 138 | 100 | 249 | 100 | 69 |
| Pe2 | 100 | 83 | 100 | 132 | 100 | 226 | 100 | 69 |
| Pe3 | 100 | 83 | 100 | 125 | 100 | 214 | 100 | 68 |
| Po1 | 100 | 81 | 100 | 125 | 100 | 206 | 100 | 66 |
| Po2 | 100 | 83 | 100 | 147 | 100 | 241 | 100 | 71 |
| Po3 | 100 | 87 | 100 | 158 | 100 | 281 | 100 | 70 |
| Average | | 82 | | 107* | | 214 | | 50 |
| Max | | 87 | | 158 | | 533 | | 71 |
| Min | | 80 | | 85 | | 139 | | 33 |

*Under price scenario 2, the average index was 91 for corn and soybean farms under the ACRE program and 138 for wheat and soybean farms

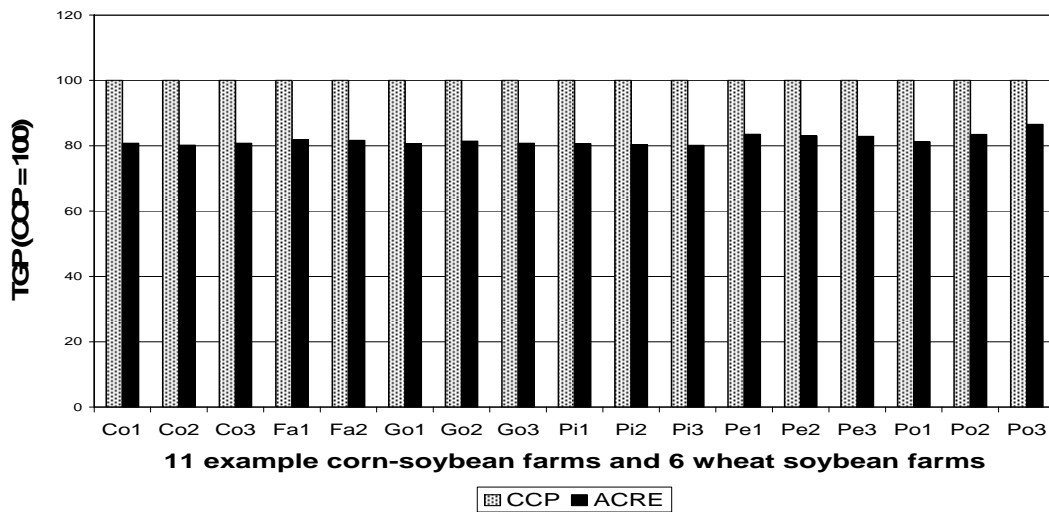


Figure 1. Index of Total Government Payments (TGP) if national market prices are higher than ACRE guarantee prices

In price scenario 2 (P2), expected national prices are set at similar levels as the market now says, but the ACRE guarantee prices are moved closer to the expected national price and, for wheat, above the national price. This price scenario may occur in the second year of the ACRE program if market prices stayed rather stable and thus the ACRE guarantee prices would be calculated from higher prices. With these price expectations (P2), TGP is greater under CCP for the 11 example corn and soybean farms compared to the ACRE program. However, TGP is greater under ACRE for the six example wheat and soybean farms. This difference in outcome is primarily due to the ACRE guarantee price for wheat is higher than the expected national price wheat in P2 while the opposite relationship is expected for corn and soybean. All the example farms have an expected ACRE payment under P2 which averages 42% of TGP for the wheat and soybean farms and 12% for corn and soybean farms. For wheat and soybean farms, the expected ACRE payment is greater than the required 20% decrease in direct payments. For corn and soybean farms, the expected ACRE payment is less than the required 20% decrease in direct payments. Thus, under this price scenario of the expected national price being higher than the ACRE guarantee price, expected TGP is greater under the CCP program for each farm. This is easily seen in the indices of the ACRE TGP compared to the CCP TGP (Figure 2).

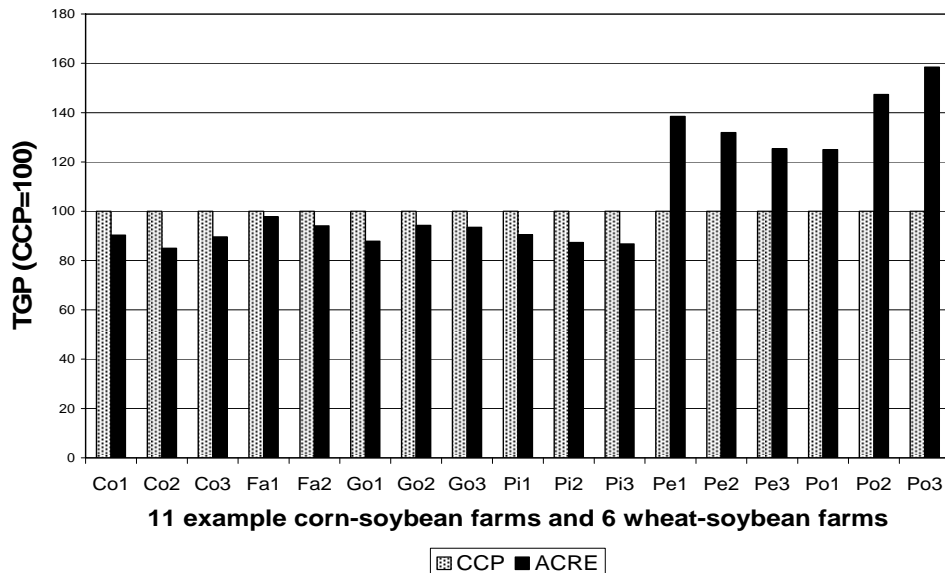


Figure 2. Index of expected total government payments (TGP) if national market prices and ACRE guarantee prices are at similar but high levels

If expectations for the national prices quickly dropped leaving the ACRE guarantee prices at higher relative levels (P3), the benefits under the two programs would be greatly different from the first two price scenarios. Under P3, TGP would be larger for each farm under ACRE compared to the CCP program. Under this price scenario, expected national prices are below target prices and loan rates set in the farm bill, so farms were estimated to receive both direct payments and either CCP or ACRE payments depending on which program they were signed up for. However, TGP is higher for every example farm under the ACRE program since the revenue guarantees were based on the higher prices before the simulated price drop. TGP for the wheat and soybean farms are higher relatively since the wheat yields are also relatively higher compared to corn and soybean yields. For the 17 example farms, the expected CCP payment under P3 is on average 56% of TGP and the expected ACRE payment is on average 79% of TGP. The expected ACRE payment is 79% of TGP for all farms, but the CCP payment is 66% of TGP for corn and soybean farms while the CCP payment is 39% for wheat and soybean farms. Under this price scenario of the expected national price being much lower than the ACRE guarantee price, expected TGP is greater under the ACRE program for each farm. This is easily seen in the indices of the ACRE TGP compared to the CCP TGP (Figure 3).

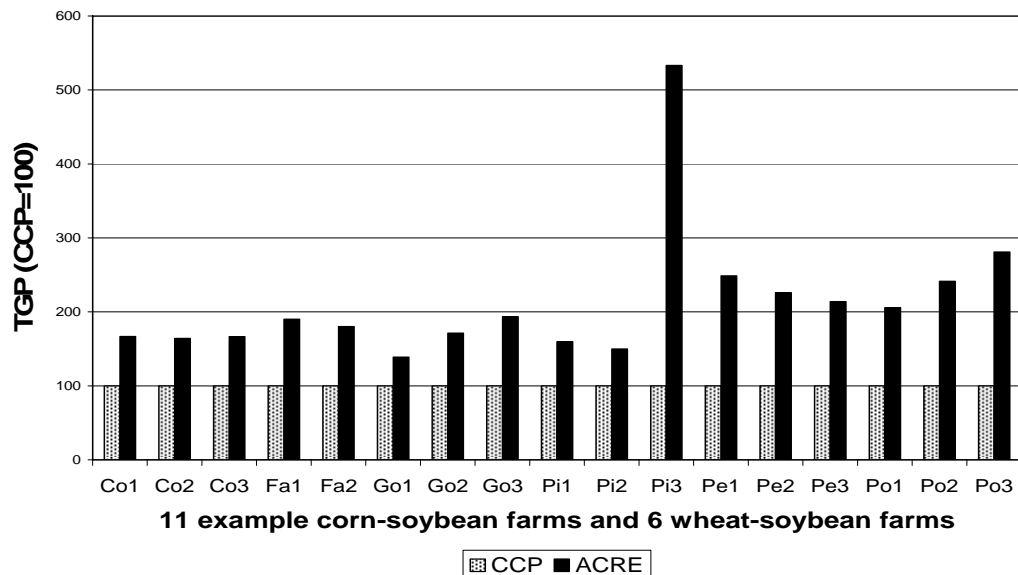


Figure 3. Index of expected total government payments (TGP) if national market prices are considerably lower than the high ACRE guarantee prices

While the fourth price scenario of all prices returned to their 5-year average from 2001-2005 is unlikely to occur, the impact of that price level is interesting to evaluate since those are the price levels closer to current target prices and loan rates. With price expectations set at these historical levels (P4) which are much lower than current levels, TGP is greater for each farm under CCP compared to the ACRE program. For the 17 example farms, TGP under the ACRE program is only half of the estimated TGP under the CCP (Figure 4). Price scenario 4 shows how well CCP (which considers only prices) supports farm income when prices are close to or below target prices compared to ACRE with its protection of revenue (i.e., both prices and yields). In this price situation (P4), the effects of considering both price and yield variations is clearly seen since ACRE payments are essentially only direct payments. That is, prices and yields tend to move in countervailing directions especially at the national and state levels so an ACRE payment is seldom triggered. When considered by themselves, prices drop below target levels more often and generate a CCP payment much more often than the actual revenue drops below target revenue.

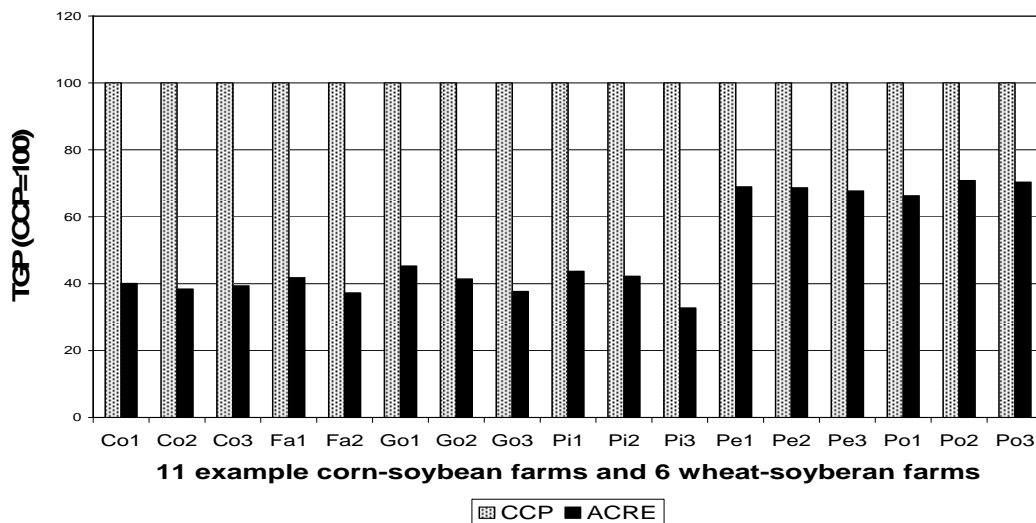


Figure 4. Index of expected total government payments (TGP) if national market prices and ACRE guarantee prices were at 2001-2005 averages

CONCLUDING COMMENTS

As stated earlier, the choice between CCP and ACRE depends in large part on one's view of what the direction of future prices will be. Since choosing the ACRE program requires a 20% cut in direct payments, the choice is not obvious nor is there a simple rule that applies to all farmers or even one farmer. If prices are expected to remain at or above the ACRE price guarantee, CCP is the best choice since government payments are expected to be lower under the ACRE program—as shown in the first price scenario. However, if national market prices fall sufficiently, the ACRE program becomes the best choice since ACRE payments will be higher—as shown in the third price scenario. The national market price does not have to be much lower for ACRE to be the preferred choice—as shown for wheat-soybean farms in price scenario 2.

It is essentially impossible to describe simple rules of thumb or breakeven prices to help farmers decide whether to sign up for ACRE or stay with CCP. This difficulty is due to several factors: the complexity of the program rules, the requirement to sign up all program crops on a farm, the potential government payment for only one crop even though direct payments and loan rates are cut for all crops, the uncertainty of future prices and yields, and the variation in how an individual farm's yields vary in relationship to its state yields.

Thus, each farmer needs to evaluate their conditions and evaluation of future prices and yields and make a decision for their own farm.

REFERENCES

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