

8-8-2011

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## Recommended Citation

Edwards, William M., "Iowa farmers' decisions to enroll in the average crop revenue election (ACRE) program" (2011). *Economics Working Papers (2002–2016)*. 104.

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# Iowa farmers' decisions to enroll in the average crop revenue election (ACRE) program

## **Abstract**

In 2009 Iowa farmers who had at least some land enrolled in the existing DCP program offered by FSA were given the opportunity to switch to an alternative called ACRE. Despite having access to information about the program and utilizing electronic decision aids, only 27.5% of the operators surveyed enrolled at least one farm in ACRE. Those who did enroll cited a desire for more risk protection and a belief that payments from ACRE would exceed the value of the direct payments they had to give up. The primary reasons operators gave for not enrolling were the program was too complex, and they did not want to give up a portion of the direct payments. Farmers who enrolled generally farmed more acres and depended more on crop production for their gross income, and were more likely to use other risk management tools such as crop insurance and pre-harvest pricing. In general, farmers who enrolled in ACRE were more concerned about controlling financial risk in their farming operations than those who did not.

## **Keywords**

risk, agricultural policy, USDA, agricultural management, ACRE

## **Disciplines**

Economics

# Iowa Farmers' Decisions to Enroll in the Average Crop Revenue Election (Acre) Program

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Working Paper No. 11013  
August 2011

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**Farm Operators' Decisions to Enroll in the Average Crop  
Revenue Election (ACRE) Program**  
**William Edwards, Professor of Economics**  
**August 8, 2011**

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**Abstract** *In 2009 Iowa farmers had the opportunity to enroll in a new revenue support program called ACRE. A survey showed that those who did enroll desired more risk protection and believed that payments from ACRE would exceed the value of direct payments forfeited. Operators who did not enroll said the program was too complex, and they did not want to give up a portion of the direct payments. Those who enrolled farmed more acres and depended more on crop production for their gross income, and were more likely to use crop insurance and pre-harvest pricing.*

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In 2009 crop farmers in the United States were faced with the decision of whether to continue with the traditional version of the Direct and Counter-cyclical Program (DCP) offered by the Farm Service Agency (FSA) of the United States Department of Agriculture (USDA) to mitigate commodity price risk, or to enroll in a new option called Average Crop Revenue Election (ACRE). The new program offered producers a chance to set a floor under gross revenue instead of just price, but required them to give up some of the benefits of the old program, as well. By enrolling in ACRE, farmers agreed to accept a 20 percent reduction in the direct payments they were eligible to receive under the DCP program, loss of eligibility for potential counter-cyclical payments, and a 30 percent reduction in the loan rate used to calculate potential marketing loans or loan deficiency payments, all through the 2012 crop year.

In return, ACRE offered farmers payments equal to the difference between the state revenue trigger, calculated as the average market price for a particular crop during the previous two marketing years times the olympic average of the state average yields during the previous five years, and the state actual revenue, calculated as the current marketing year price times the state average yield for the current year. In addition, farm level revenue had to be below the farm level trigger, with both of them being calculated in a manner analogous to the state level values. Payments per acre were capped at 25 percent of the state trigger revenue, and were generally paid on 83.3 percent of the farm acres planted to the crop (Edwards).

Prices for major feed grains and oilseeds in 2009 were considerably above levels that would trigger counter-cyclical payments or loan deficiency payments, so the prospects of receiving these payments from the existing DCP program in the near future were doubtful, at best. However, the reduction in direct payments represented a sure loss in revenue for producers who elected to enroll in ACRE. So, producers were faced with a choice between retaining a small, but certain, cash benefit each year for four years, and receiving a possible larger revenue deficiency payment if certain unfavorable combinations of prices and yields occurred in one or more of the next four crop years.

**Low Enrollment**

The vast majority of DCP participants elected to continue with the existing program. Final USDA data showed that nationally only 7.7 percent of the FSA farm units previously enrolled in DCP were enrolled in ACRE for the 2009 crop year. However, 12.8 percent of the eligible base acres were enrolled, which indicates that the farm units that were enrolled were larger than the ones that were not, on average. In Iowa, initial participation in ACRE was somewhat higher than in most states, with 11.8 percent of FSA farm units enrolled, accounting for 16.3 percent of the DCP base acres in the state. Only five states had a higher relative enrollment.

### Causes

Woolverton and Young proposed that the following factors could have limited farmer participation in ACRE:

- ACRE is a new and complicated program.
- Farmers are not sure how their revenue tracks with state-level revenue.
- Both landowner and operator must agree to enroll.
- Production records for the previous five years are needed.
- The ACRE enrollment decision is irreversible through 2012.
- ACRE may not be attractive for some crops.
- Direct payments are reduced 20 percent and the marketing loan rate is reduced 30 percent.
- ACRE payments are not received until the end of the marketing year.
- Producers may not value the risk management benefits of ACRE.
- Producers can still enroll in future years.

Briggeman and Campiche suggested in a Federal Reserve Bank of Kansas City newsletter that the low initial sign-up could have been due to farmers' reluctance to give up 20 percent of their direct payments, the complexity of the program, and the requirement to commit to ACRE through the 2012 crop year.

In June 2010 the American Society of Farm Managers & Rural Appraisers surveyed 60 professional farm managers in 11 states about their decisions to enroll farms that they managed in ACRE (Reyman). The professional managers were more favorable toward ACRE than farmers in general were. They reported that they enrolled an average of 47 percent of the farms they managed in 2009. The reasons they cited for deciding to participate, in decreasing order of importance, were:

1. The 20 percent lower direct payment is an acceptable cost for potential ACRE revenue.
2. ACRE will pay greater revenues over the life of the contract.
3. They like the revenue protection.
4. Participation in ACRE may open doors to future program opportunities.

The reasons the respondents gave for not enrolling farms in ACRE, also in decreasing order of importance, were:

1. Don't believe it is worth giving up 20 percent of the direct payments; it won't pay out.
2. The program is too difficult to understand or explain.
3. It takes too long to know whether a payment is generated or not.
4. Managers have concerns over proving yield history.
5. Managers don't want a reduced marketing loan rate.

## **Survey of Iowa Farmers**

In 2010 a mail survey was sent to 3,384 Iowa farmers to find out more about their decisions to participate in the ACRE program or not. The objective of the research was to test which factors most influenced Iowa farmers' choice to enroll in ACRE, and if any of their farming characteristics were significantly related to their decisions.

Recipients were randomly selected from a master list obtained from FSA of all Iowa producers who were enrolled in FSA commodity payment programs in 2008. Names were sorted by the county in which farm units were registered, so the sample was proportional to the geographic distribution of farms across the state. Usable replies were received from 356 producers, a response rate of 10.5 percent. Survey questions concerned how farmers received information about ACRE, how many owned and rented FSA farm units they operated and enrolled in ACRE, and what factors influenced their decision to enroll or not. In addition, information about characteristics of their farming operation and the risk management practices that they followed was obtained.

The producers who responded to the survey were operating an average of 5.0 FSA farm units, about two-thirds of which were rented (table 1). They enrolled 20.0 percent of their FSA farm units in ACRE, a higher rate than for the state as a whole (11.8 percent). They were more likely to enroll farms that they owned themselves (24.7 percent) than farms they were renting from another owner (16.4 percent).

A large majority (72.5 percent) of the respondents reported that they enrolled none of the farm units that they operated in 2009 in ACRE, either owned or rented. Only 12.6 percent enrolled all the farm units they were farming, while 14.9 percent enrolled some, but not all, of the farm units they were farming.

## **Sources of Information**

Respondents were asked to check all the sources from which they received information about ACRE (table 2), and rank their importance on a five-point scale. Not surprisingly, FSA newsletters and FSA personnel were the most common source, cited by 87 percent of the respondents. The next most common source was the farm press, followed by Iowa State University (ISU) Extension websites and articles, advice from lenders, farm managers or friends, and ISU Extension meetings. The average ranking of the importance of each source by farmers who enrolled all or some of their farm units in ACRE was compared to the corresponding ranking by farmers who enrolled none of their farms. Farmers who enrolled at least some farms ranked ISU Extension presentations as significantly more important (at the .01 level, using a student t-test analysis) than those who enrolled no farms. Other sources were not judged to be significantly different in importance by the two groups.

Just over a quarter of the respondents (26 percent) used an electronic spreadsheet program to analyze the potential effects of ACRE on their businesses. However, 50 percent of those who enrolled at least some farms in ACRE used an electronic spreadsheet, versus only 16 percent of those who enrolled no farms, a significant (.01 level) difference. Likewise, farmers who used an electronic spreadsheet program enrolled an average of 38 percent of their farm units, compared to a 16 percent enrollment rate for those who did not. This indicates that a quantitative analysis

of the ACRE decision tended to influence operators to enroll. The most common sources of the spreadsheets used were ISU Extension (52 percent) and FSA (30 percent).

### **Reasons for Enrolling**

Respondents who enrolled at least one farm unit in ACRE were asked to rate the importance of several possible reasons for doing so. They could assign a score of 0 (did not consider) to 5 (considered highly) to each reason they thought affected their decision. The percentage of the respondents who cited each reason and the average score given to it are summarized in table 3. Two reasons stood out from the rest: a desire for more risk protection against falling revenue, and a belief that the payments received under ACRE would exceed the value of the FSA direct payments given up over the four years of enrollment. High yield variability, advice from a farm lender or manager, and encouragement from a landlord were also cited as reasons for enrolling by at least 80 percent of the respondents, but were given less importance.

The average score assigned to each reason was calculated separately for respondents who enrolled some of their farms in ACRE and those who enrolled all their farms. The mean scores were compared using a student t-test analysis. There were no statistically significant differences in the degree of importance assigned to each reason by those who enrolled some of their farms versus those who enrolled all of their farms.

### **Reasons for Not Enrolling**

On the other side of the coin, respondents who enrolled none or only some of their farms in ACRE were asked to rate the importance of various reasons for not enrolling. Again, a score from zero (did not consider) to 5 (considered highly) was assigned to each reason. As shown in table 4, the factor that was most cited and given the most importance was that the details of the program were too complex. The second most important reason for not enrolling was to avoid giving up 20 percent of the FSA direct payment. Several other reasons were cited by at least 75 percent of the respondents, but were given less importance.

A comparison was made between the answers from the respondents who enrolled none of their farm units in ACRE and those who enrolled some units, again using a student t-test analysis. The respondents who enrolled no units placed significantly more importance on the complexity of the program, the loss of direct payments and possible loan deficiency payments, the low likelihood of receiving an ACRE payment, and a low perceived need for more risk protection. On the other hand, those who enrolled some of their farms placed significantly more importance on the fact that it was too hard to explain the program to their landlord, and their landlord did not want to enroll in the program, than those who enrolled no farms did. In fact, for this group the difficulty of explaining the program to their landlord was by far the most important reason cited for not enrolling farms. The difference of opinion between some operators and their landlords is further illustrated by the fact that respondents who enrolled only some of their farms enrolled 76.7 percent of the farms they owned, but only 32.0 percent of the farms they rented. This is consistent with the fact cited earlier that a higher percentage of owned farms were enrolled than rented farms. In fact, a third of the respondents who enrolled only some of their farms enrolled all of the farms they owned but none of the farms they rented.

## **Farmer Characteristics**

Some information was gathered about characteristics of the farmers who answered the survey and some of the risk management tools that they were using. Table 5 summarizes the results from combining the farm operators who enrolled either all or some of their FSA farm units and comparing them to those who enrolled no units. The first group represents those who were at least somewhat favorable toward ACRE. They operated more FSA units, farmed significantly more crop acres, and derived a higher percent of their gross farm income from the production of crops, so would presumably have more dollars at risk if prices or yields decreased substantially. They also insured a significantly higher percentage of their crop acres, and chose a significantly higher level of crop insurance coverage. Likewise, they priced a significantly higher percentage of their crop prior to harvest than the group that did not enroll in ACRE. The average farm debt-to-asset level and average age of the two groups of operators did not differ significantly, however. The data show that Iowa farmers who were utilizing common crop risk management tools were more likely to participate in the ACRE program.

## **Comments**

Respondents were given the chance to make suggestions about how ACRE could better serve the needs of crop producers. About one-fourth of them included a comment, and 49 percent of the comments were to make the program simpler. Another 18 percent of the comments recommended discontinuing the ACRE program or all government farm programs.

## **Conclusions**

Programs for mitigating financial risk for crop farmers will be an important part of the next farm bill debate. The ACRE program will likely be modified or replaced with a new revenue safety net. The results of this study show that in order to attract a high level of participation in ACRE or its successor the mechanics of the program need to be simple and transparent, and it should offer an expected benefit that clearly exceeds the value of any payments foregone. Program benefits need to be well articulated to landowners as well as tenants. Producers who received information from Extension programs and utilized electronic spreadsheet decision tools were more likely to enroll in ACRE, implying that providing adequate resources for educational programs about new commodity programs may enhance the enrollment decision.

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**Table 1. Mean number of Farm Service Agency farm units operated and enrolled in ACRE**

	<i>Units farmed per operator</i>	<i>Units enrolled in ACRE per operator</i>	<i>Units enrolled in ACRE as a percent of units farmed</i>
Owned FSA farm units	1.73	.38	24.7
Rented FSA farm units	<u>3.27</u>	.59	16.4
Total FSA farm units	5.00	.97	20.0

**Table 2. Importance of sources for information received about the ACRE program**

<i>Source</i>	<i>Percent citing</i>	<i>Mean score for all operators*</i>	<i>Mean score for operators who enrolled all or some units</i>	<i>Mean score for operators who enrolled no units</i>
FSA newsletters and personnel	87	3.8	3.9	3.8
Lender, farm manager, friend	60	2.7	2.9	2.6
Farm magazine, newsletter, website	78	3.1	3.1	3.2
Extension newsletter, website	66	3.3	3.5	3.2
Extension presentation	59	3.3	3.7 <sup>a</sup>	3.0

\*Reasons were ranked from 0 to 5 in increasing order of importance.

<sup>a</sup>Difference between means significant at .01 level.

**Table 3. Frequency and degree of importance of reasons for enrolling in ACRE**

<i>Reason</i>	<i>Percent citing</i>	<i>Mean score for all operators*</i>	<i>Mean score for operators who enrolled some units<sup>a</sup></i>	<i>Mean score for operators who enrolled all units<sup>a</sup></i>
Wanted more risk protection	97	4.24	4.08	4.42
Believed ACRE payments would exceed 20 percent of the direct payment given up	95	3.45	3.67	3.19
Farm had high yield variability	86	2.00	2.06	1.93
Lender or farm manager advised it	83	1.66	1.65	1.67
Landlord wanted to enroll farm	80	1.43	1.57	1.28

\*Reasons were ranked from 0 to 5 in increasing order of importance.

<sup>a</sup>No differences between means were statistically significant.

**Table 4. Frequency and degree of importance of reasons for not enrolling in ACRE**

<i>Reason</i>	<i>Percent citing</i>	<i>Mean score for all operators*</i>	<i>Mean score for operators who enrolled no units</i>		<i>Mean score for operators who enrolled some units</i>
Program details were too complex	87	3.83	4.00	<sup>b</sup>	3.02
Didn't want to give up 20 percent of the direct payment	85	3.55	3.69	<sup>b</sup>	2.88
Would lose possible loan deficiency payments	82	3.07	3.21	<sup>b</sup>	2.38
Too hard to explain to my landlord	77	3.06	2.95	<sup>a</sup>	3.56
Unlikely to get a payment over 4 years	80	2.93	3.09	<sup>b</sup>	2.17
Marketing loan rate would be lower	80	2.48	2.55		2.15
Farm yields don't track with state yields	80	2.45	2.52		2.13
Landlord did not want to enroll	76	2.16	2.03	<sup>b</sup>	2.79
Did not need more risk protection	77	2.16	2.22		1.83
Lacked farm yield information	82	2.03	2.09		1.75

\*Reasons were ranked from 0 to 5 in increasing order of importance.

<sup>a</sup>Difference between means significant at .05 level.

<sup>b</sup>Difference between means significant at .01 level.

**Table 5. Characteristics of operators who enrolled all or some of their farm units in ACRE versus those of operators who enrolled no units**

<i>Characteristic</i>	<i>Mean for all operators</i>	<i>Mean for operators who enrolled all or some units</i>		<i>Mean for operators who enrolled no units</i>
Number of FSA units operated in 2009	5.0	5.8		4.7
Total crop acres farmed in 2009	788	1,101	<sup>a</sup>	677
Percent of gross farm income from crops	78.1	83.1	<sup>b</sup>	76.2
Percent of crop acres insured	86.7	91.8	<sup>a</sup>	84.7
Crop insurance coverage level, percent	75.5	76.8	<sup>a</sup>	74.9
Percent of crop typically pre-harvest priced	26.5	30.0	<sup>a</sup>	25.3
Percent farm debt-to-asset ratio	28.2	27.4		28.4
Operator age, years	55.6	56.3		55.2

<sup>a</sup>Difference between means significant at .05 level.

<sup>b</sup>Difference between means significant at .01 level.