

## ACRE (AVERAGE CROP REVENUE ELECTION) DECISION QUESTION Carl Zulauf, October 2008

**Background:** Beginning with crops harvested in 2009, farmers can choose between:

- (1) The Traditional Farm Program Suite, consisting of price counter-cyclical, direct income, and marketing loan programs, or
  - (2) An ACRE Farm Program Suite, consisting of a state revenue program, 80% of direct income payments, and marketing loan payments at 70% of the loan rate
- ▲ See the appendix (page 3) for a thumbnail sketch of ACRE provisions in the 2008 Farm Bill.

Comparing program suites leads to this **Decision Question**: “Does ACRE’s state revenue program improve management of revenue risk enough, compared to the price counter-cyclical program, to compensate for the 20% reduction in direct payments and 30% reduction in marketing loan rates?”

- ▶ The reason for focusing on revenue risk management is that both ACRE’s state revenue program and the price counter-cyclical program address a systemic risk related to revenue. A systemic risk is a risk beyond the control of an individual farmer. ACRE addresses the systemic risk of a decline in state revenue, defined as a state’s yield times U.S. cash price. The counter-cyclical program addresses the systemic risk of a decline in U.S. cash price.

### Risk Management Benefits of ACRE’s Revenue Program vs. Counter-Cyclical Program

- ▶ **Revenue coverage per acre is higher for ACRE.** To illustrate, for 2009 harvested Ohio corn, soybeans, and wheat; revenue coverage under ACRE is estimated to be 65% to 75% higher than under the counter-cyclical program (Figure 1, page 2).
  - ▲ ACRE updates yield annually as a 5-year Olympic moving average. This yield for 2009 markedly exceeds the historical counter-cyclical yield (Table 1, page 2).
  - ▲ ACRE updates price annually as a 2-year moving average. This price for 2009 markedly exceeds the fixed counter-cyclical price (Table 1, page 2).
  - ▲ ACRE’s annual update of its revenue coverage is especially important when costs are increasing faster than productivity, as has happened since 2005. For 2009, revenue coverage under ACRE approximates variable production costs while revenue coverage under the counter-cyclical program is much less than variable costs (Figure 1, page 2).
  - ▲ Because ACRE’s revenue guarantee cannot decline by more than 10% percent per year, revenue coverage under ACRE will be higher than under the counter-cyclical program through the 2012 crop no matter what happens to price and yield over the next few years.
- ▶ **ACRE payments are tied to planted acres, not base acres.** Planted acres are a farm’s current production risk. They can differ markedly from the historical base acres used to calculate payments from the counter-cyclical program (Table 1, page 2).
  - ▲ Note that ACRE’s payment acres cannot exceed a farm’s total base acres.

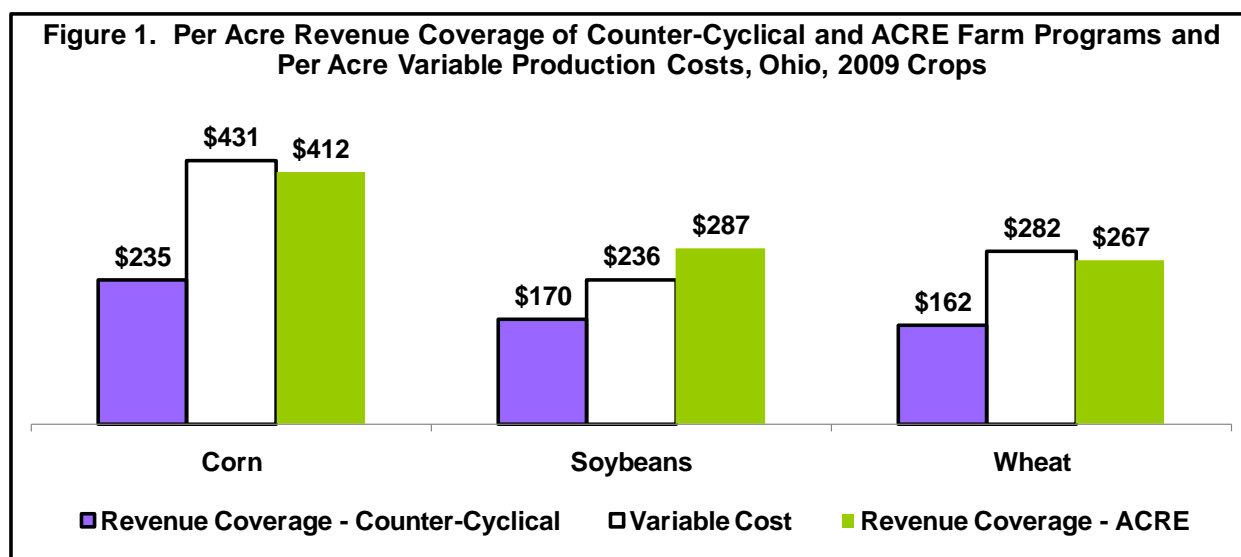
### Risk Management Costs of ACRE’s Revenue Program vs. Counter-Cyclical Program

- ▶ **Direct income payments are reduced by 20%.** Ohio farmers received direct payments of \$165 million in 2007 and planted 9 million acres to ACRE crops in 2006-08. Using these numbers, the 20% reduction in direct payment equals \$3.67 per planted acre [(20% of \$165 million) / 9 million].
- ▶ **As of today, ACRE’s 30% lower loan rate has limited importance.** Variable production costs (Ohio data excluding land rent) exceed or approximate the loan rates for corn (\$2.87 vs. \$2.00); soybeans (\$5.13 vs. \$5.12); and wheat (\$4.21 vs. \$2.34). If price declines below variable costs, acres planted to the crop should decline, causing price to increase.

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► **However, ACRE's revenue guarantee is not fixed.** Thus, ACRE's revenue coverage can change each year. In particular, its coverage level will decline if market revenue declines. Thus, a decision-maker must ask, "What is the possibility that variable costs will decline below the loan rate by 2012?" The greater is this possibility, the more favorable is the loan (and counter-cyclical) program.

**Summary:** For the average Ohio farmer, the ACRE decision question can be rephrased as: **"Is the higher per acre revenue coverage of ACRE's state revenue program plus ACRE's better match with planted acres worth an annual risk management fee of \$3.67 per planted acre, provided variable production costs do not decline below the loan rate?"** Each person facing a decision on ACRE needs to customize this question to match their individual farm's situation.



NOTES: Revenue coverage for the counter-cyclical program equals [83.3% times counter-cyclical yield times effective target price]. Revenue coverage for the ACRE state revenue program equals [83.3% times 90% times average U.S. cash price times Olympic average state yield]. The data used to make these two calculations are presented in Table 1 (below). Variable production costs are seed, fertilizer, chemicals, fuel, oil, grease, repairs, crop insurance, miscellaneous, interest on operating capital, and hired labor. SOURCES: Ohio Crop Production Budgets for costs and original calculations.

**Table 1. Variables used to Compare Risk Management Benefits of ACRE State Revenue and Counter-Cyclical Farm Programs, Corn, Soybeans, and Wheat, Ohio, 2009 Crop**

Crop	Olympic Average Yield 2004-08	Counter-Cyclical Yield 2003	Average Cash Price 2006-07	Effective Target Price 2010	Planted Acres 2006-08	Base Acres 2003
Corn	151.7/acre	119.8/acre	\$3.62/bushel	\$2.35/bushel	3.5 million	4.1 million
Beans	46.3/acre	36.8/acre	\$8.27/bushel	\$5.56/bushel	4.5 million	3.5 million
Wheat	66.3/acre	53.2/acre	\$5.37/bushel	\$3.65/bushel	1.0 million	1.1 million

NOTES: An Olympic average excludes the highest and lowest values. The 2 years used to calculate ACRE's price component is subject to debate; the lowest price option is presented. Effective target price equals (target price minus direct payment rate per bushel). SOURCE: U.S. Department of Agriculture.

## **APPENDIX: Thumbnail Sketch of ACRE (Average Crop Revenue Election) Provisions in *Food, Conservation, and Energy Act of 2008***

### **ACRE Decision:**

- (1) The decision to elect ACRE begins with covered commodities and peanuts harvested in 2009.
- (2) ACRE must be elected -- if no choice is made, a farmer remains in the traditional farm programs.
- (3) As long as a farmer is not in ACRE, the election of ACRE is an annual decision. However, once ACRE is elected, a farmer is in ACRE through the 2012 crop. Thus, a farmer can elect to participate in ACRE for the 2009-12 crops, 2010-12 crops, 2011-12 crops, or 2012 crop.
- (4) ACRE must be elected for all covered program crops and peanuts grown on a farm (for example, if corn, soybeans, and wheat are grown on a farm, ACRE must be elected for all 3 crops). However, ACRE payments are crop specific (for example, corn but not wheat can receive a payment).

### **ACRE Suite of Farm Programs:**

- ▶ Direct payments equal to 80% of traditional direct payments established in the 2008 Farm Bill
- ▶ Marketing loan payments at 70% of the marketing loan rates established in the 2008 Farm Bill
- ▶ ACRE state revenue protection payments

### **ACRE Revenue Protection Payment to a Farm for a Crop:**

- a.  $[83.3\% \text{ of the farm's acres planted to the crop}]$  (83.3% becomes 85% for the 2012 crop)
- b. times lesser of  $[ACRE \text{ state revenue guarantee per acre minus state actual revenue per acre}]$   
or  $[25\% \text{ of ACRE state revenue guarantee}]$   
(ACRE state payment per acre capped at 25% of state revenue guarantee)
- c. times  $\{[farm's \text{ Olympic average yield (removes high and low yield) for 5 most recent crop years}]$   
divided by  $[state's \text{ Olympic average yield for 5 most recent crop years}]\}$

*ACRE state revenue guarantee* per acre for a crop for a year is:

- ▶  $[90\% \text{ times } (ACRE \text{ state yield per planted acre}) \text{ times } (ACRE \text{ price})]$ 
  - ▲ ACRE state yield is an Olympic average of a state's yield for the 5 most recent crop years
  - ▲ ACRE price is an average of U.S. market year cash price for the 2 most recent crop years
  - ▲ For 2010-12, revenue guarantee cannot change more than 10% from prior year's guarantee
  - ▲ Separate state revenue guarantees are created for irrigated and non-irrigated land if a state's planted acres are at least 25% irrigated and at least 25% non-irrigated.

*ACRE actual state revenue* per acre for a crop for a year is:

- ▶  $\{[state \text{ yield per planted acre for crop year}] \text{ times } \text{higher of } [ACRE \text{ price (see above)} \text{ or } 70\% \text{ of crop's marketing loan rate}]\}$

*ACRE Planted Acre Limit:*

- ▶ ACRE payments cannot be received on more than a farm's total base acres.
  - ▲ If total acres planted to crops eligible for ACRE exceed a farm's total base acres, the farmer and landlord chooses which planted acres to enroll in ACRE.

### **ACRE Farm Eligibility Condition:**

To receive an ACRE payment, a farm's actual revenue for the crop must be less than the farm's ACRE benchmark revenue for that crop year.

- ▶ Farm's actual revenue for crop is:  $[farm's \text{ actual yield per planted acre} \text{ times } ACRE \text{ price (see above)}]$
- ▶ Farm's ACRE benchmark revenue is:  
 $\{[Olympic \text{ average of farm's yield for 5 most recent years} \text{ times } ACRE \text{ price (see above)}]$   
plus  $[per \text{ acre crop insurance premium paid for the crop}]\}$

### **ACRE Payment Limits for a Person or Legal Entity:**

- ▶ Direct Payments: \$40,000 minus amount equal to 20% reduction in direct payments
- ▶ ACRE revenue payments: \$65,000 plus amount equal to 20% reduction in direct payments