Average Crop Revenue Election (ACRE) Program

Troy Dumler
Extension Agricultural Economist
Kansas State University

A new, optional program in the 2008 Farm Bill is the Average Crop Revenue Election (ACRE) program. This program is a revenue counter-cyclical program that is designed to provide support to producers when crop revenue falls below the established revenue guarantee. Instead of only providing support when prices fall, ACRE is a new concept for commodity programs that offers the opportunity to provide support when yields are reduced as well. Sign-up for ACRE will begin with the 2009 crops and will be offered each year through 2012. However, producers who choose to enroll in ACRE must stay in the program for the remainder of the farm bill. In addition, if a producer chooses to enroll in ACRE, he must enroll all crops on that farm, even though payments will be based on individual crops.

ACRE Mechanics

Although the overall mechanics of ACRE are more involved, it is basically designed as a state-level revenue counter-cyclical program that makes payments when actual state revenue is less than the state revenue guarantee. Payments will equal the difference between the state revenue guarantee and actual state revenue, but an individual farm cannot collect payments unless the actual farm revenue falls below the producer's benchmark farm revenue. State and farm level ACRE formulas are shown below.

(1) *Benchmark State Yield = 5-Year Olympic Average State Yield per Planted Acre*

(2) *Benchmark Price = 2-Year National Average Market Year Price*

(3) *State Revenue Guarantee = (90% * Benchmark State Yield * Benchmark Price)*

(4) *Actual State Revenue = Actual State Yield per Planted Acre * Natl. Avg. Price*

(5) *Benchmark Farm Yield = 5-Year Olympic Average Farm Yield per Planted Acre*

(6) *Benchmark Farm Revenue = (Benchmark Farm Yield * Benchmark Price) + Crop Insurance Premiums Paid*

(7) *Actual Farm Revenue = Actual Farm Yield per Planted Acre * Natl. Avg. Price*

(8) *ACRE Payment = The lesser of (State Revenue Guarantee – Actual State Revenue) or (25% * State Revenue Guarantee) * (Benchmark Farm Yield/Benchmark State Yield)*

In calculating the *Benchmark State Yield*, the 5-year Olympic average yield would equal the average National Agricultural Statistics Service (NASS) yield per planted acre for the most recent 5 crop years, excluding the highest and lowest yields. Thus, for the 2009 crop, the *Benchmark State Yield* would be based on the 2004-2008 crop years. It is significant that yields on a *per planted acre* basis are used to calculate the benchmark and actual yields for both the state and farm components of the ACRE equations. This will benefit producers when crop conditions are poor enough that a significant percentage of acres are not harvested.

According to the language of the 2008 Farm Bill, the *Benchmark Price* is calculated as the "simple average of the national average market price received by producers of the covered commodity or peanuts for the most recent 2 crop years, as determined by the Secretary." Considering the 2009 crop, the "most recent 2 crop years" would seem to be 2007 and 2008. However, officials at USDA recently admitted that they may interpret the farm bill language to refer to 2006 and 2007 as the "most recent 2 crop years". The argument that USDA uses to justify this interpretation is that: 1) the Congressional Budget Office (CBO) used lower prices to estimate the cost of the ACRE program, and 2) the formula requires market-year average prices which will not be known for the 2008 crop when producers sign-up in 2009. Members of Congress and farm organizations have responded that it was the intent of Congress that ACRE be based on recent market prices, and estimates of price can be used at sign-up to establish the *State Revenue Guarantee* and *Benchmark Farm Revenue*. At this point it remains to be determined which prices USDA will use.

The legislation provides many other guidelines to dictate how ACRE payments will be calculated on an annual basis. For instance, the state revenue guarantee cannot increase or decrease more than 10% from one year to the next. This feature will protect producers if commodity prices would decline rapidly, as the revenue guarantees would not fall as fast as the crop prices. However, in years when crop prices increase rapidly, revenue guarantees will lag behind market prices.

Another important feature of ACRE is that payments will be based on planted acres, not historical base acres—unless planted acres are greater than base acres. If total planted acres on a farm are greater than total base acres, ACRE payments will be limited to base acres, and the producer will have the option to choose which planted acres to enroll in ACRE. Like direct payments, ACRE payments will be paid on 83.3% of total base acres for 2009-2011 and 85% of total base acres in 2012.

Although ACRE offers the opportunity to provide support to producers beyond when prices fall, it is not without cost. Another provision of ACRE would require producers who enroll in the program to give up 20% of their direct payment and reduce marketing loan rates by 30%. Therefore, producers will have to determine whether ACRE will provide more support over the life of the 2008 Farm Bill than the support they will give up in terms of reduced direct payments and lower marketing loan rates. Table 1 shows the average reduction in direct payments for the primary program crops grown in Kansas. By enrolling in ACRE, producers with wheat or grain sorghum base would give up

approximately $3.50 to $4.00 per acre, while soybean producers would only have direct payments reduced by about $2.00 per acre. With higher yields associated with corn (especially irrigated corn), the reduction in direct payments for corn will likely be larger.

Table 1. Average Direct Payments for Primary Kansas Crops.

	Wheat	Corn	Sorghum	Soybeans
Payment Yield (bu/ac)	34.1	102.1	54.4	22.1
Payment Rate ($/bu)	0.52	0.28	0.35	0.44
Direct Payment ($/ac)	17.73	28.59	19.04	9.72
ACRE Reduction ($/ac)	3.55	5.72	3.81	1.94

In addition, because actual revenue is calculated using market-year average prices, payments will not be made until October 1, or as soon as practicable after the applicable marketing year (one year after harvest). The delay in payments could cause some cash flow problems that may lead producers to require higher ACRE payments in order to accept lower direct payments and marketing loan rates. Because of the tradeoffs between ACRE and the traditional commodity programs, the decision to sign up may not be straightforward. As a result, considerable thought and analysis should be given before deciding whether or not to sign up for ACRE.

ACRE Enrollment Decision

Numerous factors will come into play in the ACRE enrollment decision-making process. Because producers must remain enrolled in ACRE once they sign-up, it will be necessary to estimate crop prices and yields over the next four years in order to determine whether or not they should enroll. While estimating long-term prices and yields is difficult, it will be even more difficult given the complicated design of ACRE. For example, due to the requirement that both the state and farm suffer revenue losses in order to collect payments, producers will have to estimate national prices for 2009-2012 and state and farm-level yields for the same time period. While predicting yields years in the future would be expected to be problematic given the inherent variability of production, prices will also be difficult to predict over the next four years. As prices have climbed well above historical averages, variability has increased as well. This has several implications.

First, historical relationships between price and yield may have little relevance to price and yield estimates in the near future. For example, current and future wheat prices are currently significantly higher than historical prices although recent yields and future trend yields do not differ greatly. Of course, U.S. yields are only one component of the world supply equation. Nevertheless, current supply and demand fundamentals potentially reflect a structural change for many farm commodities, thus making future projections more complicated.

Second, current historically high prices for most commodities will likely result in high ACRE revenue guarantees. High revenue guarantees increase the odds that payments will be made under ACRE. This is especially the case if prices should decline significantly. Because the revenue guarantee cannot increase or decrease more than 10% from year to

year, a large drop in commodity prices could result in large ACRE payments. Tables 2 and 3 demonstrate a scenario that could occur over the course of the 2008 Farm Bill. Table 2 shows prices and yields for wheat from 2004-2012. Prices are market year average prices for the U.S. and include actual NASS prices for 2004-2007 and forecasted prices for 2008-2012. The 2008 forecasted price is the midpoint price from the July 2008 World Agricultural Supply and Demand Estimate (WASDE) report, while the 2009-2012 prices were acquired from the March 2008 Baseline report from the Food and Agricultural Policy Research Institute (FAPRI). Yields for Kansas are derived from the same sources and are reported as bushels per planted acre (as required by ACRE). This scenario uses price projections from FAPRI to demonstrate how ACRE would perform if prices dropped significantly. Because the FAPRI baseline was published in March, it does not account for recent market trends. As a result, forecasted prices in 2009-2012 are much lower than current prices.

Table 2. Actual and Projected Market Year Average Wheat Prices and Yields, 2004-12*.

Year	U.S. MYA Wheat Price ($/bu)	Kansas Wheat Yield (bu/planted acre)
2004	3.40	31.5
2005	3.42	38.0
2006	4.26	29.7
2007	6.65	27.3
2008	7.50	37.0
2009	5.23	36.8
2010	5.21	37.1
2011	5.31	37.4
2012	5.35	37.7

* 2004-07 prices are from NASS, 2008 is the midpoint price project from July WASDE Report, 2009-2010 prices are from FAPRI March Baseline Projections.

Table 3. Projected ACRE Payments for Wheat in Kansas based on FAPRI March Baseline Projections, 2009-12.

Year	Benchmark State Yield (bu/plt ac)	Benchmark Price ($/bu)	State Rev. Guarantee ($/plt ac)	Actual State Revenue ($/plt ac)	ACRE Payment ($/plt ac)
2009	32.7	7.08	208.43	192.46	15.97
2010	34.5	6.37	197.63	193.29	4.34
2011	34.5	5.22	177.87	198.59	0.00
2012	37.0	5.26	175.00	201.70	0.00
Average	--	--	--	--	5.07

Table 3 shows the estimated ACRE payments for wheat in Kansas for 2009-2012. Based on the baseline price and yield projections from FAPRI, ACRE would make average payments of $15.97 in 2009 and $4.34 in 2010. Payments occur in those years largely because the benchmark price is relatively high. As the scenario plays out over time, even though the benchmark state yield increases, the magnitude of the price decline lowers the

state revenue guarantee. Interestingly, actual state revenue remains relatively constant, but ACRE payments are not made because of the decline in the state revenue guarantee.

Tables 4 and 5 provide another scenario that could occur during the life of the 2008 Farm Bill. This scenario is nearly identical to the previous example, except that it uses and updated price forecast from USDA and FAPRI for the 2008-2012 crop years. The market year average price estimate for wheat is lowered 25 cents to $7.25/bushel, while the FAPRI forecast for 2009-2012 ranges from $6.63 to $6.69/bushel ($1.28 to $1.47 higher than the previous FAPRI forecast). As shown in table 5, the higher wheat prices in 2009-2012 result in no ACRE payments. This occurs because actual revenue each year is significantly higher than the state revenue guarantee—even though the state revenue guarantee in this example is significantly higher than the previous example for 3 of the 4 years considered.

Table 4. Actual and Projected Market Year Average Wheat Prices and Yields, 2004-12*.

Year	U.S. MYA Wheat Price ($/bu)	Kansas Wheat Yield (bu/planted acre)
2004	3.40	31.5
2005	3.42	38.0
2006	4.26	29.7
2007	6.65	27.3
2008	7.25	37.0
2009	6.69	37.0
2010	6.68	37.4
2011	6.65	37.8
2012	6.63	38.0

* 2004-07 prices are from NASS, 2008 is the midpoint price project from September WASDE Report, 2009-2010 prices are from FAPRI August Baseline Projections.

Table 5. Projected ACRE Payments for Wheat in Kansas based on FAPRI Baseline Projections, 2009-12.

Year	Benchmark State Yield (bu/plt ac)	Benchmark Price ($/bu)	State Rev. Guarantee ($/plt ac)	Actual State Revenue ($/plt ac)	ACRE Payment ($/plt ac)
2009	32.7	6.95	204.75	247.53	0.00
2010	34.6	6.97	216.84	249.83	0.00
2011	34.6	6.69	207.97	251.37	0.00
2012	37.1	6.67	222.74	251.94	0.00
Average	--	--	--	--	0.00

The preceding examples are just two of countless scenarios that could occur over the course of the 2008 Farm Bill. However, it illustrates how ACRE could potentially benefit producers. Without question, because of the increased variability of income, government program decisions will become increasingly important. Naturally, if the ACRE enrollment decision is important, one would wonder if there are any rules of thumb that producers could follow in that decision making process. After analyzing ACRE, very few

rules of thumb come to light. In the absence of more specific rules of thumb, following are some thoughts for producers to consider when making an enrollment decision with ACRE.

- Will ACRE payments (with reduced direct payments and lower loan rates) on average be greater than current commodity program payments?
- Even if ACRE payments are not greater than current commodity program payments, will it provide more risk management protection?
- What is the price-yield correlation between state yields and national prices?
- What is the correlation between state yields and farm yields?
- How does ACRE compare with each crop in the crop mix? Does it work better for some crops than others?
- How complementary is ACRE with crop insurance and disaster assistance?