



# ERS *Report Summary*

Economic Research Service

September 2011

U.S. Department of Agriculture



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## Alternatives to a State-Based ACRE Program: Expected Payments Under a National, Crop District, or County Base

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This report simulates crop revenue variability to examine expected program payments and consequences on farm-level risk if the area trigger were changed from the State level to a national, Crop Reporting District, or county level. The analysis is national in scope and covers seven crops: corn, soybeans, wheat, cotton, grain sorghum, long-grain rice, and medium/short-grain rice, which accounted for 98 percent of the value in 2010 of crops for which ACRE was available. We analyze how the change in revenue program benefits would vary across crops and regions and how benefits from the revenue programs would stack up against benefits from direct payment and price-based commodity programs (countercyclical, marketing loan guarantees) available under the 2008 Farm Act.

### What Is the Issue?

Enacted in 2008, the Average Crop Revenue Election or ACRE program uses a combination of State- and farm-level revenue guarantees or payment triggers that are established from recent prices and yields. At the initial enrollment deadline for ACRE in August 2009, only 8 percent of farms with about 13 percent of eligible base acres elected to participate, despite the program's unique ability to align guarantee prices with increases in field crop prices. In 2010, the second year in which ACRE was available, few additional acres were enrolled.

The ACRE participation decision is complex. Prospective enrollees must weigh the benefits of ACRE relative to those of other programs that must be forgone and learn about a markedly different program that uses both farm- and State-level revenue triggers. Switching the aggregate (State) revenue trigger to a lower level, one closer to the farm level, has been suggested as a way to make ACRE more attractive to producers.

### What Did the Study Find?

Changing the aggregate level of revenue used to trigger payments in a program such as ACRE would change expected benefits and, perhaps, enrollment levels. Moving from ACRE's State level to one closer to the farm level would generally increase payments and reduce risk.

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- If expected market prices equal revenue program guarantee prices, the increase in payments and risk reduction would be greatest for crops such as wheat, cotton, and grain sorghum—crops with widely varying yield across regions and, thus, large differences in revenue variability across levels of aggregation. The average expected payments for these crops would increase 28-32 percent if the revenue program trigger were changed from State to county. Corn and soybean production is more concentrated geographically with less varied yields, so the increase in expected payments would be less, 16-19 percent. Payments for rice would change little if the aggregate revenue trigger were changed because most of the crop is irrigated, with price largely determining revenue variability.
- The relationship between expected market price in the covered year and the revenue program guarantee price affects the changes in expected payments under alternative levels of revenue aggregation. If the expected market price **increases** relative to the guarantee, then difference in expected payments across levels of aggregation would increase as yield variability becomes a stronger factor in determining revenue variability and payments; if the expected market price **decreases** relative to the guarantee, expected payments increase but differences in payments across levels of aggregation decrease.
- Because revenue benchmarks or guarantees used in the revenue programs are designed to change over time, it is important to consider the different crop guarantee price scenarios in evaluating the benefits of a revenue program relative to price-based programs. If crop prices continue to increase, guarantees and expected payments under ACRE or a similar program would increase, while expected payments under programs that are based on legislatively fixed targets would decrease. And as the crop's price increases, the size of the direct payment for a crop decreases relative to the expected payment from the revenue program. Changes in prices, and thus revenue program guarantees, appear to be much more important than level of aggregation/trigger to producers weighing the revenue election.
- Risk reduction from a program that uses an aggregate revenue trigger depends greatly on the correlation between the aggregate measure of revenue and actual farm revenue. While risk reduction increases as the level of aggregation used in the revenue program diminishes, farm-level revenue is largely uncorrelated with revenue at even the smallest level of aggregation, the county. In addition, expected payments and risk reduction are limited by the cap of revenue program payments at 25 percent of the guarantee.

While a county-level revenue program would generally produce larger expected payments and risk reduction for participants than a State-level program, it would increase government administrative costs as program benchmarks and guarantees would need to be determined for a greater number of aggregate units.

## How Was the Study Conducted?

To study the effects of changing the aggregation level used for the trigger in a revenue program, we constructed three hypothetical revenue program alternatives that maintain the structure of the ACRE program but substitute national-, district- and county-level revenue for the State-level revenue trigger. The study used data from USDA's National Agricultural Statistics Service and Risk Management Agency to construct a model that simulates random yields, prices, and revenues at farm and national, State, Crop Reporting District, and county levels. The model is national in scope and represents about 95 percent of the 2010 planted U.S. acres of corn, 89 percent of soybean acres, 89 percent of wheat acres, 84 percent of cotton acres, 74 percent of the grain sorghum acres, and more than 90 percent of rice acres.