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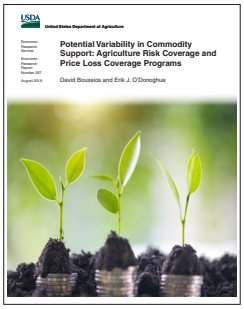

Potential Variability in Commodity Support: Agriculture Risk Coverage and Price Loss Coverage Programs

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What Is the Issue?

The Agricultural Act of 2014 shifted farm support payments from programs with mostly fixed amounts to the Agriculture Risk Coverage (ARC) and Price Loss Coverage (PLC) programs, which provide income support conditional on market outcomes. The Agriculture Improvement Act of 2018 continues these programs with modest changes. For ARC and PLC, payments occur when revenues or prices fall below a certain level. Since these programs are tied to market outcomes, both future payments to producers and the program costs to the Government are uncertain. For example, in the first 4 years of the programs, producers received $22.5 billion, with support ranging from $2.5 billion to $7.5 billion per year. This report analyzes the programs' features and the likelihood of payments being triggered in upcoming years, both nationally and at the county level. The study focuses on the three largest covered commodities by program area—corn, soybeans, and wheat—which make up 88 percent of the acres covered by these programs.

What Did the Study Find?

Using the *USDA Agricultural Projections to 2028*, ERS researchers generated a range of potential commodity prices that were then used to estimate possible ARC and PLC payment levels.

Price trends influence expected ARC and PLC payments. Corn and wheat prices are expected to recover slightly from previous years, while soybean prices have declined due to recent trade uncertainties. These price movements impact not only the payments from each program but also the election choice of farmers. Projected prices above effective reference prices—the trigger values for determining PLC payments—indicate higher payments from ARC than from PLC for corn and soybeans over the next 10 years. With wheat prices projected below the effective reference price, PLC will likely pay more per acre than ARC.

Program costs to the government can vary within a wide range each year. Significant differences between the annual average and median payments for each crop indicate a wide range of potential payments, with sizeable payments if prices decline significantly. Using farmer election choices made under the 2014 Farm Bill, the projected costs for the 2019/20 marketing year for ARC and PLC combined are:

corn (median and average: $245 million and $1.22 billion respectively), soybeans (median and average: $347 million and $1.02 billion), and wheat ($477 million and $680 million). At projected prices, payments for corn and soybeans would be triggered under ARC only. For wheat, payments are likely with either program. If realized corn or soybean prices decline roughly 5 percent from projected prices, then PLC payments will be triggered. When PLC payments are triggered, the costs of programs jump significantly because PLC payments are triggered nationally.

ARC pays a conditional amount of income support depending on realized county revenues and benchmark revenue thresholds. The most frequent payment level for ARC is expected at either $0 or the program cap each year. While ARC can provide a range of per-acre support for a commodity in a year, the most common per-acre levels observed are either $0 or the maximum per-acre level possible. This is due to the relatively narrow band of revenues over which per-acre support levels can actually vary (regardless of crop type). Because of this formula for payments, the distribution of support payments is bimodal.

The probabilities of ARC payments are related to the location of production and the variability of the county's yield. Farmers in counties where their yields correlate positively with national yields are less likely to receive ARC payments because production and prices provide natural revenue risk mitigation. For example, low national yields (supply) increase national prices, which increase revenue. However, farmers in counties with yields less positively correlated with national yields are more likely to receive ARC payments when county yields are low. The variability of a county's yield also influences the probability of ARC payments. More volatile county yields make ARC payments more likely because revenue fluctuates below the ARC payment threshold more frequently.

How Was the Study Conducted?

Using a simulation approach with the ERS 10-year agricultural projection (baseline) model, random yield and macroeconomic variable scenarios were simulated to project the distributions of uncertain market outcomes, such as prices and production. Instead of the point estimate projections used in the USDA's agricultural baseline projections, this approach develops probability distributions that allow for an examination of the uncertainty and variability of commodity market outcomes, including commodity support programs. Using data on county-level yields and macroeconomic variables spanning 1990 through 2017, the approach projects and simulates county-level crop yields across 1,000 draws to estimate the variation in markets and program payments over 10 years, beginning with the 2019/20 crop year. To project the costs of the ARC and PLC program, two base-acre election scenarios are used to analyze how costs may change due to farmers' choices.