ERS Report Summary

Markets and Trade

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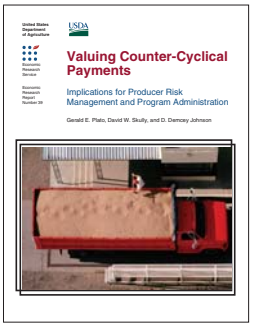

This is a summary of an ERS report.

Find the full report at ***www.ers.usda.gov/publications/err39***

Valuing Counter-Cyclical Payments:
Implications for Producer Risk Management and Program Administration

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The 2002 Farm Act instituted a new program called counter-cyclical payments. The payments supplement the incomes of producers with established base acres in wheat, soybeans, upland cotton, corn, grain sorghum, barley, oats, rice, or peanuts. Eligible producers receive payments when a designated crop's marketing-year average price falls below its effective target price, which is established by legislation. Counter-cyclical payments are tied to a fixed production base rather than actual production. Thus, producers cannot augment their payment amounts by changing their planting decisions.

The counter-cyclical payment rate after a marketing year ends equals the effective target price minus the larger of the marketing-year average price for a commodity and the commodity's national marketing loan rate, a price level specified in the Farm Act. Each month, USDA updates the forecasts of the marketing-year average prices (published in the World Agricultural Supply and Demand Estimates (WASDE) report). The October and February forecasts are used to calculate advance counter-cyclical payments for the current marketing year.

What Is the Issue?

USDA's current method for estimating expected counter-cyclical payment rates produces unintentionally biased estimates because it does not consider the variability of marketing year prices. Estimates with positive bias increase the risk of overpayment to producers who accept advance payments. According to statute, producers must reimburse the Government for any overpayments, which can lead to cash-flow problems for producers.

What Did the Study Find?

A model developed for this analysis improved upon the USDA method of estimating counter-cyclical payment rates by accounting for the variability in market price forecast errors. This enhanced method produced unbiased estimates. Forecasters and producers can also use the model to calculate the probabilities of repayment. Producers can use call options on commodity futures contracts to hedge against losses in expected counter-cyclical payments. Hedging, however, is only moderately effective and varies by commodity.

ERS is the main source of research and analysis from the U.S. Department of Agriculture, providing timely information on economic and policy issues related to agriculture, food, the environment, and rural America.

How Was the Study Conducted?

The model developed here uses an approach based on option pricing theory to derive an unbiased estimate of expected counter-cyclical payments and the probabilities that advance payments will have to be repaid. Data required to run the model included the policy parameters in the 2002 Farm Act, a forecast of a crop's marketing-year average price, and an estimate of forecast variability (based on the past history of WASDE forecasts).

This report also describes a simulation exercise to evaluate hedging opportunities. Expected counter-cyclical payments were hedged with call options on futures contracts. In principle, by hedging with call options, producers can reduce the risk of lower counter-cyclical payments (due to a price increase), while retaining potential gains in payments (from a price decline). Simulated price data—both marketing-year average and futures contract price forecast and outcome—were used to estimate expected payoffs from the hypothetical hedge. The correlations and variances of the simulated prices matched those found in historical price data.