Valuing Counter-Cyclical Payments

Implications for Producer Risk Management and Program Administration

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Introduction

The 2002 Farm Security and Rural Investment Act (the 2002 Farm Act) instituted a new program called counter-cyclical payments. The payments are intended to supplement the incomes of producers with established base acres for wheat, soybeans, upland cotton, corn, sorghum, barley, oats, rice, or peanuts. Eligible producers receive payments when the marketing-year average price for a designated commodity falls below its effective target price. Effective target prices are established by legislation. The payments provide income protection through a range of statutorily specified price levels (with coverage lasting for the duration of the 2002 Farm Act) that was not available under the 1996 Farm Act.

Counter-cyclical payments replaced market loss assistance (MLA) payments that Congress granted on an ad hoc basis during 1998-2001 (see box, "Historical Background: Similar Policies That Preceded Counter-Cyclical Payments"). Like MLA payments, counter-cyclical payments are tied to historical entitlements, rather than actual production. Some restrictions apply to plantings of fruits or vegetables, but otherwise producers are free to plant whatever they like on their base acres—acres on which payments are made. This makes it difficult to generalize about the effectiveness of counter-cyclical payments as a hedge against commodity price risk. Some individuals who are eligible to receive a counter-cyclical payment do not grow the covered commodity. Others do grow the covered commodity but use futures or options to manage their price risk. In either case, recipients are likely to view counter-cyclical payments not as a hedging instrument but as a separate financial asset (unrelated to production) characterized by risk and return. From this perspective, it is important to understand the expected value of counter-cyclical payments and the associated risks.

The 2002 Farm Act authorizes the U.S. Secretary of Agriculture to make advance counter-cyclical payments in October and in February if the latest USDA forecast of the marketing-year average price (updated monthly) for a crop falls below its effective target. However, USDA price forecasts, like all price forecasts, are subject to error—as producers of some commodities

Historical Background: Similar Policies That Preceded Counter-Cyclical Payments

Counter-cyclical payments are similar to deficiency payments that were first authorized by the Agriculture and Consumer Protection Act of 1973 (the 1973 Farm Act). Deficiency payments were eliminated by the Federal Agriculture Improvement and Reform Act of 1996 (the 1996 Farm Act).

The deficiency payment rate for a commodity equaled its target price minus the larger of its national loan rate and a market price. Before the 1985 Farm Act, only the average farm market price for the first 5 months of the marketing year was used to calculate deficiency payments. After the 1985 Farm Act went into effect (beginning with the 1986 crop year) both the 5-month and the 12-month average farm market prices were used to determine deficiency payment rates The 1990 Farm Act continued these provisions through the 1995 crop year.

A commodity's deficiency payment for a farm equaled the product of the commodity's deficiency payment rate, the farm's payment yield, and the farm's payment acres. Young et al. (2005) explain the procedures used for determining payment yields and payment acres.

Advanced deficiency payments based on payment rate forecasts were authorized by the 1986 Farm Act. Generally, repayments were required when total deficiency payments based on market price outcome were smaller than advance deficiency payments based on price forecasts.

The 1996 Farm Act replaced deficiency payments with fixed payment rates called Production Flexibility Contract (PFC) rates. PFC payments were unaffected by production and market price outcomes. A farm's total fixed payment each year equaled the product of the established fixed payment rate, the farm's payment yield, and the farm's payment acres. Payment yields were fixed at 1985 levels and payment acres were fixed at 1996 levels. Direct payments in the 2002 Farm Act replaced the PFC payments in the 1996 Farm Act.

The PFC payments were supplemented by Marketing Loss Assistance (MLA) payments in fiscal years 1999, 2000, and 2001 to compensate producers for low prices. These payments were authorized and appropriated by ad hoc emergency assistance acts, passed in response to low commodity prices. Counter-cyclical payments in the 2002 Farm Act essentially replaced MLA payments. The 2002 Farm Act, like the 1996 Farm Act, continued fixed payments, but they are now called direct payments and are unrelated to current production or market prices.

have learned when, as a result of higher prices late in a marketing year, advance payments had to be repaid to the Government. Our analysis provides a way to estimate probabilities of repayment given the underlying uncertainty about commodity prices—information that can benefit both payment recipients and program managers.

As part of its baseline analysis, USDA develops long-term projections of budgetary outlays for commodity programs. Recently, the baseline analysis has incorporated stochastic simulations, which capture the effects of yield uncertainty on prices and (consequently) commodity-program expenditures over a 10-year period (*USDA Agricultural Baseline Projections to 2015*, February 2006). The analysis presented here also makes use of stochastic simulation; however, this analysis is more short term, focusing on price uncertainty within a marketing year.

We developed an easy-to-implement computer program for estimating expected counter-cyclical payments and the probability that advance payments will have to be repaid, given a forecast of the marketing-year average price for a designated commodity. Data required to run the program are the WASDE price forecast, an estimate of forecast variability, and the policy parameters for counter-cyclical payments (outlined in the 2002 Farm Act).

Forecast price error plays an important role in the analysis. When expected counter-cyclical payment rates do not account for forecast error, they can be seriously biased. Our method provides a more reliable picture of expected counter-cyclical payments. We also investigate the risks associated with counter-cyclical payments from a producer perspective, and possibilities for hedging these risks.