

Explanatory Notes for Stochastic Budget Outlay Estimates

Counter-cyclical payments (CCPs), marketing loan benefits (MLBs), and dairy market loss payments are based on the stochastic price variability of corn, grain sorghum, barley, oats, wheat, soybeans, upland cotton, rice and milk. The stochastic approach was adopted so that budget outlays better reflect the random nature of price outcomes.

Prior to the FY 2007 President's Budget, USDA projected farm program outlays were based solely on a point-estimate (deterministic) approach. Because price-sensitive program payments (i.e., MLBs and CCPs) protect producer income only when prices fall below targeted levels, deterministic projections, by their nature, tend to underestimate outlays. Stochastic outlay estimates account for the price and corresponding outlay variability around the deterministic estimate. Stochastically-derived outlays follow this process:

- Deterministic baseline projections are developed for the 9 program commodities using the inter-agency commodity estimates committee (ICEC) process (as in the past);
- The Economic Research Services' (ERS) Food and Agricultural Policy Simulation (FAPSIM) model was used to generate price distributions for each commodity, with corresponding production distributions centered on the deterministic baseline prices;
- Each price in the distribution is weighted by its probability to determine expected CCPs and MLBs (where associated production is also weighted);
- Total outlays for each commodity in each year equal the sum of expected outlays associated with each price and production level.

By incorporating stochastic price and production variables into its baseline process, USDA is moving toward the approaches now used by other groups involved with estimating budgetary impacts of farm policies and programs. The Congressional Budget Office (CBO) and the Food and Agricultural Policy Research Institute (FAPRI) have used a stochastic approach to estimate outlays and cost legislative proposals for some time. CBO adopted a stochastic approach for crop sector analysis in September 1995 while working on the 1995/96 budget reconciliation/farm bill debate. FAPRI adopted a stochastic approach just prior to the 2002 farm bill debate.