Appendix B. Description of estimation method.

Since ARC-CO and PLC payments varied across the time period 2014–18 and across counties, the relationships of interest were estimated in fixed effects (FE) panel regression models. The estimated FE panel regression models include the program payments as the dependent variable and price and yield, for the ARC-CO case, and price only, for the PLC case, as the explanatory variables. Time-constant countywide differences are accounted for with a control variable to focus on estimation of the relationship between the variables of interest over time.

The specific estimated models, which are specific versions of the general FE regression models in the econometrics literature, such as those in Verbeek (2017), are

$$ARC_{it} = \beta_p p_t + \beta_y y_{it} + \gamma_i + \varepsilon_{it} \tag{1B}$$

$$PLC_{it} = \beta_p p_t + \gamma_i + \varepsilon_{it}, \tag{2B}$$

where i signifies the county and t the year, ARC_{it} are ARC-CO payments, PLC_{it} are PLC payments, p_t are US MYA prices, y_{it} are yields, γ_i are countywide FE control variables, and ε_{it} is a random error. The parameters of interest are β_y and β_p, which represent the extent to which program payments adjustments are explained by variation in yield and prices, respectively.

Reference

Verbeek, M. 2017. *A guide to modern econometrics*. 5th ed. Hoboken, NJ: Wiley.