



## **ARC-PLC Decision: Importance of the Price Path – The Case of Corn**

Carl Zulauf, Professor, Ohio State University and Gary Schnitkey, Professor,  
University of Illinois, March 2014

**Overview:** Farms will have to decide between the Agricultural Risk Coverage (ARC) and Price Loss Coverage (PLC) programs. The decision covers the 2014 through 2018 crop years. Because the decision covers all 5 years, can only be made once, and is irrevocable; a key consideration will be the expected path of prices through 2018. This post will illustrate the importance of this consideration using 3 distinct 5-year time paths for U.S. corn. Each time path has occurred in the last 20 years.

**PLC- ARC Overview:** PLC makes payments if U.S. average price for the crop year is below the crop's reference price. The reference price for corn is \$3.70/bushel. ARC has 2 program versions. One, called ARC-county, makes payments for a crop if actual revenue for the farm's county is less than the county's ARC revenue guarantee. The other, called ARC-individual, makes payments when the entire farm's average revenue for all its program crops is below the farm's ARC revenue guarantee. For both versions of ARC, coverage level is 86% and coverage is capped at 10%. Thus, coverage is between 76% and 86% of the ARC revenue guarantee. The yield and price components of the ARC revenue guarantee are calculated using an Olympic average (removes high and low values) of the 5 preceding crop years. However, when calculating the Olympic average, a crop year's price cannot be less than the PLC reference price. For example, if the U.S. average crop year price for 2014 is \$3, calculation of the Olympic average price for 2015 corn will use \$3.70 for 2014, not \$3. Thus, a floor exists on the price component of the ARC revenue guarantee. In essence, it cannot be less than \$3.18 (86% times \$3.70). Both ARC-county and PLC makes payments on 85% of base acres. ARC-individual pays on 65% of base acres.

**Price Paths:** The first price path is the largest 5-year price decrease since 1974. It occurred over the 1996-2000 corn crop years. Average U.S. corn price was 43% lower in 2000 than in 1995, the year before the decline began. This price path implies prices at \$3.76 in 2014, \$3.38 in 2015, \$2.69 in 2016, \$2.53 in 2017, and \$2.57 in 2018. The second price path is the largest 5-year price increase since 1974. It occurred over the 2006-2010 crop years. Average price of corn was 159% higher in 2010 than in 2005, the year before the increase began. This would imply a price path of \$6.84 in 2014, \$9.45 in 2015, \$9.14 in 2016, \$7.99 in 2017, and \$11.66 in 2018. The third is the path of prices over the last 5 crop years of 2009-2013. This results in prices of \$3.93 in 2014, \$5.74 in 2015, \$6.89 in 2016, \$7.64 in 2017, and \$4.99 in 2018. Figure 1 presents the price paths that result. Each is distinct and ends with notably different prices.

**Price Component Comparison:** Figure 2 compares the PLC reference price with the ARC implied price component. The latter is 86% of the Olympic average for the preceding 5 crop years, including using the PLC reference price for the crop year if the reference price is higher than the crop year average price. Under the 1996-2000 price scenario, the ARC implied price component goes below the PLC reference price. For the other two price paths, the PLC reference price is less than the ARC implied price component.

**Payments:** For the price paths shown in Figure 1 and 2, PLC would only make payments under the first scenario where prices are \$3.76 in 2014, \$3.38 in 2015, \$2.69 in 2016, \$2.53 in 2017, and \$2.57 in 2018. This price path is high unlikely, and represents a “disaster” type scenario for corn prices. To provide an indication of PLC and ARC-County payments under this scenario, per acre payments are calculated using U.S. yields for PLC and ARC. In a sense, this makes ARC a U.S. program. This calculation understates payments by ARC-county because county yields are more variable than U.S. yields. ARC is a revenue, not price program; and thus can make payments when yields are low as well as when prices are low.

Figure 3 shows payments under PLC and ARC. ARC would make a payment in 2014 of \$21 per acre while PLC would not make a payment. This occurs because the 2014 MYA prices is \$3.78, which is above the \$3.70 reference price. The \$3.38 price in 2015 results in ARC payments of \$68 per acre compared to \$46 under PLC. In later years, PLC payments exceed ARC payments. In 2018, for example, PLC would make a \$126 per acre payment while ARC would make a \$56 payment. Under very low corn prices, PLC will make larger payments than ARC-County, particularly in later years of the horizon.

#### **Summary Observations:**

- ▶ This post underscores the critical importance of (1) whether price in 2013 is above or below the reference price and (2) the path that prices take over the next few years in deciding which program, PLC or ARC, will provide the most risk protection.
- ▶ While the decision will rest upon more factors than expectations about future price paths, this analysis clearly demonstrates that it is clearly desirable to have more information about price.
- ▶ The preceding point implies that it will be useful to wait until the near the end of the sign up period to see where prices for the 2014 crop year are heading.

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Figure 1. Projected Price Paths for 2014-2018 U.S. Corn Path based on Price Path Observed Over 1996-2000, 2006-2010, and 2009-2013

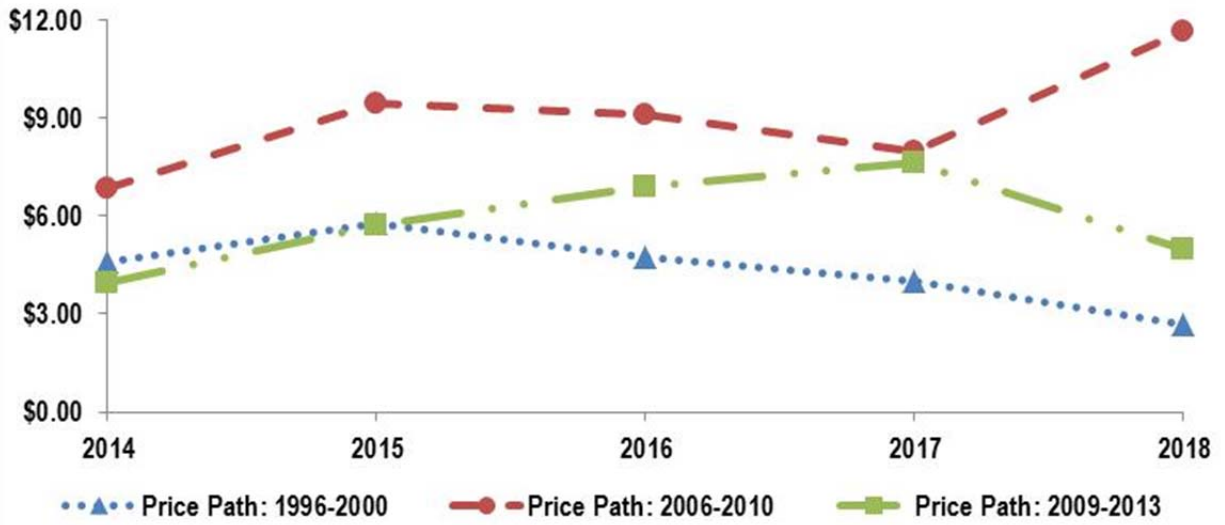


Figure 2. PLC Reference Price and Projected ARC Implied Price Component Based on Price Path Observed Over 1996-2000, 2006-2010, and 2009-2013

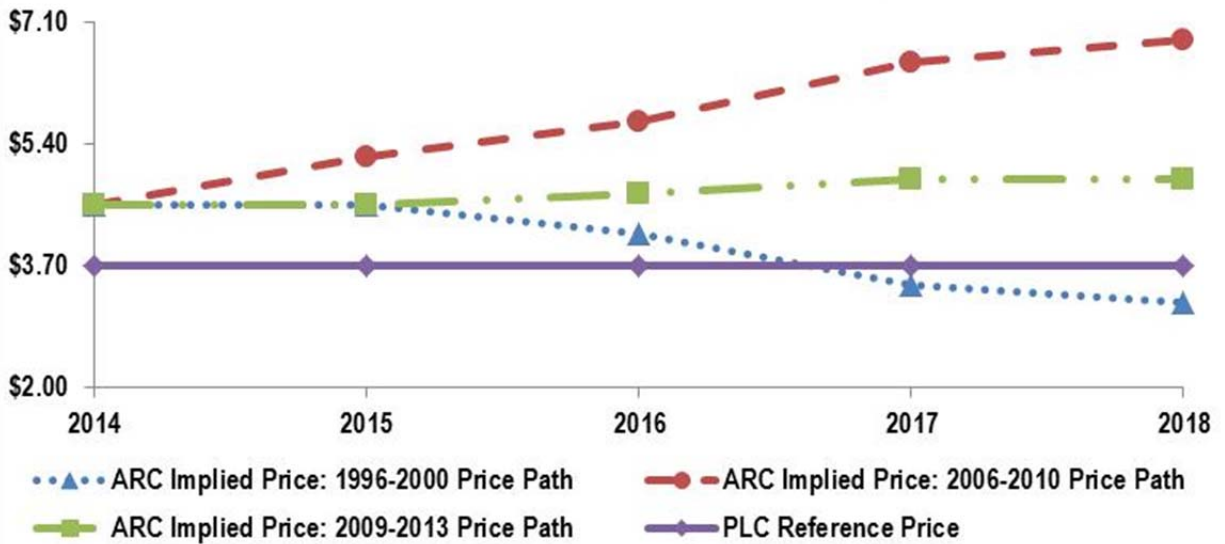


Figure 3. Projected Per Acre Payment, PLC and ARC , U.S. Corn,  
Price and Yield Follows Paths of 1996-2000

