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## Weekly Farm Economics: Which Program Paid More Under the 2014 Farm Bill: ARC-CO or PLC?

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The Farm Service Agency recently released 2018 payment rates for both Agricultural Risk Coverage at the County Level (ARC-CO) and Price Loss Coverage (PLC). With this release, yearly payments for 2014 to 2018 are available so that average payments from ARC-CO and PLC can be compared over the entire length of the 2014 Farm Bill. These comparisons are made in this article across counties for corn, soybeans, and wheat. For corn, ARC-CO paid more than PLC for many counties in the U.S., with notable exceptions in southern Iowa, Missouri, and central Illinois. By default, ARC-CO made higher payments for soybeans because PLC did not make payments. For wheat, most counties had higher PLC payments.

### ARC-CO-Minus-PLC Payments

Under the 2014 Farm Bill, farmers and land owners had a one-time decision to choose between Agricultural Risk Coverage (ARC) and Price Loss Coverage (PLC) commodity title programs for the years from 2014 to 2018. While an individual coverage option was available under ARC, most choose ARC at the County level (ARC-CO).

In this article, we determine whether ARC-CO or PLC made the largest payments across corn, soybeans, and wheat for all U.S. counties with available data. We do this by first calculating average ARC-CO payments and average PLC payments for each county for which complete data exist. These are average payments for the five years from 2014 through 2018. Then, ARC-CO-Minus-PLC payments are calculated for each county. An ARC-CO-minus-PLC payment for a county/crop combination equals the average ARC-CO payment for that county minus average PLC payment for that county. A positive ARC-CO-

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minus-PLC payment indicates that ARC-CO made larger payments than PLC. A negative value indicates that PLC made a higher average payment.

Several notes about the above calculation:

- ARC-CO is a county revenue program that makes payments when county revenue is below a guarantee. Every farm in a county receives the same ARC-CO payment per base acre.
- PLC is a price program that makes payments when the Market Year Average (MYA) price is below the reference price. Each farm in a county has a PLC yield. When the MYA price was below the reference price, the farm’s PLC yield was multiplied by the difference between the MYA price and reference price when arriving at a payment. Farms with higher PLC yields will receive higher payments. Averages presented in this article use the PLC yield equal to the average county yield from 2008 through 2012 multiplied by 90%, a yield updating option under the 2014 Farm Bill. This procedure results in PLC yields close to the county average.
- All values are stated on a per base acre basis (payment acres = 85% of base acres). A 6.8% sequester is deducted from all payments.

### Corn

ARC-CO payments were the highest in the earlier years of the 2014 Farm Bill, exceeding \$30 per base acre for 2014, 2015, and 2016 (see Table 1). Then average ARC-CO payments declined to \$8.50 in 2017 and \$5.22 in 2018. The average ARC-CO payment was \$24.21 per base acre for the years from 2014 to 2018 (see Table 1).

**Table 1. Average ARC-CO and PLC Payments Across Counties in the U.S.,  
Corn, 2014 - 2018**

Year	Average ARC-CO Payment <sup>1</sup>	MYA Price <sup>2,3</sup>	Average PLC Payment <sup>1</sup>	ARC-CO Minus PLC Payment <sup>4</sup>
	\$ per base acre	\$ per bu.	\$ per base acre	\$ per base acre
2014	31.08	3.70	0.00	31.08
2015	39.71	3.61	7.93	31.78
2016	36.54	3.36	29.96	6.58
2017	8.50	3.36	29.96	-21.46
2018	5.22	3.61	7.93	-2.71
Average	24.21		15.16	9.05

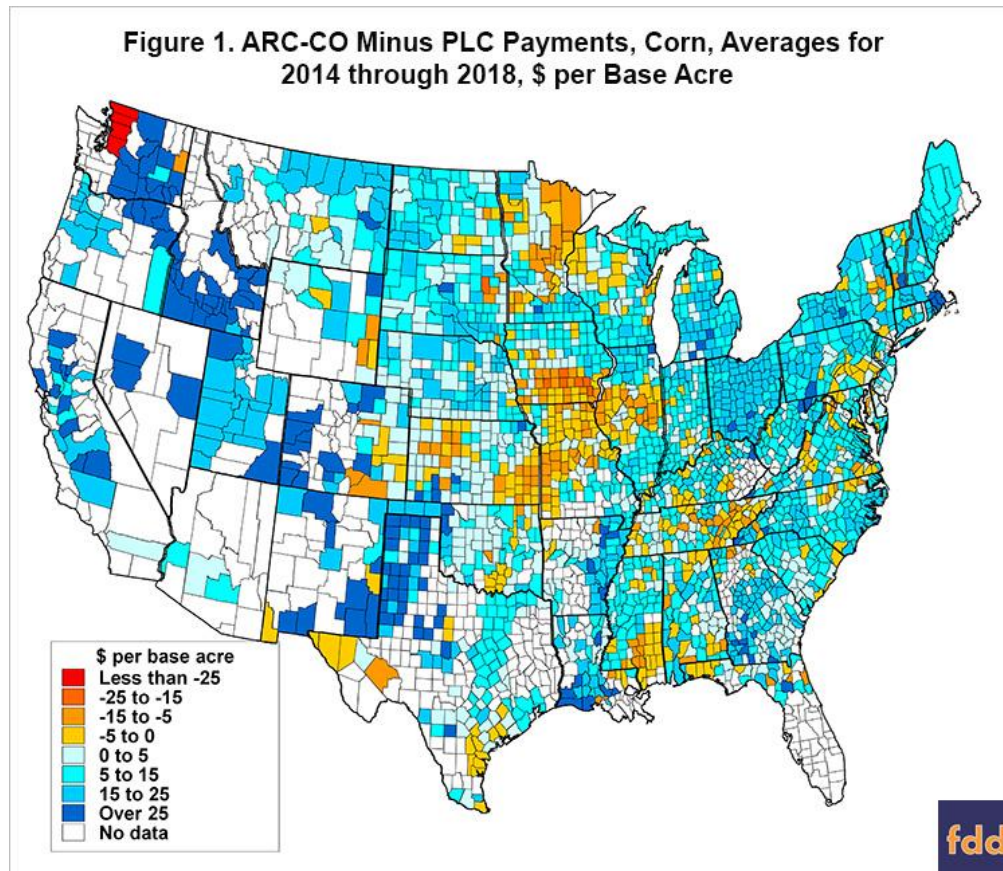
<sup>1</sup> Average across counties for which complete data exists.  
<sup>2</sup> Market Year Average price.  
<sup>3</sup> The reference price is \$3.70 per bushel.  
<sup>4</sup> Average ARC-CO payment minus average PLC payment.

The reference price for corn was \$3.70 per bushel. Because the MYA price was below \$3.70 after 2014, PLC made payments in each year from 2015 to 2018 (see Table 1). The highest payments occurred in 2016 and 2017 when the MYA price was \$3.36 per bushel.

ARC-CO payments exceeded PLC payments in 2014 to 2016, resulting in a positive ARC-CO-minus-PLC payment for those years (see Table 1). As the ARC-CO benchmark adjusted to the lower market prices,

PLC payments exceeded ARC-CO payments in 2017 and 2018. ARC-CO-Minus-PLC payments averaged \$9.05 per base acre from 2014 to 2018. The positive value indicated that ARC-CO payments averaged higher than PLC across all counties.

In 77% of the counties, ARC-CO exceeded PLC payments for corn on average over the five-year life of the 2014 Farm Bill. The 23% of counties where PLC exceeded ARC-CO tended to be in a geographical cluster. Specifically, note that a cluster of counties in southeast Iowa, northern Missouri, and central Illinois had higher average PLC payments. In this area, 2014 through 2018 county yields were above average, resulting in reduced ARC-CO payments.



### Soybeans

ARC-CO made payments in some counties each year. The highest average ARC-CO payment occurred in 2015, when the average ARC-CO payment was \$21.91 per base acre (see Table 2). Over the 2014-2018 period, ARC-CO payments averaged \$10.79 per base acre.

The reference price for soybeans is \$8.40 per bushel. From 2014 through 2018, MYA prices were never below the \$8.40 reference price. As a result, no PLC payments occurred for soybeans. As a result, ARC-CO payments averaged \$10.79 and exceeded PLC payments in all counties in the U.S (see Table 2 and Figure 2).

**Table 2. Average ARC-CO and PLC Payments Across Counties in the U.S., Soybeans, 2014 - 2018**

Year	Average ARC-CO Payment <sup>1</sup>	MYA Price <sup>2,3</sup>	Average PLC Payment <sup>1</sup>	ARC-CO Minus PLC Payment <sup>4</sup>
	\$ per base acre	\$ per bu.	\$ per base acre	\$ per base acre
2014	7.33	10.10	0.00	7.33
2015	21.91	8.95	0.00	21.91
2016	11.04	9.47	0.00	11.04
2017	6.99	9.33	0.00	6.99
2018	6.71	8.48	0.00	6.71
Average	10.79		0.00	10.79

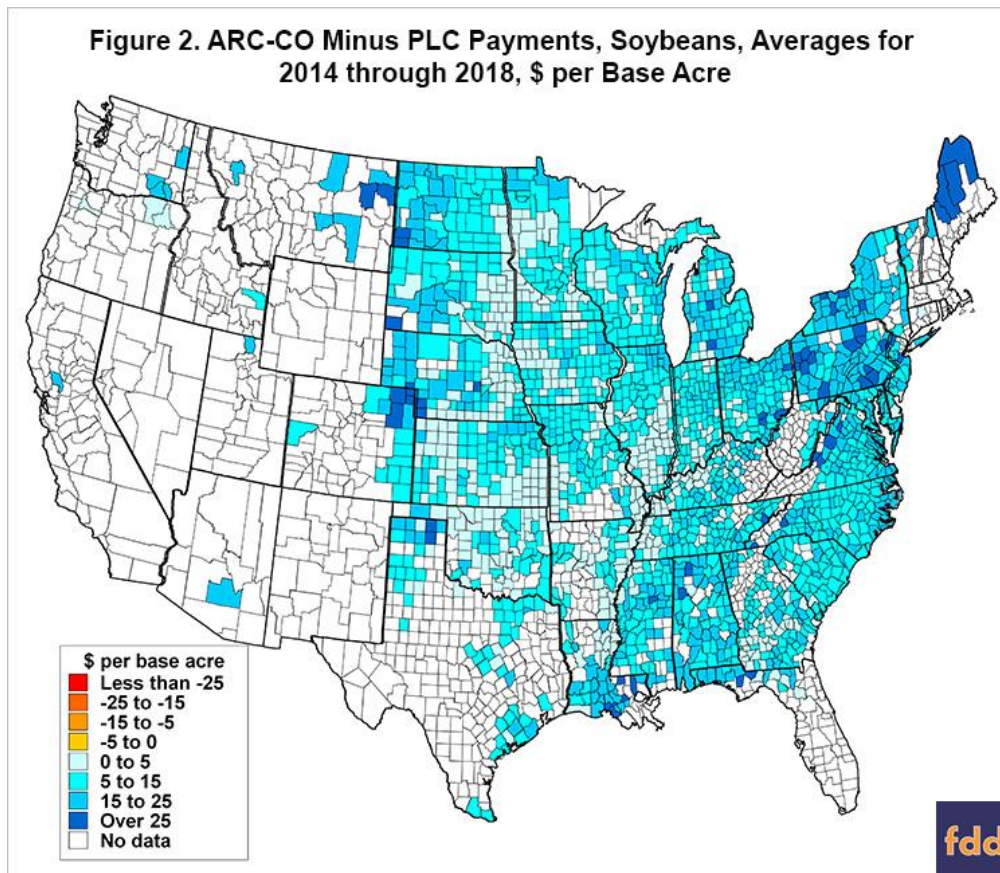
<sup>1</sup> Average across counties for which complete data exists.

<sup>2</sup> Market Year Average price.

<sup>3</sup> The reference price is \$8.40 per bushel.

<sup>4</sup> Average ARC-CO payment minus average PLC payment.

**Figure 2. ARC-CO Minus PLC Payments, Soybeans, Averages for 2014 through 2018, \$ per Base Acre**



## Wheat

ARC-CO made large payments for wheat in 2015 and 2016 (see Table 3). The reference price for wheat is \$5.50 per bushel. PLC payments made payments in all years after 2014, with the largest payment in 2016. In 2016, PLC payments averaged \$59 per base acre across all counties. PLC paid more than ARC-CO in 98% of the counties (see Figure 3).

**Table 3. Average ARC-CO and PLC Payments Across Counties in the U.S., Wheat, 2014 - 2018**

Year	Average ARC-CO Payment <sup>1</sup>	MYA Price <sup>2,3</sup>	Average PLC Payment <sup>1</sup>	ARC-CO Minus PLC Payment <sup>4</sup>
	\$ per base acre	\$ per bu.	\$ per base acre	\$ per base acre
2014	5.53	5.99	0.00	5.53
2015	21.08	4.89	22.42	-1.34
2016	24.42	3.89	59.16	-34.74
2017	13.24	4.72	28.66	-15.42
2018	6.65	5.16	12.49	-5.84
Average	14.18		24.55	-10.36

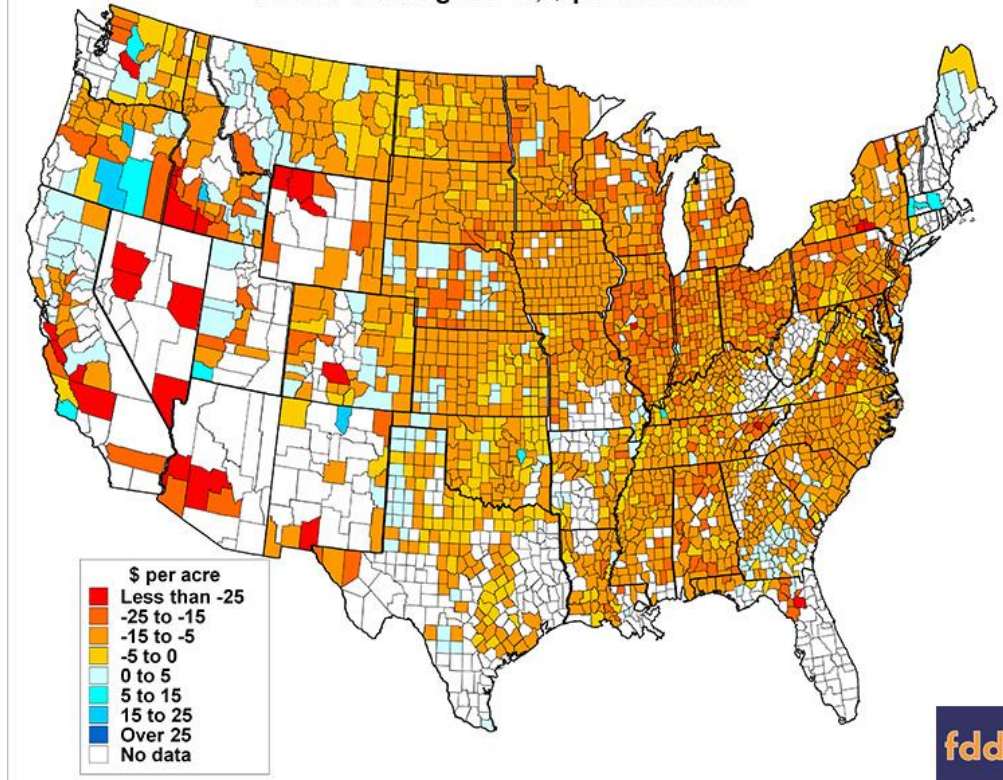
<sup>1</sup> Average across counties for which complete data exists.

<sup>2</sup> Market Year Average price.

<sup>3</sup> The reference price is \$5.50 per bushel.

<sup>4</sup> Average ARC-CO payment minus average PLC payment.

**Figure 3. ARC-CO Minus PLC Payments, Wheat, Averages for 2014 through 2018, \$ per Base Acre**



### Summary

Whether ARC-CO or PLC had higher payments varied by crop. For corn, ARC-CO had higher payments for most counties, except for those located in southern Iowa, Missouri, and central Illinois where yields were particularly strong. ARC-CO had higher payments for soybeans because PLC did not make payments. Of the two programs, PLC made higher payments for wheat in most counties.

Actual payment levels roughly matched enrollment decisions. Over 90% of the base acres were enrolled in ARC-CO for both corn and soybeans. Models suggested that ARC-CO would pay more than PLC for corn and soybeans, particularly in the early years of the 2014 Farm Bill. Approximately 60% of the wheat base acres were enrolled ARC-CO. Models did not have a strong suggestion for whether ARC-CO or PLC would pay more for wheat.

This information may be useful for evaluating alternatives under the 2018 Farm Bill. Farmers should keep in mind that the price environment is much different now than in 2018. Lower current price expectations generally suggest PLC may make higher payments for 2019 and 2020, the two years of the initial election. Given that more information will be known the longer farmers wait to make this decision, farmers are advised to wait until at least December.