

Ohio Agriculture Risk Coverage and Price Loss Coverage Payments  
for Program Year 2016  
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As the calendar turned to October producers in some counties around Ohio and the nation received federal commodity payments due to their enrollment in the Agriculture Risk Coverage (ARC) or Price Loss Coverage (PLC) programs where the Farm Service Agency (FSA) triggers and calculates payouts based on yields and prices experienced in the 2016 cropping year and 2016/2017 marketing year respectively. ARC and PLC are two new programs created in the Agriculture Adjustment Act of 2014 (2014 farm bill) that are designed to protect producers against shallow losses in revenue and price declines respectively with crop insurance designed to cover deeper losses experienced by floods or droughts. Because both programs use Marketing Year Average (MYA) prices to calculate payment rates, the 2016 program year ends when the marketing year is completed: September 1<sup>st</sup> 2017 for corn and soybeans and June 1<sup>st</sup> 2017 for wheat. After calculations by FSA in September, payments started to arrive in October. This report explores the payment rates created by ARC-County (ARC-CO) and PLC for corn, soybeans, and wheat in the 88 Ohio counties for the 2016 program year.

At the start of the farm bill producers were given a onetime choice between ARC-CO, ARC-Individual (ARC-IC) and PLC for the commodities on their farm for the lifetime of the farm bill, which is expected to conclude at the end of the 2018/2019 marketing year. Choices could be made for each commodity on the farm for ARC-CO and PLC, but not ARC-IC as it covers the entire farm under one program. There could have been many factors influencing farmer decisions about program election, but one possibility is that producers chose the program that returned them the largest expected payout over the length of the farm bill. Price estimates from the United States Department of Agriculture (USDA) and the Food and Agricultural Policy Research Institute at the University of Missouri (FAPRI-MU) indicated for corn and soybean producers that ARC-CO would return the largest payments over the length of the farm bill. Nationally 93% of the base acres for corn and 97% of soybean base acres were enrolled in the ARC-CO program. In Ohio the percentages in ARC-CO were greater at 98% of corn acres and 97% of soybeans. Table 1 shows the percentage breakdown of base acres enrolled in PLC and ARC in Ohio for all commodities.

<b>Table 1. Percentage of Base Acres Elected in the 2014 Farm Bill</b>			
<b>Commodity</b>	<b>PLC</b>	<b>ARC-CO</b>	<b>ARC-IC</b>
Barley	18%	82%	0%
Canola	0%	100%	0%
Corn	2%	98%	0%
Grain Sorghum	5%	95%	0%
Oats	5%	95%	0%
Soybeans	2%	97%	0%
Sunflowers	2%	98%	0%
Wheat	18%	82%	0%
Source: USDA-FSA, 2014			

## How is ARC-CO calculated?

Both ARC and PLC are designed to reflect changes in revenue and price respectively and both programs have formula that generate a benchmark against which marketing year revenue or prices are compared. When marketing year revenue or prices fall below those benchmarks, FSA makes payments to farmers. The benchmark for ARC-CO is produced when two five year Olympic averages are multiplied together: one for price and one for county yield. Olympic averages are simply taking five continuous years of data, dropping the highest value and the lowest value and averaging the three remaining numbers. Example: yields of 44,56,23, 30 and 42 represent a counties five year yields, whereas 56 and 23 would be dropped as the high and low values and an Olympic average of 35 would be calculated from 44, 30 and 42. Because ARC is designed to be a shallow loss program, the formula to calculate payments lowers the revenue benchmark to 86% and caps total payments at 10% of the total benchmark meaning that producers are covered under ARC for 76% -86% of the historical revenue benchmark of their county. Anything over 86% does not produce a revenue low enough to trigger a payment and anything under 76% is not covered by ARC but could be covered by crop insurance.

The formula is as follows

Expected County Revenue:

- (1) (The five year moving Olympic average of the higher of the national marketing year average (MYA) price or the fixed commodity reference price) multiplied by the (five year moving Olympic average of the higher of the county yield per planted acre or 70% of the transitional yield)

The ARC- CO payment benchmark is set at 86% of expected county revenue:

- (2) Expected Revenue multiplied by 0.86

Actual ARC-CO crop revenue for a specified payment year is calculated as the:

- (3) (Payment year county average yield) multiplied by (Payment year national marketing year average price)

The maximum payment is calculated as the:

- (4) ARC-CO expected revenue benchmark (equation 1) X 0.10

ARC-County Payment per payment acre is calculated as the

- (5) Greater of 0 or the ARC-CO payment benchmark (equation 2) minus the actual county crop revenue (equation 3), but never more than the maximum payment rate (equation 4).

An example is shown for Clark county in Table 3. However, Table 2 shows the national commodity reference prices for corn, soybeans and wheat as set by Congress.

Corn	\$3.70/bu.
Soybeans	\$8.40/bu.
Wheat	\$5.50/bu.
Oats	\$2.40/bu.

Reference prices are substituted into the ARC-CO Olympic averages when the MYA price fall below these levels. In the table, the 2015/2016 MYA is bolded to represent that the MYA was actually lower, but because of the fixed reference at \$3.70 the average is artificially inflated in the calculation.

<b>Table 3. 2016 ARC-CO Example: Clark Co., OH for corn</b>	<b>Max of (MYA Price or reference Price) \$/Bu.</b>	<b>County Yield (Bushels)</b>	<b>Revenue</b>
2011/2012	\$6.22	169	
2012/2013	<del>\$6.89</del>	<del>140</del>	
2013/2014	\$4.46	185	
2014/2015	\$3.70	<del>192</del>	
2015/2016	<b>\$3.70</b>	177	
Olympic Average	4.79	177	
Expected Revenue Benchmark (Equation 1: 4.79 x 177 = )			\$847.83
86% of Revenue Benchmark (Equation 2: 0.86 x 847.83 = )			\$729.13
10% Max of Benchmark (Equation 4)			\$84.78
Actual County Revenue (Equation 3)	\$3.36	165	\$554.40
Payment Rate/ base acres	\$729.13 – \$554.40= \$174.73, but capped at <b>\$84.78</b>		

Table 3. shows that for Clark Co., OH that the payment rate for corn is \$84.78 applied to 85% of acres on a farm and subject to a government sequester of 6.8% as created in the Budget Control Bill of 2011. Making a payment of \$67.16 receivable for all base acres on a farm enrolled in ARC-CO for 2016.

#### How is PLC calculated?

In some way, PLC is a simpler calculation as it is designed to project against price drops in commodity markets. Table 1 showed that PLC was not as popular of a choice for many Ohio producers and that could be related to the commodities that are grown in Ohio and the expected payment rates over the lifetime of the farm bill. Commodities like rice and peanuts however had large enrollment in PLC nationally because their expected payments were larger in this program. However, PLC triggers a payment when the MYA price falls below a commodity's fixed reference price as outlined in Table 2, but never more than the marketing loan rate set for each commodity. Table 4 shows the breakdown of the payments for all Ohio commodities given the 2016/2017 MYA prices.

<b>Table 4: PLC Payment Rates</b>				
<b>Commodity</b>	<b>Reference Price</b>	<b>2016/2017 MYA Price</b>	<b>Loan Rate</b>	<b>PLC Payment Rate</b>
Barley	\$4.95/ bu.	\$4.96	\$1.95	<b>\$0.00</b>
Corn	\$3.70/ bu.	\$3.36	\$1.95	<b>\$0.34</b>
Grain Sorghum	\$3.95/ bu.	\$2.79	\$1.95	<b>\$1.16</b>
Oats	\$2.40/ bu.	\$2.06	\$1.39	<b>\$0.34</b>
Soybeans	\$8.40/ bu.	\$9.47	\$5.00	<b>\$0.00</b>
Sunflowers	\$0.2015/ lb.	\$0.1735 projected	\$0.1009	<b>\$0.028</b>
Wheat	\$5.50/ bu.	\$3.89	\$2.94	<b>\$1.61</b>

After a PLC payment rate has been established the rate is then multiplied by one of three yield numbers: a payment yield established under the 2008 farm bill, 90% of the average yield per planted acre of a commodity on a farm for the years 2008-2012, or, in the absence of farm information, the county average yield per planted acre for the 2008-2012 cropping years. These yields are different per farm causing variation in payments, but for the purposes of this report county average yields released by FSA covering years 2008-2012 will be used. Similar to ARC payments are made on 85% of base acres enrolled under PLC.

As an example for PLC, suppose we have a 350-acre corn farm in Mahoning Co., OH and that the payment yield on that coincidentally matches the county average at 103 bu/acre. Given that the national reference price for corn is \$3.70 and the 2016/2017 marketing year average is \$3.36 the PLC payment rate can be calculated.

$$(\$3.70 - \$3.36) \times 103 \text{ bu./acre} \times (0.85 \times 350 \text{ acres}) = \$10,418.45$$

This farm in Mahoning Co., OH would receive a total PLC payment for corn on their farm of \$10,418.45.

Given the ARC Payment formula above the same farmer would receive \$18,550.00 if those acres were enrolled in ARC. However, this relationship will not hold for every county and certainly will not hold for every commodity. In some cases, and especially for wheat, the PLC payment is larger than the ARC payment.

#### **Ohio figures:**

Ohio county per acre payments for both ARC and PLC can be found in Tables 5 and 6 respectively. These figures are already adjusted for the 85% base acre threshold and adjusted for a 6.8% government sequester.

**Table 5: Ohio ARC-CO Payments Per Base Acre- 2016\***

\*Payments are Adjusted for 85% base acre limit

\*A 6.8% sequester was also added per The Budget Control Act of 2011

	Corn	Soy	Wheat	Oats		Corn	Soy	Wheat	Oats		Corn	Soy	Wheat	Oats
<b>Adams</b>	\$55	\$0	\$25	\$16	<b>Hamilton</b>	\$62	\$0	\$37	N/A	<b>Muskingum</b>	\$59	\$0	\$28	\$14
<b>Allen</b>	\$57	\$0	\$37	\$18	<b>Hancock</b>	\$63	\$44	\$36	\$18	<b>Noble</b>	\$47	\$0	\$28	\$14
<b>Ashland</b>	\$54	\$26	\$33	\$18	<b>Hardin</b>	\$60	\$0	\$32	\$17	<b>Ottawa</b>	\$61	\$0	\$31	\$20
<b>Ashtabula</b>	\$0	\$0	\$0	\$18	<b>Harrison</b>	\$50	\$0	\$30	\$15	<b>Paulding</b>	\$53	\$0	\$17	\$18
<b>Athens</b>	\$57	\$4	\$28	\$14	<b>Henry</b>	\$63	\$0	\$38	\$18	<b>Perry</b>	\$58	\$0	\$29	\$14
<b>Auglaize</b>	\$59	\$15	\$37	\$4	<b>Highland</b>	\$65	\$6	\$36	\$17	<b>Pickaway</b>	\$65	\$0	\$39	\$16
<b>Belmont</b>	\$46	N/A	\$30	\$15	<b>Hocking</b>	\$60	\$19	\$28	\$14	<b>Pike</b>	\$63	\$0	\$37	\$15
<b>Brown</b>	\$63	\$14	\$30	\$16	<b>Holmes</b>	\$50	\$4	\$31	\$19	<b>Portage</b>	\$53	\$0	\$15	\$15
<b>Butler</b>	\$58	\$0	\$32	\$17	<b>Huron</b>	\$60	\$0	\$32	\$18	<b>Preble</b>	\$51	\$0	\$39	\$18
<b>Carroll</b>	\$41	\$0	\$13	\$15	<b>Jackson</b>	\$55	\$6	\$30	\$15	<b>Putnam</b>	\$61	\$6	\$32	\$18
<b>Champaign</b>	\$64	\$0	\$40	\$17	<b>Jefferson</b>	\$49	\$0	\$30	\$15	<b>Richland</b>	\$60	\$5	\$34	\$19
<b>Clark</b>	\$67	\$0	\$39	\$17	<b>Knox</b>	\$57	\$6	\$32	\$14	<b>Ross</b>	\$64	\$30	\$35	\$16
<b>Clermont</b>	\$66	\$12	\$34	\$17	<b>Lake</b>	\$52	\$0	\$30	\$16	<b>Sandusky</b>	\$65	\$0	\$36	\$18
<b>Clinton</b>	\$69	\$0	\$36	\$17	<b>Lawrence</b>	\$50	\$33	\$33	\$15	<b>Scioto</b>	\$58	\$0	\$0	\$15
<b>Columbiana</b>	\$54	\$6	\$17	\$16	<b>Licking</b>	\$58	\$0	\$32	\$15	<b>Seneca</b>	\$63	\$14	\$33	\$18
<b>Coshocton</b>	\$55	\$0	\$33	\$15	<b>Logan</b>	\$60	\$0	\$36	\$17	<b>Shelby</b>	\$59	\$22	\$36	\$17
<b>Crawford</b>	\$68	\$24	\$38	\$18	<b>Lorain</b>	\$57	\$12	\$0	\$18	<b>Stark</b>	\$52	\$26	\$26	\$16

**Table 5: Ohio ARC-CO Payments Per Base Acre- 2016\***

\*Payments are Adjusted for 85% base acre limit      \*A 6.8% sequester was also added in regards to The Budget Control Act of 2011

	Corn	Soy	Wheat	Oats		Corn	Soy	Wheat	Oats		Corn	Soy	Wheat	Oats
<b>Cuyahoga</b>	\$52	\$39	\$29	\$16	<b>East Lucas</b>	\$63	\$0	\$39	\$19	<b>Summit</b>	\$45	\$0	\$23	\$16
<b>Darke</b>	\$60	\$0	\$41	\$17	<b>West Lucas</b>	\$63	\$0	\$39	\$19	<b>Trumbull</b>	\$23	\$0	\$20	\$0
<b>Defiance</b>	\$33	\$0	\$31	\$18	<b>Madison</b>	\$64	\$0	\$40	\$16	<b>Tuscarawas</b>	\$55	\$0	\$35	\$16
<b>Delaware</b>	\$48	\$0	\$34	\$16	<b>Mahoning</b>	\$53	\$0	\$9	\$17	<b>Union</b>	\$53	\$0	\$32	\$16
<b>Erie</b>	\$60	\$14	\$37	\$18	<b>Marion</b>	\$65	\$0	\$35	\$16	<b>Van Wert</b>	\$56	\$0	\$37	\$18
<b>Fairfield</b>	\$65	\$0	\$37	\$16	<b>Medina</b>	\$51	\$3	\$0	\$17	<b>Vinton</b>	\$19	\$46	\$28	\$14
<b>Fayette</b>	\$68	\$0	\$42	\$16	<b>Meigs</b>	\$54	\$21	\$28	\$14	<b>Warren</b>	\$67	\$0	\$40	\$17
<b>Franklin</b>	\$63	\$0	\$35	\$16	<b>Mercer</b>	\$55	\$0	\$39	\$17	<b>Washington</b>	\$58	\$48	\$24	N/A
<b>Fulton</b>	\$63	\$0	\$39	\$19	<b>Miami</b>	\$62	\$7	\$36	\$17	<b>Wayne</b>	\$52	\$0	\$33	\$18
<b>Gallia</b>	\$54	\$42	\$33	\$15	<b>Monroe</b>	\$49	N/A	\$28	\$14	<b>Williams</b>	\$60	\$0	\$37	\$18
<b>Geauga</b>	\$46	\$0	\$25	\$18	<b>Montgomery</b>	\$58	\$0	\$38	\$18	<b>Wood</b>	\$63	\$7	\$36	\$19
<b>Greene</b>	\$69	\$0	\$37	\$17	<b>Morgan</b>	\$39	\$0	\$29	\$14	<b>Wyandot</b>	\$62	\$14	\$36	\$18
<b>Guernsey</b>	\$54	\$41	\$28	\$14	<b>Morrow</b>	\$59	\$0	\$35	\$17					

**Table 6: Ohio PLC Payments Per Base Acre- 2016\***

\*Payments are Adjusted for 85% base acre limit

\*A 6.8% sequester was also added in regards to The Budget Control Act of 2011

	<b>Corn</b>	<b>Soy</b>	<b>Wheat</b>	<b>Oats</b>		<b>Corn</b>	<b>Soy</b>	<b>Wheat</b>	<b>Oats</b>		<b>Corn</b>	<b>Soy</b>	<b>Wheat</b>	<b>Oats</b>
<b>Adams</b>	\$27	\$0	\$40	\$11	<b>Hamilton</b>	\$29	\$0	\$54	\$14	<b>Muskingum</b>	\$29	\$0	\$46	\$13
<b>Allen</b>	\$35	\$0	\$75	\$18	<b>Hancock</b>	\$34	\$0	\$70	\$19	<b>Noble</b>	\$24	\$0	\$40	\$11
<b>Ashland</b>	\$29	\$0	\$55	\$17	<b>Hardin</b>	\$34	\$0	\$71	\$19	<b>Ottawa</b>	\$31	\$0	\$65	\$19
<b>Ashtabula</b>	\$28	\$0	\$57	\$18	<b>Harrison</b>	\$27	\$0	\$47	\$15	<b>Paulding</b>	\$32	\$0	\$66	\$20
<b>Athens</b>	\$26	\$0	\$45	\$12	<b>Henry</b>	\$35	\$0	\$74	\$20	<b>Perry</b>	\$31	\$0	\$56	\$11
<b>Auglaize</b>	\$35	\$0	\$79	\$19	<b>Highland</b>	\$29	\$0	\$51	\$12	<b>Pickaway</b>	\$31	\$0	\$68	\$17
<b>Belmont</b>	\$25	\$0	\$50	\$15	<b>Hocking</b>	\$26	\$0	\$46	\$11	<b>Pike</b>	\$26	\$0	\$43	\$11
<b>Brown</b>	\$27	\$0	\$43	\$11	<b>Holmes</b>	\$29	\$0	\$47	\$17	<b>Portage</b>	\$26	\$0	\$50	\$16
<b>Butler</b>	\$30	\$0	\$57	\$14	<b>Huron</b>	\$33	\$0	\$70	\$19	<b>Preble</b>	\$34	\$0	\$68	\$15
<b>Carroll</b>	\$26	\$0	\$46	\$15	<b>Jackson</b>	\$26	\$0	\$43	\$12	<b>Putnam</b>	\$36	\$0	\$77	\$18
<b>Champaign</b>	\$33	\$0	\$66	\$19	<b>Jefferson</b>	\$26	\$0	\$52	\$15	<b>Richland</b>	\$32	\$0	\$66	\$15
<b>Clark</b>	\$32	\$0	\$68	\$19	<b>Knox</b>	\$30	\$0	\$52	\$16	<b>Ross</b>	\$30	\$0	\$59	\$16
<b>Clermont</b>	\$29	\$0	\$60	\$12	<b>Lake</b>	\$24	\$0	\$47	\$15	<b>Sandusky</b>	\$35	\$0	\$71	\$20
<b>Clinton</b>	\$32	\$0	\$61	\$16	<b>Lawrence</b>	\$25	\$0	\$43	\$10	<b>Scioto</b>	\$27	\$0	\$50	\$11
<b>Columbiana</b>	\$29	\$0	\$55	\$16	<b>Licking</b>	\$30	\$0	\$54	\$14	<b>Seneca</b>	\$34	\$0	\$71	\$19
<b>Coshocton</b>	\$30	\$0	\$47	\$12	<b>Logan</b>	\$33	\$0	\$69	\$18	<b>Shelby</b>	\$35	\$0	\$75	\$18
<b>Crawford</b>	\$37	\$0	\$78	\$18	<b>Lorain</b>	\$30	\$0	\$55	\$16	<b>Stark</b>	\$28	\$0	\$51	\$17

**Table 6: Ohio PLC Payments Per Base Acre- 2016\***

\*Payments are Adjusted for 85% base acre limit      \*A 6.8% sequester was also added in regards to The Budget Control Act of 2011

	<b>Corn</b>	<b>Soy</b>	<b>Wheat</b>	<b>Oats</b>		<b>Corn</b>	<b>Soy</b>	<b>Wheat</b>	<b>Oats</b>		<b>Corn</b>	<b>Soy</b>	<b>Wheat</b>	<b>Oats</b>
<b>Cuyahoga</b>	\$27	\$0	\$47	\$14	<b>East Lucas</b>	\$32	\$0	\$68	\$18	<b>Summit</b>	\$26	\$0	\$48	\$16
<b>Darke</b>	\$36	\$0	\$77	\$18	<b>West Lucas</b>	\$35	\$0	\$73	\$19	<b>Trumbull</b>	\$28	\$0	\$62	\$20
<b>Defiance</b>	\$32	\$0	\$61	\$18	<b>Madison</b>	\$33	\$0	\$69	\$18	<b>Tuscarawas</b>	\$28	\$0	\$48	\$14
<b>Delaware</b>	\$31	\$0	\$62	\$16	<b>Mahoning</b>	\$28	\$0	\$52	\$16	<b>Union</b>	\$32	\$0	\$65	\$18
<b>Erie</b>	\$34	\$0	\$68	\$23	<b>Marion</b>	\$33	\$0	\$71	\$19	<b>Van Wert</b>	\$35	\$0	\$75	\$18
<b>Fairfield</b>	\$31	\$0	\$61	\$15	<b>Medina</b>	\$28	\$0	\$50	\$16	<b>Vinton</b>	\$27	\$0	\$45	\$11
<b>Fayette</b>	\$32	\$0	\$64	\$18	<b>Meigs</b>	\$27	\$0	\$42	\$12	<b>Warren</b>	\$30	\$0	\$57	\$13
<b>Franklin</b>	\$31	\$0	\$61	\$18	<b>Mercer</b>	\$34	\$0	\$79	\$20	<b>Washington</b>	\$28	\$0	\$43	\$13
<b>Fulton</b>	\$33	\$0	\$73	\$20	<b>Miami</b>	\$36	\$0	\$74	\$19	<b>Wayne</b>	\$30	\$0	\$56	\$18
<b>Gallia</b>	\$25	\$0	\$46	\$12	<b>Monroe</b>	\$24	\$0	\$41	\$15	<b>Williams</b>	\$30	\$0	\$62	\$19
<b>Geauga</b>	\$28	\$0	\$54	\$18	<b>Montgomery</b>	\$33	\$0	\$66	\$15	<b>Wood</b>	\$34	\$0	\$75	\$19
<b>Greene</b>	\$32	\$0	\$62	\$17	<b>Morgan</b>	\$28	\$0	\$45	\$12	<b>Wyandot</b>	\$34	\$0	\$70	\$18
<b>Guernsey</b>	\$25	\$0	\$40	\$13	<b>Morrow</b>	\$31	\$0	\$65	\$17					



trend yields and prices were estimated from the Food and Agricultural Policy Research Institute at the University of Missouri (FAPRI-MU) August 2016 briefing book. Figure 2. shows that for the first two years of the program ARC returned payments to producers within the county that had corn base acres enrolled, but 2016 shows that the current year revenue exceeded the 86% guarantee resulting in no payment being made. Ashtabula was the only Ohio county that did not receive a payment in program year 2016 for corn, but many more counties did not receive payments for soybeans as the MYA price has held a little stronger in relation to corn's MYA price.

Figure 2:Ashtabula County

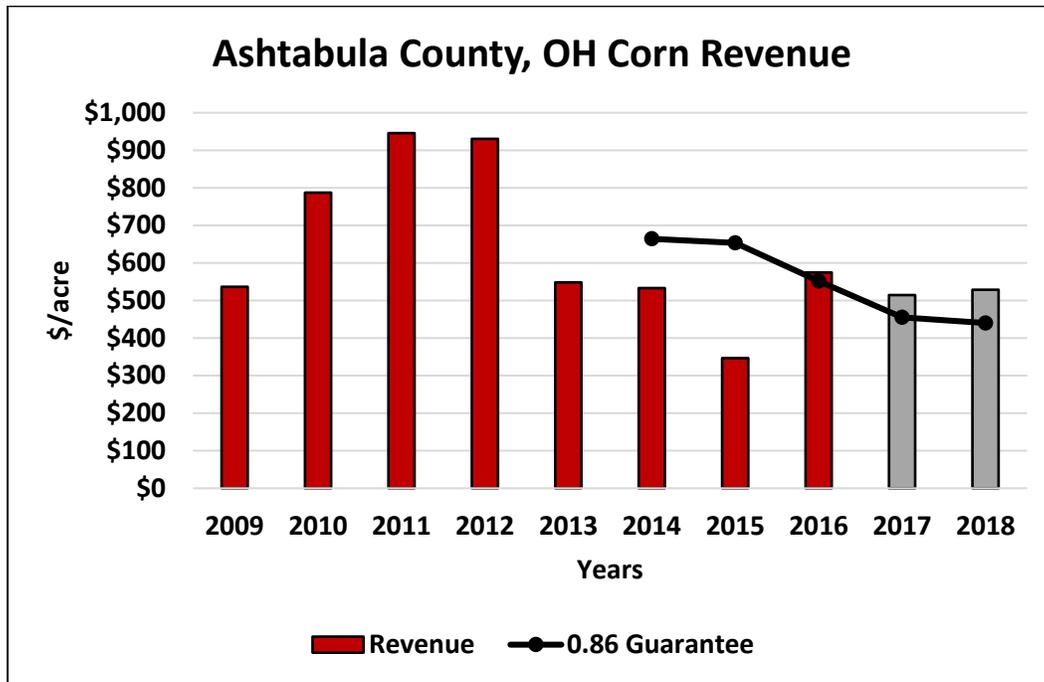


Figure 3: Ashtabula county, OH Corn Revenue- Years 2017 and 2018 are based on FAPRI-MU projections

Ashtabula is just one out of 88 Ohio Counties, and the 2017/2018 revenue projections will look different for each county based on real yields and prices, but the benchmark guarantee represented by the black line in Figure 2 will show a similar pattern for all counties as the MYA price has fallen for all counties. Therefore, it is possible to calculate a county's trigger points in 2017 for both yield and price by holding the other constant. Table 7 represents these trigger points by using a five-year trend yield at 134 bushels per acre and the median point in the October World Agriculture Supply and Demand Estimates (WASDE) MYA price for corn at \$3.20 per bushel. It should be noted that the real values for yield and price in 2017 will likely be different than 134 and \$3.20, but these numbers are for illustration purposes.

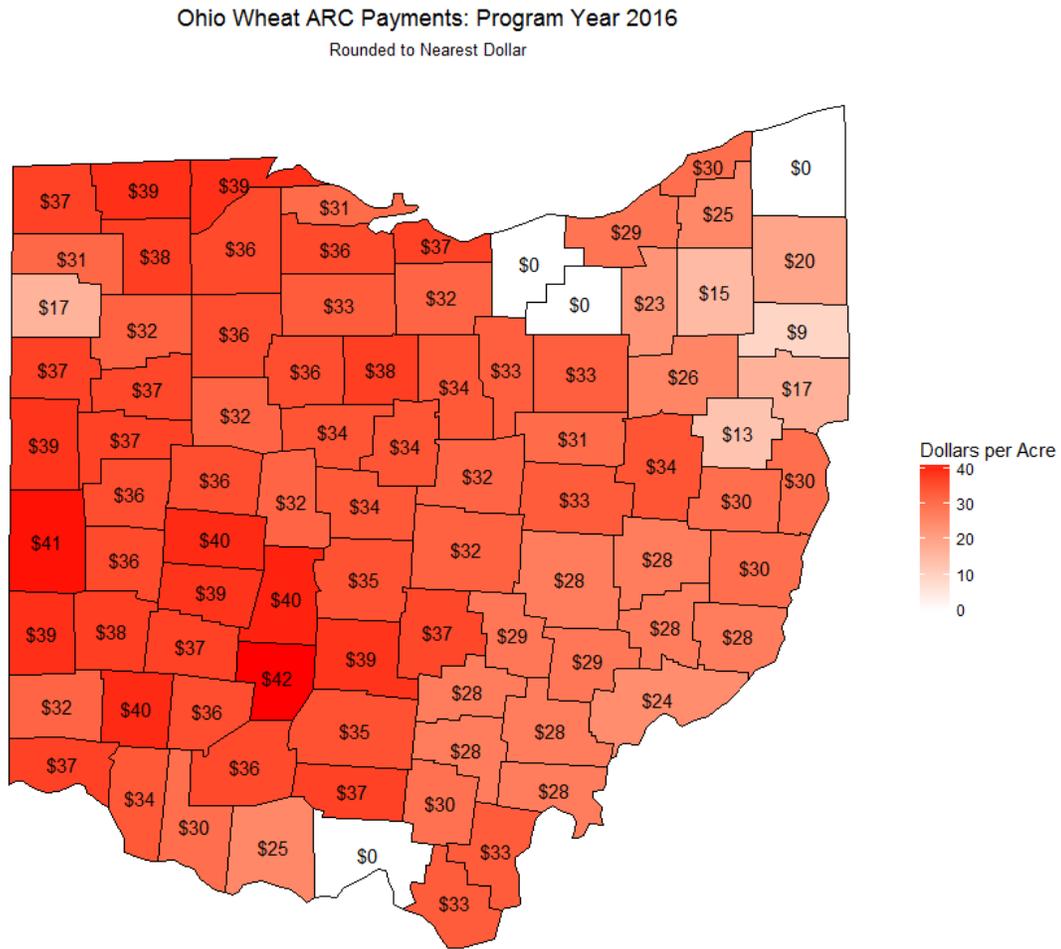
<b>Table 7. 2017 ARC-CO Example: Ashtabula Co., OH for Corn</b>	<b>Max of (MYA Price or reference Price) \$/Bu.</b>	<b>County Yield (Bushels)</b>	<b>Revenue</b>
2012/2013	<del>\$6.89</del>	135	
2013/2014	\$4.46	123	
2014/2015	\$3.70	144	
2015/2016	<b>\$3.70</b>	<b>96</b>	
2016/2017	<b>\$3.70</b>	<b>171</b>	
Olympic Average	\$3.95	134	
Expected Revenue Benchmark (Equation 1)			\$529.30
86% of Revenue Benchmark (Equation 2)			\$455.20
Scenario 1: Set Price	*\$3.20	<143	<\$455.20
	<\$3.40	**134	<\$455.20
*median WADE corn price October 2017    **Average of yield for all five previous years			

Again the high and low values are dropped for both yield and price to create the 5-year Olympic average, and the bolded values represent years where the MYA price was replaced with the commodity specific reference price. Table 7 shows that with a price of \$3.20/ bushel the county average would need to be below 143 bushels per acre to trigger a payment in Ashtabula county. Likewise, if the county yield is 134 bushels per acre, then the price would need come in below \$3.40/bushel. In the case that the MYA price is \$3.20/bushel and the county average yield for 2017 is 134 bushels/ acre the total revenue for 2017 would be \$428.80 per acre, which is less than the \$455.20 per acre benchmark resulting in an ARC payment for 2017.

Vinton County in southcentral Ohio is another county that differs from its surrounding counties in an unusual way. This can be explained by the county average yield in 2017 being relatively high in relation to its previous five year yields compared to the yields of the surrounding counties. Vinton County had a county average of 178 bu./acre compared to Ross County at 158 bu./acre, Hocking County at 154 bu./acre and Jackson County at 145 bu./acre.



Figure 5: Ohio Wheat ARC Payments



Data Source: USDA-FSA

Most counties across Ohio received an ARC wheat payment in 2016, but the payments under the PLC program were higher for almost all counties. With the large wheat payments under PLC as a result of a reference price of \$5.50 and a MYA price of \$3.89 most participants in Ohio will receive the prices listed in Figure 5 as 82% of all wheat base acres in Ohio were enrolled under the ARC-CO program. The median WASDE price for wheat in marketing year 2017/2018 is \$4.60, higher than the MYA price of 2016/2017 but still lower than the reference price making it likely that PLC payments will be made again in program year 2017. It is also likely that ARC payments will be made in program year 2017 as the five-year Olympic average includes higher prices in the formula calculation. However, a big distinction is that the ARC program is capped at a 10% of historical revenue where the PLC program is not. In 2016 all of the counties that triggered wheat ARC payments in Ohio were at the maximum 10% cap.

## Conclusions:

Payments for the 2016 program year under the 2014 farm bill should have arrived or will arrive soon for producers across Ohio. These ARC payments will differ across county lines based on variations in both historical and 2016 yields. Payments through the PLC program will differ across individual farms based on that farms commodity yields, whereas this report uses county yields to estimate PLC payments across Ohio. With the exception of Ashtabula County every county across Ohio received a corn ARC-CO payment in program year 2016. However, given historical prices and yields the 86% payment benchmark has declined, which lowers the chance of ARC-CO payments in the future. Few counties across the state received ARC soybean payments and no counties received a PLC soybean payment for 2017 largely because the MYA price finalized at \$9.47 along with slightly higher yields than expected resulted in a county revenue above the benchmark revenue for most counties and above the \$8.40 reference price for PLC. For Ohio counties that received a wheat ARC payment in 2016 that payment was capped at the 10% maximum. Payments for wheat were greater under the PLC program, but only 18 percent of wheat base acres were enrolled under this program. Looking forward, the 2014 farm bill runs through the end of the 2018 program year where Congress will likely either replace it with a new bill or extend the current legislation. It is expected that the 2018 farm bill will look similar to the current one in regards to commodity programs with a few possible changes. However, it is also expected that producers will get the opportunity to re-enroll commodity acres under ARC and PLC. Given that expected revenue for corn and soybeans is projected to be larger under the PLC program, it is likely that many corn and soybean producers will switch programs.

## Sources:

Food and Agricultural Policy Research Institute. *Baseline Update for U.S. Farm Income and Government Outlays*. Columbia: University of Missouri, 2012.

Food and Agricultural Policy Research Institute (FAPRI). *U.S. Baseline Briefing Book: Projections for Agricultural and Biofuel Markets*. Columbia, MO: Food and Agricultural Policy Research Institute-MU, 2017. Staff Report #01-17.

United State Department of Agriculture- Farm Service Agency. *ARC/PLC Program*. Washington, D.C.: United States Department of Agriculture, 2017.



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