



Analysis of the ARC-CO Payment Cap for Corn, Soybeans, and Wheat

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Revenue losses driven primarily by low commodity prices in 2014, 2015, and 2016 have triggered ARC-CO payments on corn, soybean, and wheat base in counties across the country. Where payments have been triggered, the level of those payments has varied across counties due to differences in average yields in those counties relative to their ARC-CO benchmark yields.

An important design feature of ARC-CO is its cap on payment rates per acre, set at 10% of the county's benchmark revenue (see *farmdoc daily* [March 24, 2017](#) for earlier discussion on the ARC-CO payment cap). In counties where payments have been triggered and this cap has been reached, ARC-CO payments have not fully compensated farms for their lost revenue relative to their county's benchmark revenue and the program's 86% coverage level. Given the current low price environment, triggered payments have reached the 10% cap in many counties over the past three years. This is particularly true for farms with corn and wheat base, and has driven some discussion and debate over whether the current payment cap of 10% is set at an appropriate level.

Today's article examines how the 10% cap has impacted ARC-CO payment levels for corn, soybeans, and wheat over the past three years. It also estimates how changes to that payment cap would have impacted average payment levels and total program outlays nationally for each crop.

Data and Procedures

Farm Service Agency (FSA) data on [ARC-CO payment rates by county](#), [base acres by county and crop](#), and [total program outlays by crop](#) were used for the analysis. Current program design with its 10% payment cap was compared with an alternative design of a 15% payment cap.

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Estimated payments (\$/base acre) under both designs are then compared with estimated payments if no payment cap existed. These no-payment-cap values are referred to as average revenue losses (\$/base acre) and total revenue losses under “formula payments” determined using ARC-CO’s current formula for computing the revenue loss for a crop within a given county. Note that revenue losses here are defined relative to a guarantee of 86% of the county’s benchmark revenue, based on the current ARC-CO program design.

Payment rates by county for each design were based on reported ARC-CO payment rate data for 2014 to 2016, and then aggregated to a national average payment per base acre by crop using reported base acres by county as weights and applying the 85% payment rate and 6.8% sequester reduction. The percentage change in this estimated national average payment level per base acre which results from increasing the payment cap from 10% to 15% was then applied to reported program outlays to provide estimates of total program outlays under a 15% cap design. The same procedure was used to estimate total revenue losses (per base acre and in total dollars) based on the ARC-CO formula payment rate without a cap.

Corn

Table 1 provides estimates for corn base acreage. Under current design, the national average payment per base acre was \$41 in 2014, \$46 in 2015, and close to \$33 in 2016. Total ARC-CO program payments were \$3.75 billion in 2014, over \$4 billion in 2015, and \$2.77 billion in 2016. The 10% payment cap affected payment levels in 38% of counties in 2014, and more than 50% of counties in both 2015 and 2016.

Raising the payment cap to 15% of the county’s benchmark revenue would have increased the average payment per corn base acre to roughly \$55 per base acre in 2014 and 2015, and to more than \$40 per base acre in 2016. Total ARC-CO payment outlays would be estimated to increase to nearly \$5 billion per year in 2014 and 2015, and nearly \$3.5 billion in 2016. The number of counties impacted by the higher 15% cap would have fallen to 26%, 35%, and 28% of counties in 2014, 2015, and 2016 respectively.

Applying the ARC-CO formula, average revenue losses for corn were close to \$70 per base acre in 2014 and 2015, and around \$49 per base acre in 2016. Total revenue losses for corn were estimated at more than \$6 billion per year in 2014 and 2015, and more than \$4 billion in 2016. The 10% cap covered approximately 60% of these losses in 2014, and over 66% of losses in 2015 and 2016 (based on the ratio of the average payment per base acre to the average revenue loss per base acre). Increasing the cap to 15% would have covered 78% of losses in 2014, 81% of losses in 2015, and 84% of losses in 2016.

Table 1. ARC-CO Payments Under Different Payment Cap Scenarios, Corn			
	2014	2015	2016
Current Design (10% Cap)			
Avg Payment (\$/base acre) ¹	\$41.71	\$46.13	\$32.84
Counties at Limit (%)	38%	51%	54%
Total Payments (\$ million) ²	\$3,749	\$4,066	\$2,773
Cap at 15% of Benchmark			
Avg Payment (\$/base acre) ¹	\$54.58	\$56.61	\$41.26
Counties at Limit (%)	26%	35%	38%
Total Payments (\$ million) ³	\$4,905	\$4,990	\$3,484
Formula Payments (no cap applied)			
Avg Revenue Loss (\$/base acre) ¹	\$69.94	\$69.82	\$49.10
Total Revenue Losses (\$ million) ³	\$6,286	\$6,154	\$4,146

¹Includes 85% payment rate and 6.8% sequester reduction, weighted by FSA data on base acres by county by crop

²Actual ARC-CO outlays based on FSA program payment data

³Estimated outlays/losses based on percentage change in average payment/loss per base acre

Soybeans

ARC-CO payments on soybean base averaged \$6.28, \$20.86, and \$3.80 per base acre in 2014, 2015, and 2016, respectively. Total ARC-CO payments for soybeans were \$325 million in 2014, over \$1 billion in 2015, and \$197 million in 2016. The current 10% payment cap impacted 11%, 40%, and 22% of counties in 2014, 2015, and 2016.

Increasing the payment rate cap to 15% would have resulted in a relatively modest increase in payment levels to \$6.80, \$24.90, and \$4.34 per soybean base acre in 2014, 2015, and 2016. Counties impacted by the higher 15% cap would have fallen to 7% in 2014, 27% in 2015, and 15% in 2016.

Average revenue losses based on the ARC-CO formula were roughly \$7 per soybean base acre in 2014, over \$29 per base acre in 2015, and around \$5 per base acre in 2016. Nationally, these total more than \$368 million in revenues losses on soybean base in 2014, over \$1.5 billion in 2015, and \$263 million in 2016. Payments under current design covered 88% of losses in 2014, 72% of losses in 2015, and 75% of losses in 2016. Increasing the cap to 15% would have covered over 95% of losses on soybean base in 2014, and just over 85% of losses in 2015 and 2016.

Table 2. ARC-CO Payments Under Different Payment Cap Scenarios, Soybeans

	2014	2015	2016
<u>Current Design (10% Cap)</u>			
Avg Payment (\$/base acre) ¹	\$6.28	\$20.86	\$3.80
Counties at Limit (%)	11%	40%	22%
Total Payments (\$ million) ²	\$325	\$1,093	\$197
<u>Cap at 15% of Benchmark</u>			
Avg Payment (\$/base acre) ¹	\$6.80	\$24.90	\$4.34
Counties at Limit (%)	7%	27%	15%
Total Payments (\$ million) ³	\$352	\$1,305	\$225
<u>Formula Payments (no cap applied)</u>			
Avg Revenue Loss (\$/base acre) ¹	\$7.12	\$29.15	\$5.07
Total Payments (\$ million) ³	\$368	\$1,527	\$263

¹Includes 85% payment rate and 6.8% sequester reduction, weighted by FSA data on base acres by county by crop

²Actual ARC-CO outlays based on FSA program payment data

³Estimated outlays/losses based on percentage change in average payment/loss per base acre

Wheat

The average ARC-CO payment per wheat base acre was just over \$8 in 2014, but increased considerably to nearly \$18 per base acre in 2015 and 2016. Total ARC-CO outlays to wheat in 2014 were \$353 million with less than 20% of counties impacted by the 10% payment cap. In 2015 and 2016, total payments increased to \$642 million each year with 61% of counties reaching the 10% cap in 2015 and 77% of counties hitting the cap in 2016.

Raising the cap to 15% would have raised the average payment level to just over \$11 per wheat base acre in 2014, and to around \$25 per wheat base acre in 2015 and 2016. The proportion of counties impacted by the cap would have fallen to 15% in 2014, but the higher cap would still have impacted nearly half of counties in 2015 and two-thirds of counties in 2016. This illustrates the severity of revenue losses experienced in many wheat producing counties across the country.

Average payment levels for wheat based on the ARC-CO formula were estimated to be \$24 per base acre in 2014, over \$39 per base acre in 2015, and over \$43 per base acre in 2016. Total revenue losses for wheat were estimated to be \$1 billion in 2014, over \$1.4 billion in 2015, and more than \$1.5 billion in 2016. Payments under the current ARC-CO design covered 33% of losses in 2014, 45% in 2015, and 41% in 2016. Increasing the cap to 15% would have covered 47% of revenue losses in 2014, and roughly 60% of losses in 2015 and 2016.

	2014	2015	2016
Current Design (10% Cap)			
Avg Payment (\$/base acre) ¹	\$8.17	\$17.73	\$17.98
Counties at Limit (%)	19%	61%	77%
Total Payments (\$ million) ²	\$353	\$642	\$642
Cap at 15% of Benchmark			
Avg Payment (\$/base acre) ¹	\$11.33	\$24.19	\$25.58
Counties at Limit (%)	15%	47%	67%
Total Payments (\$ million) ³	\$490	\$876	\$914
Formula Payments (no cap applied)			
Avg Revenue Loss (\$/base acre) ¹	\$24.16	\$39.24	\$43.61
Total Revenue Losses (\$ million) ³	\$1,044	\$1,422	\$1,558

¹Includes 85% payment rate and 6.8% sequester reduction, weighted by FSA data on base acres by county by crop

²Actual ARC-CO outlays based on FSA program payment data

³Estimated outlays/losses based on percentage change in average payment/loss per base acre

Discussion

Revenue losses have triggered ARC-CO program payments on corn, soybean, and wheat base acreage across many areas over the past three years. While the primary driver of revenue losses, in general, has been the decline in commodity prices, yields have also played a role in the variation in payment levels across counties for the ARC-CO program. The magnitude of revenue losses over the past 3 years has also led to payments in many counties being impacted by the 10% cap on ARC-CO payment rates, leading to payment levels which do not fully offset the revenue losses (as defined by the ARC-CO program design) experienced in those counties.

Increasing the payment cap to 15% would have increased ARC-CO program payments, and reduced the number of counties impacted by the payment cap. In looking at the cases for corn, soybean, and wheat, the impact of the current payment cap has been the most dramatic for wheat producers. Revenue losses for wheat over the past three years have been substantial in many counties. In 2014, only 19% of counties we impacted by the current payment cap, but losses in those impacted counties were very large due to a combination of the drop in wheat prices along with relatively low yields. In 2015, more than 60% of counties with wheat base were impacted by the 10% cap. The proportion of counties impacted by the current payment cap increased to more than 75% in 2016. Increasing the payment cap to 15% would still have impacted nearly half of the counties with wheat base in 2015 and two-thirds of counties in 2016.

In considering an increase in ARC-CO's payment cap, the direct tradeoffs are among the reduction in farms negatively impacted by a cap on payment levels and the increase in total program cost through increased expected outlays. However, there are a number of other related policy issues associated with a change in ARC-CO's payment cap rate that warrant consideration. These include, but are not limited to:

- How changing the ARC-CO payment limit affects the choice between ARC-CO and PLC, and their relative performance in providing support under conditions of financial stress. Comparing the relative performance of ARC-CO and PLC over the past three years was discussed in the [October 25, 2017](#) daily article.
- How changing the ARC-CO payment cap impacts overall program costs and related budgeting issues within the overall Farm Bill debate.
- How changing the ARC-CO payment cap impacts program performance across smaller geographical areas, such as different impacts by regions and counties for the same crop.
- How changing the ARC-CO payment cap impacts the interplay and linkages between the risk protection offered by commodity programs and crop insurance programs.

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