

Historic ARC, PLC, and SCO Payouts for Kansas Producers: Report Summary and Key Findings

Sylvanus Gaku (sgaku@ksu.edu) – K-State Department of Agricultural Economics

Jennifer Ifft (jiff@ksu.edu) – K-State Department of Agricultural Economics

Robin Reid (robinreid@ksu.edu) – K-State Department of Agricultural Economics

February 29, 2024

Motivation

Agricultural Risk Coverage (ARC) and Price Loss Coverage (PLC) were authorized in the 2014 Farm Bill and since 2015, producers with base acres have had to select one of these two programs. Over the past few years, this has been an annual decision. ARC provides protection against a decline in revenue and PLC provides protection against a decline in prices. While most analyses compare ARC and PLC, producers are typically only allowed to purchase Supplemental Coverage Option (SCO) insurance if they selected PLC. A [recent study](#) compared Kansas county level outcomes for ARC, PLC, and SCO from 2015 to 2022.

ARC, PLC, and SCO Refresher

ARC is triggered when actual county revenue is lower than the county guarantee.

- ARC county guarantee = 86% x benchmark revenue
- Benchmark revenue = Olympic average MYA price x Olympic average county yield
- ARC payout rate = (county guarantee - actual revenue (up to the max payment)) * 85% of base acres

PLC is triggered when the MYA (marketing year average price) is lower than the effective reference price.

- PLC payout rate = effective reference price (formula is set in the Farm Bill) - MYA price
- PLC payout = 85% x base acres x payment yield x payout rate

SCO increases coverage of a producer's underlying crop insurance policy to 86% of expected revenue (or yield).

- SCO expected revenue = county/area expected yield x the higher of (1) projected or (2) harvest price

Approach

This study compared SCO, ARC, and PLC payouts from 2015-2022 for corn, grain sorghum, soybeans, and wheat. PLC payouts were based on actual payment rates while ARC payouts were computed using FSA formulas. ARC irrigation-status designations for 2022 were applied to all previous years, using RMA yields when FSA yields were not available. Net SCO payouts are also estimates based on: (1) 75% coverage level for underlying Revenue Protection (RP) insurance, (2) assuming yields (APH) equivalent to RMA county yields, and (3) RMA formulas for premium rates. Net SCO payouts are defined as estimated indemnities minus estimated premium. *This study did not account for base acres, which can play a large role in this decision.*

Key Findings

The [report](#) has several charts and graphs that provide visualizations of average payouts by crop and practice, average payouts by program over time, and average payouts by county. While outcomes varied by county (see estimated county outcomes [here](#)), average performance for the state can be summarized as follows:

ARC

- Average ARC payouts were generally higher from 2015-17, when the ARC guarantees were relatively high, and for non-irrigated crops in 2022, when drought caused low yields across the state.

PLC

- There were no PLC payouts from 2020-22, other than for wheat in 2020.
- PLC never paid out for soybeans.
- PLC had the highest payouts for wheat and sorghum.

SCO

- Average net SCO payouts for 2015-2022 were generally positive, except for irrigated corn.
- Average net payouts were highest for 2022 due to the drought; averaging \$40-\$80 per acre for some crops and practices, including non-irrigated soybeans.
- Wheat and corn tended to have relatively higher average SCO net payouts from 2015-2021

Comparative Performance

- PLC paid out much more on average than ARC from 2015-2022 for wheat, sorghum, and non-irrigated corn.
 - ARC and PLC Payouts were similar for counties with combined ARC corn yields. For these counties, average net SCO payouts plus PLC payouts were higher than ARC payouts. This was *the only* scenario where the average difference between ARC and PLC was *smaller* than SCO net payouts.
 - Average ARC payouts were higher for irrigated corn and soybeans.
- ARC generally outperformed SCO early in the study period.
- SCO paid out much more than ARC for counties with losses from the 2022 drought.

Looking forward

While ARC, PLC, and SCO performed differently from 2015-2022, all programs provided risk protection for producers. Other than for soybean producers that selected PLC, most producers likely received meaningful payouts in some years. While historic performance does not determine future performance and 2015-2022 may not be a long enough period to reflect “long-run” performance, these findings provide some useful lessons on how these programs work. Here are some observations for future choices where a producer wants to account for SCO in the ARC and PLC decision.

- How many base acres a farm has in the crop being produced, if any, is a key consideration.
- PLC reference prices, ARC benchmark and marketing year average (MYA) prices, and crop insurance (futures) prices change over time and affect the risk protection provided by each program. Higher prices lead to high guarantees and a higher likelihood and magnitude of payouts. From 2015-2016 the ARC benchmark price for corn was higher than crop insurance projected price. From 2018-2022, crop insurance projected prices for corn were higher than ARC benchmark prices. For 2024, the ARC benchmark price will again be higher than the crop insurance projected price, as well as the PLC reference price. In years when the ARC benchmark price is higher than the crop insurance projected price, a producer’s ARC guarantee may be meaningfully higher than their SCO guarantee. Average payouts in our study reflect these price trends. Further, ARC payouts use the MYA price, while crop insurance payouts use the harvest futures price. For example, the MYA price for corn is based on prices from Sept. 1 of the harvest year through Aug. 31 the following year, while the crop insurance harvest price is based on December futures. Producers may want to consider these differences in relation to their marketing strategy.
- Over time, the combination of PLC and SCO provides broader risk protection than ARC. In a drought situation with low yields and high prices, producers with SCO benefit from the harvest price option (HPO). In other words, with the HPO, the SCO guarantee resets at the harvest price when the harvest price is higher than the projected price. ARC does not similarly reset, thus to the degree that yield losses are mitigated by price increases, payouts may be smaller. Likewise, PLC can make payouts during years with high yields and low prices. While this study provides evidence that producers should receive more in indemnities from SCO than they pay in premiums in the long run, the increase in premium costs required for SCO will likely continue to be a barrier for some producers. Further, based on the above discussion, ARC guarantees will likely continue to be periodically higher than SCO guarantees.

Additional Resources

Study on Kansas ARC, PLC, and SCO payouts from 2015-2022

<https://agmanager.info/events/risk-and-profit-conference/previous-conference-proceedings/2023-risk-and-profit-conference/7>

Spreadsheet with Kansas ARC, PLC, and SCO Estimated Average County Outcomes, 2015-2022

<https://agmanager.info/crop-insurance/crop-insurance-papers-and-information/kansas-arc-plc-and-sco-estimated-county>

Webinar on Managing Risk with ARC, PLC, and SCO in 2024

<https://agmanager.info/news/recent-videos/managing-risk-arc-plc-and-sco-webinar-slides-and-recording>

Article on ARC and PLC selections for 2024

<https://agmanager.info/ag-policy/2018-farm-bill/arc-and-plc-selections-2024>

Decision tool for tradeoff between 2024/2025 ARC and PLC

<https://agmanager.info/ag-policy/2018-farm-bill/tradeoff-between-20242025-arc-and-plc>

Maps of Actual ARC-County Payments for the 2018 Farm Bill

<https://www.agmanager.info/ag-policy/arc-co-actual-payment-maps>

Supplemental Coverage Option (SCO) and Enhanced Coverage Option (ECO): 2024 Considerations and 2023 Update

<https://agmanager.info/crop-insurance/crop-insurance-papers-and-information/supplemental-coverage-option-sco-and-enhanced>

Kansas Crop Insurance Maps

<https://agmanager.info/crop-insurance/kansas-crop-insurance-maps>

Kansas County Yield Correlation Tool

<https://agmanager.info/crop-insurance/crop-insurance-papers-and-information/kansas-yield-correlation-tool>

SCO and ECO Payment Calculator

<https://agmanager.info/crop-insurance/crop-insurance-papers-and-information/2022-supplemental-coverage-option-sco-and>

SCO and ECO Webinar

<https://agmanager.info/news/recent-videos/2021-crop-insurance-choices-sco-and-eco>

Acknowledgement: This research was supported in part by the USDA National Institute for Food and Agriculture Award number 2021-67023-33816.

For more information about this publication and others, visit AgManager.info.
K-State Agricultural Economics | 342 Waters Hall, Manhattan, KS 66506-4011 | 785.532.1504
www.ageconomics.k-state.edu
Copyright 2022: AgManager.info and K-State Department of Agricultural Economics

