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## Examining the Restriction on Using SCO Insurance for Acres in ARC

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Current public versions of both the House and Senate farm bills increase the subsidy and coverage levels for SCO (Supplemental Coverage Option) insurance. SCO insurance can be purchased only for acres elected into PLC (Price Loss Coverage commodity program) (for a more complete discussion of SCO see the *farmdoc daily* of April 24, 2014 and August 7, 2024). SCO cannot be purchased for acres elected into both ARC (Agricultural Risk Coverage) commodity programs. A commonly-stated rationale for this restriction is a concern that payments by SCO and ARC will overlap. This analysis however finds that, in general, little relationship exists between per acre payments by SCO and ARC-CO (ARC county version), as for payments by SCO and PLC, for barley, corn, oats, peanuts, long and medium grain rice, Japonica rice, sorghum, soybeans, and wheat over the 2015-2022 crop years. This finding does not support current policy of allowing SCO insurance to be purchased for acres in PLC but not for acres in ARC-CO.

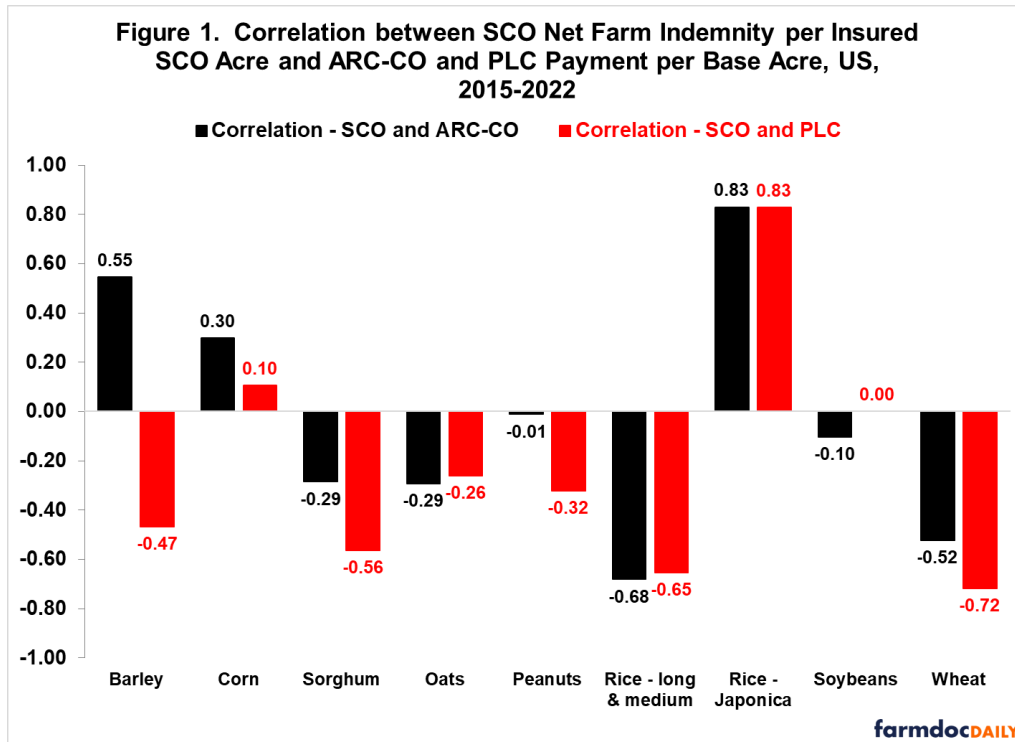
### Correlation between SCO and Commodity Program Payments

SCO insurance was first authorized in the 2014 Farm Bill and offered for the 2015 crop year. Payments by SCO are available from the Risk Management Agency. ARC-CO and PLC payments are available from the Farm Service Agency through the 2022 crop year (see Data Note 1). Unsurprisingly, especially with only 8 years of observations per crop; the correlation between SCO average payment per SCO insured acre and ARC-CO (or PLC) average payment per crop base acre in ARC-CO (or PLC) varies widely by crop (see Figure 1). Correlations between SCO and ARC-CO vary from +0.83 (Japonica rice) to -0.68 (long and medium grain rice). The SCO-PLC range is similar: +0.83 (Japonica rice) to -0.72 (wheat). Of the nine correlations, six are negative for ARC-CO and seven are negative for PLC.

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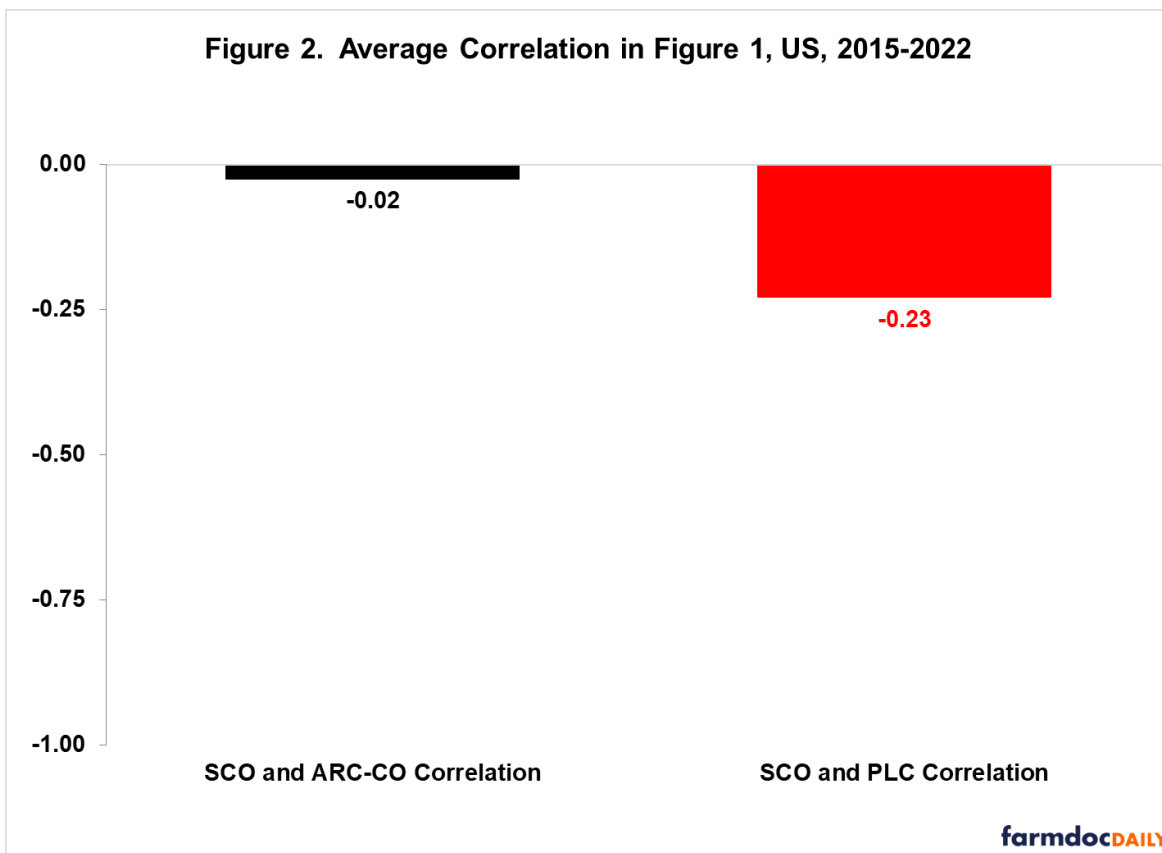
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The difference in ARC-CO and PLC correlation by crop ranges from 1.02 (barley, +0.55 vs. -0.47) to 0 (Japanica rice, +0.83 for both). Average difference is 0.24. Excluding barley, the largest difference is 0.31 (peanuts, -0.01 vs. -0.32) and the average is 0.14.



### Average Correlations

Given the small number of observations per crop, it is useful to examine the collective experience of the crops as a group. One such measure is average correlation across the nine crops. It was -0.02 for ARC-CO and SCO and -0.23 for PLC and SCO (see Figure 2). Since correlations vary from -1.0 to +1.0, neither average correlation suggests that ARC-CO and PLC per acre payments have a consistent relationship with SCO per acre payments.



A second collective examination was to estimate a regression equation for ARC-CO and PLC payment per base acre using as explanatory variables, SCO payment per insured SCO acre along with variables that identified the year and program commodity (see Data Note 2). The coefficient between commodity program payment and SCO payment differed from zero (i.e. no relationship) with statistical confidence of 6% for ARC-CO and 88% for PLC. Neither is significant at the commonly-used confidence test level of 95%, implying a statistically significant relationship did not exist between SCO payment per insured SCO acre and ARC-CO payment per ACR-CO base acre or between SCO payment per insured SCO acre and PLC payment per PLC base acre.

### Discussion

In general, little relationship was found to exist between SCO payment per SCO insured acre and ARC-CO and PLC payment per base acre for barley, corn, oats, peanuts, long and medium grain rice, Japonica rice, sorghum, soybeans, and wheat over the 2015-2022 crop years.

This finding raises questions about why SCO insurance can be purchased for historical base acres elected into PLC but not for historical base acres elected into ARC-CO.

The finding was expected. ARC-CO and SCO are both revenue programs that use county yields, but their prices differ on important characteristics. ARC-CO uses an Olympic moving average (high and low price removed) of five historical crop marketing years (for example, prices for the 2017-2021 crop years are used for the 2023 crop year). Change in price is calculated between this historical average price and the price for the payment crop year. SCO uses prices for the crop's harvest futures contract for the payment crop year. Change in price is calculated between average futures price during a one month projected period and a one month harvest period for the payment crop year. Given the different characteristics of prices and price calculations, it is not surprising that little-to-no relationship exists between payments by ARC-CO and SCO, as also exists between payments by PLC and SCO.

Moreover, while not affecting per acre payment analyses, ARC-CO and PLC are decoupled from acres planted, with payments made on historical base acres. In contrast, SCO payments are made on planted

acres. It seems inconsistent to allow insurance payments on planted acres to be received by base acres in one commodity program but not in another commodity program.

The preceding point raises the question, "Is the restriction on using SCO for acres in ARC more about favoring PLC than about providing farmers with an option to buy additional insurance against production disasters?" If so, this restriction becomes even more untenable given the current efforts to expand the use of SCO, in part to reduce the need for *ad hoc* disaster assistance.

Finally, tying use of an insurance product to a particular commodity program raises an intriguing policy question, "Should insurance payments tied to a specific commodity program count toward payment limits on commodity programs since access to the insurance program is tied to a commodity program?"

### Data Notes

1. ARC-CO and PLC payments to a program commodity planted on generic base were removed from that commodity's payments before dividing by its base acres elected into ARC-CO or PLC. Generic base was cotton base acres as of the 2013 crop year. Cotton was ineligible for ARC and PLC under the 2014 farm bill, but generic base could receive a commodity program payment if the program commodity was planted on generic base. The generic base program existed over the 2014-2017 crop years. It was replaced by ARC and PLC programs for seed cotton starting with the 2018 crop year.
2. Economists refer to crops and years as fixed effect variables. Corn and 2022 were used as the base values for the crop and year dummy variables. Coefficients for the variables of 2016, peanuts, and long grain rice were statistically significant at the 95% confidence test level for PLC and ARC-CO. The variable for 2015 was also statistically significant at 95% for ARC-CO. All other fixed effect variables were statistically insignificant at the 95% test level. Coefficients on the statistically significant fixed effect variables were all positive, implying ARC-CO (or PLC) payment was larger for peanuts and long grain rice than for corn (i.e. base value) and in 2015 and 2016 than in 2022 (i.e. base value).

### References and Data Sources

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