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Further Discussion of the Supplemental Coverage Option

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April 24, 2014

***farmdoc daily* (4):75**

Recommended citation format: Paulson, N., and J. Coppess. "Further Discussion of the Supplemental Coverage Option." *farmdoc daily* (4):75, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, April 24, 2014.

Permalink: http://farmdocdaily.illinois.edu/2014/04/illinois-prospective-plantings-2014-with-historical-comparisons.html

A previous article (*farmdoc daily* February 27, 2014) provided an initial look at the Supplemental Coverage Option (SCO) in the new farm bill. This article continues that discussion with further analysis of the statutory language authorizing the program and additional examples illustrating its expected operation. The examples in our earlier article on SCO assumed the example farm's crop insurance APH yield was the same as the expected county yield. The examples below illustrate how SCO could work for farms whose APH yields differ from the expected county yield.

Discussion

A closer look at two key provisions from the Crop Insurance Act as amended by the farm bill help clarify how the program is expected to function for farmers. First, section 508(c)(3)(B), as amended by the 2014 Farm Bill, provides the authority for this new, supplemental coverage and it states that SCO is:

> "based on an area yield or loss basis to ***cover a part of the deductible under*** the individual yield and loss policy." (emphasis added).

Similarly, section 508(c)(4)(C)(i), as amended by the farm bill, instructs the Federal Crop Insurance Corporation to:

> "offer producers the opportunity to purchase coverage in combination with a policy or plan of insurance offered under this subtitle that would allow indemnities to be paid to a producer ***equal to a part of the deductible under*** the policy or plan of insurance." (emphasis added).

As discussed in the earlier article, SCO provides coverage which is based on an area yield or loss basis, implying county level coverage. Also as previously discussed, SCO is triggered when county losses exceed 14 percent of normal levels equating to an 86% coverage level. Finally, SCO's coverage is not to exceed the difference between 86 percent and the coverage level selected for the underlying, individual plan of insurance. Thus, SCO payments (and liability) are limited in that coverage is only for a portion of the producer's individual insurance deductible.

This makes SCO a rather unique plan of insurance. Indemnities are triggered based on county losses in excess of 14 percent of normal, which means the entire county must suffer at least a 14 percent loss in order for any individual's SCO policy to pay an indemnity. However, the actual indemnity received by any individual producer will be tied to their individual deductible value. Based on this interpretation of the farm bill language above, SCO essentially provides a county trigger on a limited range of individual liability coverage. Losses in excess of 14% at the county level are required to trigger an SCO payment. The size of the county level loss results in a payment factor which is applied to the individual producer's insurance deductible to determine the actual SCO indemnity payment.

Examples for SCO and an Individual Plan of Insurance

If county losses exceed 14% SCO payments are triggered for all producers carrying the supplemental coverage in that county. The magnitude of county level losses will be translated to an individual farm SCO payment via an SCO payment factor applied to the farm's maximum SCO payment representing the portion of the deductible covered by SCO (from 86% down to the individual coverage level).

In general, the SCO payment factor is defined as follows:

$$SCO\ Payment\ Factor = \frac{\left[SCO\ Trigger\ \% - \frac{Actual\ County\ Revenue\backslash Yield}{Expected\ County\ Revenue\backslash Yield}\right]}{SCO\ Trigger\ \% - Individual\ Coverage\ Level}$$

This payment factor scales the loss experienced at the county to a percentage of the deductible range covered by the SCO policy given the individual plan selected by the farmer. Multiplying this payment factor by the size of the farm's deductible range covered by SCO (the max SCO payment) yields the SCO payment received by the farm.

Table 1 illustrates some example insurance program calculations for corn for two individual farm cases. Both farms are located in a county with an area trend corn yield of 180 bushels per acre. Example farm 1 has a trend adjusted APH (TAPH) yield above the county average of 190 bushels per acre while farm 2 has a TAPH yield of 170 bushels per acre. This results in a county level expected revenue of $828 per acre, and farm-level expected revenues of $874 and $782 per acre for farms 1 and 2, respectively.

We provide example calculations assuming SCO is coupled with an RP-HPE policy with an 80% coverage level. An RP-HPE policy at 80% coverage implies revenue guarantees of $699 and $629 per acre for farms 1 and 2, respectively. The SCO county trigger revenue (86% of expected revenue) is $712 per acre. The maximum amount of coverage that SCO would provide each individual farm for this example is the portion of each farm's deductible falling between 86% and 80% of expected revenue, or 6% of expected farm revenue. The maximum SCO payment that farm 1 could receive is $52.44 per acre (0.86 – 0.80 = 0.06; 0.06 x $874 = $52.44). The max SCO payment that farm 2 could receive is $46.92 per acre.

Table 1. County and Individual Insurance Guarantee Calculations

	County	Farm 1	Farm 2
Base Insurance Price	$4.60	$4.60	$4.60
Trend/APH Yield	180	190	170
Expected Revenue	$828	$874	$782
RP-HPE Coverage Level		80%	80%
RP-HPE Revenue Guarantee		$699	$626
SCO County Trigger Revenue	$712		
SCO Deductible Range Covered (max payment)		$52.44	$46.92

In table 2 an example is provided where the harvest price is $3.90 and the actual county yield is 180 bushels per acre. This results in actual county revenue of $702 per acre, and an SCO payment rate of 0.20. Again, this payment rate represents the revenue loss at the county level as a percentage of the deductible range covered (in this case from 86% down to 80% of expected revenue).

$$SCO\ Payment\ Factor = \frac{\left[0.86 - \frac{\$702}{\$828}\right]}{0.86 - 0.80} = \frac{[0.86 - 0.847\ ]}{0.86 - 0.80} = 0.20$$

This payment factor of 0.20 means that the loss at the county level will trigger individual SCO payments covering 20% of the deductible range covered for individual farms carrying SCO with 80% RP-HPE. This payment rate would differ for farms carrying different individual insurance plans and coverage levels coupled with SCO.

Table 2. SCO and RP-HPE Payment Scenario 1

Scenario 1	County	Farm 1	Farm 2
Harvest Price	$3.90	$3.90	$3.90
Actual Yield	180	200	160
Actual Revenue	$702	$780	$624
SCO Payment Rate	0.20		
SCO Payment		$10.64	$9.52
RP Payment		$0.00	$1.60
Total Insurance Payment		$10.64	$11.12

Example farm 1 has an actual yield of 200 bushels per acre, resulting in actual revenue of $780 per acre. Farm 1 would receive an SCO payment equal to the SCO payment rate multiplied by the farm's max SCO payment, or $10.64 per acre (0.20 x $52.44 = $10.64). Since actual revenue for farm 1 is greater than the RP-HPE guarantee, there would be no payment from the individual plan of insurance.

Example farm 2 has an actual yield of 160 bushels per acre, resulting in actual revenue of $624 per acre. Farm 2 would receive an SCO payment equal to the SCO payment rate multiplied by the farm's max SCO payment, or $9.52 per acre (0.20 x $46.92 = $9.52). Since farm 2's actual revenue also falls below their RP-HPE revenue guarantee, it would also receive an indemnity payment of $1.60 per acre or total insurance payments of $11.12 per acre.

In table 3 an example is provided where the harvest price is at an even lower level of $3.50 per acre. The actual county yield in this example is 188 bushels per acre, resulting in actual county revenue of $658 per acre. The SCO payment rate for farms with 80% RP-HPE coverage in this example would then be 100% since the actual revenue of $658 falls below 80% of the county guarantee (0.80 x $828 = $662). Thus, farms in this county which coupled SCO with an 80% RP-HPE plan would receive the full portion of their farm deductible covered by SCO (from 86% down to 80% of their expected farm revenue).

Farm 1 has an actual yield of 195 bushels per acre and actual revenue of $683 per acre in this example. The SCO payment for farm 1 is the maximum payment of $52.44 per acre. Farm 1 would also receive a $16.70 payment from their 80% RP-HPE plan, and a total insurance payment of $69.14 per acre. Farm 2 has an actual yield of 180 bushels per acre and actual revenue of $630 per acre. While farm 2 would also receive the maximum SCO payment of $46.92, their actual revenue is not low enough to trigger a payment from the 80% RP-HPE policy.

Table 3. SCO and RP-HPE Payment Scenario 2

	County	Farm 1	Farm 2
Harvest Price	$3.50	$3.50	$3.50
Actual Yield	188	195	180
Actual Revenue	$658	$683	$630
SCO Payment Rate	1.00		
SCO Payment		$52.44	$46.92
RP Payment		$16.70	$0.00
Total Insurance Payment		$69.14	$46.92

Conclusion

Understanding SCO coverage and how it works with the various individual insurance plans has important implications for producers as they evaluate commodity program options (i.e. PLC vs. ARC) and risk management decisions (i.e. individual insurance plan choices). Because SCO is limited by the statute to the deductible range of the underlying policy, it will operate as individual-based coverage, but the indemnity is triggered and scaled by area-wide (county) losses.

One strategy that has been discussed extensively is the option to reduce individual insurance plan coverage (i.e. from 85% to 80% or 75%) and adding SCO coverage. While this strategy may reduce premium costs due to the 65% subsidy rate on SCO premiums, it does create some additional basis risk for the farm because the deductible coverage provided by SCO required county losses to be triggered. The farm could suffer losses at the individual level and not receive SCO payments if losses are not experienced on a county wide basis.

Furthermore, while the analysis of the decision to use SCO can be delayed until the 2015 crop year when the program is intended to be introduced, producers need to consider their potential desire to use SCO in future crop years when making the choice between the PLC and ARC commodity program decisions. Further analysis of the farm-level impacts of the SCO program is underway and will be shared via *farmdoc* and *farmdoc*Daily over the coming months.

References

Paulson, N., and J. Coppess. "2014 Farm Bill: The Supplemental Coverage Option." *farmdoc daily* (4):37, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, February 27, 2014.