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Impacts of Lowering Coverage Levels and Using Harvest Price Exclusion on Soybeans

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In 2018, some farmers are considering lowering coverage levels or eliminating crop insurance on soybeans. A primary motive for doing so is reducing cash flows in these times of negative and short cash flows. Contributing to this consideration is the fact that many farmers have received very low crop insurance payments on soybeans (see *farmdoc daily*, January 9, 2018). The question is: Is the cost of crop insurance for soybeans worth the risk protection offered by the policy? Rather than eliminating crop insurance, two alternatives are: 1) use Revenue Protection with the Harvest Price Exclusion (RPhpe) or lower the coverage level. In this article, using RPhpe and lowering coverage levels are analyzed. Both alternatives will reduce farmer-paid premiums, coming at the cost of lowering insurance payments in drought years like 2012. While payments have been low in northern and central Illinois, it still seems prudent to take crop insurance on soybeans, perhaps lowering coverage levels or using RPhpe.

Background

Most farmers use Revenue Protection (RP) at high coverage levels to insure soybeans in Illinois. In 2017, RP was used to insure 75.7% of the acres of soybeans planted in Illinois (see Table 1). Moreover, the three highest coverage levels account for most of the use. In 2017, 12.8% of planted acres were insured at a 75% coverage level, 25.1% of the acres were insured at an 80% coverage level, and 31.5% were at an 85% coverage level. Taken together, the 75%, 80%, and 85% coverage levels were used to insure to 69.4% of the soybean acres in Illinois. Further note that there is very little use of RPhpe or Yield Protection (YP), a yield insurance available for use by farmers.

RP is revenue insurance whose guarantee increases if the harvest price is above the projected price. Another revenue insurance — RP with the harvest price exclusion (RPhpe) — does not have the guarantee increase. Because it does not have the guarantee increase, RPhpe has premiums that are roughly half those of RP (see Table 2). At the 85% coverage level, RP has a $13.46 per acre premium versus a $7.84 per acre premium for RPhpe. A farmer who usually purchases an 85% RP policy ($13.46), could reduce premiums by reducing the RP coverage level to 80% ($6.32) or by buying an 85% RPhpe policy ($7.84). Further premium reductions could be made by using both strategies and purchasing an 80% RPhpe policy ($3.69).

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Table 1. Percent of Planted Acres Insured in Illinois by Product and Coverage Levels, Illinois, Soybeans, 2017

Coverage Level	Revenue Protection (RP)	RP with Harvest Price Exclusion	Yield Protection (YP)	Area Revenue Insurances[1]	Area Yield Protection (ARP)
50%	0.9%	0.1%	1.4%		
55%	0.2%	0.0%	0.1%		
60%	0.5%	0.0%	0.1%		
65%	0.8%	0.0%	0.3%		0.0%
70%	4.0%	0.1%	0.3%	0.0%	0.0%
75%	12.8%	0.2%	0.5%	0.0%	0.0%
80%	25.1%	0.3%	0.4%	0.0%	0.0%
85%	31.5%	0.8%	0.4%	0.1%	0.0%
90%				4.1%	0.5%
Total	**75.7%**	**1.6%**	**3.4%**	**4.3%**	**0.6%**

Source: Summary of Business, Risk Management Agency

[1] Includes Area Revenue Protection (ARP) and ARP with Harvest Price Exclusion.

Table 2. Estimated 2018 Farmer-Paid Crop Insurance Premiums for a Douglas County, Illinois, Soybeans, 2018

Coverage Level	Revenue Protection (RP)	RP with Harvest Price Exclusion	Yield Protection
	$/acre	$/acre	$/acre
50%	0.28	0.19	0.21
55%	0.42	0.27	0.31
60%	0.67	0.41	0.49
65%	1.20	0.70	0.80
70%	1.88	1.10	1.19
75%	3.20	1.88	1.96
80%	6.32	3.69	3.78
85%	13.46	7.84	7.64

[1] Premium based on $10.19 projected price, .16 volatility, 55 bu APH yield, 58 bu TA-APH yield, and a 100 acre enterprise unit.

RP versus RPhpe

Besides having lower premiums, RPhpe's payments will average lower than RP's payments over time. At the same coverage level, RP and RPhpe will make the same payments when harvest price is below projected price. When harvest price is above the projected price, RP will make the same or larger payments as RPhpe.

The impacts of the harvest price exclusion are shown Table 3, which shows farmer-paid premiums and insurance payments from all 85% coverage level for RP (Panel A) and RPhpe (Panel B) products sold in Illinois for soybeans. Table 3 begins with payments in 2011, the year in which the COMBO product came into existence and introduced the RP and RPhpe plans of insurance. Payments are shown through 2016, the last year for which complete insurance payment data is available. For the 2011-2016 period, harvest prices exceeded projected prices in two years: 2012 ($12.55 projected price versus $15.39 harvest price) and 2016 ($8.85 projected price versus $9.75 harvest price).

Several notes:

- Many more acres are insured with RP than with RPhpe. In 2016, RP at the 85% coverage level was used on 3,052,182 acres compared to 58,179 acres for RPhpe.

- Farmer-paid premiums has declined over time for both RP and RPhpe. For RP, farmer paid premiums averaged $23.66 in 2011, $19.48 in 2012, $18.03 in 2013, $12.67 in 2014, $11.69 in 2015, and $9.76 in 2016. Several factors contribute to this decline, with one of the most impactful being declines in projected prices. The projected price was $13.49 per bushel in 2012. In 2016, the projected price was $8.85.

- The final column shows payments minus farmer-paid premiums. Negative values indicate that farmers have paid more into crop insurance than has been received in payments.

For the 2011-2016 period, payments minus farmer-paid premium for RP averaged -$.86 per acre for RP (see Table 3). This -$.86 value for RP compares to -$.26 for RPhpe. RP and RPhpe had roughly the same performance in terms of payments minus farmer-paid premiums.

There are, however, large difference across years. In 2012 there was a large drought resulting in a higher harvest price than a projected price. As a result, RP policies averaged $47.07 in payments compared to $11.42 for RPhpe (see Table 3). In that year, RPs payment minus premium was $27.59 compared to -$.14 for RPhpe. In drought years such as 2012, RP will make much larger payments than RPhpe. On the other hand, RPhpe had higher average payments minus farmer-paid premiums in all other years.

Table 3. Premium and Payments for Revenue Protection (RP) and RP with Harvest Price Exclusion at 85% Coverage Level, Soybeans, Illinois, 2011 - 2016

Year	Acres Insured	Farmer-Paid Premium	Insurance Payment	Payment Minus Premium
Panel A. Revenue Protection (RP) at 85% Coverage Level.				
		$/acre	$/acre	$/acre
2011	1,289,013	23.66	17.14	-6.52
2012	1,393,683	19.48	47.07	27.59
2013	2,125,324	18.03	7.95	-10.07
2014	2,977,647	12.67	7.33	-5.34
2015	2,942,527	11.69	9.29	-2.40
2016	3,052,182	9.76	1.35	-8.41
Average		15.88	15.02	-0.86
Panel B. RP with Harvest Price Exclusion at 85% CL.				
2011	184,928	14.68	16.81	2.13
2012	126,197	11.56	11.42	-0.14
2013	73,001	9.73	6.29	-3.44
2014	58,946	6.46	4.54	-1.91
2015	90,459	6.01	11.61	5.60
2016	58,179	4.89	1.07	-3.82
Average		8.89	8.62	-0.26

Source: Summary of Business, Risk Management Agency.

Lower Coverage Levels

Lowering coverage levels also will have impacts on payments minus premiums. Payments minus farmer-paid premiums from 2011 to 2016 for RP were -$.86 per acre at the 85% coverage level (see Table 3). For the same time period, premiums minus farmer-paid premiums were $2.94 per acre at an 80% coverage level. For RPhpe, payments minus farmer paid premiums were -$.26 per acre at the 85% coverage level. For the Same time period, RPhpe at the 80% had $1.19 per acre payments minus farmer-paid premiums. For both RP and RPhpe, lowering the coverage level from 85% to 80% caused premiums to exceed farmer-paid premiums across Illinois. This occurred because the portion of the premium paid by the Federal government was higher at the 80% coverage level as compared to the 85% coverage level (*farmdoc daily*, May 5, 2016).

Observations

Farmers can reduce farmer-paid premiums by reducing RP's coverage level or using RPhpe. Doing so will reduce payments in drought years such as 2012, potentially leading to more financial stress in those years. On the other hand, lower coverage level will reduce costs in non-adverse years.

Eliminating crop insurance all together does not seem prudent. At lower coverage levels, premium costs are relatively low, particularly for northern and central Illinois. At lower coverage levels, insurance payments have exceeded farmer-paid premiums on average across Illinois. And agriculture still is a risky business with many yield and price unknowns.

References

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