



www.agmanager.info
barnaby@ksu.edu
(785) 532.1515 (phone)
(785) 532.6925 (fax)

G.A. "Art" Barnaby Jr.

Copyright 2011. All rights reserved. Contact Art to be added to e-mail list

Disclaimer: This web page is designed to aid farmers with their marketing and risk management decisions. The risk of loss in trading futures, options, forward contracts, and hedge-to-arrive can be substantial and no warranty is given or implied by the author or any other party. Each farmer must consider whether such marketing strategies are appropriate for his or her situation. This web page does not represent the views of Kansas State University.

Buy the More Expensive Revenue Protection and Sell off Part of the Coverage¹

Dear Art

How can the options be so "cheap" in the new CCIP? The only reason farmers wouldn't take your recommendation is if they had no idea what you were talking about with the harvest price and revenue endorsement. What a deal. How can we get some of that for our customers? Oh another reason for not doing this would be that they don't have an agent that understands options.

Agent

Dear Agent

Farmers are likely to suffer sticker "shock" when they see their premium cost this spring. Their first reaction might be to cancel their revenue insurance coverage and select Yield Protection (YP). YP contracts will use the same price election as the revenue products. This is a major change because in the past the APH contract often had a lower price election than revenue insurance. As a result RMA's new Common Crop Insurance Policy (CCIP) will provide the same yield protection in all three contracts. The YP contract plus the harvest price and

¹Prepared by G. A. (Art) Barnaby, Jr., Professor, Department of Agricultural Economics, K-State Research and Extension, Kansas State University, Manhattan, KS 66506, January 7, 2011, Phone 785-532-1515, e-mail – barnaby@ksu.edu.

revenue endorsements is equal to the Revenue Protection (RP) contract. Farmers are allowed to delete the harvest price and create the Revenue Protection with the Harvest Price Exclusion (RP-HPE) contract that equals YP plus the revenue endorsement only. Notice farmers are not allowed to eliminate the revenue endorsement and retain the harvest price endorsement.

However, the revenue endorsement is a yield adjusted Asian “put” option and the Harvest Price endorsement is a yield adjusted Asian “call” option. Unlike Chicago CME options these options have the following limitations:

1. Farmers can always produce their way out of a price option loss in the Revenue Protection (RP) contract.
2. The RP options settle on a monthly average price not a spot market.
3. RP options have no time value that farmers can capture because one cannot exercise the option.
4. The RP “put” option can take on negative values unless the insured also purchases the harvest price endorsement (“call”) that will replace lost production at higher harvest prices and prevents the Asian yield adjusted “put” option from generating negative values.

However, the options in the new “COMBO” policy are very low cost compared to CME options. For example, at a Northern Corn Belt location the RP-HPE premium is less than the YP premium, meaning the government is paying farmers to take the revenue endorsement (Asian “put”). It is unusual for the YP premium to be less than the RP-HPE premium but “COMBO put” premiums below 3 cents on corn is not uncommon. For example a 750 Acre Iowa Corn farm with an 80% RP enterprise unit would pay less than 3 cents per bushel for the RP “put” (table 1).

The revenue endorsement (yield adjusted Asian put) will equal the CME put at the bushel trigger yield ($80\% \times 173 \text{ bu. APH} = 138 \text{ bushels}$). The Harvest Price (yield adjusted Asian call) will equal the Chicago CME call at zero yield at harvest. Because 138 bushels is more likely than zero is the reason I believe the revenue endorsement (yield adjusted Asian put) is a real cheap buy.

One alternative is to increase crop insurance coverage from 70% RP to 80% RP-HPE (without the SURE consideration maybe even 85%). Assuming the spring prices are “high” with large “volatility” this will increase the minimum revenue guarantee but limit the amount of premium increase by deleting the HPE. However, if prices were to increase the RP-HPE “put” would take on negative values and would pay a smaller indemnity payment than YP for any yield loss.

Likely a better alternative is to buy the 80% RP coverage and the RP “call” will increase the coverage if prices increase but it will also eliminate the negative values in the RP-HPE “put”. The harvest price endorsement at this location cost 5.3 cents at the 80% RP coverage level. Readers who don’t understand the

negative values on the revenue endorsement (yield adjusted Asian put) then may want to read the paper on our Website at:

http://www.agmanager.info/crops/insurance/risk_mgt/rm_pdf10/AB_2011_CropIns.pdf

If one wants to reduce their risk protection and resulting insurance costs, then sell calls (write covered calls) on the part of the guarantee that one does not expect to use. I assumed the corn grower would produce at least 69 bushels; that is half of the guarantee on an enterprise unit for this example farm. At the enterprise level it will require a zero yield for the Harvest Price (yield adjusted Asian call) to equal the Chicago CME call, so selling at the money calls on one fourth of the guarantee (34.6 bu.), currently at about 80 cents. One could reduce the risk of margin calls by selling the option out of the money. A call that is \$1.50 out of the money would sell for about 40 cents. One could “safely” increase the number of calls sold if selling out of the money.

The selling of the CME calls on one fourth of the guaranteed bushels will often pay most of the premium on the crop insurance contract. Selling an at the money call on one fourth of the guarantee would equal 173 bu. APH X 80% coverage X $\frac{1}{4}$ * 80 cents equals \$27.68 and would pay the full crop insurance premium of \$20.69 at this location. If prices fall this works out really great!

However, if prices increase (I assumed \$2), then it will cost this grower on 34.6 bushels a \$1.20 per bushel (sell the call for \$0.80 and buy it back for \$2 for a net cost of \$1.20 at harvest time when time value equals zero). On any production over 34.6 bushels one receives the full additional \$2 (\$2 above the Feb price). The grower would have margin calls if the price increases and one would also have commissions. It is less risky to sell the out of the money call but it would generate less premium dollars unless growers sell more options.

Writing covered calls and buying high levels of RP works better than just RP-HPE or YP if the spring price is high and the volatility is large. Selling covered calls \$1.50 out of the money and buying RP, will cut off the negative values in the RP-HPE “put”, will increase the SURE coverage if prices increase, and will provide harvest price payments that will be added to the “YP” payments on indemnity bushels, if price increases.

The safer alternative is sell out of the money puts rather than calls. Selling the call is unlimited liability and the RP contract has a liability limit that is 2 times the February average price. RP has no liability limit on the “put” other than zero. If one were to sell a \$4.40 CME put when the market is at \$5.50, then if prices reach \$4.40 it would trigger RP indemnity payments with an average yield (173 bushels and 80% coverage, in this case). Also with prices falling, it would likely trigger SURE and possibly ACRE payments too. Farmers selling CME puts on less than half of the guaranteed bushels would have no payment limit on the balance of the guaranteed bushels.

No farmer should even consider these alternatives if they have not lost money trading options. Also the SURE payment works well if this is only corn-soybeans, but if there are additional crops then the SURE is less of a consideration. Also if the SURE APH is higher than the crop insurance APH then the SURE consideration will be more important. However, SURE does require a 10% yield loss on one significant crop to trigger payments, so prices could fall and still not trigger SURE payments on a farm that has no yield loss. SURE also requires a “disaster” at the county level, but this requirement has not prevented many payments for farmers who meet the farm level loss trigger.

Bottom line, the government is almost giving away “put” options in Revenue Protection (in some locations they are paying farmers to take the “put” options), therefore, it is unlikely that YP will be the preferred contract. If farmers don’t want the yield adjusted Asian options, just sell them back to the market.

Summary. Buying YP rather than RP to reduce premium cost is likely not the best alternative because the price protection built into RP often cost less than 10% of a CME option. Farmers would likely be better off to buy the full RP coverage and then sell off part of the RP coverage rather than purchase the lower cost YP. Farmers could buy RP and then sell put options on $\frac{1}{4}$ of the guaranteed bushels. For example, a farmer with a 100,000 bushel APH purchases 80% RP, and would have an 80,000 bushel guarantee. The grower then sells out of the money puts on $\frac{1}{4}$ of the guaranteed bushels, or 4 CME puts on 20,000 bushels. The grower then has the following changes in coverage:

1. Growers have revenue protecting on $\frac{3}{4}$ of their guaranteed bushels and replacement coverage on 100% of the guaranteed bushels vs. no price protection in YP. Growers retain the revenue protection on the remaining $\frac{1}{4}$ of the guaranteed bushels down to the strike price in CME put sold.
2. Selling out of the money put options will require the market to fall below the strike price plus put premium before the grower will have a net margin loss at harvest. It will likely require some margin calls before harvest and that does require cash flow.
3. A 20% price decline will trigger RP indemnity payments with an average yield on 100% percent of the guaranteed bushels. However the grower will have net margin losses on 25% of the guaranteed bushels.
4. A “severe” price loss, likely will trigger ACRE payments too that only requires a county revenue loss and a farm level revenue loss to collect the payment.
5. A “severe” price loss will likely trigger SURE payments but farmers must have a 10% yield loss on one significant crop to collect. ACRE and RP do not require a yield loss to collect, only a revenue loss.
6. Selling out of the money puts would not limit any forward contract sales (futures, HTA, etc.), because if a farmer is receiving margin calls on the sold CME puts then any forward contract sales were at a higher price than current market.

- Farmers who sell out of the money puts are simply selling off part of their RP guarantee but the remaining guarantee is still greater than the YP guarantee.

Selling out of the money CME calls will generate more net dollars but it also increases the risk. If one has any forward contracted sales, then those bushels are priced at a lower price than current market. Also it is extremely unlikely that ACRE will trigger payments with higher prices. SURE may trigger because the RP will increase the SURE coverage but it does require a 10% yield loss on one significant crop. Selling CME calls has no liability limit but RP has a limit equal to 2 times the price election. For example if the corn price election is \$5.50 then RP is limited at \$11. If growers have a yield loss and the market exceeds \$11 then farmers will have net margin losses that are not covered by RP.

The combination of options, the new COMBO crop insurance coverage, SURE and ACRE are built in to the new case farm for RAMII workshops. To gain a better understanding of how one could sell a few options to lower ones risk protection costs will be a major part of the presentation. One must first understand the options in COMBO before they start to sell any of those options.

There are RAMII workshops scheduled for Kansas, Texas, Pennsylvania, and Wyoming. In addition I have hour presentations in several states. In some cases those seminars are by invitation only by the sponsoring group. The public seminars are posted on AgManager.info, or call Mary at 785.532.1506.

Art

Table 1. Calculated Premium for an Iowa Corn Farm with 750 Acres and Enterprise Unit.

Non-Irrigated Corn								
Acres	750							
APH	173							
Price Elec	\$5.50							
Volatility	0.40							
Coverage	85%	80%	75%	70%	65%	60%	55%	50%
\$ Coverage	\$809.05	\$761.20	\$713.90	\$666.05	\$618.75	\$570.90	\$523.60	\$475.75
YP Enterp	\$17.39	\$9.43	\$5.28	\$3.50	\$2.59	\$1.92	\$1.36	\$0.91
RP Enterp	\$38.99	\$20.69	\$11.64	\$8.19	\$6.35	\$4.56	\$3.12	\$1.99
RP-HPE Enterp	\$25.47	\$13.36	\$7.42	\$5.18	\$4.00	\$3.15	\$2.13	\$1.32
Cost Per Bu.								
Put Cost	\$0.0549	\$0.0284	\$0.0165	\$0.0139	\$0.0125	\$0.0118	\$0.0081	\$0.0047
Call Cost	\$0.0919	\$0.0530	\$0.0325	\$0.0248	\$0.0208	\$0.0136	\$0.0104	\$0.0077