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Don't get Caught with Your Marketing and Crop Insurance on the Wrong Side of the Basis When it Narrows[1]

Dear Dan and Art,

Did you see the attached article from a national farm management consulting firm? This provided you some very nice exposure.

Corn Belt Ag Economist

Dear Ag Economist,

Thank you for your kind note and the link to the article. One never knows where one of our *AgManager*'s postings will be cited.

We have not been nearly as critical of the Kansas City Board of Trade (KCBT) as has been the case for many of the emails we have received or in many of the newspaper reports. Therefore, those who have read those same articles will likely be disappointed when they read our paper and think we are too "soft". Under the current rules, the data suggests to us futures position holders are following their individual economic interest. However, farmers cannot obtain warehouse receipts that meet futures contract's

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specifications; therefore farmers are unable to capture the basis. If delivery were completely open, then there would be futures and cash price convergence at the delivery points because wheat farmers would then be able to profitably follow through on their economic incentive to deliver on the KCBT wheat futures contract. We believe the KCBT has an economic incentive to fix the lack of convergence that is occurring with their contract because KCBT needs to retain both the natural shorts and natural longs in order to maintain adequate liquidity. If the poor performance of the short hedge position continues, then the short hedgers might eventually lose confidence and leave the KCBT market. In the last 2-3 years there have been a number of changes made to the Chicago wheat futures contract to help bring about cash-futures convergence, and it could be a potential substitute for the natural short wheat hedgers. This would create some cross hedging issues for Kansas HRW wheat producers and/or country elevators, but those challenges may be worth the trouble if the resulting local cash basis were more predictable.

The Minneapolis Grain Exchange (MGEX) also offers a cash-settled HRW wheat futures index contract, but it has very little open interest or participation in it at this time. That may not be a problem for a small hedger holding their contract until harvest, but it is likely in some situations that one would be unable to exit their futures position as quickly as one desired because of a lack of market liquidity. However it is possible that a few traders may be available to take the opposite futures position to allow one to exit the market. Based on this lack of liquidity, anyone who enters into an MGEX index contract should do so with the assumption that one will hold the contract until its termination date and is cash settled. As a substitute for liquidity, one might take an offsetting position in the KCBT contract. For example if one were holding a short position in the MGEX index and wheat prices start to increase, then one could take an offsetting long position in Kansas City but this would not provide a complete offset if the basis narrows.

While we appreciate the highlighting of our work in a prestigious national publication, we think this national newsletter missed the most important point to farmers; **"Don't get caught on the wrong side of the basis when it narrows".** The one thing that will quickly cause a strong basis is a Kansas wheat crop failure. Contracted farmers with a crop failure will be forced to buy wheat at a higher futures price with a strong basis to deliver on forward contract with a lower futures price and a weak basis. Contracted farmers could lose up to a $1 per contracted bushel on just the basis plus the loss on the higher futures prices under a short crop scenario. Short story, under current conditions, we would suggest that farmers go ahead and forward price wheat, but that they do not lock in basis. Farmers with on-farm storage might want to consider a storage hedge to take advantage of the carry in the market, and may also gain from an improved basis in the future. Capturing an improved basis requires one to hold or keep ownership of the physical grain. In theory, one might be able to use the MGEX wheat index contract to capture an improved basis, but liquidity could be an issue.

Farmers may have to buy puts or sell the Board if they wish to forward price next year's crop, because of the lack of convergence is causing lenders to reduce their credit lines to elevators. A reduction in credit line limits elevators' ability to meet margin calls. It is

also likely to cause elevators to widen the basis on their cash prices for immediate delivery. Basis was about dollar under at Wichita where it normally has been about 25-50 cents under or even stronger.

Crop Insurance. A "minor" side issue was the crop insurance contract and the impact of the "higher" harvest price. The dollars to count against the revenue guarantee were larger because of the weak basis, assuming the cash market is the real market. If there had been large deliveries, then futures would likely have fallen to meet cash. A lower futures price would have lowered the dollars to count against the revenue guarantee an increased the indemnity payment. However, even if futures prices had been 50 cents lower, most farmers in Kansas would not have had a claim because their yields were high enough to offset the price decline. Under crop insurance, farmers can always produce their way out of a loss. Farmers do benefit from an above-average yield because it gives them more bushels to sell, it lowers their per bushel production cost (spreading fixed cost over more units), increases their next year's aph and reduces the crop insurance premium rate for the individual farm next year (premium rate is not the same a premium per acre).

Using cash prices rather than futures prices for price discovery in the revenue insurance contract would not have the impact assumed by many farmers and policy makers. The price used to set the revenue guarantee is the average KCBT futures price from August 15 to September 14. If RMA were to change from futures to cash prices for revenue insurance, then RMA would have taken the new crop futures price and added the expected basis. In the fall of the 2009 the expected basis was about 90 cents under, so it would have lowered the $5.42 Crop Revenue/Revenue Assurance (CRC/RA) base price to about $4.50-$4.55. Using the lower cash price would have lowered the revenue guarantee.

This year the CRC harvest price was $ 4.79 and that was lower than the RA harvest price of $ 5.37. The national average cash price was about $3.62 for Hard Red Winter (HRW) wheat used to settle the MGEX HRW wheat Index contract. There are many different cash prices that could be used besides the cash prices reported by DTN. So one of the issues would be selecting and defining the cash price.

Let's assume a farmer with a 42.9 bushel aph who purchased 70% CRC coverage, generating an insurable yield of 30 bushels. Her CRC guarantee would be 42.9 bu. aph X 70% X $5.42 = $162.60. Let's assume she produced 15 bushels and the CRC harvest price was $4.79, then the revenue to count is $71.85. The indemnity payment was the difference; $162.60 - $71.85 = $90.75. The $90.75 indemnity payment was a combined $81.30 yield loss and $9.45 revenue loss. This will be easier to see under the Common Crop Insurance Policy (CCIP) because the equivalent of the APH (a.k.a., MPCI) contract will have the same base price ($5.42) as the revenue coverage so the "APH" payment would have been $81.30 under CCIP.

If cash prices had been used, then a "cash" CRC guarantee would be 42.9 bu. aph X 70% X $4.50 = $135. Let's assume she produced 15 bushels and the CRC harvest "cash" price was $3.62, then the revenue to count is $54.30. The indemnity payment was the

difference; $135 - $54.30 = $80.70. There was $67.50 from yield loss and $13.20 was from revenue loss for a total of $80.70. The larger CRC payment was caused by 15 bushels lost below the yield payment trigger of 30 bushels that were paid at the higher futures price of $5.42, while a "cash" CRC policy would have paid those indemnity bushels at a lower price of $3.62. CRC would have paid $90.75 to this example farm versus $80.70 if indemnity payments were calculated using cash prices. Farmers with larger yield losses will clearly prefer the current payment method rather than one based on cash prices.

Let's assume a 30 bushel yield, i.e. no insurable yield loss. The CRC revenue to count would be 30 bu. X $4.79 = $143.70. The indemnity payment would be $162.60 - $143.70 = $18.90. A "cash" CRC revenue to count would be 30 bu. X $3.62 = $108.60. The indemnity payment would be $135 - $108.60 = $26.40. Therefore if there were no insurable yield loss then, a "cash" CRC contract would have paid more than CRC, $26.40 versus $18.90 as a revenue payment only. An APH contract that covers only yield risk would have made no indemnity payment under this scenario.

However, most Kansas wheat farmers would not have a claim under either futures or cash discovered prices because of yield. Let's assume this same farmer produced her aph yield of 42.9 bushels. A "cash" CRC revenue to count would be 42.9 bu. X $3.62 = $155.30. The revenue to count would have exceeded a "cash" CRC guarantee of $135, therefore no indemnity payment. The CRC revenue to count would be 42.9 bu. X $4.67 = $205.49. The revenue to count would have exceeded the CRC guarantee of $162.60, therefore no indemnity payment either with futures prices. Because most Kansas wheat farmers had yields greater than their aph, they would not have had an insurance claim with either a "cash" CRC or the current CRC based on futures prices.

Don't forget that prices can increase, especially with a crop failure. Under the scenario of higher prices combined with a crop failure, a futures-based CRC contract will always pay more than a "cash"-based CRC. For this condition not to hold, the national average cash price would need to exceed futures. In local markets, it is possible for cash to exceed futures but not on a national average, or least it would take a new set of conditions that have never been observed. In a future short crop year, farmers will need those higher futures prices to determine indemnity payments, because they will be short of cash, especially if the basis narrows and they have nothing to sell.

Would a strong basis have increased CRC payments? Don't forget that increasing cash prices can also cause future and cash prices to converge. However, if futures had fallen and forced convergence between cash and futures, then CRC indemnities would have been larger. In addition, most farmers would need to produce a yield below their aph in order to collect from CRC, even if futures prices were to fall by a dollar.

For example if one assumes the futures price falls by a dollar from $4.79 to $3.79, then with a yield equal to the aph of 42.9 bushels, the CRC revenue to count would be 42.9 bu. X $3.67 = $162.60. The revenue to count would have equaled the CRC guarantee of $162.60, therefore no indemnity payment. It is unlikely that with a normal basis, the

futures would have fallen more than 50 cents, not the dollar used in the calculation, meaning that yields would need to be below farmers' aph to trigger payments. That would even be true for farmers who purchased coverage greater than 70 percent. Therefore, a declining futures price to meet cash (narrowing basis) would only make difference on crop insurance for those farmers with yields below their aph yield. The wide basis impact is much greater on the marketing system and cash prices for wheat than it is on the insurance contract.

Be careful what you ask for. Farmers who are suggesting that CRC should be based on cash rather than futures should be careful about what they ask for because they may not like the result. A CRC contract based on cash prices will always generate a smaller payment with a crop failure and higher prices than the current contract. A situation with no yield is when farmers really need the bigger indemnity payment; remember there is a 25-30% deductible already built in to the contracts that most farmers buy. The only time that a CRC contract would generate a larger payment based on cash, is if the basis widens during the time period from planting to harvest, requiring market prices to decline below the base price, and then it requires yields to be near the aph. If all of these conditions are not met, then the current CRC contract will pay higher indemnity than would be the case if cash prices were used.

How is the harvest price set for crop insurance? The CRC harvest price is based on the June average closing prices of the July KCBT wheat contract. RA harvest price is based on the closing prices for July 1 to July 14 closing prices of the July KCBT wheat contract. CRC would have generated fewer dollars to count because of the lower price ($4.79) causing the CRC to trigger indemnity payments quicker and any indemnity payment would have been larger than the equivalent from RA based on the higher harvest price ($5.38). However, CRC, APH, RA, and Income Protection (IP) are being combined in to the new Common Crop Insurance Policy (CCIP) starting this fall with winter wheat, so this price difference will not happen in the future.

Summary. CRC was designed as a complement, not as a replacement for the KCBT and marketing. Because margin calls and/or forward contract cancellation penalties are tied to futures prices, this is the reason futures prices were selected for price discovery in CRC. The worst outcome is to be forward-priced, with market prices increasing, and suffer a crop failure. If futures markets increase then the price used to replace insured farmers' lost production is the futures price that is necessary for farmers to maintain their hedge. A crop insurance payment at the lower cash price would not fully maintain the hedge. Farmers who sell their crop on the Board and futures prices increase a dollar (farmers would receive margin calls) would also want their crop insurance to increase a dollar and it will as long as revenue insurance uses futures for price discovery.

Under the current crop year, most farmers in Kansas would not have a CRC/RA claim because their yields were equal to or greater than their aph yield. This would also be true if revenue insurance were to use cash prices rather than futures prices for price discovery. Under the current crop year, farmers with yield losses below their insurable yield (i.e. farmer selected percent coverage level times their aph), a cash price would have paid less

than the CRC futures price of $5.42 per indemnity bushel. Therefore, the only insured farmers who would have triggered larger indemnity payments under a cash price are those with a yield below their aph but greater than a “small” insurable yield loss. In order for CRC to pay more using cash prices rather than futures prices, the following conditions must be met: 1. the basis must widen within the crop growing year; 2. requires market prices to decline below the base price; and 3. requires yields to be near their aph. If all of these conditions are not met, then the current CRC contract will pay higher indemnity payments than would be the case if cash prices were used. Most reasonable people would conclude using futures prices for CRC price discovery is preferred because in nearly all years there would be no scenario that would generate larger indemnity payments using cash prices.