August 2019

Corn Crop Uncertainty Raises Volatility for Grain Elevators

By Tanner Ehmke
Manager

Inside…

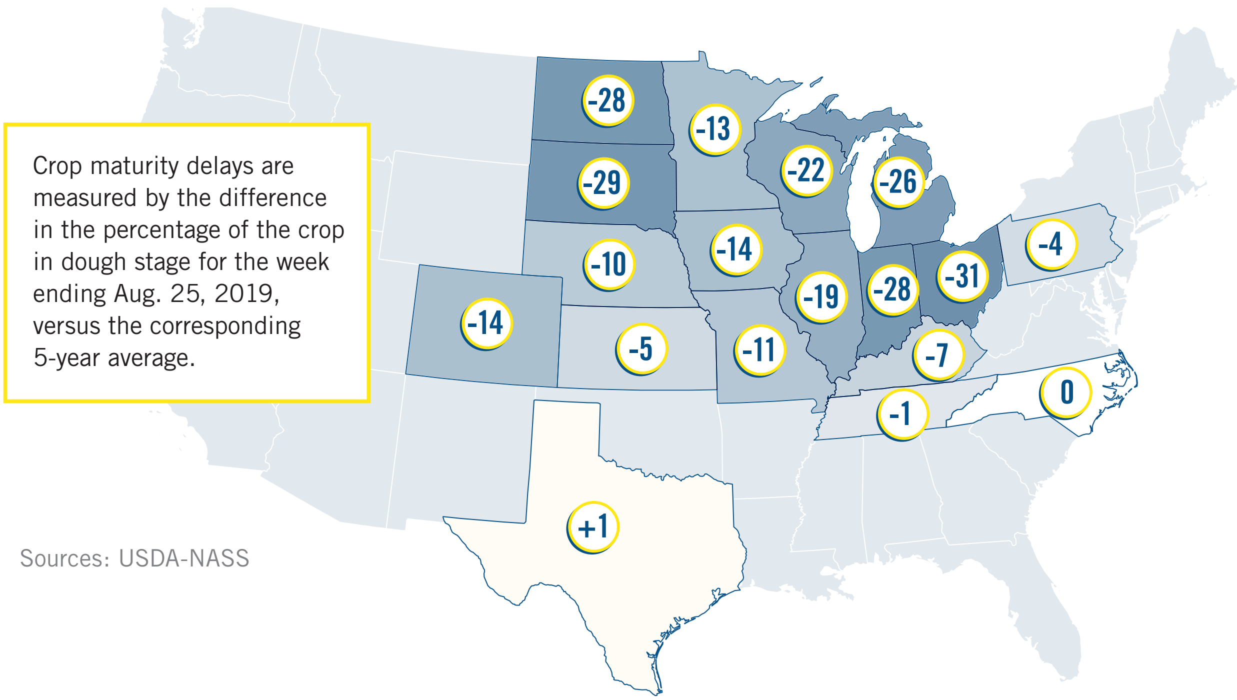
Key Points:

- Planting delays throughout the U.S. Corn Belt this spring threaten corn availability for the 2019-20 marketing year, particularly in the eastern Corn Belt states of Illinois, Indiana, Michigan, Ohio, and Wisconsin.
- Grain merchandisers and end users in the eastern Corn Belt have bid cash corn up to levels rarely seen in an effort to stockpile old-crop corn ahead of an uncertain fall harvest.
- USDA-NASS surprised the market with a much higher than expected 2019 corn crop forecast despite widespread market uncertainty on yield potential and harvested acreage this fall.
- With conflicting estimates of potential corn availability this fall, elevators are navigating extreme volatility in basis and carry.
- Grain elevators can score big wins – or losses – amid the heightened volatility. However, elevators in corn-deficit regions will have to compete for scarce bushels to maintain grain-handling operations, or brace for hard times ahead if they don't.

Introduction

Grain elevators and end users are navigating heightened market volatility as the size of this fall's corn harvest remains uncertain. After historic planting delays from nonstop rains this spring, the crop is late in maturing, especially in the eastern Corn Belt (ECB) states of Illinois, Indiana, Michigan, Ohio, and Wisconsin as well as North Dakota and South Dakota in the western Corn Belt (WCB). The delays could signal major losses in crop production this fall, raising the stakes for grain merchandisers and end users like ethanol producers and livestock and poultry feeders. The historic lateness of this year's crop means that a normal or early frost in October could severely crimp farmers' yields and reduce harvested acreage. Volatility has plagued corn basis and carry in the futures market since spring, jeopardizing grain elevators' ability to acquire bushels and profit on this fall's corn harvest.

EXHIBIT 1: Corn Crop Maturity Progress vs 5-year Average (%)



Sources: USDA-NASS

What are Basis and Carry?

Grain handlers make most of their profits from basis and carry. Basis is the difference between local cash prices of grain and the futures price at the CME Group in Chicago. Grain elevators typically make a profit on appreciation by buying basis at harvest (buying cash grain from the farmer at harvest while off-setting the risk by selling the like amount in the futures market), and selling basis at a later date (selling grain to an end user and buying back the futures contract). Carry is what the futures market pays per month for storage. The typical cost for an elevator to store corn is 3 cents per bushel per month.

Crop Uncertainty

Record rainfall plagued the U.S. Corn Belt throughout the spring planting season. U.S. corn producers typically finish planting by the first week of June; this year, USDA-NASS (National Agricultural Statistics Service) reported the slowest pace on record with only 67% of the crop planted by June 3. The biggest delays were – and continue to be – in the ECB states of Illinois, Indiana, Michigan, Ohio, and Wisconsin, and North Dakota and South Dakota in the WCB.

Late development raises the possibility that freezing temperatures could kill crops. For much of the crop to reach maturity, it needs warmer-than-normal temperatures in the remaining weeks of summer and into fall. The average date of the first fall frost of 32 degrees F ranges from early to mid-October for Ohio, Indiana, Michigan, and southern Wisconsin, according to the Midwestern Regional Climate Center. Based on USDA-NASS's latest Crop Progress data, the crop in the ECB and the Dakotas remains well behind average development *(Exhibit 1)*. Given the historic lateness in crop maturity, production is widely expected to fall far short of average in affected regions.

However, in its crop production report released Aug. 12, USDA-NASS surprised farmers, end users, merchandisers, and speculators with a much larger than expected crop forecast. While USDA-NASS's forecast of 13.9 billion bushels of total corn production on an

average national yield of 169.5 bushels per acre was down significantly from last year's harvest of 14.4 billion bushels on a 176.4 bushels per acre yield, the prediction was well above industry experts' expectations. USDA-NASS relied on farmer mailbox surveys and satellite imagery for its acreage and yield estimates in the August report this year, forgoing field surveys due to the late maturity of the crop. USDA-NASS will follow with a field survey-based yield estimate in its September crop production report.

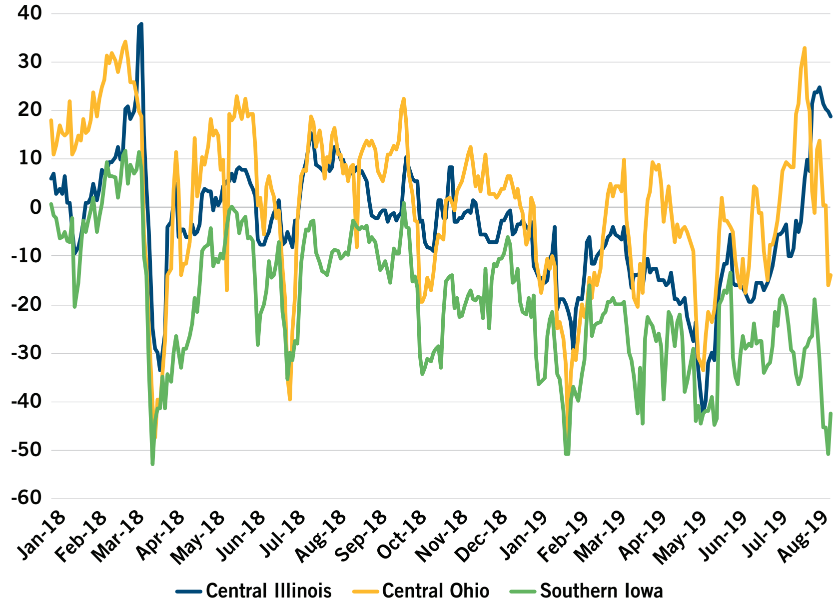
On Aug. 23, the Pro Farmer Midwest Crop Tour followed with a much lower estimate of 13.4 billion bushels with an average yield of 163.3 bushels per acre after sampling corn and soybean fields across the Corn Belt. While the total crop production estimates differ significantly, USDA-NASS and Pro Farmer expect a similar drop in ECB corn yield compared to last year.

Market Volatility

Great uncertainty over corn availability this fall has injected fear and volatility into the market, complicating forecasts on profitability for grain elevators. Through May and June, basis in central Ohio rallied 25 cents to the highest level in five years before plunging nearly 50 cents by mid-August *(Exhibit 2)*.

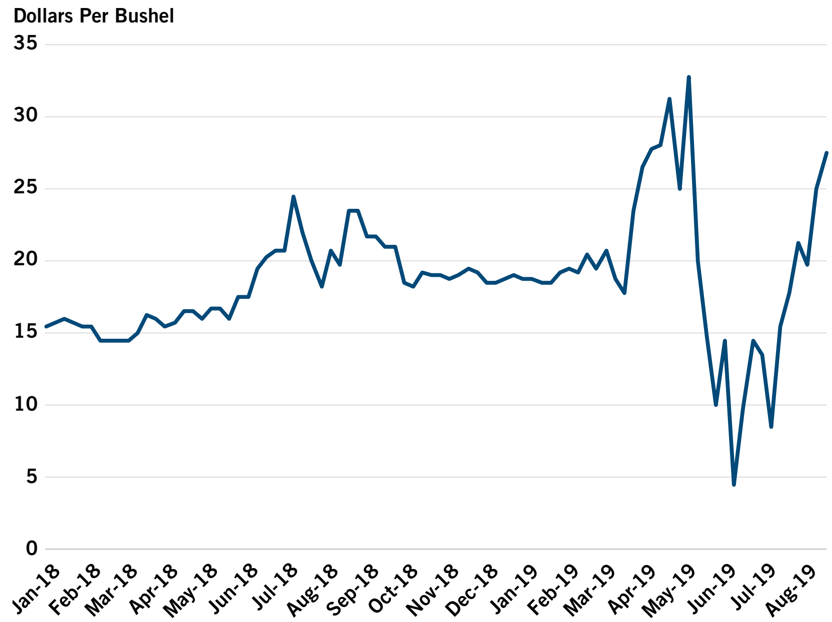
In the futures market, the December-July carry for corn fell from its peak of 32.75 cents per bushel in May to 4.5 cents per bushel in June, then rallied back to 27.5 cents per bushel in August *(Exhibit 3)*. At an estimated cost of 3 cents per bushel per month for elevators to store corn, the seven-month December-July carry needs to be at least 21 cents per bushel per month for the elevator to break even. With the high level of market volatility, elevators could experience either extreme profits or losses for new-crop corn.

EXHIBIT 2: Corn Basis



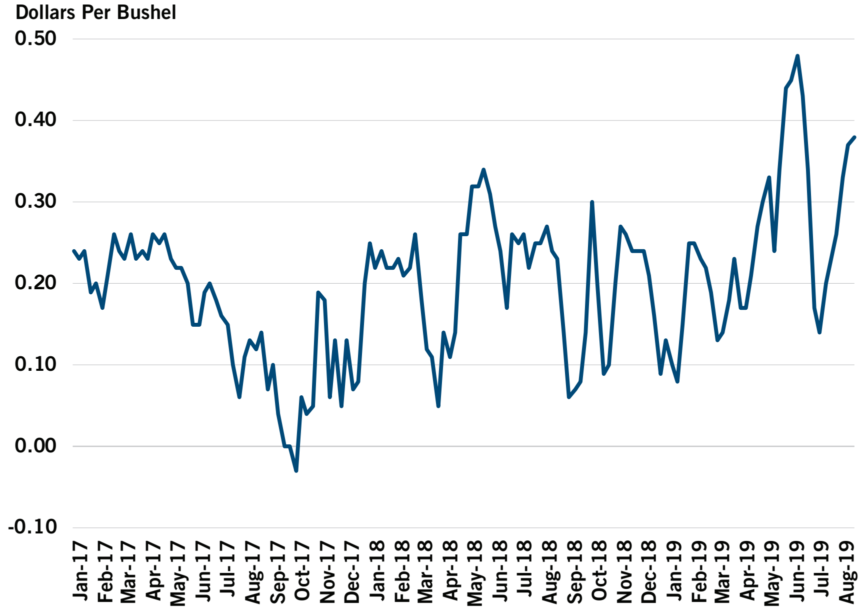
Sources: USDA-AMS

EXHIBIT 3: December 2019 - July 2020 Corn Futures Carry



Sources: USDA-AMS

EXHIBIT 4: Ohio-Illinois Cash Corn Spread



Sources: USDA-AMS

Some elevators could potentially face an even more difficult issue: Lack of access to corn. In corn-deficit areas, elevators will be forced to compete for local bushels or look for corn outside of their region. Cash bids for old-crop corn in central Ohio surged past cash bids posted in central Illinois after June 1, indicating greater concern over harvest losses in Ohio where planting delays are more acute compared to Illinois *(Exhibit 4)*.

The widening spread between Ohio and Illinois, however, creates a potential opportunity for grain handlers looking to profit from arbitrage. By moving corn from lower-priced regions like Illinois where inventories of old-crop corn are more abundant and new-crop yield potential is less concerning, elevators could profit, depending on the cost of rail transportation.

If the cost of transportation prohibits movement of corn from outside the region or if farmers are reluctant sellers, elevators may offer delayed pricing (DP) to farmers on new-crop corn. This allows farmers to store their grain at the elevator and market the grain at a later date. However, DP typically is less profitable for elevators with the farmer paying a substantially lower storage fee. With cheap storage, farmers also have less incentive to sell the grain, thereby occupying elevator space for longer periods.

Elevators have another way to pry corn from farmers' hands: Bidding cash corn up and buying higher basis. Elevators that buy high basis, though, face greater risk of basis weakening and selling at a loss. In that scenario, elevators that buy high corn basis will be motivated to quickly sell to limit their risk amid the volatility. Basis volatility may also offer elevators the opportunity to buy basis very cheaply and mark big profits on steep appreciation over time. Such opportunities, though, will likely be a matter of luck in timing.

A much bigger-than-expected corn crop and/or a drop in local demand pose a risk to elevators' strategies of bringing corn in from outside the region or enticing farmers with higher cash bids or DP plans. Ethanol producers are already curtailing production after years of low to negative margins. The outlook for ethanol demand dimmed further on Aug. 9 when the EPA approved 31 requests for small refinery exemptions from the 2018 renewable fuel standard. Major ethanol producers like POET Biofuels subsequently announced significant cut backs in production with POET saying it will indefinitely idle its plant in Cloverdale, Indiana. Other ethanol producers have also announced they will slow production, with impacts expected on local corn demand and basis.

While the uncertainty of corn availability is high in some regions, elevators may have the opportunity to profit on soybean basis. U.S. soybean inventories remain at record highs and the futures market is offering a strong carry. Elevators that can buy cheap soybean basis and profit from storing soybeans will be on stronger footing to handle volatility in corn basis.

Conclusion

The potential scarcity of bushels this fall is causing volatility in basis and carry, threatening elevators' profit potential in the 2019-20 marketing year. Elevators that buy cheap basis stand to profit from the volatility while elevators that buy high basis face steep downside risk. Weakness in basis could result if bushels are brought into a corn-deficient region and demand erodes as end users try to stem their financial losses.

Elevators in the ECB have a much slimmer chance of buying cheap basis this fall at harvest. Grain handlers will most likely need to compete for bushels in regions that are corn-deficit. This can be done by enticing farmers with higher cash bids (and higher basis), or by offering DP. If old-crop bushels cannot be acquired ahead of harvest and if new-crop bushels are not secured at harvest, elevators stand to face a tough marketing year ahead with mergers and acquisitions increasingly likely.

CoBank's Knowledge Exchange Division welcomes readers' comments and suggestions.
Please send them to KEDRESEARCH@cobank.com.