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Shifting corn basis patterns*

by Chad E. Hart, scientist, Center for Agricultural and Rural Development, chart@iastate.edu, 515-294-9911 *Reprinted with permission from the Summer 2007, Vol. 13 No. 3 issue of the Iowa Ag Review, Center for Agricultural and Rural Development.

The ethanol industry continues to reshape Iowa's agricultural economy. By the end of this summer, 28 ethanol plants will have spread across the state, capable of producing over 1.9 billion gallons of ethanol per year. Twenty more plants are being constructed in Iowa, with plans for even more. The tremendous growth of the ethanol industry has put pressure on Iowa corn producers to keep up with this growing demand for corn. Producers have responded by planting 14.3 million acres of corn, the second-largest corn area in Iowa on record. (In 1981, Iowa had 14.4 million acres of corn.) The pull on corn from the ethanol industry, combined with the push from Iowa and U.S. corn producers, has resulted in some dramatic price movements for corn over the past year. As Figure 1 shows, since September of last year, the corn market has experienced a strong run-up in prices and an increase in price variability. The growth in ethanol's demand for corn drove prices up through the harvest period last year and maintained corn prices at around \$4 per bushel over the winter. The acreage response hit the market in two waves, around the USDA acreage reports released in March and June of this year. The prospects for increased corn production have reduced corn futures prices to below \$3.30 per bushel.

For Iowa, the supply, demand, and price shifts have also affected the pattern of corn prices across the state. One way to view these impacts is to examine the basis patterns across Iowa. Basis is the difference between the prices listed on the Chicago Board of Trade (CBOT) futures for corn and the prices being paid in Iowa for corn. Since February 2005, CARD has tracked basis levels across Iowa for corn and soybeans (visit our Web site, http://www.card.iastate.edu/ag_risk_tools/basis_maps/, for the latest information). Figures 2 through 5 show historical basis patterns, based on price data from 1998 to 2005, and the basis patterns over the last year and a half. Figure 2 shows the basis patterns for Webster County, Iowa. Webster County has seen a sizable surge in ethanol production in the county with the opening of new ethanol plants in Fort Dodge and Gowrie. And since January 2006, the basis for Webster County has been above historical levels—sometimes well above. Late last year, Webster County's basis ran 20 cents per bushel above historical levels, and it is currently doing so. The ethanol demand for corn in the county has strengthened the basis situation in the county. Historically, corn prices in Webster County run from 28 to 43 cents per bushel below the CBOT prices. Currently, they are 16 cents below.

This pattern is not specific to Webster County. For many counties, especially those in north central and northwest Iowa, recent basis patterns have been stronger than the

historical averages. Figure 3 shows the basis patterns for Plymouth County in northwest Iowa. Here, local prices for corn have been within 5 cents of the CBOT prices for the last couple of months. Normally, corn prices are 30 to 40 cents per bushel below the CBOT prices.

In Kossuth County, recent basis patterns are 10 to 25 cents above historical averages, as shown in Figure 4. A tighter stock situation for corn and the ethanol boom have strengthened corn prices across a wide swath in Iowa. However, not all Iowa counties have experienced a stronger corn basis. As Figure 5 shows, Clayton County in northeast Iowa has actually had a weaker basis pattern over the last year and a half. Whereas local corn prices are typically 15 to 30 cents per bushel below the CBOT prices, since January 2006, the corn prices have been 30 to 50 cents below CBOT in Clayton County.

Figure 6 displays the typical basis pattern for Iowa corn in July, based on prices from 1998 to 2005. Eastern Iowa tends to have the strongest basis, between 0 and 15 cents below CBOT. North central and western Iowa tend to have the weakest basis, between 35 and 50 cents below CBOT. The current basis pattern is almost the inverse of the historical

Figure 1. Chicago Board of Trade nearby corn futures prices

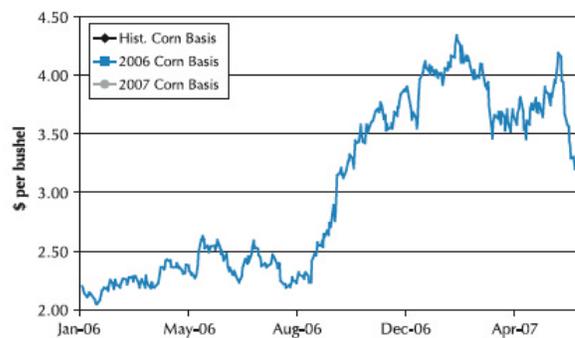
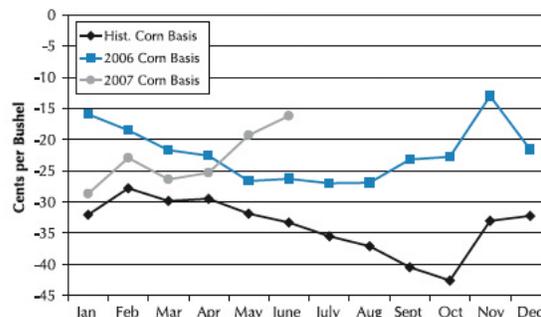


Figure 2. Basis levels for Webster County, Iowa



Shifting corn basis patterns, continued from page 4

pattern. Northwest Iowa has a very strong basis currently, while northeast Iowa's basis is weak, as illustrated in Figure 7. Arguably, the growth of the ethanol industry in Iowa has served to flatten the basis across Iowa, with many of the major corn-producing counties in Iowa seeing an improved basis.

However, the strength in the basis across Iowa is likely to be short lived. With the dramatic shift of acreage to corn, both in Iowa and nationwide, and the relatively good condition of the corn crop (63 percent in good to excellent condition for both Iowa and the United States), possible record corn production will likely soften the basis patterns across Iowa. Iowa would produce a record corn crop if yield is 161 bushels per acre or higher, surpassing the 2004 corn crop when the state average yield was 181 bushels per acre. Above-average yields would lead to record production and would put a strain on corn handling and marketing systems. This sets

up a scenario for weaker basis patterns across Iowa. Figure 8 shows there is already weakness building into basis patterns across Iowa as we look at forward contracting new-crop corn. Where the current basis shows most of the state having corn prices within 35 cents per bushel of the CBOT price, the new-crop basis across Iowa is below 35 cents for almost all of Iowa. Roughly half of the state has a current new-crop basis below 45 cents per bushel.

As the ethanol industry continues to grow and evolve, the corn market will continue to adjust. This is translating into more variable price and basis patterns for Iowa corn producers. We will likely see additional swings in Iowa's basis patterns as more Iowa ethanol plants come online and as Iowa farmers shift acreage to meet various crop demands. Increased volatility looks to be the wave of the future both locally and on the CBOT.

Figure 3. Basis levels for Plymouth County, Iowa

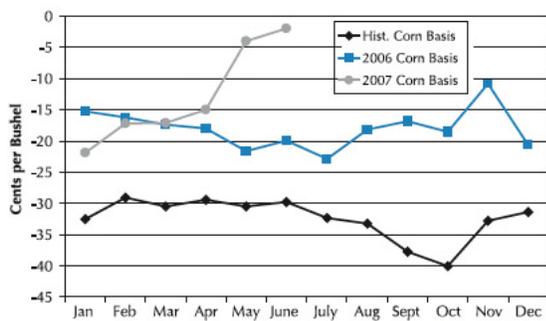


Figure 3. Basis levels for Plymouth County, Iowa

Figure 4. Basis levels for Kossuth County, Iowa

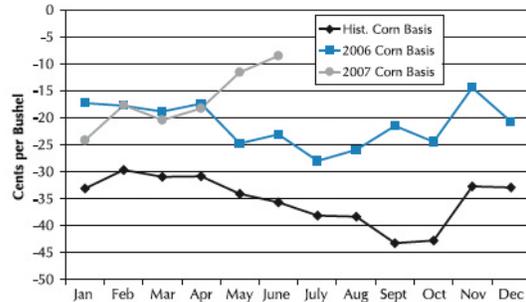


Figure 4. Basis Levels for Kossuth County, Iowa

Figure 5. Basis levels for Clayton County, Iowa

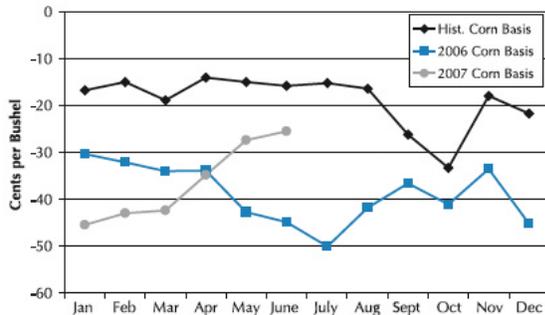


Figure 5. Basis levels for Clayton County, Iowa

Figure 6. Historical basis, average 1998-2003

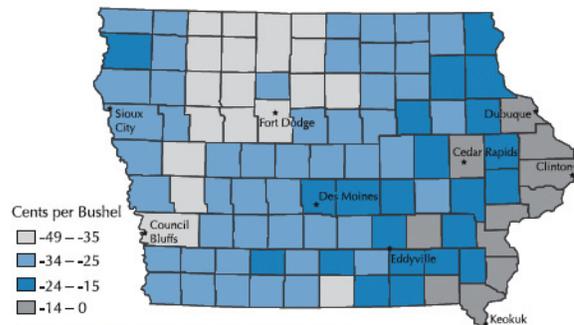


Figure 6. Historical basis, average 1998-2005

Figure 7. Basis for old-crop corn, July 2, 2007

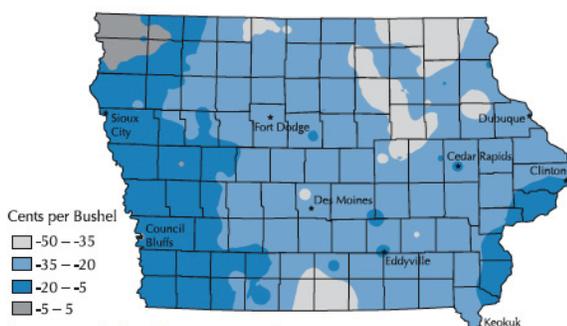


Figure 7. Basis for old-crop corn, July 2, 2007

Figure 8. Basis for new-crop corn, July 2, 2007

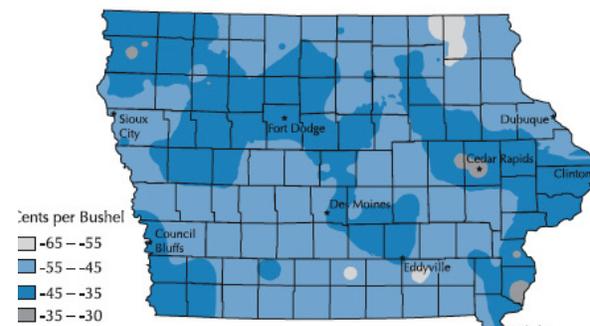


Figure 8. Basis for new-crop corn, July 2, 2007