



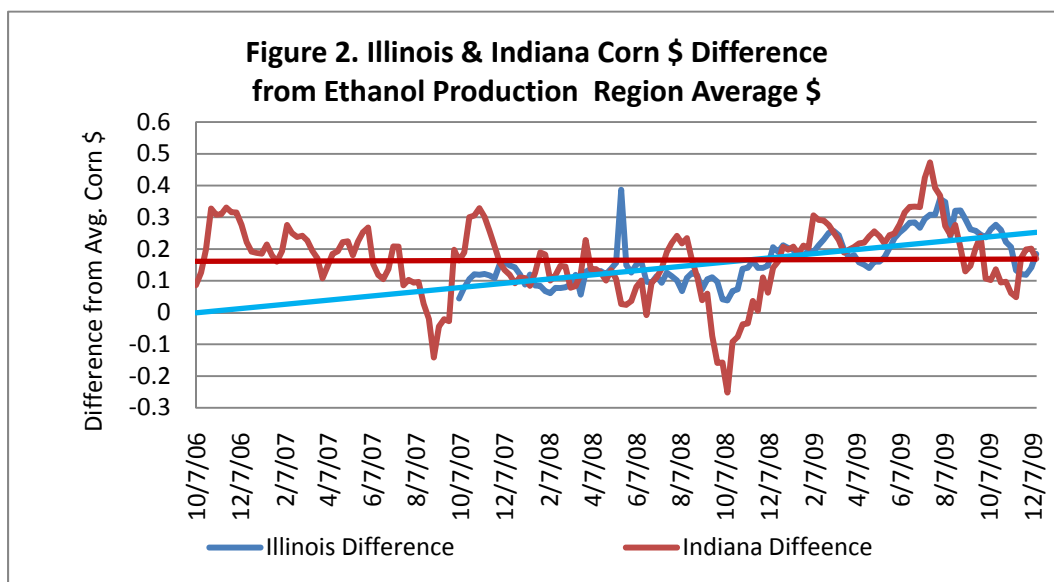
From July through early December 2008, U.S. cash corn prices as a group then declined about \$4.00, down to around \$3.00 per bushel by early December 2008. Since then corn prices have generally traded in the range of from just under \$3.00 to just over \$4.00 per bushel, similar to the price range they traded in prior to the Fall 2007 through Fall 2008 price rally and subsequent decline as described above.

During the October 7, 2006 through December 12, 2009 period, the representative corn prices in this ethanol production region averaged \$3.96 per bushel, with a median (i.e., 50% or middle) price of \$3.65 per bushel. The high-low range of the average ethanol-region cash price for this period was from \$6.93 to \$2.40 per bushel for a total of 167 weekly cash prices recorded. This difference between the average and the median cash corn price indicates some upward “skewness” of average cash corn prices during this period, which was born out in positive skewness statistical measures.

An average cash corn price for the ethanol producing states included in this analysis was calculated. This multi-region average corn price will be compared to state-level cash corn prices in order to determine whether any changes have occurred in the relative level of corn prices by region since fall, 2006.

### Relative Corn Price Trends by State

Indiana Corn Prices: Although there was much variability, Indiana corn prices averaged approximately \$0.16 per bushel higher than the multi-region average – neither trending somewhat higher than or lower than the positive \$0.16 per bushel corn price differential (Figure 2). Prices at barge grain loader facilities were used in this analysis. The average cash corn price for Indiana during this period was \$4.12 per bushel, with a median price of \$3.84.

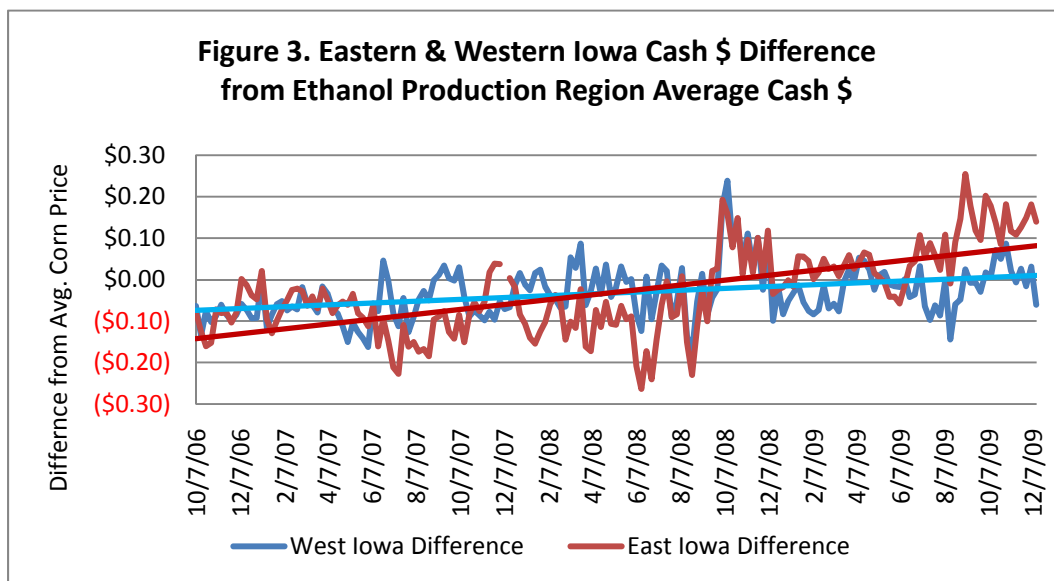


**Illinois Corn Prices:** Although again with much variation, Illinois corn prices generally trended higher relative to the multi-region average corn price. Illinois cash corn price data was only available beginning in early October, 2007. No statistical tests have yet been completed to verify the statistical significance of the increasing positive weekly price trend. That said, a positive trend over time would indicate that the cash price of corn in Illinois has been increasing relative other major ethanol production areas in the United States.

Prices at an Eastern Corn Belt ethanol plant in Illinois were used in this analysis. The average cash corn price for Illinois during this period was \$4.36 per bushel, with a median price of \$3.94. It is important to note that Illinois cash corn prices were only available beginning on October 6, 2007 (approximately 1 year later than the other corn price series). Indiana prices averaged an identical \$4.36 per bushel during the same time period.

**Eastern Iowa Corn Prices:** Eastern Iowa corn prices have generally trended higher relative to other states and/or regions during this time period, shifting from approximately \$0.10 to \$0.15 per bushel below the ethanol production region average corn price to \$0.10 to \$0.20 per bushel higher currently (Figure 3). The average cash corn price for eastern Iowa during this period was \$3.93 per bushel, with a median price of \$3.68.

**Western Iowa Corn Prices:** Western Iowa corn prices also trended higher relative to the ethanol production region average, but to a markedly lesser degree than for eastern Iowa. This indicates that recent regional developments in Iowa, including the establishment of ethanol plants, have had more impact on the competitive level of corn prices in the eastern part of the state than in the western part. The average cash corn price for western Iowa during this period was \$3.92 per bushel, with a median price of \$3.62.

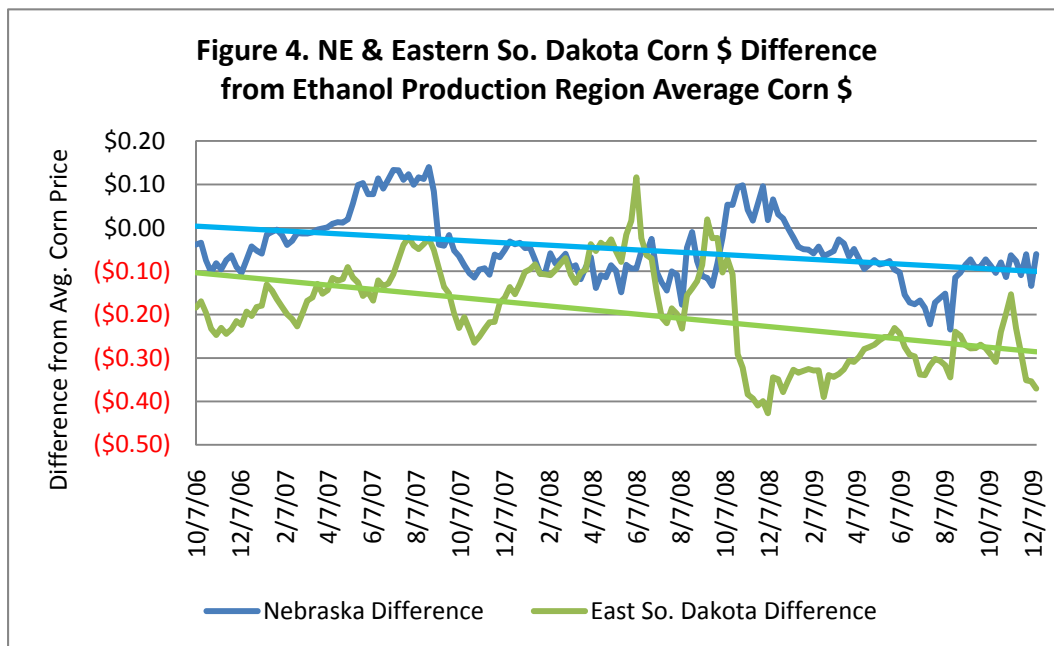


Southern Minnesota Corn Prices: Cash corn prices for southern Minnesota are not shown graphically. Minnesota cash corn prices were consistently averaging \$0.10 per bushel lower than the multi-state average corn price for the duration of this period, albeit with a fair amount of variability around the trend. The average cash corn price for southern Minnesota during this period was \$3.84 per bushel, with a median price of \$3.55.

Nebraska Corn Prices: Nebraska corn prices have generally trended approximately \$0.10 per bushel lower than the multi-region average from fall 2006 through the present (Figure 4). Relative grain prices in Nebraska are now (mid-December 2009) approximately \$0.10 lower than the ethanol production region average price. The average cash corn price for western Iowa during this period was \$3.91 per bushel, with a median price of \$3.62.

Eastern South Dakota Corn Prices: Similar to Nebraska, eastern South Dakota corn prices have generally averaged \$0.20 per bushel lower than the multi-region average from fall 2006 through the present. Relative grain prices in eastern South Dakota are now (mid-December 2009) approximately \$0.30 lower than the ethanol production region average price after starting the period at approximately \$0.10 lower on a relative basis. The average cash corn price for western Iowa during this period was \$3.76 per bushel, with a median price of \$3.40.

The downward trends in relative cash prices for Nebraska and South Dakota may be due to somewhat more competitive or tighter corn supply-demand conditions than in other parts of the U.S. Corn Belt.

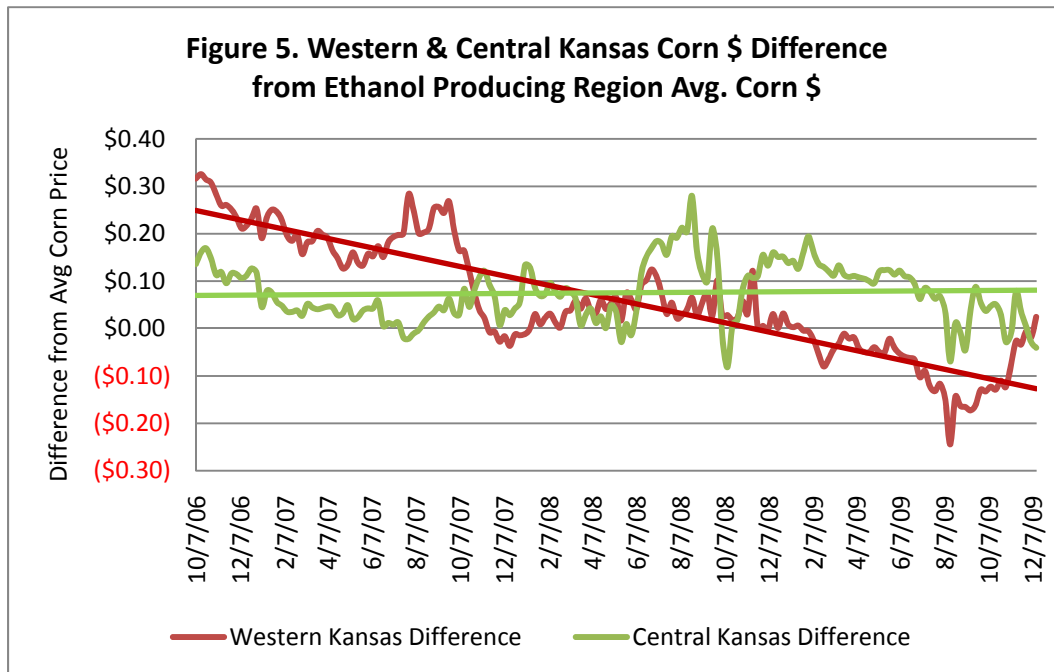


Central Kansas Corn Prices: Corn prices in central Kansas have a level average of approximately \$0.10 per bushel over the ethanol production region average corn price for the period of this paper (Figure 5). Relative grain prices in central Kansas are now (mid-December 2009)

approximately even with or slightly below the average for the multi-state ethanol production region. The central region of Kansas has a lesser focus on livestock feeding than does western Kansas, and often serves as an area of origination for feedgrains (especially grain sorghum) transported by rail to the Gulf of Mexico for export. The average cash corn price for central Kansas during this period was \$4.03 per bushel, with a median price of \$3.72.

Western Kansas Corn Prices: Cash corn prices in western Kansas have trended sharply lower relative to the multi-region average from fall 2006 through the present. In October 2006 the relative corn price in western Kansas was approximately \$0.25 over the ethanol production region average corn price. Since then the relative price has declined to its current level of \$0.12 per bushel below the multi-state average. The average cash corn price for central Kansas during this period was \$4.02 per bushel, with a median price of \$3.69.

This is the sharpest decline in relative corn price bids among the regions and states examined in this paper. Such a trend likely indicates the sharp increase in competition that has occurred throughout the ethanol production regions of the United States for the procurement of corn. The western Kansas livestock feeding industry finds itself having to more aggressively compete for feedgrain input supplies with these other regions of the U.S. as a result of the rapid ethanol industry development since fall 2006.



## **Conclusions**

This preliminary analysis indicates that some states that have been heavily involved in grain-based ethanol production have seen a relative increase in their cash corn prices in comparison to other states in the U.S.. For instance, relative corn cash prices in Illinois and eastern Iowa have increased in comparison to corn prices across the broader ethanol production region. Conversely, relative corn prices in western Kansas, South Dakota, and arguably Nebraska have declined in comparison to the overall average. Most notable is the drop in the relative prices for corn in western Kansas from fall 2006 to the present.

In the future, more comprehensive analysis of this issue needs to be completed, adding in cash market prices for ethanol, dried and wet distillers grains, soybean meal as well as futures market prices for ethanol, and RBOB gasoline.

These spatial price determination issues will continue to be important for a number of industrial and business sectors in the United States, including farmers, grain elevators, ethanol processors, and rail transportation service providers. The development of the U.S. ethanol industry has impacted a number of sectors and regions of the U.S. economy, and will likely continue to have a part in reshaping the structure of U.S. agriculture in years to come.