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Implications of March 1 Corn Stocks Estimate

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The USDA's National Agricultural Statistics Service (NASS) will release an estimate of March 1 stocks of corn on March 31st. That estimate is based on a near-census of commercial storage facilities and a survey of a large sample of corn producers.

The stocks estimate provides information needed to calculate the magnitude of feed and residual use of corn during the second quarter (December- February) of the current marketing year. That estimate is derived from the calculation of total disappearance of U.S. corn during the quarter and estimates of consumption in non-feed categories of use. The implied magnitude of feed and residual use during the quarter, combined with estimated use during the first quarter, provides for an evaluation of the USDA's projection of feed and residual use for the entire marketing year. Given that there is incomplete data on non-feed uses of corn during the quarter and the pattern of quarterly feed and residual use of corn is not consistent from year to year, market expectations for the stocks estimate can be in a wide range and the market reaction to the estimate can be unpredictable. The process and uncertainties surrounding the formation of an expectation for the stocks estimate is illustrated here.

The process starts with an estimate of total supplies of corn for the quarter--December 1 stocks plus imports during the quarter. December 2014 corn stocks were estimated at 11.203 billion bushels, but that estimate could be tweaked slightly in the March Grain Stocks report. Based on Census import estimates for December 2014 and January 2015, it appears that imports during the quarter totaled about six million bushels, so that total supplies are thought to have been 11.209 billion bushels. The estimate of March 1 stocks, then, allows for the calculation of total consumption during the second quarter.

The estimate of exports during the quarter is based on a combination USDA export inspections and Census export estimates. Cumulative export inspections for the first half of the marketing year (September 2014-February 2015) totaled 745 million bushels. However, cumulative Census export estimates through January exceeded inspections by 57 million bushels. If that margin persisted through February, exports during the first half of the year totaled 802 million bushels. Exports in the first quarter totaled 408 million bushels and exports in the second quarter are estimated at 394 million bushels.

Estimates of corn used for ethanol production during the quarter start with the estimate of ethanol production provided by the U.S. Energy Information Administration (EIA). A monthly estimate is currently available only for December, with weekly estimates for January and February. The monthly estimates sometimes deviate from the cumulative weekly estimates so there is some uncertainty about the magnitude

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of second quarter ethanol production. Current data point to quarterly production of 3.719 billion gallons, 4.4 percent more than produced in the first quarter of the year. The USDA estimates that 1.2843 billion bushels of corn were used for ethanol production in the first quarter. However, the USDA's new [Grain Crushings and Co-Product Production](#) report suggests that the yield of ethanol per bushel of corn was higher in the second quarter. Since that report is not yet available for February and since quarterly ethanol production could differ from the estimate used here, there is some uncertainty about how much corn was used for ethanol production during the quarter. Use is estimated at 1.305 billion bushels.

The use of corn for other domestic processing purposes is relatively constant from year to year, with a slow trend increase, and the quarterly pattern of use is relatively consistent. Based on USDA's projected use of 1.395 billion bushels for the year and estimated use of 335 million bushels in the first quarter, second quarter use is estimated at 340 million bushels.

If feed and residual use of corn for the year is on track to reach the USDA projection of 5.3 billion bushels, how large should use have been in the second quarter? Here is where the seasonal pattern of use becomes important. For the 13 years from 1994-95 through 2006-07, feed and residual use during the first half of the year ranged from 62 to 66.5 percent and averaged 64 percent. The average in the following four years was 67.5 percent, in a range of 65 to 70 percent. The average for the most recent four years, 2010-11 through 2013-14, was 74.3 percent, in a range of 73 to 75.6 percent. If the most recent pattern is being followed this year and the USDA projection of 5.3 billion bushels for the year is correct, use during the first half of the year should have been near 3.938 billion bushels and second quarter use should have been near 1.715 billion bushels. Total second quarter use, then would have been 3.754 billion bushels, leaving March 1 stocks at 7.455 billion bushels. On the other hand, if the seasonal pattern of corn use has returned to something closer to the pre-2010-11 levels, second quarter feed and residual use could have been 200 to 300 million bushels less (March 1 stocks 200 to 300 million bushels larger) and still be consistent with use of 5.3 billion bushels for the year.

A March 1 stocks estimate within a very wide range this year probably should not change market expectations for the magnitude of year-ending stocks. Unless the stocks estimate is outside of the large range of possibilities, the focus in the corn market will likely be on the magnitude of corn planting intentions revealed on the same day as the stocks estimate.

References

NASS/USDA. *Grain Crushings and Co-Products Production*. Released March 2, 2015, accessed March 16, 2015. <http://usda.mannlib.cornell.edu/usda/nass/GrnCrush//2010s/2015/GrnCrush-03-02-2015.pdf>

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