Corn Supply Propects for U.S. Ethanol Production

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In its October 9th report on World Agricultural Supply and Demand Estimates, the U.S.D.A. projected that 4.2 billion bushels of corn would be used for ethanol production during the 2009/10 marketing year. The immediate concern to United States ethanol producers is whether adequate supplies of corn and other feedgrains are available for their operations. They also have long run concerns about trends in exports, livestock feed use and non-ethanol feed use and how such trends may affect the supply-demand balance of U.S. corn.

Corn Supply Prospects for 2009/10

The October WASDE report released projected that the 2009 United States corn crop would be 13.018 billion bushels (bln. bu.) (Table 1.). Combined with 1.674 bln. bu. of beginning stocks and a small amount of imports, total U.S. corn supplies for the 2009/10 marketing year were projected to be 14.702 bln. bu.. If realized, this would be the largest amount of U.S. corn supplies on record, even greater than the previous record of 14.362 bln. bu. during the 2007/08 marketing year.

Table 1. U.S. Corn Supply & Use

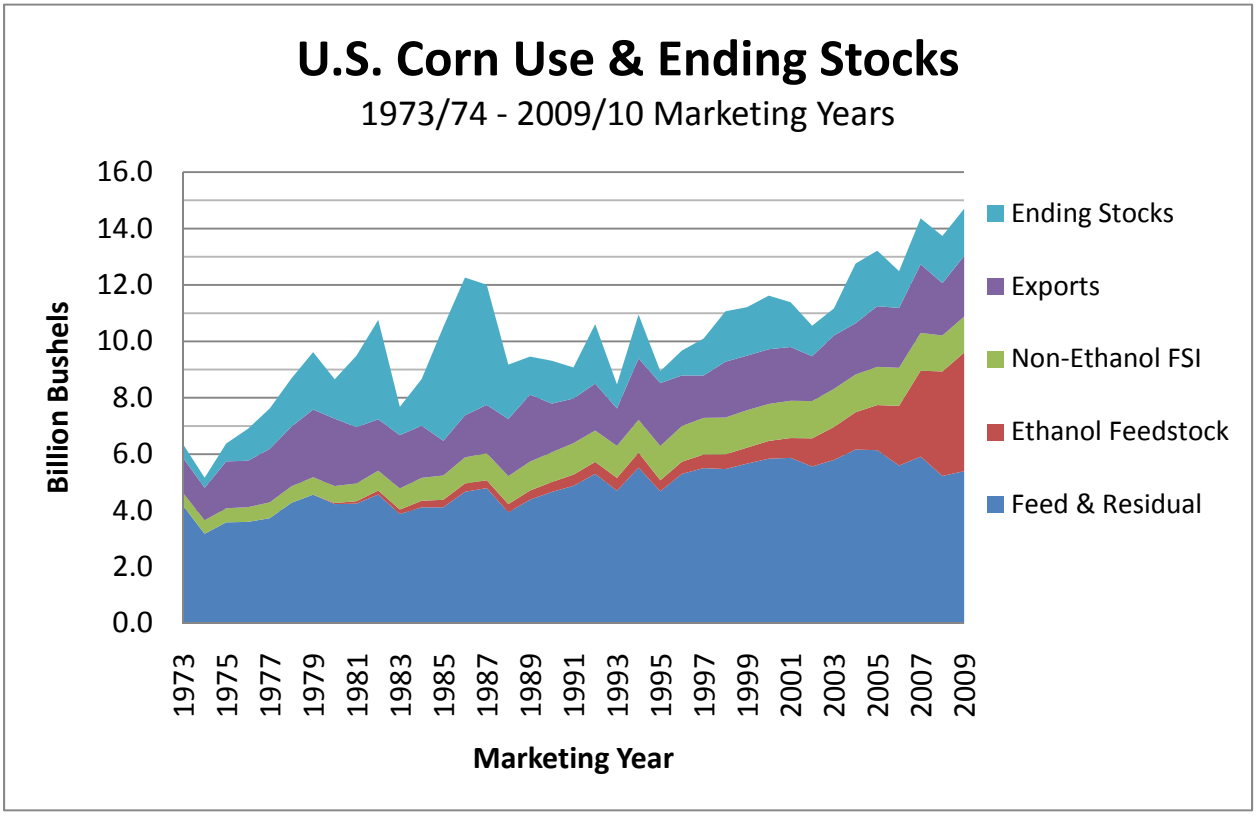
	2007/08	2008/09 Estimates	2009/10 Projections
Area (million acres)			
Planted Acreage	93.5	86.0	86.4
Harvested Acreage	86.5	78.6	79.3
Yield per Harvested Acre (bushels / acre)	150.7	153.9	164.2
Beginning stocks	1,304	1,624	1,674
Production	13,038	12,101	13,018
Imports	20	14	10
Total supply (million bushels)	14,362	13,739	14,702
Ethanol use for fuel	3,049	3,700	4,200
Non-ethanol food, seed, & industrial uses	1,338	1,276	1,280
Exports	2,437	1,858	2,150
Feed & residual	5,913	5,231	5,400
Total use (million bushels)	12,737	12,065	13,030
Ending stocks (million bushels)	1,624	1,674	1,672
Ending stocks-to-use ratio (%)	12.8%	13.9%	12.8%
Average Farm Price ($ per bushel)	$4.20	$4.06	$3.05 - $3.65

Source: U.S.D.A. WASDE Report, October 9, 2009

As of this writing, uncertainty exists regarding the final size and quality of the 2009 corn crop and total feedgrain supplies due to delayed crop development and maturity concerns. Unless crop damage is extreme and/or harvest delays become exacerbated due to prolonged wet fall weather, supplies of U.S. corn should be at record or near record levels.

Since the 1973/74 marketing year, corn use for livestock feed has been and remains the largest source of U.S. corn demand and use (Figure 1.). Domestic feed and residual use is projected to average 43.7% of total U.S. corn use through the 2007/08 – 2009/10 marketing years. Prospects for livestock feed use in the U.S. have moderated recently as livestock and poultry producers are struggling with weak product demand and large supplies.

Exports have also been a major source of demand over time for U.S. corn, averaging 17% of total U.S. corn use over the last 3 marketing years. Because of the variable and uncertain nature of corn exports, and the prevailing view that corn exports affect corn supply-demand balances annually as a "wild card" "at the margin", exports have been an important causal source of price variability in the U.S. corn market since at least 1973. The United States plays a dominant role in corn export markets, providing 63%, 59%, and 65% (projected) of total world corn exports during the 2007/08 through 2009/10 marketing years. World coarse grain production and use, including U.S. feedgrains, have been generally trending higher over time. Although U.S. corn export prospects have improved in 2009/10, barring an unforeseen shortfall in world coarse grain production there is likely limited potential to for further dramatic increases in corn exports in the near term.



Source: U.S.D.A. WASDE Reports, Historic Archives

Ethanol use of U.S. corn were relatively small until the turn of the century. From 2000/01 forward, ethanol use of U.S. corn has grown successively larger on an annual basis. During the last three marketing years ethanol use of corn as a percent of total use has increased from 24% to

31% to 32%. Non-ethanol demand for corn for food, seed and industrial use continues to be steadily increasing over time, accounting for a projected 10% of U.S. corn use in the 2009/10 marketing year.

It is noteworthy that statistical measures of the variability of U.S. corn ending stocks over time are approximately three (3) times greater than for total use. In other words, total use of U.S. corn over time has been relatively more stable than has ending stocks. Also, ending stocks-to-use ratios are typically used measure of the relative scarcity of corn supplies in comparison to use, and generally been inversely related to corn market price levels over time (i.e., high ending stocks-to-use ratios have been associated with lower corn prices, and vice verse).

Overall, there seems to be adequate supplies of corn available in the U.S. to meet ethanol demand for the 2009/10 marketing year (September 1, 2009 through August 31, 2010). Weakness in feed use seems likely to offset a stronger corn export market. Combined with a larger 2009 U.S. corn crop, these factors indicate adequate supplies during the 2009/10 corn marketing year for ethanol use.

Longer Term Corn Supply Prospects

The Economic Research Service (ERS), and branch of the U.S.D.A., developed a set of baseline supply-demand projections for U.S. feedgrain supply-demand for the 2009-2010 period (source: http://www.ers.usda.gov/Briefing/Corn/2009baseline.htm#Demand). Projections for ethanol-based corn use were for steady increases from 4.2 to 5.05 billion bushels from the 2009/10 through 2018/19 corn marketing years. This analysis generally omits annual weather and associated production variation, assuming steady trends increases in U.S. corn production and various categories of corn use. In this analysis, U.S. feed use of corn was projected to steadily increase to 5,850 billion bushels (i.e., an increase of 55 bln. bu. annually) while exports were projected to increase to 2.225 billion bushels (i.e., an increase of 22.5 bln. bu. annually) by 2018/19. Both feed and export use are projected to increase by slightly over 1% annually.

By updating the original analysis with information from the October 2009 USDA WASDE report, the impact of key factors on the tightness of U.S. corn supplies over time can be determined. At 100% of the U.S. corn export projection in the study, U.S. corn stocks-to-use will remain steady to slightly increasing through the 2018/19 corn marketing year (i.e., absent weather problems, supply or demand shocks, etc.) (Figure 2.). However, if U.S. corn exports increase by a greater rate over time than assumed in the ERS study, all else being held the same, U.S. corn ending stocks-to-use will be seriously affected. Increases in these export projections of from 5% to 10% cause projected U.S. corn stocks-to-use to fall as low as 4% from current levels of 12.8% in the 2009/10 marketing year. High U.S. corn prices would likely result in response to such historically tight domestic stocks-to-use scenarios.

A number of important assumptions have been made in deriving this analysis, any and all of which require close scrutiny. However, the critical issue is that in the long run the availability of supplies of corn for ethanol production are directly dependent on developments in other segments of both the corn supply – demand complex. In turn, these other sources of corn use are dependent on the broader set of domestic and foreign economic influences affecting the agricultural markets in general.

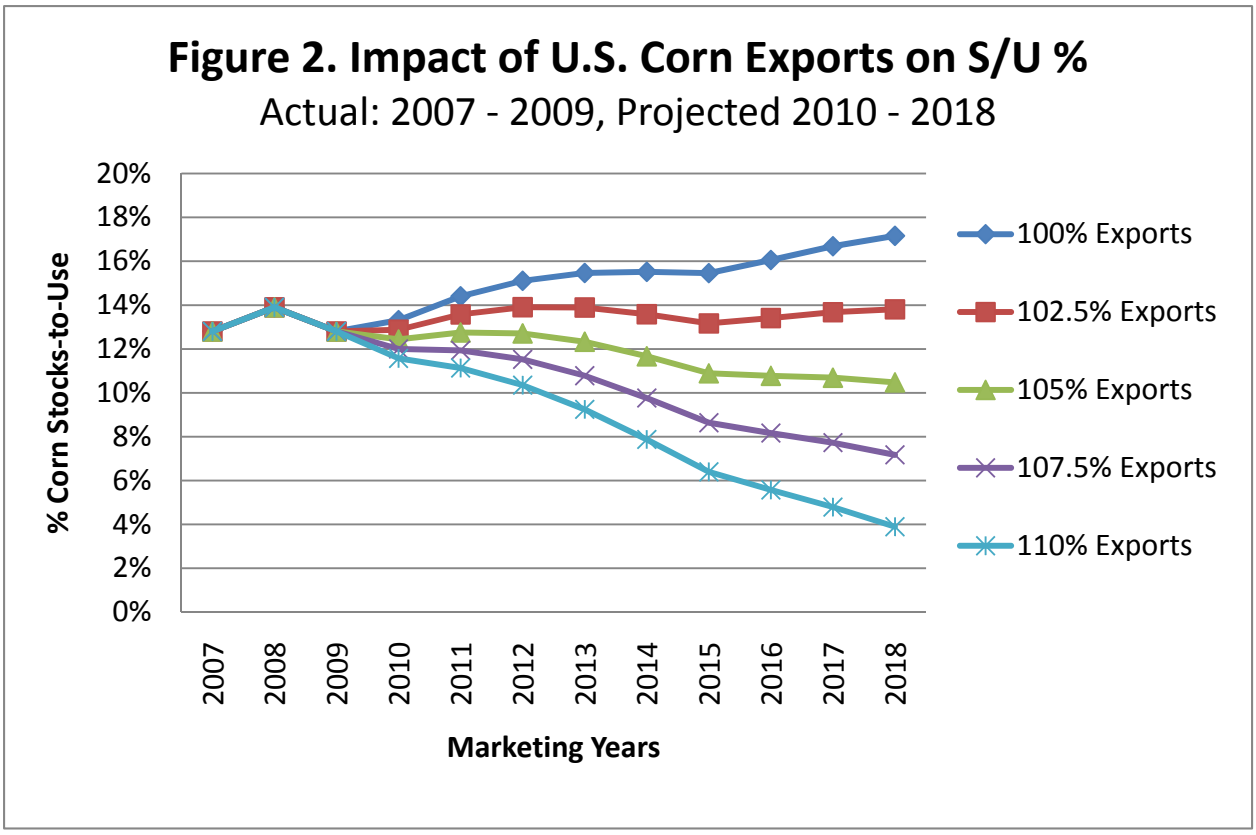


Figure 2. Impact of U.S. Corn Exports on S/U %
Actual: 2007 - 2009, Projected 2010 - 2018
% Corn Stocks-to-Use
20%
18%
16%
14%
12%
10%
8%
6%
4%
2%
0%
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
Marketing Years
100% Exports
102.5% Exports
105% Exports
107.5% Exports
110% Exports