

Comparing Corn Ethanol Use Data Sources from U.S. Government Agencies

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September 27, 2010 (Updated Version)

Agencies of the United States government provide alternative sources of information relating to domestic corn use in ethanol-related wet and dry corn milling processes. The U.S. Census Bureau, the Energy Information Administration (EIA) branch of the U.S. Department of Energy, and the World Agricultural Outlook Board (WAOB) branch of the United States Department of Agriculture all publish information either directly identifying the amount of U.S. corn used in dry milling processes or implicitly allowing for corn use calculations from ethanol production estimates.

This article examines inconsistencies that exist between monthly U.S. Census Bureau reports of the amount of U.S. corn used in domestic wet and dry milling production in comparison to bioenergy-related corn use estimates that can be obtained or calculated from information released by other U.S. government agencies.

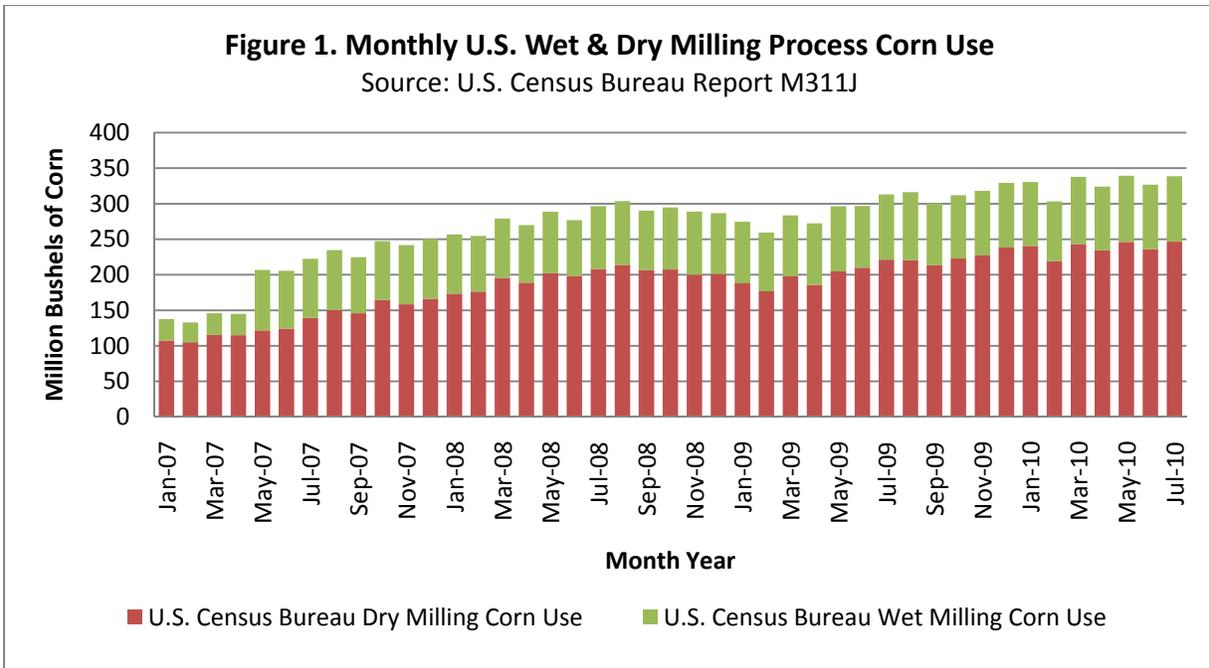
U.S. Census Bureau Data on U.S. Corn Use in Wet and Dry Milling Processes

The U.S. Census Bureau Division of Manufacturing, Mining and Construction Statistics reports U.S. corn use in wet and dry milling process in report number M311J - Fats and Oils, Oilseed Crushing Report on a monthly basis. As of this writing, information is available from January 2007 through July 2010. This U.S. Census Bureau reports can be found at the following web address:

(U.S. Census Bureau, M311J – Fats & Oils, Oilseed Crushing Report)
http://www.census.gov/manufacturing/cir/historical_data/m311j/index.html

As will be shown below, the U.S. Census Bureau data series appears to vary in its accuracy of estimating U.S. corn usage in wet and dry mill processes in comparison to other credible U.S. government data.

According to these U.S. Census Bureau reports, the monthly total amount of U.S. corn used in wet and dry mill processes during the 42 month period of January 2007 through July 2010 grew from 136.6 to 338.7 million bushels (mb), and average monthly increase of 3.9 mb (Figure 1). During the most recent 12 months of data (i.e., August 2009 - July 2010), U.S. corn use for wet and dry milling averaged 323 mb per month, while still trending upward at a rate of 2.5 mb per month. Growth in this most recent 12 month period has been slower than the growth rate of 4.4 mb per month during the 2007 through 2009 period.



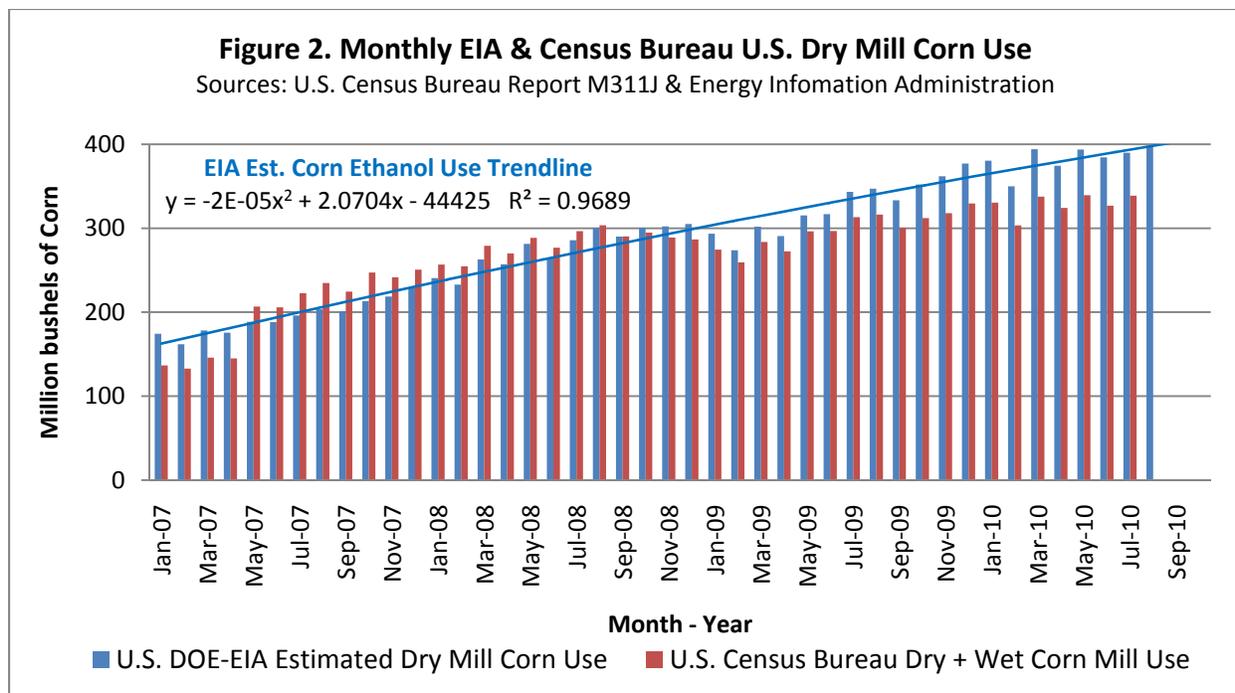
Energy Information Administration vs Census Bureau Data

The U.S. Energy Information Administration (EIA), a branch of the U.S. Department of Energy, reports monthly and weekly U.S. ethanol production. This U.S. Department of Energy data can be found at the following web address:

(EIA Petroleum Supply and Disposition, Other Liquids Section, Fuel Ethanol information)
http://www.eia.gov/dnav/pet/pet_sum_snd_d_nus_mbbl_m_cur.htm

It is possible to estimate monthly U.S. corn use in ethanol production from EIA ethanol production data by assuming common conversion rates of corn to ethanol. If it is assumed that 2.8 gallons of ethanol is produced per bushel of corn, then it is possible to estimate monthly corn use in U.S. wet and dry milling processes from the monthly EIA ethanol production data. Figure 2 shows the estimate of monthly U.S. corn use derived from EIA ethanol production data along with the U.S. Census Bureau data presented above in the same graph.

According to these EIA reports, the monthly amount of U.S. corn used in ethanol producing wet and dry mill processes during the 42 month period of January 2007 through August 2010 grew from 174.3 to 398.3 mb, an average increase of 5.5 mb per month. Note that weekly ethanol use estimates were used to derive the August 2010 ethanol production and subsequent corn ethanol use figure. In Figure 2 a statistically determined trendline has been fitted to the data. This trendline slopes upward at a decreasing rate, and explains approximately 97% of the variation in the total amount of U.S. corn used for ethanol in the EIA-based data.

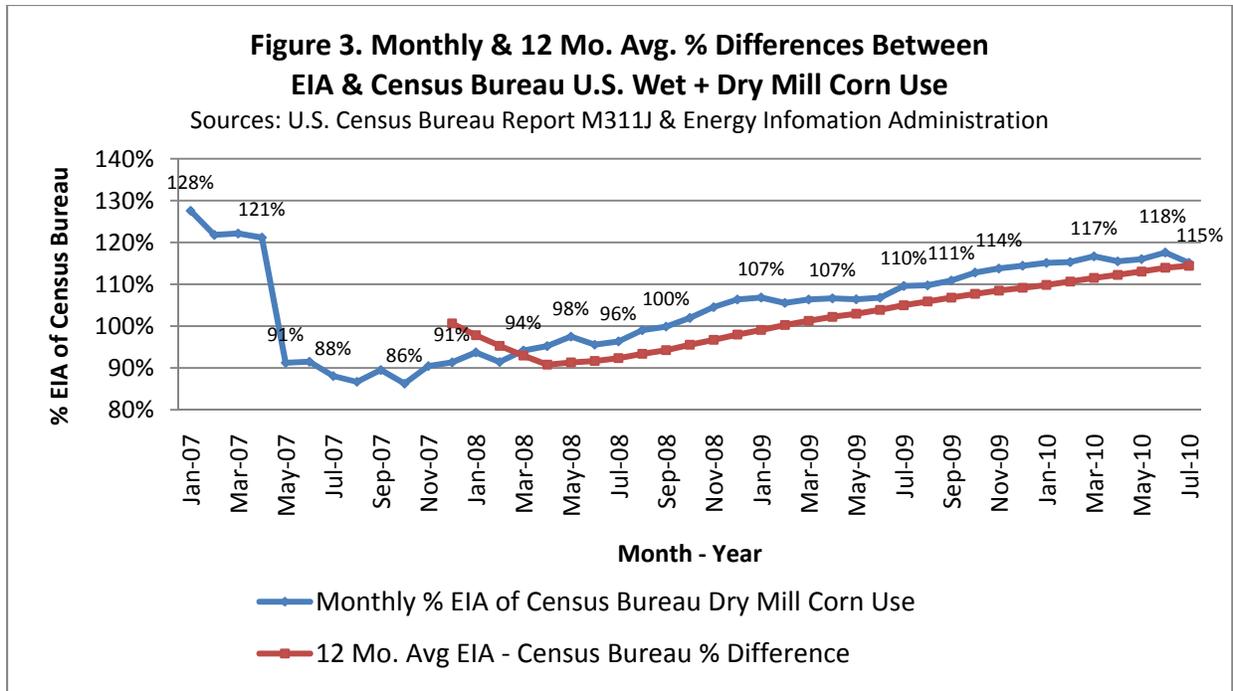


During the most recent 12 month period of available EIA ethanol data (i.e., September 2009 - August 2010), estimated U.S. corn use for ethanol production averaged 370 mb per month, trending upward at a rate of 4.6 mb per month. Ethanol-related growth in U.S. corn use during the most recent 12 months of EIA data has been slower than the rate of 5.6 mb per month that occurred during the 2007 through 2009 period.

Figure 3 shows the percentage by which EIA U.S. ethanol production-based corn use data has been either smaller or larger than U.S. Census Bureau estimates of wet and dry mill corn use since January 2007. Both monthly and 12 month moving average estimates of corn use derived from ethanol production numbers (via EIA) and from dry mill production statistics (from the Census Bureau) are used to calculate these percentages.

After initially trending down from 127.6% of Census Bureau figures in January 2007 to 91.2% in May of that year, the EIA-based ethanol corn use estimate hovered in the range of 86.3% to 93.7% of the Census Bureau estimates during the May 2007 – February 2008 period. Starting in March 2008, the percentage difference between Census Bureau and EIA-based wet and dry mill corn use estimates grew larger, trending upward from 94.2% to 100% (equality) in September 2008, and on higher from there to 117.6% in June 2010. In July 2010, the amount of corn ethanol use estimated from EIA-based ethanol production numbers was 115.1% of Census Bureau wet and dry mill production corn use estimates.

For the first time since February-March 2008, the July 2010 monthly percentage EIA-Census Bureau differential of 115.1% was nearly equal to the 12 month moving average of 114.4% (for August 2009 through July 2010). This may indicate at least a temporary stabilization of the difference between EIA vs Census Bureau ethanol corn use estimates.



Marketing Year Comparisons with USDA WASDE Ethanol Corn Use Data

Through its World Agricultural Outlook Board (WAOB), the USDA publishes monthly projections of corn use for ethanol production in its World Agricultural Supply-Demand Estimates (WASDE). WASDE estimates of corn use are presented on a marketing year basis (i.e., September 1st through August 31st). For example, the current 2010-11 marketing year (i.e., MY 2010-11) represents the period of September 1, 2010 through August 31, 2011. Monthly WASDE reports including U.S. corn supply-demand balance sheet estimates can be found at the following web address:

(Monthly USDA WASDE Estimates for Grain, Oilseed and Livestock)

<http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1194>

By aggregating months into “September or year 1 through August or year 2” grain marketing years, the amount of corn used for domestic U.S. ethanol production provided by USDA WASDE reports can be directly compared to corn ethanol use estimates from both the EIA and the Census Bureau. Figure 4 provides a marketing year-based comparison of U.S. corn use for ethanol production for MY 2007-2008 through MY 2009-10 across these three U.S. government agency sources. The most recent September 10, 2010 WASDE report ethanol corn use estimates are represented here. Projected corn ethanol use for MY 2010-11 is also shown for information purposes.

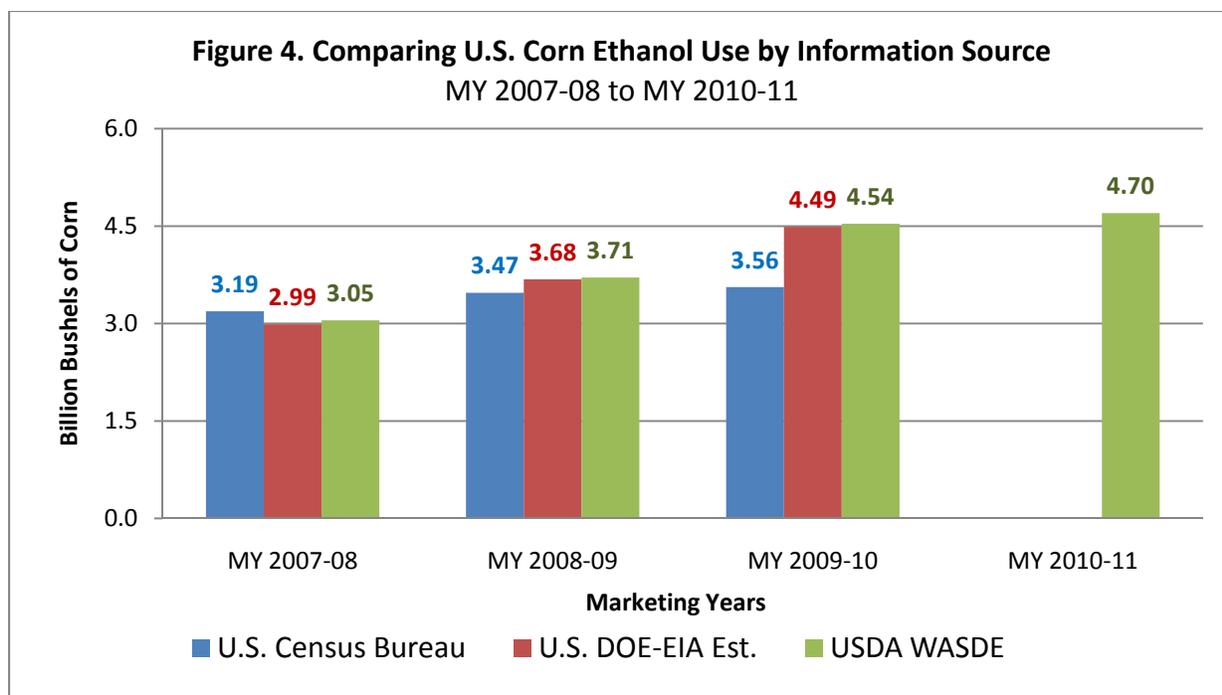


Figure 4 shows that projected corn ethanol use based on DOE-EIA data and USDA WASDE projections have been nearly equal over the three year MY 2007-08 through MY 2009-10 period. The EIA-based corn use estimates are on average 45 million bushels or 1.3% smaller than the USDA WASDE forecasts over this 3 year period of time. It is generally understood by market analysis that the USDA World Agricultural Outlook Board uses EIA data to help determine its estimate of U.S. corn ethanol use by marketing year. For MY 2009-10, EIA-based corn ethanol use estimates are 126.1% of Census Bureau estimates, while the WASDE corn ethanol use projection is 127.4% of the Census Bureau estimate.

Conclusions

Taking a broader perspective on this issue, if the U.S. Census Bureau could improve the accuracy of its report on U.S. wet and dry mill process corn use and co-product production, then it could provide agribusiness, other government agencies and the general public with more accurate data on which to make bioenergy-related business and policy decisions with. However, the “under counting” problem that currently exists in the U.S. Census Bureau corn dry mill process data has seriously limited the accuracy, credibility and usefulness of this data resource to all users. The current U.S. Census Bureau report under-counts both corn use and co-product production in dry mill processes, and needs to be drastically improved to provide the public with credible, usable information.

Alternatively, if the U.S. Census Bureau continues to be consistent in its application of sampling methods and procedures with this data source – i.e., continuing to undercount corn use and co-product production - then it may be possible to apply the types of comparative analysis and scaling adjustments discussed in this article above to make the Census Bureau data more representative of the realities of the dry mill industry. Use of such scaling procedures may allow

this data to be more relevant and useful to practitioners in the U.S. corn dry milling, feed manufacturing and livestock feeding industries.

Arguably the best solution to this problem would be for the U.S. Census Bureau to increase the size and improve the coverage of its monthly Census Bureau survey to assure that all U.S. corn dry mill /ethanol producing plants are included. If full coverage of plants could be achieved by the Census Bureau, then the corn ethanol usage figures derived from Energy Information Administration data could still continue to serve as an accuracy check on the fully enumerated U.S. Census Bureau dry mill plant survey.