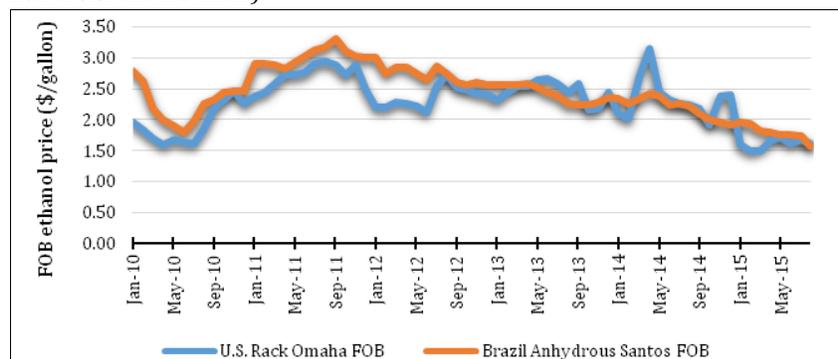


U.S. and Brazil Ethanol Price and Trade Shares

Ethanol prices have fallen during 2015 and the U.S. and Brazil FOB ethanol prices in November are both below \$2 per gallon.

- Since 2013, both the U.S. and Brazil export prices have mostly followed the same path, with the exception of price spikes in the U.S. in April and December 2014.
- The similarity of export prices of these two countries reflects their substitutability. Relative prices affect whether importers buy ethanol from Brazil or the U.S.

Figure 1. U.S. and Brazil monthly FOB ethanol price (Source: Nebraska Ethanol Board U.S. and F.O. Licht)

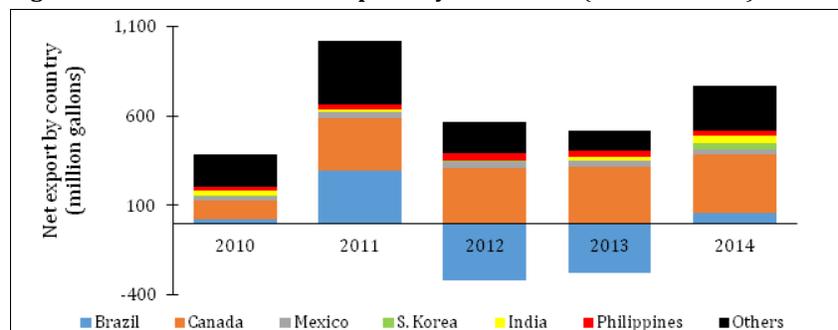


In recent years, the world ethanol export market has been dominated by the U.S. and Brazil. According to data from U.S. EIA and F.O. Licht, U.S. net ethanol exports surpassed Brazil's ethanol exports in 2014; so far, that trend has continued in 2015.

U.S. fuel ethanol export shares

Canada has been the single largest importer of U.S. ethanol since 2012. In 2014, U.S. net exports to Canada reached 331 million gallons. Because of the NAFTA agreement, U.S. ethanol enters Canada without tariff while ethanol produced in other countries—including Brazil—has faced a tariff of \$0.19 per gallon.

Figure 2. U.S. net fuel ethanol exports by destination (Source: U.S. EIA)



Summary:

This bulletin shows the U.S. and Brazil ethanol export market shares by destination and explores the potential international market for U.S. ethanol exports.

For more on this topic, see these FAPRI-MU publications:

Report #03-15
Baseline Update for U.S. Agricultural Markets

Report #01-15
U.S. Baseline Briefing Book

Authors:

Deepayan Debnath
DebnathD@missouri.edu

Pat Westhoff
WesthoffP@missouri.edu

Jarrett Whistance
WhistanceJL@missouri.edu

In the case of Japan, U.S. exports blended ethanol in the form of Bio-Ethyl Tert-Butyl Ether (ETBE). According to F.O. Licht, from January through August 2015, the U.S. exported 99 million gallons of blended ethanol; Japan imported almost all of this blended ethanol from U.S.

From January through August 2015, the U.S. net exports of fuel ethanol totaled 535 million gallons, which is 3.85 times more than Brazil's net denatured, undenatured, and blended ethanol exports during the same period.

In the first eight months of 2015 19% of the total U.S. fuel ethanol exports have been sent to Brazil (Figure 3). However, the U.S. was a net importer of Brazilian ethanol in 2012 and 2013. Sugarcane-based ethanol produced in Brazil is used to help meet the U.S. advanced biofuel mandate and the low-carbon fuel standard in California.

U.S. ethanol exports to Mexico are relatively stable, accounting for 4% of the total U.S. exports.

There are potential U.S. ethanol export markets in Asia, with the projection of steady economic growth and increasing energy uses in countries such as India and the Philippines. The government of India is in the process of implementing an aggressive 10% blending mandate, resulting in net U.S. exports of 33 million gallons of fuel ethanol to India until August 2015. However, so far this year the ethanol penetration rate in India is only 2.8%.

Currently, the Philippines has a domestic ethanol blending mandate of 10% in gasoline and is planning to raise the mandate to 20% by 2020. With limited production capacity, meeting the 10% blending mandate is difficult and could lead to the import of ethanol from the U.S. or Brazil. From January through August 2015, the U.S. has exported 45 million gallons of fuel ethanol to the Philippines.

South Korea is another significant U.S. export market. From January through August 2015, the U.S. has exported 42 million gallons of ethanol, which is 7% of total U.S. fuel ethanol exports. In South Korea, U.S. ethanol exporters also face competition from Brazil.

Brazil ethanol export shares

Brazil is also a net exporter of ethanol. In most years, the U.S. is the major trade partner of Brazil in terms of both ethanol exports and imports. In 2014, Brazil had net exports of 300 million gallons of ethanol, mostly to Japan followed by the U.S., E.U., and South Korea.

Japan only counts ethanol made from sugarcane in Brazil towards their GHG emission reduction target, with a mandate of 3%. Blended ethanol imported from the U.S. is used to meet the 7% blend rate of ETBE into gasoline.

The data reported for ethanol trade of Brazil and the U.S. are not defined the same way. For example, Brazil's ethanol trade includes exports for non-fuel uses.

In the first eight months of 2015, the mix of Brazilian trade partners has changed (Figure 5). Fifty-three percent of the total Brazilian ethanol export shares has been shipped to the U.S. Japan only accounted for 4% of Brazil's exports.

Figure 3. U.S. fuel ethanol export shares, January - August 2015 (Source: U.S. EIA)

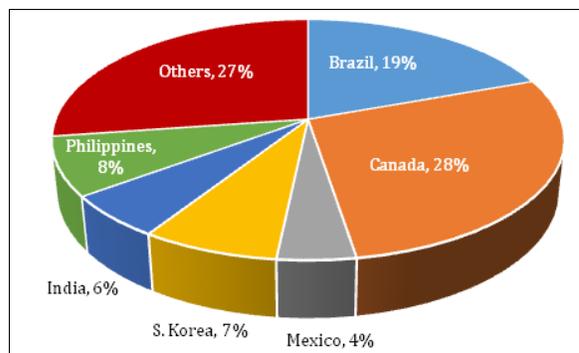


Figure 4. Brazil's net ethanol exports by destination (Source: F.O. Licht)

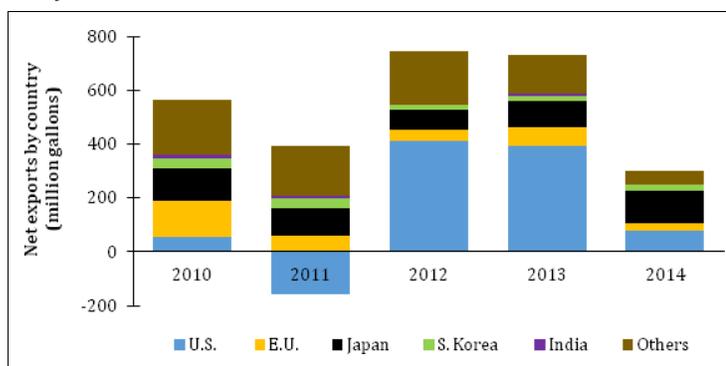
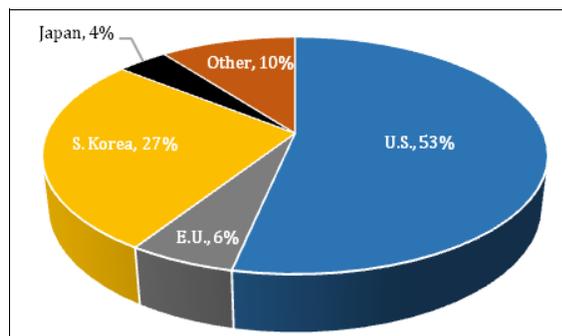


Figure 5. Brazil's ethanol export shares January - August 2015 (Source: F.O. Licht)



In Japan, Brazilian sugarcane based ethanol faces tough competition from the blended ethanol ETBE mainly supplied by U.S. exporters. In contrast, Brazil ethanol exports to South Korea have increased.