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Diminished Corn Production and Ethanol Policy - Should the RFS be Waived?

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Market Report	Yr Ago	4 Wks Ago	9/7/12
<u>Livestock and Products,</u>			
<u>Weekly Average</u>			
Nebraska Slaughter Steers, 35-65% Choice, Live Weight.	117.69	\$119.63	\$123.02
Nebraska Feeder Steers, Med. & Large Frame, 550-600 lb.	155.28	155.82	166.60
Nebraska Feeder Steers, Med. & Large Frame 750-800 lb.	140.00	143.61	148.03
Choice Boxed Beef, 600-750 lb. Carcass.	180.25	181.46	190.97
Western Corn Belt Base Hog Price Carcass, Negotiated.	83.02	88.05	65.62
Pork Carcass Cutout, 185 lb. Carcass, 51-52% Lean.	94.52	92.63	79.39
Slaughter Lambs, Ch. & Pr., Heavy, Wooled, South Dakota, Direct.	179.25	111.75	98.00
National Carcass Lamb Cutout, FOB.	408.98	322.53	313.79
<u>Crops,</u>			
<u>Daily Spot Prices</u>			
Wheat, No. 1, H.W. Imperial, bu.	7.19	7.83	8.29
Corn, No. 2, Yellow Nebraska City, bu.	7.17	7.83	7.97
Soybeans, No. 1, Yellow Nebraska City, bu.	13.77	16.41	17.17
Grain Sorghum, No. 2, Yellow Dorchester, cwt.	12.00	12.91	13.18
Oats, No. 2, Heavy Minneapolis, MN, bu.	3.63	3.88	4.18
<u>Feed</u>			
Alfalfa, Large Square Bales, Good to Premium, RFV 160-185 Northeast Nebraska, ton.	185.00	242.50	242.50
Alfalfa, Large Rounds, Good Platte Valley, ton.	132.50	220.00	212.50
Grass Hay, Large Rounds, Good Nebraska, ton.	85.00	155.00	160.00
Dried Distillers Grains, 10% Moisture, Nebraska Average.	209.00	302.50	300.00
Wet Distillers Grains, 65-70% Moisture, Nebraska Average.	74.00	115.50	119.00
*No Market			

This issue is another article in a series addressing drought conditions, economic impacts and resources for Nebraska agriculture.

The short corn crop and soaring prices due to the drought have brought forth appeals to the Environmental Protection Agency (EPA) to use its discretionary power to waive the Renewable Fuels Standard (RFS) for 2012, 2013, or both. This, it is reasoned, would reduce ethanol production, therefore reduce corn consumption by the ethanol industry and reduce corn prices. The desirability of these objectives aside, there are some pitfalls in the reasoning, which will be reviewed here.

To provide perspective, this is another expression of the concern about using *food for fuel*, this time when grain supplies are limited by drought. It is true that grain shortfalls and price spikes in recent years have surely been exacerbated by the mandated use of corn for ethanol. It is also true that in the long-run we may have difficulty feeding the world's population, even if no grain is used for fuel. But the issue at hand is one of the short-run, whether less "food" should be used for fuel in this drought year. The impact of eliminating the RFS for just a year or so is quite different than the impact of eliminating it permanently.

The Renewable Fuels Standard (RFS)

The RFS2, passed by Congress in 2007, requires motor fuel distributors to blend ethanol into the gasoline supply, 13.2 billion gallons of corn ethanol per year (bgy) in 2012, 13.8 bgy in 2013. That's about 13.6 bgy during the marketing year for this year's reduced corn crop.

Fuel distributors must use Renewable Identification Numbers (RINs) to prove that they have sold their share of the 13.2 bgy, purchase RINs to show that someone else has, or pay stiff penalties. RINs originate when batches of ethanol are produced. They are separated from the ethanol when it is



blended, to become proof that a specific number of gallons of ethanol has been blended into gasoline supplies.

Under some circumstances, blenders find it convenient to blend more than the obligated quantity of ethanol, and they may sell the excess RINs to others who blend less than their obligated amounts. They may also keep the RINs to meet future blending requirements. The number of excess RINs available to be carried forward to the coming marketing year is currently estimated to be about 2.5 billion gallons. Blenders will be able to use these RINs to satisfy their mandated blending requirements next year, potentially reducing the amount of ethanol they purchase to as little as 11 bgy, while still complying with the 13.6 bgy RFS mandate. Now for some other considerations.

The "Blend Wall"

Curiously, there exists a "blend wall" that allows delivery of only about 13.3 bgy of ethanol, an amount smaller than the 13.6 bgy mandate. The blend wall is calculated as ten percent of the 13.3 bgy of gasoline motor fuel that the Energy Information Agency expects to be consumed. It's considered to be a wall because of the lack of blender pumps and other infrastructure needed to deliver blends greater than ten percent (E10), and related concerns that most United States automobiles may be damaged by blends in excess of that amount. Obviously, there is some flexibility in this "wall."

...and the "Octane Wall"

Gasoline blending technology reduces blenders' ability to adjust to an RFS waiver in the short-run. The oil refining industry has adjusted its formulation of the primary gasoline blendstock (RBOB) to 84 octane, which when blended with ten percent ethanol produces 87 octane "regular." To maintain this octane level with less ethanol in the blend would require a new RBOB formulation, and that may require months to achieve if indeed the industry believed the change were relatively permanent.¹

Potential Responses to a Waiver of the RFS

The blend wall limits the maximum amount of ethanol that the fuel industry can utilize, while the octane wall limits the minimum amount of ethanol it can utilize. While both walls have some elasticity, they nonetheless limit response to changes in regulations and prices.

The corn-ethanol arithmetic with no RFS waiver is roughly as follows. Over the corn marketing year, ethanol production could range from about 11 bgy to the full 13.6 bgy, requiring from 2.75 to 3.4 billion bushels of corn² from the predicted 10.8 billion bushel crop. The actual amount will be chosen by the blenders, nearer the lower figure if ethanol

price is high relative to gasoline (and if octane adjustments can be made), nearer the higher figure if ethanol price is low, but no higher because of the blend wall. The Ethanol:RBOB futures price ratio has risen from about .70 last spring to .90, indicating a weakening trend in this incentive to blend. So under business as usual, changes in corn use for ethanol will likely be quite small, despite the high corn price.

If the EPA were to waive the RFS, resulting in some smaller quantity of mandated ethanol use, how would the picture differ from the one above? The octane wall would still be a strong deterrent to utilizing much less than the current 13.3 bgy, which would imply no change in ethanol production despite the waiver. Any reductions in ethanol purchases would depend on the extent to which the RBOB formulation can be adjusted within the waiver time frame, and that is not very well known.

The above reasoning suggests that an EPA waiver will not have a large effect on the amount of corn purchased by the ethanol industry. Babcock, on the other hand, concluded from using Iowa State's Center for Agriculture and Rural Development (CARD) economic simulation model, that a waiver could decrease corn prices from \$0.58-2.49/bu, but this analysis did not incorporate the influence of the octane wall. Tyner, *et al.*, performed a similar analysis using Purdue's GTAP economic simulation model, finding that the impact of the waiver varied from none to \$3.32/bu., again without considering an "octane wall."

However, both Tyner, *et al.*, and Irwin and Good concluded from qualitative evaluations similar to mine above, that a waiver would have limited impact because the combination of the octane wall and the blend wall. The consensus of economists is that a one-year waiver of the RFS2 mandate would not have much impact on corn use and prices.

References:

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- Irwin, S. and D. Good. August 2, 2012. "Ethanol-Does the RFS Matter?" Univ. Of Illinois:
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- Tyner, W. E., F. Taheripour and C. Hurt. August 16, 2012. "Potential Impacts of a Partial Waiver of the Ethanol Blending Rules." Purdue University:
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¹ Irwin and Good, and Tyner, *et al.*, bring this issue to our attention and discuss it in more detail.

² A bushel of corn converts to about 2.8 gallons of ethanol, but about a third of the corn is returned to the feed grain supply in the form of distillers grains and solubles.