

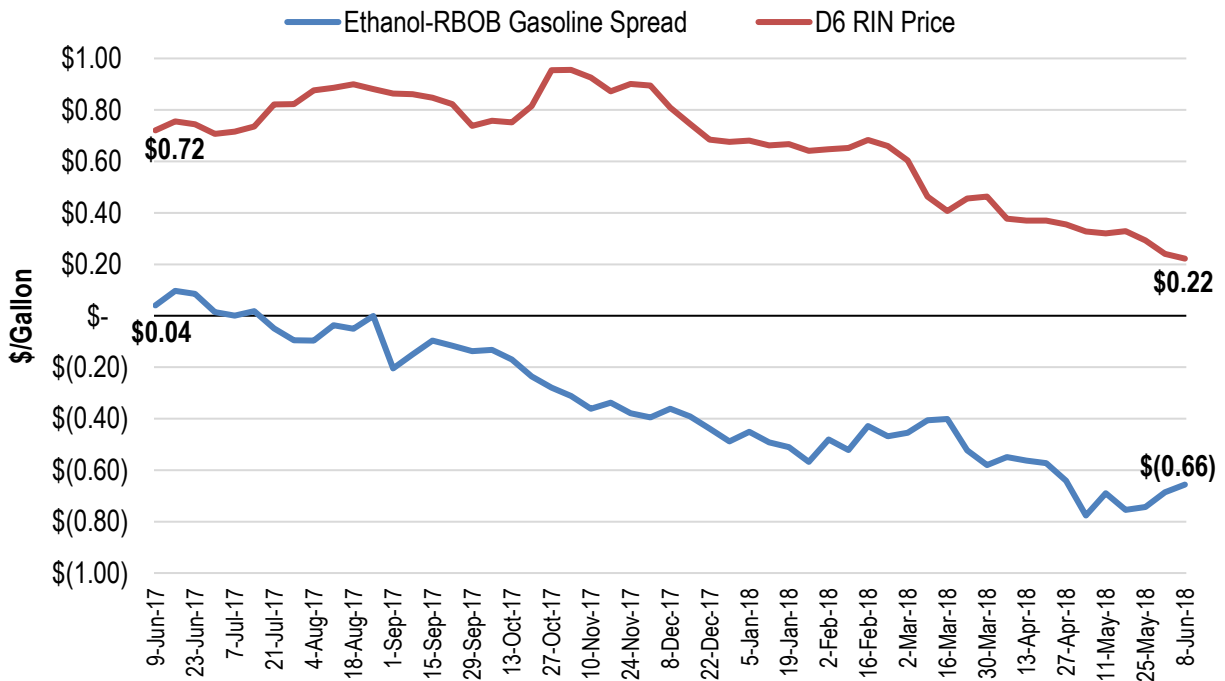
Small Refiner Exemptions Have Already Cost U.S. Corn Growers, Ethanol Producers, and Ethanol Blenders More than \$5 Billion in Economic Losses

It is estimated that the 2016 and 2017 Renewable Fuel Standard (RFS) requirements have been effectively reduced by a total of at least 1.63 billion gallons due to small refiner exemptions recently issued by EPA.ⁱ These exemptions are impacting demand for ethanol and corn in several distinct ways.ⁱⁱ

Upon receiving the exemptions, small refiners who had been accumulating 2016 and 2017 RINs with the expectation that they would be needed for RFS compliance either ended up selling those unneeded RINs to other obligated parties or banking them for compliance with future RFS obligations (although many small refiners likely also expect to secure exemptions from 2018 obligations). Thus, RIN stocks have been rapidly inflated, and RIN prices have dropped dramatically.

Sharply lower RIN prices reduce the incentive to expand ethanol blending.ⁱⁱⁱ Further, when RIN prices are low, the market price for ethanol must adjust lower relative to gasoline to ensure favorable blending economics are maintained. Indeed, ethanol's discount to gasoline has grown to its widest level in four years in recent months (60-80 cents per gallon) as RIN prices have fallen some 70 cents since November 2017.

Weekly Average Ethanol Discount to Gasoline vs. D6 RIN Price



Sources: OPIS (RINs), CME (nearby ethanol and RBOB futures)

In turn, this leads to lower profit margins for ethanol producers and reduces the price that ethanol producers are able to pay for corn to ensure break-even profitability. For example, if the market price for ethanol is \$1.50/gallon, a typical debt-free ethanol dry mill could pay \$4.30/bushel for corn and still achieve a break-even net profit margin.^{iv} However, if the ethanol price is forced to retreat to \$1.40/gallon to maintain the necessary economic incentive to maximize blending rates, the corn price must fall to \$3.90/bushel in order to maintain a break-even margin (assuming all other production costs are unchanged). Thus, lower RIN prices serve as a drag on both ethanol and corn prices and profitability.

In essence, the wealth of surplus RINs available due the small refiner exemptions also means refiners can meet future RFS obligations with low-priced paper credits rather than expanded blending of physical gallons. Even though exemptions were given for 2016 and 2017 compliance, the impact of those exemptions is likely to play out in the form of lower ethanol demand in 2018. That's because RINs have a two-year life. RINs generated in 2016 that were not ultimately needed for 2016 compliance were rolled forward and used to meet 2017 obligations, displacing the need for some amount of 2017 RINs. In turn, the 2017 RINs not needed for compliance with the 2017 RVO because of the exemptions were rolled forward and can be used to comply with 2018 RVOs in lieu of physical biofuel volumes.

While estimating the economic impacts of the small refiner waivers is extremely difficult and involves a number of complex factors and indirect effects, the *minimum* impact of the exemptions can be roughly approximated simply by examining the market value of the exempted volumes and RINs. The 1.63 billion gallons of avoided ethanol blending is approximately equivalent to:

- **\$2.45 billion worth of ethanol** (assuming \$1.50/gallon average);
- **\$1.96 billion worth of corn** (assuming 570 million bu. of avoided grind at \$3.50/bu. average); and
- **\$815 million worth of RINs** (assumes year-to-date average of \$0.50 per D6 RIN)

Thus, the minimum impact of the 1.63 billion gallons of RFS small refiner exemptions is approximated at \$5.3 billion. Importantly, this estimate examines only the value of the lost volume/avoided demand at *static prices* for corn, ethanol, and RINs; it excludes the impact that lower overall demand for ethanol and corn is having on every gallon of ethanol, every bushel of corn, and every RIN credit.

ⁱ <https://www.agri-pulse.com/ext/resources/EPA-EMTS-data-and-small-refiner-exemptions.pdf>

ⁱⁱ See: <http://www.ethanolrfa.org/2018/04/early-evidence-of-epa-induced-demand-destruction/> and <http://www.ethanolrfa.org/2018/05/more-evidence-of-epa-induced-ethanol-demand-destruction/>

ⁱⁱⁱ When RIN stocks are ample and RIN prices are low, many refiners will opt to comply with the RFS by purchasing RINs rather than expanding ethanol blending. That takes pressure off the blending market and reduces domestic ethanol demand, which has already been reflected in recent lower blend rates. Meanwhile, selling RINs is less lucrative for non-obligated blenders, so blenders at the margin may also reduce discretionary blending. Finally, lower RIN prices mean the retail discount for blends like E15 and E85 could narrow, potentially decreasing consumer demand and reducing retail station throughput of higher blends.

^{iv} Assumes current average prices for natural gas, DDGS, and corn distillers oil, as reported by USDA-AMS.