

CRA Review of Wells Fargo's Report:

“Independent Refiners: The Crack Ate My RINs – Policy and Profit Implications”

Overview

In its equity research note in November 2017, Wells Fargo evaluates the impact of RIN prices on the equity value of Independent Refiners. They employ some simple statistical tests to form a conclusion that RIN prices are showing up in refined gasoline product prices more in 2017 than they did in 2013, and therefore RINs should not be considered detrimental to Independent Refiner value. Unfortunately, their analysis is too simplistic to create any confidence in their conclusions. More importantly, the Wells Fargo analysis does not address the degree to which RIN prices show up in the crack, which is the main point of contention in the debate over pass-through. Even a high assumption of 80% RIN cost pass-through in the crack would indicate billions of dollars in unrecovered costs for refiners.

In this document, we review the Wells Fargo study and critique its approach and findings. We conclude that the analysis should not be relied upon for forming any conclusions about RIN cost pass-through.

Summary of Wells Fargo's Analysis

Wells Fargo selected a set of time periods (10-15 days in length) during 2013 and 2017 in which RIN prices were changing significantly. During these periods, they conducted a simple regression of Gulf Coast gasoline prices against two variables: 1) Louisiana Light Sweet (LLS) crude oil prices, and 2) ethanol (D6) RIN prices. They provided no other specifications of their analysis, such as the number and actual duration of the time periods.

During the selected periods, Wells Fargo claims to have found that RIN price changes explained more of any gasoline price changes in 2017 than they did in 2013. They also claim this happened as crude prices lost some of their correlation with gasoline prices, becoming less explanatory than RIN prices in 2017. They then leap to the “undeniable” conclusion that RIN prices are showing up in the crack, and therefore refiners are recovering the majority of RIN costs in their gasoline sales.

In the second half of the research note, Wells Fargo presents a comparison of hypothetical financial performance (in 2013 vs. 2017) for three refiners with varying levels of “refining and wholesale/retail integration.” For 2017, they used somewhat reasonable scenarios of 50% and 85% RIN price pass-through in the crack. For 2013, they assumed only 10% RIN price pass-through. The differing assumptions make a 2013 vs. 2017 comparison impossible, but the main theme is that the more integrated refiners are better off and all three refiners benefit with more pass-through in the crack.

CRA's Critiques

First and foremost, the simple description of their methods is inadequate to replicate results or draw any conclusions about the validity of their analysis. They do not report their selected time periods, which are critically important as their selections could bias their findings. To illustrate this, we provide Figures 1 and 2 below, which show the variables used by Wells Fargo during the two years evaluated, 2013 and 2017. We highlight three 10-15 day periods in each year that seemed to display significant movements in RIN prices. We do not know if these were time periods selected by Wells Fargo, but that does not matter for this illustration. Importantly, it can be seen that the story can be very different for each time period, and that we could select time periods that tell very different stories.

Figure 1: Daily Petroleum Product Prices and Ethanol RIN Prices (2013)

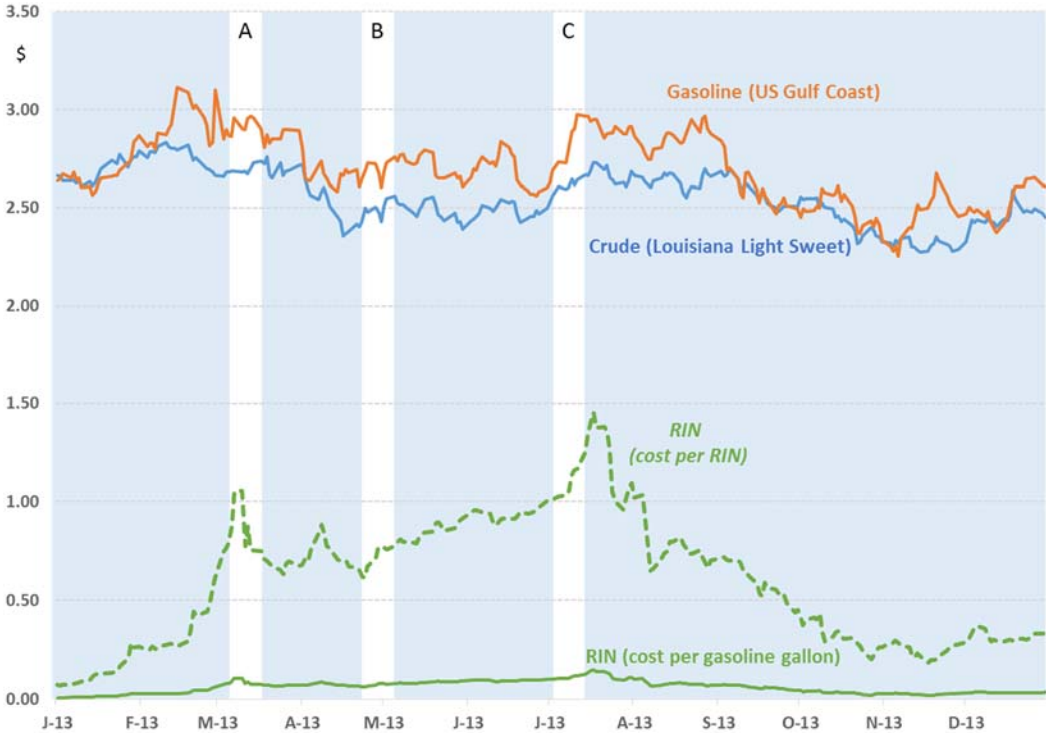
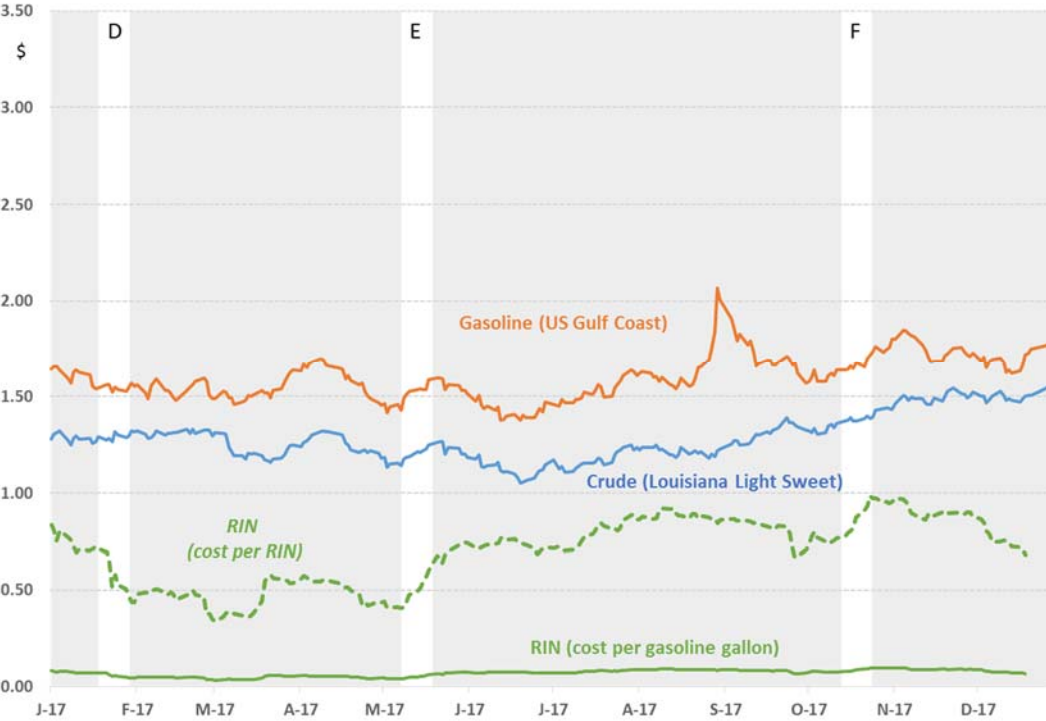


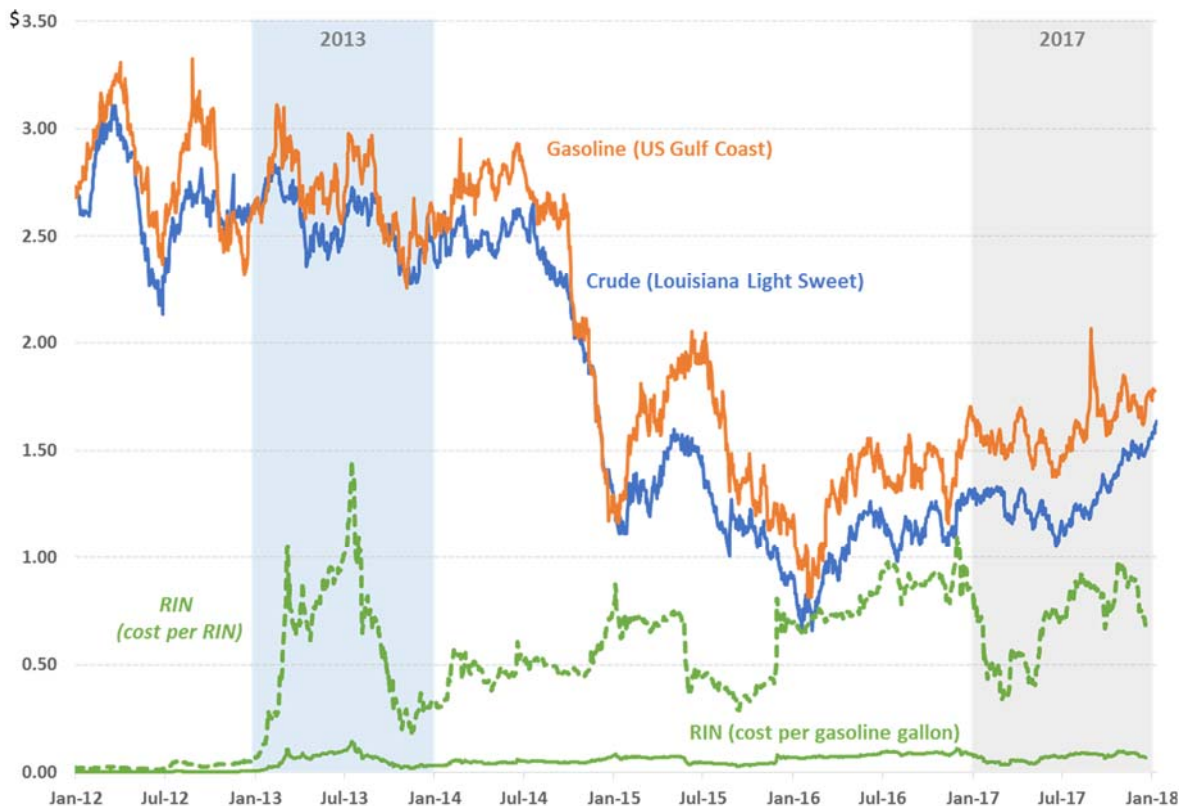
Figure 2: Daily Petroleum Product Prices and Ethanol RIN Prices (2017)



For example, in Period C in 2013, RIN prices seem to amplify the gasoline price movement. In Period D in 2017, RIN prices drop significantly with no clear impact on gasoline prices. If comparing these two periods, one might conclude higher pass-through in 2013, directly contradicting the Wells Fargo conclusion. Selecting Periods B and E would tend to support their conclusion.

When all three variables (RIN, crude, gasoline) are moving in the same direction, it is important to consider the reasonableness of a finding that RIN prices drive gasoline prices more than crude prices. Each gallon of gasoline generates the need for about 1/10th of a RIN, which means the per-gallon RIN cost has ranged from about \$0.05 to \$0.10 per gallon over the past four years. This can have a significant impact on refiner margins, but crude prices are clearly more impactful on the actual price of gasoline. In Period F in 2017, RIN prices per gasoline gallon move about \$0.03 (32%), gasoline prices move \$0.23 (32%), and crude prices move \$0.16 (9.8%). The Wells Fargo analysis would likely show RIN prices as the main driver based on the percentage moves, when the RIN price increase can only explain about 10% of the gasoline price increase, even with full pass-through. Given the scale differences, any reasonable statistical analysis of pass-through should focus on price spreads, not absolute prices.

Figure 3: Daily Petroleum Product Prices and Ethanol RIN Prices (2012-2017)



Additionally, the RINs and fuels markets are known to exhibit significant seasonal variations that need to be considered in short-term studies. Most other pass-through studies control for seasonality.

Wells Fargo claims to show that RIN prices moved gasoline prices during extreme periods of RIN price changes in 2017, more than they did in 2013. That RIN prices have an impact on gasoline prices is not

really debated. More of concern is how much RIN prices move gasoline prices. Even if we assume there is statistical significance in their results and there was indeed more pass-through in 2017 than 2013, that does not mean there was full pass-through. Merchant refiners can be economically harmed by anything less than full pass-through.

Our analysis, through more statistically robust methods, has shown that RIN price changes do not get fully passed-through to consumers in most periods. We believe true pass-through has been closer to the pass-through levels assumed in Wells Fargo's hypothetical scenarios. It also varies by fuel market.

Conclusion

Overall, the Wells Fargo note has some strong language suggesting that refiners need not worry about RIN cost recuperation, but the analysis does not substantiate those claims analytically. It also provides a false sense that things are drastically different in 2017 than 2013, but not enough analytical rigor to support it. Even if the years were different, there is no proof in the Wells Fargo analysis of full pass-through of RIN cost in 2017. Such a finding is not possible through evaluating a simple correlation between drastic RIN price changes and gasoline prices.

Note: petroleum price data obtained from Bloomberg, RIN prices from OPIS

Disclaimer

The study was commissioned by Monroe Energy. The research, analysis, results and conclusions were all developed independently by the authors. The conclusions set forth herein are based on independent research and publicly available material.

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