Diesel Fuel Prices for 2018

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Introduction

Diesel prices (and gasoline prices too) have started the year much higher than they were last year. Highway diesel prices in 2018 have been nearly $0.50 higher than in 2017 and nearly $1.00 higher than in 2016. Figure 1 below shows the weekly highway diesel price in the U.S. for the last 5 years.

The effects of fracking took hold in 2014 and ever since then, highway diesel prices have stayed within a range of $2 to $3 dollars. During 2017, prices rose throughout the year so that now, diesel prices are at the top end of that range.

Part of the reason for higher diesel prices is that the price of oil is higher. The stronger economy has help create more demand for oil (and the fuel products) because of more construction and more products being shipped across the country. For farmers this presents a challenge as diesel fuel is an important expense item. With most crop budgets showing very little profitability, farmers will need to watch their expenses very closely to have any chance of earning a profit.

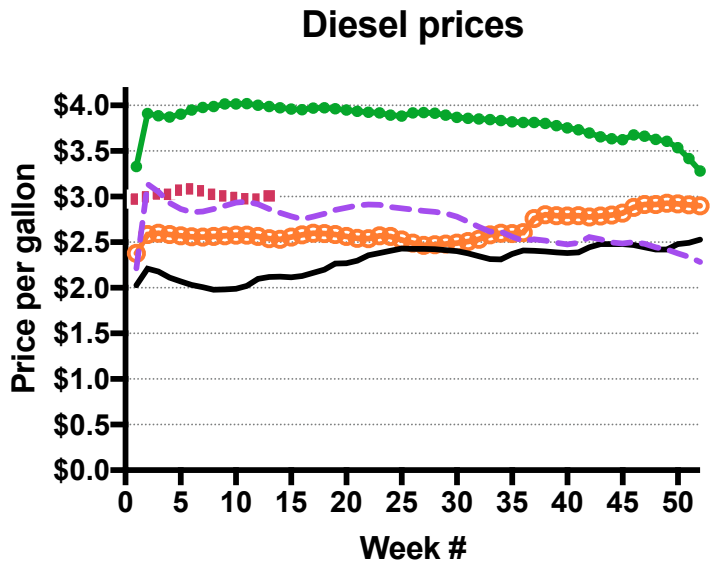

Figure 1. Five-year weekly highway diesel prices

Seasonality

Although farmers can't control the oil price, there are opportunities during the year to purchase diesel fuel where, historically, the diesel price has been lower than normal. This yearly variation is called seasonality. While the seasonality of diesel fuel is not as strong as gasoline, there is some evidence that moderate seasonality of diesel prices does exist.

Figure 2 shows the seasonality of diesel prices for the last six years. Here, the monthly price is compared to the average yearly price to determine the difference. The last six years of these monthly price differences were then averaged by month to get a monthly seasonal price difference. The black bar is this average while the purple points are the seasonal differences in a given year.

As shown in the figure, March tends to have the highest price in a given year that is typically $0.05 higher

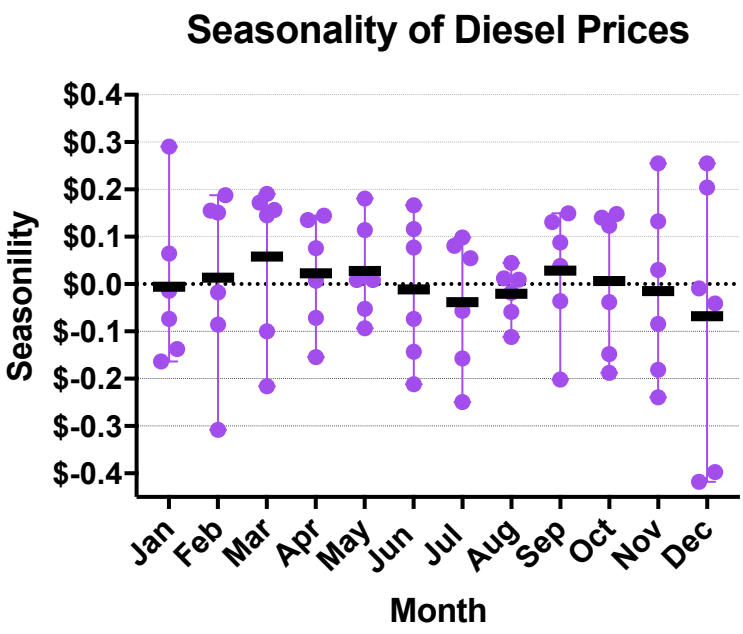

Figure 2. Monthly seasonality of highway diesel prices

than the yearly average. However, in two of the last six years, the March price has actually been below the yearly average. October has also been another month where the yearly price has been above average.

For farmers looking to obtain the lowest price for fuel, July and December have, on average, lower prices. December also happens to be one of the more volatile months for diesel prices as the price has been as much as $0.40 below average and $0.30 above average. For the last six years, the price in August has been the least volatile when compared to the yearly average.

Given that March and October are, on average, the most expensive months in a year to buy diesel, farmers should probably buy their fuel ahead of time for spring and fall work. Buying fuel as needed will typically mean that farmers are buying more fuel in those months with higher prices. Buying fuel in December for spring field work and in July for fall field work will usually result in farmers paying less for diesel. This strategy won't work every year as the large high to low range of purple dots in Figure 2 indicates but over enough years, it can.

Price Predictions for 2018

Figure 3 shows how the oil price can be use to predict diesel prices. As might be expected, oil and diesel prices are highly correlated with an R-squared of 0.93. In Figure 3, each dot represents a monthly diesel price. A regression model shows that a $10 increase in the price of oil results in a $0.27 increase in the price of diesel fuel. This regression result is shown by the trend line

Currently, the price of oil is around $64 a barrel. This would translate into a highway diesel price of just over $3 a gallon which is right at the national highway diesel price. Thus, based on trend line, diesel prices are as expected.

Predicting diesel prices for the rest of the year is possible if there is also an estimate of oil prices. Fortunately, the future market provides that based on what traders think will happen to oil prices. Currently, the futures market shows oil futures declining to 61 dollars by the end of the year with some additional decreases through 2019.

An oil price of $61 should result in a highway diesel price of $2.92 per gallon which is about $0.10 below the current price. Thus, it is very possible that diesel prices have peaked for the year and that prices will slowly decrease through the end of the year.

These price projections assume no big shocks and that traders have correctly predicted the price of oil. Even with a slow decline in prices, the average 2018 diesel price is still likely to be above the average from the last three years.

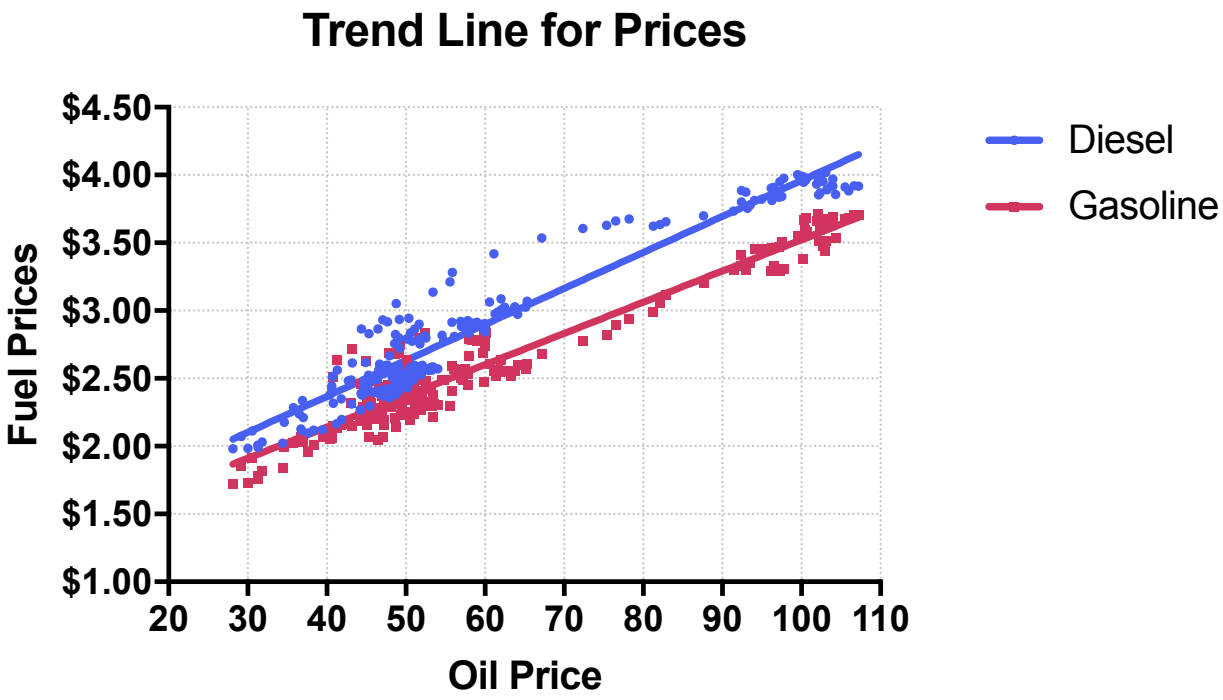

Figure 3. Regression of diesel and gasoline prices against oil prices