What's Going Down with Oil Prices

Gregg Ibendahl and Dan O'Brien

Introduction

So far 2020 has been a crazy year for the energy markets and the year is not even half over. In addition to the most volatility ever seen, prices even went into negative territory on April 20, the day before the May contract expiry. The Coronavirus has completely changed the forecast for oil, diesel, and gas prices. In a "normal" year, fuel prices would start to increase going into summer following seasonal demand for motor fuels. However, this year prices are likely to decline though much of the summer. This has important implications for farmers as fuel is a major expense item on a farm and the oil price, in turn, is an important driver of fertilizer prices. This article will attempt to give some background on the effect of the Coronavirus on fuel prices and what farmers might expect for diesel prices this summer. The demand for ethanol has also been sharply reduced – having a major impact on supply-demand balances and prices for U.S. corn and grain sorghum. But that issue is addressed elsewhere on the www.AgManager.info website by KSU Agricultural Economists.

Background

Figure 1 plots the 10-year history of oil, diesel, and gasoline prices in the United States. The left axis plots the oil price while the right axis plots the diesel and gasoline price. The early part of this decade represents the period before fracking and horizontal well drilling became common. During this time $100/barrel oil was not unusual resulting in gasoline prices hitting $4 a gallon at times.

One benefit of the high oil prices of the early 2010's was that these prices encouraged the development of fracking in the U.S.. Fracking technology has been around a long time (a century or more) but it was always cost prohibitive. That situation really changed starting in about 2013. Fracking now dominates the U.S. oil industry and the U.S. is one of the major oil producers in the world. The influence of OPEC was considerably weakened.

The environmental effects of fracking can be debated elsewhere, but fracking has clearly led to lower and more stable oil prices. Until the Coronavirus hit, oil typically traded in the range of $50 to $75 per barrel. At these oil prices, gasoline often sold in the mid $2/

gallon range. At $50/barrel, U.S. oil producers, many who carry large debt loads, are not very profitable.

Current Situation

Figure 2 shows the daily Cushing, OK, West Texas Intermediate (WTI) spot prices. This figure has at least three stories to tell. First, the price decline that starts to appear in late February is partly caused by diminished demand caused by the Coronavirus. As might be expected, all the stay-at-home orders across the U.S. have reduced the need for fuel because most Americans are driving less. There are some reports that indicate the virus has reduced fuel demand by 25%.

The second story is on the production side. When the U.S. became a world oil producer, OPEC's influence on the oil market was diminished. This resulted in Russia partnering with OPEC (now sometimes called OPEC+) to help influence prices. This new partnership has not always worked as planned. In particular, when demand started to fall because of the Coronavirus, OPEC+ attempted to curtail production, but Russia and the Saudis both ended up increasing production instead (there is much political discussion about this that is beyond the scope of this paper). This action is what caused oil prices to fall below $20/barrel the first time in mid to late March.

The third story is the negative price that occurred on April 20th. This move into negative territory was all about the expiration of the May 2020 WTI (West Texas Intermediate) oil futures contract. For CME WTI oil futures, any traders that were still long on the May 2020 contract at expiration would be forced to take physical delivery of the oil product. The May 2020 WTI oil futures contract expired on Tuesday, April 21, 2020. The WTI contract has a delivery point of Cushing, OK with capacity of approximately 93 million barrels. The Cushing, OK location was anticipated by traders to be out of storage space within the next few weeks.

After the move into the June 2020 contract the next day, CME WTI oil prices bounced back to the $10 range. At this point in the contract, long traders don't have an immediate squeeze to take oil. Still, a similar situation could very well develop in another month. Even if the negative prices are an end of the month phenomenon, demand for oil is so weak now that prices in the teens could very well persist for a number of months. At this time it is anticipated that the CME will be proactively

involved in seeking to avoid having a similar situation occur at expiration of the June 2020 WTI oil futures contract in late May of this year.

Implications for Very Low Oil Prices

Short-term, farmers and consumers could see very low diesel and gas prices this summer. Figure 3 is a trend line of diesel and gas prices against the oil price. The correlation is very high between oil and gas or diesel. Oil prices of $20 per barrel could very well result in highway diesel prices of $2/gallon. Gasoline prices might approach the $1.60/gallon range. These are national price projections – so local prices could vary somewhat.

Other short-term benefits may include lower fertilizer prices 6 to 9 months from now. Research here at K-State has shown that fertilizer prices are highly correlated to the oil price, but with a 6 month or more lag. A future paper will examine fertilizer prices in more detail. Thus, forecasting into the 2021 growing season, farmers could very well have much lower fertilizer costs.

Long-term, oil prices below $50 per barrel are not good for the U.S. economy, and oil prices in the $20 range are terrible. Prices at these levels are strong incentives for the U.S. oil industry to stop producing. Given that many of the independent oil producers in the U.S. need $40 to $50 oil to break even and given their heavy debt levels, the current situation will likely lead to many bankruptcies and the shutting down of many oil fields – particularly in recently developed fracking operations.

That said, shutting down oil production is the correct economic response when there has been a dramatic shift in demand like we have experienced due to the Coronavirus. However, eventually when the economy gets started again, demand for oil will increase. At that point, it will take high oil prices to provide the incentives that the shale oil industry needs to restart oil production. Thus, oil prices over $100 and gasoline prices over $4 are very likely at some point in the future as the oil market responds to current "shut down" and anticipated future "restart" economic signals.

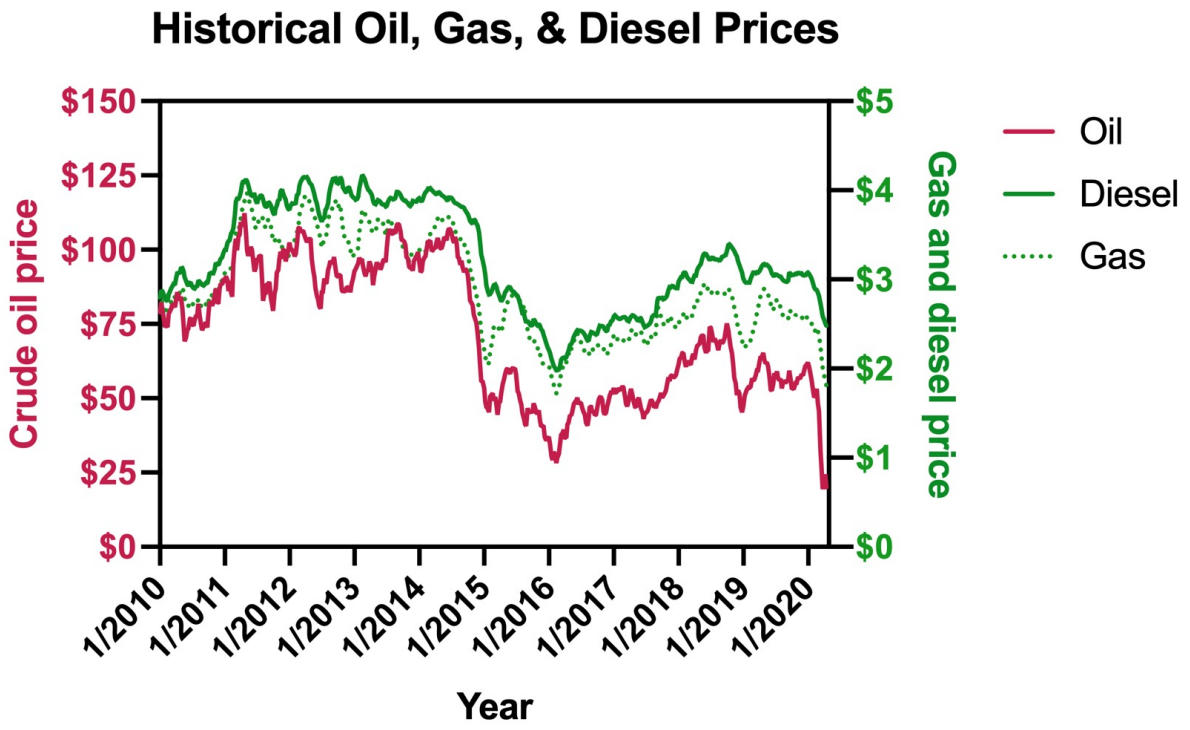

Figure 1. 10-Year Price History of Oil and Fuel Prices

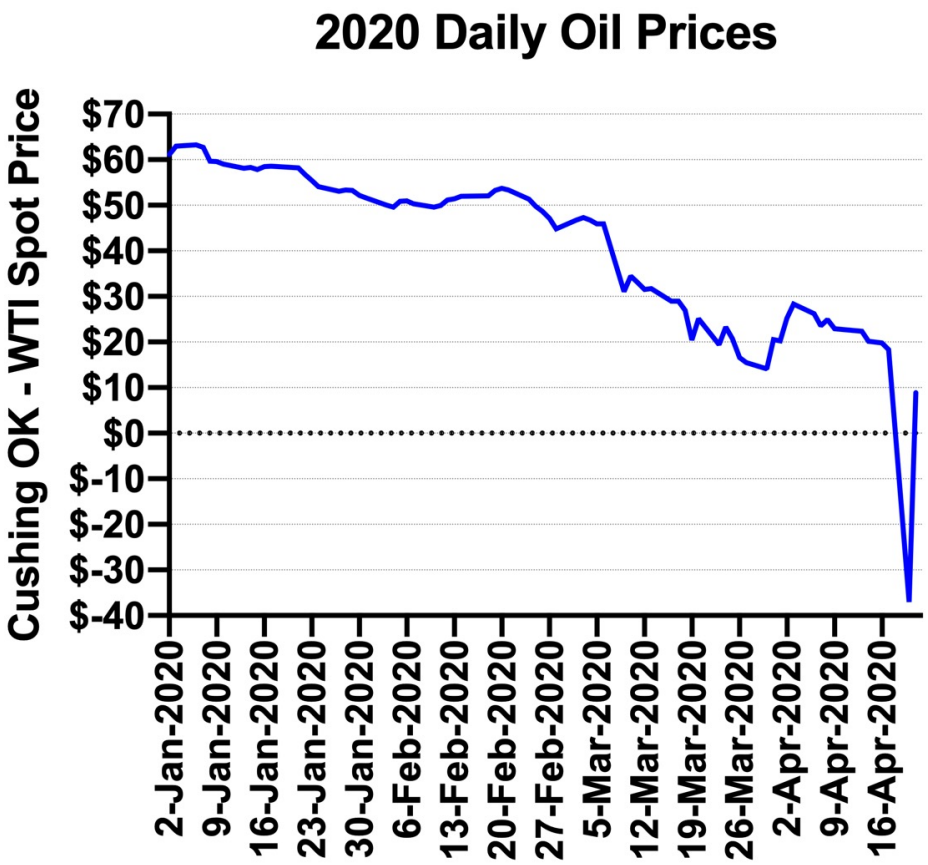

Figure 2. 2020 Daily Oil Prices

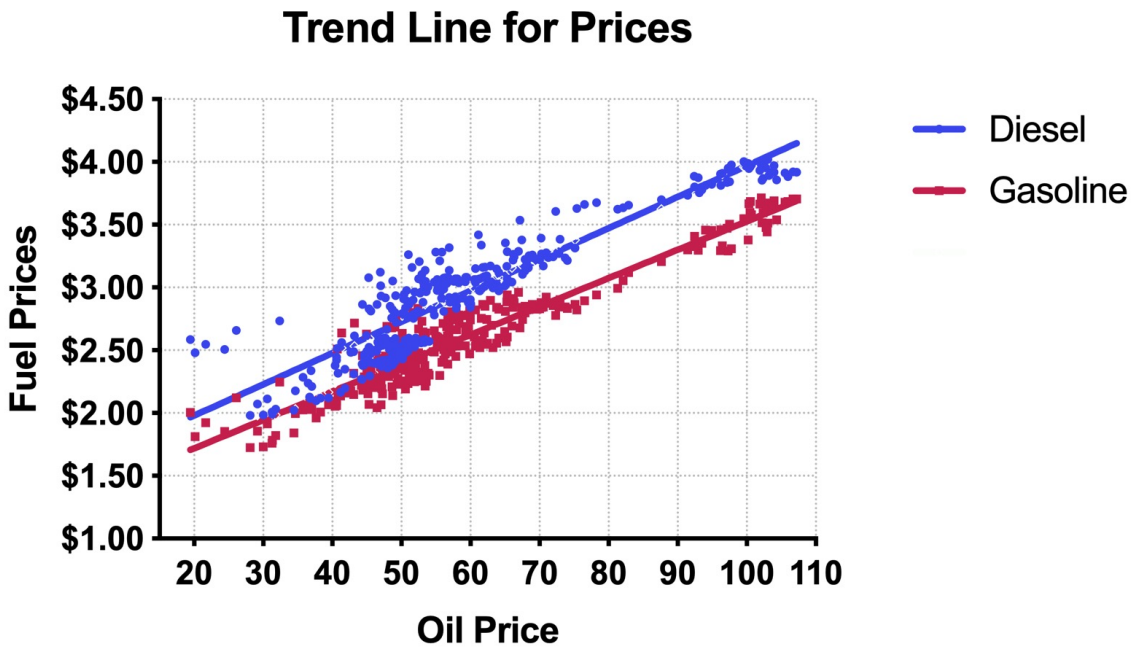

Figure 3. Regression of Diesel and Gas Prices Against Oil Prices

Gregg Ibendahl	email:ibendahl@ksu.edu	twitter:@ibendahl
Dan O'Brien	email:dobrien@ksu.edu	twitter:@KSUGrains