

WHITE

PAPER



The Other Crisis

Most of us have been appropriately preoccupied with the Coronavirus and its tragic impact on human life as well as the world's economy. However, somewhat off to the side, there have been dramatic developments in the oil markets with high stakes political poker, remarkable price volatility, and complex implications for economies and markets. Specifically, the price of oil dropped from \$63.27 per barrel on January 6th to a low of \$14.10 on March 30th, a decline of 78%. On March 8th, the price fell 30% in a single day which dwarfs even the volatility in the U.S. stock market in recent weeks. Following an agreement by OPEC members and Russia to cut production, the price rallied to \$28.36 on April 3rd, but weak demand and a lack of storage space has since resulted in an epic collapse in the price to -\$38.45 on April 20th. Yes, that is a minus sign, which means that producers are actually paying buyers to take the stuff off their hands. By the way, the volatility of this market has been such that these prices will undoubtedly be stale by the time that you read this paper.



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A Collapse in Demand and Geopolitics

The crisis was sparked by the fact that between one-third and one-half of the world's population is in some form of lockdown resulting in a dramatic decline in the usage of automobiles, airplanes, and other large consumers of petroleum products. Specifically, oil industry experts forecast that worldwide demand for oil will decline by 27 to 35 million barrels per day in April from the typical 2019 level of 100 million barrels per day. Consistent with those forecasts, U.S. demand has declined 30% from pre-crisis levels and is now at the 1990 run rate despite the fact that our economy has doubled in size since then. In response to falling demand for any commodity, producers typically reduce supply in order to support prices. However, in this case, OPEC members were unable to agree on production cuts at their March 6th meeting while Russia separately made the decision to flood markets with crude beyond their typical production level. In response to Russia's action, Saudi Arabia announced that it too would increase production and cut prices. While maintaining or increasing production in the face of decreased demand is likely to put further downward pressure on prices, many producers are in a box in that they desperately need to maintain oil revenues in order to support their economies and perhaps restive populations. Some observers also believe the Russians have a more Machiavellian objective, to cripple the U.S. shale oil industry which is a relatively high cost producer that might not survive a sustained period of low prices. On Sunday, April 12th, OPEC announced an agreement to cut production by 9.7 million barrels a day. As previously mentioned, this decision instantaneously sparked a rally in oil prices, but they have since collapsed as traders realized that there is still considerable downside risk until economies reopen and energy demand recovers. In addition to questions as to the timing and shape of the economic recovery, it is important to realize that a number of OPEC members cheated on their quotas during past oil crises in which they pledged production cuts, and there is the question of Russia's ultimate strategy. To address the issue as to why all of this matters, I will evaluate some aspects of the impact of oil on economies and markets later in this paper. First, we should spend a little time on the underlying factors that drive oil prices.

Supply and Demand

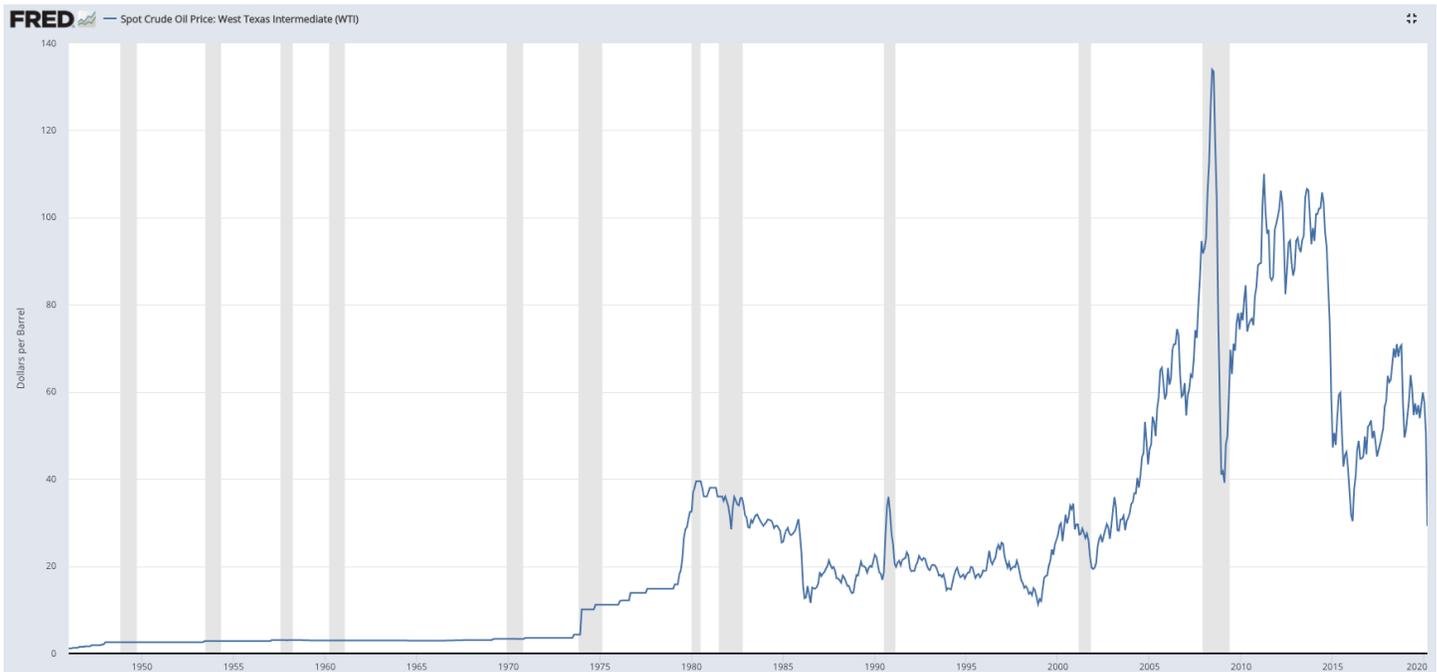
For most commodities, prices are set by the balance between supply and demand, but the equation for oil is a good deal more complicated. Let's consider supply first.

The basic determinant of the supply of oil is the rate of discovery and extraction that is in turn influenced by the financial incentive to search for oil, the impact of technology, cost of extraction, refining capacity, and the transportation system. All of these are economic in nature and therefore somewhat rational and predictable. However, superimposed on these variables are a number of political factors that are inherently volatile and unpredictable. As we will see in the next section, political instability within a producing country can materially reduce production, and several countries have used oil embargos as a weapon to punish perceived or actual enemies. As mentioned earlier, some producers have also attempted to damage competitors by lowering the price to a point that it is uneconomic for them to produce.

Long-term demand for oil is fundamentally based on economic growth but there are a number of complicating factors. From 1969 to 2018, oil consumption in the U.S grew at a .8% annual rate while Real GDP grew at a 2.8% annual rate. The discrepancy between those figures results from two factors. First, the U.S. has shifted from a manufacturing economy to a service economy that is less energy intensive. Second, consumers of energy such as automobiles and airplanes have gradually become much more energy efficient. Worldwide consumption has grown at twice (1.5%) the U.S. growth rate because of the industrialization of China and other emerging economies. However, as was the case with supply, demand can be altered by other factors. For example, political tensions can lead to increased demand for oil to build inventories as a hedge against uncertainty and possible future shortages. Finally, some people believe that speculation in the futures markets by hedge funds and other financial players has impacted the demand for oil and its price at various times. In the next section, we will see how all of these factors play out in the form of the history of oil prices.

The History of Oil Prices in the U.S.

The following chart depicts the price of oil from 1946 through April 17th, and you should be immediately impressed by its incredible volatility. As you will note, the price was relatively flat until the early 1970's because it was controlled beginning in 1927 by a cartel of seven major international oil companies. OPEC was formed in 1960, but it did not exert a great deal of influence until it instituted an oil embargo against countries that supported Israel during the Yom Kippur War of 1973. As a result of this embargo, the price rose from \$4.31 to \$10.11 in a single month at the beginning of 1974. From 1974 to early 1979, the price slowly but steadily increased from \$10 to \$14.85 when it was subjected to the second major oil shock which was occasioned by the Iranian Revolution followed by the Iran/ Iraq War. From the beginning of 1979 through mid-1980, the price increased from \$14.85 to \$39.50 per barrel. In total, the price therefore increased more than nine fold over the course of seven years significantly contributing to the U.S. inflation rate which averaged 9.2 % over that period.



The next oil shock was on the downside with crude falling from \$30.81 in November of 1985 to \$11.57 in July of 1986 due to increases in production by non-OPEC members, most notably the UK, that went from producing essentially no oil in the mid 1970's to 2.5 million barrels per day by 1985. Oil prices were then relatively stable until mid-1999 with the exception of a brief upward spike in the latter part of 1990 associated with the Gulf War. This period of relative stability was followed by an incredible surge in demand associated with the industrialization of China in which the price rose from \$17.89 in June of 1999 to \$147.27 in July of 2008. Next came the Great Financial Crisis in which demand dried up leading to the price falling to \$39.16 in a period of just eight months. Beginning in early 2009, the U.S. economy and energy demand began to recover coupled with concerns about supply related to the Arab Spring. The combination of increased demand and political uncertainty was associated with an increase in price from \$40 to approximately the \$100 level where it remained until mid-2014. Due to new technologies, U.S. production doubled between 2008 and 2014 motivating Saudi Arabia to flood the market with crude in a failed attempt to squash the nascent shale oil industry. Additionally, a number of OPEC members cheated on their production quotas. The net result was another downward shock in which prices fell from \$105 in June of 2014 to just \$30 in February of 2016. Over the next few years, prices recovered somewhat and then fluctuated in a range of \$45 to \$70 due to a generally favorable world economy, a decrease in production in Venezuela, and the imposition of sanctions on Iran. As mentioned at the beginning of this paper, the price on January 6, 2020 was \$63.27; then came the Coronavirus.

This history of oil prices is probably tedious but it makes the point that the price of oil is subject to significant swings in supply and demand, wars, political intrigue and instability, broad economic cycles, the impact of new technologies, and many other factors. The net of all of these factors has been a number of occasions when the price doubled or halved within a period of just a few months. In that sense, the recent gyrations in the price of oil are not entirely unexpected. In finance, we often use the statistic standard deviation that measures the amount by which a series of data points fluctuates around its average. Well, the long term standard deviation of oil prices is twice that of the U.S. stock market!

Why Are Gyration in The Oil Markets Important?

In most of the papers that I write on economics and finance, I point out that headlines are always simplistic and that virtually all economic events are characterized by secondary and tertiary effects as well as unintended consequences. A corollary is that something that benefits one group of economic players often penalizes another. Well, the impact of oil price fluctuations may be the ultimate case in point.

With respect to the beneficiaries, the average price of a gallon of gas in the U.S. is currently \$1.81 as compared to \$2.65 at the end of 2019, a decrease of 32%. Even though the number of miles driven has declined by more than 40%, those who are driving will certainly benefit, and there will be an impact on the published inflation rate as well. Similarly, oil represents the basic building block of a number of products including plastics, fertilizers, drugs, paints, and detergents among many others, so the decrease in the price of oil will hopefully also be passed on to consumers.

On the other hand, the plunge in oil prices is likely to have a dramatic impact on other parts of the economy. First, a firm called Rystad Energy estimated that 140 U.S. oil producers could file for bankruptcy this year followed by another 400 in 2021 if the oil price stayed at around \$20. With the most recent plunge to negative pricing, this scenario becomes very realistic. According to the American Petroleum Institute, the energy sector represents 8% of our country's GDP and accounts for more than 10 million jobs, a number of which would disappear should a large number of bankruptcies occur. A large number of bankruptcies would also damage bondholders and banks who would book significant losses. Immediately prior to the crisis, the Energy Sector represented 5.4% of the S&P 500. Given widespread ownership of index funds, this suggests that many investors have suffered losses due to the 48% average decline in the stock prices of energy companies this year. Finally, a number of oil producing regions of the country could be disrupted by unemployment, declining tax revenue, and potential migration. As just two examples, the states of North Dakota and Alaska derive 45% and 85%, respectively, of their tax revenue from energy production.

The bottom line is that the energy sector is an important part of our economy, and while many hope we will transition to other more sustainable energy sources, that is likely to be a drawn-out process. In the interim, these dramatic fluctuations in oil prices can materially change the outlook for our economy and financial markets. Demand

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will likely recover somewhat as the world economy reopens and normal business activity returns, but that may be at least partly offset by the long-term trend toward increased efficiency and substitution of other energy sources. Producers have tremendous incentive to take steps to increase prices. However, given excess supply and weak demand, it will likely take some time, which means that corporations, employees, lenders, regions, and governmental bodies will all be forced to adapt over time.

What does this all mean in terms of investment advice? Our exposure to the energy sector is quite limited. While the outlook for energy companies is fairly grim, it is important to note that their stocks have already declined significantly so forecasting future performance is difficult at best. However, we do believe there will be significant credit problems in this industry which suggests that it is very important for all investors to carefully evaluate their exposure to fixed income in any sector that could be impacted by low oil prices.

“My formula for success is rise early, work late, and strike oil.”

—J. Paul Getty

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