



**3<sup>rd</sup> Quarter 2016**

# ***After the Fall***

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**Examining the Decline in Crude Prices and  
Where the Market May Go from Here**

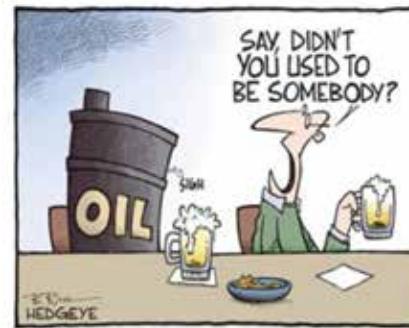
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## Examining the Decline in Crude Prices and Where the Market May Go from Here

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Source: Hedgeye

### WHAT THE FRACK?!?

Nearly two years ago, we published a White Paper entitled *What the Frack?!?*<sup>1</sup>, in which we took note of the United States oil and gas industry and the explosive growth that occurred over the prior five years. At the time, technology and high commodity prices led to an unprecedented turn around in the sector with US production reaching multi-decade highs, unemployment in the oil exporting states dramatically lower than the national average, petroleum imports steadily falling, and several regulatory hurdles serving as the major concerns for the space. It seemed like the dawn of a new, prosperous day for an oil and gas industry that had stagnated for decades. Yet, as much of us along the Gulf Coast are acutely aware, larger issues in the energy world consumed much of the next two years. As the price of oil fell over 75% from its cyclical highs, “frack” was not the only “f” word on the minds of energy investors.

### FUNDAMENTALS

“Fundamentals” also received a lot of attention. Supply and demand, inventory levels, and currency swings all earned consideration from analysts trying to make sense of market turmoil. The situation since the summer of 2014 in the oil and gas world has been - pardon the pun - fluid. Headlines, short-covering and rumors have all led to large swings, both up and down, in the price of crude. With a barrel of oil seemingly in a current trading range of \$40-\$60 (n.b.: this could change dramatically at any time<sup>2</sup>), we thought that we would take the opportunity to analyze the cause of the downturn, its impact on the industry, and some paths that the sector may go in the future.

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### 5-Year WTI Spot Price



Source: Bloomberg as of 8.18.16

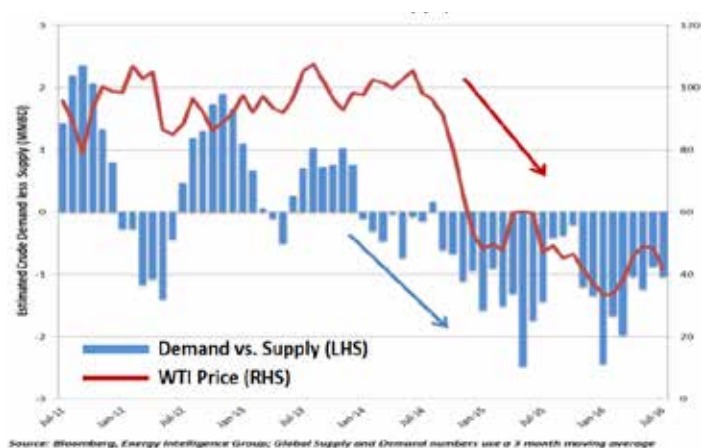
1. [www.hancockhorizon.com/press/WhatTheFrack.pdf](http://www.hancockhorizon.com/press/WhatTheFrack.pdf)  
 2. Seriously. In the time spent compiling this paper, the price of oil is up nearly 20%!

## The Fall

In the years before the sharp sell-off in oil prices, several analysts had postulated that the increase in US supply brought on by the shale boom should put pressure on the price of a barrel of crude. North of \$100 per barrel seemed too high given the rapid efficiencies gains and daily discoveries. Indeed, futures curves, an indication of where markets expected prices to go in the future, were in backwardation for period of time. Backwardation simply means that the price of a commodity in the future is less than the price of the commodity today. Prices were “supposed” to go down, but many analysts saw any correction stopping in the \$80-\$90 range. The most bearish thought prices may dip into the upper \$70s before rebounding. Nobody properly understood the risks to the price. West Texas Intermediate (WTI), the most quoted domestic index, bottomed in February this year at \$26.21.

So why did many market watchers completely miss and others radically underestimate the decline in oil prices? Obviously, a multitude of factors determines the price of oil or any asset. It seems, however, that many in the oil and gas markets did not pay close enough attention to the most crucial element: the balance of supply and demand. The chart below illustrates how the supply and demand fundamentals have changed over time. The Energy Intelligence Group estimates global supply and demand levels for crude. When the blue bars are negative, supply

### Crude Demand Less Supply vs. Price



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outpaces demand causing a glut. As one can tell, beginning in early 2014, supply has consistently and, at times, significantly outpaced demand for crude. The markets, recognizing the fundamental imbalance in the commodity, sold off in turn. While approximating future supply and demand numbers for a globally traded commodity like crude oil can be a difficult proposition, most analysts in the sector do not believe that the underlying fundamental will move back into equilibrium (supply=demand) until mid-to-late 2017. In the meantime, expect volatility to continue as market participants hang on every news headline and data point to try to better identify the inflection point.

Of course, the underlying causes of supply and demand are more complicated and interesting than simply numbers on a graph. Macroeconomic events continually influence both figures. Over the past few years, supply side impacts have included the disruptions in the Middle East from ISIS, the Iran nuclear deal, a break down in the Venezuelan government, and the Russian invasion of Crimea. None of these had the magnitude of influence as the two primary drivers: whether OPEC would curb its production and whether the United States would continue to grow its production from shale resources.

OPEC, the Organization of Petroleum Exporting Countries, has, since its founding in the 1960s, served as the global swing producer of crude. In other words, OPEC could ramp up or down its production quota to respond to market demands. With the rise of the United States shale and tight oil plays over the past 5 years, OPEC’s preeminence has slipped. While OPEC has always been a loose confederation – its constituents have competing objectives and different needed price points – over the past several years, the fractures have grown. The unofficial leader of

OPEC, Saudi Arabia, has continued to push for OPEC to meet its output quota. In November 2014, OPEC’s announcement to keep its high production level sent crude prices spiraling. Since then, markets have whipsawed around any news, or rumors, about OPEC’s next move or potential cut to production.



The second driver of global supply, as mentioned above, is the United States shale boom. The same technology that allowed for the rapid growth of the sector, also allowed America to become the new swing player in the global crude markets. While OPEC and the Saudis hoped that low oil prices would force the burgeoning US shale industry out of business, many domestic oil and gas companies have found further efficiencies and managed to continue to produce. Even though an extended period of low commodity prices has put pressure on weaker oil and gas companies, the United States energy industry has been able to maintain a relatively high level of production.

In essence, the conundrum in oil markets has become a complicated case of Game Theory. Briefly, the situation involves two rational participants with two choices. In our case, the choices are “drill” or “not drill” and the participants do not know the choice their competitor will make. The participants, depending on how it is framed can be various combinations of OPEC versus US exploration and production (E&P) companies, E&P companies versus

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each other, and specific oil play participants. The example below uses E&P Company “A” and E&P Company “B.”

This simplified chart illustrates that the best scenario for each company is for their competitor to stop drilling and they continue to drill. In theory, this would lift energy prices

		E & P Company “B”	
		DRILL	NOT DRILL
E & P Company “A”	DRILL	Supply remains high, marginal negative for both	Supply drops, prices rise, large positive for “A”
	NOT DRILL	Supply drops, prices rise, large positive for “B”	Supply drops dramatically, prices rise, no exposure, large negative for both

and the company would be able to resume profitable projects. If both companies do not drill, both companies will suffer. Therefore, rational market participants would want to continue to drill even though the most likely scenario is a small negative. Basically, market participants hope they can outlast their competitors taking a small hit to their profitability while continuing to hold or grow market share. Clearly this is a gross simplification of the matter at hand, but it does demonstrate that major players in every level of the oil and gas industry have it in their best interest to continue to keep their own production elevated.

**“Rational market participants would want to continue to drill even though the most likely scenario is a small negative.”**

On the other side of the equation, weak demand also hindered prices. Traditionally, global demand for crude has been closely linked to expected global growth. While global demand for crude has continued to grow for the past several years, concerns about future economic growth caused concern. In no particular order, the Eurozone slowdown, Brexit, a Chinese hard landing, worries of Brazilian, Russian, and Indian growth, and rapidly falling costs associated with renewables, all contributed to



demand worries about crude. Suffice it to say markets recognized that, the slow, muddle-along global economic growth that has persisted since the 2008 crash did not support triple digit oil prices.

### WTI vs US Dollar



*“Should the dollar remain relatively strong because of relatively robust economic growth, hawkish Fed policy, or some other factor, the price of crude will continue to face a strong headwind.”*

A final factor negatively WTI vs. US Dollar influencing the price of crude in recent years is the strength of the US dollar. Since the end of World War II, crude oil has priced in US dollars. Historically that has meant that when the dollar strengthens, the price of oil falls and vice versa. With turmoil overseas and monetary policy from China to the Eurozone becoming increasingly dovish, the United States’ position as “the cleanest, dirtiest shirt” – to borrow a phrase from PIMCO – has led to the dollar appreciating in value. The chart illustrates this point clearly. In mid-2014, as the US dollar strengthened (green line), the price of oil (red line) dropped. Should the dollar remain relatively strong, because of relatively robust economic growth, hawkish Fed policy, or some other factor, the price of crude will continue to face a strong headwind.

### PATH 1: A NEW EQUILIBRIUM?

A confluence of factors drove the price of oil downward over the past few years. The question weighing on many investors’ minds across the globe, and especially in the Gulf South, is where do they go from here? Instead of predicting an exact path for crude, we can only examine the factors that may have an influence on the price of oil through a range of possibilities. Of course, due to the complexity of the global crude markets, the following list will be only a selective list of potential known factors, not even considering the “unknown unknowns” or “black swan” events that could have a dramatic impact on the future.

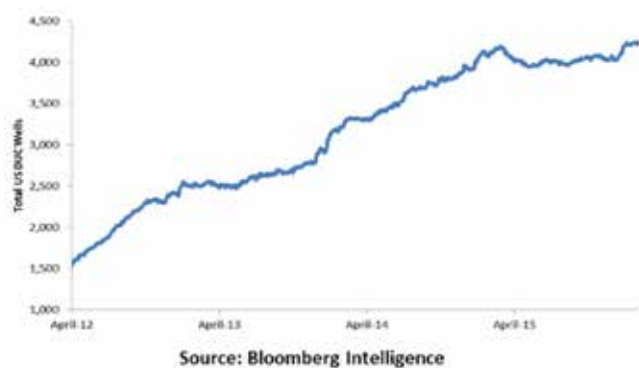
To begin, we will examine potential elements that would cause oil to remain range bound in the \$40-60 per barrel area or potentially move even lower. Analysis begins with the question of excess supply, especially in the United States. One practice in the E&P industry is to drill a well and defer completion of the well until the resource is ready to be brought to market. This allows for economical storage until prices, capacity, or other factors allow for the company to maximize profits. These drilled but uncompleted wells (DUCs), colloquially known as the “fracklog,” have nearly tripled in America since 2012. Effectively, the implications of such a large number of DUCs is that once oil prices return to a level that many companies want to begin to complete their wells, the market could be once again flooded with excess supply, dropping prices again.

*“Drilled but uncompleted wells (DUCs), colloquially known as the ‘fracklog,’ have nearly tripled in America since 2012.”*

The fracklog is not the only example of how potential excess supply could force prices to fall further. In the United States, total crude inventory levels remain near record highs. **As of mid-August, the total crude inventory in the US was 521 million barrels, well above then 2009-2014 average of about 350 million barrels.** In Cushing, Oklahoma, where WTI futures price, concerns about maximum storage capacity have echoed on numerous occasions this year. Internationally, Iranian reintegration into the global economy, and, less likely, a major output boost from Iraq or Libyan production,

could all quickly raise supply. Anecdotally, one hears stories of oil tankers anchored off the Houston shipping channel, waiting for the price environment to improve. Both domestically and overseas, high inventory levels and production surprises could negatively impact the future price of oil.

**US Drilled but Uncompleted Wells (DUCs)**



Next, one might want to consider the current market expectations. As mentioned earlier, in 2014 oil commodity markets were in backwardation – the price of a barrel of oil in the future was worth less than the price at the

time. Should the markets expect the price of oil to go up dramatically, the price of a barrel in the future would be worth more than today; a state known as contango. However, the average of the next 18 months of oil futures is only \$51 a barrel, only slightly higher than the \$49 spot price. In other words, the markets have little expectations that the price will rise considerably in the near term. Even considering that markets, especially derivatives markets, may be poor indicators of future prices, it is important to note that there is little undercurrent of support for higher prices.

Finally, and admittedly, a bit more abstractedly, one can look at the historical price of crude. A common refrain when the price of oil began to decline was “it will come back, it always does.” While this may generally hold true, it is worthwhile looking at a longer history of oil prices to avoid a “recency bias.” The following chart from Bloomberg shows both nominal (blue) as well as inflation adjusted (red) crude prices for the past 50 years. It goes without saying that the world has undergone remarkable changes and examining any past prices should be taken with a grain of salt. Yet, the average over that time for real oil prices was \$49.52, almost the same level of current

**Bloomberg Historical US Oil Prices Adjusted for Inflation**



*The point of the chart is not to claim there is or is not a “natural” price for oil throughout time; rather it aims to illustrate that, perhaps, the \$100+ oil that has been anchored to our thinking might have been the exception instead of the rule.*

prices. Two periods show some extremes over that time: from 1985 through 1999, the price of oil averaged \$35 and since 2000, the price has averaged \$71.28 a barrel. The point of the chart is not to claim there is or is not a “natural” price for oil throughout time; rather it aims to illustrate that, perhaps, the \$100+ oil that has been anchored to our thinking might have been the exception instead of the rule.

**PATH 2: A ROAD HIGHER?**

Oversupply, underwhelming demand, and future and historical prices could all point to a lower oil price in the future, so what could lead prices higher? In short, factors which lead to the opposite effect. Again beginning with the question of domestic supply, one fixture of the energy investor’s data set is the weekly release of the Baker Hughes rig count. Baker Hughes, a global diversified oilfield services companies, provides updates into how many oil and gas rigs are currently working. As one can see from the chart on the right, the domestic rig count (black line) remained fairly stable, even as production was growing until late 2014 when many companies drastically cut back their spending. US production (yellow line), however, continued to rise, not peaking until 6–9 months later in the 3Q15. Even though the US rig count has fallen by nearly 80%, production is only about 10% below its highs! Some of that has to do with efficiencies of oil and gas companies, but most market participants believe the steep decline in the rig count will lead to a delayed drop in US production, thereby tightening supply. Analysts also believe that even when oil gets to a price that many companies want to resume their drilling programs, it will take several months before production will rise potentially causing a sharp increase in prices.

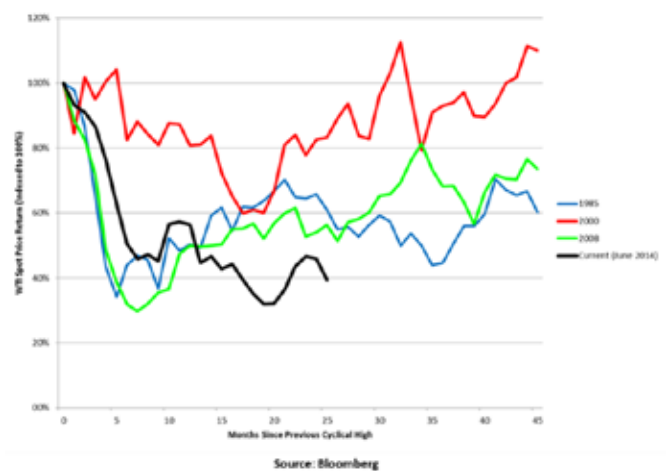


OPEC has also been the focus of potential production cuts of late. As discussed earlier, the decision by OPEC (led by the Saudis) to maintain output at roughly 30 million barrels a day exacerbated the decline in crude prices through 2014 and 2015. Many believed that OPEC wished to hinder the burgeoning shale industry in America. Yet, many countries in OPEC, and other large non-OPEC producers like Russia, have had difficulty with such depressed oil prices. Paul Sankey of Wolfe Research, a global research firm, estimates that if OPEC reduced its production by 5%, oil prices would immediately shoot above \$60 a barrel. With many of its constituents struggling, analysts once again are carefully paying attention to OPEC’s actions.

*“Even though the US rig count has fallen by nearly 80%, production is only about 10% below its highs!”*

On the demand side of the equation, the most likely driver of higher prices would be increased global growth. Global growth has been relatively slow over the last few years, but some analysts continue to expect major gains in the economy coming from emerging countries. These countries, traditionally Brazil, Russia, India, and China, but more recently several other Eastern European, Southeast Asian, African and Latin American states, have traditionally

**Comparison to Other Historical Drawdown**



*“In June 2008, futures implied a price around \$125 a barrel in June 2009, rather than the actual sub \$50 price that the contract received.”*

needed cheap energy sources in order to power their growth. Should expectations rise in the emerging economies and thereby global growth, the price of crude should rise as well.

Finally, as mentioned above, although futures point to anemic price increases in crude over the next year, they have a reputation for not being a great proxy for where prices will go. For instance, in June 2008, futures implied a price around \$125 a barrel in June 2009, rather than the actual sub \$50 price that the contract received. Also, from a previous price level, perhaps the time from 2005 onward is more representative of what oil should cost than the longer history of the commodity. In that instance, one may expect an increase in oil prices.

### SO...WHERE TO?

After examining potential positive and negative catalysts, the question becomes: which side has the stronger case? Again, we turn to the past and probability to form our thesis. The chart above displays four major prior drawdowns in the crude market. A point worth noting from the chart involves the current drawdown (as represented by the black line) actually took the longest to form its bottom (assuming the February lows marked the bottom). Both the 2008 and the mid-1980s decline had a sharper pattern, and therefore, at this point in the cycle, had already rebounded considerably. The second noteworthy point is that in all cases, the rebound was a slow and sporadic rise. None of the prior cases exhibited a “V-shaped” recovery that some pundits had initially predicted. History suggests that this time is not different and a long, choppy recovery in energy prices may be expected.

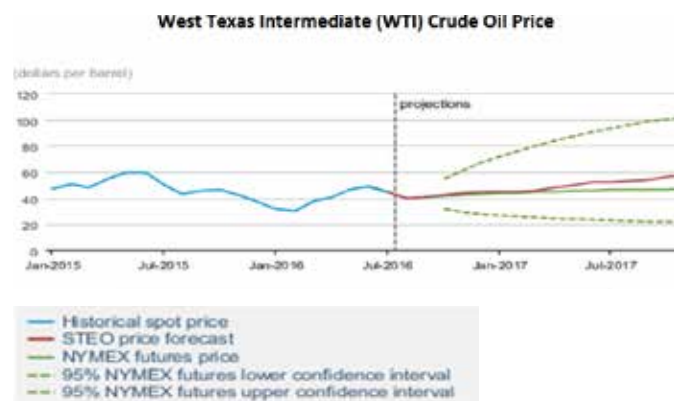
This leads us to our “base” case direction for oil and gas prices. In short, the highest probability outcome for oil and gas prices is a slowly rising scenario over several years with numerous starts and stops to any bull market. Based on the current economic environment, most analysts

**“In short, the highest probability outcome for oil and gas prices is a slowly rising scenario over several years with numerous starts and stops to any bull market.”**

agree with this general outlook. Just because this is the most likely scenario, however, does not mean that it is the only possible, or even probable, outcome. Any number of potential catalysts from short-term shocks (a Middle East conflict, disappointing economic news, geopolitical surprises) to long-term fundamental shifts (industry efficiencies, new discoveries, cheap and efficient renewable substitutes) could radically distort commodity prices in the future. The US Energy Information Administration (EIA) also agrees that a slow rise in crude prices should be the base case scenario going forward. To illustrate the vast differences of opinion, the EIA also “confidently” concludes that there is a 95% chance that the price of oil will be somewhere between \$20 and \$105 per barrel at the end of 2017. Not exactly the most precise forecast, but representative of the uncertainty in the industry. While a slow, choppy recovery remains the most likely outcome for oil prices, analysts have a wide difference of opinion that could radically change the trajectory of crude.

**“To illustrate the vast differences of opinion, the EIA also ‘confidently’ concludes that there is a 95% chance that the price of oil will be somewhere between \$20 and \$105 per barrel at the end of 2017.”**

### West Texas Intermediate (WTI) Crude Oil Price



Source: Energy Information Administration



Oil prices have fell precipitously over the last two years due to a mixture of oversupply, weak demand, and a strengthening US dollar. The future direction of energy prices may depend on a multitude of factors from US production growth, to OPEC quotas, to rig count declines, to macroeconomic events. Investors will need to remain nimble in order to manage the expected volatility in crude markets going forward and should look to invest in stable companies that can cope through turmoil.

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Austin Zaunbrecher, CFA, CMT serves as a senior portfolio manager and lead energy and utility equity analyst for Hancock Horizon Investments. His responsibilities as portfolio manager include managing discretionary investment portfolios for high-net worth individuals, endowments, foundations, and government entities. Additionally, he manages the Hancock Horizon Dynamic Asset Allocation Fund and the Energy Focused Strategy for the firm. As an equity analyst, he researches and analyzes companies in the energy and utility sectors from both fundamental and technical perspectives. Prior to joining HHI, Austin worked as Institutional Investment Consultant at a boutique firm and as an Investment Associate for Merrill Lynch. He attended Tulane University earning a B.A. in History and a M.B.A. with a concentration in finance and international business. He is a board member of the CFA Society of Louisiana, a CFA charter holder, and a member of the Market Technicians Association.

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