

January 2016

## A Crude Gesture

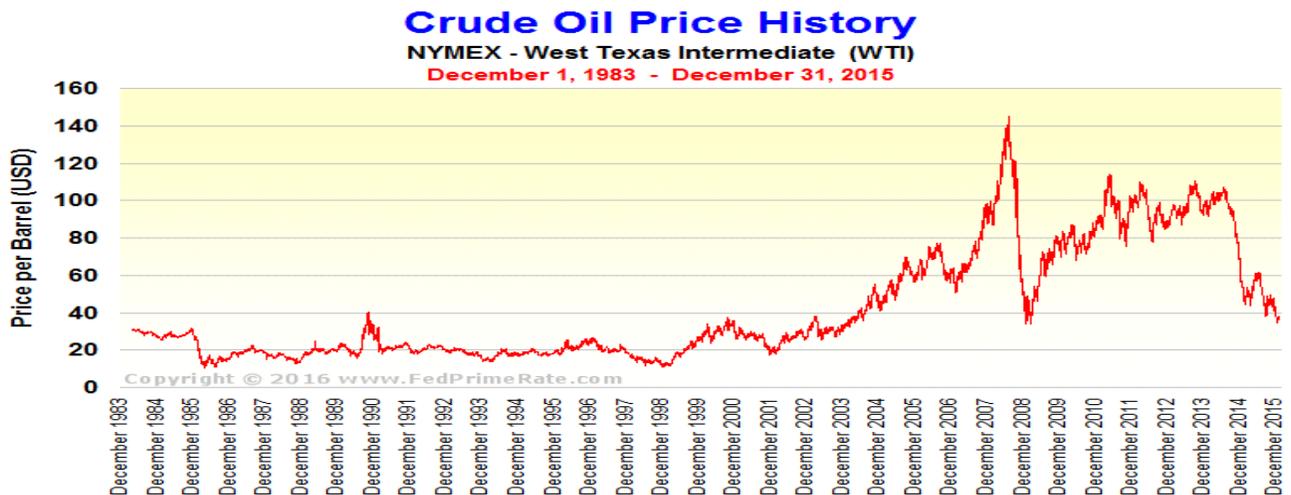
*“What we learn from history is that people don’t learn from history.” — Warren Buffet*

As I write this, the price of a barrel of oil has slipped below thirty-three dollars. Oil and the US dollar typically have an inverse relationship as oil is priced in US dollars, but the rest of the world has to buy oil in their own currencies. As the dollar increases relative to a foreign currency, the price per barrel increases because it takes more of that currency to buy a dollar. This effectively raises the price of oil in that country and reduces the demand and voila, the price of oil falls.



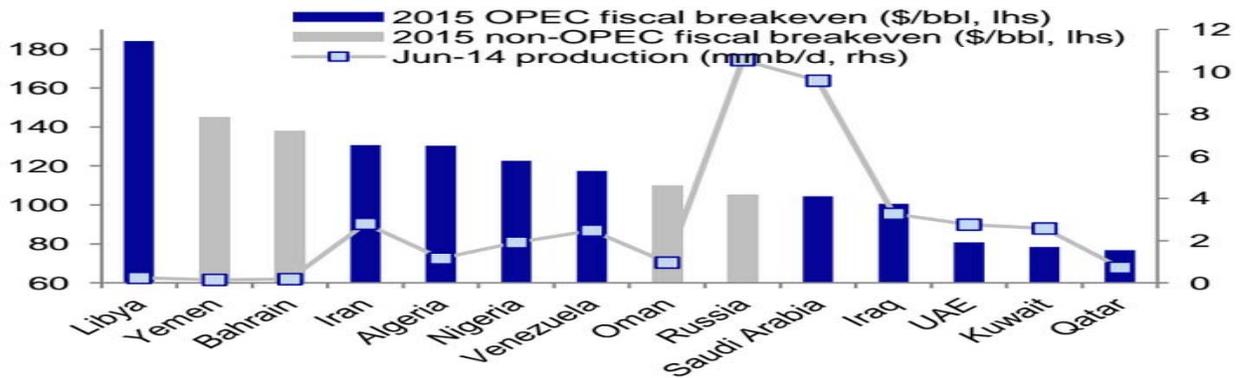
The US dollar has been on a tear since mid 2014 against all other major (and minor) currencies. This, however, is not the only reason that the price of oil has dropped precipitously. New technologies have been introduced that have made the extraction of oil from previously uneconomical sites now practical. At the same time world economies (China) are slowing dramatically, and the demand for oil with them. This is Econ 101: Supply up + demand down = lower price.

If we pull back a bit on the current focus, you can see that oil is headed back to prices not seen since the 1990’s.



At the same time all of the major oil producing countries are hemorrhaging dollars. Below is a chart of the break-even price of oil in order to balance each country's annual budget (left scale). As you can see the most efficient producer, Qatar, has a break-even price of around \$80. The line running through the graph is the annual production of each country for the year 2014 (right scale). Russia and Saudi Arabia are pumping as fast as they can (losing money on every sale and making it up in volume). The irony is that the Saudis lit this fuse by increasing their own production in hopes of driving both Russian and US productive capacity out of the market. According to the North Dakota Oil and Gas Division, some parts of the Bakken Shale region in that state have breakeven prices as low as \$24 per barrel, and a recent analysis by Moody's showed that North American independent producers, most of whom have shale operations, can survive at about \$42 per barrel. With these numbers it's hard to understand what the Saudis were thinking.

Figure 6: Producer country fiscal breakeven (\$/bbl)



Source: IMF, Deutsche Bank

Many of the world's major oil producers have not invested in technology or diversified their economies. How this will play out of the world stage is not clear, but the Saudis are rapidly running out of hard currency (US dollar) reserves. At the projected rate of spending, they will exhaust their dollar reserves in less than 5 years. Russia is an even tougher spot. Their foreign currency reserves plummeted by \$140 billion in eighteen months beginning in 2014 to \$360 billion – a drop of almost a third of their reserves in a year and a half. This happened when the price of oil was still above \$60. With prices at about half that now, things are getting desperate for Mr. Putin's economy.

OK, so what does all this mean for us? It suggests that oil is probably cheap in historic terms. Many countries want (need) the price of oil to rebound back in the high double digits. But what about alternative energy, isn't that the wave of the future? Yes. And no.

Although alternative energy has tremendous potential for its sustainability and lack of negative environmental impact, there are some practical reasons that this power will not be available on a large scale soon. Energy people talk about two critical components of power. "Dispatchable" power is power that can be ramped up and down quickly, and fetches the highest market price. "Distributed" power is generated close to the electricity meter and is also worth more as it avoids the costs and issues related with transmission and distribution.

When you think about alternatives like wind and solar there are significant issues with dispatchable power. You only get this power when the wind blows and the sun shines. When you talk about biomass, and thermal energy, the issue is distributed power, having the infrastructure necessary to transmit this power efficiently. And when you consider the current moratorium on nuclear power plant permits, it is unlikely that any of the aforementioned will supplant fossil fuels in the near future.

So for now, it appears that the world will continue to rely on the decomposed plants from pre-historic times to heat our homes, power business and help us to move around. Maybe we are "green" after all.