

Global Energy Policy - Oil Markets

Oil is global by nature, produced in specific countries and consumed around the world. It is one of the most mature commodities in the globe. Oil has underpinned global economic growth and prosperity for many years.

Despite a long-standing track record in oil projects, oil markets are marked by uncertainty of supply and demand. Factors affecting the economics of oil markets rely on a host of elements that not only intersect with the global economy but also with geopolitics and environmental concerns.

The following memo is divided in two sections respectively focusing on oil prices and historical and recent market dynamics. The first part provides an analysis of the price trends from 2014 to 2018 while the second part discusses the debate of peak oil demand and potential conclusions that can be drawn moving forward.

Price dynamics. Are oil prices structural, cyclical or both?

The 2014 decline and the different views to forecast the future

Oil prices have oscillated between \$100 per barrel and \$110 per barrel from 2011 to 2014. In 2014, they plummeted significantly as they reached \$30 per barrel. This was the third largest decline seen in the past 30 years. Some of the specific factors that triggered the collapse include:

- Lower than expected demand. Decelerating demand after the 2008 financial crisis.
- Increased supply. US Shale oil entered the market.
- Geopolitical conflicts in Iraq and Libya.
- Lack of coordination between the OPEC countries. Saudi Arabia and its allies opted for an aggressive approach to the market to maintain large market shares.

This scenario raised some questions among oil analysts and economists. Was this drop in price attributed to a structural shift in the oil market or is it part of another, regular cycle? If this one was different, what were the key characteristics that explain this behavior?

Bassam Fattouh in the report "*Adjustment in the Oil Market: Structural, Cyclical or Both?*" (2016) presents the arguments of the structural view that proposed a "lower for longer" scenario and the cyclical view that suggested a "higher sooner than later" forecast. The analysts considered three main elements to predict how oil prices were going to react in the future: demand, US shale supply, and OPEC dynamics.

The structural view argued that oil demand was going to ease due to the ongoing energy transition and climate change regulations. On the contrary, the other group stated that demand was going to follow its historical trend. In terms of US shale supply, the group that was assuring lower prices for longer was convinced that US shale "would respond quickly in a higher oil price environment". The opposite view argued that the ability of American oil to respond was not immediate and constrained. Regarding OPEC dynamics, the first group argued that the cartel was no longer functional and that they would never coordinate to increase prices. The defenders of the scenario of supply crunch and increasing prices were convinced that "geopolitical deterioration and unplanned outages" were going to put pressure on the prices. However, they didn't have a clear forecast for OPEC's behavior.

According to the author, it was impossible to categorize the oil market in neither view, and the reality suggests a combination of elements from both categories.

In the next section, we analyze what happened after the paper was written in 2016 to assess the viability of the author's conclusion.

What happened? How did prices evolve between 2016 to 2018?

- **Oil Demand**

From the oil demand perspective, the cyclical view was correct. Demand continued growing. According to the BP Statistical Review of World Energy 2018, in 2017, the demand growth was 1.6%, higher than the 10-year average (1.2%). The oil demand will most likely to continue to grow based on two facts. Firstly, the oil prices stimulate the demand. Secondly, income effects in developing countries lead to the vast growth in oil demand.

- **OPEC dynamics**

One of the main factors that defined the price trajectory from 2016 to 2018 was the cut in oil production from the Vienna Group (OPEC and non-OPEC oil producers). In early December 2016, this group reached the historic Declaration of Cooperation (DOC) entailing 24 (now 25) of the world's leading oil producers committing to removing around 1.8 million barrels/day of crude oil from global supplies from the beginning of 2017 (ending in 2018).

In response to the OPEC cuts, along with the oil demand growth, oil prices gradually recovered, hovering about \$50s per barrel through most of 2017. **This behavior was not predicted** neither by the structural nor the cyclical view. OPEC played an influential role in balancing the market. At the time of the price collapse in 2014, OPEC's important role was misunderstood.

However, geopolitical deterioration and unplanned outages exacerbated the disruption in crude oil supply, mainly in Venezuela, Iran and Libya. In this case, the cyclical view was correct as it suggested that oil markets will continue to be subject to sharp cycles, and in the event of physical shortages, sharp rises in oil prices will be the only mechanism to clear the market

- **US Shale Gas**

The structural view explains, to some extent, the trends in the US shale market. The group of analysts that advocated for "lower prices for longer" argued that the US shale oil could act as a stabilizer. Despite OPEC's influential role in oil market dynamics, the US emerged a few years ago as a competing actor with a more flexible and pragmatic response to changing prices.

However, we cannot say the structural view was definitely correct since we can't make a judgement on whether the US shale gas will put a cap on oil price. Especially when we are seeing prices oscillating around \$80 per barrel currently.

The cyclical view was definitely incorrect about its US shale oil trends. It argued that the cut in investments was going to generate a decline the US shale supply, which is against the reality. The

growth in US oil supply between 2010 to 2019 has been the largest production increase in the oil history.

After analyzing the main dynamics after the decline in prices in 2014, we can state that Fattouh had a more accurate perspective of the oil markets: they are uncertain. It's almost impossible to classify its behavior in only one category, in reality we see many elements playing together. This is what we can expect from one of the most interconnected global markets in the world.

Peak oil demand discussion

Potential factors that might determine the future of oil demand

Understanding future price cycles requires a deep dive into the historical and more recent oil demand and supply trends. The peak oil debate lies at the heart of future price forecasts. Dating back to the late 1950s, the peak oil debate has historically referred to the peak of oil production according to King Hubbert.

Today, the debate has evolved and new versions of the story emerged. More and more reserves are being unlocked, and the rate of production in oil is growing. Global capacity in liquids is expected to increase by 9% to reach about 113 million barrels per day in 2030 up from 2018, largely driven by non-OPEC suppliers (mainly the US). With a rising imperative to address climate change, governments are more seriously looking into energy diversifications to accelerate the sustainable energy transition. The Paris Climate Agreement is one of many forward-looking signs that demonstrate a widespread ambition. The question is where does the future of oil stand in the face of this global green push? Governments are actively looking into enhancing efficiency, reducing the carbon footprint, while promoting cost-effective renewable energy deployment, all of which have spilled over to the private sector's priority agendas. The RE100 initiative launched by large private corporations to power 100% of their operations by renewables is an illustrative example. With these factors combined, the focus of the peak oil demand shifted to the future of oil demand.

Looking at historical trends in oil demand, the British Petroleum suggests that oil demand has experienced 150 years of uninterrupted growth with some exceptions as the oil demand plummeted due to market shocks e.g. oil embargoes in 1973 and 1979. Based on the trend illustrated in the graph, oil demand may have reached a progressive plateau starting from the 1980s.

However, there are conflicting views on the future of oil demand. In 2016, the IEA confirmed the decoupling of economic growth from energy-intensive activities, largely crediting energy efficiency improvements and renewable energy development especially in wind.. Another fact that complicates the debate is the record that was achieved in 2017 in terms of greenhouse gas emissions.

Furthermore, some key economic sectors are expected to demand more and more oil moving forward. While competition between oil and other resources e.g. natural gas and renewables has been confirmed, the outlook for energy demand in transport and buildings seems different. According to BP, for instance, the transport sector will drive two-thirds of oil demand growth by 2030

This combination of factors adds uncertainty to the debate on the future of peak oil demand. Various agencies have come up with an array of predictions on future oil demand. While some expect oil demand to peak by 2025 or 2040, others reject this theory and suggest continued growth beyond 2040.

The main challenge to oil demand: the transportation sector

First of all, electric vehicles' supply and demand would increase sharply in the next 30 to 50 years, together with the prices going down. We can take the United States as an example to better understand the evolution of peak oil demand. For instance, forecasts suggest that the deployment of electric cars in the United States will significantly affect US oil imports. As electric vehicles gain traction in the country, oil imports in 2030 are projected to be 18-38% lower than the scenario of improved internal combustion engine fuel efficiency, equivalent to 2.0-3.7 million barrels per day. According to the statistics, in 2008, the U.S imported 2.3 million barrels per day from Persian Gulf. However, this condition would change in the future due to the shale revolution and electric vehicles development in the U.S. To future explain, domestic battery manufacturing industry grows domestically to account for between 1.1% and 1.5% of the total business investment by 2030 in the U.S. Because of that, battery prices fell 35 percent last year and would definitely make unsubsidized electric vehicles as affordable as their gasoline counterparts in the next six years. By 2040, long-range electric cars will cost less than \$22,000 (in today's dollars), according to the projections. 35 percent of new cars worldwide will have a plug. Under this circumstance, electric vehicles would become a significant substitution of traditional oil-powered vehicles in the future.

Second, battery packs will require less than 1 percent of the known reserves of lithium, nickel, manganese, and copper. They'll require 4 percent of the world's cobalt. After 2030, new battery chemistries will probably shift to other source materials, making packs lighter, smaller, and cheaper. Therefore, the price of electric cars or even vehicles would decrease. This isn't something oil markets are planning for, and it's easy to see why. Plug-in cars make up just one-tenth of 1 percent of the global car market today. They're a rarity on the streets of most countries and still cost significantly more than similar gasoline burners. OPEC maintains that electric vehicles (EVs) will make up just 1 percent of cars in 2040.

However, there's still reason for oil markets to be skeptical. Manufacturers need to actually follow through on bringing down the price of electric cars, and there aren't yet enough fast-charging stations for convenient long-distance travel. Many new drivers in China and India will continue to choose gasoline and diesel. Rising oil demand from developing countries could outweigh the impact of electric cars, especially if crude prices fall to \$20 a barrel and stay there. In a nutshell, whether oil demand will encounter a sharp decrease or still keep the historical trend is still a debate. We might witness a new oil era in the next few years.

As we discuss in the first section, oil markets are complex. It is difficult to forecast oil prices with certainty and confirm future oil trends based on fluctuating trends. Yet experiences in oil markets generated a variety of lessons learned that help us better understand potential future trends in the supply and in the demand. The evolving discussion on peak oil demand, while highly uncertain, is set to determine the direction that governments are taking to accelerate the green energy transition and the role that oil will play (or not) in driving economic growth.