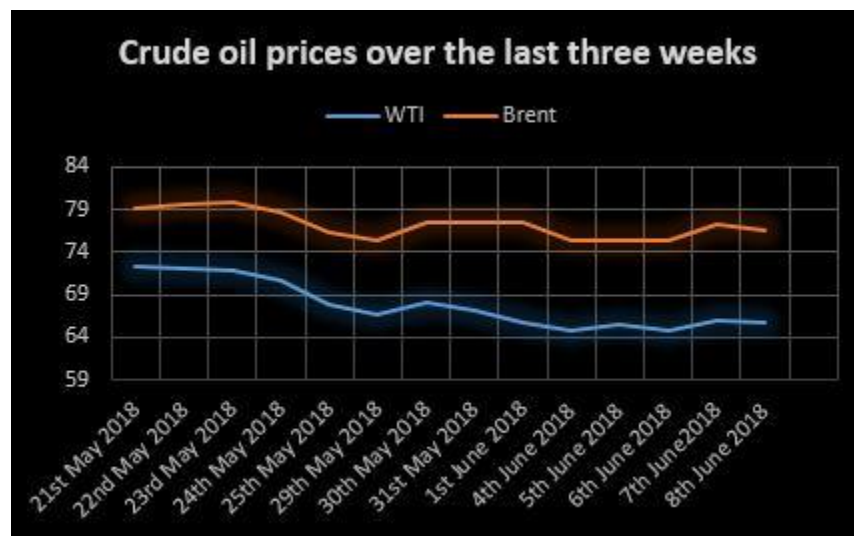
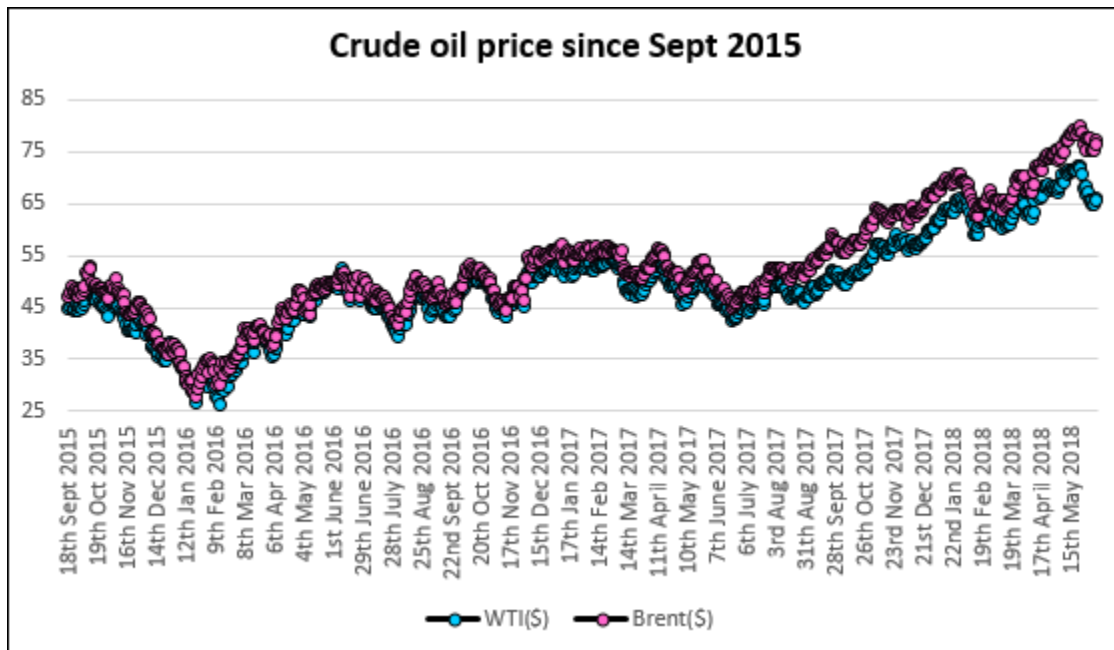


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Calgary, Canada



- The price of crude fluctuated this week, ahead of the OPEC and Russia's meet on June 22<sup>nd</sup>, where some decision on OPEC's production plans for the rest of 2018 is expected. As the global stockpiles are wearing down, the crude price is getting volatile, also due to the global trade tensions that are grabbing headlines these days.
- An unofficial consultative meeting between the energy ministers from Saudi Arabia, UAE, Kuwait, Algeria and Oman was held last Saturday in Kuwait City. This was as a follow up to an announcement made by Saudi Arabia and Russia recently, about reviving crude oil production. Crude oil prices fell after the announcement. The other member producers were not consulted about any such proposal. The OPEC and the allied producers including Russia and Oman are due

to meet on the 22<sup>nd</sup> of June at Vienna, to discuss the production cuts that are due to run for the rest of the year. OPEC has held its production steady, even as it is talking about an increase. Only Saudi Arabia, Kuwait, UAE and Russia have spare capacity to boost production.

- Venezuela has urged member OPEC countries to unite against US sanctions. US has unilaterally decided to impose sanctions on Venezuela, and reimpose sanctions on Iran, which the victim countries say are acts of aggression, financially and economically, for the oil and gas industry, as well as the stability of the market. The US got out of the Iran nuclear deal, giving 180 days to buyers of Iranian oil to reduce their purchases of oil or be shut out of the US banking system. Venezuela has already been under US sanctions and faces stiffer penalties after a US panel recently accused the country's President, Nicolas Maduro of committing crimes against humanity. Iran has already made a similar request to OPEC. Both Iran and Venezuela have asked OPEC for support from fellow members and that the matter should be discussed at the forthcoming OPEC meeting at Vienna. It will be interesting to see the outcome.
- Iran's first shipment of crude oil in 16 years made its way to Chile. The oil tanker carrying 1 mb of crude left the Persian Gulf recently and will reach its destination on July 12. Iran is desperately trying to keep customers around the world, or find new ones in view of the US proposed sanctions.
- President Trump's trade policy has started getting European Union (EU) into economic conflict. Two prominent decisions in this regard have been the US pull out of the Iran nuclear deal and imposing tariffs on steel imports. On the other hand, President Putin has been strengthening ties with that region. Gazprom has also recently settled a 7-year old pricing dispute with EU. The \$11 billion USD pipeline from Siberia to Germany is going ahead, as planned. The US is concerned that the pipeline will make Europe too dependent on Russia for the supply of energy, and also that the new route will bypass the existing corridor through Ukraine and deprive that country of the crucial revenue. As per its viewpoint, Europe should get US exports of liquified natural gas (LNG), which the Europeans think may be risky, as the US supplies could go to Asia, where it will fetch higher prices. Germany and Finland have granted the construction permits and this will allow boats to begin dredging along the 1220 km route, wherein 24-ton sections of steel pipe will be lowered into the sea. The work on the pipeline is expected to be completed by the end of 2019.
- Recently, in the US as the price of gasoline at the pumps reached its highest levels in 3 years, President Trump had tweeted his displeasure about OPEC policy and the rising prices. Following this, and the US decision on the proposed US re-imposition of sanctions on Iran, it has been reported that the US government has quietly asked Saudi Arabia and some other OPEC producers to increase oil production by about 1 mb/d. The price of crude oil slid after this news reached the market. An analyst from Goldman Sachs Group has said that the proposed increase, even if implemented, will not prevent the stockpiles around the world to diminish during the second half of this year. The infrastructure constraints are preventing the US to get the supply of oil from the Permian or Oklahoma to the coast for exports. Even if the OPEC decides to boost production, it could take a few months for it to add the indicated supply.
- The European Union has asked for exemptions from the expected US sanctions on Iran. This is a month after President Trump withdrew from the nuclear pact and vowed to sanction companies

doing business with Iran. Many European companies have financed their Iranian investment, and the US unilateral walking away from the nuclear deal has left them in the lurch.

*For the lighter side this week*

Lately, I have been reading about machine learning, deep learning, artificial intelligence, and their possible applications in geophysics. I hope to discuss these as I make headway with some of their applications, probably at the SEG Anaheim this October. But more interestingly, the talk about artificial intelligence (AI) or machine intelligence (MI) applications of the future, and how they will impact our lives has fascinated me. Already our smart phone applications have started showing us the glimpses of what is in store for us in the near future. Smart gadgets and appliances are being installed in households which are connected to our smart phones. Sitting in the office, we can check what the temperature in our house is (smart thermostat), or if everything is intact there (smart cameras) in your absence. Any knock or bell on your door immediately sends a message, and you can see the visitor (video bell) on your smart phone. Motion sensors have been installed in the houses, and so there is no problem if the lights or fans have been left on. All this is being already done. The next step is to integrate all this with AI, and bring in more intelligent automation. And I see this happening in the next 5 years. Similarly, such gadgets will be installed in offices, restaurants, hospitals, etc., so that links can be established as and when desired under strict scrutiny. So, what is it all about?

More recent apps on your phones are being designed to understand your location, what you are engaged in doing, remind you about your daily activity and engagements, what information you need at that time, and others. Other apps are being developed that will have features where your likes and dislikes will be understood by training the system.

Let us see what your typical day may look like in the near future.

Your smart phone will wake you up with a soothing musical tune. As you get up, it will remind you succinctly, about how your day is looking

It is time for you to head out for your morning jog, or a walk (if that is the first thing on your routine), or time to do some physical exercises. Next, you head into the washroom and after the necessary business you take a shower. If there is a corner or place in your house, where you begin your day by spending a few minutes praying, or be in the service of the Almighty, then that would be your next activity. As you head there, your coffee brewer gets switched on. After completing that chore as you head to your dressing room, you get detailed instructions on your daily activity, so that you dress up appropriately. You may have a meeting today with your subordinates, or you are making a presentation somewhere, or you have an important meeting with a government official. This will be based on the information you have fed to it, and the rest it will furnish as it keeps gathering more information and training itself. Your engagements will vary as per your life style, your age group and what you do for a living. I am citing a typical day in the life of a senior level executive, living in an urban environment. Again, how relevant the various suggestions your smart phone makes will improve with time as it learns and understands. It senses what you are doing, it starts understanding your preferences, and then guides you through your daily activity.

You reach your dining area in, or by the side of the kitchen, serve yourself some cereal and fruit and pour yourself a cup of coffee, which by now is brewed and hot. You may have some time to catch up with a few headlines on TV, or your laptop or your smart phone.

Next you head out to work, and as you get into your car, you get information on the weather, the traffic on the roads and the time it will take you to get to your destination. You get into your car and the music of your choice gets switched on, or this may happen as per what you like to hear often, or what newer songs are, in line with what your favourite ones are. Your wife is a working person and is all technically savvy as yourself. On reaching your workplace, a message goes out to her about your reaching work safely. Similarly, you receive a ping when she reaches her place of work.

You reach your office (8 am), your first engagement is enunciated, and the information you need for your meeting is also narrated or shown up on your monitor. You quickly browse through all that and head to your meeting. You may record the salient points in your meeting as your discussion points are being attended to. All the time the information you need for specific items on the agenda are flashing on your smart phone.

Depending on your daily routine, or what you do for a living, such engagement will keep you busy.

Around 10 am, as your energy levels tend to come down, you pour yourself a cup of tea/coffee and get back to work.

At lunch today, you are meeting an important client. You are reminded about it 30 minutes prior, and the confirmation from the restaurant you are visiting also arrives. You head out and reach the restaurant a few minutes early to greet your client. The menu choices show up on your smart phone, and with your client you decide on what to have for lunch. Some drinks are served first, and while you wait for the food, the agenda items are discussed. Food arrives, you both relish it, and that is followed by some more discussion. You pay for the bill on your smart phone and head back to your office. Its afternoon, you get busy with your work, some planning and some execution. You are again reminded about your tea/coffee at 3 pm, and after that there is more work.

Before you head out for the day, you are reminded about your pending visit to the hospital, where your friend is recuperating. You are also apprised about the traffic you will come across on the road, the approximate time you will take to reach, and how much time you will be able to spend with your friend at the hospital in view of the visitation hours. You are also prompted about a gift, or a bouquet of flowers you might want to pick up on your way. You send an order to the florist (on your way) for drive-by pick up. A ping goes out to your wife about your visit to the hospital. You reach there, meet your friend, enquire about his medical condition, wellness and find out when he will be discharged. After that you head home, and before reaching there you are reminded about taking your wife out for dinner. It is a special day today, as on this day you first met her 30 years ago. You enter the house, and your lady is there to greet you, all nicely dressed up and looking her best. Your tired frame of mind is reenergized at once. You have some romantic dialogue with her, and then you go freshen up and change.

The reservation has already been made for you both at your favourite restaurant. You are 20 minutes away, table 3 is for you, and the menu items and drinks have also been ordered. You reach there, and you find your table is in a quiet corner, with soothing music playing in the background, and you both relax, sip your favourite drinks, and start reflecting on your life together, how your togetherness has enriched it, how you had your funny moments as well as rejuvenating moments, and your family. Food arrives and leisurely you relish it together, followed by a delightful dessert. With all that over, and realizing that you have been there for over two hours, you both head home, still reminiscing the interesting events in your life. On reaching home, you realize the day as fulfilling, which ended on a very satisfying, happy and a blissful note.

As the AI advancements we are talking about here find their way into our lives, we feel happy and inquisitive. In 5 years' time, we will take them for granted, but will still be looking for: what are the latest advancements, and how can we bring their applications into our lives?

There may be a section of people who are apprehensive about job losses, with all the automation going on around us. Others defend it, and this debate will continue.

I have not mentioned about driverless cars, as I focused on smart phone advancements, but that is a whole new ball game, likely to become a reality soon.

I hope you find these interesting.

So much for this week! Till the next post, stay safe and happy!