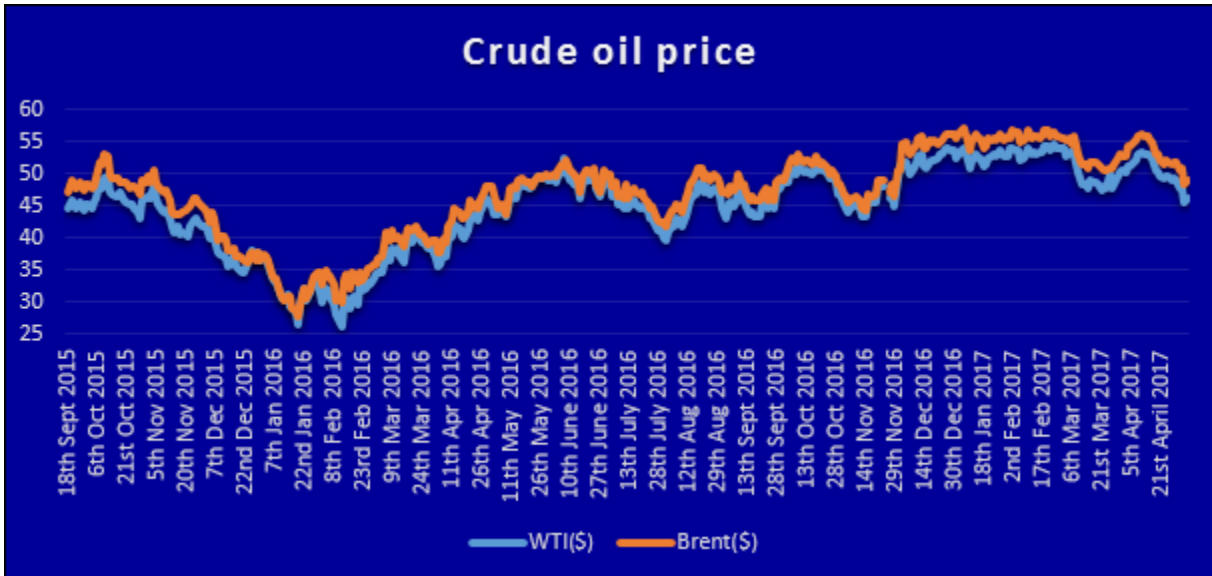


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Calgary, Canada

The price of oil has shown the following variation over the last week:



- Over the past two weeks, the price of oil has fallen on building concerns that the increasing US output is likely to undermine efforts by the OPEC and its allies to eliminate the glut in the market. Oil rebounded a bit on signs that the US supply was easing and also because Russia also supported efforts at extending OPEC cuts past June 2017. But oil prices collapsed on Thursday to their lowest in 5 months as the crude glut seems to be persistent in spite of OPEC cuts. The OPEC delegates seem to be interested in taking the production cuts beyond June 2017, but have downplayed any cuts deeper than what they are doing at present. Meanwhile, Libya's crude production rebounded to over 700,000 b/d with the Sharara field producing 216,400 b/d and El Feel also adding another 26,500 b/d. Meanwhile, an encouraging US job report made the crude oil look up on Friday.
- A recent study by API showed that private investment in the US oil and gas infrastructure could exceed \$1.3 trillion for oil and natural gas, create 1 million jobs, and \$1.89 trillion could be added to the US GDP, if the right regulatory prices are in place by 2035. As it is the US leads the world in carbon reductions, thanks to greater use of natural gas, where 60% of those reductions took place from 2005 and 2016.
- Both Exxon Mobil and Chevron has reported profits in Q1 this year, thanks to the 55% increase in the crude prices from the same period in 2016. Total SA also reported a profit last week. As for Royal Dutch Shell and BP, the two other members of the elite supermajor group, the former has

reported a net income of \$3.54 billion, a jump from \$484 million from the same period last year and BP is expected to post encouraging results next week. ConocoPhillips reported a Q1 earning of \$777 million compared with a loss of \$1,469 billion in Q1 2016. Devon Energy Corp. reported a Q1 earning of \$565 million.

- Saudi Aramco has lowered its pricing for Arab Light crude to Asian buyers by 40 to 80 cent discount to defend its sales. By making production cuts, Saudi Arabia has ceded market sales to OPEC rivals Iran and Iraq. Iran has gained ground since the easing of sanctions on its oil industry last year, and OPEC deal allows it to pump more. The Middle Eastern producers compete with Latin America, North Africa and Russia for buyers in Asia.
- Saudi Arabia's Deputy Crown Prince Mohammad bin Salman said on state TV this week that even after the Saudi Aramco's initial public offering (IPO) of 5% shares in 2018, any decisions about producing from the country's oil and gas reserves will rest with the government. The IPO is expected to add to the kingdom's sovereign wealth-fund, and is part of the policy proposals by Prince Mohammad to reduce the country's reliance on hydrocarbons. Almost half of the IPO proceeds are expected to be used for developing local industries such as mining. The Prince had said last year that he expected Aramco to have a value of \$2 trillion, though analysts estimate it to be between \$1 and \$1.5 trillion.
- The UAE, the fourth-largest producer in OPEC will cut back supplies to its buyers in June due to maintenance scheduled on its fields in May.
- According to US Interior Secretary, Ryan Zinke, the US is in a position to be energy-dominant, thanks to fracking technology and the plans that are being pursued for relaxing drilling regulations. The US oil production may increase by 17% to a record 10.24 mb/d by the end of next year.

So much for the industry news this week.

For the lighter side this week

In our physics lessons in school and college, we were introduced to gravity, and we learn more and more about it as we progress through the classes. Beginning with Newton's law of gravitation, we build up on it and come to appreciate the following:

1. Objects with mass are attracted to each other due to gravity.
2. The force of gravity is only attractive, unlike other fundamental forces such as electromagnetism, weak and strong nuclear forces, which may attract and repel.
3. Gravity is responsible for keeping the planets in the solar system in orbit around the Sun. Similarly, the orbit of Moon around the Earth, and the moons of different planets around them are also due to gravity.

4. All objects on Earth experience the same acceleration due to gravity, which is around 9.8 m/s^2 , i.e. in a free fall, every second the speed of a body increases by 9.8 m/s .
5. Larger bodies have greater gravity associated with them and likewise smaller bodies have lower gravity. The gravity on the Moon is $1/6^{\text{th}}$ of what it is on the Earth, and similarly when a body of 100 kg were taken to the planet Jupiter, it would weight a massive 240 kg , due to its higher gravity.
6. Tides on the Earth are caused by its rotation, and gravitational effects of the Sun and the Moon.

As students of physics at the university level, we learnt about the fact that while Newton's law of gravitation explains most of the observations, the general theory of relativity proposed by Albert Einstein is used to describe gravity more accurately. He explained that gravity is more than a force, in that the mass of an object causes the space around it to curve, more like a heavy ball sitting on a rubber membrane, and other smaller balls falling in the warped space around the heavier ball. This curvedness of space is not seen directly, but can be detected in the motion of objects. Massive objects such as galaxies in space can cause straight beams of light to bend around it. I remember this from a lecture that an eminent physicist, Dr. R. K. Patharia, who at the time was working at University of Waterloo, was visiting India and had delivered a talk at Himachal Pradesh University, Shimla, where I was studying in the 1970s.

Our understanding of gravity is still incomplete in that how or where gravity comes from, or how it happen, is not explainable. The presently available theories fall apart in their application to black holes and the Big Bang.

More on this in my fresh post, next week!

Did you know?

On a hot summer day, a piece of watermelon is very welcome. Did you know that each bite of watermelon contains about 92 percent water and 6% sugar? Besides keeping our body hydrated, watermelon is a good source of vitamin C, beta carotene and lycopene.

Beta carotene is the red/orange pigment in the watermelon, which is converted into vitamin A.

Lycopene is another reddish pigment called carotenoid. It is also found in tomatoes. It is believed that lycopene prevents hardening of the arteries, and cancer of prostate, lung, bladder and pancreas. It is a powerful antioxidant and helps protect cells from damage.

So continue to feast on watermelons during the summer.

I hope you find this interesting.