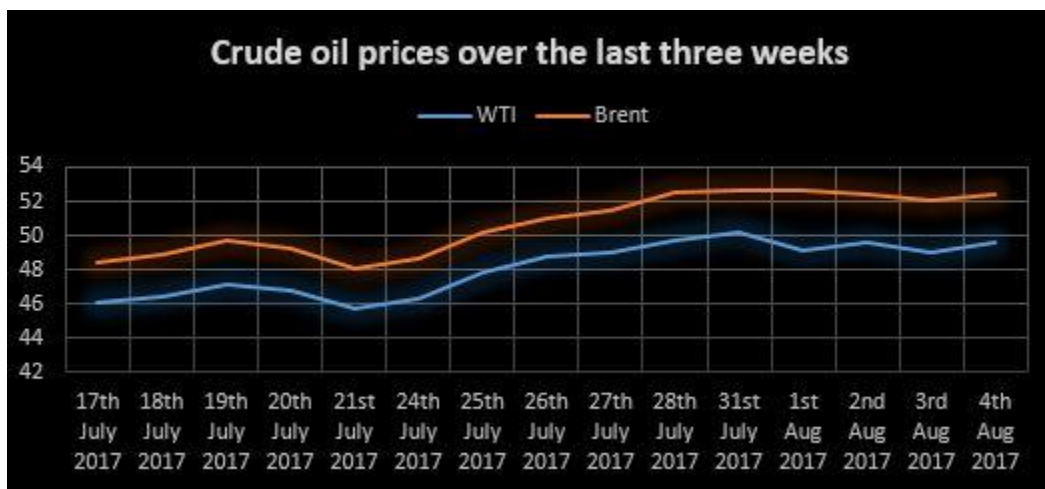
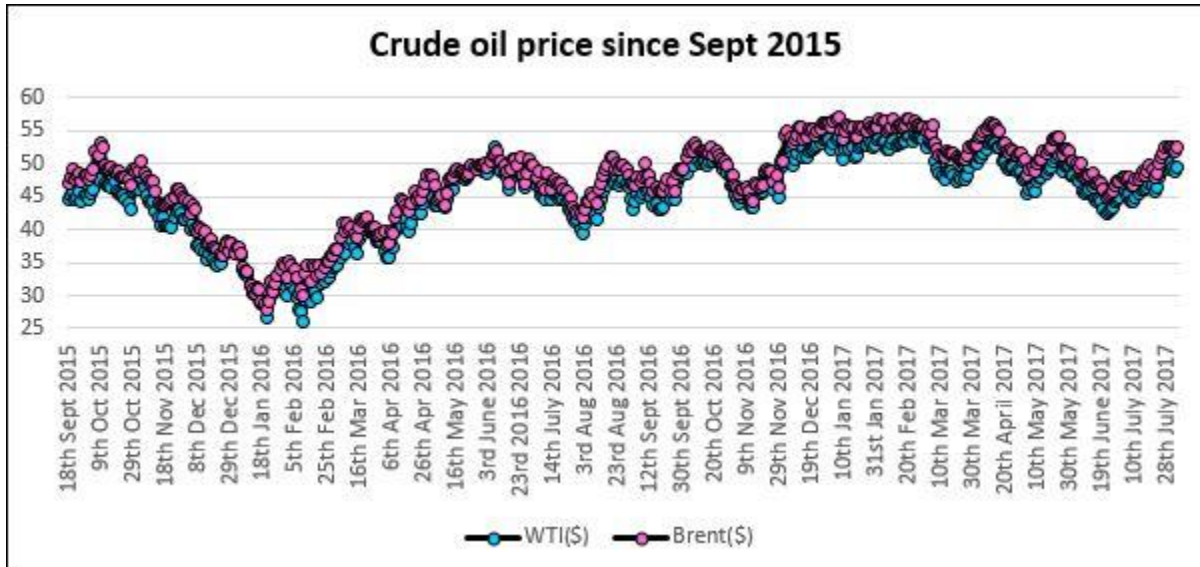


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Some of the news items for this week are as follows:



- The price of crude oil this week fluctuated due to different reasons. According to API, crude stockpiles in the US rose by 1.78 mb/d last week and led to some drop in the price. It gained strength as Venezuela President, Nicholas Maduro mounted efforts to seize more power and raised speculation that US could step up sanctions. Last Sunday there were demonstrations after a vote to elect members to a new legislative body that the President insisted is needed to restore order after months of protests. As a result, the US froze any American assets owned by President Maduro and 12 other Venezuelan nationals, which was a symbolic move, but more US sanctions are anticipated. The US buys about a third of Venezuela's crude oil production (and pays in cash for its transactions) and has been considering blocking imports from that country. The crude oil price also gained strength after it was announced that some OPEC and non-OPEC nations will

meet in Abu Dhabi on August 7- 8 to discuss why some of them are not implementing their agreed production cuts.

- ExxonMobil reported a Q2 2017 net income of \$3.35 billion compared with \$1.7 billion a year earlier. However, this number fell short of analysts' forecast due to many oil and gas wells underperforming expectations, and weaker-than-expected cash flow generation. Chevron reported a Q2 profit of \$1.45 billion compared to a loss of \$1.47 billion a year earlier.
- As the crude oil price holds its place below \$50 (since May 2017), oil and gas companies are exercising caution. While Statoil reduced its 2017 exploration forecast by 13%, ConocoPhillips dropped its exploration budget for 2017 by 4% to \$4.8 billion. Hess announced as 4% cuts to its capital expenditure. Whiting Petroleum (operates in Bakken), Sanchez Energy (focuses on Eagle Ford Shale) and Anadarko have also announced cuts in their drilling budgets.
- Canada's oil sands hold the world's third largest oil reserves after Saudi Arabia and Venezuela, and the oil-sands operators have been working to reduce their costs in the present crude prices in the below \$50 range. The large upfront investments that are required as well as the costs of mining or steaming the oil sands gives the impression that these are high cost operations and thus not able to compete with the shale producers. However, this image seems to be changing. Companies such as Suncor, Cenovus and MEG Energy have reduced their cash operating costs, and increased production as to be profitable at current crude oil prices. Shrinking the size of well pads, reducing the amount of steam and use of solvents, as well as improving the reliability of their facilities are some measures that have been taken.
- Some of the US biggest drillers such as EOG Resources, Devon, Newfield Exploration, Diamondback Energy and Pioneer, in their Q2 earning reports disclosed their plans for the rest of 2017, which is sure to help US record a 10 mb/d production next year. These companies have become more efficient and on their way to a good profitable year.
- The anticipated US sanctions on Venezuela are somewhat tricky and that is the reason the Trump administration is weighing in on them. Venezuelan economy is on the verge of collapse. The country owes \$55 billion to Russia and China and is months behind on its oil-for-loans payments. The national oil company PDVSA is not able to pay foreign service companies, and many of them have taken hundreds of millions in write downs. The US imports close to 750, 000 b/d of crude oil from Venezuela for its refineries in the Gulf Coast. The Venezuelan crude in these refineries competes with the Canadian heavy oil and so the sanctions could help the Alberta oil sands, which are set to increase output this year by 200,000 b/d. A ban would push Venezuela into complete chaos and worsen the humanitarian crises. The country's oil production has dropped to a 14 year low to 1.97 mb/d in June. It has an upcoming \$3.2 billion debt payment coming up in October/November 2017. The refineries in the country are operating at 43% capacity due to lack of maintenance. If the US imposes sanctions on Venezuela, it will need to find buyers for its crude oil elsewhere. While China and India are already importing Venezuelan crude, Venezuela will need to compete with established grades of crude being imported in Europe. This can happen with discounted prices. A shutdown of Venezuelan oil could force a slowdown in production in the Gulf Coast refineries, which in turn will lead to a temporary spike in gasoline prices in the US. Any embargo on Venezuelan oil is also not good for companies like Chevron, Phillips 66 and Valero Energy that have spent billions calibrating their plants to handle Venezuelan crude.

So much for the industry news this week.

For the lighter side this week

Have you ever thought about space junk?

Yes, you read it right, space junk! Space has a lot of debris or trash of dead or non-functioning artificial objects. As per NASA, space debris comes from old spacecraft, which have outlived their lives, spacecraft separation from their launch vehicles, or upper stages of rockets, and collision between spacecraft and space junk. Collision between two objects generate hundreds of smaller pieces and these are whizzing around in space at high speeds (~4 miles per second). Space junk has been increasing since the beginning of space age in 1957. Since then over 5000 launches of different objects in space have resulted in over 30,000 large objects in space. There are numerous bits of space junk that are smaller than 10 cm.

Tests carried out by some countries have resulted in space junk. In 1985, a US one-ton satellite got destroyed at a 525-km altitude and resulted in thousands of pieces of space junk. Such debris pose a threat to newer spacecraft that are launched or others that are already in orbit and may strike any junk object. Interestingly, the 400-tonne International Space Station at a height of 350 km had to be moved out of the way of incoming space junk more than a dozen times.

Scientists have been working hard to create ways to clean up space debris to make future operations safer. Some interesting ideas are as follows:

1. Some scientists are working on launching a big satellite with giant spidery hands which will be able to grab space junk objects and throw them downwards into the Earth's atmosphere, where they will burn up.
2. High-powered laser beam on Earth would be directed at space debris, which will cause the objects to lose velocity and fall into the Earth's atmosphere and burn up.
3. Construct a robotic arm system and attach it to a space craft. Such an arm system would be able to extend 100 ft. and clamp on to the debris objects.
4. Construct a conducting long string and hook them onto space junk objects. As the string moves through the Earth's magnetic field, it creates an electromagnetic drag, which would slow the junk, again leading to its burn up in the atmosphere.

Space technology at present is about \$160 billion business, and it is only going to get bigger and better. We will probably see advancements in space junk clean up in the future.

I hope you find these interesting.

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