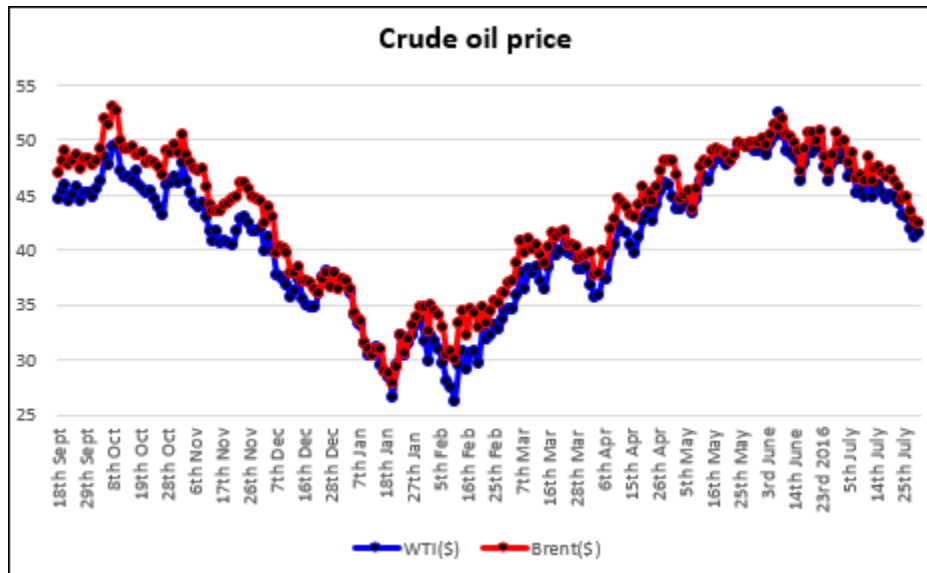


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- The crude oil price fluctuated between \$41 and \$44 this week and fell to its 2-month low. This is partly due to the swelling stockpiles in the US, even though the global oversupply has eased due to recent disruptions in Nigeria. The gasoline demand is in oversupply now and serving to pull the prices down. The IEA has said that the 'bloated stockpiles' will continue to damp oil prices and the road ahead may not be smooth. For the week of July 22nd, the US commercial crude oil inventories increased by 1.7 mb, according to EIA. This number excludes the Strategic Petroleum Reserve. The overall figure is at 521.1 mb.
- Since the downturn in our industry started in late 2015, some of the major integrated companies have relied on their downstream businesses to cushion the losses on their upstream units. The low oil prices gave refineries a large profit margin. But now the market is changing. These companies have been refining oil all through 2015 and 2016, and it fed the demand. But now with the slowing demand for refined products including gasoline, the company profits are coming under pressure. This will not provide the cash flow that the companies are expecting, and it will retard the demand for crude oil.
- Since the beginning of July 2016, the number of rigs in the US targeting crude oil has risen by 27 and has reached 371, according to Baker Hughes. Natural gas rig count was reduced by 1 to 88. The rig count in the Gulf of Mexico fell by three to 18. The latest rig count is giving rise to speculation that US oil production will increase. In the week ending July 15th, the US production was 8.49 mb/d as per EIA data.
- Anadarko has plans to spend more on oil and gas exploration next year as it expects the oil price to reach \$60 a barrel going forward. It also expects that the recovery of price will be driven by demand rather than by supply constraints. The company has reduced spending for 2016, and is raising cash by selling assets which is targeted to reach \$3.5 billion by the end of the year.

- Some of the reported Q2 2016 figures by some of the major oil and gas companies have been released. Exxon earnings were down to 1.7 b from 4.2 b in Q2, 2015; Hess reported a loss of \$393 m; Shell's earnings were \$1.05b compared with \$3.76 b in Q2, 2015; TOTAL's adjusted net income is \$2.2b; BP reported a net loss of \$2.73 b; Chevron reported a loss of \$1.5 b compared with earnings of \$571 m in Q2, 2015; Statoil reported a loss of \$307 m; ConocoPhillips reported a net loss of \$1.1 b compared with a loss of \$179 m in Q2, 2015, and Anadarko reported a loss of \$692 m in Q2, 2016.

So much for the industry news this week.

For the lighter side this week

We talk about or refer to computers all the time. First it used to be the mainframe computers which then led to smaller and faster computers employing miniaturized integrated circuits. The next big leap was from the conventional or sequential to parallel computing, which had more to do with breaking down the algorithmic implementation on computers in a parallel fashion. Apart from the size and speed, looking forward, what is the future of computing?

It is *quantum computing*, which will revolutionize the whole concept of what we know now. Recently, I stumbled across an interesting article in *Nature* that discussed it and so thought I should apprise my blog readers about it.

We are all aware that the size of semiconductor chips employed as microprocessors in computers has been reducing, but there is a limit to which this can go. As we approach the nanometer scale, the electrons start behaving as quantum particles, and the principles of classical physics are no longer followed. The conventional or classical computers use instructions or memory that is in the form of binary 'bits' encoded as a 'zero' or a 'one', or as an 'on' and 'off'. A quantum computer uses the concepts applicable to quantum particles, e.g. atoms, electrons and photons, etc., and talk in terms of quantum bits or 'qubits'. A qubit is a quantum system that encodes the 'on' and 'off' as two distinguishable quantum states, which can both be on and off at the same time. This allows quantum computers to perform computations in parallel, and so crunch through them in several-orders-of-magnitude less time. These qubits may be the spins of electrons, the polarization states of photons, or nuclei of atoms that are controlled by special magnetic/electric fields. More involved concepts such as '*superposition*' and '*entanglement*' of quantum states are being utilized for going through a vast number of computations simultaneously.

As you may have sensed already, there is no simple, convincing or a logical way to explain the working of quantum computers. As they work on principles entirely different from conventional computers, they are expected to solve problems whose solutions are not feasible the conventional way

Research is going on to develop these ideas and get over the challenges that are being faced in a big way. Some of the centers pursuing quantum computing that I have come across are Yale University, University of Boston, University of Bristol, University of Southern Carolina, Delft University of Technology, Iowa State University of Science and Technology, University of California at Santa Barbara, Centre for Quantum Computing and Communication Technology, at University of New South Wales in Sydney, Australia, Institute for Quantum Computing at University of Waterloo, Canada, IBM, Google, University College, and Imperial College at London. There may be many more.

So looks like the future for computing is bright. If this happens in the next 10 years, we might be able to see seismic data being processed on quantum computers, and if not then it may be wishful thinking on my part.

Did you know?

.. that *camel's milk does not curdle and can hold for longer when refrigerated?*

The reason has to do with the multi-molecular structure of the protein in camel's milk, as compared with cow's milk, or for that matter milk from goats and sheep. This is what keeps it intact in the desert heat.

It is watery, low in fat and has five times more vitamin C.

I hope you find these interesting.

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