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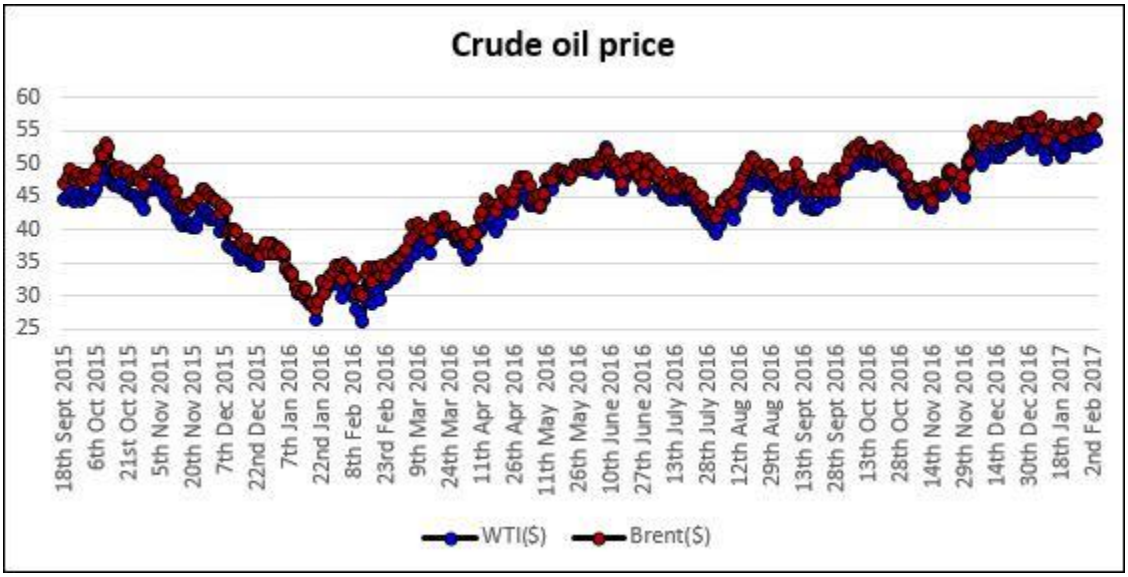
Some of the news items for this week are as follows:



- The price of oil fluctuated between $52 and $54 this week. This was largely out of doubt and anticipation. The doubt had to do with the promised cuts agreed to by OPEC and if the member countries would actually make that happen; the anticipation had to do with the rising prices giving a boost to shale oil drilling in the US. The US crude production climbed 17,000 b/d to 8.96 mb/d for the week ended Jan 20th, 2017 as per the EIA, and the rigs targeting crude oil have risen by 235 to 551 since touching a 2-year low in May 2016, as per Baker Hughes data.

- The US is now sending out more crude and refined products to Latin America than it is importing, bringing in an oil-trade surplus. This happened in October, when a surplus of 89,000 b/d was recorded for the first time since 1993, when records were started, as per the EIA. In November 2016, the surplus grew to 184,000 b/d. Mexico is importing large quantities of gasoline as its aging refineries are not keeping up with the soaring demand. Oil output in Venezuela, Mexico, Colombia and Argentina fell last year as low prices have caused a natural decline of some of the aging fields. As per the data from IEA, only Brazil posted an increase in its annual production. This balance may change if US President Trump introduces border taxes as he has suggested.

- OPEC reduction in January is estimated to be about 900,000 b/d, which is the first month for the implementation of the agreement. Saudi Arabia, Kuwait and Algeria have said that they have cut production by even more than what was required of them. Similarly, Russia has said that it was making a reduction in its production faster than what it had agreed to. Meanwhile, the US rigs have risen by 15 to 566 last week, as per Baker Hughes data.

- With crude supplies already reduced by OPEC countries, the West African nations, led by Nigeria and Angola are expected to increase their supplies to Asia in February, notably to China and India.

- Chevron Corp. reported a Q4 earning of $415 million as its revenue rose by 7.7% to $31.5 billion. However, this fell short of Wall Street expectation of $32.5 billion. ExxonMobil reported a Q4 earning of $1.7 billion, which included an asset impairment charge of $2 billion. Full year 2016 earnings were $7.8 billion compared with $16.2 billion a year earlier. Royal Dutch Shell reported a Q4 adjusted profit of $1.8 billion, which was also short of analysts' expectations. Finally, Anadarko reported Q4 loss of $515 million, which was again well short of analysts' expectations. Total and BP are expected to announce their 2016 figures in the coming days.

So much for the industry news this week.

For the lighter side this week

Microwave ovens are part of over 90% households in North America. They are convenient for defrosting, heating tea/coffee/milk or food such as a bowl of rice and lentils, etc., and hence save time. Some people do cooking in microwave ovens too. So, every now and then the question pops up – Does heating in microwave ovens reduce the nutritional value in food? Or, are microwave ovens safe?

Let us first begin with understanding how does a microwave oven work. Microwave ovens have a magnetron tube which converts electricity into electromagnetic waves that are on the low end of the spectrum. Microwaves fall between the radio waves and infra-red waves in terms of their wavelength or frequency, and are thus low-energy waves. Microwave ovens function at a frequency of 2.45 GHz, which is close to the frequency of WiFi.

When a microwave oven is switched on, the microwaves are absorbed by the food items placed inside it. For any food item to be heated, water or moisture must be present in it, otherwise it remains cold. Besides water, fats (butter, cream, oils) and sugars (glucose, fructose,…) may help with heating food items in which they are present. Microwaves cause water molecules to vibrate or spin at very high speeds, and as this motion is shared by other surrounding molecules due to molecular friction the food gets heated up. If the water or moisture is not uniformly distributed in the food item being heated, some parts of the item may be heated more than others. For this reason the food needs to be stirred well before it is put in the microwave oven. This is how food gets heated in microwave ovens.

Let us now come to conventional cooking. Except boiling or steaming, stir-frying vegetables at high temperatures causes loss of chlorophyll and vitamin C. Similar treatment to other food items causes decrease of soluble proteins and sugars. Now with this in mind, no molecular structure damage or changes take place in the food nutrients in a microwave oven, while just heating tea/coffee/milk or food. Come to think of it, it is the conventional cooking that may reduce the nutrients in the food items, as they are put through elaborate heating and frying. This suggests we should never overcook food, as its nutritional value goes down.

Now coming to the question that we are trying to answer, for the purpose for which microwave ovens are mostly used, i.e. heating tea/coffee/milk to bring it up to the temperature of your liking, or heat up a bowl of rice and lentils to a temperature that is comfortable to the tongue and taste, they are good, convenient and so a great help.

Of course, care has to be taken that the food is being heated in safe containers. Personally, I always prefer glass or porcelain plates, cups or bowls in which the food is heated.

I cannot comment on the nutritional damage when food is overcooked in microwave ovens as I am not aware of any experimentation that may have carried out to verify such claims. But outside of this particular situation, any fear of the use of microwaves or radiation for heating food seems to be unfounded. We may not realize, but our bodies, especially those of us who live in urban areas, are exposed to various types of radiation emanating from radio towers, TVs, cell phones, computers, etc. So why single out microwave ovens? Are you with me?

Did you know?

.. that birds don't urinate?

When mammals digest proteins and other nitrogen-containing compounds, one of the waste products is toxic ammonia. This ammonia is turned into urea which is passed out as urine, and the waste matter is defecated separately. So, there are separate outlets for these two things.

Birds are different, as they convert ammonia into uric acid, which is less toxic than urea. This uric acid does not need water and can be excreted as a solid. Thus the birds are able to conserve the water content in their bodies. You may have noticed the white pasty substance in bird droppings; that is uric acid. As no separate liquid excretion is required in the case of birds, there is only one channel for its outlet.

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

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