



Tight storage may lead to huge oil price drop

Posted by [Rune Likvern](#) on May 12, 2009 - 10:00am in [The Oil Drum: Europe](#)

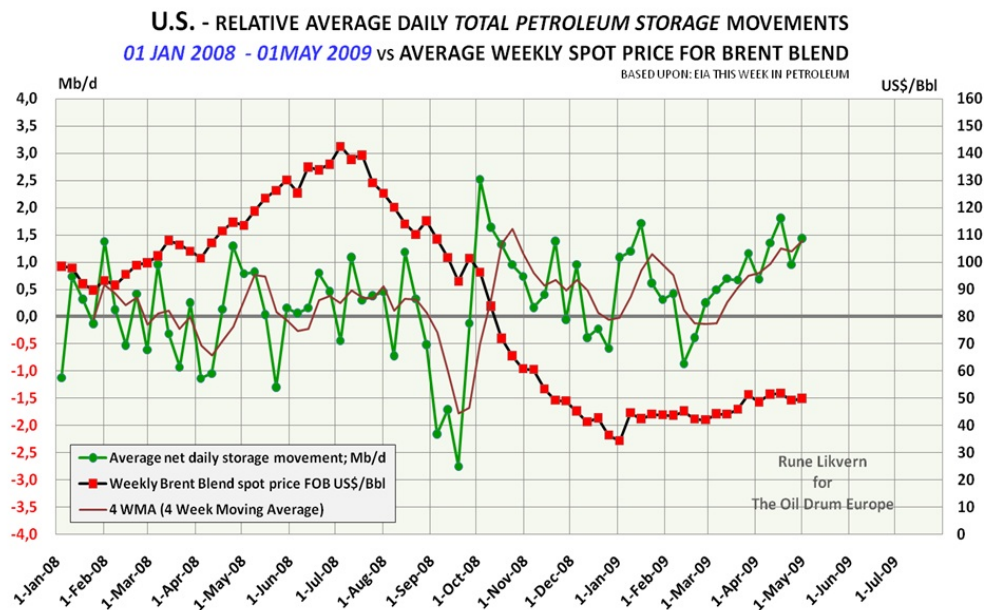
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Tags: [backwardation](#), [china](#), [china oil storage](#), [contango](#), [oecd](#), [oil prices](#), [original](#), [tanker storage](#), [us oil consumption](#), [us oil storage](#) [[list all tags](#)]

The present contango in oil prices bears all the hallmarks of an oil market where supplies are well above present fundamental physical consumption.

The recent large inventory build of petroleum, under a steep contango which now is flattening, within the big oil consumers (like the OECD countries and China) have left some with the expectation that major economies soon will begin to grow again, and that the contango now signals increased oil demand and higher oil prices in the future.

My analysis indicates that in recent months, as much as 2 - 3 Mb/d of global petroleum supply has been used to build inventories. This is about to come to an end, because available storage is getting closer and closer to full and contango has begun to flatten. When additions to storage cease, the resulting drop in demand can be expected to lead to substantial downward pressure on oil prices.



The chart above shows one component of inventories--US inventories. The chart indicates that US oil inventories (green) have been increasing since after the September 2008 hurricanes, and, in fact, started increasing as early as May 2008. Brent oil prices (red) decreased between June and December, but recently have been slightly increasing.

Below the fold I give a summary of US, OECD and China petroleum inventories, inclusive of oil stored on tankers, and indicate what I expect will happen to near term oil prices.

Contango - is not a place in Chile

First a brief look on definition(s) of **contango**;

- Contango is when the price of the oil (or other commodities) some day in the future, in short often referred to as “*futures*”, is higher than the price of oil today. This offers market participants an incentive to buy oil today and store it for future use or sale.

Some participants buy oil contracts today, then turn around and sell them into the futures market. Using this approach makes it possible to pocket an almost no-risk profit. This also helps explain the 100 + Mb of oil and petroleum products presently stored on tankers waiting for deliveries. Read more about this [here](#)

- Contango thus adds demand beyond the existing fundamental physical consumption, and most of this added demand ends up in storage. There are of course also market participants who do not want to take physical delivery of oil future contracts as these expire. This occurs because oil is sticky, toxic, and requires specialized storage facilities. Oil is not bought and stored the way gold is, for instance.
- These futures “expire” on the third Friday of every month. If a buyer holds a contract through expiration, the buyer has to take physical delivery of 1,000 barrels (which is the size of one contract) of oil at a depot. This could be in Cushing, Oklahoma. Some buyers (investors) do not want to do that, so these buyers sell their current contract(s) before it expires and buy the next-month contract.

This is referred to “rolling” the futures position forward.

- This is also where “contango” comes in. If the price of the next-month contract (like say, July) is more expensive than the price of the near-month contract (i.e., June), the buyer effectively loses money on the “roll.” When that happens, the market is said to be in “contango.”
- The opposite is commonly referred to as “backwardation.”

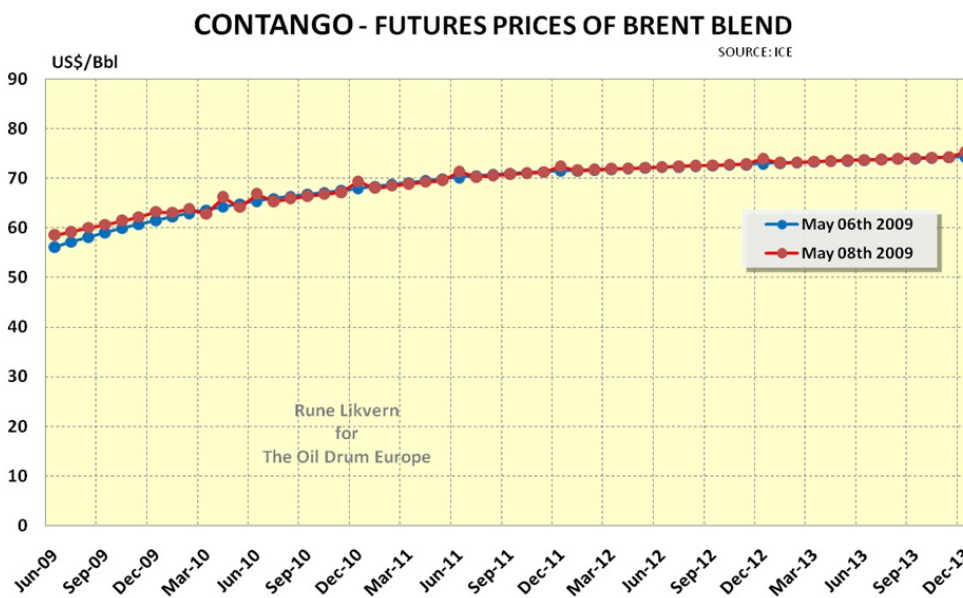


Figure 01: The diagram illustrates the present contango and shows the closing prices for Brent blend as of May 6th and 8th 2009.

The diagram illustrates that the contango flattens the longer into the future it goes. This suggests

An update of the storage situation

An increased inventory build by companies and refineries may reflect a fundamental change by these participants from just in time (JIT) inventories to building inventories in anticipation of a tighter supply situation in the future. (IEA has on several occasions pointed to the possibility of a supply crunch in 2011 - 2013 due to lack of investment in new oil production).

Increased inventory could also be rooted in anticipation of good OPEC discipline in observing their present quotas and hints about further cuts in the quotas. Furthermore, statements by OPEC that US\$ 70/Bbl constitutes a “fair” price may give the impression that OPEC’s is committed to strengthening oil prices by adjusting supplies.

The demand side may be fueled by expectations and public assertions that the present recession will end soon, and that the big economies again will enter growth by the end of this year.

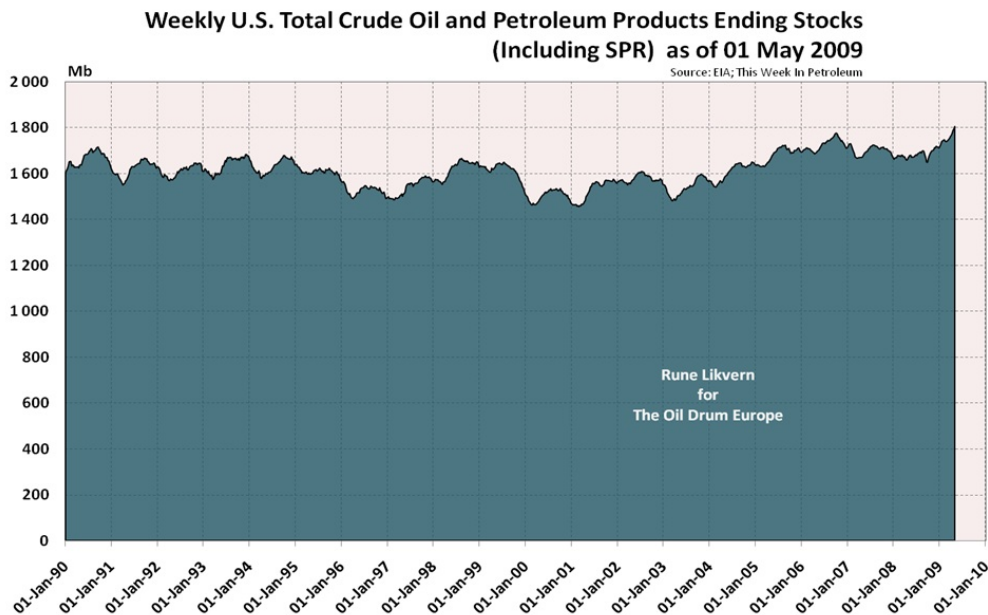


Figure 02: This diagram illustrates the development in U.S. total crude oil and petroleum storage as of May 1st 2009 inclusive of SPR (Strategic Petroleum Reserve).

This diagram illustrates that inventories have not been at their current level since 1990. The diagram also illustrates that there normally is an inventory draw down during the heating season (winter) but that this did not happen the past heating season. Instead, there was a total net build of 95 Mb as of May 1st 2009.

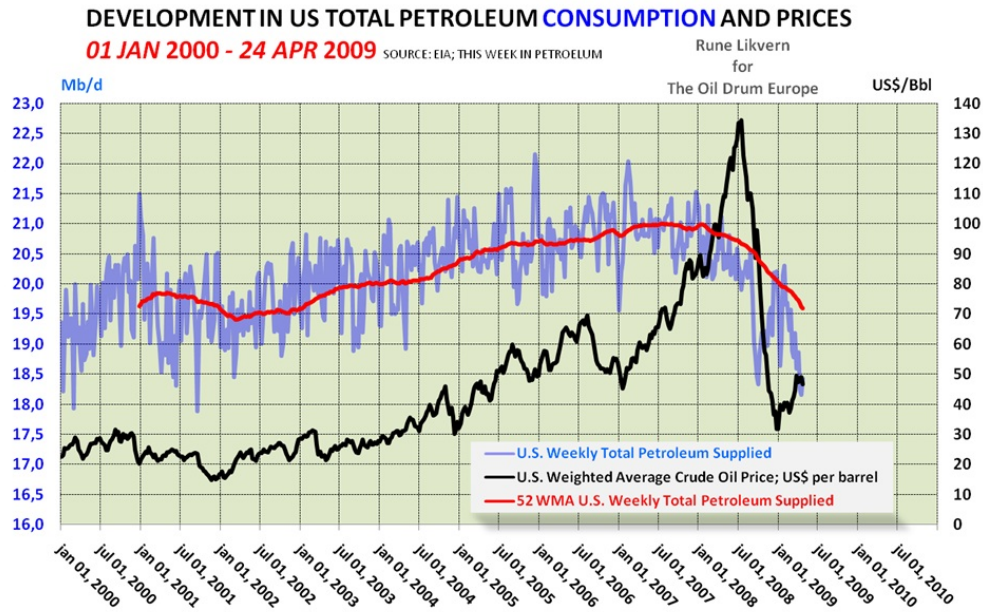


Figure 03: The diagram illustrates U.S. total petroleum consumption for the period 01st January 2001 through April 24th 2009. Consumption data (blue line) is plotted against the primary (left) y-axis. A 52 WMA (Weekly Moving Average) is added to smoothen the wild swings in the data. The crude oil price (weighted average), black line is plotted against the secondary (right) y-axis. NOTE: Primary (left) y-axis is not zero scaled.

US petroleum demand first was affected by the growth in oil prices early in 2007. The price spike in July 2008 accelerated the downward demand trend. Demand has been driven further down with the slowing economy.

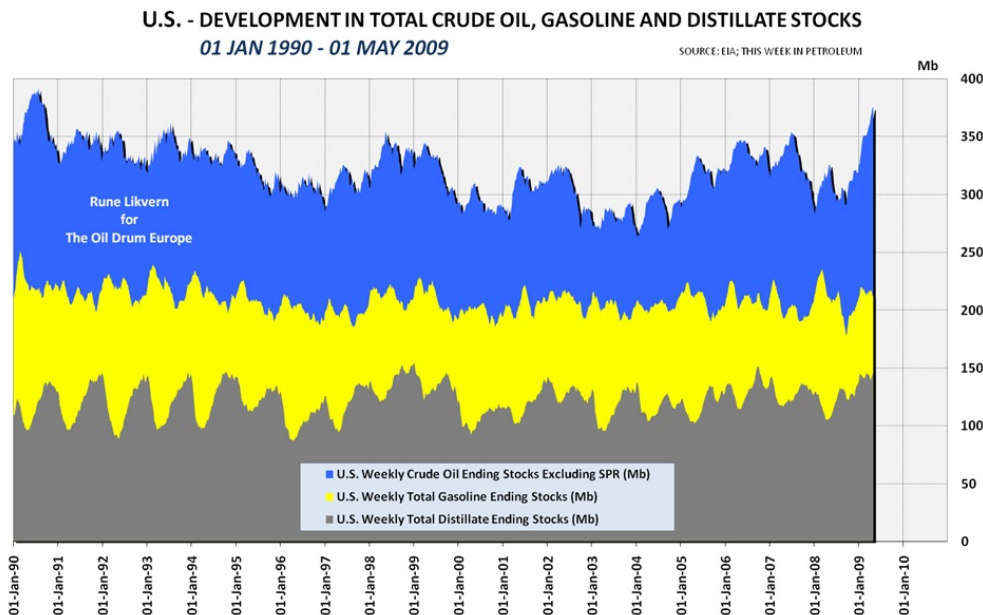


Figure 04: The diagram illustrates the development of U.S. commercial crude oil, gasoline and distillate stocks from January 1990 until 01st May 2009.

The diagram illustrates that normally during the heating season, U.S. crude oil inventories remain flat or are drawn down. The exception seems to be the last heating season, where a strong inventory build took place.

At some point there eventually will be little free physical storage left. At this point, it will become increasingly difficult to purchase oil for storage. Because of the lack of available storage, this link in the demand equation will decline. Eventually, the oil in storage will appear as available supply sometime in the future.

Owners of oil in storage (mostly refineries) could draw down storage to temporarily temper future price increases.

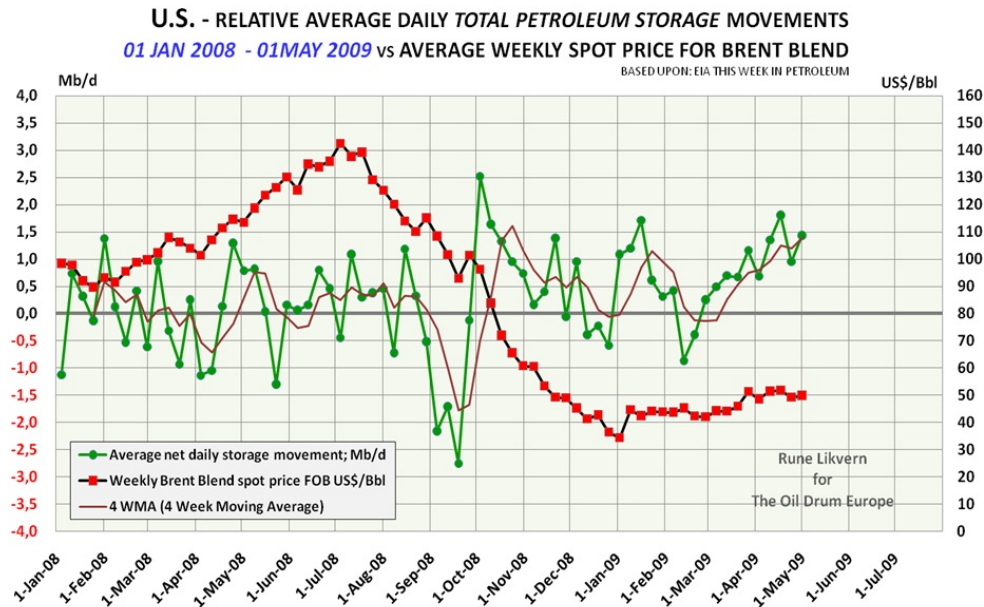


Figure 05: The diagram illustrates U.S. daily total inventory movements for the period 01st January 2008 through May 01st 2009 (based upon weekly figures), green dots connected by a green line plotted against the primary (left) y-axis. Against the secondary (right) y-axis is the average weekly oil price plotted, red squares connected by a black line.

The diagram shows through the 4 WMA (4 Week Moving Average) that in the months of April 2009, the build up U. S. inventories occurred at a rate of close to 1,5 Mb/d. Using a 26 WMA brings this rate to above 0,5 Mb/d. From the start of 2008 until the hurricanes affected GOM (Gulf of Mexico) production in September, there was a net build in total petroleum inventories of 25 Mb (Million barrels) suggesting that total U.S. inventories were maintained as long the oil price remained high.

According to IEA Oil Market Report as of April 2009, OECD excluding the U.S. saw total inventory build of around 53 Mb from October 2008 through February 2009, and China saw a build of approximately 17 Mb totaling 70 Mb. This translates into an average build of close to 0,5 Mb/d, and there is reason to believe that the inventory build for (OECD - USA + China) has continued at this rate.

Combining these indications, we find that for the countries constituting 2/3 of the global consumption as of 2008, have in recent months been building at a rate above 1 Mb/d. If the most recent data from U.S., the sum of the inventory build indications suggests this rate was around 2 Mb/d during April.

If the storage build from OECD and China could serve as a proxy for the rest of the world, this would suggest that they were building total inventory at a rate of around 0,5 Mb/d. There is reason to believe that the rest of the world has seen a lower rate of storage build, but to quantify this becomes hard. However as an approximation, it will here be assumed that this rate has been half of China's recent 0,1 Mb/d, around 1,5 % of consumption.

This suggests that the rest of the world, with estimated consumption of 30 Mb/d in 2008, has been building at a total rate around 0,25 Mb/d.

At some point, available storage will be filled. What will happen then? Will demand suddenly increase to make up for the amount that would have been added to storage? It is difficult to envision this happening. Instead, that it seems likely that there will be a sudden drop in demand.

Tanker storage

There is a limit to how many tankers that can be used for storage (or reduction of the seaborne transport capacities) before it starts to affect tanker rates. This is because oil tankers are in some ways comparable with pipelines. The present economic downturn has depressed tanker rates and made their use for storage, if not economic, more attractive than the alternative--dropped anchors, empty and no income.

If additional storage continues, the world's operating tankers will at some point will reach their fundamental capacities. Then tanker rates will again grow, making it more attractive to use the tankers for transport than for floating storage.

According to [this](#) article, shipping analysts estimate that around 100 Mb of crude oil and 25 Mb of refined products were stored at sea as of end late April. This storage will someday change from demand to additional supply.

Assuming that this built up in storage at sea, 125 Mb, has taken place during the last 6 - 7 months suggests that this added 0,6 - 0,7 Mb/d to global oil demand.

Oil now stored on tankers will at some point enter the market. This could add an average supply of 0,3 - 0,4 Mb/d over a year (and more over a shorter time span, if panic breaks loose). Moreover, as most of the readers know, pricing happens at the marginal barrel and small changes in the demand - supply equation may result in big price changes.

More about tanker storage may be found; [here](#) and [here](#).

Summary

As I have shown in this post, data from the recent months suggests that as much as 2 - 3 Mb/d of present global petroleum supplies have been entering storage, and this is about to end due to lack of storage.

This (2 - 3 Mb/d) admittedly sounds like a lot, even adjusted for the decline in consumption and shut in capacities within OPEC. However, given the price growth of approximately US\$ 15/Bbl, or 25 %, between the middle of March this year and *now*, it could have given some exporters an incentive to open their taps a little beyond their quotas.

At this point, I see little evidence that would justify a reinforced contango in the near future. Physical evidence like storage levels and reported and estimated total storage onboard tankers suggests a presently well-supplied oil market.

The situation in the oil market now bears some similarities to the situation in 1998 when oil prices temporarily went below US\$ 10/Bbl--not that I believe prices will drop that far this time. The drop could be very large, however.



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