

# Weak dollar and US petroleum reserves behind strong oil price

**E**ARLY THIS YEAR, THE PRICE OF CRUDE OIL SURPASSED its previous inflation-adjusted peak of \$103.76 a barrel (a record established in 1980). Since then, the price of crude has been making new record highs on a regular basis. And that's not all. On June 6th, it surged by \$10.58 a barrel – a record one-day move. This was enough to bring the chattering classes out in full force. They produced a great deal of commentary – much of it unfounded – about what was causing oil prices to go through the roof. They were also quick to condemn the traditional bogeyman – the speculators. Not surprisingly, the finance ministers from the Group of Eight industrialized nations focused on oil prices during their recent two-day meeting in Osaka, Japan.

Just what is pushing prices skyward? Surprisingly, the G-8 finance ministers failed to mention the US dollar's role. Every commodity trader knows that all commodities trade off changes in the value of the greenback. When the value of the dollar falls, the nominal dollar prices of internationally traded commodities, like gold, rice, and oil, must increase because more dollars are required to purchase the same quantity of any commodity. Accordingly, a weak dollar should signal higher commodity prices. And it does.

For example, if the greenback had held its January 2001 value against the euro, oil would have traded at about \$76 a barrel in May 2008. This is almost \$50 below the price that crude oil was trading at in May 2008. Accordingly, the decline of the dollar's value accounted for a whopping 51% of the \$97 a barrel increase in the price of oil from May 2003-2008.

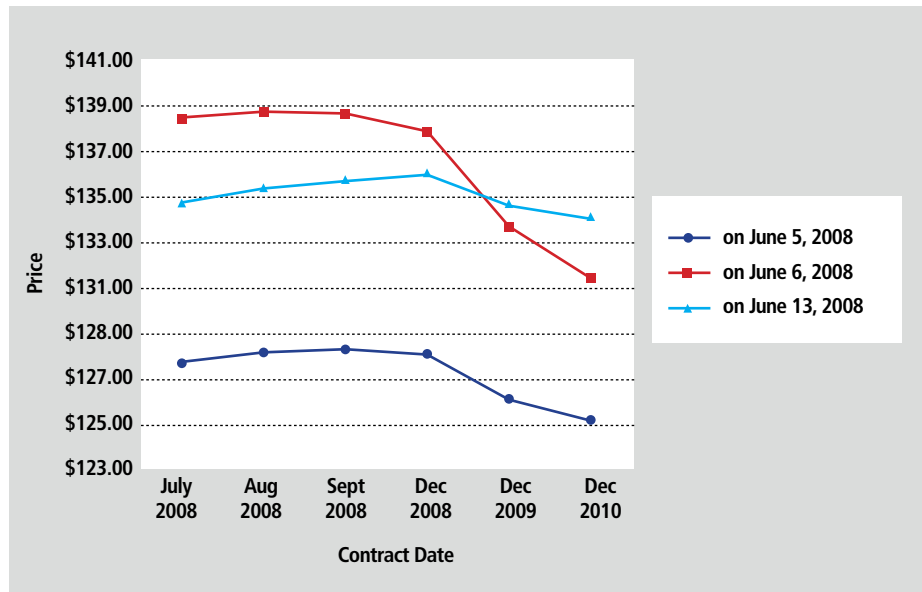
In addition, global economic activity and the demand for crude oil have been strong since 2003. This has been accompanied by weaker growth rates on the supply side of the oil market. In consequence, excess capacity has declined. These smaller margins of safety

and the fact that a large share of global oil production occurs in politically unstable regions result in larger risk premiums that contribute to higher oil prices.

To obtain a better grasp of the dynamics of the oil market, consider the market for light sweet crude oil traded on the New York Mercantile Exchange in New York. The accompanying chart shows the prices for futures contracts. These are agreements between buyers and sellers to exchange oil at a later date (July 2008 – December 2010) at a price fixed "today" (either June 5, 6 or 13, 2008). Among other things, it is clear that market participants expect oil prices to remain elevated.

In addition, the chart shows the record jump in crude prices from June 5 to June 6 and also the prices one week after the jump. These three curves contain information that can be used to calculate the term structure of interest rates for oil. These commodity (or "own") interest rates are presented in the accompanying table. They provide important insights into the workings of oil markets.

## Light Sweet Crude Futures Contracts



Source: New York Mercantile Exchange



## West Texas Intermediate Crude Oil

Spot Date	Futures Maturity	Commodity Interest Rate (Annualized)
6/5/2008	Dec-08	-0.232%
6/6/2008	Dec-08	0.798%
6/13/2008	Dec-08	-1.616%

Note: Commodity Interest Rate (Annualized)  
= (Spot Price - Futures Price) / Spot Price X  
365 / Days between Spot and Futures Maturity)

Source: *The Wall Street Journal*, Bloomberg, US Energy Information Administration, and author's calculations

Before interpreting the commodity interest rates, it is important to realize that futures markets operate as loan markets for commodities. As such, they operate in a manner that is similar to money markets. When a handler of commodities purchases a commodity and simultaneously sells a futures contract, he is temporarily borrowing a commodity. This procedure is much like borrowing money from a bank with the promise to repay the loan in the future. The sales of a futures contract, in conjunction with the purchase of a commodity in the spot market, allows a handler to borrow a commodity now and repay it later. These simultaneous buy-sell transactions are, therefore, implicit commodity loans.

If the price of a commodity for future delivery exceeds the spot (or cash) price, the market is in contango, and the commodity interest rate is negative. A lender of a commodity has no incentive to lend to the spot market because he would be in effect selling low and buying high. The reverse occurs when the spot price exceeds the futures price and the market is in backwardation. Commodity interest rates are positive. In this case, it pays those who hold commodities to loan them to the spot market.

When the price of oil made its record jump on June 6, many conjectures were made about the causes. The one that turns out to be the most plausible is the threat made by the Deputy Prime Minister of Israel, Shaul Mofaz. After Mr. Mofaz stated that an Israeli attack against Iran was "unavoidable" if Tehran continued to push forward with its nuclear program, the curve for futures contracts prices shifted up and its shape changed. With the change in shape, the commodity interest rate switched from negative to positive for

2008. In other words, it became profitable to lend oil to the spot market. This occurred because the precautionary demand for oil became elevated as oil users became concerned about a possible Israeli attack on Iran and the adequacy of their inventory levels. After Israeli defense officials rebutted Mr. Mofaz, concerns were dispelled and the commodity interest rates became negative for 2008, indicating a more relaxed precautionary demand and more adequate inventory levels.

### Mother hoard

SPEAKING OF INVENTORIES, LET'S EXAMINE THE WORLD'S LARGEST – the US government's Strategic Petroleum Reserve. The SPR is a response to the oil embargo imposed by the Organization of Arab Petroleum Exporting Countries after the 1973 Arab-Israeli War. It comprises five underground storage facilities, hollowed out from salt domes, located in Texas and Louisiana. By 2005, the SPR's capacity reached its current level of 727 million barrels. At present, 702.7 million barrels are stored in the SPR. That's over twice the size of private crude oil inventories. To put SPR's size into perspective, its current storage would cover about 71 days of US crude oil imports or 47 days of total US crude oil consumption. The SPR's drawdown capacity is 4.3 million barrels per day. That rate is slightly greater than the combined daily crude oil exports from Iran and Kuwait. In short, the SPR is huge.

Not being faced with capital carrying charges and never wanting to be caught short, government officials, like proud pack rats, want to just sit on this mother of all commodity hoards. They argue that the SPR represents an insurance policy for national emergencies. But without a specified release rule, just what is the insurance policy written for?

Instead of hoarding the SPR, the government should sell out-of-the-money (at strike prices that exceed the current spot price) call options on the SPR. This would allow the purchasers to buy oil at the strike price until the option contracts expired. It would transform what is in effect a dead resource into a live one. It would provide the country with a huge inventory of oil, generate revenue to defray some of the government's stockpiling costs, smooth out crude oil price fluctuations, and push down spot prices relative to prices for the oil to be delivered in the future. In consequence, commodity interest rates would become very negative as inventories would be abundant.

A stronger dollar and market-based release rules for SPR would provide relief from sky-high crude oil prices. GA

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