More Crude Oil Fun With Fundamentals

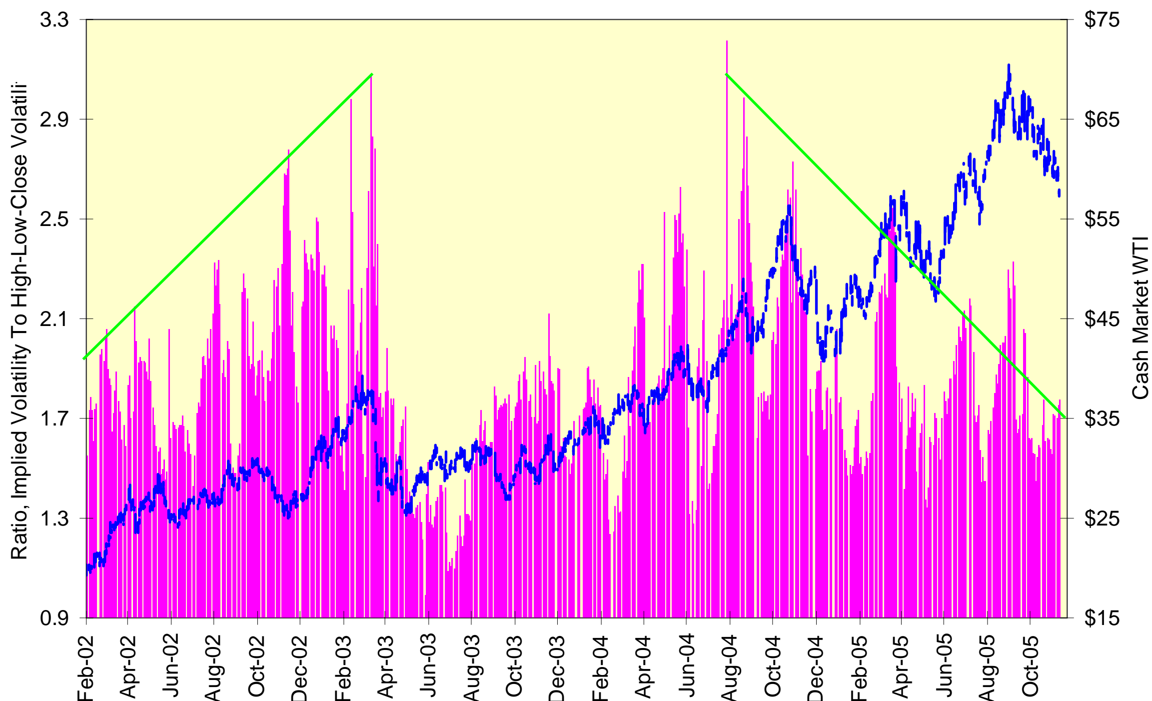
Legend has it that macabre cartoonist Charles Addams, now known better for television's *The Addams Family* than for his long-running work for *The New Yorker*, kept a single cartoon in his desk drawer to shoo away editors on deadline. It had a maternity ward nurse handing a swaddled newborn over to the father, who replied, "don't bother wrapping it, I'll eat it here."

Writers on commodities and futures markets can follow a similar strategy by keeping a continuously updated article on the crude oil market on their hard drives, ready to launch with a single click on the "send" button. But this would be the intellectually lazy way out, a parallel to the ever-popular "is the market going to go up or down?" story. But so saying, I was a little surprised to find I had not done a little review of the fundamentals of the petroleum industry since July 2004, at which point I concluded the market was going to go higher. The ongoing retreat in prices and margins demands an update, does it not?

All indications at present are pointing toward short-term weakness in the crude oil market. That's the punch-line; now let's get to the joke.

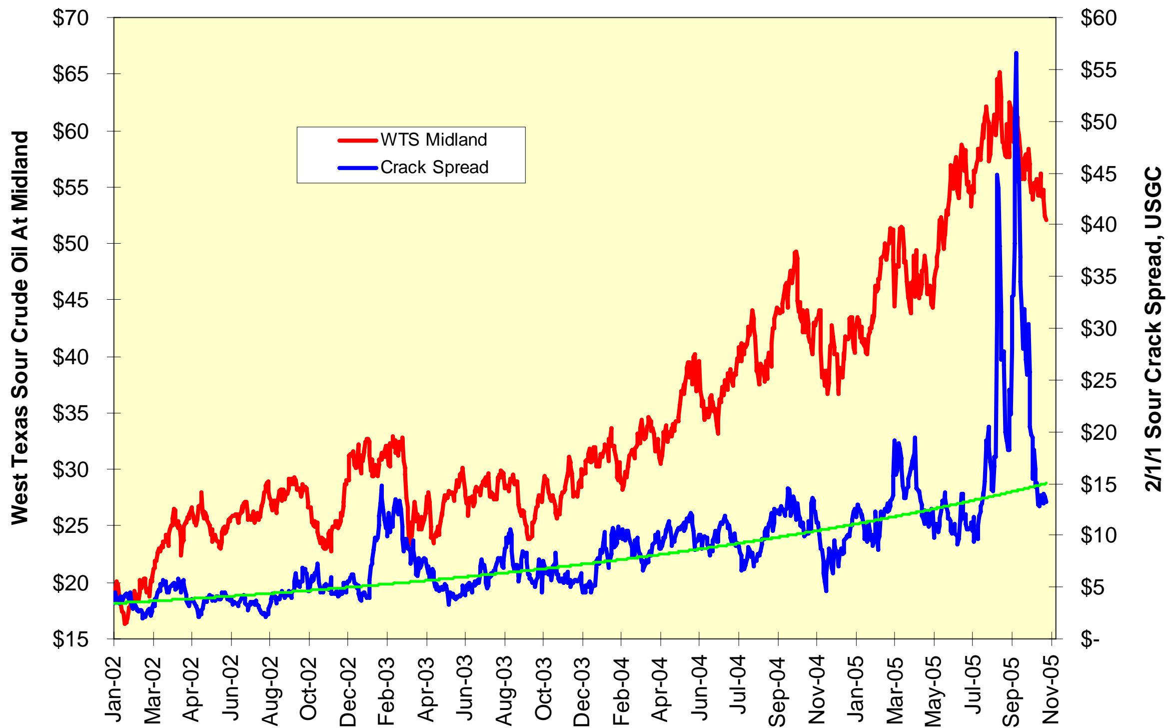
The Fear Factor
The volatility structure of the crude oil market is similar to that of the stock market. Both exhibit an investor skew, the pattern wherein implied volatility rises as prices fall, and vice-versa. The producers and holders of crude oil inventories tend to be the more anxious parties, and they rush to buy protection when prices start to come down from their most recent highs.

If we compare these option volatilities to actual high-low-close volatility in the cash market, we can measure the excess demand for price insurance over and above that indicated by price volatility itself. Prior to the Iraq War, this ratio rose along with price; option buyers were increasingly nervous about a price collapse after each new high. This pattern has reversed since mid-2004. Now the ratio of implied volatility to actual volatility is falling with each new high in price. More tellingly, it has fallen even as prices have taken a sharp downturn over the past month. We can conclude the crude oil market has turned way too complacent about its long-term bull market; it no longer fears any downturn in the same way stock traders got used too the NASDAQ's periodic tech wrecks prior to March 2000. We know how that one ended.

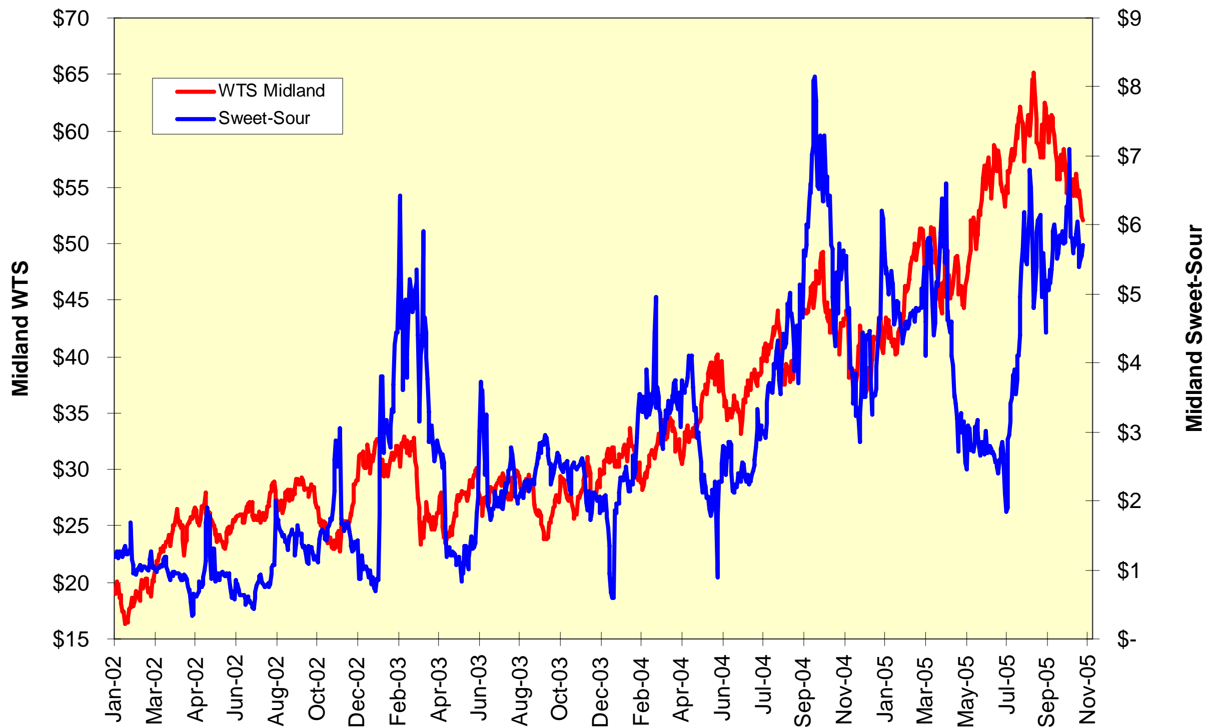


A Refined View

The world in general and the U.S. in particular remain short of refining capacity. This has led to a secular increase in refining margins – "crack spreads" for those of you who wish to talk the talk – and the occasional spike higher in gasoline prices. If we plot 2-1-1 crack spread, two barrels of crude oil into one each of heating oil and gasoline, for sour, or high-sulfur, crude oil at the U.S. Gulf Coast against the price of West Texas Sour crude oil at Midland, Texas, we can see just how dramatic the Katrina effect was. But it is important to note this spike was but an extension of a trend already in place; the trend-curve drawn simply extrapolates the pre-Katrina trend, it does not include it in the calculation. The refining margin has now retreated back to and slightly below this trend line, which lowers the incentive for refiners to bid for incremental supplies of crude oil.

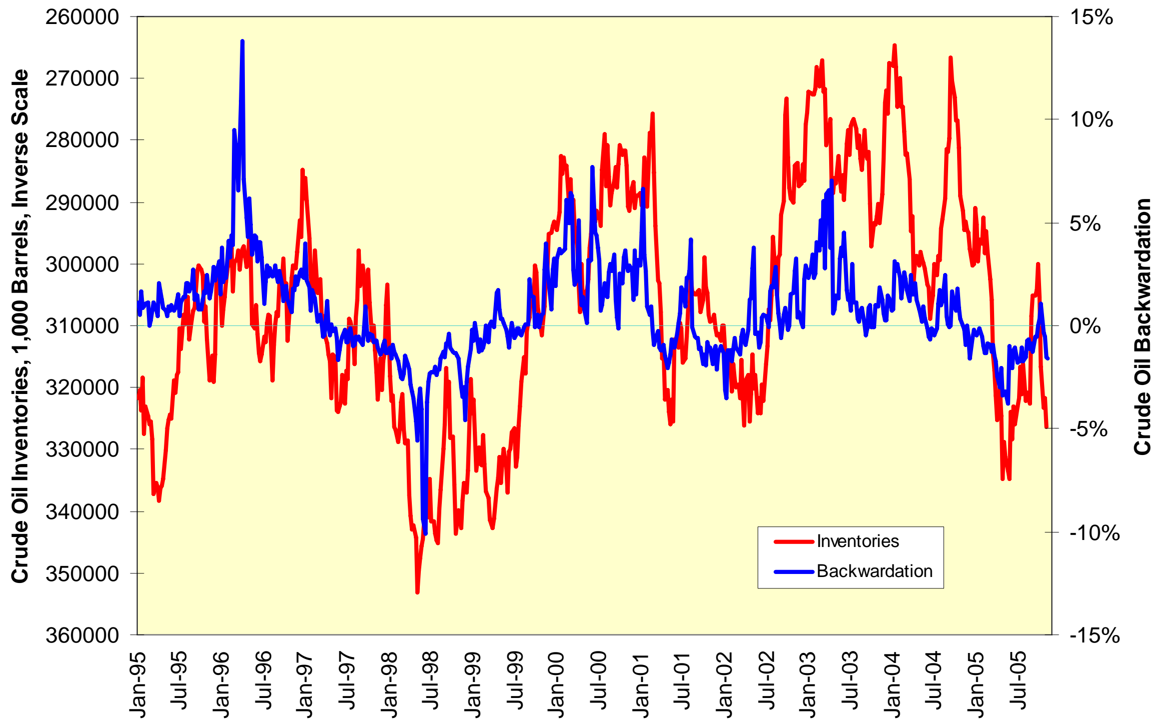


The decreased incentive to bid for more supplies can be seen with another indicator, the spread between low-sulfur "sweet" crude oil and sour crude oil. As the refining systems strains toward capacity, the least efficient units are brought on stream, and these cannot process sour crude oil. The sweet-sour spread expands, as it did just before the Iraq War, during the 2004 hurricane season and again during the 2005 hurricane season. It has stopped expanding, which indicates refineries no longer can afford to run their least-efficient units.

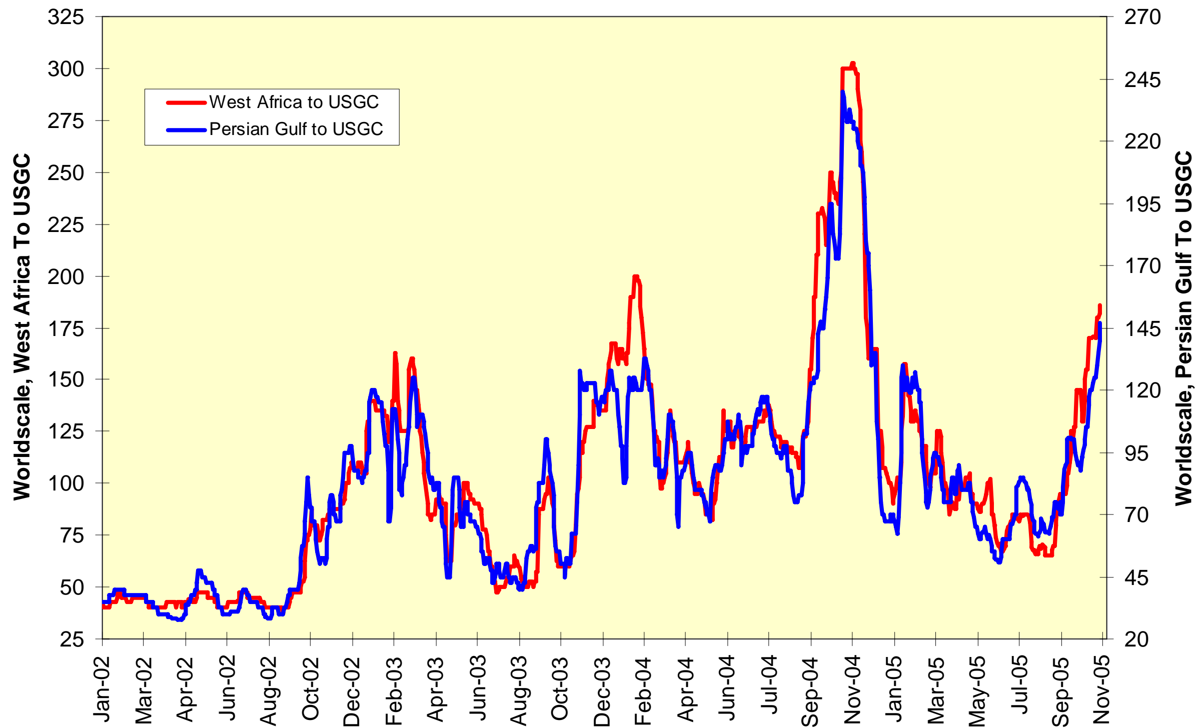


Supplies

If refiners lack the incentive to maximize throughput and crude oil producers have every incentive to maximize output, then we should expect to see inventories on the rise. This is happening, and along with the depredations of the long-only commodity funds, a topic discussed here in April, the rising inventories are pushing spread between the first and second months of crude oil futures deeper into a discount. Crude oil inventories are not going to rise forever; once refiners start running them down, buying pressure will disappear perforce from the market.



But in any market, momentum matters. Refiners want to protect their long-term relationships with producers and rightfully feared being called on the carpet if they did not maximize inventories for the winter. As a result, floating inventory, or the tankers already nominated and headed this way, is rising. We can tell this by tracking the shipping tariffs expressed as Worldscale, or percentage of expected normal tariffs, between both the Persian Gulf and West Africa to the U.S. Gulf Coast. They are rising, which tells us more crude oil is on its way here.



Not An Easy Trade

While the short-term picture is for price softness, remember there are two sides to every market, and we have not dealt with suppliers' incentives. When prices softened about a year ago, our good friends at OPEC signaled they would start closing the taps. They have come to enjoy the high prices – you would, too – and are unlikely to sit by idly during a collapse. They learned their lessons in 1985-1986 and again in 1998-1999 about the lack of cohesiveness in the cartel. Expect to see some jawboning about the need for field maintenance or the "emergency" post-Katrina production not being necessary.

After all, what are friends for?