Bianco Research L.L.C.

An Arbor Research & Trading Company

Independent · Objective · Original

Volume 10, No. 15 | 1731 North Marcey, Chicago IL 60614 | www.biancoresearch.com

Market Facts

By Neil Bouhan (847) 304-1511

May 16, 2005

Crude Prices And Inventory – How Do They Relate?

Reports of a refinery problem in the Gulf Coast region seemed to stoke the early rally; however the glitch didn't appear to be too serious and the perception that the United States is well-supplied with crude and gasoline brought out the bears…The market will get a better idea of the nation's fuel supply Wednesday when the weekly inventory statistics are released by the American Petroleum Institute and the Energy Information Administration. – "Roller-coaster crude ends at start point", *The Washington Times*, May 11, 2005

Are you interested in predicting crude oil futures prices from US inventory data? Released weekly by both the American Petroleum Institute (API) and the US Department of Energy (DOE), these inventory statistics are the subject of instant and cursory supply/demand analysis. The assumption is made that rising crude oil stocks will lead to lower prices.

History suggests inventory statistics will provide *some* valuable insight into price movements. And according to this spate of recent headlines, the major financial news media concur:

The Financial Times

- Rising inventories force drop in **crude oil** prices
- **Oil** prices below $50 after US **crude** stocks rise

TheStreet.com

- Oil **Prices** Lower Ahead of Data

CNN

- **Oil retreats** on **inventory** issues

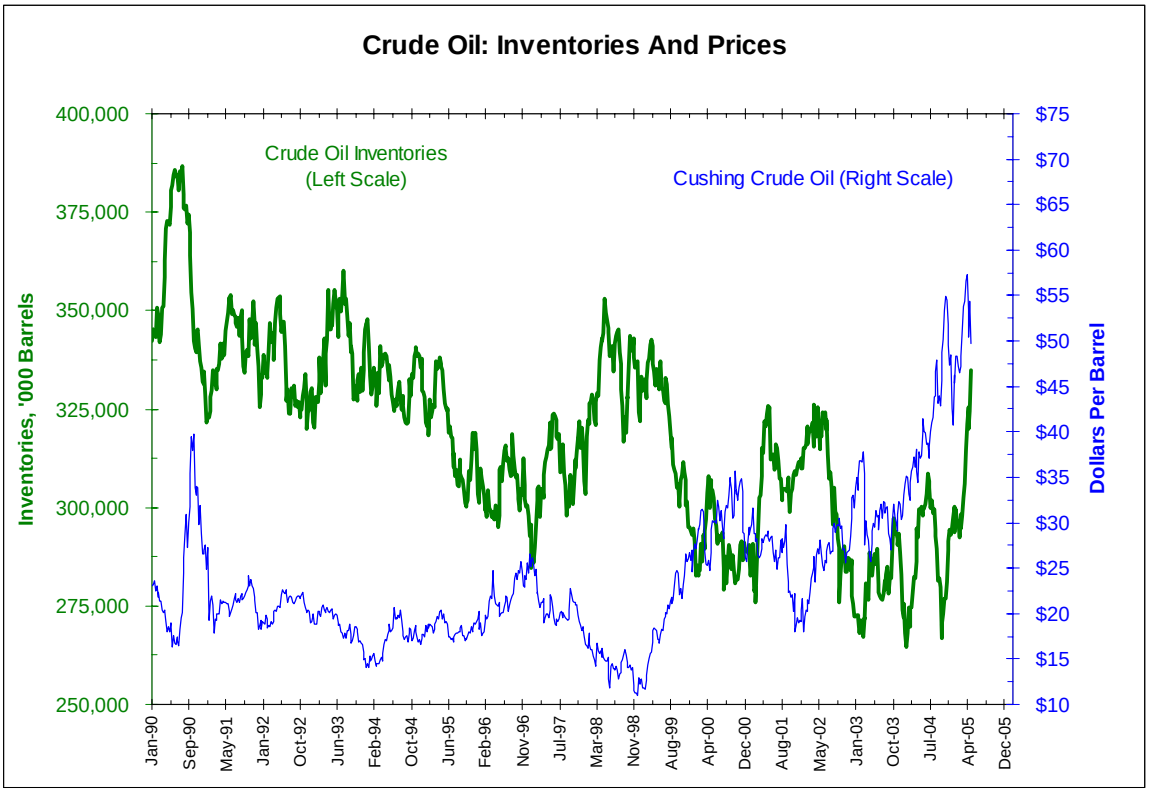
Bloomberg News

- **Crude Oil** Drops Below $50 a Barrel on Rising US **Inventories**
- **Crude Oil** Drops Below $49 a Barrel on Rising US Inventories

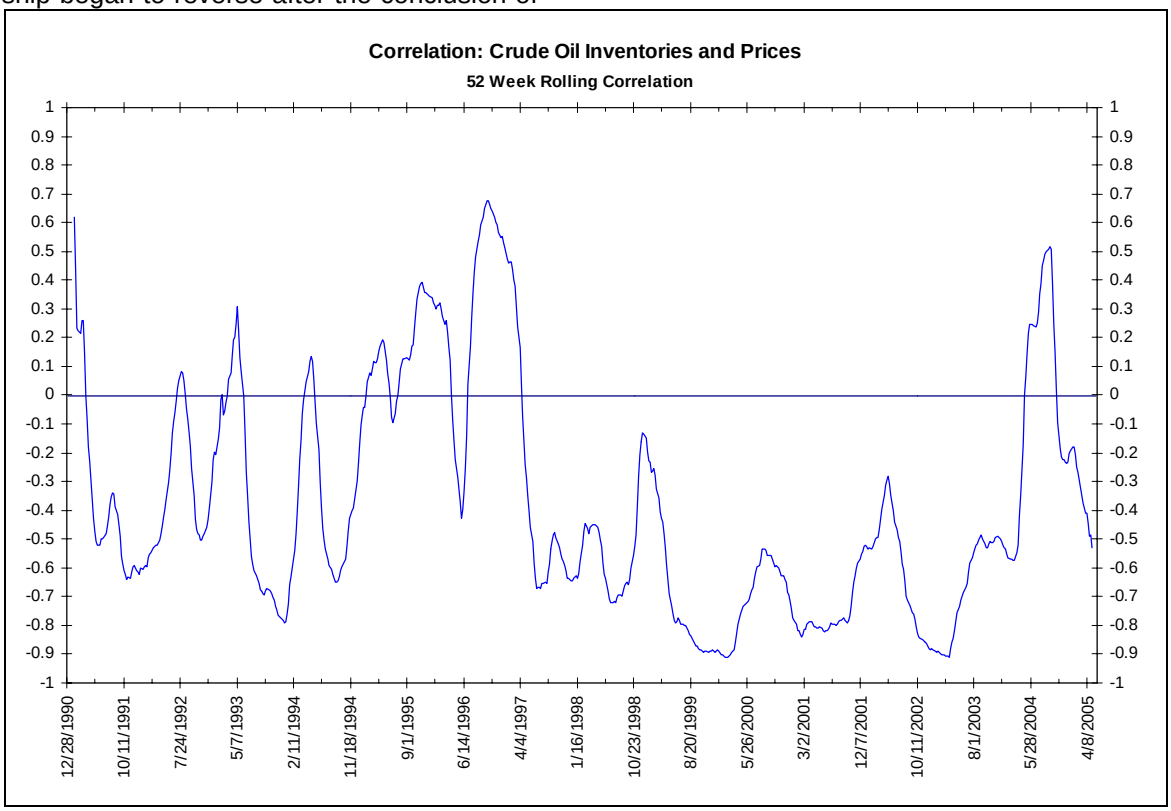
Is Bloomberg News correct to attribute every incremental move lower in the price of crude oil to rising supplies? Have they uncovered a single predictive variable of crude oil prices, a Rosetta stone? Probably not: While economic intuition, some empirical statistical evidence, and simplistic headlines argue for a perfectly inverse relationship between US crude oil inventories and crude oil futures prices, closer inspection reveals a rather inconsistent correlation.

Closer Inspection

The quote above from the *Washington Times* makes clear the importance of the weekly inventory statistics. However, market players may clarify that neither the absolute level of stockpiled crude oil nor the variance of reported levels from estimates are as important as the market's *perception* of the supply situation. The following chart illustrates what may be the most significant domestic supply statistic, The American Petroleum Institute's Weekly Statistical Bulletin (WSB). According to the API, this weekly report includes "the most current data available on U.S. refinery operations, petroleum imports, and inventories of crude oil and petroleum products. Usually published on Wednesdays at approximately 9 a.m. Eastern Time, the WSB includes estimates made by the API for the previous week based on reports filed voluntarily by petroleum companies operating in the U.S. The WSB is intended to serve as a preliminary indicator of recent trends in industry operations until more detailed data based on reports from all companies are published several months later by the U.S. Department of Energy's Energy Information Administration (EIA)."



From the chart above, the *real* relationship between primary inventories (green line) and cash West Texas Intermediate crude oil prices at Cushing, Oklahoma, is difficult to assess. The dominant relation during the 1990's was negative. The relationship began to reverse after the conclusion of major fighting in Iraq in mid-2003. The long-term rolling correlation between the two series is appropriately inconsistent and argues against the simple deterministic relationships preferred by journalists and interlopers from financial markets.



While the correlation between inventory data and futures prices is negative over time, it does not exemplify a relationship robust enough for a trading strategy. During most periods, the correlation gyrates violently between its limits of +1 and -1. From mid-1997 to mid-2004, the relationship exhibits a fairly consistent negative correlation.

We can note how recent spikes in the correlation series indicate the period of consistent correlation may be over. The situation prevailing during the first half of the 1990s appears to be returning.

Explaining price moves from inventory data ignores market nuances. For example, a May 4 Reuter's article titled "Oil rises even as U.S. stocks hit 6-year high" comments about the relationship of inventories to US crude prices, Cushing in particular. The author notes:

> *Stocks rose to 327 million barrels, the highest level since July 1999, the U.S. Energy Information Administration said. The rise was the 11th in 12 weeks for crude stocks. But the bulk of the crude stock increase was on the U.S. West Coast, which is not connected to the regions that affect U.S. light crude futures prices. "The crude build is a little misleading because it is concentrated on the West Coast and so people think this is not as bearish as many had expected," said Marshall Steeves, analyst at Refco Group in New York*.

To gain a clear picture of crude oil futures, it is crucial for market watchers to understand and report these nuances and the changing perception of supply, rather than making broad connections between one statistical release and subsequent price moves.

Conclusion

Perhaps as a result of the recent, sustained period of consistent correlation, market commentators now take for granted that inventory levels are the primary statistic driving the crude oil market. Such a complacency would go far to explain the media's fascination with simplifying the relationship. Given these market facts, we recommend laymen turn a critical eye on a nuanced market driven by subtle changes in perception rather than rely merely on the reports of a media focused on broad generalizations.

Bianco Research L.L.C.

1731 North Marcey, Suite 510
Chicago IL 60614

Phone: (847) 304-1511 Fax (847) 304-1749
e-mail: research@biancoresearch.com
http://www.biancoresearch.com

For more information about the contents/ opinions contained in these reports:

President (847) 756-3599
James A. Bianco jbianco@biancoresearch.com

Strategist/Analysts (847) 304-1511
Howard L. Simons hsimons@biancoresearch.com
Greg Blaha gblaha@biancoresearch.com
Neil Bouhan nbouhan@biancoresearch.com

For subscription/service Information:

Arbor Research & Trading, Inc.
Director of Sales & Marketing (800) 625-1860
Fritz Handler fritz.handler@arborresearch.com
Peter Forbes peter.forbes@arborresearch.com

Arbor Research & Trading, Inc.

1000 Hart Road, Suite 260
Barrington IL 60010

Phone (847) 304-1560 Fax (847) 304-1595

e-mail inforequest@arborresearch.com
http://www.arborresearch.com

For more information about Arbor Research & Trading and its services:

Director of Fixed-Income Sales (800) 625-1855
Daniel Lustig dan.lustig@arborresearch.com

Chicago Sales Office

1 N. LaSalle Street, 40th Floor
Chicago IL 60606
Bob Youstra bob.youstra@arborresearch.com

Phone (312) 379-3767

New York Sales Office

230 Park Avenue, Suite 2425
New York, NY 10169
Edward T. McElwreath ed.mcelwreath@arborresearch.com

Phone (212) 867-5326 Fax (212) 370-1218

For more information about Arbor Research & Trading and its services:

Director of International Sales (847) 756-3510
James L. Perry james.perry@arborresearch.com

London Sales Office

75 Cannon Street London England EC4N 5BN

Phone 44-207-556-7309 Fax 44-207-556-7468

For more information:

Director of Arbor (UK) 44-207-556-7309
Neil Tritton neil.tritton@arborresearch.com
Ben Gibson ben.gibson@arborresearch.com