

Will Crude Oil Grease The Market?

Experience is a great teacher if you are good at forgetting things. I can recall the crude oil price crash of December 1985-February 1986, and how bonds traded tick-for-tick with crude oil and then stocks traded tick-for-tick with bonds. A little over a year later, we changed the chain of causation from the yen to bonds to stocks.

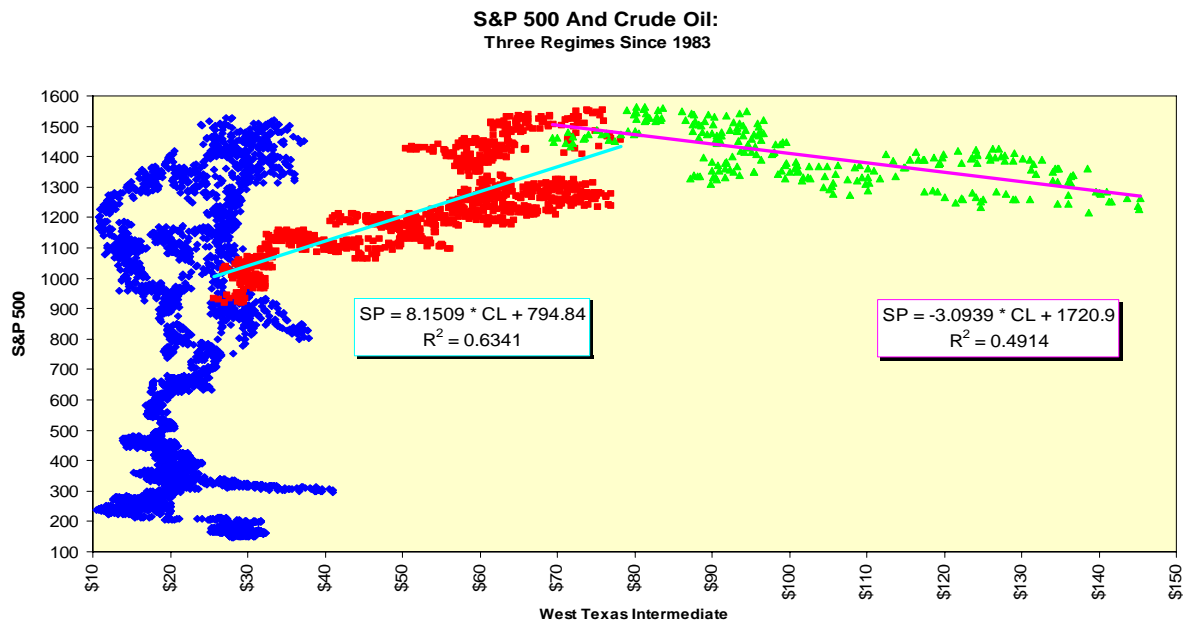
Now the yen is good for a few laughs every year when the 13 year-old yen carry trade, last visited here in [September 2007](#), gets unwound globally in a two-minute period, and bonds pretty much ignore crude oil and stocks and bonds more often than not trade inversely. If old dogs refuse to learn new tricks their owners stop taking them to the vet's.

So imagine my amusement when the Ritalin-for-lunch-bunch starts hyperventilating about how lower crude oil prices – and that's "lower" in a very relative term; the present price level would have been shockingly high even eight months ago – will pull this market higher single-handedly.

Shocks For The Long-Term

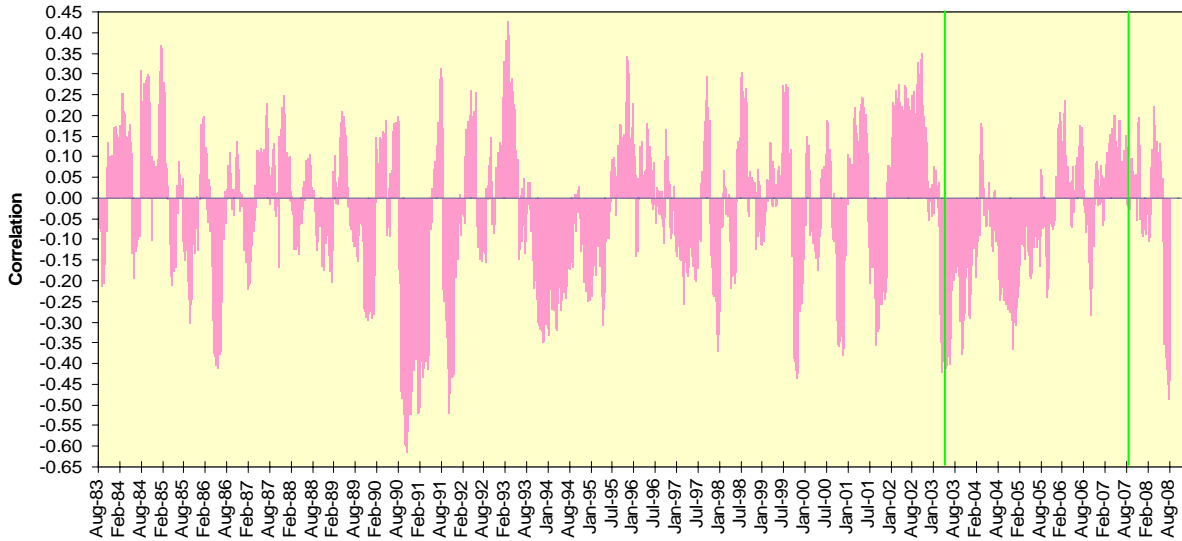
First, let's stipulate the obvious: Stocks and crude oil have been correlated negatively over the past year. The operative part of that sentence is, "over the past year." Let's take the long-term history of crude oil and the S&P 500 and divide it along two very obvious fracture dates, May 6, 2003, when the Federal Reserve bravely began its war on deflation, and August 17, 2007, when that war entered its surge phase.

Three sets of ordered pairs emerge from that division and are mapped below. The January 1983-May 2003 period, marked in blue, has an essentially random relationship. The May 2003-August 2007 period, marked in red, has a strong positive relationship; both stocks and crude oil rose simultaneously under a combination of strong global growth and generally stimulative policies. The August 2007-August 2008 period, marked in green, has a negative relationship; stocks sank under the weight of the credit crunch while crude oil prices doubled. Restated, we have one year out of almost 26 years of data where we can demonstrate a negative relationship between crude oil and the S&P 500, and yet the fast-trigger crowd thinks this is all you need.



We can rearrange the data in the chart above to a long-term map of correlation of returns between the two markets. The present three-month correlation of returns is one of the most negative on record, surpassed only by the first Persian Gulf War and approached a few times thereafter. But take a look at how many times the rolling three-month correlation of returns is positive; it includes the March-June 2008 period following the Bear Stearns panic low. More than 45% of the daily rolling three-month correlations of returns in the chart below are positive.

**Rolling Three-Month Correlation Of Returns
S&P 500 And Crude Oil Since January 1983**

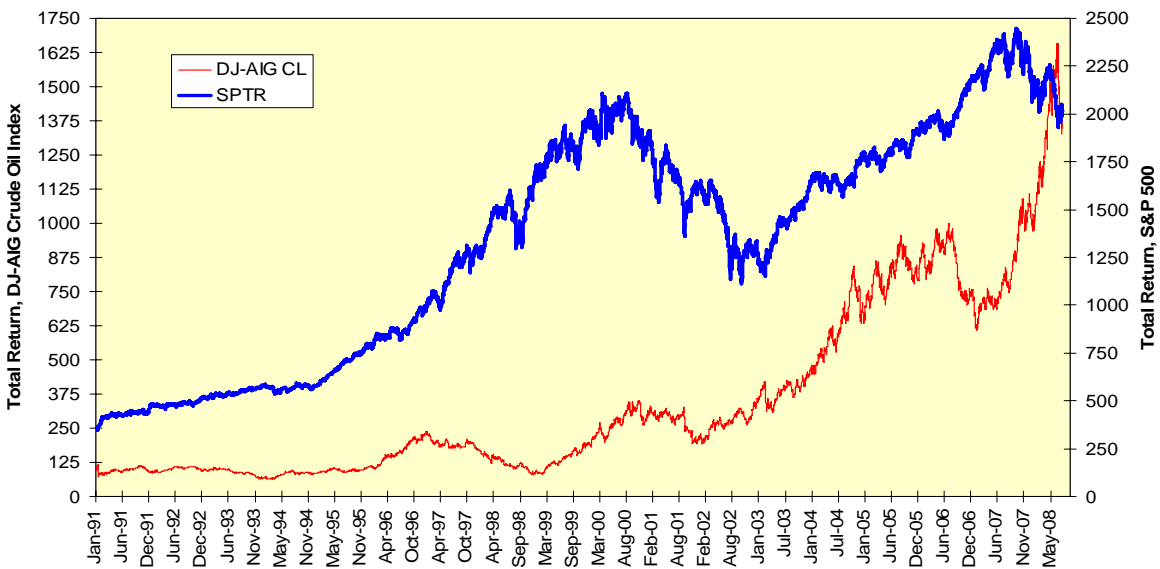


Many Unhappy Returns

Now let's steal a page from the commodities as a financial investment crowd and shift the focus from the spot price of crude oil to its total return. This includes the roll yield, which can be negative as well as positive, of selling one future or set of futures and buying another, along with the return earned on the collateral deposits. We can compare this series as calculated by Dow Jones-AIG (idle thought: Why do I get much of my index information from firms who lose \$5-10 billion a quarter with regularity?) to the total return of the S&P 500 (second idle thought: Why do I get the rest of my index information from firms who slap AAA ratings on things with the word "pile" in the description?).

The long-term relationship between the two total return series is highly unstable but weakly positive. The largest feature on the S&P 500 line since the data began in 1991 is the tech boom-and-bust between 1995 and 2002, and that occurred independently of crude oil. The largest features on the crude oil line have been the two rallies of 2002-2006 and August 2007-July 2008, and as noted above, only the second one is coincident with a downturn in stocks. Negative causality from crude oil to stocks cannot be demonstrated.

Is This A Long-Term Deterministic Relationship?



Industry Group Impact

Finally, let's return to an analysis first introduced in [February 2005](#) on assessing the impact of factor prices on S&P industry groups, and add the twist introduced in [November 2006](#) on weighting these factors by the groups' representation in the index, we can construct a table of groups both helped and hurt by rising crude oil prices at a 90% confidence interval.

There are 69 industry groups accounting for 68.6% of the S&P 500's market capitalization with statistically significant negative relationships to crude oil prices. These groups are concentrated in the consumer-related and financial sectors. If we multiply their weights by the betas relative to crude oil, we get a negative impact of -3.56%.

There are only 16 industry groups accounting for 18.84% of the S&P 500's market capitalization with statistically significant positive relationships to crude oil prices; these are concentrated, obviously, in the energy and utility sectors. However, their betas are much higher, so that when we multiply them by their weights, we get a positive impact of 5.08%.

The net impact across industry groups is 1.51%. Every 1% rise in crude oil prices should lead to a .0151% rise in the S&P 500, all else held equal. That is correct: The net partial contribution of higher crude oil prices to stocks is positive, not negative; just glance at the chart above and tell me otherwise.

Experience is a great teacher. You have to know what to forget and when to forget it, but the one thing you never should forget is to look at the data before offering conclusions based on short-term thinking.

Crude Oil Beta-Weighted Impact On S&P 500

	SPX Weight	CL Beta	Weighted Beta		SPX Weight	CL Beta	Weighted Beta
Other Diversified Financial Services	3.46%	0.105	-0.36%	Integrated Oil & Gas	7.50%	0.305	2.29%
Pharmaceuticals	6.51%	0.048	-0.31%	Oil & Gas Equipment	2.31%	0.448	1.03%
Diversified Banks	1.72%	0.101	-0.17%	Oil & Gas Exploration	1.80%	0.471	0.85%
Systems Software	3.14%	0.048	-0.15%	Oil & Gas Drilling	0.68%	0.479	0.33%
Computer Hardware	4.45%	0.032	-0.14%	Diversified Metals & Mining	0.30%	0.336	0.10%
Industrial Conglomerates	3.36%	0.041	-0.14%	Oil & Gas Refining	0.23%	0.360	0.08%
Hypercenters & Superstores	1.46%	0.083	-0.12%	Steel	0.38%	0.195	0.07%
Communications Equipment	2.74%	0.042	-0.12%	Gold	0.18%	0.311	0.06%
Investment Banking & Brokerage	1.68%	0.068	-0.11%	Fertilizers & Agricultural Chemicals	0.53%	0.099	0.05%
Semiconductors	2.16%	0.051	-0.11%	Construction & Farm Machinery	0.99%	0.047	0.05%
Integrated Telecommunications	2.74%	0.038	-0.10%	Electric Utilities	2.14%	0.020	0.04%
Regional Banks	0.89%	0.107	-0.09%	Multi-line Utilities	1.14%	0.035	0.04%
Multi-line Insurers	1.02%	0.085	-0.09%	Aluminum	0.23%	0.139	0.03%
Air Freight & Logistics	0.98%	0.088	-0.09%	Construction & Engineering	0.20%	0.148	0.03%
Asset Management & Custodial Banks	1.30%	0.064	-0.08%	Agricultural Products	0.15%	0.112	0.02%
Household Products	2.53%	0.032	-0.08%	Gas Utilities	0.09%	0.138	0.01%
Healthcare Equipment	2.26%	0.033	-0.08%				
Home Improvement Retailers	0.73%	0.101	-0.07%				
Life & Health Insurers	1.19%	0.053	-0.06%	Subtotal:	18.84%		5.08%
Tobacco	1.68%	0.037	-0.06%				
Movies & Entertainment	1.47%	0.039	-0.06%				
General Merchandise Retailers	0.38%	0.139	-0.05%				
Data Processing & Outsourcing	1.01%	0.052	-0.05%				
Consumer Finance	0.66%	0.079	-0.05%	Total:	87.44%		1.51%
Biotech	1.69%	0.030	-0.05%				
Drug Retailers	0.81%	0.062	-0.05%				
Property & Casualty Insurers	0.91%	0.055	-0.05%				
Aerospace & Defense	2.82%	0.017	-0.05%				
Thrifts & Mortgages	0.32%	0.146	-0.05%				
Department Stores	0.38%	0.109	-0.04%				
Soft Drinks	2.02%	0.020	-0.04%				
Restaurants	0.98%	0.038	-0.04%				
Hotels	0.32%	0.095	-0.03%				
Healthcare Distributors	0.41%	0.069	-0.03%				
Broadcast & Cable TV	0.88%	0.031	-0.03%				
Airlines	0.10%	0.246	-0.03%				
Semiconductor Equipment	0.41%	0.062	-0.03%				
Apparel Retailers	0.30%	0.085	-0.02%				
Packaged Foods	1.48%	0.017	-0.02%				
Food Retailers	0.35%	0.064	-0.02%				
Application Software	0.45%	0.043	-0.02%				
Automobile Manufacturers	0.15%	0.126	-0.02%				
Computers & Electronics Retailers	0.21%	0.085	-0.02%				
Specialty Stores	0.22%	0.082	-0.02%				
Diversified Chemicals	0.81%	0.019	-0.02%				
Apparel & Accessories	0.21%	0.065	-0.01%				
Specialized Finance	0.41%	0.033	-0.01%				
Insurance Brokers	0.26%	0.045	-0.01%				
Auto Parts & Equipment	0.17%	0.066	-0.01%				
Household Appliances	0.15%	0.059	-0.01%				
Leisure Products	0.12%	0.073	-0.01%				
Environmental Services	0.20%	0.039	-0.01%				
Publishing & Printing	0.22%	0.032	-0.01%				
Homebuilding	0.10%	0.063	-0.01%				
Office Electronics	0.11%	0.051	-0.01%				
Footwear	0.21%	0.027	-0.01%				
Motorcycle Manufacturers	0.09%	0.062	-0.01%				
Housewares & Specialty Stores	0.13%	0.038	0.00%				
Distributors	0.06%	0.073	0.00%				
Food Distributors	0.16%	0.028	0.00%				
Casinos & Gaming	0.07%	0.056	0.00%				
Diversified Commercial Services	0.08%	0.047	0.00%				
Building Products	0.06%	0.048	0.00%				
Tires & Rubber	0.05%	0.056	0.00%				
Photo Products	0.04%	0.056	0.00%				
Paper Packaging	0.06%	0.036	0.00%				
Metal & Glass Containers	0.07%	0.030	0.00%				
Home Furnishings	0.03%	0.047	0.00%				
Healthcare Facilities	0.02%	0.051	0.00%				
Subtotal:	68.60%		-3.56%				

