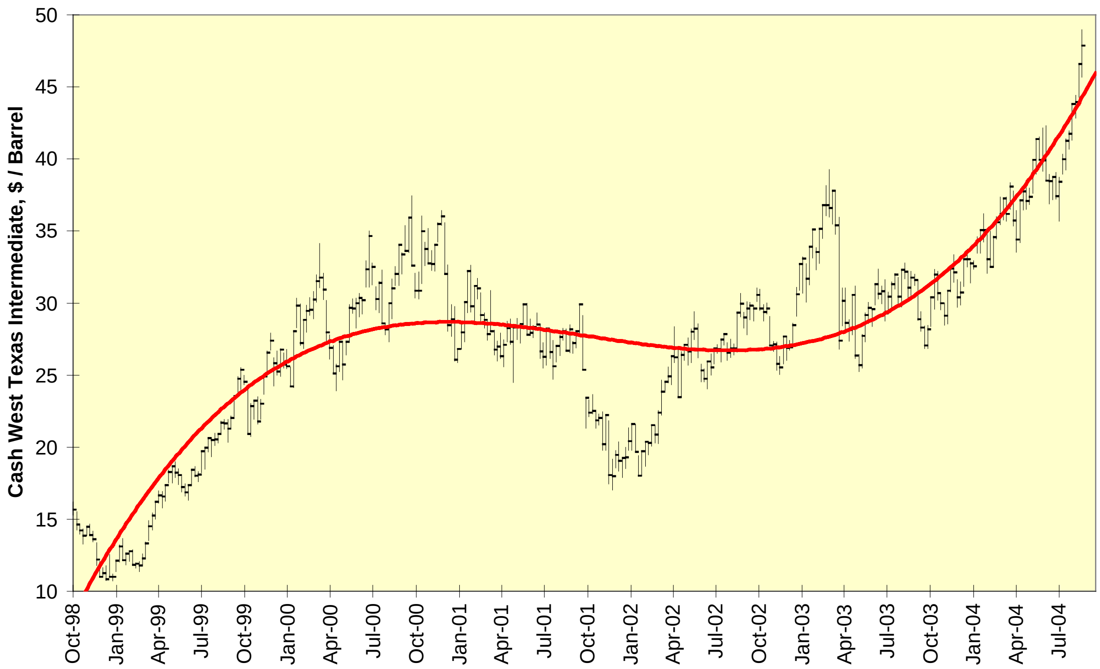
A Crude Look At Factors And Sectors

"A child of five would understand this. Send someone to fetch a child of five. "
-- Grouch Marx

"There are only two ways to make money trading: Either go with the trend or go against it."
-- Howard Simons

Higher crude oil prices did not sneak up and bite us; the only real question is why a primary trend almost six years in the making took so long to reach the stage of wonderment. Death has four stages, denial, anger, bargaining and acceptance. A primary trend goes through similar phases; in 1999 we were in denial about OPEC's ability to bargain with Mexico and Russia to control output. We moved on to anger when gasoline first crossed $2.00 a gallon in 2000 in some parts of the country. The present phase of bargaining, pundits tripping over each other to opine on just how high the price may go or the depths to which it will collapse once those wicked, wicked speculators get their comeuppance involves wonderment at how we got here. Acceptance will come later.

Is This A New Trend?



Who Wins, Who Loses
The global economy's ability to grow smartly out of the collapsed stock bubble and 2001 recession - if there was a recession in 2001- while oil prices were moving higher convinced many that it was different this time. After all, we were using about half as many BTUs per dollar of GDP as we were thirty years ago, and once we removed political uncertainty out of the oil markets, oil prices would subside.

Those who were correct in noting it was no longer 1974 forgot to check their facts otherwise. Nearly all sectors of the stock market exhibit a negative correlation with the price of crude oil. We can correlate the daily returns on various sectors against the daily returns on cash crude oil prices since some insolent sailor acting on his own proclaimed a certain mission to be accomplished in May 2003. Only 11 of 113 S&P 500 sectors, accounting for all of 8.10% of the index' capitalization, had a positive correlation of daily returns over that period.

A small note on correlation may be in order. The number ranges from -1 to 1, with -1 being perfectly inverse movement between two variables and 1 being perfectly harmonized movement between two variables. A value of zero indicates randomness. If we square the number, we get something called R-squared, which is the percentage of the variance of one variable that can be explained by the variance in another variable. The correlations below range from a high value of 36.2% to a low value of -22.1%. This represent R-squares in a range of 13.14% on the positive side to 4.88% on the negative side. These numbers are a partial explanation of the movements for each sector; other factors such as interest rates, the dollar, expected inflation, credit spreads, etc., would be required for a complete model.

Daily Correlation of Returns, S&P Industry Groups Vs. Crude Oil
May 2003 - August 2004

	Correlation	Weight
Oil & Gas Drilling	**36.2%**	**0.22%**
Oil & Gas Exploration & Production	**31.6%**	**0.81%**
Oil & Gas Equipment & Services	**27.5%**	**0.67%**
Oil & Gas Refining & Marketing	**23.2%**	**0.35%**
Integrated Oil & Gas	**17.3%**	**4.74%**
Gas Utilities	**6.8%**	**0.14%**
Gold	**6.6%**	**0.19%**
Diversified Metals & Mining	**4.7%**	**0.14%**
Health Care Services	**3.7%**	**0.40%**
Health Care Facilities	**1.1%**	**0.30%**
Steel	**1.1%**	**0.14%**

While the inclusion of so many energy-related groups may seem obvious to Groucho and his five-year old, it should be a bit of an eyebrow-lifter. Capital expenditures in the oil and gas industry are for multi-decade projects; where the price of the underlying commodity goes tomorrow or next week should be fairly irrelevant. Investment today should be new supply in the future and higher prices today should reduce future demand growth. One of two conclusions is possible: Either today's investors are complete fools for chasing short-term projects, or today's investors are moving into the Acceptance phase at last. The betting here is on the latter; you will make more money by going with the trend in the long-term than against it.

Which sectors have been taking it on the chin? If we limit the display to those 42 sectors with correlations of less than -10%, we can account for 40.4% of the index' capitalization. Big losers include alcohol, tobacco, wireless telecommunications, railroads, airlines and all manner of retail. Dead last is the 2-member "Hypermarkets & Supercenters" group, consisting of Wal-Mart and Costco. When Wal-Mart blamed high gasoline prices for its recent woes, it had facts on its side. How's that for a change in the corporate blame-shifting game?

Daily Correlation of Returns, S&P Industry Groups Vs. Crude Oil
May 2003 - August 2004

	Correlation	Weight
Metal & Glass Containers	**-10.4%**	**0.08%**
Footwear	**-10.5%**	**0.21%**
Brewers	**-10.5%**	**0.44%**
Restaurants	**-10.7%**	**0.68%**
Regional Banks	**-10.9%**	**2.15%**
Life & Health Insurance	**-11.4%**	**0.95%**
General Merchandise Stores	**-11.4%**	**0.51%**
Home Entertainment Software	**-11.6%**	**0.15%**
S&P 500 Other Diversified Financial Services	**-11.9%**	**3.74%**
S&P 500 Diversified Banks	**-12.2%**	**3.93%**
Distributors	**-12.2%**	**0.06%**

Diversified Commercial Services	-12.3%	0.55%
Drug Retail	-12.3%	0.53%
Computer Storage & Peripherals	-12.4%	0.43%
Housewares & Specialties	-12.6%	0.16%
Paper Packaging	-12.8%	0.10%
Environmental Services	-13.0%	0.19%
Packaged Foods	-13.3%	1.18%
Leisure Products	-13.4%	0.13%
Food Retail	-13.5%	0.34%
Tobacco	-13.6%	1.14%
Electrical Components & Equipment	-14.2%	0.41%
Hotels	-14.3%	0.53%
Diversified Chemicals	-14.4%	0.96%
Trading Companies & Distributors	-14.5%	0.05%
Home Improvement Retail	-14.5%	1.23%
Specialty Chemicals	-14.8%	0.25%
Wireless Telecommunication Services	-14.8%	0.62%
Specialty Stores	-14.8%	0.51%
Railroads	-15.2%	0.44%
Computer Hardware	-15.4%	3.08%
Data Processing & Outsourced Services	-15.6%	1.11%
Distillers & Vintners	-16.1%	0.05%
Semiconductors	-16.2%	2.62%
Application Software	-16.4%	0.31%
Department Stores	-16.7%	0.57%
Semiconductor Equipment	-16.9%	0.40%
Air Freight & Logistics	-17.9%	1.04%
Household Products	-20.2%	2.07%
Systems Software	-20.5%	3.92%
Airlines	-21.1%	0.12%
Hypermarkets & Supercenters	-22.1%	2.50%

Inter-Nation Correlation

Some of these studies are like eating potato chips; once you start, it is difficult to stop. Many firms attributed their earnings hits and misses to the vagaries of the dollar. How were the various sectors affected by the dollar over this period?

Twenty-one sectors had daily correlation of returns of 10% or higher; these accounted for 27% of the index' capitalization.

Daily Correlation of Returns, S&P Industry Groups Vs. Dollar Index
May 2003 - August 2004

Systems Software	15.9%	3.92%
Computer Hardware	15.9%	3.08%
Biotechnology	15.6%	1.35%
Semiconductor Equipment	15.5%	0.40%
Food Retail	14.9%	0.34%

Semiconductors	**14.9%**	**2.62%**
Data Processing & Outsourced Services	**14.4%**	**1.11%**
Hypermarkets & Supercenters	**14.4%**	**2.50%**
Employment Services	**13.9%**	**0.07%**
Aerospace & Defense	**13.6%**	**2.03%**
Computer Storage & Peripherals	**13.5%**	**0.43%**
Electrical Components & Equipment	**13.4%**	**0.41%**
Drug Retail	**13.1%**	**0.53%**
Application Software	**12.8%**	**0.31%**
Airlines	**11.8%**	**0.12%**
Publishing & Printing	**11.3%**	**0.67%**
S&P 500 Communications Equipment	**11.3%**	**2.75%**
Department Stores	**11.2%**	**0.57%**
Air Freight & Logistics	**10.7%**	**1.04%**
Diversified Chemicals	**10.5%**	**0.96%**
Movies & Entertainment	**10.0%**	**1.78%**

Interestingly, some of the sectors hit worst by high oil prices, such as Biotechnology, System Software, Semiconductor Equipment and those hypermarkets were helped the most by a stronger dollar even though several of these sectors are highly export-dependent.

On the other side of the coin, several of the sectors helped most by higher oil prices were hurt most when the dollar weakened. The poor performance of Gold and Metals & Mining is once again logical to a five-year old, but the same comments made earlier about the difference between short-term commodity fluctuations and long-term capital budgeting apply.

Daily Correlation of Returns, S&P Industry Groups Vs. Dollar Index
May 2003 - August 2004

Electric Utilities	**-6.4%**	**1.97%**
Integrated Oil & Gas	**-6.7%**	**4.74%**
Gas Utilities	**-7.0%**	**0.14%**
Steel	**-7.3%**	**0.14%**
Oil & Gas Equipment & Services	**-8.2%**	**0.67%**
Specialized Finance	**-9.5%**	**0.10%**
Oil & Gas Drilling	**-9.7%**	**0.22%**
Thrifts & Mortgage Finance	**-10.7%**	**1.97%**
Oil & Gas Refining & Marketing	**-11.4%**	**0.35%**
Aluminum	**-12.6%**	**0.27%**
Oil & Gas Exploration & Production	**-13.7%**	**0.81%**
Homebuilding	**-15.2%**	**0.16%**
Diversified Metals & Mining	**-32.9%**	**0.14%**
Gold	**-55.4%**	**0.19%**

This game could go on to the full development of a simultaneous equation system linking a host of factors to sector performance and to each other. And for the purposes of making intelligent investment decisions, it should: Too many traders focus on a single factor, see it go their way, and then get the old exploding cigar treatment. It is far better to look at multiple factors and see if your good bet on oil is going to get sandbagged by the dollar or something else.