

MUSINGS FROM THE OIL PATCH

September 2, 2008

Allen Brooks
Managing Director

Note: *Musings from the Oil Patch* reflects an eclectic collection of stories and analyses dealing with issues and developments within the energy industry that I feel have potentially significant implications for executives operating oilfield service companies. The newsletter currently anticipates a semi-monthly publishing schedule, but periodically the event and news flow may dictate a more frequent schedule. As always, I welcome your comments and observations. Allen Brooks

Reduced Crude Price Volatility A Market Positive?

The analyst's view is that greater stability in oil prices means oil industry supply/demand factors will have a greater influence on future price trends

We recently read a report by a Wall Street analyst who argues that the crude oil market has entered a period of reduced volatility – defined as fewer days with macro (at least \$5 per barrel) price changes – that is signaling not only a bottoming of the recent decline for oil prices and will mark the start of a price recovery, but more importantly for him, it will lead to an increase in the valuation of energy stocks. The focus of his analysis was on the macro price changes occurring during 2008 and how in recent weeks, at least until the tail end of two weeks ago, the daily price changes had contracted in magnitude. Underlying the conclusion of this analysis is the analyst's view that greater stability in oil prices means oil industry supply/demand factors will have a greater influence on future price trends. To him, this means the more volatile period in oil prices reflected the greater influence from one-off events and geopolitical considerations than underlying industry fundamentals.

Since the stock market peak last fall, the P/E ratio for the energy stocks within the S&P 500 Index has contracted

With investors focusing more on the oil industry's underlying supply/demand fundamentals, this analyst believes energy stock valuations should improve. This would certainly be a positive as energy stock valuations have contracted during 2008. Since the stock market peak last fall, the P/E ratio for the energy stocks within the S&P 500 Index has shrunk while the ratio for the overall index has increased as shown in the accompanying exhibit. The overall index P/E expansion is largely the result of the index price not having fallen as much as earnings have declined due primarily to the earnings problems of the financial and technology stocks.

Exhibit 1. Energy Stock Valuations Have Contracted

Change in P/E and Price During Current Bear Market				
Sector	P/E on 10/9/07	Current P/E	Chg in P/E	% Chg in Price Since 10/9/07
Technology	28.19	21.00	-7.19	-12.44
Utilities	19.84	14.02	-5.82	-10.35
Industrials	19.64	15.29	-4.35	-17.51
Health Care	23.98	20.64	-3.34	-8.63
Energy	13.46	11.32	-2.14	-6.05
Materials	16.32	16.76	0.44	-9.24
Cons Stap	19.47	20.45	0.98	1.64
S&P 500	19.62	25.67	6.05	-17.85
Cons Disc	116.41	1402.78	1286.37	-20.15
Financials	12.19	Negative	Negative	-42.82
Telecom	23.20	Negative	Negative	-27.58

Source: Standard & Poor's; Agora Financial

The DJIA actually reported negative earnings in this year's second quarter

To understand exactly how bad the earnings problems for companies have been this year, the chart in Exhibit 2 shows the nominal earnings reported by the 30 companies that compose the Dow Jones Industrial Average. Because of losses due to poor investments that have been written off, the DJIA actually reported negative earnings in this year's second quarter. That means the DJIA actually does not have a P/E ratio. These non-cash write-offs are usually ignored by Wall Street, but the chart points up clearly what is happening in corporate America today – a disconcerting development.

Exhibit 2. Write-offs Wipe Out Dow Jones Earnings



Source: Agora Financial

Part of the argument was that the greater crude oil price stability meant that demand destruction due to the growing global economic slowdown was wielding greater influence on oil prices than geopolitical events

About the same time last week that we read the report, we heard a debate on CNBC between two institutional money managers about whether the lack of a substantial crude oil price rise in response to the developing Russia/Georgia political events meant that the “war risk” premium assumed to be a part of current oil prices has largely been eliminated from the marketplace. Part of the argument was that the greater crude oil price stability meant that demand destruction due to the growing global economic slowdown was wielding greater influence on oil prices than geopolitical events. While this argument struck us as interesting, we wondered about the issue of crude oil price volatility in a broader context than merely 2008.

In order to investigate what has happened to crude oil price volatility over time, we gathered the price data for the near month crude oil futures contract since the start of 2000. We then calculated the absolute dollar change in the contract’s value each day of the period. Since we didn’t have access to the daily trading data for the futures contract, we couldn’t measure volatility by looking at the spread between the intraday high and low prices, but rather we were forced to look only at the daily closing price changes.

We then focused on was the number of times the daily price change exceeded 2.5%, our measure of extreme volatility

With the data on the daily dollars and cents change, we then decided to calculate the daily percentage price change. We then plotted each year individually from 2000 through August 19th of this year. What we then focused on was the number of times the daily price change exceeded 2.5%, our measure of extreme volatility. This helps to even out the comparisons from the early years of this decade when oil prices were trading in the \$20s and \$30s per barrel and daily price changes of 50-cents to 75-cents would be meaningful, to recent months when, with oil prices above \$100 per barrel, daily price changes of \$2.50 or more signaled extreme volatility.

We have presented the data in the nine exhibits at the end of this article. When you look at the charts, you will see that we have put the zero-change grid line in red to help one’s eye look at the array of daily price changes. One immediate observation is that by merely looking at the axis displaying the percentage change amounts, one can see those few years when some daily change amounts were particularly large. On the other hand, there are a number of years when the maximum daily percentage change number never exceeds 7.5%.

This year is on track to be a more volatile year

The table in Exhibit 3 summarizes the data for the daily price changes for crude oil futures. What we found quite surprising, especially given our view that the dramatic rise in global oil prices was largely due to supply and demand factors coupled with heightened geopolitical tensions, was that the last two and a half years actually marked the period with the least price volatility. This year is on track to be a more volatile year as the number of identified volatile days already exceeds the number experienced in 2006 and is rapidly approaching 2007’s count. Our 2008 data does exclude

the two recent days when oil price shot up and fell back in amounts well in excess of 2.5%. As can be seen in our notes under the table, if we annualize the number of volatile days so far in 2008, we get a projected count that is somewhere in the range of the number of volatile days experienced in 2000 through 2005.

Exhibit 3. Crude Oil Price Stability In Price Rise Period

Year	Daily	Crude Oil Price	
	Price Change > +or- 2.5%	Start	End
2000	63	\$25.55	\$26.80
2001	57	\$27.21	\$19.84
2002	51	\$21.01	\$31.20
2003	61	\$31.85	\$32.52
2004	59	\$33.78	\$43.45
2005	56	\$42.12	\$61.04
2006	35	\$63.14	\$61.05
2007	41	\$58.32	\$95.98
2008*	38**	\$99.62	\$114.53*

* Through August 19
** Annualized between 57 and 61

Source: EIA, PPHB

The price action reflects the impact of the increase in investor interest in and attention to commodities that has dominated investment markets for the past few years

What can we, or should we, conclude about the 2006-2008 period as it relates to crude oil volatility? Our conclusion is that the price action reflects the impact of the increase in investor interest in and attention to commodities that has dominated investment markets for the past few years. As stated by Michael Masters of Masters Capital Management, a hedge fund, in testimony before Congress this spring on speculation in oil prices, the assets allocated to all commodity index trading strategies by "index speculators" has risen from \$13 billion in 2003 to \$260 billion through March. This dramatic increase in pension and other investor funds directed to trading commodities coincided with the recognition and promotion of commodities as an asset class that all investors should own in order to better diversify their investment portfolios.

The rise in commodity prices that commenced in 2005 and saw the near month futures price approach \$150 a barrel early this July, was largely accomplished with little price volatility. With so much money wanting in to a relatively small commodities trading market, there was always more money seeking to get in every time there was any weakness or perceived weakness in commodity prices. This relentless influx of money helped to dampen the natural volatility in the oil price that has historically existed in commodity markets when commercial interests dominated the trading.

As a result of the surge in crude oil prices this year, Congress decided to investigate believing that the only way to lower gasoline pump prices – a huge political issue – was to find a scapegoat.

Speculators now are believed to control upwards of 81% of the commodity futures market in the U.S.

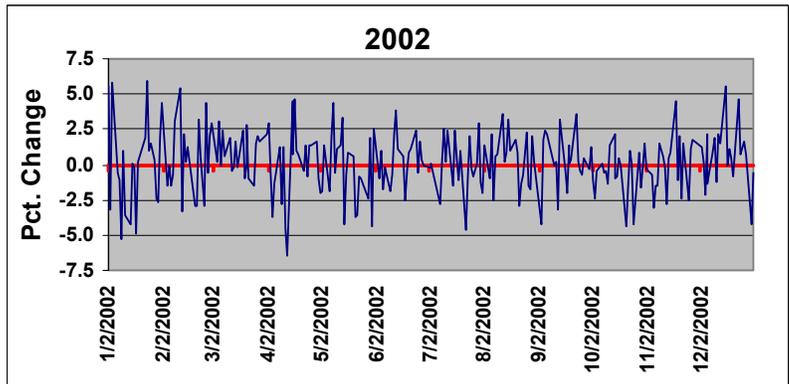
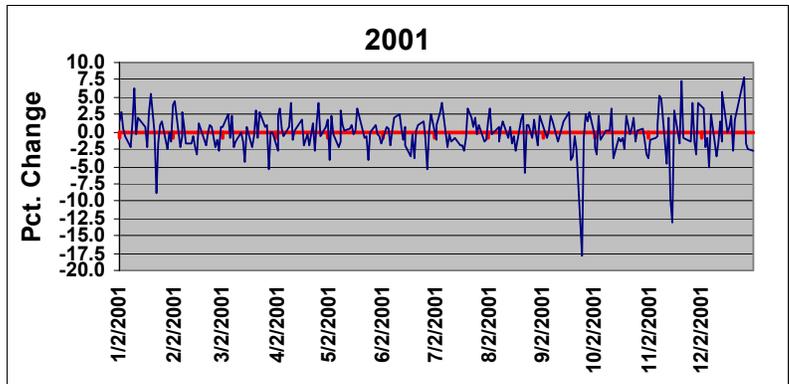
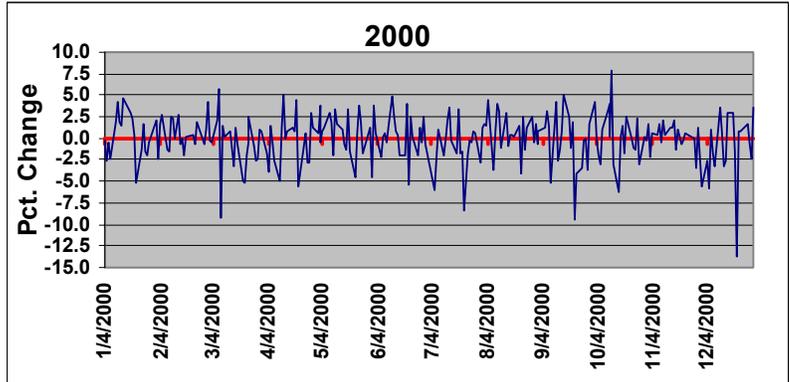
Commodity speculators became the favorite target since earlier Congress had been unable to pin the scapegoat tag on oil company executives, their traditional target. In order to determine whether speculators were the cause of sharply rising oil prices, Congress requested a study from the Commodity Futures Trading Corporation (CFTC). That study reported that speculators were only a minor factor in the commodity futures market. But just recently, the CFTC, after requesting additional trading data from commodity trading firms ascertained that one of the firms that had previously been considered a commercial trader was really a speculator. In fact, the data showed that during one time of dramatic price increases that firm controlled about 11% of the outstanding positions. With the switch in classification, speculators now are believed to control upwards of 81% of the commodity futures market in the U.S., certainly a significant change in the CFTC report's conclusion.

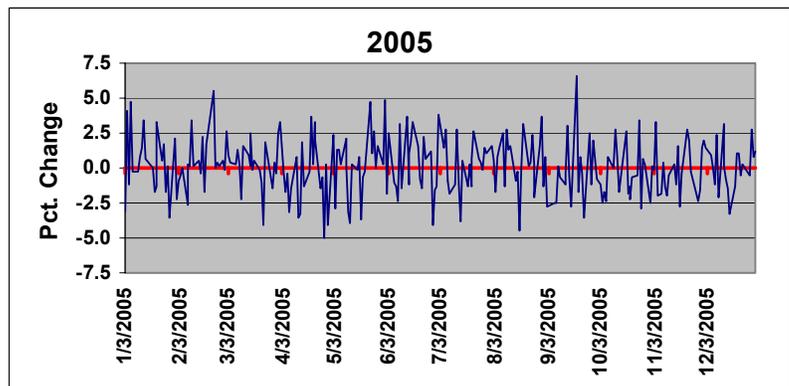
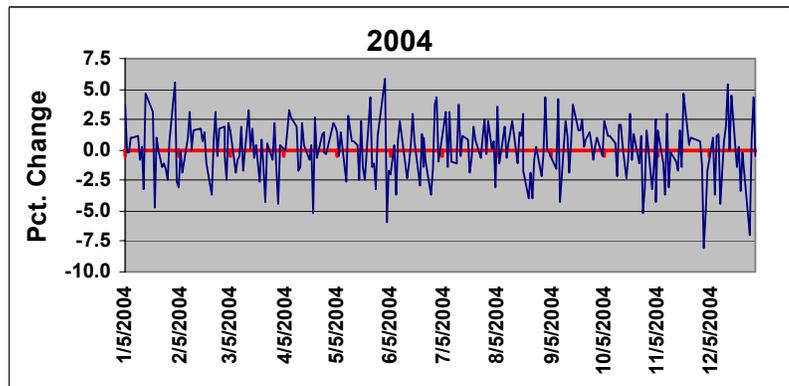
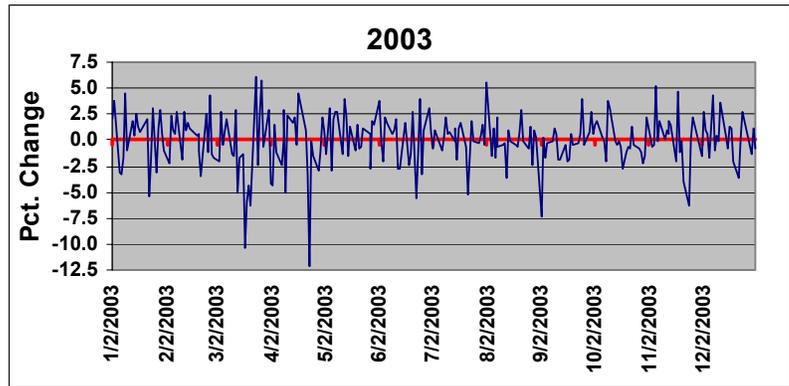
It is interesting that about the time the Congressional hearings were examining the workings of the commodity futures market, oil prices peaked and started to decline. While it is too much to ascribe the correction entirely to the Congressional investigation and traders' fear of greater regulation, but the timing happened to coincide with increased concern about the health of the global economy and in turn future energy and oil demand growth. We have to believe, however, that a factor in the greater stability evidenced by crude oil prices has to be tied to the reduced emphasis on the futures market by investors and speculators due to potentially heightened regulation.

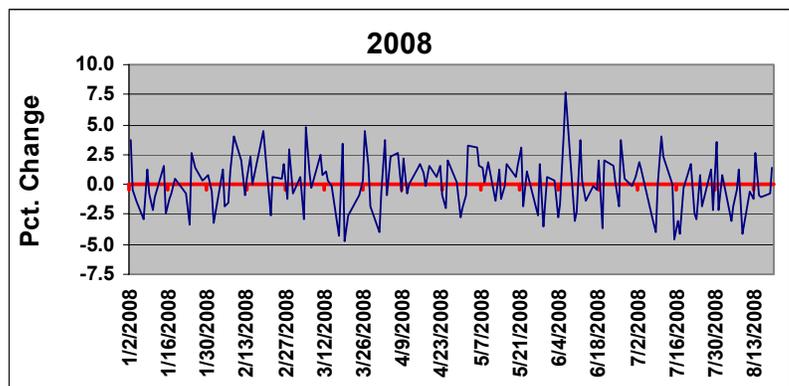
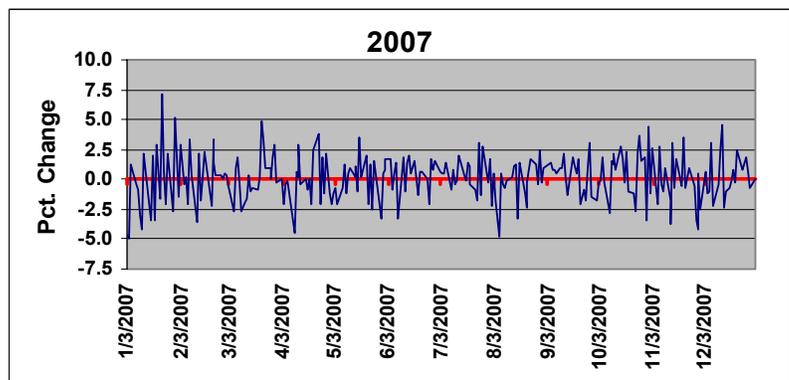
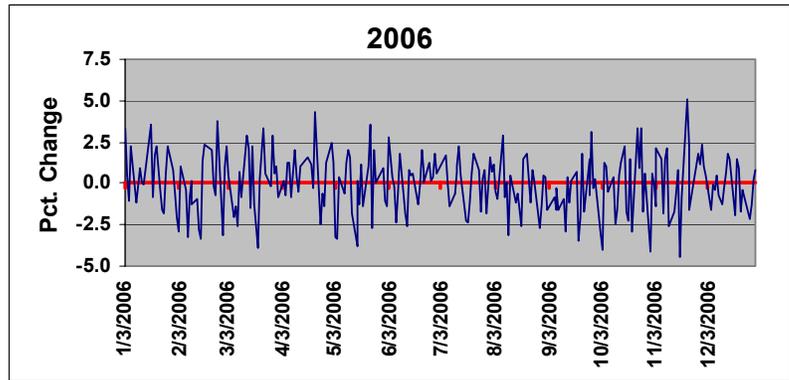
Maybe the conclusion to be drawn from this analysis is that we may end up 2008 with an oil price somewhere around \$100 a barrel, or approximately where we started the year (\$99.62)

How does this relate to our initial starting point of investigation? We think the analysis that focused on the volatility and now greater stability of crude oil prices is more a reflection of comparing what appears to be a year of more normal price volatility with the two preceding years marked by low price volatility. As a result, we are less likely to draw any conclusion about the future trend in crude oil prices from the increased stability since normal volatility, measured by our standard, coincided with years of stable oil prices as demonstrated by the beginning and ending price for crude oil during the years 2000 through 2005. (See Exhibit 3.) Maybe the conclusion to be drawn from this analysis is that we may end 2008 with an oil price somewhere around \$100 a barrel, or approximately where we started the year (\$99.62). Whether that means energy company stock valuations will improve is hard to say. If oil prices are headed lower, we suspect the stocks will not be as attractive, but then again, energy stocks have real and sustainable earnings that could make them a haven in a stock market where large sectors are experiencing rough times with their earnings.

Exhibit 4. Oil Futures Price Volatility Record by Year







Source: EIA, PPHB

China's Energy Demand Moves Front And Center

An item in *The Wall Street Journal* caught our eye, yet it seems not to have created much, if any, discussion. The item appeared August 20th and stated that China Petroleum & Chemical Corp. (SHI-NYSE) has indefinitely suspended gasoline and diesel imports. An official for Sinopec, as the company is known, said that a resumption of imports would depend on market conditions, but he didn't elaborate.

The two China state-owned oil companies – Sinopec and PetroChina (PTR-NYSE) – will stop importing gasoline and diesel fuel into the country beginning in September

Just this past weekend, we received a report about the supposed import cutback based on a discussion with Wilfred Wang, Chairman of Taiwan's Formosa Petrochemical (6505.TW), a refiner of petroleum products. Based on his understanding, the two China state-owned oil companies – Sinopec and PetroChina (PTR-NYSE) – will stop importing gasoline and diesel fuel into the country beginning in September. This follows a nine-month long buying binge that appears to have left the companies' storage facilities overflowing. During the buying binge, the companies were importing increasing amounts of diesel, peaking in June at 960,000 tons (roughly 210,000 barrels a day). The import surge resulted in China even becoming a net gasoline importer for the first time in its history.

The buying seems to have been driven by political orders to avoid fuel shortages during the Olympics, which ended August 24th. The buying was helped by tax rebates granted to the two companies for imported refined products. It seems that some of the import surge helped the Chinese economy meet greater economic output generated by plants that were scheduled to be shuttered during the Olympics in August and the Paralympics in early September, while at the same time building inventories for the anticipated surge in energy demand associated with the record number of tourists coming for the Olympics. But now there are many, and growing, signs of slowing economic output in China in response to the global economic slowdown.

Analysts expect the refinery margin for this year to average about the same as in 2007, which suggests refining margins in the second half of 2008 will be below \$6 a barrel

If China stops importing gasoline and diesel, there will be a significant impact on the profitability of Asian refineries. Mr. Wang suggested that between 25% and one-third of his company's refined product output was shipped to China during the country's buying binge. Singapore refining margins averaged \$9.92 per barrel during the first half of 2008. This was 20% ahead of last year's margin. Now, analysts expect the refinery margin for this year to average about the same as in 2007, which suggests refining margins in the second half of 2008 will be below \$6 a barrel. Given the collapse in refining margins, and the resulting decline in refining profitability, we could expect to see refineries reduce the volume of crude oil they need in the future. This could be one more sign of weakening global oil demand that would likely send oil prices lower while at the same time boosting the world's spare oil production cushion. The latter factor will influence any rise in oil prices in 2009

Is Wind Really The Energy Solution for America?

Boone Pickens has an energy plan that entails constructing enough wind turbines to replace 22% of the nation's electric power generation capacity

A well respected international economic research organization, GaveKal Limited, has taken a quick look at the economics of the Pickens Energy Plan. As we have discussed previously, T. Boone Pickens, the billionaire oilman, has an energy plan for this country that entails constructing enough wind turbines to replace the 22% of the nation's electric power generation capacity that is currently fueled by natural gas and to use that gas supply to power a portion of the domestic vehicle population. Mr. Pickens has suggested that

To get to 22% of U.S. total power demand from wind would require constructing 400 GW of installed wind power

The average energy efficiency of a gasoline-powered car is about 18% to 20%

They conclude that the U.S. would be better off turning the entire U.S. car fleet into electric vehicles

his plan could save the United States about \$300 million in oil imports, or roughly 45% of the amount of money he estimates we currently ship to foreign countries for our oil supplies.

GaveKal's analysis, a copy of which was provided to us by a friend, suggests that the Pickens Energy Plan is not quite the win-win solution it is presented to be. According to their analysis, based on 2006 data, the wind component of the U.S. total installed electric power generating capacity represents about 5.7% (26.7 Gigawatts (GW) of a 468 GW total). But wind power is not a steady source of electricity – estimated load factor of 25.8% - so the wind component represents about a quarter of what the raw numbers suggest. Based on their calculation, to get to 22% of U.S. total power demand from wind would require constructing 400 GW of installed wind power. That is estimated to cost about \$800 billion.

The other side of the equation is the shifting of natural gas into the transportation segment of the energy market. The average energy efficiency of a gasoline-powered car is about 18% to 20%. Natural gas has a higher octane so it is slightly more energy efficient as a car fuel. Two-stroke engines powered by natural gas are potentially much more efficient, even as much as 50% efficient. As GaveKal pointed out, for people who commute on mopeds that works, but two-cycle engines don't work well for cars.

They went on to point out that a Combined Cycle Gas Turbine (CCGT) power plant has an energy efficiency of 65%. When a Combined Heat and Power (CHP) application that reuses the wasted heat is paired with a CCGT, the power plant's efficiency rating can reach 85%. On the other end of the vehicle efficiency rating, electric cars reach about 81% efficiency. According to GaveKal's research, taking into consideration the average power grid efficiency and current battery technology, you can measure the fuel needed to power a vehicle in kilowatts per mile (KWh/m). Based on this fuel measure, the average electric car requires only about 0.20 KWh/m in order to be almost twice as efficient as a hybrid vehicle that needs 0.52 KWh/m. The hybrid vehicle's electric power efficiency rating equates to about 70 miles per gallon (mpg). For the entire U.S. vehicle fleet, the electric power requirement would be 1.58 KWh/m per vehicle for an efficiency rating of 23 mpg.

GaveKal uses all this data to value the financial and energy cost of Mr. Pickens' plan. They conclude that the U.S. would be better off turning its entire car fleet into electric vehicles. To fuel those vehicles for the roughly three trillion miles the fleet drives annually would require about 76 GW of additional power generation capacity from a constant power source such as nuclear energy that would cost about \$188 billion. If the electricity were to be generated by CCGT power plants, the country would need an additional 115-135 GW of power at an estimated cost of \$150 billion. On the other hand, if wind were to provide all the incremental power, we would need 264 GW of new capacity at an estimated cost of \$530 billion. We are not sure whether the GaveKal analysis uses the most recent

power plant costs, but the figures from the U.S. Federal Energy Regulatory Commission suggest significantly higher costs for nuclear power today.

Exhibit 5. Inflation Hits New Power Plants



Source: U.S. Federal Energy Regulatory Commission

CNG vehicles consumed about 0.1% of the 23 trillion cubic feet of natural gas consumed in the United States last year

The GaveKal analysis probably explains why natural gas-fueled vehicles have not been wildly successful given their more environmentally friendly output and the lower cost of natural gas. Compressed natural gas (CNG) vehicles have been around for more than 20 years. Most are in municipal and utility fleets where they go and come from central facilities that can justify the infrastructure investment for storage tanks and fuel pumps. According to the U.S. Energy Information Administration, CNG vehicles consumed about 0.1% of the 23 trillion cubic feet of natural gas used in the United States last year, a very small market.

This is one aspect of increased energy efficiency that many people have failed to consider – how to generate the taxes needed by governments to meet their spending that is currently supported by existing fuel taxes

With regards to natural gas being cheaper than gasoline or diesel fuel, one would expect state and local governments to levy higher taxes per gallon on CNG or LNG if it became a significant percentage of the motor vehicle fleet in order to offset the greater efficiency of these vehicles. The governments would need higher taxes to fund the maintenance and upgrade requirements of its roads and highway systems. This is one aspect of increased energy efficiency that many people have failed to consider – how to generate the taxes needed by governments to meet their spending that is currently supported by existing fuel taxes. The GaveKal analysis points to electrification of the United States as the more likely and economical energy strategy. The big question is how can we reduce the cost and time to build new nuclear power plants?

Miles Driven, Rebate Checks and Life Style Changes

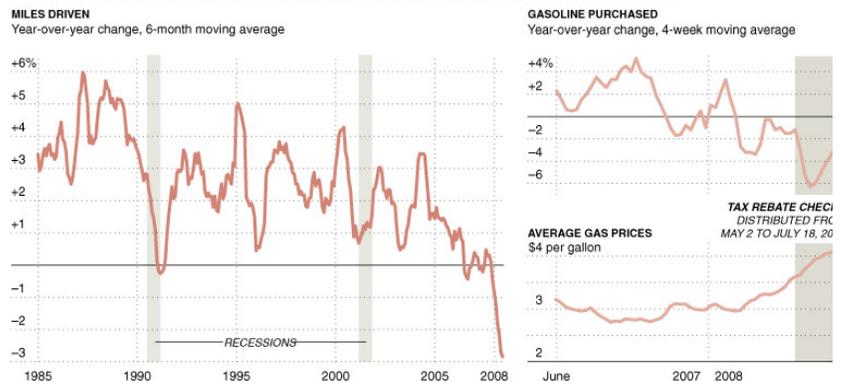
Recently Floyd Norris, business writer for *The New York Times*, wrote about the impact of high gasoline prices and a weakening economy on vehicle usage. The reduction in American driving that has become increasingly more evident as the summer has gone and drawing greater attention from the media and public. The story seems to have three chapters. The reduced driving trend seemed quite strong as the summer began, and Mr. Norris talks about the reports and news stories detailing less crowded highways on Memorial Day. As we wrote while detailing our drive from Houston to Rhode Island in mid May, we observed less traffic and slower moving trucks in response to the high price of gasoline and diesel fuel.

In between Memorial Day and mid August, there was a period when it appeared that driving picked up, which seems to be supported by the gasoline sales numbers and anecdotal evidence

Based on the gasoline sales data Mr. Norris cited in his story, for the week ending August 15th, MasterCard Spending Pulse reported Americans purchased 7.8% less gasoline than they had in the same week a year earlier. This was one of the largest weekly declines experienced over the past year. But in between Memorial Day and mid August, there was a period when it appeared that driving picked up, which seems to be supported by the gasoline sales numbers and anecdotal evidence. To substantiate this belief, Mr. Norris did some research that is displayed in the charts in Exhibit 6.

Exhibit 6. Have We Seen The Gasoline Demand Tipping Point?

High gasoline prices and a weak economy are keeping drivers off the road and away from the gas pumps.



Source: *The New York Times*

The peak four-week decline this year of 6.3% came the week that ended May 23

His supposition was that the impact of the rebate checks that were sent out this summer may have accounted for the slippage in the gasoline conservation trend. In measuring the sales of gasoline, Mr. Norris acknowledged that weekly figures are quite volatile because of weather and other factors, so he plotted the year-over-year change in gasoline prices over moving four-week periods. The peak four-week decline this year of 6.3% came the week that ended May 23rd. The mid August period found the decline was back to 4.8%. In the interim, the fall-off had slipped to merely a 3% decline.

During most of the past 20 years, the number of miles driven has climbed by 3% a year

The U.S. Department of Transportation has been estimating and reporting the number of miles driven by Americans on a monthly basis for more than 20 years. During most of that time, the number of miles driven has climbed by 3% a year. As we know and have reported, the total number of miles driven by Americans has been falling for the past nine months. To smooth out the historical trend, Mr. Norris prepared a chart showing the year-over-year changes in miles driven over six-month period. As shown in the chart, economic recessions have contributed to periods of slow growth in miles driven. Now, with gasoline prices around the \$3.50 a gallon level, we have seen the impact of falling mileage numbers. It is even more dramatic in the chart Mr. Norris created.

We found two points in Mr. Norris' article of interest. First, his analysis showing the relaxation in the declining trend of gasoline purchases, the price of gasoline and miles driven during July coincides with the shipment of rebate checks and with our experience during our return drive from Rhode Island. As we said in our report, we wondered where everyone had come from on certain stretches of highway since they were not there in May.

Second, while the decline in the number of miles driven by Americans is dramatic in 2008, we found the generally downward sloping chart since the later 1980s to be an interesting visual trend. As cheap as gasoline was during this period, and given population growth and the increased American vehicle fleet, one might have expected a stronger growth in miles driven than the historic 3% per year figure. Clearly some of the potential reduction was due to the impact of higher fuel efficiency standards for automobiles and more recently for light trucks. But one has to wonder how much of this slower growth in miles driven in recent years reflects the saturation of the automobile market coupled with changes in vehicle usage.

America's love affair with the automobile may need to be altered as gasoline prices soar and we enter the early stages of a post carbon and peak oil dominated world

We have suggested before that America's love affair with the automobile may need to be altered as gasoline prices soar and we enter the early stages of a post carbon and peak oil dominated world. With the prospect of life style changes staring us in the face, we were intrigued with the article in *The Houston Chronicle* last week discussing the arrival of Zipcar on the Rice University campus. This rental car concept, which is a form of car sharing club, is a realistic alternative to car ownership. In other cases it may eliminate the need for a second car in a family. The car-sharing club concept provides its members extremely short-term car rentals primarily in cities that essentially eliminate all the traditional hassles associated with renting and returning vehicles.

Zipcar now has 225,000 members in 50 cities in North America and London

Zipcar is an eight-year old company founded in Cambridge, Massachusetts. Late in 2007, Zipcar merged with Flexcar enabling the combined company to become the leader in this nascent rental car business. Zipcar now has 225,000 members in 50 cities in North America and London, England, and it operates 5,500 cars, and expects to generate revenues in excess of \$100 million this year. The company started during the dot.com boom era and

The keys are already inside the vehicle, the insurance is paid for and gasoline purchases can be made at no cost using a charge card inside the vehicle

employs state-of-the-art technology such that reservations are made on web-based communications equipment such as computers, cell phones and PDAs.

Having lowered its minimum renting age from 21 to 18, Zipcar is now targeting universities as a new growth market. For Rice University students, Zipcar requires an annual membership at \$35, which allows for the renting of a car at \$7 per hour or \$60 per day. Typically the membership fee is \$50 a year. At the reserved time, the member goes to the car, swipes his membership card across a sensor on the windshield that unlocks the car's door. The keys are already inside the vehicle, the insurance is paid for and gasoline purchases can be made at no cost using a charge card inside the vehicle. Drivers are subject to a penalty if they return the car with less than a quarter of a tank of gas, but since it doesn't cost to fill the tank, only lazy people are likely to pay the fine.

Exhibit 7. The Growing Reach of Car-Sharing



Source: Zipcar

Zipcar limits the number of days in a row you can rent and charges for going beyond 180 miles a day

The company has ideas on the drawing board that include one-way rentals between cities and designating cars for longer distances. At the moment, Zipcar limits the number of days in a row you can rent and charges for going beyond 180 miles a day. (We can still remember when the concept of unlimited mileage per day was introduced by the American rental car industry.) The Zipcar model is challenging the traditional rental car companies, but as Scott Griffith, Zipcar's CEO says, "We think about lifetime membership; rental car companies focus on transactions."

In London where Zipcar competes with Streetcar, a new market is being developed. These companies are now targeting the corporate market where companies have needs for vehicle fleets or periodic

The combination of the credit crunch and soaring gasoline prices is driving businesses and individuals to reassess their vehicle ownership needs

availability of vehicles. The classic customer is a small business in the city proper that needs access to vans for deliveries. The combination of the credit crunch and soaring gasoline prices is driving businesses and individuals to reassess their vehicle ownership needs. The growth of the corporate market is also being driven by a new corporate manslaughter rule in Britain that holds companies responsible for deaths or damage caused by employees driving on duty. This law has prompted fleet managers to reconsider the cars their staffs use.

Car-sharing could also become a solution for those travel times when a rental car is needed but only for a portion of a trip

A business development challenge in London, in contrast to most U.S. cities, is the lack of parking garages. In the U.S., parking garages are providing a convenient location for car-sharing vehicles, but London lacks garages meaning the car services are spending more time trying to find on-street parking. Helping this effort, however, is that commercial building developers are being pressured to reduce the number of parking stalls they make available. Many developers are starting to turn to car-sharing companies as a solution for their tenants' transportation needs.

Just as Americans and Brits are rethinking the number and types of vehicles they intend to own, highly flexible car-sharing services could become a viable solution to meet certain infrequent vehicle needs. Car-sharing could also become a solution for those travel times when a rental car is needed but only for a portion of a trip. Life style changes may significantly alter how people view the need for automobiles in the future. That could have a meaningful impact on future gasoline consumption.

Hot Or Cold Winter? Pick'em But Beware the Outcome

Lay in lots of firewood or put away your long-johns?

If you believe the recently released *Farmers' Almanac* the upcoming winter will be brutal with below-average temperatures for most of the country. On the other hand, the long-lead seasonal outlook prepared by the Climate Prediction Center of the National Weather Service (NWS) says relax, the probabilities are that the winter will be warmer than normal. So, lay in lots of firewood or put away your long-johns? You may need to take your clue from the work of scientists in Greenland recently highlighted in a newspaper column by global warming advocate Thomas Friedman.

The publication's reclusive forecaster Caleb Weatherbee relies on a secret methodology that employs the number of sunspots, the position of the planets and the tidal action of the moon

The 192-year old *Farmers' Almanac*, the younger of the two publications with virtually the same name, published its new edition last week that includes its long-range weather forecast. The weather outlook is prepared two years ahead (belies the view that weather forecasters can't predict tomorrow's weather) by the publication's reclusive forecaster Caleb Weatherbee who relies on a secret methodology that employs the number of sunspots, the position of the planets and the tidal action of the moon (sounds very scientific). According to this forecast, two-thirds of the country can expect colder than average temperatures with only the Far West and Southeast projected to have near-normal temperatures.

The *Farmers' Almanac* claims an accuracy rate of 80% to 85%, but as an Oklahoma weather forecaster, commenting on its prognostication said, we won't know until April

Supporting this forecast is anecdotal reports of increased frequency of fog off the East Coast and greater numbers of acorns already on the ground. We haven't received any reports of whether the squirrels are storing these acorns, another classic justification for cold weather forecasts. The *Farmers' Almanac* claims an accuracy rate of 80% to 85%, but as an Oklahoma weather forecaster, commenting on its prognostication said, we won't know until April whether it's right or not, but generally one specific event during a season is what everyone remembers and how they characterize the season in their mind – an ice storm, a record snowstorm, a heat wave, a pond not freezing over, etc.

To support their forecast models, the NWS employs models tracking and predicting the water temperatures in the North Pacific and the tropical Pacific Ocean water temperature phases

The NWS employs a number of forecasting tools that they mix and match to help forecast long-term weather patterns. The most important variables rely on weather patterns and ocean temperatures in the Pacific Ocean. Based on their data and models, the NWS forecast states: "The outlook for SON (Sept., Oct., Nov.) 2008 indicates enhanced probabilities of above normal temperatures for a broad swath extending from the desert Southwest extending eastward across Texas to the Northeast U.S." It goes on to predict, "The area of enhanced chances of above normal temperatures expands to include most of the U.S. except for the area west of the Rocky Mountains for the NDJ 2008-2009 through JFM 2009 seasons." It seems they are pretty confident of the warmer winter season. So why?

A cool PDO may also suppress the "signals" of global warming – rising temperatures and sea levels – at least for a while

To support their forecast models, the NWS employs models tracking and predicting the water temperatures in the North Pacific and the tropical Pacific Ocean water temperature phases popularly known as El Nino and La Nina. The former temperature pattern is known as the Pacific Decadal Oscillation (PDO), a natural cycle that can last for 20 to 30 years. The tropical temperature fluctuations last for much shorter time periods – 6 to 18 months. When these two temperature phases are out of step, their effects on distant weather patterns are blunted. When they are in phase, the effects are combined and amplified.

William Patzert, an oceanographer and climatologist at NASA's Jet Propulsion Laboratory in Pasadena, California, said a cool PDO may also suppress the "signals" of global warming – rising temperatures and sea levels – at least for a while. "It can mask the signal for a decade or so, But then, when there's a switch to a positive [warm] PDO, all of a sudden you can get a dramatic rise" in seas levels and temperatures, he said.

According to Mr. Patzert, after a decade of "flipping" and uncertainty about the PDO, it "now looks like it has settled into its cooler negative phase." The evidence comes from satellite measurements of sea-surface heights. Last fall, the satellite images began to show falling sea surface heights (cooler temperatures) in the horseshoe-shaped pattern characteristic of the PDO. The cooler water prevailed from Alaska southward along the west coast of North America and then curved westward out to sea. Enclosed in the

The North Atlantic Oscillation (NAO), the temperature phases of the Atlantic Ocean, has a greater influence on short-term weather forecasts and has its strongest impact during winters

horseshoe was a large pool of relative warm water. This is the reverse of the warm-phase pattern for the PDO.

Based on the shift in the PDO phase, the NWS says that we will have warmer temperatures and increased hurricane activity in the Northeast, more dry weather for the Southwest and Southeast and cooler temperatures and more rain than normal in the Northwest, the upper Midwest and the Great Lakes. Unfortunately, as the NWS acknowledges, the North Atlantic Oscillation (NAO), the temperature phases of the Atlantic Ocean, has a greater influence on short-term weather forecasts and has its strongest impact during winters. The impact of the NAO lasts for weeks and months rather than years, but has a much stronger impact on regional weather patterns. As a result, the NWS does not use the NAO in its long-range forecasts, but merely acknowledges its existence.

The last time the PDO turned from warm to cool was in 1947 and it lasted until 1976. The warm phase lasted until the mid-1990s when the pattern became more erratic. On the other hand, the NAO is in a cool phase. It was in such a cool phase in the 1950s and into the 1970s. Hurricane activity was strong in the early part of that period and winters were colder than average. The warm phase dominated the 1980s and 1990s when hurricane activity was subdued and winters were milder. Based on this weather-impacting phenomenon, we should be experiencing increased hurricane activity (sure looks like it) and colder winters.

As recently reported by the World Meteorological Organization, the first half of 2008 was the coolest for at least five years

As recently reported by the World Meteorological Organization, the first half of 2008 was the coolest for at least five years. They predict the whole year will almost certainly be cooler than recent years – at least since 2000 - even though temperatures remain above the historical average measured over the period 1961-1990. So can we conclude anything from all these various data sources and outlooks? We found a column by Thomas Friedman about ice cores from Iceland to be a possible key to an interpretation.

The change was so abrupt that it warmed the Northern Hemisphere over Greenland by 10°C in just 50 years

A few weeks ago, Mr. Friedman visited a research team from the Centre for Ice and Climate at the Niels Bohr Institute of the University of Copenhagen at work north of the Arctic Circle drilling cores in the ice to track the atmospheric data over Greenland beginning 150,000 years ago. The most recent data was extracted in 2004 and focuses on the period 14,500 to 11,000 years ago. An article in the journal *Science Express* has caused considerable stir in the climate community. The data discussed in the article showed that the atmospheric climate over Greenland “changed abruptly” just as the last ice age ended around 11,700 years ago. The change appears to have been driven by a sudden change in monsoons in the tropics. The change was so abrupt that it warmed the Northern Hemisphere over Greenland by 10°C in just 50 years. We wondered how that history might link to the PDO, but that latter’s data base, also involving tree rings, only goes back 1,500 years.

The conclusion of Mr. Friedman’s column was that climate-change

The problem is that the ice core is scientific data that unfortunately doesn't fit the theory and/or preconceived conclusions about global warming (oops, climate-change)

deniers (note how the term global warming is no longer used by its advocates in favor of the broader term) should not use this data to argue that mankind is not the cause of the rapid global warming we are experiencing. The problem with that argument is that the ice core is scientific data that unfortunately doesn't fit the theory and/or preconceived conclusions about global warming (oops, climate-change). To us this signals that the claim the debate about global warming is over cannot be accepted. When you add in the data about global cooling currently underway, it becomes obvious that we have a long way to go to understand the workings of the globe's climate system. That does not negate the many justifiable reasons why we should not be injecting more carbon emissions into the atmosphere. Let's cool the rhetoric and recognize there is much about this climate change issue we do not know or understand and let's not run off making radical changes to the world's economic and social systems in the name of a phenomenon that could prove more transitory than some would have us believe.

**Contact PPHB:
1900 St. James Place, Suite 125
Houston, Texas 77056
Main Tel: (713) 621-8100
Main Fax: (713) 621-8166
www.pphb.com**

Parks Paton Hoepfl & Brown is an independent investment banking firm providing financial advisory services, including merger and acquisition and capital raising assistance, exclusively to clients in the energy service industry.