

## MUSINGS FROM THE OIL PATCH

January 20, 2009

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**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

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### Do WTI Oil Prices Reflect Underlying Market Conditions?

**During the early days of the first full week of January, crude oil futures prices actually traded above \$50 during the day, but failed to hold on to that level on the close**

On December 23, crude oil prices flirted with \$30. That barrier marked the bottom of the price decline that commenced in early July after oil futures hit \$147. The \$117 price decline has done much to alter the current and prospective landscape for the oil and gas industry and the global economy, too. Just when it seemed oil prices were headed toward zero, a wave of optimism swept over the crude oil trading pits after Christmas and prices rallied through the start of 2009 heading back toward \$50. During the early days of the first full week of January, crude oil futures prices actually traded above \$50 during the day, but failed to hold on to that level on the close. Having run up by almost \$20 a barrel, it was not surprising that traders began taking profits since the \$50 price – viewed as a critical technical trading support level – hadn't held. At the same time, increasingly disappointing economic figures were being released showing further significant deterioration in the health of the U.S. economy and other major economies around the world.

**What will be the catalyst to end the bear market and reignite another oil bull market, which is an important driver for energy stock prices?**

The reversal in crude oil prices reversed what had become a new bull market for crude oil into another bear market. The question for which both commodity traders and energy stock investors are seeking an answer to: What will be the catalyst to end the bear market and reignite another oil bull market? (That is an important driver for energy stock prices.) A better economic outlook would be one condition, but possibly a view that the stimulus being injected into economies around the world will eventually bring a surge in inflation, which often boosts commodity prices.

Along with the worse than expected economic statistics released over the past few weeks came a strengthening of the U.S. dollar,

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**Exhibit 1. This Is Our 9<sup>th</sup> Crude Oil Bear Market Since 2000**

Oil Bull and Bear Markets Since 2000						
Bull/Bear	Start Date	End Date	Days	Start Price	End Price	% Chg
Bear	3/7/2000	4/10/2000	34	34.13	23.85	-30.12%
Bull	4/10/2000	9/20/2000	163	23.85	37.20	55.97%
Bear	9/20/2000	12/20/2000	91	37.20	25.77	-30.73%
Bull	12/20/2000	1/19/2001	30	25.77	32.19	24.91%
Bear	1/19/2001	11/15/2001	300	32.19	17.45	-45.79%
Bull	11/15/2001	3/12/2003	482	17.45	37.83	116.79%
Bear	3/12/2003	4/29/2003	48	37.83	25.24	-33.28%
Bull	4/29/2003	10/22/2004	542	25.24	55.17	118.58%
Bear	10/22/2004	12/10/2004	49	55.17	40.71	-26.21%
Bull	12/10/2004	7/14/2006	581	40.71	77.03	89.22%
Bear	7/14/2006	1/18/2007	188	77.03	50.48	-34.47%
Bull	1/18/2007	7/3/2008	532	50.48	145.29	187.82%
Bear	7/3/2008	9/16/2008	75	145.29	91.15	-37.26%
Bull	9/16/2008	9/22/2008	6	91.15	120.92	32.66%
Bear	9/22/2008	12/19/2008	88	120.92	33.87	-71.99%
Bull	12/19/2008	1/6/2009	17	33.87	49.00	44.67%
Average Bull			109	Average Bull		89.42%
Average Bear			334	Average Bear		-38.73%

Source: Bespoke Investment Group

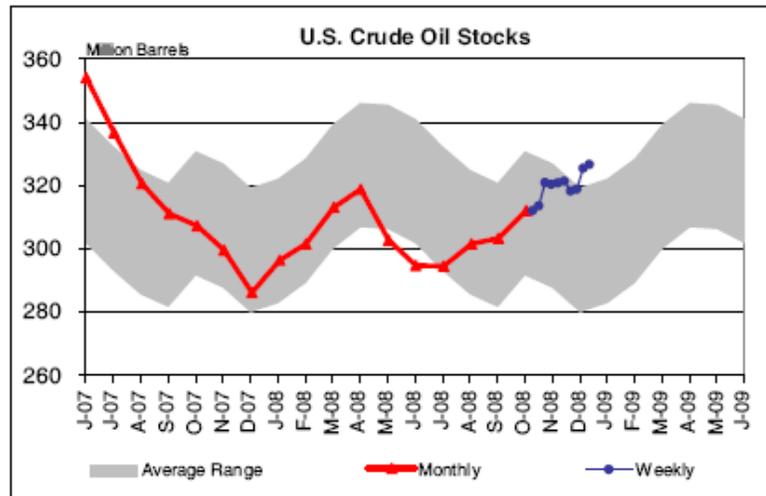
**Probably more challenging for the near-term direction for oil prices is the growing volume of crude oil being produced and not consumed**

**The contango condition that exists in the crude oil market today as it relates to West Texas Intermediate (WTI) oil has begun to raise questions of whether the price for this crude actually reflects the oil market's underlying fundamentals**

which tends to depress crude oil prices. The increasing economic problems in Europe and Japan, and now China and India, has prompted a flight of capital to U.S. government bonds further helping to boost the value of the U.S. dollar. Probably more challenging for the near-term direction for oil prices is the growing volume of crude oil being produced and not consumed. OPEC's several attempts to reign in its members' production flow last year have only recently begun to have an impact on the available supply of oil globally, but in the interim large quantities of oil were arriving at markets that do not need it. Some large oil companies and crude oil trading firms have contracted a handful of very large crude carriers (VLCCs) to store oil. They saw that future oil prices were sufficiently high and the opportunity for oil buyers to purchase current volumes and sell contracts to deliver the oil at some future date and make a profit even after paying the storage fees.

The volume of oil stored in tankers has climbed to 80 million barrels, based on 40 VLCCs each holding roughly two million barrels of oil. According to Frontline (FRO-NYSE), the world's largest operator of VLCCs, the current rate to charter these tankers is about \$75,000 a day. That translates into about \$1.12 a barrel per month for storage. As long as a buyer of crude oil can cover this cost for storing the oil, he will engage in these time-spread trades. The contango condition (future crude oil prices being substantially higher than current prices) that exists in the crude oil market today as it relates to West Texas Intermediate (WTI) oil has begun to raise questions of whether the price for this crude actually reflects the oil market's underlying fundamentals, or rather is a victim of a regional market imbalance between supply and demand.

Exhibit 2. Crude Oil Inventories Continue To Build



Source: EIA

**Inventories continued to climb at Cushing, Oklahoma, where WTI is traded and the global oil price established**

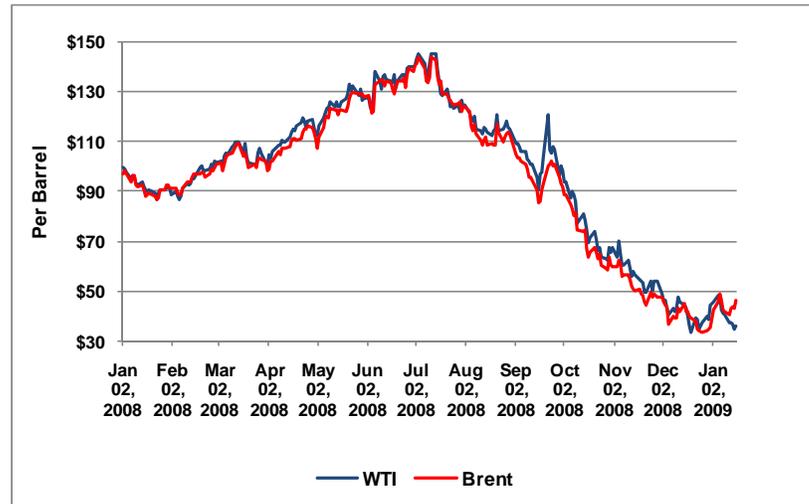
One of the manifestations of weak WTI oil market fundamentals is the continuing build in oil inventories despite the relentless drop in price. Last week, the Energy Information Administration (EIA) reported that for the week ending January 9, crude oil inventories, excluding oil in the strategic petroleum reserve, increased by 1.2 million barrels. This pushed total inventories to 326.6 million barrels, above the upper limit of the historical average volume of inventory at this time of the year. More important was that inventories continued to climb at Cushing, Oklahoma, where WTI is traded and the global oil price established. Cushing's inventories increased by 800,000 barrels bringing storage to 33 million barrels, which is rapidly approaching the maximum operable storage capacity (34 million barrels) based on the assumption that 80% of the 42.2 million barrels of total capacity is available as working storage.

**Since WTI has limited access to waterborne oil markets that could relieve its inventory challenge, it has recently traded at substantial discounts to other domestic crude oils in the physical oil market**

The impact of rising Cushing inventories has been to depress current spot oil prices because WTI oil is landlocked. The spread between WTI and other popular crude oils has widened to an extreme seldom seen. Since WTI has limited access to waterborne oil markets that could relieve its inventory challenge, it has recently traded at substantial discounts to other domestic crude oils in the physical oil market. Last Wednesday, WTI traded in the physical market in Houston at a 15¢ per barrel discount to the Mars blend (the representative crude oil produced in the Gulf of Mexico) when it normally sells at a \$4-\$5 per barrel premium.

What has further demonstrated the recent distortion of the WTI oil market has been the relationship between WTI and the North Sea's Brent oil, the most frequently traded barrel in the European crude oil market. In recent days, the spread between WTI and Brent has soared to unusually high premiums. Traditionally, Brent, a lower quality crude oil compared to WTI, sells at a discount of \$1.50 a barrel, but in recent days has seen that morph into a premium that

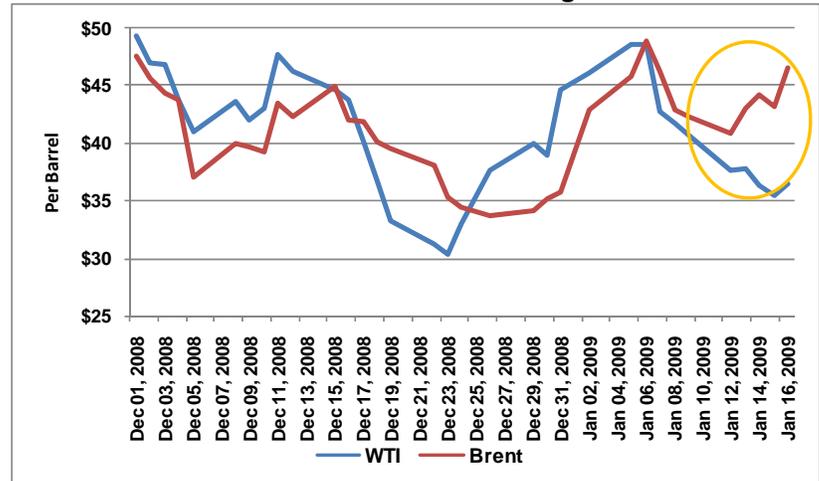
**Exhibit 3. Brent Moves From WTI Discount To Premium**



Source: EIA, PPHB

widened to about \$10 a barrel. Throughout history, WTI and Brent have essentially tracked each other so closely that it appears they are one and the same on any long-term price chart.

**Exhibit 4. Landlocked WTI Falls Questioning Its Price Value**

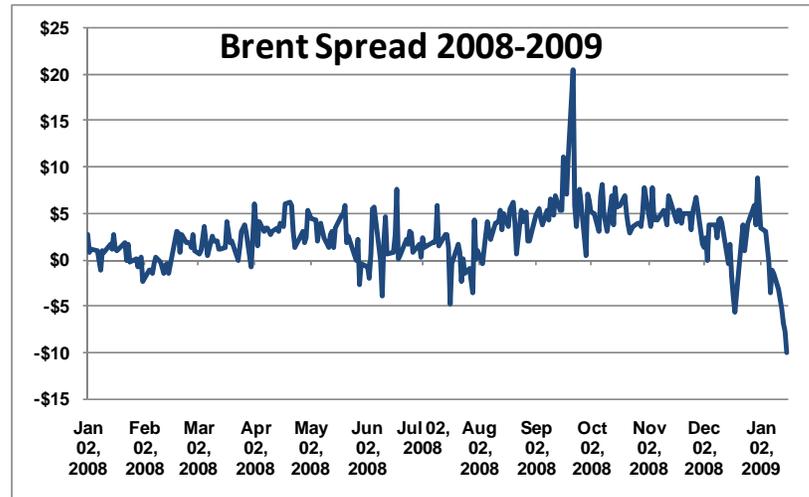


Source: EIA, NYMEX, ICE, PPHB

**Over the past two weeks, as the storage volumes at Cushing have approached capacity, the WTI premium over Brent has fallen to a substantial discount**

On the other hand, over the past two weeks, as the storage volumes at Cushing have approached capacity, the WTI premium over Brent has fallen to a substantial discount. Notice the upturn of the Brent price line (in red) compared to WTI in recent weeks. To show the dynamics of these markets, especially in recent days, we plotted the spread between WTI and Brent over the time period. Since summer the premium for WTI has been running about \$5, except for the one day in late September when WTI spiked due to a short-squeeze in the commodities trading market. Over the past almost 13 months, Brent has largely traded at a discount to WTI, which can be seen by the gap between the two price lines on the chart in Exhibit 4.

**Exhibit 5. WTI From A Premium To Discount To Brent**



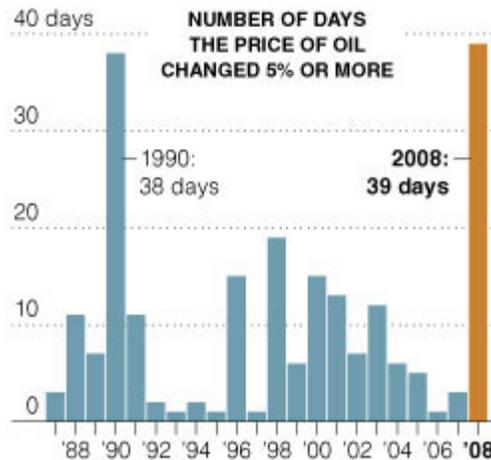
Source: EIA, PPHB

**Oil prices changed by 5% or more 39 times in 2008**

Another characteristic of the crude oil market this year has been the daily volatility. Oil prices change by 5% or more 39 times in 2008, one more than the number of days it happened in 1990.

**Exhibit 6. 2008 Was A Volatile Year  
A Volatile Market**

In 2008, the price of oil changed 5 percent or more from its previous close on 39 days, making it the most volatile year since 1990.



Source: Bloomberg

THE NEW YORK TIMES

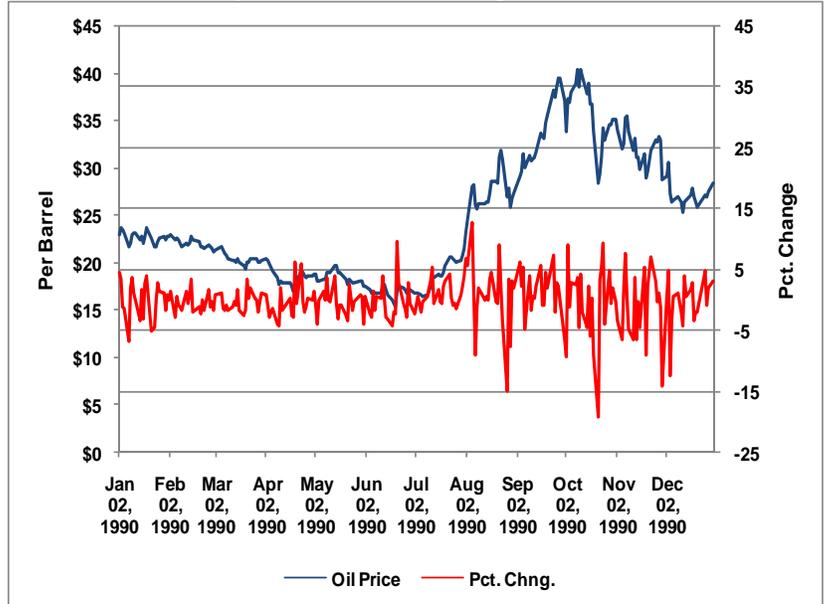
Source: *The New York Times*

We were curious about the nature of the oil markets when there was this huge increase in price volatility. We plotted the daily price changes in the crude oil futures prices for 1990 and 2008. What we found was that when oil prices entered a dynamic state price volatility increased. We surmise that this is related to the uncertainty

**When oil prices entered a dynamic state price volatility increased**

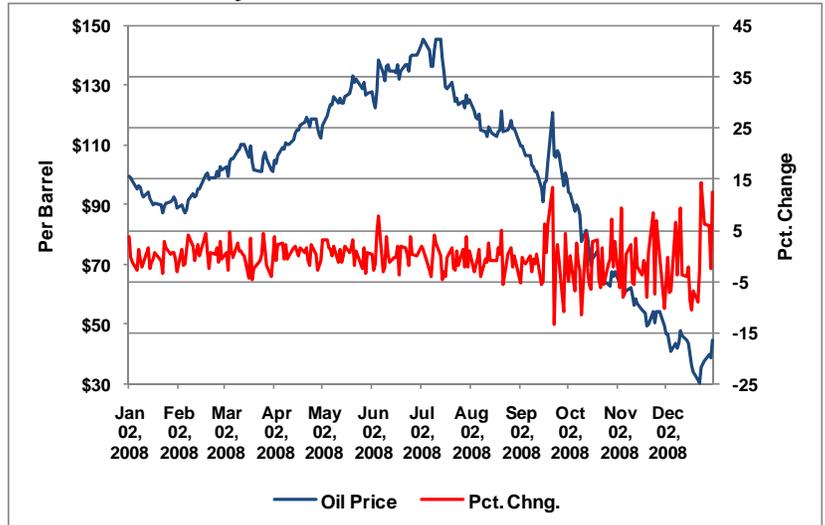
about the strength and stability of the trends moving the oil price. This has a tendency of attracting traders and speculators that boosts the trading volatility. But it is clear that in 1990 when oil prices were steady, volatility was less than when the oil price was moving either higher or lower.

**Exhibit 7. Volatility Came With Meaningful Oil Price Move**



Source: EIA, PPHB

**Exhibit 8. Volatility Associated With The Fall Break In Oil Price**



Source: EIA, PPHB

In 2008, the volatility in the crude oil market seemed to be associated with the change in the health of the credit market, i.e., volatility picked up around the time of the failure of Lehman Brothers

**There is great risk that WTI crude oil prices could fall into the \$20s a barrel range**

and the sale of Merrill Lynch, and when credit market turmoil impacted hedge funds and the credit markets. In other words, the trading volatility seems to be more associated with broad financial market events and less with crude oil market fundamentals.

This price action suggests one of three courses of action will evolve. One is that Cushing inventories reach their maximum capacity so WTI prices plummet to the point at which refiners will buy the oil to produce product because almost whatever product prices are they will make a positive spread. Second, domestic consumption rebounds causing a jump in crude oil purchases, or third, the OPEC production cuts reduce supply sufficiently and less oil flows into the U.S. leaving greater room for WTI oil to supply normal, albeit lower, demand. We suspect that before anyone of these courses of action develops, it may be some weeks into the new year. That suggests there is great risk that WTI crude oil prices could fall into the \$20s a barrel range. But the important thing is that the WTI price will not be reflecting an accurate reading of the underlying supply and demand trends in the global oil market.

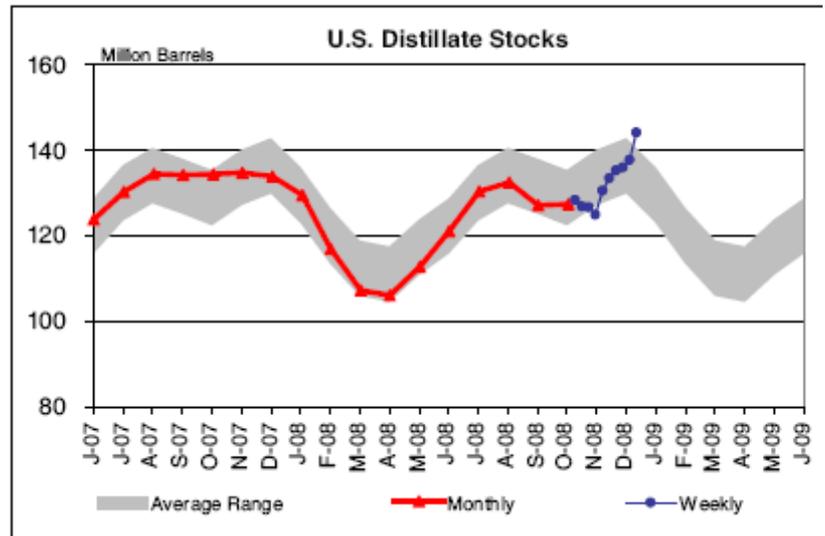
**Public sentiment and political retaliation against companies that allowed citizens to die during a period of extreme cold due to a shortage of heating oil would be extreme**

The uncertainty about the health of the economy and the oil market is also demonstrated by events happening in the petroleum product market. Last week saw the government report that 6.4 million barrels of distillate including heating oil was added to inventories. Analysts are offering two possible explanations. One is that it reflects weak consumer demand, a reading of the health of the U.S. economy. The other conclusion is that refiners are boosting production of heating oil fearing more cold weather. We believe this conclusion more than the first for the reason that people can die from a lack of heating oil, as opposed to a lack of cooling during extreme heat waves in the summer. The economic hardships being experienced in the country today should be a governing principle. Public sentiment and political retaliation against companies that allowed citizens to die during a period of extreme cold due to a shortage of heating oil, just after oil prices have fallen by \$100 a barrel and the world is swimming in crude oil, would be extreme. This is not a position oil industry executives want to be in given the low esteem they are already held in by the public.

**The IEA has reduced its demand forecast for 2009 by 950,000 b/d producing an estimate that demand will fall by 500,000 b/d from 2008**

Just how bad is the global oil market? In reality, the latest forecast by the International Energy Agency (IEA) cut its estimate of 2008 and 2009 oil demand are merely catching up with the prior four forecasts by the EIA and OPEC. The IEA cut its estimate of 2008's global oil demand growth to a decline of 300,000 barrels per day (b/d). It has reduced its demand forecast for 2009 by 950,000 b/d producing an estimate that demand will fall by 500,000 b/d from 2008. The IEA is now firmly in the camp of successive yearly oil demand contractions for the first time since 1982 and 1983. Our only concern is that the IEA's forecasting record in recent years has always been too optimistic. Time will tell.

Exhibit 9. Heating Oil Supplies Have Soared Recently



Source: EIA

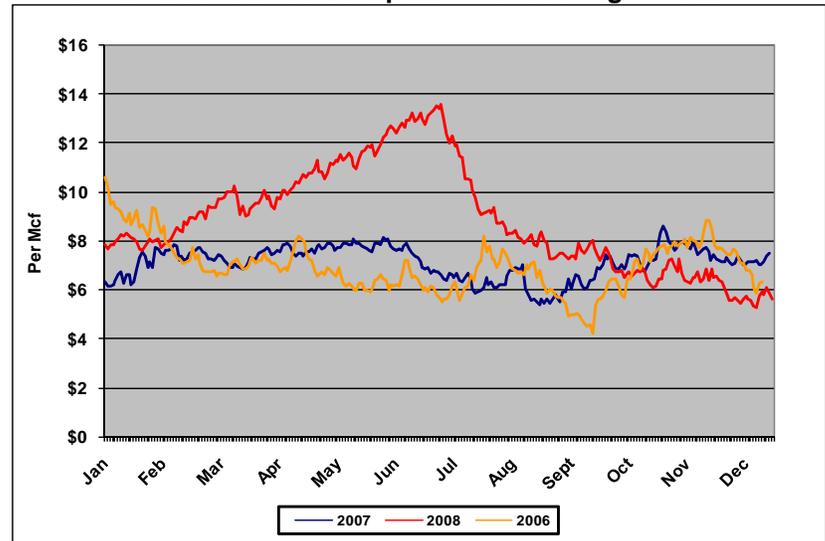
## Back To The Future: \$1 Per MCF Natural Gas Again?

**The dour outlooks for domestic gas markets were shaped by the respective speakers' views about the state of the U.S. economy and the timing of its recovery**

**We already have negative oil demand growth projections with China at 5%-8% economic growth in 2009, so no economic or negative growth would suggest something in excess of a 1-million b/d drop in global oil demand**

Last week we attended several meetings about energy markets, companies, investing and private equity. We found two of the talks about the natural gas market in the United States significantly depressing. During 2008's first half natural gas futures prices soared to over \$13.50 per thousand cubic feet (Mcf) before starting their extended slide that has continued into early January. Last week the near-month futures price actually fell below \$5 per Mcf, their lowest price since September 2006. The dour outlooks for domestic gas markets were shaped by the respective speakers' views about the state of the U.S. economy and the timing of its recovery. Both believe the economic recovery will not arrive until sometime in 2010, in contrast to the conventional view that sometime in 2009 credit markets will begin functioning normally and investor and consumer confidence will be restored leading to increases in spending and investment.

One of the concepts we had not heard discussed in many years is gas-on-gas price competition. John Walker, the chief executive officer of EV Energy Partners (EVEP-Nasdaq), who began his company's investment presentation with a discussion of the general economic environment and energy market outlook. His outlook on the oil market is that it all hinges on the health of the Chinese economy. If it doesn't grow or has negative economic growth (the most negative view we've heard to date) then there will be no oil demand growth. We already have negative oil demand growth projections with China at 5%-8% economic growth in 2009, so no economic or negative growth would suggest something in excess of a 1-million b/d drop in global oil demand.

**Exhibit 10. Gas Futures Collapsed After Soaring In 2008**

Source: EIA, PPHB

**He thinks gas storage will be full by September 1<sup>st</sup> and that could lead to \$1 per Mcf gas as gas-on-gas price competition develops**

He believes there will not be an economic turnaround until 2010. He sees too much natural gas supply in the market largely due to the fall in industrial gas consumption, but also from the development of unconventional gas supplies. According to Ziff Consulting, by 2014, some 42% of U.S. gas supply will be coming from unconventional gas resources. Given the current gas supply/demand situation, he sees gas prices falling into the \$3-\$4 per Mcf range that will create serious economic challenges in the gas and energy industries. He thinks gas storage will be full by September 1<sup>st</sup> and that could lead to \$1 per Mcf gas as gas-on-gas price competition develops. His thoughts about the impact of the natural gas industry environment on the oilfield service business were not particularly encouraging. He expects a further 500 rig-count drop and expects well costs to fall dramatically as well. He pointed out that well costs had risen by a factor of two over the prior two years, but well costs are starting to fall, especially for steel prices (casing and tubing) and drilling rig day rates. He questioned how quickly we would see oilfield service costs fall to 2006 levels, but then wondered aloud when they would retreat to 2003 levels. Bad news for oilfield service companies!

**He also admitted that he shouldn't have made any acquisitions last year because he overpaid for all the reserves and prospects he bought**

Mr. Walker used his outlook to help boost the investment merit of his master limited partnership (MLP). He said that MLPs are the best energy investment place to be because of the nature of having to distribute significant cash flow to investors, which forces managements to put substantial hedges in place that insures stronger cash flows than for traditional E&P companies. He also admitted that he shouldn't have made any acquisitions last year because he overpaid for all the reserves and prospects he bought. On the other hand, because he was able to hedge most of the production (but not all) his deals weren't as bad as they might have been otherwise.

**He is excited about there being less capital chasing deals – the first time in about seven years**

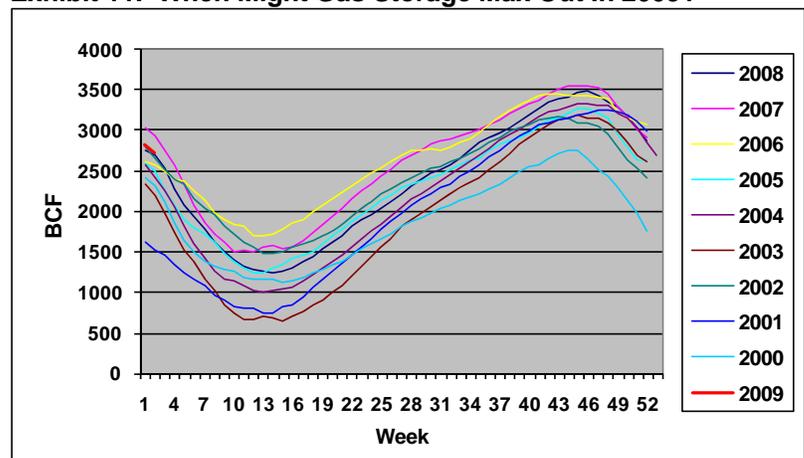
He also thinks that by the 2<sup>nd</sup> and 3<sup>rd</sup> quarters of 2009 there will be plenty of distressed assets to acquire at higher V/P ratios and that are less risky investments. He is excited about there being less capital chasing deals – the first time in about seven years this has happened. In his view the industry needed this shakeout. He also believes there will be a number of mergers and joint ventures as operators combine to lower costs and to strengthen the entities.

**He sees the gas market returning to health at the end of 2010 or maybe even as late as early 2011**

The other talk we heard with a negative view of the natural gas market was made by Doug Schantz, the head of Sequent Energy Management, a division of AGL Resources (ATG-NYSE). They are the 13<sup>th</sup> largest marketer of natural gas and focus on physical asset management. He stated that the gas industry needs to watch the corporate world closely and pointed to Dow (DOW-NYSE), DuPont (DD-NYSE) and the bankruptcy of privately-held chemical company LyondellBassel as examples. He sees 1-1.5 billion cubic feet (Bcf) lower industrial and power generation gas consumption.

Mr. Schantz doesn't see any early recovery for the gas markets, due to economic conditions. Instead, he sees the gas market returning to health at the end of 2010 or maybe even as late as early 2011. The impact of credit markets is forcing a lot of changes on the gas and power industries that will have a negative impact on gas producers. He sees many infrastructure projects delayed due to a lack of funding. In addition, lower demand and prices will have implications on companies as they evaluate how many of these infrastructure projects are needed. All these projects require that the owners do not need to access capital markets. That means companies are being forced to live within their cash flow.

**Exhibit 11. When Might Gas Storage Max Out In 2009?**



Source: EIA, PPHB

**The emphasis on working capital will also impact the gas supply situation**

A major shift within corporations is an increased focus on trade credit. Managements will spend a lot more time checking out and monitoring the credit health of their customers. The emphasis on working capital will also impact the gas supply situation. He believes that the domestic gas storage volumes will not reach the 3.8 trillion

cubic feet (Tcf) goal, but rather be capped at 3.5 Tcf. That could set the market up for a spike in gas prices if demand were to surge while inventories are capped. Hearing of the problems facing the gas marketers, pipeline operators and gas gatherers due to the credit crisis and changes in business plans, we think there are number of unintended consequences that could significantly hurt, or at least disrupt, the recovery of the domestic gas business.

## If China's Growth Goes South What Happens To Oil?

A new analysis of China's growth shows its economy slumping and that it has recently crossed its long-term filtered growth trend line. The filtered growth trend line is developed utilizing a macroeconomic mathematical tool to smooth short-term fluctuations from time series data. When you look at the filtered growth trend for China's economy since 1978 in Exhibit 12, the pace of its growth, including those periods of modest decline, creates a slow, undulating line over time rather than the sharp up and down movements reflected in a plot of the actual changes in real annual gross domestic production.

**The people who prepared this chart are suggesting that China's economy will slump for potentially four years**

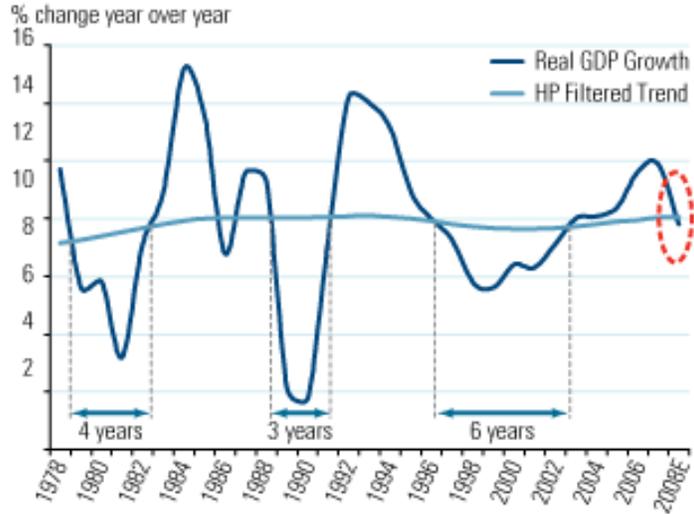
The current trend pattern suggests a further weakening in the country's economic growth based on China's history of economic growth. The people who prepared this chart are suggesting that China's economy will slump for potentially four years. They arrive at their forecast based on the three economic contractions since 1978 that averaged 4.3 years. We believe it might be of more value to examine closer the three historic recession periods and business conditions.

In the first recession, 1978-1982, China's economy was subjected to the same pressures the rest of the world's economy experienced as there was a broad-based recession during that period. The second recession spanned the 1988-1991 period, again when the world suffered a recession but one that was much more mild than the earlier period. It did include the last time of significant social unrest marked by the Tiananmen Square confrontation between students and the Chinese military. The six-year recession of 1996-2002 encompassed the Asian currency crisis, which was regional in scope rather than the global one we are now dealing with. That economic recession was accompanied by a huge collapse in oil prices that inflicted economic pain on the Southeast Asia region.

**Over 1978-2008, China's oil consumption has grown by slightly over 6.1 million b/d from 1.825 million b/d to 7.940 million b/d**

We looked at China's oil consumption over 1978-2008. Over that period, China's oil consumption has grown by slightly over 6.1 million barrels a day (b/d) from 1.825 million b/d to 7.940 million b/d. Within this growth profile there were periods of rapid oil consumption increases and periods of slow growth and even periods of decline in consumption. For example, in 1978-1982, China's oil demand fell by 224,000 b/d. Then in 1988-1991, oil consumption grew by 313,000 b/d. The more recent period of economic weakness – 1996-2002 – saw the country's oil consumption grow by 1.586 million b/d. Clearly each of these periods was marked by different economic and

**Exhibit 12. China's Economy Is Weakening**  
**It appears that we are just at the beginning of the growth normalization cycle**  
**China's actual growth and trend potential growth**



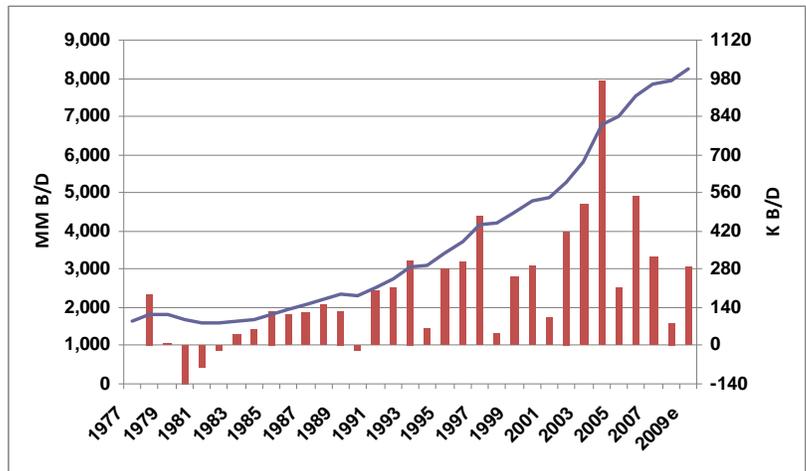
HP filtered trend: Hodrick-Prescott filter, a macroeconomic math tool used to smooth short term fluctuations of a time series

Source: CEIC, GS Global ECS Research estimates.

Source: U.S. Global Investors

financial factors making it impossible to merely point to one and say that should be the model for forecasting the impact on China's oil consumption in the next recession.

**Exhibit 13. China's Oil Demand Only Slowed in Recessions**



Source: BP, IEA, PPHB

It is interesting to note the relative impact of the consumption growth or contraction on China's total oil consumption in each period.

**The IEA initially estimated China's oil demand growth for 2008 at 500,000 b/d but have reduced it to 85,000 b/d and its 2009 growth projection has fallen from a 400,000 b/d increase to 290,000 b/d**

**Guangdong province, mainland China's largest exporting base, saw its exports shrink 5.6 percentage points from the 22.3% growth recorded in 2007 while industrial output slowed by 5.2 percentage points to 12.8% in 2008**

**An unidentified Cathay Pacific executive said he expects Hong Kong exports to fall year over year more than 20% in December magnifying the 15.4% decline experienced in November**

When oil consumption fell in the early 1980s, the average annual decline measured against the average annual total consumption during the period was 3.3%. In 1988-1991, the impact was 4.3%. During the most recent period of economic weakness, the impact of the oil consumption change was 5.6% of average annual Chinese demand.

Looking to the future to try to assess the impact of a contracting Chinese economy on the country's oil demand, we think the recent period of economic weakness may prove to be of greater guidance value than the two earlier periods. That means we still expect Chinese oil consumption to grow in the next few years even if the pace of economic activity is below its historic trend line growth rate. So far, we have seen the IEA's estimates for China's oil demand growth shrink. This is true for both 2008, which has already seen significant deterioration in the country's rate of growth, and 2009. The IEA initially estimated China's oil demand growth for 2008 at 500,000 b/d but have reduced it to 85,000 b/d and its 2009 growth projection has fallen from a 400,000 b/d increase to 290,000 b/d. We would not be surprised to see the 2009 forecast fall further as we move deeper into the year.

We feel safe stating that conclusion given the latest economic data points and antidotal evidence coming from China. For example, Guangdong province, mainland China's largest exporting base, grew at 10.1% in 2008, some 4.6 percentage points slower than in 2007. The province's export growth shrank 5.6 percentage points from the 22.3% growth recorded in 2007 while industrial output slowed by 5.2 percentage points to 12.8% in 2008. According to Guangdong province's vice governor Huang Longyun, the number of businesses that closed or de-registered in 2008 increased to 62,400, 4,739 more than in the previous year. Small companies and traditional industries made up the bulk of the casualties. The province added 32,800 new companies in the Pearl River Delta area. The vice governor pointed out that some of the province's economic indicators "declined seriously" last year. He believes the province is facing the worst economic environment since the Asian financial crisis a decade ago.

The poor health of the Chinese economy and especially its export industry was further substantiated by figures for China's air cargo volumes for mainland airlines in November that declined 11.3% compared to the prior year. Air cargo from the mainland to Hong Kong, a major export hub for Chinese air freight, declined 22.4% in November after slipping 3.1% in October, as reported by the South China Morning Post. The air cargo weakness was supported by the second profit warning issued to the Hong Kong stock exchange by Cathay Pacific. An unidentified Cathay Pacific executive said he expects Hong Kong exports to fall year over year more than 20% in December magnifying the 15.4% decline experienced in November. Besides profit warnings, Cathay Pacific has parked two large air freight planes to trim its U.S. and European capacity by 10%.

**The market for exports will be slow to recover since new contracts have 6-week to 6-month lag times from signing to production**

The outlook for an improvement in Chinese exports in the near term is not promising. According to Sunny Ho Lop-kee, executive director of the Hong Kong Shippers' Council, Pearl River Delta factories are working on old contracts, if they have any, as no new contracts have been signed in recent months. The market for exports will be slow to recover since new contracts have 6-week to 6-month lag times from signing to production. With the demand for high-end goods (electronics and high-fashion) withering in the United States and Europe, he does not expect much of a recovery in the region's exports until well into 2009. The economic softness recently showed up in China's foreign exchange reserves, which increased by 27% last year to \$1.95 trillion. That growth was down from prior years' growth rates marking the first time in a decade that has happened. In 2008, foreign exchange reserves increased by \$417.8 billion compared to \$461.9 billion in 2007. The slowdown is attributed to a shrinking trade surplus that became very evident in the second half of last year and a possible slowing of the speculative "hot-money" flows into the country.

**We are reminded about the Chinese counter arguments to the theory that countries that host the Olympics suffer slower economic growth following the event**

As we read these economic statistics and learn about growing economic and financial turmoil in China, we are reminded about the Chinese counter arguments to the theory that countries that host the Olympics suffer slower economic growth following the event. This analysis points to the 5.2% annual GDP growth in Japan in 1965, the year following the Tokyo Olympics and a year with 13.1% growth. People also point to 1988 when South Korea's growth rate slowed to 6.7% from 10.6% the year prior to the Seoul Olympics. It seems that this economic growth pattern was also true for Spain, Australia and Greece. It was not true for the United States as its post Atlanta Olympics growth rate accelerated to 4.5% from the prior year's 3.7%.

**Beijing represented only 3.6% of its nation's economic activity**

The research conducted on this economic growth phenomenon by various Chinese professors concluded that there is a close relationship between the host country's economic growth following an Olympics and the host city's economic size. The larger the city's role in the host country's GDP, the greater the impact on the national economy. Tokyo represented 26.3% of Japan's GDP in 1965 while Seoul accounted for 27.7% of South Korea's economy and Sydney was 24.5% of Australia's national product. These three cities accounted for over one-quarter of their country's GDP. Athens' was even greater as it accounted for 34.2% of Greece's economy.

In contrast, Atlanta accounted for only 1.9% of U.S. GDP. In 2007, Beijing's GDP was 900 billion yuan in contrast to 25,000 billion yuan for all of China's economy. Beijing represented only 3.6% of its nation's economic activity. Because almost all of the Olympic events and venues were in or close to Beijing, the view of these economists was that the country would not suffer the same economic fate of most of the other host cities. Since the global economic and financial downturn deepened soon after the ending of the Olympics, it is hard to discern whether Beijing will prove to be the exception to the rule of cities with small national economic impact not experiencing a post-Olympic slowdown.

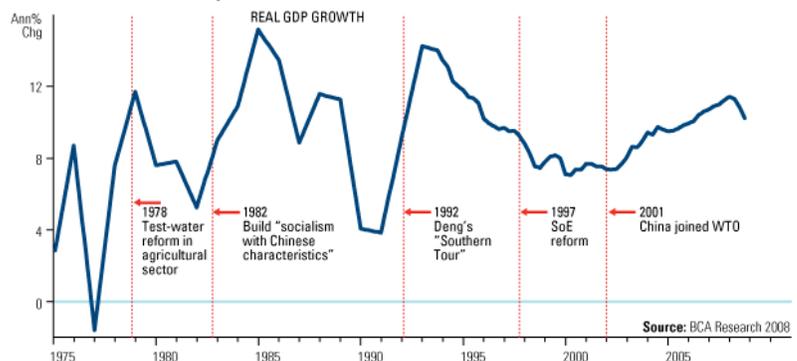
**Unless we experience a global recession similar in scale to the Great Depression, we believe there is little that will stop China's oil consumption from growing**

**BCA Research concluded that China's healthy economic growth periods nearly always were preceded by major economic challenges**

As more global oil forecasts call for 2009's demand to decline from 2008, marking the second year in a row of declining oil consumption, one might expect there to be a significant impact on China's oil use. We believe China's recently announced economic stimulus package that emphasizes new infrastructure investment coupled with the country's expanding population and domestic consumption, energy use will increase. Unless we experience a global recession similar in scale to the Great Depression, we believe there is little that will stop China's oil consumption from growing. If nothing else, the government may consider accelerating buying foreign crude oil for storage in its newly completed strategic storage facilities. While we are comfortable in projecting increased Chinese oil consumption, we are not sure about the rate of its consumption growth. For global oil markets therein may lay a problem. If China's oil demand growth is not robust, which we believe means 500,000 b/d to one million b/d of annual growth, then global oil markets could be negatively impacted for a period of time that would place downward pressure on oil prices.

A counter to that view is suggested by recent research from BCA Research that examined the history of China's economic growth since 1975. They concluded that China's healthy economic growth periods nearly always were preceded by major economic challenges. That correlation extends back 30 years to the start of Deng Xiaoping's efforts to use market forces to strengthen the Chinese economy.

**Exhibit 14. China's Rapid Growth Follows Economic Turmoil**  
Crises And China's Reform Cycle



Source: U.S. Global Investors

After the 1970s economic slowdown, China embarked in the early 1980s on its policy of "socialism with Chinese characteristics," which blended state ownership of major industries with private enterprise. The result was acceleration in China's growth rate. Again after a government-induced economic slowdown and the Tiananmen Square massacre in the late 1980s, Deng made his famous tour of southern China to promote special economic zones and other market-oriented reforms. China's growth then shot up. The same sequence of government action and rapid economic growth followed China's admission into the World Trade Organization in 2001.

**It would help explain the government's efforts in recent years to seek out oil and mineral resources around the world to ensure the country's raw material supplies**

From this research, BCA believes there is the opportunity for China to seize upon the current financial turmoil and take bold actions that will boost the country's growth. There may be a huge opportunity for the government to use its announced economic stimulus program to begin the shift of its economy away from an export-dependent model to one more reliant on domestic consumption. That could not only provide a stimulus to economic growth but also provide a more steady growth for China in the future. If this is part of the government's plan, it would help explain the government's efforts in recent years to seek out oil and mineral resources around the world to ensure the country's raw material supplies. It also suggests that China will continue to need more oil in future years, a good thing for oil exporting countries.

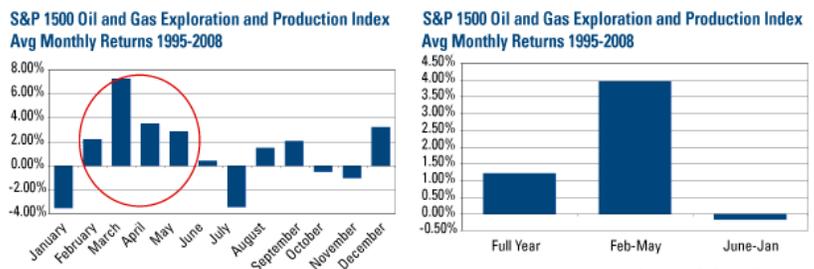
## Do Winter Blasts Suggest Stronger Energy Stock Prices?

Early last week the Midwest and Northeast regions of the country were hit by snowstorms and blasts of bitterly cold weather. The cold produced record low temperatures in places. In Grand Forks, North Dakota, the thermometer dropped to 37 degrees below zero Tuesday morning, blowing away the 1979 record low by six degrees according to the National Weather Service. In numerous cities in northern Minnesota temperatures reached lows of -35° with wind chill readings of -45°. The record cold temperatures coupled with snow and stiff breezes dipped into Iowa shutting down schools and making driving dangerous. The cold went as far south as Houston. The end of the week brought another arctic clipper with abnormally cold readings for the eastern half of the country.

**Investors achieve their best price performance from energy stocks during the February through May time period**

The cold weather has not appreciably helped oil and gas prices as they continue to soften due to concerns about weak global energy demand. Traditionally winter weather helps lift oil and gas prices and, in turn, investor outlooks toward the energy stocks. We saw the chart in Exhibit 15, showing the average monthly price appreciation for the Standard & Poor's 1500 Oil and Gas Exploration and Production Index over the period 1995-2008. The chart demonstrates that investors achieve their best price performance from energy stocks during the February through May time period. In fact, during this period, the balance of the year, on average, E&P stocks lost money for investors.

**Exhibit 15. Oil & Gas Producer Stocks Best Early in Year**



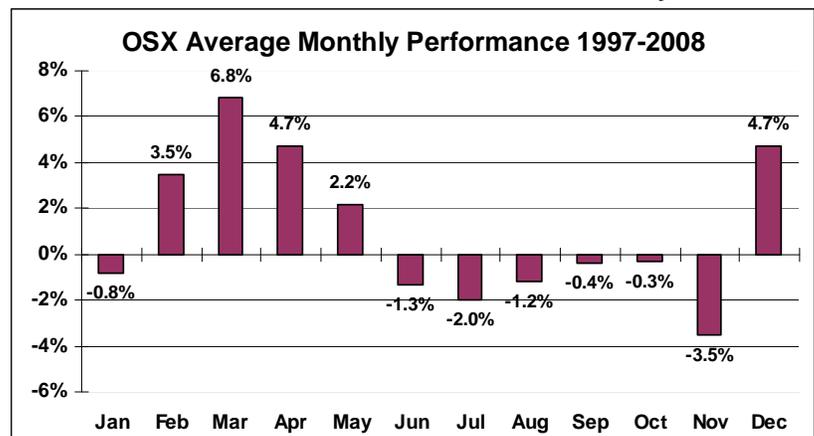
Source: U.S. Global Investors

Source: U.S. Global Research

**Oilfield service investors should probably only hang around for the first half of the year**

We thought it would be interesting to see what the average monthly price appreciation record was for the oilfield service stocks. We used the Philadelphia Oil Service Stock Index (OSX) for the analysis. This index was unveiled in January 1997, so we have 12 years of performance for the months of February through December and 11 years for January. The results of this analysis are presented in Exhibit 16. It seems clear from the chart that oilfield service investors should probably only hang around for the first half of the year. This sector's price performance is even more dramatically lopsided time-wise than the E&P stocks. Both of these charts, however, support the investment trader slogan to "sell in May and go away."

**Chart 16. Oil Service Stocks Post Best Returns Early in Year**

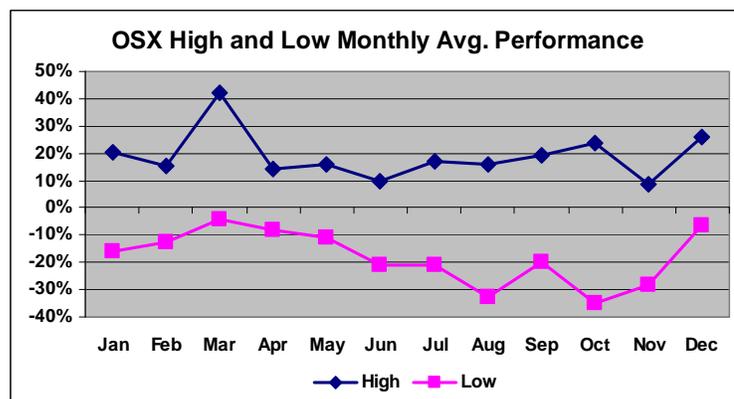


Source: Yahoo Finance, PPHB

**The positive monthly performance bias was evident during the first part of the year as the low monthly values for February through May probably averaged less than a loss of 10%**

In order to see how strong the positive monthly price performance for oilfield service stocks was, we thought we would look at the range of monthly highs and lows. The positive monthly performance bias was evident during the first part of the year as the low monthly values for February through May probably averaged less than a loss of 10%. In contrast, the average monthly lows for the balance of the year were centered in the range of losses of 20% to 30%.

**Exhibit 17. Month Results Confirm 1<sup>st</sup> Half Performance Bias**



Source: Yahoo Finance, PPHB

We also looked at the distribution of years containing the monthly high and low performance. Seven out of 12 years contained all the monthly highs while only six years had all the lows. 2000 had three monthly highs but no lows. On the other hand, 1984 and 2008 contained four monthly lows each.

#### Exhibit 18. Any Trading Pattern?

<u>High</u>	<u>Low</u>
1997-1	1997
1998-1	1998-4
1999-2	1999
2000-3	2000
2001-2	2001-1
2002	2002
2003-1	2003-1
2004	2004
2005	2005-1
2006-2	2006-1
2007	2007
2008	2008-4

Source: Yahoo Finance, PPHB

**Yet during the bull market for crude oil prices – 2007-2008, there were no monthly highs, but four monthly lows, all in 2008**

Another interesting way to examine the distribution is to note that in the five year span 1997-2001, there were nine monthly highs and five lows, while in the four year period of 2005-2008 there were only two highs yet six lows. In 1997-1999, when the OSX turned in four monthly highs, crude oil prices collapsed to about \$10 a barrel in response to the Asian financial crisis. There were four monthly lows recorded in 1998. Yet during the bull market for crude oil prices – 2007-2008, there were no monthly highs, but four monthly lows, all in 2008. For an index with a very high correlation with the price movements of crude oil, these monthly records are something of a surprise. Do they offer any sense of what the OSX might do in the future? We doubt it. Other than trading the OSX during the first 150 days of the year, there is little other guidance to take away. Sorry about that.

## Where's The Beef – er The Heat?

**“Where's the beef?” We thought that was the appropriate phrase to modify given the extreme cold weather barreling through the Midwest and Northeast regions driving temperatures to record lows last week**

Some 25 years ago, Clara Peller, a gray-haired, four feet eleven inch octogenarian spokeswoman for hamburger chain Wendy's, spoke three words that have been immortalized in political campaigns and social discussions: “Where's the beef?” We thought that was the appropriate phrase to modify given the extreme cold weather barreling through the Midwest and Northeast regions driving temperatures to record lows last week. For the past several weeks, Arctic cold weather has been in the news a lot. First the Arctic high sat over the state of Alaska sending temperatures to record lows and forcing the postponement of several winter sports competitions because it was too cold. Once the Arctic high began to move, the cold weather swept across the plains of central Canada and then

down into the Midwest and then the Northeast regions of the United States bringing record low temperatures, so low they forced ski resorts in the Northeast to shut down out of fear for people's safety, and schools and businesses to close or delay their opening to keep people from being exposed to the coldest weather of the day.

#### Exhibit 19. Darling Clara



Source: [www.survinggrady.com](http://www.survinggrady.com)

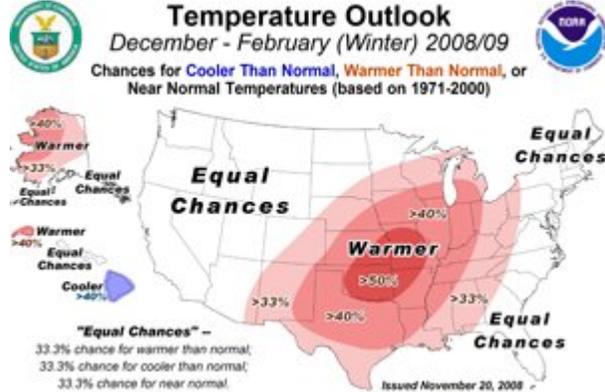
**NOAA reported that in the United States December's average temperature of 32.5 degree F was 0.9 degree below the 20<sup>th</sup> Century average temperature**

**According to NOAA's forecast, the temperatures for this winter period were going to be either warmer than normal, or had an equal chance of being either warmer or cooler than normal**

As the cold weather gripped the country, an anomaly developed. At the same time the media was reporting the record cold weather, the National Ocean and Atmospheric Administration (NOAA) announced that 2008 tied 2001 as the 8<sup>th</sup> warmest year on record for the Earth based on the average of worldwide land and ocean surface temperatures through December. NOAA also reported that the single month of December was the 8<sup>th</sup> warmest December on record based on weather data collected back to 1880. Yet barely a week before NOAA reported that in the United States December's average temperature of 32.5 degree F was 0.9 degree below the 20<sup>th</sup> Century average temperature. Interestingly, the NOAA headline for that press release was worded in such a way that unless one read it closely the cold ranking was almost missed. The headline said: "2008 Temperature for U.S. Near Average, was Coldest Since 1997; Below Average for December." Near average? This is the coldest a December has been in 11 years, which was before the so-called warming decade arrived yet NOAA calls it near average.

It was interesting to go back in time to examine the NOAA forecast for the first winter period – December through February - that included the month of December. According to NOAA's forecast, the temperatures for this winter period were going to be either warmer than normal, or had an equal chance of being either warmer or cooler than normal. This did not sound like a forecast for a cold spell.

**Exhibit 20. NOAA Forecast Called For Warm December**



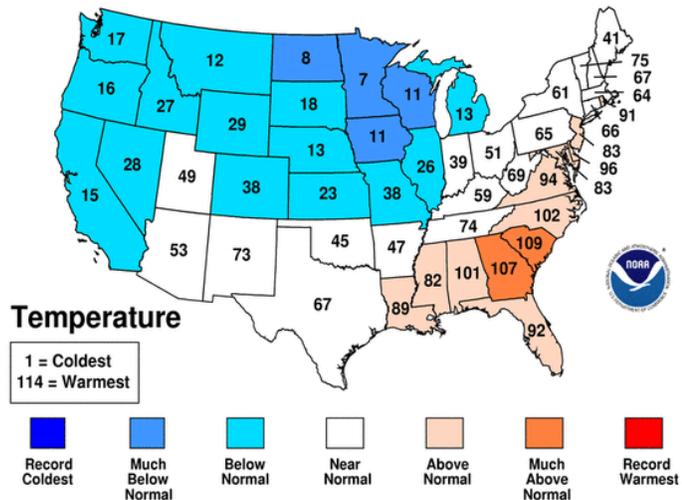
Source: NOAA

In contrast to the prediction, when actual December temperatures were analyzed it appears there were only two states with temperatures much warmer than normal. Nine states, basically those comprising the deep South and mid-Atlantic regions, had above normal temperatures. The remainder of the states experienced near normal, below normal or much below normal temperatures.

**Exhibit 21. Most of Nation Colder Than Normal in December**

**December 2008 Statewide Ranks**

National Climatic Data Center/NESDIS/NOAA



Source: NOAA

**Baring a tropical heat wave it is likely January will also be colder than normal**

As parts of the Midwest and Northeast reported temperatures of 20s and 30s below zero, baring a tropical heat wave it is likely January will also be colder than normal. In following this weather story, we just saw that after weeks of record cold weather in Alaska, they got a "pineapple front" that has taken temperatures in Anchorage to 45°F.

**The data shows a regular cycle of the 100,000 years of Ice Age with followed by 12,000 years of warm temperatures**

But we also came across a paper published on the English section of Pravda's web site and referenced by Janice Dean, the weather lady on Fox News, on her blog. The article discusses the body of long range climate change information and the theories that have developed suggesting that the warm 12,000 year-long Holocene period is coming to an end soon and the Earth will then return to Ice Age conditions for the next 100,000 years.

This article discusses the Milankovich cycle based on three astronomical cycles – the tilt of the earth that varies over 41,000 years, the shape of the Earth's orbit that changes over 100,000 years, and the Precession of the Equinoxes, or the Earth's wobble that evolves over 26,000 years. This theory is backed up by research of sea-sediment cores and ice cores. In 1999, *Nature* magazine published the results of data derived from glacial ice cores collected at Russia's Vostok station in Antarctica during the 1990s. The cores record temperatures, gases and dust measurements from 420,000 years ago to now. The data shows a regular cycle of the 100,000 years of Ice Age followed by 12,000 years of warm temperatures. The data also shows that high and rising CO<sub>2</sub> concentrations follow the Ice Age by 800 years rather than precede the warm periods. This data undercuts the anthropogenic global warming (AGW) concept first expounded upon by Carl Sagan in the 1970s.

**The *Farmers' Almanac* said this winter would be brutal with below-average temperatures for most of the country**

While all of this research was interesting, and we have read and studied much of the literature about global warming, we found our September 2, 2008, article on the winter forecast battle between the *Farmers' Almanac* and the Climate Prediction Center of the National Weather Service (NWS) more interesting. And it's not just because we wrote it. At the time, the *Farmers' Almanac* said this winter would be brutal with below-average temperatures for most of the country. In contrast, the NWS said the probabilities were that the winter will be warmer than normal.

The winter has also brought significantly colder weather to Europe. The cold being encountered by the citizens of a number of European countries has become an even greater hardship due to the dispute between Russia and the Ukraine over the fee for allowing natural gas to flow through the Ukraine's pipelines. As a result of the dispute, Russia has shut off the flow of gas forcing a number of western European countries to seek gas supplies from other sources.

**The canals in the Netherlands have frozen over for the first time in 12 years**

We were interested in reading that the canals in the Netherlands have frozen over for the first time in 12 years. As a result, it has renewed the country's frenzy for ice skating popularized by the 19<sup>th</sup> Century teenaged hero, Hans Brinker, who in the novel tries to win a pair of silver skates. In that era, the canals froze over every year. Pollution and global climate change have made that a rare event in recent times. In fact, a 15-year old, the same age as Hans Brinker, may have never experienced the canals freezing over. As a result of the current phenomenon, hundreds of thousands of people have

**So much of the global warming debate has been about computer models driving the conclusions even when scientific data doesn't support the theories**

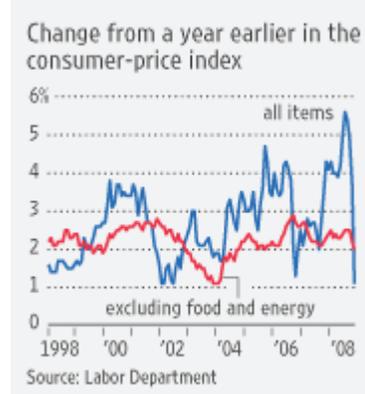
found a new reason to skip work and school to pursue their skating passion. One sidelight of the ice is that hospitals now find themselves with wards filled with dozens of people suffering from fractured arms, sprained ankles and broken legs.

We ended the article with a discussion of Thomas Friedman's discussion of the harvesting of an ice core in Greenland that showed a remarkably abrupt change in its atmospheric climate that warmed the country by 10° in 50 years due to a sudden change in monsoons in the tropics. Mr. Friedman warned the climate change deniers not to seize on this data to argue that mankind is not the cause of the rapid global warming we are experiencing. We said at that time that this is difficult to accept since the ice core is scientific data and the global warming theory doesn't fit the data. So much of the global warming debate has been about computer models driving the conclusions even when scientific data doesn't support the theories. There remains a lot of the winter to go, but so far it looks like Caleb Weatherbee, the reclusive *Farmers' Almanac* forecaster, has the inside track on winning this competition.

## Random Thoughts Bothering The Energy Market

With the reporting of December's consumer price index (CPI) decline of 0.7% last week, it brought the full year increase to only 0.1%, the smallest increase in 54 years. While the core CPI index was flat in December, for the full year it increased 1.8%, the smallest yearly increase since 2003.

**Exhibit 22. 2008's Tame CPI**



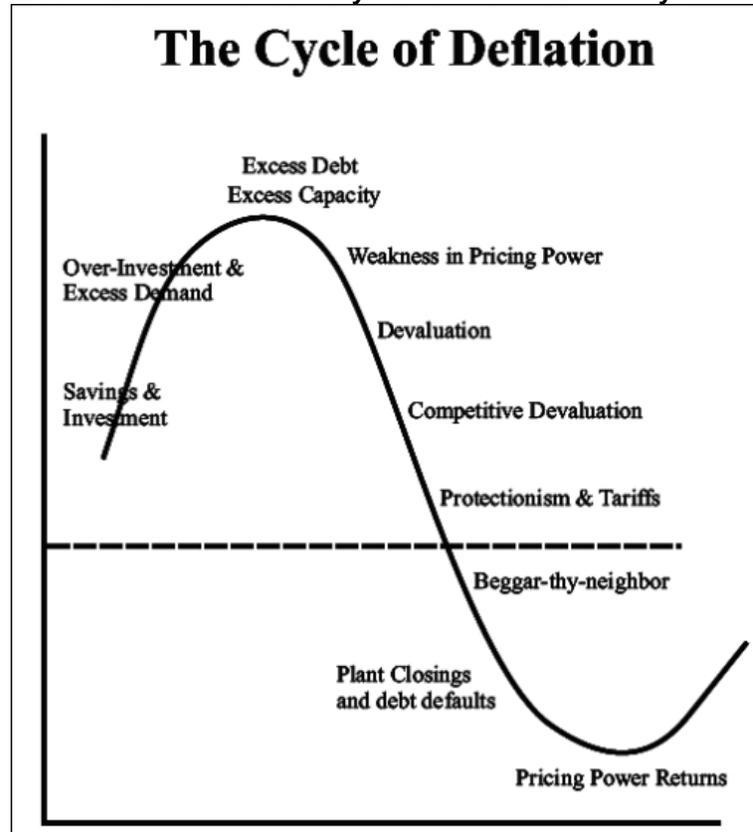
Source: *WSJ*

**Deflation was one of the major maladies that controlled the economy during the Great Depression**

The CPI report was cited as another sign of the trouble the global economy is in due to falling prices. It resurrected the fear among economists and politicians about deflation gripping the economy creating serious government fiscal and monetary policy challenges. Deflation was one of the major maladies that controlled the economy during the Great Depression and forced significant governmental economic stimulus, yet which wasn't truly successful in boosting the economy until the stimulus came from World War II. The best

explanation of the deflation issue is demonstrated by the chart in Exhibit 23.

**Exhibit 23. Where In The Cycle Is The U.S. Economy?**



Source: Prieur du Plessis

**We could experience the protectionism and tariff problem early in 2009 as the newly elected, Democratic-controlled Congress decides to flex its muscle in order to save ailing industries**

It seems to us that the U.S. economy is somewhere on the down slope but not as far down as devaluation. The somewhat scary thought is that we could experience the protectionism and tariff problem early in 2009 as the newly elected, Democratic-controlled Congress decides to flex its muscle in order to save ailing industries. Our sense is that many of our customer and supplier governments will not stand-by idly and watch their economic health be damaged by U.S. government trade policies. This fear is augmented when we look at the chart in Exhibit 24 that shows the recent collapse in November and December exports for many leading economies.

If the world's economies continue to contract as they did at the end of last year, then we will have a serious challenge in restarting the U.S. economic growth. One hopes that the collapse in exports at the end of last year reflects more of a reaction to the fall in consumer confidence and commercial enterprise trust. A resumption of credit market operations, signs of which we are just seeing, should help to stimulate a pickup in global trade. However, it will take some time for global trade to return to very active levels, suggesting that the

**Exhibit 24. Global Exports Are Collapsing**  
**Global Slowdown in Exports**

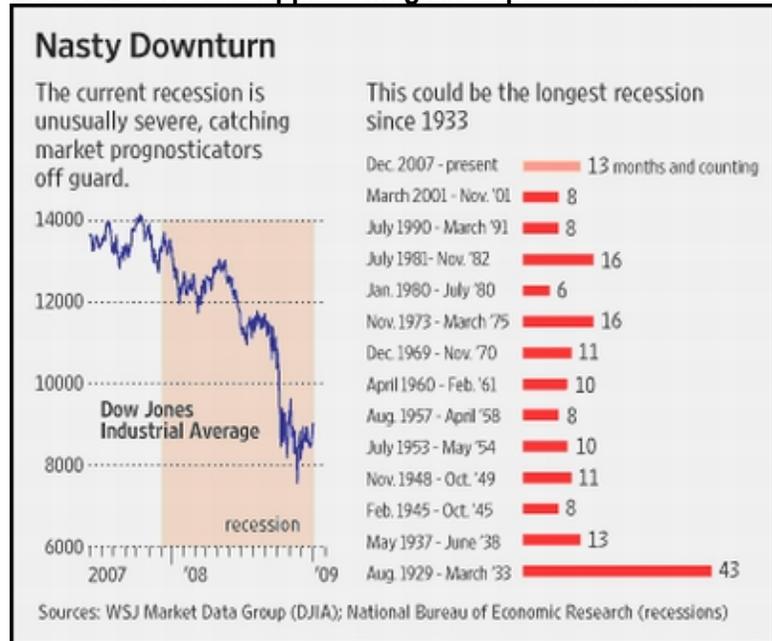


Source: *The New York Times*

**The pace of economic activity around the world will dictate the growth, or lack thereof, for oil and gas demand**

recovery will be sluggish. Our hope for a more robust economic recovery has to rely on growth in domestic consumption within the respective countries. The pace of economic activity around the world will dictate the growth, or lack thereof, for oil and gas demand. But we cannot forget the workings of depletion on helping to repair oil and gas pricing, especially as new petroleum industry capital spending slumps.

**Exhibit 25. We Are Approaching An Unpleasant Record**



Source: *WSJ*

**The bottom line is that we will experience the longest recession since the Great Depression**

The bottom line is that we will experience the longest recession since the Great Depression. As we often remind ourselves, every recession is different from those that occurred before. The key is to try and understand how it is different and what those differences might mean for the pace of a recovery and, in turn, the health of the energy industry.

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