PARKS PATON HOEPFL & BROWN

ENERGY INVESTMENT BANKING, LP

MUSINGS FROM THE OIL PATCH

January 8, 2008

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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

After Record 2007, Whereto for Energy Stocks in '08?

S&P Energy sector topped all other sectors by generating a 32.4% increase

Early in 2007, many Wall Street investment strategists and portfolio managers were pounding the table because they felt financial stocks were grossly undervalued and energy stocks overvalued

On the back of a 57% increase in crude oil prices last year, energy stocks turned in the best performance of any of the industry sectors comprising the S&P 500 index. The Energy sector's performance was nine-fold better than the gain posted by the overall index. For all of 2007, the S&P Energy sector topped all other sectors by generating a 32.4% increase, outpacing the Materials sector that came in second with a mere 20% annual gain. Given what happened to both crude oil and mineral prices during 2007, it was not surprising that these two sectors generated such strong investment returns. What we found interesting was that the Financial sector was the worst performer with a decline of almost 21%, but given the problems experienced by the sub-prime and credit markets that forced banks and other financial institutions to take huge asset write-downs, which cost several CEO's their jobs, this performance was not totally surprising. However, if one harkens back to early in 2007, many Wall Street investment strategists and portfolio managers were pounding the table because they felt financial stocks were grossly undervalued and energy stocks overvalued. Again Mr. Market's wisdom confounded the pundits.

Another sector that received increased investor attention and accolades for its positive outlook during the year was Information technology. Led by companies such as Apple (AAPL-NASDAQ), Microsoft (MSFT-NASDAQ) and Oracle (ORCL-NASDAQ) the index performed reasonably well with a 15.5% return to claim fourth place right behind Utilities, despite a number of technology companies posting share price declines for the year.

If one looks at the makeup of the Energy sector it is truly reflective of

Given the strong weighting of the oilfield service companies in the sector, it is not surprising that Energy did so well

the breadth of scope of the industry. There are 35 stocks in the sector index including 12 oilfield service companies. The balance of 23 stocks encompasses companies from a wide range of energy sub-sectors including: integrated oil companies; large exploration and production companies; refiners; coal producers and natural gas pipeline/producing companies. Given the strong weighting of the oilfield service companies in the sector, it is not surprising that Energy did so well. Almost all 12 of the oilfield service companies in the Energy sector are part of the Philadelphia Oil Service Stock Index (OSX), so we decided to plot the performance of that index against the S&P Energy sector (XX:1676240) and the S&P 500 index for all of 2007.

Sentiment about energy did not improve until early March when winter weather roared back into the Midwest and Northeast

When examining the performance of the Energy and OSX indices, it was impossible early in 2007 to imagine that these sectors would be the best performing sectors in the overall market for the full year. From the very first day of 2007, energy stocks sold off as investors who had stayed in them through year-end elected to take their profits early in the year to be able to invest in other market sectors for the coming year. The warm winter weather experienced in January gave investors and traders little incentive to buy back into the group. Sentiment about energy did not improve until early March when winter weather roared back into the Midwest and Northeast and the strengthening economy suggested there would be continued oil supply/demand tightness that would keep oil prices up. The continued geopolitical turmoil helped elevate the risk premium in oil prices. Little did we appreciate at that time how crude oil prices would rise to near record levels and what that would mean for energy company earnings and their share prices.

Exhibit 1. OSX And S&P Energy Sector Lead S&P 500 Index

Source: BigCharts.com

The OSX was the best performing stock market subset with a nearly 51% gain. The range of share price performances reflected by the 15 companies in the OSX was astounding from a high of 140% to a low of a loss of nearly 17%. The 2007 performance of the 15

The top performers in the OSX were exposed to the rig building and offshore equipment cycles and derive a substantial portion of their business from international markets

companies is presented in Exhibit 2. But what is more interesting is to look at the price action of the OSX against the top three and bottom three stocks in the index over the course of the year. While each company in these two groupings is there for different reasons, one can make a couple of broad generalizations about the reasons for the under- or over-performance. The top performers were exposed to the rig building and offshore equipment cycles and derive a substantial portion of their business from international markets. On the other hand, the three worst performing oilfield service companies were more heavily exposed in their businesses to the weakening North American natural gas drilling and completion markets.

Exhibit 2. How OSX Stocks Performed in 2007

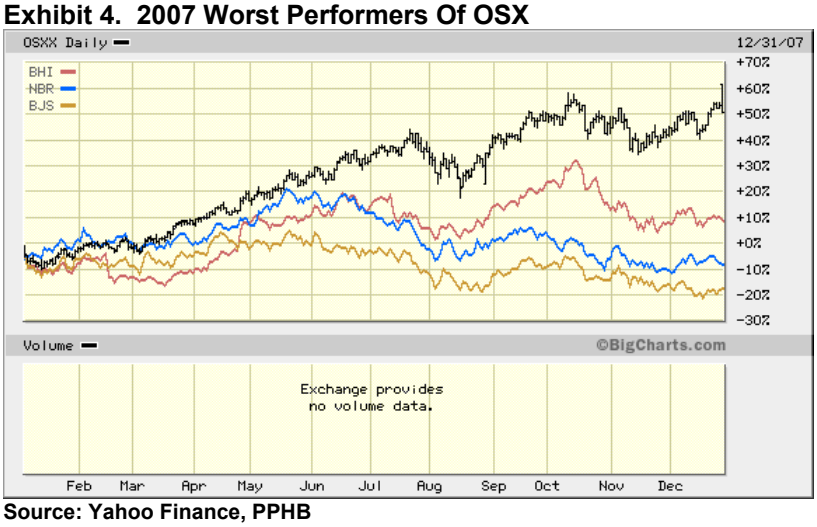
Company	Close 12/29/2006	Close 12/31/2007	Pct. Change
Baker Hughes	74.17	81.10	9.3%
BJ Services	29.10	24.26	-16.6%
Cameron Int'l	26.52	48.13	81.5%
Global Industries	13.04	21.42	64.3%
Halliburton Company	30.74	37.91	23.3%
Nabors Industries	29.78	27.39	-8.0%
Noble Corp.	37.99	56.51	48.7%
National Oilwell Varco	30.59	73.46	140.1%
Oceaneering Int'l	39.70	67.35	69.6%
Rowan Companies	32.84	39.46	20.2%
Transocean, Inc.	80.89	143.15	77.0%
Smith International	40.78	73.85	81.1%
Schlumberger Ltd.	62.61	98.37	57.1%
Tidewater, Inc.	47.85	54.86	14.6%
Weatherford Int'l	41.79	68.60	64.2%
OSX Index	199.90	301.61	50.9%

Source: Yahoo Finance, PPHB

Exhibit 3. 2007 Best Performers Of OSX

Source: Yahoo Finance, PPHB

Exhibit 4. 2007 Worst Performers Of OSX



Source: Yahoo Finance, PPHB

The investment strategists favored the smaller exploration and production and oilfield service stocks for greater appreciation potential this year

On the first trading day of 2008, several investment strategists being interviewed on the early morning CNBC business shows stated they expect commodity prices to continue to move higher this year, including crude oil, and as a result they expect energy stocks to remain an attractive sector for future investment. These strategists were all asked about the attractiveness of the large integrated oil companies such as ExxonMobil (XOM-NYSE). The standard answer from the strategists was that it would represent an o.k. investment within the energy sector, but all of them favored the smaller exploration and production and oilfield service stocks for greater appreciation potential.

We were clearly sad to see 2007 end because we are not so sure that 2008 can produce investment results equal to or better than what was experienced last year

While favorably disposed to energy investments for the long haul, we were clearly sad to see 2007 end because we are not so sure that 2008 can produce investment results equal to or better than what was experienced last year. Now that doesn't mean we expect 2008 to be a disaster, but history suggests that anyone expecting a meaningful increase in crude oil prices may be disappointed. We make that statement knowing full well that there are a number of energy investors, strategists and traders all calling for higher average oil prices in 2008 than last year. In some cases the forecasts call for sharply higher prices in 2008. We saw a number of investment newsletter writers who are favoring energy investments for all the usual reasons that were touting incredibly high oil price forecasts. One commented that the EIA had just raised its 2008 average oil price forecast to $85 and that Goldman Sachs expects oil prices to hit $105 per barrel by the end of 2008. So this writer is calling for oil to hit $150 a barrel, although he admits it likely will not stay there.

Another forecaster, basing his price projections on a more substantial analysis of the market drivers, lays out his five-year forecast for crude oil prices. I would caution you that you should be sitting down to read this forecast. He expects crude oil prices in

In 2012, the crude oil content of a gallon of gasoline would range in cost from $6.55 to $11.90

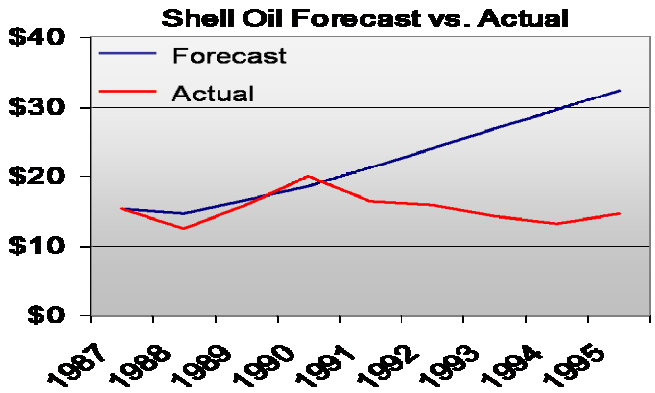
2008 to range between $80 and $140 a barrel; in 2009, $105-$195; in 2010, $150-$250; in 2011, $175-$325; and in 2012, $275-$500. This forecast implies that in 2012, the crude oil content of a gallon of gasoline would range in cost from $6.55 to $11.90. That per gallon figure is before any refinery or dealer profits, distribution costs or state and federal taxes are added on.

Another consideration about the price of gasoline is that due to the blending requirement of ethanol, it now requires less crude oil to produce a gallon of fuel. So we can take 90% of that per gallon crude oil price range above as the basic cost, but we also have to add in the cost of the ethanol. At today's price for a gallon of ethanol of $2.36, and we have no idea what that would be in 2012, it would add $0.24 to the crude cost to bring us to a material cost per gallon figure of $6.14-$10.95. We still would have to add in the other costs and taxes to get to the retail price. So what would this price do to gasoline demand?

To achieve the same fuel-efficiency auto buying pattern experienced in 1980, gasoline would have to be $6 a gallon

A recent interview on CNBC with Mike Jackson, the chairman and CEO of AutoNation, the country's largest auto dealer, may shed some light on that question. When asked what gasoline price would cause auto buyers to shift their focus to more fuel-efficient vehicles, he said that to achieve the same fuel-efficiency auto buying pattern experienced in 1980, gasoline would have to be $6 a gallon. He said that estimate was based on the price of gasoline and its share of consumer incomes adjusted for inflation and consumer income growth. That target price is essentially double the current cost of gasoline. His message is that there is likely little chance that consumers are going to be swarming after the small, fuel-efficient and hybrid cars Detroit is being pressured to produce. That may support the Wall Street Journal's editorial position that the new CAFE fuel standards will be the death knell for Detroit' Big Three automakers. I would caution readers, however, about how horrendous the history of long-term oil price forecasts has been. Seldom do forecasters get future price projections correct as demonstrated by the graph in Exhibit 5.

Exhibit 5. Shell's Oil Price Forecast in 1987 Proved Wrong



Source: Shell Oil

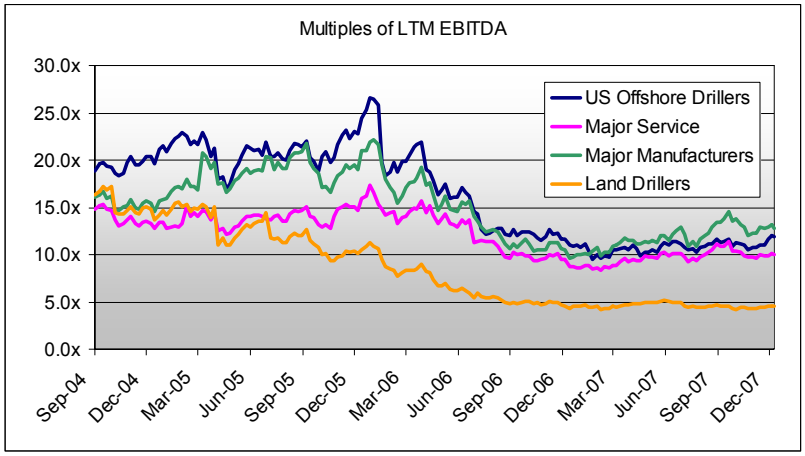
The correction last Friday was caused by fear about an impending recession, which would cut energy demand and thus undercut energy company earnings outlook

During the first two trading days in 2008, energy stocks are on a different course than they followed last year – up rather than down. With crude oil touching $100 per barrel, investors spooked by renewed Nigerian violence, a huge winter storm crossing the nation's mid-section and falling petroleum product inventories, it is not hard to understand why energy stocks are doing well. The correction last Friday was more in keeping with the overall market correction that was caused by fear about an impending recession, which would cut energy demand and thus undercut energy company earnings outlook.

Without a catalyst to accelerate corporate earnings growth rates, it is hard to justify an expansion in valuation parameters

The big question marks for this year include: the health of the global economy and its impact on energy demand; non-OPEC supply growth; depletion of existing production; possible shifts in consumer energy consumption patterns; reductions of petroleum subsidies in Asian countries; and energy company earnings growth rates. While all of these question marks could produce positive impacts for energy stocks, the most difficult one may be the pace of earnings growth. Without a catalyst to accelerate corporate earnings growth rates, it is hard to justify an expansion in valuation parameters.

Exhibit 6. Oil Service Valuations Compressed in 2006 and 2007



Source: Capital IQ, PPHB

The offshore drillers and manufacturers outperforming in 2004-5, but beginning in the second half of 2005 the land drillers have significantly underperformed the rest of the sectors

What has been evident about oilfield service stocks since late 2004 is that after multiples of the price to the latest 12-months (LTM) of earnings before interest, taxes, depreciation and amortization (EBITDA) rose to peaks at late 2005 and early 2006, they have been in steady decline. The chart in Exhibit 6 shows this record for four subsectors of the oilfield service industry: offshore drillers; major service companies; major equipment manufacturers; and land drillers. While we have described the general trading pattern, with the offshore drillers and manufacturers outperforming in 2004-5, but beginning in the second half of 2005 the land drillers have significantly underperformed the rest of the sectors. This poor performance probably is related to disappointing natural gas prices and substantial expansion of the drilling rig fleet.

Exhibit 7. Service Company Valuations Have Been Declining

P/LTM of EBITDA	Offshore Drillers	Major Service	Major Manufact.	Land Drilling
September-04	18.9	14.8	16.1	16.4
December-04	20.4	13.4	12.5	14.8
December-05	22.8	14.7	15.9	10.1
December-06	11.6	9.5	10.5	4.6
December-07	11.9	10.1	12.8	4.5

Source: PPHB

Without expanding valuations, stock prices are likely to only expand with earnings growth as investors become increasingly concerned about reinvestment risks over growing cash balances

Without expanding valuations, stock prices are likely to only expand with earnings growth as investors become increasingly concerned about reinvestment risks over growing cash balances. This assumes the stocks are able to sustain their current valuations, which could be in doubt if energy market dynamics weaken. Energy stocks could also be at risk of negative investment flows (leading to lower valuations and lower prices) if other stock market sectors begin to exhibit accelerating earnings growth. Our best guess is that energy may start the year as the place to be for investors, but may not end the year in that position. That doesn't mean that energy investors will lose money this year. They are just going to have to be more patient until industry fundamentals reassert themselves. We'll look at that potential scenario in the next Musings.

Crude Oil Prices: Headed For A Fall in 2008?

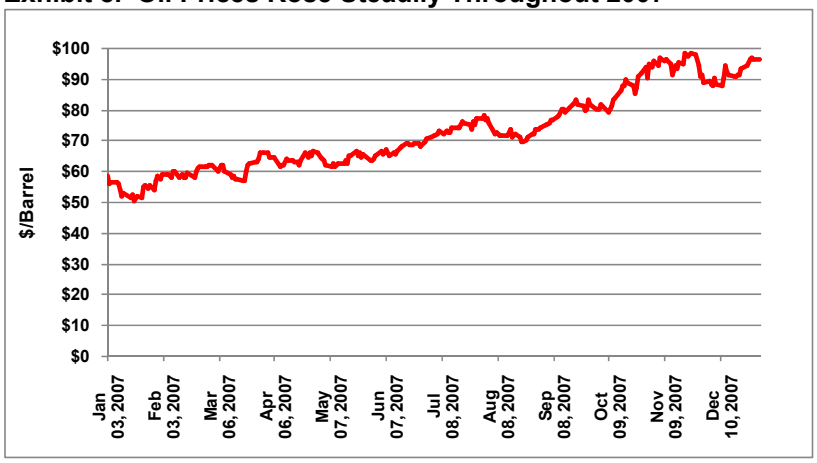
The $100 per barrel threshold was attained on January 2, 2008, as the NYMEX recorded one trade around mid-day at that level

With prices at $61.60 when crude oil futures opened on January 3, 2007, few people would have forecast that 366 days later, the price would hit $100. The first triple digit price tag for crude oil was reached in 2008, despite the strong convictions of commodity traders and media pundits during the second half of the year that the century mark would be reached before the end of 2007. The $100 per barrel threshold was attained on January 2, 2008, as the NYMEX recorded one trade around mid-day at that level. The price immediately fell by $0.40 on the next trade. For the day, the futures price established a new record close of $99.62. But by the end of the week, after flirting with the $100 level once again, the price fell to $97.92.

Last year's percentage increase of 57.2% was actually exceeded by the percentage increase experienced during 2002

The almost $42 per barrel rise in the price of crude oil over the span of 2007 plus one day was spectacular to say the least. Without that one day in 2008, crude oil futures prices jumped by only $35 per barrel over the course of 2007. However, to demonstrate just how spectacular that per barrel rise was, we would note that it was almost exactly double the per barrel price increase experienced during 2005. However, when we examine the history of crude oil prices so far during this decade, we find that last year's percentage increase of 57.2% was actually exceeded by the percentage increase experienced during 2002 (57.3%). Of course the dollar per barrel increase last year ($34.93) was about three times the dollar increase of 2002 ($11.36).

Exhibit 8. Oil Prices Rose Steadily Throughout 2007

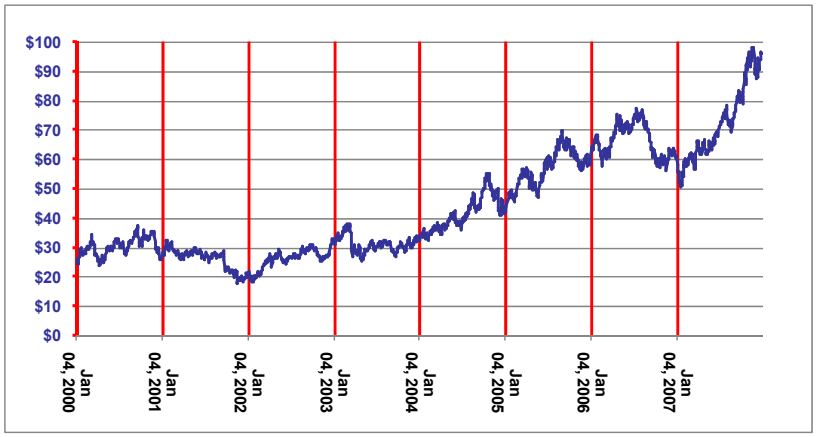


Source: EIA, PPHB

The direction of crude oil prices this year is being hotly debated given the question marks about the health of the U.S. economy and its impact on the global economic outlook

The burning question for investors and traders is where are oil prices headed in 2008? We have seen them climb a net of just under $2 per barrel so far in the first three trading days of the new year. From the close of 2007 to last week's intraday high, crude oil futures prices gained slightly over $4 per barrel. The direction of crude oil prices this year is being hotly debated given the question marks about the health of the U.S. economy and its impact on the global economic outlook. In addition, there is the unanswered question of when the high oil prices of recent years will begin to take a toll on oil demand growth. We also have a question about the impact of the weak U.S. dollar on the price of oil. Lastly, we have a very cloudy picture of the sustainability of existing global oil production and where new production may be coming from along with just how much there will be. Of course there always are the geopolitical influences on global oil prices.

Exhibit 9. Oil Price Record Over This Decade



Source: EIA, PPHB

In order to attempt to fathom where oil prices might be headed in 2008, we began looking at price actions of the past. First, we looked

What happened after the last time we experienced a 57% increase in crude oil prices a year? It was followed by a 4.2% gain

at what happened after the last time we experienced a 57% increase in a year. The 2002 increase was followed by a 4.2% increase in 2003. We then noticed that in 2004 and 2005, crude oil prices rose by $10.93 and $17.59 per barrel, respectively. On a percentage basis, those two yearly increases were 33.6% and 40.5% respectively. However, in 2006, crude oil prices didn't budge, gaining only a penny a barrel, which doesn't even register on a percentage basis. After examining the annual pattern of crude oil price movements so far this decade, there doesn't seem to be much to draw from to forecast 2008's possible price change.

Exhibit 10. 2007 Price Rise Not Tops This Decade

Date	Closing Price	Yr-to-Yr Change	Percent Change
Dec. 31, 2007	$95.98	$34.93	57.2%
Dec. 29, 2006	$61.05	$0.01	0.0%
Dec. 30, 2005	$61.04	$17.59	40.5%
Dec. 30, 2004	$43.45	$10.93	33.6%
Dec. 31, 2003	$32.52	$1.32	4.2%
Dec. 31, 2002	$31.20	$11.36	57.3%
Dec. 31, 2001	$19.84	-$6.96	-26.0%
Dec. 29, 2000	$26.80	$1.20	4.7%
Dec. 30, 1999	$25.60	$25.60	

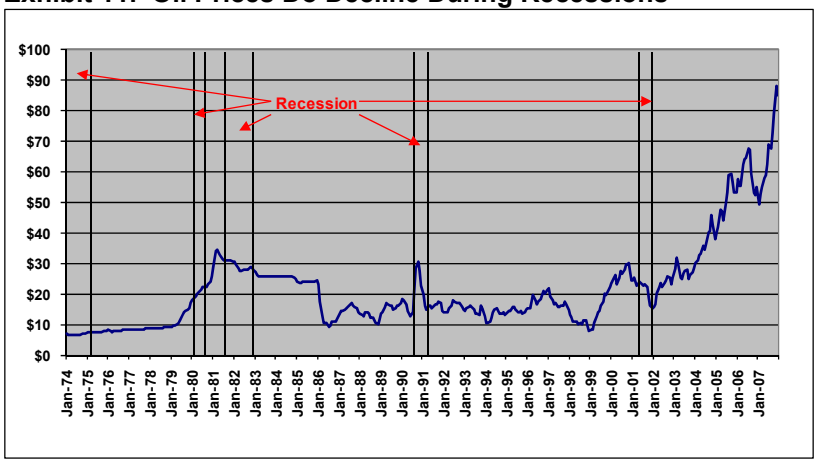
Source: EIA, PPHB

One of the strategists claimed that crude oil prices would fall sharply this year because every time in the past four recessions, crude oil prices fell

We next were drawn to a discussion amongst some commodity traders and investment strategists focusing on the possibility that the United States would enter a recession during 2008, if we are not already in one. One of the strategists claimed that crude oil prices would fall sharply this year because every time in the past four recessions, crude oil prices fell. When challenged about the fact that crude oil prices were trading up in the first few days of 2008, he reminded the others that oil prices often would rise in the early days of a recession, but they would then collapse – his word not mine. We thought these were interesting observations so we decided to examine the evidence. The problem in doing the analysis is that we do not have either futures prices or even spot oil prices back far enough to cover the last five recessions. What we did have to use in the analysis was the monthly average first wellhead sale price of domestic crude oil. We charted that data and superimposed on the chart the official recession periods as determined by the National Bureau of Economic Research (NBER). What we found was that the claim about the oil price pattern was largely correct, but not totally.

Exhibit 11 shows the monthly average crude oil price from the start of 1974 to the end of 2007. The first recession began in 1973 and ended in early 1975. While the graph shows a flat oil price, we believe the price may have dropped slightly from the start to the end of the recession. However, in 1980, crude oil prices rose steadily throughout the recession. But prices did demonstrate the pattern the strategist talked about in the 1981-82 recession, and even more

Exhibit 11. Oil Prices Do Decline During Recessions



Source: EIA, NBER, PPHB

The investment strategist's view about the pattern of oil prices in recessionary periods appears true – they almost always fall

dramatically in the 1990-91 recession. Then crude oil prices rose sharply through the early part of the recession and then collapsed in the second half. During the 2001 recession, crude oil prices fell throughout the period. So on balance, given Wall Street's tendency to fudge the analysis, the investment strategist's view about the pattern of oil prices in recessionary periods appears true – they almost always fall. They also appear to still be rising during the first part of the recession.

If the issue is whether the U.S. is in a recession, we need much more economic data to make that assessment. Last Friday's employment report, showing only 18,000 new jobs created when Wall Street was expecting 40,000 more, and the unemployment rate jumping to 5.0% from 4.7%, suggests serious economic weakness. Additionally, the Institute of Supply Management's (ISM) index showing whether the economy is expanding or contracting was another total surprise on the downside to Wall Street when it showed a sharp decline below 50, the measure of a stable economy. With the current economic data suggesting a likely recession in early 2008, it takes the NBER significant time to make that call.

Most oil price forecasts call for declines that will take oil prices into the $60-$70 range, but they averaged $72.34 for 2007

Besides the delay in knowing whether we are in a recession or not, even knowing it doesn't help project how far the oil price could fall. We have seen all sorts of decline estimates ranging from essentially none to $50 a barrel. Most oil price forecasts call for declines that take oil prices into the $60-$70 range, but in reality this is almost no decline since the price averaged $72.34 for 2007.

We thought the best explanations for why crude oil prices are likely to fall were Phil Flynn at Alaron Trading and the people at Stratfor Strategic Forecasting, Inc. Mr. Flynn talks about weakening oil demand with a recession, growing oil supplies and the shrinking of the geopolitical risk premium since we are winning in Iraq. Stratfor comes at the question from the point of a diminishing geopolitical risk premium, also. As Stratfor put it: the Nigerian oil production

disruptions in 2006 and 2007 were all about determining who would become the next president and thus gain control over the oil. They believe that since the election is over, no one has a vested interest in seriously disrupting output. Stratfor also believes that Venezuela's Hugo Chavez can hardly produce any surprise in today's oil market that wouldn't risk his control over the country. With al Qaeda leadership essentially trapped in the Afghanistan-Pakistan border area, the group has little power to inflict violence outside of the Middle East region. Stratfor also thinks that the Iraqi situation is improving such that we can expect to see more investment in its oil producing infrastructure that will lead to greater oil production down the road. So far Iraq is already exporting more oil than at any time since immediately before the overthrow of Saddam Hussein.

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In Stratfor's view, the calming of the geopolitical environment "suggests that not only is the Jan.2 price point about to become viewed as aberrantly high, but that we could soon experience price drops that have not been seen since the days immediately after the Sept. 11, 2001, attacks." To remind you, the spot oil price on Sept. 11, 2001, was $27.65. A month later is was at $23.49; three months later it was at $18.04 and fully six months later it was only back to $24.36. Over the three month period following Sept. 11, spot oil prices fell by 35%. If that were to happen today, it would suggest a $65 per barrel oil price.

In Stratfor's view, "…the Jan.2 price point about to become viewed as aberrantly high, but that we could soon experience price drops that have not been seen since the days immediately after the Sept. 11, 2001, attacks"

Rest assured that if we had this magnitude of an oil price drop, even over a longer time period than three months, energy equities and confidence about the outlook for the energy industry would be shaken substantially. Of course this price decline would do wonders for the U.S. economy, inflation and interest rates and reinvigorate the overall stock market. This isn't a forecast, but it certainly should be considered as a possible scenario.

Empty LNG Carrier Could Signal NA Drilling Rebound

At the end of December a liquefied natural gas (LNG) tanker left a Norwegian LNG gas plant without its cargo. The empty-ship departure was reported by *BarentsObserver.com*, which is owned by a consortium of StatoilHydro ASA (STO-OSLO), ConocoPhillips (COP-NYSE), Norwegian consultancy Ramboll Storvik AS and the Norwegian Barents Secretariat. Its purpose is to report on oil and gas activities in the region including those of the Snohvit gas field. The LNG ship, the *Arctic Discoverer,* departed the Melkoya gas plant on the Barents Sea empty due to operational problems at the plant.

At the end of December a liquefied natural gas (LNG) tanker left a Norwegian LNG gas plant without its cargo

The Snohvit gas field, primarily owned by StatoilHydro, delivered its first LNG cargo to the Montoir LNG import terminal in France in November according to *Platts*. The field had started production in September, but two weeks after its first cargo was delivered, the plant was shut down due to a "leakage in a pipe in the cooling water

system" according to the *BarentsObserver.com*. The Snohvit LNG project is expected to deliver 4.1 million tons of LNG per year. Since StatoilHydro holds a third of the capacity of the one-billion-cubic-foot per day U.S. Cove Point LNG import terminal in Maryland owned by Dominion Resources, Inc. (D-NYSE), one can assume that some Snohvit LNG would find its way to this facility. There has been no report as to when this plant will be ready to produce.

If these LNG plant technical difficulties take longer than normal to rectify, available LNG supplies relative to expectations could fall short

We would likely see a sharp rise in North American natural gas prices that could stimulate a rebound in gas-directed drilling

While technical delays are expected with project start-ups, there is growing evidence that more LNG projects are experiencing problems than normal. That is in addition to delays in new liquefaction plants that are under construction. If these LNG plant technical difficulties take longer than normal to rectify, available LNG supplies relative to expectations could fall short. That condition would most likely impact the LNG supply/demand balance in the Atlantic Basin and most probably gas supply for the U.S. market. However, the U.S. still remains the global LNG swing storage provider so its supply role will probably be less impacted than some LNG experts anticipate, but should gas demand in Europe pick up, those countries might be willing to bid up LNG prices to attract supplies away from the U.S. market. If that happens, we would likely see a sharp rise in North American natural gas prices that could stimulate a rebound in gas-directed drilling and accelerate the timing of the anticipated recovery of the North American drilling industry. This LNG plant start-up trend bears close scrutiny for its impact on the North American oilfield service industry outlook.

Is Rail A Low-cost Mobility Answer To High Gas Prices?

During the 20th Century, following the commitment of the Eisenhower Administration to building a national interstate highway system, the automobile became the preferred way to travel, while trucks gained a greater share of the business of moving goods

As retail gasoline prices climb over $3 per gallon nationally due to escalating oil prices, consumers are beginning to consider alternative travel options. In the history of this country's growth, the development of the transcontinental railroad network played a pivotal role. The railroads connected our two coasts and provided a low-cost way to transport both people and goods that were necessary for the economic development of the Midwest and Far West regions of the country in the 1800s. During the 20th Century, following the commitment of the Eisenhower Administration to building a national interstate highway system, the automobile became the preferred way to travel, while trucks gained a greater share of the business of moving goods . For long distance travel, the growth of the airlines proved critical, but its importance really took off when low-cost, no-frills airlines emerged. As a result of these transportation alternatives, the nation's passenger railway system fell out of favor and largely was allowed to rust away.

Today, a new set of economic and social drivers have combined to re-invigorate the railroads. Highways chocked full of vehicles, creating gridlock and increased air pollution, were the original stimulants for a re-examination of the viability of passenger railroads. There was a clear recognition of the need to step up

railroad infrastructure investment if this alternate transportation was to become viable. By making this commitment a number of years ago, the Northeast rail corridor was revitalized first with improved express train service then with the Metroliner passenger service and finally with the Acela high-speed train service. As transit times between the major Northeast center cities were reduced, railroads began to challenge the prior mass transit options of buses and airline shuttle services. The gridlock had already begun to choke off the option of the automobile.

Last fiscal year, Amtrak, the national railway passenger service, carried 25.8 million passengers, up over 6% from the prior year

Now, besides highway gridlock and air pollution concerns, fears about the impact automobile emissions is having on global warming coupled with accelerating retail gasoline prices are further pressuring citizens to abandon their vehicles when commuting or traveling. Last fiscal year, Amtrak, the national railway passenger service, carried 25.8 million passengers, up over 6% from the prior year. Ticket revenues were up 11%. In the Northeast Corridor and other popular corridors around the country, trains are increasingly sold out.

With soaring oil prices, he believes demand could add millions of passengers to the existing Amtrak load

However, as Rick Harnish of the Midwest High Speed Rail Association points out, there is no way of knowing what true passenger rail demand would be if more routes were opened and all routes offered increased frequency such as three or four trains per day. With soaring oil prices, he believes demand could add millions of passengers to the existing Amtrak load. As he put it, “For 50 years we assumed we could do everything by car. It’s now painfully clear that’s not true.”

There is a lack of funds for new railroad equipment

The problem now for Amtrak is that if demand continues to rise, as seems likely, it will lack sufficient cars and backup equipment by the 2010-2012 timeframe. Given the multiyear lead times for equipment design and manufacture, the procurement process needs to be starting now. However, there is a lack of funds for new railroad equipment. At the end of December, there were two bills pending in the Senate – one a $1.9 billion-a-year railroad subsidy and a separate Senate Finance Committee proposal for $900 million a year to enable states to issue tax-free bonds to finance new intercity passenger rail infrastructure.

The “Hiawatha Service” in the Chicago-Milwaukee corridor that has boosted ridership 48% to 588,000 in the last five years with a 90% on-time performance

Wisconsin Transportation Secretary Frank Busalacchi heads the “States for Passenger Rail Coalition,” an organization of 30 states transportation departments pushing for an 80-20 federal-state funding split to stimulate rail expansion. Sec. Busalacchi points out 14 states already provide support for Amtrak corridor services. These services are the ones responsible for virtually all of Amtrak’s recent ridership gains. He boasts about the “Hiawatha Service” in the Chicago-Milwaukee corridor that has boosted ridership 48% to 588,000 in the last five years with a 90% on-time performance. Other successes he points to include Pennsylvania’s 50-50 cost split with Amtrak to electrify and rehabilitate the Philadelphia-Harrisburg corridor to enable it to offer 110-mile-per-hour service. Caltrans, the California state transportation department, now is carrying 4 million

riders yearly on its three combined corridors that benefited from a $2 billion bond issue in 1990.

Soaring crude oil and corn prices to make the mandated ethanol fuel will make auto transportation much more expensive in the future

As environmentalists increasingly make automobiles and airplanes the target of their efforts to restrict carbon emissions, railroads may become a preferred alternative. Soaring crude oil and corn prices to make the mandated ethanol fuel will make auto transportation much more expensive in the future. It seems that this is one time when a strategic direction needs to be established and long-range planning to eliminate bottlenecks is needed. It is possible that one day in the not-too-distant future, riding the rails will be more the rule than the exception.

CFL Bulbs Drawing Greater Ire As Reality Sets In

The newly mandated energy efficiency standards for light bulbs have effectively dealt a death sentence for incandescent bulbs

In our last Musings, we covered some of the changes to the nation's energy consumption patterns that will result from the enactment of the provisions of the recently enacted energy legislation. One of those changes will be in the types of light bulbs we use in the future. While the U.S. did not directly outlaw the mainstream incandescent light bulb, the newly mandated energy efficiency standards for light bulbs have effectively dealt a death sentence for them. As one of the authors of the legislation, Sen. Jeff Bingaman (D-N.M.), put it, by 2014 incandescent light bulbs "will be virtually obsolete."

Based on the legislated standard, only compact fluorescent light (CFL) bulbs, or possibly light emitting diode (LED) bulbs, will meet these standards

The new law specified that general service incandescent lamps – defined as the standard incandescent or halogen type lamp – must meet new energy efficiency standards. These standards are a measure of the light output, or lumens, per watt. Based on the legislated standard, only compact fluorescent light (CFL) bulbs, or possibly light emitting diode (LED) bulbs, will meet these standards. Under the schedule of the future standards, by 2012, 100-watt light bulbs will be phased out to be followed by 75-watt bulbs in 2013 and 60-watt and 40-watt bulbs in 2014. At the present time, LEDs are not capable of producing acceptable light output at a low cost.

Almost all the reports we have read have been negative – not because the authors are against CFL bulbs, but because of the heavy-handed manner in which the ban is being imposed

Since that Musings we have heard from a number of readers about the CFL bulb mandate, along with reading a number of articles in the media written in reaction to the legislation. Almost all the reports we have read have been negative – not because the authors are against CFL bulbs, but because of the heavy-handed manner in which the ban is being imposed. As the authors put it, if these bulbs are so superior, how come it requires a government mandate to get consumers to switch? At the present time, according to one source, CFL bulbs account for about 5% of all the bulbs sold in this country. Another source, however, claims that in 2006, there were 1.7 billion light bulbs sold in the United States and 1.5 billion were incandescent bulbs. If correct, that implies that the CFL bulb market share is up to nearly 12%. Given the huge marketing push behind the CFL bulbs by nationwide retailers such as Wal-Mart, Target, Home Depot and Lowe's it would not be surprising if their market share has climbed from 5% to 12 % as suggested by our sources.

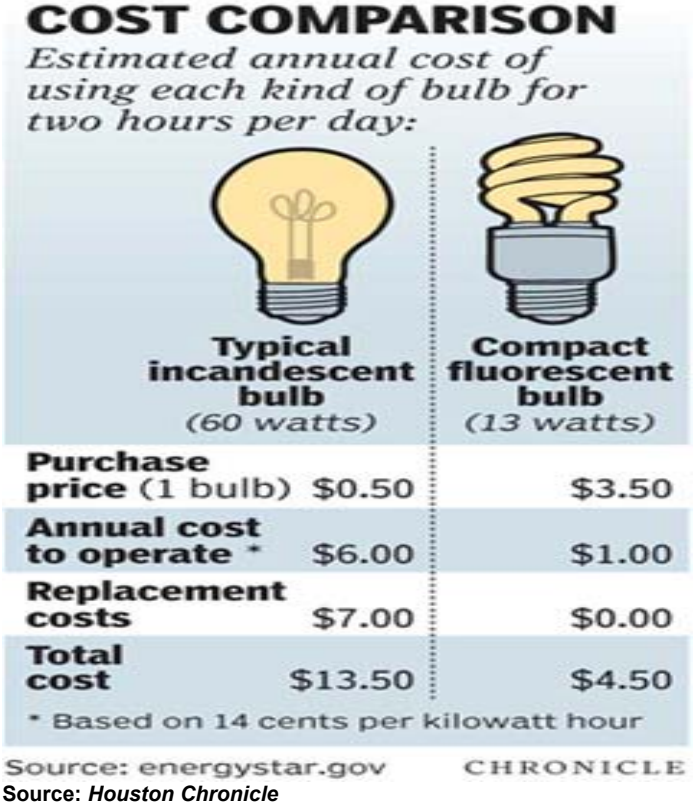
The CFL bulb proposition is that by buying them, even though they are significantly more expensive than incandescent bulbs, their longer operating life and lower power consumption will translate into electric power savings worth a multiple of the initial bulb cost over its life

Of course many people are beginning to wonder whether this is such a good thing. The primary argument behind the use of CFL bulbs is that they are significantly more energy efficient and when they populate all the nation's light fixtures, the country's electric power consumption will drop, resulting in less need to build new power plants, which means less hydrocarbon fuel will be consumed and fewer carbon emissions will be released, helping ease the global warming threat. For the consumer, the CFL bulb proposition is that by buying them, even though they are significantly more expensive than incandescent bulbs, their longer operating life and lower power consumption will translate into electric power savings worth a multiple of the initial bulb cost over its life. It is this proposition that many individuals are questioning.

Consumers are not experiencing the long operating lives touted by CFL bulb sponsors

We have received emails and phone calls from people who wanted to share their experience with CLF bulbs. In the September 18, 2007, Musings From The Oil Patch, we reported on our own experience, which essentially matched that of the readers who contacted us. The bottom line is that consumers are not experiencing the long operating lives touted by CFL bulb sponsors. Additionally, there are a number of applications where CFL bulbs will not work, for example with dimmer, timer and photo-controlled lights. In addition, there are a number of bulb shapes that do not yet have comparable CFL bulb alternatives.

Exhibit 12. CFL Bulbs Cost More But Payoff Later



Source: ***Houston Chronicle***

To some degree we believe the economic claims are arrived at in the same way automobile fuel efficiency ratings are developed – in an ideal environment, and not the real world

As several of our readers suggested, the supposed economic benefits of switching from incandescent bulbs to CFL bulbs don't appear to be as great as the sponsors suggest, and our own experience concurs. To some degree we believe the economic claims are arrived at in the same way automobile fuel efficiency ratings are developed – in an ideal environment, and not the real world. All of these problems ignore the issue of light quality and the inconvenience of the CLF bulb start-up time, both of which are being improved. At the end of the day, the real world experience with CFL bulbs is likely to generate a backlash from consumers as they realize the future world they are being thrust into.

As we read the text we were dumbfounded by the language and the regulatory thrust

As part of our research for this article, we went and read the text of the Energy Independence and Security Act of 2007 as the legislation is called. We focused on the information in Title III – Energy Savings Through Improved Standards For Appliance and Lighting that details the new rules for light bulbs. As we read the text we were dumbfounded by the language and the regulatory thrust. In fact, this section reminded us of the language of energy legislation enacted in the 1973-1975 time period to deal with our then energy crisis. As we found out during the later 1970s, the micro-management of the energy business created greater economic problems, market distortions and led to criminal activity on the part of a number of citizens.

As we found out later, our government's knee-jerk reaction to these events proved much more damaging in the long-term to our economy than had we allowed the market and consumers to work out acceptable solutions

It is quite possible that many of our Musings readers are not familiar with the details of that energy crisis and our government's response. In response to the political demands for action to deal with our escalating energy costs, we created an "energy czar" who headed a new government department whose job it was to seek quick solutions to our economic pain and turn those ideas into laws. The energy shock to our economy was being caused partly by the inflation coming from OPEC's decision to triple oil prices in early 1973 and to embargo oil being shipped here in response to the U.S. support for Israel. As we found out later, our government's knee-jerk reaction to these events proved much more damaging in the long-term to our economy than had we allowed the market and consumers to work out acceptable solutions.

The most famous energy czar was William E. Simon, the first head of the Federal Energy Agency that was established in late 1973 to deal with the energy turmoil besieging the U.S. economy. Mr. Simon was also the primary author of the mandatory oil import program that was put in place early in 1973 to deal with our growing supply problems brought on by the peaking in domestic oil production. He was also the father of most of the nation's energy regulations that altered fundamentally the workings of the oil industry and how consumers related to the industry. Some of his more famous, or infamous, rules included restricting consumers to alternate day of the week gasoline purchases, at times based on whether one's vehicle had an odd or even license plate. At other times, gasoline purchases were banned, such as on Sundays. All petroleum products were price controlled – from retail gasoline to what

refineries could pay for crude oil. Oil producers had to price their oil based on when it was first discovered which led to the terminology of "old" oil, "new" oil and "new-new." Old oil was already producing oil that was priced at historically low levels. Because the cost to find new oil had gone up, newly discovered oil was allowed a higher price. But for oil companies that worked over existing producing wells to boost their output, that oil was priced at an in-between price. Imported oil could be purchased at world market prices that were often well in excess of domestically controlled oil prices.

We were subjected to a nationwide speed limit that was lowered to no more than 55 miles per hour on highways

Besides the reworking of the retail gasoline transaction, we were subjected to a nationwide speed limit that was lowered to no more than 55 miles per hour on highways. Consumers also had to deal with an extended mandatory daylight savings time, much as we are saddled with now. All of these rules contributed to massive distortions of the domestic energy market, which further contributed to the nation's economic problems.

At the end of this theater of the absurd, Mr. Simon acknowledged there was nothing that could be done to turn the lights on and off

As an aside, in 1973 we worked for a financial institution in Hartford, Connecticut when Mr. Simon held one of his energy hearings on how to deal with the energy crisis. During the hearing, someone raised the question of gas street lights that burned all day. In what was one of the more comic scenes we have ever witnessed in government, Mr. Simon demanded that someone from the local gas utility be summoned to the hearing. Mr. Simon's aides scurried around and phone calls were made. Some thirty minutes later a hassled utility executive raced into the hearing room at the state capitol and was thrust into a chair before Mr. Simon and the other officials attending the meeting. Under tough questioning from Mr. Simon, a former government bond trader for Wall Street firm Salomon Brothers, the executive had to explain that these natural gas-powered street lights were connected directly to pipelines buried under the streets and that there were no individual shut-off valves. At the end of this theater of the absurd, Mr. Simon acknowledged there was nothing that could be done to turn the lights on and off, so the issue of possible new rules mandating on/off switches to control gas street lights was taken back to Washington for further consideration. We can't remember what, if anything came of this episode.

Buried in the 2007 energy legislation is a list of bulbs that are exempt from the CFL mandate

Buried in the 2007 energy legislation is a list of bulbs that are exempt from the CFL mandate. These include the following incandescent bulbs: appliance lamps; black light lamps; bug lamps; colored lamps; infrared lamps; left-hand thread lamps; marine lamps; marine signal service lamps; mine service lamps; plant light lamps; reflector lamps; rough service lamps; shatter-resistant lamps; sign service lamps; silver bowl lamps; showcase lamps; 3-way incandescent lamps; traffic signal lamps; vibration service lamps; and variously shaped bulbs with specific low wattage ratings. Clearly these bulbs do not account for major bulb consumption, but here's where things get into the extreme micro-management philosophy of the legislation.

The Energy Secretary must "construct a model for each type of lamp based on coincident economic indicators that closely match the historical annual growth rate of the type of lamp to provide a neutral comparison benchmark to model future sales after calendar 2006"

For five of the above exempted bulbs – rough service, vibration service, 3-way incandescent, 2,601-3,300 lumen general service incandescent and shatter-resistant lamps - the Energy Secretary is required to gather unit sales volume for each of the calendar years 1990 through 2006 to determine their historical growth rate. Then he is required to "construct a model for each type of lamp based on coincident economic indicators that closely match the historical annual growth rate of the type of lamp to provide a neutral comparison benchmark to model future sales after calendar 2006." Then for the years 2010 through 2025, the Energy Secretary has to collect unit sales data for each of the five bulb types and compare the actual sales to the sales predicted by the model. If it is determined that the market share of these bulbs might be eroding the market share of general service bulbs, which assumed to be if there is a 100% difference in the actual and forecast sales figures, then the Energy Secretary must accelerate a rulemaking effort to establish an energy efficiency standard for that particular bulb.

What this means that if any of our readers are thinking they can get around the CFL bulb requirement by substituting non-regulated incandescent bulbs, if too many do it, those popular substitutes will be hit with CFL-type standards. Talk about micro-managing a market! Not only will we have to live with this government involvement in the light bulb market, but we may also be faced with requirements in the future to have to replace some of our decorative lighting fixtures such as coach lights, chandeliers and timing- and light intensity-controlled switches.

The Great Light Bulb Exchange experiment conducted in 1987 in Traer, Iowa, resulted in an eight percent increase in power consumption the next year

If we had to bet, we would wager that sometime in the future – probably before 2012 – certain aspects of this legislation will be redone. The law of unintended consequences will rule! In the meantime, prepare yourself for the frustration of being forced to buy light bulbs you may not want. At the same time, you may want to keep in mind the outcome from the Great Light Bulb Exchange experiment conducted in 1987. In February of that year, about half the citizens of Traer, Iowa traded their incandescent light bulbs for CFL bulbs supplied by North American Philips Lighting Company under a program created by the Traer Municipal Utility, the Iowa Public Utilities Commission and Philips. In May, they began monitoring the utility bills of the town to determine the energy savings these CFL bulbs would generate over the next year. Unfortunately, the experiment produced an 8% increase in power consumption. As citizens believed they were saving money due to the more energy-efficient CFL bulbs, they left the lights on longer. The results of this experiment are certainly not what the sponsors were anticipating. We suspect that the sponsors of the new energy legislation are not expecting a repeat of the 1987 results, but it is a real possibility given the instructions that CFL bulbs should not be turned on and off repeatedly for short times as that shortens the bulb's life. So will consumers act to save the life of their more expensive light bulbs at the cost of using more power?

Correction

We apologize for misspelling Shel Erikson's name in our last Musings From The Oil Patch, but our sentiments about his managerial talent are unchanged.

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