
MUSINGS FROM THE OIL PATCH

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Allen Brooks
Managing Director

Note: *Musings from the Oil Patch* reflects an eclectic collection of stories and analyses dealing with issues and developments within the energy industry that I feel have potentially significant implications for executives operating and planning for the future. The newsletter is published every two weeks, but periodically events and travel may alter that schedule. As always, I welcome your comments and observations. Allen Brooks

Oil Industry Restructuring Beginning – What’s The Outcome?

From the peak to the recent trough, Brent has fallen by 61%, while WTI dropped 59%

Global crude oil prices peaked in mid-June and began drifting lower slowly but didn't drop below \$100 a barrel until early/mid-August. From there, the pace of the decline began to pick up as the \$80's were reached in early/mid-October and the \$70's in early/mid-November. On that fateful Thanksgiving Day (a turkey of a day for oil industry participants) when Saudi Arabia officially nixed the idea of cutting its production in order to support oil prices for the rest of its fellow OPEC members and other significant oil exporters, West Texas Intermediate (WTI), America's benchmark crude oil price, sat at \$73.70. Internationally, the price quoted for European Brent crude oil was \$77.39 a barrel. In approximately 45 days, the Brent spot oil price shed slightly over \$32, reaching a low on January 13, 2015, of \$45.13 a barrel. In the case of WTI, it took nearly 60 days for the price to lose slightly more than \$28 a barrel, hitting its low of \$44.08 a barrel on January 28, 2015. From the peak to the recent trough, Brent has fallen by 61%, while WTI dropped 59%. Since then, the oil market has rebounded somewhat in response to slightly improved economic data for the United States, the Eurozone and Japan. China's economic results have been much more muted leaving analysts guessing how much oil it may need to import. The net result of the oil price rebound is that from the peak in mid-June to the end of February, the declines are 54% for WTI and 46% for Brent.

Once storage tanks are full, oil prices will need to drop again in order to entice buyers

The recent oil price lows were set in an environment of extreme uncertainty. Would they mark absolute lows for this cycle or merely delineate temporary lows before falling further in the spring as the absence of demand coupled with unrelenting increases in supply are rapidly filling available storage facilities. Once storage tanks are full, oil prices will need to drop again in order to entice buyers, primarily refinery operators but also speculators, to step up purchases.

Managements were optimistic the downturn would have a “V” shape, similar to what was experienced during the 2008-2009 downturn and subsequent recovery

Instead of watching falling oil prices, oil and gas exploration and production and oilfield service company managements were aggressively cutting their capital spending plans and announcing employee layoffs. These actions were taken in an attempt to right-size the business for its anticipated level of activity. Managements were optimistic the downturn would have a “V” shape, similar to what was experienced during the 2008-2009 downturn and subsequent recovery. As time has gone on, however, that view is being dismissed as the forces behind this downturn appear to be more long-lasting and thus require additional time to correct. The duration of time required remains an elusive guesstimate.

Much like a slow-motion train wreck, companies prepared their capital budgets using assumptions of what the oil price would average in 2015 knowing that their estimates were slowly sinking

Initially, a number of managements accepted that the downturn would be more severe than the one experienced in 2008-2009 and began preparing for an extended period of low oil prices, even though they had no idea of exactly how low prices would go or how long they would remain low. As a result, when managements began cutting spending and employees, most did so with meat-cleavers rather than scalpels. Two surveys conducted by prominent Wall Street investment banks suggested that exploration and production capital spending this year would decline significantly. The surveys were conducted by Cowen and Company and Barclays and were prepared late last fall just as the oil price collapse was becoming evident. Much like a slow-motion train wreck, companies prepared their capital budgets using assumptions of what the oil price would average in 2015 knowing that their estimates were slowly sinking. Recognizing that their oil price assumptions were just that, assumptions, they prepared budgets utilizing different, and in most cases, significantly lower oil prices. As a result, when the investment banks’ surveys were announced, many observers thought they were unrealistic. However, they began focusing on the alternative spending reductions based on lower oil prices; the reality of how difficult 2015 would be for the industry became clearer.

Cowen reported that at a \$60-a-barrel average price, spending would drop by 30-35%, or roughly twice its initial estimate

Cowen’s study forecast that global E&P capital spending would decline 17% in 2015 to \$571 billion. But that projection was based on oil prices averaging \$70 a barrel. Cowen reported that at a \$60-a-barrel average price, spending would drop by 30-35%, or roughly twice its initial estimate. Surprisingly, the Barclays survey wound up at about the same spending cut assuming a \$50 a barrel average oil price for 2015 although the survey’s initial projection called for a reduction of about half the Cowen forecast at \$70-a-barrel oil pricing.

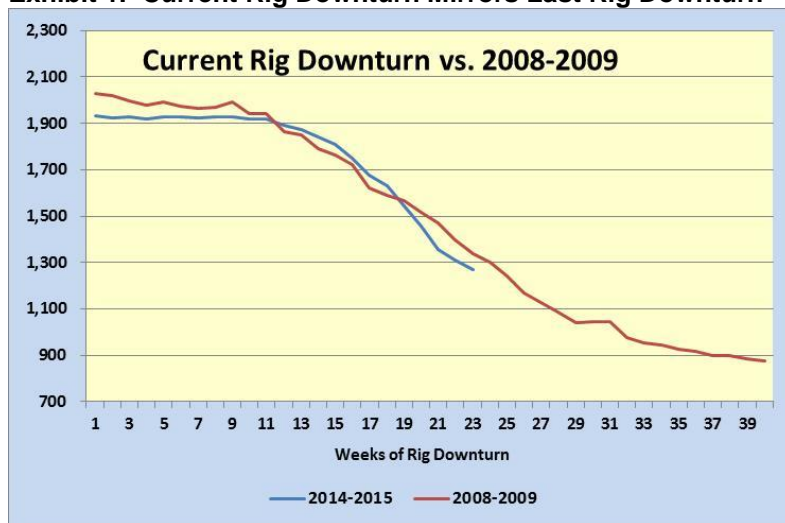
During the crisis of 2008-2009, the active rig count fell by 1,155 rigs from peak to trough, a period that extended for 39 weeks

With industry spending cuts of 30-35%, activity was destined to collapse, and it has. The drilling rig count, as reported weekly by Baker Hughes (BHI-NYSE), has dropped by 664 rigs from its recent peak established the week ending September 26, 2014, to the week ending February 27, 2015, shrinking the active rig count by over one-third. Surprisingly, during the crisis of 2008-2009, the active rig count fell by 1,155 rigs from peak to trough, a period that extended for 39 weeks. If we assume the current rig correction will match the

Key questions are whether this downturn needs to last as long as the prior one did, and if the rig count needs to fall to the same level as in 2009

earlier one, the industry still needs to lay down another 500 active rigs. We would like to make two points about this comparison. First, the 2008 peak had exactly 100 more active rigs than last fall's peak. Second, the current downturn from its peak has lasted 22 weeks. At the same point in the 2008 correction, only 28 more rigs had been shut down than now. So has this rig downturn been worse than 2008? It would seem to be the case until one recognizes that the prior downturn started with many more rigs and still had more active rigs at the same point where we are now in this downturn. Key questions are whether this downturn needs to last as long as the prior one did, and if the rig count needs to fall to the same level as in 2009. If it needs to last as long as 2008-2009, then the drilling industry needs to endure another four months of falling rigs. If we have to cut another 500 rigs, at the recent weekly pace of 40+ rigs per week, we are looking at only another three months. As shown in Exhibit 1, the shape and pace of the rig downturns have been very similar. If this downturn continues to follow the earlier one, then we likely have 7-8 weeks of weekly rig count declines as experienced in the past two weeks before the rate of decline slows and we reach 39 weeks of downturn duration. The good news from this analysis is that we may be nearing a bottom in the rig decline. The bad news is we don't know when or how fast the rig count might rebound.

Exhibit 1. Current Rig Downturn Mirrors Last Rig Downturn



Source: Baker Hughes, PPHB

While the rig count is one indicator of current oil and gas industry activity, it doesn't tell much about underlying changes that may be going on in the business

While the rig count is one indicator of current oil and gas industry activity, it doesn't tell much about underlying changes that may be going on in the business. Those changes only become apparent when we look back at measures of activity or results. We sense the events we are observing and the comments we are hearing mean that structural changes in the global oil and gas industry are underway. We have been ruminating about some of these observations and their potential significance. One such

The article was titled, The Beginning of the End of the Fossil Fuel Revolution (From Golden Goose to Cooked Goose)

Mr. Grantham’s analysis of the past and his outlook for the future is based on a study of the relationship between U.S. average hourly manufacturing earnings and the price of a barrel of oil from the end of the Great Depression until now

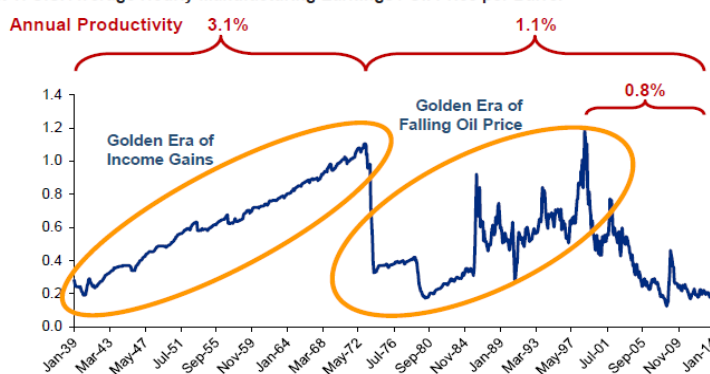
observation is the analysis of the history of the oil industry and its interpretation for the future suggested by iconic Boston-based money manager Jeremy Grantham of GMO.

In his firm’s 2014 third quarter investor newsletter, Mr. Grantham commented on the role of energy, and especially that of coal and oil, in our economic history and our future. The article was titled, The Beginning of the End of the Fossil Fuel Revolution (From Golden Goose to Cooked Goose). Mr. Grantham is an avowed supporter of climate change research and steps to mitigate the impact. He and his wife have established a foundation to support this research. In the letter Mr. Grantham points to the need for cheaper energy sources to displace oil, which he says will be renewables. He wrote, “The only longer-term price relief and net benefit to the economy will come when either we reverse recent history and start to find more oil more cheaply, which will be like waiting for pigs to fly, or when cheaper sources of energy displace oil.”

Mr. Grantham’s analysis of the past and his outlook for the future is based on a study of the relationship between U.S. average hourly manufacturing earnings and the price of a barrel of oil from the end of the Great Depression until now. (We tried replicating his chart as shown in Exhibit 2 in an attempt to bring it current, but we failed. We came close, but our work created several unusual data points – primarily higher values in the early 1940’s and in 1998-1999, suggesting that the price data we used may have been different from that used by Mr. Grantham. Having dealt with Mr. Grantham in the past, we will accept his chart as accurate.)

Exhibit 2. Phases Of Oil Affordability And Wealth Creation

Exhibit 1: U.S. Average Hourly Manufacturing Earnings / Oil Price per Barrel



As of September 30, 2014
 Source: GMO, Global Financial Data
 % number = productivity measured as GDP per capita deflated by CPI

Source: GMO

As Mr. Grantham pointed out, in 1940 one hour’s work for an American engaged in manufacturing could buy 20% of a barrel of oil. Twenty percent of an oil barrel equals roughly eight gallons. Since one gallon of oil contains the energy equivalent of 200 to 300 man-

Mr. Grantham calls this “the greatest surge of real wealth in U.S. history.”

hours of labor, eight gallons would mean 1,600 to 2,400 man-hours of labor, a significant achievement. As shown within the circle labeled the Golden Era of Income Gains, the affordability of oil increased at a steady rate beginning in 1940 such that by the end of 1972, one hour's work controlled 1.1 barrels of oil, over a five-fold increase in about 33 years. Mr. Grantham calls this “the greatest surge of real wealth in U.S. history.”

After 1981, the price of oil declined for the next 17 years, bottoming out at \$13 a barrel in November 1998

Note that beginning in 1972, when America's oil self-sufficiency ended, OPEC's power grew, leading to the First Oil Shock (1973's Arab Oil Embargo) and eventually the Second Oil Shock (1979's Iranian Revolution), after which oil affordability fell to a new low. Between 1979 and 1999, peak oil affordability was re-established, but this time the improvement was less smooth and it was achieved during a period of falling oil prices. Another recent study pointed out that after 1981, the price of oil declined for the next 17 years, bottoming out at \$13 a barrel in November 1998. Adjusted for inflation, this was the lowest price for oil since the 1940's when its affordability began to climb. What troubles Mr. Grantham is the trend in oil affordability observed since the end of the last century. Since then, affordability has now fallen to where it was in 1940.

Since 1972, oil affordability has fallen and oil usage per person has declined, but productivity per man-hour has also declined such that the average increase for this entire period was only 1.1% a year

Another key development has been what has happened to the trend in worker productivity throughout the modern era, and how it relates to the evolution of oil affordability. As oil affordability was improving between 1939 and 1972, oil intensity per person was increasing, but productivity per man-hour increased at the rapid rate of 3.1% a year. Since 1972, oil affordability has fallen and oil usage per person has declined, but productivity per man-hour has also declined such that the average increase for this entire period was only 1.1% a year. Mr. Grantham suggests that the difference in these long-term productivity rates is extremely significant. As he points out, at a 3.1% rate of increase, \$1 will grow to \$21 in 100 years. But at 1.1%, in the same length of time, \$1 will barely grow to \$3. Also very disturbing is that since 2000, the average annual productivity increase has been 0.8% a year!

One may want to take that relationship a step further and ask whether it may help to explain why U.S. (and possibly even global) economic growth has remained so weak since the bursting of the Internet bubble in 2000

While Mr. Grantham can't definitively link these two trends, he notes that the data is compatible with the thesis that falling oil affordability has dominated our energy equation and poses a serious threat to the nation's income and wealth generation capability. One may want to take that relationship a step further and ask whether it may help to explain why U.S. (and possibly even global) economic growth has remained so weak since the bursting of the Internet bubble in 2000, despite the best efforts of our monetary and fiscal authorities to pump up growth. So does this relationship have implications for how the oil and gas industry may change?

If we are destined for oil affordability to stay at such a low level and thus condemn our economy to perpetual slow growth, it is hard to see how oil prices can rebound anytime soon. On the other hand,

The shale revolution has significantly altered the oil industry, but the more important question may be whether this change has set our energy business on a new, permanent course of unlimited supply growth, or whether we merely are enjoying some additional time to effect a transition to the next energy source to power the world

His outlook has to be terrifying for a Saudi

Another issue confronting oil and gas companies is whether they have been entrenched in the mal-investment phase of the industry's business cycle

we know that the cost of finding new oil supplies is rising, a favorite point of Mr. Grantham's. Just how much can oilfield technology limit that increase, or could it hopefully reverse it? Many people believe the shale revolution has significantly altered the oil industry, but the more important question may be whether this change has set our energy business on a new, permanent course of unlimited supply growth, or whether we merely are enjoying some additional time to effect a transition to the next energy source to power the world. This is Mr. Grantham's position. He wrote in his newsletter article, "What I'm trying to describe here is on one hand a remorseless and historically unprecedented rise in the costs of delivering oil to the marketplace, which is sapping economic strength globally, and on the other hand (and simultaneously) what will be the beginning of an accelerating transference of demand away from oil under the impact of surprising technological progress in alternative energy."

If you are a Saudi Arabian oil official, you have to be concerned by Mr. Grantham's projection for the future for the oil industry. He admits that with the addition of fracking to the equation, "the outlook for oil and energy is the most complicated puzzle I have ever come across." His outlook has to be terrifying for Saudi oil officials. "My guess is that oil prices will bounce around for most or all of the next 10 to 15 years as first one side of this tug of war moves ahead and then the other, with perhaps another 2008-type spike (or two) in the price of oil, after which prices will plateau and decline as electric vehicles take over, and one by one, oil's remaining uses are slowly replaced." If you are a newly-minted exploration and production or an oilfield service company CEO you have to be worried that Mr. Grantham's predictions are correct. But maybe your career will be over by then. But what about your pension and stock option wealth?

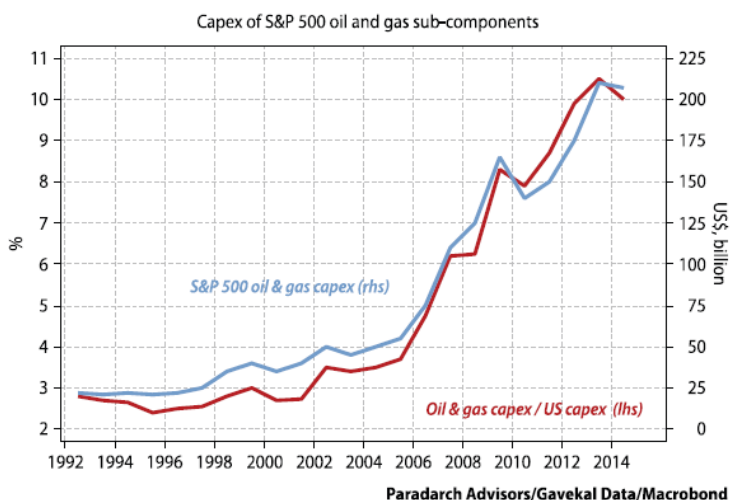
Another issue confronting oil and gas companies is whether they have been entrenched in the mal-investment phase of the industry's business cycle. This is the phase when "irrational exuberance," to borrow a term coined by former Federal Reserve Chairman Alan Greenspan, takes over and capital is literally thrown at "sure" projects that ultimately turn out to be disasters. Some interesting work on the topic of mal-investment and its potential implications for future economic activity and risks has been conducted by Louis-Vincent Gave of Gavekal Dragonomics Global Research. In a piece Mr. Gave penned late last year, he leaned on work done by Josh Ayers of Paradarch Advisors showing what has happened to capital spending by the oil and gas sub-components of the Standard & Poor's 500 Stock Index beginning in 2006. Notice from the chart in Exhibit 3 that the share of total capital spending was firmly within the 3% to 4% range during 1992-2006. Following 2006, that share began climbing as oil and gas prices took off. After reaching 8% during the 2008-2009 financial crisis and resulting recession, spending climbed further reaching 10% in 2014 as a decade of extraordinarily high oil prices convinced oil company managements that there was no end in sight to profitable investment opportunities.

Many of these companies are in distress, so maybe we are seeing the verdict on that debate

But as the chart in Exhibit 4 shows, starting in 2006, returns began declining despite the capital spending faucet being wide open. We are well aware of the debate over the financial management of a number of E&P companies who continually overspent their cash flows, but were able to tap the debt and equity markets to raise capital along with receiving injections of funds from private equity investors and even from some of the largest oil and gas companies in the world who had initially missed the shale plays. Many of these companies are in distress, so maybe we are seeing the verdict on that debate.

Exhibit 3. Oil Industry Capital Spending Hit Record In 2014

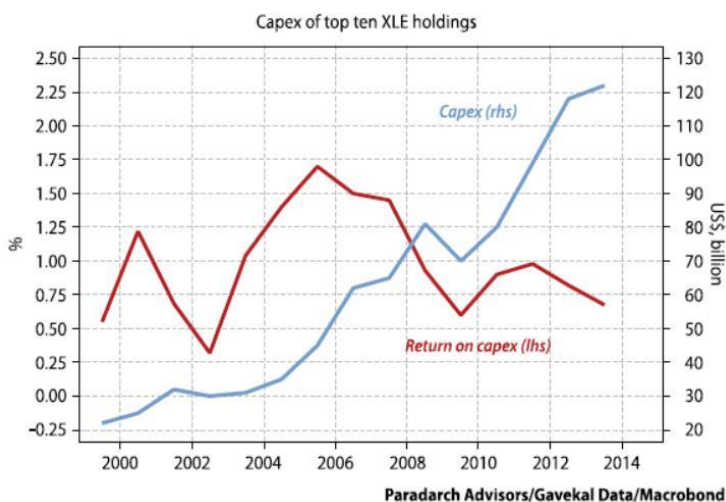
Oil and gas investment has boomed...



Source: Gavekal

Exhibit 4. Oil Industry Guilty Of Poor Capital Stewardship

...even as the returns on that investment have declined



Source: Gavekal

He was reluctant to cut his budget further but would rather focus on other “financial options” to protect the company’s balance sheet and oil and gas production ambitions

A key question Mr. Gave asks is whether we have reached “peak demand” for oil? He is not sure, but if we have, he wonders whether we are destined to have to live through years in which markets and investors need to digest the past handful of years of misallocation of capital by the oil industry. So when we read the comments by Doug Suttles, CEO of Encana Corp. (ECA-NYSE) at the time of his year-end earnings report, during which he announced a reduction in the company’s capital spending plans for 2015 to between \$2 billion and \$2.2 billion from its December 2014 projection of \$2.7 billion to \$2.9 billion, that he was reluctant to cut his budget further but would rather focus on other “financial options” to protect the company’s balance sheet and oil and gas production ambitions, we were surprised. Mr. Suttles said his reluctance to cut spending further was because his strategy depends on developing four North American unconventional resources plays and he doesn’t want to jeopardize the plan. He plans now to raise \$1 billion of new equity.

Slashing and burning is a tactic for survival but not a strategy for dealing with the failure to properly manage capital

Mr. Grantham and Mr. Gave have given us a lot to consider as we think about how the next few years will play out for the oil and gas business. We wonder whether any of these thoughts are being discussed in the boardrooms of energy companies. We suspect they are not being considered as the recent successful efforts of the major oil companies to raise billions in new debt, Canada’s Cenovus (CVO-NYSE) to sell C\$1.6 billion in new equity, and private equity funds to complete record fund-raising efforts dedicated to energy investments have many executives focused more on what it will take to get through the next few months rather than thinking about steps to enhance or protect shareholder value for the long-term. Slashing and burning is a tactic for survival but not a strategy for dealing with the failure to properly manage capital. Resolving that failure, while gutting one’s organization, will make it extremely difficult to deal with an industry future dictated by slower underlying growth.

Age Of LNG Is Rapidly Approaching – Will It Mean Anything?

Each train should produce 4.5 million tons of LNG per year (mtpa), or a total of 18 mtpa for the four trains

Two weeks ago, Cheniere Energy’s (LNG-NYSE) Sabine LNG unit filed status reports with the Federal Energy Regulatory Commission (FERC) showing that the company’s Trains 1 and 2 remain on schedule for commencing operations in February 2016 and June 2016, respectively. The company also reviewed the engineering and construction status of Trains 3 and 4, which have estimated respective completion dates of April 2017 and August 2017. Each train should produce 4.5 million tons of LNG per year (mtpa), or a total of 18 mtpa for the four trains. That output equates to roughly 2.1 million cubic feet of natural gas per day.

The Cheniere terminal is located at the mouth of the Sabine River, as shown in the picture in Exhibit 5. We would like to point out to readers that on the other side of the Sabine River are a several jackup drilling rigs, as the location is a prime spot for

We learned last week where some of the liquefied natural gas (LNG) to be shipped from the Sabine terminal will be delivered – Lithuania

servicing offshore drilling rigs and as a site for their stacking when they are not being utilized. For those who have been around the offshore drilling industry for a long-time, you may recall past photos of dozens of jackups and semisubmersible drilling rigs stacked in and along the banks of the Sabine River during the 1980s. Importantly, we learned last week where some of the liquefied natural gas (LNG) to be shipped from the Sabine terminal will be delivered – Lithuania.

Exhibit 5. Site Of Cheniere's New LNG Export Terminal

Sabine Pass LNG



Source: Cheniere Energy

LITGAS, Lithuania's LNG importer announced it had signed a non-binding agreement to purchase 0.54 billion cubic meters annually

LITGAS, Lithuania's LNG importer announced it had signed a non-binding agreement to purchase 0.54 billion cubic meters annually, or approximately 822 Mcf/d of natural gas per day, from Norway's Statoil (STO-NYSE) to be shipped from the Sabine LNG terminal. The proposed contract initially was announced last fall but was not officially signed until last week. Litgas Chief Executive Dominykas Tuckus stated, "We can begin receiving cargoes as early as 2016 to match demand." The statement would seem to fit with Sabine LNG's scheduled start-up of Trains 1 and 2 as Lithuania installed a floating LNG receiving terminal last fall at Klaipeda (see Exhibit 6).

The agreement reportedly is non-binding meaning that the buyer does not have to take all the gas volumes contracted

The details of the agreement between Litgas and Statoil have not been disclosed, but it is clear from what is known about the deal that shifting global LNG market trends probably shaped the final terms. The agreement reportedly is non-binding meaning that the buyer does not have to take all the gas volumes contracted. Exactly what minimum number of cargoes (volume of gas) Litgas has to accept is unknown, or if it has to accept any, but the Litgas terminal has also been singled out as a possible delivery point for LNG destined for the Polish gas market. The key point of the Statoil/Litgas contract is its implications about the current state of the global LNG market.

Exhibit 6. Lithuania's New Floating LNG Receiving Terminal

Source: www.lngworldnews.com

The Asian LNG market has also been hit by reduced demand due to slowing economic activity, especially in China

In our last *Musings*, we wrote about the shifting LNG market in Asia as it reflected trends about the broad economic environment of Asia and their impact on the region's energy needs. Asia is an important energy market whose demand level will impact the trajectory of global crude oil prices, and in turn LNG. In our article, we pointed out how much the price for delivered LNG in Northeast Asia had declined during the past 6-12 months. The price decline reflected both the fall in crude oil prices that affects oil-linked LNG contracts as well as the \$11 per cubic foot price for natural gas delivered as part of the new pipeline contract between Russia and China. The Asian LNG market has also been hit by reduced demand due to slowing economic activity, especially in China, and growing LNG supplies from the Middle East, Southeast Asia and Australia, along with anticipated additional supply emanating from North America.

Many of the U.S. LNG exporters are looking to the small Baltic nations (Lithuania, Latvia and Estonia) and Poland as hopes about contract opportunities in Asia fade

One of the media articles reporting on the Litgas LNG contract pointed out that many of the U.S. LNG exporters are looking to the small Baltic nations (Lithuania, Latvia and Estonia) and Poland as hopes about contract opportunities in Asia fade. The opening of European markets is a reaction to the recent struggles between several eastern European countries and their prime, or in some cases their only supplier for natural gas - Russia. Being totally dependent on Russia for natural gas has exposed these small countries, and others in Europe to a lesser degree, to high gas prices and onerous contracting terms. Attempting to reduce their dependence on Russian gas supply has been a focus of politicians in countries that border Russia for at least the last 12 months.

Although Lithuania joined the European Union and NATO in 2004, it has remained completely dependent upon Russia for its natural gas supply, a legacy of five decades of Soviet domination, which would

Exhibit 7. Baltic States Try Breaking Russia Gas Stranglehold



Source: www.bigkahuna.apollo53.com

Last year, the installation of the floating LNG import terminal gave this nation of three million people the ability to import up to four billion cubic meters of gas per year

Versus a year ago, the delivered gas price has fallen by 20.2% to the January price of \$9.25/mmBtus from \$11.59/mmBtus

Lower crude oil prices have dragged down oil-linked LNG pricing terms in Asia and Europe, even as U.S. natural gas prices remain entrenched in a trading range below \$3 Mcf

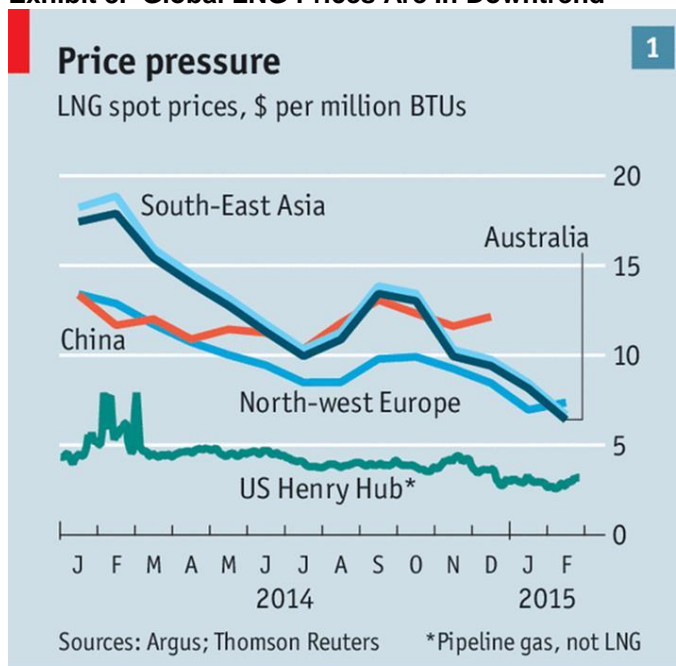
down in 1990. Last year, the installation of the floating LNG import terminal gave this nation of three million people the ability to import up to four billion cubic meters of gas per year. This exceeds the nation's purchase of 2.7 billion cubic meters from Russia in 2013. The terminal, owned by Norway's Hoegh LNG, a company that has been involved in the LNG business for 40 years, can satisfy all of Lithuania's gas needs as well as nearly 90% of the needs of its two small neighbors - Estonia and Latvia.

European natural gas prices have been falling during the past year, largely due to the drop in global oil prices. Most natural gas contracts in Europe have their delivered price tied to indices that reflect the level of and changes in crude oil prices. January's delivered gas price has declined 5.9% from December's \$9.83 per million British thermal units (Btus). Versus a year ago, the delivered gas price has fallen by 20.2% to the January price of \$9.25/mmBtus from \$11.59/mmBtus. In response to the arrival of more LNG supplies into Europe, Gazprom has reduced its price demands slightly while also improving the financing and delivery terms.

The fact that Statoil and Lithuania have been negotiating the recently announced LNG contract for 4-6 months signifies that the huge competitive advantage U.S. LNG exporters anticipated when they started filing for permits to build the new export terminals has slowly dissipated. Lower crude oil prices have dragged down oil-linked LNG pricing terms in Asia and Europe, even as U.S. natural gas prices remain entrenched in a trading range below \$3 per thousand cubic feet (Mcf). U.S. LNG exporters fully anticipate that domestic gas prices will remain below \$4/Mcf giving them a significant cost advantage when delivering LNG into the Asian and

European markets, but that was when Asian and European LNG prices were in the double digits, and in some cases the high double digits. Continued weak economic activity in these regions is further contributing to the narrowing of the gas price gap between delivered LNG prices in those markets and U.S. natural gas prices.

Exhibit 8. Global LNG Prices Are In Downtrend



Economist.com
 Source: *Economist.com*

As noted in the Statoil/Lithuania LNG deal, the contract terms are non-binding, suggesting that Lithuania will be looking for even better terms in future contracts

The arrival of additional supply, especially from the four new Australian export facilities just beginning to ship gas, is compounding the downward pressure on global LNG prices. As U.S. export terminals begin to near service, the pressure to secure markets for surplus U.S. natural gas will force shippers to seek the best deals available. As noted in the Statoil/Lithuania LNG deal, the contract terms are non-binding, suggesting that Lithuania will be looking for even better terms in future contracts. As reported, Lithuania has already signed an additional 16 non-binding agreements with companies that currently supply about half the world’s LNG. Does this suggest Europe will become a highly competitive LNG market with buyers playing one supplier against another? If so, it could mean the owners of the new North American LNG export terminals may regret their decisions to build them.

Has Oil Price Fall Insured Activists Will Target Oil Industry?

“The activist attacks come in wave after wave,” wrote *Financial Times* columnist Stephen Foley recently. His comment made it

Will the activists overwhelm the corporate defenders, or will they be repulsed?

seem like he was discussing a military campaign in which an attacking army launched wave after wave of troops against an entrenched target, much like activist fund managers attack corporate officers. Will the activists overwhelm the corporate defenders, or will they be repulsed? That is a question that often draws outsized interest from the media and investors, even if they are not as directly involved as shareholders. People love a good battle fought in the media arena and on terms investors understand – higher investment returns. And what can be better about these battles than they usually involve struggles between camps led by individuals with large egos?

Activists are professional investors who target companies that have a record of underperforming

Who are these activists and what exactly is activism? In the simplest terms, activists are professional investors who target companies that have a record of underperforming the overall stock market and, in particular, their peers. The targets are companies possessing assets and/or businesses that have meaningful value but because of either mismanagement or poor governance policies, the value of the assets/businesses is not being appropriately reflected in the value of the owner's shares.

Mr. Foley was struck by how weak its case was for activism

Mr. Foley's column was written in response to the publication of a couple of reports about the performance of hedge funds that engage in shareholder activism. According to a report issued by the Alternative Investment Management Association (AIMA), a London-based hedge fund industry group, which was based on a survey of all the academic literature about activist investing, it found (not surprisingly) that it was good for the companies who are targeted and for the stock market in general. Although the AIMA report showed that there is a lot of contradictory evidence from different markets around the world about the group's conclusions, Mr. Foley was struck by how weak its case was for activism.

According to Hedge Fund Research Institute (HFRI), the sector received a record \$14.2 billion in cash inflows last year, boosting the industry's holdings to \$120 billion

Given the recent cheerleading for activist investing and the outsized-returns posted by several high-profile activist hedge funds such as Bill Ackman's Pershing Square Capital Management and Paul Elliott's Elliott Management Corp., money has surged into this sector. According to Hedge Fund Research Institute (HFRI), the sector received a record \$14.2 billion in cash inflows last year, boosting the industry's holdings to \$120 billion. Importantly, the leverage these activist hedge funds can exercise is huge. The successful activists attract numerous copy-cat investors. In addition, pension funds and many mainstream mutual funds are now investing in these hedge funds in order to participate in the anticipated outsized returns. Moreover, many of the mutual funds will often work alongside the activists in order to help them accomplish their goals.

Last year turned out to not be a great year for activist hedge funds as they only returned 4.8%, according to the HFRI index. However, in the prior two years, this investment strategy produced returns of

They underperformed the Standard & Poor's 500 Index in five of the past seven years, he says, suggesting that activist funds are heavily influenced by the volatility of the overall stock market

16% and 21%, respectively, and handily outperformed other hedge fund strategies, which is a reason for the record cash inflows, and the stock market in general.

In analyzing the performance of these activist hedge funds, Mr. Foley has found that they haven't really performed better than the stock market as a whole. They underperformed the Standard & Poor's 500 Index in five of the past seven years, he says, suggesting that activist funds are heavily influenced by the volatility of the overall stock market. Mr. Foley also suggests that by the fact that these funds are attempting to isolate the upside potential of their investments and hedge against the downside, they should be able to outperform the market in down periods. These funds, however, matched the market in the 2008 market downturn. Mr. Foley also points to a survey conducted by J.P. Morgan Asset Management that found that the mean activist fund return is three times larger than the median. This means that the average investor is unlikely to match the returns of the HFRI index. It also suggests that there is a wide distribution of activist fund returns. He then goes on to discuss the risk that a bear market may have on activist fund performance.

A bear market takes away the two primary tools activists employ to boost their results

As Mr. Foley points out, a bear market takes away the two primary tools activists employ to boost their results. First, economic and industry uncertainty makes it difficult to pile debt on corporate balance sheets and return corporate cash to shareholders, a popular activist strategy. Second, it will limit merger and acquisition activity, another favorite strategy of activists who prod corporations to put themselves up for sale.

We understand that activist investors are targeting the energy business with an eye toward a recovery for the sector by late 2015 or in 2016

Mr. Foley's analysis brings us to the energy sector, and especially the oil and gas exploration and production and oilfield service companies. Both sectors are now mired in a deep industry recession (a depression may be more appropriate description based on the attitude of participants), so the two favorite activist strategies are off the table at the moment. That said, we understand that activist investors are targeting the energy business with an eye toward a recovery for the sector by late 2015 or in 2016. It is much easier for investors, such as activists, seeking large share positions to buy when everyone else is throwing the shares out the window, which has largely been the case during the past several months. If oil prices stabilize around current levels, then activists are probably preparing to agitate for corporate actions once the oil price floor has been established.

Most of their investments appear to be directed toward the E&P sector, especially shale players who have been outspending their cash flows for years

According to the investment holdings forms the activist funds are required to file with the Securities and Exchange Commission, a number of the high-profile activist funds have already staked out positions. Most of their investments appear to be directed toward the E&P sector, especially shale players who have been outspending their cash flows for years in an attempt to grow their asset values with the expectation that they will soon be able to

While activist shareholders have not targeted oilfield service companies, another group of investors – private equity - has

translate the asset value into earnings and higher share prices. What we know about the stock market is that when it sniffs an upturn in oil and gas prices, which do not need to return to \$100-a-barrel for crude oil or \$10-per-thousand-cubic-feet for natural gas, share prices will jump, putting pressure on managers to put themselves up for sale or elect to sell off assets.

While activist shareholders have not targeted oilfield service companies, another group of investors – private equity - has. This investment group, which functions much like activist shareholders, has been aggressively building up funds in anticipation of seeking distressed investment opportunities and continued purchases of companies and/or businesses that offer long-term investment opportunities to build a meaningful presence in the industry. Both large, broad-based private equity funds such as Blackstone (BX-NYSE), Carlyle Group (CG-NYSE), KKR (KKR-NYSE) and Warburg Pincus have recently completed fund-raising efforts. Additionally, the traditional energy private equity players have also recently raised new funds – often record amounts.

Private equity investors generally are more patient investors and more willing to become actively engaged in the management and growth of their investments

Private equity investors are generally focused on building companies through a series of acquisitions within a similar business line, referred to as a “rollup,” or they look to buy complementary businesses to add on to their “platform” investment. In either case, these private equity investors are targeting to create long-term value that can be translated into either a stand-alone, publicly-traded entity or sold to a larger oilfield service company to fulfill the buyer’s strategic business plan. Private equity investors generally are more patient investors and more willing to become actively engaged in the management and growth of their investments. Given that orientation, we were no surprised when in December, Blackstone’s CEO, Stephen Schwarzman, in commenting about the opportunities the turmoil in the energy industry was presenting said it would be a “wonderful, wonderful opportunity for us.”

The industry we know today will not be the industry we will deal with in the future

With activist funds and private equity investors targeting the oil and gas and oilfield service industries, we remain convinced that by the time the industry is in the early stages of its next cyclical recovery phase, it will be in the midst of being reshaped. In other words, the industry we know today will not be the industry we will deal with in the future. While maybe a radical thought at the moment, except for those of us who have been in it since the early 1970’s, we would point to various times when the industry has been reshaped - usually in the bankruptcy courts or corporate board rooms. This time may be different – it may be reshaped by investors.

Daylight Savings Time – The Non-Energy Saving Maneuver

Most of the United States has just engaged in moving their clocks forward an hour in the traditional spring ritual of shifting to daylight savings time (DST) from standard time. Much of the world engages

Dr. Franklin's idea to create DST was born during his extended stay in Paris in the 1780's as the American delegate to the French court

According to Dr. Franklin, it was "An immense sum that the city of Paris might save every year."

The British adopted a plan whereby the clock was advanced by 20 minutes each Sunday throughout the month of April and then reversed at the same pace during October

in this ritual, too. In January, Chile said it would keep DST year-round in order to save energy by shifting sunlight to evening hours when people are home. Yet, in the United States, not all states observe DST, and last year Vladimir Putin abolished it in Russia.

Many people associate DST with the early colonist Benjamin Franklin, who in his efforts at promoting thrift suggested shifting clocks forward to capture more sunlight in the evening because it would save candle wax. Dr. Franklin's idea to create DST was born during his extended stay in Paris in the 1780's as the American delegate to the French court. During much of that time, he was hampered by bouts of gout and gallstones that restricted his movements and left him virtually confined to his house in the Parisian suburb of Passy. It was during one of these periods of restriction that Dr. Franklin penned a humorous letter to his close friend, Antoine Alexis-Francois Cadet de Vaux, editor of the *Journal de Paris*. The topic of the letter was the economy of lighting in the home, which was ignited by Dr. Franklin's observing the benefits of a new lamp design. In the letter, Dr. Franklin parodied himself, his love of thrift, his scientific papers and his passion for playing chess until the wee hours of the morning and then sleeping until midday. His friend Cadet de Vaux published the letter in the *Journal* on April 26, 1784, under the English title An Economical Project. In the letter, Dr. Franklin noted the discussion that had followed the lamp demonstration the previous evening concerning the amount of oil used in relation to the quantity of light it produced. From that discussion evolved Dr. Franklin's humorous idea about thrift, which dealt with the benefits for Parisians by shifting daylight in order to save candles.

Dr. Franklin calculated that "183 nights between 20 March and 20 September times 7 hours per night of candle usage equals 1,281 hours for a half year of candle usage. Multiplying by 100,000 families gives 128,100,000 hours by candlelight. Each candle requires half a pound of tallow and wax, thus a total of 64,050,000 pounds. At a price of thirty sols per pounds of tallow and wax (two hundred sols make one livre tournois), the total sum comes to 96,075,000 livre tournois." We have no idea how much a sol or a livre tournois was worth, but according to Dr. Franklin, it was "An immense sum that the city of Paris might save every year."

There were several attempts in the late 1800's and early 1900's in Britain to enact DST, but all failed until patriotism prompted its passage during the First World War. The problem was that the scheme for implementing DST was confusing. The British adopted a plan whereby the clock was advanced by 20 minutes each Sunday throughout the month of April and then reversed at the same pace during October. During the Second World War, DST was adopted around the world as a means of conserving energy. In Britain, the government actually advanced the clock by two hours, creating Double Daylight Savings Time while everyone else only added

That savings was on a national oil demand level of 8.774 million barrels a day in 1974, or a miniscule savings

one hour. From that point forward, DST for the traditional summer months became a regular fact of life until the oil embargo of 1973.

In response to that disruptive event, the U.S. Congress extended DST by two months to eight months. The Department of Transportation (DOT) estimated that by extending DST to March from April, the nation saved 10,000 barrels a day of oil, or 300,000 barrels a month, which for two months equated to a total savings of 600,000 barrels. That savings was on a national oil demand level of 8.774 million barrels a day in 1974, or a miniscule savings.

According to the DOT, in the average home, 25% of electricity was used for lighting and small appliances

Besides saving oil, the DOT looked at saving electricity by shifting daylight. The savings would come from the greater amount of electricity demand that is lost in the evening with longer daylight than the increased power needed during early morning darkness. The DOT study showed that 70% of Americans arise before 7:00 am when lights are needed, but that demand was more than offset by the reduced need for electricity in the evening. According to the DOT, in the average home, 25% of electricity was used for lighting and small appliances, such as TVs and stereos (dating the study). A good percentage of energy consumed by lighting and appliances occurred in the evening when families were home. So by moving the clock ahead one hour, the amount of electricity consumed each day decreased. According to the DOT, America's electricity demand was cut by about 1% per day through the reduced demand for lights and appliances.

The analysis showed that the counties using DST for the first time were actually using more electricity - \$3.29 more per household annually

Over time, more studies designed to measure the benefits of DST show them to be marginal at best. Two economists completed a study in 2006 after Indiana adopted DST statewide for the first time. Prior to that time, only 15 of the state's 92 counties had observed the DST switch. The economists were able to examine demand for electricity use before and after the policy changed, and to compare a treatment group – counties changing time for the first time – with a control group – those counties that had observed DST previously. Rather than conserving electricity, the study found that DST increased demand for electricity. The analysis showed that the counties using DST for the first time were actually using more electricity - \$3.29 more per household annually. The study's authors concluded that those homes needed to use more air conditioning due to the additional sunlight hours.

It found a reduction in electricity use of 0.5% in the spring and 0.38% in the fall

A more recent federal government study, conducted by the Department of Energy, tested whether the expansion of DST by four weeks in 2007 reduced the use of electricity. The study examined the additional weeks of DST using data provided by 67 utilities accounting for two-thirds of U.S. electricity consumption. It compared daily use in 2006, when there was no DST, with the same period in 2007 when the most recent extension took effect. It found a reduction in electricity use of 0.5% in the spring and 0.38% in the fall. A critic of the study pointed out that there was no control group

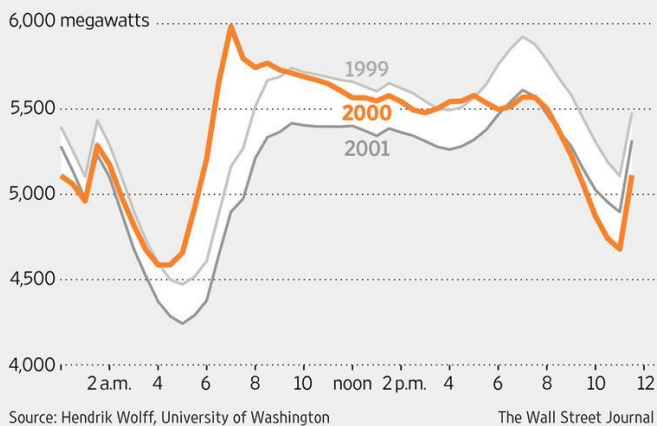
or area, making it impossible to determine whether the changes in demand were due to DST or other conditions.

Exhibit 9. DST Showed No Energy Savings In Australia

Energy Offset

Two states in Australia started daylight-saving time two months earlier than usual for one year to facilitate the 2000 summer Olympic Games, allowing researchers to test whether changing the clock saved energy. Energy use declined in the evening, but increased in the morning, eliminating savings overall.

Average daily electricity use in Victoria, Australia, during the same two-month period of each year:



Source: Hendrik Wolff, University of Washington

The Wall Street Journal

Source: *The Wall Street Journal*

They compared electricity consumption in each of the two states over a seven-year period, from 1999 through 2005

A peer-reviewed study was conducted on electricity demand in two states in Australia where DST was started two months earlier than usual for one year to accommodate the 2000 Summer Olympics in Sydney. To control for the influence of the Olympics on demand, the researchers excluded from their study the two-week period during which the games were conducted. The researchers used half-hour data for electricity usage. They examined the state of Victoria, which, like New South Wales, extended DST, but didn't host the games. As a control, the researchers used neighboring South Australia, which didn't extend DST. They compared electricity consumption in each of the two states over a seven-year period, from 1999 through 2005.

The study looked at differences across time, comparing consumption during the period when DST was extended with consumption during the same period in different years. It also examined daily differences, comparing morning and evening consumption, when DST is expected to have an effect, with use in the middle of the day, when no effect is anticipated. The study was published in the *Journal of Environmental Economics and Management*. It concluded that electricity use did decrease in the evening but also that it increased in the morning, resulting in no overall reduction in consumption.

So as you enjoy the extended daylight-hours for the next few months, remember that it will probably mean little for the nation's energy consumption.

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

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