
MUSINGS FROM THE OIL PATCH

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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 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

Plumbing The Depths Of Saudi Oil Strategy – Al-Naimi Talks

Their comments provide insight into what transpired during last year's run-up to the November OPEC meeting

As the cacophony of oil price forecasts resonates throughout the petroleum market, recent speeches by several Saudi Arabian oil officials may provide some insight into the Kingdom's current thinking about its oil policy and what that might mean for global oil prices. Several talks and interviews have been given by Saudi Arabia's Minister of Petroleum and Mineral Resources Ali al-Naimi and Ibrahim Al Muhanna, an advisor to the Saudi oil minister. Their comments provide insight into what transpired during last year's run-up to the November OPEC meeting at which the organization shocked the world with its decision not to cut its production quota in order to support high oil prices and the thinking of the Kingdom about the role of oil in the country's plans.

In an interview with the *Middle East Economic Survey (MEES)* at the end of 2014, Minister al-Naimi described what occurred during the November 25th meeting between himself and oil officials from Venezuela, Mexico and Russia. The *MEES* interviewer asked:

"When you met with the Russian oil minister in Vienna, it has been said that he told you that Russia would not reduce output and you told him that the market would reduce his output.

The minister confirmed that Russia was not willing to cut

"No, no. I did not have a dialogue with him at all. The Venezuelan oil minister asked me if I had a comment, so I said we wanted to hear from countries outside OPEC. He asked the Mexican minister, who mentioned Mexico's problems, which we understand. He asked the Russian minister, who was also accompanied by the head of Rosneft, Igor Sechin. He provided information about the Russian oil industry. In the end, he said he could not make any reductions because their wells are old, and if they reduce, the wells will not come back up. The minister confirmed that Russia was not willing to cut. We said 'thank you' and the meeting was over."

No one was quite sure why he overruled an agreement to cut production other than that he never believed OPEC wouldn't agree to cut its output

Following their responses that the oil industry could adapt to lower prices, rumors started circulating that OPEC and possibly Saudi Arabia desired lower global oil prices

He pointed to the prominent conspiracy theory offered up by *The New York Times* columnist Tom Friedman

According to other accounts of the meeting, Mr. Sechin favored Russia agreeing to an oil production cut but he was overruled by Russian Energy Minister Alexander Novak. No one was quite sure why he overruled an agreement to cut production other than that he never believed OPEC wouldn't agree to cut its output. Because of that decision the Russian economy was dealt another blow at a time when it already was struggling to deal with the economic sanctions levied by western governments in retaliation for its actions in Ukraine. This history sets the stage for a possible oil price scenario in which at the upcoming June 5th OPEC meeting the Russians agree to support a production cut, thereby leading to a concerted effort by exporters to lift global oil prices through reducing output.

While the outcome of the November 25th meeting set the stage for OPEC's decision the next day, trends underlying the global oil industry's production history during 2014 underscored the primary concerns of Saudi Arabia, which it believed could only be changed by altering the thinking of the industry's leaders. Those trends were described by Mr. Al Muhanna during a speech in Riyadh in mid-March when he said, "By late-June, 2014, some forecasts talked of over-supply by the end of the year, and into 2015. The price started to go down slowly to \$100, and then to \$90 during the following month." He then went on to refer to comments made by two different OPEC officials in different parts of the world who were responding to questions about lower oil prices and what that might mean for OPEC. Following their responses that the oil industry could adapt to lower prices, rumors started circulating that OPEC and possibly Saudi Arabia desired lower global oil prices. When Saudi Arabia adjusted its pricing for oil sales to Southeast Asian customers by lowering prices, speculation flamed the belief that politics were driving the Kingdom's oil policy.

As Mr. Al Muhanna put it, "These Aramco prices, by the way, rise and fall, month by month, and are driven purely by business imperatives. Saudi Aramco has never been in a price war with anyone." He went on to discuss some of the conspiracy theories that arose from various interpretations of Saudi Arabia's oil policy. He pointed to the prominent conspiracy theory offered up by *The New York Times* columnist Tom Friedman suggesting that Saudi Arabia lowered its oil price as part of a strategy agreed to with the Obama administration to punish Russia for its military actions.

The Saudi Arabian narrative and its discussion about oil policy continued in a speech by Minister al-Naimi two weeks ago at an oil conference in Riyadh. He began by stating that he wanted to discuss "two interconnected subjects: Saudi Arabia's global, and local, petroleum policy." After discussing the significance of the Kingdom's crude oil and natural gas recoverable reserves and its in-Kingdom and out-of-Kingdom oil refining capacity, he moved on to discuss Saudi Arabia's petroleum policy. Barely a month before, Mr. al-Naimi had characterized Saudi Arabia's long-term oil policy as a

Saudi Arabia understands it has a one-product economy – hydrocarbon fuels – that is facing the prospect of less robust growth in the future

“quest.” The question is: What is the quest designed to attain? This time Mr. al-Naimi elaborated by saying that the Kingdom “seeks to strike a balance between the present and the future.” And as part of that policy, he said the Kingdom strives to “boost national income and preserve our share of the oil market.”

What that statement indicates is that Saudi Arabia understands it has a one-product economy – hydrocarbon fuels – that is facing the prospect of less robust growth in the future that threatens the country’s long-term economic outlook. However, other statements buried in the speech further highlighted the Kingdom’s concern about its economic future given the numerous attacks being launched against the use of fossil fuels. As one of the world’s leading producers of crude oil, what is Saudi Arabia to do? First, Mr. al-Naimi attempted to show that Saudi Arabia was just as concerned about the environment as it was in continuing to sell oil. He proclaimed, “we are pioneers when it comes to climate change technology” and pointed to Aramco’s work in injecting carbon dioxide into old oil fields. But he also declared that “we will stand up, firmly and resolutely, in solidarity with a number of countries, against any attempt to marginalize the use of oil in a way that could undermine sustainable development. We prefer to focus on sustainable development with its economic, social and environmental elements.” He was clearly challenging the environmental movement and those governments around the world who are embracing its message, especially those in the developed world that are seeking to implement mandates to reduce and in some cases eliminate the use of fossil fuels and to replace them with renewable fuels. Therein lays the greatest threat to Saudi Arabia’s long-term future – the end of the age of oil.

Sheik Yamani was famous for repeatedly reminding people that “the stone age didn’t end when they ran out of stones.”

This threat has been on Mr. al-Naimi’s mind for a while. Three years ago in a speech in Qatar, he stated that “demand will peak way ahead of supply.” Interestingly, this statement carries on a long-standing Saudi Arabian narrative first expressed by Sheik Ahmed Zaki Yamani, the Kingdom’s oil minister from 1962 through 1986. Sheik Yamani was famous for repeatedly reminding people that “the stone age didn’t end when they ran out of stones.” He used this line frequently during the 1985-1986 collapse in oil prices driven by the Kingdom’s decision to flood the market with its oil in order to punish its fellow OPEC members who had been cheating by overproducing their OPEC quotas. The events of that period still dominate the thinking of Saudi Arabia’s petroleum officials and the country’s rulers. In fact, Mr. al-Naimi commented on the lessons learned from that period in his speech, which is a good lesson to remember because that experience will continue to shape the Kingdom’s oil policy.

As Mr. al-Naimi said in his speech, “The experience of the first half of the 1980s was still in our minds. At the time, we cut our production several times. Some OPEC countries followed our lead,

“We are not willing to make the same mistake again.”

and the aim was to reach a specific price that we thought was achievable. It didn't work. In the end, we lost our customers and the price. The Kingdom's production dwindled from over 10 MMBD in 1980 to less than 3 MMBD in 1985. The price fell from over \$40 per barrel to less than \$10. We are not willing to make the same mistake again.”

“The burden cannot be borne by Saudi Arabia, the GCC countries, or OPEC countries, alone.”

In order to avoid repeating that mistake, he added: “...I would like to be absolutely clear. The Kingdom remains willing to participate in restoring market stability and improving prices in a reasonable and acceptable manner. But this can only be with participation from major oil producing and exporting countries. And it must be transparent. The burden cannot be borne by Saudi Arabia, the GCC countries, or OPEC countries, alone.” Reducing supply, however, is only one half of the balancing act.

Demand growth can be overruled by government instituted mandates to restrict fossil fuel consumption

Flagging oil demand, both near- and long-term, has been of great concern to the Saudis. That concern has grown as the Kingdom has watched China's oil demand growth slow after it had been the primary demand driver throughout the first decade of this century. The environmental moves by Germany and France to reshape their electric power industries along with the strong environmental push being orchestrated by President Barack Obama in the United States to promote our renewable fuel use and to restrict the use of carbon-intensive fuels has forced Saudi Arabia to consider what it will take to accelerate weak global oil demand. Obviously, lower oil prices will help as they should slow down the transition to electric vehicles and natural gas-fired ones, but demand growth can be overruled by government instituted mandates to restrict fossil fuel consumption.

Americans are now purchasing more SUVs and light duty trucks, which have lower fuel-efficiency standards than those for automobiles

The decline in gasoline pump prices in the U.S. during the past four months is leading to a decline in the average fuel-efficiency ratings for the fleet of new cars sold. The decline comes as Americans are now purchasing more SUVs and light duty trucks, which have lower fuel-efficiency standards than those for automobiles. At the same time, the number of miles driven by the American vehicle fleet is climbing after more than half a decade of being stagnant or declining. Lower oil prices, however, may not alter the long-term thinking of environmentalists and government policy makers. If they perceive that petroleum prices will remain low for an extended period, they are likely to push harder for regulations to limit fossil fuel use and to promote the use of renewables. If left to market forces, low oil prices promote urban sprawl and more gasoline powered vehicles boosting oil demand, while high oil prices promote more compact cities and greater reliance on mass transit options. Those two choices produce significantly different futures for oil-dependent Saudi Arabia!

From the Kingdom's perspective, one of the most disconcerting developments was the decision last fall by the European Union to not declare Canada's oil sands bitumen “dirty” oil and therefore not

What Saudi Arabian oil officials know is that once these new oil sands facilities are in place, their production will continue for decades, thus costing the Kingdom more global market share

According to Bank of America Merrill Lynch commodities research, at \$60 to \$70 a barrel, the peak in oil demand may be pushed out by up to five years, further adding to the long-term future for Saudi Arabia's oil output

Mr. al-Naimi wanted the audience to appreciate the growth of domestic industries capable of providing products and services to assist Aramco in developing the country's petroleum resources

eligible for use in the continent's refineries and power plants. While the official EU vote was not held until December 2014, the die was cast earlier in the fall when EU officials announced they would not be recommending to the EU Congress that oil sands be classified as "dirty" oil. That declaration happened, some six weeks before the late November OPEC meeting. Opening up the European continent to oil sands output insured greater investment in new Canadian mines, even though the country needs to construct additional export pipelines. What Saudi Arabian oil officials know is that once these new oil sands facilities are in place, their production will continue for decades, thus costing the Kingdom more global market share.

A former senior economic advisor to Mr. al-Naimi, Mohammed al-Sabban noted in an interview that the Kingdom's oil officials have prepared for global oil demand growth to level off, possibly as soon as 2025. In their view, that timeframe might have been moving closer with the continuation of the era of \$100-a-barrel oil. According to Bank of America Merrill Lynch commodities research, at \$60 to \$70 a barrel, the peak in oil demand may be pushed out by up to five years, further adding to the long-term future for Saudi Arabia's oil output. Understand that a peak in oil demand does not necessarily mean an immediate collapse thereafter. A lack of demand growth, however, may make the battle over future market share that much more difficult, especially for an OPEC organization that will be contending with numerous members desiring to ensure their share of the market in order for them to generate the income necessary to support their economies. Saudi Arabia may soon fall into that camp as the government's response to the 2011 Arab Spring has boosted its social expenditures in order to buy domestic peace. The current military campaign against Yemen and the need for potentially greater military expenditures to counter the growing political muscle of Iran, coupled with its possible development of a nuclear capability, may force Saudi Arabia to need to outspend its income and dip deeper into its pool of \$700+ billion in cash reserves. All of these considerations will weigh on Mr. al-Naimi as he attempts to guide the Kingdom's oil policy.

When Mr. al-Naimi turned to domestic petroleum policy in his speech, his goal was to enlighten the audience about his country's long-term objectives, which are "...to ensure oil and gas can help boost the national economy and expand Saudi Arabia's industrial base." He also pointed to the country's achievements such as the success Aramco has had in evolving into a world-class oil company that is pushing the frontiers of petroleum technology. But importantly, Mr. al-Naimi wanted the audience to appreciate the growth of domestic industries capable of providing products and services to assist Aramco in developing the country's petroleum resources, which is the typical strategy for resource-rich countries seeking to leverage their resources into a permanent source of economic growth. He said, "We aspire for the Kingdom not only to be an oil producing nation, but also a global center for the production

“In terms of petroleum, I expect that prices will improve in the near future, that the Kingdom’s production will continue at approximately 10 MMBD”

If lower prices boost demand, retard supply growth and push out the date for the end of the oil age, higher prices do the exact opposite

of the materials and services needed by the oil, energy, petrochemical and other industries.” He went on to enumerate many of the achievements and undertakings by Aramco and the government.

In closing his speech, Mr. al-Naimi offered both an outlook on Saudi Arabia’s near-term oil policy but also its aspirational goals. He stated: “In economic terms, I expect our GNP to reach \$1 trillion before the end of the current decade. In terms of petroleum, I expect that prices will improve in the near future, that the Kingdom’s production will continue at approximately 10 MMBD. I also expect our discoveries of the various types of oil and gas will continue in all areas of the Kingdom, and that our economic base will continue to expand, turning us into a truly industrialized country not just a country dependent on oil production and exports. “

So what can we deduce about Saudi Arabia’s oil strategy and the future for oil prices? Many forecasters are now suggesting oil prices have stopped declining. While we still believe there is some risk of prices going lower, we also think that risk is fairly low. Where we probably disagree with the more optimistic forecasters is that we think there are numerous headwinds that may limit oil prices from rebounding significantly. For those forecasters who believe that oil producing powers will agree to a significant cut in export volumes around the time of the June OPEC meeting, we question what Saudi Arabia will have gained after just seven months of pain. If lower prices boost demand, retard supply growth and push out the date for the end of the oil age, higher prices do the exact opposite. Given the more highly leveraged state of the western producing industry, they will welcome higher prices with rapidly stepped up production in order to generate income to pay down their debts. As a result, current market conditions impacting oil supply and demand today are much more like the 1980’s than either the 1997-1998 or 2008-2009 downturns. The 1980’s required a longer re-adjustment period than either of those later periods. We think Mr. al-Naimi has provided sufficient guidance to believe “lower for longer” should be your mantra.

Marked Down Economic Activity Impacting Energy Demand

This is the fifth consecutive year of downward revisions to its growth forecasts for emerging markets

The International Monetary Fund (IMF) has just released its latest *World Economic Outlook* report. This is the fifth consecutive year of downward revisions to its growth forecasts for emerging markets, supposedly the primary source of global oil demand. Slowing emerging market growth, coupled with weak growth in the advanced economies of the world, has produced a forecast showing only modest improvement, +0.1%, over 2014’s 3.4% growth.

Exhibit 1. World Economies Continue To Show Weak Growth

Not as Hot

The International Monetary Fund's latest World Economic Outlook marks the fifth straight year of downward revisions in its growth forecasts for emerging markets. Along with anemic output in rich countries, souring emerging-market expectations are keeping a lid on overall global growth prospects.



Source: IMF
THE WALL STREET JOURNAL.

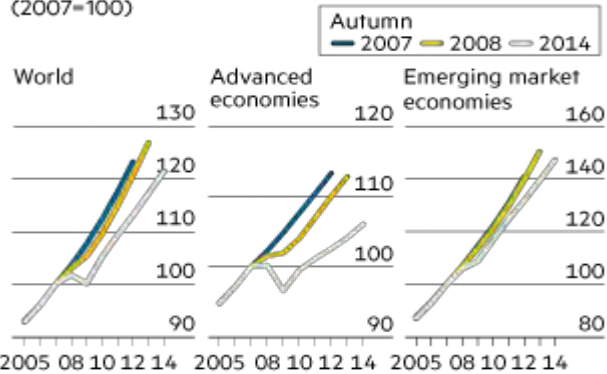
Source: *The Wall Street Journal*

IMF Managing Director Christine Lagarde called for finance officials to use all available policy tools to stimulate the economy

In advance of last weekend's IMF and World Bank meetings, IMF Managing Director Christine Lagarde called for finance officials to use all available policy tools to stimulate the economy out of its nearly decade-long rut of anemic growth.

Exhibit 2. The Story Of Slowing Global Growth
How output expectations changed

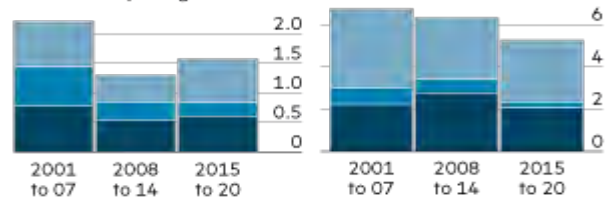
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Potential output growth

Advanced economies (%) Emerging market economies (%)

- Total factor productivity growth
- Potential employment growth
- Capital growth



Source: IMF
Source: *Financial Times*

In the advanced economies, the slowdown in potential output began in the early 2000's, while for the emerging economies it started after 2009

All of these concerns lead to worries about a growing global glut in savings that may lead to secular stagnation

Martin Wolf, the economics columnist for the *Financial Times*, wrote about the challenges facing the global economy based on a chapter taken from the IMF's recent report. The primary challenge is that global output potential is growing more slowly than it has in many years. In the advanced economies, the slowdown in potential output began in the early 2000's, while for the emerging economies it started after 2009. Without getting too far into the weeds of economic theory, economic potential is a measure of when an economy is capable of growing without generating either inflation or deflation – or in other words at a zero rate of price changes.

Mr. Wolf chronicled some of the issues impacting potential output growth in advanced economies such as the waning beneficial economic impact of the internet plus a decline in the rate of improvement in human skills, which impacts the productivity of the labor force. There is also the problem of the ageing of the population in advanced economies and the decline in capital investment following the financial crisis. In emerging economies, demographics are a challenge as there has been a fall in the growth of the working-age population, especially in China. Capital investment has also fallen after the huge investment that occurred during the early years of the 2000's. These trends have economists worried about a fall in the growth of total factor productivity in the longer term, especially as the rate of catch-up between emerging economies and advanced economies is shrinking. All of these concerns lead to worries about a growing global glut in savings that may lead to secular stagnation. What this means is that there is a growing sense that the rate of global economic growth in the future will be slower than experienced in the past. Slower economic growth is likely to translate into less energy consumption, although there will be differences in energy consumption growth rates between advanced and emerging economies. The charts in Exhibit 2 (previous page) show how expectations for economic growth for emerging economies, advanced economies and the world are lower than the expectations that existed prior to the financial crisis of 2008-2009. The lack of demand growth could become a serious issue for the energy business almost regardless of what happens to the shale revolution.

Shell CEO On BG Deal – “This Isn’t A Bet On Oil Prices”

BG's upstream output was split 36% to 64% between oil and liquids and natural gas

In a video from the press conference following the announcement of the agreement by Royal Dutch Shell plc (RDS.B-NYSE) to purchase BG Group plc (BG.L) in a cash and stock transaction that values BG at approximately £47 (\$69.2) billion, Shell CEO Ben van Beurden said, “This [the purchase of BG] isn't a bet on oil prices.” According to the 2014 annual report of BG, the company's upstream output was split 36% to 64% between oil and liquids and natural gas. It is clear from these numbers that Mr. van Beurden's statement is correct on its face, but the BG transaction really is about oil prices! By buying BG, Shell is signaling it believes there is a better future

Some would construe Shell's oil price forecast as conservative, but the other side of the oil price equation is the question of finding costs for new oil reserves?

profit potential in natural gas than oil, despite holding to a view that oil prices will average \$67 a barrel in 2016, \$75 in 2017 and reach \$90 by 2020. It is possible that some would construe Shell's oil price forecast as conservative, but the other side of the oil price equation is the question of finding costs for new oil reserves? As Shell is about to embark on its next Arctic drilling venture this summer, it knows that the reserves it may find will be very expensive to develop. In addition, there is the possibility that as the petroleum industry recovers from the current downturn costs to find and develop new crude oil resources may rise equally as fast, or possibly faster, than oil prices, leaving little room for profit margin expansion.

According to Mr. van Beurden, the talks with BG's Chairman Andrew Gould only began March 15th

The timing of the BG deal was interesting when considering Mr. van Beurden's statement and the implications of the transaction, not only for Shell but for the petroleum industry as a whole. According to Mr. van Beurden, the talks with BG's Chairman Andrew Gould only began March 15th. This was about five weeks after BG had brought on board an all-star exploration and production executive to lead the company's growth strategy. Late last year, BG announced it had hired Helge Lund, formerly the CEO of Norway's Statoil (STO-NYSE) and an acknowledged leader in the global petroleum industry. The terms of his employment agreement with BG created a firestorm among its shareholders who were upset at the amount of money BG was paying him to come on board. The contract was reworked and his onboarding award was significantly reduced. However, based on the contract, he is eligible to receive as much as £28.8 (\$43) million in severance and equity payouts once the BG sale is completed.

It signaled that Shell was anxious to conclude the deal and therefore made a highly attractive offer

According to media reports, Mr. Lund did not participate in the negotiations. The speed with which the deal came together is somewhat shocking. It signaled that Shell was anxious to conclude the deal and therefore made a highly attractive offer, which is essentially what Mr. Gould acknowledged in his statement about the combination contained in the BG press release announcing the transaction. In that press release, Mr. Gould's comment was:

"Shell's offer, however, allows us to accelerate and de-risk the delivery of this value"

"This offer represents an attractive return for BG shareholders. BG has a strong portfolio of operations including growth assets in Australia and Brazil and a highly competitive LNG business, as well as an enviable track record of exploration success. The BG board remains confident in BG's long-term prospects under the leadership of Helge Lund. Shell's offer, however, allows us to accelerate and de-risk the delivery of this value. The structure of the offer will provide BG shareholders with an attractive premium and a substantial cash return, as well as enabling them to participate in the benefits of the combination through the share component. For these reasons, the BG Board recommends the offer."

Given the speed of the deal and the magnitude of the share price premium, we have a nagging concern. We have followed Mr.

Andrew Gould was a shrewd buyer of companies; we wonder whether he may also be an equally shrewd seller

Shell executives point out that the purchase will add 25% to the company's proven oil and gas reserves and will increase its production capacity by 20%

Gould's career and interacted with him over many years in our analyst role as he built Schlumberger. During his career he was involved a number of company purchases in which he acquired key building blocks of the present Schlumberger – the world's largest oilfield service company with the most complete product and services offering and geographic footprint in the industry. As a shrewd buyer of companies, we wonder whether he may also be an equally shrewd seller. Only time will provide that answer.

For Shell, purchasing BG adds significantly to the company's natural gas business and in particular to its liquefied natural gas (LNG) business. Shell executives point out that the purchase will add 25% to the company's proven oil and gas reserves and will increase its production capacity by 20%, especially in the Australian LNG market and in the deepwater oil exploration and development business, primarily off the coast of Brazil. While not named by Shell executives, we have to think that BG's recent East African natural gas success may also have been an attraction as this is a highly prospective gas basin that has received little notoriety but that offers outstanding long-term potential, especially given its proximity to Asia and the Indian sub-continent markets.

Exhibit 3. East Africa Is A Potentially Rich Gas Region



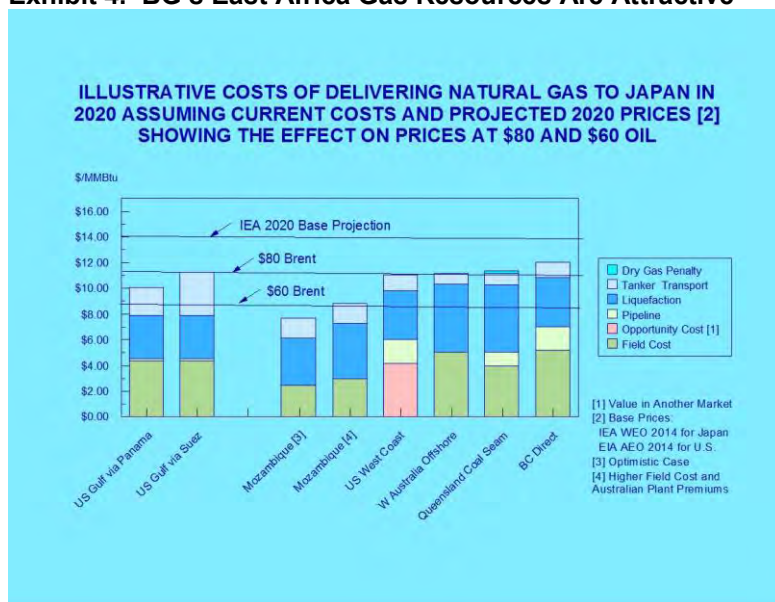
The Indian Ocean is the home of deepwater gas with an estimated total of 300 Tcf of gas reserves discovered to date, or about two-thirds of all the deepwater gas reserves discovered worldwide

A \$60-a-barrel Brent oil price environment equates to about \$9 per million British thermal unit of LNG

In the BG 2014 Annual Report, the company states that it has drilled 16 consecutive successful exploration and appraisal wells in Tanzania since 2010. BG says that these wells contain 16 trillion cubic feet of total recoverable natural gas resources, the equivalent of 2.5 billion barrels of oil. This is a significant new potential gas supply source. According to data from Ray Leonard and Art Berman in their paper, "The Changing World of Natural Gas 2015-2030" presented at the 6th International Gas Technology Conference in Dubai in mid-February, the Indian Ocean is the home of deepwater gas with an estimated total of 300 Tcf of gas reserves discovered to date, or about two-thirds of all the deepwater gas reserves discovered worldwide. Of that basin's total, approximately 130 Tcf lies in the East Africa portion of the basin and is represented by discoveries off Tanzania, Madagascar and Mozambique. The BG reserve estimate suggests it holds about 12% of the region's total.

The potential importance of this gas resource is highlighted when one considers a chart from a presentation by independent LNG expert Jim Jensen to the CSIS Gas Market Study Group Session at the end of March in Washington, D.C. His paper was titled, "The Impact of Low Oil Prices on International Gas Markets" and shows that in a \$60-a-barrel Brent oil pricing environment, which equates to about \$9 per million British thermal unit (Btu), LNG from a Mozambique terminal (adjacent to Tanzania) is \$1 per million Btu cheaper than all the other future competitive supplies. Moreover, if the market clearing price were based on an \$80-a-barrel Brent price, the equivalent of an \$11 per million Btu price for LNG, then the East African gas supply has nearly a \$2 per unit cost advantage, making it the least costly natural gas supply available.

Exhibit 4. BG's East Africa Gas Resources Are Attractive

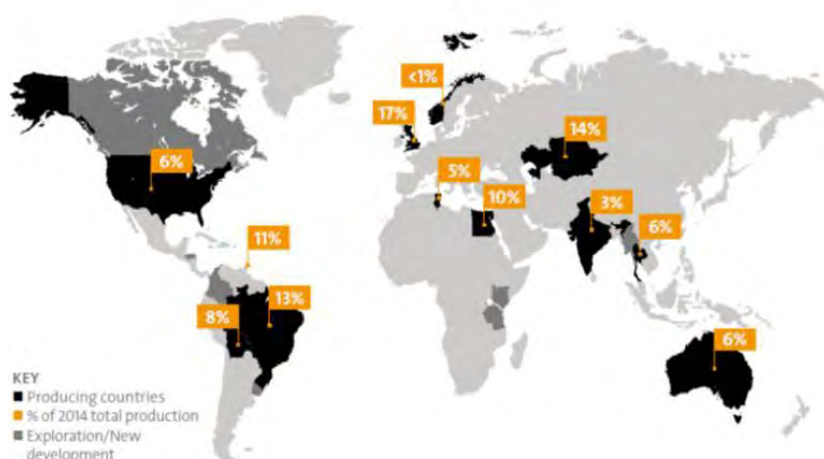


Source: Jensen presentation at CSIS

BG is an expert at buying cheap commodities and selling them for a higher price elsewhere

BG also has a dispersed oil and gas supply profile that will provide Shell with a greater range of global energy supply options, and if some of these supply sources don't fit they could be attractive sources of cash from asset sales. But what may be very important for Shell is the strengthening of its LNG franchise that comes with the BG deal. As Mr. Jensen pointed out to a reporter for a news story following the announcement of the transaction, BG is an expert at buying cheap commodities and selling them for a higher price elsewhere. He thought that may have been an additional attraction for Shell. As Mr. Jensen said, "They have extremely good trading skills. And that's something that they are better at than Shell is."

Exhibit 5. BG Provides Shell With Diverse O&G Supply

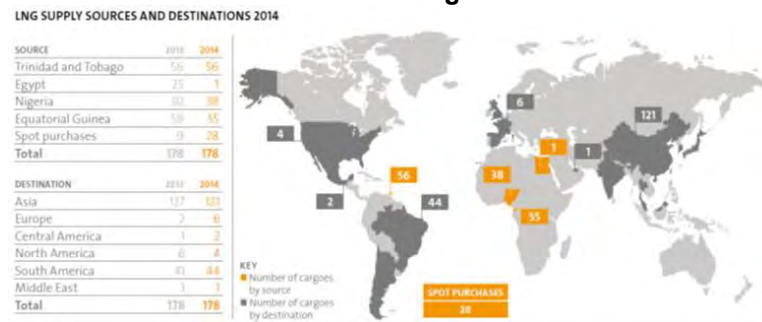


Source: BG 2014 Annual Report

The company offset this supply loss by increasing its cargo purchases from Nigeria and on the spot market

BG's ability to trade commodities better than Shell is a capability that shows up when one looks at some of the information from the 2014 BG Annual Report. A table and chart in Exhibit 6 below from the report shows the sources of BG's LNG cargoes and their destinations in 2013 and 2014. Two things stand out. First, the total number of cargoes sourced was the same in both years, but due to social unrest in Egypt, BG was only able to obtain one cargo in 2014 compared to 25 in 2013. The company offset this supply loss by increasing its cargo purchases from Nigeria and on the spot market. Second, there also were shifts in the markets where BG delivered its LNG cargoes as fewer went to Asia and North America while more landed in Europe and South America. This trading skill is likely to prove of greater value in the future for the newly combined Shell enterprise as the historical regionally-linked supply and use markets break down and a truly global gas market evolves.

Exhibit 6. BG's Active LNG Trading Business



Source: BG 2014 Annual Report

The recent strategy thrust of the company under CEO van Beurden suggests a path much more committed to the dynamics of natural gas, which the company believes offers greater growth along with price stability

Even though Shell has a \$90 a barrel future price for oil in its exploration and production price deck calculations, the recent strategy thrust of the company under CEO van Beurden suggests a path much more committed to the dynamics of natural gas, which the company believes offers greater growth along with price stability. Anyone who has followed the flow of information about the scenarios Shell uses in its long-term strategy planning can see this focus, or bias as the case may be. Not long ago, Shell unveiled two new scenarios for the evolution of world economies and energy markets. The two scenarios – Mountains and Oceans were spelled out by the company on its web site. One can also obtain detailed scenario documents that go through each scenario and its implications that Shell managers, and anyone who wants to utilize the scenarios, work through.

Briefly, the two scenarios are as follows:

‘Mountains’ sees a strong role for government and the introduction of firm and far-reaching policy measures

“Mountains: The first scenario, labelled ‘mountains’, sees a strong role for government and the introduction of firm and far-reaching policy measures. These help to develop more compact cities and transform the global transport network. New policies unlock plentiful natural gas resources – making it the largest global energy source by the 2030s – and accelerate carbon capture and storage technology, supporting a cleaner energy system.”

‘Oceans’ describes a more prosperous but volatile world

“Oceans: The second scenario, which we call ‘oceans’, describes a more prosperous but volatile world. Energy demand surges, due to strong economic growth. Power is more widely distributed and governments take longer to agree on major decisions. Market forces rather than policies shape the energy system: oil and coal remain part of the energy mix but renewable energy also grows. By the 2070s solar becomes the world’s largest energy source.”

By the move to purchase BG, it would seem that Shell’s senior management and its Board of Directors are tilting in favor of the Mountain scenario. If we look at Europe and the United States, it is clear that strong government involvement in the energy sector has already made its mark and is reshaping energy supply choices.

A world that derives a growing share of its energy from solar has to have benefitted from significant improvements in battery technology

The deal was announced a week after natural gas spot prices hit a record of over \$14 per thousand cubic feet

This deal occurred at the point when domestic gas prices were collapsing and shale producers were forced to shift their attention from dry gas drilling to crude oil and liquids-rich shale plays

Under that scenario, natural gas is the clear beneficiary. On the other hand, even the Oceans scenario, while leaving open a meaningful role for oil and coal, suggests that the share of global energy supply derived from renewable energy grows and thus opens the door for increased consumption of natural gas, too. But a world that derives a growing share of its energy from solar has to have benefitted from significant improvements in battery technology.

What other observations might we draw from Shell's move to buy BG? We think about other oil company bets on natural gas. First was the bet by James Mulva, the then-CEO of ConocoPhillips (COP-NYSE), who bought Burlington Resources in December 2005 for \$35.6 billion in cash and stock. The deal increased ConocoPhillips' gas reserves, excluding its Alaska holdings, by 88% and increased its gas output by 77%. The deal was announced a week after natural gas spot prices hit a record of over \$14 per thousand cubic feet. One analyst who questioned the deal's metrics suggested that the purchase price was the equivalent value for Burlington's oil and gas reserves of \$15 per barrel of oil equivalent (boe). This was at a time when ConocoPhillips' oil and gas reserves were being valued in the stock market at only \$10/boe.

The second big bet on natural gas was made by Exxon Mobil Corp.'s (XOM-NYSE) CEO Rex Tillerson when he engineered the purchase of XTO Energy for \$31 billion in December 2009. Until then, ExxonMobil had missed the gas shale revolution. To catch up, Mr. Tillerson opted to purchase XTO for shares and established the company as an independent unit within ExxonMobil in order to exploit its success in drilling and producing U.S. gas shale resources and boost the fledgling ExxonMobil effort. This deal occurred at the point when domestic gas prices were collapsing and shale producers were forced to shift their attention from dry gas drilling to crude oil and liquids-rich shale plays.

Exhibit 7. Big IOC Natural Gas Bets With Little Success



Source: EIA, PPHB

Shell has an advantage of buying at nearly the lowest gas price since the beginning of this century

Based on this history, one has to wonder whether there is a roughly five-year half-life in thinking about the future for natural gas – 2005, 2009, and 2015. Given the timing of the ConocoPhillips and ExxonMobil purchases, we note that Shell has an advantage of buying at nearly the lowest gas price since the beginning of this century. That should give Shell executives some comfort that there may be upside to the value of their purchase.

The Asian LNG market is being disrupted not only by reduced demand, but by increased competition from cheap coal and new transcontinental gas pipelines

What is probably more important is the LNG business infrastructure of BG. BG has a diversified portfolio of gas supply sources, an excellent gas marketing and trading staff, and ownership or control over liquefaction, regasification and LNG shipping assets. Offsetting these positives, however, is the fact that the global LNG market appears to be slowing in response to reduced economic activity. Another troubling aspect of the global LNG market is that current low oil prices are pulling down the price of oil-linked LNG contracts, especially in Asia where LNG prices have been extremely high for many years. The Asian LNG market is being disrupted not only by reduced demand, but by increased competition from cheap coal and new transcontinental gas pipelines linking the huge gas resources of Russia with the insatiable gas needs of China. As the Leonard/Berman paper concluded, the forces at work within the global natural gas market are converging gas prices at a lower price than what has prevailed in Asia and Europe. A converged global natural gas price will erase much of the arbitrage advantage that has driven, and mistakenly continues to drive, North American LNG export developments.

Hopefully, Shell's strategic analysis of the evolution of the gas business is right, or at least the company doesn't have to survive years of low gas prices

Quite possibly, Shell's purchase of BG isn't a bet on oil prices, but it certainly is a bet on the development of a global natural gas market. Shell, with BG's reserves and LNG infrastructure, appears well positioned to help develop a global natural gas market. Hopefully, Shell's strategic analysis of the evolution of the gas business is right, or at least the company doesn't have to survive years of low gas prices. Shell's insurance policy will be its ability to deliver cheap gas anywhere in the world. We will be watching how the global gas market develops with great interest.

Future Of Shale Revolution Driven By Private Equity Money

They all acknowledge that the industry's outlook has changed materially over the past nine months and that the industry is not likely to return to its prior condition for some period of time

Last Tuesday, we attended two interesting meetings in Houston at which the role of private equity in the energy sector was highlighted. It was evident after listening to the five private equity investors who presented at these meetings that each sees continued opportunities to deploy capital in the energy business, but they all acknowledge that the industry's outlook has changed materially over the past nine months and that the industry is not likely to return to its prior condition for some period of time – although exactly how long that time will be is subject to debate. Reinforcing the view of a changed industry was the fact that we saw and met numerous bankruptcy attorneys and work-out investment professionals at the functions.

The vultures are circling but they don't have anything grasped in their claws, yet! It suggests to us that the bottom for this industry has not yet arrived.

Michael Ryder, senior managing director in the Blackstone Private Equity Group (BK-NYSE) and a member of the investment committee for Blackstone Energy Partners II, spoke at the Private Equity Breakfast to a full house of some 250 professionals. Mr. Ryder is responsible for the fund's investments in the oilfield services and midstream sectors, although his talk was about his organization's total energy investment exposure as well as observations about the energy private equity industry and the outlook for oil and gas markets.

He and his partners have \$8 billion to invest in the energy industry, making it the largest pool of uncommitted money in the energy sector

Mr. Ryder described the success of his firm's energy focus as Blackstone Energy Partners II was able to raise \$4.4 billion in under six months. According to Mr. Ryder, Blackstone's two energy funds, along with its access to other private equity money managed by Blackstone gives him and his partners \$8 billion to invest in the energy industry, making it the largest pool of uncommitted money in the energy sector. Given the size of this capital pool, Blackstone prefers to write a smaller number of larger checks, meaning it looks for very large energy transactions.

Mr. Ryder estimated that there was about \$200 billion of uncommitted capital available within the energy private equity industry

In discussing the state of energy private equity investing, Mr. Ryder pointed out that the industry raised approximately \$50 billion in each of 2013 and 2014. For 2015's first quarter, the industry has raised \$15 billion in new capital. These are significant sums of money. Mr. Ryder estimated that there was about \$200 billion of uncommitted capital available within the energy private equity industry. He also suggested that the top three investing groups - Blackstone, EnCap and Natural Gas Partners (NGP) – currently hold about \$15 billion of uncommitted capital in search of opportunities.

Last year, private equity energy investing accounted for slightly over 20% of energy M&A deals

To show how energy has become a significant investment sector within the private equity business, Mr. Ryder showed a chart that looked at the amount of private money invested each year in energy as a percent of total energy merger and acquisition (M&A) activity. In 2000, energy, broadly defined, represented less than 2% of energy M&A. In 2014, private equity energy investing accounted for slightly over 20% of energy M&A deals. For this year's first quarter, private equity energy investing was running at a 20% rate, but has now fallen as a result of the recently announced \$70 billion purchase of BG Group (BG-NYSE) by Royal Dutch Shell (RDS.B-NYSE).

If you exclude the 2008-2009 correction, this downturn marks the end of a nearly 14-year energy bull market

In discussing his outlook for the energy business, Mr. Ryder stressed that if you exclude the 2008-2009 correction, this downturn marks the end of a nearly 14-year energy bull market. His reasoning for excluding the downturn of 2008-2009 was it happened as quickly as did the rebound that the industry barely had time to make any structural adjustments. As he put it, "this is the correction

Companies will undergo much more significant change than what is currently being contemplated by their managements or most outside investors

that cleans it up.” If one accepts his characterization of the industry’s recent history and the current state of affairs, then companies will undergo much more significant change than what is currently being contemplated by their managements or most outside investors. We tend to agree with Mr. Ryder’s assessment largely because we believe the debacle of 2008-2009 was in response to a global liquidity crisis. Once governments, corporations and the public realized that the global financial system was not about to collapse, most economic activity restarted, which largely explains the quick snapback in oil demand and the recovery in oil prices and industry activity.

One of Mr. Ryder’s concerns about the pace of the energy industry’s recovery, however, is how readily public debt and equity markets have welcomed energy companies

As Mr. Ryder surveys the current state of the oil and gas industry, he is optimistic the supply and demand imbalance is not great and that demand will grow for both fuels, thus leading to higher prices in the foreseeable future. One of Mr. Ryder’s concerns about the pace of the energy industry’s recovery, however, is how readily public debt and equity markets have welcomed energy companies. In fact, he said that he was surprised by the industry’s reception during the first quarter of the year. This sentiment was echoed by the four energy private equity investors who spoke later that day at the Houston chapter of the Association for Corporate Growth (ACG) lunch.

With public markets open, energy companies are now finding cheaper sources of capital available than if they had to rely on private equity

Mr. Ryder displayed a table listing all the public energy company equity and debt offerings conducted during the first quarter, which totaled \$320 billion in new capital for the industry. With public markets open, energy companies are now finding cheaper sources of capital available than if they had to rely on private equity. This diminishes the opportunities for Blackstone and the other private equity funds. In Mr. Ryder’s view, the availability of public equity and debt funding not only pushes out the timing for opportunities for private equity investments, but it also extends the current downturn beyond what it would have otherwise been.

They are company builders so they are less concerned about managing the downturn and more focused on being positioned for the upturn

At the ACG lunch, four well-established energy private equity managers expounded on their views of the energy world and the opportunities and challenges for them and their portfolio companies. There was a universal theme among the presenters, which was that they are company builders so they are less concerned about managing the downturn and more focused on being positioned for the upturn. Statements such as “don’t cut to the bone” in dealing with the downturn because you will lose your ability to grow, and focus on how to position for the next upturn by adjusting your cost structure and concentrating on new technologies, were indicative of the views of these managers. There was an overwhelming theme of technology among the four, as they see it as critical to their portfolio companies’ successes and every one of them wants to be positioned to buy more technology to broaden their positions.

In discussing how the energy industry and private equity’s role may play out during the current downturn there were several insightful

They see their world of investment opportunities as being bifurcated more between companies with low leverage and those with high leverage, rather than business lines within industry sectors

comments. These energy-focused investors believe there is a lot of new capital available to companies from non-dedicated energy private equity funds. That becomes a challenge as it increases the competition for good deals. On the other hand, they see their world of investment opportunities as being bifurcated more between companies with low leverage and those with high leverage, rather than business lines within industry sectors. They believe that in today's energy climate, the commercial banks are under pressure to minimize their bad loan portfolios and therefore will be less flexible in dealing with troubled companies. That could open the door for capital coming from the shadow-banking world. Private equity is not a part of that world as it is regulated under the Dodd-Franks financial legislation.

They will shun bad managements and bad business models

What will these private equity managers be on the lookout for amidst the industry wreckage? They will be focusing on good businesses that were improperly capitalized. They will shun bad managements and bad business models, but those companies with good managers and solid business plans that were underfunded will be attractive candidates.

He believes that change will become imperative for those managers dedicated to the crude oil market

While there were many comments made about the energy industry's macro environment, one of the more cogent observations compared the price history for natural gas with that of crude oil. The thought was that as natural gas prices have settled into a trading range of \$2.50 to \$4.00 per thousand cubic feet that has lasted for several years, it is quite possible that crude oil prices might settle into their own range encompassing both sides of current price levels, or a range of \$45 to \$65 a barrel. The manager offering up this observation believes that as natural gas prices established and remained within the range despite cold winters and storage level questions, managers of companies active in the dry gas sector have had to adjust their thinking and operations. He believes that change will become imperative for those managers dedicated to the crude oil market. Clearly, he was referring to exploration and production company managements and not oilfield service companies as they are not as commodity-specialized.

There is too much money chasing a limited number of quality investments

We came away with several impressions from the two presentations and our discussions with fellow attendees. First, as we mentioned earlier, the vultures who circle over every disastrous industry are circling over energy with high expectations that road-kill victims will soon be available. Second, there are a lot of smart investors looking for the right opportunity to "buy into the energy industry at the bottom." To us, that means there is too much money chasing a limited number of quality investments. That also likely means pricing on deals initially will be too high. The private equity investors believe these early investors may have to wait longer for the returns they are traditionally expecting. Fortunately, or unfortunately, the availability of public money is delaying the typical industry cycle pattern for private equity returns.

There were very few present that experienced the 1980's forced restructuring of the energy business following the bullish experience of the 1970's

The uniformity of thinking among private equity players is a bit scary. Group-thought is usually not a successful strategy. The volume of public capital is not only surprising, but discouraging if one believes the industry needs to experience pain before a true recovery can begin. Lastly, in looking at the presenters and the audience, there were very few present that experienced the 1980's forced restructuring of the energy business following the bullish experience of the 1970's. In our discussions that day, we encountered another old-timer who referenced the 1980's downturn starting in 1982, three years before when most who look at the industry's history think it began. We were there then, and this guy had it exactly right. This industry is headed for significant change.

Oil Patch Unemployment Is Challenge For Industry's Future

Just how many people have already lost their jobs is difficult to accurately determine

Several recent media stories have focused on rising petroleum industry layoffs in response to the decline in global oil prices and the resulting fall in activity. Just how many people have already lost their jobs is difficult to accurately determine. Job loss estimates are being provided to the media by various personnel recruiting firms, although there are also data points available from the Bureau of Labor Statistics (BLS).

As reported by the *Houston Chronicle*, more than 120,000 jobs worldwide have been shed by energy companies

Since oil prices began dropping last December, energy companies have announced layoffs in excess of 100,000 jobs, according to *The Wall Street Journal*. It references an estimate of at least 91,000 layoffs having already occurred according to Graves & Co., a Houston-based consulting firm. On the other hand, according to recruiting firm Swift Worldwide Resources and as reported by the *Houston Chronicle*, more than 120,000 jobs worldwide have been shed by energy companies. Those totals are going up as Schlumberger (SLB-NYSE) announced last Friday a cut of an additional 11,000 worldwide employees bringing its total staff reduction so far to 20,000, or approximately 15% of its pre-oil-price drop labor force.

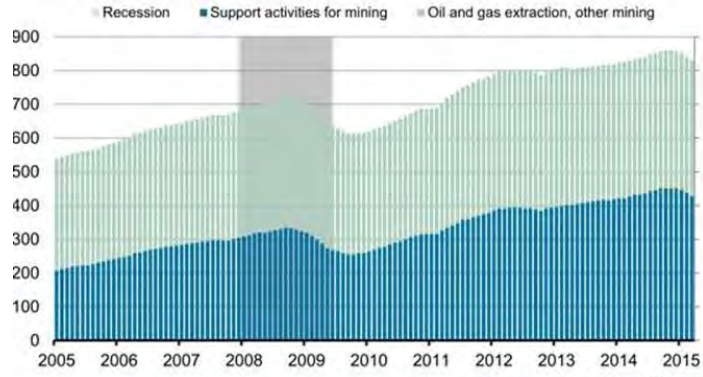
The visual image presented by the chart is of an industry that is in decline, which increasingly resembles the pattern beginning in mid-2008

According to the BLS data, since October, direct employment in the oil and gas extraction industry, which is a subset of the mining industry, has shrunk by 3,000. This category had added 50,000 jobs since 2007, reaching a peak in October of 201,500 jobs. In the case of energy support firms, where employment peaked at 337,600 jobs in September 2014, some 12,000 layoffs have occurred so far. Unfortunately, the chart accompanying another *Wall Street Journal* article focused on energy industry employment seems to show much larger labor forces for both oil and gas extraction and support activities. It is quite possible that the categories plotted in the chart in Exhibit 8 (next page) are for the broader mining sector, which includes the oil and gas industry. Regardless of the specific figures, the visual image presented by the chart is of an industry that is in decline, which increasingly resembles the pattern beginning in mid-2008.

Exhibit 8. Oil And Gas Industry Layoffs Climbing

Losing Support?

Jobs in the mining sector, a category that includes oil and gas, in thousands



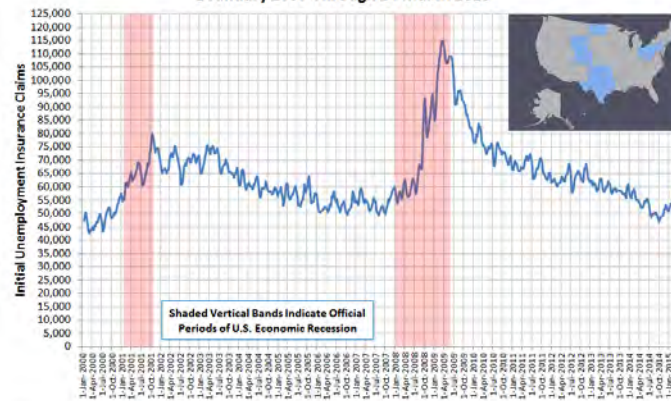
Source: Labor Department | WSJ.com

Source: *The Wall Street Journal*

To gain greater appreciation for where the layoffs are occurring, Exhibit 9 shows a plot of the four-week average for first time weekly unemployment applications in the leading oil shale states. The count reflects those claims filed in Colorado, North Dakota, Ohio, Oklahoma, Pennsylvania, Texas and Wyoming. The creator of the chart, which spans the period from 2000 to mid-March 2015, says he should have included West Virginia in the totals because after further research he learned that most of the state’s territory overlays the Marcellus and Utica shale formations that span much of Pennsylvania and part of Ohio as well. The problem in using West Virginia’s figures is that due to its extensive coal-mining activity the unemployment figures might be overstated as a result of the downturn in the coal-mining industry.

Exhibit 9. Shale Oil Layoffs Show Only Modest Rise So Far

Trailing Four Week Average of Seasonally Adjusted First Time Jobless Claims in Tight Shale Oil Production States (CO, ND, OH, OK, PA, TX, WY)
1 January 2000 Through 14 March 2015



Source: U.S. Department of Labor

© Political Calculations 2015

Source: *PoliticalCalculations.com*

The latest unemployment statistics for Texas show the early effects of the drop in oil prices as jobs were lost state-wide last month

While the four-week average of first time weekly unemployment claims in these shale oil states has jumped up since October 2014, if we look at the 2008-2009 pattern, the recent rise seems to have only matched about 20% of that earlier increase. However, it has occurred in a shorter time span. The current increase has matched almost half of the rise from 2000-2001, but at a quicker pace. It is also worth noting that both of the earlier downturns coincided with officially designated economic recessions. This downturn doesn't appear to show signs of being associated with a new U.S. recession, although the latest national economic statistics might belie that observation. The latest unemployment statistics for Texas show the early effects of the drop in oil prices as jobs were lost state-wide last month. If this downturn matches the 2008-2009 pattern then we have many more jobs to shed.

There Is Good News For The Offshore Oil And Gas Industry

It “will be one of the least active seasons since the middle of the 20th century.”

The first forecast for the upcoming hurricane season suggests it “will be one of the least active seasons since the middle of the 20th century.” That is the opinion of Dr. Philip Klotzbach and Dr. William Gray of the Department of Atmospheric Science of Colorado State University. The hurricane forecasting team, in its April 9th forecast, predicts that the Atlantic Basin will only experience seven named storms with three becoming hurricanes, but only one attaining major hurricane status (Category 3, 4 or 5).

The latest forecast suggests there is only a 28% probability of a storm landing somewhere along the entire U.S. coastline compared to the average for the last century of 52%

Possibly better news for the nation is that the probability for at least one major hurricane making landfall on the U.S. coastline is very low. The latest forecast suggests there is only a 28% probability of a storm landing somewhere along the entire U.S. coastline compared to the average for the last century of 52%. For a landfall along the U.S. East Coast including the Florida peninsula, the probability is 15% versus the historical average of 31%. The probability for a landfall on the Gulf Coast extending from the Florida Panhandle westward to Brownsville, Texas is forecasted at 15% versus the average of the last century of 30%. Despite these low probabilities, the forecasters remind readers that they should always prepare since no one can forecast where a storm might make landfall.

The debate has been less about whether an El Niño event has formed but more about what stage it may be in

The primary reason for the low landfall probabilities and the expectation for this to be the least active hurricane season in decades is the anticipated development this summer and fall of an El Niño of at least moderate strength. The development of this weather pattern has been debated among meteorologists since the end of last year since so far its pattern has not followed traditional or past patterns. Thus, the debate has been less about whether an El Niño event has formed but more about what stage it may be in and what that means for North American weather patterns associated with it. Stay tuned because it is possible that by June, the view of the El Niño event may have changed along with its impact on the Atlantic Basin and hurricane formation, strength and paths.

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