

MUSINGS FROM THE OIL PATCH

August 17, 2010

Allen Brooks
Managing Director

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

Weak Economy A Challenge For Robust Energy Demand

Last year's stimulus effort and the recently legislated overhauls of our health and financial sectors have set the U.S. economy on a slow growth course with little or no new job creation

A double-dip economic recession may or may not be in the cards depending on which economist or pundit you listen to, but the latest economic statistics gauging the health of the U.S. economy certainly do not suggest a resumption of robust energy demand growth anytime soon. While economists and politicians remain divided on the need for additional economic stimulus by the federal government, last year's stimulus effort and the recently legislated overhauls of our health and financial sectors, with the possibility that the energy sector may follow, have set the U.S. economy on a slow growth course with little or no new job creation.

Both the housing and auto sectors are significant consumers of fossil fuels both as raw materials used in making products and as energy to actually produce the output

Once again we go back to the outlook for the key factors that will determine both U.S. economic growth and future energy consumption – housing and autos. Both sectors continue to struggle, although there has been much hype recently about a rebound in auto sales. To remind our readers, both the housing and auto sectors are significant consumers of fossil fuels both as raw materials used in making products and as energy to actually produce the output. Additionally, the health of these sectors is a reflection of the overall strength of the economy and a measure of the willingness and ability of consumers to spend money, which importantly includes spending on gasoline.

What triggered our revisiting this topic were the most recent employment, housing and auto sales figures that all reflect a less robust economy. The challenge is to understand the factors behind each of these statistics and whether they are harbingers of an even weaker economy in the second half of 2010 and into 2011 or whether they merely reflect a brief pause in the pace of the

Only 71,000 private sector jobs were created, well short of the 100,000-125,000 per month job creation number required to offset growth of the labor force in this country

economic recovery. The answer to this question may shed light on the outlook for the energy and fuels sectors over the next 12-18 months.

July's nonfarm payrolls fell by 131,000 jobs or double the estimate based on surveys of economists. Additionally, the June data was revised down from the originally reported loss of 125,000 jobs to a revised loss of 221,000 jobs. A key reason for the greater than expected fall in jobs in July was because only 71,000 private sector jobs were created, well short of the 100,000-125,000 per month job creation number required to offset growth of the labor force in this country. The surveyed economists had been predicting private sector growth of 90,000 jobs in July, or nearly 30% more than were actually created. Besides slower private sector growth, the government sector lost 202,000 jobs, with 143,000 being previously employed temporary 2010 Census workers whose job was completed. The more ominous note about the health of the government jobs market is that 11,000 non-Census federal workers were also let go in July along with 48,000 state and local workers as government budgetary restraints are taking their toll on spending.

Exhibit 1. Jobs Are Becoming Harder To Find

Nonfarm Payrolls,

in thousands



Source: Labor Department

Source: The Wall Street Journal

Construction jobs declined by 11,000 in July, a time of the year when one would have expected relatively healthy job growth in a normal environment

Within the private sector employment number was the encouraging news that manufacturing jobs grew by 36,000 in July after increasing by 13,000 in June. Part of the explanation for the growth is that the motor vehicle and parts industry had fewer seasonal layoffs than normal in July as General Motors decided to not shut down its manufacturing plants as it normally does because it is trying to build vehicle inventory for the second half of the year. A surprising development, although not totally a shock was that construction jobs declined by 11,000 in July, a time of the year when one would have expected relatively healthy job growth in a normal environment.

The unemployment rate held steady at 9.5% rather than ticking

Mr. Rosenberg estimates that the odds of three consecutive months of labor force contraction without the economy either being in a recession or heading into one are 50 to one

upward to 9.6% as was predicted by economists. The reason it held steady was that the labor force participation rate shrank rather than increased. As economist David Rosenberg pointed out, the establishment survey tends to underestimate what is happening at the small business level, thus the reason why forecasters and government officials rely on the household survey as a more accurate measure. That survey showed a decline of 159,000 jobs in July after declines of 301,000 jobs in June and 35,000 jobs in May. Mr. Rosenberg estimates that the odds of three consecutive months of labor force contraction without the economy either being in a recession or heading into one are 50 to one. He also pointed out that labor force participation declined by 181,000 jobs in July and is now down by 1.2 million in the last three months. If the labor force had stayed the same over the past three months, the unemployment rate would have been 10.5%. Mr. Rosenberg also noted that temporary worker employment declined in July by 5,600 for the first drop since last August. This would help support the high U-6 unemployment rate, which measures all unemployed workers including those part-time workers who want full-time work. That rate remained stable at 16.5% in July, but was also subject to the benefit of a decline in the size of the labor force.

Jay Feldman, chief economist at Credit Suisse, said in a research note on the July payroll report that private sector jobs were still 0.3% lower than 13 months ago when the economic recovery is supposed to have begun

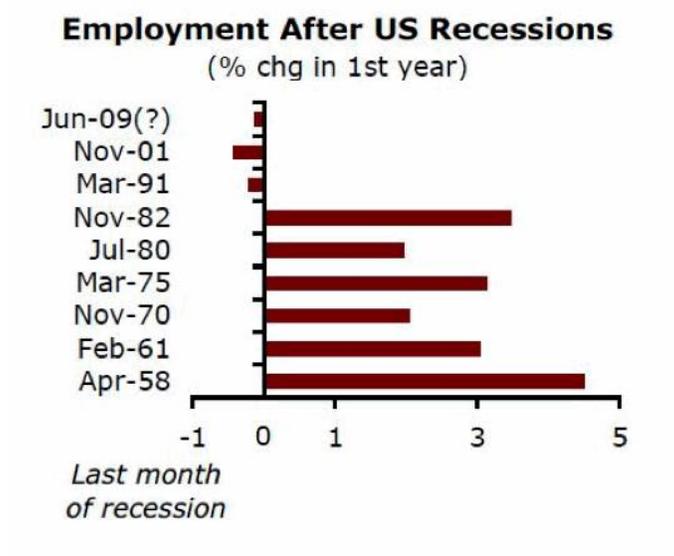
The lack of employment growth has become a topic of serious debate in this country because the Obama administration had promised that with the passage of the \$826 billion (revised up from \$795 billion) stimulus bill passed in early 2009, the unemployment rate would have been kept in check. The chief economic spokesperson for the administration suggested at the time the legislation was being considered that the massive stimulus bill would keep unemployment below 8% this summer, something it has clearly failed to do. Jay Feldman, chief economist at Credit Suisse, said in a research note on the July payroll report that private sector jobs were still 0.3% lower than 13 months ago when the economic recovery is supposed to have begun. By contrast, private sector jobs were up 3.5% on average in economic recoveries during the 1960s, 1970s and 1980s. The chart below shows the record of employment growth in the 12 months following the first month of the economic recovery from each recession that hit the United States starting in 1958. That recovery, the strongest of all during the period studied, was about 4.5%. The 1982 recovery following the 1981-1982 recession that most economists and politicians point to as the benchmark for this recession and recovery, was marked by about 3.2% employment growth. So far this time, we are confronted with negative employment growth.

In June, new home sales were at a 330,000 seasonally adjusted annual rate, down 16.7% from a year ago and the second slowest monthly pace on record

On the housing front, May's new home sales figure was revised to a seasonally adjusted annual rate of 267,000, the slowest monthly pace on record back to 1963. The U.S. population was 190 million at that time. In June, new home sales were at a 330,000 seasonally adjusted annual rate, down 16.7% from a year ago and the second slowest monthly pace on record. Based on the pattern of revisions for the past few months, don't be surprised if the July estimate is also reduced next month. The explanation for the slow new home

sales is the expiration of the federal home buyer credit that ended

Exhibit 2. Jobs Recovery Following Recent Weak Patterns



Source: Oakshire Investment Research

The likelihood of future monthly housing starts holding up is doubtful

April 30, but can still be claimed by consumers if they had signed a purchase contract before that date and complete the transaction by September 30th. The timing of that credit's expiration is the reason why new home starts held up in May and June, but since newly built homes will have to be finished in about 45 days, the likelihood of future monthly housing starts holding up is doubtful, even though home mortgage rates are in record low territory.

Exhibit 3. Ending Of Buyers Credit Killed New Home Sales



Source: Casey Research

A continuing sign of weakness in the housing market is the rise in personal bankruptcies. They were up 9% in June (138,000 filings). So far, 2010 is on track to record the highest number of personal

bankruptcies in five years with 980,000 filed so far, or just under 1% of the number of households in this country. There is a suspicion that the Obama administration may try a backdoor stimulus plan in an effort to help the beleaguered housing industry through its government controlled entities – Fannie Mae and Freddie Mac – that currently supply virtually all the new money to the residential mortgage market. The rumor is that these entities may recalibrate the mortgage debt of individuals and wipe away significant amounts of indebtedness, thus stimulating the economy by lowering monthly mortgage payments and putting more spending money in the hands of lower- and middle-income families. This would be a way to address the concern about the U.S. economy becoming a plutonomy, but it would serious harm the holders of mortgage bonds.

Throughout history, plutonomies have proven to be far less stable economies than those with more evenly distributed income and mass consumption

A plutonomy is an economy dependent on the spending and investing by its wealthy members. Throughout history, plutonomies have proven to be far less stable economies than those with more evenly distributed income and mass consumption. A recent study by Moody's Analytics of Federal Reserve data showed that while consumer spending accounts for roughly two-thirds of U.S. gross domestic spending, spending by the rich now accounts for the largest share of consumer outlays in at least 20 years. The study reported that the top 5% of Americans by income category, i.e., household incomes greater than \$210,000, account for 37% of all consumer outlays, which is defined as consumer spending, interest payments on installment debt and transfer payments, i.e., cash gifts. Similarly, the bottom 80% of Americans by income account for 39.5% of all consumer outlays. Together, this mix of 85% of Americans represents 76.5% of all consumer outlays. What the data shows is how important wealth is to the health of the U.S. economy, as measured by consumer outlays.

The other aspect of this trend is that lower- and middle-income families are struggling with their installment and mortgage debt loads given conditions in the employment market

In the third quarter of 1990, the top 5% of income earners accounted for 25% of consumer outlays. That percentage held steady until the mid 1990s when it began to inch higher towards 30%. The proportion of spending accounted for by this group dipped in 2003 and again in 2008 before surging in 2009. It was clear that the wealthy restrained their spending as a result of the credit crisis but as time has passed they recovered their confidence and have loosened their purse strings. The other aspect of this trend is that lower- and middle-income families are struggling with their installment and mortgage debt loads given conditions in the employment market.

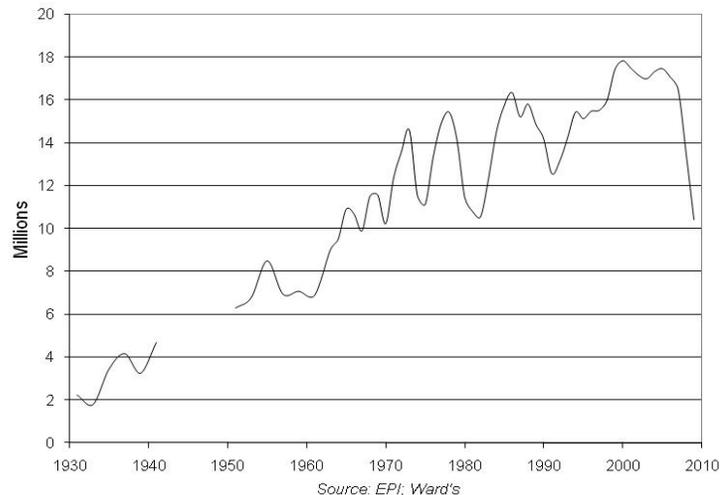
A major question is whether this spending surge by the wealthy will continue. According to Moody's chief economist, Mark Zandi, the savings rate for this group was more than 26% in 2008 during the financial crisis but as of the first quarter of 2010 it has fallen to -7% suggesting that the pace of consumer spending is likely to slow. That conclusion is also supported by a Gallup survey showing that spending by upper income families, defined as those with incomes greater than \$90,000, surged to an average of \$145 a day in May, up 33% from the prior year. In June, however, the spending slid to

\$119 per day. Likewise, MasterCard Advisors' SpendingPulse survey showed that luxury spending fell in June for the first time since last November. So the less-than-stellar retail sales figures reported recently are probably a precursor of further weak sales data, and especially year-over-year comparisons throughout the second half of 2010.

An area of the economy generating positive reviews is the auto sector because it is reporting reasonably healthy sales. July's industry sales are estimated to be at an 11.55 million annual rate, reflecting a 5% year over year comparison. July's sales were the third highest monthly rate this year although the slowest monthly year over year comparison. The expectations are that auto sales should continue to average in this 11-12 million unit range, which puts it above where sales were in 2009 but still well below recent years. The pending initial public offering for General Motors this fall may cause it to take aggressive steps to boost sales volume during the balance of this year in order to build momentum and improve financial results. After the debacle of 2008 and 2009, both consumers and rental car companies are in need of new vehicles to replace their aging vehicles. That should help boost sales, at least for the next few months.

Exhibit 4. Auto Sales Are Up From 2009 Lows

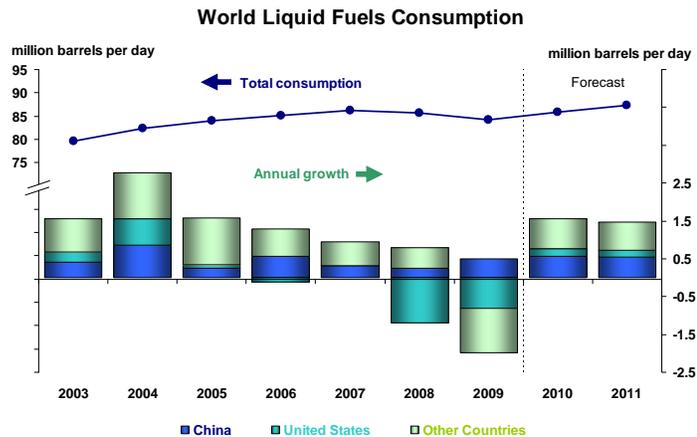
U.S. Vehicle Sales, 1931-2009



Source: Earth Policy Institute

We believe there is a risk to the optimistic forecast for U.S. oil demand growth in 2010 and 2011

From the perspective of energy demand, the latest economic statistics do not support a case for a resumption of robust growth. Even with the auto sector doing better than last year that is not the case with overall employment and the housing industry. As a result, we believe there is a risk to the optimistic forecast for U.S. oil demand growth in 2010 and 2011 as put forth by the Energy Information Administration (EIA) in its July Energy Outlook.

Exhibit 5. EIA Holds To Optimistic Demand Outlook

Source: Energy Information Administration

For the United States the IEA is estimating 180,000 b/d demand growth in 2010 to be followed by a 90,000 b/d decline in 2011

The IEA warned that if global economic growth in 2011 is a third less than the 4.5% growth predicted, its oil demand growth projection will be wiped out

The EIA is projecting global oil demand growth in 2010 of 1.555 million barrels per day (b/d) to be followed by a further 1.473 million b/d growth in 2011. For the United States, the EIA sees oil demand growing by 207,000 b/d this year and by 169,000 b/d next year. The International Energy Agency (IEA) sees world oil demand growth increasing more this year than the EIA but less next year. It sees 2010 showing world oil consumption growth of 1.8 million b/d but then only a 1.3 million b/d growth next year. For the United States the IEA is estimating 180,000 b/d demand growth in 2010 to be followed by a 90,000 b/d decline in 2011.

Until the American automobile and housing industries demonstrate more robust activity on a sustained basis, it is difficult to see U.S. oil and energy demand growth being strong. Therefore, our best guess at this point in the year is that the IEA's more modest oil consumption projection for 2010 followed by a decline in 2011 may be more likely the case than the EIA's higher growth expectations. That view was reinforced by the IEA's warning that if global economic growth in 2011 is a third less than the 4.5% growth predicted its oil demand growth projection will be wiped out. We will continue to monitor the U.S. and world auto industry and domestic housing statistics for signs of strengthening that convince us to become more optimistic about world oil demand growth.

Natural Gas Market Heading For A Course Reversal?

He expects the U.S. drilling rig count to start dropping at mid-year 2011

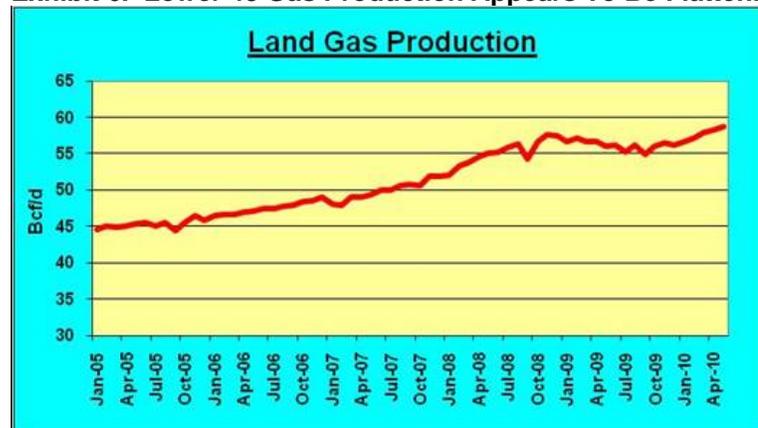
According to comments made by Devon Energy (DVN-NYSE) CEO John Richels at a luncheon in Houston last week, he expects the U.S. drilling rig count to start dropping at mid-year 2011 given current natural gas prices. With gas prices below \$5 per thousand cubic feet (Mcf) currently and also in 2011 futures trading, bringing on new natural gas production, especially from gas shales, is at best minimally profitable. His belief about the future rig count course is

Those short lease lives meant that operators have been under pressure to drill the acreage to hold the leases until gas prices improve

predicated on the fact that significant amounts of gas shale leases were acquired in 2007-2009 and have two and three year lives. Those short lease lives meant that operators have been under pressure to drill the acreage to hold the leases until gas prices improve, or forego their upfront bonus and lease rental payments. Therefore, the rig count has reflected a land rush that will slow significantly when these initial leases are either terminated or secured with wells until gas economics improve.

Many industry observers have marveled at the frantic drilling activity in the face of continued weak natural gas prices, but many people understood the land rush driver and the ability of many of the large land holders to find creative ways to find “cheap” money to fund the drilling. Neither condition is sustainable unless gas economics improve.

Exhibit 6. Lower 48 Gas Production Appears To Be Flattening



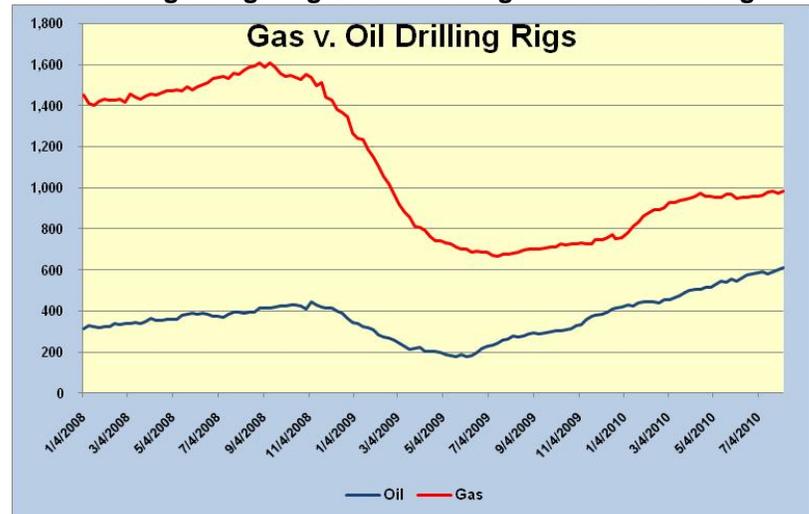
Source: EIA, PPHB

Monthly natural gas data provided by the Energy Information Administration's 914 form survey of producers for the month of May shows a slowing

The most recent monthly natural gas data provided by the Energy Information Administration's 914 form survey of producers for the month of May shows a slowing in the volume of estimated natural gas production. That is encouraging for people hoping for a recovery in natural gas prices. That hope is also being helped by a flattening in the count of drilling rigs targeting natural gas in recent weeks, which is the most recent data about market conditions as the production data lags by several months.

Within the natural gas market, the biggest problem has been weak gas demand especially for industrial use. The summer has been extremely hot, which has boosted the demand for gas in generating electricity to meet the air conditioning load, but weak industrial use coupled with substantial gas inventories and continued growth in production have contributed to weak gas prices.

Since last spring when natural gas prices began to fall back from their winter rally, the case for high natural gas prices weakened forcing many of the natural gas bulls to cut their projections for future prices. Last week one of the last major bulls cut its forecast (actually

Exhibit 7 Rigs Targeting Gas Flattening While Oil Climbing

Source: Baker Hughes, PPHB

Until gas producers seriously restrain their drilling and bringing new prolific production on stream or natural gas demand fundamentals improve materially, a meaningful recovery in gas prices anytime soon is probably not in the cards

they merely acknowledged the reality of the marketplace) and suggested that gas prices may stay around current prices for an extended period – years! Does their capitulation signal an impending turn in the gas market? Until gas producers seriously restrain their drilling and bringing new prolific production on stream or natural gas demand fundamentals improve materially, a meaningful recovery in gas prices anytime soon is probably not in the cards. Whether current gas prices will extend at these levels for years will depend upon market fundamentals not changing. The pace of the recovery in the U.S. economy will be critical in that determination. That said, gas producers still need to demonstrate strong capital discipline if future supply is to be constrained.

Although we are not overly optimistic about an improvement in the pace of the U.S. economic recovery and improvement in the capital discipline of gas producers, there could be some other factors at work in the natural gas market that might help to improve prices. We are actively watching for these conditions to improve, but they are all speculative trends at the moment. We expect to write about the natural gas market in greater detail in coming *Musings* as we focus on these possible market-changing trends.

NOAA Makes News With Tropical Storm Forecast Adjustment

It was the storm forecast revision that was supposedly responsible for a noticeable movement in the price of crude oil futures

On August 5th, the National Oceanic and Atmospheric Administration (NOAA) made news when the Climate Prediction Center a part of the agency's National Weather Service issued a revised tropical storm forecast for the current hurricane season. It was the storm forecast revision that was supposedly responsible for a noticeable movement in the price of crude oil futures that day. From August 5th to the 6th, crude oil futures prices dropped by 2.6%, attributed to the NOAA forecast. The financial talking heads on CNBC seemed to

The net effect of the storm forecast revision was to lower the upper end of NOAA’s initial storm prediction made in May before the hurricane season started on June 1st

ignore the drop that day in the value of the U.S. dollar versus other currencies and how this impacted the price of crude oil.

NOAA revised its forecast for storms and hurricanes in its traditional seasonal update at this time of the year. According to NOAA, it now expects there will be 14-20 named tropical storms this season. All the estimates include the three storms that have formed to date – Alex, Bonnie and Colin. The revised forecast expects that of the named storms, 8-12 will become hurricanes and 4-6 of those will become major hurricanes (Category 3, 4 or 5) before the season is over November 1st. The net effect of the storm forecast revision was to lower the upper end of NOAA’s initial storm prediction made in May before the hurricane season started on June 1st. This storm forecast revision removed three tropical storms, two hurricanes and one major hurricane from the earlier projections.

The revised forecast is still based on the continuation of the same atmospheric conditions that drove the initial forecast – the impact of the formation of La Niña in the Pacific Ocean on the reduced amount of wind shear in the Atlantic Basin that allows tropical storms to form and strengthen, the warmer-than-normal water temperatures in the Atlantic Ocean and the existence of the tropical multi-decadal signal.

The CSU forecast calls for 18 named storms, 10 hurricanes and five major hurricanes

Interestingly, the day before NOAA released its hurricane forecast update, the hurricane forecasting team at Colorado State University (CSU) had issued its normal early hurricane season prediction update. After reviewing the meteorological conditions existing now and the results of the first three tropical storms to form this season, the CSU team kept its forecast count unchanged for the year. The CSU forecast calls for 18 named storms, 10 hurricanes and five major hurricanes. Leaving its forecast intact did little to generate media coverage in contrast to the NOAA revision.

Exhibit 8. Only NOAA Forecast Has Been Revised So Far

Organization	Named Storms	Hurricanes	Major Hurricanes
NOAA	14-23	8-14	3-7
Colorado State University (April)	15	8	4
Colorado State University (June)	18	10	5
Commodity Weather Group LLC	14	8	3
Tropical Storm Risk, Inc. (UK)	16.3	8.5	4
AccuWeather.com	16-18	5	2-3
1950 - 2009 Average	10	6	3

Source: PPHB

The CSU hurricane forecast team also left in place its projection of the landfall outlook for hurricanes. That projection calls for a 75%

chance of a hurricane hitting somewhere on the U.S. coastline compared to an average of the past 100 years of 52%. They see the potential for a hurricane landing on the East Coast including the Florida peninsula at 50%, up from a 31% historical average. The chance of a Gulf Coast landfall is put at 49% compared to the historical average of 30%.

All in all, the hurricane forecasters still anticipate the 2010 tropical storm season to be a more active season than in the most recent years. That could help support current natural gas and crude oil prices.

Food Inflation And Revising The U.S. Ethanol Mandate

One is to clean up gasoline's carbon emissions while the other is to boost agricultural incomes of corn growers and ethanol processors

The U.S. Environmental Protection Agency (EPA) is engaged in studying the feasibility of raising the mandate for using ethanol in the nation's gasoline supply while trying to juggle two conflicting objectives. One is to clean up gasoline's carbon emissions while the other is to boost agricultural incomes of corn growers and ethanol processors. To reduce pollution we have mandated the use of ethanol derived from corn that has lifted its prices, which in turn has contributed to food inflation globally according to a new study from the National Bureau of Economic Research (NBER).

In 1995, the EPA began mandating year round use of oxygenated fuel in cities with serious smog problems

In the late 1980s, ethanol was used to oxygenate gasoline to reduce carbon emissions during winter months in Colorado and help reduce their unhealthy smog. Other oxygenates were introduced for this purpose including the chemical formulation of methyl tertiary butyl ether (MTBE). In the early 1990s the EPA designated various areas of the country where carbon monoxide emission standards were not being met and thus creating smog as regions that required oxygenated fuel during the winter. In 1995, the EPA began mandating year round use of oxygenated fuel in cities with serious smog problems. The automobile industry responded by creating flexible-fueled vehicles that could run on either a blend of 85% ethanol fuel and gasoline, or gasoline alone, or both. Most of the time, however, these vehicles used gasoline due to a shortage of E-85, as the 85% blend is known, stations that partly countered the rationale for building these flex-fuel vehicles.

The Energy Policy Act of 2005 created regulations requiring gasoline sold in the United States contain a minimum volume of renewable fuels

By the late 1990s, a number of localities experienced problems with MTBE spills that got into the ground water and contaminated drinking water sources. In response, states began to ban the use of MTBE to oxygenate the gasoline supply and meet the regulatory mandates. The Energy Policy Act of 2005 created regulations requiring gasoline sold in the United States contain a minimum volume of renewable fuels, called the Renewable Fuels Standard. At that time one of the most popular blends of ethanol and gasoline was E-10 (10% ethanol and 90% gasoline), which had been used extensively around the world to address emission issues as shown by the chart above. De facto this became the standard for mixing ethanol and gasoline in the United States gasoline pool because it

Exhibit 9. Ethanol Blends Used Around The World

Low ethanol blends used around the world (E5 to E25)		
Country/	Ethanol	Legal use
Region(1)	blend	
Australia[1]	E10	Optional
Brazil[2]	E20-E25	Mandated
Canada[3]	E5/E10	Optional
China[4]	E10	Nine provinces
Colombia[5]	E10	Mandated(1)
Costa Rica[6][7]	E7	Mandated(2)
India[8]	E5	Mandated
Jamaica[9]	E10	Mandated(3)
New Zealand[10]	E10	Optional
Pakistan[11]	E10	Optional
Paraguay[12]	E12	Mandated
Thailand[13]	E10/E20	Mandated
European Union[14]		
Austria	E10	Optional
Denmark	E5	Optional
Finland	E5	Optional
France	E10	Optional
Ireland[15]	E4	Mandated
Sweden	E5	Mandated
United States		
(states where mandatory only(4)) [16][17]		
Florida	E10	Minnesota
Hawaii	E10	Missouri
Iowa	E10	Montana
Kansas	E10	Oregon
Louisiana	E10	Washington
Notes: (1)In Colombia mandatory blend was enforced only in cities with more than 500.000 inhabitants.[18]		
(2) Mandatory blend will take effect in the entire country on November 2009. Sales of E7 continue for 3 years now in the two original trial regions.[19]		
(3) Since November 1, 2008 became available in some cities and will become mandatory in May 2009.		
(4) Though mandated only in 10 states, ethanol blends in the US are available in other states as optional or added without any labeling, making E blends present in two-thirds of the US gas supply.[17] Florida effective in 2010.		
(5) The State of Oregon exempted premium unleaded gasoline (91 octane or higher) from the 10% ethanol mandate for road use, effective January 2010.[20]		

Source: Wikipedia

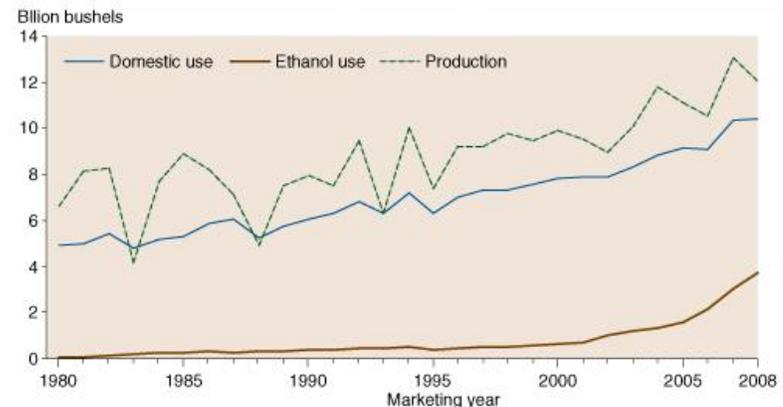
was a formulation that refiners could easily adapt to quickly. The regulations put in place aimed to double the amount of renewable fuel used in gasoline over time, which was considered feasible because the ethanol was mainly produced from corn. The Energy Independence and Security Act of 2007 expanded the Renewable

The expanded mandate set off a construction wave for new ethanol manufacturing plants

Fuels Standard to require the use of 36 billion gallons of ethanol and other renewable fuels be blended into gasoline, diesel and jet fuel by 2022. In 2007, the U.S. consumed 6.8 billion gallons of ethanol and 0.5 billion gallons of biodiesel. The expanded mandate set off a construction wave for new ethanol manufacturing plants and the creation of new ethanol fuel companies.

Exhibit 10. Ethanol Market Since 1980; Explodes In Mid 2000s

U.S. corn: Growth in ethanol use began accelerating in 2000



Source: USDA, Economic Research Service, Feed Grains Database, available at: www.ers.usda.gov/data/feedgrains/

Source: USDA

Farmers assured of a growing demand for corn started planting more acreage and investing in improved farming techniques, seeds and fertilizers to boost crop yields

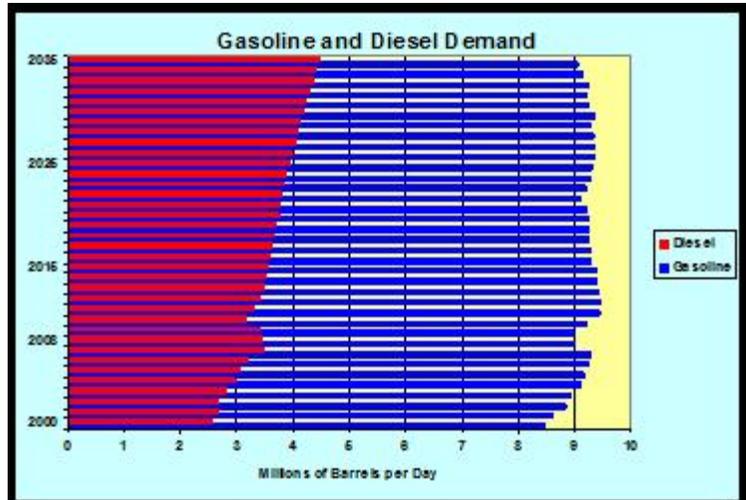
As the chart above shows, it was around 2002 when ethanol use began to ramp up. It was rising sharply by 2008 as the federal mandate for increased use of ethanol as the legislated oxygenate went into effect. With the mandate providing assured demand growth, private equity and existing refiners started building new ethanol refining facilities. Farmers assured of a growing demand for corn started planting more acreage and investing in improved farming techniques, seeds and fertilizers to boost crop yields. The agricultural revolution was further spurred by a sharp rise in corn prices in 2008. That year there were nine billion gallons of ethanol manufactured and blended into the gasoline pool, which consumed about one-third of the nation's corn crop.

Industry expectations about the gasoline market suggest that it is near, if it hasn't already passed, peak demand

The problem now is that the expanded market for ethanol is being restrained by the lack of growth in gasoline demand due largely to the ongoing recession but also to the inroads that smaller, more fuel-efficient vehicles are making into the nation's vehicle fleet. As many oil refiners are discovering, after years of railing against government policies that have prevented the construction of new, grassroots refineries, there is a growing surplus of capacity that is keeping refining profit margins under severe pressure. Industry expectations about the gasoline market suggest that it is near, if it hasn't already passed, peak demand. The EIA in its 2010 annual outlook issued earlier this spring forecast that gasoline demand would rise for the next two years and peak in 2012 before beginning a slow but steady decline that while interrupted by temporarily periods of some growth,

would result in about a half a million barrels per day reduction in annual demand by 2035.

Exhibit 11. Gasoline To Peak In Two Years Then Decline



Source: EIA, PPHB

Between 2002 and now, annual ethanol production has grown 600%

For the ethanol industry and corn farmers this outlook poses a serious problem. In addition, there is the problem of how to deal with the federal mandate for the increasing ethanol volumes for blending into the fuel supply. These forces have combined to put ethanol prices under significant pressure. The pressure has been so bad that corn prices have fallen as demand has dropped and ethanol producers, caught in a vise of higher than anticipated raw material costs and lower than expected product prices have gone bankrupt. In a speech earlier this year to the Governor's Ag Development Summit, South Dakota's Governor Mike Rounds (R-S.D.) pointed out that between 2002 and now, annual ethanol production has grown 600%. Without an increase in the federal mandate to 15% from 10% of the gasoline pool, the ethanol industry will continue to struggle, just as it is currently.

He believes farmers can sustain that rate of growth, which would push yields to 200 bushels per acre by 2030

One of the concerns about the growth of ethanol use is its impact on the cost of corn and on food supplies generally. Increasingly around the world, diets have included a greater amount of animal protein that is met by raising animals fed with corn. The topic of ethanol and food prices has been hotly debated and we will come back to the issue later. Gov. Rounds attempted to diffuse the issue by pointing out that over the last 40 years average corn yields have doubled to around 165 bushels per acre. He believes farmers can sustain that rate of growth, which would push yields to 200 bushels per acre by 2030. Moreover, he thinks it is possible that yields could go even higher with advancements in farming practices, plant breeding and biotechnology. He said that these advancements could push yields as high as 300 bushels per acre by 2030, or 50% more than currently expected. With that productivity growth, Gov. Rounds believes there will be no problem meeting both our food and

Exhibit 12. Corn Prices Exploded With Mandate; Still High

Source: TFC Commodity Charts

The EPA has not bought into the increased ethanol mandate yet as it has been challenged by numerous user groups who question the higher blend's impact on engine performance

So the boat owner who traditionally buys his fuel at the same gasoline station where he fills up his car may not be able to without risking damage to his boat engine by using E-15

increased fuel needs from corn without driving corn prices higher.

The problem is that the EPA has not bought into the increased ethanol mandate yet as it has been challenged by numerous user groups who question the higher blend's impact on engine performance. As a result of this pressure, the EPA had delayed reaching a decision to increase the ethanol content of gasoline to 15%. The most recent delay was the second time. The EPA said it was waiting for the results from further testing of engines that should be complete by the end of September. At issue is the use of greater amounts of ethanol in older vehicles, especially those built before 2001, and in small engines and marine engines.

Already, there is a page on the web site of the Renewable Fuels Association that talks about there being issues with increased ethanol for marine engines. The organization's solution is to keep 10% ethanol for use in these engines. The problem with that solution is that it inflates the cost of fuel production for refiners, distributors and retailers, let alone the problem for consumers. If only batches of E-10 are made, that will raise the per-unit cost for the refiner. Then the distributors will have to maintain separate storage facilities as will retailers. For consumers, they will be limited as to where they can purchase their fuel, which is guaranteed to boost retail prices. So the boat owner who traditionally buys his fuel at the same gasoline station where he fills up his car may not be able to without risking damage to his boat engine by using E-15.

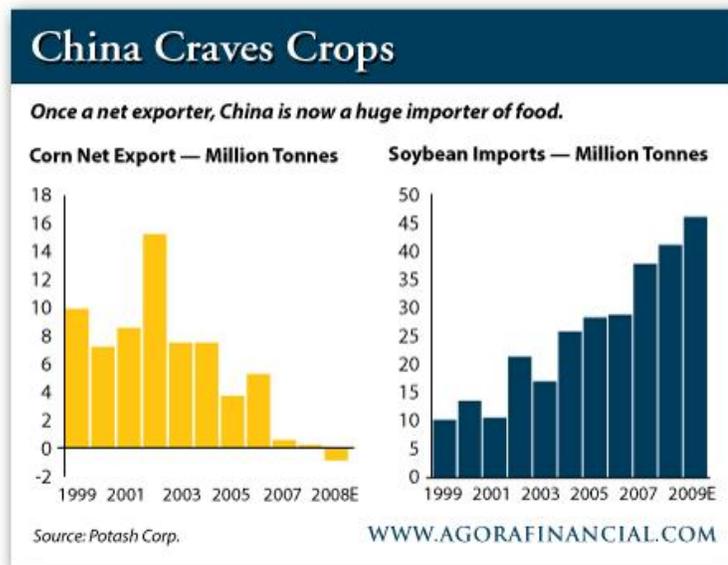
The battle over whether the ethanol mandate is creating inflation within the food chain continues to rage. The Renewable Fuels Association web site had a blog talking about a new World Bank study that challenged the organization's earlier conclusions of two years ago that the ethanol mandate was responsible for 75% of the

They predict that with the mandate for increased use of corn-based ethanol, world food prices will increase by about 30% and global consumer surplus from food consumption is predicted to decrease by \$155 billion annually

then sharp rise in corn prices. The new study attributes the bulk of that rise to speculators. (That sounds familiar as speculators are always the cause of rising crude oil prices!)

A new working paper by two economists, Michael J. Roberts and Wolfram Schlenker, issued by the NBER in April, examined supply and demand elasticity of agricultural commodities and the implications for the U.S. ethanol mandate. The authors looked at the issue from the perspective of global caloric production that comes from corn, wheat, rice and soybeans, The study's conclusion was that the U.S. ethanol mandate requires that about 5% of world caloric production be used for ethanol production. As a result, they predict that with the mandate for increased use of corn-based ethanol, world food prices will increase by about 30% and global consumer surplus from food consumption is predicted to decrease by \$155 billion annually. The authors also examined the impact of the use of recycled calories as feed stock for livestock. If a third of the calories are recycled, they predicted that the price increase will be limited to about 20%.

Exhibit 13. China Shifts To Corn Importer From Exporter



Source: Agora Financial

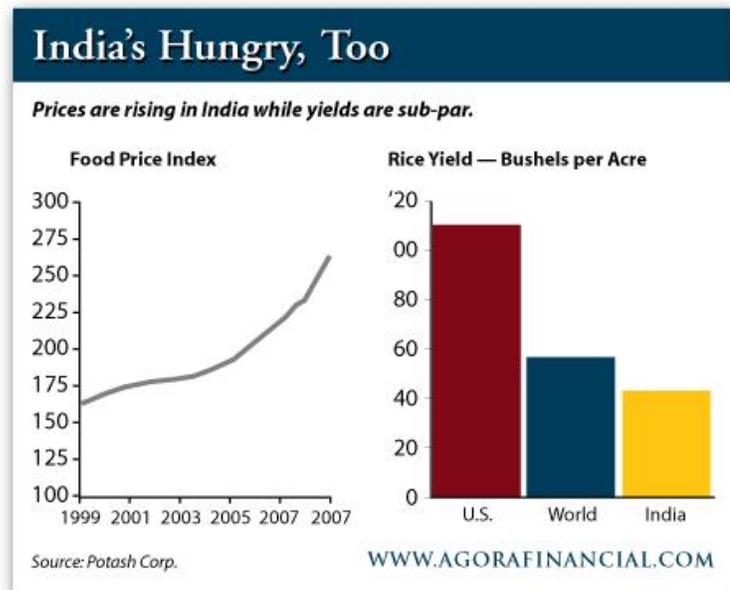
Only approximately 4.7% of the Earth's land is currently being used to raise food crops

The study may have underestimated the global challenges for agricultural crops. Roughly 82% of the Earth's land is of no use for growing crops. About 13.3% of the land is arable but maybe 40% of that is rated as "seriously degraded" due to over-harvesting, soil erosion and climate change. Only approximately 4.7% of the Earth's land is currently being used to raise food crops. A problem with the land situation globally is that lower quality land is being planted forcing greater use of fertilizers to boost crop yields. Pressure is even on highly productive land to boost its yield to the maximum as the agriculture industry strives to grow more food to feed the ever-

China has gone from being a corn exporter to being an importer

growing global population. In the case of rice (as shown in the chart below), the United States crop yield is well ahead of that of the world average and much better than for India. And, as seen above, China has gone from being a corn exporter to being an importer, as well as having to import other foodstuffs in order to feed its growing population. These are just examples, although important examples, of the challenges the global agricultural industry is facing.

Exhibit 14. India's Rice Yield Well Below World's And U.S.



Source: Agora Financial

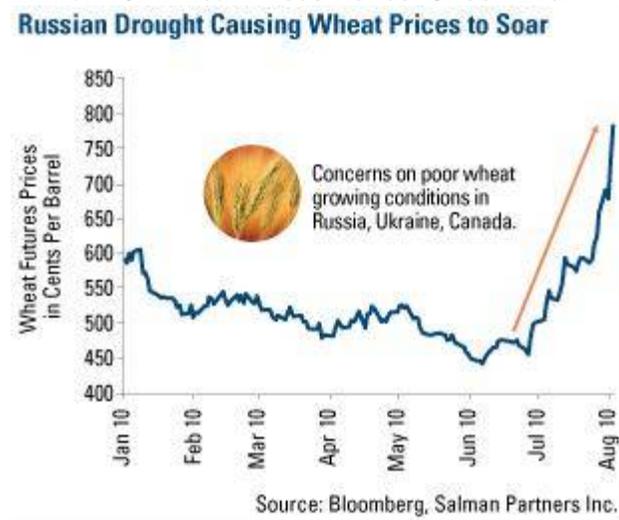
We are currently in the midst of one of those great shocks – the failure of the Russian wheat crop and the government's decision to restrict all exports

The NBER study was well done in that it looked at the impact of shock events on the prices and outputs of the four basic food crops. By adjusting for shocks, the authors were able to better measure the impact of demand and supply changes in response to price movements. We are currently in the midst of one of those great shocks – the failure of the Russian wheat crop and the government's decision to restrict all exports. As a result, wheat prices in the world market have soared in recent weeks and will likely have an impact on the prices of other caloric food crops such as corn, rice and soybeans.

The EPA's conclusion is that ethanol is not as much of an emissions savior as once thought

As a side note to the NBER study, the authors point out that there is likely to be an expansion of the agricultural growing area that may offset the CO₂ emission benefits derived from the increased use of biofuels. This is a growing topic in the U.S. as the EPA has been forced to re-assess its estimate of the life cycle greenhouse gas emissions in producing ethanol. The EPA's conclusion is that ethanol is not as much of an emissions savior as once thought. As expected, the Renewable Fuels Association claims there are errors in the EPA study that if corrected to their math would demonstrate greater emissions savings from the use of ethanol. That is an

**Exhibit 15. Wheat Prices Reflect Shock Event
Russian Drought Causing Wheat Prices to Soar**



Source: U.S. Global Investors

More corn needed for an expanded ethanol mandate may significantly increase the environmental damage to the Gulf of Mexico

important point because if ethanol is not the great environmental savior, one has to begin questioning the value of expanding the mandate due to its possible impact on global food costs, let alone its possible costs to engines in this country. There is also the issue about increased environmental damage (the dead zone) to the Gulf of Mexico from increased use of fertilizers since corn crops take a huge toll on the nutrients of farm land each year. More corn needed for an expanded ethanol mandate may significantly increase the environmental damage to the Gulf of Mexico. The ethanol mandate is just one more arena where the environmental movement is experiencing a tougher time making its case. In this situation, they are up against one of the strongest lobbies in the United States. As the battle rages on, the refining industry and American consumers can only stand and watch, holding on to their wallets.

Government Motors IPO Highlights EVs And Engine Trends

The stage is set for GM launching an offering with the momentum of positive earnings

Last week General Motors announced its earnings for the second quarter even though the company is still private. They also indicated the filing of an initial public offering document was imminent. GM reported that it earned \$1.54 billion on sales of \$33.2 billion in the quarter, so the stage is set for the company launching an offering with the momentum of positive earnings. There is also enthusiasm about the recovering auto market, albeit not all experts are as optimistic as the recent data might suggest about the industry's outlook.

Domestic auto sales were at an 11.55 million rate in July or up 5% year over year. The sales rate was the third highest monthly rate this year, but the slowest year over year gain. What came out of digging into the reported sales statistics by *Automotive News* is that much of the strength in sales came from cars sold to auto rental

Importantly, the data also shows that retail sales were down slightly less than 1% at GM and off 19% at Chrysler for the seven months

fleets rather than individual consumers. For the seven months through July, all three of the domestic auto manufacturers sold over 30% of their cars to rental fleets. GM's fleet sales are up 53% to 400,000 units so far this year while Chrysler's more than doubled to 242,000 cars. The dramatic improvement in sales this year for both companies follows the drastic downturn they experienced during their bankruptcies in 2009.

According to the data studied, fleet sales have climbed to 1.6 million units in the first seven months of 2010 from less than one million cars last year. Importantly, the data also shows that retail sales were down slightly less than 1% at GM and off 19% at Chrysler for the seven months. Taking all vehicles into account, GM's sales are up 13% this year while Chrysler is up 11%, both close to the industry's increase of 15%.

Internal combustion engines will hold 80% of the market at least through 2020 and probably beyond

While we have yet to see the GM IPO document, we will be interested in seeing what it says about the market and the company's plans for alternative vehicles – natural gas, hybrid and full electric vehicles (EV). One signal we got was comments made by engine technology officials of the leading auto companies at a recent conference. In early August, at the 2010 Management Briefing Seminar sponsored by *Automotive News*, Johannes-Joerg Rueger, senior vice president of diesel engineering at Robert Bosch said that internal combustion engines will hold 80% of the market at least through 2020 and probably beyond. His understatement was, "I don't think there will be any radical changes" when discussing the outlook for engine technology.

He believes that most U.S. customers need gasoline engines for long-range driving needs and ethanol "is the best opportunity for near-term energy diversity, hands down"

Larry Nitz, executive director of hybrid and electric power train engineering for GM suggested that EVs have the potential of becoming a successful niche market. However, he believes that most U.S. customers need gasoline engines for long-range driving needs and ethanol "is the best opportunity for near-term energy diversity, hands down." That is interesting since GM has made much about the introduction of its Chevy Volt electric car. But as we pointed out in our last *Musings*, there are a number of problems with the car's design, besides its sky-high price (\$41,000 before tax credits) that will likely limit its appeal. Those include the fact the car can only seat four people because of the space used by the battery, the fact that the small engine requires premium fuel, the weight of the car and its limited battery charge range (40 miles).

Ford sells clean diesel engines in Europe and has engine models ready for the U.S. but that the economics of selling them are unfavorable

There was an extended discussion of the merits of clean diesel engines that are very popular in Europe largely because of the subsidy for diesel fuel. An engine technology official for Ford (F-NYSE) said that clean diesel engines are unattractive in the U.S. because of expensive regulatory requirements and higher diesel fuel costs. She pointed out that Ford sells clean diesel engines in Europe and has engine models ready for the U.S. but that the economics of selling them are unfavorable. Countering that argument, Mr. Rueger said that the spread between the cost of diesel and gasoline averaged 20-cents per gallon for the past 20

Their observations about the future engine profile of the auto industry also point out how overhyped the EV business has become at the present time

years. Any wider gap, such as now, he said is temporary. He also went on to say that stricter emission regulations would actually make clean diesel engines more attractive, not less so than in Europe.

The debate about engine technology by officials who are guiding the auto manufacturers is interesting because it may tell us more about how the fuel supply business in the United States may change, or whether it will remain stable. Their observations about the future engine profile of the auto industry also point out how overhyped the EV business has become at the present time. That is not surprising because the hype is coming from government officials and politicians with an agenda, and occasionally from auto officials dependent upon the federal government. We think all of this suggests that the domestic auto industry will be forced into making some poor investment decisions by backing EVs as the future of the industry. Their decisions, and their ramifications in the auto market, need to be watched closely by the oil companies with refining operations.

Environmental Concerns Fade As Recession Fears Grow

An interesting working paper issued in July by the National Bureau of Economic Research (NBER) examined the relationship between environmental concerns and the business cycle. The authors, Matthew E. Kahn and Matthew J. Kotchen, examined the chilling effect on environmental concerns that flow from growing economic fears, as measured by the level of unemployment associated with recessions. The two economists also found that the relationship can be influenced by the political ideology of a state's population.

The study found that increases in a state's unemployment rate is correlated with a decrease in Google searches for "global warming" and increased searches for "unemployment"

Using measures of internet searches and their terms, a modern academic research practice, the study found that increases in a state's unemployment rate is correlated with a decrease in Google searches for "global warming" and increased searches for "unemployment." This correlation fits with the results of national surveys that find that a state's unemployment rate is associated with a decrease in the probability residents think global warming is happening and in reduced support for the U.S. to target policies intended to mitigate global warming.

In California, the rise in a county's unemployment rate is associated with a significant decrease in the county's residents choosing the environment as the highest policy issue for politicians. These study results are consistent with the belief that when economic downturns occur, people become much more focused on how to feed, clothe and house themselves and their families at the expense of worrying about environmental concerns that generally are associated with actions that increase the resident's cost of living. In short, during periods of economic downturns, pocketbook issues become the most important consideration for people rather than clean energy.

Rhode Island Wind Decision Creates Legal Battle

The decision is driving at least two objectors to the law dictating the conditions under which the PUC had to consider this project to announce that they will file appeal the decision

On August 11th, the Rhode Island Public Utility Commission (PUC) rendered a favorable decision in support of the offshore wind project to be built off the coast of Block Island. In a 2-1 decision, the commissioners voted to approve the Power Purchase Agreement (PPA) negotiated between Deepwater Wind, the project's developer, and National Grid (NGG-NYSE), the state's principle electric utility company. The PPA calls for the initial electricity price when the project starts up in 2013 to be set at 24.4-cents per kilowatt-hour with a guaranteed 3.5% escalation each year of the 20-year contract life. This price is more than twice the price of electricity generated by natural gas that can be purchased in Rhode Island from other suppliers. The decision is driving at least two objectors to the law dictating the conditions under which the PUC had to consider this project to announce that they will file appeal the decision.

The law said that the PUC could only consider four issues as they related to an offshore wind farm with eight turbines even if there are other sources of electricity available that are cheaper

As we have written about extensively in previous Musings, the original PPA submitted to the PUC was rejected as not being "reasonable" based on all factors considered by the commissioners in evaluating the contract's fairness to Rhode Island electricity consumers under the Commission's rules. Following the rejection of the PPA, the state legislature, at the prompting of the governor, wrote a new law that covered the basis upon which the PUC would have to consider any offshore wind power PPA. The law said that the PUC could only consider four issues as they related to an offshore wind farm with eight turbines even if there are other sources of electricity available that are cheaper. It was this targeted language that brought forth objections from the Rhode Island Attorney General and the Constitutional Law Foundation, previous supporters of the offshore wind project, who claimed the law was unconstitutional due to it being exclusionary. The PUC rejected those claims as well as claims from a Maine-based wind farm operator who wants to deliver clean energy to the state at a much cheaper price than contained in the PPA.

The PUC evaluated the PPA based on four criteria:

- Is the agreement commercially reasonable? – 2-1 vote yes
- Does the agreement pass cost savings to ratepayers? – 2-1 vote yes
 - Deepwater Wind cut cost from \$219 million to \$205 million but won't transfer savings
- Does the project create economic benefits? – 2-1 vote yes
 - The state Economic Development Corp. reported \$107 million in benefits
 - Two manufacturers complained about high electricity costs preventing their expansions
 - That these companies didn't say they would leave caused the comments to be discounted
- Were there environmental benefits from the project? – 3-0 vote yes

Deepwater Wind suggests it will be two years before the wind farm project will be operational

The PUC plans to issue its written opinion on Monday, August 16th and the appeals will then commence. Under Rhode Island law, appeals of PUC decisions have to be made directly to the state Supreme Court. The last chapter in this battle hasn't been written.

Even after the favorable decision, Deepwater Wind has to await the completion of the state's offshore development program at which time it can apply for the necessary construction and operating permits. Deepwater Wind suggests it will be two years before the wind farm project will be operational. The most important upcoming date is the end of this year when the ability of wind projects to receive upfront cash for the production tax credit alternative energy is eligible for, which would ease the financing burden, expires. If Deepwater Wind has commenced construction before year end it can receive the upfront payment.

Between July and December 2009, 602 birds and 1,270 bats were killed by the 86-turbine Wolfe Island Wind Farm

North of Rhode Island another environmental challenge to clean power is being waged. The Save the River organization has called for a three-year moratorium on new wind power development along the St. Lawrence River due to the potential threats to the region's bird and bat populations. Between July and December 2009, 602 birds and 1,270 bats were killed by the 86-turbine Wolfe Island Wind Farm. While Save the River is not opposed to wind development, it believes municipalities, wind developers, and U.S. and Canadian federal governments should be more responsible and take a closer look at this issue to ensure that wind development is right for the area before erecting additional turbines.

At the moment there are 400 wind turbines proposed in the Thousand Island region

At the moment there are 400 wind turbines proposed in the Thousand Island region near the Wolfe Island Wind Farm, including the St Lawrence, Cape Vincent, Horse Creek and Galloo island wind farms. Save the River believes these wind farms pose a threat to local wildlife including the Indiana bat, currently listed as a federally endangered species. Save the River wants two assessments made of bird and bat mortality and other environmental considerations of wind power development – one with 500 wind turbines and the other with 1,000. It will be interesting to see which environmental group comes out on top in this dispute.

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

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