Qwest Investment Management

Qwest for Returns

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Gulf of Mexico Disaster + Quiet Sun + Noisy Volcanoes = Energy Bullish

We wanted to update our readers about a number of developments that point to long-term bullish trends for energy prices. In our October 2009 Qwest for Returns newsletter, we wrote about the negligible effects of "elephant" oil finds on energy supply. In our March 2010 newsletter, we wrote about the possible cooling effects of the solar cycle on the earth's climate, which could lead to greater energy heating demand.

Supply disruptions from the Gulf of Mexico disaster

The BP's Deepwater Horizon rig disaster in the Gulf of Mexico has served to highlight the engineering difficulties of oil and gas extraction in deep water. Environmental standards are certain to be raised in the wake of this incident, which will serve to curtail supply.

Simply said, the combination of lower energy supply from tougher environmental standards and higher demand from cooling global temperatures would be long-term bullish for energy prices.

Increased demand from a cooling climate

On the demand side, we previously wrote about the possibility of a scientific theory that solar cycles (e.g. sunspots) may be the primary cause of the earth's warming and cooling cycles. Should this theory be right and investors start to believe that the earth is entering a cooling period it would be bullish for the price of energy and other commodities.

The latest update of sunspot activity, in the current solar cycle, suggests we are tracking the pattern seen during the Dalton Minimum, which coincided with an extremely cold period in history. Should the theory about the link between solar activity and earthly temperatures be correct, then we are on track for a substantially cooler period in the years ahead.

In addition, additional volcanic eruptions, such as the recent event in Iceland, could spew more volcanic ash into the air which, besides severely disrupting air traffic, can obscure the sun to further cool the global climate.

So, supply constraints + more demand pressure = higher prices

Simply said, the combination of lower oil supply from tougher environmental standards and higher demand from cooling global temperatures would be long-term bullish for energy prices.

In the pages to follow, we revisit our explanations of the theories of Peak Oil, the effects of solar activity on global temperate and their impact on energy supply and demand. We then give updates on the developments that indicate an energy bullish environment.

For more details see ***Significant New finds = The End of Peak Oil?*** http://www.qwestfunds.com/publications/newsletters_pdf/newsletter_october_2009.pdf and ***Global Cooling: Profitable Contrarian Investing?*** http://www.qwestfunds.com/publications/newsletters_pdf/newsletter_march_2010.pdf)

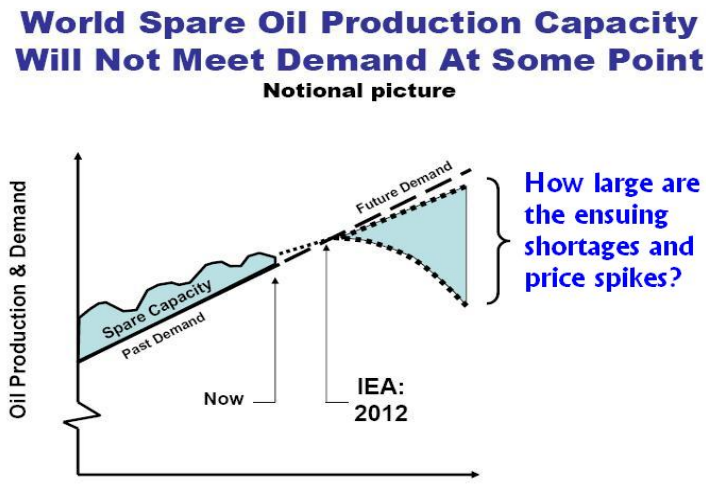
Peak Oil – Theory or Reality

The theory behind what is commonly known as "Peak Oil" is that global oil production capacity cannot meet rising global demand. In fact, production capacity is expected to peak and begin to fall in the near future. When that happens, oil shortages will develop.

An important assumption behind Peak Oil is that we are about to use up half of all of the extractable oil there is in the ground. Once we hit that peak, production starts to fall.

The world is not running out of oil, but running into the Malthusian limits of extraction and production capacity. An important assumption behind Peak Oil is we are about to use up half of all of the extractable oil that there is in the ground. Once we hit that peak, production starts to fall. Meanwhile, world demand continues to rise, driven by industrialization and rising affluence in the developing world. Simple economics tells us that when rising demand and falling supply meet, you get a shortage squeeze resulting in rising prices.

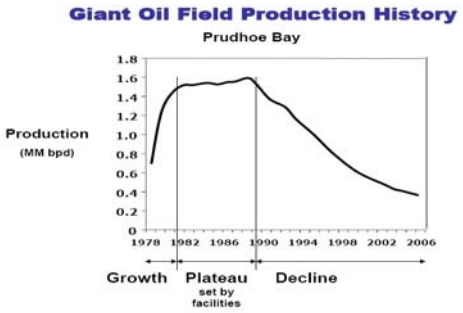
For all of us, the realization that there are limits to production growth would highlight the scarcity of oil as an energy source, create investment paradigm shifts and create constraints on world economic growth. While the chart below is a little dated, the questions and conclusions are still valid.



Source: Robert Hirsch

So let's hope we continue to expand alternative energy supplies as we will need it!

An excellent book that discusses peak oil is *Hubbert's Peak, The Impending World Oil Shortage* by Kenneth S. Deffeyes. Deffeyes writes that global oil production will probably reach a peak sometime during this decade. After the peak, the world's production of crude oil will fall, never to rise again. The world will not run out of energy, but developing alternative energy sources on a large scale will take at least 10 years. The slowdown in oil production may already be beginning; the current price fluctuations for crude oil and natural gas may be the preamble to a major crisis.



A profile of falling oil production

The chart on the left comes from Robert Hirsch, a leading energy analyst who co-authored *Peaking of World Oil Production: Impacts, Mitigation and Risk Management* in 2005 for the US Department of Energy. It shows the production history for Alaska's Prudhoe Bay which is a typical profile for an oil field. You turn on the taps and get a big ramp up in production, which is followed by a plateau and eventually by a slow decline until it is no longer profitable to keep the field running.

What many analysts have done is aggregate the data for all oil fields around the world and create a global cumulative oil production profile. The depletion rates come to 4-6% when you come to the down slope, and the figures are corroborated by various sources like the IEA.

That means a minimum of three million barrels of daily output is disappearing a year due to old age. In the meantime, announced finds that are due to come on stream can't keep pace with lost production.

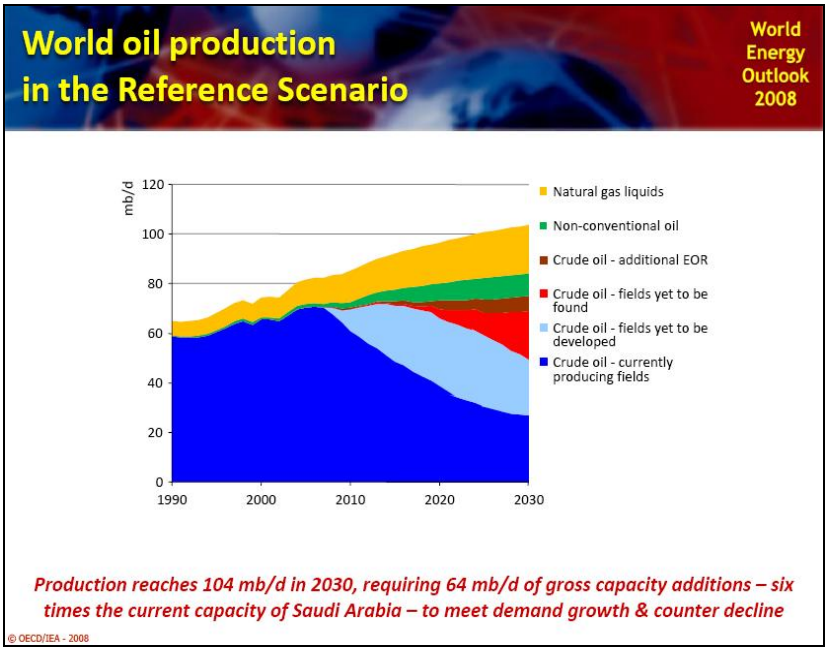
Putting three million barrels a day into perspective

To understand what three million barrels a day really means, the oil industry has gotten very excited about big finds such as Atlantis (Gulf of Mexico) and Plutonio (Angola) which are expected to produce 220,000-240,000 barrels per day. For another perspective, consider that the aging mammoth Ghawar field in Saudi Arabia produces 5 million barrels per day.

Hey Mister, do you have a spare Saudi Arabia?

Even if we assumed flat demand growth to 2030, we need to replace production equivalent to four Saudi Arabias.

The chart below is an extract from the IEA's 2008 outlook which projects that ***the world needs to add six Saudi Arabias of oil production*** between now and 2030 to keep up with demand. Even if we were to make the brave assumption that demand was to stay flat until 2030, we would need to replace production equivalent to four Saudi Arabias.



The trouble with the new discoveries

In September 2009, BP announced a "giant" discovery at its Gulf of Mexico Tiber field. The Street got excited as the Tiber find had the potential to produce 300,000 barrels of oil equivalent a day. Ironies of ironies, the news story read [emphasis added]:

> Tiber was drilled 250 miles (400 kilometers) southeast of Houston in 4,132 feet (1,259 meters) of water, reaching almost 31,000 feet beneath the seafloor. Transocean Ltd., the world's largest offshore driller, ***used the Deepwater Horizon semi- submersible rig for the discovery***. BP, which hasn't disclosed the project's costs, plans more wells to assess the find. (http://www.bloomberg.com/apps/news?pid=newsarchive&sid=aeGpXwL7lH3U)

Up until the disaster in the Gulf of Mexico, the public had underestimated the engineering difficulties and risks of deepwater energy extraction.

Oops! That rig may not be, well, available for the exploitation of the Tiber field for some time. Up until the disaster in the Gulf of Mexico, the public had underestimated the engineering difficulties and risks of deepwater energy extraction.

What about the enormous discoveries in Brazil? They are in deeper water. Anyone seeking to exploit that find faces the engineering problem and risks of drilling through a layer of salt, which is extremely unstable compared to the geology in the Gulf of Mexico.

So with higher environmental standards, delays from environmental reviews, and engineering problems – it all adds up to a picture of curtailed offshore energy supply.

Did the sun cause global warming?

Another "oil bullish" development may come from increased energy heating demand because of global cooling from a shift in the solar cycle.

What we write may seem sacrilegious to some people. The general consensus about climate change is that the Earth is undergoing a warming period caused by the effects of human activity and industrialization, otherwise known as Anthropogenic Global Warming (AGW). However, there is another view that global warming is caused primarily by solar activity.

While we are not yet investing based on global cooling as our base case, we do have to allow for the possibility that it may be a valid one,

Currently, the forecast for the latest solar cycle is that it is late and subdued. Such cycles have been associated with cooling periods such as the Little Ice Age experienced in the 17th Century or the Dalton Minimum in the 19th Century.

To graphically illustrate our point about the effects of global cooling, Dutch artist Hendrick Avercamp painted numerous landscapes such as the above entitled, "*A Scene in the Ice",* documenting everyday life in Holland during the Little Ice Age (for see http://promotions.artinfo.com/alldutch/rijksmuseum/).

Solar activity and climate change

One possible explanation advanced for the observed warming trend in global temperatures is solar activity. A study from NASA's Goddard Space Flight Center concluded that solar variation made a significant impact on the Earth's climate.

The Sun goes through eleven year cycles. At the cycle's peak, solar activity occurring near sunspots is particularly intense, basking the Earth in solar heat and solar winds. Although sunspots themselves produce only minor effects on solar emissions, the solar winds and other magnetic activity that accompany the sunspots can produce dramatic changes in the ultraviolet and soft x-ray emissions that affect the Earth's upper atmosphere. Putting it simply, solar winds protect the Earth from cosmic rays. When the sun is quieter, not only is solar heat less intense, more cosmic rays penetrate the atmosphere, serving as nuclei for clouds and as a result cooling cloud cover increases.

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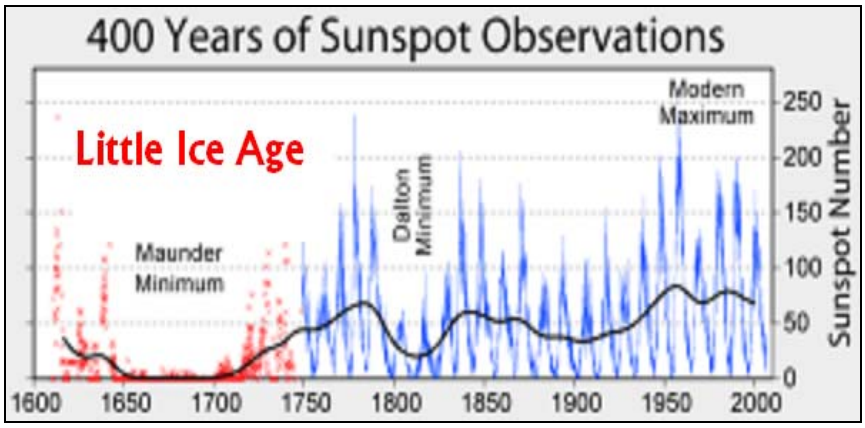


Source: Robert Rohde (http://en.wikipedia.org/wiki/File:Sunspot_Numbers.png)

Little Ice Age

Recorded history has seen the Earth going through several periods of abnormally cold temperatures. The Little Ice Age coincided with a period called the Maunder Minimum, where there was little or no sunspot activity.

The change in climate devastated agriculture during the Little Ice Age. The growing season was reduced by 15% to 20% between the warmest and coldest times of the millennium. That is enough to affect almost any type of food production, especially crops adapted to use a full-season warm climate.

Dalton Minimum

Subsequent to the Little Ice Age, the Earth experienced another one of the Sun's extended periods of low sunspot activity called the Dalton Minimum. This particular minimum lasted from about 1795 to the 1820s.

The combination of minimal solar activity and major volcanic activity today parallels the experience of 1816, otherwise known as the "year without a summer".

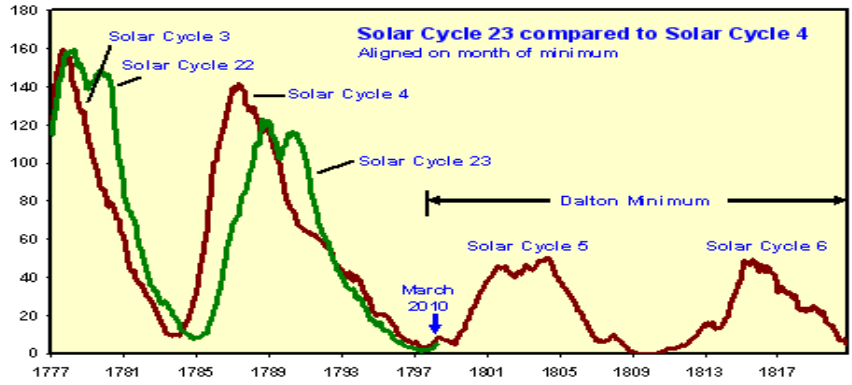
The year 1816 was in the middle of the Dalton Minimum period. It is still known to historians as the "year without a summer", the "poverty year", or "eighteen hundred and froze to death". Poor conditions were said to have been caused by a combination of a historic low in solar activity and the Mount Tambora eruption of 1815, which spewed extensive amounts of volcanic ash around the globe.

It was a time of ecological disaster. 1816 saw snow in June in the U.S. and Europe. Crops failed and starvation followed, Many Europeans spent their summers huddled around the fire. It was during this bleak summer that Mary Shelley was inspired to write *Frankenstein* and John William Polidori to write *The Vampyre*.

Are we facing a global cooling cycle?

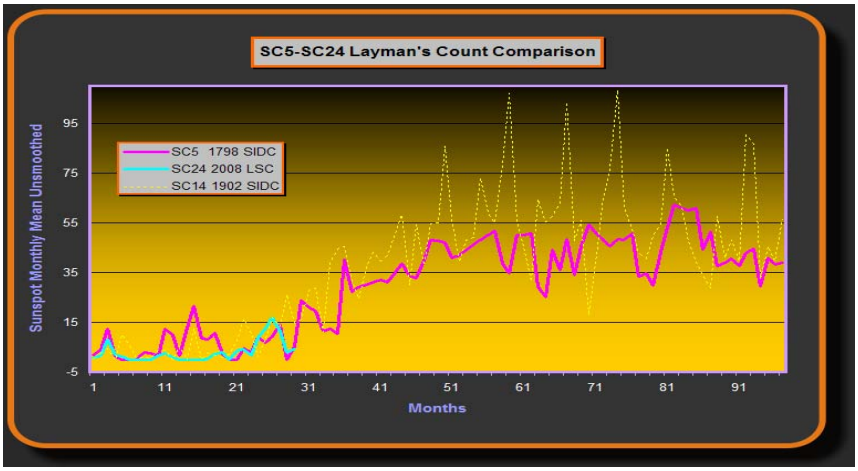
Currently, sunspot activity is extremely low. While readings indicate that we are not on the verge of another Little Ice Age, another Dalton Minimum is possible.

Sunspot activity, then and now



Source: Anthony Watts (http://wattsupwiththat.com/2010/06/20/quote-of-the-week-35-nat-geo-bangs-the-drum-for-the-next-solar-cycle/)

The latest update of the sunspot count, which is a proxy for the solar cycle, is tracking the pattern of Solar Cycle 5, which occurred at the start of the Dalton Minimum – the start of the Little Ice Age.



Source: Layman's sunspot count (http://www.landscheidt.info/?q=node/50)

In response to the quiet activity observed in the sun, David Hathaway of NASA has again lowered his prediction of the peak in sunspot numbers for the current solar cycle 24 to only 65 sunspots per month as of June 2010. The forecasts for the current solar cycle have been plunging since the December 2006 forecast suggested that it would be "one of the ***most intense*** cycles since record keeping began almost 400 years ago" to one of the ***least intense*** cycles of the past 400 years.

Echoes of the past

Back in 1816, the combination of subdued solar activity and the eruption Mount Tambora eruption of 1815, led to a year of extremely cold conditions.

Today, the same combination of conditions is in evidence. Anemic solar activity is tracking the Dalton Minimum-like conditions. In addition, the 2010 eruption of Eyjafjallajökull in Iceland substantially disrupted European air traffic as the volcano with volcanic ash. Moreover, a second and much larger nearby volcano at Katla is threatening to erupt.

The combination of minimal solar activity and major volcanic activity today parallels the experience of 1816, otherwise known as the "year without a summer".

Global cooling is commodity bullish

What would a period of global cooling mean for investors? Cooler global temperatures would translate into higher energy demand, which would in turn be long-term bullish for energy prices.

And rising prices under a global cooling scenario would not stop with the energy complex. In 1823, noted astronomer William Herschel reported finding a correlation between sunspot activity and wheat prices.

And rising prices under a global cooling scenario would not stop with the energy complex. In 1823, noted astronomer William Herschel reported finding a correlation between sunspot activity and wheat prices. More recently two Israeli researchers, Lev A. Pustil'nik and Gregory Yom Din, confirmed Herschel's work:

> We show that for all 10 time moments of the solar activity minima the observed [wheat] prices were higher than prices for the corresponding time moments of maximal solar activity (100% sign correlation, on a significance level < 0.2%). We consider these results a direct evidence of the causal connection between wheat prices bursts and solar activity.
>
> (Source: http://www.springerlink.com/content/xvl4j4n07ht0676x/)

Watching for a shift in investor sentiment

We are agnostic as to the question of global warming and its causes. However, we are cognizant of the fact that investors make the big money by correctly going against the crowd. The consensus on climate change appears to be shifting from global warming to cooling. There is a definite possibility that investors could embrace the concept of a global cooling cycle, which would be commodity bullish.

Less supply, more demand = Bullishness for energy prices

These factors of increased demand and lower supply serve to underline our long-term bullish outlook for energy prices.

In summary, the events may be converging to a "sweet spot" for commodity prices and energy prices in particular.

Regardless of whether you believe in the Peak Oil theory, the disaster in the Gulf of Mexico will undoubtedly have repercussions that will raise the cost and slow the speed of the exploitation of offshore oil and gas reserves. These changes will serve to curtail energy supply for the next several years.

In addition, our quiet sun raises the stakes on the demand side of the energy equation. If the theory of solar activity and global temperatures are correct, then it could portend a cooling cycle, which would raise energy heating demand and further pressure prices upwards.

These factors serve to underline our long-term bullish outlook for energy prices. While we don't believe that oil prices will necessarily rise in a straight line, the combination of disruptions to supply and potentially higher marginal demand are likely to at least put a floor on oil prices should they weaken.

People are our strength. Creating value is our goal.

Qwest Investment Management Corp.

Qwest Investment Management Corp. ("Qwest") is an investment management firm which specializes in identifying, structuring and managing investment products. Qwest is currently focused on investments in the natural resource sector.

Qwest's executive management team has over 100 years of combined experience in corporate and financial product structuring and investment management which provides the team with the skills required to evaluate and profitably manage the risk and rewards inherent in the capital market industry.

Qwest is the parent company of Qwest Investment Fund Management Ltd., a company which provides investment advisory, portfolio management services and fund management services, and Heritage Bancorp Ltd., a company which provides administrative services.

Interesting Facts About QIM

- Specialists in investing Canadian capital in the natural resource sector;
- Throughout their careers, members of the Qwest management team have completed hundreds of financings and have raised and/or invested billions of dollars of capital in the natural resource sector;
- Resource company flow-through specialists;
- Recognized for our experience in Canadian oil and gas sector;
- Top quartile oil and gas-weighted flow-through portfolio performance.

About the Author

Cam Hui has been involved in the equity markets since 1980, both on the buy side and the sell side. Most recently, Cam was a Relative Value and Technical Research Analyst with Merrill Lynch in New York. He is currently semi-retired and living in Vancouver with his family. He maintains his interests in the markets through his investment blog: ***http://humblestudentofthemarkets.blogspot.com****.*

Cam is a portfolio manager for Qwest Investment Fund Management Ltd., a subsidiary company of Qwest Investment Management Corp.

Calgary and Vancouver Based Portfolio Management

Qwest's Calgary-based portfolio management team is strategically situated to conduct in-depth research and analysis of Canada's oil and gas companies. Our Calgary portfolio management team is led by Ms. Jennifer Stevenson who brings over 20 years of oil and gas industry experience and a strong track record in financing and investments in oil and gas companies.

The portfolio management team's additional strengths include:

- first-hand knowledge and insight into the oil and gas sector (i.e. situated in the heart of the Canada's oil patch)
- years of experience working with management teams to finance their oil and gas companies
- specialization in the research and analysis of Canadian mining companies
- considered to be leading experts in the oil and gas sector by Canada's most reputable media outlets

Qwest's Vancouver-based portfolio manager is Mr. Cam Hui. Cam brings to Qwest his broad business experience, knowledge and insight in financial markets as well as a diverse background in investment management, equity quantitative research and experience in all phases of investment processes.

Prior to joining Qwest, Cam was a Relative Value and Technical Research Analyst with Merrill Lynch in New York.

Cam was employed by Merrill Lynch in New York City as a Relative Value and Technical Research Analyst. Before joining Merrill Lynch, Cam Hui held portfolio manager positions with Graham Capital Management LLC and Batterymarch Financial Management, Inc. Mr. Hui also held positions with Wood Gundy Inc. (now CIBC World Markets).

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