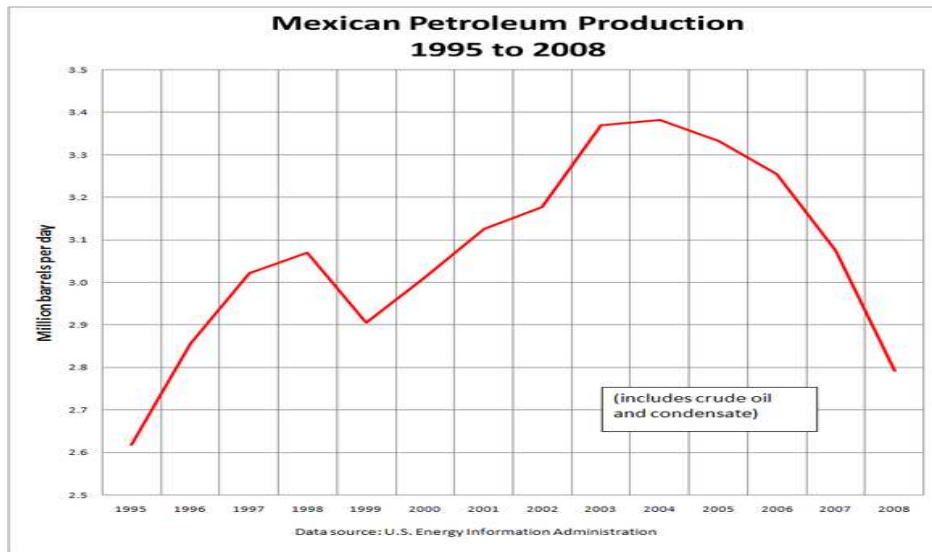


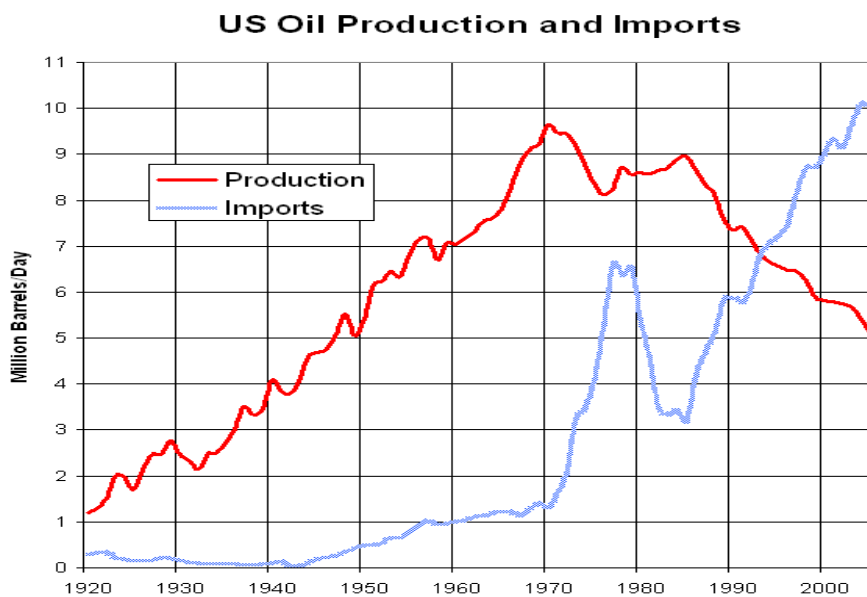
The Starboard Side Report

The week ending November 13, 2009

We wanted to focus this week's report on a concept called peak oil. While not currently discussed in the mainstream press, we feel it is a term that will increasingly become part of the global economic landscape in the years ahead. Peak oil is simply the point in time when global oil production peaks and starts to trend downward. This is not to be confused with the world running out of oil, but rather it is the moment when the world can no longer grow its oil production past a certain level. Many countries in the world have already surpassed peak oil production. In fact, it is estimated by some that 54 of the top 65 oil producing nations are no longer able to grow production. Countries like the US, Mexico, UK and Norway have all passed their peak and are already more than halfway through their productive oil supplies. The world must therefore rely on the other nine nations to grow global production going forward. Unfortunately, these are countries such as Saudi Arabia, Nigeria, Iraq, Bolivia and Kazakhstan. Not exactly a who's who of political and economic stability. Below is a graphical representation of what peak oil looked like in Mexico and the US.

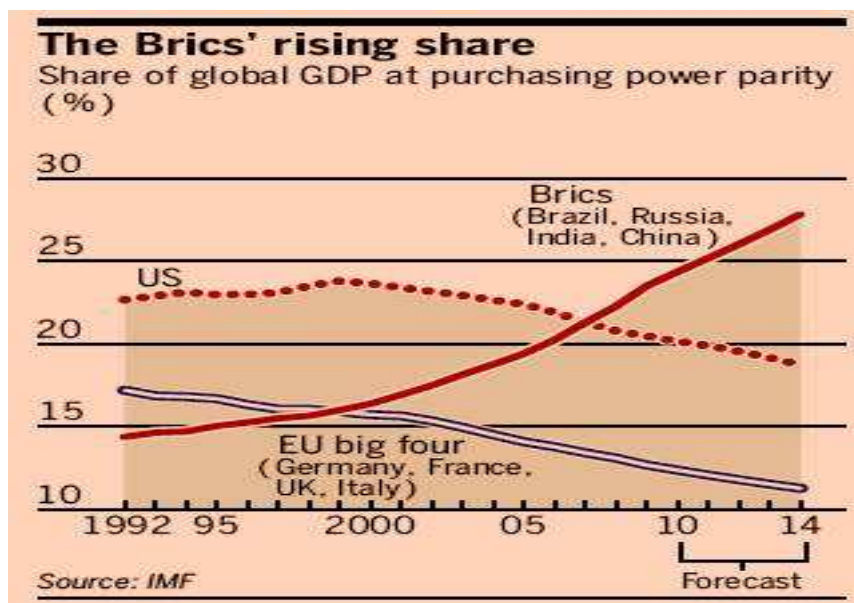


Most oil producing regions have been shown to follow the same path of once peak oil is reached. First, there is a production plateau followed by a sharp drop off in well productivity. Once the peak is hit the variables become the length of the plateau and the decline rates.



These charts are a microcosm that illustrate the finite and non-renewable nature of crude oil production. It is scary to think that this could be playing out soon across global production in its entirety. US oil production peaked in 1970 and then plateaued for fifteen years mainly due to the ramping up of Alaskan oil production (which subsequently peaked in 1988). Mexican production began its plateau in 2003 and has recently dropped off a cliff thanks to the peak being hit at their super-giant Cantarell oil field. The US was able to get away with its production peaking due to enormous amounts of crude oil coming out of the Middle East. However, equally as important to oil price stability in the US over the 1980's and 90's was the lack of competition for oil from the rest of the world. As a result of economic turmoil in many emerging markets, we were able to greatly increase our oil imports with little impact on cost. That has all changed this decade with the emergence of the BRIC nations (Brazil, Russia, India and China) onto the global economic scene. They have billions of people hungry for a better life and their governments now have the economic means to make it happen. The growing world is increasingly competing over a scarce resource that has been proven to exhaust itself.

In the 1990's, US had little competition for oil imports without economic growth from the populous BRIC nations. However, that has all changed in the past ten years.

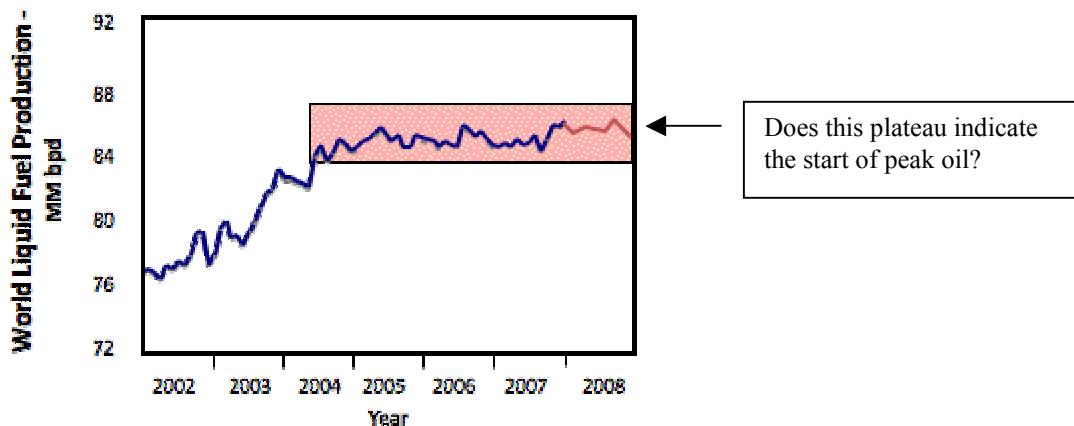


The chart above from the *Financial Times* shows that the BRIC's now make up a greater share of the global economy than the US and the gap is forecast to accelerate in the decade ahead. The growth numbers are truly staggering. A 2007 article in the *Economist* discussed how far China needs to go in order to get to where they want to be in terms of standard of living. They currently have 2 cars for every 100 people versus 50 per 100 people in the US. By 2040, it is estimated that China will have 29 cars per 100 people. If you were to combine China and India the numbers get even more dramatic. In 2007 these countries had only 30 million cars on the road, but by 2040 it is estimated that they will have 750 million! That is more autos than there is in the entire world today and that's at only 25 cars per 100 in those two countries. So to get to only half of the US standard of living it will require one heck of a lot of automobiles and fuel.

The world produced about 85 million barrels of oil per day back in May of 2005 and production has surpassed that in only two months since. Many energy analysts argue that production of 86.7 million barrels p/day in July of 2007 may never be surpassed on a sustained basis. In essence, there is a possibility that we have already passed peak oil. The theory is that the credit crisis has crippled production so dramatically that by the time it is ramped back up, the depletion and decline rates from existing wells will offset new production. On the more

optimistic side, government bodies such as the Energy Information Administration (EIA) see the peak happening about 20 years down the road at production levels around 105 million barrels p/day. However, as we discuss next, even the most optimistic assumptions will not be enough oil to power BRIC growth. In addition, government budgeting assumptions are usually very unreliable. Recall the two charts above on US and Mexican peak oil. The plateau phase is usually the first sign that production is about to peak. Unfortunately, the chart below is very ominous for *global* oil production and may indicate that we have already hit worldwide peak oil of around 87 million barrels per day. Even if we have a long plateau period of twenty years, we are still in deep trouble because of demand increases from the emerging world.

World oil production started to stagnate in 2004 & has been on a plateau since then.



Source: Gregor Macdonald

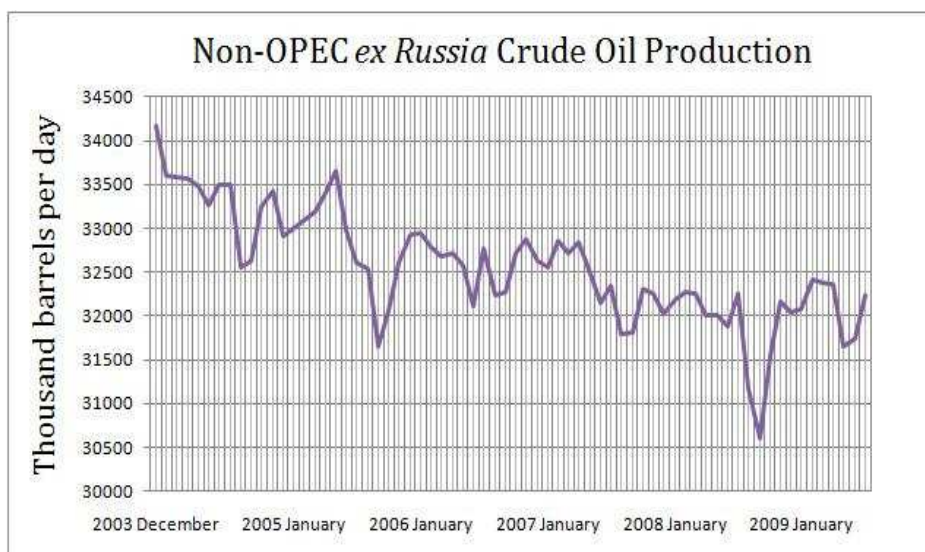
According to E&P Magazine, if China follows a similar growth path to South Korea, they will consume 45 million barrels p/day by 2030! That is more than half current global production at a standard of living that would be still roughly half the US at present. The story gets worse when you factor in Brazil and India. As you will see below, these two emerging powers currently consume a combined 5.4 million barrels p/day. However, should they grow at a similar rate to China then they could conceivably consume 17 million barrels p/day together. That means that these three BRIC nations could consume over 80% of current production. These numbers factor in extremely optimistic economic growth forecasts. Yet, even much more conservative oil demand growth assumptions combined with the more aggressive supply growth numbers from the EIA put demand at 12 million barrels p/day greater than production by 2030. The worst case scenario would put oil demand 70 million barrels p/day over supply by 2030! That enormous gap is only 20% less than current production levels and clearly not a sustainable growth path. Over the past twenty-five years, these supply-demand dynamics have almost always been in balance with each other; hence a stable oil price and low inflation world. Expect economic and price instability to accelerate in the years ahead until alternative energy solutions are developed.

Below are the top oil producers in the world and the top oil consumers in the world. These are presented as the number of barrels of oil per day. For instance, Saudi Arabia produced 10.87 million barrels of oil per day in 2008 while the US consumed 19.5 million barrels per day.

<u>Country</u>	<u>Production</u> (barrels p/day)	<u>Country</u>	<u>Consumption</u> (barrels p/day)
Saudi Arabia	10,780,000	USA	19,500,000
Russia	9,790,000	European Union	14,440,000
USA	8,514,000	China	7,850,000
Iran	4,174,000	Japan	4,785,000
China	3,973,000	India	2,940,000
Canada	3,350,000	Russia	2,900,000
Mexico	3,186,000	Germany	2,569,000
UAE	3,046,000	Brazil	2,520,000
Kuwait	2,741,000	Saudi Arabia	2,380,000
Venezuela	2,643,000	Canada	2,260,000
European Union	2,538,000	South Korea	2,175,000
Norway	2,466,000	Mexico	2,128,000
Brazil	2,422,000	France	1,986,000
Iraq	2,385,000	Iran	1,755,000
Algeria	2,180,000	UK	1,710,000
Nigeria	2,169,000	Italy	1,639,000
Angola	2,015,000	Indonesia	1,564,000
Libya	1,875,000	Spain	1,562,000
UK	1,584,000	Netherlands	962,900
Kazakhstan	1,429,000	Taiwan	959,000

Source: CIA World Factbook

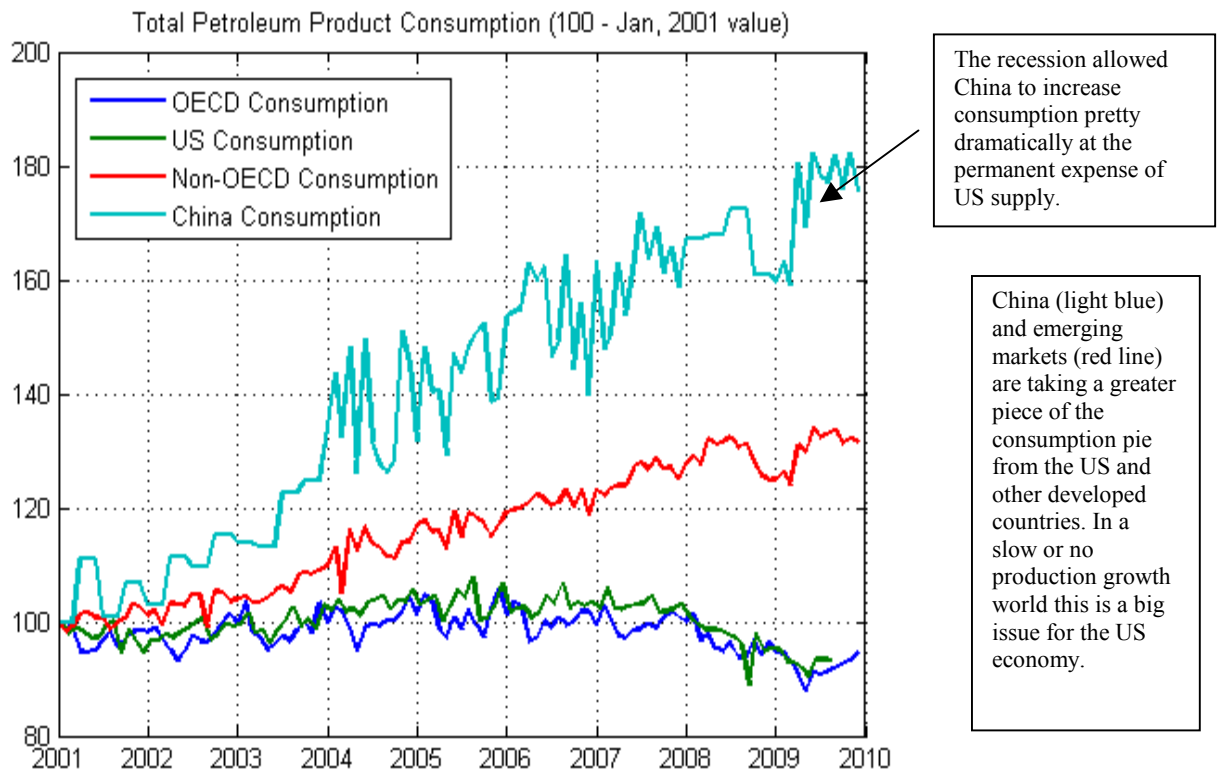
The reason these numbers are so important is the fact that the consumption side of the ledger will be changing so dramatically over the next 20 years (due to BRIC demand) with relatively little relative change in production. In addition, the list of producer countries that will be supplying the market shows a lack of US allies. *Where will all this oil that the world needs in the years ahead come from?* The answer can be found by studying the chart below.



Independent energy analyst Gregor McDonald calls this chart above "free market" oil. Essentially, it is oil that comes from countries with relatively stable governments like the US, Canada, Britain, Norway, Mexico etc. In total, this is only 40% of global oil production. The other 60% is produced in Russia and the OPEC nations. OPEC is an alliance of 12 oil

producing nations (Algeria, Angola, Ecuador, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, and Venezuela). As oil prices rose from \$30 to \$140 between 2003 and 2008, free market oil production declined by 2 million barrels p/day! Therefore, the answer to our question posed above is "from not so friendly places".

One theory that has been circulated by *E&P Magazine* is that in the years ahead we can expect to see continually rising energy prices as emerging countries bid up the price of oil beyond the tolerance of current end users (advanced economies). Any resistance to this dynamic by the developed world (i.e. refusing to cut consumption) will result in price spikes, like the one we saw in 2007-08, followed by deep recessions. The emerging economies will use the cover of recession to seize the production that was abandoned by the developed world. Therefore, as the economy recovers following the recession, the advanced economies will be locked-out at lower levels of consumption to the emerging economies. To quote *E&P Magazine* " the constraint on US recovery and growth by mid-2010 is likely not to be financial stability but rather the oil price. The oil price may well rise above \$80, preventing a material recovery of the economy or sending the US back into recession.....in the era of peak oil, therefore, sharp and painful recessions may prove the chief means by which oil consumption is transferred from the rich to the poor."



Source: The Oil Drum

The investment implications of this analysis are very significant. First, inflation in the US has become highly correlated to oil prices as the chart below illustrates. It will become imperative to have inflation hedges in the years ahead as our energy dependent economy grapples with the end of the era of cheap oil. Second, those countries that take the initiative on green technologies and fossil fuel alternatives will be in much better shape. Third, investments in energy stocks should perform relatively better than the rest of the market. The energy sector in the US is currently smaller than the financial and technology sectors. We expect it to take over leadership from both these groups and eventually be larger than both. Finally, deficit free emerging markets and stable countries with abundant energy resources like Canada and Brazil should be able to navigate a peak oil environment better than those with declining energy resources and/or mountains of debt left over from the credit bust. There are numerous other issues and implications both economic and social that are too deep to go into in this report. We were early in warning clients about the impending credit crisis hanging over our heads and we suspect that we are early with this cautionary tale as well. However, it is always better to try and get out in front of the headlines before it is too late to do something about them. In the words of hockey great Wayne Gretzky when asked about the secret to his success "skate to where the puck is going, not where it has been."

