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The solution for high oil price is high oil price. That is the reason why a thought experiment like this is worthy of conducting. When I wrote “$100,000 per Barrel Oil” last July, I was unaware of economist Jeff Rubin and his bullish outlook on oil; nor was I aware of his book, *Why Your World Is About to Get a Whole Lot Smaller: Oil and the End of Globalization*. The following quote prompted me to draft up another variation of my very simple back-of-the-envelope model for estimating the peak price in the current raw materials secular bull market:

“Discovery of new oil fields peaked in 1966 and has been falling ever since. And while we still every once in a while read headlines about major new discoveries like the Tupi oil field off the coast of Brazil, announced to great fanfare in late 2007, what the oil companies don't hold glamorous press conferences to announce is that every year the world oil industry loses *almost 4 million barrels per day* [emphasis added] in production through depletion. That is, as we drain the oil wells scattered around the globe, they produce less each year – a lot less. This means that the industry has to find roughly 20 million barrels per day of new production over the next five years simply to replace what will be lost (*Why Your World Is About to Get a Whole Lot Smaller: Oil and the End of Globalization*, Jeff Rubin, p. 11).”

The writeup is about another version of estimating crude oil's peak price by varying the numerical inputs in the second of the three assumptions from last July's article. In that article, I wrote for my assumption #2:

“2. Post- Hubbert peak global oil production decreases at the Cantarell Field-like rate of 13.1% annual decline. While large, due to geographical proximity of Mexico, I think this Mexican oil field should have the highest production transparency, unlike Saudi Arabia. Therefore, actually a good proxy for post-peak oil global petroleum production.”

I believe my explanation for using the Cantarell figures was quite clear. Nevertheless, I feel it's important to re-configure this assumption into a decline rate that reflect the current global oil industry's annual output losses of four million b.p.d., as pointed out by Rubbin in his book. For the denominator – the peak global oil production – I will use oilman T. Boone Pickens' 85 million b.p.d. The billionaire stated that " I do believe you have peaked out at 85 million barrels a day globally " on the June 17, 2008 testimony before the US Senate Energy and Natural Resources Committee. Dividing 4 million b.p.d. into 85 million b.p.d. yields approximately a 4.7 percent annual decline rate of post-peak global oil supply – a lower, thus more conservative, decline rate than that of Cantarell.

So, here is the new version of peak oil price estimate...

Assumption:

1. Every percentage change of supply (while holding demand constant) or demand (while holding supply constant) results in roughly a 10 to 30 percent change in price. I heard that this tends to be the experience of long time commodities traders. Citation welcomed. But given that both the price elasticity of demand and supply for oil is very inelastic , this assumption sounds reasonable. This assumption stays the same.

2. Post- Hubbert peak global oil production decreases at the annual rate of 4.7%. This is the only changed assumption.

3. In order to get an approximation for long-term oil price, we will take the average of the highest and lowest oil price over the past 18 months or so as a proxy for the current oil price. This assumption stays the same.

Calculation:

1. Taking the mid-point of 10 and 30 percent gives us 20% for every percentage change in supply or demand while holding the other factor unchanged.

2. The 4.7% annual production decline rate, holding global oil demand constant, would result a price increase of 2.356 *times*. Equation: 1.2 (20% price increase) raised to the $4.7^{\text{th power = 2.356}}$

3. Eight-and-a-half years into the future, oil price goes up 1457.1 *times*, if price goes up 2.356x every year. Equation: 2.356 raised to the 8.5^{th} power = 1457.1

4. Taking the highest and lowest oil price from the beginning of 2008 to now (147.9 and 35.13 respectively), and average them, we get $91.515 per barrel. Equation: (147.9 + 35.13) / 2 = 91.515

5. Multiply 1457.1 by $91.515, we get $133,346.5 per barrel.

I had explained in the last article: "...On March 10, 2000, according to one estimate , Nasdaq's p/e ratio reached an incredible 264. At the market close of Friday July 17^{th}, 2009; the NASDAQ 100 index ETF, PowerShares QQQ Trust I (or "Cubes"), trades at the p/e ratio of 22.8. On March 10, 2000, the NASDAQ composite closes at 5048.62 . The composite closes at 1886.61 on 7/17/09. NASDAQ's p/e at the 2000's tech bubble peak is more than 10 times today's p/e ratio! Yet the composite still trades at less than half of its millennial peak value today, almost ten years after…Looks like the p/e ratio at the tech stock's market top in March of 2000 reflects future expectation more than two decades, from the time of market top, into the future. My opinion: it's easier for oil to trade at price level reflecting fundamentals only three years into the future."

I remain steadfast in my opinion. It, too, is easier for oil to trade at price level reflecting fundamentals eight-and-a-half years into the future. And as of last Friday's close, 6/10/2010, slightly more than 10 full years after the 2000 March peak, Cubes trade at a p/e of 26.92. That is slightly more than *one-tenth* the peak NASDAQ p/e of 264; in spite of the tremendous rally that took the NASDAQ composite from the March 2009 low of 1265.52 to last Friday's close of 2243.6 after a severe bear market due to the 2007/2008 global financial crisis. The composite remains at less than half of its millennial peak value.

While many readers may find this kind of estimate hard to believe, I must repeat that this is an estimate for the *peak* oil price in a *secular bull market*. So, the estimate may very well be a *bubble price*; build up after one or two decades of "pressure" from fundamentals. And today there is a long and ever expanding list of financial instruments that will ensure abundant flow of capital in pushing the oil prices to incredible heights. This list includes fiat paper money, its more technologically advanced cousin – digital money, paper oil futures and options, OTC derivatives, commodities-linked notes...etc.

In addition, expanding the production volume of alternative sources for liquid fuels – such as gas-to-liquids, coal-to-liquids, ethanol, oil sands, other heavy oil resources – into industrial significance are likely to take quite a few years. My very crude and very unprofessional estimate is about five to ten years. Other solutions may be just as lengthy in time. These include massive global conversion into hybrids, ethanol-based, or electric vehicles; nuclear marine propulsion ; aviation biofuels . Therefore, I classify all these as *medium-term* solutions. The long-term solution would be the nuclear fusion, which is likely to take decade or even decades with huge capital investment to become commercially viable. That leaves us with high price as the solution for high price *in the short-term*.

An extremely high short-term oil price (like six-figure?) gives the capital owners the incentive *and* profits to fund the aforementioned medium- and short-term energy solutions. Hence, GTL; CTL; ethanol; oil sands; other heavy oils; hybrids, ethanol-based, and electric vehicles; nuclear marine propulsion; aviation biofuels; and eventually fusion power plants and space travel can become reality in their respective time frame.

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