

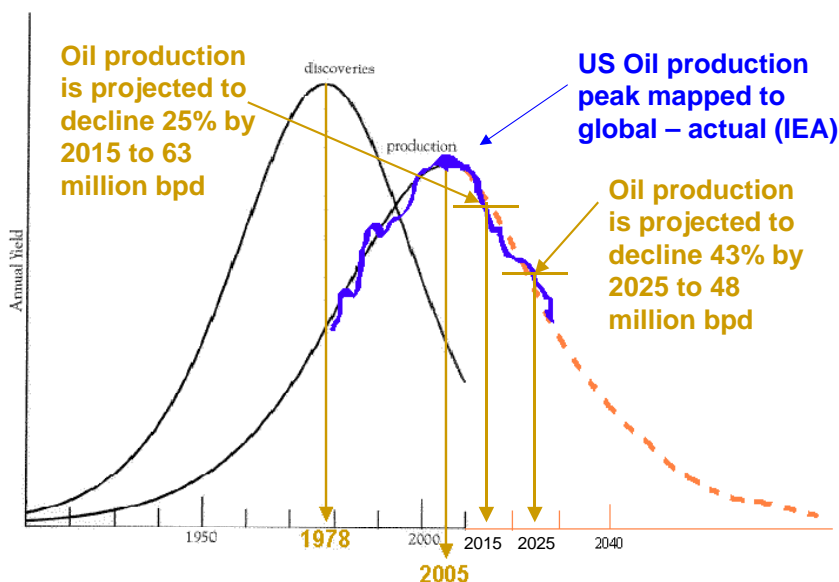


Markets At A Glance

Peak Oil – Are We There Yet?

For over a year now we have embraced energy as a major investment thesis, publishing our first article on this topic, titled “Slipping and Sliding Down Hubbert’s Peak”, in April of last year. As many of you are aware, we have been and continue to be avid proponents of the **peak oil** hypothesis. We believed it back then; and, given events as we’ve seen them unfolding, we believe it even more strongly today. The time when the world will no longer be able to produce enough oil to keep up with demand will happen sooner rather than later, if it hasn’t in fact happened already. Over the past year, the idea of peak oil has received increasingly more attention in the investment community and the media at large, and energy-related investments have performed handsomely in that time. In the futures market the oil price is in contango (future price higher than spot price) until 2007... a very rare state of affairs. For the most part, however, the notion that we won’t be able to find and produce ever-increasing quantities of oil as needed remains unpopular. The outcome, after all, is a very unpleasant one for the world. Be that as it may, we believe the signs are there for those who want to see it – and that this will irrevocably change the world as we know it.

At the heart of our view is the analysis done by the geophysicist Marion King Hubbert in 1956, with similar analyses being done by others today. We’ve explained Hubbert’s methods in two prior articles and won’t go into the details again here. Suffice it to say, Hubbert predicted **in 1956** that US oil production would peak sometime between 1966 and 1972. The inputs to his model were: the quantity of oil in existing oil reserves, the number and size of new discoveries (which had already peaked at the time and were in decline), and knowledge of the production profiles of producing oil wells, which over time follow similar patterns of rapidly rising production, followed by a peak, and then a period of irrevocable decline – like clockwork. As it turns out, US oil production actually peaked in 1970. In spite of a litany of naysayers, Hubbert’s prediction turned out to be correct even though it was made over a decade in advance of the actual peak. Such prescience warrants attention. Experts such as Deffeyes, Campbell, and Simmons have applied Hubbert’s methods to world oil production using more recent data. We believe the following chart says it all:



Source: “Beyond Oil”, Kenneth S. Deffeyes, p. 50 (with SAM additions)

If one superimposes the actuality of the US oil production experience (which peaked in 1970) with global production today (as this chart tries to do), then the world is on the verge of having substantially less oil production in the not too distant future. As unappealing and perhaps even downright scary as this chart is, we believe this is the situation the world currently faces. World oil production is “peaking” and about to go into precipitous decline following a period when new oil discoveries have already been in sharp decline for almost three decades. The writing is on the wall. Needless to say, there are those who dispute these findings, believing (or hoping) instead that production will keep in lockstep with demand and increase by 50% in the next twenty years. This would be convenient if it were so, but we unfortunately consider it little more than wishful thinking. Why is it being hoped that the same methods that correctly predicted US peak oil won’t apply to the world at large? We find this illogical, and the dominance of such views is only adding to the problem – nothing is being done.

The world produced 72.5 million barrels of crude oil per day in 2004 (83 million barrels per day if we include other hydrocarbon liquids and unconventional production). There is evidence that the system is already strained at these production levels, with every marginal barrel of new production seemingly more and more difficult to obtain. We may be able to produce more oil – but it won’t be much more. And it seems very unlikely to ever be the 120 million barrels per day the world will need in the next twenty years. If Hubbert’s Peak is correct then we may end up with only half that amount by 2020, as the above chart shows. Only posterity will reveal with certainty if we are at the peak today or close to it. But as we said, if world oil production follows the same pattern that US production did 35 years ago (as was predicted by Hubbert) then the discrepancy between supply and demand going forward will be enormous.

New and sizeable discoveries just aren’t there to permit ever-rising oil production. Furthermore, the old, giant oil wells that account for the vast majority of today’s production (both OPEC and non-OPEC) are being shackled by astonishing decline rates. At the Howard Weil Energy Conference earlier this month in New Orleans, Andrew Gould, president and CEO of Schlumberger (the world’s largest oil services company), made the following startling observation during his presentation: “An accurate average decline rate is hard to estimate, but an overall figure of 8% is not an unreasonable assumption.” If this is true, then the problem is even larger than we surmised. The world is “naturally” losing 6 million barrels per day of oil production each year, every year. That’s an ominous hurdle to overcome with new production. In the face of such decline rates, just to keep production where it is today will be a Herculean task. But we fear that even such a modest goal will be untenable for long before we fall off the peak.

Many believe that market forces will save the day. A higher oil price, they claim, will lead to more discoveries and thus more oil in our future. Although shortages may occur in the near term, leading to a spike in oil prices, higher prices will stimulate supply and all will be well and good. Goldman Sachs shocked many when they opined that the oil price may “super-spike” up to \$105 per barrel within the next two years, before falling back to more normal levels. Although such a prediction is bold (and would have been unheard of this time last year), we believe we are facing more than just a spike – more likely is a higher (and rising) plateau. We again turn to the US experience. In spite of rising oil prices in the 1970’s (when in real terms oil surpassed \$100 per barrel), during that time US oil production continued falling off a cliff even though countless dollars were being spent on oil exploration. Which goes to show, once the peak occurs it is well nigh impossible to reverse. New oil will be hard to find **at any price**. Meanwhile, the burden of decline rates ensures that production can only head lower and lower.

Adam Smith's invisible hand won't save us here. Market forces can do wonders for the supply of widgets but crude oil is a different animal altogether. It's a finite resource. We were blessed with a limited supply to begin with and we've been exploiting it to the best of our abilities for a century. From day one we were doomed to eventually run out. Taking a more philosophical approach, some would argue that the exploitation of abundant hydrocarbons (giving us cheap energy) was the primary reason behind our rapid progress as a civilization this past century. Our use (abuse?) of cheap hydrocarbons has been ubiquitous. We are so dependent on the stuff that we frequently take it for granted. Everything we do needs energy. Energy is needed to make the products we buy as consumers, and energy is needed to transport those products to us from far flung regions of the world. We need energy to live in the suburbs and drive to work in our SUV's. We need energy to go to our cottages on the weekends (once again in SUV's). We need energy and petrochemicals to manufacture plastics, fibers, and pesticides. Even making the food we eat is a very energy intensive process, almost all of which comes from hydrocarbons. Running tractors to plant and harvest crops over vast stretches of land, using fertilizers and pesticides made from petrochemicals, then processing and transporting these products to market. It is estimated that as much as 80% of a farmer's costs are, directly and indirectly, the cost of fuel! Indeed, cheap oil is needed everywhere – and make no mistake, oil has been **very** cheap. A barrel of oil contains 42 gallons and throughout most of the past century could be obtained for under \$20. And just think of all the use we get out of it! 42 gallons of just about any other liquid costs many times more, spring water included. Alas, the party may soon be over. Without cheap energy, industrial production and our standard of living will inexorably fall. This may lead to the end of consumerism as we know it. In the worst case scenario, civilization may even get hurled back into the Stone Age as we obliterate ourselves in one last ditch attempt to control what little oil remains... but we digress.

There are no saviors on the horizon. Russia is now the world's second largest producer of oil, coming in just behind Saudi Arabia. In the past five years Russia has managed to increase its oil production by 45%. There is little doubt that without Russia we would already be talking about peak oil in the past tense. It is for this reason that we find worrisome that Russian production is only expected to remain flat this year. So will Canada's oilsands be the savior? Not by a long shot. Even though oilsands production is expected to more than double in the next 10 years, it will still only amount to 2.5 million barrels per day... barely enough to meet Canada's needs, let alone the world's. Let's face it, there is nothing for us to transition into when the oil stops flowing in increasing quantities. We are totally unprepared.

One of our key points is: we don't need to run out of oil before we have a problem. Once we used up half our oil the game is over. There is still plenty left, but we won't be able to extract it fast enough to meet the world's growing thirst for it. Even if production flattens out and stays where it is we are still in big trouble. Countries such as China and India are in the process of rapid industrialization. Just imagine how much oil will be needed if they were to consume as much energy per capita as we do! China currently has 24 million cars. By 2020 they are expected to have 100 million cars. However, the US today has 250 million cars and one quarter of the population. The math isn't complicated – it's not going to happen... because it **can't** happen. There are no alternatives to oil that we could adopt on such a scale, and even if we did they most certainly won't be anywhere near as cheap as hydrocarbons have been.

It is for these reasons that we are extremely bullish on oil and all things energy related. Unlike the 1970's oil crisis, we believe the rising cost of energy will be a secular trend and not just a spike. We are faced with a permanent and irreversible supply disruption that will make the future nothing like the past. When the US passed its peak oil production, it was able to make up the difference by importing from the rest of the world. When the world reaches peak oil production,

clearly no such luxuries will exist. It won't be the end of the world, but it will be the end of the world as we know it.

For this reason, we view energy as a long term buy and hold opportunity – one that we believe will perform relatively well even in a weak stock market as is being witnessed currently. That's not to say energy won't have its corrections and be taken down with everything else... it will and is. However, we find it telling and encouraging that the demand for oil is so inelastic that its rising price (and indeed the rising prices of all energy commodities) have done **nothing** to slow demand in the last two years. There are simply no alternatives to energy.

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