
Peak Oil: why \$40 per barrel is no cause for complacency

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These days it is comforting to have one thing not to worry about. As the world teeters on the edge of a full-blown depression, and business is crushed between slumping sales and seized-up credit markets, at least the oil price is in retreat. From an historic high of \$147 per barrel last July to around \$40 today, the price of crude has collapsed so quickly it is tempting to believe it means the end of the energy crisis; that the spike was just some speculative aberration; and that all talk of 'peak oil' is so 2008.

It is true that the horizon has been utterly transformed. Last year the big issue keeping many company bosses awake in the small hours was rising energy bills - this year all manner of competing spectres haunt their sleepless nights. But to relegate oil simply because the price has slumped is to misunderstand the causes of the recent spike and collapse, and therefore the future outlook for energy prices and what it means for business and the climate.

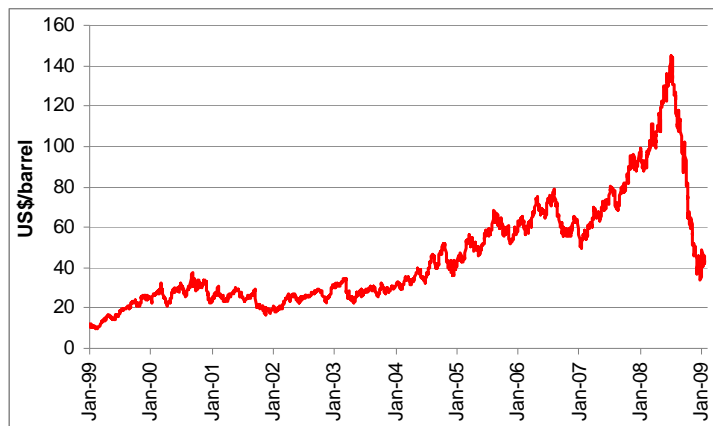
It is commonplace to blame \$147 oil on booming demand in China and India, but that is only one half of the equation. The other is that global oil production between early 2005 and mid 2008 was stagnant, at around 86 million barrels per day. So for three years the oil supply was a zero sum game: the East consumed more, and with production static, the price of crude had to rise to force the West to consume less. Under the circumstances the oil price was a one way bet. But in the past, rising demand has always been met by increased output, so the key question is: why did global oil production fail to grow?

Analysts divide the oil producing world into two halves: OPEC and the rest. Non-OPEC output has underperformed against forecasts every year this century. Because it depends on production from regions that are increasingly mature, non-OPEC output is widely expected to peak by around the end of this decade. But OPEC also failed to raise its game, and this is unlikely to have been the result of deliberate market manipulation. At \$147 per barrel, the incentive to pump more oil rather than risk destroying demand would have been irresistible, if it were possible. In fact, there are good reasons to suspect that the cartel's members have been exaggerating the size of their reserves for decades (most observers attribute the sharp jump in proved reserves of several Middle Eastern members during the 1980s to a dispute over production quotas, which created an incentive to overstate reserves.) So OPEC's collective inability to respond to record prices by raising production may suggest its output is approaching its geological limits. If we have not yet arrived at the oil peak, we seem at least to be in the foothills.

The subsequent oil price *collapse* is just as misunderstood as the spike that preceded it. Of course, the price is falling because demand is shrinking, and that's due to the recession. But what caused the recession? The obvious culprit is the banking crisis, which has clearly been extraordinarily damaging. But so too are oil price spikes; every major recession since World War II has been preceded by one.

It's not hard to see why: the global transportation system – moving goods, workers and consumers around, thereby enabling an increased level of economic activity to take place – is almost entirely fuelled by crude oil. When the price of oil soars, almost all aspects of modern daily life become more expensive. And as the oil exporters accumulate more of the world's money, so everyone else has to make do with less.

The 2008 spike not only set a new record high oil price, in both absolute and inflation-adjusted terms, but it was also very sudden, with the price almost trebling in around eighteen months. So it seems highly likely that even without the credit crunch, the oil market fundamentals would have been sufficient to push us into a global recession.



Brent crude, daily price. Source: Argus Media

Far from being a source of relief, today's relatively low oil price is as damaging in its own way as the spike. Oil companies around the world are cancelling or delaying investment in planned production projects, because they are uneconomic at current levels; \$60 billion of investment in the Canadian oil sands was shelved in the three months to January alone. At the same time, existing global production capacity is constantly shrinking, as oil fields age and reservoir pressures decline. The International Energy Agency (IEA) estimates that capacity is currently shrinking by around two million daily barrels per year, and that this decline rate will accelerate in future ([World Energy Outlook 2008](#)). Oil production projects have long lead times, so the combination of declining reserves and limited investments means there is a very real danger that when economic growth returns, oil supplies will be inadequate to meet demand, and the price will spike once more. And the cycle starts all over again.

Extreme volatility in the oil price will of course mean the same for gas and electricity. Natural gas purchasing agreements are tied to the price of crude, meaning that extreme volatility in the oil price means the same for gas and electricity – as has been demonstrated in the past two years.

This is likely to wreak havoc with company budgets, and share valuations – at least for those companies that do not take steps to reduce their exposure. A recent analysis of the correlation between energy costs and the share valuations of logistics companies showed that financial markets can reward fuel thrift and punish profligacy. A 10% rise in energy costs was credited with precipitating a 10 cent fall in FedEx's share price, but a rise of 3 cents for UPS. It turns out that fuel-per-package-delivered is a key performance indicator for UPS, for which managers are held accountable. So in addition to carbon reduction, cost cutting, and resilience to short term supply disruption such as the UK fuel duty protests of 2000 (which are likely to become more frequent as the oil supply tightens) there is now yet another reason for companies to eliminate their dependence on oil.

When the next spike occurs depends crucially on the depth of the recession – or depression – although analysts such as Barclays Capital forecasts that in the fourth quarter of this year the oil price will average \$87 per barrel, rising to \$96 twelve months later. But for as long as the oil price stays low, it's not just bad for the future oil supply, but also for investment in renewable electricity generation, where the economics are judged against the cost of electricity from gas fired power stations. The impact is worsened by the low price of allowances in the EU Emissions Trading Scheme (ETS), now languishing at around €10 per tonne of CO₂, where most energy analysts believe it is impotent as a stimulus for green energy investments. (The economic slowdown has thus highlighted one of the inherent flaws in the existing EU ETS: emissions allowances are allocated in advance, on the assumption that economies will *grow*.) Major projects such as the London Array offshore wind farm are in the balance, while plans by the legendary oilman T Boone

Pickens to build the world's largest wind farms in Texas have already been put on hold. Paradoxically, one of the indirect impacts of falling oil consumption is that investments in green energy technologies are less economically viable.

If we are still in the foothills of peak oil, there is good evidence to suggest we will reach the summit well within most companies' planning horizons. We are clearly already in deeply unsustainable territory: discovery of oil has been falling for over forty years, while consumption has risen inexorably, save for a couple of brief recessionary interludes. Today, for every barrel of oil we discover, we consume three; annual production is already falling in over sixty of the world's 98 oil producing nations. Many oil companies and forecasters expect trouble at least by the middle of the next decade – whether or not they strictly accept the term 'peak oil'. Shell expects global production to plateau, Total's chief executive, Christophe de Margerie, says the world will never produce more than 89 million barrels per day, and the IEA says we face a "supply crunch".

Given the prominence of the peak oil debate, no CEO can claim they were not put on notice about this fundamental threat to their business, irrespective of their role within the economy. It is hard to imagine any sector prospering today in the absence of a functioning transportation system.

The good news however is there is absolutely no shortage of energy. The sunlight that hits the earth in an hour contains enough energy to run the global economy for a year. But while solar, wind, wave, tidal and geothermal energy can all be harnessed to generate clean electricity, they cannot hope to solve the oil crunch – and with it many of the environmental consequences of our crude oil addiction, not least climate change – as long as the global economy runs on liquid hydrocarbon fuels.

There is scant evidence that governments have awoken to the scale of the peak oil crisis, the impacts of which will surely be felt well before the worst effects of climate change start to kick in. Oil market psychology lurches between two extremes: complacency and panic. What we need is to find the middle ground: a sense of urgency and an appetite for action commensurate with the challenge, and to sustain it even when oil prices are low. The trick for corporate leaders will be to figure out what the post-petroleum economy is going to look like, what technologies and policy frameworks will be required to expedite the transition, and what risks and opportunities will emerge within the changing regulatory environment. In short, they will need to plan how to survive – or better still, profit from – the inevitable transformation.

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