Transcript

Fossil Fuels Expert Roundtable: How will a World Recession Affect Oil and Gas Investment, Supply and Demand?

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Andrew Gould:

Ladies and gentlemen good evening - it's a pleasure to be here. For the last thirty six-years I have lived in self imposed exile and it is to me somewhat intimidating to be standing here talking to you about the industry that I have followed for almost all that period. I am pleased to give my point of view on what the current financial climate means for the global oil market.

Schlumberger works in all the major oil producing countries of the world, and through its seismic, wireline, production testing and data and consulting services, it has a very unique view on the health of the worlds exploration and production system. However, this knowledge is the property of our customers and as such, while we can make general statements, we cannot descend to the level of a diagnostic or opinion on a particular customer or country. That would be the equivalent of a doctor using an individual patient's record and like doctors we are bound to keep our knowledge between ourselves and our customers. Also, we are not experts on demand and anything I say on demand is my own opinion and has no more value than anybody else’s.

Looking at global oil and gas markets it seems to me that the most common error that many observers make is to fail to understand the notion and the consequences of scale that surround the industry. The first notion is why are oil and natural gas so popular as fuels? Simple physics tells us that petrol, or Gasoline as we exiles have learnt to call it holds an enormous amount of energy. The best rechargeable batteries hold only 1% of the energy of gasoline. Gasoline for the same weight delivers about twice the energy of bituminous coal or 1.6 times the energy of ethanol. Some fuels do beat gasoline in energy per pound. Hydrogen gas or liquid is about 3 times better. Uranium or plutonium fission is 2 million times better.

So the first issue with oil and gas at scale is the relative efficiency of the fuels in their power to weight ratio and their relative ease of extraction conversion and transportation and storage for their ultimate use. These arguments are not currently popular with politicians but the facts remain.

It is not the subject of today’s talk and I do not have the time to enter into the debate over the contribution of oil and gas to CO2 emissions. Suffice it to say that
in the short term far more progress can be made by focusing on reducing emissions from the use of coal rather than oil and gas and that investment in this will yield far more short term benefits to the levels of CO2 emissions than investments in alternative transportation fuels almost all of which have their own side effects and are currently in all cases are difficult to scale.

I will make some brief remarks on demand and then devote the rest of my time to supply.

It is interesting to look at the parallels with the last major oil price collapse of 1986. After all, the two oil price shocks of the 1970’s were equal in magnitude if not in speed to what happened between 2003 and 2008. The supply side situation between the two periods is very different and I will return to this later.

The differences on the demand side are many and striking. In the early 1980’s demand growth was still very largely driven by the OECD countries who had been accustomed to cheap supplies of oil and gas throughout the post war period. Ample supplies, coupled with low producer rent and lower tax cost all drove demand growth with little concern for cost. The success of OPEC in raising producer rent provoked an immediate reaction in curbing demand. Conservation and substitution coupled with a recession led to a demand drop of some 8 million barrels a day between 1979 and 1985 and demand did not reach the level of 1979 until 1992. Changes in fuel source, witness the nuclear construction during this period, coupled with higher taxes and conservation incentives all contributed.

In addition, Paul Volker at the Federal Reserve was determined to kill inflation despite the recessionary effects and US interest rates were in double digits for some 6 years, there was no quantitative easing.

Compare this to today, the recent increases in oil prices were driven not only by actual demand but also by the perception that demand growth for oil and gas in the non-OECD economies - particularly in China, India, and the Middle East - would continue. We should also note that demand was not limited to oil and gas as all commodities necessary to the rapid industrialization of an economy were subject to similar inflation. The same picture has not been true for the OECD world where oil consumption has in fact been declining for the last three years. In addition, price had a direct effect on consumer behavior - particularly for gasoline in the United States - even before the recession.
As a result of the rapid de-acceleration of the world economy following the financial crisis in the autumn of 2008, (or was it the end of the Beijing Olympics?) the price of West Texas Intermediate which tested $147 in July 2008, ended the year at $45 and has hovered slightly around that level ever since with consequent effect on industry spending plans.

We are not in the same situation as the 1980’s. While demand can still be affected by conservation efforts the easy demand gains of the previous oil shock are over. Conservation and/or fuel substitution efforts in the OECD are likely to take much longer to implement and will suffer from the law of diminishing returns as long as oil and gas prices remain low, just look at the implosion of US ethanol production. This is true for the OECD and even truer for the non OECD economies where the energy intensity of the emerging economies is much higher. Only energy conservation can have a substantial effect on the demand for oil in the medium term, and as long as the population in the non-OECD economies seeks to adopt the lifestyle that the West enjoys, demand for oil is not going to disappear.

To return to the notion of scale, the differences between now and the nineteen-eighties in the demand drops are worth noting. In the 1980’s demand dropped 8 million barrels a day from the peak which at the time represented 13% of world demand. The most pessimistic of current forecasts of demand drop anticipate that 2009 will show a drop of 2.3 million barrels a day or 3% below 2008…A few areas of the world will continue to show modest demand growth.

We are now at a stage where the evolution of demand - governed by the level of economic activity - has become the overriding driver of oil and gas price behavior. Over the last few years we have all watched upward and downward revisions of non-OPEC supply. At the present time - and until the world economy stabilizes - we will all be looking for downward demand revisions because these, more than OPEC production cuts, will govern price behavior.

Let me now turn to supply, I will again begin by pointing out the differences between today and the price collapse of the nineteen eighties. I will then explore some of the reasons that the renewal of supply is becoming more difficult. I will look at some of the circumstances that are making investment more complex and
end with my view of the likely outlook for the industry in the case of a slow but reasonably sustained economic recovery.

I would contend that in the 1970’s there was never a physical shortage of oil. Price increases were driven by the fundamental change in the producers’ attitude to their share of the rent and the supply base was sufficiently concentrated for them to obtain it. There was also no shortage of newly discovered supplies. The industries response to the price increase was to add approximately 9 million barrels a day of non-OPEC supply from the big exploration discoveries of the 1960’s Alaska, the North Sea and Canterell in Mexico. Prices were high enough to sustain the development costs. Again, at scale 9 million barrels a day represented an increase in overall capacity of about 15% on the world’s total supply at that time. It is therefore hardly surprising that the oil price collapsed in 1986. The world was functioning with a spare capacity of somewhere between 12 and 15 million barrels a day at times close to 25% of total demand.

How does that contrast to today’s situation? Current world consumption of approximately 85 million barrels a day is some 40 to 45% higher than in the 1980’s. The current excess production capacity has probably reached 6 to 7 million barrels a day or 7-8% of total demand compared to the 25% I mentioned in the context of 1986. Therefore the imbalance is much more fragile and more sensitive to regional supply disruptions. The concentration of excess supply is again very much in the hands of OPEC and when demand recovers there is a real risk of a further price shock.

So what, in addition to the huge increase in demand, happened to fragilize supply? The answer in my view lies very simply in the long period of under investment that followed the collapse in the oil price in 1986. For approximately sixteen years from 1986 to 2004 investment in new supply was low. The world gradually worked off the excess capacity that had been created in the boom years after 1973. The sudden rise in prices that appeared in 2004 was due to the surge in demand in front of a very small margin of spare capacity. One important fact to note here is that absent the re-emergence of supply from Western Siberia in the late 1990’s and early 2000’s and the development of deepwater resources, the shortage of excess production capacity would probably have appeared 3 or 4 years earlier. The facts are that by now probably 70% of the world’s production comes from fields that have been in service for more than 40 years. Some 27%
of the world’s production comes from the top 40 fields of which the average age is close to 50 years old.

Let us now look at the supply response post 2004 and the effect of increased spending on liquids supply... Increases in supply in this period took place principally in Saudi Arabia. If you look at all the other supply additions in this period the delta is approximately positive 500,000 thousand barrels a day as additions were offset by declines. Here it is important to mention the notion of decline rates. Much debate has occurred around the notion of decline rates and following comprehensive study by the IEA they have established an average post-peak decline rate of 6.7%. This means that every year we have to replace approximately 5 million barrels of production lost to decline before we can even address demand increases.

In the period post 2004 there was a huge increase in capital spending in the exploration and production industry. Spending increased from $200 billion in 2004 to almost $450 billion in 2008 and the key question is why did such a huge increase in spending not result in more production?

The period also saw a rush to invest. It was a classic case of too much money chasing too few goods and services. After the long period of low investment the Oil Companies and the suppliers and service companies who assist them were all short of equipment and people to get the job done. The result was a lot of inflation and a great deal of inefficiency. You have all seen the headlines on huge project overruns and the political fallout many of them generated.

Governments everywhere saw an opportunity to increase their share of the rent. Fingers are often pointed at the OPEC countries and the developing world but first off the mark increasing government tax take were often the OECD countries the state of Alaska and the UK being prime examples. The period also saw through the actions of producer countries a gradual closing of access to new resources by host governments. In my own company we actually maintained a scale to measure this. As producing countries fought to maintain a higher share of the rent they closed their borders to international capital. It is fair to say that others opened, perhaps the most notable being the re-opening of Libya after a long period of embargo. I will return to this subject.
Governments and other observers took no account of whether or not the actual cost and difficulty of extraction had increased. But restricted access meant that the oil companies had to accelerate the investment in more difficult and costly resource varying from the deep offshore to the heavy oil and tar sands of Western Canada and Venezuela for example.

Political constraints over investment either due to domestic issues as in the Niger delta or international political situations such as those of Iraq and Iran put much of the most promising remaining resource off-limits to international capital. While capital flowed to the industry it could often not be deployed to the most promising cost effective resources.

Let me now turn to the current situation and probable outcomes. Among the various scenarios considered (V, U, L or W-shaped), two alternatives have the highest likelihood. The first is that the current recession becomes L shaped, it deepens and that demand for oil continues to contract in which case, depending on the steepness of the fall in demand, the problem of supply will be postponed much as it was in the 1990’s though not for so long as the supply demand balance is much more fragile. The second is that demand stabilizes and starts to grow again as all the various stimulation packages take effect, a V but more probably a U shaped recession. In this scenario, oil prices are likely to rebound fairly dramatically and let me now look at why that would be the case.

The precipitous drop in oil prices has led to immediate cutbacks in Exploration and Production expenditure. At current oil prices only conventional oil and current deepwater projects are profitable. Many of the high cost development projects particularly in heavy oil have been cancelled or postponed pushing new supply further out. The same is true for many small project or rehabilitation efforts that were just getting under way particularly for those companies that needed access to credit markets. You will see further declines in UK North Sea production for just that reason and more particularly in Russia. Exploration spending will probably reduce by approximately 30% in 2009 compared to last year. As a result, as demand stabilizes or begins to grow pricing power will rapidly revert to OPEC.

In the case of a reasonably short cycle, a number of the structural changes we have seen over the last few years are likely to survive.
The major National Oil Companies that are resource rich will probably resist a return of international capital unless their internal domestic budgets become much worse, while those that are resource poor will continue to attempt to access resources outside their home territory. Overseas investment by the Chinese Oil Companies already a new and important part of the oil and gas investment scene will accelerate and take new forms as the recent sales of future oil by Russia and Brazil witness. Some countries where the state is highly reliant on oil revenues for the national budget are already cutting expenditure.

The major international oil companies are in general not cutting their expenditure but are making a major effort to remove some of the cost inflation from the system. They are lowering their hurdle rates and trying to adjust their project costs accordingly. We have not yet seen any major merger or acquisition activity amongst our customers but we cannot rule this out. It will be interesting to see what will give first, returning money to shareholders through share buy backs and dividends or cutting E&P expenditure.

However, all these facts do not remove the reality that exploration and production investment are being cut, and while some inflation is being removed from the system which will make investment more effective, it is unlikely that investment at current levels be sufficient to stem decline and increase overall supply. We therefore risk a further shock should demand recover too fast.

If I am right in my assumption that capital will not be able to flow easily to the most promising remaining resource either because access is closed or because the risks are too high private investment will flow to the resource that is more costly, more technically challenging and generally in smaller accumulations which makes stemming decline and increasing supply all the more difficult.

This leads me to another interesting particularity of investment in oil. The infrastructure around the transportation, refining and marketing of oil is widely spread across geographies and industries. As a result, oil is a fungible commodity easily traded with, by and large a market mechanism which finds a price, albeit heavily influenced by OPEC. The resulting volatility that this free and rapid trading creates is a discouragement to investment to all except those who hold a very long term view. It also frees producers from the need for partners to
bring their oil to market. Contrast this with liquefied natural gas where supplies need heavy investment in liquefaction, transportation, re-gasification and distribution. The result is that up until now producer consumer partnerships have provided a term pricing mechanism and suitable terms to encourage long term investment. There are currently some 256/ bcm a year of liquefaction capacity which will increase by 55% in 2012. It is to be hoped that the predicted 130% increase in inter-regional gas trade over the next two decades will retain a pricing mechanism for continued investment.

So radical change in industry thinking or another boom and bust? I am afraid it is a boom and bust with new tweaks. If I look back and this is my fourth boom and bust they all have one thing in common and that is they are associated with a weakening of demand. 1986 was an accumulation of lower demand and increased supply, 1997-98 was the drop in demand in Asia just after OPEC had increased production by 10% and was the cycle that everybody read wrong. JB across the way and $9 South bank $15 by August $25. 2000-2001 was a wrong reading of the market by OPEC who allowed supply to increase without the demand being there and just before 9/11.

What is true is that each of the more recent cycles has shown greater amplitude but shorter span and in my opinion this has much to do with the increasing fragility of the supply base and OPEC’s ability to influence the margin of excess supply.

The tweaks this time are the depth of the recession and the ultimate drop in demand, the lack of investment opportunities in the most promising resource areas for political or security reasons, all of which lead to a conclusion that if we wish to obtain greater stability of price and security of supply we either have to invest a lot more in expensive resource or we have to accommodate a new producer supplier dialogue. In either case a postponement of investment will inevitably amplify the next boom, again a question of scale.

Ladies and gentlemen thank you very much.