Prepared Testimony

Trends in Gasoline and Crude Oil Markets

Testimony by
Paul Horsnell, Head of Commodities Research, Barclays
before the U.S. Senate Committee on Energy and Natural Resources,
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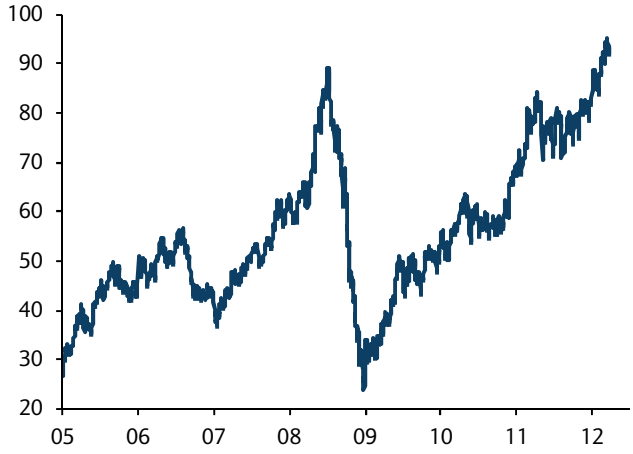
Chairman Bingaman, Ranking Member Murkowski, and members of the committee, it is a pleasure to appear before you today and I thank you for your invitation to do so.

In background, I am the Head of Commodities Research at Barclays. I lead a team of analysts in New York and London who research supply and demand conditions and other fundamental drivers across a wide range of traded commodity markets. My own particular focus is on oil markets which I have covered over a couple of decades, first as an academic working in the Oxford Institute for Energy Studies and then latterly as an analyst within the banking sector.

The current oil market situation is one of high crude oil and gasoline prices. The US national average for the retail price of regular unleaded gasoline stands, as of 26 March, at $3.92 per gallon, which is 9% higher than a year ago and which is within 20 cents of its all-time high. In a few areas of the country the all-time high has been surpassed, for example in the EIA gasoline price survey the average of regular unleaded in Chicago stands at $4.47 per gallon, higher than the peaks reached in 2008 and then exceeded in 2011. Elsewhere in the world, retail gasoline prices are also at record levels, for example in the UK the national average for unleaded gasoline currently stands at the equivalent of $8.40 per US gallon. Indeed, across Europe both crude oil and retail prices are at record highs in domestic currency terms due to the combined effect of a stronger dollar and higher international commodity prices. Figure 1 below shows the value of the OPEC basket of crude oils in euro terms, which has reached new all-time highs after a sustained rise that has now lasted for more than three years.

Figure 1: The value of the OPEC basket of crude oils in euros, (2005-12, €/b)



My focus here is on the fundamentals of the international oil market at this time. There are six salient characteristics of the current market that I will address in more depth below. First, there are some specific factors bearing on US gasoline prices that relate to East Coast refinery closures and the associated uncertainty. Second, the buffer of sustainable spare crude oil production

capacity is currently thin at the global level. Third, a surge in North American supplies has coincided with a weak output profile elsewhere, leaving non-OPEC output as a whole rather stagnant. Fourth, so far 2012 has seen an unusually high level of production outages. Fifth, global demand growth is continuing albeit at a modest level, dominated by four countries in particular, taking global oil demand close to 90 mb/ d for the first time despite a continuing fall in OECD demand. Sixth, and finally, that there is a heightened level of geopolitical risk and geopolitical awareness in the oil market. I will now turn to each of these defining characteristics in turn.

1. US gasoline and the effect of refinery closures

Some of the rise in gasoline prices is not due to global issues or to changes in the price of crude oil. Indeed, a large part of this year's rise in US retail gasoline prices has been due to the specifics of the US physical gasoline market. US wholesale gasoline prices have increased more this year than either crude oil prices or other oil product prices. From the last trading day of 2011 through to 26 March, the price of May gasoline increased by 23%. By contrast, over the same period US West Texas Intermediate crude oil for May delivery rose by just 8.1%, May Brent rose by 18.2% and May heating oil rose by 13.4%. As is shown in Figure 2, the May gasoline crack has risen by more than $20 per barrel since December, ie wholesale gasoline prices have risen by over $20 per barrel more than WTI crude prices.

Figure 2: The May gasoline crack (i.e. May RBOB gasoline minus May WTI), $/b

The higher rate of increase of wholesale gasoline prices relative to crude and other products reflects market concerns as to the impact of a series of closure announcements for oil refineries on the US East Coast and in the Caribbean. The closure of refineries with high gasoline yields (and with other closures possible) means that the a large tranche of the North East gasoline market is transitioning from being supplied within the region to, in future, being met by imports or by increased flows from the Gulf Coast. In terms of the latter, there are a variety of market views as to how binding pipeline and shipping constraints are likely to be, and the concern among physical traders is that regional inventories might fall fairly sharply when the driving season begins. Market price dynamics appear to be attempting to incentivise imports to meet any potential gap over the next three months in particular, as well as reflecting concerns as to a potential abrupt tightening of the physical gasoline market in the NY Harbor area in the wake of the refinery closures.

The element of the gasoline price rises that is due to the uncertainties in the wake of the East Coast closures is localised and does not reflect the global availability of refinery capacity and gasoline. There is no global shortage of gasoline, and sufficient supplies can ultimately be obtained, albeit at a cost. Those supplies can only be obtained at higher import costs, and that is what US wholesale prices are beginning to reflect. At a global level, we still expect the net addition of refinery capacity to outpace global oil demand growth in 2012, just as it did in 2011. That is despite substantial closures in North America and Europe, estimated at almost 2 mb/d across 2011 and 2012 combined, with further closures possible. In particular, there has been a rapid build up in Chinese refinery capacity. Between 2010 and 2013 we expect Chinese capacity to have risen by 3.4 mb/d, Indian capacity to rise by 1.8 mb/d, other Asian capacity to rise by 1.7 mb/d and Middle East capacity to rise by 1.3 mb/d. We do not expect there to be refinery constraints at a global level, nor do we expect any lasting global issues in the deliverability of gasoline. However, the abrupt closure of so much North American capacity has clearly unsettled the market, and led to concerns that the physical markets in the regional might remain tight and dislocated, at least in the early part of the driving season. Ultimately imports and the tweaking of any logistical issues and bottlenecks will solve the problem, however that may well come at the cost of a higher equilibrium price in order to keep imports flowing in to the required extent.

2. Global spare oil production capacity

Beyond the factors specific to the US gasoline market, there are also pressures coming through from crude oil markets. While there is significant global spare capacity in the refining of oil, there is currently little spare capacity in crude oil production. If we define sustainable capacity as being that which can be brought into production within 30 days and which can be kept on stream for at least 90 days, then we estimate that global spare capacity today stands at no more than 1.7 mb/d, with virtually of that being held by Saudi Arabia. This is a little less than 2% of global oil demand, i.e. the global crude oil industry is currently producing at 98% of its sustainable maximum. Loosening that definition and allowing for capacity that takes as long as 90 days to come on stream may take the total to a shade above 2.5 mb/d. However in our view the stricter definition is the more useful one when it comes to the consideration of filling supply gaps in a crisis. Such high rates of capacity utilisation normally involve higher and more volatile prices, producing a far greater reaction to potential supply shocks than during periods when spare capacity is more ample.

The current level of total OPEC production (i.e. crude oil plus natural gas liquids and other oil liquids) is running at an all-time high of 37.5 mb/d. Thus far, this extremely high output level has not resulted in any significant or sustained observable market surplus or inventory build, although in our view it has removed a long-lived imbalance. Global oil demand has exceed global oil supply for an unprecedented eight quarters in a row, which has whittled away at the significant level of surplus inventories built up during the 2008-9 downturn. To return the global system to a more even footing, there would be a case for the desirability of a few quarters of inventory builds to start to rebuild cover. With OPEC producing at the current elevated levels, we are projecting a modest global inventory build for both Q1 and Q2, breaking that long run of inventory draws. The scale of those projected builds is perhaps not enough to restore an optimal cushion, but it should help stall the increase in crude prices as long as there are no further significant supply shocks.

Thus far in 2012 the physical global crude market is reflecting tightness, with participants prepared to pay a premium to accelerate their deliveries of crude oil. This situation, known as

backwardation, has held in the Brent market for just over a year, and means that there is currently no prompt surplus of crude and that there is no market incentive or need to clear the market by holding more inventories. We would expect to see the erosion of prompt physical market differentials as being an early sign that the tightness was at least beginning to fade, but thus far the strong bid for prompter physical crude has been maintained.

3. Significant changes in the geography of non-OPEC supplies

Despite the strong increase in US oil supply and the prospects of significant further increases, non-OPEC supply as a whole has stagnated, indeed it fell in 2011. A sharp divergence in crude oil production growth has opened up between North America and the rest of non-OPEC output. In 2011 North American oil supply surged by 550 thousand b/d, of which growth two-thirds came from the US alone. Barclays expects a further 500 thousand b/d of growth in 2012, of which more than 80% is expected from the US. In contrast, non-OPEC supply outside North America fell by 580 thousand b/d in 2011, cancelling out all of the North American growth, with the UK and Norway being the major sources of decline. In 2012 we expect non-OPEC supply outside of North America to decline by 220 thousand b/d, and outside the Americas as a whole we expect it to decline by 410 thousand b/d.

Because of the weakness elsewhere, the increase in US production has served primarily to prevent the market from becoming even tighter, rather than creating any overall tendency towards surplus. It has, however, begun a significant remapping of the geography of global oil trade, made more obvious when the additional effect of lower regional oil demand is factored in. The gap between North American oil demand and supply narrowed by 870 thousand b/d in 2011, and we expect a further 750 thousand b/d narrowing in 2012. For the US alone, the implied trade gap narrowed by 720 thousand b/d in 2011 and is expected to narrow by a further 690 thousand b/d in 2012.

4. There is currently an unusually high rate of non-OPEC production outages

Beyond a more general malaise in the performance of non-OPEC production outside of North America, there is also currently an unusually high level of production outages. These are due to various factors including civil disturbances, civil and other wars, geological disappointments and accidents. As of this week, the tally of outages includes a loss of 0.4 mb/d from Sudan/South Sudan, 0.15 mb/d from Yemen, 0.15 mb/d from Syria, 0.2 mb/d from Canada (syncrude outages) and a tail of other outages including the latest problems in the North Sea Elgin/Franklin fields that together bring the total to just over 1 mb/d. While, with the exception of the Sudanese outage, none of these situations have been large enough in volume terms to garner much sustained attention, the combined effect has been enough to prevent any overall inventory and supply cushion from building up over the course of Q1.

5. **Global demand growth continues, albeit modest and highly concentrated**.

The strong difference in recent years between weak OECD and strong non-OECD demand growth has continued into 2012, but with some new features. Within the OECD, the reshaping of Japan's energy sector following the Fukushima accident has produced strong Japanese demand for fuel oil and direct burning crudes, as well as sharp increase in LNG demand. As of now, of the 54 Japanese nuclear units there is only one that is operational. Even that single remaining plant is due to come offline for maintenance in a few weeks. With Japanese LNG regas capacity becoming a little stretched, and with the utilisation of gas-fired generation now high, oil looks likely to garner

a significant slice of incremental Japanese power demand. The y/y increase in Japanese use of fuel oil and direct burning crudes stands at more than 350 thousand b/d and is likely to rise further, providing a significant offset to the weakness of OECD demand elsewhere. Overall, Barclays expects OECD demand to fall by 370 thousand b/d in 2012, less than the 660 thousand b/d fall seen in 2011 due to an improving US economy and the increased use of oil in Japanese power generation.

Overall, Barclays expects global demand growth of around 1 mb/d in 2012, with the OECD decline being offset by emerging market growth. The main sources of that net growth are expected to be the same countries that have dominated global demand growth in recent years. From 2008 to 2011, global oil demand grew by 2.6 mb/d. Over the same period, demand growth of 3.2 mb/d came from just four countries; namely Brazil, India, China and Saudi Arabia. We are not expecting any dramatic slowing in the pace of demand growth from these four countries in 2012, and their combined growth is, at just over 1 mb/d, expected to represent all of the net global demand growth.

6. An elevated degree of geopolitical risk

The impact of geopolitical risk on oil prices is a function of the level of spare sustainable capacity. At high levels of spare capacity, the potential for geopolitical tension to rattle markets and to become priced in is limited. As spare capacity falls, the impact of geopolitical developments is likely to increase, and at the current extremely limited level of spare capacity there is some danger that geopolitical concerns could begin to dominate. Currently the potential situations include, for example, the political tension and attacks in Nigeria, and the downside risks to Iraqi output in the face of tensions over oil policy and oil payments between central government and the regions. However, the tightening constraints on Iranian exports has perhaps been the main geopolitical issue for oil markets this year, with physical markets starting to consider the effects of the realignment of global trade flows in the face of the impending EU import ban. The Barclays base case scenario has a relatively benign outcome for oil prices, with some cooling from current levels to achieve an annual average of $115 per barrel for Brent. That base case involves no significant escalation or extended supply loss in any geopolitical situation.

Conclusion

Current retail gasoline prices are the result of the combined effect of specific gasoline market factors (namely East Coast and other refinery closures) and the feed through of higher crude oil prices. For prices to cool probably requires some improvement in the position in most of the six areas we note above. That would include avoiding the worst-case scenario in the market transition effects and the concerns on system flexibility caused by the refinery closures; the appearance of more slack within the global crude oil system be that through improved non-OPEC supply performance or by a more significant downturn in demand; and more limited oil market implications from the various geopolitical concerns currently at play. The key summary parameter is global spare sustainable capacity, and the tightness of that does appear to be a source for magnification of the market sensitivity to further supply-side or demand-side shocks.