# Crude Assessment

Schroders

Global Energy Research
June 2006

## OIL MARKET SUMMARY

1. **Demand issues to the fore.** Geopolitics still relevant, but broader concerns over growth and inflation come to the fore.
2. **Is the US consumer responding to higher energy prices?** Growth in oil demand continues despite higher prices, although muted versus prevailing economic growth.
3. **Supply matters.** Headline grabbing demand downgrades take centre stage – but watch supply developments. Our call on OPEC increases, further reducing growth in spare capacity.
4. **Oil price assumptions for 2006 revised up.** Year-to-date prices stronger due to supply disruptions and geopolitical premium. We see this continuing and strong Q4 finish to year. We raise our 2006 oil price assumption to $67.45/bbl (from $59) and expect consensus to revise up too.

## 1. ITS ALL GOING PEAR-SHAPED, APPARENTLY

**Since the last *Crude Assessment* in March we have seen oil prices reach new highs** in April on the back of continued concerns over potential Iranian disruption (reflected in record high non-commercial net long futures positions). However, **prices have more recently started a downward tack, trading down as much as $7/bbl as geopolitical pressures *appear* to have eased and commodity and equity markets have lurched from perhaps an overly complacent outlook on growth to one of apparent panic over prospects for growth and inflation**. Markets fear the withdrawal of liquidity as central banks raise interest rates and consumers, already witnessing higher inflation and fiscal drag from energy prices will respond by aggressively reining in consumption. The argument goes that a slowdown in economic growth will result in lower oil demand and thereby loosen the tight supply/demand balance that has proved a key driver of rising crude oil prices.

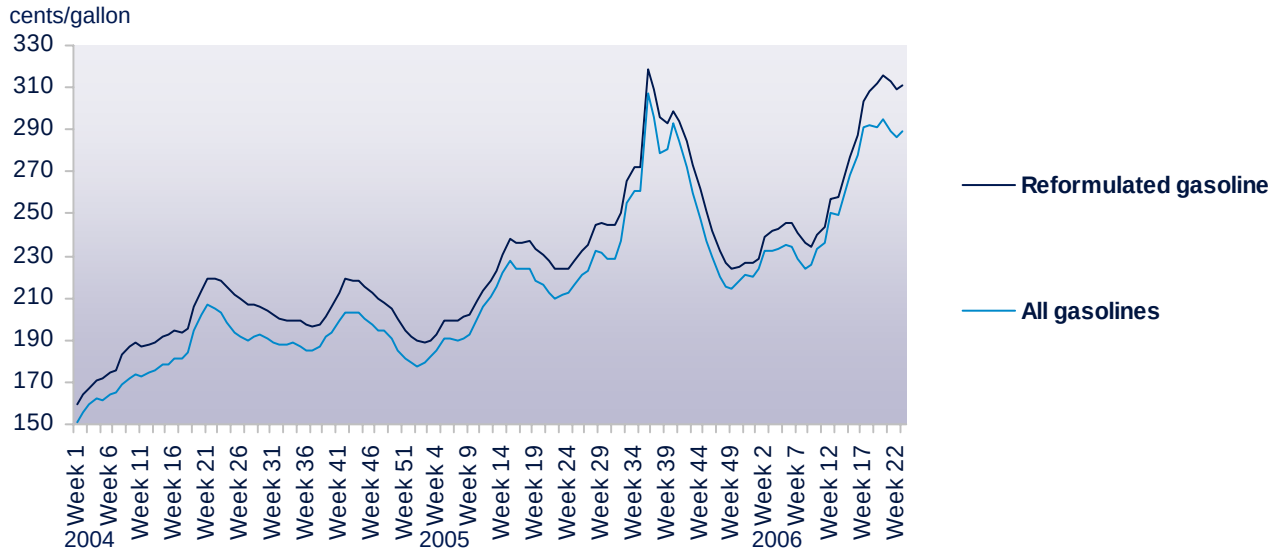
Adding to this concern is mixed demand data out of the US (at least for gasoline) and statements from the International Energy Agency (IEA) which has downgraded assumed oil demand growth for 2006 by 0.56mbbl/d to 1.24mbbl/d since the start of this year. With fear over global economic slowdown a key market concern, such announcements have been met with oil prices coming under pressure and oil sector equities seeing especially heavy selling. In this *Crude Assessment* we hope to address the issue of demand growth and look once more at supply issues. **The obsession with demand risks is, we believe, unwarranted given patterns suggested by the underlying data and ignores the weak outlook for non-OPEC supply growth which is, in our opinion, being overestimated by the IEA.**

## 2. TIME TO TRADE IN THE SUV?

**Data on SUV sales in the US suggests that consumer habits are perhaps finally waking up to the reality of higher gasoline prices**. General Motors reported May vehicle sales down 16% yoy with marked falls in SUV sales and commentators were quick to point the finger at energy costs for this deterioration. That gasoline prices are high can not be doubted (see chart below) and perhaps it is the case that a small element of the US consumer community will now think twice about buying a gas guzzler. The fall in sales might also have something to do with reduced incentives, the fact that sales growth during recent times has been robust and that interest rates have increased 400bps during the past two years. An economy which in the words of its own president is 'addicted to oil' is, in our opinion, unlikely to witness such a rapid conversion in driving habits.

**Gasoline prices have recovered to levels consistent with the aftermath of Hurricanes Rita and Katrina last fall**, despite the return to production of the hurricane impacted refining capacity and record high levels of imports. Initial price support came from high levels of refinery maintenance during April and May, followed by the introduction of summer grade gasoline which this year requires ethanol as additive and

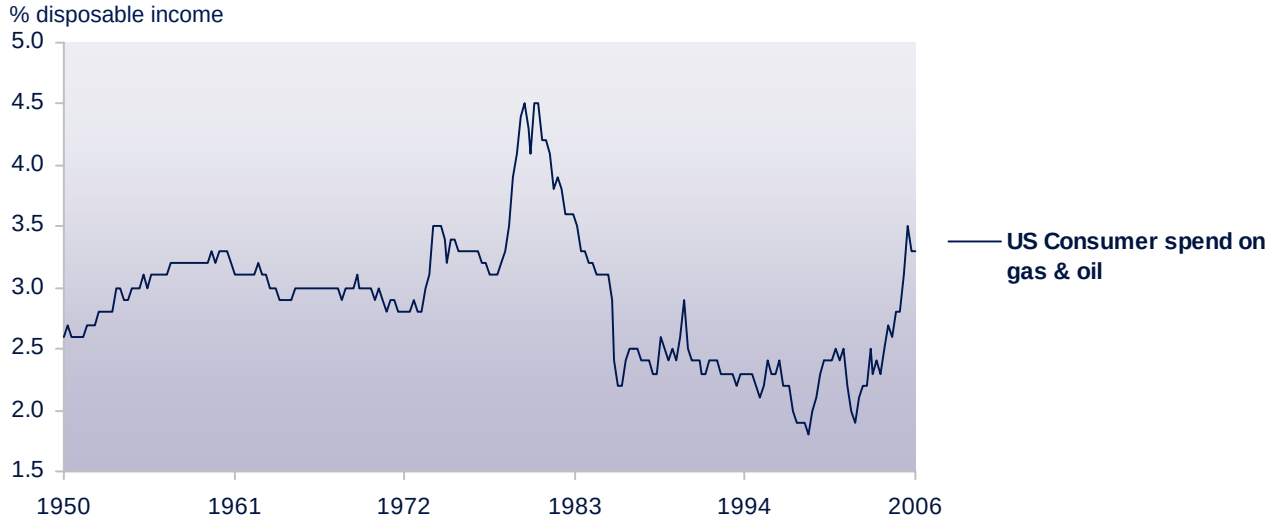
not MTBE (methyl tertiary butyl ether). Logistical problems associated with the introduction of ethanol have resulted in localized shortages of product and have contributed to higher prices. Average retail prices are now 37% higher than this time last year.




Source: US Department of Energy, Schroders

**Are higher prices impacting consumption?** If we are to take the data at face value this suggests **demand for gasoline is running at 0.5% YTD, pretty lackluster given prevailing economic growth**. Taking the data at face value can of course be extremely dangerous. **With the transition to ethanol taking place this year data are likely being distorted**. *Readers with a technical aversion can skip to the next paragraph*. The addition of MTBE in the past has been done at the refinery. Ethanol is intolerant to water, so can only be blended with gasoline at the distribution depots closer to the customer. Official data estimates implied demand by calculating product availability (production + net imports + change in primary inventories). During the transition to ethanol in gasoline, refinery gate deliveries of gasoline are likely lower for two reasons. First, MTBE is no longer present when gasoline leaves the refinery and ethanol for blending is not measured in total gasoline stocks. Second, refiners have estimated that the loss in gasoline yields/output from not using MTBE can be as high as 5-8%. As a result, **it is possible that low product availability has muted implied demand growth as measured by the US Department of Energy**.

With gasoline throwing up all sorts of uncertainties, let's look instead at total product demand. Excluding the volatile 'Other Oils' category suggests total product demand was down 0.11% in Q1, improving to 0.70% growth YTD. Again, compared to prevailing rates of economic growth this is muted and perhaps reflects the impact of higher prices on household disposable income.




Source: Datastream, Schroders

The last time energy accounted for a similar proportion of household income, oil demand *fell* by 0.8% in 1982 only to rebound 2.8% in 1983. Demand fell in response to high oil prices, but also global recession triggered by high nominal interest rates. Prices are once again at high levels and demand does appear to be reacting but oil price moves have been gradual and not sudden as they were in 1979-80 and nominal interest rates are materially below levels seen at that time. The chart above also includes gas costs which are materially above those levels seen in the early 1980s. The feedback mechanism to oil demand growth should, all other things being equal, be more muted despite the fact that energy costs are absorbing more of the average family budget.

After no oil demand growth in the US last year we continue to assume growth of 0.9% this year. This implies a moderate acceleration in growth during the remainder of the year. Given consensus estimates of a slowdown in US growth by Q4 we need to watch weekly demand numbers closely. Who knows, rather than trading in the SUVs, **the weaker dollar might prompt more people to stay at home this year and drive to holiday destinations instead**. Despite the increased proportion of income taken by energy costs, **the US EIA estimates that the average American family need only spend $8.50 more this year on gasoline to do an equivalent road trip to that undertaken last year despite higher prices at the pumps**. **Trade in the SUV? I don't think it's come to that just yet.**

**The other key source of demand growth acceleration for this year is assumed to be China**. Data for the first four months of the year are typically volatile. Through to April demand growth is up 6.3% y-o-y, comfortably above our own FY06 estimate of 5.5%. Indeed, recent data suggest acceleration in demand growth with April demand up 9.6% y-o-y. Retail prices have been increased twice so far this year which is reducing losses experienced in the refining and marketing operations of PetroChina and Sinopec, acting to boost product availability, hence stronger implied demand.

We have made minor changes to oil demand assumptions for 2006 which stands at 85.1mbbl/d (previously 85.0mbbl/d). Upward revisions to 2005 data result in demand growth falling y-o-y from 1.68mbbl/d to 1.50mbbl/d. With higher consensus economic growth forecasts this implies lower oil elasticity of demand versus prior assumptions, reflecting the impact of higher than previously assumed prices on consumption.

Whether you are in the 'demand destruction' or 'demand slowdown' camp, it is perhaps instructive to put demand estimates in the context of available spare capacity. **With estimated spare capacity recovering, although still only 2.2mbbl/d by year-end (see below) demand would actually have to FALL for spare capacity to rise to such a level as to offset supply risks**. Analysts might differ on the extent of demand growth, but no one is calling for demand to actually fall. **The market appears to be rationing demand growth via higher prices in an attempt to allow the supply cushion to re-establish itself**. Unchecked demand growth would simply slow this process down and make the oil market more exposed to disruptions with the unwanted outcome of price spikes and increased volatility.

## 3. LETS NOT FORGET ABOUT SUPPLY

Demand issues are important, but one should not lose sight of what's happening on the other side of the equation. We revised down non-OPEC output growth in the March *Crude Assessment* to 750kbbl/d. The major source of downgrade was Russian oil output growth. In the first five months of this year Russian oil output averaged 9.5mbbl/d, somewhat lower than our assumption of 9.7mbbl/d for the full year and representing growth of only 2.6% y-o-y. Clearly there are downside risks to our assumptions for Russian growth. Perhaps an early indication of this was the statement from the Economy Ministry earlier this month that oil output in 2009 will not exceed 10.2mbbl/d. This implies growth of only 2.0% versus our estimate of 3.6% pa.

This is important as the IEA and OPEC assume non-OPEC output growth of 1.1 and 1.3mbbl/d respectively. This suggests a material recovery in North American output and decent growth from Russia, areas where we believe there is scope for disappointment. Updating our own assumptions, we have left Russian growth unchanged, but have revised down North American output growth. This is a function of lower assumed recovery from Gulf of Mexico hurricane damage caused last year (jack-up rigs leaving the GoM to seek better contracts internationally) and project specific delays such as Thunderhorse which is continuing to experience problems in preparation for a H2 06 start-up. As a result of these changes **non-OPEC output growth falls to only 670kbbl/d, significantly lower than that expected by the IEA**. Both our and IEA estimates are back-end loaded so the degree of last minute growth in output will not be apparent for some time to come, but we maintain the view that scope for disappointment is material.

**These supply adjustments increase our call on OPEC crude oil for FY06 from 29.7mbbl/d to 30.0mbbl/d. This reduces OPEC spare capacity estimates from 2.4mbbl/d by year end 06 to only 2.2mbbl/d, still half the level the global oil market has previously been comfortable with.**

| mbbl/d | 05 FY | 06 Q1 | 06 Q2 | 06 Q3 | 06 Q4 | 06 FY | 07 FY | 08 FY | 09 FY | 10 FY |
|---|---|---|---|---|---|---|---|---|---|---|
| OECD Demand | 49.6 | 50.2 | 50.2 | 51.1 | 52.0 | 50.1 | 50.5 | 51.1 | 51.6 | 52.1 |
| Non-OECD Demand | 34.0 | 34.6 | 33.5 | 34.1 | 34.7 | 35.0 | 36.2 | 37.4 | 38.7 | 40.0 |
| **Total Demand** | **83.6** | **84.9** | **83.7** | **85.2** | **86.7** | **85.1** | **86.7** | **88.5** | **90.2** | **92.1** |
| *Change* | *1.06* | *0.74* | *1.61* | *2.22* | *2.62* | *1.50* | *1.64* | *1.73* | *1.78* | *1.83* |
| Non-OPEC Crude Supply | 48.2 | 48.6 | 48.8 | 48.9 | 49.2 | 48.9 | 49.7 | 50.2 | 51.0 | 51.4 |
| Total OPEC Crude | 29.9 | 29.8 | 29.9 | 29.9 | 30.0 | 29.9 | 30.8 | 31.9 | 32.8 | 34.2 |
| NGLs | 4.1 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.4 | 4.4 | 4.5 | 4.5 |
| Processing Gains | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 2.0 | 2.0 |
| **Total Supply** | **84.0** | **84.6** | **84.9** | **85.0** | **85.4** | **85.0** | **86.7** | **88.5** | **90.2** | **92.1** |
| *Change* | *1.06* | *0.23* | *-0.08* | *0.08* | *-0.04* | *0.92* | *1.76* | *1.73* | *1.78* | *1.83* |
| **Underlying Call on OPEC** | **29.4** | **30.1** | **28.6** | **30.1** | **31.3** | **30.0** | **30.8** | **31.9** | **32.8** | **34.2** |
| Implied Stock Change | 0.5 | -0.3 | 1.3 | -0.2 | -1.3 | -0.1 | 0.0 | 0.0 | 0.0 | 0.0 |

Figures may not add due to rounding
Source for oil demand: IEA, Consensus Economics GDP forecasts, Schroders
Source for oil supply: IEA, OPEC, Schroders

## 4. UPGRADE TO 2006 ASSUMPTIONS

**With prices so far this year stronger due largely to actual and perceived risks of supply disruptions an element of geopolitical risk premium appears to have become a material feature of prevailing crude oil pricing**. Although notoriously difficult to quantify with any degree of certainty we think current prices have somewhere between $5-10/bbl premium built in for supply risks. If the situation in Nigeria was to improve and Iran was to suspend uranium enrichment, we would expect such a premium to unwind. Although there is scope for some of the disrupted Shell output to recover during the next couple of months the situation in Nigeria is far from resolved. As for Iran, initial responses from Tehran to the US/European sponsored proposals suggest that suspension of uranium enrichment is not negotiable.

**Putting in YTD prices and assuming some degree of sustainability to the geopolitical premium (and not attempting to predict the impact of an unusually active hurricane season) means our 2006 assumption rises to $67.45/bbl.** The inventory build seen in Q2 06 is assumed to reverse during the remainder of the year, with expectations for a strong Q4 06. **Our new numbers are 8% above consensus and we expect upward adjustment to Street estimates to follow**. The current Street estimate for Brent is $62.27 and prices would have to fall to $60 for the rest of the year for consensus to not rise from here.

Estimates beyond this year remain unchanged. Does this imply we expect all supply issues to be resolved by year end? Not necessarily. We are simply attempting to factor in the current supply issues to 2006 assumptions based on available information and strong prices seen so far this year. Trying to factor in such inherently volatile and unpredictable elements for the medium term is, we believe, imprudent.

| $/bbl | 05 FY | 06 Q1 | 06 Q2 | 06 Q3 | 06 Q4 | 06 FY | 07 FY | 08 FY | 09 FY | 10 FY |
|---|---|---|---|---|---|---|---|---|---|---|
| Brent - old | 54.74 | 62.28 | 56.00 | 56.50 | 61.00 | 59.00 | 57.00 | 52.00 | 46.00 | 40.00 |
| **Brent - new** | | | **69.50** | **68.00** | **70.00** | **67.45** | **57.00** | **52.00** | **46.00** | **40.00** |
| Brent – consensus | | | | | | 62.27 | 56.07 | 47.83 | 44.78 | 43.89 |
| WTI - old | 56.57 | 63.28 | 58.50 | 59.00 | 63.50 | 61.00 | 59.00 | 54.00 | 48.00 | 42.50 |
| **WTI – new** | | | **70.65** | **69.50** | **71.75** | **68.80** | **59.00** | **54.00** | **48.00** | **42.50** |
| WTI - consensus | | | | | | 63.87 | 57.96 | 49.72 | 46.67 | 45.78 |

Source: Datastream, Schroders
Consensus as of June 12th: JP Morgan, Deutsche Bank, Credit Suisse, UBS, Morgan Stanley, Lehman, Goldman Sachs, Merrill Lynch, Citibank



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