Edison investment research

Supply concerns wane

Oil supply concerns have waned significantly since early 2012, as political tension over Iran has eased and evidence has surfaced of rising OECD inventories. Meanwhile, demand globally is subdued. As the IEA has recently alluded, the oil market is probably moving into surplus. Prices could soften noticeably in the coming months in the absence of an upsurge in tension between the West and Iran over the latter's nuclear programme.

Supply/demand balance: Supply surplus looms

The global supply/demand balance probably tightened in the opening weeks of 2012 due to significant non-OPEC outages. The IEA has estimated that the loss in output was 0.75mmb/d. OPEC production, however, has been rising solidly in recent months and is probably now more than filling the void. Significantly, the IEA has pointed to a seasonal small decrease in OECD inventories in February and a larger than normal gain in March. For 2012 as a whole we look for non-OPEC controlled supplies to increase by almost 1mmb/d, which is likely to modestly exceed demand growth. Including higher OPEC output, we believe there could be a 2012 supply surplus of about 1mmb/d.

Crude oil prices: Weakening trend in April

Light crude prices have come under pressure since the end of March, driven by waning supply concerns and ample inventories. Weakness of late has been particularly apparent in the case of Brent which has slipped 7% from the late March highs. The WTI-Brent discount has narrowed significantly since late March, from $21/barrel to $15/barrel in the third week of April. The narrowing probably reflects the re-emergence of the European sovereign debt crisis, which has tended to depress Brent, and the recently announced decision to bring forward the reversal of the Houston-Cushing Seaway pipeline by a month or so. The latter will potentially help alleviate the bottleneck at the Cushing tank farm. Reflecting the stronger than expected trend through early April, we have raised our 2012 price forecast for Brent from $113.5 to $115.2/barrel.

US natural gas prices: Continuing slump

The big energy market story of 2012 has been the continuing slump in US natural gas prices. In mid-April the Henry Hub benchmark was down to about $1.86/mm Btu, a 10-year low and about variable cost for a typical dry gas producer. Over the balance of 2012 we look for US prices to firm in response to a tightening supply/demand balance stemming from capacity shut-ins, lower drilling activity and strengthening power generation related demand.

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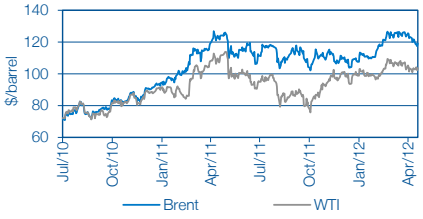
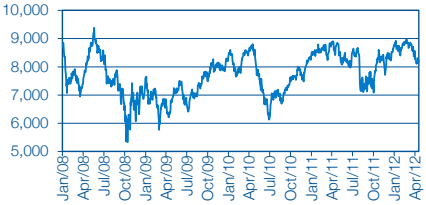
WTI vs Brent



AIM Oil & Gas Index

FTSE 350 Oil & Gas Index



Price trends

Note: Prices are yearly averages.

	WTI $/barrel	Brent $/barrel	Henry Hub $/mm Btu
2009	62.0	62.0	3.94
2010	79.5	79.7	4.37
2011	94.9	110.0	4.00
2012e	97.9	115.2	3.03
2013e	98.5	115.0	3.85

Source: Bloomberg (historics) and Edison Investment Research (estimates)

Crude oil market dynamics

Price overview

Market backdrop: Iran concerns ebb, macroeconomic concerns resurface

Benchmark light crude prices surged in February, trended broadly flat in March and have dipped significantly in April. The February surge was supply, or more specifically supply fear, driven. Key among the concerns was the potential impact on supplies of the EU import embargo, and tightening US financial sanctions on Iran related to its nuclear programme. Iranian concerns were compounded for a time by speculation on imminent military conflict and the potential for the closure of the Straits of Hormuz through which roughly 20% of the world's oil passes.

Supply concerns in recent months have also reflected significant non-OPEC outages. These have occurred primarily in Canada, Syria, Yemen, Sudan/South Sudan and once again the North Sea and reflect a combination of mechanical failures, adverse weather conditions, EU sanctions on Syria and, specifically in the case of Sudan/South Sudan, a pipeline dispute. All told, according to the IEA, non-OPEC unplanned outages in the first quarter of 2012 were running at about 0.75mmb/d, equivalent to 0.8% of global demand. It needs to be remembered, however, that there are always outages for a variety of reasons and that there were also some offsetting positives for supplies in early 2012, with the key ones being rising output in OPEC and the US. Despite references by market commentators to tight conditions, supplies have in reality been perfectly adequate, even if OECD inventories outside of the US were below the five-year average in early 2012.

The reversal of the upward price pressure since early March in no small part reflected the wise counsel of President Obama playing down the imminent prospect of military conflict in the Middle East. Additional factors dampening sentiment of late have been increasing US inventories to seasonally very high levels; signs of a reversal of the earlier downward trend in OECD inventories; evidence of slowing economic growth in the BRIC economies; a resurfacing of European sovereign debt concerns; and the apparent decision of the Federal Reserve not to apply a third round of quantitative easing in the near future. The demand side of the equation has been anything but bullish in recent months with clear signs of softness not only in recession-hit Europe but also the US. Given slowing economic growth, the demand picture in the developing world, in all probability, is also less robust than many had anticipated.

In the coming months we expect the oil market to be driven largely by three factors. The first concerns developments in the stand-off between the West and Iran over the latter's nuclear programme. The second relates to the European sovereign debt crisis and the third the ongoing flow of industry macro economic statistics in the US. A potential wild card in the coming months concerns a possible release of oil from the US strategic reserve.

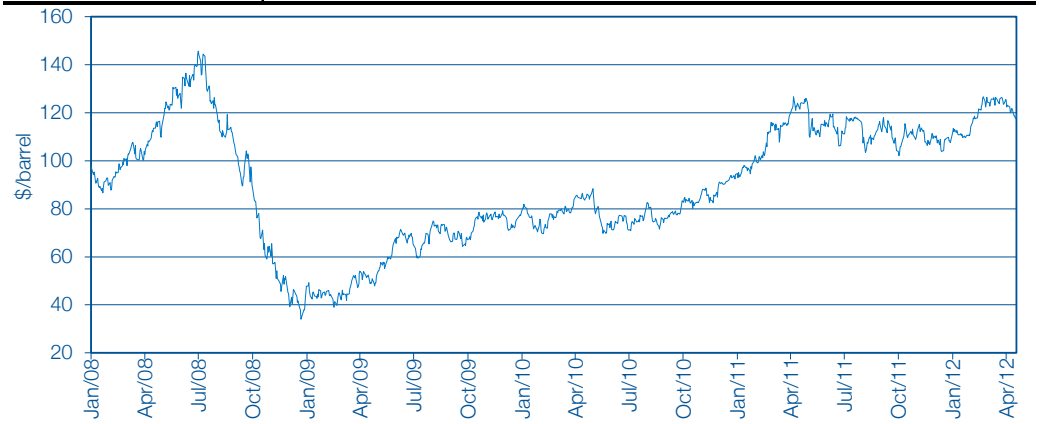
Recent trends in Brent and WTI: Recently Brent has been weaker than WTI

The trend in Brent, the key international benchmark, was significantly stronger than that of WTI in February and March, but in April the situation has reversed. At the end of January 2012 Brent was trading at $110.8/bl. For most of February Brent trended higher pretty consistently and by 24 February hit an almost 10-month high of $126.7/barrel, driven largely by supply concerns related to Iran. Over the balance of the month Brent eased to $123.9/barrel though this was still up a hefty

21% on 4 October 2011 low of $102.2/barrel. During March Brent moved in a very tight trading range of $122.8 to $126.4/barrel with the market in a wait-and-see mode as concerns over Iran lessened. The average price for the month was $124.9/barrel against $119.7/barrel in February.

Through the first two trading days of April the flat trend persisted, with Brent selling for slightly over $125/barrel. This, however, has been followed by significant slippage, with Brent dropping to around a two-month low on 19 April of $117.3/barrel. Compared with a year ago this was down 3.5%. The weakening trend of late has been driven by several bearish factors. These include the re-emergence of the European sovereign debt crisis, an easing of supply concerns related to Iran, disquiet at the economic slowdown in China and the IEA's recent report pointing to increasing OECD inventories.

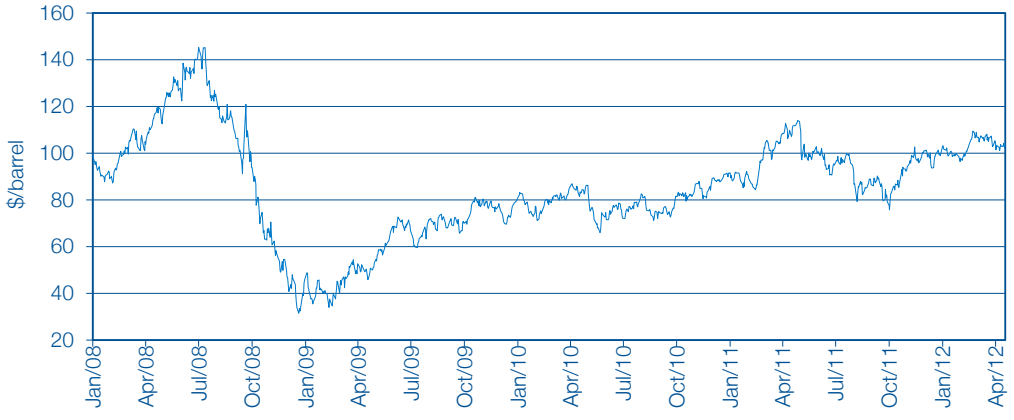
Exhibit 1 Brent crude oil price trend



Source: Bloomberg

Contrasting with Brent, the WTI price was actually softening in late January and at month end was $98.5/barrel. The trend remained weak through early February with WTI hitting around a 1.5 month low of $96.4/barrel on 3 February. Weakness in late January and early February reflected plentiful supplies in the US Mid-Continent and continuing evidence of soft demand. As February progressed WTI firmed in reaction to bullish international influences, reaching a 10-month high on 24 February of $109.5/barrel. This was up a substantial 45% above the early October 2011 low of $75.7/barrel. WTI softened in the closing days of February finishing the month at $107.1/barrel. The trading range was fairly tight through March between $102.8 and $108.1/barrel but contrasting with Brent the trend was modestly down through the month. At month end WTI was trading at $103.0/barrel.

Exhibit 2: WTI crude oil price trend



Source: Bloomberg

After firming to around $105/barrel during the first two trading days of April, WTI has subsequently slipped. The downward pressure, however, in April has been less pronounced than for Brent. On 19 April WTI was trading at $102.4/barrel, a two-month low and 5% under a year previously. The soft trend of late reflects bearish oil industry statistics in terms of inventories and demand. Partially offsetting this has been underlying bullish sentiment regarding the direction of the US economy, and on 16 April the Enbridge/Enterprise announcement that the reversal of the Seaway pipeline from Houston-Cushing is being brought forward to 17 May. This constituted a gain of two weeks or so compared with the original plan. By increasing low cost take away capacity, Seaway is expected to help alleviate the bottleneck at the Cushing, Oklahoma tank farm (NYMEX delivery point) and in the process allow the WTI discount to more highly priced waterborne import grades to narrow.

Iran review: A loss in exports of 1mmb/d still looks valid

The EU embargo on imports of crude from Iran is scheduled to commence on 1 July. Anecdotal evidence suggests that several European countries have already ceased importing, while in retaliation for the embargo Iran has stopped supplies to others. In revenue terms, however, Iran has probably been little affected given the elevated prices of recent months, in large part due to the embargo. Rather than the EU embargo itself, tightening US sanctions on financial institutions doing business with Iran's central bank may have a considerably greater impact on Iranian crude exports. These sanctions effectively mean that imports from Iran in future will have to be undertaken either on a barter or hard cash basis at discounted prices. With the possible exception of those based in China, no significant financial institution will risk being cut-off from the US financial system. Tightening financial sanctions also appear to have resulted in western tanker insurance coverage being removed for shipments from Iran.

Outside of Europe, Petronas controlled Engen in South Africa has recently indicated that it will cease importing from Iran. Historically Engen, the second largest refiner in South Africa after Sasol, has sourced about 80% of its crude from Iran. South Africa in turn accounts for about 3% of Iran's crude oil exports. Elsewhere, India and Korea have expressed misgivings about halting imports from Iran and major refineries in Greece, Italy and Spain are understandably less than enthusiastic about having to sever connections with the country. For all concerned, halting imports from Iran is likely to involve higher costs both in terms of feedstock and possibly re-configuring refineries to take different grades.

The key questions now concerning Iran's exports are: by how much will they fall in the coming months and how easy will it be to find alternative supplies. In our previous report we indicated that at least 50% or perhaps 1.25mmb/d of Iran's exports of 2.5mmb/d or so are at risk, due to a combination of the EU embargo and tightening US financial sanctions. All the indications are that this conclusion is still valid. A wild card however is the extent to which China and maybe one or two other maverick players might be prepared to increase their imports from Iran at short notice in exchange for a discount. Clearly this is an unknown but probably is not more than 0.5mmb/d. The conclusion therefore remains that the West could face a feedstock shortfall due to the EU embargo and financial sanctions of approaching 1mmb/d. This compares with OPEC surplus capacity presently of about 3.5mmb/d excluding Iran.

In theory, therefore, the loss of 1mmb/d of Iranian exports could reasonably comfortably be absorbed, as the US administration is fond of pointing out. There are, however, two problems with

this analysis. Firstly, more than half of the surplus capacity is located in Saudi Arabia and there is some doubt in market circles as to how long Saudi production can be sustained above the current level of around 10mmb/d. The issue is compounded given that some other OPEC participants might not be prepared to step-up output, thereby shifting more of the burden onto Saudi Arabia. The second problem is that an extra 1mmb/d of OPEC production would make a significant dent in spare capacity, which would leave the supply network more vulnerable to an interruption than would otherwise be the case. The saving grace is that demand growth is fairly muted at present, and there are some significant near-term increases in OPEC capacity in the pipeline. According to the IEA, these amount to 0.62mmb/d in the second half of 2012 and reflect the completion of expansion projects in Angola, Iraq, Libya and Nigeria.

Light crude spreads

WTI-Brent: The WTI discount narrows in April to $15/barrel

The WTI Cushing discount to Brent has widened noticeably since the lows of December 2011 when it was around $9/barrel. After running at $10.7/barrel in January 2012, the discount averaged $17.5 and $18.7/barrel in February and March respectively. During March the discount trended higher, widening from $17.5/barrel at the beginning to $20.8/barrel at the end of the period. In early April WTI continued to trade at discount to Brent of about $21/barrel, a six-month high. The widening discount reflected the differing market dynamics impacting WTI and Brent. In the case of the former, plentiful supplies and rising inventories at the Cushing, Oklahoma tank-farm have tended to constrain any upward movement in prices. By comparison, Brent has been considerably more sensitive to bullish influences surrounding Iran, supply disruptions – particularly in the North Sea – and still reasonably buoyant Asian demand.

Since early April, the WTI-Brent spread has narrowed significantly and by 19 April was down to $15/barrel. This reflects the previously mentioned change in market dynamics since the beginning of April, with the bringing forward of the Seaway reversal start-up being particularly influential.

Interestingly, in 2012 a wide discount has opened up between WTI Midland (west Texas) and WTI Cushing. Historically, the discount of the WTI Midland to the WTI Cushing has been $1 to $2/barrel but as of early April 2012 was running at $9/barrel. Although subsequently it has narrowed to about $5/barrel the discount remains well above historical levels. The marked widening in the WTI Midland discount in 2012 is indicative of rapidly rising production in the Permian Basin and transportation bottlenecks.

US pipeline developments: Seaway reversal brought forward

Major pipeline projects have recently been announced by Enbridge/Enterprise and TransCanada that should help alleviate the logistical bottleneck at Cushing, Oklahoma. The most significant near term is the Enbridge/Enterprise Seaway pipeline reversal between Houston and Cushing from south-north to north-south. The first stage of the project now scheduled for start-up on 17 May will provide 150,000b/d of takeaway capacity from Cushing to Gulf Coast refineries. Following a pump station upgrade, capacity will increase to 400,000b/d in the first quarter of 2013. Enbridge/Enterprise is then planning to more than double the size of Seaway to 850,000b/d by mid-2014. Additionally, Enbridge has announced that it is expanding the capacity of its Flanagan South pipeline from Flanagan, Illinois to the Seaway pipeline. This will facilitate shipments of rapidly growing Bakken production to the Gulf Coast.

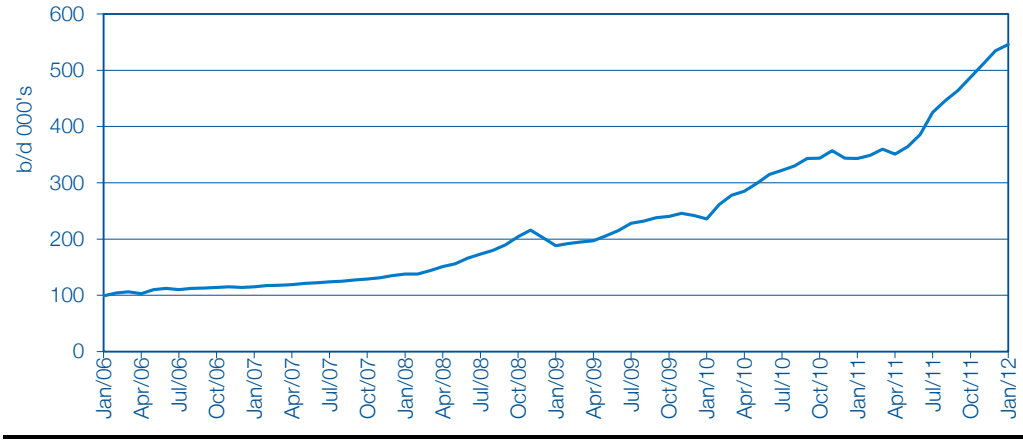
Rates have also been announced for using the Seaway pipeline. For uncommitted shipments they are $3.82 and $4.32 per barrel of light and heavy crude respectively. Based on five-year committed volumes of less than 100,000 b/d of light oil, the rate will be between $2.75 and $3.0/barrel. Over 100,000b/d the rate will drop to $2 to $2.25/barrel. These rates are apparently in line with industry expectations and compare with rail freight costs between Cushing and the Gulf Coast of perhaps $15/barrel.

TransCanada indicated at the end of February that it will go ahead with the southern section of the 500,000b/d Keystone XL pipeline from Cushing to Port Arthur Texas as a standalone project. It has Presidential support and is expected to be completed by end 2013. TransCanada is also intending soon to submit a new application to construct the northern section of Keystone XL pipeline from the Canadian border to Cushing. This project has proved controversial from a number of environmental perspectives but is expected to be approved post the Presidential election in November. When completed, Keystone XL will enable crude to be supplied via a direct route over the 1,600 miles from the Alberta oil sands to Gulf Coast refineries.

US production developments: Trending higher

North Dakota crude oil production continues its strong upward path driven by intensive drilling activity and advances in completion techniques in the Bakken/Three Forks shale formation (roughly 87% of state production). According to data supplied by the ND Department of Mineral Resources, North Dakota crude oil production in 2011 averaged 418,923b/d, up 35% on a year earlier. In January 2012, the most recent month for which data is available, production was 546,050b/d, 2.1% higher than the prior month and a hefty 52% above a year previously. A further major increase in North Dakota production seems probable in 2012 given carryover strength from the previous year, the upward trend in drilling activity and advances in completion technology. The state is looking for about 650,000b/d by year-end, which might suggest 590,000b/d or so on average in 2012. This would probably imply North Dakota displacing California to become the third-largest oil producing state in the union. The Department of Mineral Resource's forecast of 750,000b/d in 2015 still looks eminently plausible.

Exhibit 3: North Dakota crude oil production

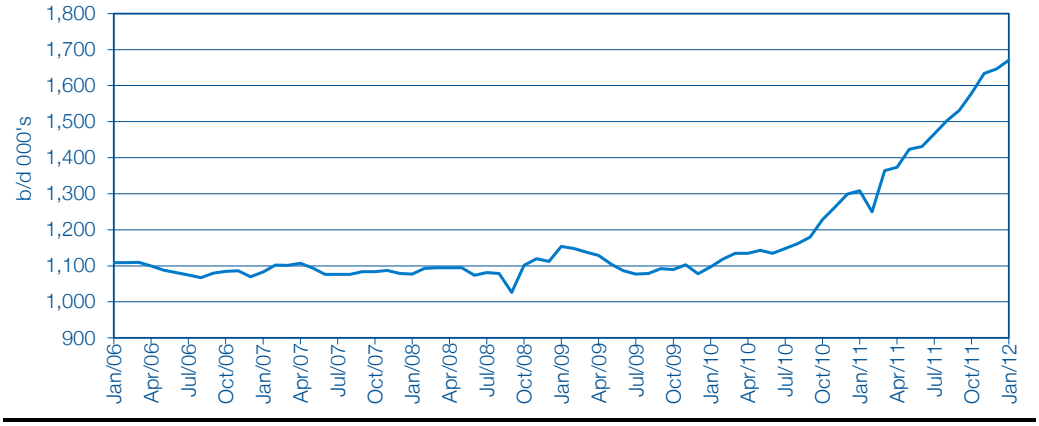


Source: EIA

Texas Oil production has also been surging of late in Texas, the number one producing state of the union, reflecting the rapid development of the Eagle Ford shale deposits and other tight oil plays in the Permian Basin. Production in 2011 averaged 1.46mmb/d, 25% up on a year previously and a post-1997 high. In January 2012, production was running at 1.67mm b/d, 28% above a year

earlier and the highest monthly total since late 1993. Over the next two or three years production in Texas appears to be heading for 2mmb/d plus, which is a level not seen since the late 1980s. Other lower 48 states experiencing a renaissance in output of late are Colorado, New Mexico and Oklahoma.

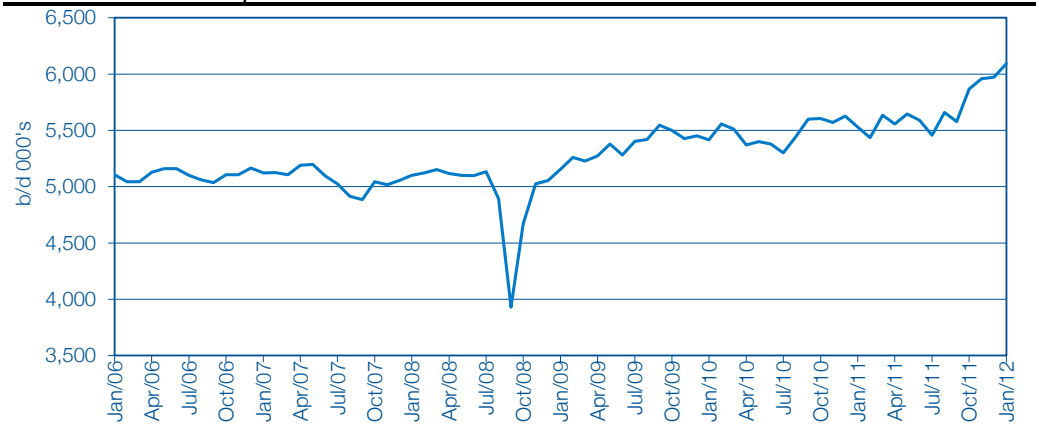
Exhibit 4: Texas crude oil production



Source: EIA

US Reflecting the gains being made in the lower 48 states, US oil production is now trending significantly higher after 45 years of decline. In 2011 crude production grew by 3.2% to 5.66mmb/d and in January 2012 was running at 6.09mmb/d. Significantly, January's outcome was up 10% on a year previously and was the highest monthly total since late 1998. The EIA's US crude oil production forecast for 2012 of 5.83mmb/d is arguably looking decidedly conservative. The constraining influences on US production at this time are the weak trends in Alaska, California and the Gulf of Mexico.

Exhibit 5: US crude oil production

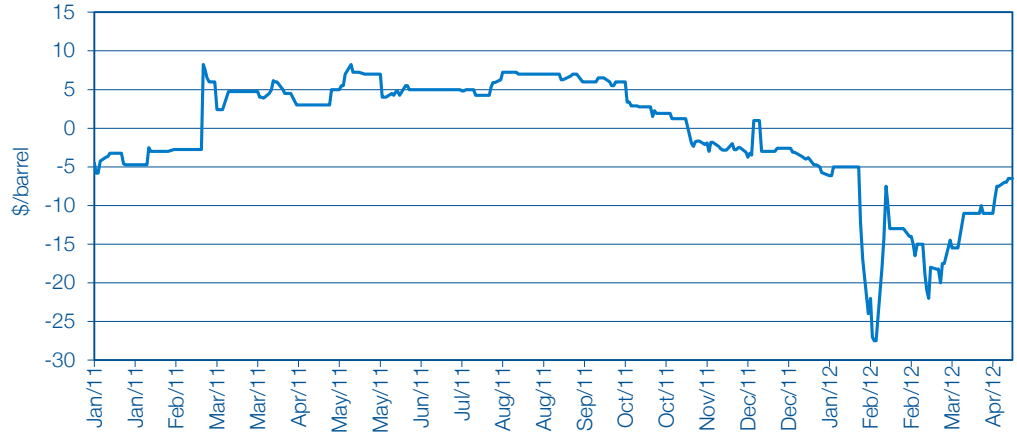


Source: EIA

Bakken and Syncrude discounts: Recent narrowing from the early 2012 highs

In the early weeks of 2012 Bakken and Canadian Syncrude grade oil moved to substantial discounts of about $25/barrel to WTI, after having traded at premiums of $5/barrel or so in 2011. This left Bakken and Syncrude at about $74/barrel, which we believe was easily the lowest priced premium grade light oil in the world excluding countries with state controlled markets. It might be added that both Bakken and Syncrude are similar in specifications to WTI. The swing appeared to reflect an acute example of buoyant production combined with logistical bottlenecks.

Exhibit 6: Bakken-WTI spread



Source: Bloomberg

Since reaching highs in early February, both the Bakken and Syncrude discounts have narrowed. As of mid-April the former was around $7/barrel while the latter was $2/barrel. The earlier exceptionally wide discounts probably encouraged efforts to ship excess supplies to Cushing or another higher priced hub such as St James, Louisiana. In the case of Canadian Syncrude we also believe that news of sharply lower output in March due to planned and unplanned maintenance at the two largest oil sands operators, Syncrude and Suncor, was a factor. Remedial work is, however, expected to be completed soon at the former and has recently been finished at the latter. The upward trend in output in the oil sands should therefore be resumed during the course of April.

Exhibit 7: Syncrude-WTI spread

Source: Bloomberg

As we have noted previously, where production is trending significantly higher as in the Athabasca oil sands and the Williston Basin of North Dakota, price discounts will probably emerge given the lag in adding transportation infrastructure. We suspect in the near term, at least, it might not be surprising to see discounts in the $5 to $10/barrel range for Bakken and Syncrude grade oil.

Outlook for the WTI-Brent spread: Upgraded logistics should ultimately narrow the spread

In the near term we would expect the WTI discount to remain within the recent range of $15 to $20/barrel. Expectations of a continuing relatively high discount reflects a combination of the buoyant supply backdrop in the Mid-Continent and lingering supply concerns internationally mainly relating to Iran. The former is bearish for WTI while the latter is bullish for Brent. In the event of a resurgence in political tension between the West and Iran over the latter's nuclear programme a dramatic widening in the WTI-Brent spread to over $30/barrel is entirely possible. Arguably, however, this scenario is looking less likely over the next few weeks, at least, given the scheduled negotiations between the West and Iran. It might also be added that President Obama has no interest in precipitating a crisis over Iran with the attendant surge in gasoline prices ahead of the elections in November.

We would not expect the Seaway pipeline reversal in May, initially at least, to have a major impact on the WTI discount. This reflects the relatively small takeaway capacity and the continuing strong build up in supply in the US Mid-Continent and Alberta. As Seaway capacity is increased in 2013, however, a more pronounced narrowing tendency could become apparent. The modest pipeline charges along with rising rail loading capacity in the Bakken are also conducive to such a development. Abstracting from a major geopolitical crisis we believe a narrowing in the WTI-Brent spread to $5-10/barrel is entirely plausible post 2013.

Exhibit 8: WTI 2008-12 quarterly prices $/barrel

	Q1	Q2	Q3	Q4	Average
2008	97.9	123.8	118.2	59.1	99.9
2009	43.2	59.7	68.1	76.0	62.0
2010	78.8	77.9	76.1	85.2	79.5
2011	93.9	102.3	89.5	94.0	94.9
2012	101.4	100.0e	95.0e	95.0e	97.9e

Source: Bloomberg and Edison Investment Research

Exhibit 9: Brent 2008-12 quarterly prices $/barrel

	Q1	Q2	Q3	Q4	Average
2008	96.5	122.2	115.9	56.2	97.7
2009	45.1	59.4	68.4	75.0	62.0
2010	76.8	78.6	76.4	86.9	79.7
2011	104.9	116.8	109.1	109.3	110.0
2012	115.7	119.0e	114.0e	112.0e	115.2e

Source: Bloomberg and Edison Investment Research

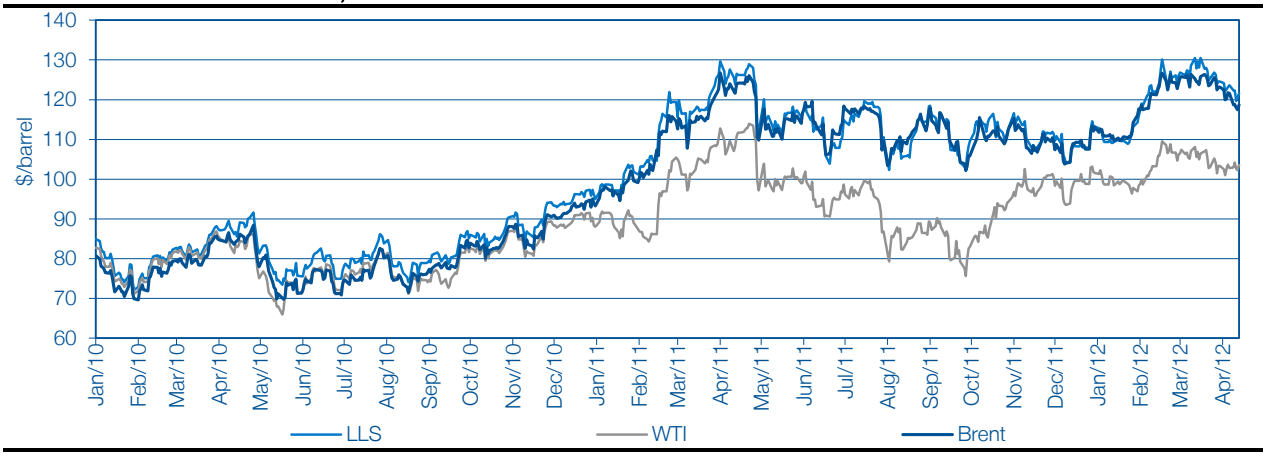
LLS-WTI and LLS-Brent: An influx of GC supply should depress LLS premiums

Light Louisiana Sweet (LLS) is a Gulf of Mexico-sourced light crude with a specification similar to WTI and Brent. It competes with waterborne imported grades at Gulf Coast refineries and has traditionally traded at a dollar or so premium to WTI and perhaps $2-3/barrel to Brent. Given its waterborne characteristics, LLS has been tracking Brent rather than WTI for 18 months or more. As a consequence, a hefty LLS premium to WTI has surfaced. In March this averaged $21.0/barrel and in early April was running at about $22/barrel, although by mid-month it had slipped to $18/barrel. The hefty LLS premium, of course, translates into substantially higher feedstock costs for Gulf Coast refineries than their counterparts in the Mid-Continent able to source WTI.

Unusually, the LLS-Brent spread swung from a premium of $0.9/barrel in December 2011 to a discount of $0.5/barrel in January, probably reflecting the build-up of tension over the Iranian nuclear issue. Subsequently, LLS has moved back to a modest premium in line with historical trends as Iran for the moment, at least, has moved onto the backburner. The LLS premium averaged $0.8/barrel and $2.2/barrel in February and March respectively and in early April was $1.5/barrel.

If upgraded logistical connections from Canada and the US Mid-Continent do indeed lead to an influx of low-cost light crude, competing imported crude grades could be largely, if not completely, displaced along the Gulf Coast by around mid-decade. Furthermore, the traditional LLS premium to Brent could switch to a discount of $2/barrel or more.

Exhibit 10: Recent trends in WTI, LLS and Brent



Source: Bloomberg

Other key international light crude benchmarks

Brent-Urals Mediterranean Urals is a Russian sourced medium-sour export blend that is shipped either from Black Sea or Baltic ports. Reflecting its inferior quality in terms of gravity and sulphur, Urals has typically sold at a discount of $1-3/barrel to Brent. Urals is nevertheless well suited to producing middle distillates such as diesel and is believed to be the grade of choice for Mediterranean refiners looking to replace lost Iranian supplies. This reflects in part logistical considerations and in part the broad similarity of specification between Urals and high sulphur Iranian crude. It should be noted here that several major Mediterranean refineries have been configured to handle sour grades.

During January and February Brent traded at premiums of $1.3 and $0.7/barrel respectively to Urals Mediterranean. These were towards the lower end of the historical range which probably reflected strong interest from refineries in the light of the Iranian import embargo. The Brent premium, however, widened noticeably in March and averaged $2.4/barrel for the month and in early April was roughly unchanged. The widening premium appears to have reflected tightening supplies of Brent and falling Mediterranean refinery utilisation. There remains a possibility in the coming months that the Brent premium to Urals could evaporate, in the event that major Mediterranean refineries have to scramble for feedstock due to the Iran import embargo.

Brent-Dubai Dubai is a Gulf-sourced light but relatively sour crude popular with Far Eastern refineries. During 2011, Dubai was at times trading at historically very high discounts of $6 or $7/barrel to Brent reflecting tight supplies and strong demand for high-quality light crude grades. The situation however normalised towards the end of 2011 and in early 2012, as the availability of

light crudes in the eastern Atlantic and Mediterranean improved following the resumption of Libyan exports and a recovery in North Sea supplies. The Dubai discount was running at $1.92, $2.24 and $1.72/barrel in January, February and March respectively. In early April the discount was around $2.2/barrel.

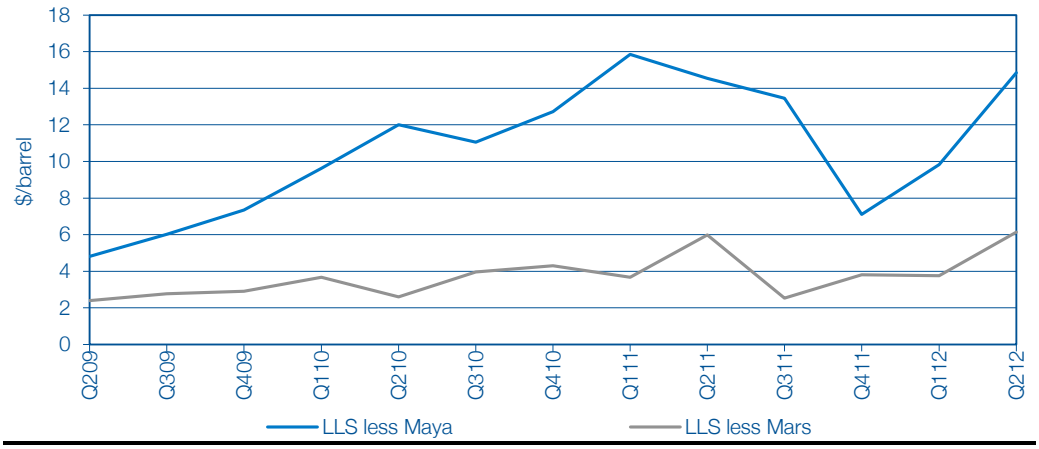
Brent-Bonny The key eastern Atlantic Brent-Bonny (Nigerian ultra-low sulphur light grade) light crude spread has been running slightly above par so far in 2012. The Brent discount to Bonny averaged $2.5/barrel in the first three months and remained at this level in early April. Bonny has possibly been supported by civil unrest in Nigeria combined with reports from time to time of interruptions to supply. Nigerian production has nevertheless trended pretty flat in recent months.

Tapis-Dubai The spread between Tapis, a high-quality low sulphur Malaysian-sourced crude, and Dubai is one of the key sweet-sour crude price relationships. The Tapis premium to Dubai has been fairly stable since end-2011, at around $11.8/barrel, which compares with almost $15/barrel at the peak in 2011. The narrowing premium is indicative of the improving supply situation for light crudes and also possibly the solid demand backdrop for sour grades in the wake of tightening sanctions on Iran.

US heavy crude spreads: Heavy discounts widen of late

After narrowing sharply in the second half of 2011, US heavy crude discounts based on waterborne-sourced supplies have recently begun to widen. Taking Mars, a medium-sour grade sourced from the Gulf of Mexico, the discount to LLS widened from $2.1/barrel in January to $5.9/barrel in early April. For Maya, a Mexican heavy sour grade, the discount to LLS over the same time period has shown an even more pronounced widening tendency, from $4.5/barrel to $14.98/barrel. The discounts for both heavy grades are now reasonably close to the longer-term averages of $6 and $13/barrel respectively. We believe the marked widening of the heavy discounts over the past three months is a reflection of the surge in the prices of light waterborne grades over the same period. The widening has enhanced the competitiveness of sophisticated Gulf Coast refineries able to process low-grade feedstock.

Exhibit 11: US medium and heavy discounts

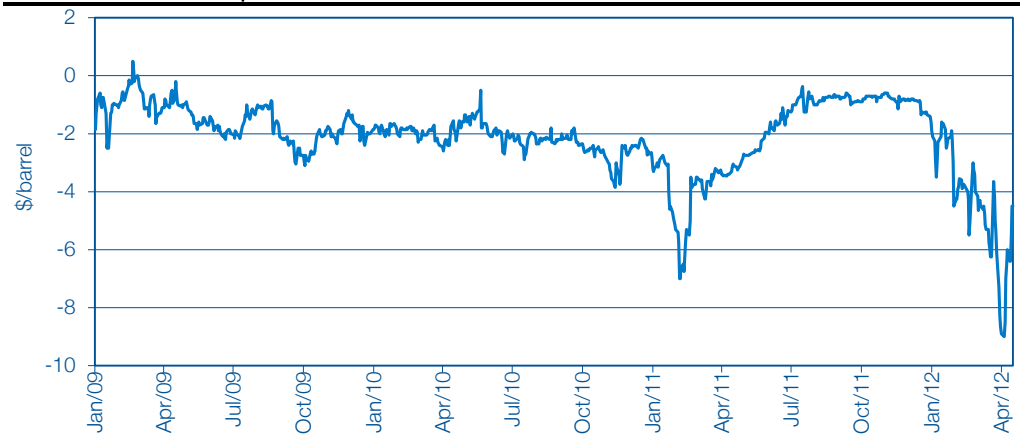


Source: Valero Energy

WTS-WTI

WTS (West Texas Sour) is an inland medium gravity sour grade with a specification similar to Mars and a delivery point of Midland, West Texas. The WTS discount to Cushing, Oklahoma WTI also widened noticeably between early January and early April 2012. At the beginning of the year the discount was about $2/barrel but by 9 April it had widened to $9/barrel. Over the following week or so there was a narrowing to $4.5/barrel or slightly above the longer term average of $3.5-4.0/barrel. The widening in the WTS-WTI (Cushing) discount since the beginning of 2012 appears to reflect the build up of supplies in the west of the Permian Basin mentioned previously. Interestingly, in mid-April WTS was trading at parity with higher grade Midland WTI. Refineries able to access Midland denominated WTS and WTI therefore have a significant feedstock cost advantage presently compared to those dependent on Cushing WTI.

Exhibit 12: WTS-WTI spread



Source: xx

Forward curves: No major changes of late

The forward curves for WTI and Brent have not changed greatly over the past two months or so. The former is in mild contango (near-term prices lower than forward dates) for all months through January 2013. From a spot price of about $102/barrel in the third week of April, the WTI forward curve rises to $102.4/barrel in May and $104.4/barrel in December 2012. After flattening over the next three months, the curve then goes into significant backwardation (near term prices greater than for forward dates) through all dates to end-2017, when the forward price falls to $89.5/barrel. Over the remaining three years the WTI forward curve is in mild backwardation with the price dropping to $87.4/barrel in December 2020. The mildness of the near-term WTI contango is arguably surprising in the light of historically high inventories both at the Cushing tank farm and more generally in the US.

The Brent forward curve remains in significant backwardation through late 2017. The curve starts at $118.8/barrel for June 2012 deliveries and by year-end is down to $116.2/barrel, which equates to an $11.8/barrel premium to WTI. Between end-2012 and end-2017, the Brent curve drops to $90.9/barrel. The curve then flattens, leaving forward prices for end-2020 at $89.95/barrel or marginally above WTI. The continuing marked Brent backwardation is indicative of perceived tight near-term supplies reflecting Iran and outages in the North Sea. Assuming that supply fears dissipate in the coming months, as we think likely, we would expect the Brent curve to flatten.

Supply/demand balance: Probably moving to surplus

The consensus view in recent months is that the oil market has been tight, reflecting the backwash of supply disruptions in 2011 and early 2012. Although based on IEA data there was a significant draw on OECD inventories in the second-half of the former year, there is no sense that inventories either in terms of crude oil or total petroleum products (crude oil plus refined product) reached critical levels. Furthermore, there remains the possibility that non-OPEC supply plus OPEC natural gas liquids/unconventionals (not subject to quota) will grow modestly in excess of global petroleum demand in 2012. OPEC crude production also looks like running somewhat above 2011's 30.0mmb/d even allowing for a declining contribution from Iran.

A key reason for taking a sanguine view on the petroleum supply/demand balance in 2012 is the relatively subdued nature of demand. Compared with a few months ago the IEA, OPEC and EIA have all downgraded their demand forecasts for 2012, reflecting lacklustre economic growth globally. As of early April the IEA is forecasting demand growth of 0.82mmb/d while the EIA and OPEC are looking for increases of 0.89mmb/d and 0.80mmb/d respectively. These increases translate into growth of around 0.9%.

Forecast absolute gains in demand of 0.8 to 0.9mmb/d are broadly in line with the increase in 2011 and look reasonably plausible in relation to the IMF's global economic growth forecast of 3.5%. We believe, however, the demand forecasts are vulnerable to the downside, given negative structural influences (the improving fuel economy of the vehicle fleet and declining vehicle usage in parts of the OECD) and the significant recessionary forces at work in much of the OECD world, along with the spill-over effect in developing countries. The former and latter factors have both been given added impetus by this year's surge in refined product prices. In our view, it would not be totally surprising if oil demand growth in 2012 is closer to 0.5mmb/d than 0.8mmb/d. This might reflect a gain in the developing world of perhaps 1.0mmb/d partly offset by a drop in the OECD of 0.5mmb/d.

At this juncture the key issue surrounding the near-term outlook for supply/demand balance is clearly supply. Iran is the major area of uncertainty. As we have noted, a decline in exports of 1mmb/d is a very real possibility in the coming months, unless the Iranian authorities have a dramatic change of heart concerning the country's nuclear development programme. Against this, we believe, OPEC production could increase, if need be, by perhaps another 1.5mmb/d or so in the coming months, with 0.5mmb/d from both Saudi Arabia and Iraq, 0.3mmb/d from Libya and 0.2mmb/d from other sources – with Angola being the key one as new capacity comes on-stream. Reflecting the outages in the early months of 2012 and the apparent intensification of the border and pipeline disputes between Sudan and South Sudan, the gain in non-OPEC supplies is likely to be somewhat less than anticipated a few months ago. Nevertheless, there are some significant capacity expansion projects coming on-stream in 2012 in the US, Canada, Colombia, Brazil, Ghana and the Caspian region. These may enable non-OPEC production to be boosted by a net 0.7mmb/d to 0.8mmb/d. To this, another 0.2mmb/d to 0.5mmb/d can be added for OPEC natural gas liquids. The resulting increase in supply of 1mmb/d or so should be more than sufficient to cover any conceivable gain in global demand before allowing for higher OPEC crude oil production. The key wild card concerning non-OPEC output growth relates to possible unforeseen outages, with the North Sea being the major area of vulnerability.

For 2013 we continue to look for moderate global oil demand growth, given what we believe is the subdued outlook for the world economy. The EIA is currently forecasting growth of 1.3mmb/d,which we think is on the high side bearing in mind the challenging economic backdrop. We believe a gain of nearer 1mmb/d is more plausible. Growth of this magnitude can be roughly covered by a combination of increases in non-OPEC and OPEC natural gas/unconventionals production. The EIA's forecast on this basis is 0.91mmb/d. Contributing to the gain should be the start-up of operations at the giant Kashagan field, in the Kazakhstan sector of the Caspian Sea.

OECD inventories: Ample

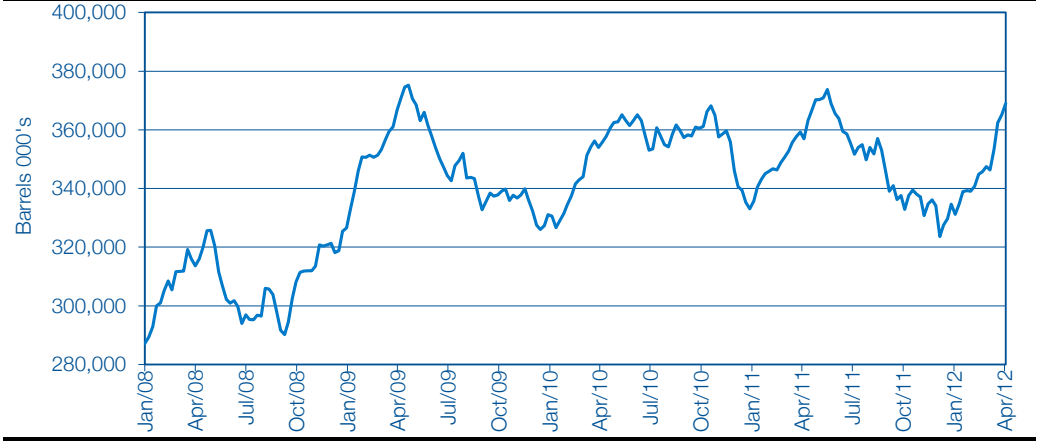
Recent IEA data point to a strengthening seasonal trend in OECD inventories. In February 2012, total OECD inventories (crude and refined product) were an estimated 2,630mm barrels. Although down 12.4mm barrels on the prior month, this was less than the five-year average of 38.8mm barrels. Significantly, the inventory deficit compared with the five-year average narrowed to 13.9mm barrels from 40.4mm barrels in January. According to the IEA's preliminary estimates, OECD inventories in March rose by a seasonally strong 22.6mm barrels. Forward demand cover in February was 59.6 days, up 1.2 days on the previous month. Overall, we can say current OECD inventories – both absolutely and on a day's cover basis – are ample.

US inventories

Crude oil: Trending upwards and seasonally high

US crude oil inventories have been trending higher of late and remain at seasonally high levels both absolutely and in terms of days supply. Based on EIA data, commercial inventories for the week ending 6 April 2012 were 365.2mm barrels, up 5.9mm barrels on a year previously and close to the upper limit for the five-year range. The upward trend in crude oil inventories since the end of 2011 has been seasonally pronounced, with a gain from 329.7mm barrels at the end of 2011. Crude oil inventories for the week ending 6 April were equivalent to 25.2 days supply, which was the same level as a year previously and significantly above the 22-23 day average for the period since 2000. Including the strategic petroleum reserve, crude inventories on 6 April were 1061.1mm barrels, equivalent to about 73 day's supply.

Exhibit 13: US crude oil inventory

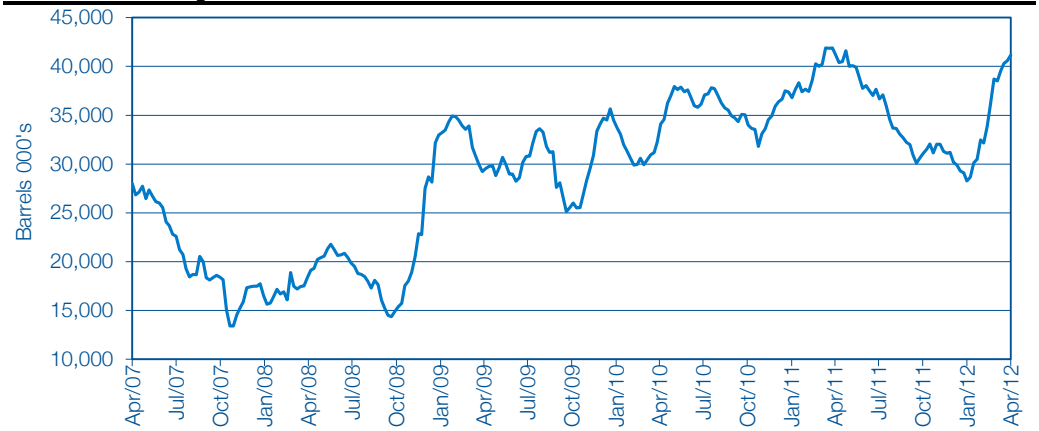


Source: Bloomberg/EIA

Cushing: Near record levels

Crude oil inventories at Cushing, Oklahoma, the world's largest tank farm, have also trended strongly upward higher over the past few months. For the week ending 6 April, inventories stood at 40.6mm barrels against 29.3mm barrels at the end of December 2011. Compared with a year ago for the week ending 6 April Cushing's inventories were, however, down 1.3mm barrels. The utilisation rate for the tank farm is currently about 74% of the working capacity of 55mm barrels. The sharp upward trend in inventories since the end of 2011 reflects a combination of seasonal influences, buoyant Mid-Continent production and the purging of the Seaway pipeline before its reversal. Given the buoyant production trend in the Mid-Continent and the Seaway issue, the upward trend in Cushing's inventories has arguably been somewhat weaker than might have been expected. This may reflect the relative success of operators in shipping oil out of the tank farm by rail, truck and barge to more lucrative hubs.

Exhibit 14: Cushing crude oil inventories



Source: Bloomberg/EIA

Gasoline: Still very comfortable

The trend in US gasoline inventories has been weak in recent weeks but this is not unusual for the time of year. Adjusted for seasonality they remain at very comfortable levels, both absolutely and relative to supply. On 6 April gasoline inventories were 217.6mm barrels, up 4% on a year earlier but down 14.6mm barrels on the recent high at the beginning of February. Compared with the range for the time of year they are at the upper end, based on the five-year average. In terms of day's supply, gasoline inventories are currently at 25.2 against 23.3 a year earlier.

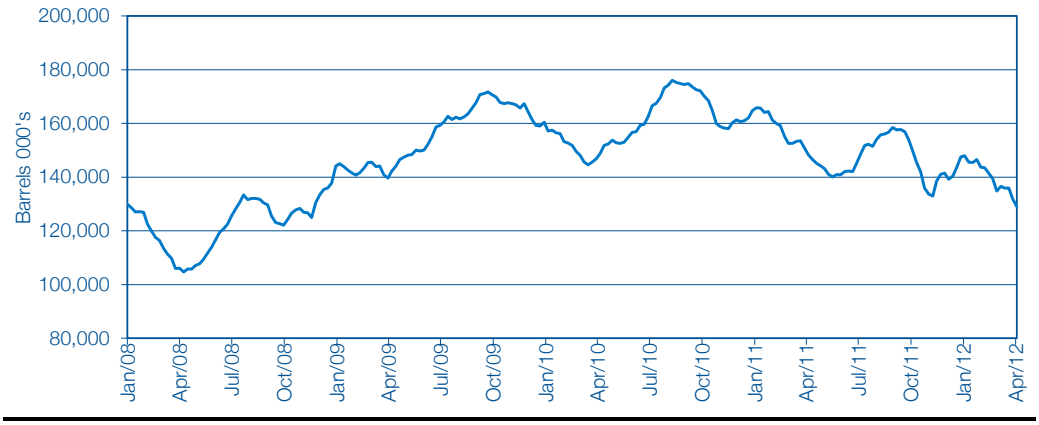
Exhibit 15: US gasoline inventories

Source: Bloomberg/EIA

Distillates: Comfortable

US distillate inventories have shown a less robust trend of late than gasoline and crude but nevertheless remain at comfortable levels. For the week ended 6 April inventories came in at 131.9mm barrels, down 4mm barrels on the prior week and 18.9mm barrels on a year previously. They are, however, running in line with the middle of the range for the time of year. On a day's supply basis distillate inventories were 36.8 days in the most recent week. This is down from the 40.5 days of a year ago but comfortably in line with the longer-term picture since 2000.

Exhibit 16: US distillate inventories



Source: Bloomberg/EIA

All product inventories: Historically high

US commercial petroleum product (crude plus refined product) inventories in total have been trending up since the end of 2011 and are currently running at historically high levels. On 6 April, inventories on this definition were 1069.9mm barrels, which although down 3.9mm on the prior week were up 32.5mm barrels on a year previously. Since 2000, total commercial inventories have only been significantly higher than at present in 2009 and 2010. During these two years a high of 1,144bn barrels was reached in September 2010.

Refinery crack spreads

USA: Spreads widen as refined product prices surge

US refinery crack spreads have surged since the lows of early December 2011. Taking, for example, the Bloomberg Gulf Coast/WTI 321 crack spread (the margin before refining costs on converting three barrels of WTI into two barrels of gasoline and one of diesel) there was a widening from about $10/barrel to a recent high on 3 April of $32.6/barrel. Subsequently, the spread has eased to $28.5/barrel. Compared with a year earlier, the GC/WTI crack spread is up around $8.5/barrel. Currently, crack spreads based on WTI feedstock are at highly profitable levels for refineries. Inevitably, using higher cost LLS the 321 spread would be considerably narrower, currently at about $10/barrel. Contra-wise refineries able to source Bakken feedstock would have a 321 spread based on Gulf Coast refined product prices of closer to $40/barrel.

The widening in US crack spreads over the past few months has been driven by the surge in prices for refined products in general and gasoline in particular. The wholesale price of Gulf Coast regular gasoline for example, rose from $2.4/gallon at the end of November 2011 to a recent high on 2 April 2012 of $3.28/gallon, a gain of 37%. Gasoline, in fact, has been one of the best performing commodities in 2012. Diesel by comparison has shown a more pedestrian increase of about 20% on a similar basis. Since peaking in early April, GC gasoline has softened to $3.14/gallon while GC

diesel has slipped to $3.10/gallon. This year's surge in gasoline has arguably been surprising, given the benign inventory backdrop. It reflects partly higher feedstock costs, partly major refinery closures along the Eastern Seaboard/Caribbean and partly rising prices for refined product in the Atlantic basin generally. Refinery closures along the Eastern Seaboard since late 2011 have eliminated about 50% of capacity in the region. In future, more of the North East's supplies will have to be sourced from the Gulf Coast and Midwest. Capacity is available in these regions but there is no doubt that recent refinery closures along the Eastern Seaboard and in the Caribbean constitute a very significant market tightening.

Exhibit 17: US GC wholesale gasoline price trend

Source: Bloomberg

In addition to widening crack spreads, US refineries are also benefiting on the cost front from falling natural gas prices. Natural gas provides the principal heat source for many refineries and also provides the feedstock for producing the hydrogen used in hydrocrackers. US Gulf Coast natural gas prices are presently about 20% of those prevailing in the North Sea basin.

Which way for crack spreads? The outlook for crack spreads depends fundamentally on how sustainable the boom is in gasoline and other refined products. We suspect, in fact, that the boom may have peaked, given that gasoline demand is under significant pressure and that overall there is adequate refining capacity in the US. This suggests that crack spreads could narrow somewhat in the coming months in the absence of unplanned plant outages. We suspect, however, that Mid-Continent and Middle West refineries using WTI/WTS feedstock will continue to enjoy historically high crack spreads.

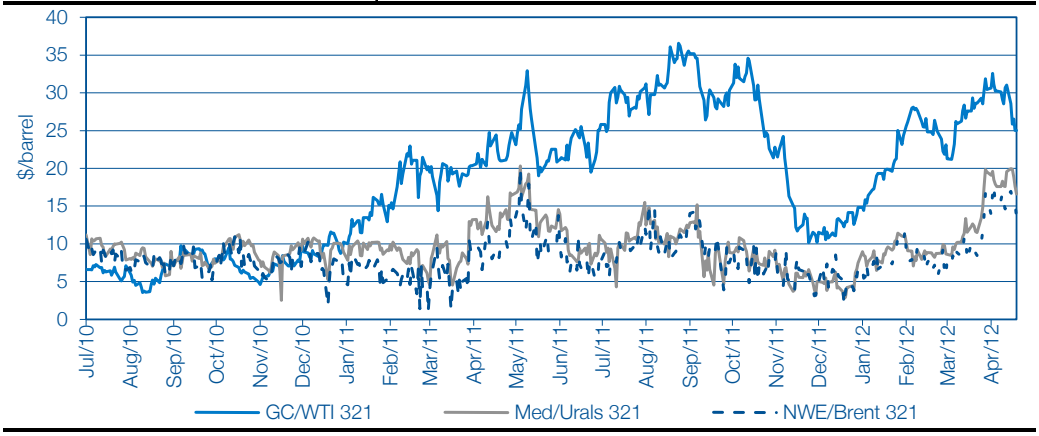
Europe: Spreads in Europe have also widened, but narrower than in US

Crack spreads in Europe have also widened substantially in recent months. From a very depressed December 2011 low of $2/barrel the Bloomberg NWE/Brent 321 spread, for example, rose to a recent high of $17.8/barrel in early April. Similarly, the Mediterranean/Urals 321 spread widened from $2.8/barrel to $19.5/barrel over the same time span. Both spreads narrowed about $2/barrel between the first and second weeks of April but remained a useful $4 to $5/barrel above year earlier levels. As for the US, the widening in European crack spreads has been driven by a surge in refined product prices stemming in large part from refinery closures associated with the collapse of Petroplus, the largest independent refinery group in Europe. In early April gasoline ex Rotterdam, for example, was up 37% on the mid-December low while diesel gained 17%.

The future of the Petroplus group refineries has still to be determined. The largest of the five refineries at Coryton, 40km east of London, is still operating under a tolling agreement but at only

about 50% of capacity. The tolling agreement ends in mid-May. If all five refineries are shuttered permanently, a highly significant 668,000b/d of capacity will be removed. This is equivalent to about 5% of Western European refined product consumption.

Exhibit 18: Recent trends in crack spreads

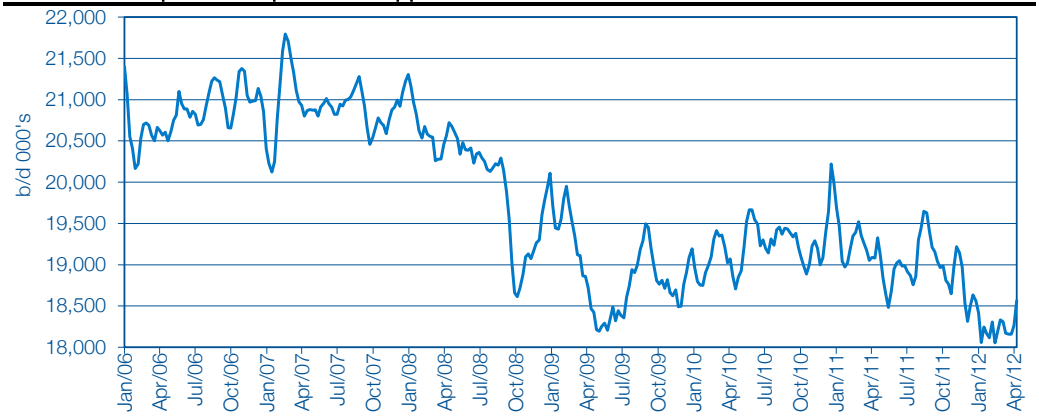


Source: Bloomberg

US petroleum product demand: Still lacklustre

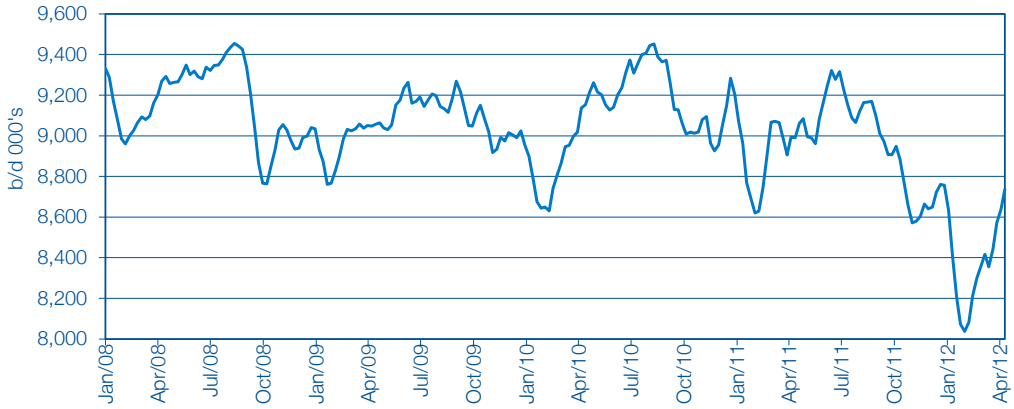
The trend in US petroleum demand has remained lacklustre in recent weeks. Based on EIA data for products supplied (a proxy for demand) in the four weeks to 6 April, demand overall averaged 18.27mmb/d, down 4.3% from a year previously. In reality the trend since the end of 2011 has been flat, at approximately 18.25mmb/d. Taking the cumulative picture in the year-to-date demand has fallen 4.9% year-on-year, which constitutes a decline of 17% from the 2007 peak of almost 22mmbbl/d. Broadly speaking, demand is now back to the levels prevailing in the late 1990s. In terms of product categories, the year-on-year movements in the four weeks to 6 April were as follows: gasoline -4.0%, distillates -3.6%, kerosene -0.1%, residual fuel oil -8.6%, propane/propylene -4.4% and miscellaneous -9.6%. Gasoline consumption in the four weeks to 6 April averaged 8.64mmb/d, which was sharply up on the January and February lows of just over 8mmb/d. The apparent rebound, however, in large part reflects seasonal influences. On an underlying basis gasoline consumption is running approaching 1mmb/d below peak levels recorded in 2006/07.

Exhibit 19: US petroleum products supplied



Source: EIA

Exhibit 20: US gasoline supplied

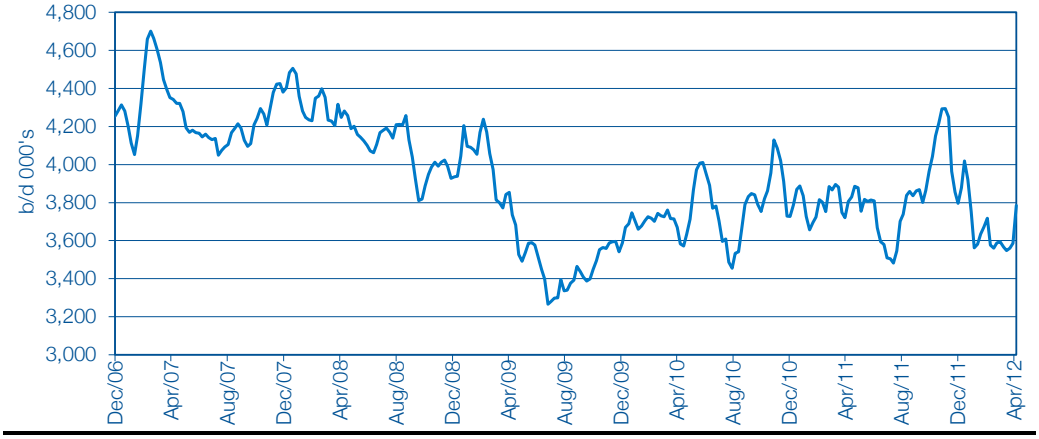


Source: EIA

The EIA's latest forecasts for 2012 call for a marginal decline in US petroleum demand of 0.4% to 18.77mmb/d. This constitutes a modest downgrade compared with earlier in the year. Gasoline is forecast to show a drop of 0.8% in 2012 while the other principal categories are expected to be flat to marginally down for the year. Given the weak volume trend in the year-to-date and the less than robust economic backdrop, the latest EIA forecasts appear optimistic and we suspect will probably be subject to downward revision. We do, however, believe that over the balance of 2012 the year-on-year rates of decline will narrow. This reflects the potential for easier year-on-year comparisons, bearing in mind that downward pressure on demand intensified in 2011 in the second half.

For 2013 the EIA is currently forecasting an increase in petroleum demand of 0.6% to 18.88mmb/d, a slight upgrade compared with a few months ago. Gasoline demand in 2013 is expected by the EIA to be marginally lower than in the previous year. We believe the EIA's forecasts for 2013 in terms of demand growth are plausible, assuming economic growth in line with the IMF's GDP forecasts of 2.2% and bearing in mind the structural influences tending to depress demand. Indicative of the latter is the recent announcement by Chrysler that its 2013 Dodge Ram pick-up trucks (Chrysler's largest product line) in either V6 or V8 form will have 20% plus better fuel consumption than for the 2012 models.

Exhibit 21: US distillates supplied



Source: EIA

Exhibit 22: US petroleum product demand

Mm b/d	2004	2005	2006	2007	2008	2009	2010	2011	2012e	2013e
Gasoline	9.11	9.16	9.25	9.29	8.99	9.00	8.99	8.74	8.67	8.66
Other	11.62	11.64	11.44	11.39	10.51	9.77	10.19	10.10	10.10	10.22
Total	20.73	20.80	20.69	20.68	19.50	18.77	19.18	18.84	18.77	18.88

Source: EIA

US refined product trade balance: Continuing net export balance

The US trade balance in refined product swung to an export surplus in 2011 for the first time since 1949. So far in 2012, a significant net export balance has been sustained. In the early weeks of 2012 exports continued to surge and in the four weeks to 9 March peaked at 3.12mmb/d, a hefty 43% above a year previously. Since early March, however, exports have slipped and in the four weeks ended 6 April, were down to 2.70mmb/d. Imports have also been on a declining trend in 2012 and in the latest four week period were 1.83mmb/d against 2.25mmb/d at the end of 2011 and 2.04mmb/d a year earlier. Taking the four weeks to 6 April the net export balance was 0.87mmb/d, which contrasts with a net import position of 0.22mmb/d a year earlier. In the year-to-date, early April net exports have averaged 0.97mmb/d, which reflects a sizeable swing from net imports of 0.30mmb/d in the corresponding period of 2011.

The growth in US exports of refined products over the past few years very much reflects buoyant demand and capacity constraints in Latin America. The recent slippage in exports is possibly systematic of a general business slowdown in the region. Declining domestic demand combined with the availability of spare refining capacity in the US accounts for this year's drop in demand. Compared with earlier in the year, the EIA has raised its forecast for the net export balance in 2012 and 2013 to 0.53mmb/d and 0.37mmb/d respectively. Previously it had been looking for surpluses of 0.31mmb/d and 0.29mmb/d.

Exhibit 23: US refined product trade balance trend

Mm b/d	2005	2006	2007	2008	2009	2010	2011	2012e	2013e
Exports	1.13	1.29	1.41	1.77	1.98	2.31	2.87	-	-
Imports	3.59	3.59	3.44	3.13	2.68	2.58	2.49	-	-
Net exp+/ imp-	(2.46)	(2.30)	(2.0)3	1.36	0.70	(0.27)	+0.38	+0.53	+0.37

Source: EIA

Crude oil price outlook: Weakening trend anticipated over balance of 2012

We are broadly maintaining our stance on the outlook for crude oil prices for 2012, which calls for a weakening trend over the balance of the year. Admittedly, the trends in the first quarter of 2012 have been stronger than originally forecast, but we suspect that this may represent the high-water mark for a while at least. As we noted in our last report, prices are far higher than justified by fundamentals, including inventories. Clearly, prices currently contain a substantial premium for supply uncertainties, particularly with regard to Iran. Once these dissipate in the coming months, which we believe is likely, the price trend should weaken noticeably. The key factors here are subdued demand, a likely build up in non-OPEC production over the balance of 2012, the rapidly strengthening trend in OPEC output and the possibility that tension between the west and Iran will gradually lessen. Regarding the last point we believe both sides can't afford the current situation to

persist and certainly can't afford to see it degenerate into a shooting war. We think it very unlikely that President Obama, at least, will want to provoke a ratcheting-up of tension and oil prices in advance of the November election. A release of oil from strategic stockpiles is also a possibility in the coming months, given that gasoline and diesel prices have been flirting with record highs not only in nominal but also real terms.

In our scenario a supply surplus is likely to emerge in 2012. This applies even on the conservative basis of comparing the supply non-OPEC and OPEC natural gas liquids with global oil demand. The surplus potentially becomes very comfortable indeed, assuming a continuing upward trend in OPEC crude oil output. The upshot should be a rise in OECD inventories, as has already been alluded to in the IEA's April report. Once marketplace perceptions change on supply tightness, oil prices could quickly come under heavy pressure.

Despite our bearish stance over the balance of the year we are raising our average Brent and WTI price forecast for 2012 to reflect the significantly stronger than expected price trend in the first quarter and the early part of the second quarter. Our new forecast for Brent is $115.2/barrel against $113.5/barrel previously, with the following quarterly scenario: Q1 $115.7; Q2 $119.0; Q3 $114.0; Q4 $112.0. The WTI forecast for 2012 rises modestly from $96.4 to $97.9/barrel with a quarterly scenario as follows: Q1 $101.4; Q2 $100.0; Q3 $95.0; Q4 $95.0.

In the absence of a major supply shock or shocks, we continue to believe that crude oil markets will be subdued in 2013. The key factor here is the likelihood of an extended period of sluggishness in the world economy that should keep a lid on demand growth, not only in the OECD world but also in developing countries. In our view it is very unlikely in 2013 that demand growth will exceed 1mmb/d given current expectations for the world economy. The risks to such a forecast are, in fact, very much to the downside. We believe non-OPEC controlled supply should be able to keep pace reasonably comfortably with demand growth of up to 1mm b/d. Against this background, we are maintaining our 2013 average price forecasts for Brent and WTI at $115.0/barrel and $98.5/barrel respectively.

Exhibit 24: WTI and Brent price trends

$b	2004	2005	2006	2007	2008	2009	2010	2011	2012e	2013e
WTI	41.5	56.6	66.1	72.2	99.8	62.0	79.5	94.9	97.9	98.5
Brent	38.3	54.5	65.4	72.7	97.7	62.0	79.7	110.0	115.2	115.0

Source: Bloomberg and Edison Investment Research

US natural gas market

Production and consumption: Strong production growth and weak consumption

Recent trends The trend in US natural gas production remains very strong. Based on revised EIA data, marketed production in 2011 is now estimated to have risen by 7.9% to 24.17tcf rather than the 7.4% stated earlier in the year. According to the EIA, the increase of 1.77tcf between 2010 and 2011 was the largest year-on-year gain on record. EIA data for January, the most recent available, show production of 2.15tcf, up a hefty 8.9% on a year previously. In the year ago period, however, production was negatively impacted by adverse weather conditions, so the year-on-year gain may overstate the underlying position. According to the estimates of Evergreen, Colorado-based Bentek Energy, a leading energy market analytics company, US natural gas production has continued to

trend higher in recent weeks and in early April was running at about 63.9bcf/d or 23.32tcf at an annual rate. This was 0.3% higher than the previous week and 5.4% above a year earlier.

Production has continued to be driven by the lagged impact of shale gas development activity in the lower 48 states. Interestingly, in January one of the few areas to show a year-on-year decline was the Gulf of Mexico, where production was off 20%. The net import balance has continued to narrow and is now distinctly marginal in relation to the total supply. January's net imports were 147bcf against 161bcf in the prior month and 235bcf a year earlier. The narrowing of the net import balance reflects a combination of lower pipeline imports from Canada, declining LNG imports and rising pipeline exports to Canada and Mexico. Clearly, declining imports are ultimately attributable to the growing availability of domestically produced gas. LNG imports in January were running at a trickle of 15.8bcf, down 72% from a year previously. Residual LNG imports, we believe, largely reflect contract obligations.

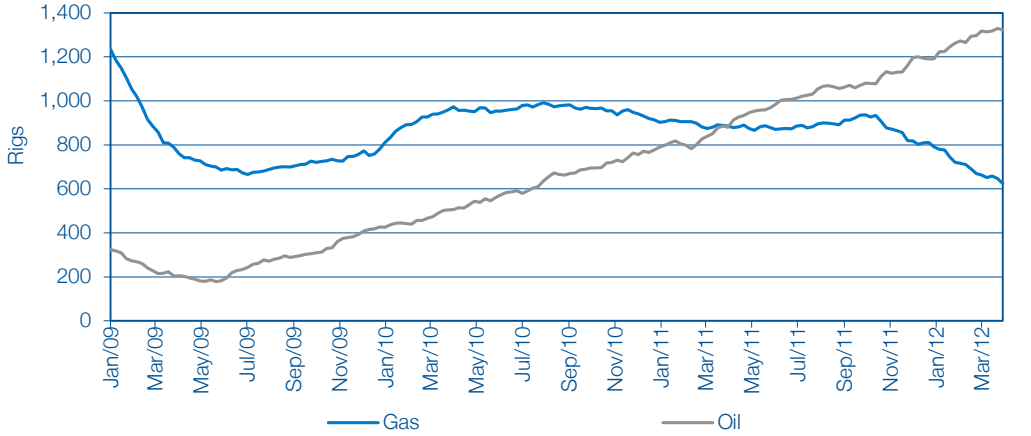
US natural gas consumption in 2011 grew by 2.5% to 24.4tcf, a slightly slower pace than estimated previously and well under the gain in supply. The initial indications point to subdued consumption in early 2012. EIA data for January of 2.73tcf, was down 5.1% on a year earlier. All principal market segments showed year-on-year declines with the exception of the largest, electric power generation.

The key negative for natural gas consumption over the past six months or so has been the remarkably mild winter in the key natural gas consuming regions of the Northeast and Midwest. Very mild winter temperatures have sharply cut into residential and commercial consumption, given the widespread use of natural gas for space heating. Partly offsetting the 15-17% declines in residential and commercial natural gas consumption in January was the 20% increase in usage in the power generation sector. Growing usage in this application stems from the radically enhanced competitiveness of the fuel vscoal as its price has slumped. The EIA is forecasting a 5% decline in coal consumption in power generation between 2011 and 2012.

Drilling activity The key determinant of natural gas production medium to long term is drilling activity. Data released by Baker Hughes show a sharp drop in the rotary rig count devoted to gas since end-October 2011, which probably portends a flattening in the production trend although possibly not until 2013 or even 2014. For the week ending 14 April the US gas rig count was 624, down 3.5% on the prior week and 33% on the recent high of 936 in mid October 2011. The gas related rig count is now very close to a 10-year low. Given that US prices for dry gas of under $2/mcf are beginning to look distinctly marginal even on a variable contribution basis, we would expect the US gas related rig count to continue to slide near term. Residual drilling activity is likely to be focused on the liquids-rich shale plays such as those in the Marcellus and Utica formations of Appalachia.

Contrasting with gas, US oil drilling activity has continued to surge to record levels in recent weeks and months. The Baker Hughes oil-related rig count hit a post-1987 (the date when the rig count was split between oil and gas) record of 1,329 on 6 April 2012. In the following week there was a dip to 1,322, but this still left the rig count up 50% on a year earlier. Understandably, in the light of incomparably more attractive economics, gas producers have been increasingly re-orientating their drilling operations to shale oil for some time. There is also no shortage of shale plays available. One of the newer ones is the Tuscaloosa marine shale formation in Mississippi and Louisiana.

Exhibit 25: Baker Hughes US rig count



Source: Bloomberg/Baker Hughes

2012/13 production and consumption: Production growth likely to slow in the months ahead

The growth in US natural gas production is likely to slow significantly in 2012 and 2013, partly reflecting falling drilling activity and partly capacity shut-ins as announced by Chesapeake Energy and Encana in January. Other producers such as ConocoPhillips, Southwestern Energy and Exco Resources have suggested that they would be prepared to consider similar measures if there is no improvement in gas prices. The EIA's current forecasts call for marketed production to increase by 2.6% to 24.8tcf in 2012 and 0.8% to 25.0tcf in 2013. Given the strong upward trend in the early months of this year, the former forecast could well prove to be on the low side in the absence of a major round of shut-ins in the coming months.

Over the balance of 2012 we would expect US natural gas consumption to receive a considerable boost from rising power generation usage. A hot summer in the Midwest and Northeast might also support usage. The EIA is currently calling for US gas consumption to grow by 3.1% to 25.1tcf in 2012, which we think is plausible if weather patterns return to more normal patterns. For 2013, consumption growth of 0.7% is forecast by the EIA, which is broadly in line with the anticipated gain in production. As always, consumption growth in 2013 will be sensitive to weather conditions in the first quarter. In the event of a colder than average winter together with at least a moderately buoyant economy, consumption growth could easily be substantially higher than 0.7% in 2013.

In the medium term we continue to believe that US gas consumption will receive a possibly significant boost from current ultra-low gas prices. Remember here that gas is selling for not much more than $10/boe. Gas, we believe, has very obvious advantages in power generation, bearing in mind not only competitive economics compared to coal, but also around 50% lower CO_2 emissions, an increasingly important consideration in the light of a prospective tightening regulation in this regard. A particularly interesting potential market, we believe, is gas-to-liquids (GTL) projects. Fischer Tropsch GTL facilities are capable of producing large quantities of high-quality fuels and chemical feedstock and should be highly profitable, assuming that anything like the current spread persists between oil and gas prices on an energy equivalent basis.

Inventories: Seasonally very high

US gas inventories remain at seasonally very high levels reflecting robust production and subdued demand. For the week ending 6 April, inventories stood at 2,487bcf, according to EIA data. This was 888bcf above the levels of a year ago and 920bcf greater than the five-year average. Significantly, the variance compared with the five-year average has widened noticeably since the

third quarter of 2011, while in all three storage regions inventories are well above both year ago and five-year average levels. Based on the EIA's production and consumption forecasts, inventories are likely to remain seasonally high in the coming months. Without a hot weather related surge in demand during the third quarter, gas inventories are likely to enter the next withdrawal season in October at unprecedentedly high levels. The EIA is currently forecasting end-2012 inventories of 3,400bcf, which is slightly down on 2011's 3,462bcf. The forecast is arguably vulnerable in the absence of strong demand in the coming months.

Price trend: Prices drop to 10-year lows

US gas prices have dropped to levels few would have thought possible even a year ago. The key Henry Hub, Louisiana benchmark has been on a very pronounced downward trend since early in the third quarter of 2011 when the price hit a recent high of $4.92/mm Btu. By year-end the Henry Hub price was down to $2.98/mm Btu and at the end of March was $1.98/mm Btu. In early April the trend continued to weaken, which left the Henry Hub quote at $1.86/mm Btu on 13 April. This was 62% below the June 2011 high and a 10-year low. Elsewhere, according to Bloomberg, prices at key hubs on 13 April were as follows: New York $2.03/mm Btu Chicago $1.96/mm Btu Agua Dulce; Texas $1.88/mm Btu Opal, Wyoming $1.79/mm Btu and Cheyenne, Wyoming $1.73/mm Btu.

The marked downward trend in US gas prices in recent months reflects the underlying imbalance between supply and demand. Recently, we believe added impetus has been given by the extended period of mild weather in the US and the relentless sequence of seasonally high inventory numbers.

Exhibit 26: Henry Hub price trend

Source: Bloomberg

Economics Based on data provided by Southwestern Energy and Chesapeake, we believe variable costs for a typical dry gas operator in the US are around $1.8/mcfe which, of course, is very close to current price levels. This includes $1.5/mcf for lifting costs and another $0.3/mcf for production taxes. In practice we may also need to add another $0.2/mcf or so for processing and pipeline tie-in. The economics of course become even more marginal if SG&A costs of perhaps another $0.9/mcf are added, while finding and development costs of $1 to $2/mcf would imply fully accounted costs well north of current prices at $3.7 to $4.7/mcf.

For a liquids-rich gas producer, however, economics are significantly more favourable than for the above. Depending on product mix natural gas liquids could conceivably add $2/mcf or more to price realisations. Even allowing for higher processing costs this would imply a comfortable variable margin, even assuming Henry Hub early April prices of around $1.86/mcf.

Price outlook: Firmer trend expected in the coming months but weather is a wild card

The key question now relating to US natural gas prices is how much downside exists from current levels of $1.7 to $2/mcf. Based on our variable cost analysis we would say not a great deal, abstracting from a scenario with the economy descending into an extreme recession. This conclusion reflects the fact that current prices are approaching variable cost for the average dry gas producer. A further plunge in prices would therefore in all probability precipitate a major round of capacity shut-ins, which in turn should support market sentiment and result in equilibrium being restored within a relatively short time frame. Interestingly in this regard, gas producers have sharply reduced their hedged positions in recent months for fear of locking in losses.

In common with many other observers we are again sharply reducing our 2012 forecast for the Henry Hub price. The actual outcome for the first quarter average of $2.43/mm Btu was pretty close to our earlier forecast. However, the recent softening in the Henry Hub quote to significantly below $2/mm Btu was not anticipated. Reflecting the very weak start to the second quarter, the current wide imbalance between supply and demand and hefty inventory position, our Henry Hub price forecast for 2012 has been reduced from $3.50 to $3.03/mm Btu. The quarterly profile is now as follows: Q1 $2.43; Q2 $2.20; Q3 $3.50; Q4 $4.00. Compared with early April prices of under $2/mm Btu, we continue to expect an uptrend over the balance of 2012, reflecting a combination of anticipated shut-ins, the lagged impact of falling drilling activity, rising demand from power generators and an assumed less benign weather backdrop in the coming months. Probably the most significant of these factors is weather conditions. In the absence of seasonally high temperatures in the Northeast and Midwest in the third quarter stimulating heavy air conditioner usage, we believe gas prices could languish below $3/mm Btu and possibly under $2.5/mm Btu during this period. Implicitly, our forecast for the fourth quarter of 2012 is implying seasonally cool conditions in the fall and early winter. We think it very unlikely that there will be a repeat of 2011's ultra mild conditions in the fourth quarter.

For 2013 we continue to look for a significant recovery in US gas prices. The starting point however looks like being considerably lower than expected previously. We have consequently lowered our average Henry Hub price forecast for 2013 from $4.00/mm Btu to $3.85/mm Btu. The recovery in 2013 is expected to be driven by the supply-demand relationship moving closer to equilibrium, as shut-ins and declining drilling take hold and usage gathers momentum due to competitive prices and possibly firming economic activity. As is always the case, much will depend on weather conditions.

Exhibit 27: Henry Hub quarterly price scenario

$/mm Btu	Q1	Q2	Q3	Q4	Average
2008	8.66	11.37	9.06	6.45	8.89
2009	4.54	3.70	3.17	4.37	3.94
2010	5.15	4.15	4.32	3.86	4.37
2011	4.18	4.37	4.12	3.33	4.00
2012	2.43	2.20e	3.50e	4.00e	3.03e

Source: Bloomberg and Edison Investment Research

Exhibit 28: Henry Hub natural gas price trend

$/mm Btu	2004	2005	2006	2007	2008	2009	2010	2011	2012e	2013e
	5.85	8.79	6.72	6.96	8.89	3.94	4.37	4.00	3.03	3.85

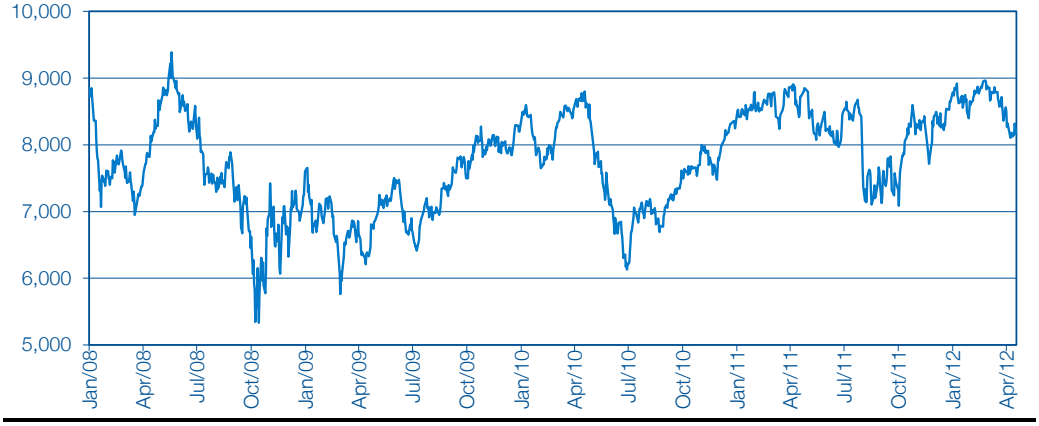
Source: Bloomberg and Edison Investment Research

Oil and gas sector performance

UK: The bull run in the AIM juniors goes into reverse

Oil and gas stocks rebounded strongly from the early October 2011 13-month low, but the upward trend lost momentum late in the first quarter in tandem with the broader market. The high-water mark for the FTSE 350 Oil & Gas Index, which is dominated by the majors, came on 27 February. At the time the Index was 27% above the October low and at a 45-month high. By contrast, the FTSE 100 during the first quarter was still lagging the highs of the first half of 2011. Since 27 February the FTSE 350 Oil & Gas Index has dipped 7%, which has left it roughly in line with year ago levels. This is similar to the FTSE 100 year-on-year performance.

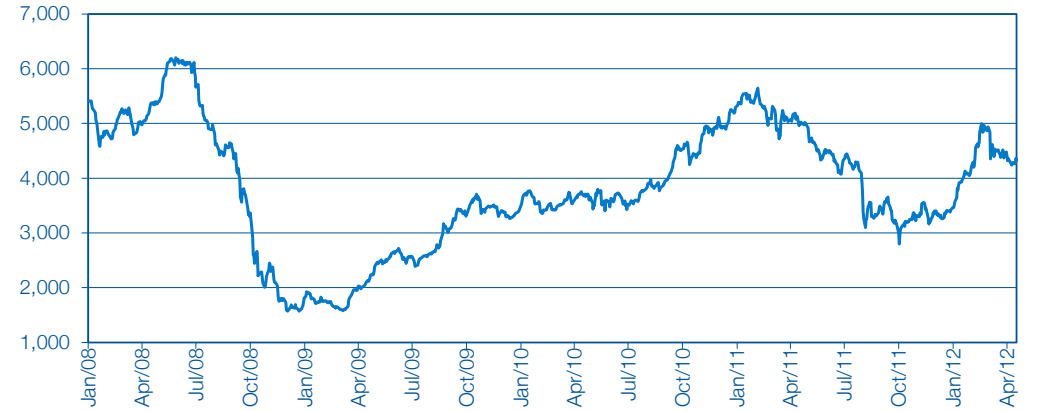
Exhibit 29: FTSE 350 Oil & Gas Index



Source: Bloomberg

The AIM junior oil and gas stocks surged between the October 2011 low and the recent February 2012 high and in the process comfortably outperformed their large and mid capitalisation peers. The gain in the benchmark AIM Oil & Gas Index over the period was a hefty 79%. This left the Index at around a 12-month high but still 19% below the May 2008 all-time high. The juniors generally benefited disproportionately in late 2011 and early 2012 from the 'risk off' phenomenon during the period. Since the February high the AIM juniors have slipped about 15%, a significantly weaker performance than for the FTSE 350 Oil & Gas Index. This reflects the greater sensitivity of the juniors to a recent weakening of investor sentiment related to the sovereign debt crisis and broader concerns surrounding the world economy. As of mid-April 2012, the AIM Oil & Gas Index was down about 14% on a year earlier.

Exhibit 30: AIM Oil & Gas Index



Source: Bloomberg

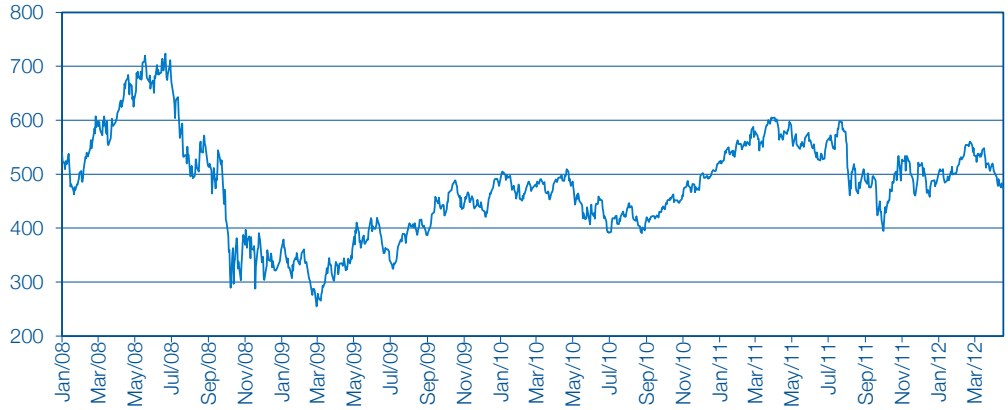
USA: Gas orientated stocks have recently been under heavy pressure

US oil and gas stocks have followed a similar path to their UK counterparts in recent months. Taking the broadly based S&P 500 Oil & Gas Index of majors and independents there was a gain of 30% between early October 2011 and late February 2012, but the highs of 2011 were not regained. Subsequently, the Index has dipped 7% while the S&P 500 has firmed marginally. Compared with a year previously, the S&P 500 Index in mid-April was down about 5%. Interestingly, the bulk of the increase in the S&P 500 Oil & Gas Index between October 2011 and February 2012 was concentrated in the former month and reflected the strong rebound at the time in WTI. The trend in the S&P 500 Oil & Gas Index has waned of late as the WTI price has softened and US gas prices have come under heavy pressure. Energy sector sentiment also appears to have weakened, as the consensus has turned more bearish on the outlook for oil prices over the balance of 2012.

Exhibit 31: S&P 500 Oil & Gas Index

Source: Bloomberg

Exhibit 32: S&P 500 Oil & Gas Exploration and Production Index



Source: Bloomberg

Downward pressure since end-February has been more significant in the case of the independent explorers and producers than the broadly based S&P 500 Oil & Gas Index. Compared with the recent end-February high the S&P 500 Oil& Gas Production and Exploration Index, for example, has dropped about 15%. The relative weakness of the independents of late reflects in large part their exposure to the slump in gas prices. For some of the more gas-oriented stocks the decline from the first quarter highs has been considerably greater than for the S&P 500 Oil & Gas Index. For example, Chesapeake Energy is down 30% while Southwestern Energy and Quicksilver are off 22% and 35% respectively. Chesapeake has additionally been subject of late to conflict of interest allegations involving the CEO, Mr Aubrey K McClendon. The company has subsequently issued a statement that the allegations are unfounded.

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