Shale: Too Big To Fail

www.sucdenfinancial.com

Thursday, 15 September 2016

Kash Kamal, CFA
Senior Research Analyst

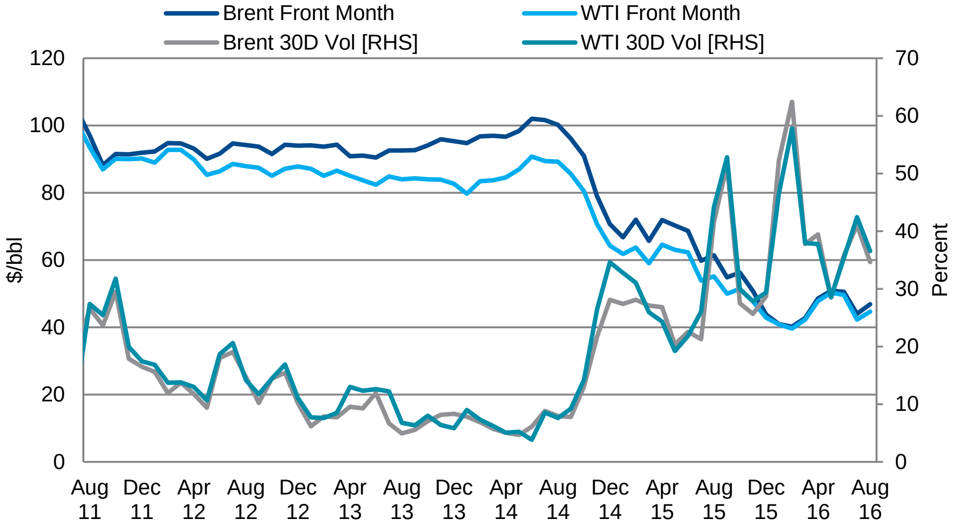
Geordie Wilkes
Research Analyst

+44(0) 20 7940 5290
research@sucfin.com

www.sucdenfinancial.com

September 2016

Front Month Crude Futures: *Volatility continues to rise throughout 2016 despite the lower price structure*



Source: Bloomberg

Earlier this year we focused our attention on the crude oil market, specifically we assessed the opportunities presented to participants from the steepening contango in the short dated futures curve over the coming eight to twelve months.

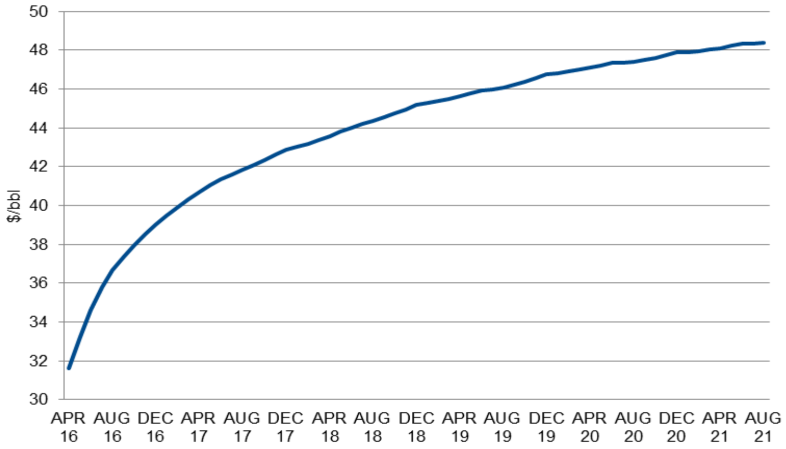
After the abysmal year almost everyone who had anything to do with the oil market in 2015, participants were confident that a combination of historically low borrowing costs, a tanker market dealing with significant overcapacity, and improving demand side fundamentals would see the crude oil market offered up a profitable trade to investors who had otherwise been struggling to find anything resembling a decent return.

We posited that investors, who locked in crude until the end of the year, taking advantage of the near record low timecharters for crude oil tankers and cheap financing, would maximise returns for a relatively low risk trade. Below, we briefly recap how the trade did and what market developments over the past two quarters signal ahead.

When we first looked at the floating storage play for crude oil in early March, the benchmark front month Brent futures contract was trading around $38/bbl while the May 12 month contango was the steepest at $10.61/bbl. Fast forward five months and we can see that those expectations were rather modest and despite some heightened volatility in the interim, front month Brent futures are trading comfortably around $50/bbl.

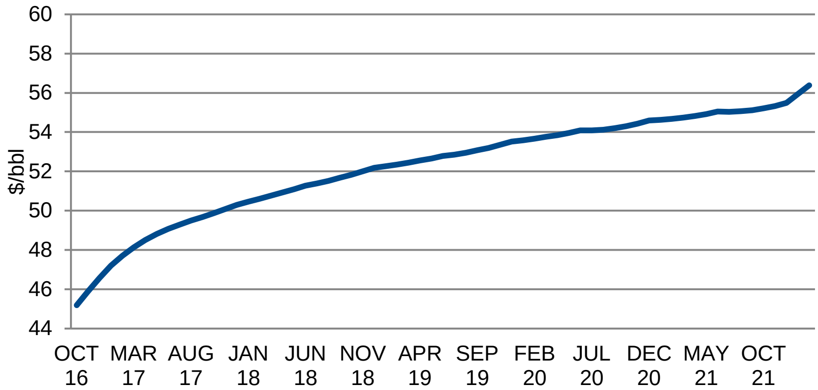
The flattening of the contango is due to the increase in price at the front end of the curve to around $45/bbl. In today’s market the front month Brent futures contract is trading at $48/bbl with the October 2017 $3.95//bbl higher at $51.95/bbl, the curve then starts to level off.

Brent Futures Curve: *12 month contango conditions were steepest at the start of the year…*



Source: Sucden Financial, Bloomberg

…the near-dated curve has since levelled off as crude price expectations remain subdued



Source: Sucden Financial, Bloomberg

"Savvy investors who took advantage of the glut of vessels plaguing the shipping market could have locked in a 300 DWT dirty tanker for approximately $45,000/day…"

Savvy investors who took advantage of the glut of vessels plaguing the shipping market could have locked in a 300 Deadweight tonnage (DWT) dirty tanker for approximately $45,000/day, while not as competitive as prices between 2013-2015 which averaged $28,000/day, the near month contango structure in the Brent futures curve more than compensated for this.

The supply glut in dirty tankers has continued to build in 2016, precipitated by an under pressure commodities market which has prompted many owners to think twice before sending aging vessels to the breakers yard as scrap steel prices plummet. Two years ago, ship breaking yards in India, Pakistan and Bangladesh were offering as much as $450/tonne for steel, prices for this year are closer to $250/tonne.

"Operators have been reducing the average age of vessels scrapped, from 30 years to 15 years..."

The current daily timecharter for Very Large Crude Carriers (VLCC's) reflects this supply glut, slipping back towards $31,500/day. Operators have been reducing the average age of vessels scrapped, from 30 years to 15 years, according to operators in the scrap market, in

"More needs to be done to improve the demand outlook before a stable equilibrium can be found."

an attempt to address the fundamental imbalance. More needs to be done to improve the demand outlook before a stable equilibrium can be found.

12-Month Dirty Timecharter Rates: *Tanker rates continue to drop in 2016 as the market struggles with oversupply*

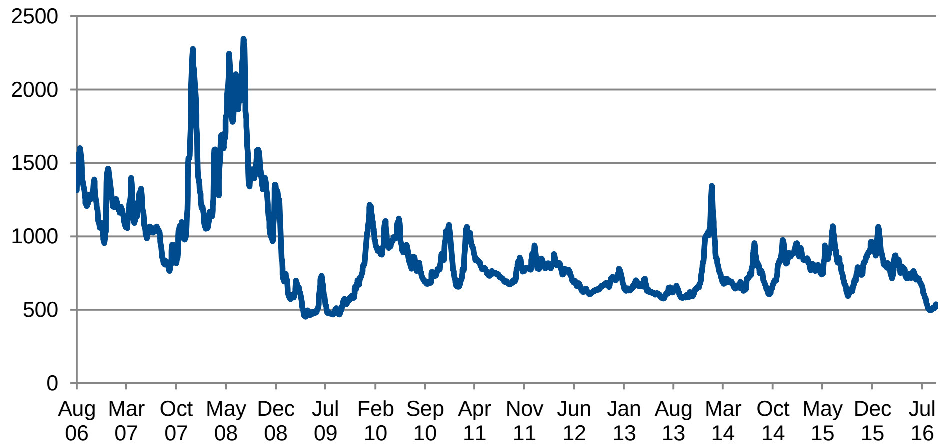
Source: Simpson Spence Young, Bloomberg

It's clearly been a very interesting year so far for participants in the crude oil industry and despite the lower for longer price outlook reaffirming itself, the obstacles and issues preventing any material fundamental tightening mentioned above ensure rangebound trading in near term crude oil futures.

"Any attempt to post a sustained move above $50/bbl triggers an increase in output particularly from US shale producers…"

Any attempt to post a sustained move above $50/bbl triggers an increase in output particularly from US shale producers, more of which will be discussed later on in more detail. Accordingly, the market dynamics that dominated the first half of the year, exacerbated by weaker sentiment owing to global macroeconomic concerns offered lucrative trading opportunities to those willing to commit a little more for a little longer.

Baltic Exchange Dirty Tanker Index: *BIDY has returned to levels last seen during the financial crisis*



Source: Bloomberg

Back in March we calculated that a very large crude carrier capable of storing 2 million barrels with an average timecharter of $45,000/day would bring in revenues of approximately $15.7 million over a six month period and after factoring in Brent's return to $50/bbl. A profitable trade indeed, easily yielding a 20% margin for relatively little effort. So what do the remaining months of the year have in store for oil investors? The following sections will assess and evaluate the key issues and developments we feel will dominate the industry landscape throughout the remainder of the year and well into 2017.

Shale never fails

"Global spending on crude oil exploration is set to drop towards $40 billion in 2016 from $100 billion in 2014…"

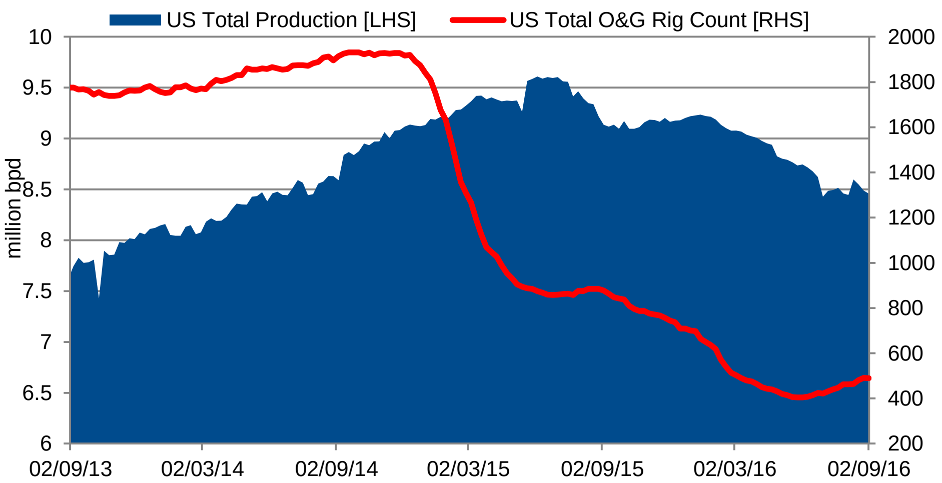
In terms of the supply outlook for crude oil, the belt tightening that was triggered from crude oils precipitous fall from above $100 shows no signs of letting up this year. Global spending on crude oil exploration is set to drop towards $40 billion in 2016 from $100 billion in 2014 according to Wood Mackenzie. Furthermore, expectations are for capital spending to remain subdued at least until 2018.

According to figures compiled by the oil and gas consultancy just 2.7 billion barrels of new supply was discovered in 2015, the smallest annual discovery since 1947. Year-to-date exploration activities have revealed 739 million barrels of conventional crude with full year 2016 exploration activity on track to be the worst in almost 70 years. While shale oil discoveries are expected to plug much of the shortfall in conventional crude, a robust demand outlook could see the market fundamentals balance much sooner than consensus expectations, offering some hopes of a sustained recovery in 2017.

"While shale producers continue to benefit from cost efficiencies, prolonged price activity either side of this range could trigger a more responsive change in weekly rig counts."

Supply pressures from US shale drillers continue to dominate the industry with output from the Permian Basin and Eagle Ford maintaining a steady clip as prices settle between $40 and $60 per barrel. While shale producers continue to benefit from cost efficiencies, prolonged price activity either side of this range could trigger a more responsive change in weekly rig counts. This can already be seen with prices approaching $45-$50/bbl with the Baker Hughes rig count rising from 404 towards the end of May to 489 as of 26th August, a period when front month WTI prices averaged $46/30/bbl.

US Crude Oil Production: *Improving shale efficiencies have kept output relatively stable while rig count seems more responsive to changes in market price*



Source: Baker Hughes, Bloomberg

This could be as a sign of couple of things. Firstly, some producers have ignored the low prices and stubbornly continued to keep producing oil, feeding the glut. Secondly, the cost of production has come down considerably; initially shale oil was considered economically viable when market prices were at $60/bbl but since prices hit a low in January, producers have been able to negotiate better terms with service providers.

"…marginal costs of production have come down considerably, in some cases as much as 30% to 40% per barrel…"

As a result marginal costs of production have come down considerably, in some cases as much as 30% to 40% per barrel and a growing percentage of production is breaking even below $50/bbl. As producers continue to drive cost cutting and efficiency gains we could see this cost come down further.

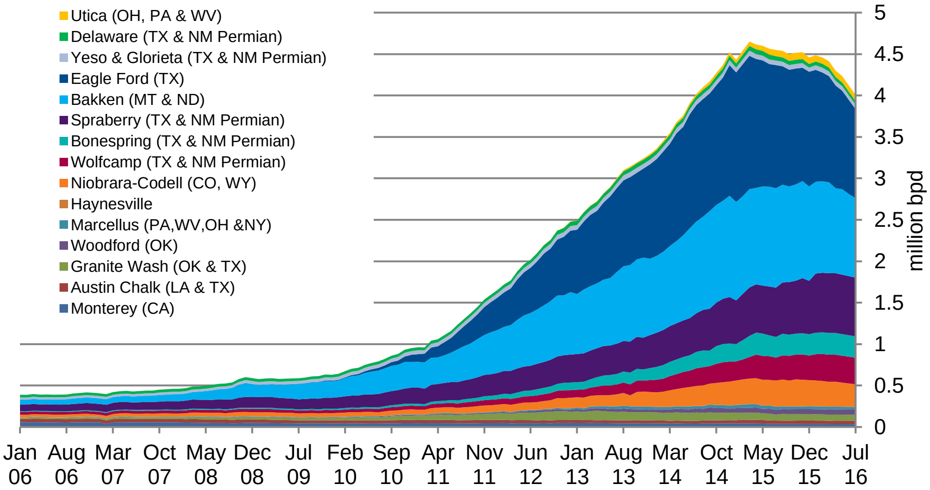
American shale producers have faced considerable headwinds over the past year but there may be light at the end of the tunnel. Companies are not just starting to drill again and are looking to expand by increasing their budgets to tap new wells. Newfield Exploration, Devon Energy and Pioneer natural resources are all among those companies who have increased budgets by over $1 billion, a sign that they don't expect prices to return back towards $25/bbl.

"…BP is now looking towards shale to help boost growth…"

BP, have embarked on a new endeavour which should boost the London based supermajor's competitiveness in the shale industry. With oil prices hovering around $45 a barrel, the expensive offshore rigs synonymous with big oil are coming face to face with tighter budgets. Accordingly, BP is now looking towards shale to help boost growth. They have already started to develop the 'chicken foot' technique; involving drilling horizontally in multiple directions from one vertical bore, allowing producers to tap wells at different layers with one wellhead substantially reducing costs.

US oil production stood at 8.48m bpd at the end of August, below the EIA forecast for the year of 8.6m bpd for 2016. Crude stocks hit a record high in April of 543m barrels; and while cyclical demand has seen stocks drawn down slightly during driving season, currently at 524m barrels, this is considerably above the 5 year average of 407m barrels (EIA).

US Tight Oil Production: *Lower crude oil prices have caused tight oil production to fall from record highs in mid-2014*



Source:EIA

The US Energy Information Administration recently cut their forecasts for America's oil demand by 160,000 bpd for 2016. Projections for the next 18 months suggest this could grow 120,000 bpd as stronger than expected growth drives the US economy, which would see total consumption for the year at 19.68m bpd.

"…we anticipate the increase in US crude output to provide only short term headwinds."

While a lower marginal cost of production and stabilising crude prices could prompt a further increase in rig counts, we anticipate the increase in US crude output to provide only short term headwinds. A robust demand outlook and the lifting of the US crude oil export ban in December could potentially alleviate some of this downward pressure going forward.

Canada continues to be the largest single buyer of US crude, as it was before the ban was lifted, buying up over 300,000 bpd but other buyers have come into the fray, notably Curacao, the Netherlands, Japan and Italy averaging purchases of 54,000, 39,000, 17,000 and 15,000 bpd respectively, throughout the first five months of the year.

"Total exports of US crude oil hit 662,000 bpd in May, up over 80% year-to-date…"

Total exports of US crude oil hit 662,000 bpd in May, up over 80% year-to-date suggesting overseas buying continues to grow and this trend could continue over the mid-term, potentially leading to a material draw in US stockpiles over the next 6-12 months, alleviating some of the supply overhang that has acted as a ceiling on near term futures (EIA).

OPEC will they or won't they?

Investors looking towards this month's OPEC meeting for any signs of supply tightening may be disappointed. Looking at their recent track record, the Organisation of the Petroleum Exporting Countries has a habit of building expectations of a supply freeze only for talks to break down as members self-interest keep the pumps working, concerned that any production cut backs will see an erosion of market share.

If OPEC members decide to freeze production during informal talks at the International Energy Forum in Algeria at the end of the month, the initial reaction in front month futures will likely be a sharp rally in pices. However, as previously stated, any increase in prices barring a material improvement in the demand outlook would only serve to coax more shale output from the US as margins become attractive again.

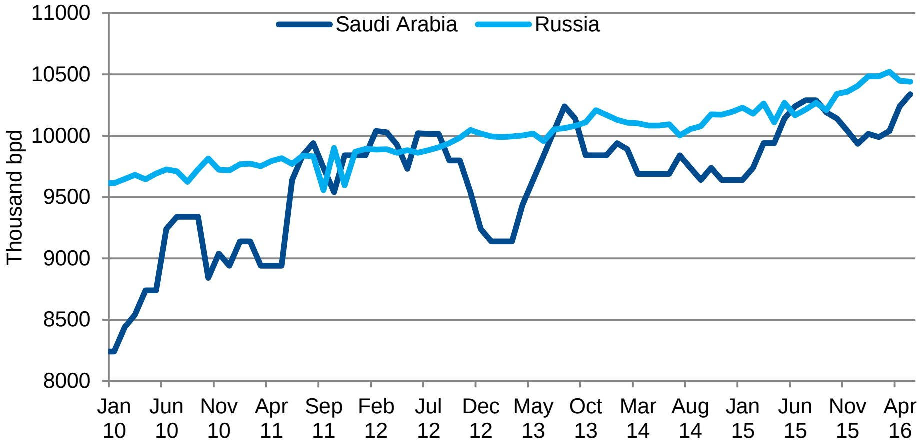
The cartel is hoping comments given this month will ease the growing disquiet after the failure seen at the last meeting. Iran failed to turn up to the meeting earlier this year and past expectations of a production freeze have so far failed to materialise. It is becoming more possible that we could see production capped for each country rather than frozen, which is unlikely to solve the supply glut.

Talks between Saudi Arabia and Russia earlier this month offered some hopes on an output cap as the two largest crude oil exporters agreed to stabilise the market. However, with nothing concrete in terms of a production ceiling materialising market participants are wary of OPEC members talking up prospects only to be let down once more.

"Accordingly, expect a high degree of volatility across both Brent and WTI near month futures…"

We expect a low probability outcome on any firm action regarding capping output, primarily due to the competitive forces between both Saudi Arabia and Russia. Recent output data for both nations shows no let-up in monthly production despite calls for a production freeze from both sides. Accordingly, expect a high degree of volatility across both Brent and WTI near month futures, broadly within the range that has dominated H1 2016.

Saudi and Russian Crude Output: *Despite vocally supporting an output freeze both Saudi Arabia and Russia continue to lift production levels*



Source: EIA, Bloomberg

Iranian supply will further depress the near term outlook for crude oil. Since US sanctions were lifted, Iranian crude oil production has increased exponentially throughout 2016, rising to an estimated 3.4-3.6 million barrels per day in June according to OPEC data as well as independent figures compiled by Rystad Energy.

OPEC data indicates Iran holds the fourth largest proven crude oil reserves in the world, estimated at 158m barrels, accordingly if Iran is unwilling to pledge to a production freeze the rate at which exports can be boosted could add to the supply glut.

Indeed, recent comments from a senior executive at the National Iranian Oil Company have expressed the Islamic Republic's outlook of pushing output towards pre-sanction levels above 4 million barrels per day before any freeze is considered. Comments by Iran's oil minister also hint at the longer term prospect of a production cap, as hopes for crude prices between $50-60/bbl would necessitate some constraining of supply.

"Their ability to increase output is limited by global demand…"

Their ability to increase output is limited by global demand however Iranian and Chinese companies have been developing new oil fields with the aim of adding 100,000 to 200,000 bpd of crude production by 2017. They also unveiled a list of 53 oil and natural gas projects and 18 exploration projects as they hope to attract $30 billion in foreign investment (EIA).

After 2017, production growth is reliant on their ability to strike new trade deals and attract further foreign investment which would enable Iran to develop new technology and greater expertise. Many industry participants were surprised at Iran's ability to ramp up production so rapidly; however, the official target to increase crude output to 4.7m bpd by 2021 would need significant additional foreign investment.

Iranian Crude Production: *Output continues to ramp up at a significant pace, exceeding almost all market expectations*

Source: EIA, OPEC, Sucden Financial Estimates

Further to Iranian supply, OPEC officials will be keeping a watchful on Africa. Recent reports suggest Libya's state oil company may lift controls on crude sales. Whilst in Nigeria Exxon Mobil Corporation is resuming shipments of the country's biggest export grade of crude, Qua Iboe, and Royal Dutch Shell Plc could also revive output. Although both countries' supply has been hindered by conflicts, if this materialises, the market could see total of 800,000 bpd coming online which could add to downward pressure on prices.

India, the driving force

While the supply outlook is still somewhat murky, the demand side at least has some bright spots on the horizon which will help guide use steadily through the remainder of the year and into the start of 2017. India continues to ramp up its consumption of crude oil and with a population of 1.3 billion growing at 1.2% annually their prominence on the global stage is only increasing. Economic growth in Asia's 3rd largest economy is forecast to remain strong this year at 7.5% y/y. Going forward India's GDP is forecast to grow at an average of 5.5% per year out to 2040 (EIA). With Chinese growth cooling, India could continue to pick up the slack.

"Total oil consumption grew 7.8% year-on-year through April to June this year at 48.5m tons."

IEA data suggests India is on track to become the third largest consumer of crude oil by the end of the year. Total oil consumption grew 7.8% year-on-year through April to June this year at 48.5m tons. Expectations are for this trend to continue, with H2 2016 and next year on track to post further increases in crude oil consumption of 400,000 barrels a day, likely seeing oil exporter's price competitively to tap into coveted Indian demand.

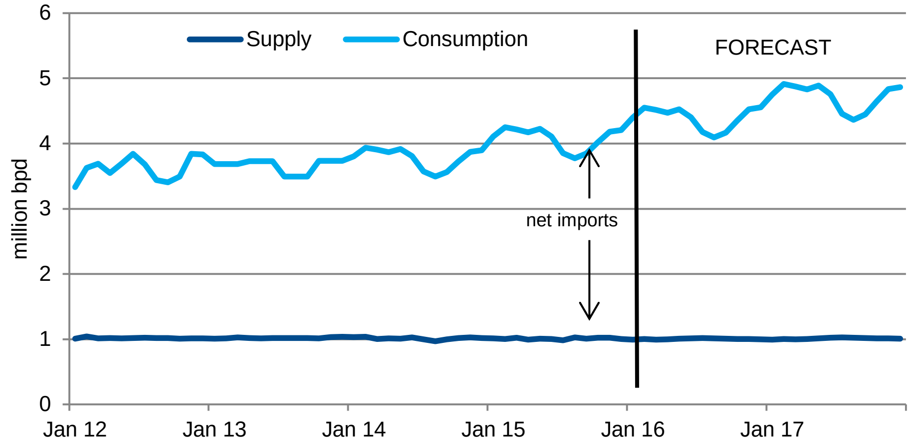
According to the EIA India's consumption is set to reach 8.3 million bpd by 2040. Furthermore the 'Make in India' campaign is aiming to bolster demand growth as officials look to raise the proportion of the manufacturing industry to 25% by 2022.

"Total domestic vehicle sales in India increased 11.8% during the first six months of the year…"

The objective is to create 100 million factory jobs through construction of ports, railways and highways as well as investment in 25 other strategic industries.

One of the primary reasons for India's sustained consumption growth is transportation. Although coming from a low base, the country is getting richer with a growing middle class driving sales of cars, motorbikes and airline seats. Total domestic vehicle sales in India increased 11.8% during the first six months of the year compared with 2015 according to the Society of Indian Automobile Manufactures (SIAM). As the urbanisation advances and the improvement to the country's highway network links key hubs together we expect auto sales in India to post strong growth in the coming quarters.

Indian Crude Supply vs Consumption: *The substantial deficit will ensure India remains a prominent buyer on global markets*



Source: EIA, Bloomberg

A notable headwind to the outlook in India, and indeed one that continues to hit headlines in recent months has been inflation. While current market conditions point towards a global glut in crude oil supply, expectations are for the market to balance in mid-2017. Inflationary pressures as the price of oil rises on tighter fundamentals could prompt increasing diversification to alternatives, notably natural gas for fuel and thermal coal for power generation.

"The Indian government has noted this distant obstacle and has taken steps to introduce a strategic petroleum reserve…"

The Indian government has noted this distant obstacle and has taken steps to introduce a strategic petroleum reserve, with a capacity of 39.1 million barrels to be completed by the end of the year. Under current market expectations this will provide an estimated 13 days of net import coverage, however, the government have planned to extend this cover out to 90 days, adding an additional 91 million barrels by 2020. As a result, the building of reserves throughout the remainder of the year and indeed into 2017 in addition to the generally sanguine demand outlook will go some way in absorbing the current supply overhang.

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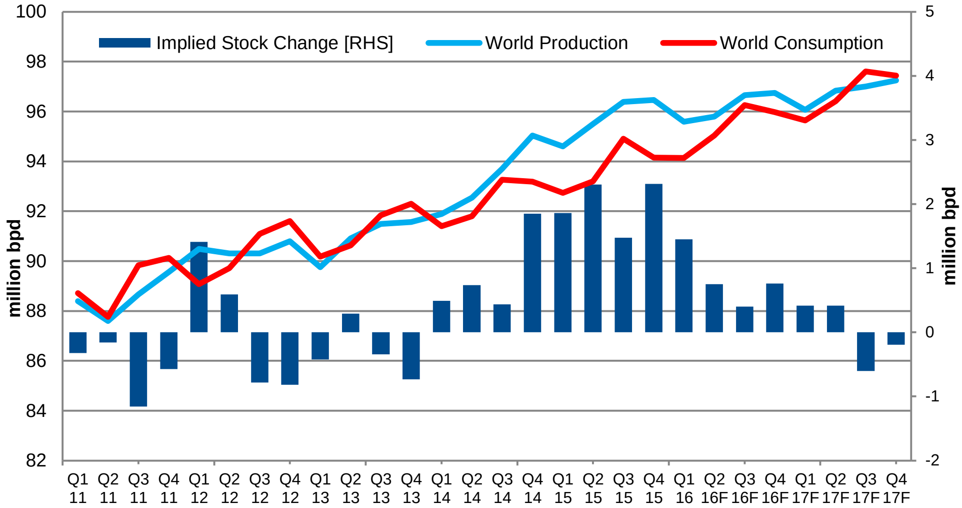
Crude Market Fundamentals: *The market is expected to balance in Q3 2017 as a rebound in demand gathers steady pace*



Source: Sucden Financial, EIA

"Steady demand growth in Africa and the Middle East will hopefully offset the projected lacklustre outlook in the US."

"…given the glut of crude oil hitting the market, specifically hitting the storage facilities around the world, we anticipate range bound trading…"

On a global scale, demand growth for 2016 is pegged at 1.4m bpd; however for 2017 the IEA forecast consumption to increase at a slower rate of 1.2m bpd, which while still above trend, suggests some modest cooling of demand ahead. This downward adjustment is largely due to the IMF trimming its global economic growth forecast to 3.4% in 2017, from 3.5% previously. Asian consumption growth is projected to be an additional 0.8m bpd next year which is the majority of this growth (IEA). Steady demand growth in Africa and the Middle East will hopefully offset the projected lacklustre outlook in the US.

While the start of the year presented brave investors with a clearly profitable trade, offering relatively safeguarded returns at a time when macro uncertainty was causing substantial spikes in volatility, sadly, the same cannot be said now about the outlook over the coming quarters. Efficiency gains in US shale production, lack of cohesion among OPEC members, and a relatively unexciting demand outlook will likely keep crude oil futures range bound throughout the remainder of the year and well into 2017.

Glimmers of hope continue to shine through, predominantly from Asian economies ex-China; however, given the glut of crude oil hitting the market, specifically hitting the storage facilities around the world, we anticipate range bound trading will dominate much of the price activity for the foreseeable future. For the coming weeks and months expect headlines to be dominated by talks and perceived agreements between oil powers, taking a closer looking at the production statistics and trends going forward would quickly shatter any illusion that these talks are anything more than just that.

London
Sucden Financial Limited
Plantation Place South
60 Great Tower Street
London EC3R 5AZ

Tel: +44 (0) 20 3207 5000
Fax: +44 (0) 20 3207 5010
Email: info@sucfin.com
www.sucdenfinancial.com

Hong Kong
Sucden Financial (HK) Limited
Unit 1001, 10/F.
Li Po Chun Chambers
189 Des Voeux Road Central
Hong Kong

Tel: 852 3665 6000
Fax: 852 3665 6010
Email: hk@sucfin.com
www.sucdenfinancial.hk

Moscow
Sucden Financial (Russia)
Sucden Financial Limited
Representative Office
Orlikov per. 3 'B'
Moscow 107139

Tel: +7 495 796 96 40
Fax: +7 495 796 96 41
Email: russia@sucfin.com
www.sucdenfinancial.ru

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