



## The History of a Supply-Driven Bear Market: Part 1 of 2 Oil Price Surprises from 2014 through 2015

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### Introduction

This article is the first in a two-part series. This series of articles will provide insights into the complex dynamics of oil price formation from 2014 onwards. Part 1 focuses on the events influencing the oil markets from 2014 through 2015 while Part 2, which will appear in the next issue of the *GCARD*, will cover the oil-market-moving events from 2016 through the present. Part 2 will also cover projections on the oil market through 2025 based on work with the Clingendael International Energy Programme, which, in turn, is a think tank on energy in The Hague, Netherlands.

Price formation is characterized by highly dynamic interactions amongst a wide set of drivers, each one sometimes dormant, and at other times, hyperactive. These drivers can be clustered into four overarching categories: (1) Supply & Demand Fundamentals, (2) Geopolitics, (3) Geo-Finance, and (4) Technology & Innovation. The reader will recognize them all in this article. Oil, like all commodities, is not an anticipatory asset and pricing expectations typically eventually prove self-negating. Hence, in contrast to equities, oil does not have much expectation value and is thus far more of a spot asset class. For that reason, big structural changes, such as we witnessed in 2014, always seem to come as a big surprise.

This article starts with Saudi Arabia's (then) Minister of Petroleum and Mineral Resources, Ali Al-Naimi, hinting that a major shift in oil policy was pending, but ultimately failed to get his message across. The article then describes what actually happened in the market over the course of the next two years along with the difficulties that oil analysts experienced in providing accurate projections.

### Late 2013 Through 2014

In late 2013 Saudi Arabia's Minister of Petroleum and Mineral Resources, Ali Al-Naimi, tacitly noted that the Kingdom would not necessarily cut production by itself to balance oil markets. Those signals, which were first presented in an interview with *MEES* (*Middle East Economic Survey*, a weekly newsletter published by Middle East Petroleum and Economic Publications), were evidently not heard. At that time, the expectation in oil and financial capitals around the world was that Saudi Arabia would once again cut production to support oil prices. And thus analysts felt comfortable about a floor in oil prices of around \$80 per barrel (bbl), which would be fiercely defended by Saudi Arabia in its capacity as the world's "central bank of oil." It took another nine months or so before market participants were brutally awakened to the fact that indeed Saudi Arabia could not persuade OPEC and key non-OPEC producers to act together, but instead the oil market had to stabilize itself eventually, triggering a new era for oil.



Nevertheless, in December 2013, it was already flagged that Saudi Arabia would be key to global balances and oil prices during the upcoming year. Again the key question was raised as to how willing OPEC, and in particular Saudi Arabia, would be to balance what was expected to become an oversupplied market. Between 2010 and 2013, U.S. shale liquids had grown 3.2 million barrels per day (mb/d), a nearly unparalleled growth spurt only achieved once before in the oil world by Saudi Arabia between 1970 and 1974. The Bakken field had just touched 1 mb/d (from about 0.2 mb/d five years earlier), and the U.S. Energy Information Administration (EIA) had published its projections that U.S. crude oil production would reach a whopping 10 mb/d before 2020. But the feared oversupply from the spectacular growth of U.S. tight oil had not (yet) materialized due to offsetting supply losses from other non-OPEC and OPEC countries, notably Libya and Iran. That said, the U.S. was already “crude long” between 2011 and the summer of 2013, which was reflected by a deep discount in West Texas Intermediate oil versus Brent oil, resulting in the Atlantic Basin becoming “crude long” as well. However, growing Iraqi output was becoming a pressing issue for Saudi Arabia, as was (a) the pending return of Iran to the oil market and (b) the possibility that Libya could see a sudden upswing in production as well. Saudi Arabia thus had enough time to strategize on what to do at a time when oil prices were still comfortably above \$100/bbl as well as how it would communicate its reluctance to act as the sole swing producer. History alone already suggested that Saudi Arabia would not acquiesce to large Iraqi or Iranian output increases, foregoing any response to a decline in its market share. Hence the possibility that Saudi Arabia would abandon the role of the swing producer and would fiercely compete to maintain its market share was looming large and would imply a very different oil world in the years to come.

Let us fast forward to the 165<sup>th</sup> Meeting of the OPEC Conference, which convened in Vienna on June 11, 2014. The conference participants decided to retain the production ceiling of 30 mb/d of crude for the Organization’s 12 Member Countries, a level of production which was first agreed by the OPEC Ministers at their Conference in December 2011. Right then, Abdalla Salem El-Badri, OPEC’s Secretary General, mentioned that “we have a very comfortable crude oil price, the market is stable and OPEC is producing 30 mb/d of crude, more or less. The consumers are getting their supplies and the producers a good price. Everybody is happy.” His comments of optimism were echoed by OPEC Ministers before and after the Conference, irrespective of the broad awareness within the cartel of the increase of shale outpacing demand, and that demand was suffering from high oil prices. Even Ali Al-Naimi observed before the Ministerial talks that oil markets were stable and that current oil prices were satisfactory for both producers and consumers. “Everything is in good order. Supply is good. Demand is good. The price is good,” he affirmed. But perhaps he knew better; his advisors had already offered him a gloomy prognosis of the year ahead at the end of 2013, helping him to draft a new strategy for Saudi Arabia. Meanwhile, markets were of the opinion that demand was growing, backed by a strong signal from the International Energy Agency (IEA) suggesting a rise in demand of 1.3 mb/d for that year. When OPEC’s production ceiling was kept intact, oil prices continued to rise and reached their peak of \$115/bbl for Brent crude about a week after the meeting. Goldman Sachs analysts wrote in a June 10 report that “going forward, we expect continued growth in U.S. shale oil production, combined with normalization in non-OPEC production growth outside North America to allow a gradual decline in crude oil prices, with our 2015 year-end Brent price forecast at \$100/bbl.” Meanwhile the break-even oil price required for new developments to compensate for lost production from fields in decline and to satisfy the global growth in oil demand over the coming 15 years was calculated at \$85/bbl.

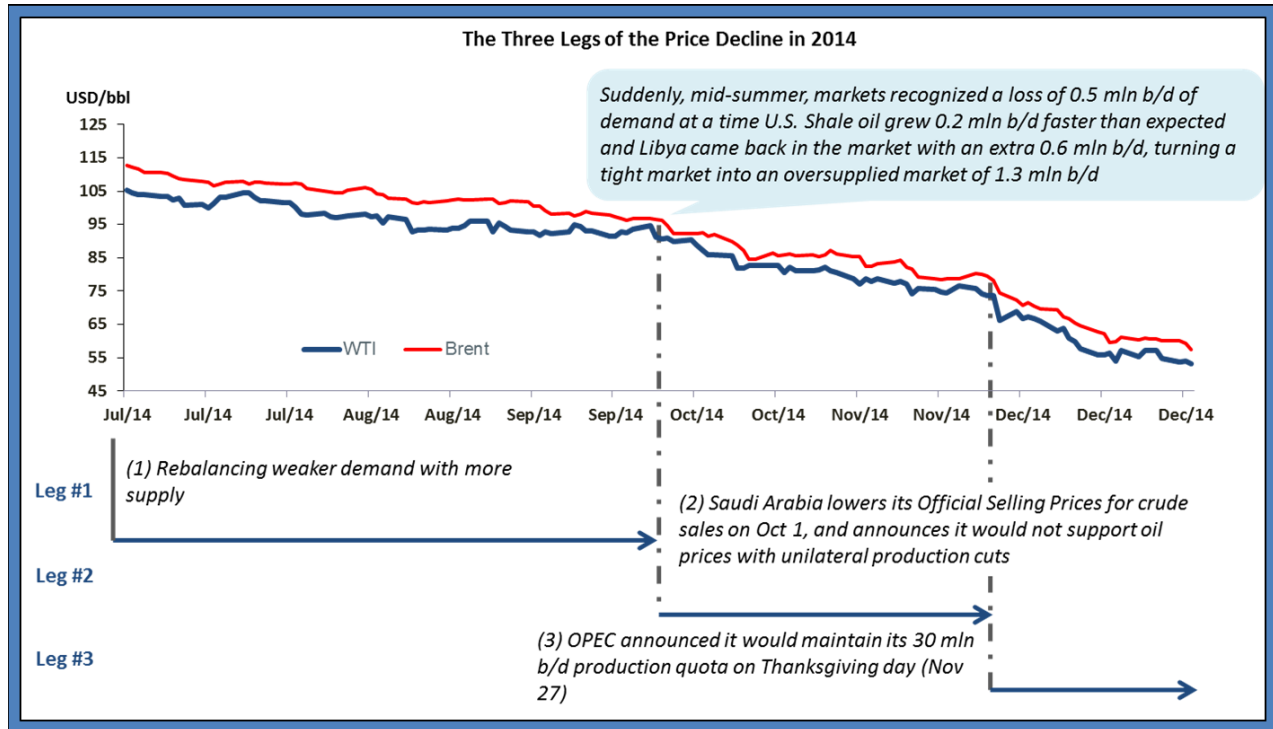


As the weeks passed, prices slumped. Gradually but slowly, it became clear that East of Suez could no longer accommodate all the crude being produced, and the oil market moved to the next phase from “Atlantic (Basin) crude long” to “Globally crude long” during the summer. The first leg of price declines was still gentle, but suddenly during mid-summer, markets recognized a loss of 0.5 mb/d of demand when U.S. shale oil grew 0.2 mb/d faster than expected. In addition, Libya came back in the market with an extra 0.6 mb/d, turning a tight market into a heavily oversupplied market of 1.3 mb/d by September. At that time, the 1-versus-3-month time spread in the front of the futures curve turned into contango. A second leg of price declines, now at an accelerated pace, was initiated by Saudi Arabia. The Kingdom unexpectedly lowered its Official Selling Prices for crude oil sales on October 1 to protect market share. Still market participants had difficulties with accepting this change of events. Oil analysts’ conviction in \$100/bbl was waning, but they were not yet willing to lower their price projections. After all, they noted that inventories were still low, and they expected demand acceleration. Their view was that the sharp price decline to \$94/bbl had overshot their near-term price targets. Instead of a price crash overnight, as occurred in 2008 when the financial crisis broke out, Brent crude prices drifted lower to \$85/bbl in October and to the high \$70s in November.

Pressure was building up within OPEC. Clearly the market expected them to cut production. But at meetings amongst members, Al-Naimi said, “I don’t think it’s fair for us to defend prices just for the sake of defending prices. It will come at the expense of our market share.” He added: “If we want to cut back then it has to be in collaboration with other non-OPEC producers who need to come to the table.” Several meetings took place, but at a meeting between Saudi Arabia, Venezuela, Russia and Mexico, a couple of days ahead of the next OPEC meeting planned on Thanksgiving day, November 27, Al-Naimi took the blunt decision to say that “it looks like nobody can cut, so I think the meeting is over” and stood up to shake hands and left. Finally the market understood the new situation. Brent crude oil futures plunged 6.7% to \$72.58/bbl immediately after the Thanksgiving 2014 meeting. In addition, the contango further deepened to more than \$10/bbl twelve months out, and spot prices crashed to below \$50/bbl early in January 2015. The oil-market events of the second half of 2014 are illustrated in Figure 1 on the next page.



Figure 1



Behind the weak fundamental backdrop as described above, financial flows probably had a hand in exacerbating moves in flat price and time spreads. Open positions on ICE Brent reached a record high in November 2014. Since the start of the first leg of the sell-off during the summer, the sharp decline in the net speculative length in the futures market likely contributed to oil prices being pressured lower. And with investors also piling into spreading positions, there was a risk of short-term volatility coming from length liquidation. Ultimately crude oil prices moved into a region where many of the put options purchased by producers had been struck in order to hedge their oil risk exposure. These put options are typically sold by financial houses (swap dealers) and other non-commercial traders to oil producers looking to hedge their exposure to declining oil prices. By selling a put, the non-commercial traders agree to take exposure to downside price risk, which they typically hedge by selling crude oil futures. The number of crude oil futures that must be sold to hedge a short position is called the “delta” of the short position, hence this risk management practice is known as delta-hedging. Importantly, the number of oil contracts that must be sold to hedge a short put position depends on the oil price. More specifically, as the price of crude oil falls, as it did on October 14, 2014, the delta of the short position increases, requiring more futures to be sold and thereby helping to push prices down, as discussed in Ngai (2014). That prices can be temporarily driven by purely technical effects such as the hedging of option deals is also described in Till and Eagleeye (2017). Many of the puts were concentrated around strikes of \$70 to \$85/bbl for West Texas Intermediate (WTI) oil (and went deep-in-the-money). Moreover, the sell-off in oil in the second half of 2014 was arguably driven largely by positioning (in the futures market) based upon expected fundamental shifts, as opposed to observable fundamental shifts. In other words, the market was trying to price in a more than 2 mb/d inventory build by the end of 1Q2015.



Many analysts evidently could not believe that such a rapid inventory buildup was likely and concluded that prices had likely overshot to the downside. More specifically, Citi analysts wrote at the end of 2014: “The era of \$100/bbl oil is over. Citi’s base case oil price scenario at \$80/bbl Brent for 2015 and \$85 for 2016 is slightly below the curve, but this assumes both some coordinated OPEC action and some deterioration in one of the many geopolitical hot spots around the world. The geopolitical backdrop remains troubling and is, we think, underpriced at the moment. If nothing ‘bad’ happens, and OPEC does not come together, then the outlook is decidedly bearish and Citi’s bear case puts Brent at \$65/bbl. Citi ascribes a probability of 45% to the base case, 40% to the bear case, and just 15% to the bull case which involves a material disruption to global supplies over and above the already severe levels priced into the market, in which case Citi sees prices rally to \$90/bbl Brent, but Citi views this as a low probability outcome.”

Likewise Barclays analysts wrote at the time: “OPEC’s decision to leave targets unchanged ushers in a new phase for the global oil market. We believe that the fundamental oversupply will take up to a year to clear, but we are already a quarter into the price adjustment. OPEC crude supply is poised to increase by January, but the quality of its crude is shifting heavier. Non-OPEC supplies will be pushed further to respond, but U.S. tight oil will not be the only lever to adjust. Longer term, collateral damage will be found in Canadian Oil Sands and other non-OPEC supplies due to less drilling, more maintenance and project deferrals and cancellations. We expect prices to fall further, to \$67 in 1H15, signaling an adjustment period that is likely to also include OPEC more closely adhering to the demand for its crude and U.S. tight oil producers cutting back spending. However, in contrast to 2008-09, oil demand does not face equivalent headwinds. Hence, non-OPEC supplies will likely adjust over the next six months, leading to prices of about \$80 in 2H2015. Even OPEC supplies are involuntarily adjusting.” Further, Goldman Sachs analysts concluded: “WTI oil prices are already at levels today equivalent to expected 1H2015 lows outlook. The price next year will depend on 2 factors: 1) whether in fact U.S. oil producers will have enough confidence in \$70-75/bbl WTI oil to drive enough of a production response in 2H2015 and FY 2016; and 2) whether Organization for Economic Co-operation and Development (OECD) inventories build at a faster rate than currently foreseen (0.4 mb/d in 1H2015).” Finally, J.P. Morgan had a forecast of \$82/bbl for 2015 and \$87.75/bbl in 2016.

One might question how this optimistic picture could have persisted, given the ten-month-old signals from Saudi Arabia on not willing to continue accepting the swing producer role. Late in October 2014, most commodity desks still had a forecast of \$85/bbl or more for Brent in 1H2015 and some even higher for 2016. There was still a strong belief that these sell-offs had far exceeded the actual weakening in fundamentals, and there was an expectation that OPEC would announce a modest cut at their November 27, 2014 meeting.

Why was the message of Saudi Arabia, which we had discussed at the outset of this article, not heard or accepted? In review, Minister Al-Naimi had already announced in December 2013 that “Saudi Arabia does not oppose cuts, but cuts have to be collective and burden shared. ... Saudi Arabia will not cut output unilaterally.” Thus, far before the fall in oil price, Saudi Arabia started sending clear signals regarding its intentions. At a *MEES* interview during that month, Al-Naimi added: “We (Saudi’s) have learned our lesson. Every time we go for quotas, who bears the brunt? Us. We have learned our lesson. We are no longer the swing producer. Who needs quotas?” His comments appear to have



reflected a desire to cause long-term damage to high-cost production, most of which is in non-OPEC countries and which had been encroaching on OPEC market's share. Secondly, the oil minister was openly questioning why it would be reasonable to expect a highly efficient producer, i.e., Saudi Arabia, to reduce output. In contrast, the producers of poor efficiency oil, i.e., the "Most-Expensive Oil" category with breakeven prices of \$75/bbl or higher such as (a) U.S. shale oil producers, (b) deepwater producers and (c) Canadian oil sand producers, would continue to produce. To Minister Al-Naimi, this may have not made sense, regardless of the fact that OPEC had followed this logic for decades with its oil production quota system and with the role of swing producer for Saudi Arabia. Apparently, his remarks presented too big a departure from the cartel's traditional policy of reducing supply to stabilize prices to have made an impact.

Looking back into the weekly bank analyst reports of that year, the *MEES* article was never mentioned. At best, it was seen as a tactical move, and the oil minister's message was not seen as a realistic perspective. There was a strong perception that OPEC (or rather, Saudi Arabia) would step in to stabilize prices. That understanding started to only break down early in October 2014 when the IEA cut demand forecasts, and Saudi policy started to show its colors by the lowering of Asian Official Selling Prices to maintain market share. Then came the OPEC meeting at the end of November and it became clear that Saudi Arabia was prioritizing market share, not price, and had given up its role as the central bank of oil. It was now a free for all, but the new situation was still not well understood.

## 2015

Without any production restraint, prices continued to drop. Since OPEC's November 27, 2014 meeting, attention completely shifted to the U.S. shale oil producers and their financiers: how quickly would they throttle back production due to low prices? U.S. producers were now considered as the major marginal supplier of oil instead of OPEC. Clearly, the fast growth of shale production in the U.S. had been disruptive. In fact, high and stable crude prices in combination with ultra-cheap money from Quantitative Easing had worked against both OPEC and the International Oil Companies (IOCs) by having encouraged competition from many small entrepreneurial oil companies. Only lower oil prices could stop this growth since presumably this would shut down financing for the more leveraged U.S. shale players and thereby arrest the roll out of the shale oil revolution. And indeed, shale producers were cutting their budgets early in 2015, but not enough to slow the decline in oil prices.

Meanwhile, too much oil – on average more than 1 mb/d – was produced relative to demand, and this surplus had to be stored in tanks and tankers. This caused a deep contango in the futures market. The steepest contango of -\$6.5 a barrel for the 1-versus-7-month Brent futures spread was reached on February 13, 2015. But by the summer of 2015, many analysts expected that the market would begin to rebalance and inventories would begin to drain. Under that scenario, there would be a slow but gradual recovery in the oil price in 2016, back to the marginal cost of supply, which, in turn, was projected at \$70/bbl. Markets were convinced that prices had to and would move back to this level in order to incentivize oil companies to take final investment decisions on new (and in many cases deferred) oil field developments. These decisions would be needed in order to keep their production from falling as a result of underlying field declines in their existing producing fields. Thus, while oil prices were revised down to \$42/bbl Brent for 1Q2015 in January 2015, by 4Q2015 Brent was already set at \$64.50 and



forecasted to be \$70/bbl in 2016. Such forecasts relied on there not being a fundamental structural change in the oil markets, which turned out to be what was actually happening.

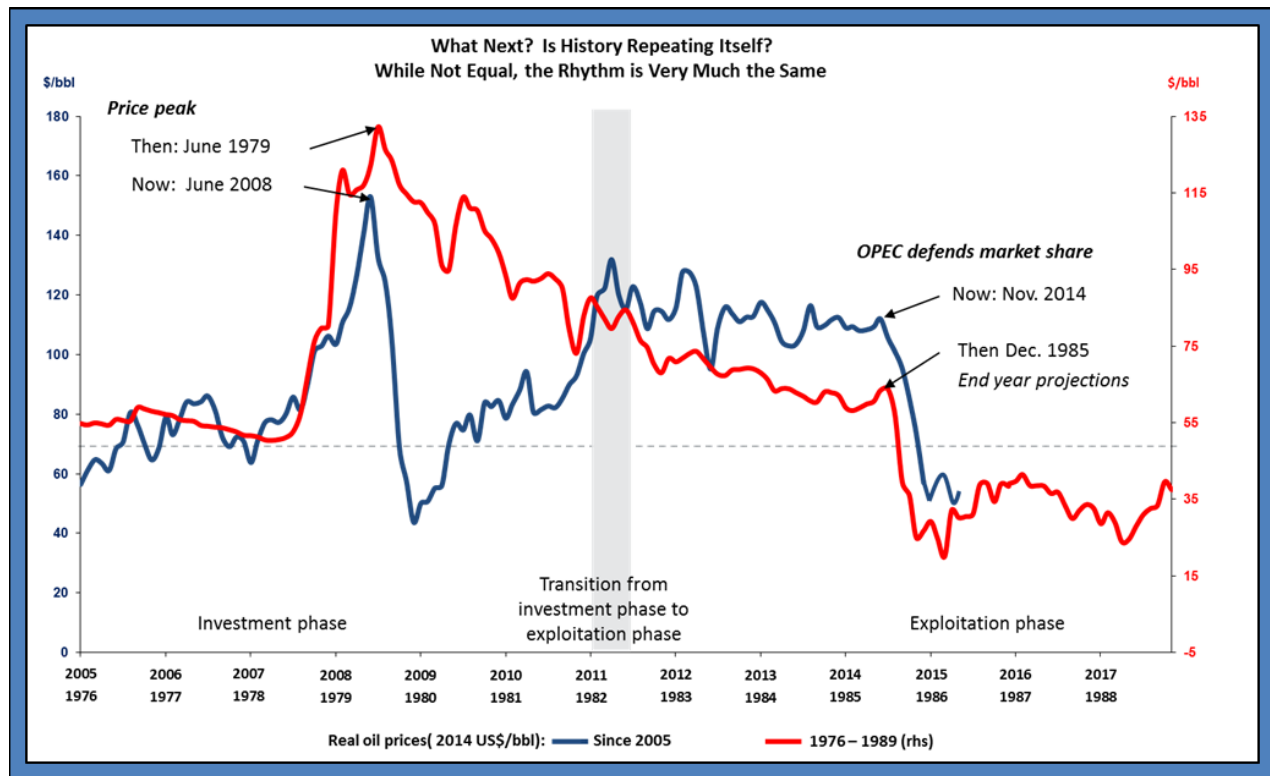
Quoting at the time from Jesse (2015b), “we [are] now witnessing [an] Oil (Price) Regime Change, the first one since 1982 when OPEC introduced a system of quotas, and Saudi Arabia subsequently decided in 1986 to defend market share (and raise production) ... [to] halt non-OPEC supply growth and stimulate demand. Even today, the market has still not fully understood the message from Saudi Arabia in the past few months.” In addition, we noted in Jesse (2015a) that the late 1990s period was a good proxy for comparing what we could expect in the coming years. Examining the shifts of the futures curve in the late 1990s when the price of oil dropped to \$10/bbl, a stylized pattern in the sell-off and subsequent recovery of spot and long-dated oil prices emerges. When oil prices were trading at \$26/bbl in January 1997, the oil futures curve was in a strong backwardation. A year later, prices dropped to \$18/bbl as supply and demand factors became misaligned, and the futures curve turned into a mild contango. This was basically repeated between May and October 2014 when the sell-off took place in an orderly manner.

In the next phase of the analogy, in July 1998 the spot price sharply dropped to below \$12/bbl, and the futures curve was pushed into an extremely deep contango. Importantly, falling spot prices, a futures curve in contango, and rising inventories are all symptoms of the same fundamental market weakness. Not much later, the back end of the curve also collapsed as long-dated prices began to fall. Even after spot prices had troughed, it would then take several quarters before supply and consumption would fully adjust. And indeed, it took the full following year to see a bit of a recovery with the curve still in contango. Only after the turn of the century did the curve trade in backwardation and oil prices started to rise. These market signals indicated a normalization of the oil market and an adjustment to a new equilibrium. At that time, it also introduced a new phase in the oil cycle, out of the “exploitation phase” of 1982-2001 and into the “investment phase” of 2001-2013.

A historical analogy, overlaying past oil market action with recent oil price trends, is illustrated in Figure 2 on the next page.



Figure 2



Graph based on Goldman Sachs Global Macro Research (2015).

The sharp drop in the U.S. oil rig count from a peak of 1,112 horizontal oil rigs to 800 between October 2014 and February 2015 triggered large rallies in oil prices. But this rig flexibility and associated cost deflation, along with both significant producer hedging that had occurred during these price rallies and the accompanying wave of equity issuance, raised the risk that the U.S. production slowdown would be delayed. Moreover, productivity gains were expected to accelerate in a lower price environment, as producers started to concentrate on drilling the most prolific resources only, while seeking to minimize costs through efficiency gains and lower services costs. Oil prices needed to remain lower in the coming quarters in order for the announced capital expenditure (“capex”) guidance and rig reduction to materialize into sufficiently lower production growth. More precisely, as capital (available to U.S. shale producers) was the new margin of adjustment, oil prices had to remain lower for longer to keep capital sidelined and allow the rebalancing process to occur uninterrupted.

Outside the U.S., oil producers responded strongly to the fall in oil prices with the most aggressive capex cuts the industry had seen since the 1980s. In Jesse (2015a), we introduced the “Triple 20% Rule for Oil”: a -20% reduction in capex spent by the international oil companies in 2015 and 2016; a -20% reduction in unit costs throughout the value chain, and at least 20% overcapacity in oil services equipment and manpower. The reactions to this prediction were fiercely negative, but in hindsight, this prediction was still too conservative. It was expected that these capex cuts would flow to production, with U.S. shale oil growth set to slow markedly in 2H2015. In addition, the lower spend in





predominantly mature offshore regions around the world and the cancelling of new projects was expected to increase the risk of rising decline rates and the emergence of a supply gap in the near future. However, just as U.S. activity was quick to respond to low oil prices, U.S. producers were increasingly primed for a recovery, which was seen as a likely cap on an oil price recovery. At the same time, warnings came out that U.S. inventories would continue to build at a rapid pace, and OECD inventories would also start to build over the coming months. And indeed, U.S. crude oil inventories had already increased by 100 million barrels to 490 million barrels by March 2015. But later in 2H2015, it was expected that this trend would gradually reverse as the market would reach a new normal. Indeed, in April 2015 it was expected that U.S. crude oil inventories would peak in that month followed by average monthly draws of about 350 thousand b/d during the summer. This was based on the Brent 24-month time spreads, which had substantially narrowed, and were pricing in a meaningful draw in inventories. In addition, producers' focus on high grading, productivity gains and shorter drilling times continued, leading to an expectation that while U.S. Lower-48 production would likely peak in April, it would start rising again before the end of the year with a 170 thousand b/d quarter-over-quarter gain in 4Q2015, and a 550 thousand b/d year-over-year gain in 2016. And indeed, the price rally derailed the market rebalancing. Higher prices settling above \$60/bbl led U.S. producers to ramp up activity, drawing down a large well backlog and also to hedge, given improved returns with costs down by already 20%. Meanwhile OPEC announced after its June 2015 Ministerial meeting that it would maintain its 30 mb/d production target. The OPEC press conference, though, did not feature commitments for enforceability or country quotas (which had already been abandoned in 2011.) This decision was in line with market analysts' consensus expectations, with higher OPEC production forthcoming in the months ahead. In fact, analysts forecasted that Saudi Arabia and other low-cost producers would continue to increase output as this was seen as the next logical step for maximizing revenues in the face of shale oil's scalability.

A strong consensus was developing that OPEC should grow production to its capacity, as shale short-cycle production had created a competitive oil market where a cartel could no longer exist. Importantly, the oil market had already moved from the investment phase to the next exploitation phase due to (a) the return of "Cheap Oil" growth in Iraq in 2010 and Iran in 2015, (b) the giant "Medium-priced Oil" discoveries that were made offshore Brazil since 2007 and that were now being developed, and (c) the swift move from "Most Expensive Oil" U.S. shale oil to "Medium-priced Oil" category, having made all other "Most Expensive Oil" prospects obsolete. While the "Most Expensive Oil" developments drove the price to all-time highs in the 2000s, and allowed the low-cost Middle Eastern producers to constrain production growth in order to maximize value from high prices, this time the merit-order was prevailing. And as long as "Cheap Oil" and "Medium-priced Oil" could meet demand, there was no need to sanction and develop any of the "Most Expensive Oil" projects, and the marginal barrel would be determined where the new equilibrium was found. In 2015, this equilibrium was found in U.S. shale oil, which was effectively seen as the new swing producer and as was further explained in [Till and Jesse \(2016\)](#). This also left the major oil companies with a lot of "Most Expensive Oil" projects in their portfolios. They had no alternatives but (a) to cancel their most expensive developments not yet sanctioned, (b) to reengineer their slightly cheaper ones so that they would fall in the "Medium-priced Oil" category and could compete with U.S. shale, and (c) to sell and restructure their overall portfolios to raise money needed for their transition.



Moreover, given that the companies were hit hard by their legacy projects, built when oil prices were more than \$100 per barrel, these majors – and actually the oil industry as a whole – were not earning their cost of capital. But commodity markets are not priced at legacy fixed costs; instead pricing is only about today's cost to bring on a marginal barrel. Hence, the major oil companies focused on restoring their balance sheets instead of sanctioning new projects. Only after balance sheet restoration is completed and return-on-average-capital-employed (ROACE) has materially improved, could one expect more activity in new oil production via the major oil companies. Meanwhile, these companies banked on production growth from fields that were sanctioned before 2014 and were still coming on-stream or were in the ramp-up phase. But even with this calculus, these legacy projects would be expected to eventually plateau in their oil production and would start showing declines, and a supply gap would thereby emerge. Taking this picture into account, since 2015 industry analysts have formed into two camps. One camp strongly believes that prices would move back again to \$75 to \$90/bbl before the turn of the decade. This view is based on the opinion that the severe capex cuts would create a gap that could not be filled by “Cheap Oil” from the Middle East and “Medium-priced Oil” from Brazil, U.S. and Russia alone. Simultaneously, bank analysts such as at Citi and Goldman Sachs led the other camp in 2015 with an oil price forecast for the remaining part of this decade set by the marginal cost of U.S. shale oil. So far, the latter scenario seems to have won out, but the former have not given up, perhaps only postponing their prediction date.

Besides the fundamental drivers as described above, it is also important to look to short-cycle price dynamics within the financial markets. One could argue that with the withdrawal of Saudi Arabia as the central bank of oil, price formation has become more short-term driven, erratic and unpredictable, having resulted in more self-defeating rallies and price cycles than ever. Moreover, it is important to note that shale oil operates at the margin of global oil supply and is highly sensitive to price. The interaction between physical and financial markets has also changed due to the arrival of shale oil, which in its current role is quite a dominant force. The financial world of oil is highly concentrated with a relatively small number of influential players, the majority based in the U.S. and not (well) known outside the oil trading community. This sensitivity (of shale producers to price) has translated into active positioning on NYMEX and ICE, the premier oil futures market for WTI and Brent respectively. In line with swings in positioning, oil prices moved up and down between the low \$30s and low \$60s in 2015.

In the last week of August 2015, one of the largest price spikes in recent years took place in a matter of days. Market players not only saw a further deterioration in fundamentals in the weeks before the spike, but were also decreasing their confidence in a quick rebound in prices and started to recognize that the rebalancing of supply and demand would likely prove to be far more difficult than was previously priced into the market. A lower-for-longer picture was emerging, with risks substantially skewed to the downside. Between the middle of June and end of August prices sharply dropped, first to \$38/bbl, but then unexpectedly recovered to \$49/bbl in the space of less than a week, before gyrating around the mid \$40s in September, and later to further fall to the high \$30s by year-end. At first sight, the jump of more than 27 percent in U.S. crude prices to \$49/bbl in three trading days late in August could not be explained by fundamentals. Far more important was the unusually large concentration of short derivatives positions in U.S. crude held by hedge funds. Starting in the middle of June, hedge funds applied an increasingly bearish filter to market news, emphasizing bearish developments in supply



and demand while minimizing bullish ones. As more and more hedge funds established larger and larger short positions, prices fell, seeming to validate their bearish expectations. Large concentrations of hedge fund long or short positions have at times preceded a sharp reversal in prices, as also happened in March that year, when an unusual concentration of short positions preceded a sharp \$18 rally.

Hedge funds and other money managers held short futures and options positions in the main U.S. crude markets equivalent to -157 million barrels of oil at the end of trading on Tuesday, August 25, two days before the rally began, and almost three times greater than had been the case two months previously, when they stood at just -56 million barrels. The number of hedge funds with reportable short positions stood at 61 with the average position at 2.6 million barrels. With so many hedge funds heavily committed to a strategy that relied on a further decline in prices, any factor that caused the market to start rising, however insignificant, had the potential to start a race to cover short positions. In a complex system, a small trigger can result in an outsized movement in prices through positive feedback and a cascade effect. And that was exactly what happened during the last week in August 2015.

In the latter part of 2015, it became increasingly clear that supply was still too strong due to U.S. productivity gains and legacy surprises, notably from regions such as Russia and the North Sea, with the biggest from OPEC, which was producing 2 mb/d above their 30 million target.

On the U.S. side, this all occurred despite the fact that production had started to fall as the rig count reduction started to bite. In April 2015, U.S. oil production reached its latest new peak of 9.4 million b/d (with the U.S. Lower-48 producing 7.5 mb/d). As a result, the expected inventory draw, foreseen for 2H2015 only a couple of months before, was no longer valid. Instead, analysts were seeing inventories building further out over 2H2015 and into 2016. The oil price forecasts were lowered to \$40/bbl WTI for the next six months and \$45 for the year on average, keeping financial pressure on producers and cutting off long-lead projects. And indeed, the path of price declines accelerated towards the end of 2015. Lower for even longer became a fact although the forecasts were still for \$60 WTI for 2017. The global oil market had become heavily oversupplied as production was 3 mb/d higher than a year previous, with a market imbalance of more than 2 mb/d. This resulted in a rapid, and counter-seasonal stock build around the world, nudging in the direction of 450 million barrels of crude oil in the U.S. alone, and about 140 million barrels higher than the 10-year median. Likewise, OECD crude inventories had shown a substantial increase during 2015, growing to 1.2 trillion barrels. It became increasingly clear that there was no requirement for U.S. shale oil to grow until 2017. Only by then would supply and demand likely find a balance, but even that would not mean a sharp rebound in prices, as many other factors could weigh on prices. OPEC announced on December 4, 2015 that the cartel would aim to keep production near existing levels (31.8 mb/d), effectively setting aside its production ceiling of 30 million b/d, setting the stage for a further fall in oil prices in early 2016.

## Conclusion

In Part 2 of this series, we will continue providing a historical record of the events and analyses of the oil markets, focusing on 2016 through the present. We will also summarize the results of a full field-by-field study for 72 oil producing countries, which JOSCO Energy Finance and Strategy Consultancy carried out in conjunction with The Netherlands' Clingendael International Energy Programme. In addition, Part 2



will examine how long the new Oil Order may stay with us and will also provide insights on the key drivers that will plausibly determine oil prices in the 2020s.

In the meantime, the following is what we consider are the important factors for the oil market in 2018: (1) whether there will be a further decline in commercial crude inventories; (2) what the decisions are regarding extending the production cuts by ROPEC (Russia and OPEC) and the tapering thereof; (3) how aggressive U.S. shale producers will be in drilling new wells and bringing them into production; (4) how far U.S. shale producers will be allowed by investors and capital markets to spend beyond their means; (5) what will happen with cost inflation versus further efficiency improvements in 2018; (6) how influential the return of geopolitical risk will be in oil price formation; and (7) from a macroeconomic point of view, how rising interest rates might impact the state of the economy and the demand for oil. Altogether these factors have made the oil market even more fragile, both from a fundamental and from a financial and geopolitical point of view.

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## Endnote

This digest article is based on bank and industry research reports as well as analyses from the EIA and IEA.

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## Author Biography

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Jan-Hein Jesse has been active in the oil and gas industry since 1980. Mr. Jesse is also an independent director and advisor of Centerbridge Partners (USA, UK) and AT Capital (Singapore) as well as a non-executive board member of HelloFlex Group (The Netherlands). He is the former head of Energy Finance at ING Bank, a former senior manager Mergers & Acquisitions at Shell, and the former CFO of Heerema Marine Contractors. He is an expert for the International Energy Agency, a visiting fellow of Clingendael International Energy Programme (CIEP, The Netherlands), and a member of the Chief Economic Roundtable Group at the Ministry of Economic Affairs of The Netherlands. He lives in Amsterdam.



Mr. Jesse's involvement with the J.P. Morgan Center for Commodities (JPMCC) at the University of Colorado Denver Business School not only includes his membership in the Editorial Advisory Board of the *GCARD*, but also his participation in the JPMCC's Knowledge Exchange lecture series in 2016. Mr. Jesse previewed some of the work featured in this digest article during his talk at the JPMCC on "the strategic impact of shale and renewables and gaining confidence in higher oil prices."