RBC Capital Markets

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2018 Oil Strategy Outlook: The Battle for Balance

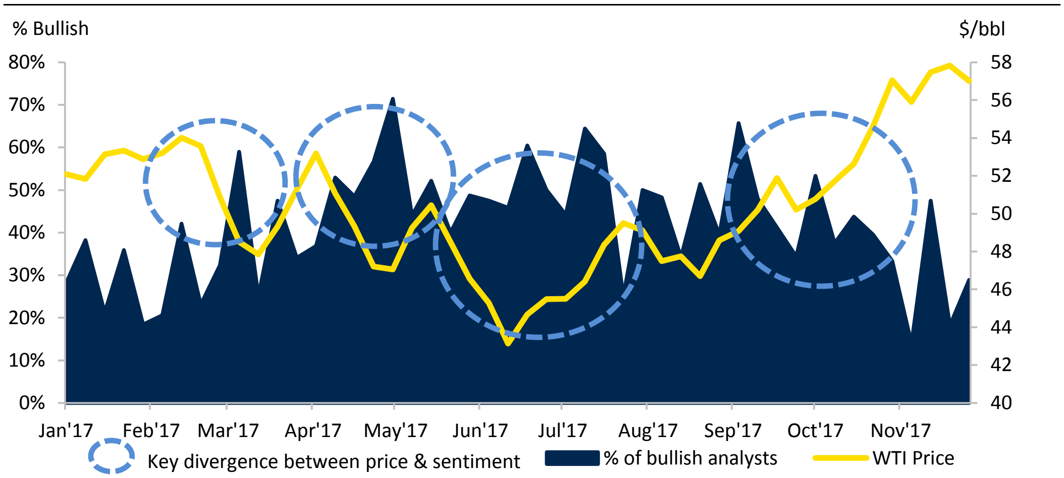
RBC Capital Markets, LLC
Michael Tran
Commodity Strategist
(212) 266-4020
michael.tran@rbccm.com

Helima Croft
Global Head of Commodity Strategy
(212) 618-7798
helima.croft@rbccm.com

Christopher Louney
Commodity Strategist
(212) 437-1925
christopher.louney@rbccm.com

- While largely range-bound relative to the volatile swings seen in preceding years, oil price action was often trendless and, until recently, catatonic for much of 2017 despite the improving fundamental backdrop. The herd mentality remains fiercely strong, making investor positioning arguably more influential than market fundamentals at times.
- Prices will ebb and flow over the coming months, but our conviction supports the notion of a rising price floor that is likely to limit potential risk to the downside. We view dips as key buying opportunities given the firming fundamental framework.
- We are revising our 2018 average price forecast for WTI to $58/bbl (from $53/bbl) while Brent increases to an average of $62.30/bbl (from $55.50/bbl). While we see prices as largely range-bound, next year is fraught with potential "gap" risk given that many variables have upward skew potential.
- One can argue that many of the variable risks present counterweights to a market that is widely expected to reach storage equilibrium next year—the bear US shale story and the bull Venezuela development are two variables, for example, that can make for disproportionate and lumpy price action over the course of 2018. We also highlight several other visible risks with variable outcomes to watch for in the year ahead.
- With a tightening fundamental backdrop and a return to normalized stockpiles in sight, the logical next question is: What is the leading indicator to watch as a gauge of the broad health of the oil market? Spoiler alert: The Atlantic Basin.
- While our West to East rebalancing thesis remains in motion, the global market is having difficulty simultaneously soaking up both the Atlantic Basin crudes and US barrels. The fungible nature of these barrels has left global balances in a cannibalizing position.
- The US shale impact is now encroaching on unchartered territory. Until recently, US barrels never competed head on with global crudes outside the US Gulf. Previously, the shale phenomenon had localized impact with a global ripple effect. The US production boom has redrawn the global crude flow map and has wide-ranging implications for how we think about the future of the global oil trade.
- Despite years of dominating Asian market share, OPEC is no longer benefiting from home field advantage. The bottom line is that US crude exports are disrupting the historical rules of thumb as it pertains to logistics and the physical movement of global oil.

Figure 1: Bloomberg Weekly Analyst Sentiment Survey vs. WTI Spot Price



Source: RBC Capital Markets, Bloomberg

All values in USD unless otherwise noted.

Priced as of prior trading day's market close, ET (unless otherwise stated).

For Required Conflicts Disclosures, please see page 16.

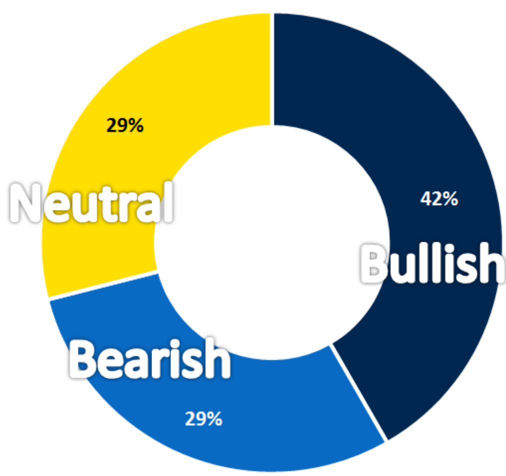
Oil Strategy: The Battle for Balance

Market sentiment remains binary and the herd mentality remains fiercely strong

Wisdom of Crowds?

It has been a tricky year for oil market participants. While largely range-bound relative to the wild volatile swings seen in preceding years, price action was often trendless and, until recently, catatonic for much of 2017 despite the improving fundamental backdrop. The herd mentality remains fiercely strong, which makes investor positioning arguably more influential than market fundamentals at times. The influx of tourist traders in the space means that prices can dislocate from fundamentals for longer cycles today than historically. For example, Bloomberg conducts a simple weekly poll of some 40 oil analysts and traders with the goal of gauging market sentiment from a collection of dedicated global energy professionals. The single-question poll solicits input on whether the oil price outlook is bullish, bearish, or neutral. On a year-to-date basis, 42% of the sample has been bullish, with the remainder almost evenly split between bearish and neutral. While directionally bullish, on average this year, group sentiment gyrated materially from week to week, often diametrically opposed to subsequent price movement.

Figure 2: Bloomberg Weekly Oil Sentiment Survey, YTD Average



Source: RBC Capital Markets, Bloomberg

Prices can disconnect from market fundamentals for longer periods of time than historically has been the case

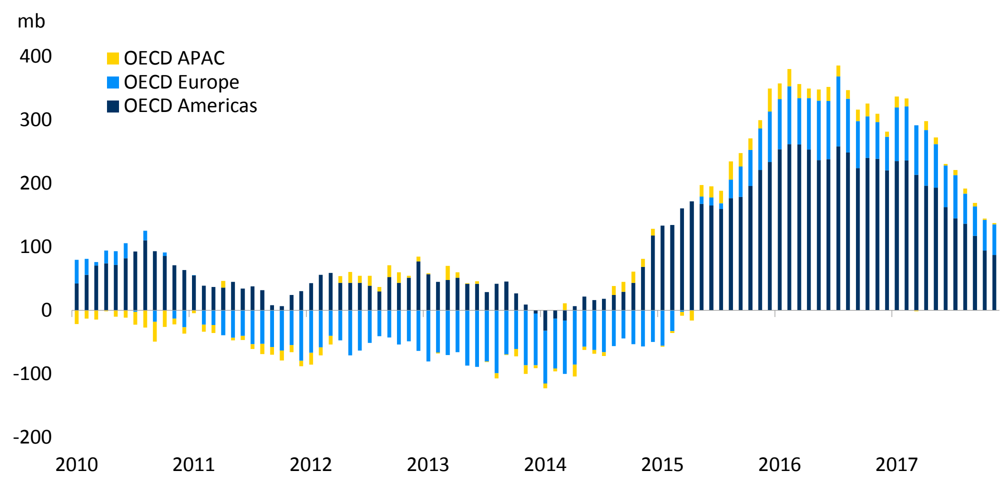
Figure 1 highlights several distinct instances in which oil prices moved in direct contrast to the market sentiment among the polled energy specialists. For example, one can argue that global fundamentals turned the corner late in the spring and improved markedly throughout the summer. The bullish cohort reached peak levels in mid-May when more than 70% of participants were constructive, but prices plunged the same week and subsequently tumbled to the lowest level of the year several weeks later. The opposite was true in mid-September when sentiment eroded throughout the subsequent months before bottoming, with only 14% of the group bullish leading into the OPEC meeting.

To be fair, the anecdotal survey is a snapshot of near-term sentiment rather than an official price forecast, but the frequent divergence raises several questions: Is market consensus lying to us? Does sentiment among tourist traders matter more than a fundamentally driven outlook? Does the former have outsized near-term influence on prices? Have recurring faulty price recoveries de-sensitized energy specialists?

Investor positioning leaves room for pause, but global fundamentals remain firm

Dedicated energy analysts and traders track different market indicators than non-energy specialists. As has been the case during several occasions over recent years, fundamentalists may often be early on calls if balances send firm fundamental signals, but such a view may not necessarily be reflected in prices until indicators reach the mainstream media and are digested by investment generalists. In addition to modeling supply and demand, specialists often have to consider the actions of the broader crowd to ensure that views are immediately actionable and can be monetized. One can argue that being early is the same as being wrong given the fleeting nature of investment capital, but the convergence between price and fundamentals is now often realized over longer cycles than was the case previously.

Figure 3: OECD Oil Stocks – Surplus to Current Five-Year Average



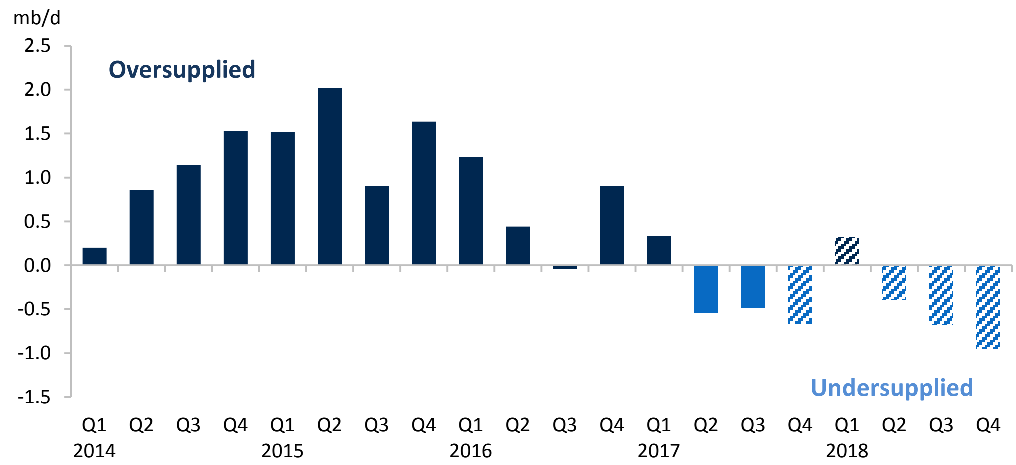
Source: RBC Capital Markets, EIA, IEA, JODI, PAJ, Euroilstock, country and government reports

Global Oil Prices: Asymmetric Risks in 2018

Dips are to be bought, particularly as global storage shock absorbers become eradicated

Despite several premature price rallies over recent years, the drastically improved fundamental backdrop makes the recent recovery more sustainable than the previous myriad of stutter steps. While we remain cautious at current oil price levels given the pace of WTI's surge toward $60/bbl, our conviction supports the notion of a rising price floor that is likely to limit potential risk to the downside. Investor positioning remains toppy and warrants watching given that subtle shifts in sentiment can have an outsized impact on price, particularly when positioning is pushing record length. The lesson learned over recent years is that the herd mentality is strong and tourist traders cycling in and out of positions can make for violent price swings even if prices are largely embedded in a $50–65/bbl range. We view dips as key buying opportunities given the firming fundamental framework, particularly as geopolitical risk plays an increasingly large needle-moving role as global storage shock absorbers become eradicated.

Figure 4: Global Oil Supply & Demand Balance



Source: RBC Capital Markets, EIA, IEA, JODI, country and government reports

Several risks may present counterweights to a market closing in on equlibrium…

We expect inventories to return to seasonally normal levels by mid-2018 based on balances that currently suggest global stock draws of nearly 400 kb/d on average through 2018. Stocks have largely already reverted to historical levels when measured on a days of forward cover basis. One can argue that many of the variable risks present counterweights to a market that is widely expected to reach storage equilibrium next year. However, the asymmetric nature of how even visible story lines such as the bear US shale headline or the bull Venezuela demise story unfold can provide disproportionate and lumpy price action over the course of the year. While we anticipate a range-bound market trending between a low-$50 and low-$60/bbl environment for WTI, we describe 2018 as a year that is fraught with potential “gap” risk given that most risks have upward skew potential. For the year, we anticipate that WTI will average $58/bbl while Brent averages $62.30/bbl. While the concept of overtightening the market in 2018 is quietly being slipped into conversation, we believe that such an idea is premature, at least until the market acquires a better handle on US production growth potential and the intensification of developments in Venezuela.

…but the asymmetric impact from countries such as the US or Venezuela can make for choppy price action

While the recent meeting between OPEC and partners yielded few fireworks, it helped to legitimize the price rally seen over recent months. Saudi Oil Minister al-Falih continues to drive home the mantra of doing “whatever it takes” as a show of commitment to the pact. The cartel has ramped up transparency ranging from the inner mechanics behind the ongoing commitment to wrangling Nigeria and Libya to commit to production caps. This helps to eliminate frequently used bearish alibis for market naysayers. In a convoluted market proliferated by moving variables, OPEC and partners have attempted to take the uncertainty out of its oil policy and make the variable a known, known for the market. In other words, the risk event is known, with the outcome of the event also largely known. By definition, unknown, unknowns are, of course, uncertain; instead, **we focus on the foremost known, unknowns, or the key market risks for 2018.**

Figure 5: Oil Price Forecasts

Price Forecast ($/bbl)	2016					2017					2018				
	Q1	Q2	Q3	Q4	'16 Avg	*Q1*	*Q2*	*Q3*	*Q4*	*'17 Avg*	*Q1*	*Q2*	*Q3*	*Q4*	*'18 Avg*
WTI	$33.63	$45.64	$44.94	$49.29	**$43.47**	$51.78	$48.15	$48.20	*$54.50*	***$50.10***	*$54.50*	*$58.50*	*$61.00*	*$60.50*	***$58.01***
Brent	$35.21	$47.03	$46.99	$51.06	**$45.13**	$54.61	$50.79	$52.17	*$60.50*	***$53.93***	*$59.50*	*$63.25*	*$65.00*	*$64.00*	***$62.27***
WTI-Brent Spread	-$1.58	-$1.39	-$2.05	-$1.77	**-$1.66**	-$2.83	-$2.64	-$3.97	*-$6.00*	***-$3.83***	*-$5.00*	*-$4.75*	*-$4.00*	*-$3.50*	***-$4.26***

Source: RBC Capital Markets

Figure 6: Known, Unknowns (Visible Risks with Variable Outcomes) and the Impact on Price

US Production	**Outlook: Bearish.** Upside price potential remains clouded by question marks surrounding production. US producers have long suggested that short-cycle, price-elastic shale can flourish in a mid-$50 price environment. The backdrop of multi-year price highs coupled with topped-up hedges provides a license to drill, but in a way and unlikely by design, the price environment inadvertently tests the ability of US producers to deliver. With prices in a self-described sweet spot, an inability to perform within the realm of expectations would undoubtedly alter the perception of the economics of shale.
Geopolitical Risk	**Outlook: Bullish.** While the geopolitical event itself is often unknown, the price reaction to the risk will become increasingly apparent as the market's susceptibility to adverse global events increases as the global storage buffer narrows. Several recent geopolitical events have sparked rallies that previously would have generated a relatively muted response. The demise of Venezuela is well known and arguably no longer a risk, but the degree and pace at which production falters remain the key question.
OPEC Off Ramp	**Outlook: Neutral/Bullish.** Concerns regarding the off ramp for OPEC and partners surrounding production cuts and ongoing compliance remain central for a skittish market. The emphasis on the health of the broader economy sets the stage for a future pivot to a strong demand growth narrative. The future focus on meeting demand growth will alter the broad market narrative and serves as a bridge from a market currently led by a supply push to that of a demand pull without a fall-out in price.
Global Oil Demand Growth	**Outlook: Neutral/Bearish.** OECD demand peaked 10 years ago and despite recent years of relative strength, we anticipate OECD demand growth to revert back to the anemic growth rates of previous years. The US and Europe have been reasonably strong of late, and that is unlikely to change given the firm economic backdrop, but participation will be limited in the years ahead. Growth from the OECD should be viewed as an upside surprise rather than counted on to carry the load. Emerging Asia remains the bright spot and will continue to anchor global demand growth, but concentration risk remains.
Market Risk Appetite	**Outlook: Neutral.** Despite the improved fundamental outlook, market participants are taking a defensive stance as the year winds down. With toppy investor positioning, one can argue that all of the bulls are already in the trade. Where will the next buyer come from? On the flip side, balances are trending tighter and fundamentals haven't looked this strong in years. Will the turn of the calendar year bring more generalist investors back into the fold? Do the lessons learned from recent years alter how oil producers and consumers view risk management?

Source: RBC Capital Markets

Known, Unknowns (Visible Risks, Unknown Outcomes)

OPEC has attempted to make its policy a known variable…

In a market with few true known, knowns, the visible risks with variable outcomes, or known, unknowns, often provide the biggest torque to oil prices. While **geopolitical risk** can often be lumped into the unknown, unknown category, it is not necessarily the uncertainty surrounding the geopolitical event itself; instead, the market reaction to the risk will become increasingly apparent as the global surplus in inventories continue to deplete. Simply put, the event may often be unknown, but the directional price movement likely has greater certainty given that the shrinking storage buffer means that markets are increasingly susceptible to being ignited by adverse global events. This is already unfolding, as several geopolitical events over recent months have sparked rallies that previously would have generated a relatively muted response. The demise of Venezuela is well known and arguably less of a hypothetical risk and more of an unraveling actuality, but the degree, pace, and timing of production continuing to falter remain in question. It is clear that the evolving situation is bullish, but how bullish? And over what time period?

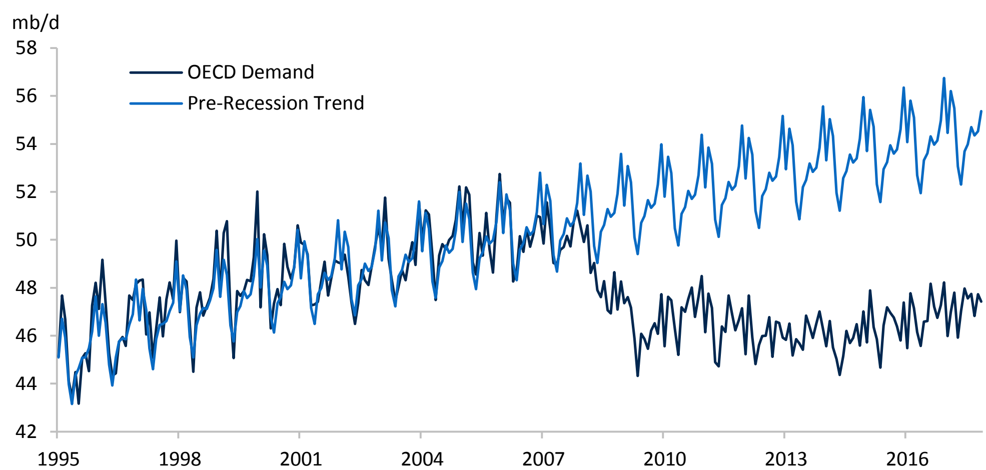
…but several other known risks come with unknown outcomes

Naturally, the biggest roadblock to prices continuing to trend higher remains clouded by question marks surrounding **US production**. While our medium-term constructive upward price trajectory remains intact, the shape and the tenor of the next cycle hang in the wait. Many view OPEC's production cut extension as an attempt by the cartel to shore up fiscal balances (among other things), but it is also important to remember that the Saudi-led cartel continues to gather data points on the elasticity of non-OPEC production growth at various price points. US producers have long suggested that short cycle, price elastic shale can flourish in a mid-$50 price environment. The backdrop of multi-year price highs coupled with topped-up hedges provides a license to drill. However, in a way and unlikely by design, the price environment inadvertently challenges US production to deliver. With prices in a self-described sweet spot, the inability to perform within the realm of expectations would undoubtedly alter the perception of the evolving economics of shale.

US production is in the hot seat and will be counted on to deliver given that prices have risen to a self-declared "sweet spot"

Market participants will continue to pontificate on both ongoing compliance levels and the **off ramp for OPEC's production cuts**, particularly as prices firm. In our view, the group's emphasis on global economic growth and the health of the broader economy help to set the stage for a future pivot to a strong demand growth narrative. In other words, OPEC and its partners will remain committed to tightening global inventories before passing the baton to resilient global oil demand growth to keep the fundamentals of the oil market balanced. The future focus on meeting demand growth will alter the broad narrative and serve as a bridge from a market currently led by a supply push to that of a demand pull without a fall-out in price.

Figure 7: Actual OECD Oil Demand vs. Pre-Recession Trend



Source: RBC Capital Markets, EIA, IEA, JODI, country and government reports

Global oil demand growth will be a tale of two distinctly different regions: OECD and Emerging Markets

Our expectation for 2018 **global demand growth** remains status quo steady near 1.3 mb/d, YoY. While the oil price collapse of recent years has provided the opportunity for demand to outperform, we expect recent growth trends to slow modestly over the coming years. To be clear, global oil demand growth has been robust and even remarkable, at times, since the oil price collapse, but we expect global oil demand to revert back to a tale of two distinctly different regions: the OECD and the Emerging Markets. Global peak oil demand remains topical in the news cycle, but it is important to remind ourselves that OECD demand peaked nearly 10 years ago during the Financial Crisis, and despite several recent years of relative outperformance, we anticipate **OECD demand** growth to revert back to the anemic growth rates of previous years. Currently, three major pillars of growth support the bulk of global consumption growth: The US, Europe, and Emerging Asia. And while the US and Europe are unlikely to experience a dramatic drop-off given the reasonably strong economic backdrop of each region, we anticipate tepid participation in the years ahead given the structural downtrend in oil demand as fuel competition, vehicle efficiency, and broad consumption patterns all carry a bearish hue. In short, we see limited demand growth stemming from OECD countries this year and firm participation from the region should be viewed as an upside surprise rather than counted on to carry the load.

Figure 8: Middle East Oil Demand, YoY Change

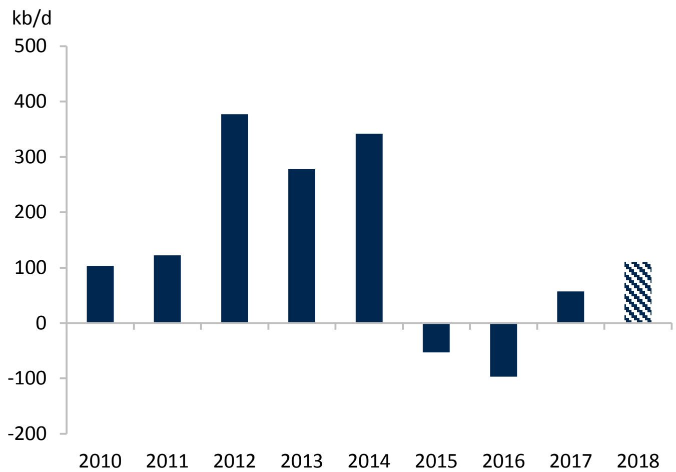
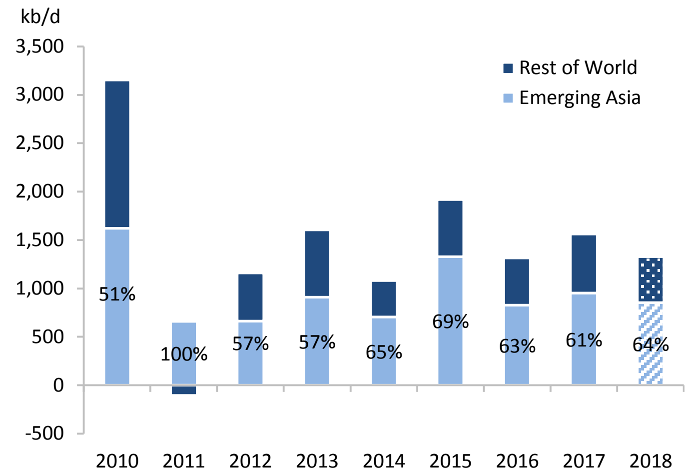


Figure 9: Global Oil Demand Growth by Region, YoY Change



Source: RBC Capital Markets, IEA, JODI, country and government sources

OECD growth should be viewed as an upside surprise rather than counted on to carry the load

Emerging Markets demand growth can ultimately be distilled down to China, India, the rest of developing Asia, and pockets of the Middle East. Middle Eastern oil demand growth averaged some 330 kb/d in the three years prior to the oil price collapse and -31 kb/d in the three years since. While far from resurgent, a higher oil price environment and a more stable domestic fiscal backdrop for the oil-producing region translates into the Middle East chipping in some 130 kb/d of demand growth next year.

Global demand has grown at an annualized clip of 1.3 mb/d over the course of this decade, with two-thirds stemming from the collection of countries in Emerging Asia. In other words, this cohort has continually delivered, but the concentration risk always presents an asymmetric risk profile to the downside. For example, transitory soft patches in places like India earlier this year can temporarily magnify the fragile nature of future demand growth.

Emerging Markets have delivered over recent years, but concentration risk remains

Traded volumes remain elevated, and investor length hovers near record highs across several benchmark contracts, yet market sentiment remains mixed and **risk appetite** is anecdotally fleeting. With toppy investor length and shorts at recent lows, one can argue that all of the bulls are already in the trade. In other words, given that prices have hovered in a high $50/bbl price environment for several months, where will the next buyer come from? Does profit-taking or length fatigue set in, particularly if prices continue to malaise at current levels over the coming weeks? Do the first signs of bearish news ignite a flurry of shorts to pile back into the trade? Do the lessons from recent years alter how oil producers and consumers view risk management? Despite the improved fundamental outlook, market participants appear to be defensive as the year winds down rather than forcing risk almost irrespective of outlook. Numerous head fakes have, at times, stymied investor appetite, but will the new fiscal year bring renewed interest or will investors be parked on the sidelines? As realized over recent years, market positioning can play a profound role in both disconnecting and converging prices to oil market fundamentals.

Figure 10: WTI Volumes Traded

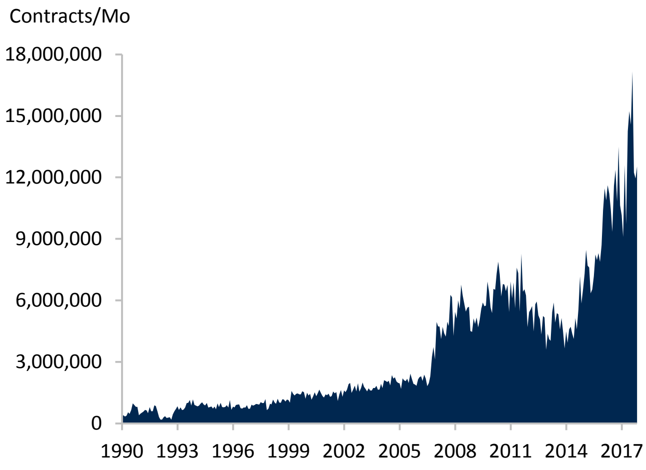
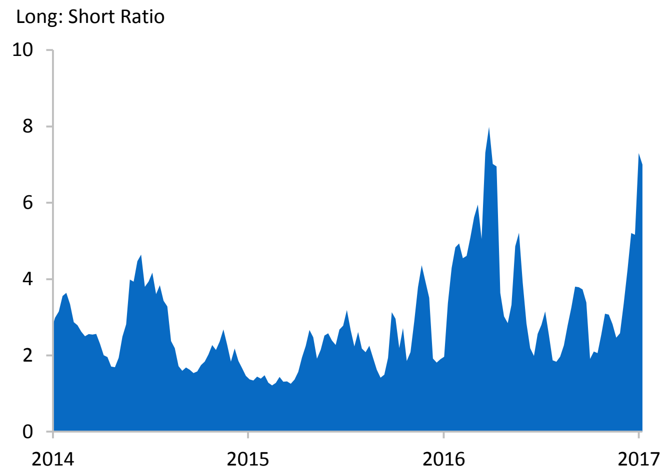


Figure 11: WTI – Managed Money Long to Short Ratio



Source: RBC Capital Markets, Bloomberg, CFTC

What to Watch in 2018: The Atlantic Basin and the Battle for Balance

If the consensus view is that fundamentals have tightened and a return to normalized stockpiles is in sight, the logical next question is: What is the leading indicator to watch as a gauge of the broad health of the market? **Spoiler alert:** The Atlantic Basin.

The leading indicator to watch as a proxy for the health of the oil market? Atlantic Basin physical oil differentials

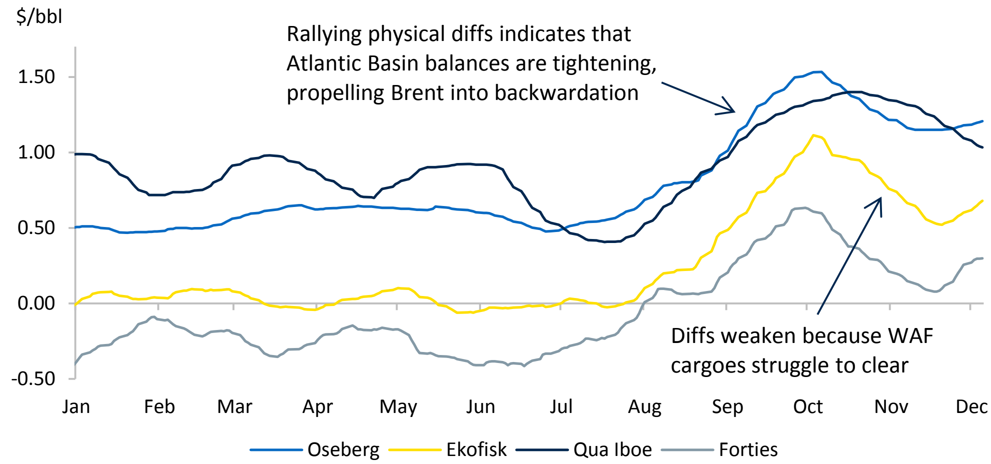
While the market remains occupied with high-level, broad-strokes scenario analysis of US production growth and the impact on global oil balances, we believe that the key data points to watch as leading indicators of the market's ability to absorb new supply are physical crude pricing differentials in the Atlantic Basin. In a normalized market, the region is the first to fall into oversupply and the last region to rebalance. These regional barrels also serve as a first mover with centralized reach to desirable demand regions in a tightening market. As such, we see it as the best physical proxy to ascertain the health of the global oil market.

US crude exports are cannibalizing WAF exports to Asia

Global fundamentals have unequivocally improved over recent months, and while the market has reached the healthiest state in several years, both market sentiment and physical balances remain fragile. Our West to East rebalancing thesis was predicated on the notion that Asia would rebalance first and ultimately serve as the global anchor in the pursuit of equilibrium by sourcing barrels from oversupplied regions. Ultimately, West African (WAF) and North Sea barrels funneling to Asia would clean up the Atlantic Basin and propel the Brent term structure into backwardation before the call on US exports increases to plug supply gaps on a global basis. This playbook remains in motion, and while global balances have firmed markedly over recent months, the fungible nature of these barrels means that the recent interplay between North American crudes and Atlantic Basin barrels leaves global balances in a potentially cannibalizing position.

Given the sequential nature of the blueprint to rebalancing supply and demand, many market participants assume that the rebalancing hurdle has been cleared once the promised land of equilibrium is reached. While we largely believe that the trend to full rebalancing is a cyclical, multi-quarter, or longer event, regions often gyrate in and out of balance over varying periods of time.

Figure 12: Atlantic Basin Physical Differential to Dated Brent Pricing



Source: RBC Capital Markets, Reuters

Physical North Sea and West African differentials have oscillated between periods of relative softness followed by bouts of strength

Asia has been balanced for much of this year, and while localized Brent-based fundamentals trended firmer late this summer, the Atlantic Basin has, at times, shown signs of softness. Physical indicators of regional balances such as Forties, Oseberg, Ekofisk, and other North Sea pricing differentials have recently waxed and waned since reaching peak backwardation "steepness" over recent weeks. WAF crudes like Qua Iboe have reflected a similarly looser regional fundamental framework. Front Brent spreads have oscillated between intermittent periods of relative softness, followed by bouts of strength over recent months. Regional physical differentials reflect the ability to find buyers and clear cargoes. Firm pricing signals barrels bid away while a trend of softer prices is indicative of a dearth of takers.

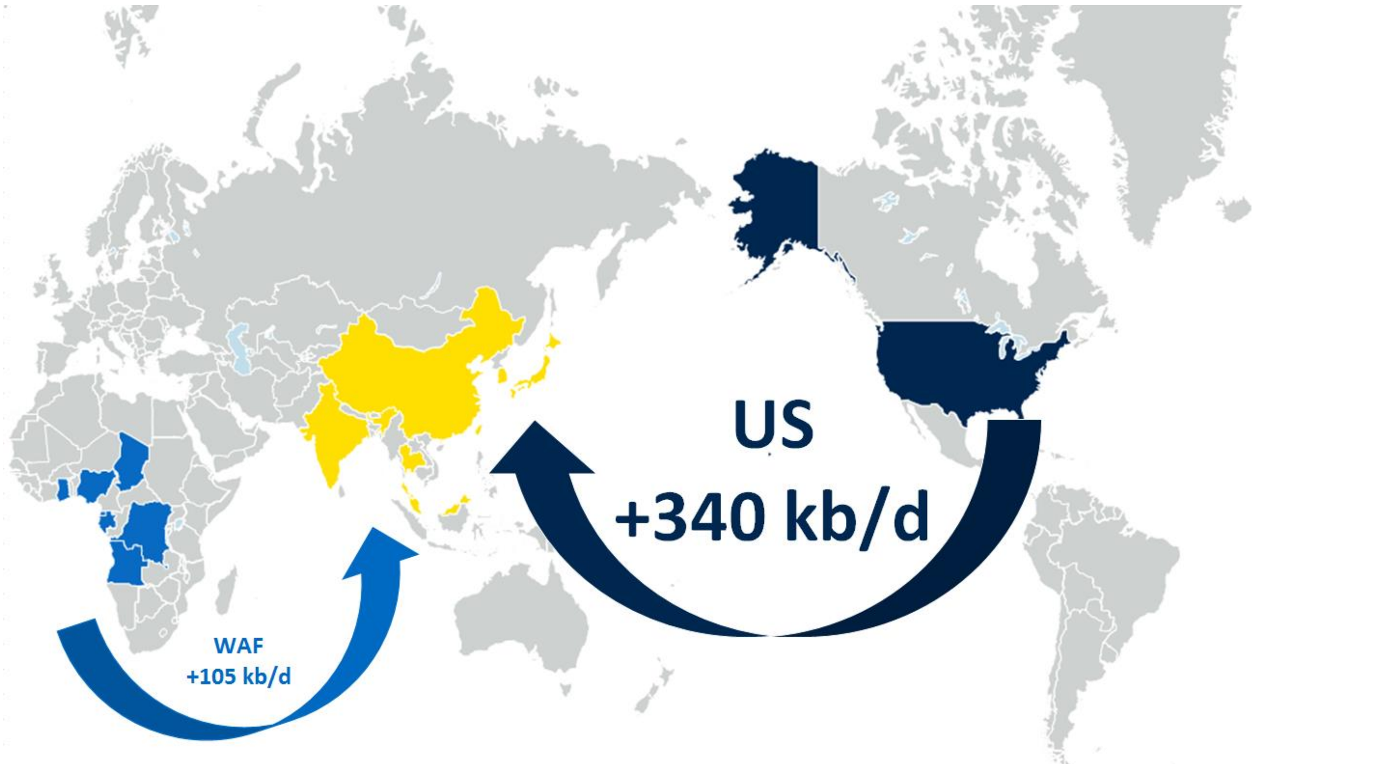
What does this mean?

The market has applauded the recent record level of US exports, and the pace of these outbound shipments sets the tempo for how quickly domestic inventories are driven back toward seasonally normal levels. However, the surge in exports can cannibalize shipments from the Atlantic Basin. This does not necessarily mean that US Gulf crudes are forcefully competing head on with North Sea and WAF barrels for European market share. In fact, the recent uptick in Suezmax tanker usage in Europe is indicative of shorter haul voyages, meaning that localized barrels continue to find buyers. Instead, the proliferation of US exports to Asia has recently been crowding North Sea and WAF crudes out of the coveted Asian battleground region. West African crude exports to Asia recently fell to the lowest point this year, leaving the Atlantic Basin with scores of unsold cargoes. This interplay between US and other Atlantic Basin barrels competing in non-domestic jurisdictions reveals several key takeaways surrounding the current state of the oil market:

Global balances remain fragile and are having difficulty absorbing both Atlantic Basin and US crude exports

First, the global market is having difficulty simultaneously soaking up both the Atlantic Basin crudes (North Sea and WAF) and US barrels. Atlantic Basin pricing differentials will act as a leading indicator of the market's ability to absorb additional barrels, particularly over the coming months as global demand hits a seasonal soft patch before picking up in the second quarter. Additionally, the market is perpetually plagued by the issue of light crudes struggling to find a home given the dearth of new incremental pockets of demand for a lighter, sweeter quality barrel. Additional exports from either side of the Atlantic ultimately reverberate the overhang of unsold crudes to a different pocket of the world. The WTI discount to Brent ebbs and flows based on current market conditions, but the arbitrage window ultimately has a built-in, self-correcting mechanism in the form of exports that will prevent the mass price dislocations seen earlier this decade.

Figure 13: US vs. West African Exports to Asia, YoY Change



Source: RBC Capital Markets, Bloomberg, EIA, IEA, Chinese Customs General Administration, country and government reports

This reinforces the necessity of OPEC's production cut extension...

Second, this reinforces the necessity of OPEC's production cut extension. Absent an extension, an added amount of barrel-on-barrel competition in Asia leads to a series of price-cutting measures to win market share. A similar regional and localized price war in 2014 led Saudi Arabia to make rounds of cuts to Official Selling Prices into Asia. This action was a primary source of what spurred the Kingdom's market share strategy, which ultimately kicked off the race to the bottom. Tangentially, the highly touted, notoriously troubled Kashagan oilfield in the Caspian Sea has missed target production in its first full year of operation. This is a fortunate break for Atlantic Basin balances given that the region would be incrementally soggier if output matched its first-phase target near 370 kb/d rather than operating at current levels of 200 kb/d. Caspian barrels are typically earmarked for the Mediterranean, which ultimately ousts North Sea and WAF barrels back into the Atlantic.

…and serves as a key reminder of how fungible and substitutable global crudes are

Third, the scores of unsold barrels can pile up quickly when regions become soggy. This serves as a key reminder of the fragile and elastic nature of oil pricing and the fungible and substitutable nature of global crude. We have long suggested that the Atlantic basin warrants watching given that we deem the region a key barometer of the health of the global oil market. This is predicated on the idea that much of the supply growth expected over the coming years from regions ranging from the US to offshore Eastern Canada to Angola and the Former Soviet Union ultimately funnels barrels directly or indirectly to compete in the Atlantic Basin. This reinforces the thesis that the region is the first to become oversupplied and typically the last to rebalance.

Most importantly, this highlights how the US shale phenomenon has gone global

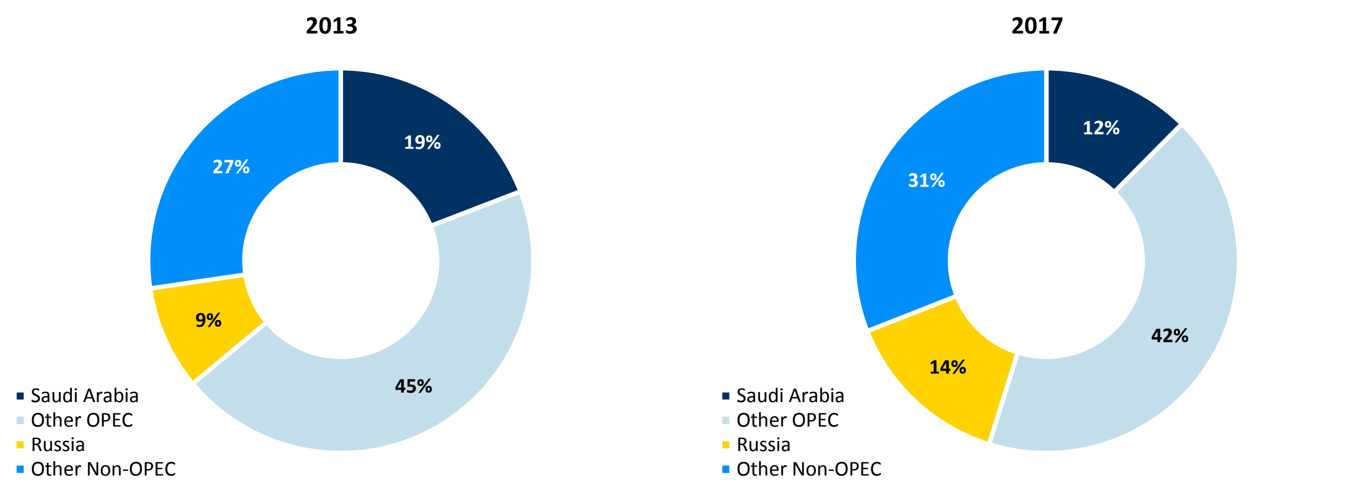
Finally, and arguably most importantly, the unleashed phenomenon of US barrels competing in key demand growth regions such as China and India underscores the growing reach of the US shale movement. The US shale impact is now encroaching on unchartered territory. Simply put, until now, US shale had never competed head on with global crudes outside the

US Gulf. The proliferation of barrels outside the US has wide-ranging implications for how we think about the future of global trade.

What to Watch in 2018: Redrawing the Global Crude Flow Map

The US shale revolution has elicited anxiety among global producers for years. Previously, the shale phenomenon had localized impact with a global ripple effect. The crowding out of foreign shipments to the US was the first step in altering trade flow by pushing displaced barrels to compete elsewhere. Until recently, shale never competed globally outside the US at significant scale. The US production boom has redrawn the global crude flow map. Notional US growth spurring anxiety among OPEC members is one thing, but American barrels penetrating key demand growth markets like Emerging Asia in growing size should be particularly concerning for the cartel and other global producers.

Figure 14: Chinese Crude Oil Imports by Region, 2017 vs. 2013



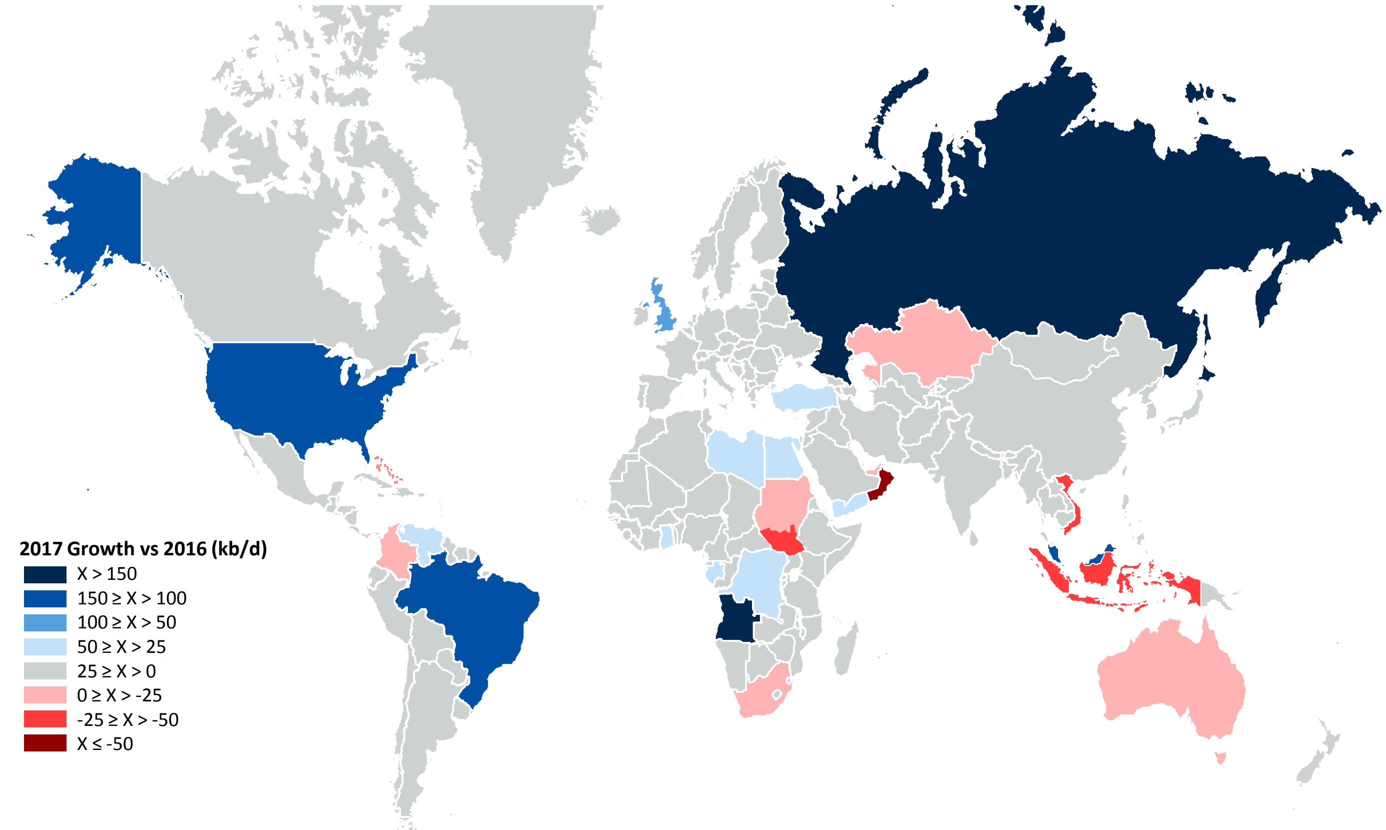
Source: RBC Capital Markets, IEA, Chinese Customs General Administration, country and government reports. *Figures may not sum to 100% due to rounding

OPEC's shifting policies have led major demand centers to source barrels from alternate and far-ranging regions

The advent of the Saudi-led market share battle three years ago kicked off at a time when US legislation still restricted the export of US crude. Today, current domestic production is several hundred thousand barrels per day higher than prior levels and the export ban has since been lifted. While the Saudi-led cartel has expressed little appetite for a return to market share for at least another year, a new war is brewing on its desired turf in Asia.

China is the world's largest and most ferocious crude importer. Inbound crude shipments have increased by a staggering level north of 900 kb/d this year. OPEC's shifting policies over the last several years, particularly given the recent production cuts, have led the Asian giant to source barrels from alternate and far-ranging sources. While OPEC remains rhetorically committed to advancing the global rebalancing process, cartel market share of the world's foremost driver of demand growth has eroded from some 64% of Chinese market share prior to the oil price collapse in 2014 to current levels sub 55%.

Figure 15: Chinese Crude Imports by Country, YoY Change



Source: RBC Capital Markets, IEA, EIA, Chinese Customs General Administration, country and government reports

A new market share battle is born and Emerging Asia is the epicenter both today and in the future

Truthfully, this is not strictly a Saudi, OPEC, or Middle East conundrum. The share of Chinese crude imports stemming from regions outside the Middle East has increased materially this year. Recent data suggest that 57% of Chinese crude imports stemmed from countries outside the Middle East, versus year-ago levels closer to half. Russia has been the primary beneficiary and expanded share from 9% to 14% over the same time frame. To be clear, shrinking market share does not necessarily translate to placing fewer barrels. Chinese crude imports have grown by nearly 2.8 mb during the same period, meaning that the pie has expanded, but simply maintaining notional market share means leaving percentage share on the table.

The recent game changer is the notion that US crudes are competing for the first time in regions outside the US. Despite years of dominating Asian market share, OPEC and the Saudis in particular are no longer benefiting from home-court advantage. The US has taken advantage of OPEC's production curtailment to advance its footprint in Asia. We anticipate that this will continue to be the case assuming favorable economics given that the US Gulf also benefits from having a wide range of crude qualities on offer to customers.

Figure 16: Chinese Crude Oil Imports, YoY Change

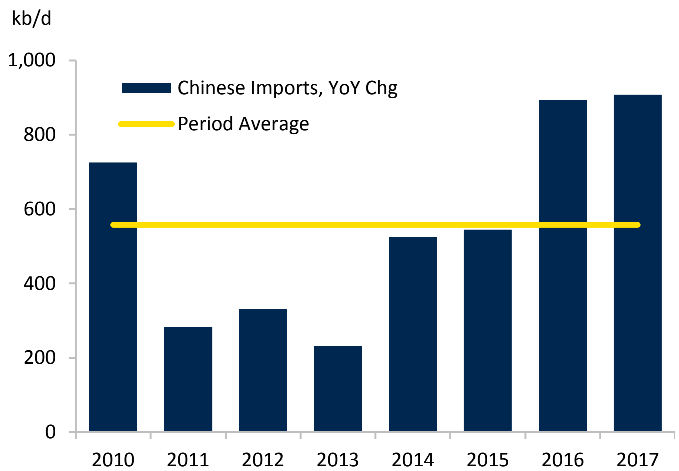
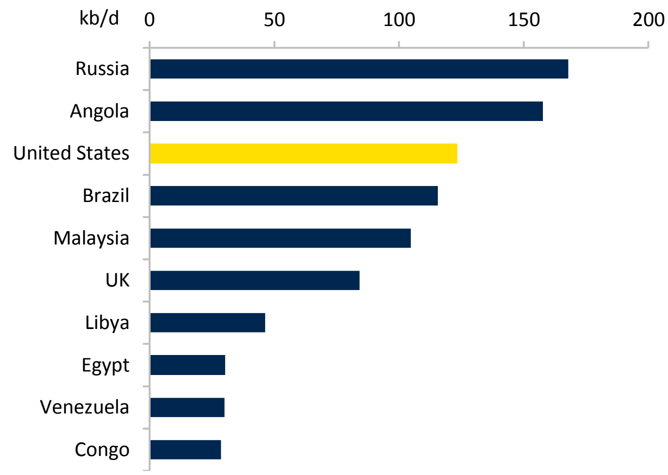


Figure 17: Crude Exports to China by Country, Largest YoY Chg



Source: RBC Capital Markets, IEA, Chinese Customs General Administration, country and government reports

While a return to the free-for-all style of market share strategy has been scrubbed from the OPEC narrative this year, party crashers like the US are competing on foreign battlegrounds. This raises the stakes for coveted Asian demand irrespective of whether it is formally coined a market share battle or not. The bottom line is that US crude exports are disrupting historical rules of thumb as it pertains to logistics and the physical movement of oil.

Figure 18: Global Supply & Demand Balance (mb/d)

Global Supply & Demand Balance			2016					2017					2018		
mb/d	Q1	Q2	Q3	Q4	YoY	Q1	Q2	Q3	Q4	YoY	Q1	Q2	Q3	Q4	YoY
Demand															
OECD	46.5	45.8	47.1	47.3	**0.6**	46.6	46.6	47.2	*47.2*	***0.2***	*46.5*	*46.5*	*47.3*	*47.3*	***0.0***
Non-OECD	48.6	49.3	49.4	49.6	**0.9**	49.6	50.9	50.7	*50.7*	***1.2***	*51.0*	*51.8*	*51.9*	*52.2*	***1.3***
Total Demand	**95.2**	**95.2**	**96.4**	**96.9**	**1.4**	**96.2**	**97.6**	**97.8**	***97.9***	***1.5***	***97.5***	***98.2***	***99.2***	***99.5***	***1.2***
Supply															
OPEC Crude	32.7	32.5	32.7	33.7	**1.0**	32.5	32.6	33.0	*32.5*	***-0.2***	*32.1*	*32.4*	*32.8*	*32.2*	***-0.3***
OPEC Other Liquids	6.7	7.0	7.0	6.8	**0.3**	6.9	6.8	7.0	*6.9*	***0.0***	*6.7*	*6.8*	*6.8*	*6.8*	***-0.1***
Non-OPEC Crude & Biofuels & Proc Gain	57.0	56.1	56.7	57.3	**-0.7**	57.2	57.5	57.3	*57.9*	***0.7***	*59.1*	*58.7*	*58.9*	*59.6*	***1.6***
Total Supply	**96.4**	**95.6**	**96.4**	**97.8**	**0.5**	**96.5**	**96.9**	**97.3**	***97.3***	***0.5***	***97.9***	***97.9***	***98.5***	***98.6***	***1.2***
Stock Change	1.2	0.4	0.0	0.9		0.3	-0.6	-0.5	*-0.7*		*0.3*	*-0.4*	*-0.7*	*-0.9*	
Call on OPEC	31.5	32.1	32.7	32.8	**1.9**	32.1	33.2	33.5	*33.2*	***0.8***	*31.7*	*32.7*	*33.5*	*33.2*	***-0.2***

Source: RBC Capital Markets, Petro-Logistics SA, IEA, EIA, JODI, company and government sources

Figure 19: Global Oil Demand (kb/d)

OECD Demand	2016				2017				2018						
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	YoY'16	YoY'17	YoY'18
US	19,869	19,795	20,240	20,087	19,829	20,209	20,203	20,254	19,955	20,289	20,452	20,297	159	126	125
Canada	2,334	2,317	2,463	2,418	2,351	2,340	2,492	2,422	2,395	2,420	2,515	2,430	11	18	39
Mexico	2,055	2,019	2,008	2,026	1,955	1,975	1,935	2,012	1,953	1,875	1,890	2,000	21	-58	-40
Total North America	**24,258**	**24,131**	**24,711**	**24,531**	**24,135**	**24,524**	**24,630**	**24,688**	**24,303**	**24,584**	**24,857**	**24,727**	**190**	**87**	**124**
OECD Europe															
Germany	2,413	2,358	2,425	2,474	2,485	2,438	2,418	2,456	2,438	2,411	2,457	2,499	50	32	2
UK	1,555	1,604	1,601	1,584	1,525	1,590	1,621	1,589	1,542	1,610	1,641	1,606	39	-5	19
Other Europe	9,726	10,042	10,498	10,234	9,879	10,327	10,652	10,275	9,931	10,310	10,642	10,316	211	158	17
Total OECD Europe	**13,694**	**14,004**	**14,524**	**14,292**	**13,889**	**14,355**	**14,691**	**14,320**	**13,911**	**14,331**	**14,740**	**14,421**	**300**	**185**	**37**
OECD APAC	**8,571**	**7,700**	**7,841**	**8,450**	**8,559**	**7,758**	**7,830**	**8,229**	**8,282**	**7,544**	**7,660**	**8,157**	**78**	**-47**	**-183**
Total OECD Demand	**46,523**	**45,835**	**47,076**	**47,273**	**46,583**	**46,637**	**47,151**	**47,237**	**46,496**	**46,459**	**47,257**	**47,305**	**568**	**225**	**-23**

Non-OECD Demand	2016				2017				2018						
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	YoY'16	YoY'17	YoY'18
South & Central America															
Argentina	739	776	779	754	748	770	776	742	732	763	762	753	-9	-3	-7
Brazil	3,021	3,071	3,133	3,071	3,007	3,047	3,167	3,099	3,025	3,093	3,170	3,111	-103	6	20
Other South & Central America	2,705	2,730	2,743	2,707	2,690	2,751	2,730	2,708	2,699	2,729	2,758	2,656	-43	-2	-9
South & Central America	**6,465**	**6,577**	**6,655**	**6,532**	**6,445**	**6,568**	**6,673**	**6,549**	**6,456**	**6,585**	**6,690**	**6,520**	**-155**	**2**	**4**
Middle East															
Iran	1,839	1,821	1,786	1,824	1,843	1,821	1,792	1,835	1,834	1,827	1,820	1,845	-19	5	9
Saudi Arabia	3,024	3,388	3,528	3,114	2,879	3,353	3,535	3,085	3,007	3,432	3,566	3,164	-150	-51	79
Other MidEast	3,006	3,194	3,386	3,185	3,196	3,290	3,421	3,271	3,318	3,435	3,618	3,401	74	102	149
Middle East	**7,869**	**8,403**	**8,700**	**8,123**	**7,918**	**8,464**	**8,748**	**8,185**	**8,087**	**8,514**	**8,896**	**8,338**	**-95**	**55**	**130**
Emerging APAC															
China	11,796	11,861	11,626	12,162	12,424	12,635	12,119	12,264	12,804	12,744	12,504	12,717	302	499	332
India	4,654	4,601	4,394	4,597	4,596	4,767	4,612	4,882	4,930	5,018	4,826	5,176	321	153	273
Other	8,370	8,409	8,322	8,396	8,546	8,797	8,618	8,835	8,925	9,029	8,973	9,274	220	325	351
Emerging APAC	**24,820**	**24,871**	**24,342**	**25,155**	**25,566**	**26,199**	**25,349**	**25,981**	**26,659**	**26,791**	**26,303**	**27,167**	**843**	**977**	**956**
Africa	**4,201**	**4,183**	**4,023**	**4,143**	**4,350**	**4,223**	**4,119**	**4,314**	**4,501**	**4,367**	**4,239**	**4,445**	**45**	**114**	**137**
Non-OECD Europe	**693**	**724**	**720**	**714**	**703**	**738**	**752**	**760**	**715**	**733**	**757**	**754**	**26**	**26**	**2**
FSU	**4,587**	**4,560**	**4,922**	**4,927**	**4,600**	**4,748**	**5,028**	**4,918**	**4,621**	**4,789**	**5,059**	**4,979**	**203**	**75**	**39**
Total Non-OECD Demand	**48,635**	**49,318**	**49,362**	**49,594**	**49,582**	**50,940**	**50,669**	**50,707**	**51,039**	**51,779**	**51,944**	**52,203**	**866**	**1,247**	**1,267**
Global Demand	**95,158**	**95,153**	**96,438**	**96,867**	**96,165**	**97,577**	**97,820**	**97,944**	**97,535**	**98,238**	**99,201**	**99,508**	**1,434**	**1,473**	**1,244**

Source: RBC Capital Markets, Petro-Logistics SA, IEA, EIA, JODI, company and government sources

Figure 20: Global Oil Supply (kb/d)

Non- OPEC Supply	2015				2016				2017				2018						
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	YoY'16	YoY'17	YoY'18
US	12,826	13,035	13,065	13,013	12,745	12,648	12,291	12,458	12,699	12,997	12,916	13,455	13,839	13,931	13,954	14,324	-449	481	995
Canada	4,562	4,040	4,436	4,503	4,617	3,864	4,573	4,826	4,925	4,481	4,771	4,807	5,081	4,853	5,170	5,152	85	276	318
Mexico	2,657	2,557	2,603	2,591	2,545	2,494	2,461	2,371	2,329	2,315	2,217	2,190	2,163	2,119	2,100	2,121	-134	-205	-137
Total North America	**20,045**	**19,632**	**20,104**	**20,107**	**19,907**	**19,006**	**19,325**	**19,655**	**19,953**	**19,793**	**19,904**	**20,452**	**21,083**	**20,903**	**21,224**	**21,597**	**-499**	**552**	**1,176**
Argentina	631	634	631	634	622	608	612	604	591	563	577	580	602	603	587	606	-21	-34	22
Brazil	2,539	2,495	2,561	2,531	2,401	2,548	2,729	2,770	2,749	2,744	2,751	2,879	2,848	2,986	2,970	3,026	81	169	177
Colombia	1,033	1,026	978	1,002	933	907	847	850	846	859	860	861	865	858	838	844	-126	-28	-5
Other South & Central America	438	413	402	412	380	384	377	377	375	373	363	371	385	382	367	375	-37	-9	7
Total South & Central America	**4,641**	**4,568**	**4,572**	**4,579**	**4,336**	**4,447**	**4,565**	**4,601**	**4,561**	**4,539**	**4,551**	**4,691**	**4,700**	**4,829**	**4,762**	**4,851**	**-103**	**98**	**200**
Norway	1,930	1,929	1,913	2,019	2,035	1,935	1,896	2,112	2,082	2,000	1,944	1,979	2,045	2,023	1,870	1,939	47	7	-32
UK	920	1,020	896	1,042	1,096	1,058	977	997	1,058	1,041	1,000	1,129	1,228	1,195	1,021	1,136	63	25	88
Other OECD Europe	570	554	555	553	514	451	473	530	516	449	490	538	502	472	558	549	-66	6	22
Total OECD Europe	**3,420**	**3,503**	**3,364**	**3,614**	**3,645**	**3,444**	**3,346**	**3,639**	**3,656**	**3,490**	**3,434**	**3,646**	**3,775**	**3,690**	**3,449**	**3,624**	**43**	**38**	**78**
Azerbaijan	874	832	852	839	853	857	823	782	776	788	757	796	821	817	782	779	-21	-50	21
Kazakhstan	1,759	1,703	1,628	1,691	1,720	1,601	1,531	1,812	1,831	1,835	1,810	1,881	2,023	2,013	1,851	1,893	-29	173	106
Russia	10,670	10,698	10,700	10,790	10,903	10,834	10,893	11,215	11,090	10,963	10,918	10,962	11,092	11,003	10,948	11,012	247	22	31
Other FSU	504	493	485	512	514	478	462	464	550	593	436	484	479	474	457	502	-19	36	-38
Total FSU	**13,807**	**13,726**	**13,665**	**13,832**	**13,990**	**13,770**	**13,709**	**14,273**	**14,247**	**14,179**	**13,921**	**14,123**	**14,415**	**14,307**	**14,038**	**14,186**	**178**	**182**	**119**
Non-OPEC Africa	**1,788**	**1,788**	**1,777**	**1,773**	**1,594**	**1,606**	**1,671**	**1,639**	**1,653**	**1,684**	**1,761**	**1,702**	**1,767**	**1,766**	**1,756**	**1,786**	**-154**	**73**	**69**
Non-OPEC Mideast	**1,319**	**1,271**	**1,250**	**1,250**	**1,251**	**1,253**	**1,270**	**1,225**	**1,242**	**1,244**	**1,232**	**1,237**	**1,295**	**1,237**	**1,254**	**1,285**	**-23**	**-11**	**29**
China	4,237	4,309	4,282	4,274	4,143	4,017	3,903	3,875	3,907	3,912	3,836	3,806	3,794	3,725	3,757	3,729	-291	-119	-114
India	872	860	865	874	854	846	850	834	866	855	854	822	858	832	842	838	-22	3	-7
Malaysia	737	710	660	697	726	708	694	674	712	687	721	692	713	701	700	688	-1	3	-3
Thailand	445	446	451	465	473	458	458	433	449	437	438	410	435	434	435	439	4	-22	2
Other Non-OPEC Asia	1,808	1,923	1,842	1,887	1,896	1,841	1,956	1,862	1,788	1,762	1,769	1,734	1,761	1,702	1,682	1,696	24	-126	-53
Total Non-OPEC APAC	**8,099**	**8,248**	**8,100**	**8,197**	**8,092**	**7,870**	**7,861**	**7,678**	**7,722**	**7,653**	**7,618**	**7,464**	**7,561**	**7,394**	**7,416**	**7,390**	**-286**	**-261**	**-174**
Processing Gains	**2,240**	**2,240**	**2,240**	**2,240**	**2,267**	**2,267**	**2,267**	**2,267**	**2,192**	**2,459**	**2,226**	**2,234**	**2,290**	**2,270**	**2,322**	**2,382**	**27**	**11**	**38**
Global Biofuels	**1,760**	**2,367**	**2,573**	**2,358**	**1,921**	**2,468**	**2,671**	**2,281**	**1,939**	**2,498**	**2,645**	**2,367**	**2,167**	**2,302**	**2,652**	**2,469**	**71**	**27**	**35**
Total Non-OPEC Supply	**57,119**	**57,343**	**57,645**	**57,950**	**57,003**	**56,131**	**56,685**	**57,258**	**57,165**	**57,539**	**57,292**	**57,916**	**59,053**	**58,698**	**58,873**	**59,570**	**-745**	**709**	**1,571**
Global Supply	**94,649**	**96,083**	**96,592**	**96,629**	**96,388**	**95,594**	**96,398**	**97,771**	**96,493**	**96,936**	**97,333**	**97,294**	**97,878**	**97,875**	**98,485**	**98,570**	**550**	**476**	**1,188**

OPEC Supply	2015				2016				2017				2018						
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	YoY'16	YoY'17	YoY'18
Algeria	1,102	1,071	1,053	1,056	1,052	1,106	1,096	1,174	1,066	1,095	1,073	1,054	1,047	1,070	1,082	1,062	37	-35	-7
Angola	1,788	1,780	1,829	1,788	1,814	1,767	1,769	1,679	1,631	1,688	1,656	1,705	1,645	1,646	1,626	1,677	-39	-87	-21
Ecuador	553	550	538	535	535	540	546	533	555	511	531	522	547	527	535	525	-6	-9	4
Equatorial Guinea	191	181	188	165	162	158	145	164	133	113	132	125	122	110	129	118	-23	-32	-6
Gabon	230	227	225	222	200	241	212	243	199	210	209	215	195	187	196	201	-2	-16	-14
Iran	2,816	2,978	2,850	2,800	3,123	3,639	3,668	3,839	3,820	3,717	3,830	3,783	3,816	3,770	3,906	3,824	706	220	41
Iraq	3,492	4,030	4,341	4,308	4,336	4,322	4,394	4,722	4,551	4,570	4,552	4,440	4,474	4,534	4,596	4,490	401	85	-5
Kuwait*	2,794	2,693	2,798	2,850	2,920	2,779	2,948	2,848	2,754	2,764	2,671	2,755	2,773	2,802	2,694	2,778	90	-138	26
Libya	347	395	357	395	317	305	322	562	672	695	959	1,082	905	848	959	993	3	476	74
Nigeria	1,773	1,720	1,733	1,789	1,709	1,411	1,200	1,479	1,350	1,448	1,691	1,548	1,448	1,554	1,641	1,533	-304	59	35
Qatar	656	642	612	646	649	645	604	649	626	610	575	544	606	656	633	600	-2	-48	35
Saudi Arabia*	9,794	10,384	10,254	9,943	10,567	10,324	10,465	10,402	9,861	10,032	9,952	9,990	9,892	10,063	10,089	9,977	346	-481	47
UAE	2,803	2,840	2,873	2,900	2,787	2,850	3,007	3,106	3,010	2,976	3,116	2,849	2,871	2,859	3,122	2,854	83	51	-62
Venezuela	2,722	2,683	2,630	2,588	2,534	2,407	2,329	2,287	2,244	2,180	2,101	1,903	1,750	1,750	1,600	1,600	-267	-282	-432
OPEC Crude Total	**31,061**	**32,172**	**32,281**	**31,983**	**32,704**	**32,493**	**32,703**	**33,688**	**32,472**	**32,609**	**33,047**	**32,513**	**32,091**	**32,375**	**32,806**	**32,233**	**1,023**	**-237**	**-284**
OPEC Other Liquids	**6,469**	**6,568**	**6,666**	**6,696**	**6,681**	**6,970**	**7,010**	**6,825**	**6,856**	**6,788**	**6,994**	**6,865**	**6,734**	**6,802**	**6,806**	**6,768**	**272**	**4**	**-98**

Source: RBC Capital Markets, Petro-Logistics SA, IEA, EIA, JODI, company and government sources. *Includes Neutral Zone

Required disclosures

Conflicts disclosures

The analyst(s) responsible for preparing this research report received compensation that is based upon various factors, including total revenues of the member companies of RBC Capital Markets and its affiliates, a portion of which are or have been generated by investment banking activities of the member companies of RBC Capital Markets and its affiliates.

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SELL [Underperform]	104	6.41	7	6.73

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