Where does each OPEC producer stand amid the “Spectrum of Pain”?

- We continue to contend that given 2018’s tightening oil market, any geopolitically driven supply disruptions would have an outsized impact versus recent years when the market was awash in crude. This necessitates classifying the risks and stacking up potential outages.

<table>
<thead>
<tr>
<th>Country</th>
<th>2017 avg</th>
<th>Last month</th>
<th>Past year</th>
<th>This year</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saudi Arabia</td>
<td>9.97</td>
<td>10.65</td>
<td>6</td>
<td>7</td>
<td>Ambitious economic reforms; confrontational foreign policy</td>
</tr>
<tr>
<td>Iraq</td>
<td>4.44</td>
<td>4.56</td>
<td>9</td>
<td>8</td>
<td>Security, economic and political challenges still persist</td>
</tr>
<tr>
<td>Iran</td>
<td>3.79</td>
<td>3.74</td>
<td>6</td>
<td>9</td>
<td>Economic gains are imperiled by sanctions snapback</td>
</tr>
<tr>
<td>UAE</td>
<td>2.91</td>
<td>2.96</td>
<td>2</td>
<td>2</td>
<td>Best in class in OPEC but high foreign policy expenditures</td>
</tr>
<tr>
<td>Kuwait</td>
<td>2.71</td>
<td>2.77</td>
<td>3</td>
<td>3</td>
<td>Financially flush but the population does not want austerity</td>
</tr>
<tr>
<td>Venezuela</td>
<td>1.94</td>
<td>1.31</td>
<td>10</td>
<td>10</td>
<td>With few economic options left, oil production is plummeting</td>
</tr>
<tr>
<td>Nigeria</td>
<td>1.71</td>
<td>1.72</td>
<td>10</td>
<td>8</td>
<td>The oil region remains restive and 2019 elections pose a key risk</td>
</tr>
<tr>
<td>Angola</td>
<td>1.66</td>
<td>1.40</td>
<td>6</td>
<td>6</td>
<td>Angola continues to face strong economic headwinds</td>
</tr>
<tr>
<td>Algeria</td>
<td>1.04</td>
<td>1.06</td>
<td>8</td>
<td>7</td>
<td>Algeria is seeking to boost investment but faces challenges</td>
</tr>
<tr>
<td>Libya</td>
<td>0.83</td>
<td>0.66</td>
<td>9</td>
<td>8</td>
<td>The country remains at risk for an unfavorable reversal of fortune</td>
</tr>
<tr>
<td>Qatar</td>
<td>0.61</td>
<td>0.62</td>
<td>2</td>
<td>6</td>
<td>Qatar has proven more resilient than expected, blockade still bites</td>
</tr>
<tr>
<td>Ecuador</td>
<td>0.53</td>
<td>0.52</td>
<td>5</td>
<td>5</td>
<td>Courting new investment but lies in the middle of our risk spectrum</td>
</tr>
<tr>
<td>Gabon</td>
<td>0.20</td>
<td>0.18</td>
<td>6</td>
<td>6</td>
<td>Low production amid increased political turmoil</td>
</tr>
</tbody>
</table>

Scale: High -> Low  

Source: Bloomberg (production data), RBC Capital Markets
The Trump Administration has cemented a hawkish shift in foreign policy

- For Iran, the US officially withdrew from the JCPOA. Some extraterritorial sanctions snapped back in early August, and another round will do so in November. With an apparent goal of taking more Iranian oil out of the market than the Obama administration, the White House has looked to Saudi Arabia to help fill the supply gap and prevent a price spike.
- Meanwhile, for Venezuela, US measures to isolate Maduro’s government with sanctions and potentially promote leadership change there have exacerbated an already steep and ongoing decline for the country. We note, however, that Robert Mugabe’s 30-year tenure in Zimbabwe serves as a cautionary tale for those who contend that economic collapse and severe social misery produce timely regime change.

Mike Pompeo (Sec. of State) and John Bolton (National Security Advisor)

- Moving CIA Director Mike Pompeo to the top diplomat spot will continue to have important implications for US policy toward Iran (Tillerson had advocated for remaining in the JCPOA as long as Iran was viewed as compliant) and Venezuela.
- The appointment of John Bolton as National Security Advisor also represents a critical factor for oil given his long-held views on key producers. It cements a hawkish shift in the Trump administration’s foreign policy.
- The re-imposition of sanctions on Iran paired with more confrontational foreign policy will seriously test the assumption that US shale can solve any global supply disruption, and we highlight potential losses below, especially given the continued decline faced by Venezuela.

<table>
<thead>
<tr>
<th>Country</th>
<th>Additional volumes at risk</th>
<th>Drivers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iran</td>
<td>Goal to take off more than Obama admin’s 1.2 mb/d in 2019</td>
<td>With the US out of the Iranian nuclear deal (Joint Comprehensive Plan of Action) and extraterritorial sanctions snapping back, barrels are ready to roll</td>
</tr>
<tr>
<td>Venezuela</td>
<td>Losses likely to reach ~1 mb/d</td>
<td>Economic decline, inflation, debt servicing, existing production declines, infrastructure, worker absenteeism, sanctions risk, general instability</td>
</tr>
<tr>
<td>Libya</td>
<td>Reasonable risk of 250-300 kb/d, episodically 450-850 kb/d</td>
<td>Political fault lines, security challenges, multiple governments, armed militants, terror threats, elections, infrastructure risks, institutional challenges</td>
</tr>
<tr>
<td>Nigeria</td>
<td>Reasonable risk of ~250 kb/d episodically</td>
<td>Militants in the Niger Delta are once again threatening disruptions, crude theft and pipeline vandalism is increasing, raising the specter of more sophisticated attacks</td>
</tr>
<tr>
<td>Iraq</td>
<td>Reasonably 120 kb/d, tensions in the South could materially raise volumes</td>
<td>Protests and tensions in the South, the relationship between Baghdad and Erbil, disagreements over issues pertinent to oil production and transport, and election fallout</td>
</tr>
</tbody>
</table>

*Source: Wikimedia Commons (photos), RBC Capital Markets*
OPEC: Reality Bites

Current price levels are still challenging for OPEC

2018 fiscal breakeven estimates ($/bbl)

Many grappled with low oil prices through debt issuance

GCC bond & sukuk issuance ($bln)

Source: IMF, SWFI, News and government sources, Bloomberg, MEES, RBC Capital Markets
OPEC and Russia: Table for Two

Go it alone?

- After the somewhat ambiguous outcome of the last meeting, Saudi Arabia and Russia have reasserted control of the narrative and added barrels to the market.
- This seems to prove that they are willing to fully embrace their role as co-regulators of the oil market and have little problem overriding the opinions of the rest of the sovereign producers.
- On multiple occasions, the Saudi oil minister Khalid al Falih took to the stage to decisively signal the Kingdom’s determination to put additional barrels on the market and a willingness to go it alone if necessary.
- As the Trump-supported move to add barrels to the market progresses, the Vienna alliance appears increasingly strained in our view.

Russia has been an active participant in the OPEC/non-OPEC deal

Source: Bloomberg, IEA, company and government sources, OPEC, RBC Capital Markets

Photos from OPEC meetings
Saudi Arabia: Crown Prince Mohammad bin Salman Continues His Quest to Remake the Kingdom

Since the death of King Abdullah, much has changed in Saudi Arabia

Succession of the Saudi Throne

- King Abdul Aziz ibn Saud (until '53)
- King Khaled (until '82)
- King Fahd (until '05)
- King Abdullah (until '15)
- King Salman (current)

There has been an unprecedented consolidation of power under MBS

Mohammad bin Salman (top)
Crown Prince

Khalid Al-Falih (right)
Minister of Energy, Industry and Mineral Resources

King Salman (left)
King of Saudi Arabia

Muhammad bin Nayef (bottom)
Former Crown Prince (until June 2017)

Proposed reforms are ambitious but not necessarily unprecedented

Saudi Arabian crude production

Source: Wikimedia Commons (pictures), Bloomberg, country and government sources, RBC Capital Markets
Rest of GCC: Mostly Well Positioned

- **United Arab Emirates**
  - The Emirati oil minister, Suhail Mazroui, has repeatedly stated that he would like to use his OPEC presidency to craft a charter arrangement to ensure further cooperation among the Vienna alliance producers.
  - UAE was one of the countries best positioned to ride out the low oil price storm given its small population, flush sovereign wealth funds, more diversified economy, and having adopted adjustment measures.

- **Kuwait**
  - Few citizens, an ample sovereign wealth fund, and adopting some adjustment measures.

- **Qatar**
  - One of the wealthiest nations in the world on a per-capita basis and proving mostly resilient in its blockade situation.
  - We also note that Qatar is more of an LNG exporter than it is a crude exporter; in fact, it is the smallest in this group in terms of oil exports.

- The group as a whole would obviously face increased borrowing costs if oil were to fall back to its lows and influence their credit ratings.

- Saudi Arabia and most of the rest of the GCC are pleased with the policies of the Trump administration, particularly with the tougher line and sanctions on Iran and the downgraded emphasis on democracy and human rights.

**Source:** Bloomberg, EIA, Al Jazeera, RBC Capital Markets
Iraq: Post-Election Uncertainty

A time of political change is occurring

- Iraq's oil producing region has been roiled by a wave of protests over the summer (beginning in Basra) and they have potential to put significant volumes at risk if the unrest escalates.
- The protests have been fueled by a profound sense of grievance over the failure of the central government to provide jobs and essential services, including electricity and clean water to the region that generates the wealth for the country. Prime Minister Abadi visited the region and pledged additional development assistance, but it is hard to say whether this will turn the tide.
- At the same time, the country is experiencing a shakeup of the political landscape since Shiite cleric Muqtada al Sadr’s political bloc won a surprise victory in May’s parliamentary election. He has repositioned himself, but questions remain.

Muqtada al Sadr’s bloc won the most additional seats in the 2018 election

Source: Bloomberg, Wikipedia, RBC Capital Markets
Venezuela: One Direction

Venezuela is past the brink and faces a severe economic and social crisis

- The recent drone attack on Maduro serves as yet another reminder of the chaos engulfing the most distressed petro-state. Recent arrests have prompted some to believe that Maduro may be ousted by a military coup. Even in that case, though, any economic recovery and return of oil production would likely be very protracted given the depths of the crisis. Zimbabwe serves as a cautionary tale for those expecting timely regime change.
- US sanctions have pushed the country further toward a full-blown debt crisis, and oil production has fallen to a multi-decade low (barring the 2002–03 strike). The government has struggled to maintain critical energy infrastructure, pay the necessary parties (i.e., workers) on a regular basis, etc., and with creditors now moving to seize energy assets and PDVSA becoming the military’s piggy bank, losses will likely approach 1 mb/d y/y.

Oil production continues to falter and losses continue to mount

Source: Thomson Reuters Eikon, Bloomberg, RBC Capital Markets
Libya: Risky Business

Libya has long been in a state of chaos...

- While control of the four main eastern ports may have changed hands in July, we are hesitant to believe that production could be back for good anytime soon. Libya could easily relapse again, and we think that the battle for its oil spoils is far from over.
- Libya was one of the winners from the 2017 recovery in oil prices, but output has stumbled and there remain rival governments and dozens of armed factions.
- Attacks on Libya’s energy infrastructure by various armed groups (including local ISIS offshoots and militias backed by armed rivals) have increased since the start of the year. Headlines about agreements and accords have previously given rise to some expectations that Libya is poised for a sustainable reversal of fortune, but we still think it is far too soon to declare such.

Map of Libyan oil infrastructure

… and maintaining high levels of production remains a “risky business”

Source: EIA, ISW, Bloomberg, RBC Capital Markets
Nigeria: Another Chapter in a Long-Running Story

Nigeria continues to face challenges and instability for oil production...

- While it remains challenging to predict the exact timing of when militant groups elevate their engagement in hostilities, a government effort to crack down on criminality in the oil region would represent a likely catalyst, as do upcoming elections.
- Companies have previously declared force majeure on several hundred thousand barrels of exports following the closure of three major pipelines (Nembe Creek, Trans Forcados, and Trans Ramos) because of vandalism.
- Losses of this type could easily compound as Nigeria heads into elections in February 2019. Nigerian security services would likely find it challenging to prevent fresh attacks on underwater pipelines. Thus, such a scenario could see production plunge.

The latest instability is another chapter in a long story in the Niger Delta

Source: CFR, local Nigerian news sources, RBC Capital Markets
Iran: Nuclear Options

Challenges exist

- Despite the deteriorating domestic conditions, Iran has shown no signs of folding, and we eye both a nuclear restart and an intensification of proxy wars in the offing.
- The Trump administration has signaled that it will force foreign energy firms to reduce their Iranian crude purchases (its apparent goal essentially is to take Iran out of the market), surpassing Obama’s 1.2 mb/d by 2H 2019.
- Iran’s response to the US’s JCPOA withdrawal warrants close watching. The likelihood of an Iranian nuclear restart in H2 2018 is high in our view. Beyond sanctions, there are still proxy conflicts such as Yemen and Syria, which remain worrying.
- How these security stories stemming from the Iran crisis unfold will likely determine whether we are in for a super spike in oil’s geopolitical risk premium or a softer landing by year-end.

Some sanctions snapped back in August, oil sanctions return in November

<table>
<thead>
<tr>
<th>Top Oil Buyers from Iran and Reductions (kb/d)</th>
</tr>
</thead>
<tbody>
<tr>
<td>--------------------</td>
</tr>
<tr>
<td>European Union</td>
</tr>
<tr>
<td>China</td>
</tr>
<tr>
<td>Japan</td>
</tr>
<tr>
<td>India</td>
</tr>
<tr>
<td>South Korea</td>
</tr>
<tr>
<td>Turkey</td>
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<tr>
<td>South Africa</td>
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<td>Malaysia</td>
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<tr>
<td>Sri Lanka</td>
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<tr>
<td>Taiwan</td>
</tr>
<tr>
<td>Singapore</td>
</tr>
<tr>
<td>Other</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

Source: Congress.gov, Congressional Research Service, Petro-Logistics SA, Bloomberg, RBC Capital Markets
Contagion Risk in the Middle East

War on two fronts

- Syria and Yemen remain critical concerns. For Yemen, the battle continues and the risk remains that the war could spread further beyond the country’s geographic boundaries, which could add a possible “fear premium” to oil.
- At the same time, the other proxy war raging in Yemen presents a clear risk to regional energy supplies given the brazen Houthi attacks on Saudi targets.
- The intensification of these proxy fights come in addition to the White House’s move to pull out of the Iranian nuclear deal and reinstatement of sanctions on the country. Important given Iran’s role in regional proxy conflicts.

Yemen map with Infrastructure

Yemen represents an increasingly dangerous conflict in the region

Source: Al Jazeera, ISW, EIA, other news and government sources, RBC Capital Markets
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