CMBI Crude Oil Express

Drone strikes twist short-term supply fundamentals

Brent crude and WTI oil price exhibited range-bound movement during the past month, with Brent crude averaged US$60.2 per barrel, and WTI averaged US$55.7 per barrel. A sudden attack on two Saudi Aramco's oil facilities on 14 Sep broke the situation and caused short-term supply shock, which led to production suspension of 5.7mbpd according to Saudi Aramco, accounting for ~58%/5.7% of Saudi Arabia's crude oil output and global crude oil consumption, respectively. After the weekend, the incident pushed up Brent crude by as high as 19.5% to above US$71.95 in early Asia trading session. As the 5.7mbpd supply outage is substantial, we expect oil market will place short-term attention from trade tension and weak demand to supply outage as well as geopolitical events, and questions will be focused on 1) how long will Saudi Aramco to resume those capacity offline; 2) whether geopolitical conflicts will escalate in the Gulf Area; and 3) by what means could major oil producers to sustain short-term demand and to avoid oil price soar in a weak global economic situation. We raise 4Q19 Brent crude and WTI outlook from US$65-70/b to US$70-75/b and raise WTI outlook from US$50-55/b to US$60-65/b respectively. We believe Brent crude can test up to US$80/b depends on Saudi Arabia's supply recovery pace.

- **Half of Saudi oil capacity was knocked out by drone strike.** Saudi Arabia's two major oil facilities, Abqaiq and Khurais oil field run by Saudi Aramco, suffered coordinated drone attacks on 14 Sep. The attacks sparked a massive fire at major crude processing facilities, forcing the Saudi Arabia to put 5.7mbpd capacity offline according Saudi Aramco's official statement. According to Bloomberg data, Saudi Arabia had crude oil output of ~9.8mbpd in Aug, which means the 5.7mbpd supply disruption would account for ~58%/5.7% of Saudi's crude output and global demand respectively.

- **The impacts: oil market is likely to face short-term supply shortfall.** According to Saudi Aramco, there was no injury in the incident, and work is underway to restore production and a progress update will be provided in around hours (implying an update will be provided on 16 Sep). It is not yet clear that whether if the closure of 5.7mbpd capacity was precaution based, but according to the Financial Times, person close to Saudi's energy ministry expects it will take weeks to ramp up and bring the complex to maximum capacity. Based on preliminary news information. According EIA and OPEC's monthly report, global oil supply-demand was close to the range of balance and slight inventory draw of 0.48mbpd. A 5.7mbpd supply outage is significant enough to cause substantial short-term supply shortfall, and that will likely to fuel strong momentum to push oil price upward, despite the fact that Saudi Arabia may have ~2.3mbpd spare capacity and considerable storage to offer some buffer, in our view.

- **What come in next? Depending on how long it takes to resume production.** Based on a balance market outlook in 3Q19 with OECD inventory of 2,895mb according to EIA, the sudden shortfall represents an inventory draw of 5.7mbpd. If Saudi Aramco's spare capacity as well as other OPEC countries' supply growth capacity is considered, we estimate there will still be an inventory draw of ~2.7mbpd. According our estimates, 1) a 4-week supply outage will bring OECD inventory down by 75.6mb to a level close to

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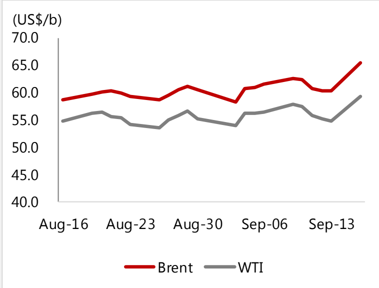
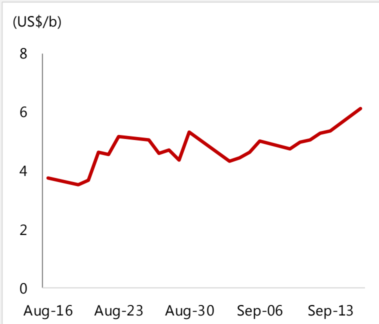
Brent Crude	**US$65.48**
1-month change	+12.5%
WTI	**US$59.36**
1-month change	+7.5%



Source: Bloomberg

Brent –WTI Spread	**US$6.12**



Source: Bloomberg

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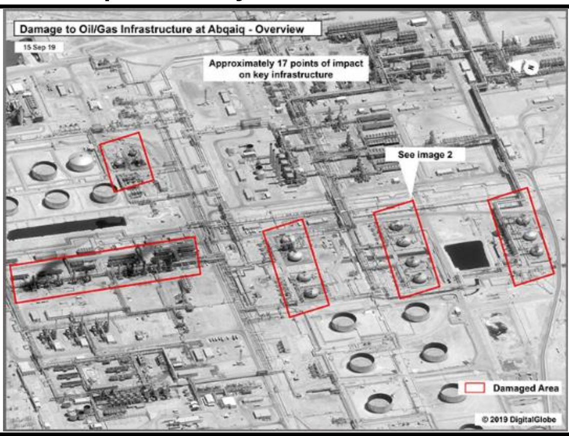
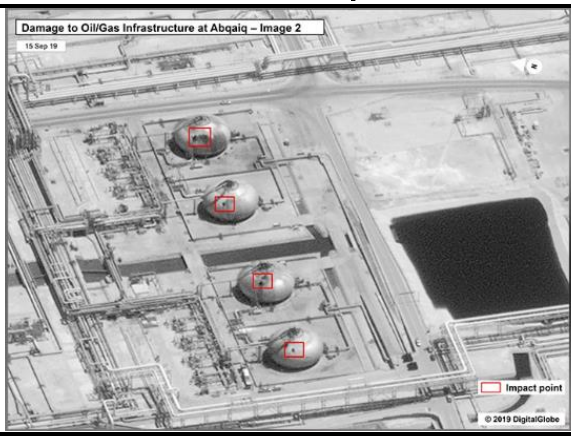
1H15; 2) a 10-week supply shortfall will bring OECD inventory back to upper bound level when oil price range bounding around US$100/b in the period of 2010 – 2014; and 3) we expect the longer the supply outage, the higher growth momentum with oil price. Therefore, we expect Saudi Aramco's progress update will be a short-term key to oil price in the coming few weeks.

Figure 1: U.S. satellite imagery showing about 17 points of impact on key infrastructure



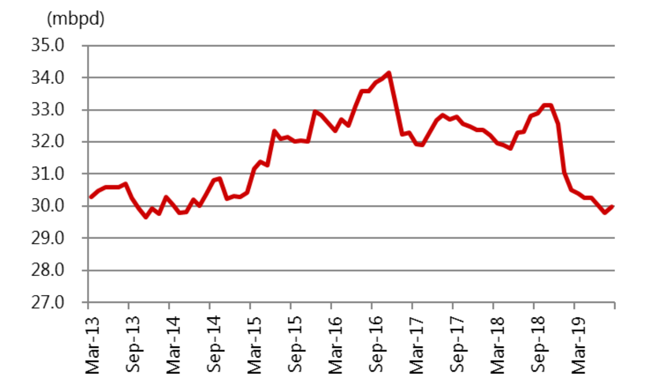
Source: US Official

Figure 2: The exact extent of the damage from the drone attack wasn't immediately clear



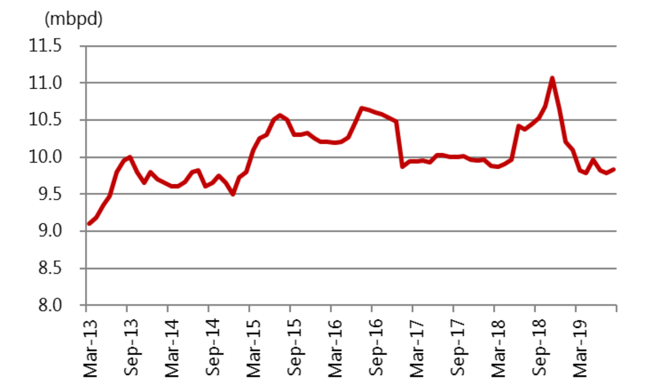
Source: US Official

Figure 3: OPEC's output was below 30mbpd in Aug, still complying well with the output curb



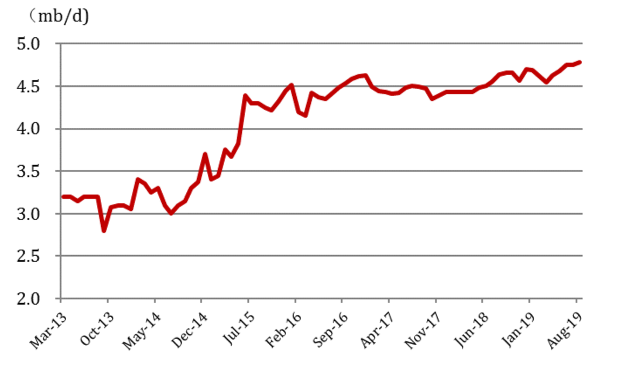
Source: Bloomberg, CMBIS

Figure 4: Saudi Arabia's output was 9.8mbpd in Aug, and according to Saudi Aramco's statement, the drone attack took 5.7mbpd offline



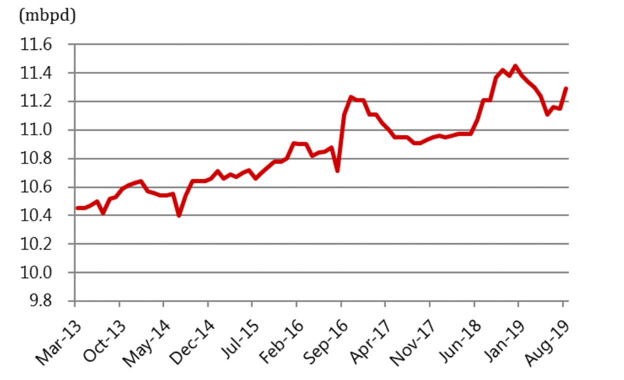
Source: Bloomberg, CMBIS

Figure 5: Iraq does not seem to have much room for output growth in short-term



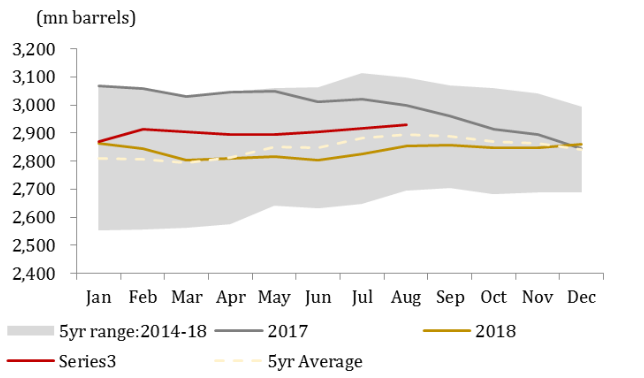
Source: Bloomberg, CMBIS

Figure 6: Non-OPEC Russia still has reserve capacity to support supply during short-term Saudi's short-term outage



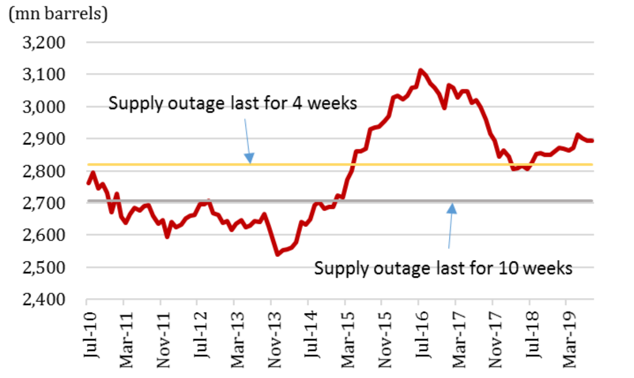
Source: Bloomberg, CMBIS

Figure 7: According to EIA's estimate, OECD inventory is now getting close to 2014-18 5-year average mark



Source: Bloomberg, CMBIS

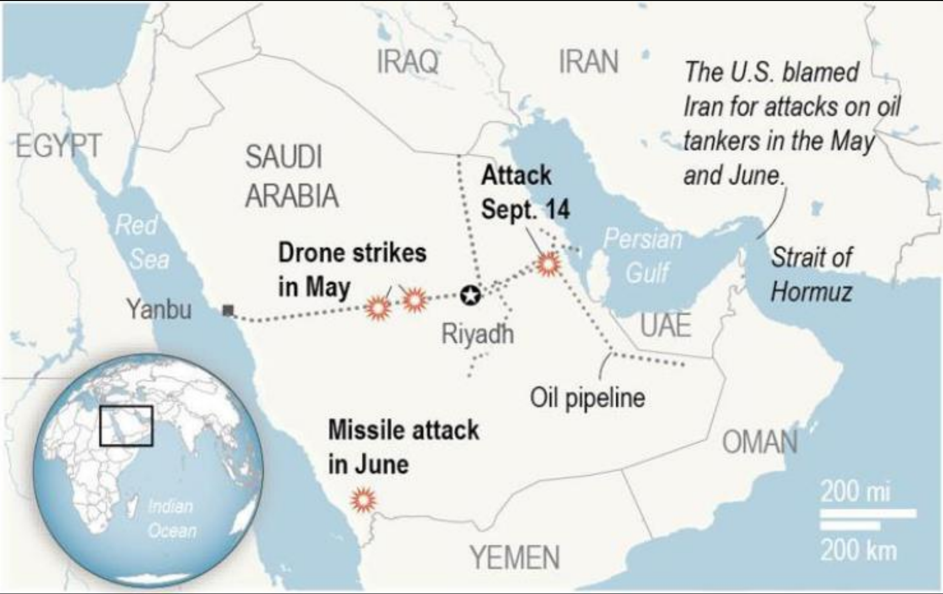
Figure 8: Based on OECD inventory by Aug 2019 (est. by EIA) and 2.7mb outage assumption, we expect OECD inventory draw to ~2,820mb with outage lasting for four weeks and to 2,700mb with outage last for 10 weeks



Source: Bloomberg, CMBIS

- **Geopolitical tension to escalate in the Gulf Area.** According to news report by far, Yemen's Iran-aligned Houthi group claimed to be responsible for the drone attacks, while US Secretary of State Mike Pompeo blamed Iran for the attacks. Iran had denied for the accusation. According to New York Times, one US official said "there were 19 points of impact on the targets, and the attacks had come from the west and north-west – not Yemen, which lies to the south of Saudi Arabia." US President Trump also expressed that "the culprit were locked and loaded depending on verification" by Saudi Kingdom, while Saudi Arabia had not identified any specific target yet. We believe market is still caution to a potential escalate of geopolitical conflict in the Gulf Area, but the odds are not yet priced in.

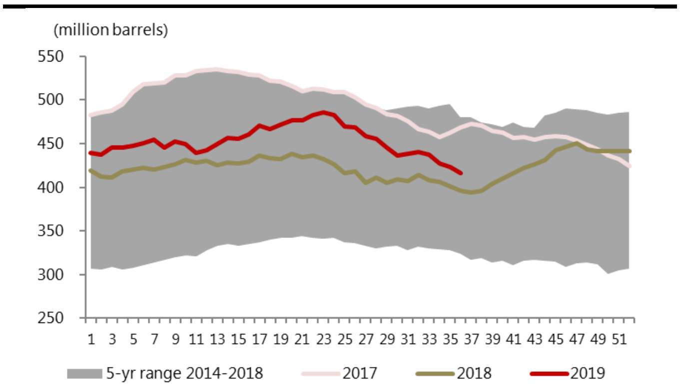
Figure 9: There were several drone strikes in Saudi Arabia in 2019. Yemen's Iran-aligned Houthi group claimed to be responsible for the drone attacks, while US Secretary of State Mike Pompeo blamed Iran for the attacks.



Source: AP, maps4news.com

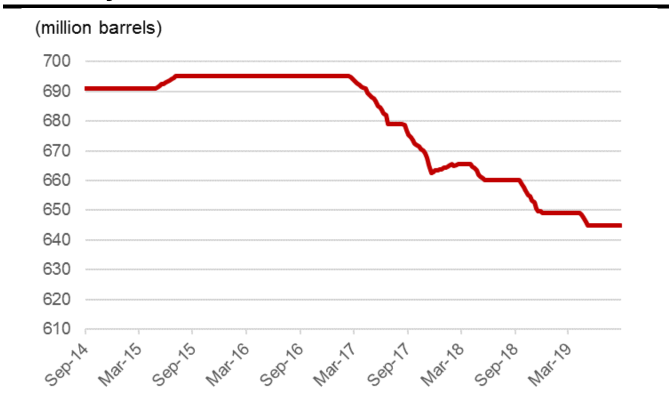
- **Oil storage serves as buffer to suppress oil price from surging too high.** Saudi Arabia may have considerable oil storage to cover export obligation for the initial weeks. US President Trump also tweeted about releasing Strategic Petroleum Reserve (SPR) to suppress oil price from surging too high. According to EIA's weekly update, the US had ~416mb commercial stocks and ~645mb SPR by Sep 6, 2019. In a worst case scenario with 5.7mb shortfall per day, releasing SPR could sustain global oil supply by ~113 days, which we think will provide support for crude oil supply and therefore suppress oil price from surging too high.

Figure 10: US commercial crude oil storage can sustain 22 days for refinery input



Source: Bloomberg, CMBIS

Figure 11: In an extreme case, we estimate US SPR can cover for Saudi Arabia's outage of 5.7mbpd for ~113 days



Source: Bloomberg, CMBIS

- **A potential trade deal may boost oil price higher in short-term.** Market has been concerning about weakening oil demand due to disruption from trade tension right before the drone attacks. Given sluggish economic outlook, EIA and OPEC trim 2020E crude oil demand growth outlook slightly to 1.4mbpd and 1.08mbpd, while IEA maintained demand growth forecast at 1.3mbpd unchanged. Now that as market is longing for a trade deal (or a partial trade deal) between US and China again, we expect that will help strengthen market outlook on crude demand, which we believe will likely to boost oil price upward, given that short-term fundamentals are shifted by the drone attacks as well as expectation for potential geopolitical conflicts to escalate.
- **Iran is still a wild card.** US sanction decision against Iran had significant impacts on oil price during 2H18 and 1H19. US policy towards Iran may turn soft, as hawkish National Security Advisor John Bolton recently left White House because Donald Trump opted to soften pressure campaign against Iran and consider talks with Iranian president Hassan Rouhani on Tehran's nuclear program and the administration's sanction. Based on the impacts from drone attacks, we believe it won't be Trump's administration's best interest to see rapid surging oil price during the period when US is facing increasing risks of economic downturn. Therefore, if Iran is proven not involved in the drone attacks on Saudi Aramco's crude oil processing facilities, we expect possibility of lifting sanction will increase, and that will help Trump suppress oil price in his favorable way.

Figure 12: Iran's crude output exhibited significant decline after US sanction enforced

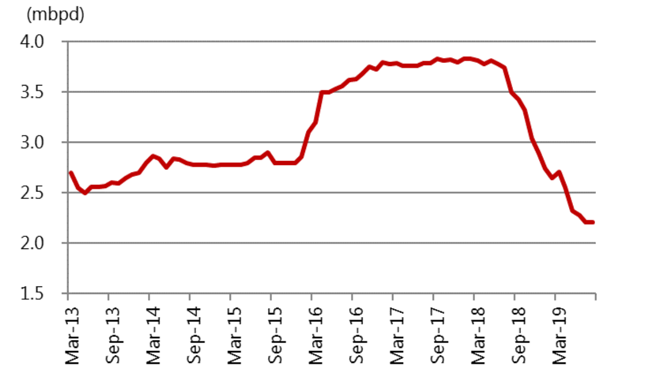


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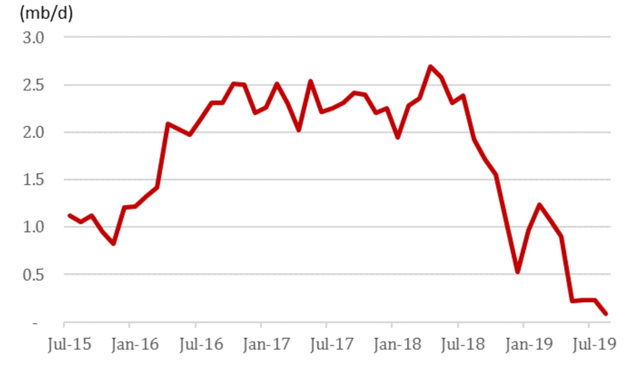
Figure 13: Lifting export ban could be a potential mean to ease supply shortage in short-term



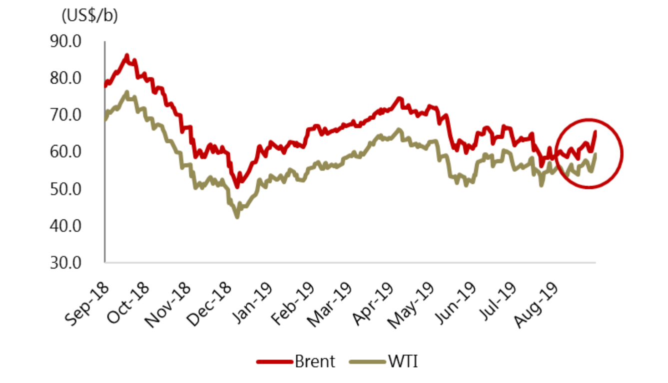
Source: Bloomberg, CMBIS

- **Short-term oil price to increase with momentum.** We weigh the impacts from several short-term factors. In summary, we believe,
  1) Saudi Arabia's supply outage will likely to persist for several weeks, which will likely send oil price higher;
  2) potential escalation of geopolitical conflicts will also boost oil price;
  3) potential trade deal reached in short-term will improve crude oil demand outlook, which also supports oil price to go higher;
  4) releasing Saudi Arabia storage reserve, OECD inventory and US SPR will counter react to suppress oil price from surging too quick;

5) lifting export ban on Iran will accelerate the process for oil market to restore balance, especially when Saudi Aramco need more time to resume those 5.7mbpd capacity's production.

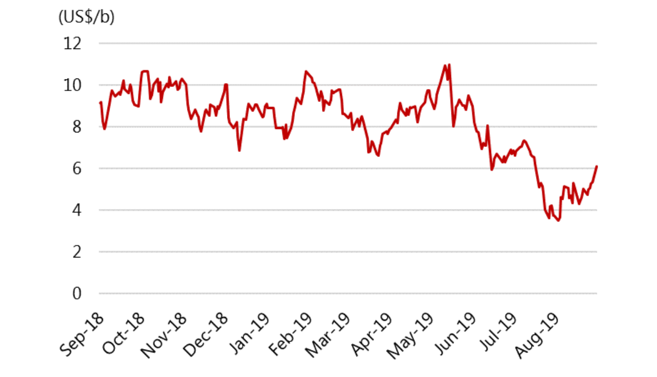
Based on the factors and impacts above, we expect short-term oil price to increase with relatively strong momentum. We raise 4Q19 Brent crude and WTI outlook from US$65-70/b to US$70-75/b and raise WTI outlook from US$50-55/b to US$60-65/b respectively. We believe Brent crude can test up to US$80/b depends on Saudi Arabia's supply recovery pace.

Figure 14: Oil price regain upward momentum after range bounding for several months



Source: Bloomberg, CMBIS

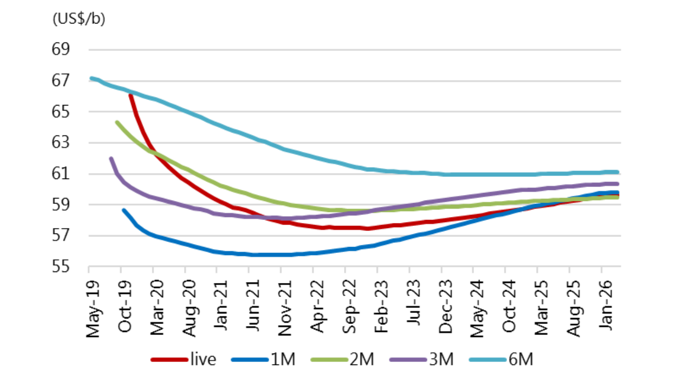
Figure 15: Spread between Brent crude and WTI getting narrower on reduced pipeline constraints



Source: Bloomberg, CMBIS

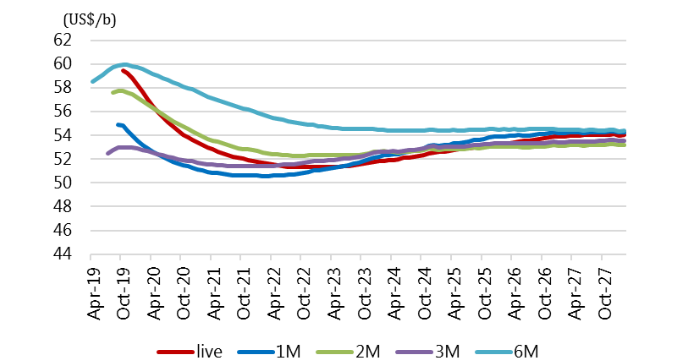
- **Long-term outlook remain in pressures.** Though we expect short-term oil price may gain some upward momentum, we believe long-term oil price still remain in pressure, driven by 1) relatively weak economic growth outlook leading to soft crude oil demand growth; and 2) increasing non-OPEC output led by US shale and tight oil producers forcing OPEC+ to cut more output to sustain oil price to meet budget balances. Future curves confirm our view that short dated future prices skew downward with steeper downward sloping shape comparing with few months ago, implying when supply disruption is removed, oil market will return to supply glut status. As a result, we are cautiously optimistic on oil price in 2020. We expect long-term equilibrium oil price will stand at US$60 for Brent crude and US$55 for WTI.

Figure 16: Brent Crude future curve is in backwardation shape in short term then skews back to contango shape in the long run



Source: Bloomberg, CMBIS

Figure 17: WTI future curve is in backwardation shape in short term then skews back to contango shape in the long run



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