COMPARATIVE ANALYSIS OF MONTHLY REPORTS ON THE OIL MARKET

SUMMARY FINDINGS FROM A COMPARISON OF DATA AND FORECASTS ON THE OIL MARKET BY THE INTERNATIONAL ENERGY AGENCY (IEA) AND ORGANIZATION OF THE PETROLEUM EXPORTING COUNTRIES (OPEC).

FEATURING A COMPARATIVE ANALYSIS OF OIL INVENTORY DATA REPORTED BY JODI, THE IEA, OPEC AND SECONDARY SOURCES IN COLLABORATION WITH THE RAPIDAN ENERGY GROUP.

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1. NOTE BY THE SECRETARY GENERAL

The IEF conducts a comprehensive comparative analysis of the short-, medium-, and long-term energy outlooks of the IEA and OPEC, to inform the IEA-IEF-OPEC Symposium on Energy Outlooks that the IEF hosts in Riyadh as part of the trilateral work programme on a yearly basis.

To inform IEF stakeholders on how perspectives on the oil market of both organisations evolve over time more regularly, this monthly summary provides:

- Key findings and a snapshot overview of data points gained from comparing basic historical data and short-term forecasts of the IEA Oil Market Report and the OPEC Monthly Oil Market Report
- Features a comparative analysis of oil inventory data reported by JODI, the IEA, OPEC, and secondary sources in collaboration with the Rapidan Energy Group

Moreover, international developments this month that will have an impact oil market balances are as follows:

US-China Trade Conflict

- China implemented tariffs on a second tranche of US goods, targeting oil products and coal for the first time, in retaliation to US tariffs.

Caspian Agreement

- Leaders of five Caspian Sea nations, Russia, Kazakhstan, Iran, Azerbaijan and Turkmenistan, signed an agreement that aims to settle a longstanding dispute over ownership of oil and gas reserves on the Caspian Sea.

US-Mexico Trade Deal

- The US and Mexico are moving towards a trade deal that could replace NAFTA leaving question marks about Canada’s role in the trilateral trade pact.

I trust this month’s analysis helps to sharpen focus on evolving short-term market perspectives.

Dr Sun Xiansheng  
Secretary General  
International Energy Forum
2. KEY POINTS

2.1 DEMAND

- **IEA and OPEC demand growth assessments continue to differ slightly.** The IEA revised its growth figure downward by 40 kb/d while OPEC growth is lowered by 20 kb/d from last month’s assessment leading to a difference of 290 kb/d. The IEA world demand growth amounts to **1.35 mb/d** in 2018. OPEC’s demand growth stands at **1.64 mb/d** in August marking its first reduction in three months but only by 20 kb/d. The IEA and OPEC estimates for absolute world demand for August are **99.20 mb/d** and **98.83 mb/d** respectively.

- **Both the IEA and OPEC see steadily increasing demand growth in OECD countries, driven primarily by the US, since the beginning of 2018.** With the exception of a 30 kb/d drop from April to May, the IEA has seen consistent OECD demand growth since January 2018 which now stands at **0.36 mb/d** for August. OPEC reports the same trend with an August demand assessment at **0.42 mb/d**. OPEC reports a slight downward revision to non-OECD demand growth that stands at **1.21 mb/d** compared to 1.25 mb/d last month. The IEA sees a similar reduction with non-OECD demand at **1.00 mb/d** compared to 1.05 mb/d last month.

2.2 SUPPLY

- **OPEC reports a higher assessment for Non-OPEC supply for the second straight month.** OPEC’s July assessment for Non-OPEC supply growth was 30 kb/d greater than the IEA which marked the first time OPEC reported greater Non-OPEC supply growth than the IEA this year. OPEC is continuing that trend in August with Non-OPEC supply growth of **2.08 mb/d**, of which 1.69 mb/d is attributed to the U.S. alone, compared to the IEA’s assessment of 1.98 mb/d of which 172 is attributed to the U.S., that diverges by 100 kb/d. In absolute values OPEC and the IEA estimate non-OPEC supply at **59.62 mb/d** and **59.91 mb/d** respectively.

- **OPEC reports higher Non-OECD supply growth for the first time in 2018.** OPEC’s Non-OECD growth of **0.17 mb/d** year-on-year is only slightly greater than the IEA's figure of **0.13 mb/d**, but marks the first time this year OPEC has reported higher Non-OECD supply driven by higher supply growth from China.

2.3 STOCKS

- **Both OPEC and the IEA report nearly identical stock figures for August.** The IEA reports **2823 mb** in OECD stock that is 32 mb below the five-year average. OPEC’s assessment is not far off with **2822 mb** in OECD stock that is 33 mb below the five-year average. The divergence between OPEC and the IEA stands at 1 mb for August. Total US crude inventories in August stand at about 408 mb, down close to 55 mb year-on-year according to the US Energy Information Administration (EIA). EIA reports US stocks are at the five-year average in August and OPEC reports US stock below the five-year average by 7 mb based on July data.
### 2.4 SNAPSHOT (mb/d)

<table>
<thead>
<tr>
<th></th>
<th>IEA</th>
<th>OPEC</th>
<th>Δ m/m</th>
<th>OECD</th>
<th>Non-OECD</th>
<th>Δ m/m</th>
<th>World</th>
<th>Δ m/m</th>
</tr>
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<tbody>
<tr>
<td>Demand</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEA</td>
<td>47.69</td>
<td>0.36</td>
<td>+0.02</td>
<td>51.51</td>
<td>1.00</td>
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<td>51.08</td>
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<td>Difference</td>
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<td>0.06</td>
<td>0.01</td>
<td>0.43</td>
<td>0.21</td>
<td>0.02</td>
<td>0.37</td>
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### Supply

<table>
<thead>
<tr>
<th></th>
<th>IEA</th>
<th>OPEC</th>
<th>Δ m/m</th>
<th>OECD</th>
<th>Non-OECD</th>
<th>Δ m/m</th>
<th>NOPEC</th>
<th>Growth</th>
<th>Δ m/m</th>
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<tr>
<td>IEA</td>
<td>25.96</td>
<td>1.79</td>
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<td>29.11</td>
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<td>-0.02</td>
<td>59.91</td>
<td>1.98</td>
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<td>OPEC</td>
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<td>59.62</td>
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<td>Difference</td>
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<td>0.04</td>
<td>0.71</td>
<td>0.06</td>
<td>0.11</td>
<td>0.29</td>
<td>0.10</td>
<td>0.07</td>
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### Stocks (mb)

<table>
<thead>
<tr>
<th></th>
<th>IEA</th>
<th>OPEC</th>
<th>OECD</th>
<th>OECD to 5-Year Average</th>
<th>US to 5-Year Average</th>
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<tbody>
<tr>
<td>IEA</td>
<td>2823</td>
<td>-</td>
<td>-32</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>OPEC</td>
<td>2822</td>
<td>409</td>
<td>-33</td>
<td>-7.0</td>
<td>-</td>
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<tr>
<td>EIA</td>
<td>408</td>
<td>-</td>
<td>-</td>
<td>At the 5-year average</td>
<td></td>
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*Totals in table may not exactly reflect content due to independent rounding.*
3. GLOBAL ANALYSIS

Latest data indicates the global economy to sustain growth rates at 3.9 percent in 2018 according to the IEA and 3.8 percent as per OPEC. The IEA reports the same 3.9 percent growth rate for 2019 which contrasts with OPEC reduced growth rate at 3.6 percent. Both the IEA and OPEC cite concerns with ongoing trade disputes that will have a negative impact on world GDP growth, and thus adversely impact oil demand. According to the IEA, this takes the form of a direct reduction in bunker fuel demand and diesel used in the transportation of traded goods. Tariffs could also impact the trade of oil and petrochemical feedstocks and products. Although OPEC forecasts that there will be no significant rise in trade tariffs and current disputes will be resolved soon, rising trade tensions, leading to mounting uncertainties will translate into falling business and consumer sentiment, and provide a significant downside risk to the current still relatively positive global economic outlook.

3.1 DEMAND DATA

Absolute Demand

The IEA's estimate for global demand growth in July stands at 1.35 mb/d down by 40 kb/d from 1.39 mb/d in last month's report for an absolute demand of 99.20 mb/d in 2018. Concerns about the stability of oil supply have cooled down according to the IEA given increases in production, mainly from OPEC members, Russia, and a surge in US exports in June that saw a record weekly average level of 3 mb/d, and a partial, but fragile, recovery in Libya. This has resulted in a weaker oil price which has benefitted consumers.

OPEC's global demand outlook also has remained steady at 1.64 mb/d down a mere 20 kb/d compared to last month's projections, mainly due to weaker-than-expected oil demand data from Latin America and the Middle East in 2Q18. This leads to a projected total global consumption of around 98.83 mb/d for the month of August. OPEC-IEA divergence in overall world demand stands at 0.37 mb/d up from 0.28 mb/d in July.

OECD Demand

The IEA continues to see robust OECD oil demand growth at 0.36 mb/d; up slightly from last month’s figure of 0.34, anticipating total OECD consumption for 2018 is 47.69 mb/d. OPEC marginally revised up its growth projection for the OECD region to 0.42 mb/d from 0.41 mb/d constituting the seventh consecutive increase in growth this year. OPEC total OECD demand now stands at 47.75 mb/d. The divergence of OECD oil demand growth between the IEA and OPEC now stands at 0.06 mb/d. The IEA reports a 0.06 mb/d upward revision in OECD Americas demand growth from 0.34 mb/d in last month’s report to 0.40 mb/d, while OPEC’s estimate only rose slightly by 0.02 mb/d to 0.32 mb/d from 0.30 mb/d. OECD Europe demand growth decreased to zero from 0.07 mb/d according to IEA data. OPEC’s OECD Europe growth figure remains the same as last month at 0.10 mb/d. The IEA’s and OPEC’s assessments for 2018 OECD total demand also differ by 0.06 mb/d.

Non-OECD Demand

Both, the IEA and OPEC anticipate continued growth in non-OECD demand for this year at 1.00 mb/d and 1.21 mb/d respectively, with total demand forecasts averaging 51.51 mb/d and 51.08 mb/d respectively. OPEC’s growth projection for the non-OECD remains largely unchanged from its June forecast after it revised this growth estimate down by 0.03 mb/d to 1.21 mb/d. The IEA reported an equally slight decrease of 0.05 mb/d for August non-OECD demand growth estimated at 1.00 mb/d.
Compared to 1.05 mb/d in last month’s report, IEA’s and OPEC’s assessments for 2018 non-OECD demand growth now differs by **0.21 mb/d**.

China and India continue to drive non-OECD demand. OPEC’s regional demand growth adjustments in 2018 reflect a solid pace of demand growth for China reported at 0.42 mb/d year on year. The IEA reports a higher assessment of 0.49 mb/d year over year given oil demand is estimated to have increased by 340 kb/d year-over-year in 2Q18. Chinese consumption is expected to reach around 12.74 mb/d and 13.06 mb/d in 2018, respectively. The IEA maintains that demand growth in India will continue to grow by around 0.28 mb/d to reach 4.85 mb/d in 2018. Meanwhile, OPEC reports Indian demand growth at 0.22 mb/d and sees total consumption in India reach 4.75 mb/d in 2018. Projections for non-OECD Asia, as a whole, show growth at 0.85 mb/d according to OPEC and 0.93 mb/d according to the IEA.

See the following graph for the monthly revisions of IEA and OPEC annual estimates for 2017 and new estimates for 2018 supply, and the tables for annual estimates for demand.

**IEA sees a slight decrease in world demand growth in August**

**OPEC continues to show consistency in demand growth**

### Monthly Revisions of Annual Estimates for Oil Demand Growth 2017/16 and 2018/17 from August 2018

*IEF comparative analysis of IEA and OPEC Monthly Reports on the Oil Market August 2018

*monthly estimates rounded to the nearest barrel.

#### 3.2 SUPPLY DATA

**Non-OPEC Supply**

OPEC’s August assessment of total non-OPEC supply for 2018 reaches **59.62 mb/d**, indicating robust year-on-year growth of **2.08 mb/d** driven by the US (1.69 mb/d), Canada (0.27 mb/d) and Brazil (0.15 mb/d). Growing output from these countries is offset by declining production from Mexico (0.12 mb/d), Norway (0.09) and Vietnam (0.03 mb/d).

The IEA reports the forecast for non-OPEC supply at **59.91 mb/d** with a year-on-year growth of **1.98 mb/d** up slightly from 1.97 mb/d last month. Higher expectations for Russian production is partly offset
by a downgrade to Brazilian output due to heavier than expected maintenance outages over the first half of 2018. OPEC’s and the IEA’s non-OPEC supply growth forecast diverge by **0.10 mb/d**.

**OECD Supply**

Both OPEC and the IEA project solid OECD supply growth in 2018 at **1.87 mb/d** and **1.79 mb/d** respectively with total supply standing at **27.55 mb/d** and **25.96 mb/d** according to August estimates. The IEA’s data shows OECD Americas liquids supply growth at **1.87 mb/d** to reach **22.16 mb/d** total supply while OPEC reports slightly lower growth close at **1.83 mb/d** with total liquids supply at **23.29 mb/d** for 2018. Growth within the region is led by the US for which OPEC revised its liquid supply forecast up to **1.69 mb/d** from **16.06 mb/d** while the IEA projects higher US growth by **1.72 mb/d** to amount to **14.96 mb/d**.

**OPEC Supply**

Total OPEC-15 crude oil production averaged **32.32 mb/d** in July, an increase of 41 kb/d over the previous month. Crude oil output increased mostly in Kuwait, Nigeria, UAE and Iraq, while production showed declines in Libya, Iran, Saudi Arabia and Venezuela. The IEA estimates OPEC crude production at **32.18 mb/d** in July. OPEC output held steady after an unexpected drop from Saudi Arabia and further declines in Venezuela, Libya and Iran were largely offset by higher production from Kuwait, the UAE and Nigeria.

See the following graph for the monthly revisions of IEA and OPEC annual estimates for 2017 and new estimates for 2018 supply, and the tables for annual estimates for total supply.

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**OPEC reports greater Non-OPEC supply growth compared to IEA**

IEA and OPEC continue to see strong convergence on Non-OECD growth

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IEF comparative analysis of IEA and OPEC Monthly Reports on the Oil Market August 2018

*monthly estimates rounded to the nearest barrel.*
3.3 STOCK DATA

OECD commercial stocks fell 7.2 mb month-on-month (m-o-m) in June to **2823 mb**, the eighth fall in the last 11 months according to the IEA. At end-month, OECD stocks were **32 mb** below the five-year average. Preliminary OPEC data for April shows a decline at 12.8 mb month-on-month to reach **2822 mb** in total OECD stocks. OPEC reports that stocks are now **33 mb** below the latest five-year average. While both organizations report closely aligned data on OECD stocks due to a continuous and reliable data stream and data harmonization efforts, comprehensive data on stock developments for non-OECD countries is still work in progress.

See the following graphs for monthly estimates of OECD total commercial oil stocks for 2017 and 2018.

**IEA and OPEC data shows convergence on OECD stock draws**

**Comprehensive non-OECD stock data remains missing**

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IEF comparative analysis of IEA and OPEC Monthly Reports on the Oil Market August 2018

**IEA and OPEC report closely aligned OECD stock balances**

Surplus stocks data came down to **-32** and **-33 mb** respectively in June

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IEF comparative analysis of IEA and OPEC Monthly Reports on the Oil Market August 2018

*monthly estimates rounded to the nearest barrel.*
3.3.1 GLOBAL STOCK ANALYSIS

OECD and JODI non-OECD crude and product inventory data show a 3.0 mb draw in June

- IEA estimates OECD commercial inventories drew seasonally by 7.2 mb in June to 2,823 mb (32 mb below the 5-year average), exiting the quarter 6.6 mb above end-1Q18 levels. Similarly, OPEC estimates that OECD commercial stocks fell 12.8 mb to 2,822 mb in June.

- JODI non-OECD* data for June show crude stocks grew by 9.0 mb (led by a 6.4 mb build in China), while product stocks drew by 3.4 mb (driven by a 2.3 mb decline in Saudi Arabia). Together JODI non-OECD crude + product data shows a 5.6 mb build in June.

- Available global inventory data (see table below) imply global crude + product stocks built by 13.1 mb in 2Q18 (driven by a 22.8 mb increase in floating storage and oil in transit). This is 10.5 mb above IEA’s estimated 2Q18 global supply surplus of 2.5 mb and 27.6 mb above OPEC’s estimate of a 14.6 mb draw.

* Non-OECD data is the aggregate of country-level data through JODI. Not all non-OECD countries report inventory data and the countries in the aggregate may vary monthly depending on regularity of individual country reporting.

### Global Inventory Changes

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<th>2Q18</th>
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<tbody>
<tr>
<td></td>
<td>Crude</td>
<td>Products</td>
</tr>
<tr>
<td>OECD Commercial (IEA)</td>
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</tr>
<tr>
<td>OECD SPR (IEA)</td>
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<tr>
<td>Available JODI Non-OECD Data*</td>
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</tr>
<tr>
<td>Singapore</td>
<td>-</td>
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</tr>
<tr>
<td>Fujairah</td>
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<td>2.0</td>
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<tr>
<td>Floating Storage/Oil in Transit (IEA)</td>
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<td>-</td>
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<tr>
<td>Total</td>
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<td>11.7</td>
</tr>
<tr>
<td>IEA’s Implied Global Supply Surplus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OPEC’s Implied Global Supply Surplus</td>
<td></td>
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</tr>
</tbody>
</table>

* Aggregate of all non-OECD data available through JODI. Not all non-OECD countries report inventory data and the countries in the aggregate may vary monthly depending on regularity of individual country reporting.

Source: IEA, JODI, OPEC, Platts, Rapidan Energy Group
COMPARATIVE ANALYSIS OF MONTHLY REPORTS ON THE OIL MARKET

RIYADH, SAUDI ARABIA

AUGUST 2018

Monthly Change in OECD and Non-OECD* Crude + Product Inventories

Accumulative OECD and Non-OECD* Crude + Product Builds Since End-2014

* Aggregate of all non-OECD data available through JODI. Not all non-OECD countries report inventory data and the countries in the aggregate may vary monthly depending on the regularity of individual country reporting.

Source: IEA, JODI, Rapsig Energy Group