Commodity prices: Oil price developments

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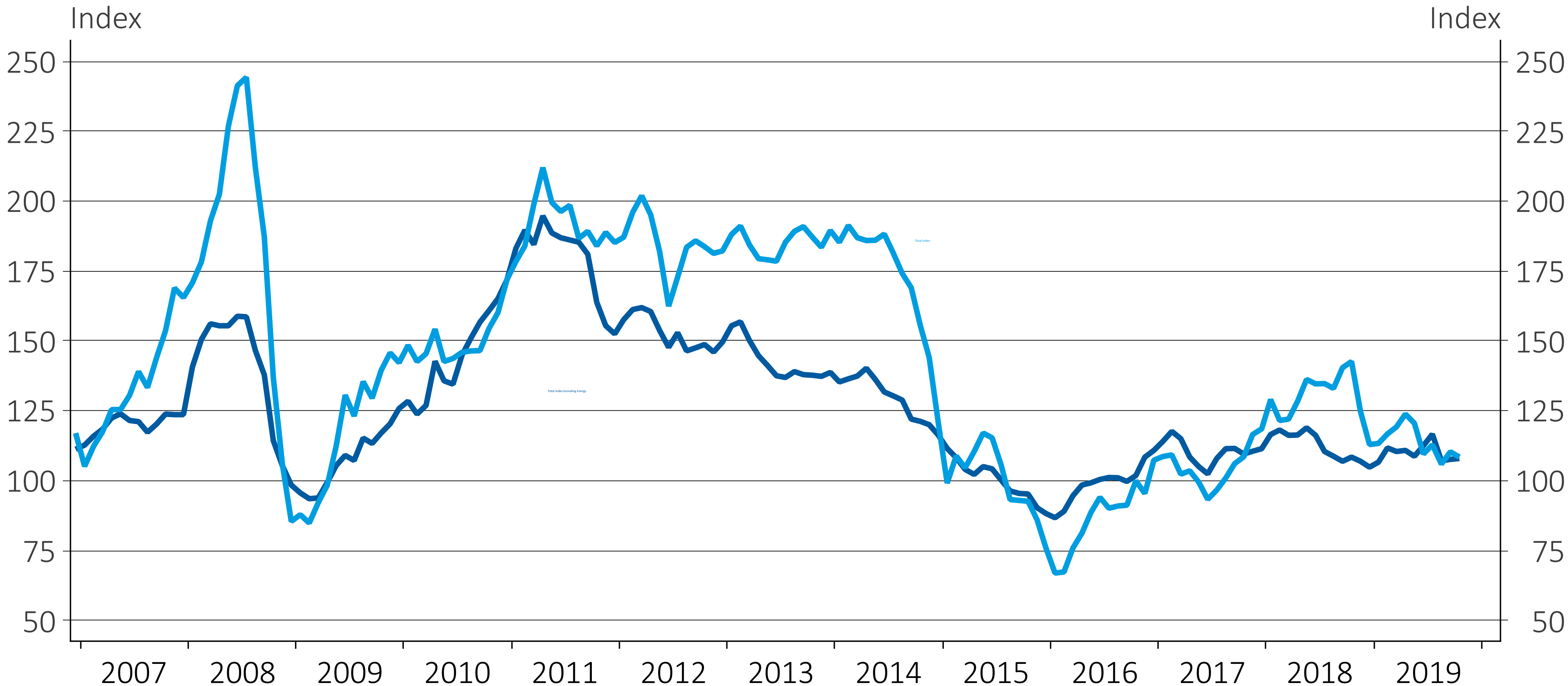
This presentation

- Sums up the recent trends in oil (and commodity) prices
- Discusses core factors determining price changes:
  - **Demand and supply side prospects**
  - **The US (shale) oil production**
  - **Geopolitics**
  - **The OPEC quotas**
- Revised estimations for the US shale oil production
- Future prospects of oil price development

HWWI Index, including and excluding energy 2007:1 – 2019:10 (2015=100)

World, Commodity Indices, HWWI, Average of Period, USD



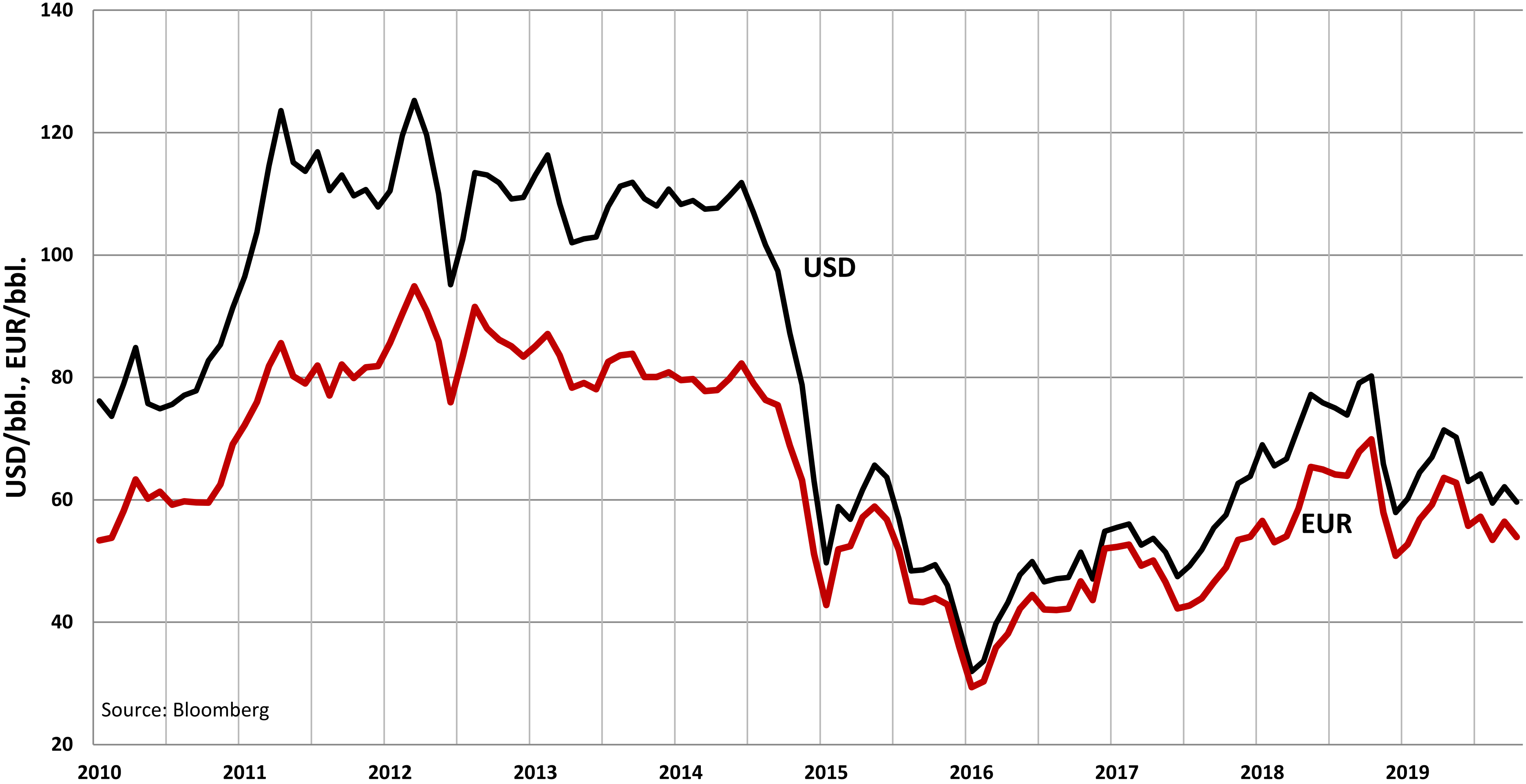
Source: ETLA via Macrobond & HWWI

Weighting of Commodities and Commodity Groups in the HWWI Index
Index, total (all commodities)

- Weights, HWWI-Index (2015 = 100)

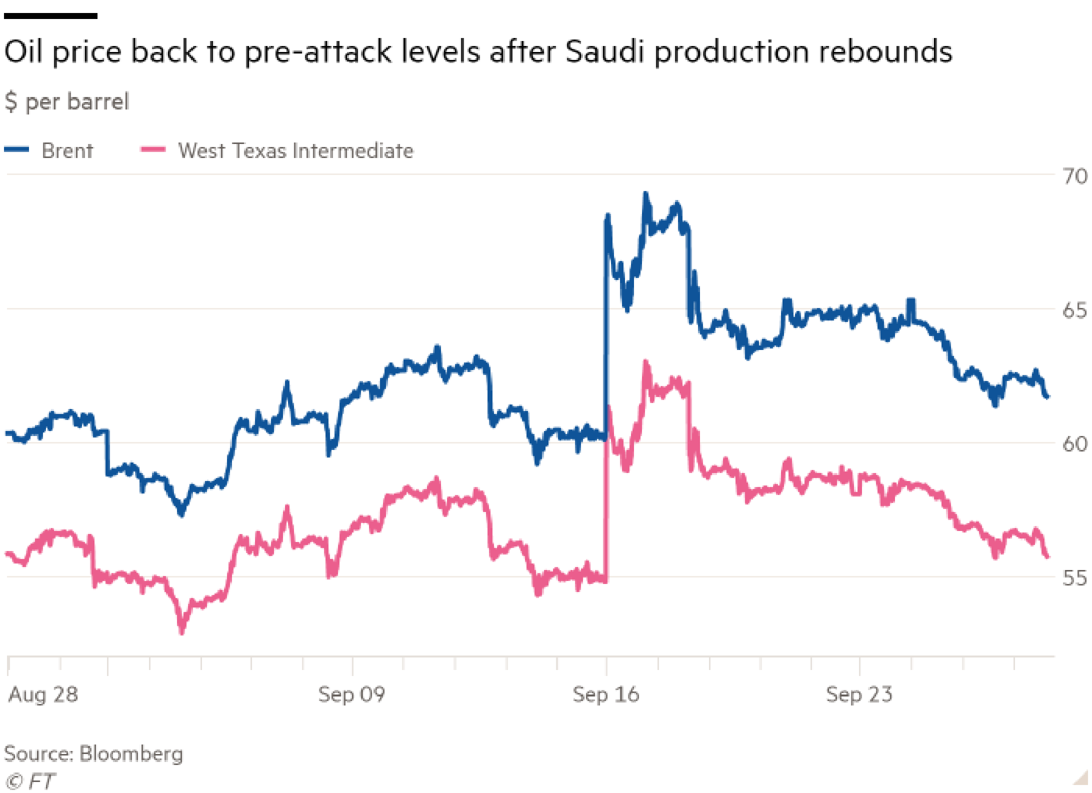
HWWI Index, total	**100**
HWWI Index, total excl. Energy	13.8
Food total	5.7
Industrial raw materials	8.1
Energy raw materials	86.2
- Coal	2.56
- Crude Oil	**68.93**
- Natural gas	14.70

Crude oil price (Brent) 2010:1 - 2019:10, in dollars and euros



The broad picture conceals a dramatic episode

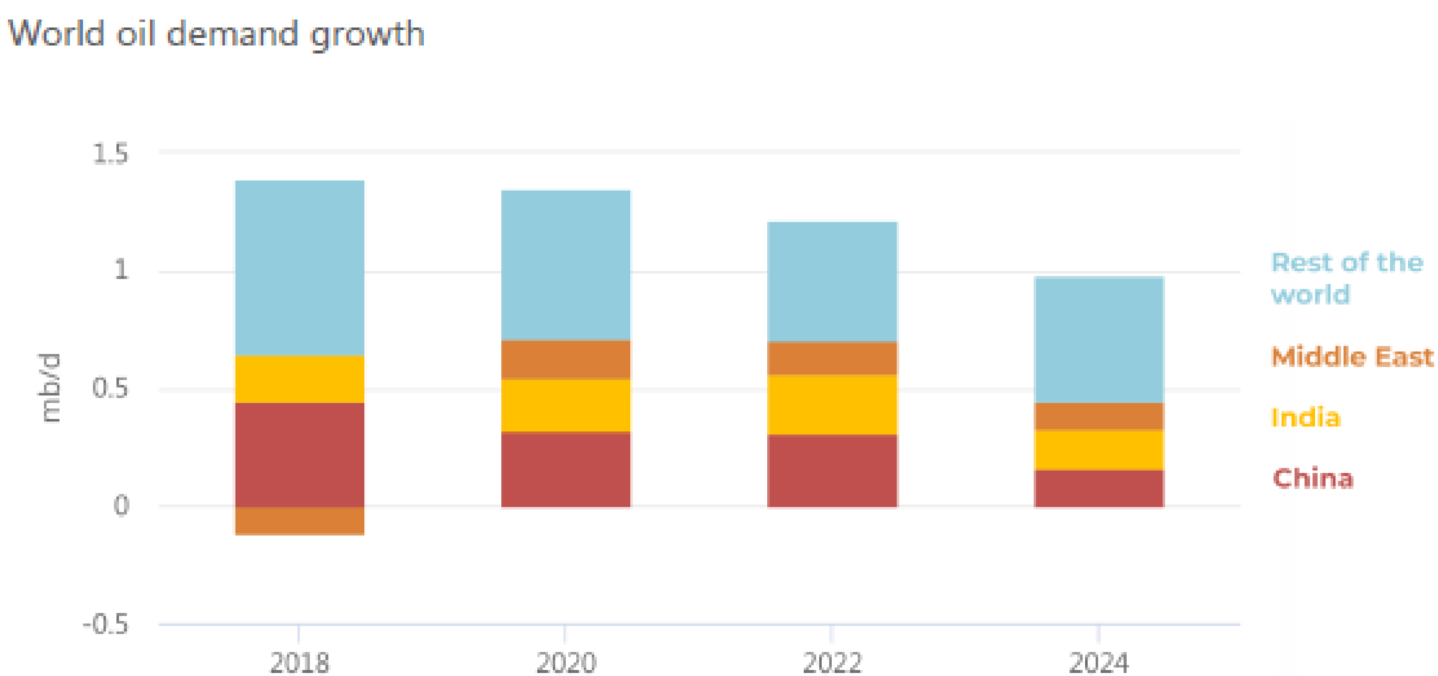
- On September 15th, Saudi Arabia sustained an unprecedented attack on its oil infrastructure, which knocked 5.7 million bpd—or 5 percent of global oil supply—offline.



- Already on October 3th Saudi Arabia said it had fully restored oil production to almost 10m barrels a day

Demand side prospects (IEA, 11 March, 2019)

Demand growth 1.2 mb/d per year, no peak in sight



China eases on shift to consumer economy and environmental policies. India's *volume* growth similar to China by 2024. Middle East fuel oil demand boosted after IMO 2020. US demand steady.

Supply and demand side prospects (IEA Report: 11 October, 2019)

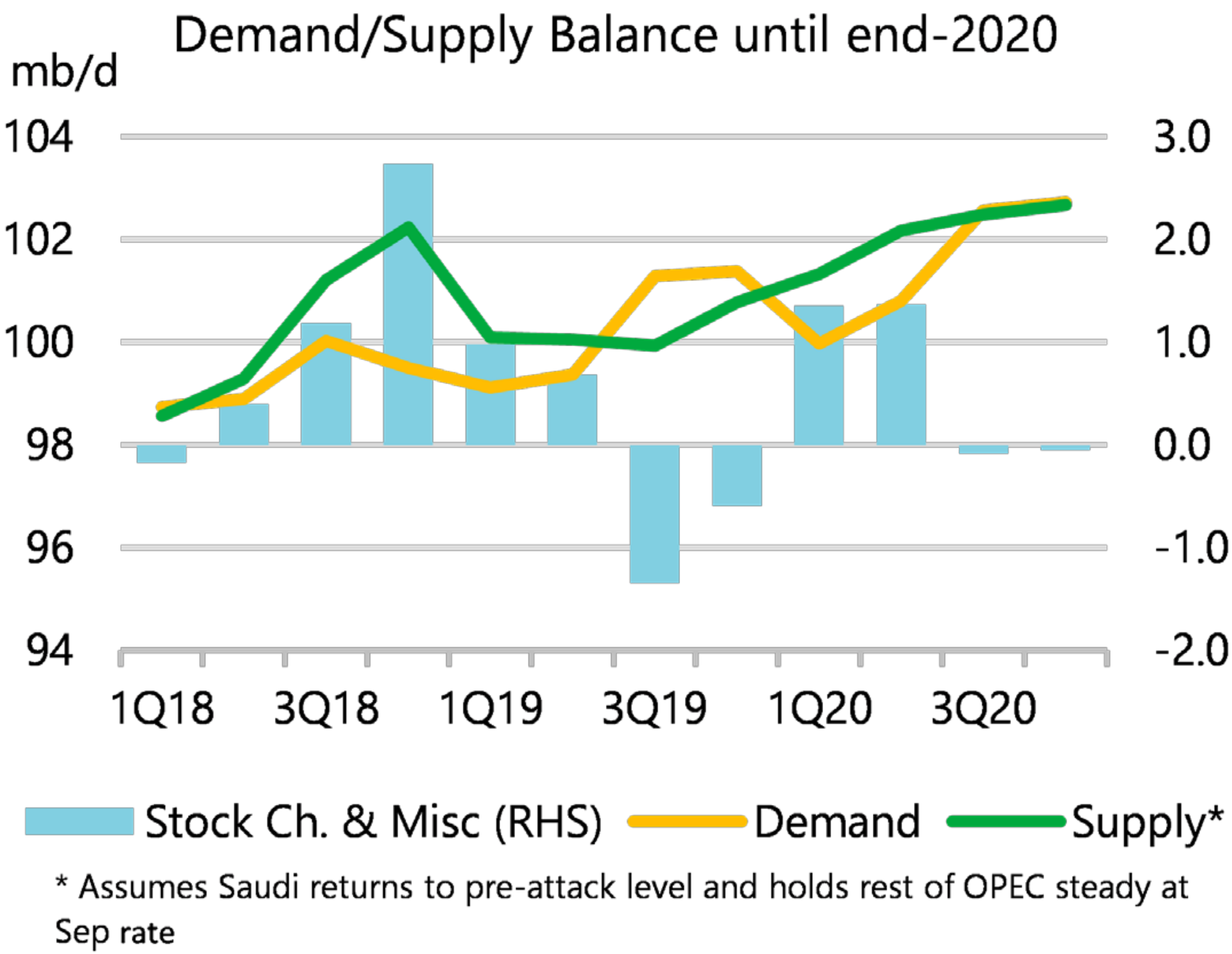
- Global oil supply plunged 1.5 mb/d in September to 99.3 mb/d after attacks on Saudi oil facilities briefly shut in more than half the kingdom's production. Even with a swift recovery and steady supply from the rest of OPEC, stock draws are likely in 4Q19.
- This year demand growth is seeing two very different halves. In 1H19, global growth was only 0.4 mb/d but in 2H19 it could be as high as 1.6 mb/d
- In the 2H19 y-o-y growth returns helped by a comparison versus a low base in the latter part of 2018. Demand is supported by prices (Brent) that are more than 30% below year-ago levels.

Supply and demand side prospects (IEA Report: 11 October, 2019)

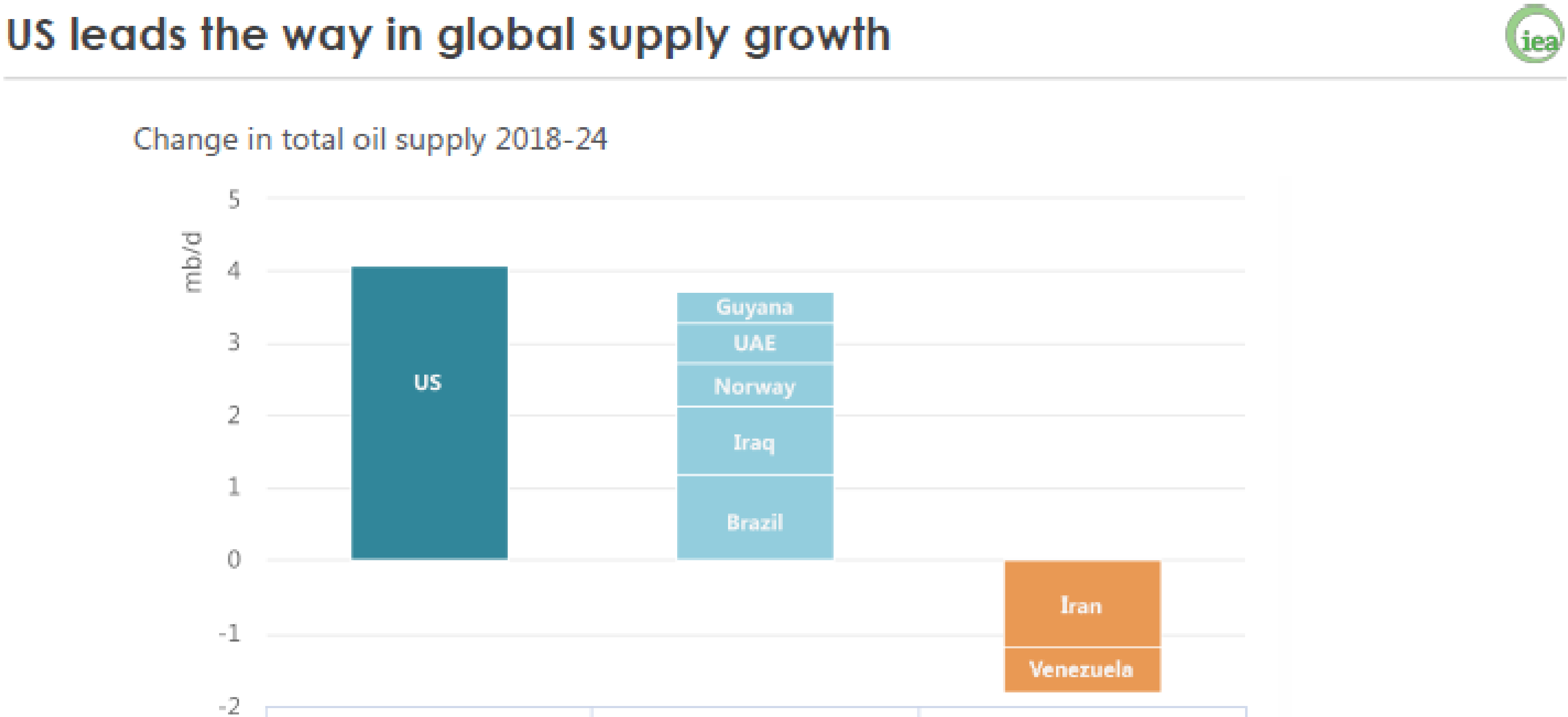
- A slightly different picture emerges for 2020, when non-OPEC supply growth, led by the US, Brazil and Norway, accelerates from 1.8 mb/d to 2.2 mb/d.
- **All in all, the IEA's demand growth forecasts for 2019 and 2020 are both reduced by 0.1 mb/d, to 1 mb/d and 1.2 mb/d, respectively**. For 2019 this reflects changes to 2018 data (new data showing higher US demand in 2018) and for 2020 it reflects a lower GDP outlook.

  -> A lower GDP outlook has probably been the most important driver for the oil price development in recent months
- **Opec expects (November 5) oil consumption growth will weaken from 1.1m b/d in 2019 to 900,000 b/d in 2024.**

World oil demand and supply
Source:IEA

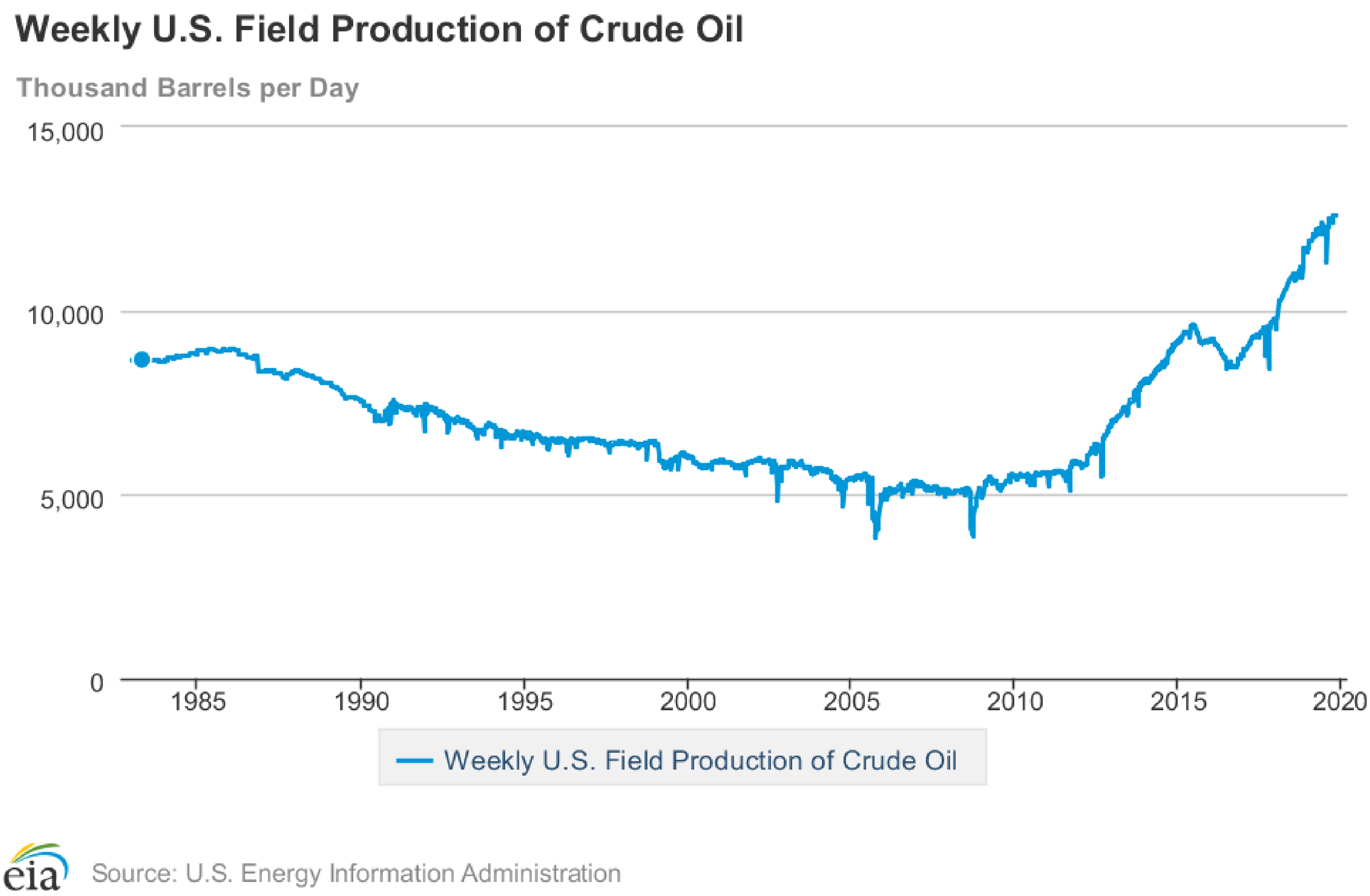


Looking at the supply side more carefully: the game changer is still the US shale oil production

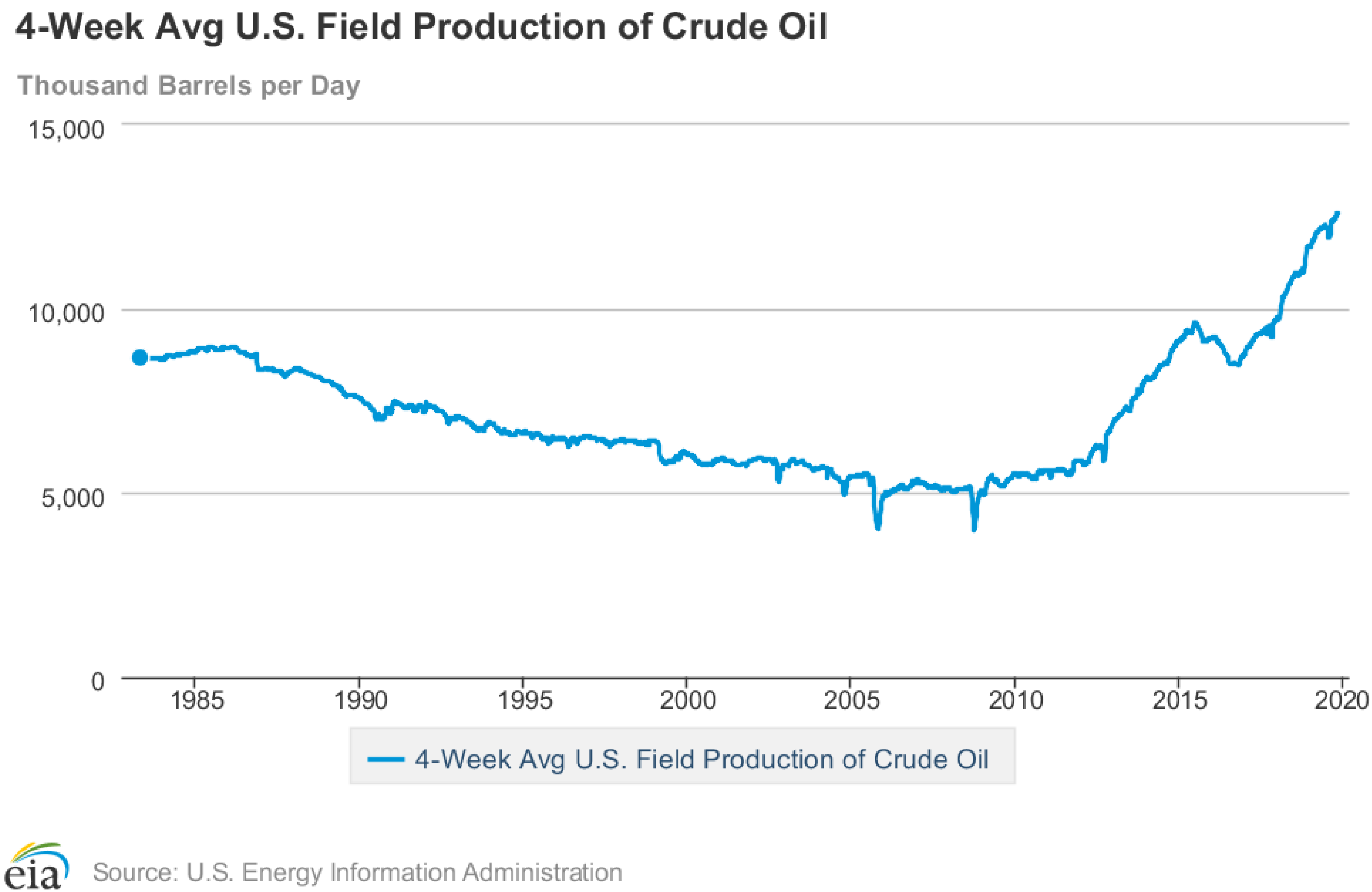


US expansion is 70% of global growth. Gains in Brazil, Iraq, Norway, the UAE and Guyana. Main declines in Iran and Venezuela.

Weekly U.S. Field production of Crude Oil (Thousand Barrels per Day)



4-Week Average U.S. Field Production of Crude Oil (Thousand Barrels per Day)



The US response

- U.S. oil production was 12.6 million barrels a day in November, surpassing Russia, making the United States the world's largest oil producer

  -Russian oil production is expected to total

  11.2 million barrels per day this year

Russia's Novak says U.S. oil output to peak in next few years

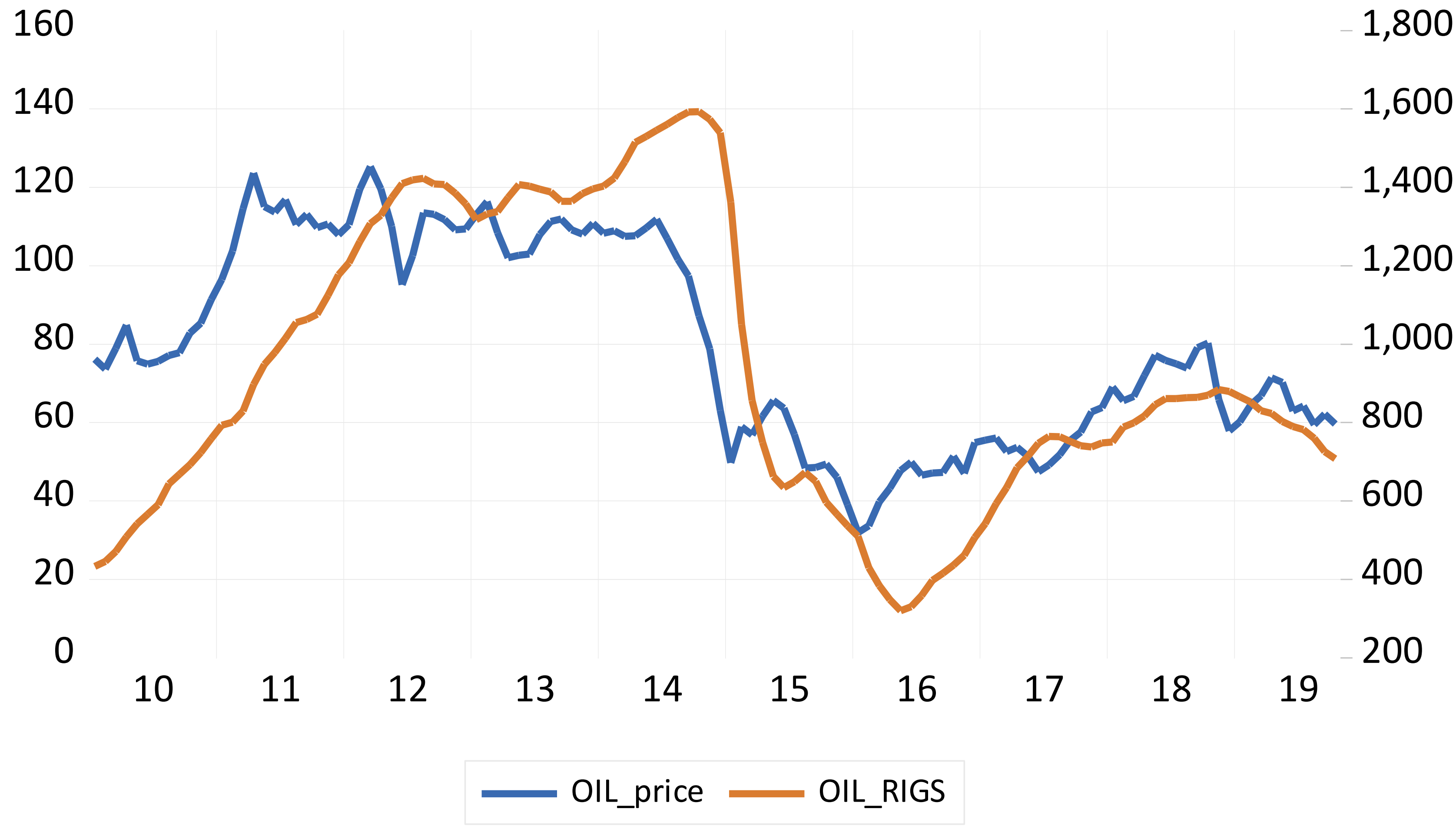
2 MIN READ

“U.S. oil production is likely to peak in the next few years as current petroleum prices are capping the pace of expansion”, - Russian Energy Minister Alexander Novak (Reuters, October 22)

The response of the US shale industry?

- Estimation of the response of the US oil rigs to oil price changes

American shale oil production has responded sharply to changes in oil prices
(left axis = oil price, right axis = number of rigs)



Estimating the US oil rigs response to oil prices (2013:1 - 2019:10)

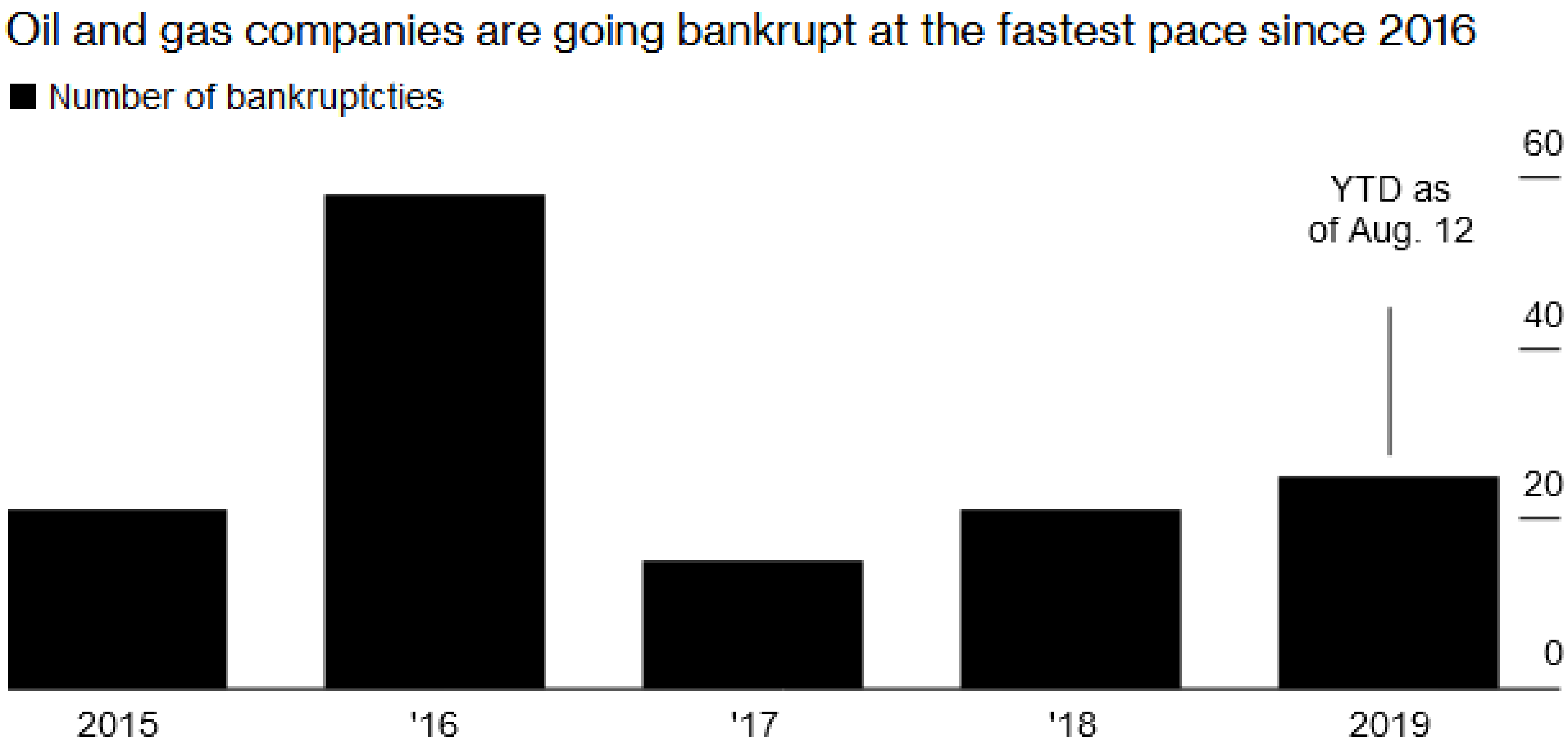
- We can estimate with the US data (using OLS)

$$LOG(OIL\_RIGS_t) = 1.62 + 1.21 * LOG(OIL\_PRICE_{t-4})$$

Adjusted R^2 = 0.905

-> 1 per cent increase in oil price has in 4 months been associated with 1.21 per cent increase in the number of US oil rigs

But: Shale producers struggle to prove to investors they can produce positive cash flow, not just grow at any cost…



Source: Bloomberg

Outlook for the shale oil producers in the US

- “While there continues to be talk of more financial prudence in the tight oil patch, prospects for growth remain given that efficiency and technology gains have further increased” (Mohammad Barkindo, secretary-general of Opec, Financial Times, November 5)

Geopolitcs / Iran sanctions

- The United States will continue to impose sanctions on whoever purchases Iran’s oil or conducts business with Iran’s Revolutionary Guards and no oil waivers will be re-issued (after May 1)

  - Iran’s crude oil exports have been slashed by more than 80% due to re-imposed sanctions

- **The United States has removed nearly 2.7 million barrels of Iranian oil from global markets daily as a result of Washington's decision to reimpose sanctions on all purchases of Iran's crude**
- France has proposed offering Iran about $15 billion in credit lines until year-end if Tehran comes fully back into compliance with its 2015 nuclear deal, a move that hinges on Washington not blocking it (Reuters, September 8)
- Iran wants to export a minimum of 700,000 barrels per day of its oil and ideally up to 1.5 million bpd if the West wants to negotiate with Tehran to save the nuclear deal

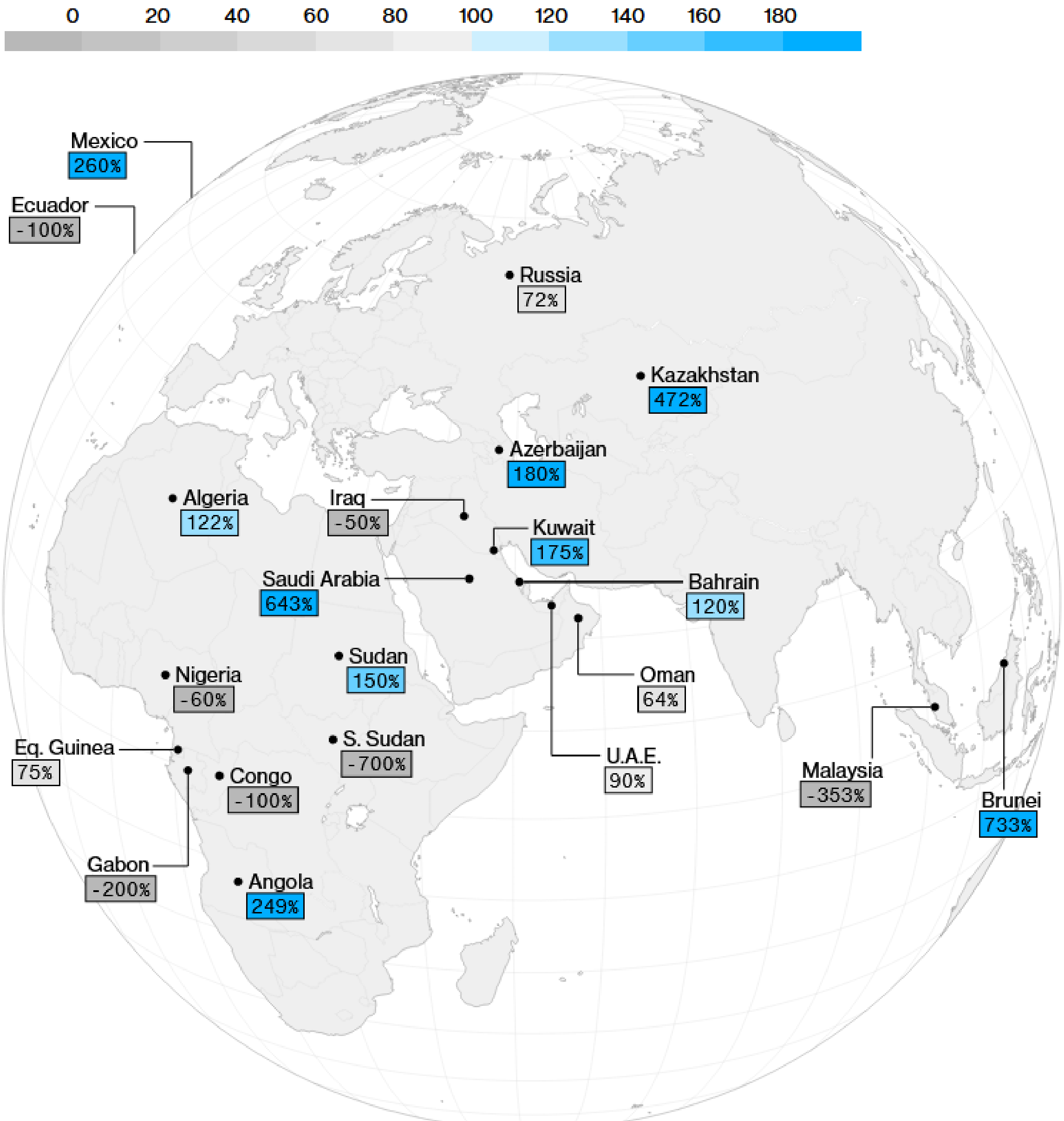
-> After attacks in Saudi Arabia chances of a deal with the West seem rather low

The OPEC response to oil price developments

- The OPEC and its partners have pledged to trim a combined 1.2 million barrels a day from January 1 this year.
  - OPEC's share of the cut is 800,000 bpd, to be delivered by 11 members and exempting Iran, Libya and Venezuela.
- **In July OPEC renewed the pact until March 2020 to avoid a build-up of inventories as worldwide demand is seen weakening.**
- OPEC compliance in September was 286%, according to Bloomberg calculations. Non-OPEC adherence was 122%, according to calculations from revised International Energy Agency figures.

OPEC+ Countries' Compliance With Oil-Cuts Agreement in September

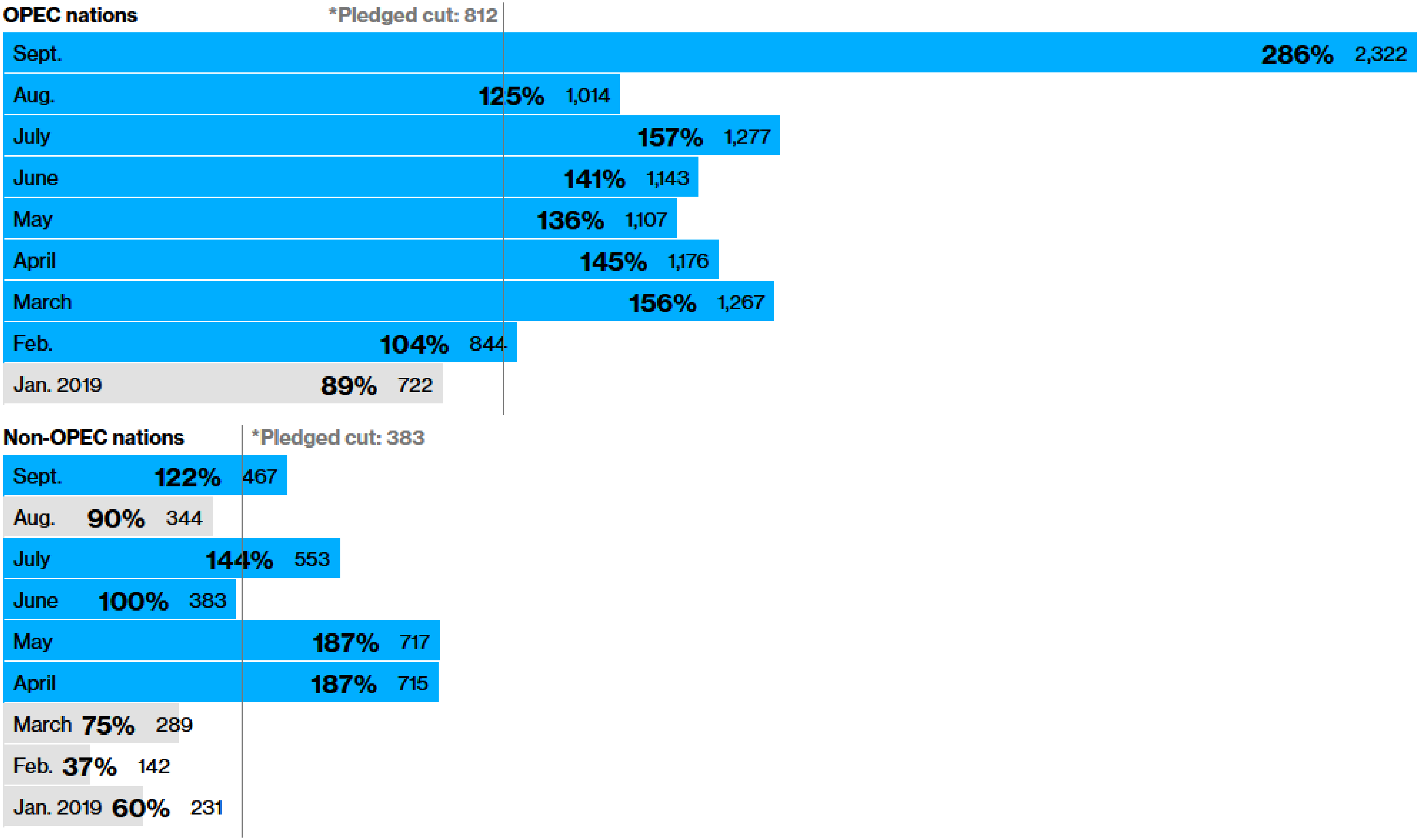
Percentage of cutback target reached



Note: Positive numbers over 100 indicate full conformity with pledged cuts. A positive number below 100 indicates cuts, but less than pledged. Negative numbers show production actually increased relative to the baseline.
Source: Data compiled by Bloomberg

Historical Compliance 2019 by Group

Pledged reductions versus actual curbs



Note: Figures are in thousands of barrels a day.

Near future trends in oil prices

- Success of public listing of Saudi Aramco (2 - 3% of its shares) one signal of the future of oil

  - Aramco's net income earned last year **nearly twice that of Apple and more than the combined earnings of the five biggest *international* oil companies** - ExxonMobil, Royal Dutch Shell, Chevron and Total

- **Saudi Aramco produces 11 % of the global oil production**
- **Spends just $3 to lift a barrel from the desert, but break-even rate est. 31 $.**
- Saudi Arabia's Crown Prince hopes a valuation of $2trn. However bankers and investors have privately said that a valuation of $1.2trn to $1.5trn is more realistic.
- Saudi Arabia and listing of Aramco faces three problems (Economist Nov 2):

  1) Shale has transformed the US into the world's largest oil producer, vexing OPEC's efforts to maintain high, stable prices

  2) Saudi Arabia has a growing, youthful population, but the capital-intensive oil industry cannot employ enough of them

  3) **Economic growth and oil demand, could be decoupled as the threat of climate change grows.**

Near future trends in oil prices

- **The OPEC quotas will remain in place**
- **The US supply is solid, at least in the short run, even though its growth rate will slow down**
- **Geopolitcs will produce shifts in oil prices, for sure, but changes in global economic outlook probably even more important in the short run**
- **5-10 years outlook uncertain. Oil responsible for a third of global carbon emissions – (no) peak oil in sight?**

Thank you

Source: BBC