

Commodity prices: Oil price developments

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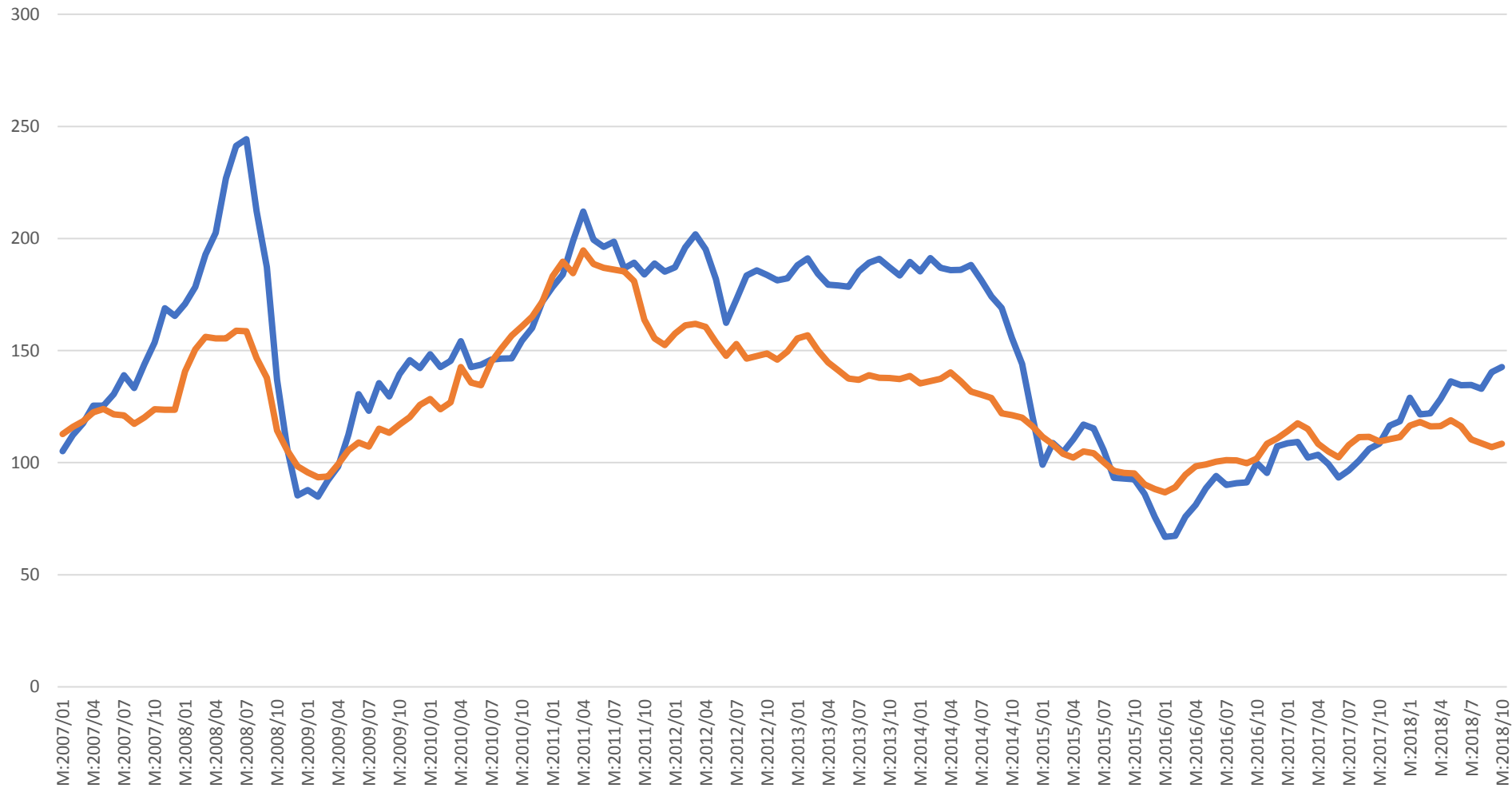
AIECE meeting, Brussels 15.11.2018

This presentation

- Sums up the recent trends in oil (and commodity) prices
- Discusses core factors determining price changes:
 - **Geopolitics: Iran sanctions**
 - **Responses to supply losses from Iran and on the other hand, change in market price trend in October -> OPEC reactions**
 - **Demand side prospects**
 - **The role of the US shale oil production**
- Revised estimations for the US shale oil production
- Future trends in oil prices?

HWWI Index, including and excluding energy 2007:1 – 2018:10 (2015=100)

— HWWI Index, total (2015=100) — HWWI Index, total excl. Energy (2015=100)



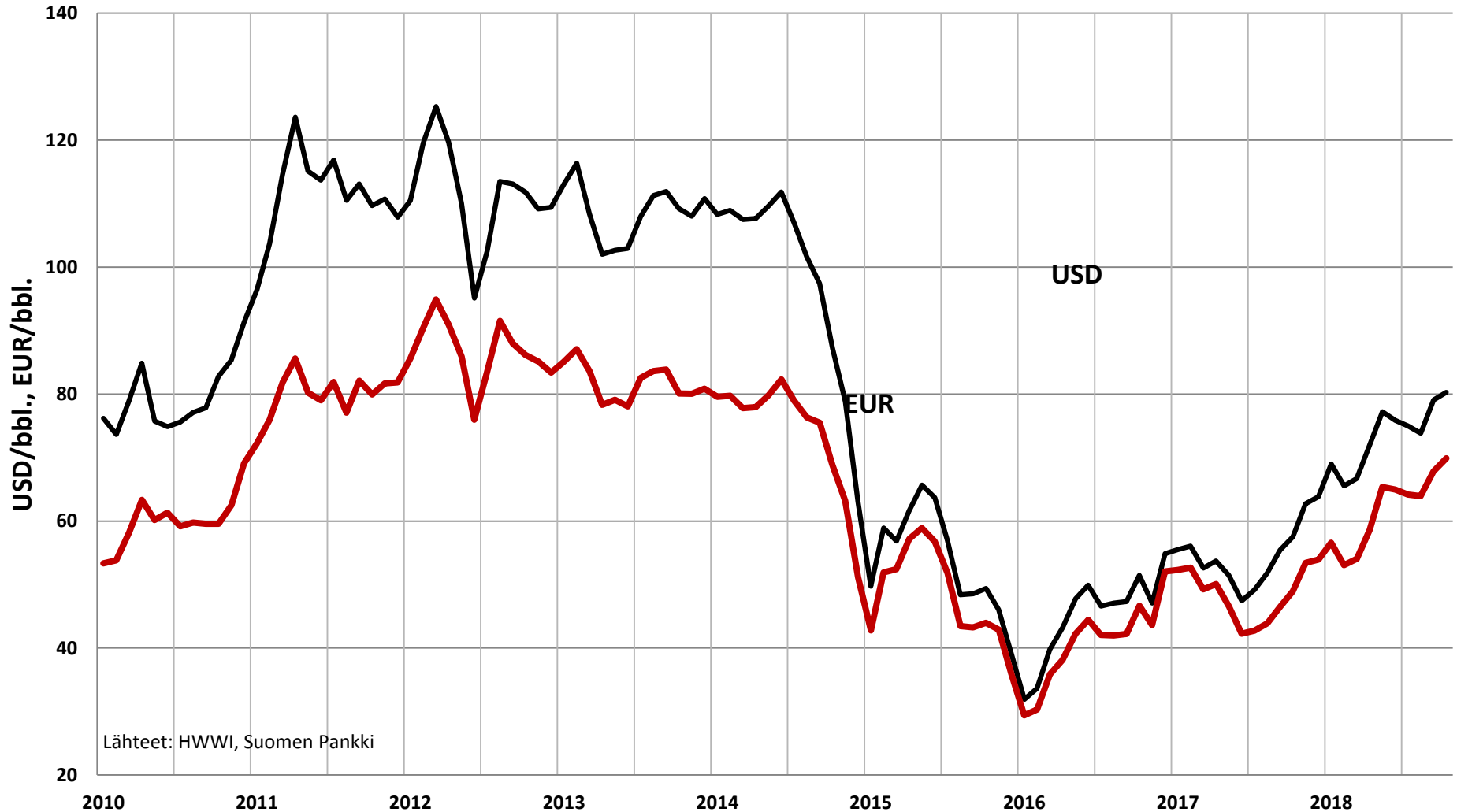
Weighting of Commodities and Commodity Groups in the HWWI Index

Index, total (all commodities)

- Weights, HWWI-Index

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 - 2018:10, in dollars and euros



Probably the most important driver of the recent increase in oil price: Geopolitics

- **The US withdraw from the Iran nuclear deal and instituted sanctions for Iran**
- **Beginning on August 7, 2018, the first tranche of reinstated sanctions include**
 - Secondary sanctions applicable to non-U.S. persons who support the Government of Iran in acquiring U.S. dollar banknotes and precious metals
 - Secondary sanctions applicable to non-U.S. persons who transact with Iran's automotive sector
 - Foreign financial institutions who conduct certain transactions involving the Iranian rial.

Probably the most important driver of the recent increase in oil price: Geopolitics

- **The sanctions that entered into force by 5th November 2018**
- **Target Iran's**
 - (1) port operators**
 - (2) energy, shipping, and ship-building sectors,**
 - (3) petroleum-related transactions, and**
 - (4) certain transactions by foreign financial institutions.**
- Also additional measures for U.S.-owned or –controlled foreign entities and persons under certain circumstances

The OPEC response to supply losses from Iran (mood in September / October)

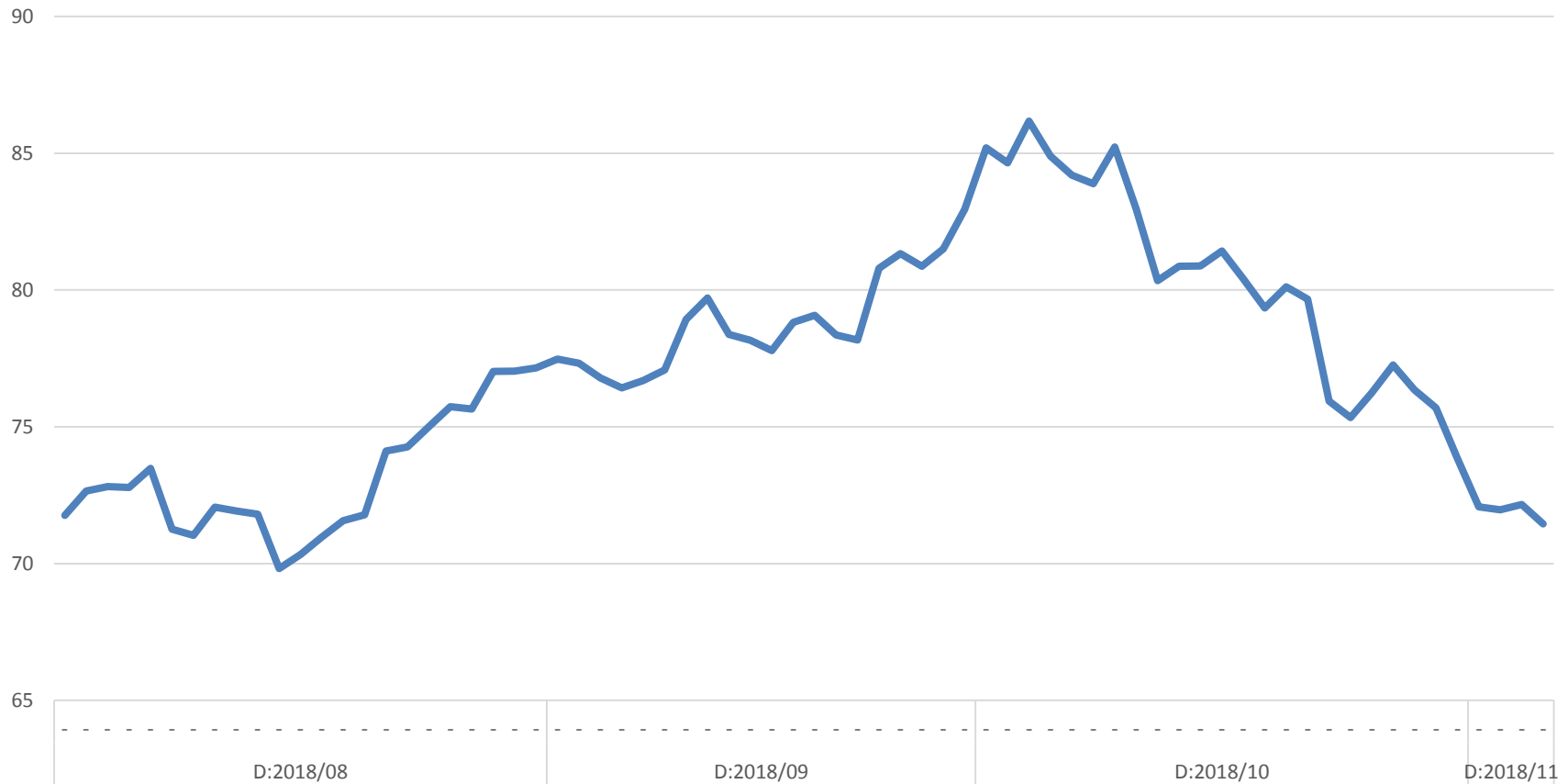
- Iran's production has dropped by 140,000 barrels a day **before sanctions**
- Uncertainty over whether the OPEC and its allies can offset supply losses from Iran after sanctions start in November.
 - OPEC pumped an extra 30,000 barrels a day in September
 - > **NOT enough to cover the losses even before the sanctions hit**
 - > **Explains a great deal of the oil price increase concurred last months**
- OPEC production 32.83 millions barrels a day in September
 - Comparison: on the Q3 2017, the daily average OPEC production was 32,9m barrels per day - > **The OPEC production close to the level seen one year ago**

The OPEC response to supply losses from Iran (mood in September / October)

- Saudi Arabia has discussed of pumping as many as 550,000 additional barrels of oil per day if demand merits it.
 - > However, recent political events do not support the view that this will materialize
- Saudi Arabia probably the only OPEC member country that is capable to quickly increase oil production

Change in oil price development in October

Price of oil, dollars (Brent), daily data



The supply side dynamics: other than the US (mood in November)

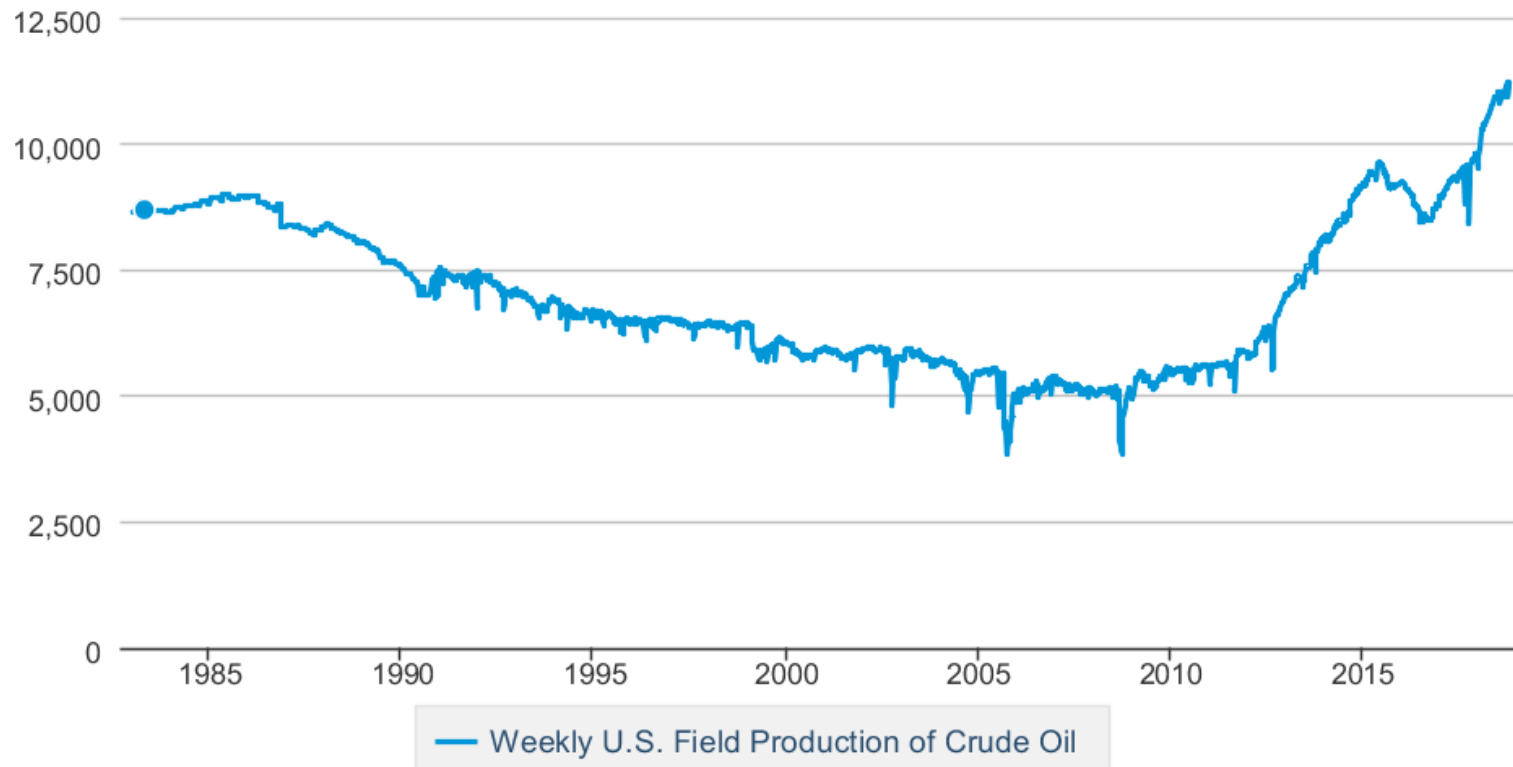
- The financial market turmoil in October
- 8 countries to receive waivers on importing Iranian oil
- Russian oil production moved closer to an all-time high in October
 - The country's crude and condensate output averaged 11.4 million barrels per day in October
 - It's about 160,000 barrels a day more than two years ago before Russia agreed to cut supply with Opec
- Saudi Arabia's oil production reached an all-time high 10.7M bbl/day in October, in an effort to compensate for the loss of Iranian barrels from U.S. sanctions.
 - > Nov 7 (Reuters): Russia and Saudi Arabia have started to discuss cutting production next year following steep falls in oil prices in the last month, according to a report by Russia's TASS news agency.

The US response

- U.S. oil production broke 11 million barrels a day in August for the first time ever and surpassed Russia, making the United States the world's largest oil producer
 - Oil production hit 11.3 million barrels a day, pushing past the Russian Ministry of Energy's August estimate of the Russia's production that was 11.2 million barrels a day
- Recent weekly data shows U.S. crude production at 11.200 million barrels a day

Weekly U.S. Field Production of Crude Oil

Thousand Barrels per Day

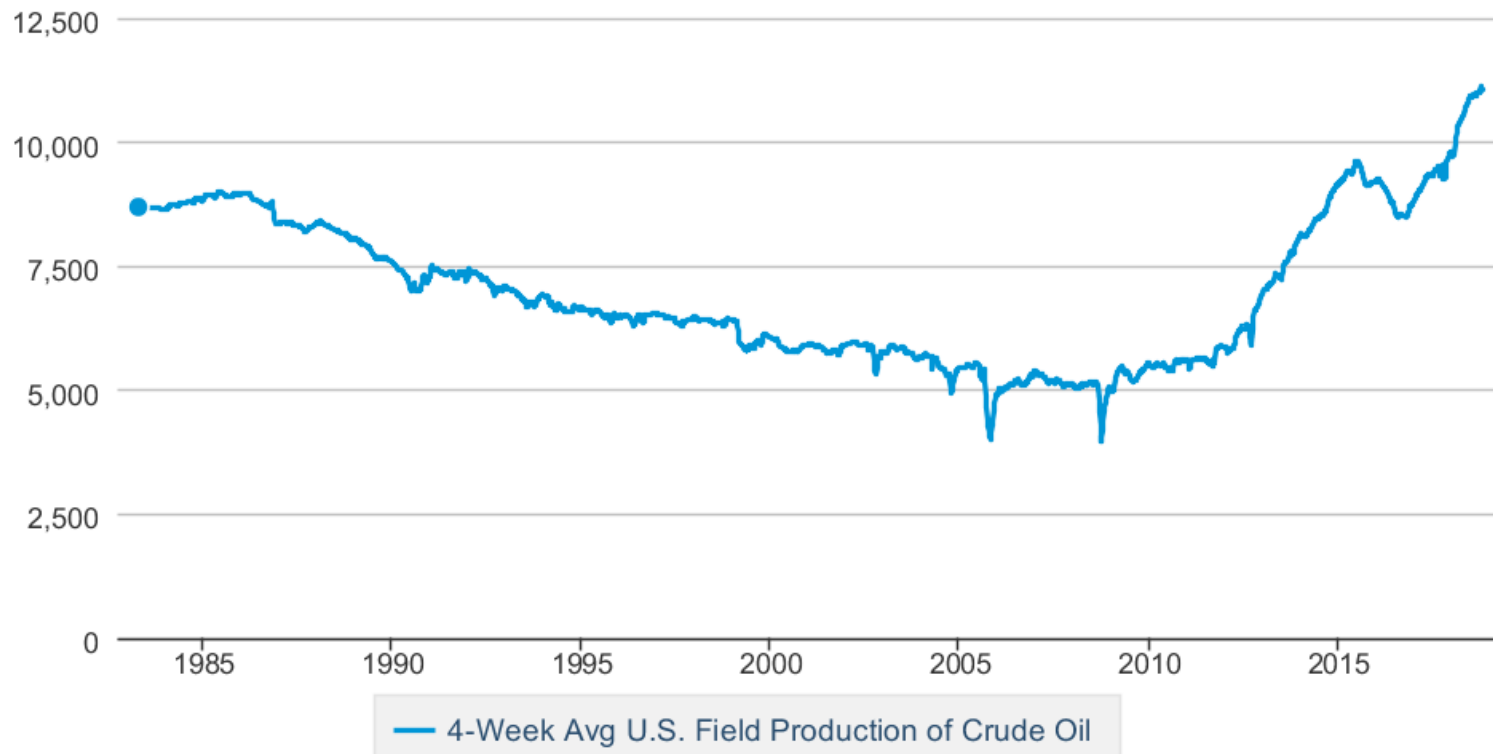


Source: U.S. Energy Information Administration

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

4-Week Avg U.S. Field Production of Crude Oil

Thousand Barrels per Day



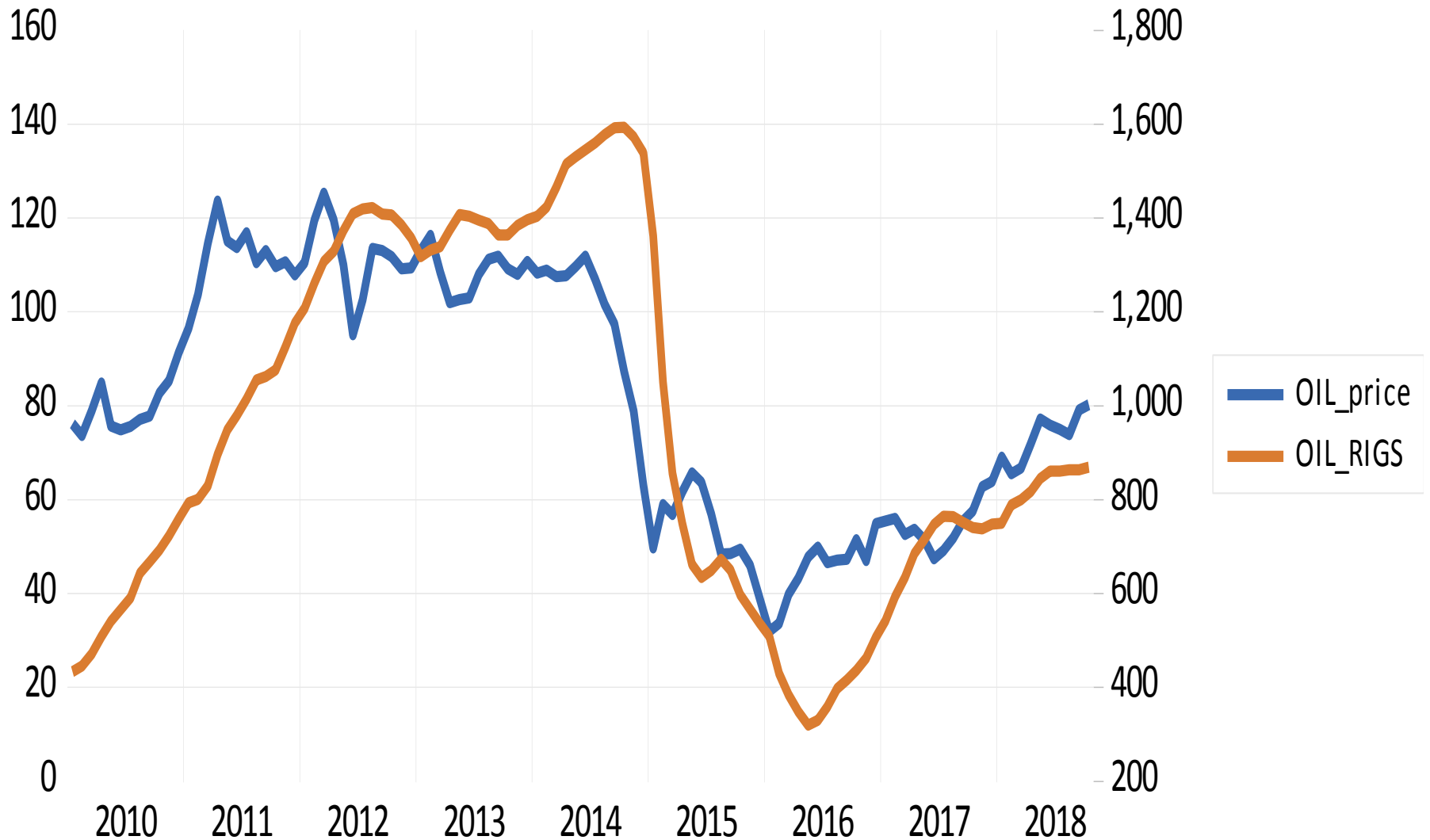
Source: U.S. Energy Information Administration

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 - 2018:10)

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

$$\text{LOG(OIL_RIGS}_t) = 1.58 + 1.22 * \text{LOG(OIL_PRICE}_{t-4})$$

Adjusted R2 = 0.915

-> 1 per cent increase in oil price has in 4 months been associated with 1.22 per cent increase in the number of US oil rigs

The US: The supply side dynamics

- The US shale oil production has proved to adapt quickly to changes in oil prices
- Increased US production has lowered price pressures BUT...
- The positive relation between US oil rigs and oil price seems to have somewhat weakened lately
 - The shale oil firms have concentrated more on increasing profit margins on the second half of 2017, in particular
 - Declining rate of return from drilling due to limits in technology

Future trends in oil prices

- What about oil price development next year and forward?

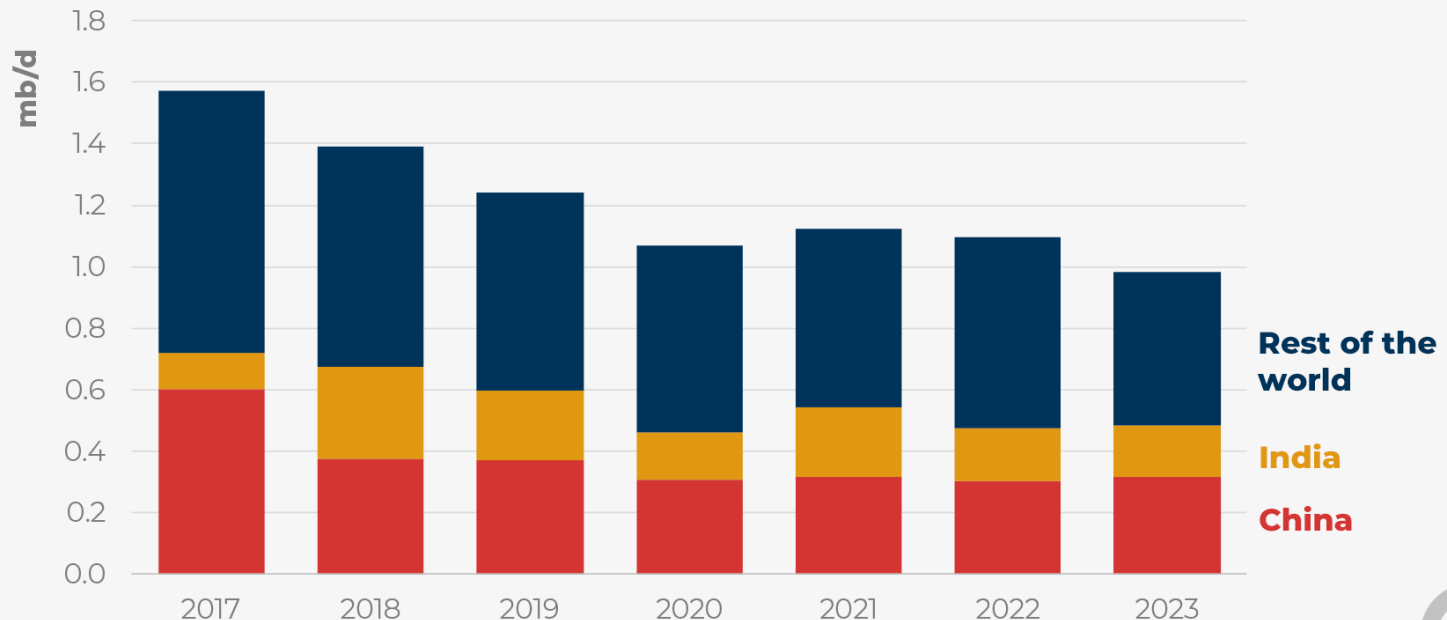
Demand and supply prospects

- IEA: While there is no peak oil demand in sight, the pace of growth will slow down to 1 mb/d by 2023 after expanding by 1.4 mb/d in 2018 (figure)
- The biggest drivers alongside supply losses and geopolitics:
 - A steady – even though slowing – growth of the world economy
 - Expectations that the OPEC production quotas will be loosened (but not ended)...(?)
 - A big question: will the demand for oil hold steady in 2019 amid increasing risks in the world economy

World oil demand, countries/areas.

Source:IEA

World oil demand growth (year-on-year change)
Oil 2018



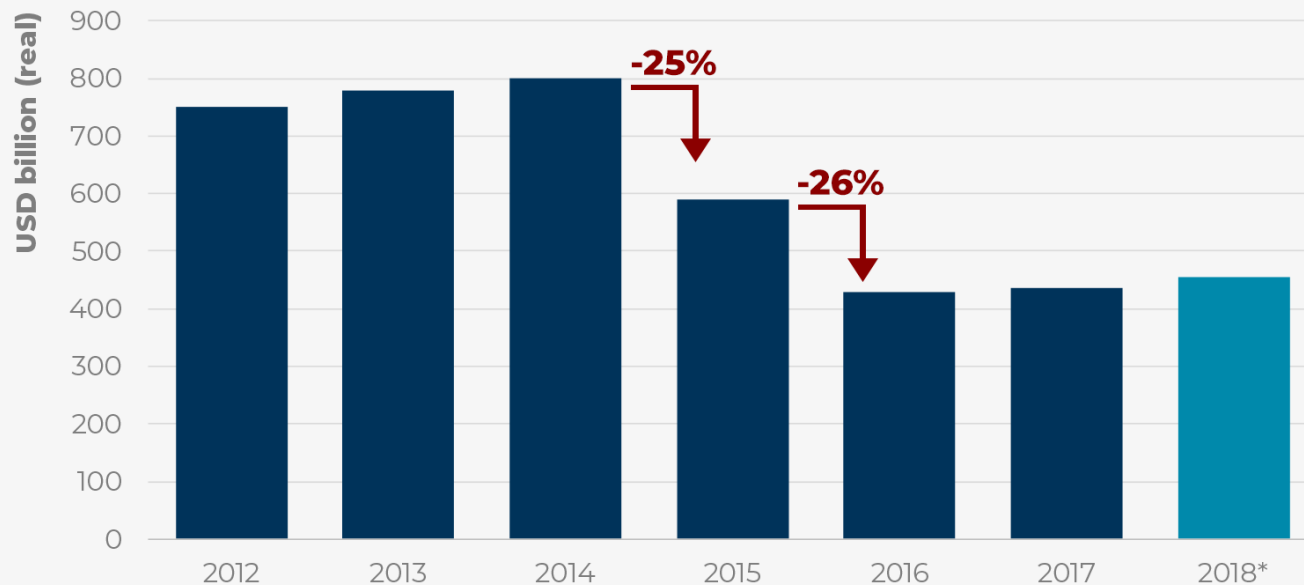
The demand side prospects

- The consensus view is that growth of the world economy slows down slightly but stays clearly above 3 per cent in 2019
- But risks are accumulating
 - In China, the rate of GDP growth in the third quarter dropped to 6.5% and further deceleration is possible if the trade war with the US continues to escalate
- China contributes nearly third of the global oil demand growth
- However IEA estimates that as China's economy becomes more consumer-oriented, the rate of growth in oil demand slows down to 2023. In contrast, the oil demand growth will pick up slightly in India.
- The US GDP growth in 2020 ??

Investment in oil&gas industries was flat in 2017, and early data suggests only a modest rise in 2018

(Source: IEA)

Global oil & gas upstream capital spending, 2012-2018
Oil 2018



*Preliminary based on selection of investment updates



Near future trends in oil prices

- OPEC reaction to recent price changes (at least Saudi Arabia has signalled its worry over an excess of supply)
- Underinvestment in new capacity due to recent years' low price level may increase price pressures during next couple of years
- This is potentially storing up trouble for the future if the world economic growth holds steady
- If not, so that the world GDP growth decelerates significantly, the price of oil will decline, instead
- **Yet the GEOPOLITICS may prove to be even more important driver for oil prices than these factors**

Thank you



Source: BBC