

Outlook for International Oil Market

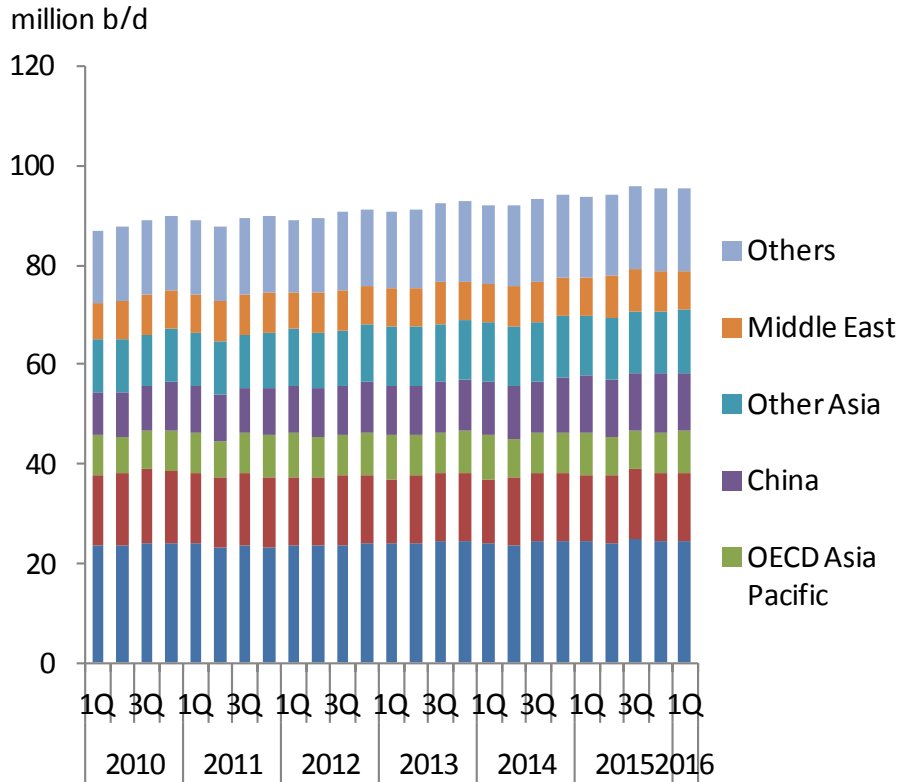
The Institute of Energy Economics, Japan

Tetsuo Morikawa

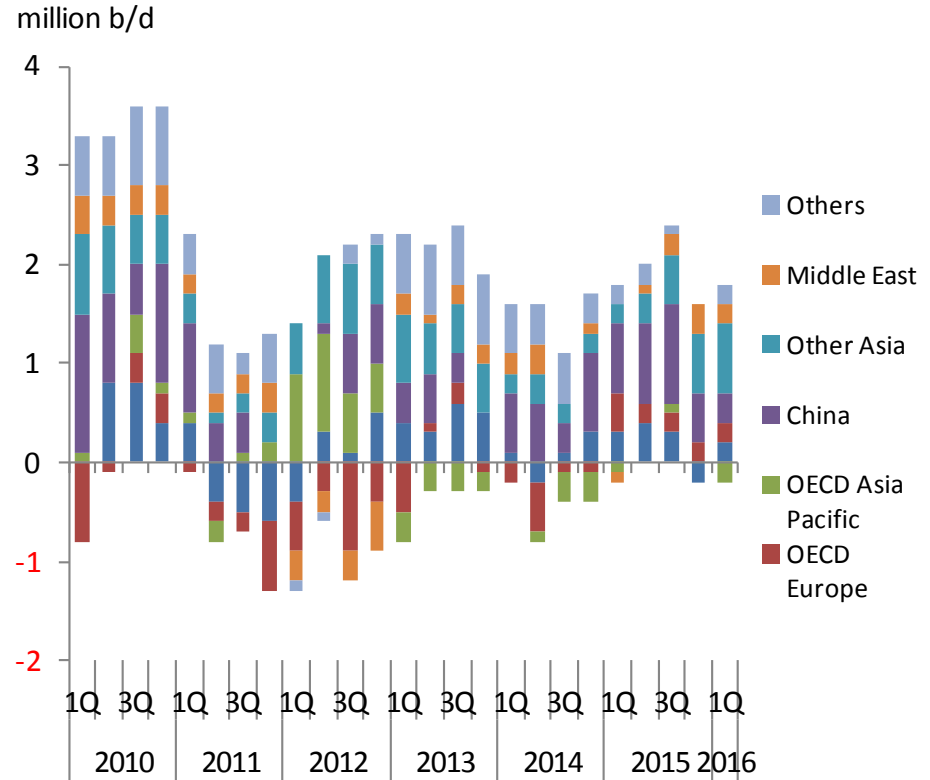
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Crude oil demand

Demand



Changes (year on year)

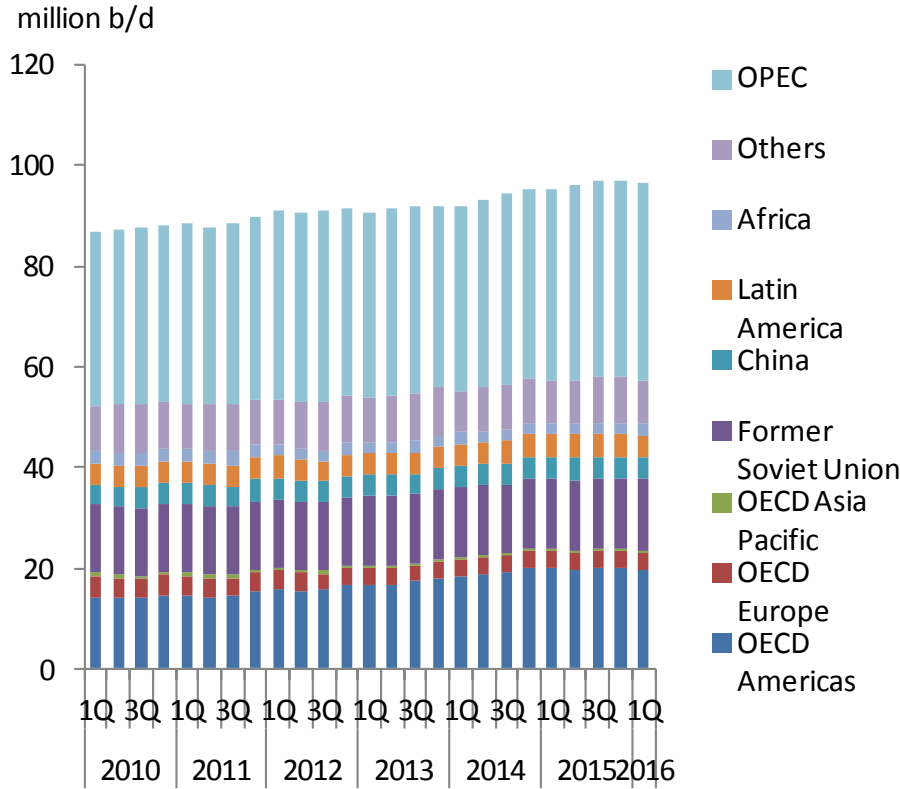


(Source) IEA

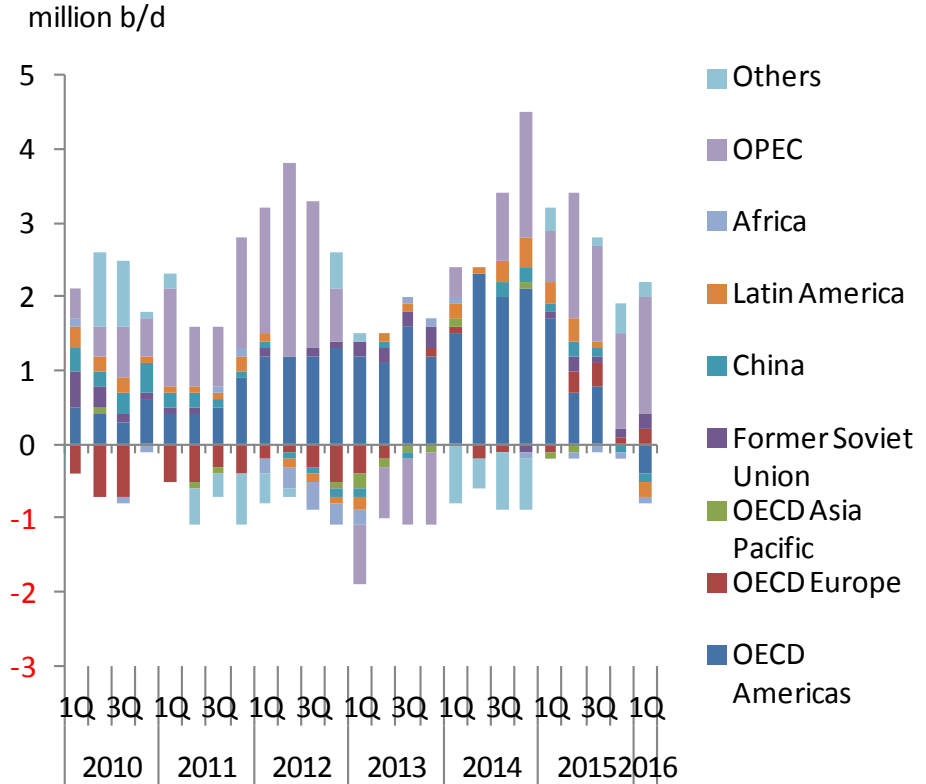
- Demand in the first quarter of 2016 grew by 1.6 mb/d or 1.7% year on year to 95.2 b/d
- U.S., Chinese and Indian demand especially for transportation drove overall oil demand growth

Crude oil supply

Supply



Changes (year on year)

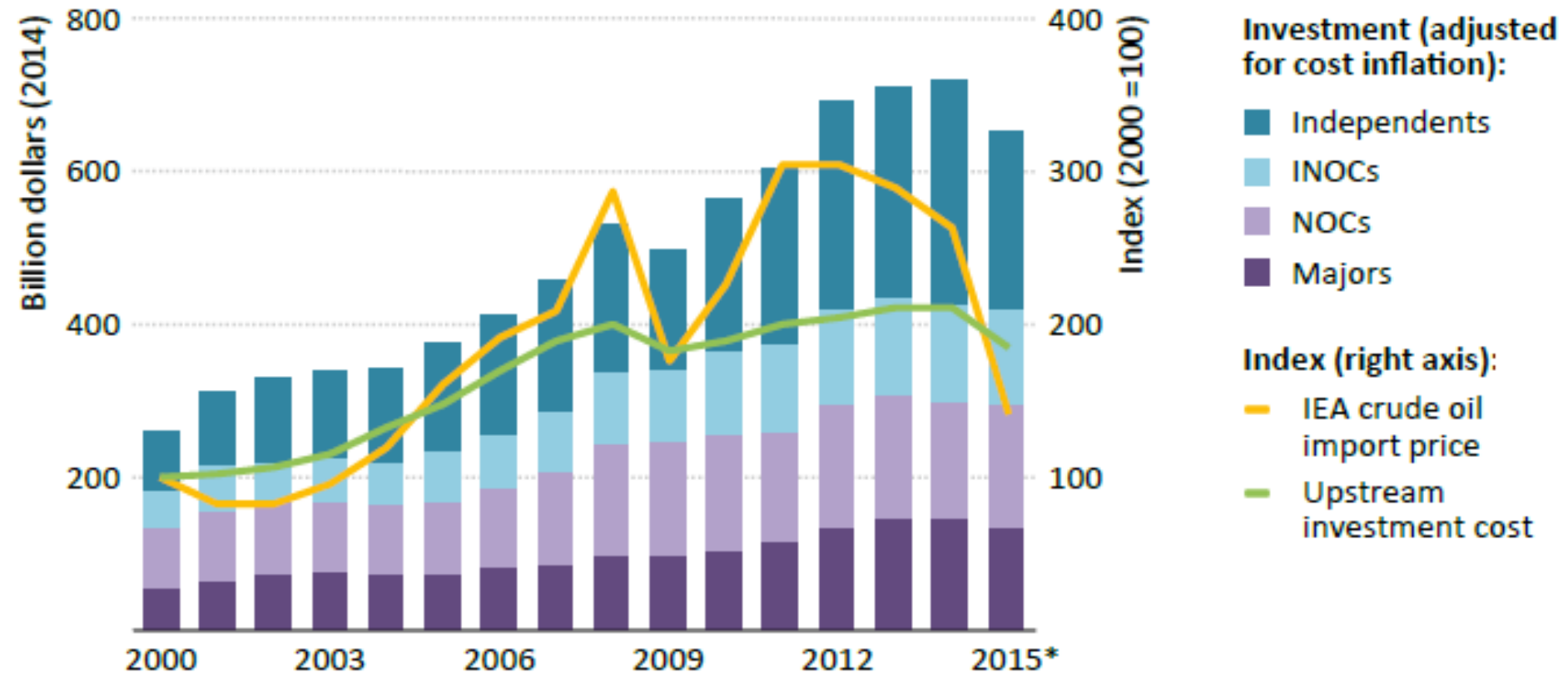


(Source) IEA

- Supply in the first quarter of 2016 grew by 1.4 mb/d or 1.5% year on year to 96.5 mb/d
- The Middle East covered a production decrease in the Americas and Africa.

Slumping upstream investment under low oil prices

Upstream investment and oil price

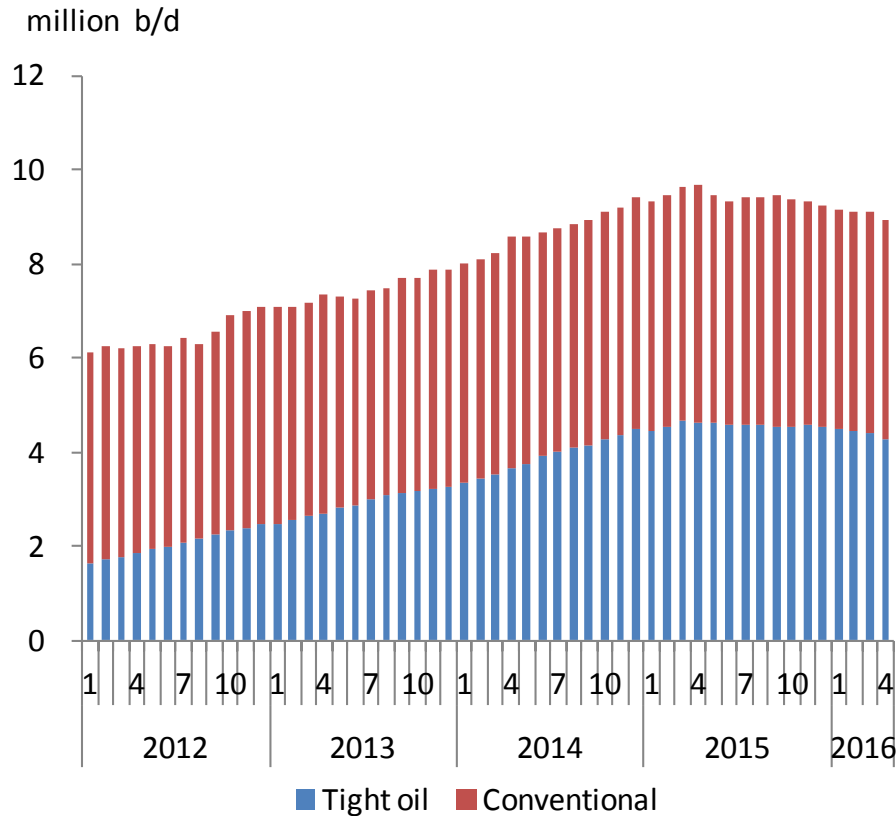


(Source) IEA

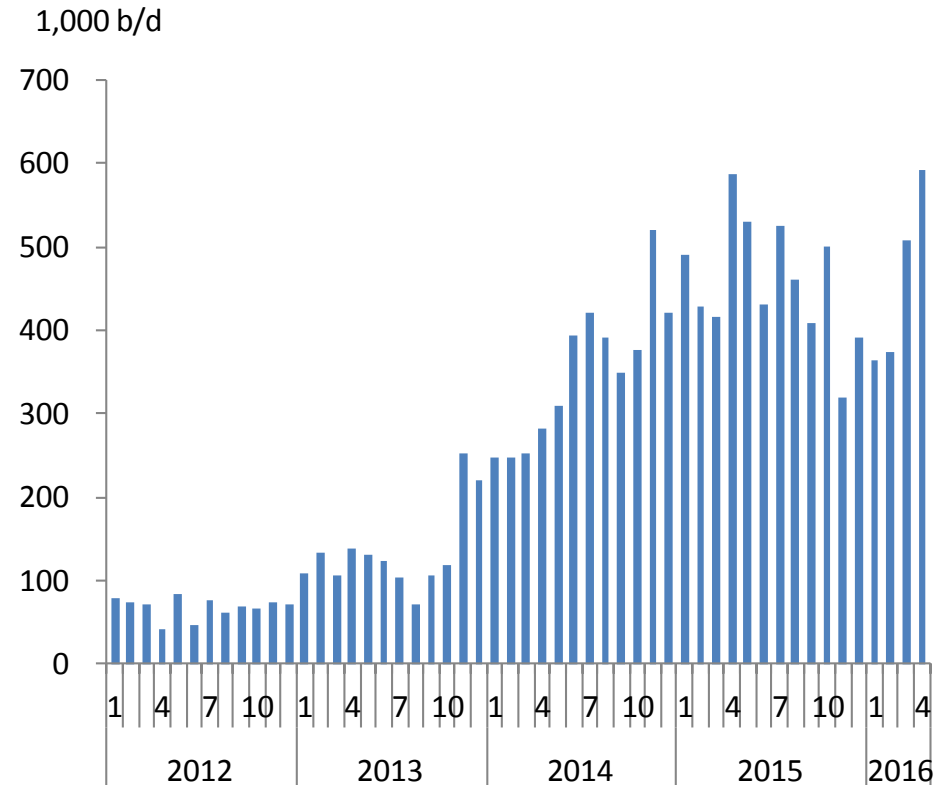
- Upstream oil and gas investment in 2015 fell by 13% from the previous year. Particularly, North American investment posted a remarkable decline.
- When would the upstream investment decline trigger a price hike?

U.S. crude oil production resisting low prices

Production



Exports

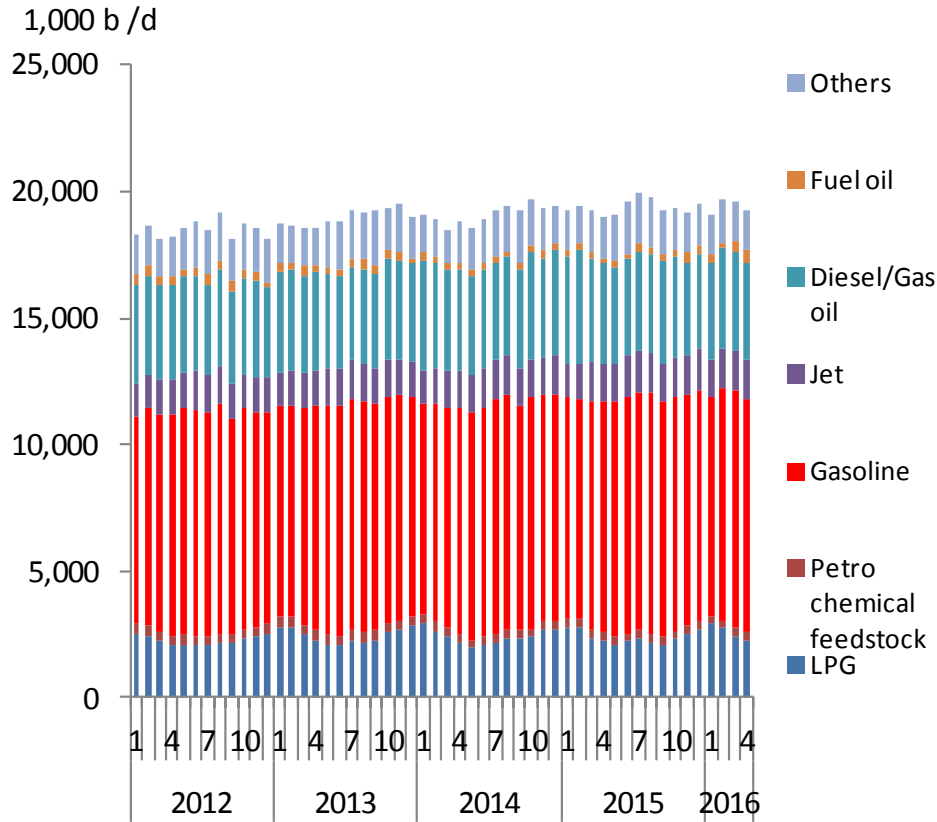


(Source) EIA

- While production declines, shale oil productivity continues to improve
- Is the rig count hitting the bottom?
- Crude oil exports are increasing, while the lifting of a crude oil export ban has had little impact so far

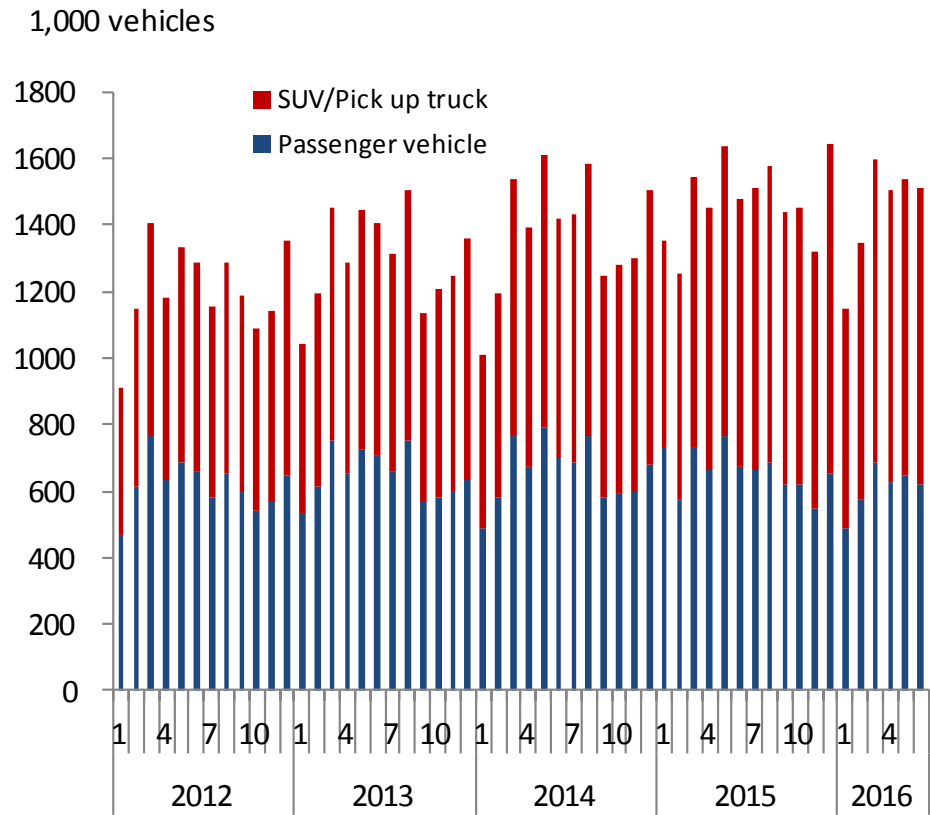
U.S. oil demand remains brisk

Demand by product



(Source) EIA

Vehicle sales



(Source) Motor Intelligence

- Demand is brisk for gasoline as well as LPG and jet fuel
- Modest gasoline demand growth in the driving season
- Vehicle sales in the first half of 2016 fell year on year

Energy and foreign policies of U.S. presidential candidates

	Clinton	Trump
Oil/gas	<ul style="list-style-type: none"> • Repealing oil industry subsidies and tax incentives • Toughening environmental regulations on resources development including hydraulic fracturing 	<ul style="list-style-type: none"> • Supporting competitive energy development without subsidies • Countering market manipulation by OPEC and other state-run oil companies
Foreign policy	<ul style="list-style-type: none"> • Enhancing international cooperation to prevent terrorism • Supporting the Iran nuclear agreement 	<ul style="list-style-type: none"> • Blocking immigration from the Middle East • Opposing the Iran nuclear agreement • Supporting Middle Eastern countries and forces fighting against ISIS and other extremist groups

(Sources) Republican Policy Platform, media reports

- Further policy developments within Democrat could affect shale oil and gas development
- Trump's exclusionist remarks pose risks for financial markets

Impacts of Brexit

Brexit schedule

Within 2 years in principle

U.K.: Official notice to exit from EU

EU: Decision on response

Exit negotiations

European Parliament approves exit agreement

European Council agrees on exit agreement

U.K. exist from EU

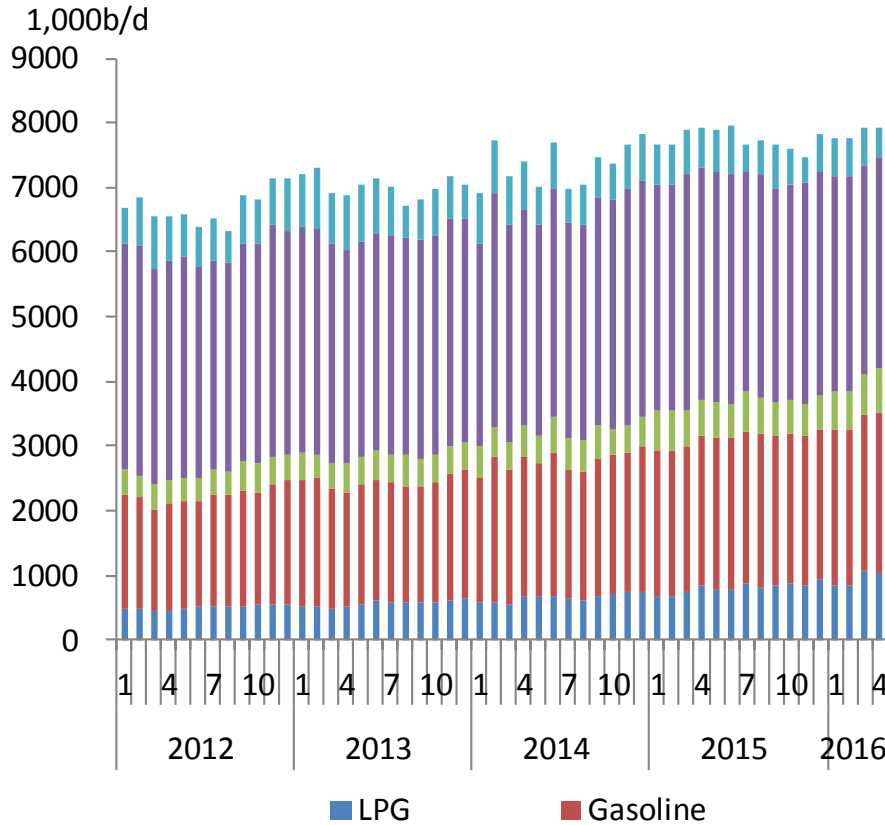
U.K.-EU trade agreement options

	Accession to EEA	Signing agreement	WTO
Contributions to EU	Required	△	Not required
Single market access	○	△	×
Immigration restrictions	×	△	○

- Uncertainties exist about the timing for the U.K.'s official notice to exit from the EU and the EU's response
- The single market access is traded off with immigration restrictions
- Other uncertainties include Scotland's possible independence, French and Dutch national referendums and German and French elections
- Financial market turmoil or recession will put downward pressure on oil demand and prices

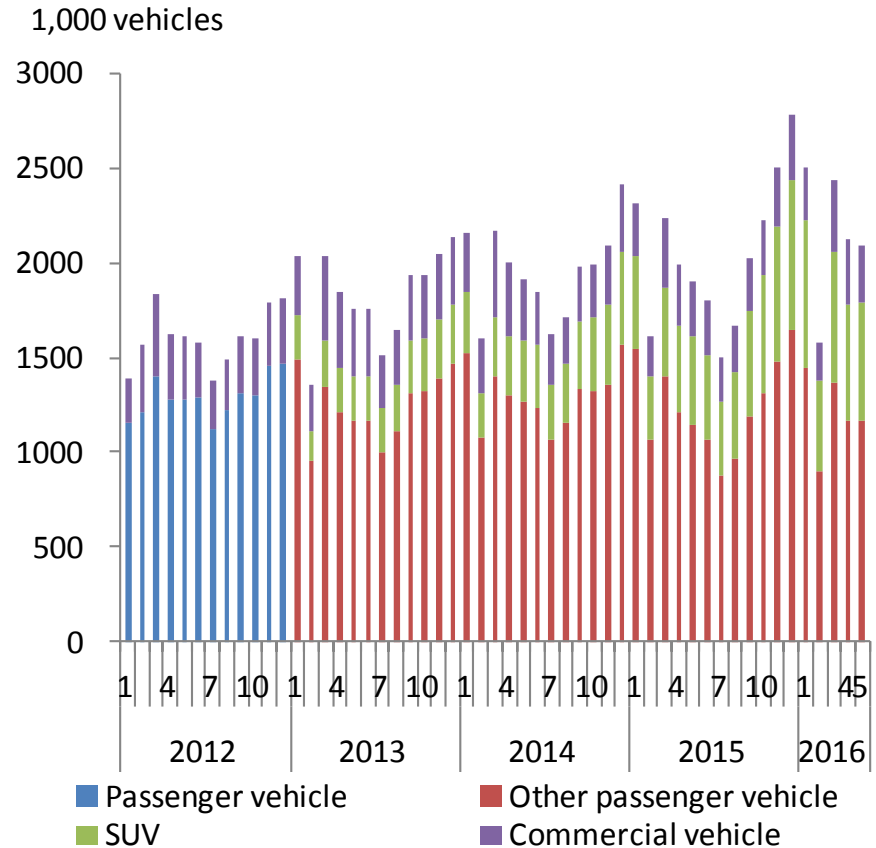
China's oil demand in recovery

Demand by product



(Source) APEC

Vehicle sales

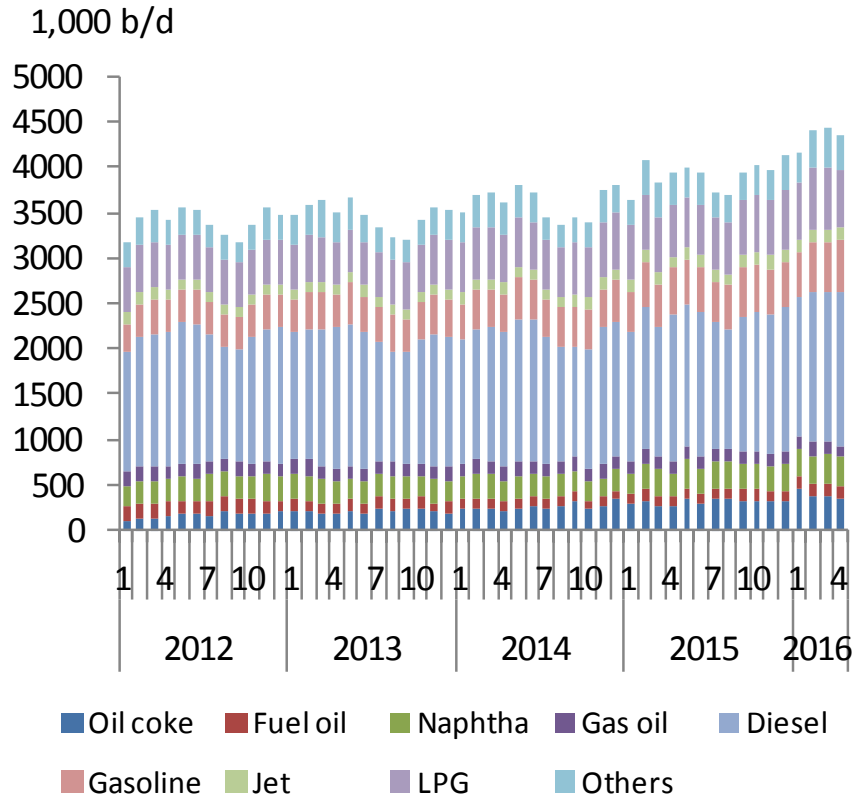


(Source) China Association of Automobile Manufacturers

- Recovering from a slump in the second half of 2015, oil demand increased 4% year on year in the first four months of 2016.
- Vehicle sales are recovering from a plunge in February

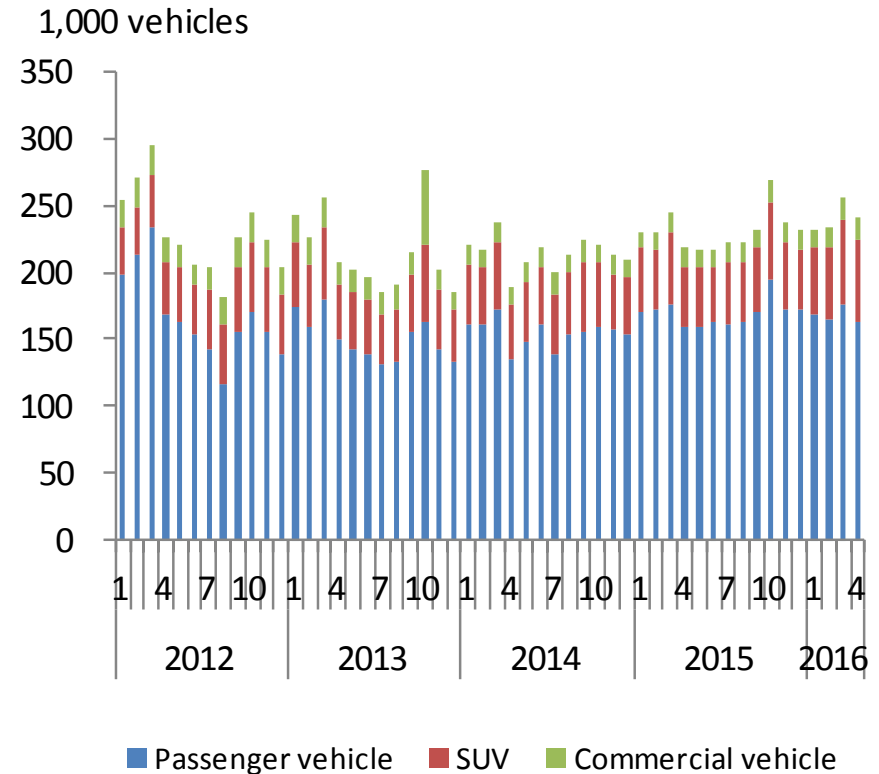
Brisk Indian demand

Demand by product



(Source) PPAC

Vehicle sales

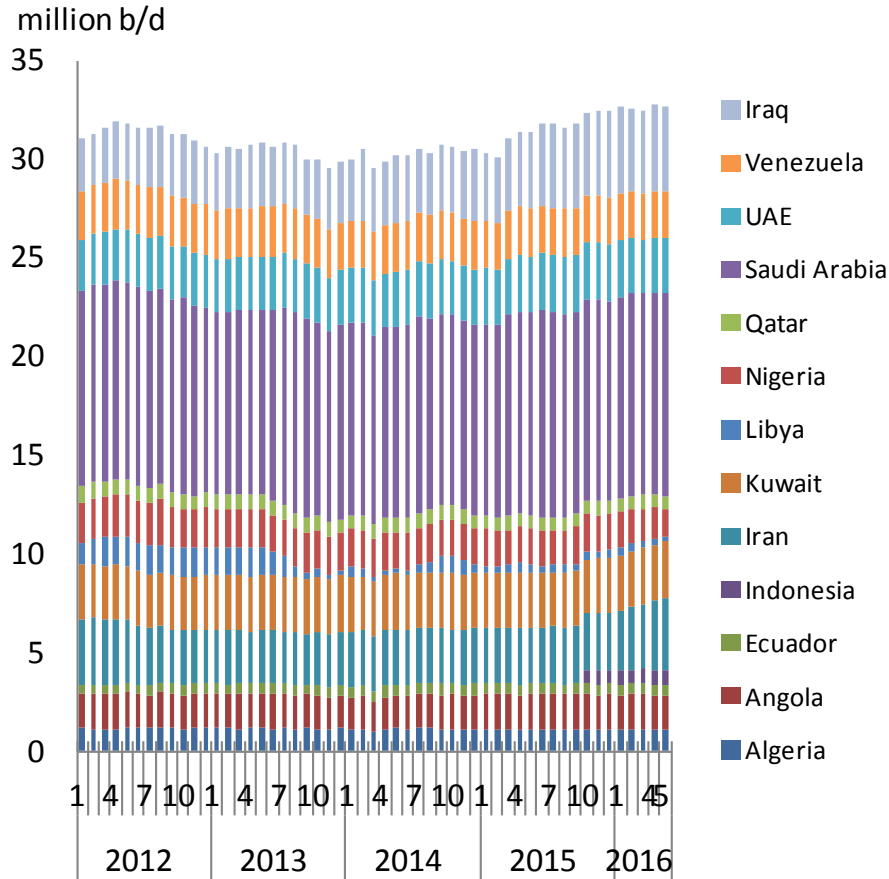


(Source) SIAM

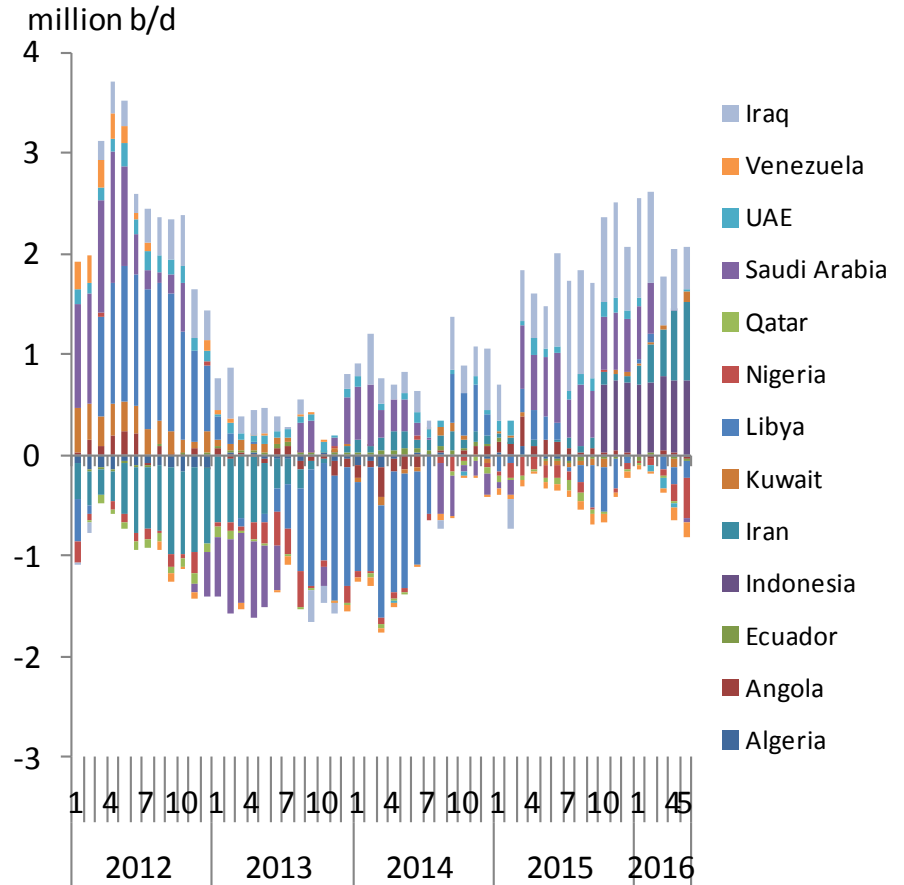
- Demand growth accelerated in the second half of 2015. In the first four months of 2016, demand expanded 12% year on year.
- Particularly, gasoline and diesel oil have driven oil demand growth. Vehicle sales have been robust

OPEC production remains high

Crude oil production



Production changes (year on year)

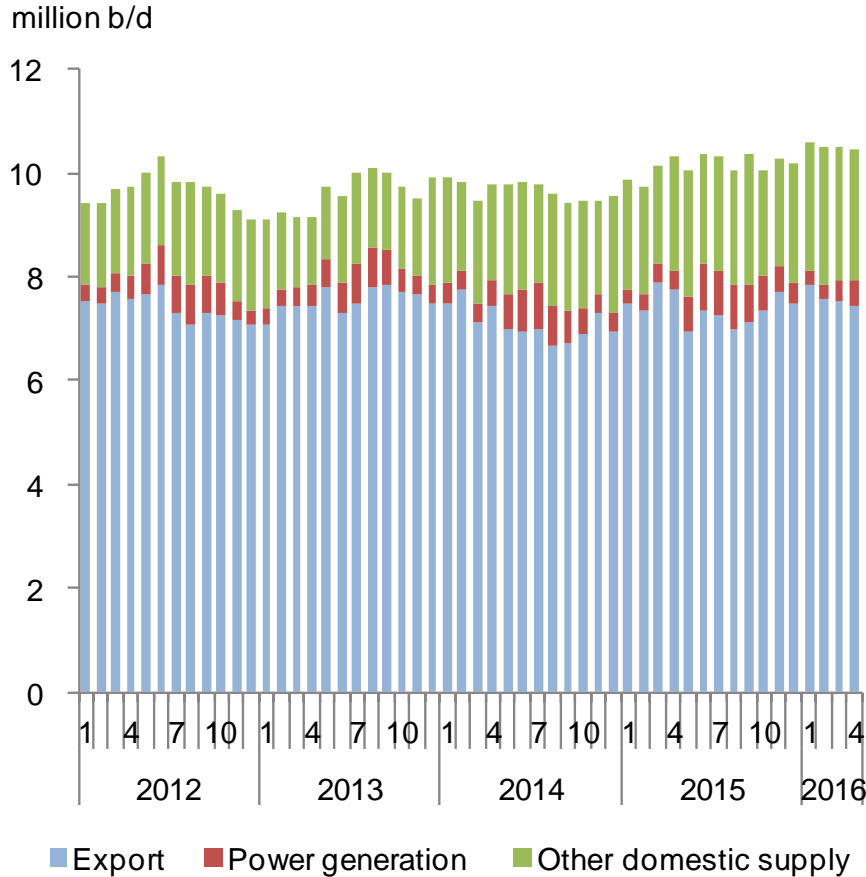


(Source) IEA

- Oil producing countries failed to freeze oil production expansion in April and at the OPEC meeting in June
- Middle Eastern countries have covered production falls in Nigeria, Libya and Venezuela

Saudi oil production under new government

Crude oil exports and supply



(Source) JODI

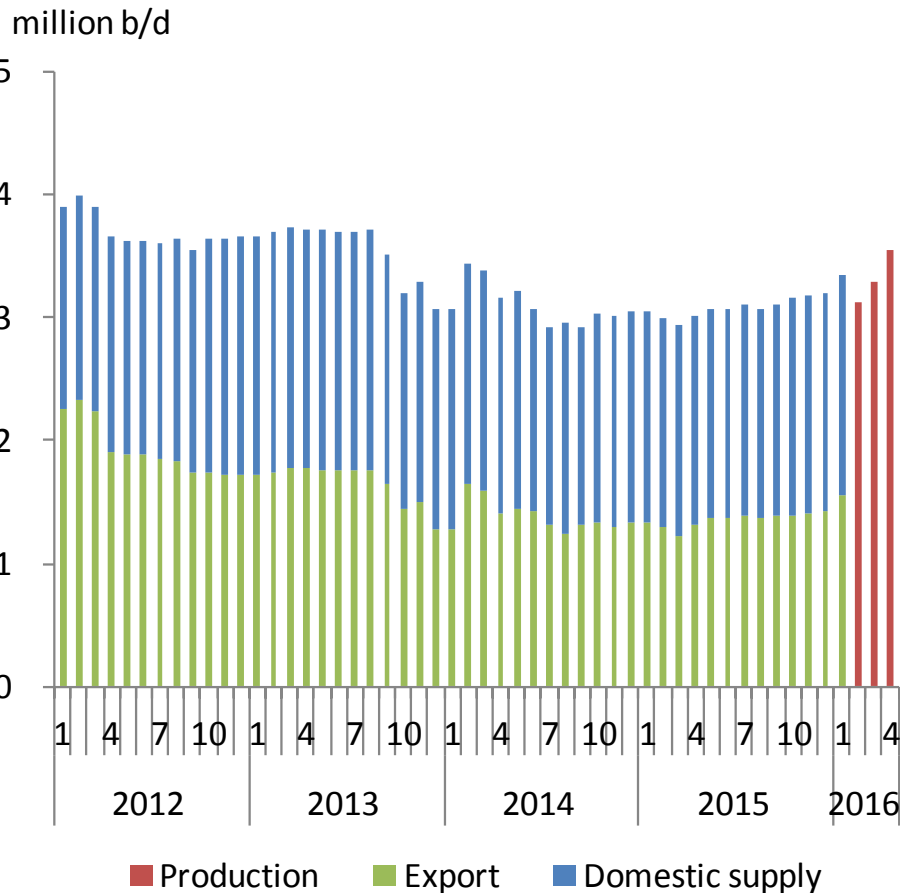
Energy policy targets under Vision 2030

Crude oil	Maintaining production capacity at 12.5 million b/d
Natural gas	Increasing output to 17.8 bcf/d by 2020
Renewable energy	Increasing power generation to 9.5 GW by 2030
Oil refining capacity	Increasing capacity to 3.3 million b/d

- Saudi Arabia will continue to give priority to its market share in 2017 as well
- Under the leadership of Deputy Crown Prince Mohammed bin Salman, Saudi Arabia announced the ambitious Vision 2030.

Iran oil output restoring pre-sanction level

Crude oil exports and supply



(Source) JODI

Oil fields planned to introduce foreign investment

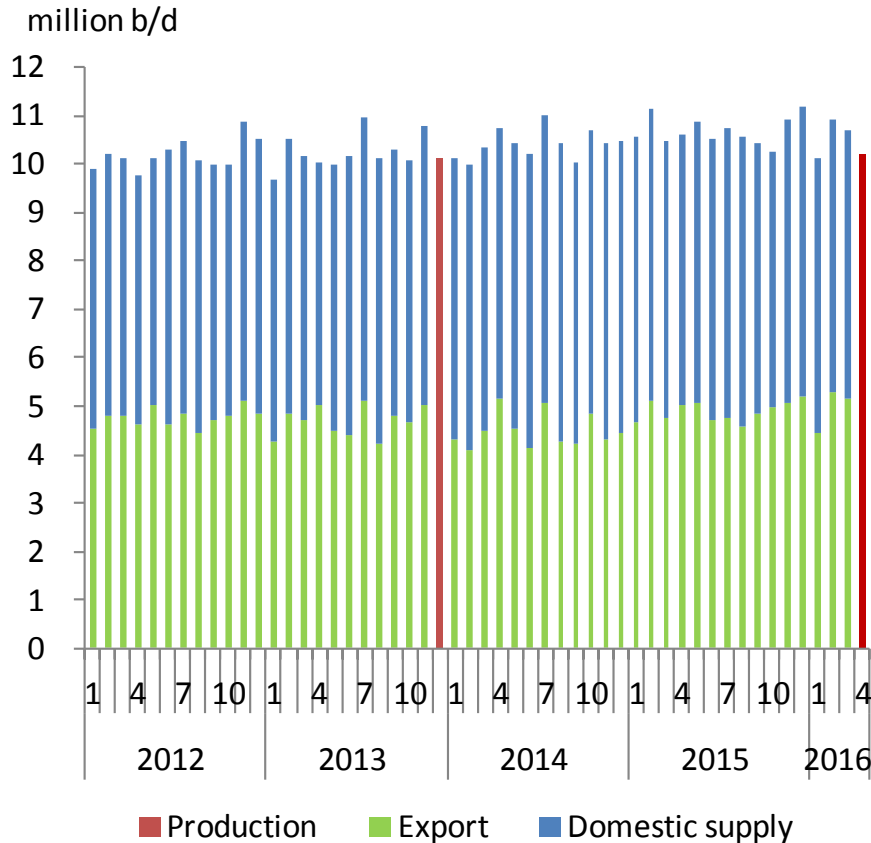


(Source) JOGMEC

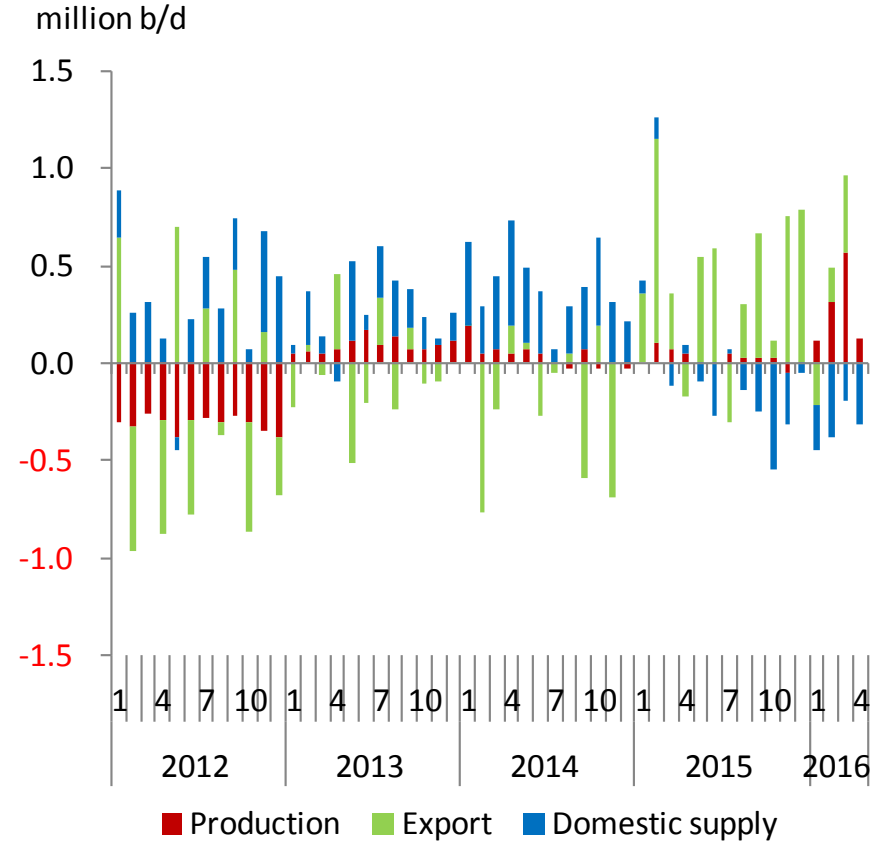
- April 2016 production rose back to 3.6 mb/d
- While foreign investment is required to boost oil output to a policy target of 4.7 million b/d in 2021, IPC (Iran Petroleum Contract) development is in rough waters

Russian crude oil output also remaining high

Crude oil production and supply



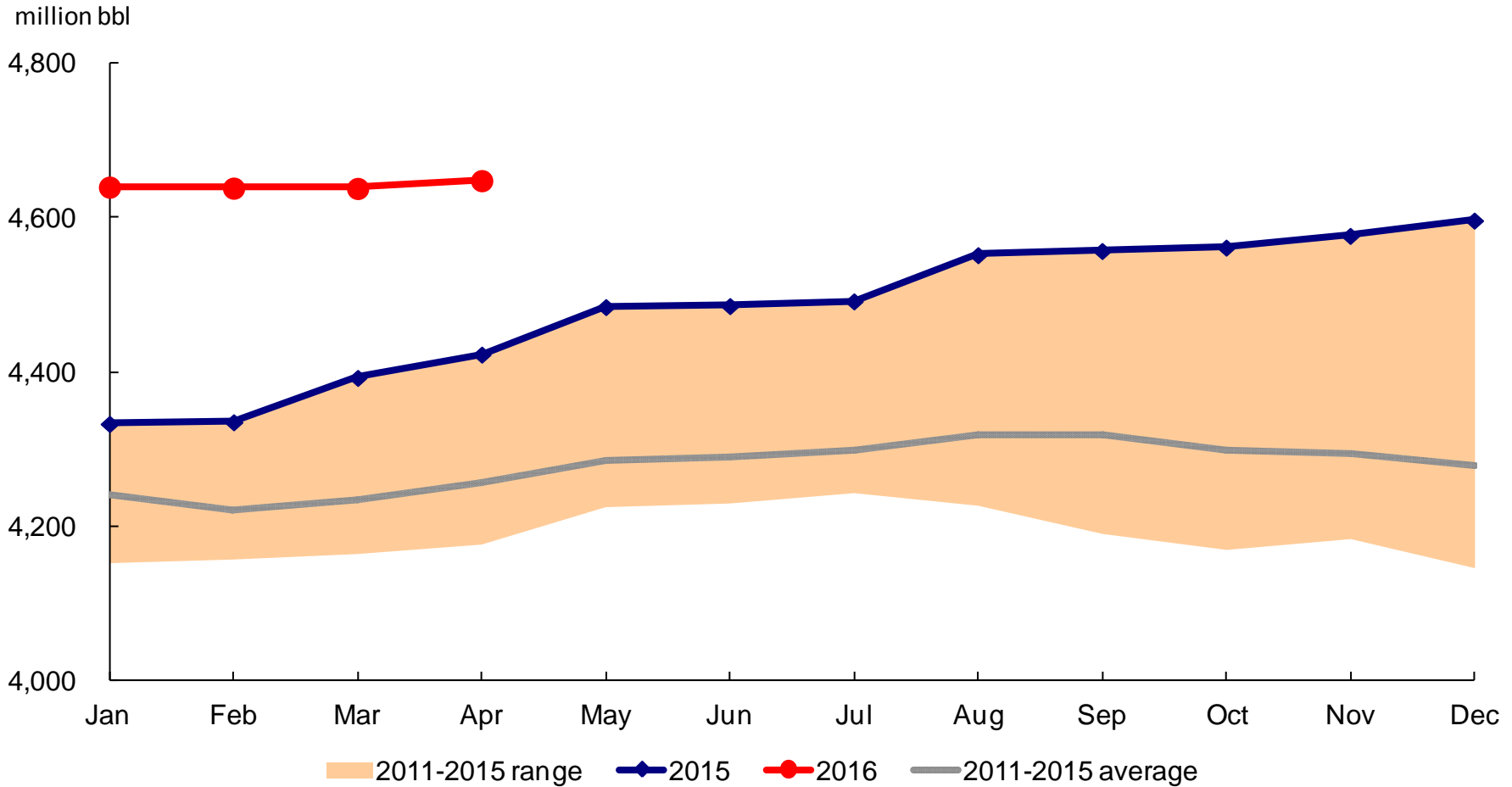
Changes (year on year)



(Source) JODI

- Russia has maintained oil output at more than 10 mb/d rivaling the Saudi level.
- Russia intensively competes with the Middle East in exporting crude oil to Europe, while exports to Asia expand via ESPO

OECD inventories

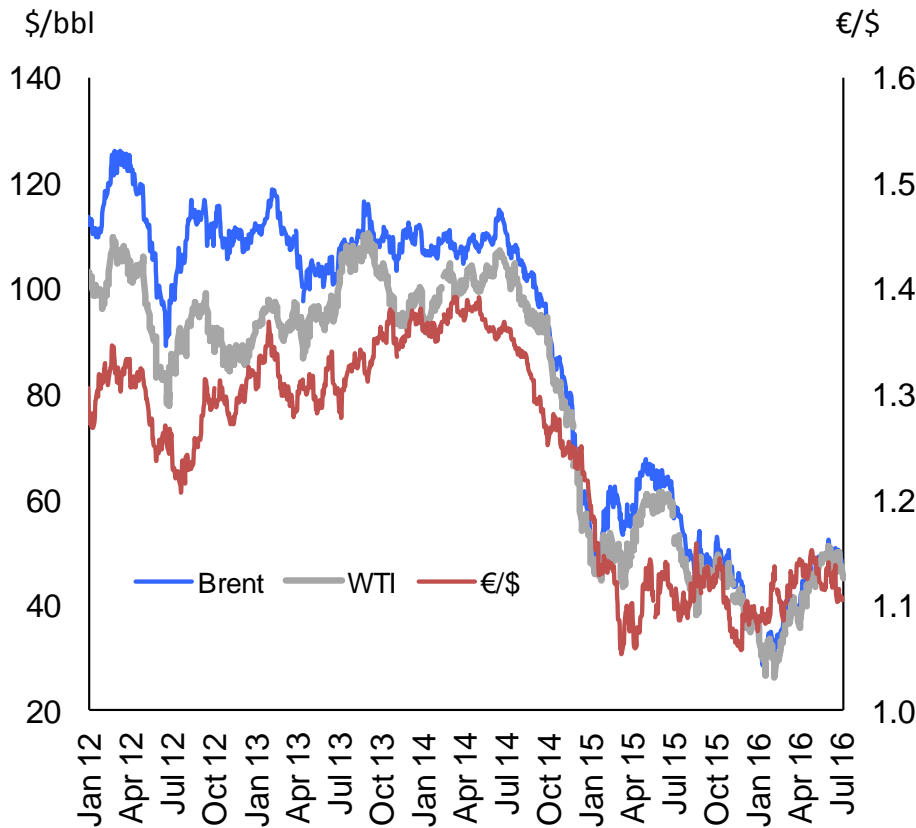


(Source) IEA

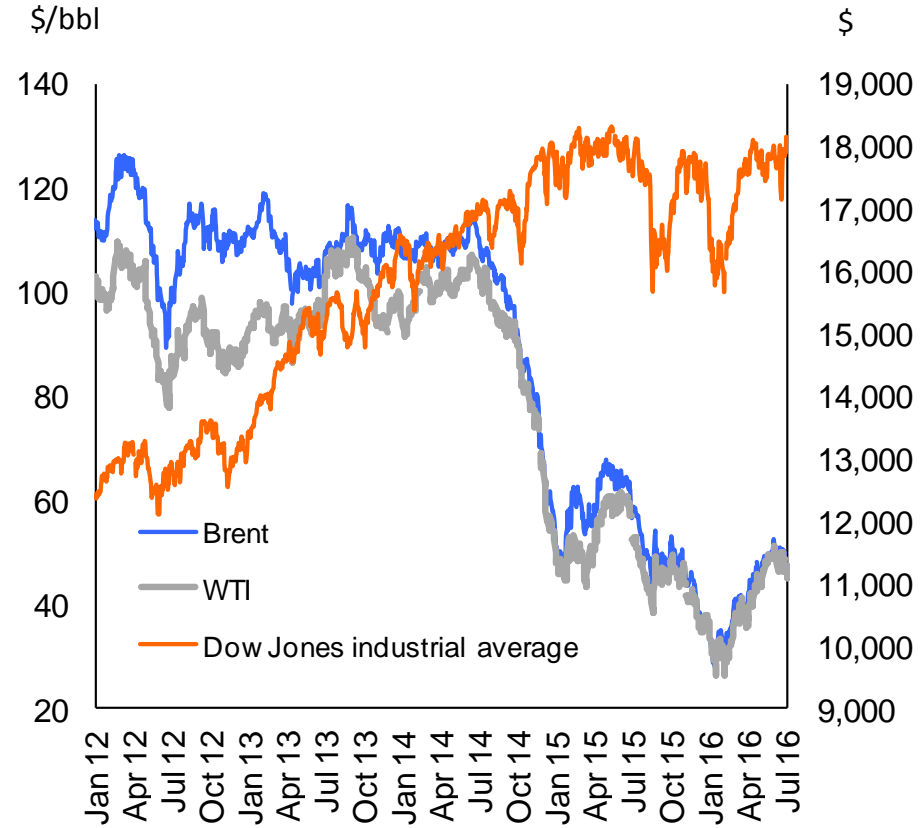
- OECD crude oil inventories remain at the highest ever level
- While supply and demand go in the direction of equilibrium, massive inventories hold down price hikes

Financial market risks

Oil prices and exchange rate



Oil and stock prices

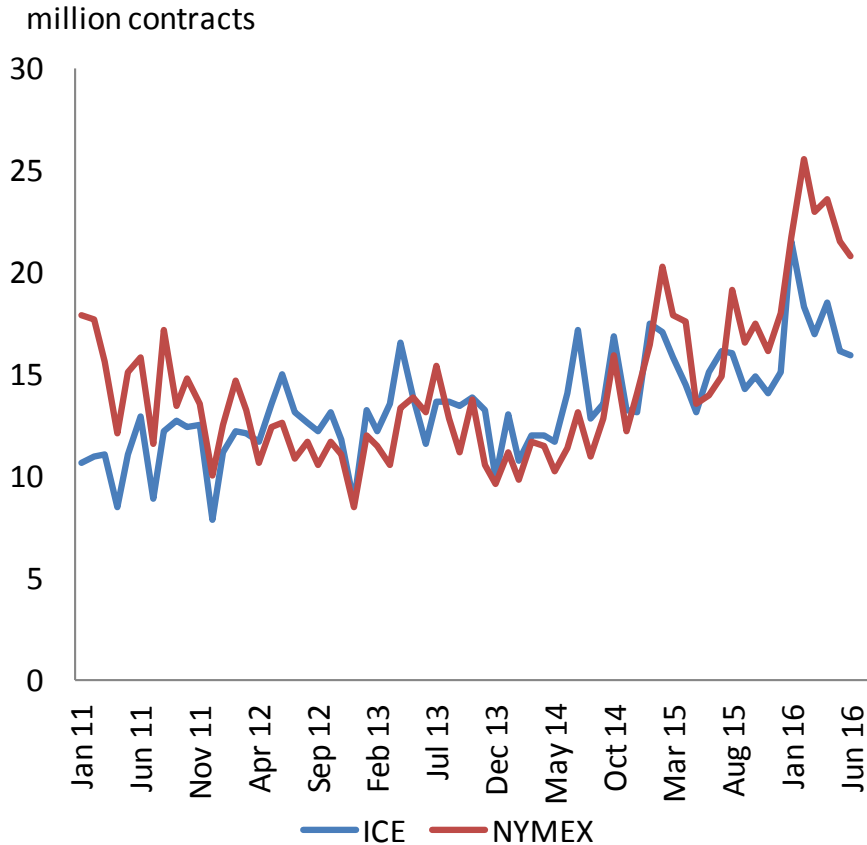


(Source) FRB

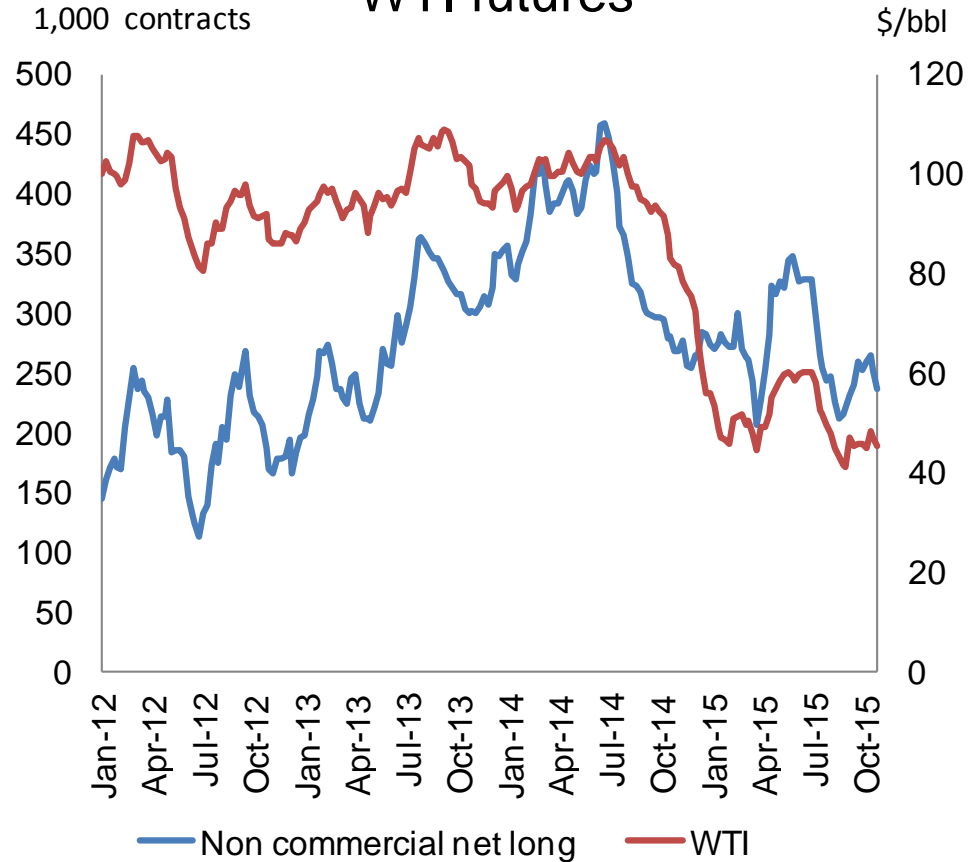
- Will coupling between oil and stock prices revive?
- U.S. interest rate hikes will decelerate oil price hikes through the dollar's appreciation.

Futures market

Brent WTI futures trading volume



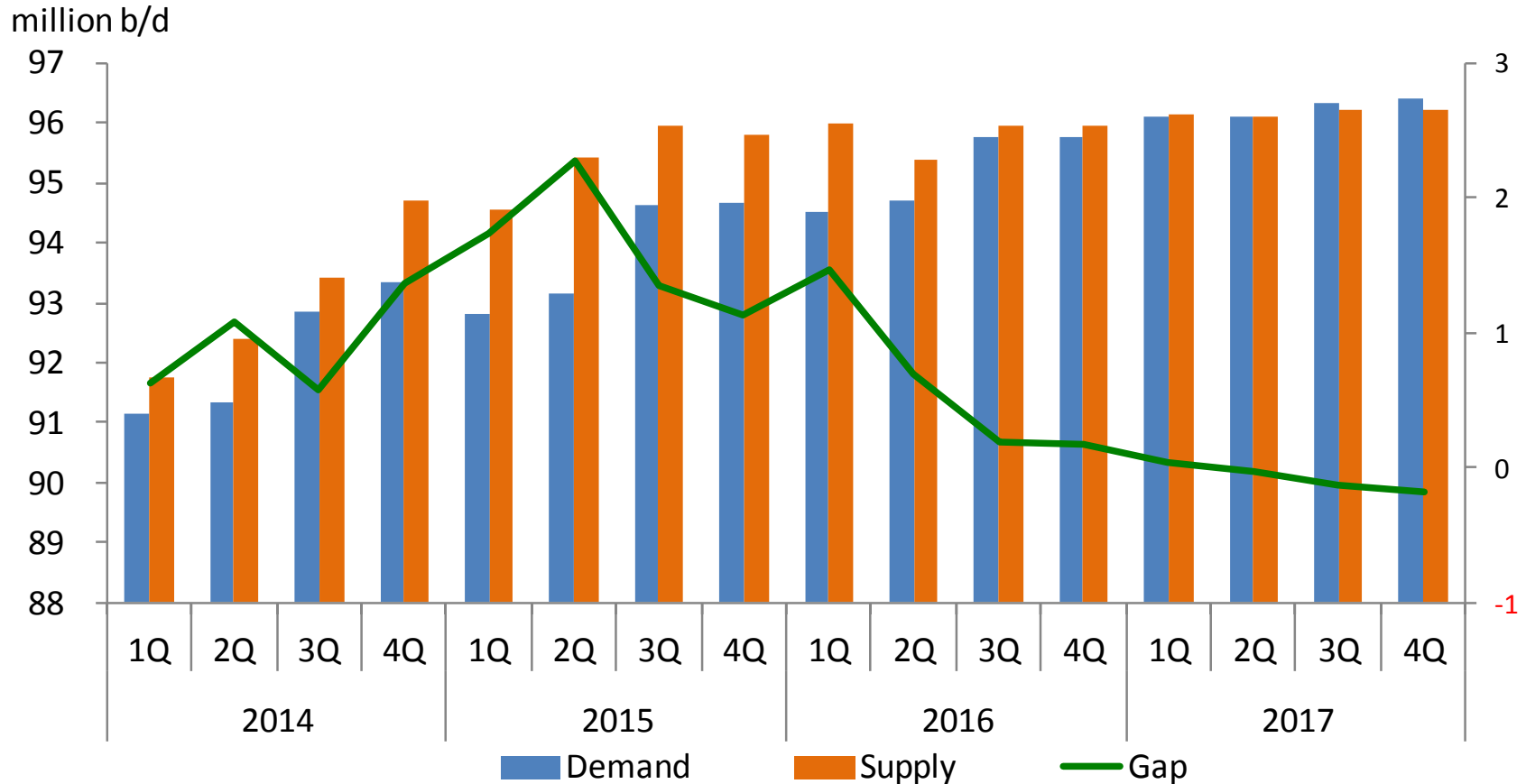
Non-commercial net long position on WTI futures



(Source) CME, ICE

- The non-commercial net long position has been expanding in the first half of 2016

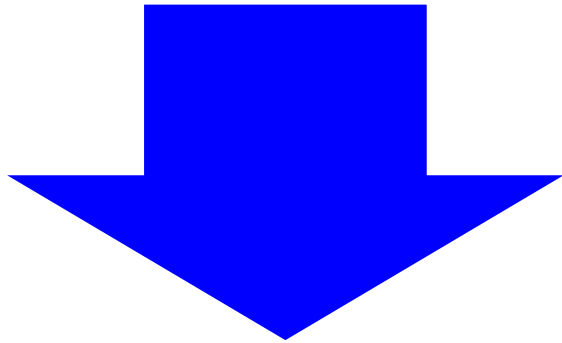
Supply-demand balance outlook



(Source) IEEJ

- Demand growth, though decelerating, will be around 1.1 mb/d in 2017.
- Supply growth will fail to catch up with demand growth, leading to a supply-demand equilibrium toward 2017

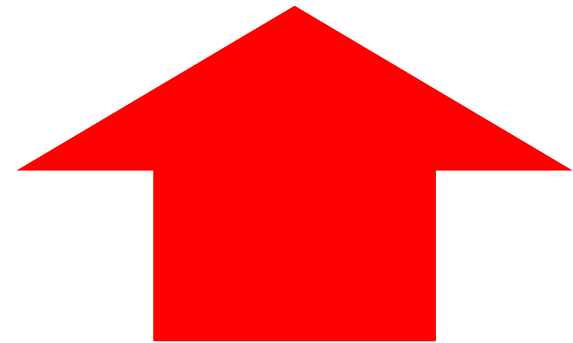
Major factors to fluctuate oil prices toward 2017



- U.S. interest rate hikes
- Brexit spillover
- Financial market turmoil
- U.S. production hitting bottom?

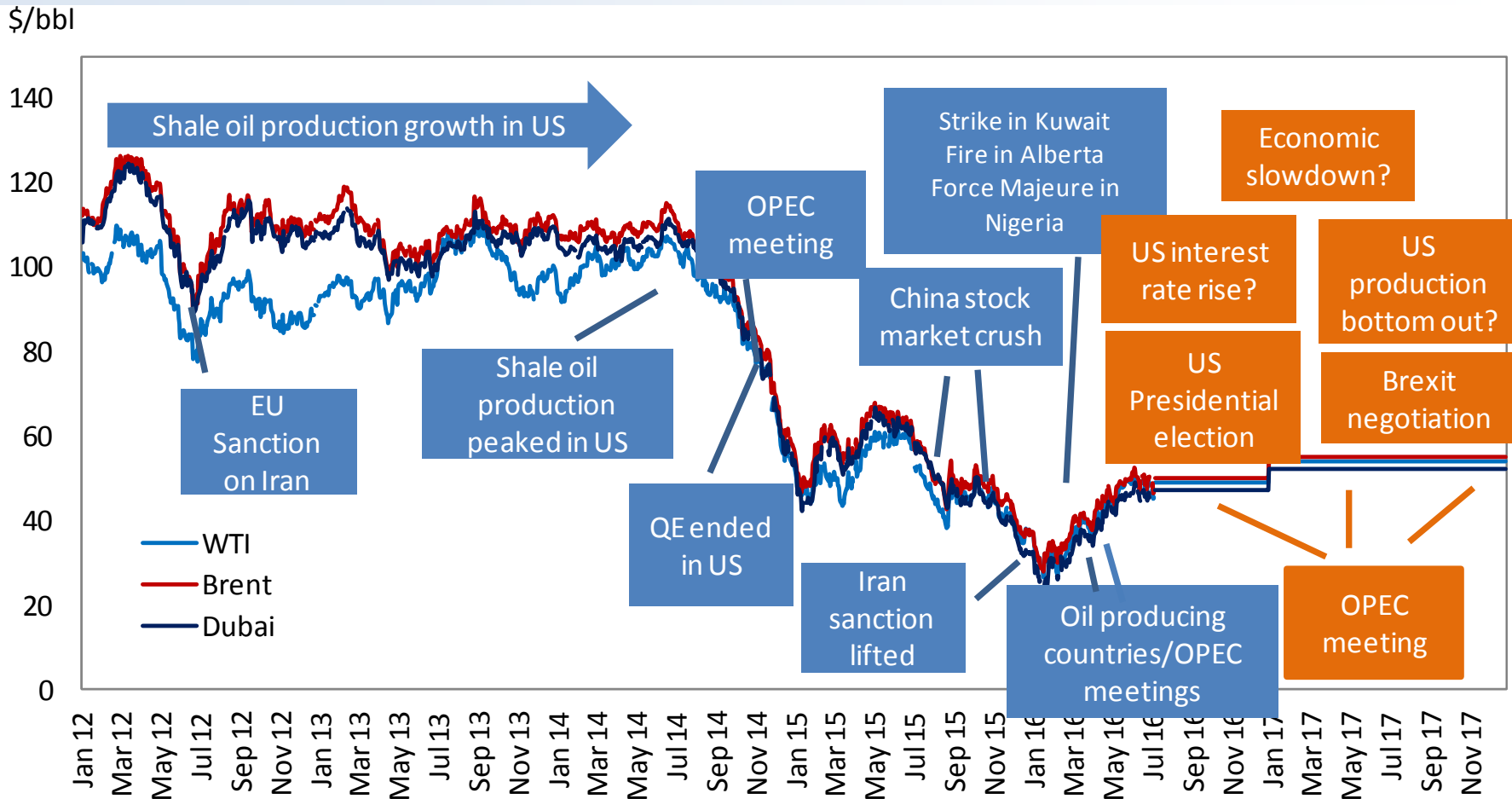


- Continuous demand growth
- Delay in U.S. interest rate hikes
- Supply disruptions



- Supply and demand fundamentals should boost prices
- But considerable uncertainties about GDP growth, U.S. interest rate hikes and Brexit will slow down prices surge
- Yet large-scale supply disruptions could trigger price hike at least for the short-term

Price increases since early this year to decelerate



(Source) IEA, The Institute of Energy Economics Japan

- Prices will average \$50/bbl for Brent, \$49/bbl for WTI and \$47/bbl for Dubai in the second half of 2016, and \$55/bbl for Brent, \$54/bbl for WTI and \$52/bbl for Dubai in 2017.