420th Regular Research Report Presentation Session July 10, 2015

Outlook for International Oil Market

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Key Points of Today's Report

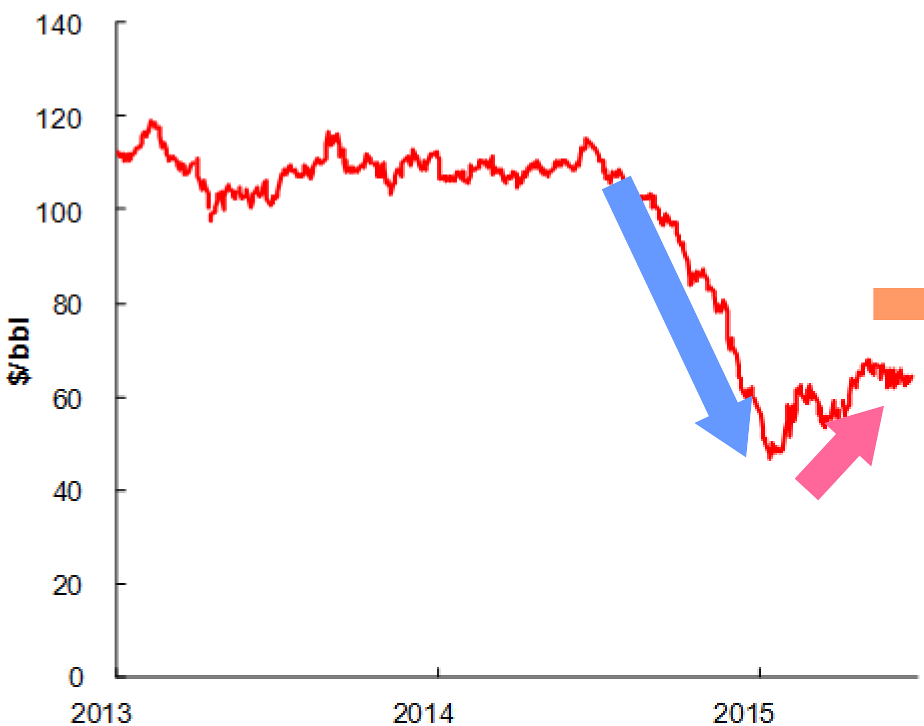
- The global oil supply-demand balance will gradually tighten in the second half of 2015 as demand increases steadily despite a slowdown in non-OPEC production. Given oil price-lowering factors such as OPEC countries' possible oil output expansion, high-level inventories in industrial countries, the Greek debt crisis, and other financial and economic factors, however, crude oil prices will remain weak in the period.

- Crude oil prices will turn up in 2016 as the supply-demand balance tightens moderately. But no substantial price hike is likely as higher crude oil prices are expected to induce an increase in U.S. oil production and as Iran is expected to expand oil output in a full-blown manner if Western economic sanctions on Iran over the nuclear problem are lifted.

Recent Trends of International Crude Oil Prices

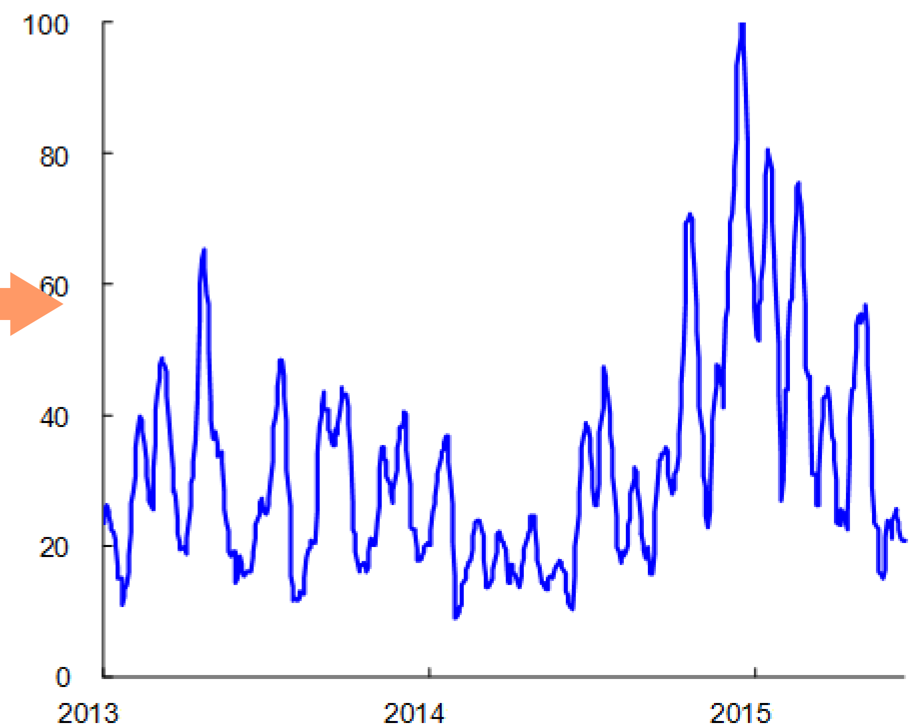
- Crude oil prices bottomed out and turned up in January 2015 after a rapid fall from the summer of 2014.
- Since May 2015, the Brent crude oil price has remained stable in the $60-65/bbl range. Crude oil price volatility has calmed down in the wake of a temporary rise.

Brent crude oil price since 2013



Source: ICE

Historical volatility (20 days) of Brent crude oil price

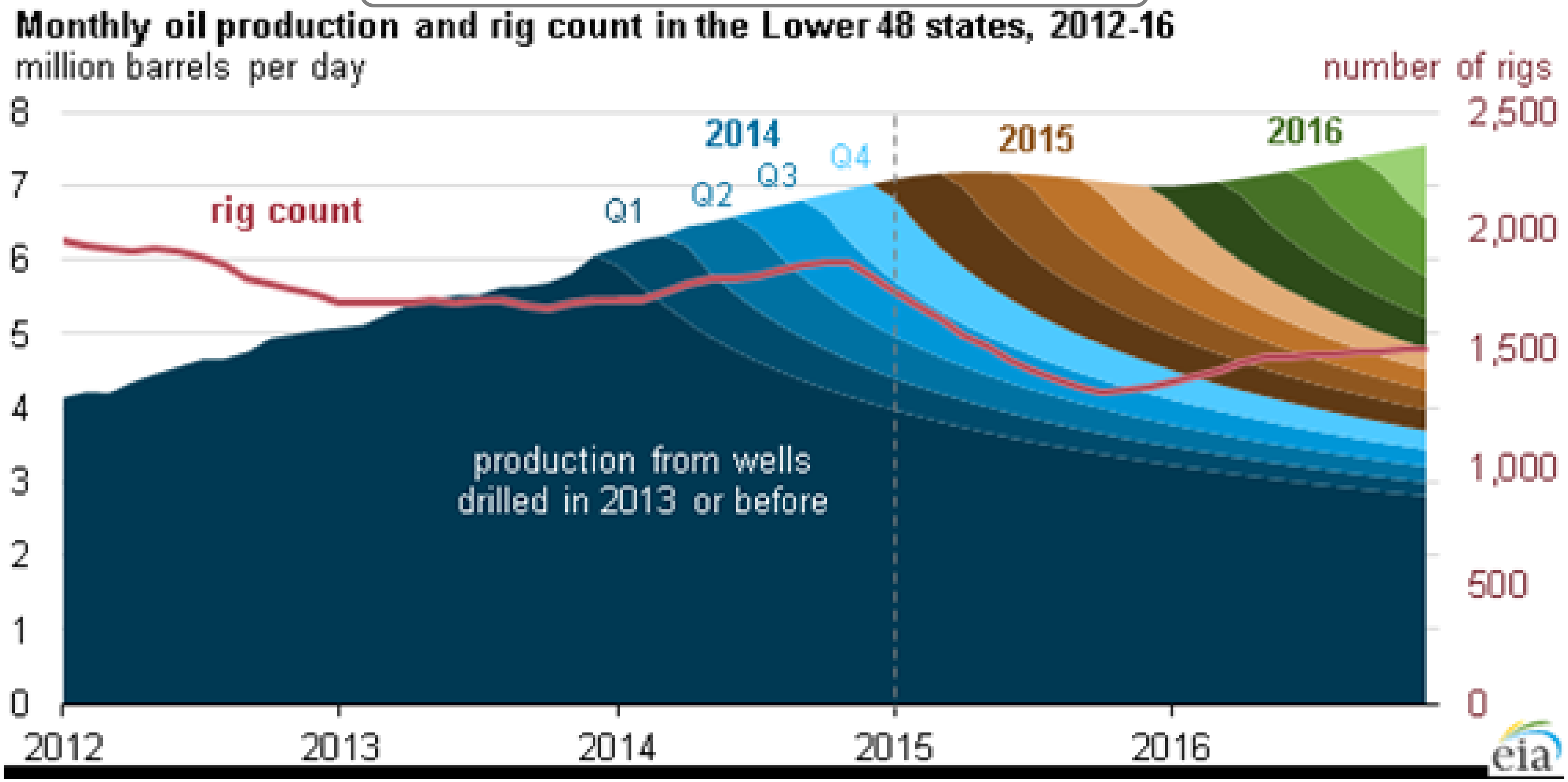


Source: Prepared based on ICE data

Factors behind Oil Price Hikes Since Early 2015
① Deceleration of U.S. Crude Oil Output Expansion

- As oil development operations have declined since the fourth quarter of 2014, output growth has lost steam.
  - Output expansion came to a halt in the second quarter of 2015. At present, however, U.S. production cannot be concluded as having entered a downward trend.

Crude oil output in Lower 48 U.S. states

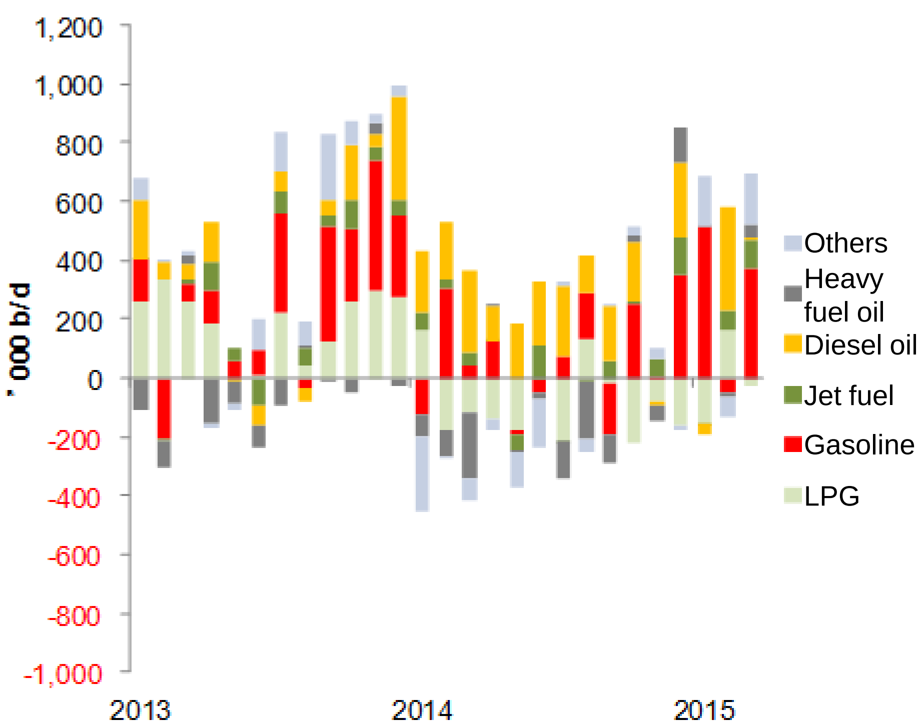


Source: EIA

Factors behind Oil Price Hikes since Early 2015 ② Demand Recovery

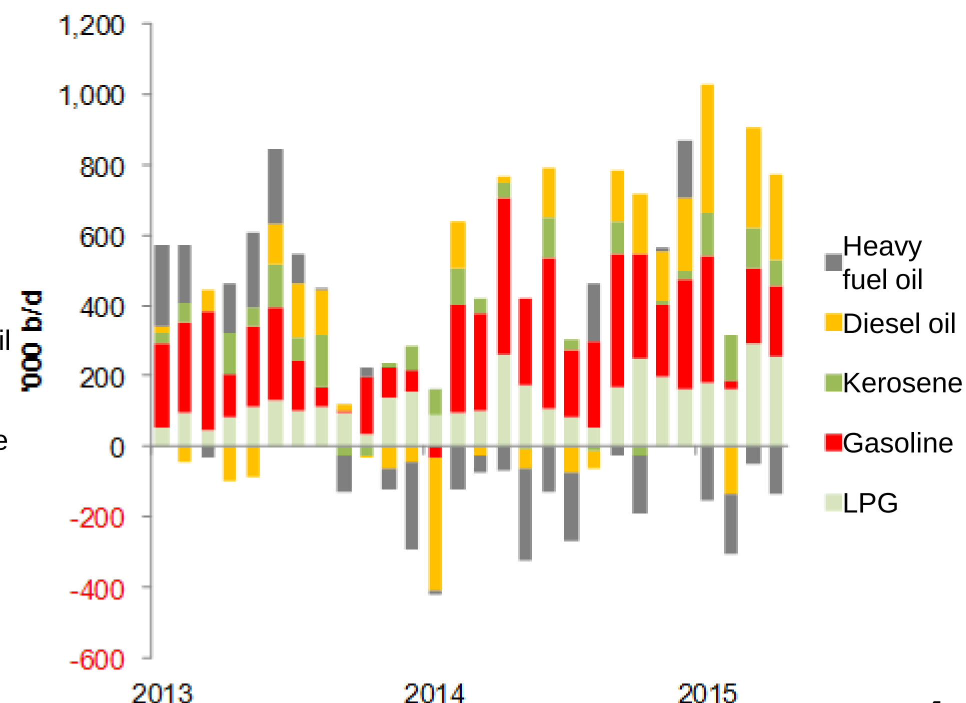
- U.S. petroleum product demand has recovered on an economic pickup and petroleum product price falls.
  - Demand has generally increased for petroleum products, particularly gasoline.
- Oil demand has steadily increased in China despite economic growth deceleration.
  - Demand has been robust for gasoline, diesel oil and LPG including petrochemical feedstock.

U.S. petroleum product demand changes (year on year)



Source: U.S. EIA data

Nominal Chinese petroleum product demand changes (year on year)

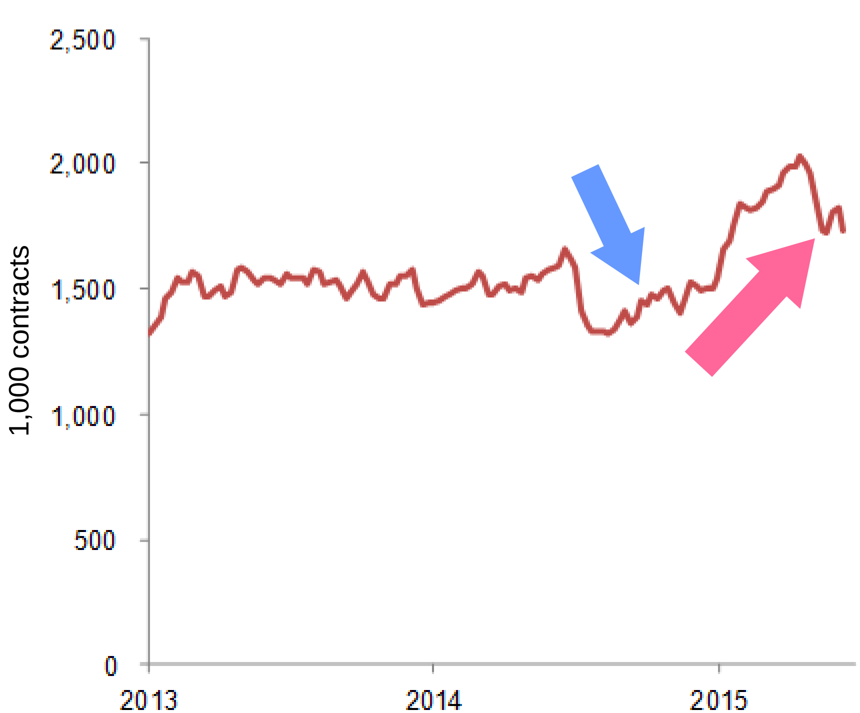


Source: APEC data

Factors behind Oil Price Hikes since Early 2015 ③ Investment Fund Trends

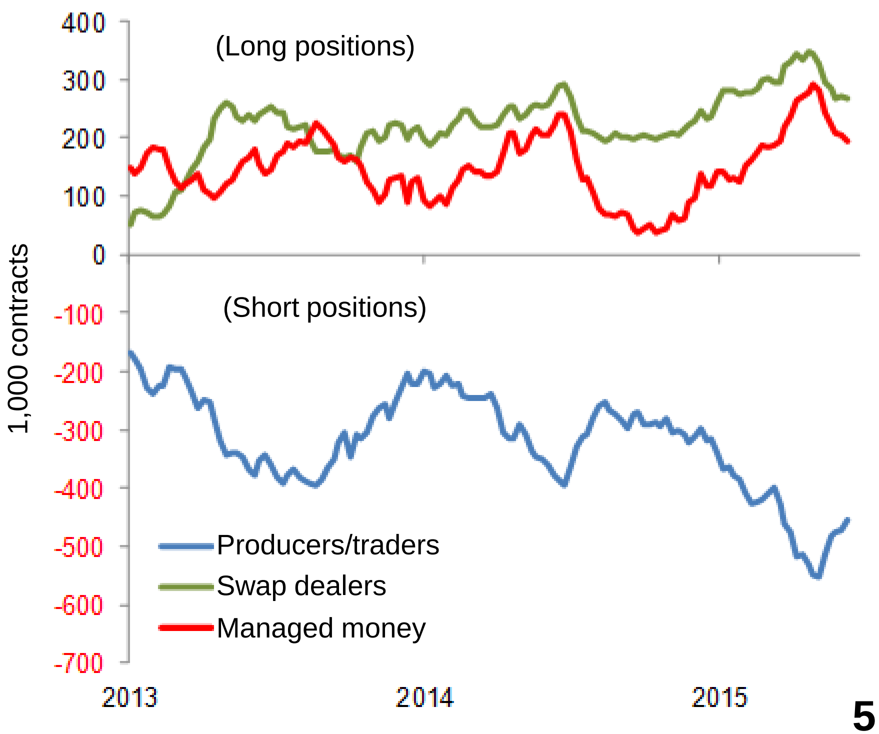
- Open interest for Brent futures on the ICE increased from January, hitting a record high.
- As well as open interest, net long positions for managed money increased.
  - European cold weather, the falling number of U.S. oil drilling rigs in operation, uncertainties about the future Middle East situation and other factors apparently encouraged speculative buying amid expectations of oil price hikes.
- But investment has slowed down since April.

ICE market open interest



Source: ICE data

Each player category's positions on ICE market

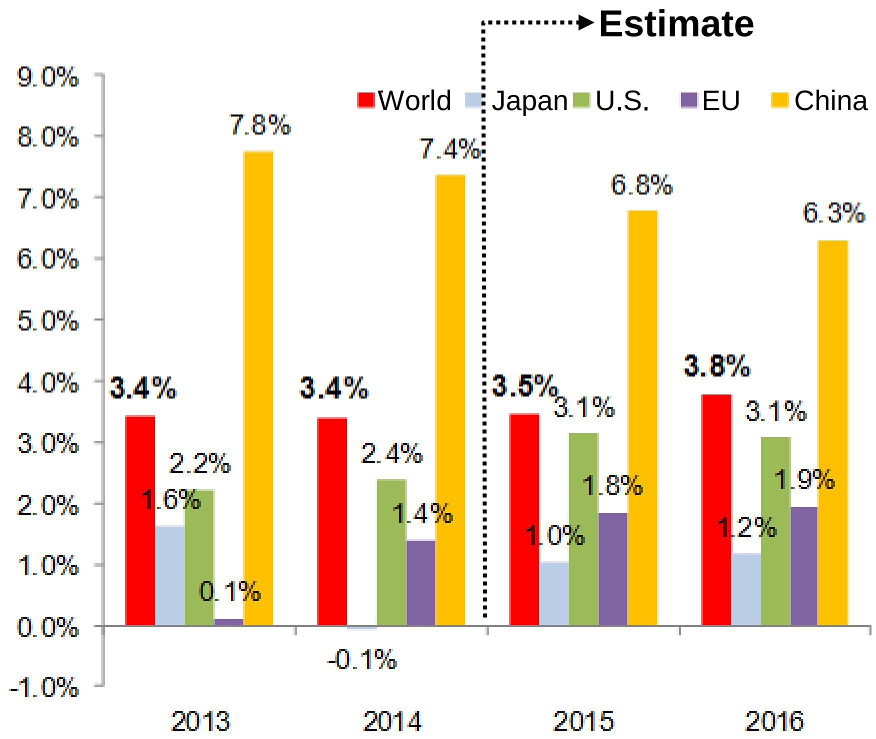


Source: ICE data

Future Economic Growth and World Oil Demand

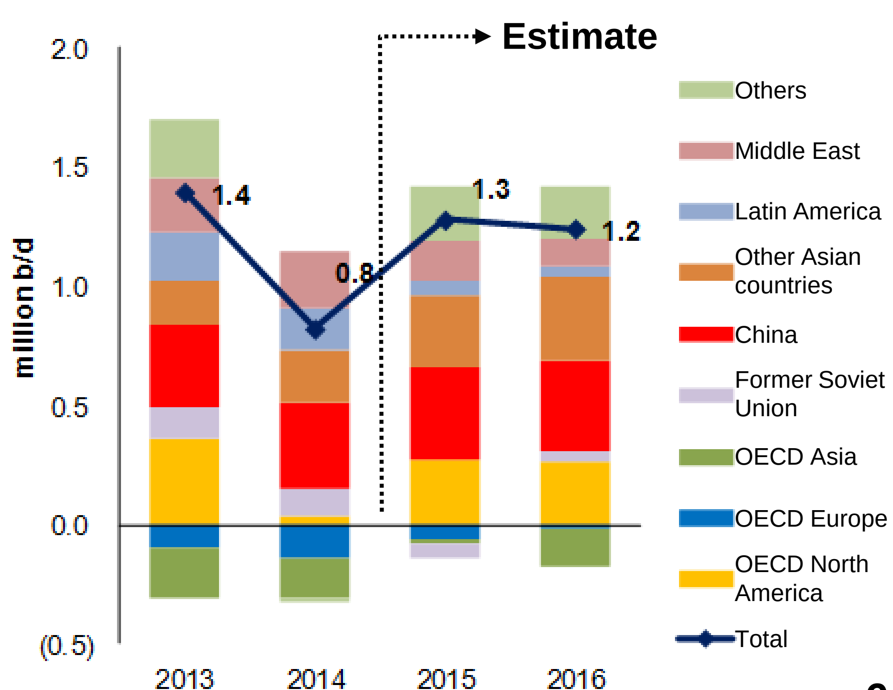
- World economic activity will gradually expand from 2015 to 2016.
  - While China's economic growth will decelerate, OECD countries will steadily recover.
- Year-on-year world oil demand growth will rise back above 1 million bpd.
  - Driving global oil demand growth will be demand recovery in North America as well as China, other Asian countries and the Middle East.

IMF outlook for global GDP growth



Source: IMF (April 2015)

Year-on-year world oil demand changes and outlook

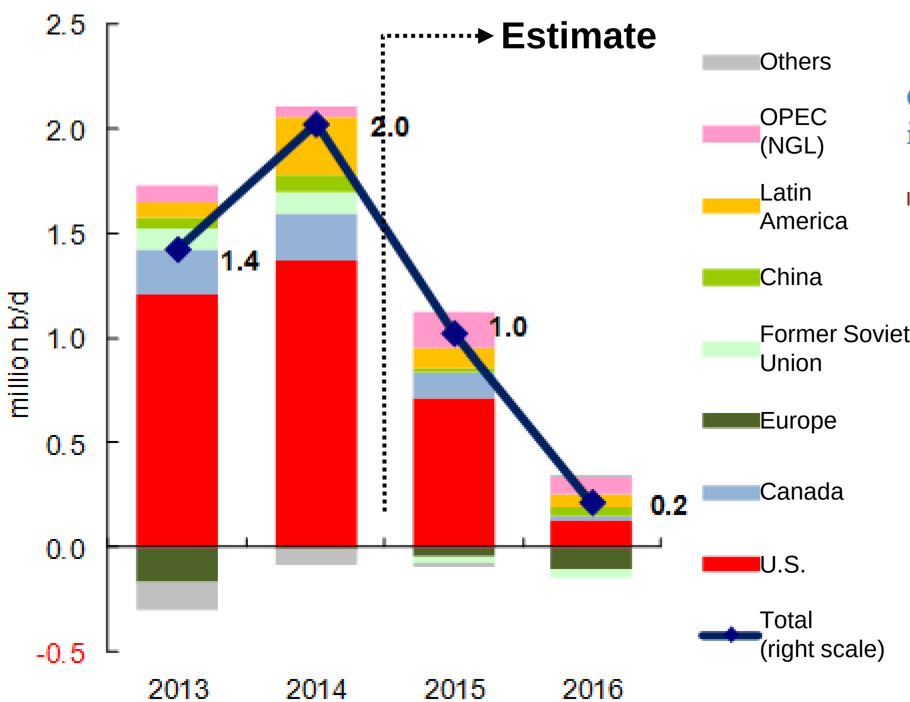


Source: Estimates based on IEA, OPEC and EIA data

Non-OPEC Supply

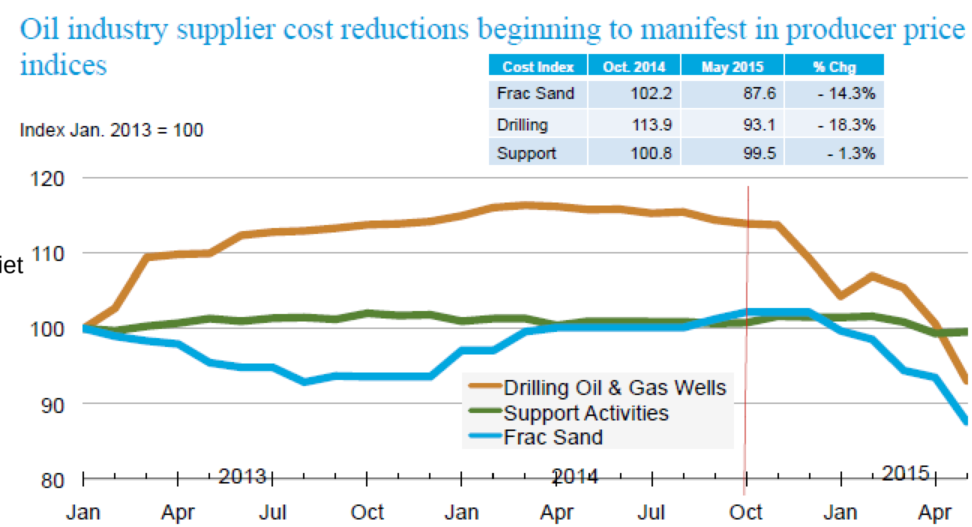
- Non-OPEC oil output is expected to continue to expand, although the expansion will slow down in line with the oil price decline.
  - U.S. output, though leveling off recently, will increase for the whole of 2015. It will continue to expand at a slow pace in 2016 as development cost drops and efficiency improvements encourage development.

Region-by-region non-OPEC oil supply changes (year on year)



Note: OPEC data cover NGL
Source: Estimates based on IEA, EIA and OPEC data.

U.S. oil development cost indicators



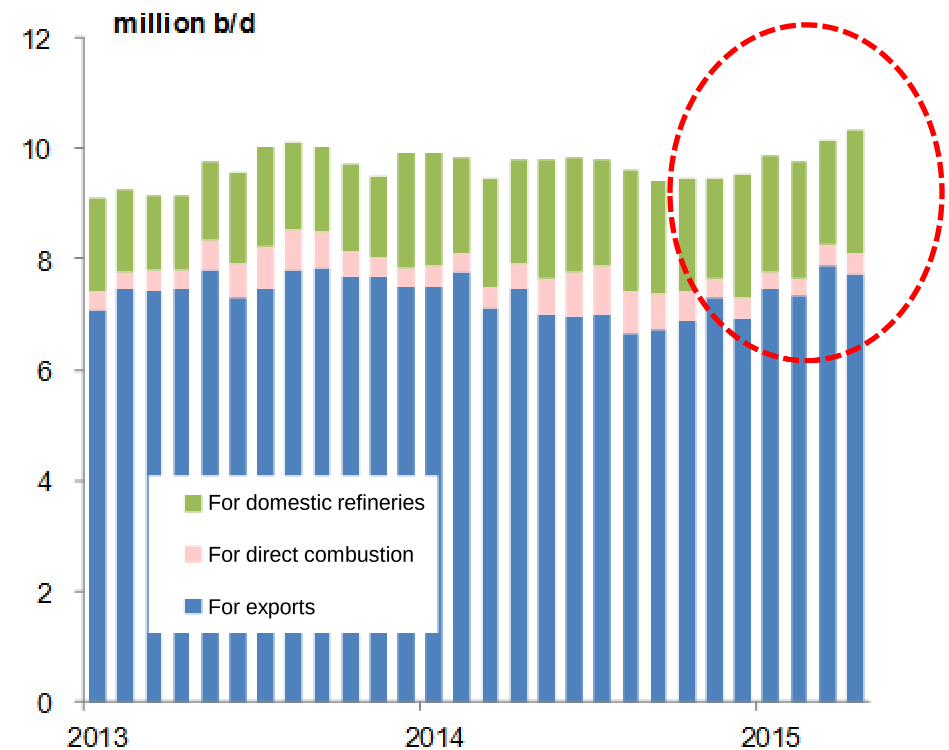
Cost Index	Oct. 2014	May 2015	% Chg
Frac Sand	102.2	87.6	- 14.3%
Drilling	113.9	93.1	- 18.3%
Support	100.8	99.5	- 1.3%

Source: EIA

Saudi Oil Production Trends

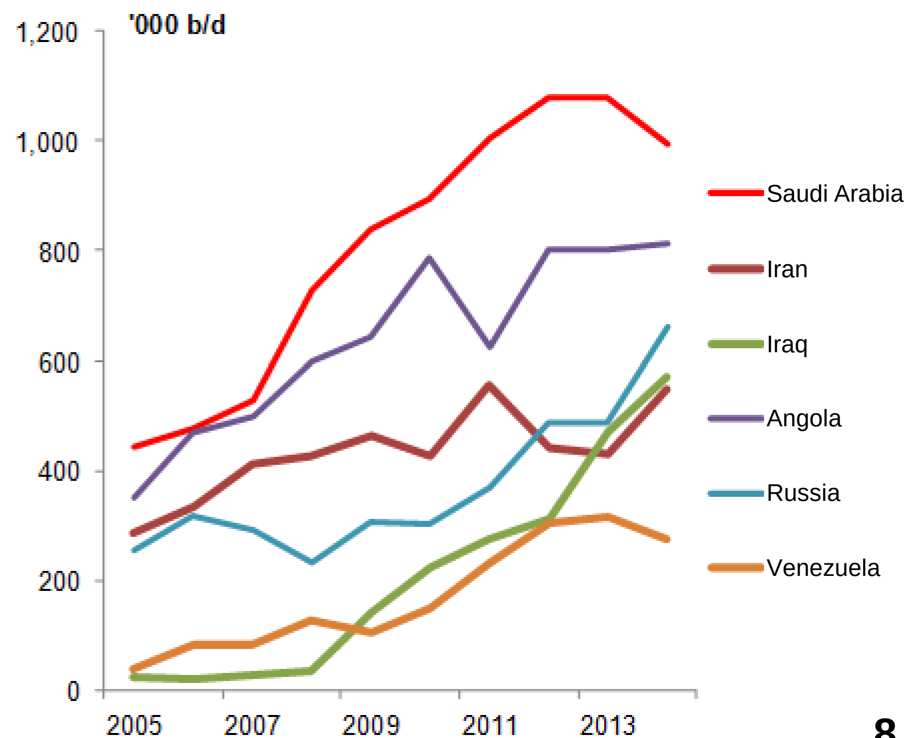
- At present, there is no sign that Saudi Arabia will change its policy of giving priority to its market share.
- As competition continues for the Asian market, Saudi Arabia's production cut will lead directly to a decline in its oil market share.
  - Saudi Arabia has lost some of its market share in China to Iraq, Iran and others and may try to defend its share in response to future output growth in Iran and Iraq.

Saudi oil production trends



Source: IEA

Changes in China's crude oil import sources

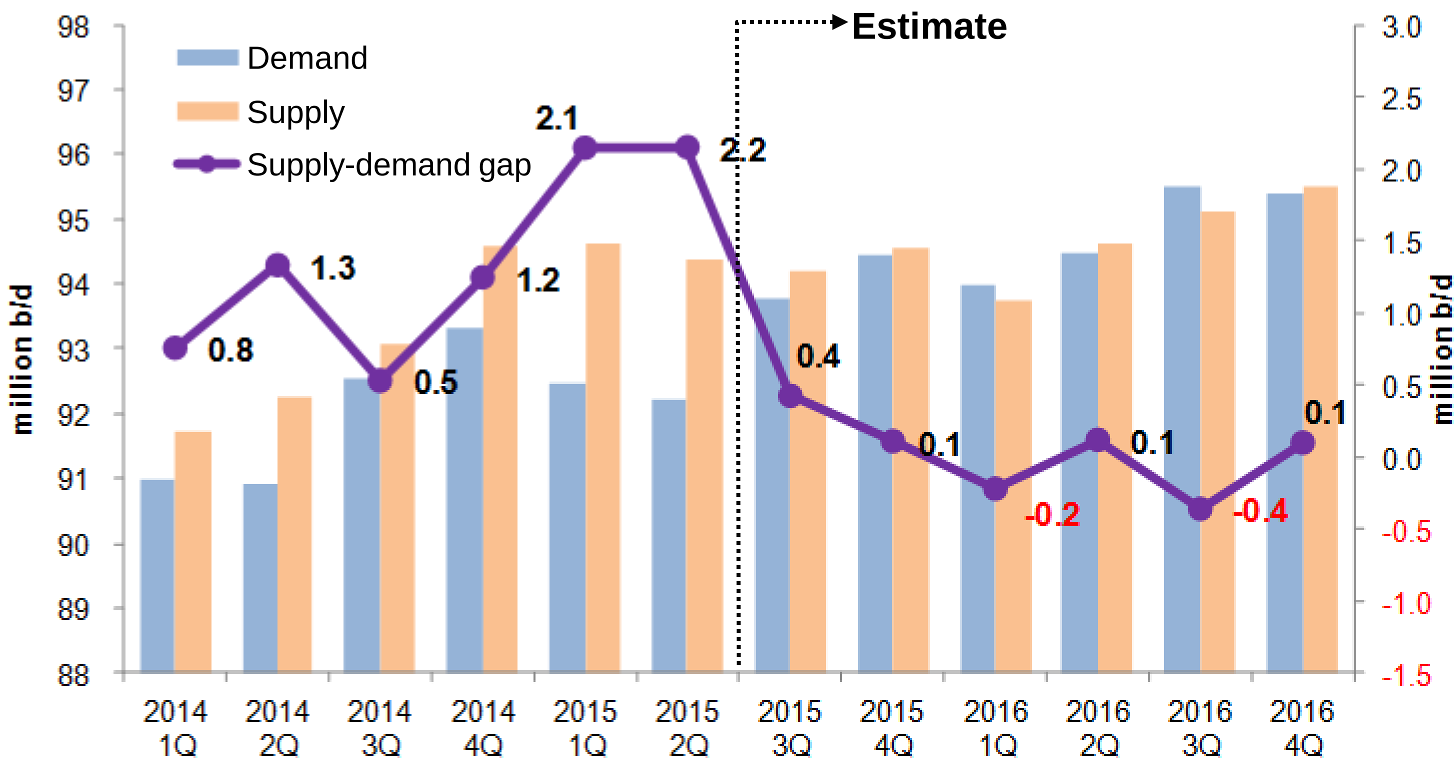


Source: China OGP

Future Supply-demand Balance Outlook

- Supply will remain above demand within 2015, although the supply-demand gap has been relatively narrowing.
- The supply-demand balance will gradually tighten with oversupply diminishing in 2016.

Global crude oil supply-demand balance results and outlook



Source: Estimates based on IEA, EIA and OPEC data

Financial and Economic Factors

- Greek default problem
  - A Greek default could trigger the euro’s decline against the dollar.
  - European and global financial markets and real economies could be affected.
  - Oil demand could decline in Europe and other regions.

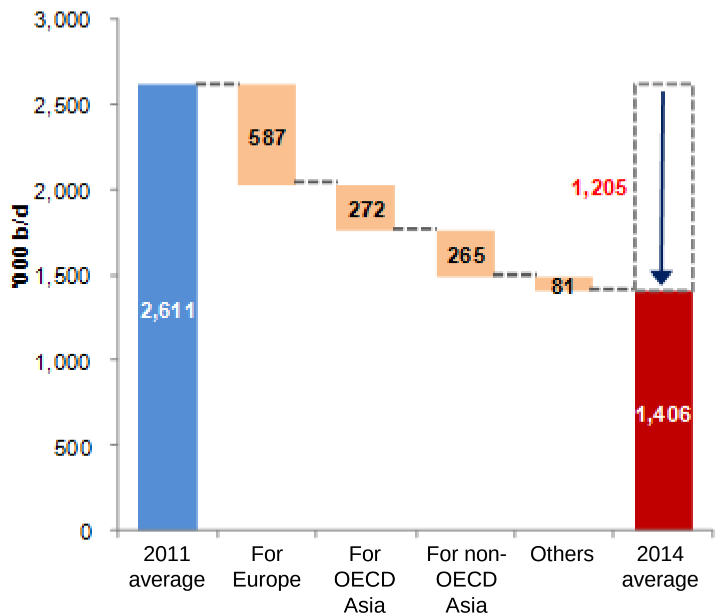
- U.S. Fed’s interest rate hike
  - As the U.S. economy starts a full-blown recovery, the zero interest policy will be terminated.
  - U.S. Fed Chairwoman Yellen said that it would be appropriate to begin within this year to raise interest rates and that any decision would be based on data.
  - The dollar’s depreciation and financial market money supply drops through an interest rate hike would exert downward pressure on the crude oil market.

- Chinese economy’s New Normal and its future impact on oil demand
  - Economic growth deceleration has so far exerted no remarkable negative impact on oil demand.
  - In the future, overall energy demand will decelerate through the promotion of energy conservation and a decline in demand for transporting domestically produced coal will work to slow down diesel oil demand.
  - If demand deceleration becomes remarkable, it may affect market participants’ perception of China’s future oil demand.

Crude Oil Exports from Iran

- After sanctions were enhanced in 2012, Iran's crude oil exports declined by about 1.2 million bpd from 2012 to 2014.
- Attention is being paid to how much Iran would increase crude oil exports after the sanctions are lifted.
  - Iranian Oil Minister Zanganeh said oil output could be increased by 1 million bpd in seven months after the sanctions are lifted. The IEA has assessed Iran's surplus oil production capacity as 750,000 bpd. Among others, the U.S. Energy Information Administration has estimated that Iran could expand oil output by 700,000 bpd by the end of 2016. A U.S. think tank has forecast that Iranian oil output could be raised by 500,000-800,000 bpd within six to 12 months after the termination of the sanctions. A consultant in the United Kingdom has predicted that Iran could increase oil output by 500,000 bpd within two to three months after the termination.
- Iranian oil export growth will depend heavily on when the sanctions would be lifted and whether Iran could secure sufficient sales channels. If Iran expands oil exports by 700,000-800,000 bpd, international crude oil prices may decline by some $10/bbl.

Iran crude oil export trends (2011⇒2014)



Source: EIA

Sanctions subject to mitigation/repeal

Sanctions based on UNSC resolutions	Freeze on assets, export control, ban on financial support for new trade deals, etc.
Secondary nuclear-related sanctions under U.S. law	Ban on upstream sector development investment and military technology transfers, ban on trade in petroleum products, crude oil, automobiles and petrochemicals, ban on financial, insurance and shipping services, etc.
EU nuclear-related sanctions	Crude oil embargo, ban on insurance/reinsurance, etc.
Relevant Japanese government measures	Freeze on assets, export control, fund transfer prevention, etc.

・・・What sanctions would be lifted when is unknown at present.

Source: IEEJ JIME Center

Price-Boosting/Lowering Factors

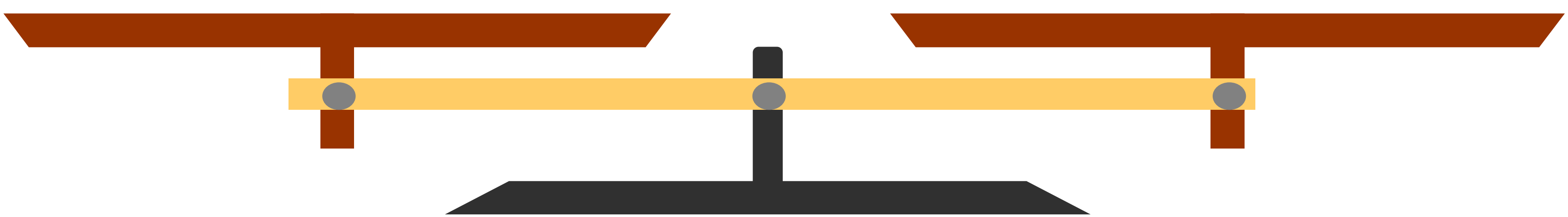
- As well as supply and demand factors, risk, financial and economic factors greatly affect crude oil prices.

Price-boosting factors

- ✓ Political destabilization factors and terrorism in the Middle East, including Islamic State terrorist attacks and the Yemeni situation
- ✓ Continuation of recovery in global oil demand including U.S. and Chinese demand
- ✓ Saudi Arabia's reversal of policy giving priority to maintaining its market share
- ✓ U.S. hurricane disasters
- ✓ Rough Iran nuclear negotiations and continuation or enhancement of Western economic sanctions on Iran

Price-lowering factors

- ✓ Iran's export expansion accompanying early termination of economic sanctions and Iraq's continued oil output expansion
- ✓ Saudi Arabia's further oil output expansion to counter abovementioned moves
- ✓ Dollar appreciation and money supply decline accompanying U.S. Fed interest rate hikes in or after autumn 2015
- ✓ Dissemination of adverse financial and economic impacts of the Greek debt crisis in Europe and the world
- ✓ Economic growth deceleration and slumping demand in China and other emerging economies



Outlook on International Crude Oil Prices

- Following is an outlook on crude oil prices in the second half of 2015 and the whole of 2016:

Benchmark crude oil	1st half of 2015 (results)	2nd half of 2015	Whole of 2016
Brent	$59/bbl	$60/bbl±$10	$65/bbl±$10
Dubai	$57/bbl	$58/bbl±$10	$63/bbl±$10
WTI	$53/bbl	$55/bbl±$10	$60/bbl±$10

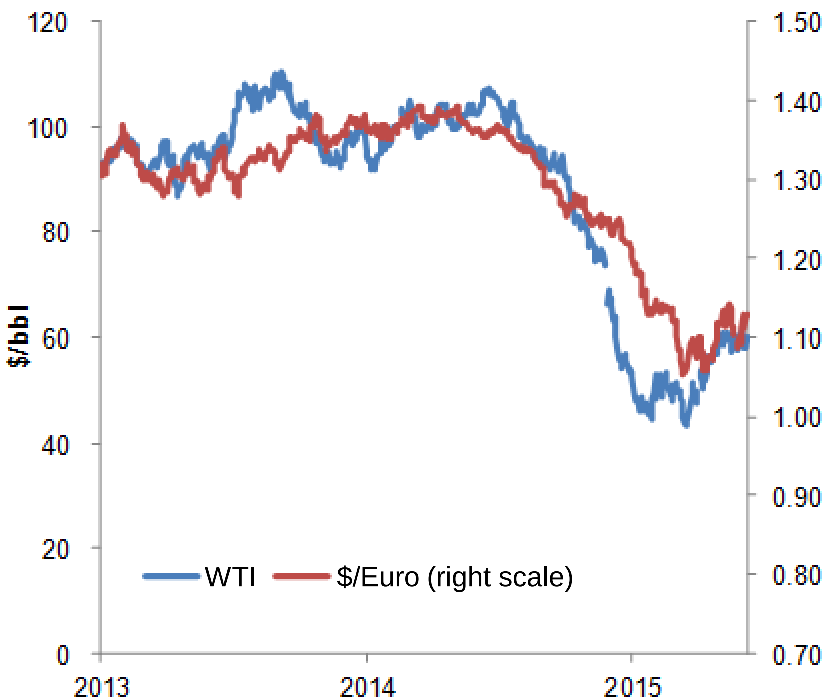
- Basic assumptions for forecasting prices
  - In the international crude oil market in the second half of 2015, the supply-demand balance will gradually tighten on a slowdown in non-OPEC production and firm demand growth. But crude oil prices will remain weak as a possible OPEC output increase, massive inventories in industrial countries, and the Greek default problem and other financial and economic factors work to lower oil prices.
  - In the international crude oil market in 2016, prices will turn upward as the supply-demand balance moderately tightens. Given that any price hike may induce an increase in U.S. production and that Iran may expand production in 2016 if economic sanctions are lifted, however, no substantial price hike is likely.
  - As for price differences between crude oil brands, see the results for the first half of 2015.

References

Impacts of Exchange Rate and Stock Market Changes

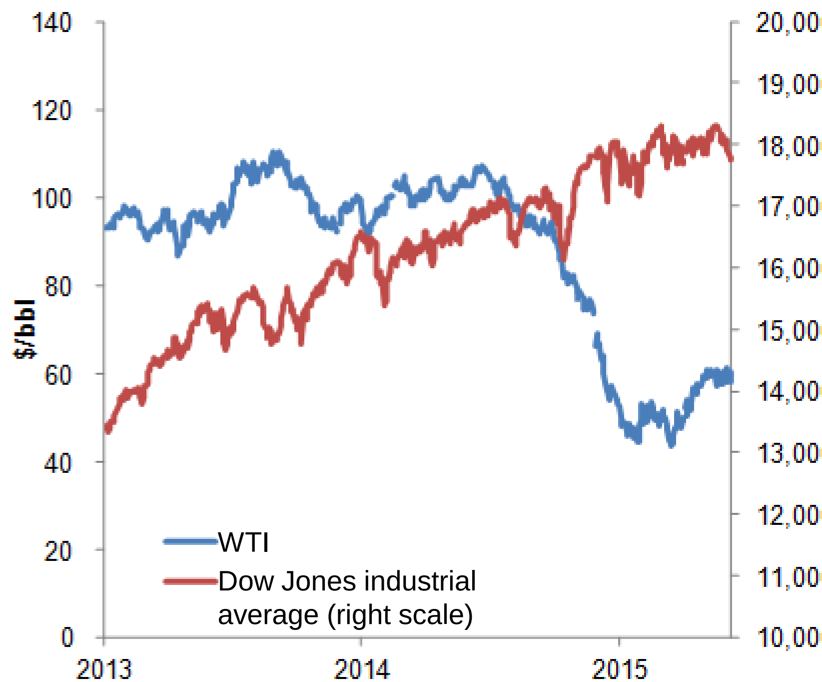
- Since the second half of 2014, a strong correlation has existed between exchange rates and crude oil futures markets
  - Mechanism for a stronger dollar to induce weaker crude oil prices: Stronger dollar ⇒ The dollar rises against other currencies ⇒ The value of crude oil traded in dollars rise irrespective of actual value or supply/demand factors ⇒ Crude oil is overvalued for exchange rate changes alone ⇒ Market participants believe crude oil prices will fall as present overvaluation is corrected ⇒ Market participants are prompted to sell crude oil futures.
- A U.S. stock market upsurge reflecting a U.S. economic pickup might have been a contributor to oil prices' rally since early 2015, although stock prices' correlation with crude oil prices has become weaker than in the past.

Exchange rate and WTI price



Source: Prepared by the author based on FRB and EIA data

Stock prices and WTI price

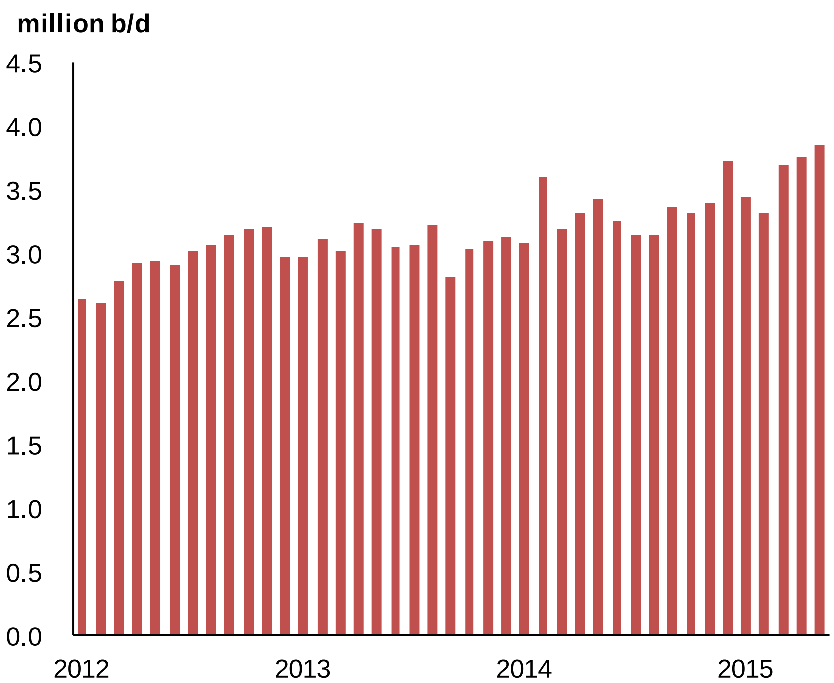


Source: Prepared by the author based on various data

Iraq's Crude Oil Exports

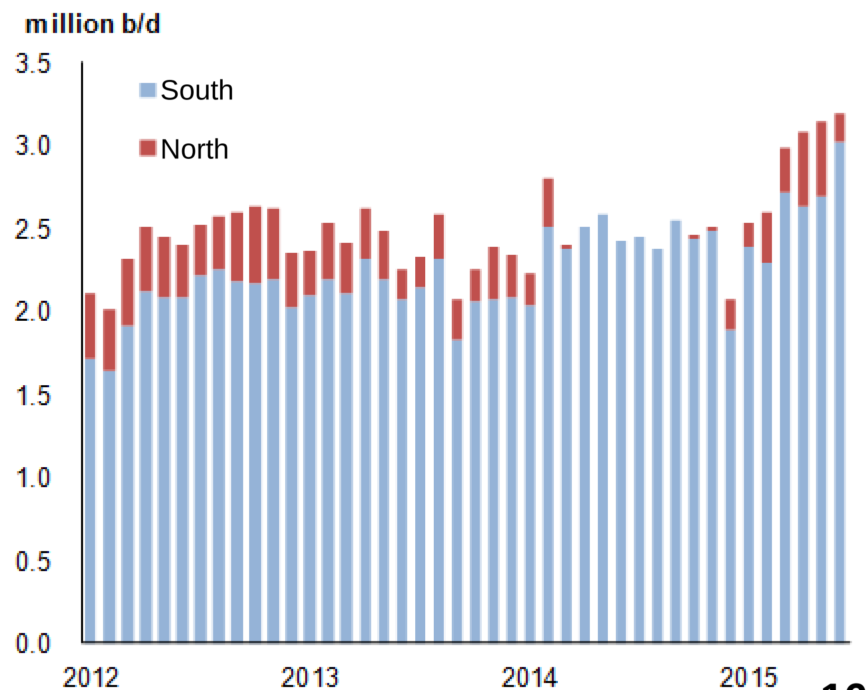
- Iraq's crude oil output has increased by 1 million bpd in the past three years due to new oilfield and export infrastructure development.
  - The Iraqi government sets an oil production target at 6 million bpd for 2020, after a recent downward revision.
  - In June 2015, exports from southern Iraq increased substantially due to an export capacity expansion.

Iraq's crude oil output



Source: IEA

Iraq's crude oil exports (SOMO sales)

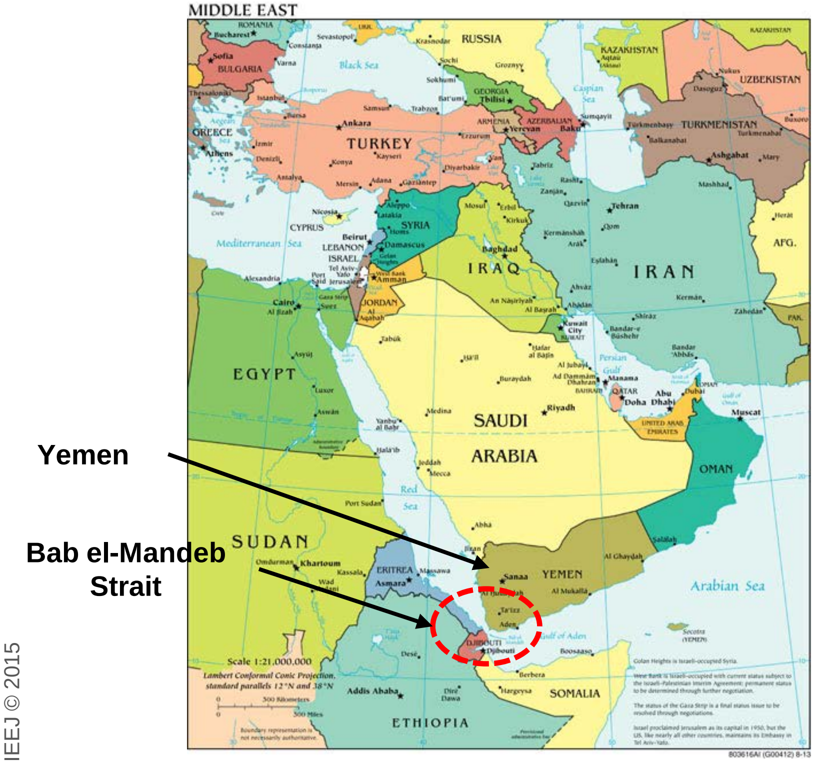


Source: Iraq Oil Ministry

Yemen's Oil/Natural Gas Situation

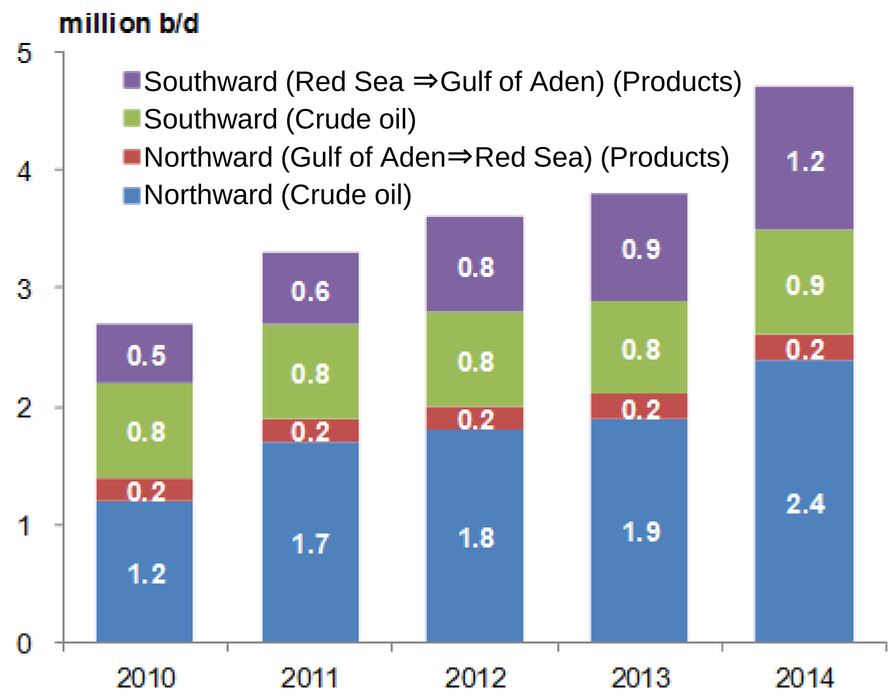
- In April 2015, oil and LNG production was suspended due to the deterioration of the domestic political situation.
  - While the suspension has covered 140,000 bpd in oil output and 6.7 million tons in LNG production, it has had no major impact on international oil and LNG markets.
- Matters of concern include the domestic conflict's spillover to Saudi Arabia and other neighboring countries and its possible impacts on recently growing oil traffic through the Bab el-Mandeb Strait.

Yemen and Bab el-Mandeb Strait



Source: CIA

Oil traffic through Bab el-Mandeb Strait



Source: EIA

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