



Fifth IEA-IEF-OPEC Symposium on Energy Outlooks

Session III: Uncertainties in coping with appropriate
investment decisions



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23 March 2015

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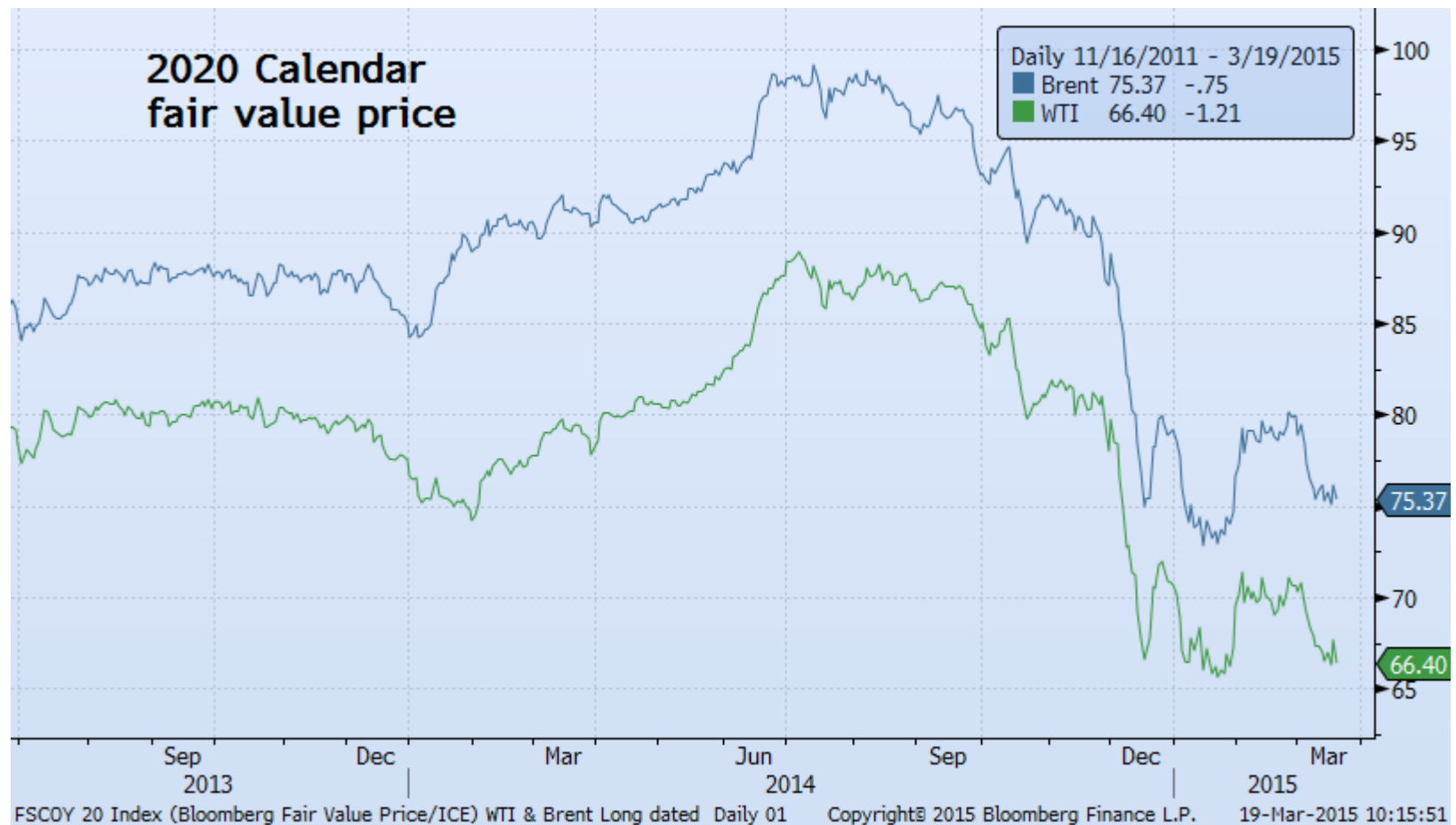
Oil price collapse, echoes of 2008?



Two price collapses: in 2008, we were confronted by a negative demand shock.
In 2015, we are confronted with a positive supply shock.



Long term oil prices



Source: Bloomberg, BNP Paribas



**Fair value for the price of oil five-year forward has also declined.
Are they still sufficient to support investment**



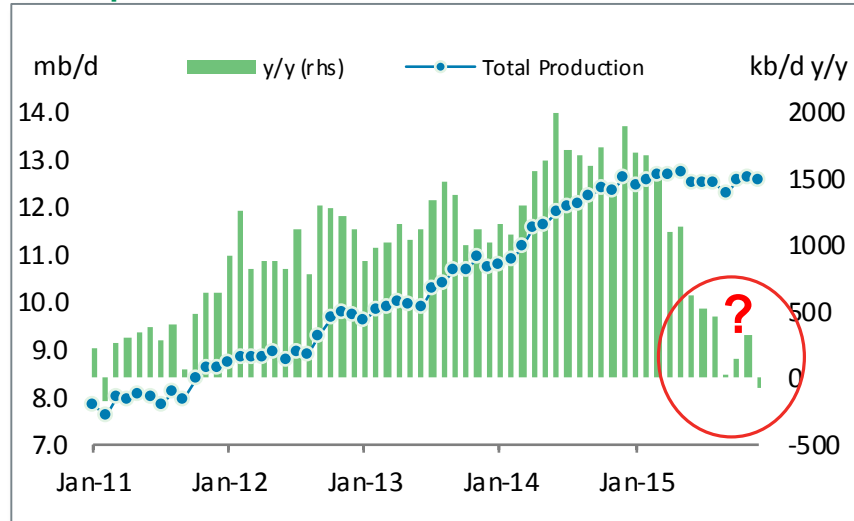
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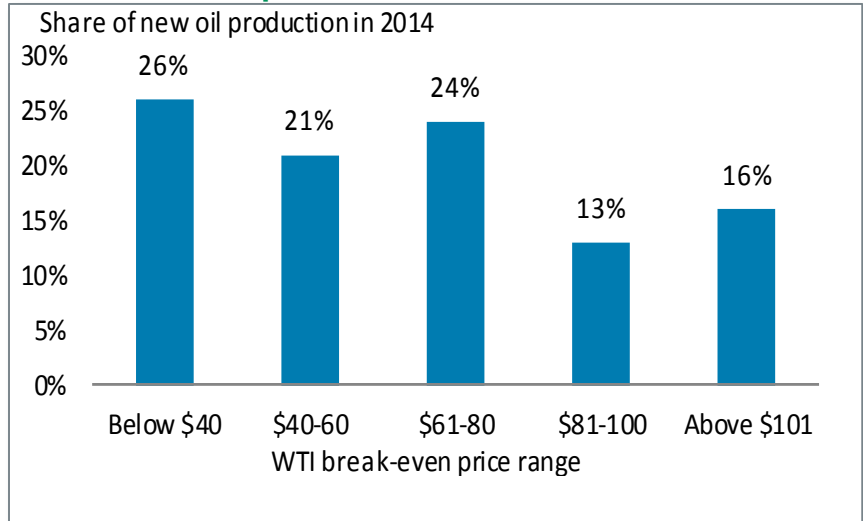
US production keeps going on?

US oil production



Source: IEA projection to Dec-15, BNP Paribas

WTI break-even price for new wells & share of new oil

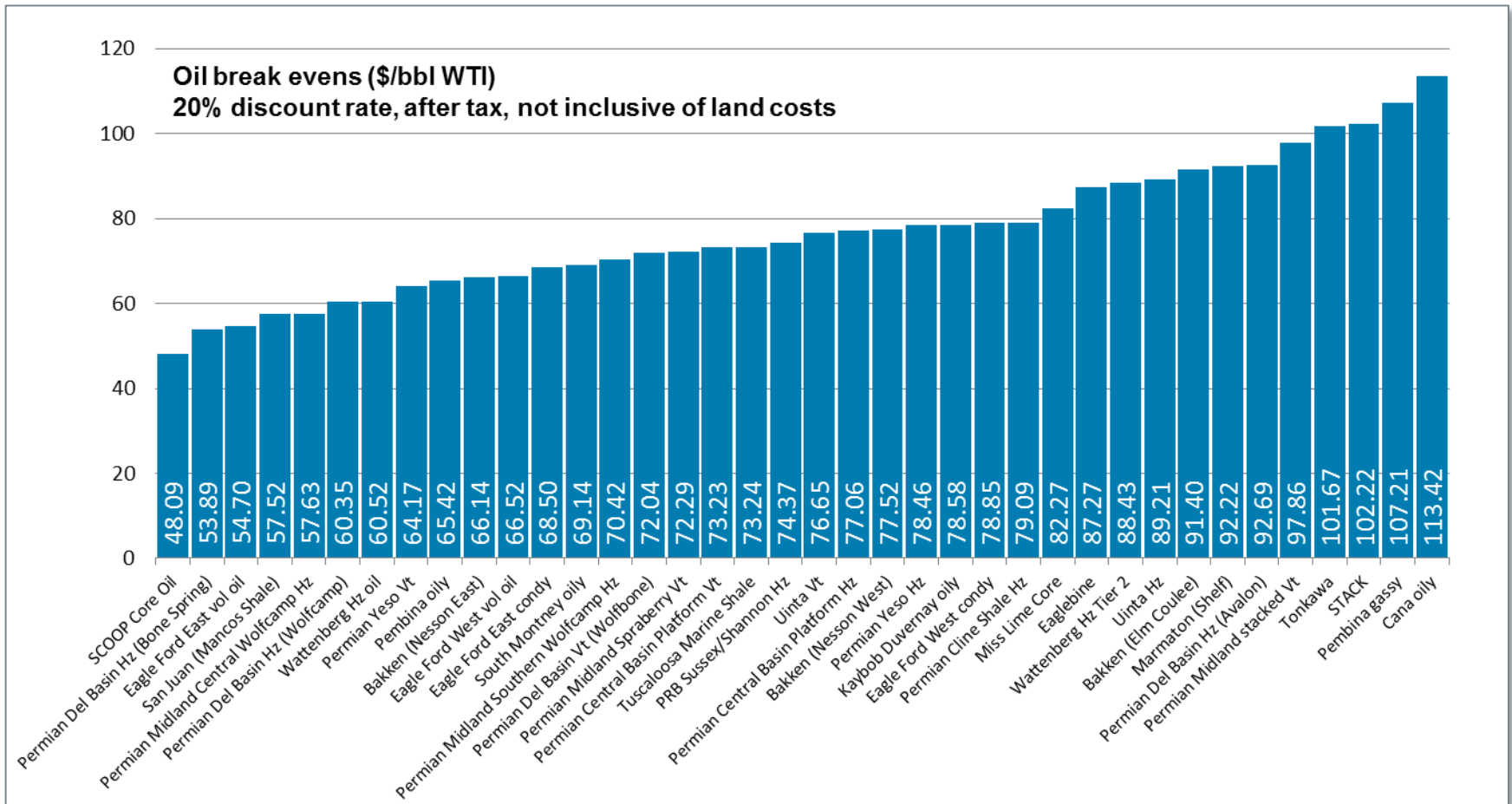


Source: IHS, BNP Paribas

➤ The rate of US oil production growth may slow sharply in 2016.
Only when drilling activity is curtailed will a notable impact on supply be felt.
Some 74% of planned US shale projects are uneconomic if sub-50 prices are sustained.



US break-even oil prices – various plays



Source: Bloomberg New Energy Finance



Not all shale plays are equal. There are wide range of break even prices for US shale oil production. Spending, while cut, will be directed to the higher yielding and lower cost plays.



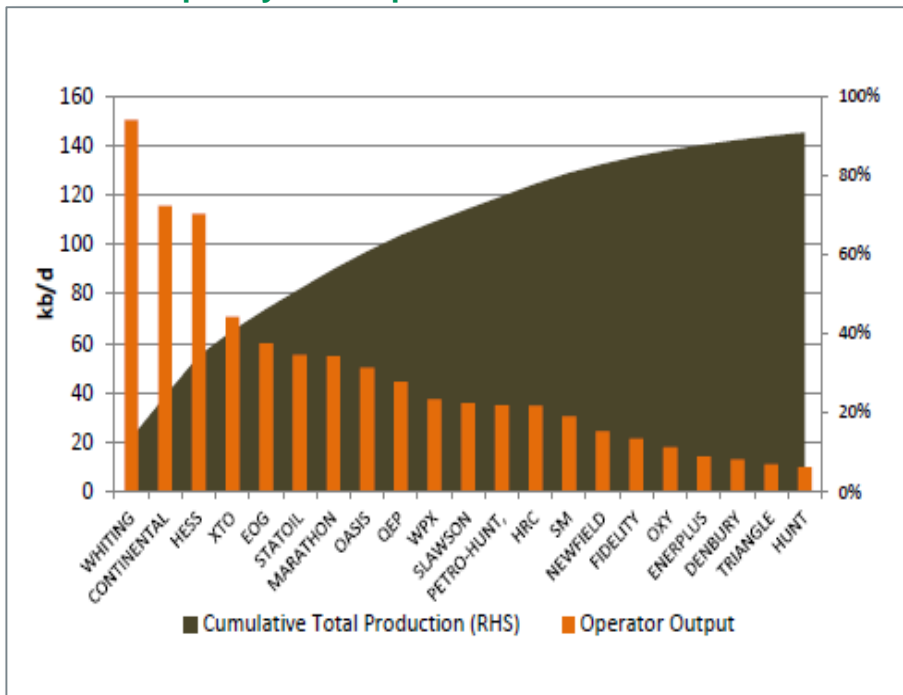
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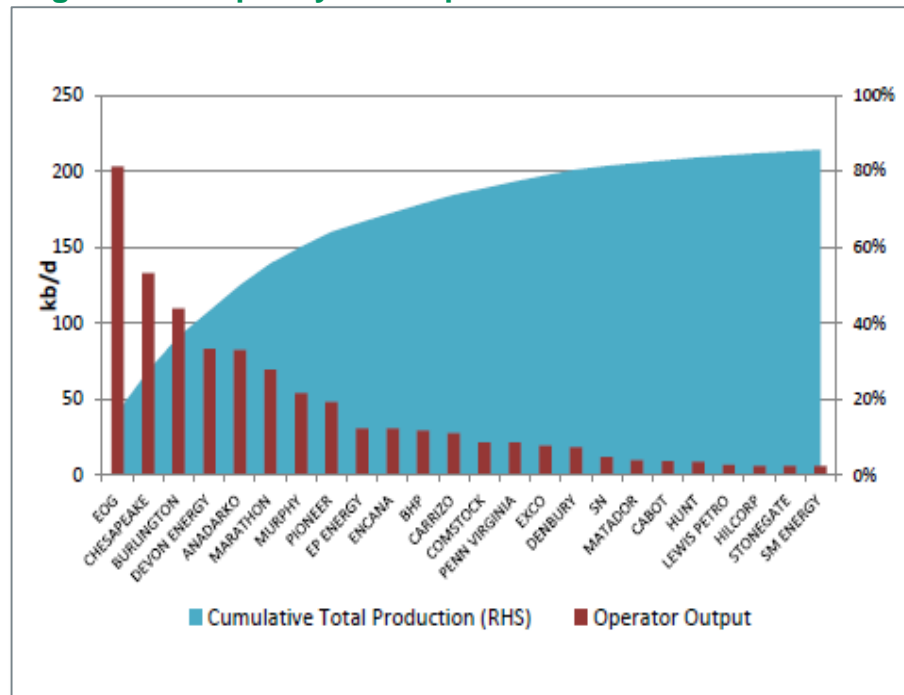
US output: concentrated in the hands of few players

Bakken output by main operator



Source: FGE 22 January 2015, BNP Paribas

Eagle Ford output by main operator



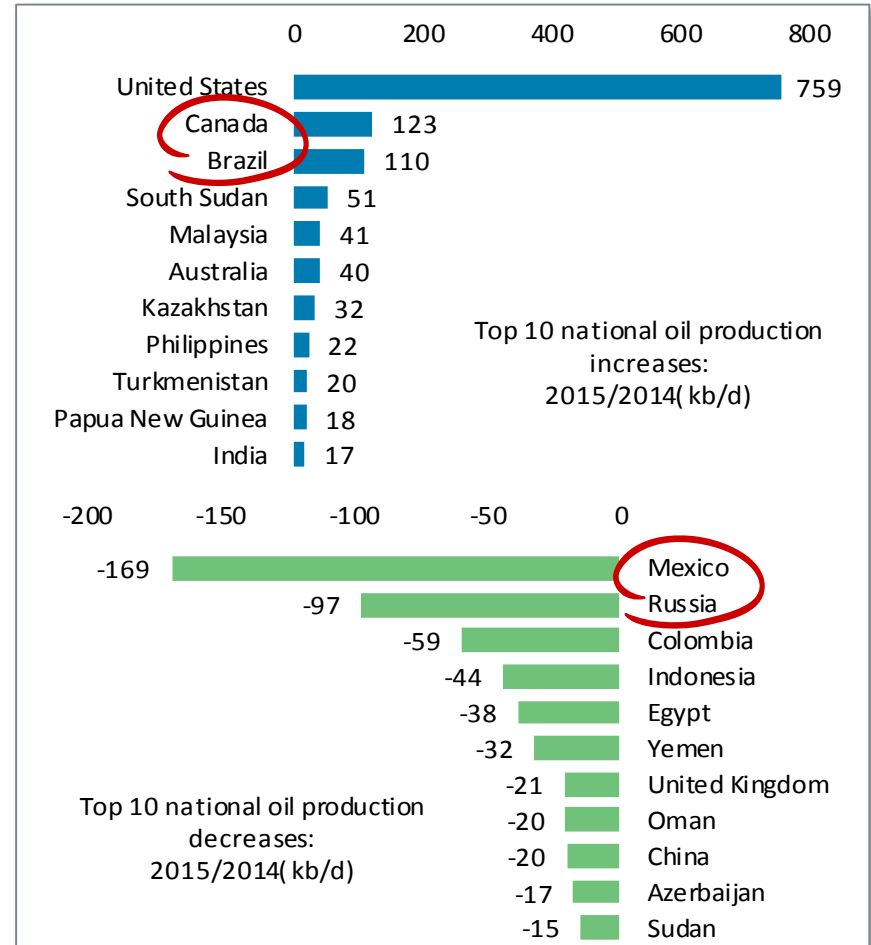
Source: FGE 22 January 2015, BNP Paribas

For the Bakken play in North Dakota, 90% of the output comes from just 10% of the operators. In Texas, the concentration of production is even greater. According to Texas Rail Road Commission data, there are nearly 5 times as many oil-producing operators in the Eagle Ford area as there are in North Dakota's Bakken play. About 90% of tight oil output in North America from less than 60 companies in total



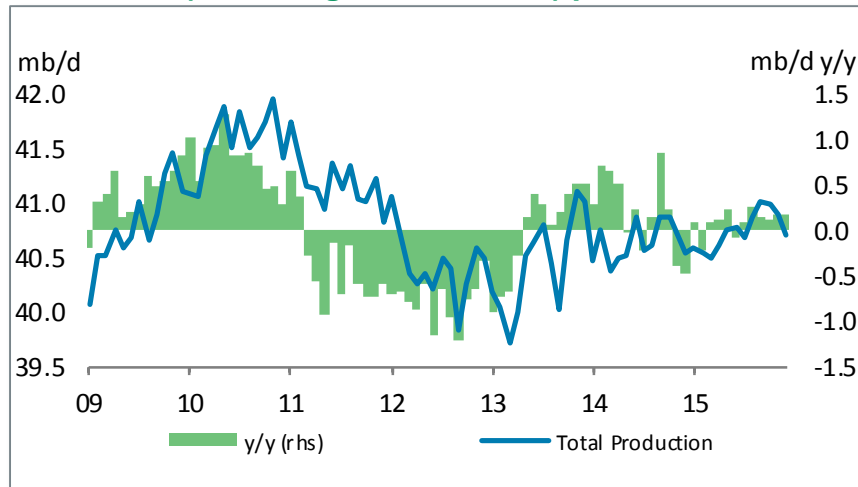
Non-OPEC production at risk

Annual change in selected non-OPEC countries



Source: IEA, BNP Paribas

Non-OPEC (excluding US & Canada) production

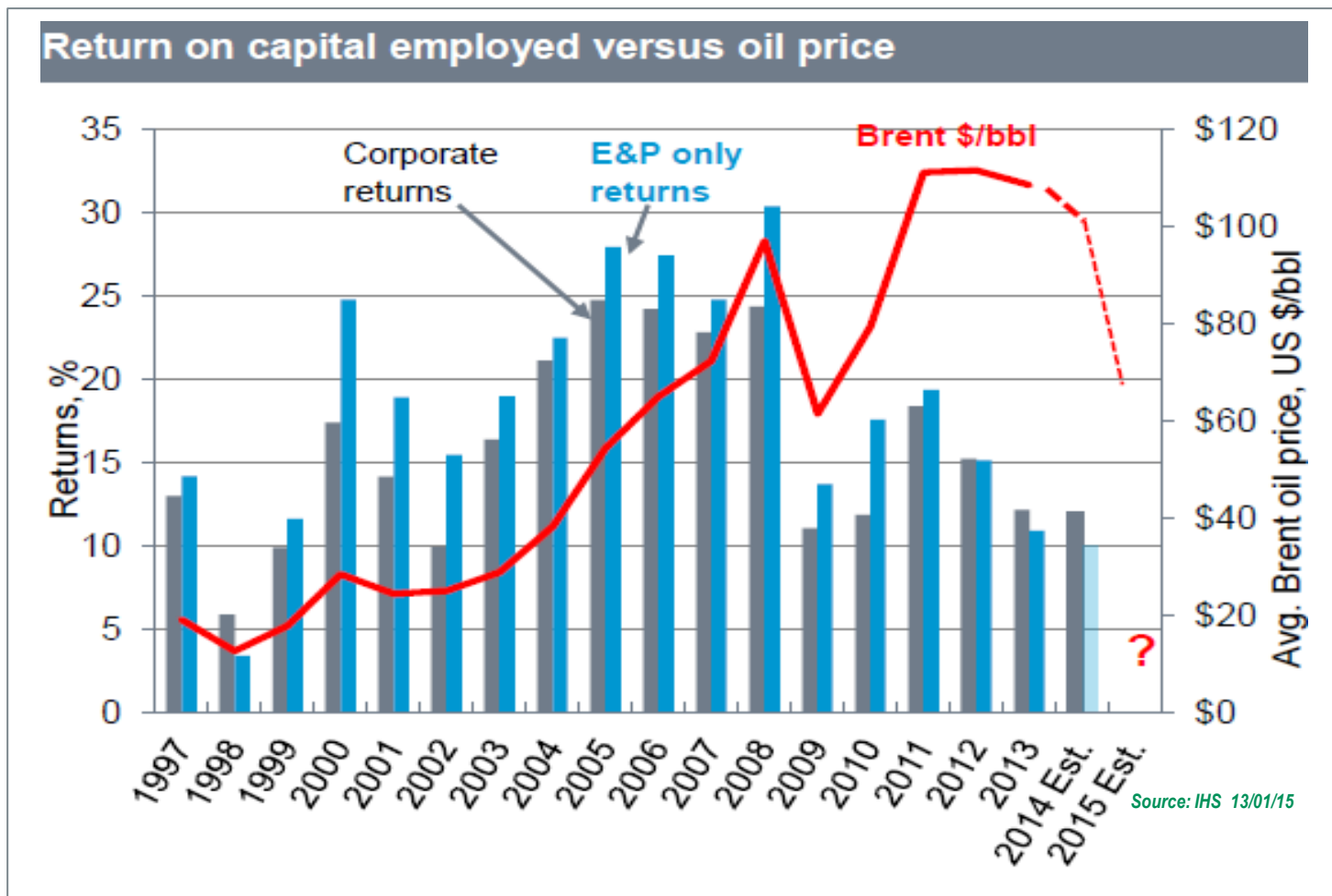


Source: IEA, BNP Paribas

Outside the US and Canada, oil supply from other non-OPEC is near flat over the next 12 months. Contribution to supply growth outside of the US comes from high cost basins. Countries in decline – will Mexico's energy reforms turn the tide. Contraction ahead for Russia, the largest oil producer.



ROCE in free fall



➤ In 2013, the largest capital spenders, mainly the Majors, announced major cuts in spending for 2014 to raise return on capital. 2014 returns were lower despite high oil prices. Spending in 2015 is going to be cut heavily not just because of low oil price but lower returns.



Capex on the way down:

European major company capex 2014-2015

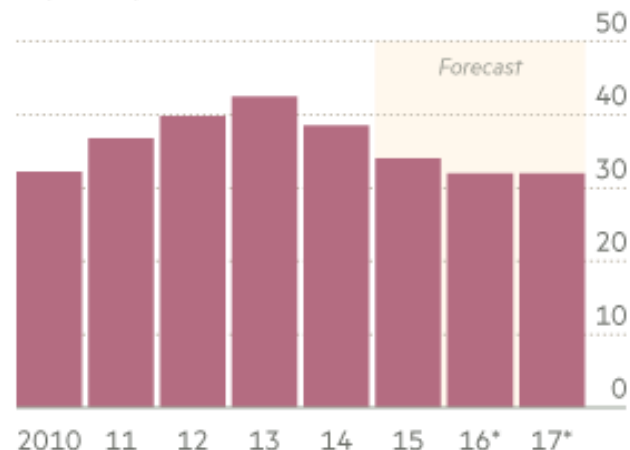
Company	2014 capex \$ Billions	2015 capex \$ Billions (estimated)
Shell	35.3	Same to slightly lower
BP	23.8	20
Total	26.4	23 to 24
Statoil	20.0	18
Eni	13.9	11.6
BG Group	9.4	6 to 7

Source: Company reports

Source: Platts 24 February 2015

ExxonMobil's spending

Capital expenditures (\$bn)



* Less than \$34bn

Source: company

Source: FT 04 March 2015

FT

➤ Exxon planned to cut annual capital spending for this year to about \$34bn per year (-12%, over \$4 billion) , and to a little less for 2016-17, down from an earlier projection of \$37bn.

➤ Exxon's planned capital spending cut is in line with the reduction planned by Chevron, the second-largest US oil group, but smaller than the 20 per cent drop announced by BP. Royal Dutch Shell, Europe's largest oil company, has said it plans to "curtail" spending over the next 3 years by \$15bn, without specifying a target for 2015.



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OPEC crude output capacity- what is the scope for expansion?

	2014	2015	2016	2017	2018	2019	2020
OPEC Crude Capacity	35.03	34.73	35.12	35.41	35.65	35.91	36.24
Call on OPEC Crude + Stock Ch.	29.44	29.43	29.87	30.54	31.02	31.58	32.12
Implied OPEC Spare Capacity*	5.58	5.30	5.25	4.87	4.63	4.33	4.13

* Spare capacity is defined as the difference between estimated OPEC capacity and the 'Call on OPEC + stock ch.'. Actual idle capacity is lower than spare capacity when OPEC produces above the 'Call'.

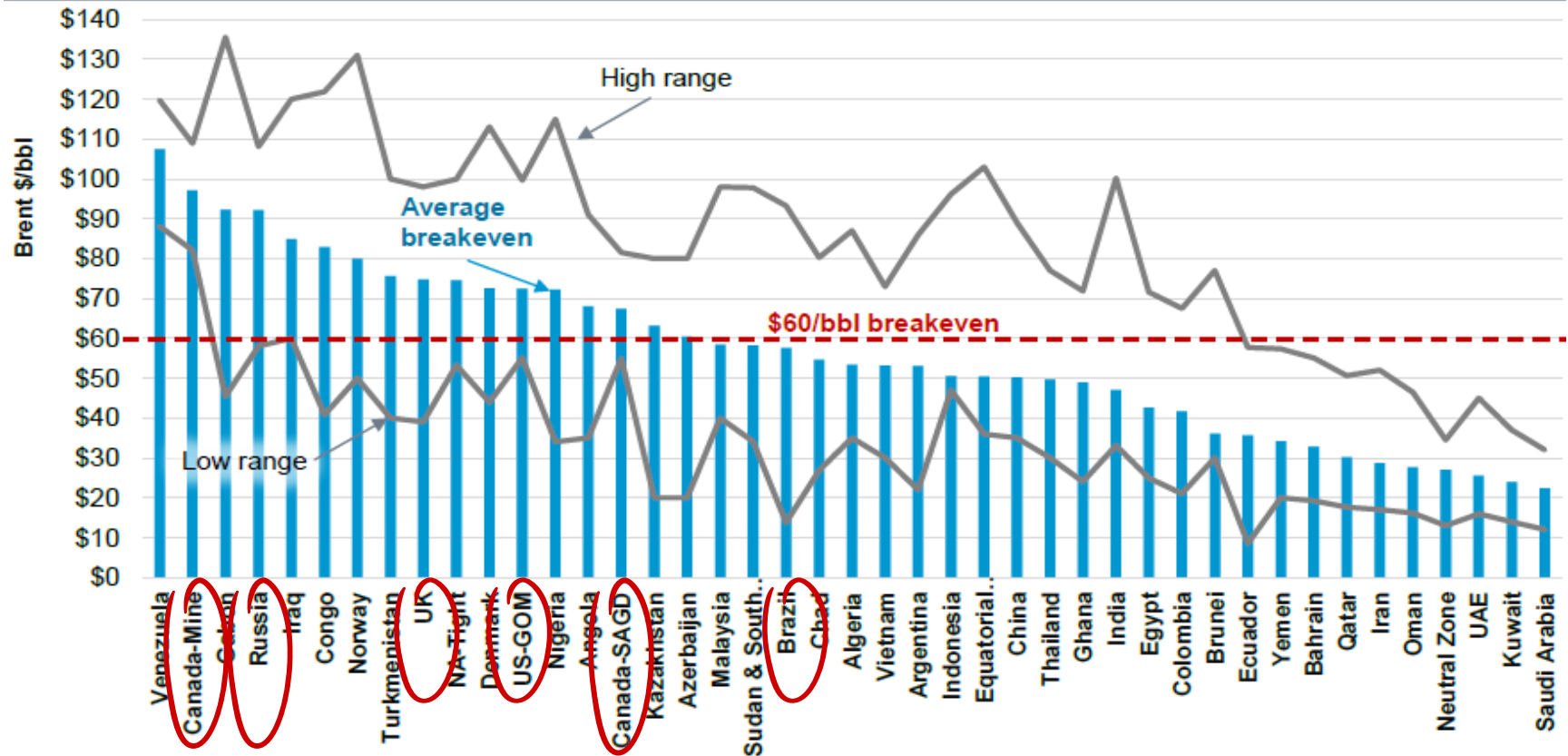
Source: IEA medium term oil market report, February 2015

➤ Will a growing 'Call' on OPEC crude oil translate into investment in production capacity? What are the incentives to maintain spare production capacity?



What price does it take to develop oil from scratch?

2014 average Brent breakeven price full cycle 10% discount rate by country:
Ranked highest to lowest breakeven with high and low price range



Source: IHS 13/01/15

Full-cycle Brent \$60/bbl breakeven threshold would put a number of key producers at risk of cancelling projects.



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