Oil Market Outlook

Painful time for the oil industry

Particularly painful for the service industry as 70 $/b
no better than 50 $/b for global oil investments

The DNB oil story in pictures & graphs

April 2015 - Torbjørn Kjus

Flere vil dessverre miste jobben (DN 18 oktober 2013)

- Oljepriser på 70-80 dollar vil ikke forhindre at flere mister jobben langs kysten de neste 12-18 månedene

- Folk vil miste jobben, og det vil bli mindre trøkk på boligmarkedet, sier oljeanalytiker Thorbjørn Kjus i DNB

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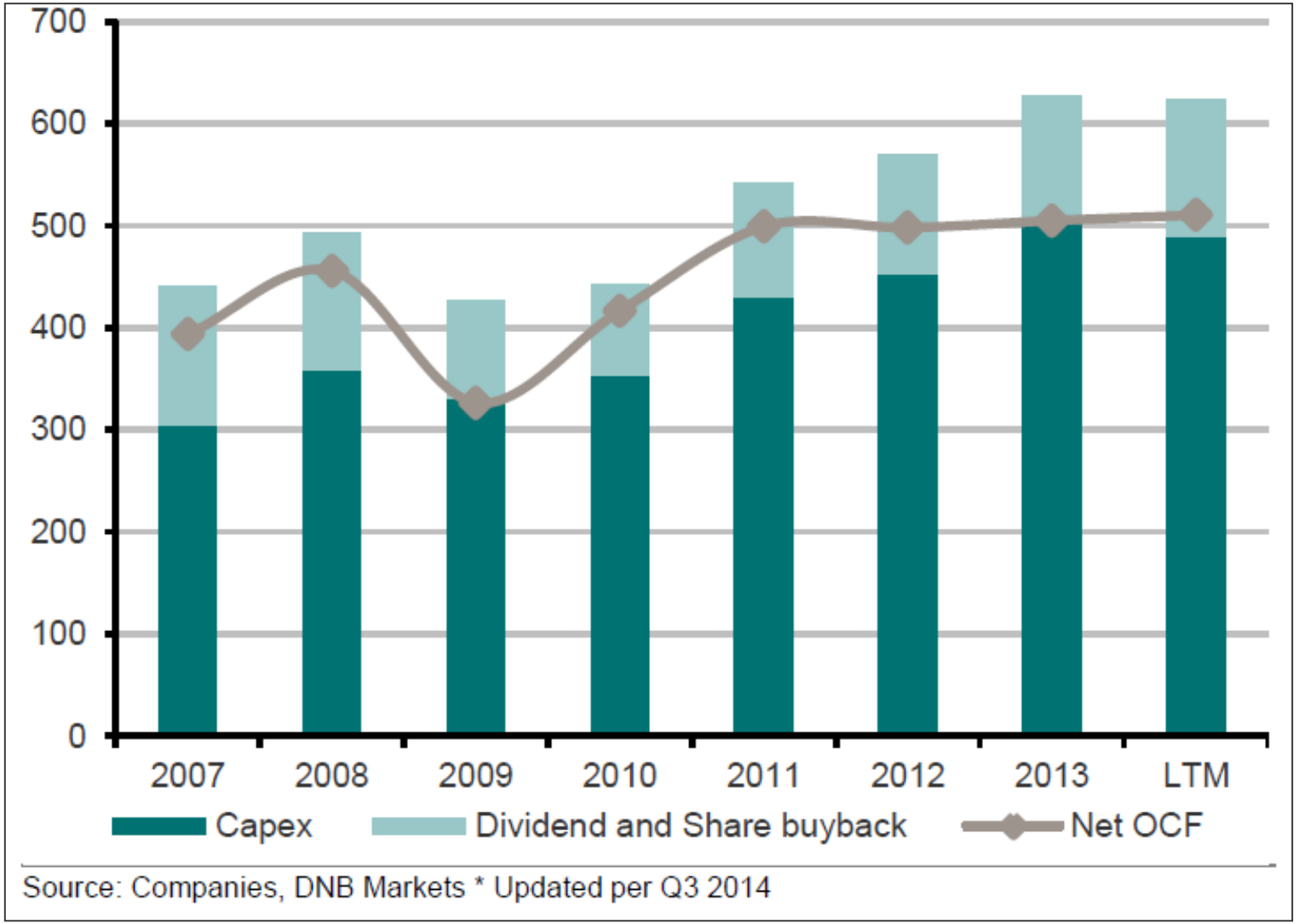
Cash Flow Was In Trouble At 110 $/b – 80 $/b The New 110 $/b?

- An oil price of 70-80 $/b will not help much for the global offshore service industry. Pain will continue for a while.



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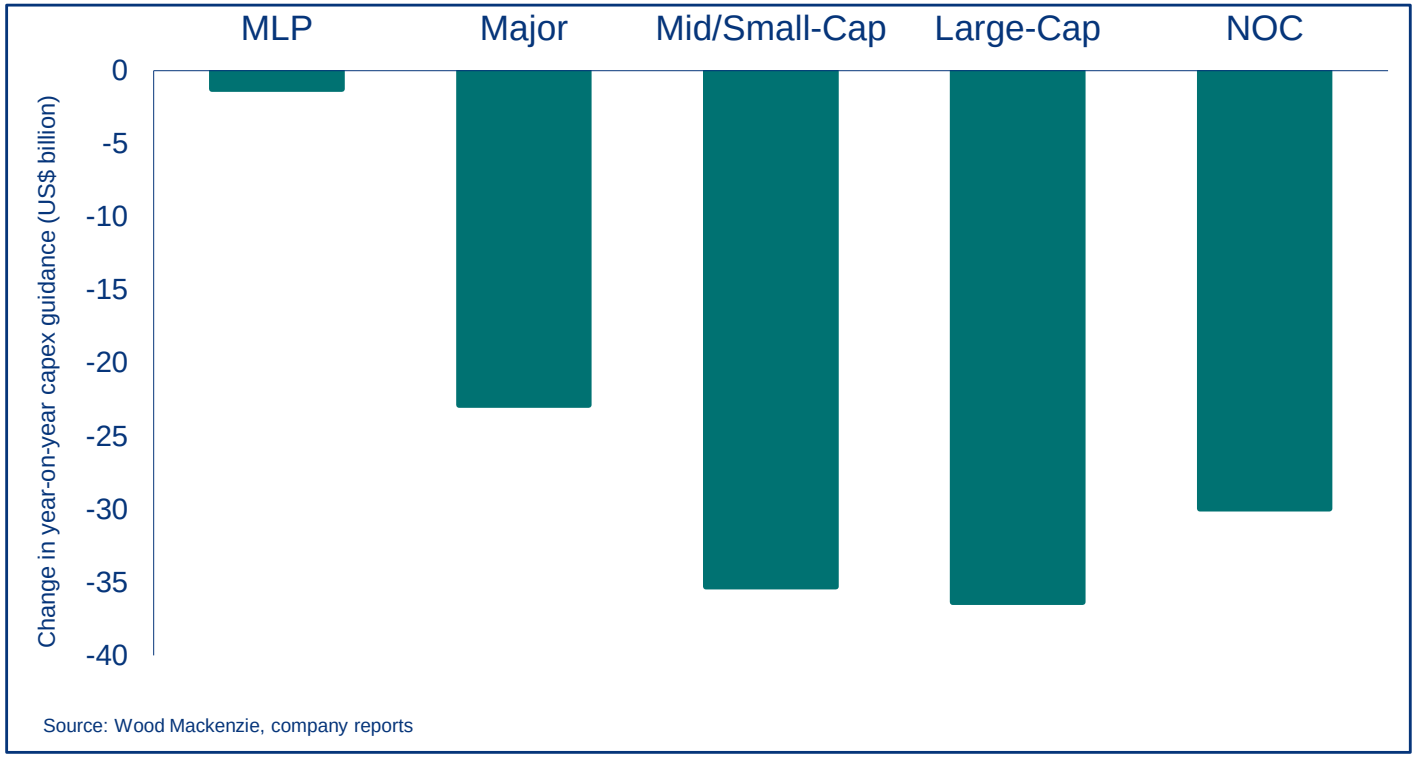
Enormous Cuts In Global Oil Investments

- This sets the stage for lower production/lower production growth in the future



Source: Wood Mackenzie, company reports

Peer group	2014 upstream E&D capex (US $m)	2015 upstream E&D capex (US $m)	y-o-y change in upstream E&D capex (US $m	y-o-y change in upstream E&D capex (%)
MLP	2,025	780	- 1,245	-61%
Major	193,376	170,500	- 22,876	-12%
Mid/Small-Cap	95,584	60,279	- 35,306	-37%
Large-Cap	118,968	82,604	- 36,364	-31%
NOC	109,778	79,819	- 29,959	-27%
	519,731	**393,982**	**- 125,749**	**-24%**

Source: Wood Mackenzie, company announcements

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The Battle Is On

- Saudi has decided to test the price levels for the US shale industry

Last updated: December 22, 2014 7:36 pm

Opec leader vows not to cut oil output even if price hits $20

Opec will not cut production even if the price of oil falls to $20 a barrel, the cartel's de facto leader said, spelling out a dramatic policy shift that will have far-reaching implications for the global energy industry.

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The Saudi Royal Family (Source Wikipedia)

Abdul Aziz (Ibn Saud)
•King: 1902-1953
•Founded Saudi Arabia in 1932
•22 wives (4 at a time)
•45 sons of which 6 have been kings

King Saud
•King: 1953-1964
•Forced out

King Faisal
•King: 1964-1975
•Killed

King Khalid
•King: 1975-1982
•Heart Attack

King Fahad
•King: 1982-2005
•Stroke

King Abdullah
•King: 2005-2015
•Regent since 1995
•Unifying and popular
•6 sons

King Salman
•80 years old
•Full brother of King Fahad
•25th son of Ibn Saud
•Well regarded
•Trusted mediator
•Had a stroke in 2010
•Pro economic reforms
•, but slow for social reasons
•Has 11 sons

Crown Prince Sultan
•Died 23.10.2011

Crown Prince Nayef
•Ultra conservative
•23rd son of Ibn Saud
•Full brother of King Fahad
•Died 16.06.2012

New Crown Prince Muqrin
•70 years old, 35th and youngest surviving son of Ibn Saud
•Mother from Yemen (18th spouse of Ibn Saud)
•Was an air force pilot educated at Britain RAF College in Cranwell
•In favour of sanctions instead of military action vs Iran
•Appreciated by the Saudi public, no corruption or negative activities
•Believed by many to be a liberal within the family
•Has 6 sons

New Deputy Crown Prince bin Nayef
•58 years old, son of late Crown Prince Nayef
•Educated in the US - Political Science
•The most pro-American Saudi minister
•First successor from the third generation

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Nobody Were More Bearish Than DNB In October

- But we were not bearish enough

	INDIVIDUAL FORECASTS - REUTERS MONTHLY POLL ON OIL PRICES									
Organisation	Q414	Q115	2014	2015	2016	Q414	Q115	2014	2015	2016
ABN Amro	90.0	95.0	105.0	90.0	85.0	90.0	90.0	95.0	85.0	80.0
ANZ	94.0	98.0	94.0	105.0	98.0	90.0	94.0	90.0	97.0	93.0
Barclays	89.0	88.0	103.0	93.0	-	81.0	78.0	95.0	85.0	-
Banco BPI	89.0	94.0	105.0	90.0	99.0	87.0	92.0	98.0	86.0	95.0
Bernstein	-	-	106.0	104.0	109.0	-	-	100.0	98.0	104.0
BNP Paribas	96.0	100.0	104.0	97.0	-	89.0	91.0	97.0	88.0	-
BofA Merrill	93.0	95.0	104.0	98.0	-	85.0	86.0	95.0	90.0	-
Capital Economics	93.0	90.0	103.0	85.0	80.0	88.0	87.0	97.0	85.0	80.0
Citigroup	92.0	92.0	103.4	95.5	95.0	83.0	84.0	95.6	87.5	85.0
Commerzbank	85.0	85.0	-	85.0	-	-	-	-	-	-
CRISIL	87.0	90.0	101.7	92.5	92.5	84.5	87.5	96.0	90.5	90.5
Credit Suisse	92.0	87.0	103.3	91.5	90.0	85.0	77.0	96.0	84.5	82.0
Deutsche Bank	87.0	88.0	102.0	88.8	90.0	82.0	81.0	95.2	80.5	80.0
DNB Markets	85.0	-	102.0	80.0	85.0	-	-	-	-	-
Economist Intelli	98.0	101.0	104.4	97.6	96.0	88.2	91.9	97.0	88.4	84.5
Goldman Sachs	-	-	-	83.8	90.0	-	-	-	73.8	80.0
JBC Energy	91.6	99.0	102.8	100.0	105.9	87.6	91.8	96.7	93.1	100.4
Jefferies	89.0	87.0	95.6	90.0	98.0	-	-	-	-	-
LBBW	90.0	90.0	102.0	88.0	93.0	84.0	86.0	87.0	84.0	90.0
Morgan Stanley	106.0	-	107.0	98.0	102.0	97.0	-	99.0	87.0	-
NAB	90.0	100.0	103.0	103.0	105.0	85.0	94.0	96.0	97.0	102.0
Natixis	93.0	98.0	103.5	99.3	103.8	87.0	92.0	96.6	93.5	97.8
Nomisma Energia	85.9	83.3	101.4	80.5	75.3	80.9	78.3	97.4	77.5	72.3
Intesa Sanpaolo	87.0	90.0	102.0	96.2	102.0	85.0	87.0	94.3	91.4	94.6
Raymond James	90.0	90.0	102.5	90.0	90.0	84.0	80.0	96.0	75.0	82.0
Raiffeisen Bank	87.0	90.0	102.0	98.0	110.0	84.0	86.0	96.0	94.0	106.0
Santander	90.0	93.0	102.5	92.0	90.0	85.0	83.9	96.1	82.0	82.0
Societe Generale	88.0	92.0	102.3	91.0	95.0	82.0	85.0	95.2	83.0	86.5
Standard Chartere	88.0	94.0	103.0	105.0	115.0	90.0	96.0	97.0	99.0	104.0
UBS	100.0	100.0	100.0	100.0	100.0	95.0	95.0	95.0	95.0	95.0
Unicredit	90.0	95.0	103.0	98.0	98.0	86.0	91.0	97.0	94.0	91.0

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Now We Are Among The Most Bullish

- We forecast 65 $/b for 2015 and that is currently among the most optimistic forecasts

	INDIVIDUAL FORECASTS - REUTERS MONTHLY POLL ON OIL PRICES									
Organisation	Q215	Q315	2015	2016	2017	Q215	Q315	2015	2016	2017
ABN Amro	55	-	60	75	-	50	-	55	70	-
ANZ	44	49	49	64	68	42	47	47	61	65
Barclays	47	50	51	-	-	39	47	46	-	-
Banco BPI	54	53	54	60	65	48	47	48	54	59
Bernstein	-	-	80	90	95	-	-	75	85	90
BNP Paribas	55	63	60	75	-	48	58	55	70	-
BofA Merrill	-	-	52	58	-	-	-	50	57	-
Capital Economics	56	60	60	65	65	51	56	55	60	65
CIBC	58	80	69.5	82.5	-	48	62	57	70.5	-
Citigroup	45	55	54	69	-	35	45	46	61	-
Commerzbank	55	65	62	78	-	43	60	56	75	-
Credit Suisse	54	-	58	76	80	53	-	56	72	75
CRISIL	57	60	59.5	64.5	70	52	56	55.5	61.5	68
DNB Markets	55	63	65	80	84	-	-	-	-	-
EIU	52	58	58	71.38	-	46.28	51.62	51.93	65.51	-
First Energy Capi	57	60	58.7	72.25	79.5	50	53	52	67.25	74.5
Global Risk Manag	55	60	58	-	-	-	-	-	-	-
Goldman Sachs	42	-	50.4	70	-	40.5	-	47.15	65	-
Intesa Sanpaolo	60	60	60	69	75	53	58	55.3	66.5	72
JBC Energy	53.33	58.81	58.32	74.81	-	46.66	55.6	53.32	70.37	-
Jefferies	45	53	50.25	67.5	77.25	43	49	47.25	62.5	72.25
LBBW	55	60	58	65	75	50	55	50	60	70
Morgan Stanley	57	71	70	88	100	-	-	59	-	-
NAB	54	58	57	69	-	49	54	53	67	-
Natixis	50	60	57.3	63.3	69	43	56	52.4	60	66
Nomisma Energia	59.55	61.19	59.09	64.91	67.18	51.55	54.19	52.09	59.91	63.18
Raiffeisen Bank I	53	60	59	77	85	51	57	55	73	82
Raymond James	60	72	68	82	87	55	65	62	75	80
Santander	55.5	56.5	56.5	65	70	50.59	51.5	51.5	57	63
Societe Generale	51.3	55	55.2	65	70	45	50	49.3	60	65
Standard Chartere	71	83	76	100	112	58	75	67	93	106
Thomson Reuters	56	57	57	70	-	-	-	-	-	-
UBS	50	-	52.5	67.5	80	48	-	49	62.5	75
Unicredit	60	60	60	70	-	54	54	54	66	-

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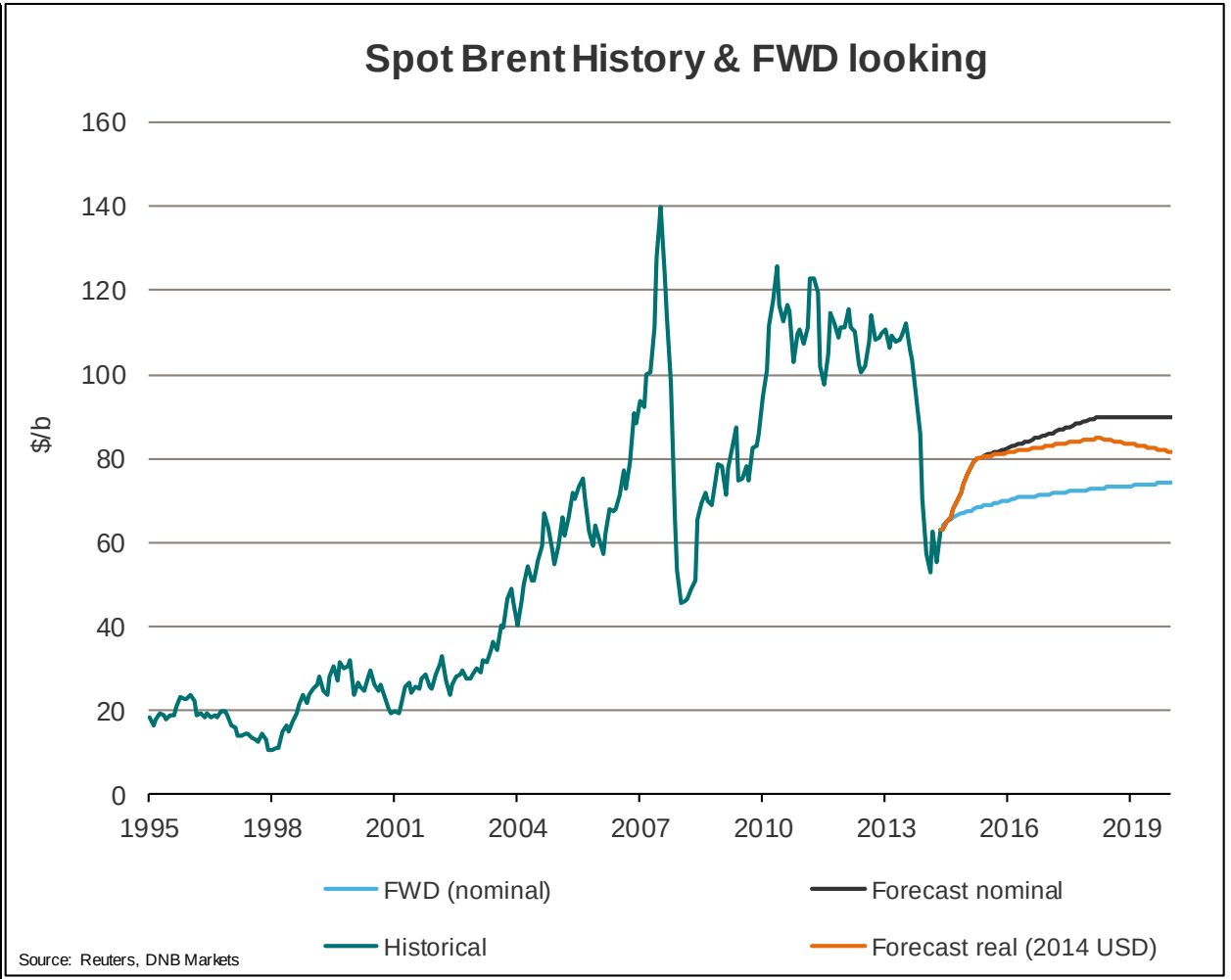
Long Term Oil Price Forecast – Current

(The forecast is for the average of the rolling 1st month ICE Brent future contract)

	Historical Nominal $/b	Historical Real (2015) $/b
2001	24.4	32.2
2002	25.0	32.4
2003	28.8	36.5
2004	38.3	47.2
2005	54.5	65.0
2006	65.1	75.3
2007	72.4	81.3
2008	97.3	105.2
2009	61.7	67.0
2010	79.5	84.9
2011	111.3	115.2
2012	111.7	113.3
2013	108.7	108.7
2014	99.5	99.5
	Forecast Nominal $/b	**Forecast Real (2015) $/b**
Q1-15	55	55
Q2-15	63	63
Q3-15	69	69
Q4-15	74	74
2015	65	65
2016	80	79
2017	84	81
2018	88	84
2019	90	84
2020	90	82



Source: Reuters, DNB Markets

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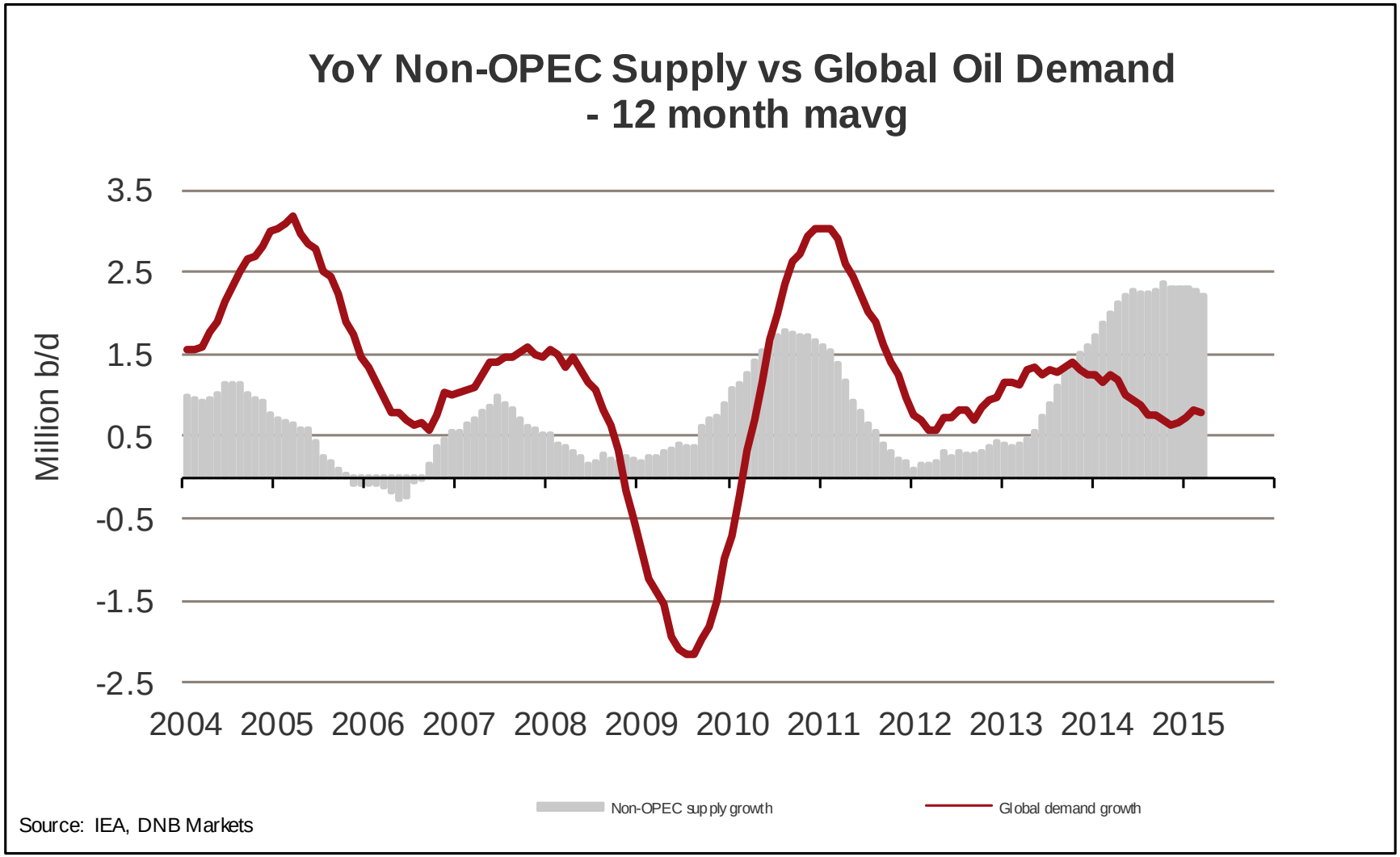
Trend Line Growth Favors Supply – Not Demand



Source: IEA, DNB Markets

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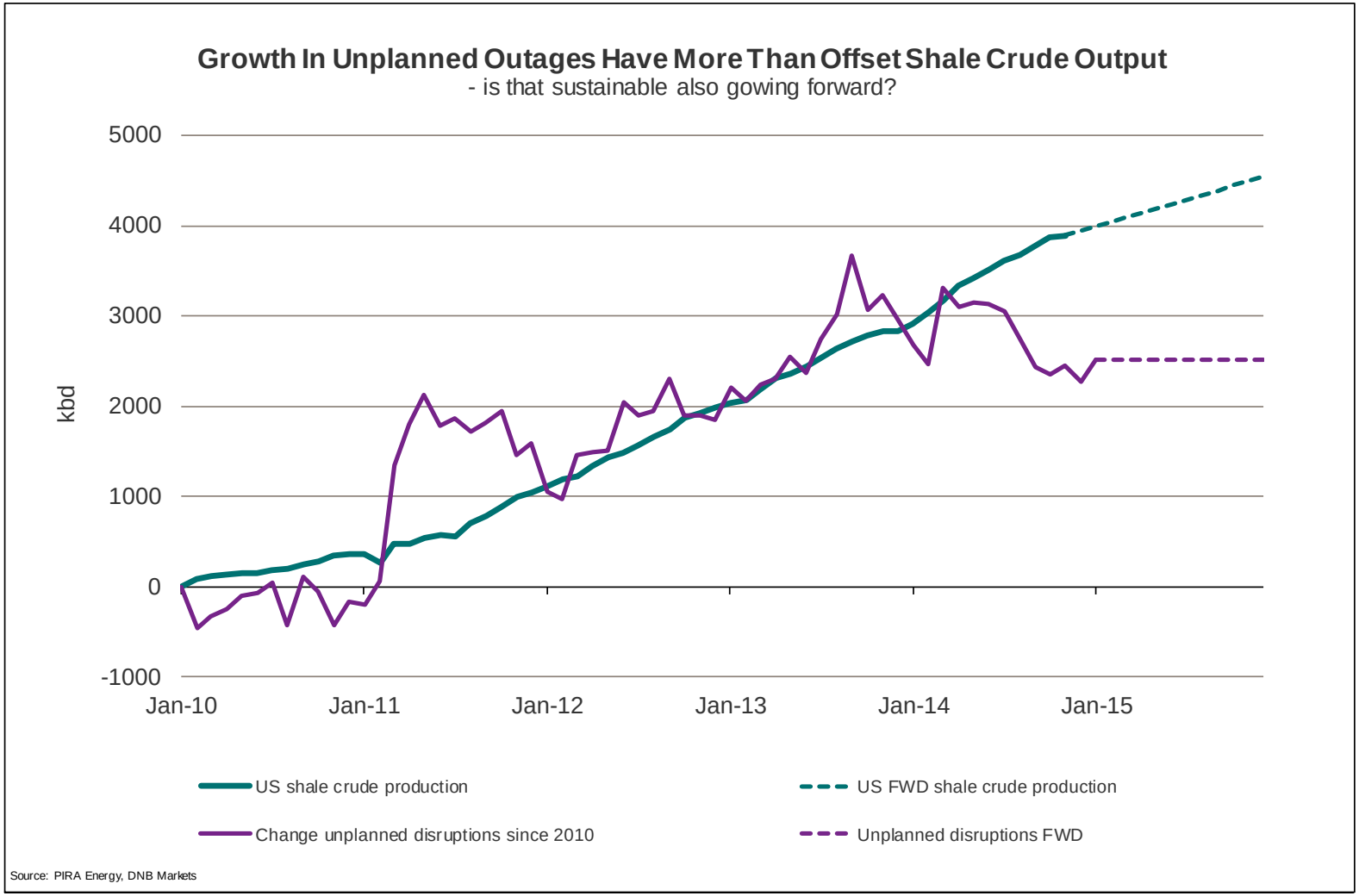
Shale Crude Output Growth Has Been Offset By Outages

- Shale crude production growth is starting to catch up – What happens next three years with unplanned outages??



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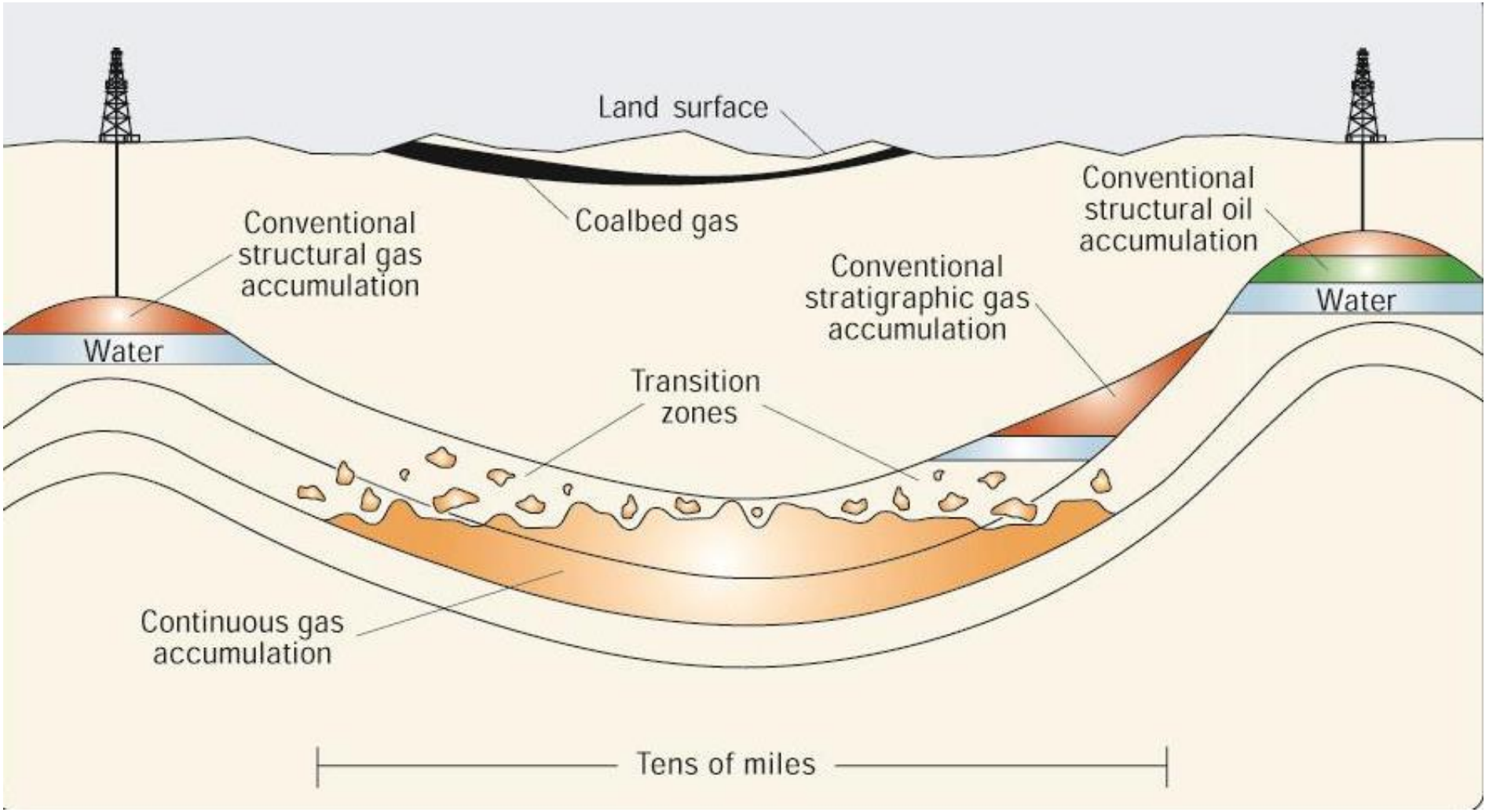
Conventional vs Unconventional

- Moving to the “kitchen” instead of the “living room” (Source: USGS)



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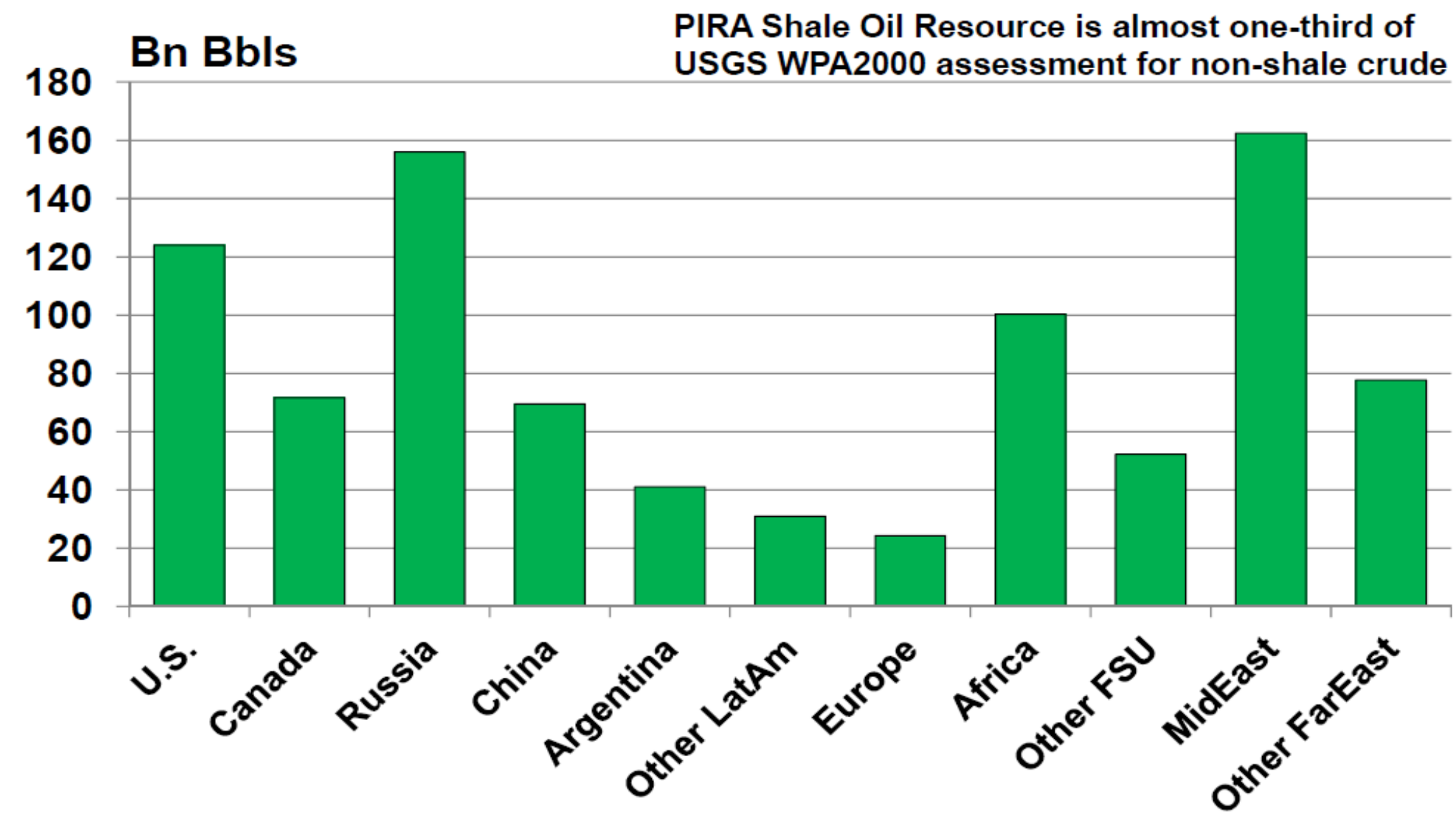
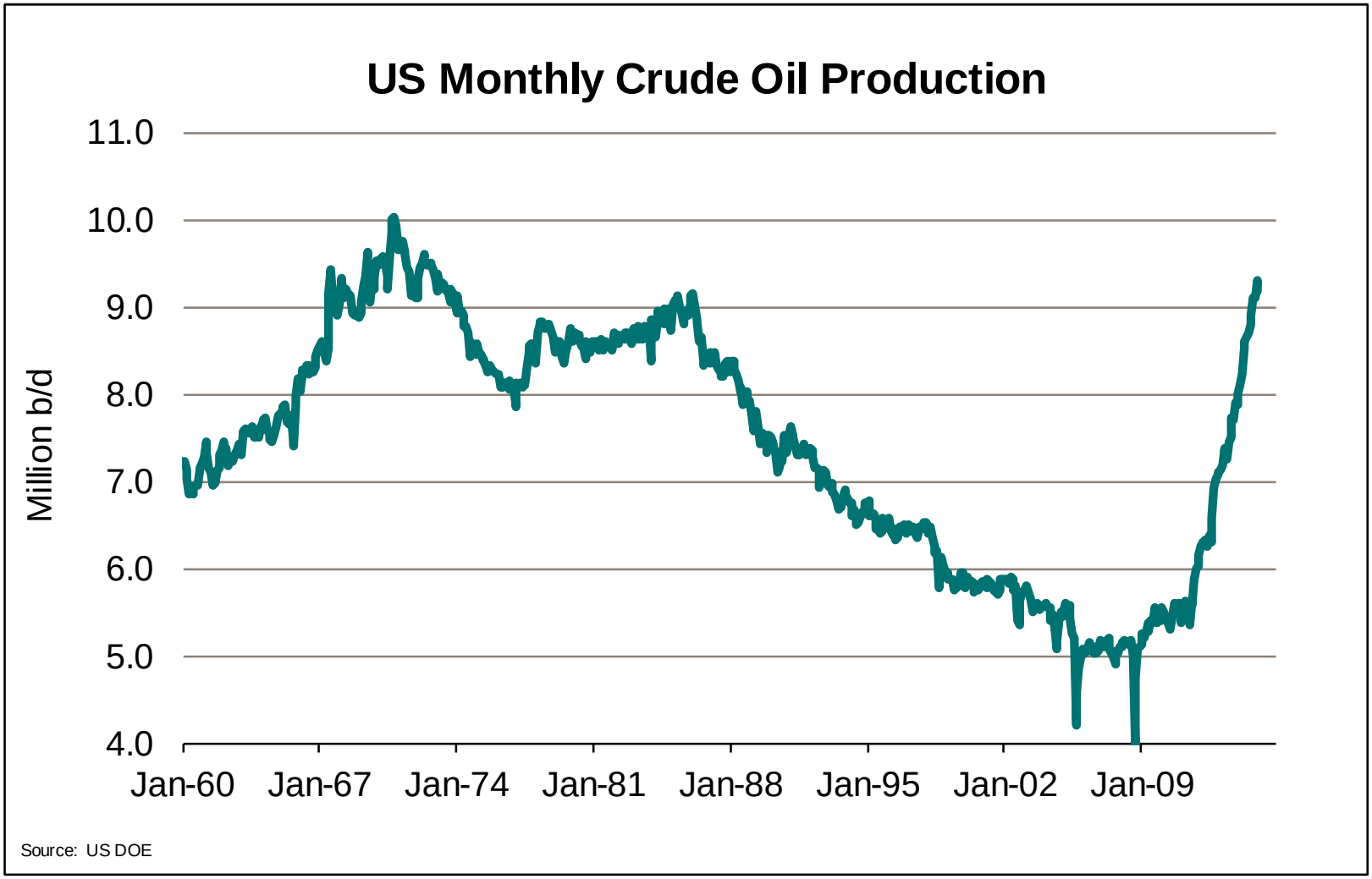
World Technically Recoverable Risked Resource of Shale/Tight Crude/Condensate Totals 0.9 Trillion Bbls



US Crude Production Back On The Rise – The Shale Revolution

- After more than 20 years of steep production decline, US production is rising again



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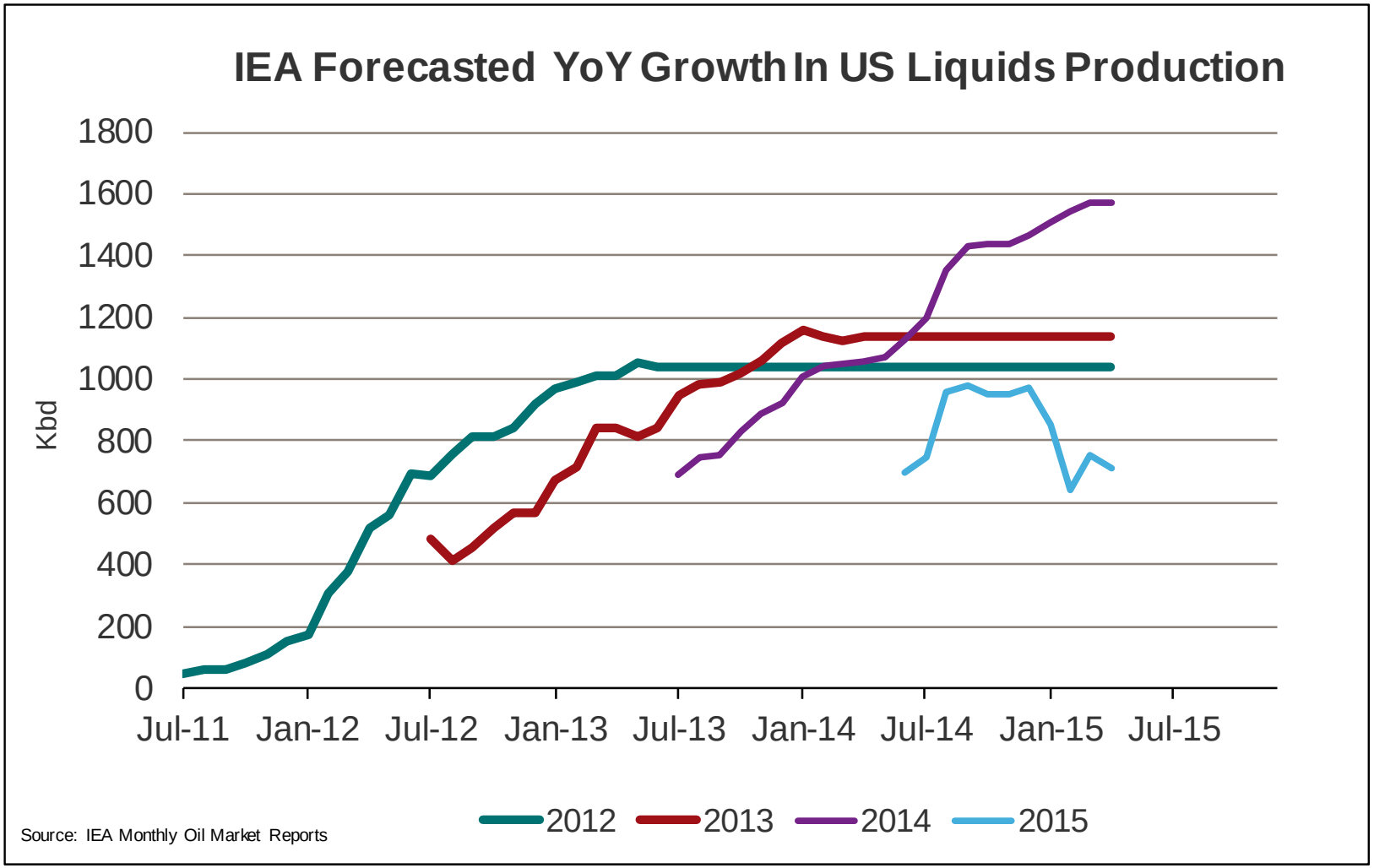
IEA's Forecasts For US Production Growth Far Too Low So Far

- IEA's first take on 2012 US production growth was at 45 kbd - now 2012 growth is estimated to have been 1.04 million b/d
- For 2013 the forecasted growth was 479 kbd, now the number is revised up to 1.14 million b/d
- For 2014 the initial estimate was 700 kbd, now the estimate is revised up to 1.57 million b/d



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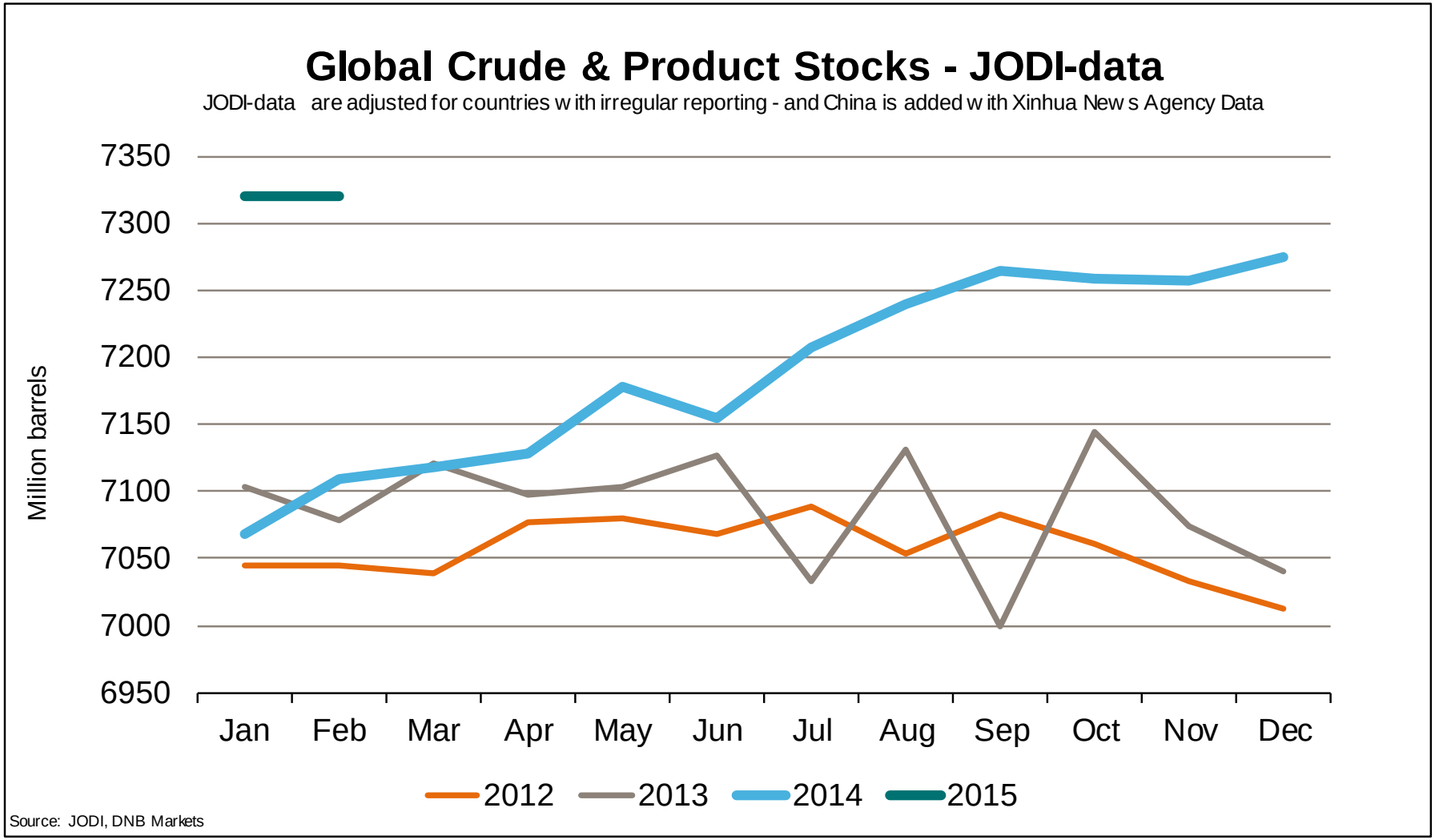
Over Supplied Market in 2014

- Global oil stocks (excl. Chinese strategic stocks) are now 253 million barrels above a year ago.



Source: JODI, DNB Markets

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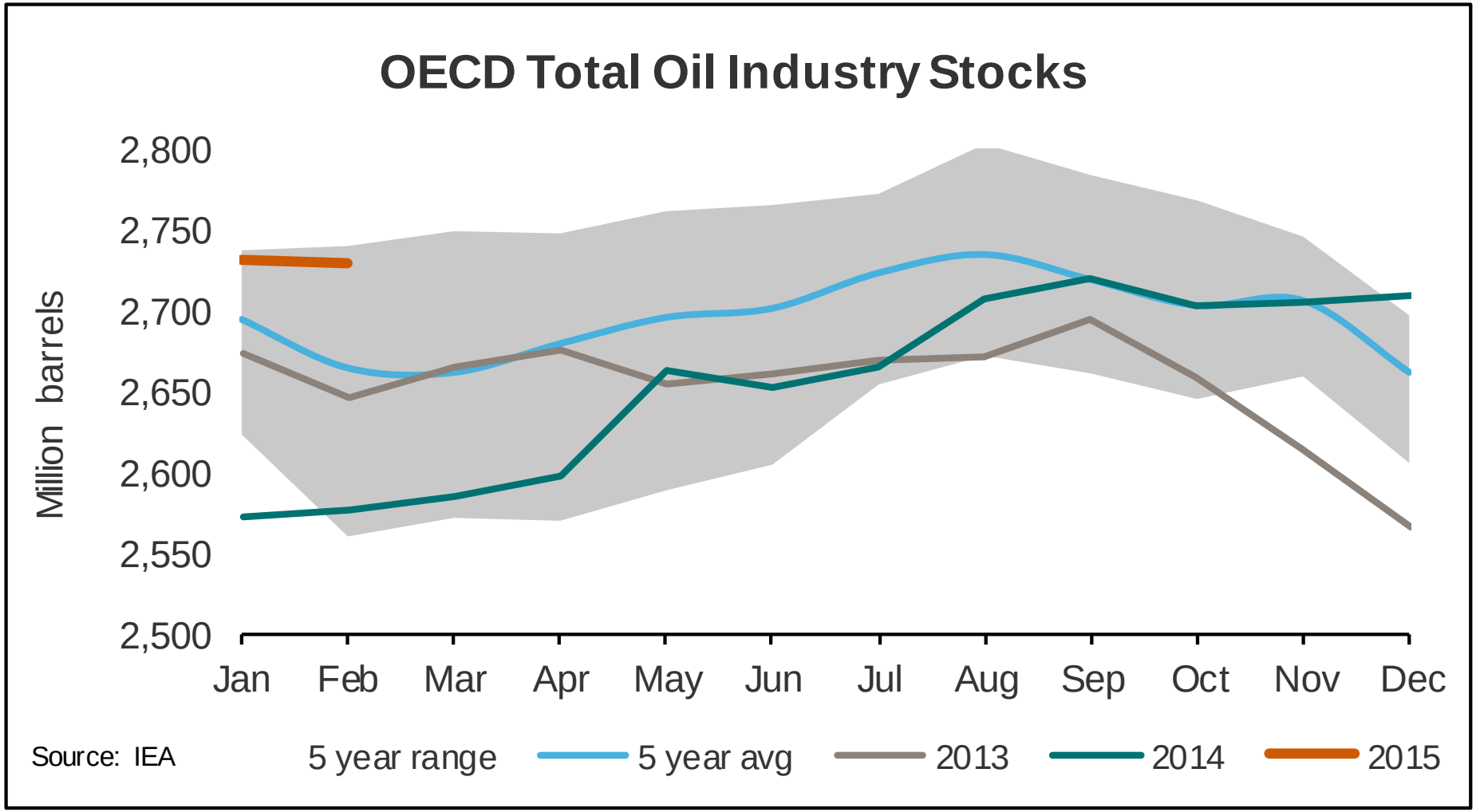
OECD Stocks Are High



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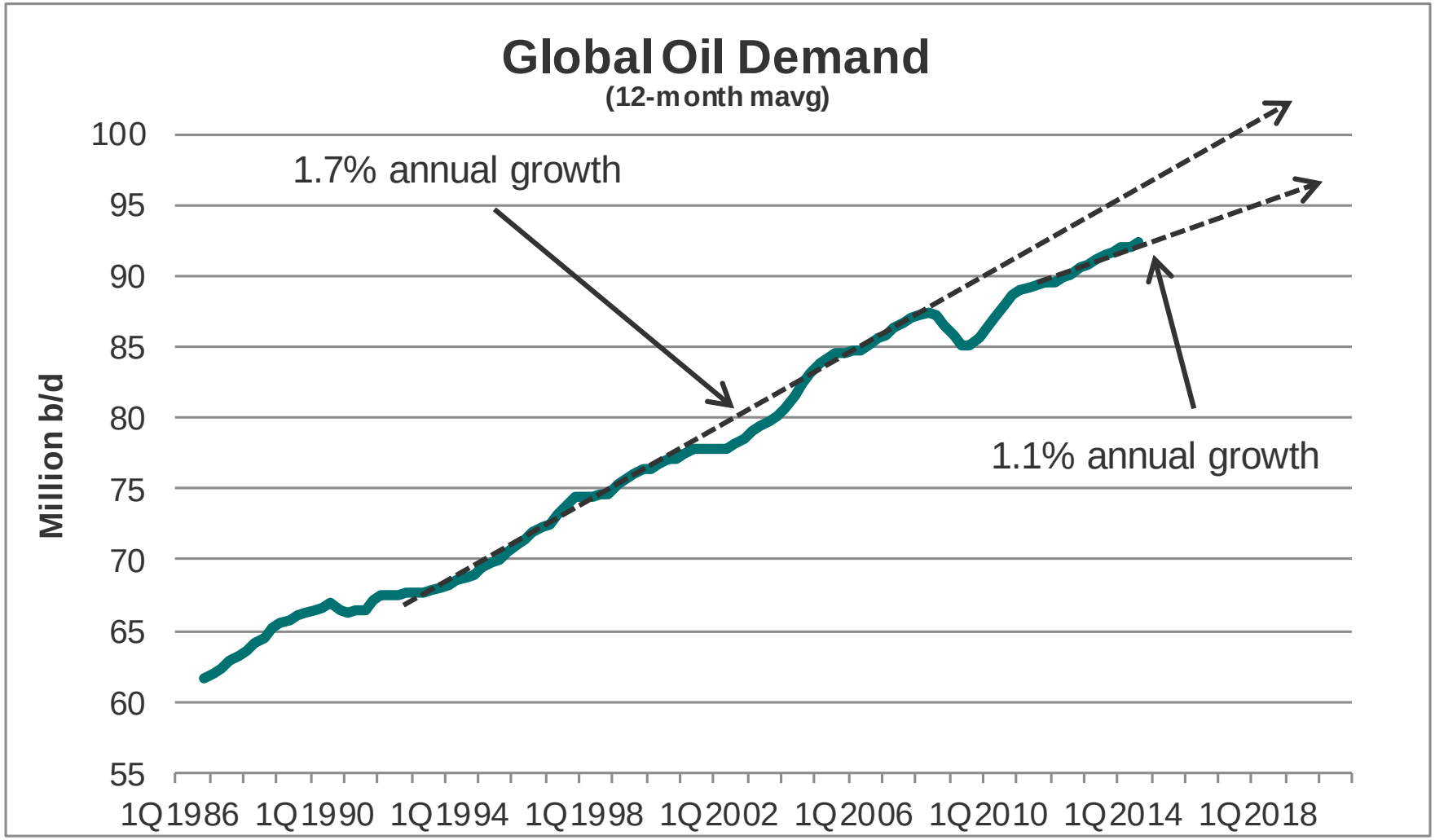
We Are Not Set To Return To The Trend Line

- All the changes to oil demand in recent years are not all cyclical, there are also structural elements to them like efficiency improvements and substitution



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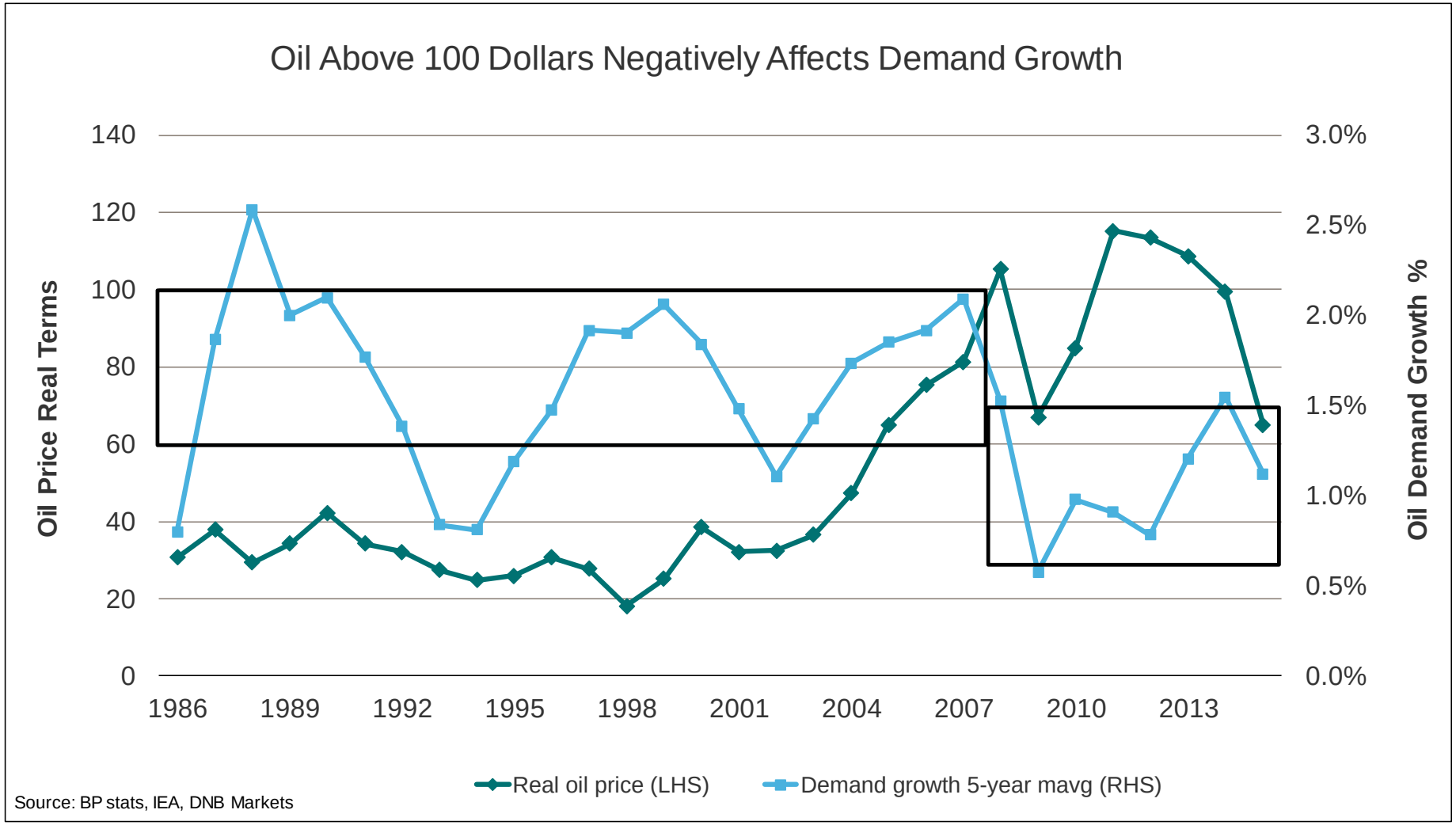
Better Oil Demand Growth At Prices Below 100 Dollars



Source: BP stats, IEA, DNB Markets

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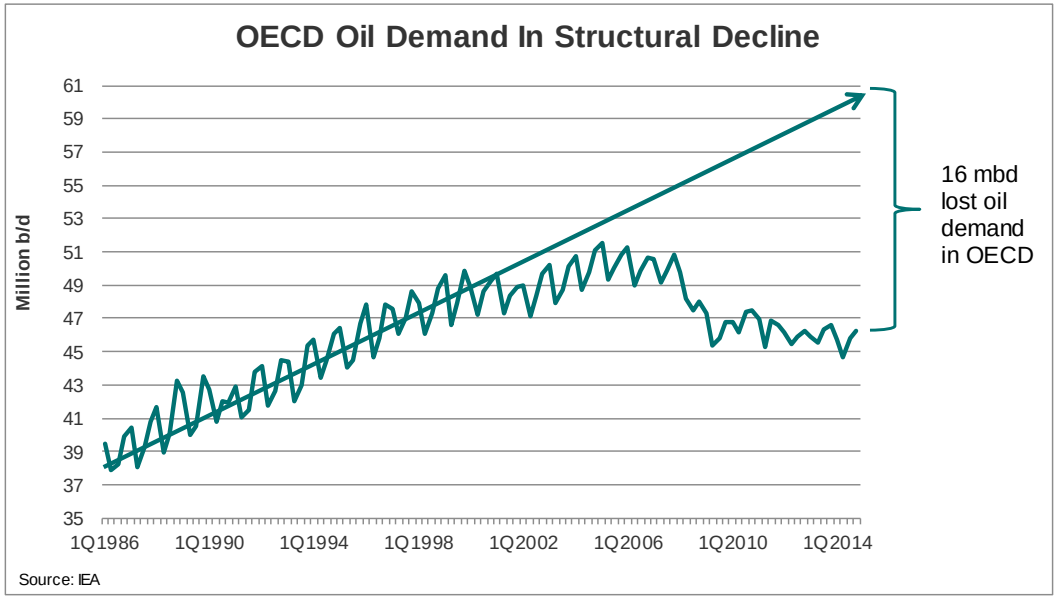
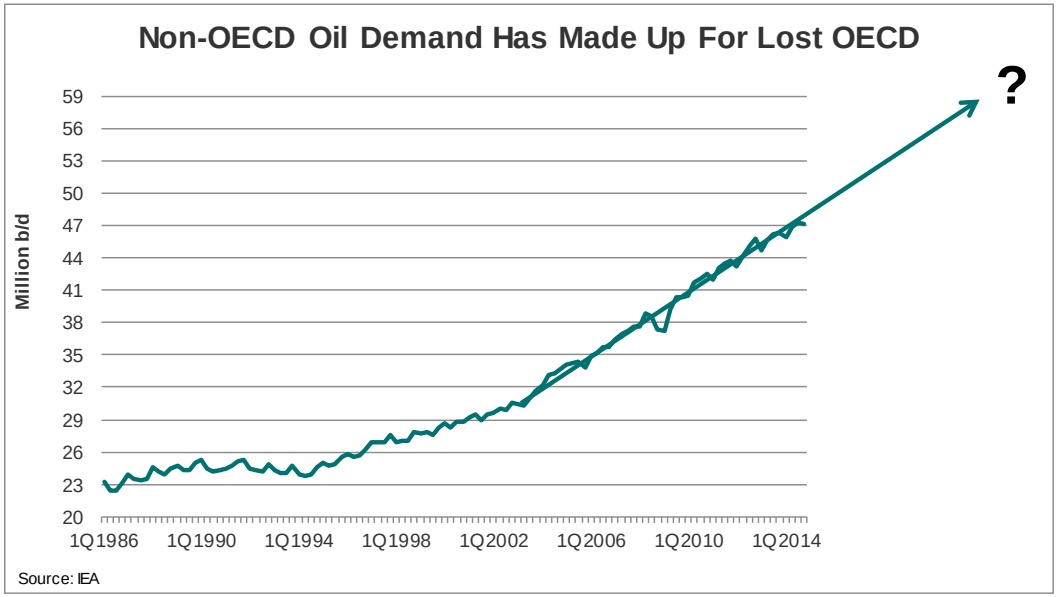
The Oil market Is Now Very Dependent On Oil Demand From EM

- OECD oil demand would have been 16 mbd higher had we not left the trend line as oil prices started to increase





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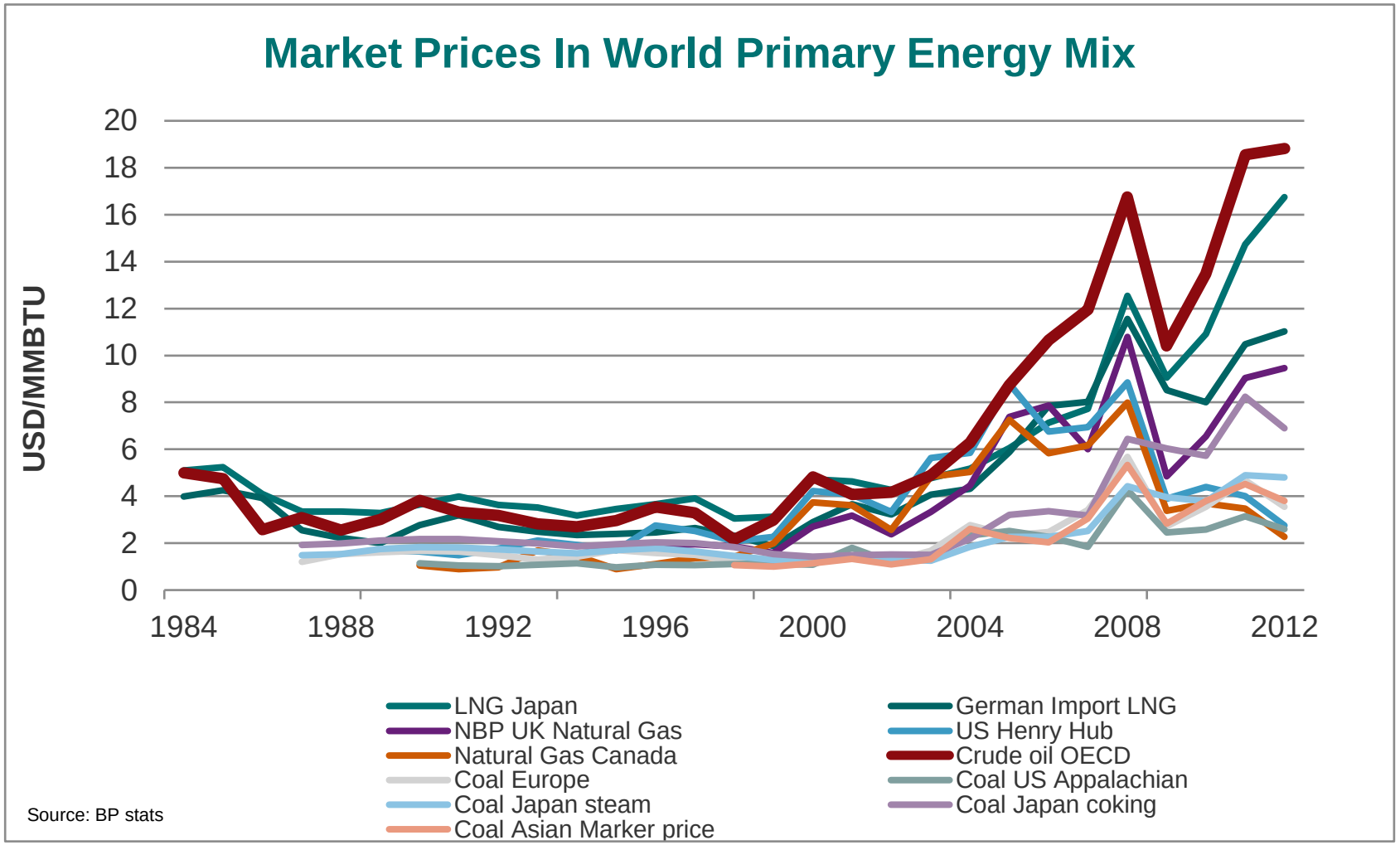
Oil Is Too Expensive – Coal Is Too Cheap

- When oil prices are running away from other energy prices it will initiate switching where possible



Source: BP stats

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Petroleum Subsidies Have Supported Oil Demand In Non-OECD

- Emerging Markets economies heavily subsidize oil prices for their consumers, but some large countries are now forced to cut back

Country	% of Government Revenues	Population Million	Oil demand kbd
FSU			
Armenia	2.1	3	
Azerbaijan	1.9	9	
Georgia	2.0	5	
Kazakhstan	2.3	17	
Kyrgyzstan	10.4	5	
Turkmenistan	31.8	5	
Emerging Asia			
Bangladesh	7.6	153	106
Bhutan	1.4	0.7	
Brunei	3.8	0.4	18
India	**6.8**	1270	3427
Indonesia	**14.5**	246	1636
Malaysia	**5.7**	29	746
Myanmar	9.4	60	27
Pakistan	1.0	179	453
Sri Lanka	8.0	21	106
Thailand	0.7	67	1310
Latin America			
Antigua	2.4	0.1	
Bolivia	6.6	10.3	72
Ecuador	15.4	14.7	263
St.Kitts	0.6	0.1	
St.Lucia	0.7	0.1	
Trinidad	7.5	1.3	
Venezuela	**15.8**	29.7	709

Country	% of Government Revenues	Population Million	Oil demand kbd
MENA			
Algeria	10.8	37.3	396
Bahrain	19.0	1.2	
Egypt	**30.6**	83.6	756
Iran	**17.0**	79	1721
Iraq	**12.7**	31.1	777
Jordan	8.1	6.2	139
Kuwait	**4.6**	2.6	459
Libya	16.6	1.8	269
Morocco	2.4	32.3	297
Oman	7.3	3.1	184
Qatar	3.2	1.9	229
Saudi Arabia	**14.0**	26.5	3026
Sudan	7.3	34.2	98
Tunisia	2.4	10.8	86
UAE	**1.4**	5.3	699
Yemen	19.0	24.8	138
Africa			
Angola	2.7	21	129
Cameroon	8.9	20	38
Congo	2.8	75.5	16
Equatorial G.	0.9	0.7	
Ethiopia	1.1	83	54
Ghana	3.2	25	79
Madagascar	1.0	22	
Nigeria	**4.8**	166	336

Source: IMF, IEA, Wikipedia

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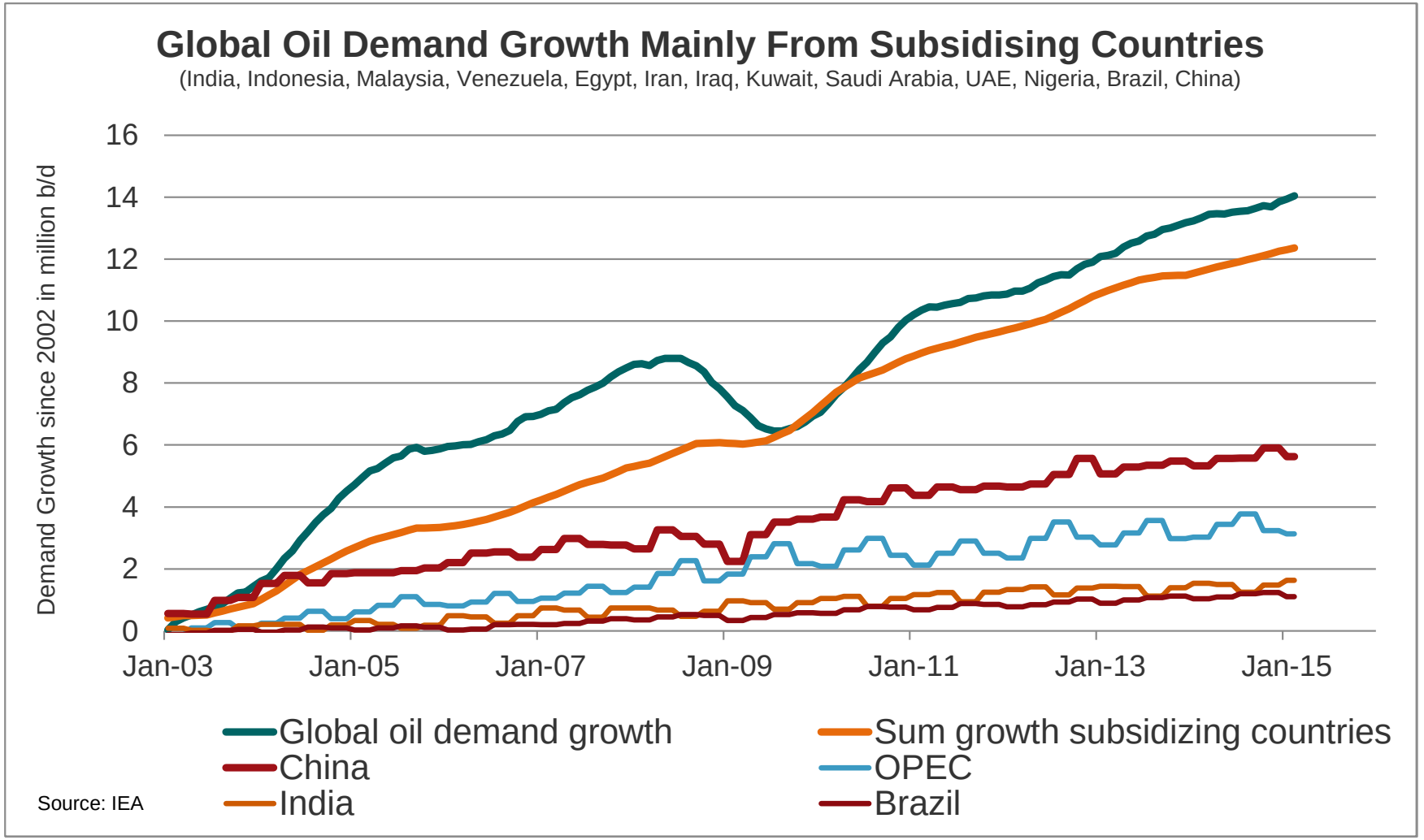
Almost All Demand Growth From The Subsidizing Countries

- Almost all growth in global oil demand since 2002 has been coming from subsidizing countries



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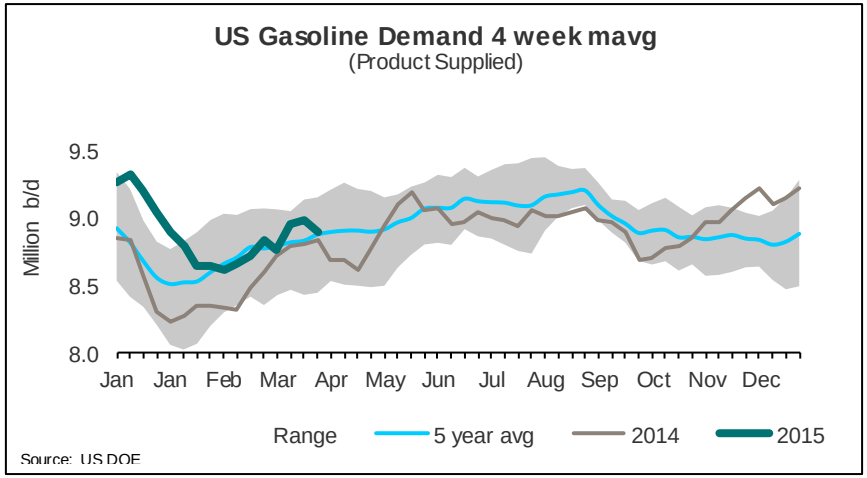
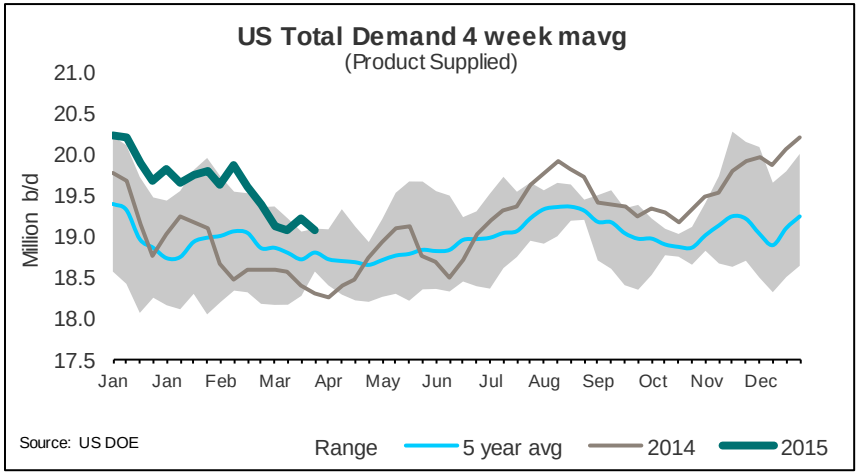
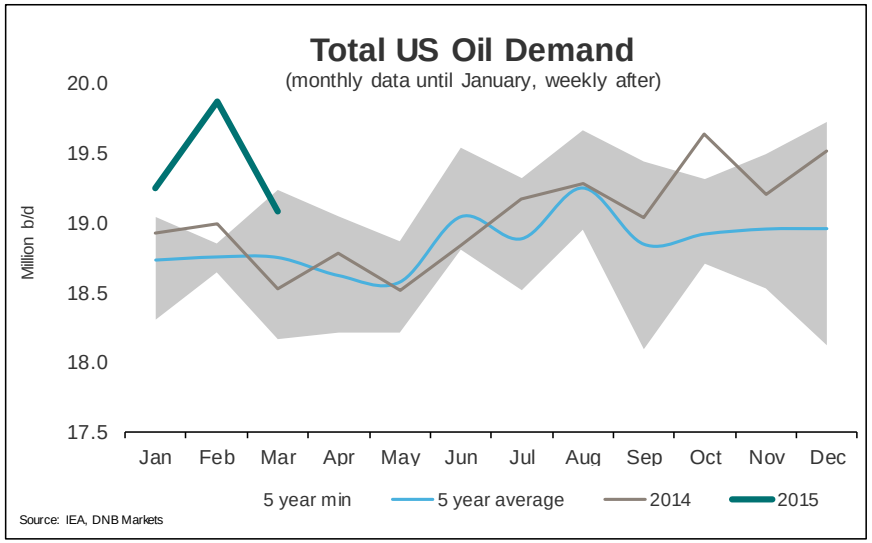
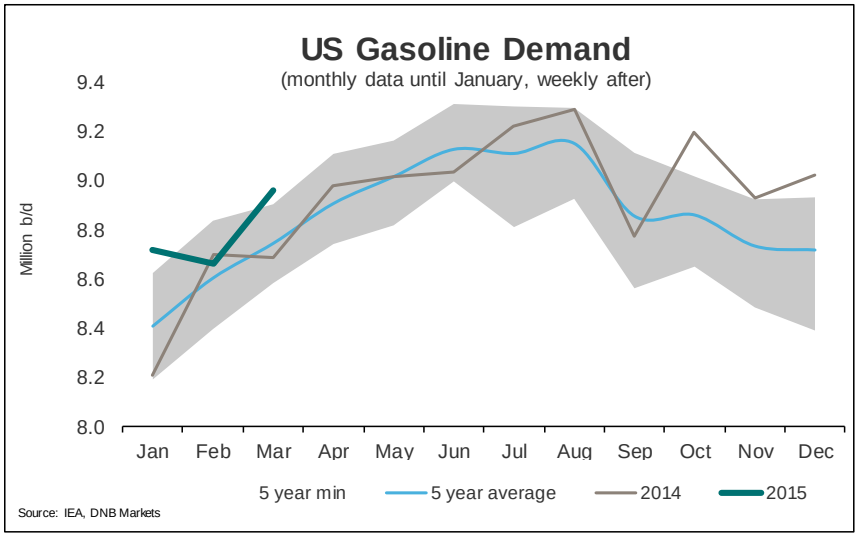
US Oil Demand Improving On Lower Oil Prices

- Gasoline demand very strong since the autumn – People driving more coupled with lower fuel efficiency









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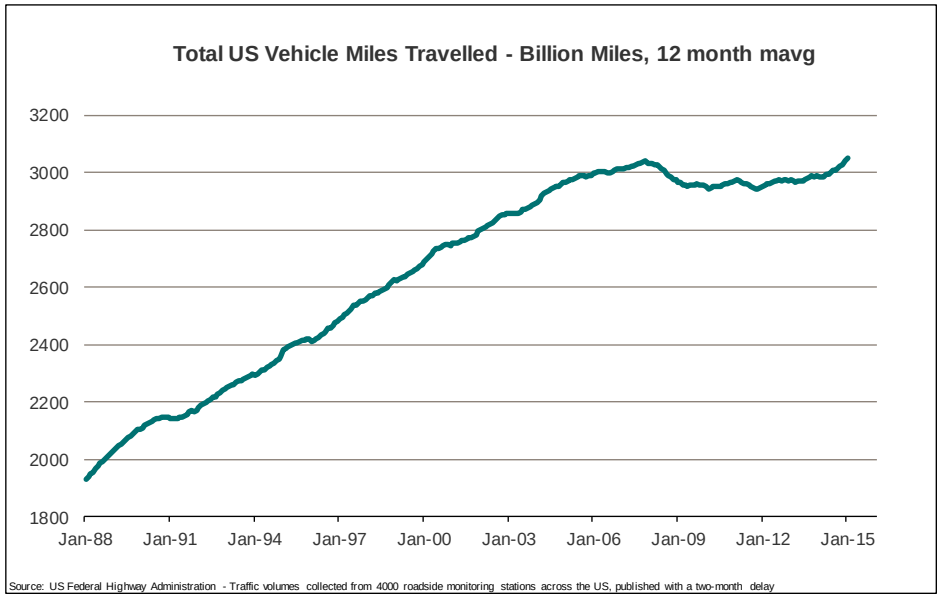
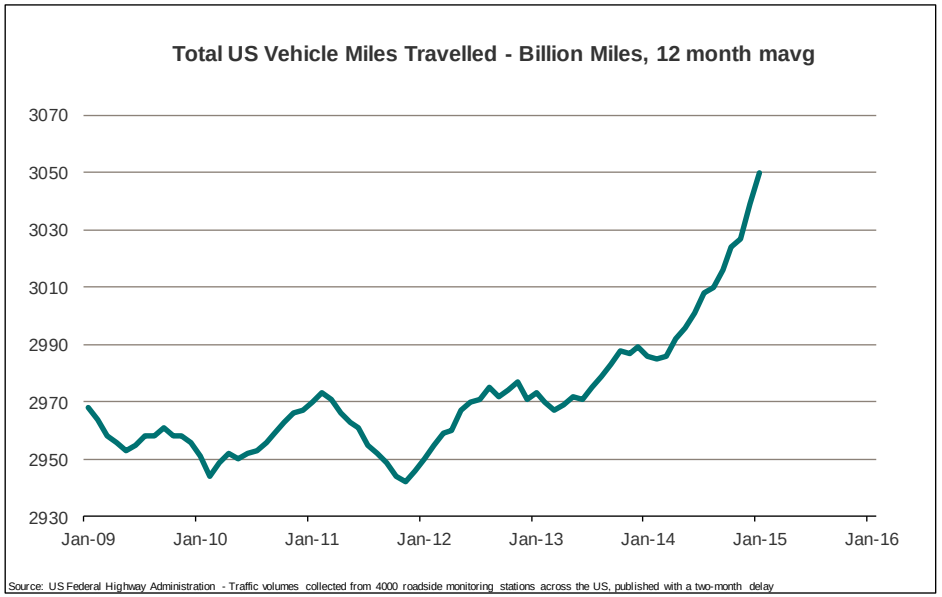
Torbjørn Kjus – torbjorn.kjus@dnb.no – Telephone: +47 24 16 91 66

Driving Distance On The Rise Gasoline Prices Drop

- Lower oil prices are incentivizing more driving





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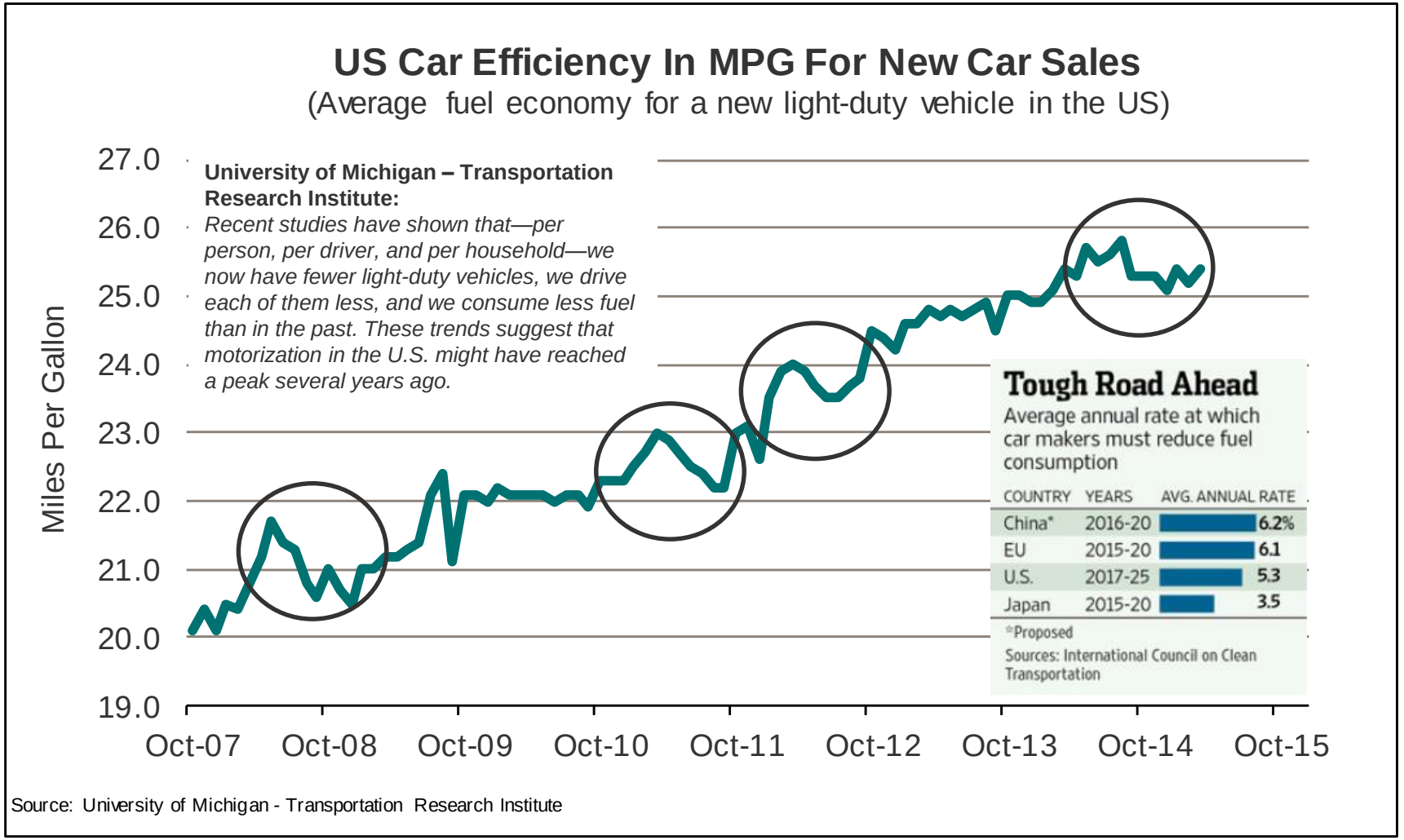
Efficiency Improvements In The US Car Fleet Now Visible

- But every time the oil price drops, the fuel efficiency drops as well – People buying more gasoline hungry cars again



Source: University of Michigan - Transportation Research Institute

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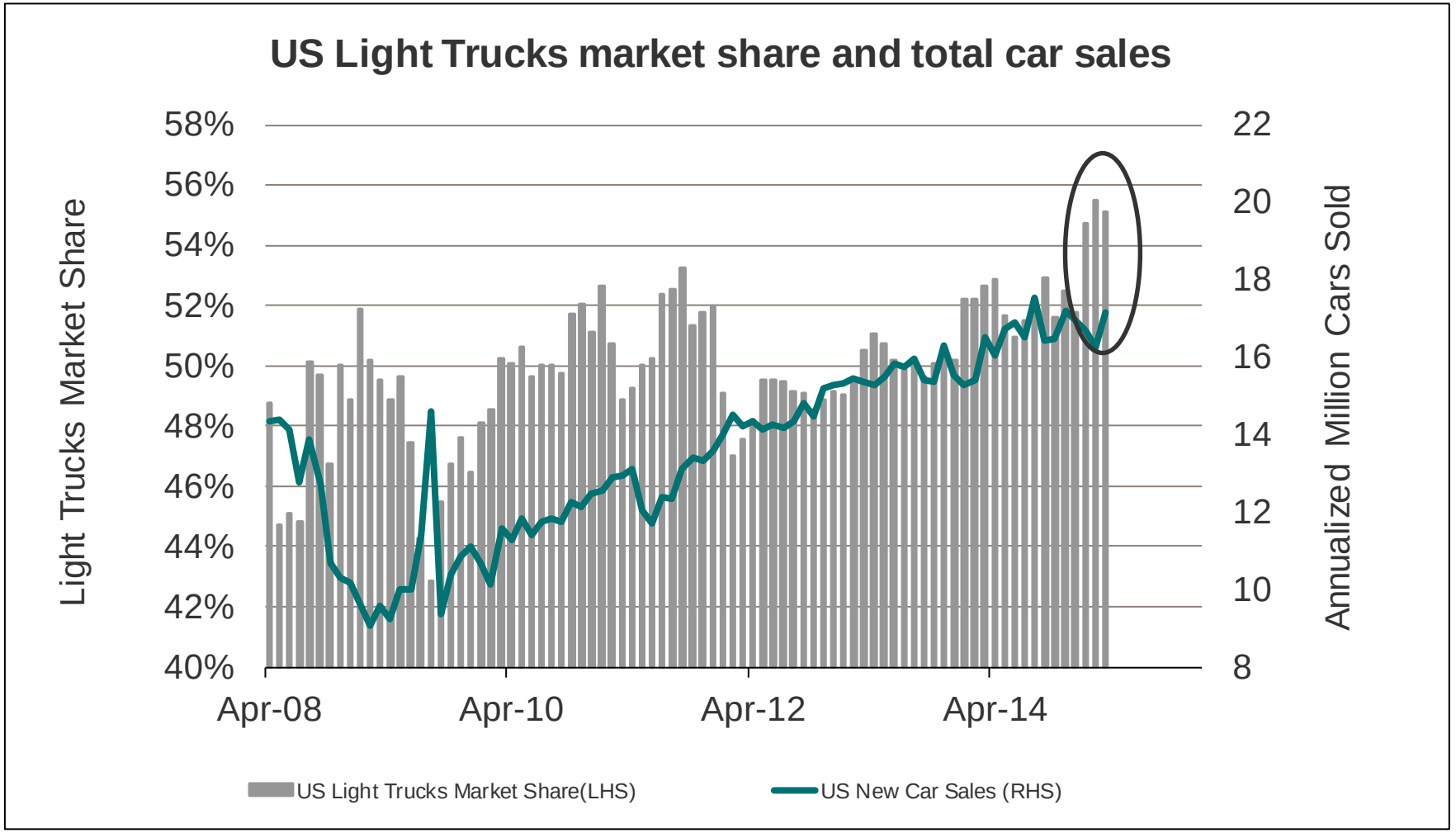
US SUV Market Share Expanding Again



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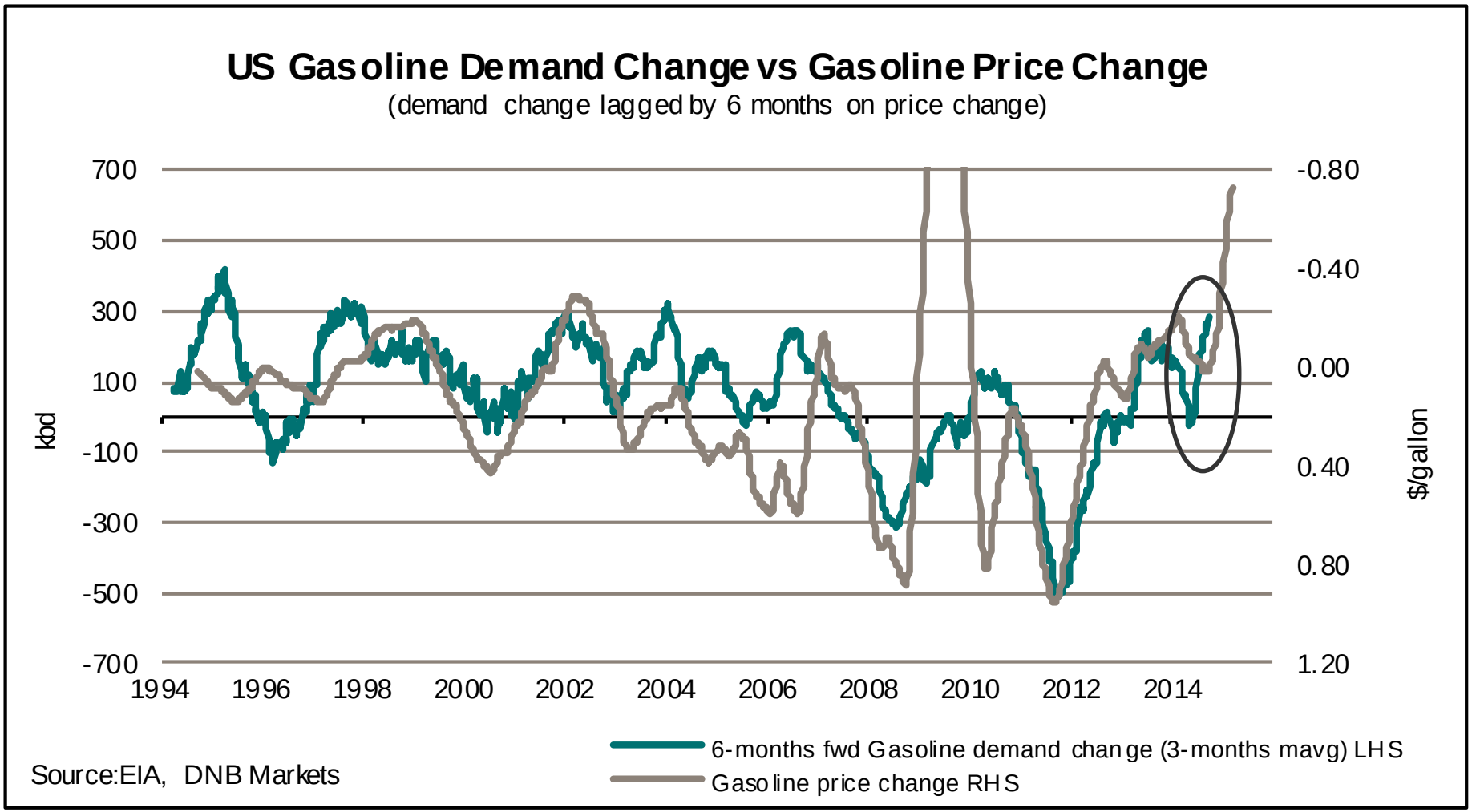
Lower Gasoline Price To Positively Affect US Gasoline Demand

- But not a large enough impulse to change the world oil balance…



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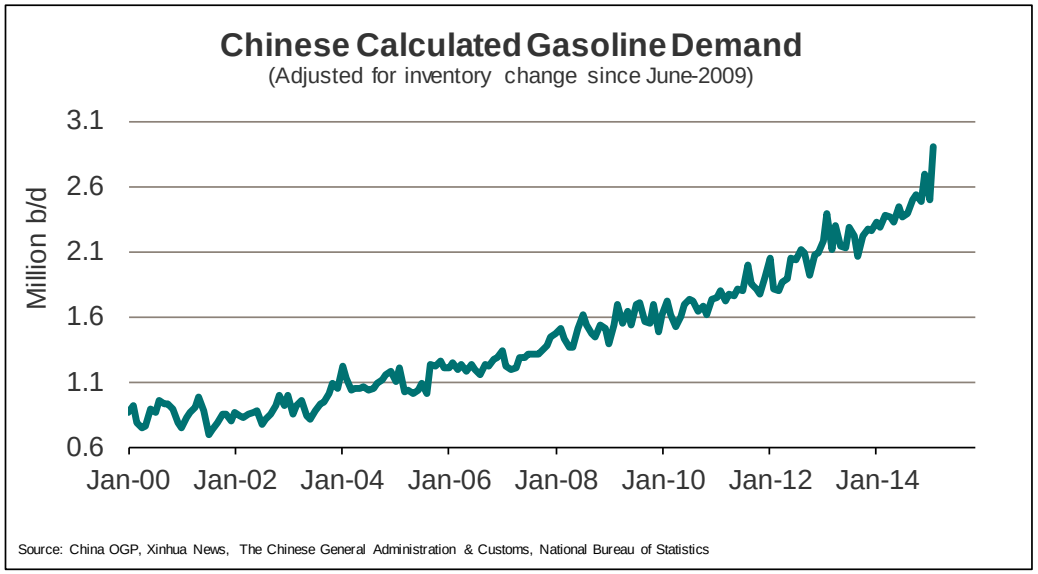
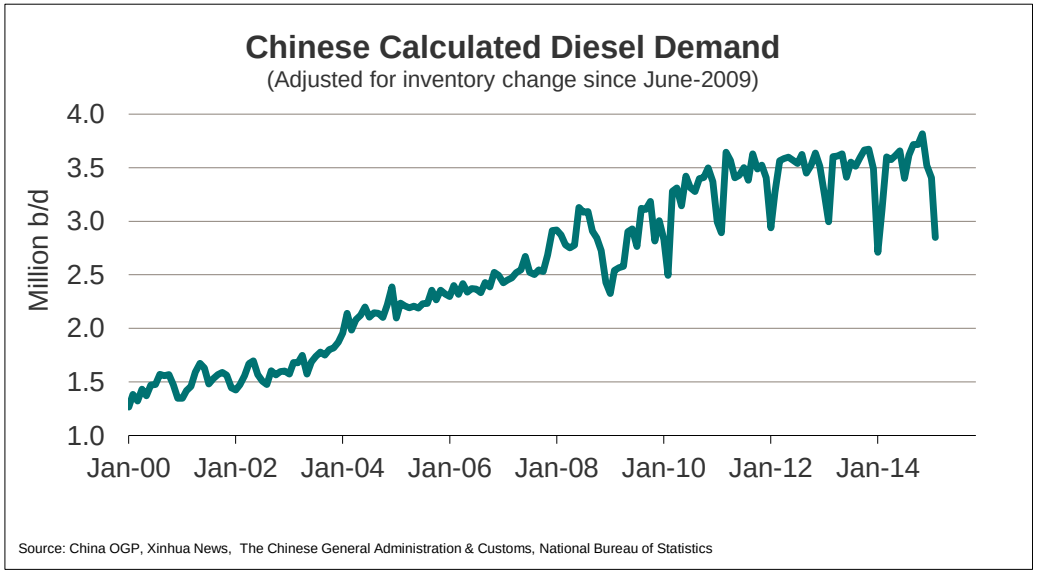
Chinese Gasoline Demand Accelerating

- Our take: Lower prices coupled with record car sales looks more important than lower GDP-growth
- Diesel continues its weak performance from the past couple of years however on a weaker construction growth





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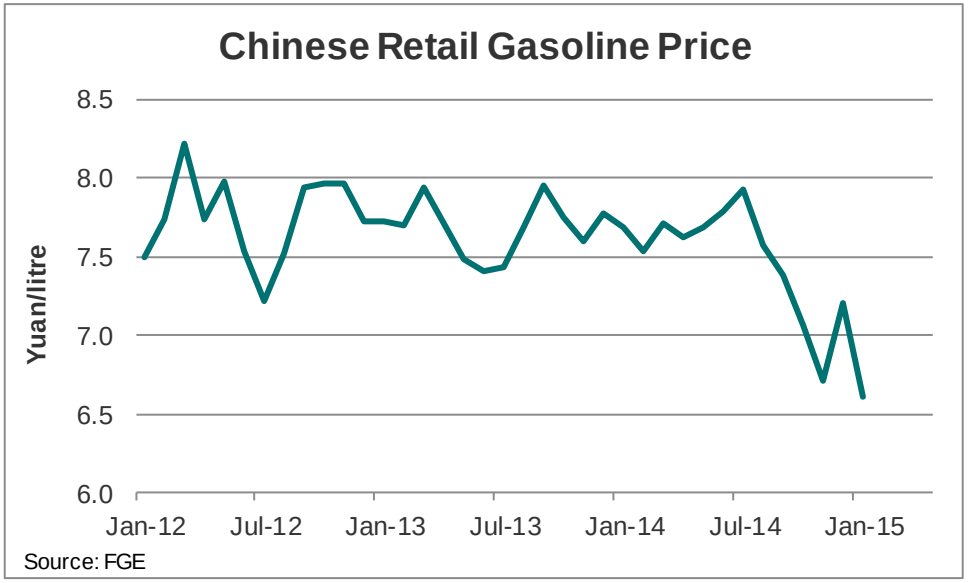
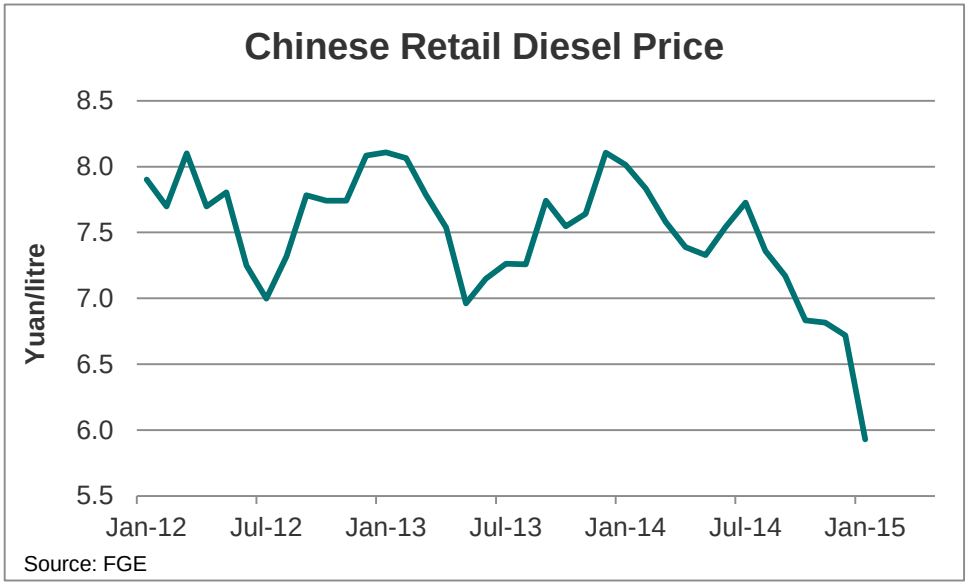
Chinese Retail Prices Reduced Massively Since The Summer

- Are we seeing a price response from Chinese consumers of petroleum products?





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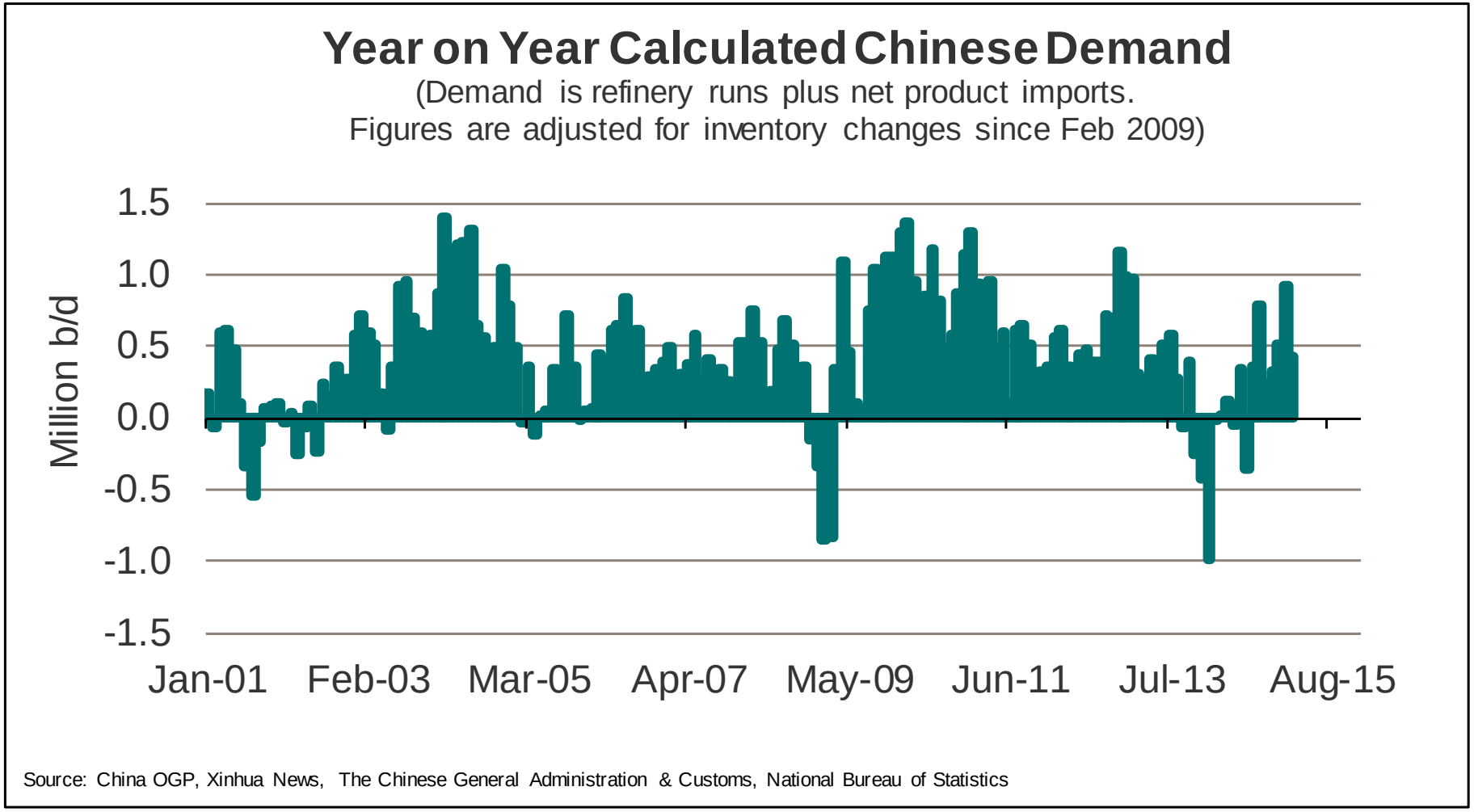
Chinese Oil Demand Growth Improving



Source: China OGP, Xinhua News, The Chinese General Administration & Customs, National Bureau of Statistics

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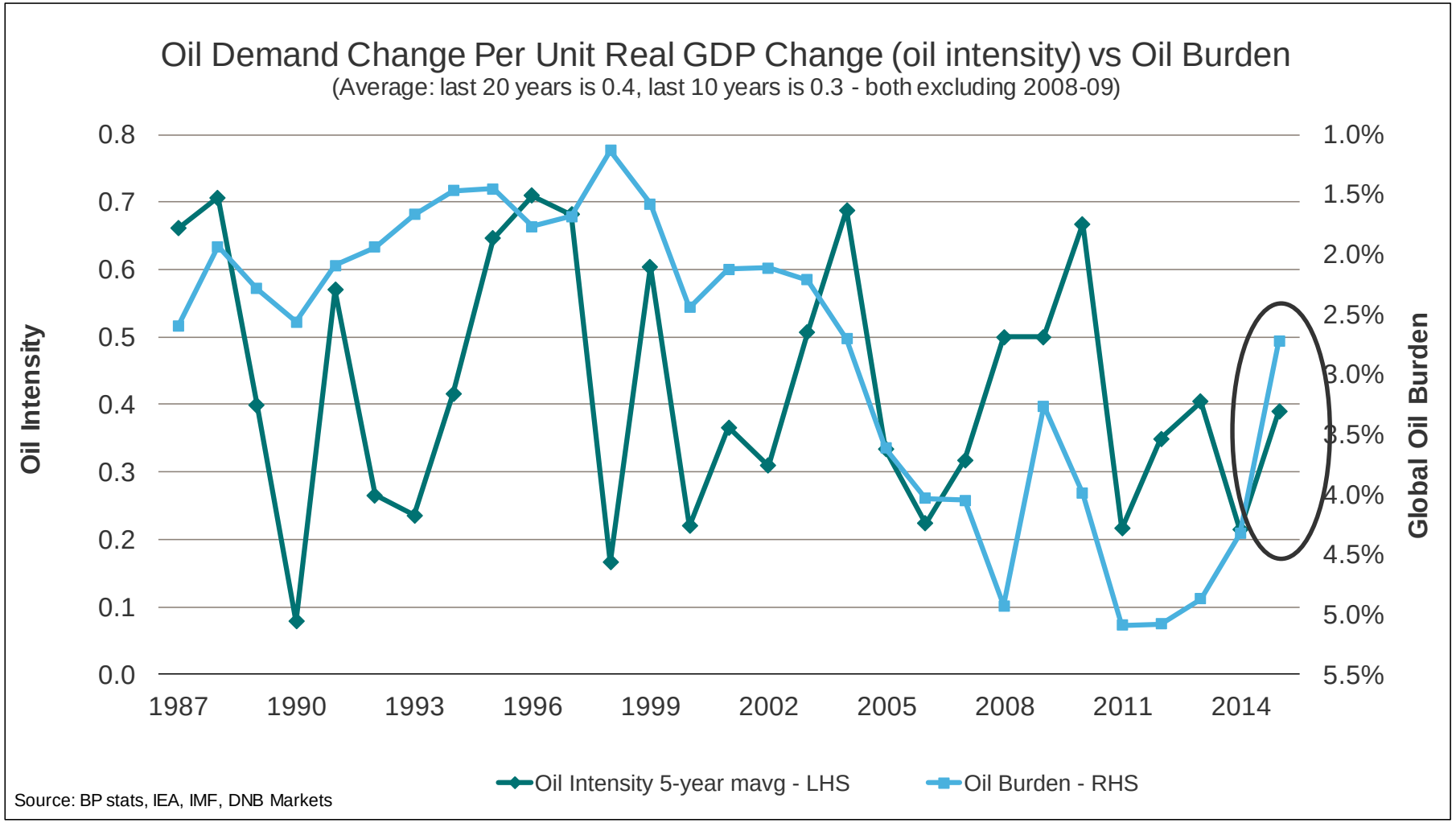
Reduced Oil Burden May Support Oil Demand Growth

- The lower oil burden may increase the oil intensity back to 0.4 from 0.2 in 2014 (oil demand as a factor of GDP-growth)



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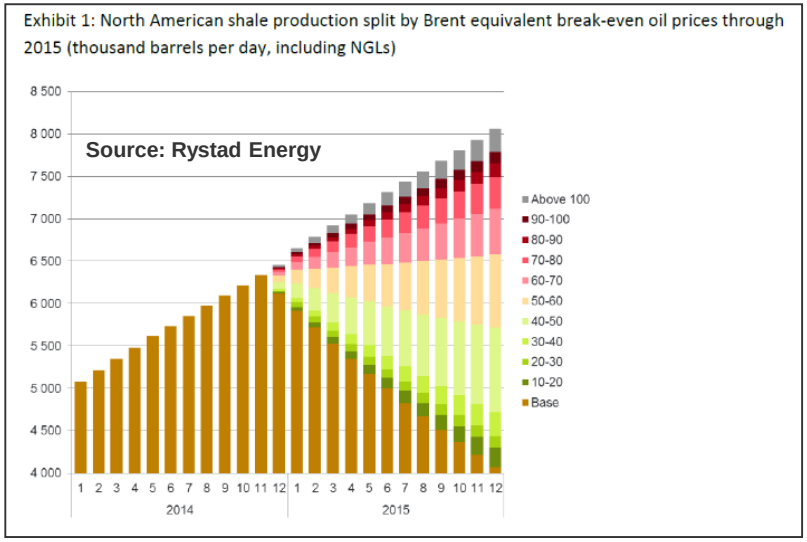
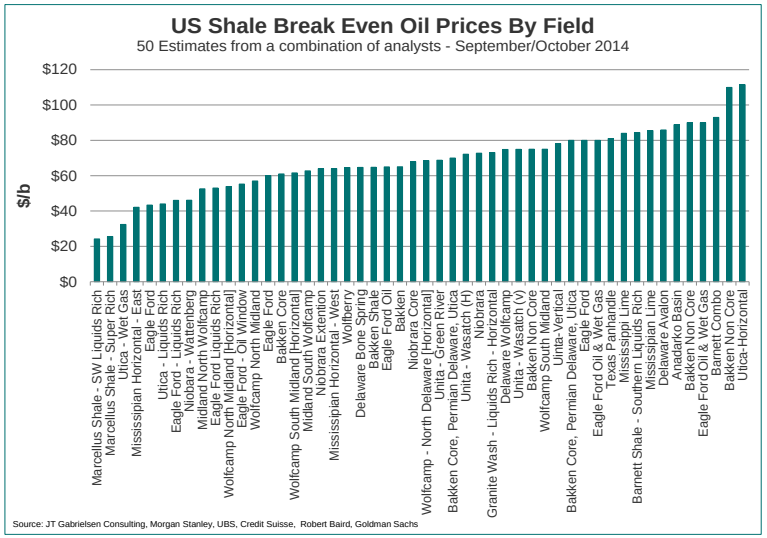
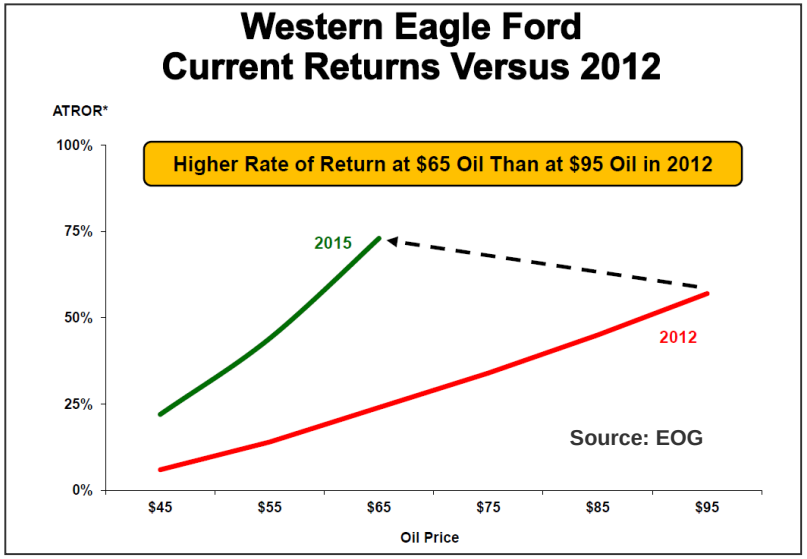
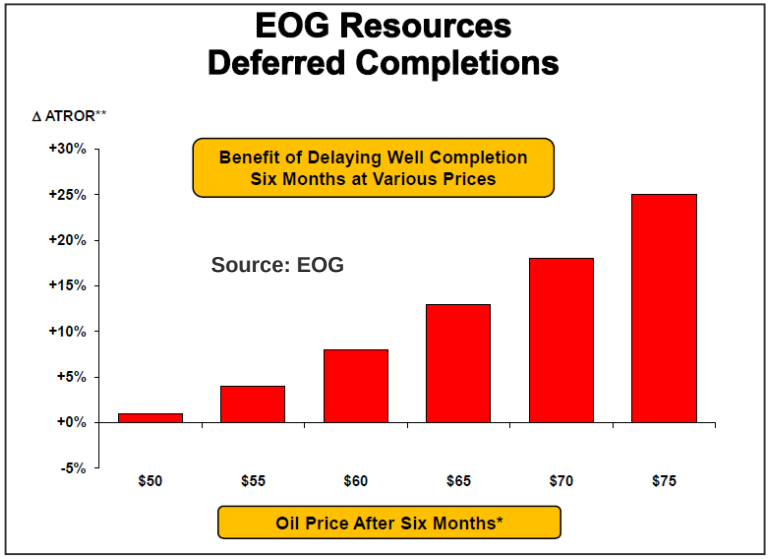
Last Autumn: 60-80 $/b Brent Required For Further Growth

- But costs are now coming significantly down, ref EOG and others









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CAPEX Now Guided Down 35% - YoY Output Will Still Be Up

- But entry vs exit is guided flattish

	2015 Vs 2014			2015 Avg Vs 4Q14		% of 2014 Production in the US	
	CAPEX Growth	Total BOE Growth	Oil Growth	Total BOE Growth	Oil Growth	Total BOE/D	Oil
Anadarko						91%	74%
Apache						45%	42%
Chesapeake						100%	100%
Cimarex						100%	100%
Concho						100%	100%
ConocoPhillips						47%	59%
Continental[1]						100%	100%
Devon						86%	61%
Encana						44%	73%
EOG						87%	98%
Hess						56%	60%
Marathon[2]						66%	69%
Newfield						94%	98%
Noble						60%	66%
Pioneer						100%	100%
Whiting[3]						100%	100%
Weighted Average	-35%	3%	9%	-1%	1%		

Increase
Flat
Decrease
Insufficient data

Source: PIRA Energy

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Prices Have Reached Unsustainable Levels For Shale

- Will the shale players be able to service their debt and continue to invest at 50 $/b WTI prices?

Lifting costs in $/b (incl. G&A costs & County/State tax)	**15**
Interest rate:	**5%**
WTI price ($/b)	**50**
NGL's price as percentage of crude price:	**35%**

Company name:	**EOG**	**Chesapeake**	**Pioneer**	**Whiting**	**Continental**	**Concho**	**Noble**	**Cimarex**	**Crescent**	**Oasis**	**Average**
Crude production 2015 kbd (Q4 plus 10%)	**339**	**133**	**110**	**117**	**150**	**79**	**108**	**52**	**140**	**50**	**128**
Crude diff average to WTI in Q2/Q3/Q4 ($/b)	-0.4	-8.0	-7.3	-10.6	-11.4	-10.9	-1.8	-9.5	-6.1	-9.7	-7.5
Achieved crude price at assumed WTI price $/b	49.6	42.0	42.7	39.4	38.6	39.2	48.3	40.5	43.9	40.3	42.5
Revenue from crude sales million USD	6,141	2,039	1,716	1,682	2,115	1,129	1,902	769	2,242	736	2,047
NGL's production kbd	**84**	**100**	**45**	**10.5**	**0**	**0**	**35**	**34**	**0**	**0**	**31**
NGL price $/b	17.4	14.7	15.0	13.8	13.5	13.7	16.9	14.2	15.4	14.1	14.9
Revenue from NGL's sales million USD	533	537	246	53	0	0	216	176	0	0	176
Natural gas production (million cubic meters/day)	**37.0**	**88.0**	**10.0**	**2.7**	**10.0**	**7.5**	**32.0**	**15.0**	**2.2**	**0.9**	**21**
Natural gas price $/cm	**0.10**	**0.06**	**0.13**	**0.15**	**0.15**	**0.20**	**0.12**	**0.14**	**0.16**	**0.17**	**0.14**
Revenue from natgas sales million USD	1,351	1,927	475	148	548	548	1,402	767	128	56	735
Revenue pr year million USD	8,024	4,503	2,436	1,883	2,662	1,676	3,519	1,712	2,371	792	2,958
Total production in oil equivalents (Q4)	**610**	**729**	**201**	**131**	**193**	**120**	**302**	**158**	**141**	**50**	**264**
Lifting costs USD (based on total oil equivalents output)	3,340	3,991	1,100	717	1,057	657	1,653	865	772	274	1,443
Long Term debt by Q4-2014 (million USD)	**5,910**	**11,555**	**2,665**	**5,629**	**5,998**	**3,610**	**6,103**	**1,500**	**2,850**	**2,700**	**4,852**
Interest rate costs 2015 (million USD)	296	578	133	281	300	181	305	75	143	135	243
Total Debt Ratio (Q4- 2014) LT debt to total capital	**25%**	**38%**	**24%**	**50%**	**55%**	**40%**	**37%**	**25%**	**22%**	**59%**	**37%**
Calculated free cash flow 2015:	4,389	-66	1,202	884	1,306	839	1,561	772	1,456	383	1,273
CAPEX 2014	**8,247**	**5,307**	**3,576**	**2,968**	**4,716**	**2,589**	**4,871**	**2,108**	**2,168**	**1,400**	**3,795**
Calculated change in CAPEX for 2015	-3,858	-5,373	-2,374	-2,084	-3,410	-1,750	-3,310	-1,336	-712	-1,017	-2,522
Debt/Free cash flow	1.3		2.2	6.4	4.6	4.3	3.9	1.9	2.0	7.0	3.7
Calculated decrease in CAPEX if no new debt/equity	**47%**	**101%**	**66%**	**70%**	**72%**	**68%**	**68%**	**63%**	**33%**	**73%**	**66%**

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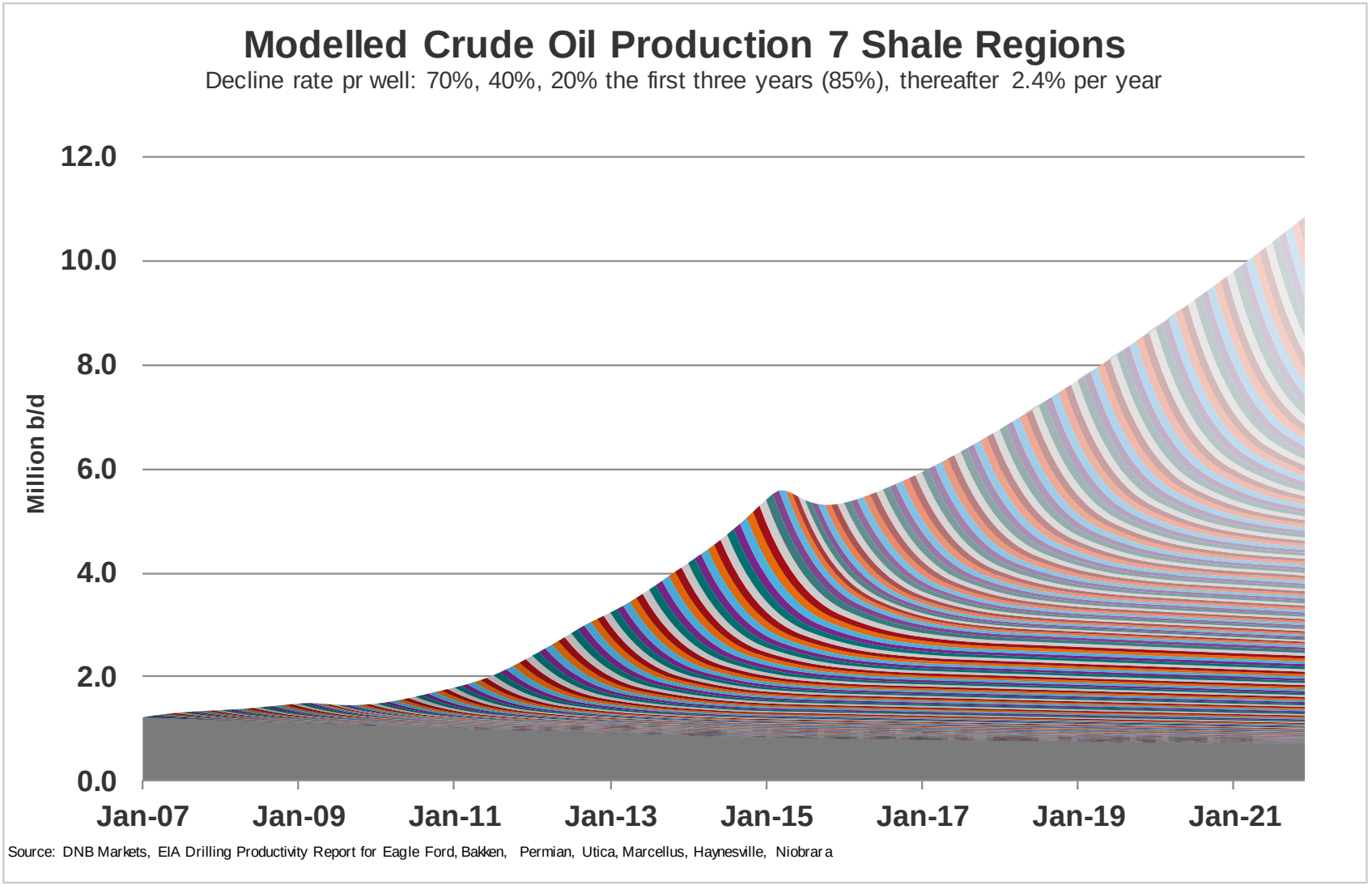
Oil Production From 7 Key Shale Regions – Model & Reported



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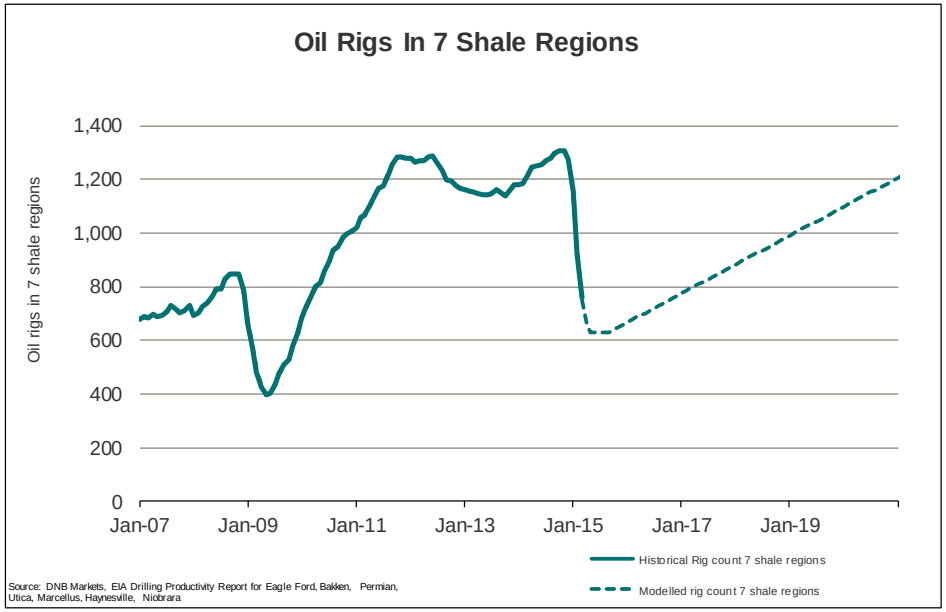

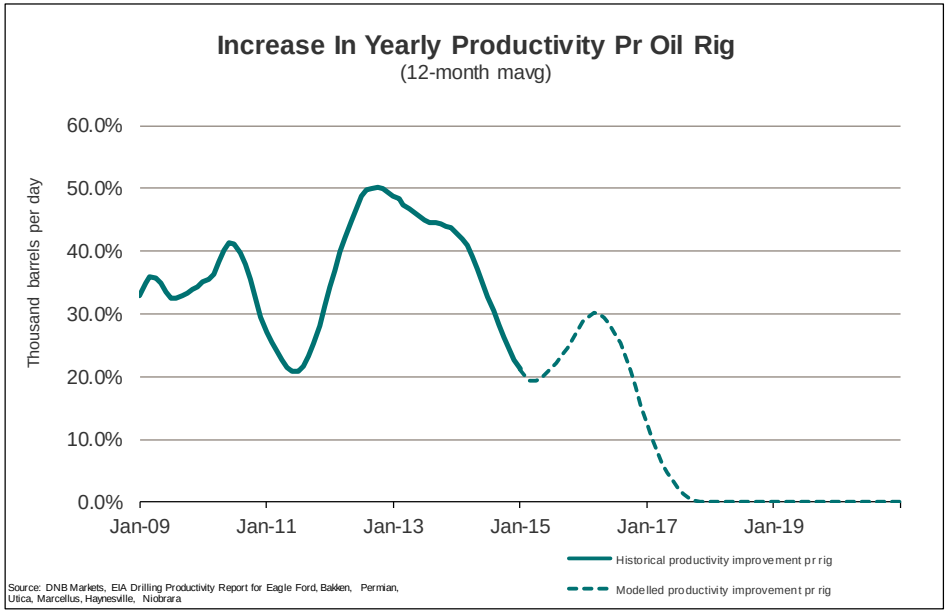

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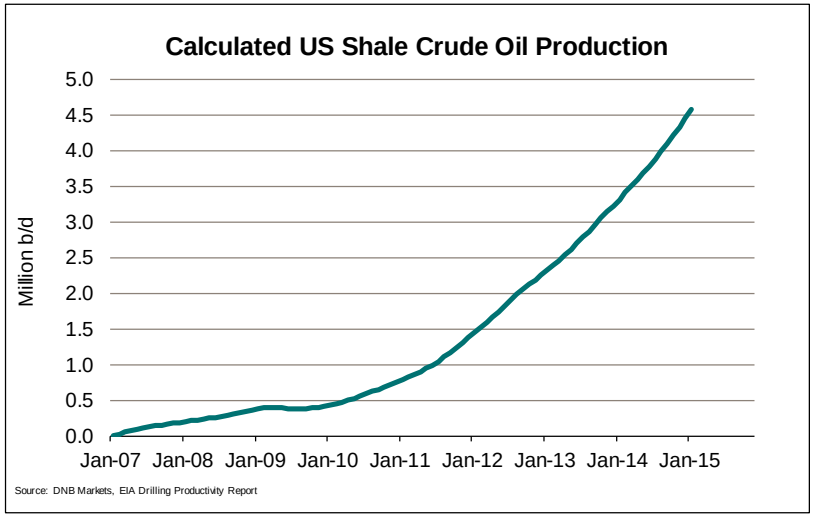
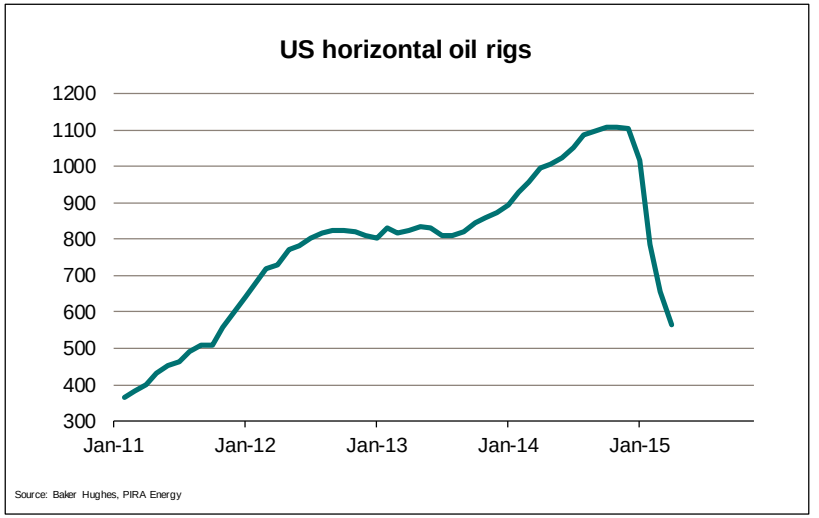
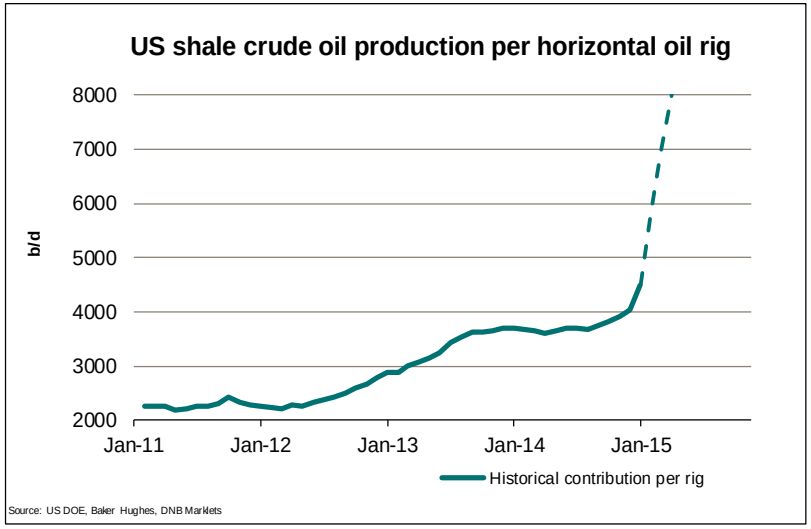
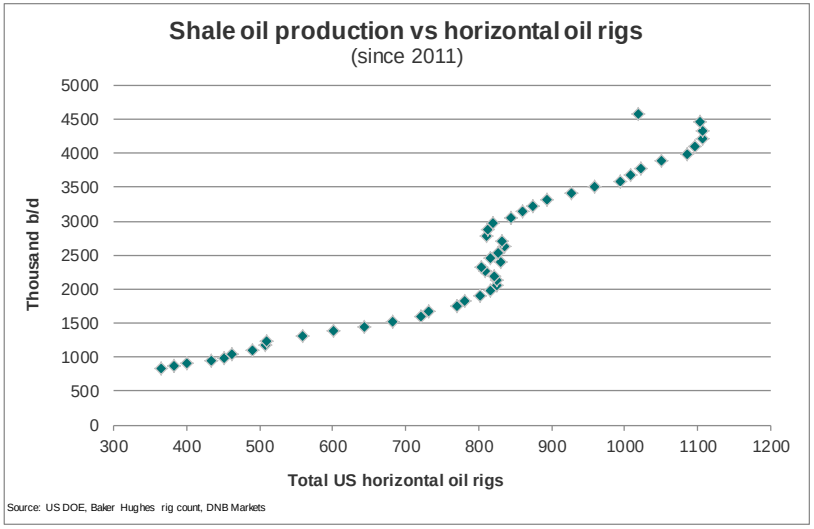
Horizontal Oil Rigs & US Calculated Shale Oil Output









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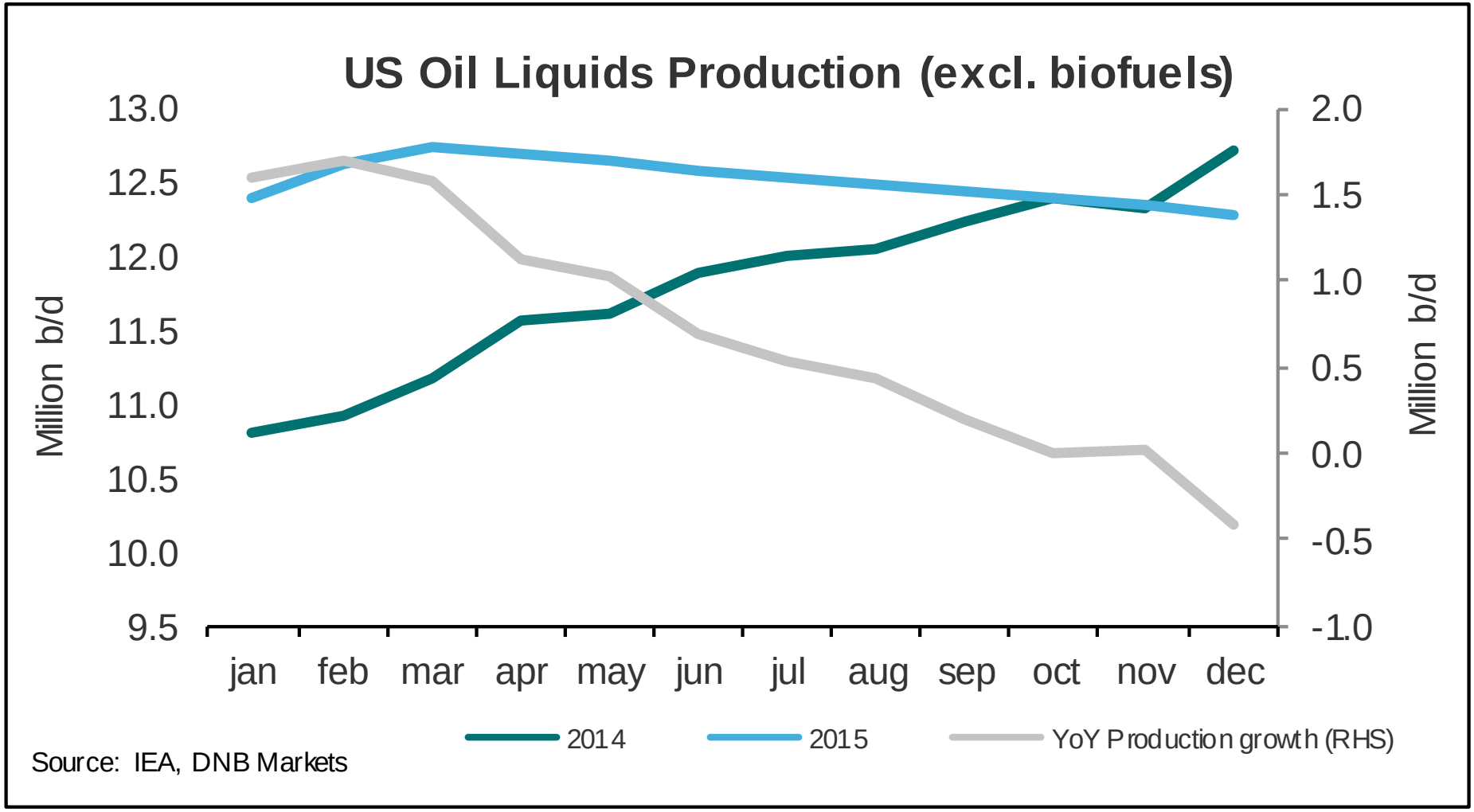

Source: IEA, DNB Markets

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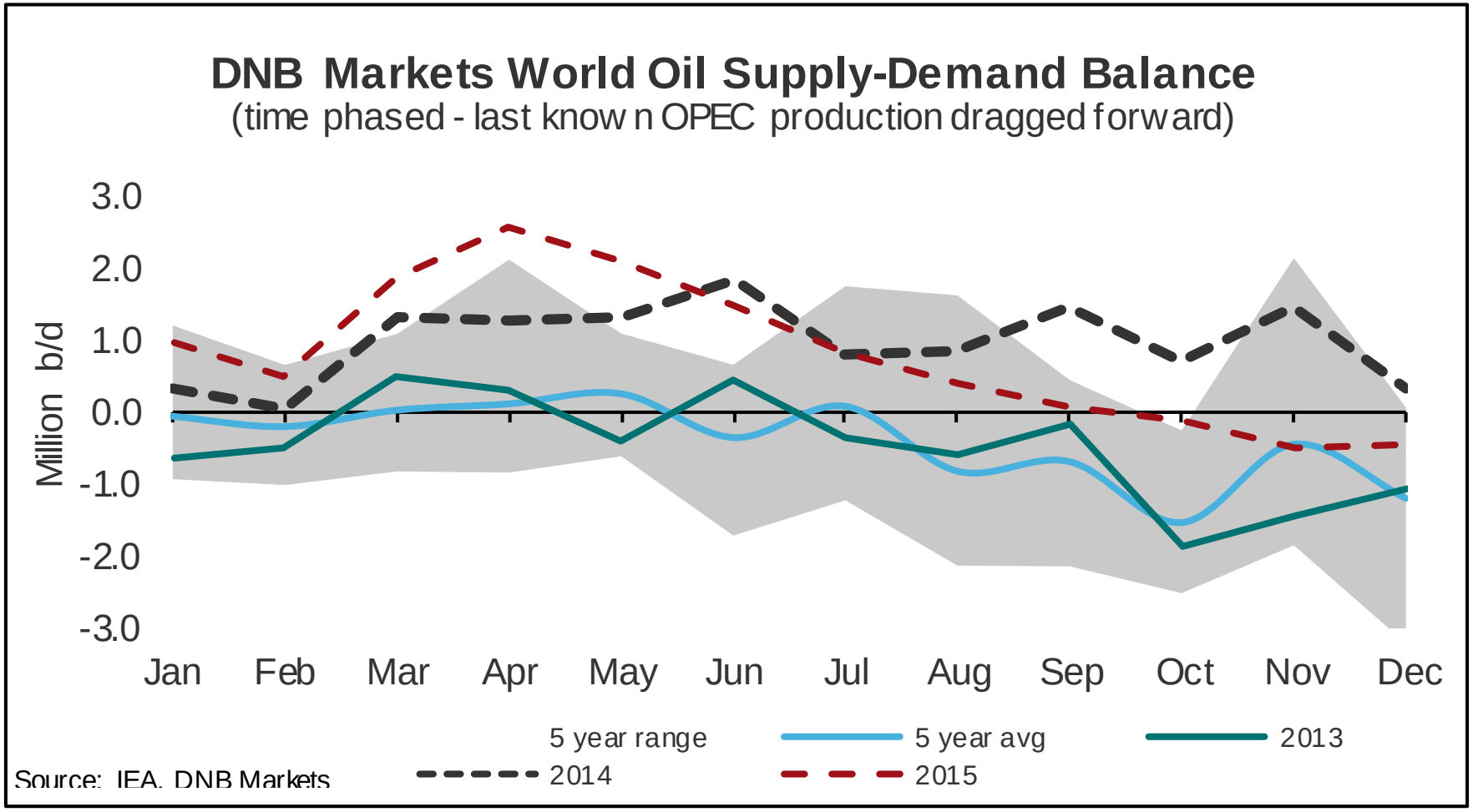
The Market Has Been Over-supplied Through 2014

- The red line is our view on 2015



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The Adjustment Will Not Be Without Pain For Many Players

- The tone is set - CAPEX in the oil industry will be lowered – A lot!!!

Last updated: January 14, 2015 6:46 pm

Oil projects worth billions put on hold

Christopher Adams and Michael Kavanagh Author alerts

Billions of dollars of spending on oil and petrochemicals projects has been scrapped or put on hold, with Royal Dutch Shell and UK-based Premier Oil announcing the first big cost-cutting moves of 2015 after a brutal slide in crude prices.

Halliburton requests 25% discount from its suppliers in reaction to reduced capital spending

PRAMOD KULKARNI, Editor

HOUSTON – Oilfield services giant Halliburton has issued a memorandum to its suppliers, asking for a 25% discount effective immediately. The vendors must confirm the discount no later than Dec. 31, 2014.

The memo cites recent decline in commodity prices and how it has created uncertainty for their operator clients and, consequently, for companies like Halliburton in the oilfield services sector. "Given these conditions, we must adjust our costs in order to continue to successfully manage our business through this period," according to the memo dated Dec. 17, 2014.

ft.com > companies > energy >

Oil & Gas

Schlumberger cuts seismic survey fleet as oil weakens

Ed Crooks in New York Author alerts

Schlumberger, the world's largest oil services group, is cutting back its fleet for offshore geological surveys and taking an $80om writedown on the value of its ships, in the first significant cutback in the industry following the recent fall in crude prices.

The company also said it was cutting jobs, without giving a number, in response to lower oil prices and expected slower growth in oil exploration and production company spending.

ConocoPhillips plans to spend less in 2015 as crude slides

ConocoPhillips said its 2015 capital budget would be 20 per-cent, or about $3 billion, lower than this year's, the biggest spending cut by a U.S. oil and gas producer in dollar terms as oil prices hit five-year lows.

Shares of the company, which set a budget of $13.5 billion for 2015, fell as much as 3.5 percent to $65.50 on the New York Stock Exchange on Monday.

ConocoPhillips said it would "defer significant investment" on less developed projects in the Montney and Duvernay fields in Canada, the Permian Basin in Texas and the Niobrara shale field, which extends over Colorado, Wyoming, Nebraska and Kansas. ConocoPhillips, which is focusing on the Eagle Ford shale in Texas and North Dakota's Bakken shale, said it would also spend less on major projects, many of which are nearing completion.

More than $150 bln of oil projects face the axe in 2015

Global oil and gas exploration projects worth more than $150 billion are likely to be put on hold next year as plunging oil prices render them uneconomic, data shows, potentially curbing supplies by the end of the decade.

As big oil fields that were discovered decades ago begin to de-plete, oil companies are trying to access more complex and hard to reach fields located in some cases deep under sea level. But at the same time, the cost of production has risen sharply given the rising cost of raw materials and the need for expensive new technology to reach the oil.

Now the outlook for onshore and offshore developments - from the Barents Sea to the Gulf or Mexico - looks as uncertain as the price of oil, which has plunged by 40 percent in the last five months to around $70 a barrel.

Next year companies will make final investment decisions (FIDs) on a total of 800 oil and gas projects worth $500 billion and totalling nearly 60 billion barrels of oil equivalent, according to data from Norwegian consultancy Rystad Energy.

January 15, 2015 10:59 pm

Schlumberger to axe 9,000 jobs amid oil rout

Ed Crooks in New York Author alerts

Schlumberger, the world's largest oil services company, plans to cut 9,000 jobs as a result of the fall in oil prices and cutbacks in spending by the energy groups that are its customers.

BG Group responds to low oil prices. Reduces capex

The company has said that planned capital expenditure on a cash basis in 2015 will fall to between $6 – 7 billion in 2015. For comparison, capital investment in 2014 was $9.4 billion, almost entirely spent in the Upstream segment ($9 387 million) and concentrated primarily on BG's key growth projects in Australia and Brazil.

Petronas may cut 2015 spending by up to 20%

Malaysian player considering revising capital expenditure as it announces 1% drop in revenue

AMANDA BATTERSBY
Singapore

MALAYSIA'S state-owned oil and gas company Petronas is considering cutting its 2015 capital expenditure by 15% to 20% from the expected 60 billion plus ringgit ($17 billion-plus) in light of the

January 20, 2015 5:35 pm

Baker Hughes to axe 7,000 jobs

Ed Crooks New York

Oil drilling is falling faster in North America than in the rest of the world, according to Baker Hughes, which on Tuesday announced plans to cut 7,000 jobs in the first quarter of this year in response to the plunge in oil prices.

The oil services company warned of "challenging" conditions ahead, with the industry in the early stages of a downturn of the type seen once or twice every decade.

December 7, 2014 6:00 pm

BP considers job cuts in face of plunge in oil price

By Henry Sanderson Author alerts

BP is accelerating plans to reduce its headcount, in a sign of how global oil companies are looking to control costs in the face of a lower oil price.

The oil major is looking at its non-operations staff, including back-office employees, that have been kept on as the company has shed production assets in its portfolio.

BP hit by $3.6B charge, cuts capex on oil prices

January 20, 2015 5:39 pm

Total's Patrick Pouyanné vows surgical response to oil price slide

Mr Pouyanné's central aim is therefore to reduce Total's "break-even" price — the minimum level at which the group can profitably produce oil — by $40 a barrel.

*First*FT is our new essential daily email briefing of the best stories from across the web

Total, Mr Pouyanné says, will reduce group capital spending by 10 per cent in 2015, from $26bn last year — a larger cut than expected. Of that reduction, the exploration budget — the easiest area where majors can save money — will be cut 30 per cent to less than $2bn.

This week, Cnooc announced plans to reduce capital spending as the government and large state-owned enterprises respond to the collapse in oil prices. China's third-largest oil producer said it would cut development spending by 67 per cent and, albeit less dramatically, reduce exploration and production capital expenditure.

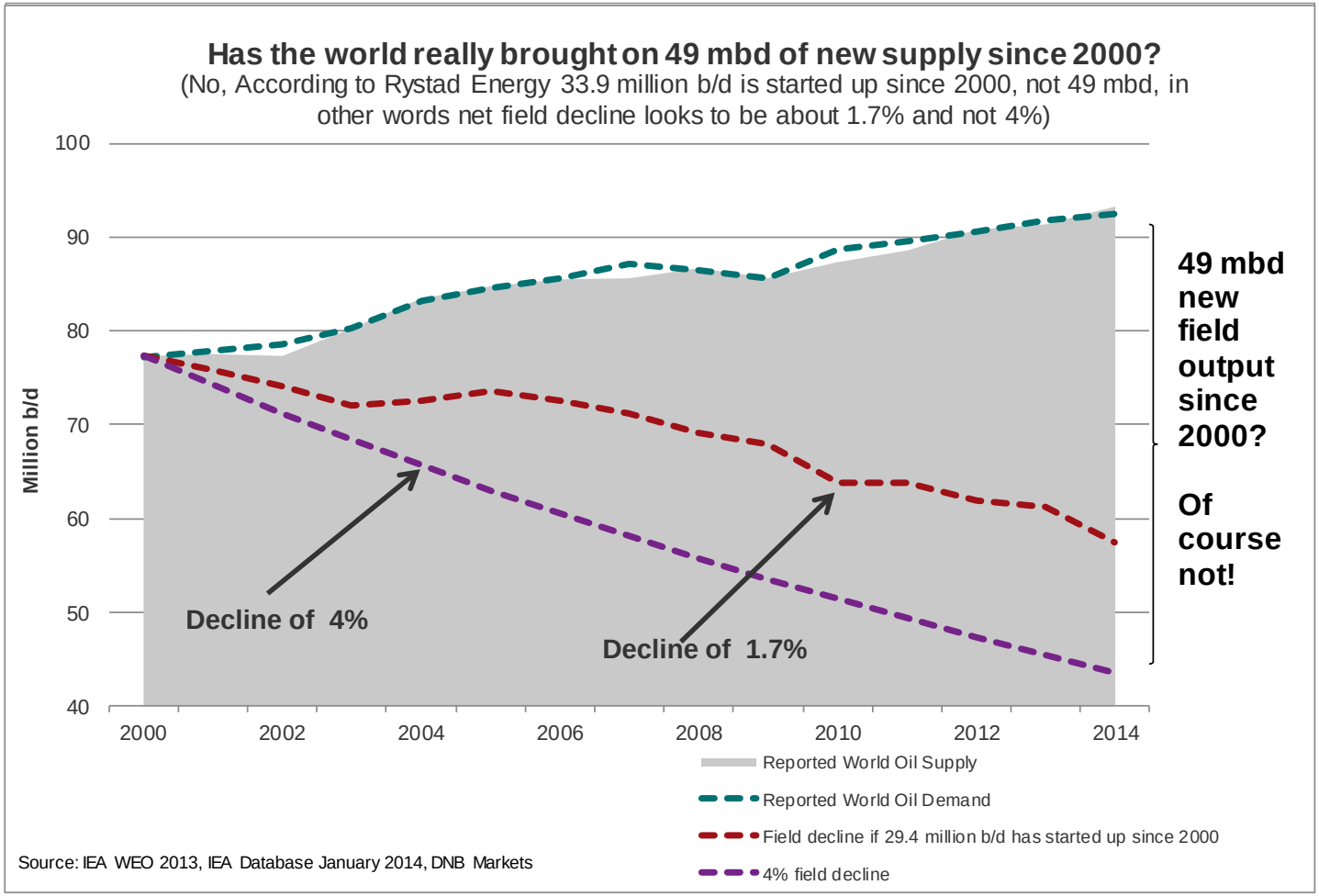
Exxon says it won't reveal 2015 capex plans until March

Chevron : plans $35 billion capex budget for 2015, a 13 percent cut

DNB

Has The World Brought On 5 New Saudi Arabias Since 2000?

- Of course not - which means net decline is much lower than 4%.
- We think IEA's assessment of the efficiency of investments in existing fields must be too low



IEA WEO 2013 page 459:

A small difference in the decline rate makes a large difference to the investment requirement and can, therefore, have a large influence on future market conditions. In the projections, the compound annual decline rate of currently producing conventional fields is around 4%.

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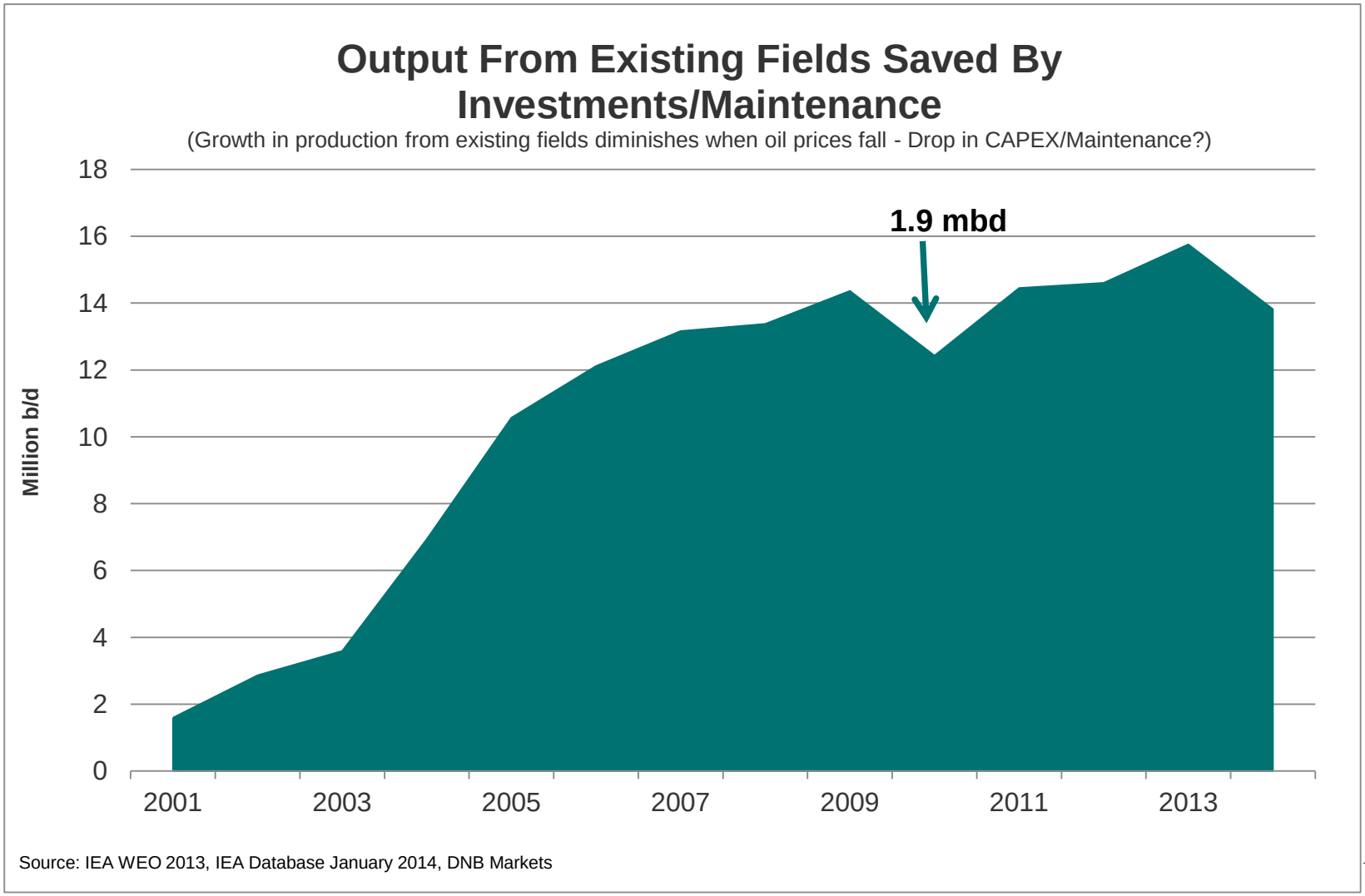
If You Invest In Existing Production You Get More Out

- The graph below shows the difference in production between net decline of 4% and the net decline calculated using real startups



Source: IEA WEO 2013, IEA Database January 2014, DNB Markets

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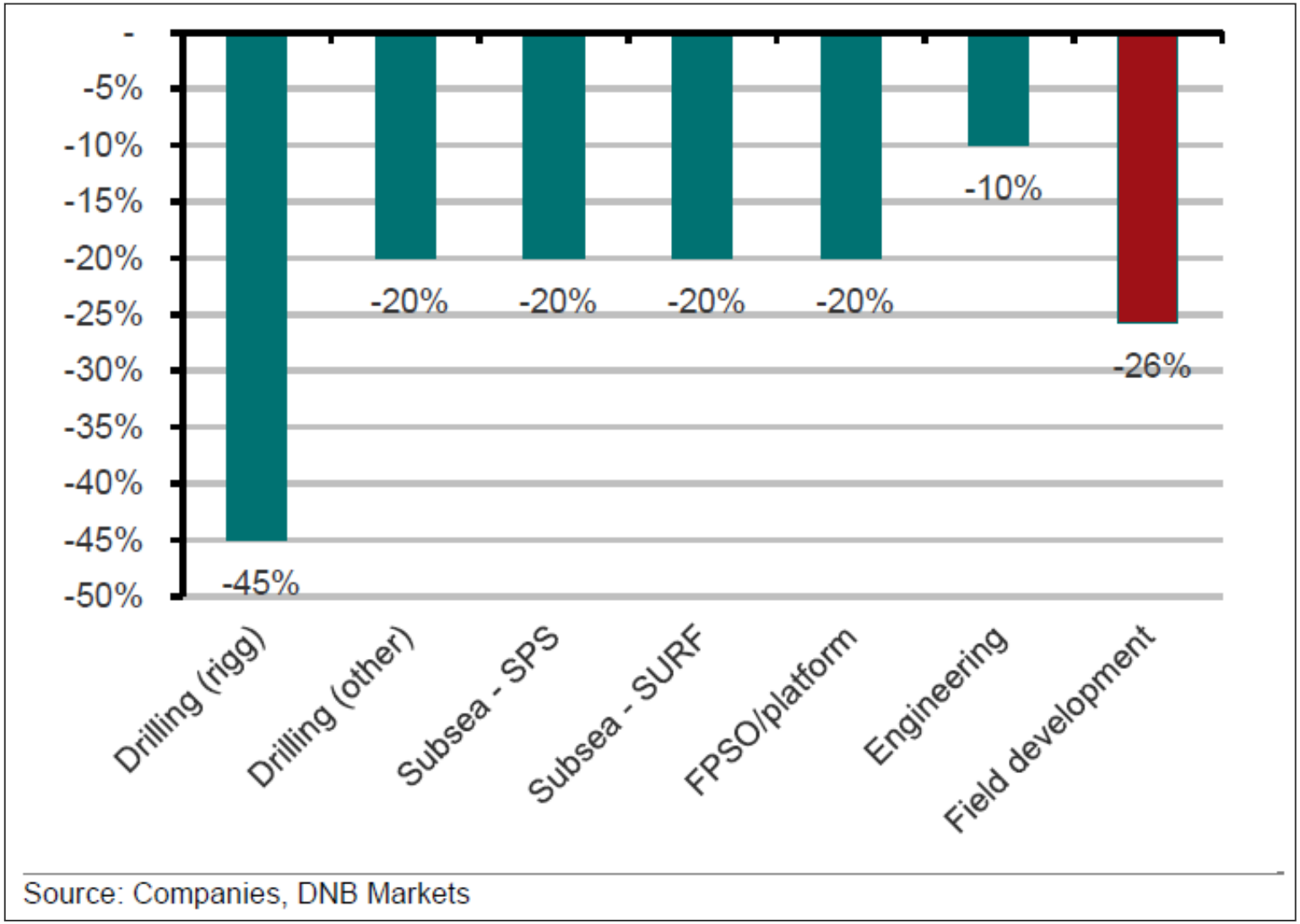
Costs Are Already Coming Down For Future Projects

- Some companies already report large cost savings for future projects



Source: Companies, DNB Markets

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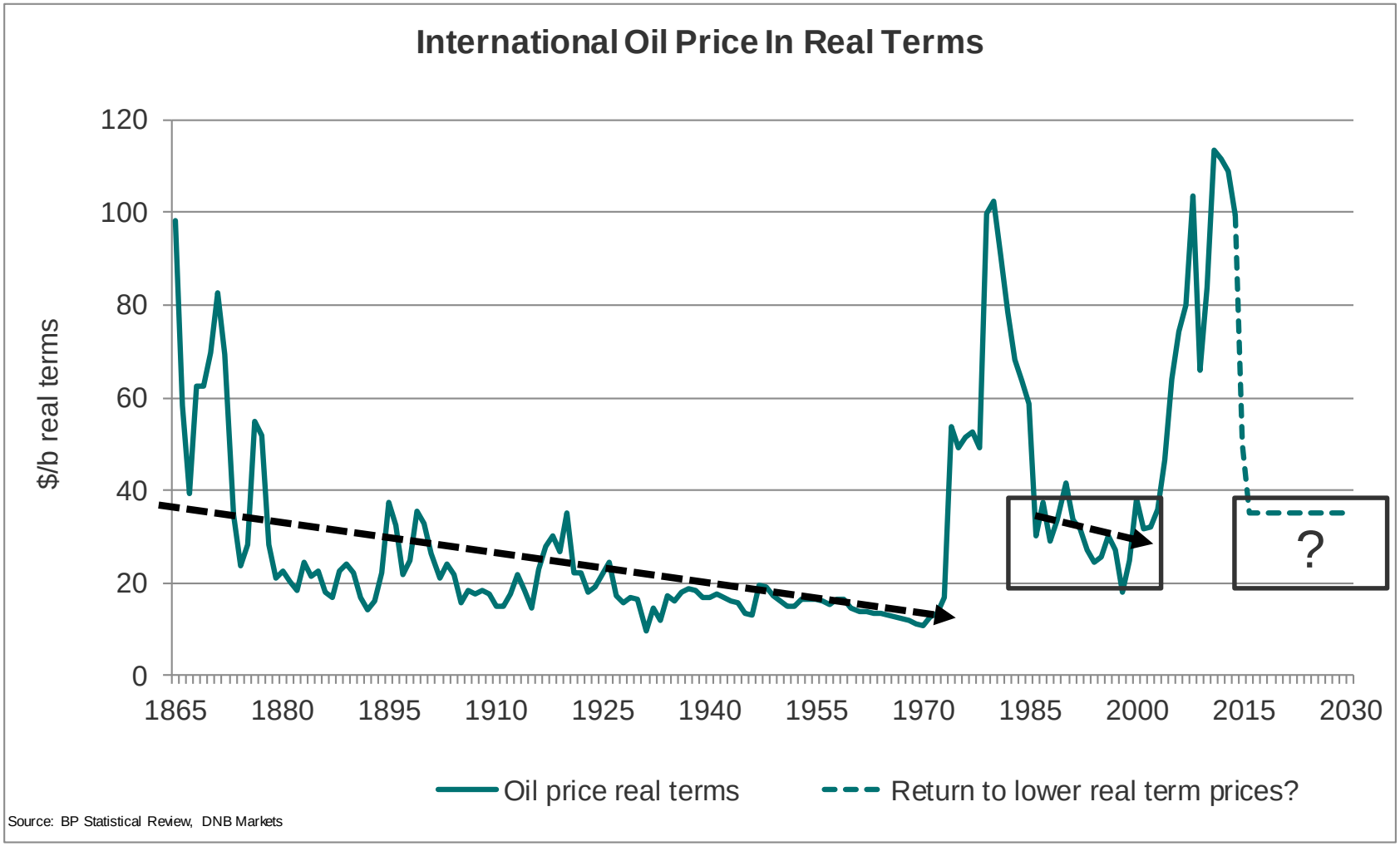
Could We See Another 10-15 Year Period Of 30-40 $/b

- Historically oil prices have trended lower – More volatility after OPEC was formed – Will we again see a period of lower prices?



Source: BP Statistical Review, DNB Markets

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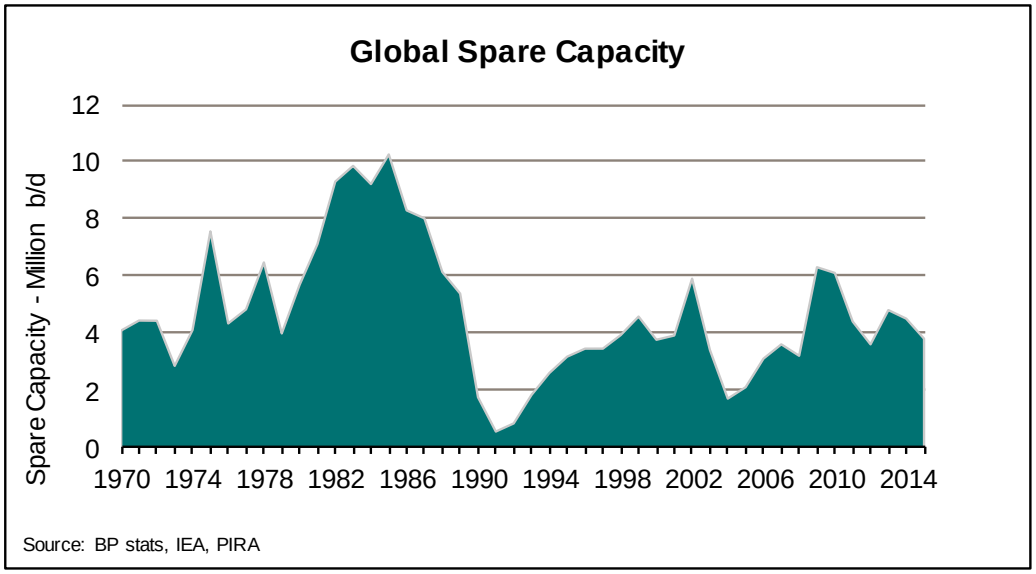
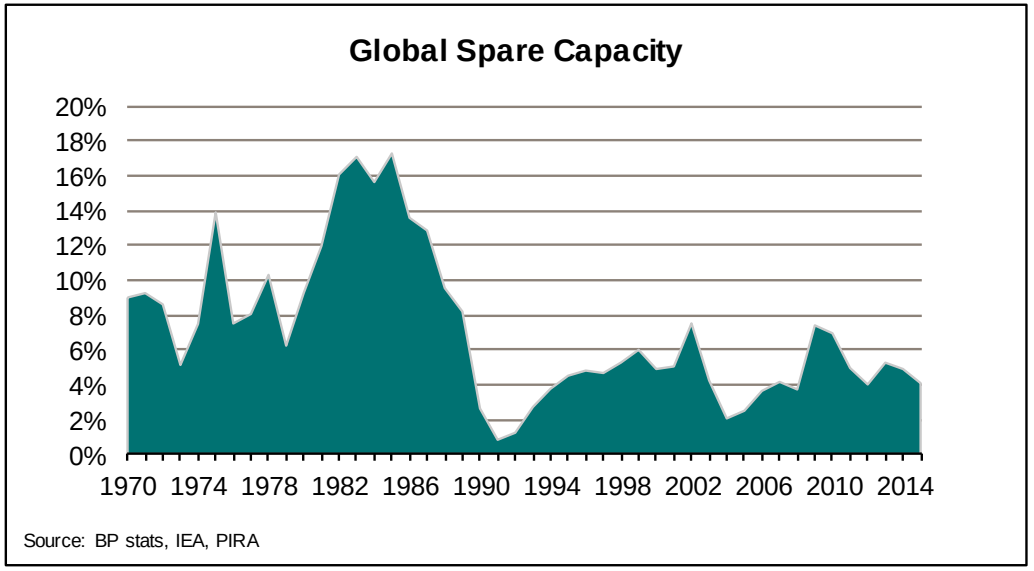
Spare Capacity Still Much Lower Than In The 1980's

- An equally long period with low prices as in the 1980-90's should not be the most plausible scenario





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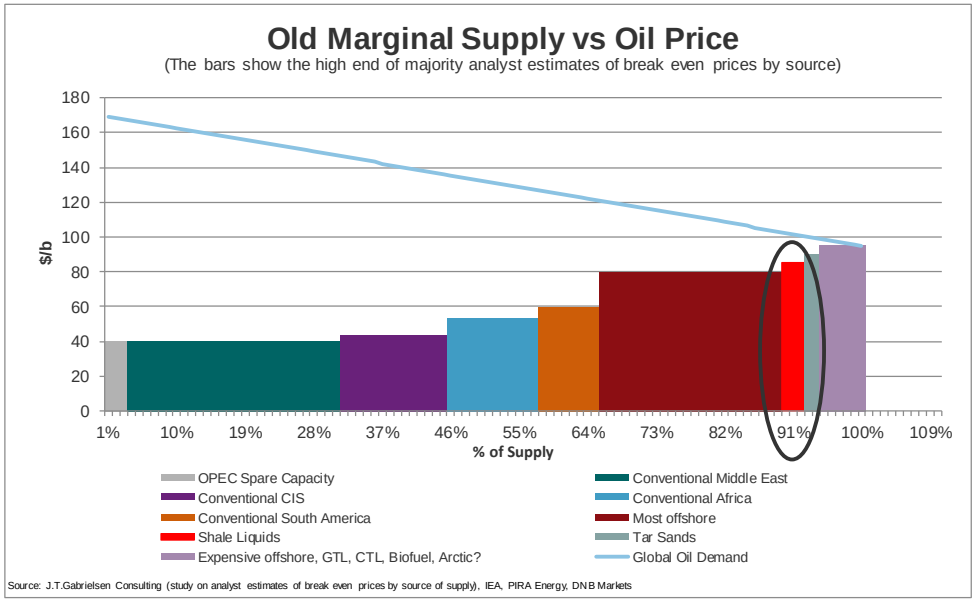
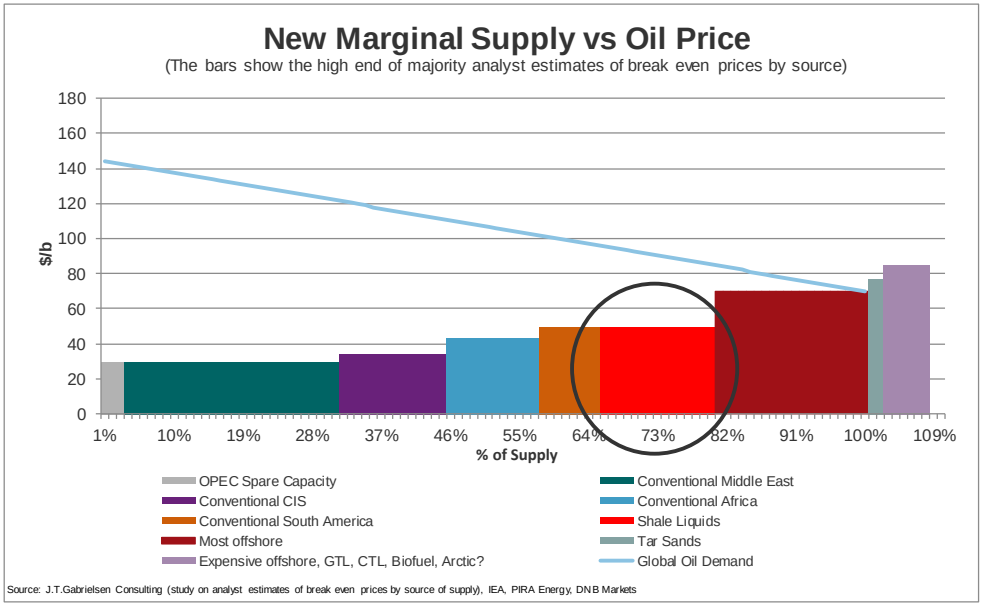
The Most Expensive Resources Are Being Pushed Out

- Do we need the most expensive resources in the coming 5 years?





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Backup

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Bullish Arguments

- Large cuts in global oil investments
- Even larger cuts in US shale oil companies – US shale oil growth finance by debt, so CAPEX cuts now needs to be huge
- Rig count in the US is collapsing
- US liquids production growth of 1.5 mbd will cease to about zero within 12-18 months
- Decline rates set to accellerate already into 2016
- Demand is performing very strongly in US and China on lower prices
- Record car sales in China in December
- Americans driving more and buying more gasoline thirsty vehicles again
- 65 $/b vs 110 $/b is worth 1500 billion USD to the global oil importers – Translates to better global GDP-growth
- Geopolitical risk in OPEC countries is increasing at low oil prices (and remember we are coming from average 110 $/b)
  - Key risk is Venezuela and Iraq
- Spare capacity is only 3% compared to 17% in the middle of the 1980's
- Oil price will move higher before supply/demand-balance is moving to stock draw modus

Bearish Arguments

- Over supplied supply/demand-balance in 1H2015
- Global oil stocks are already high and continue to build rapidly – Particularly in the US
- Shale oil resource base looking to be much larger than everybody though just a few years ago
  - Shale oil production has only surprised to the upside so far
- Delayed response from drop in rig count to drop in production – High grading of acreage – Productivity improvements
- Global demand growth last ten years protected by subsidies – What now when subsidies are removed in many EM?
- Saudi Arabia not set to protect a high price – targeting market share instead
- Costs in the global oil industry set to drop significantly – Slack in the service industry as CAPEX is cut
  - The marginal 2-3 million most expensive barrels are set to be cheaper = lower oil price required
- Libya is already out of the market and cannot get any worse – Can only see barrels returning from here
- Iran already shut out with 700-800 kbd, more chance of barrels coming in than more out

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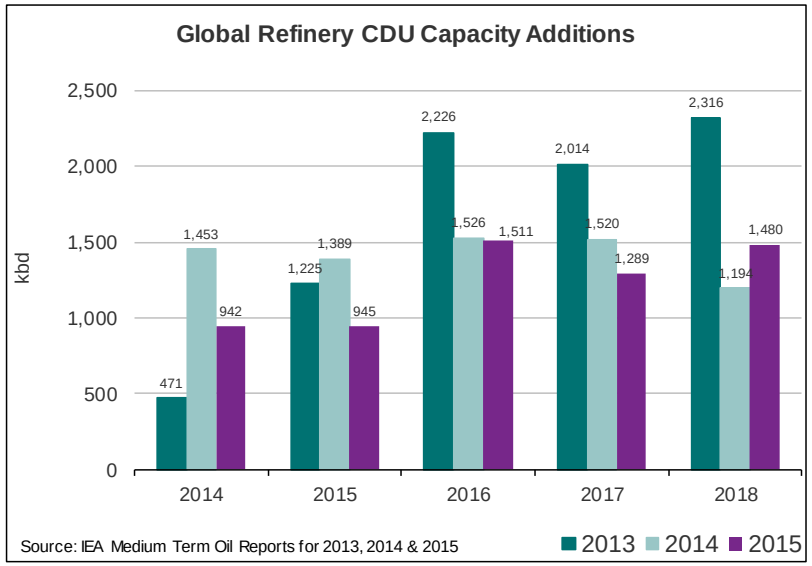
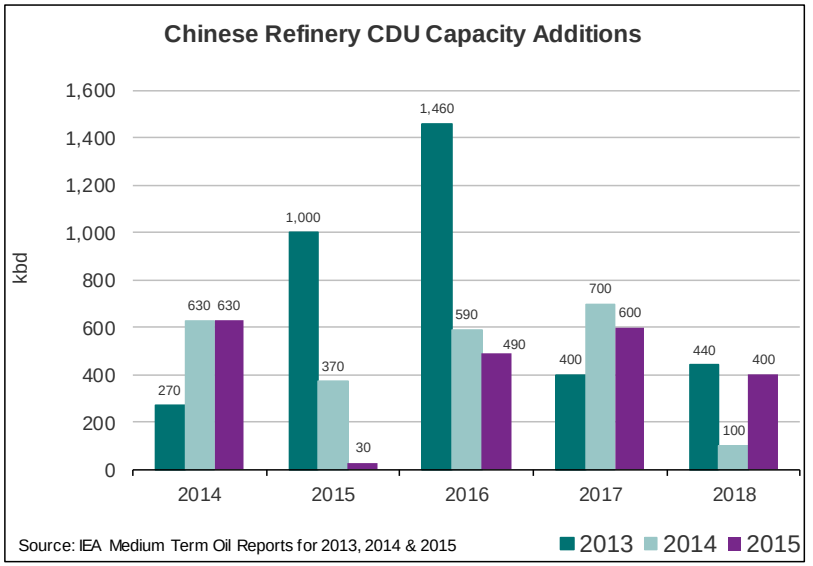
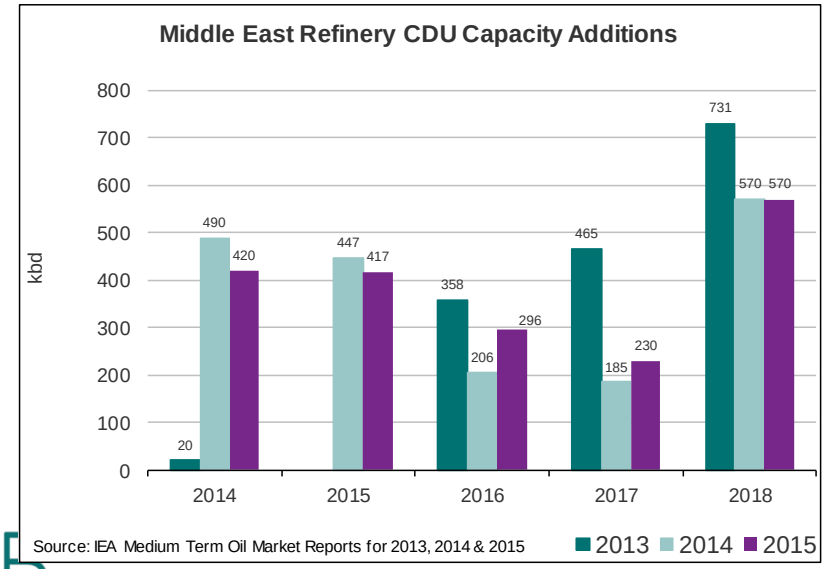
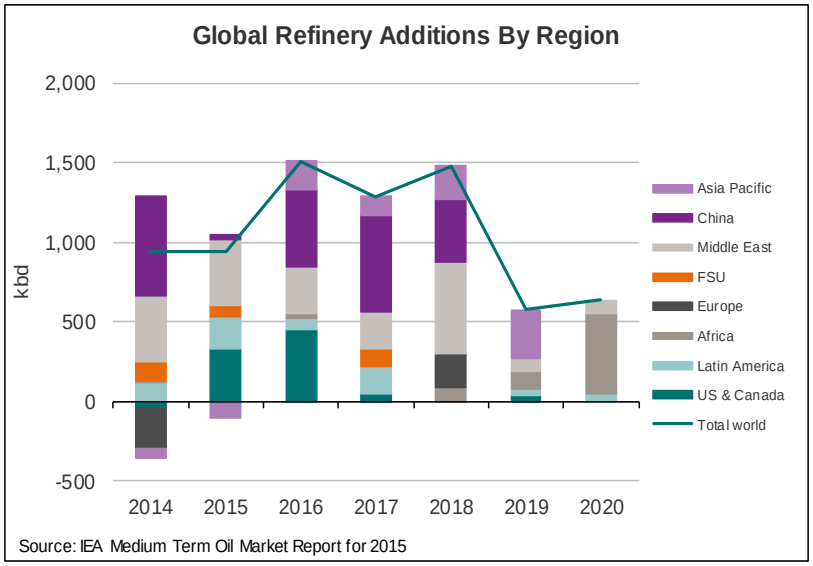
Global Refinery Capacity Additions

- Source: IEA Medium Term Oil Market Report









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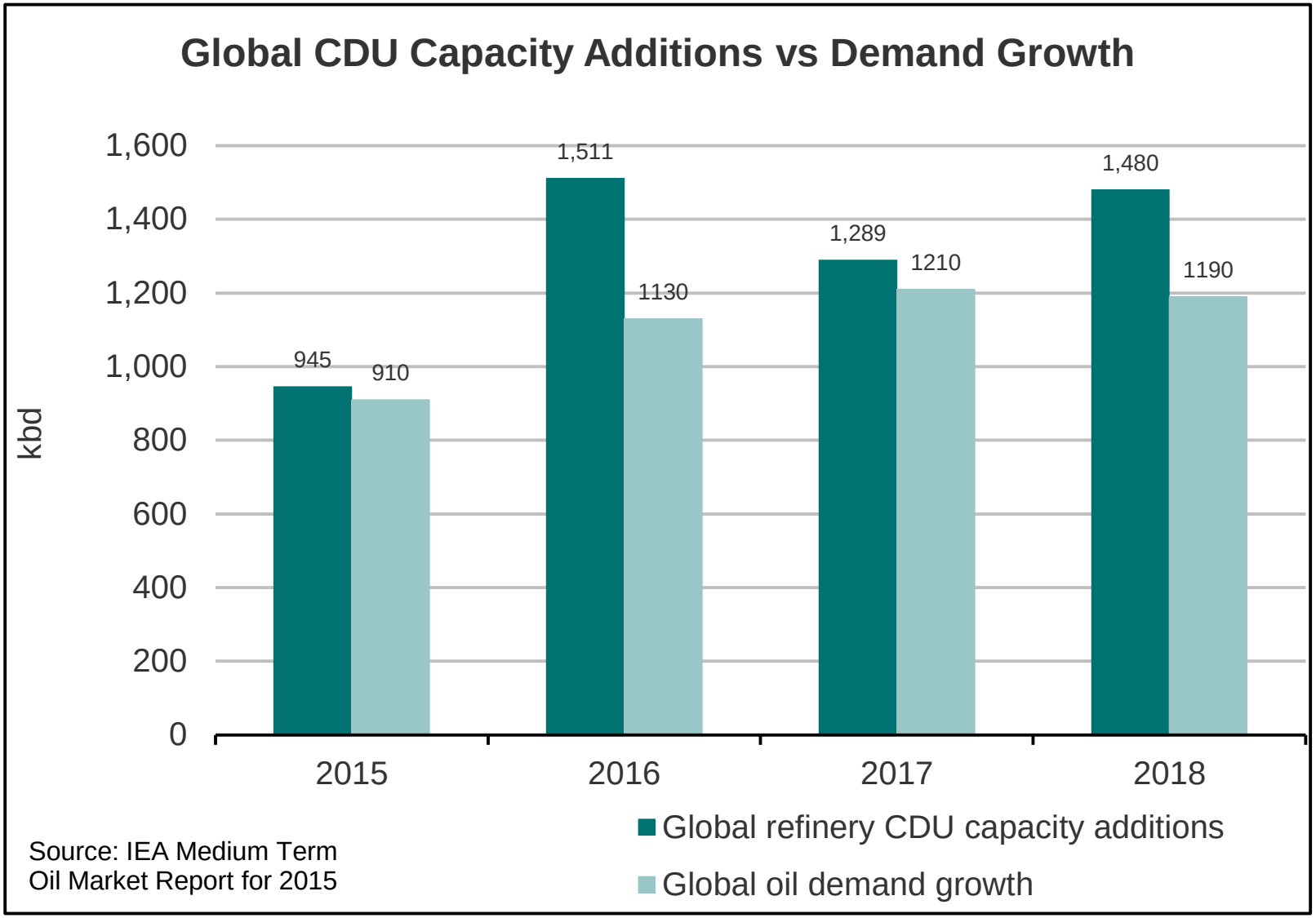
Refinery Capacity Additions Larger Than Oil Demand Growth

- Source: This is not a bullish picture for refinery margins



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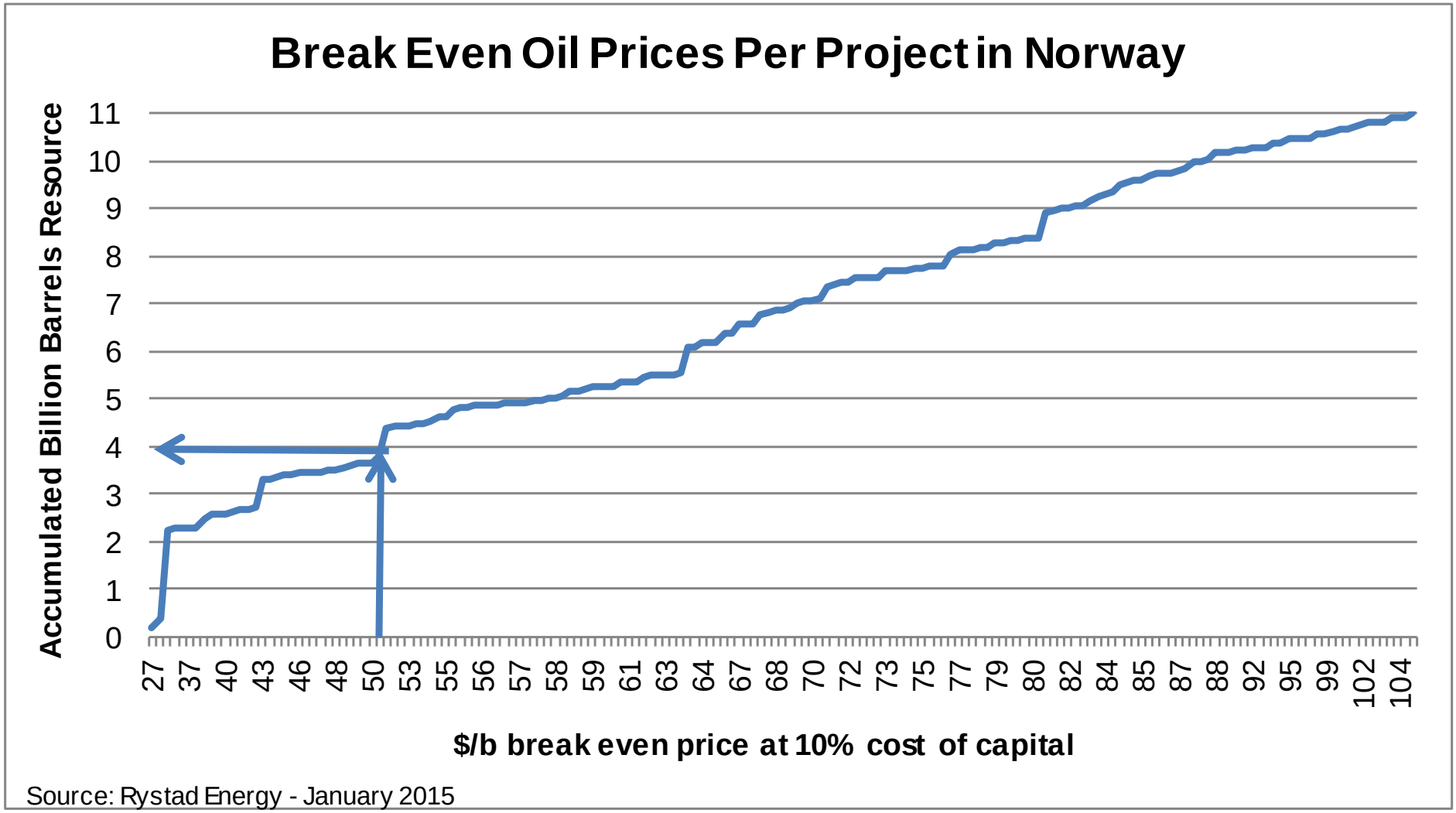
60% Of NCS Not Economical At Brent Below 50 $/b

- Cost of capital 10% and with the current cost base



Source: Rystad Energy - January 2015

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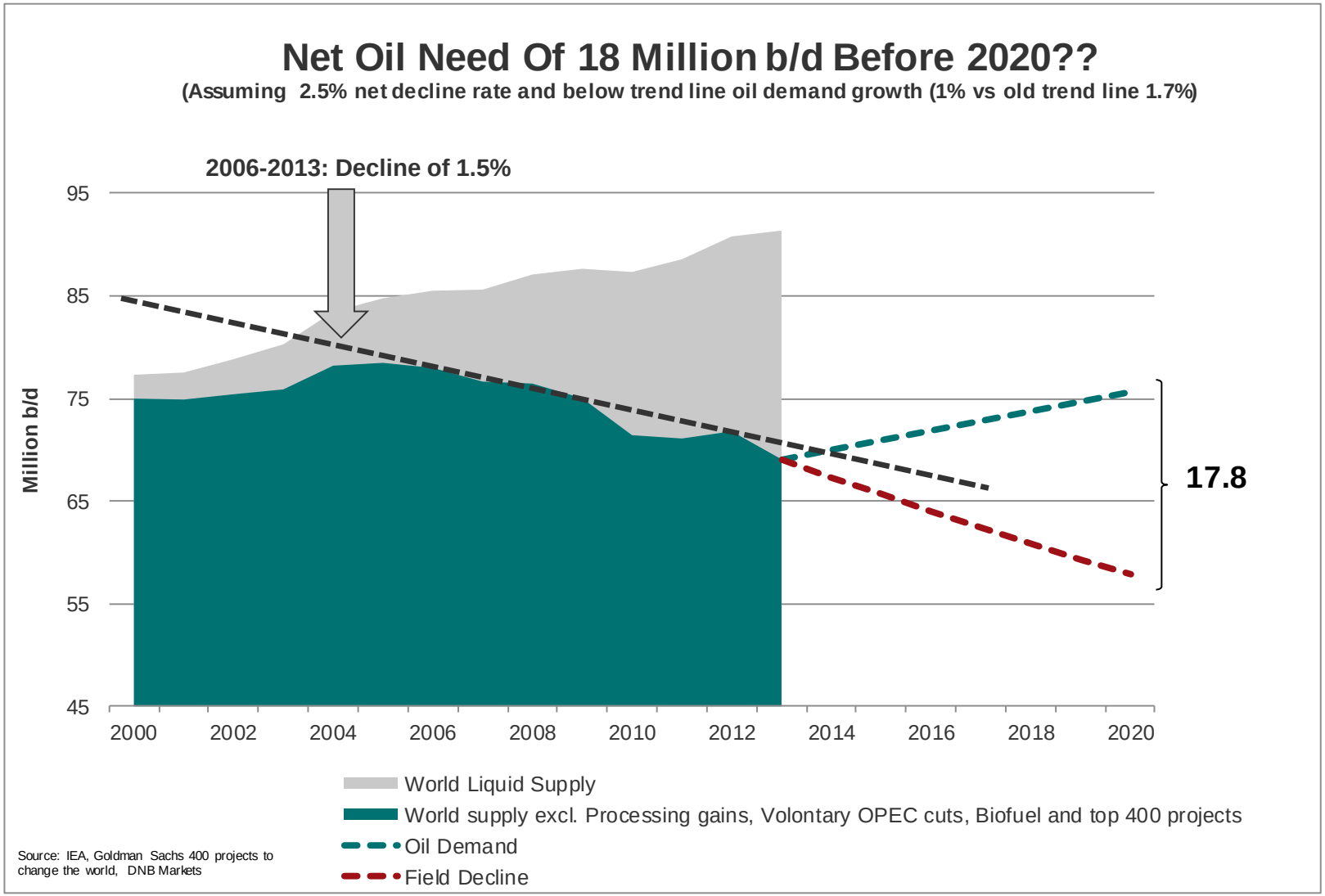
Net Decline Rate Accelerated In 2010 After CAPEX Cuts In 2009



Source: DNB Markets, Goldman Sachs 400 projects to change the world – 16 May 2014

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Fundamental Balances DNB Markets vs IEA, OPEC, EIA

DNB Markets World Oil Supply-Demand Balance:	2008	Change	2009	Change	2010	Change	2011	Change	2012	Change	2013	Change	2014	Change	2015
OECD Demand	48.4	-2.0	46.3	0.6	47.0	-0.5	46.4	-0.5	45.9	0.2	46.1	-0.5	45.6	0.3	45.9
Non-OECD Demand	38.1	1.2	39.3	2.5	41.7	1.4	43.1	1.6	44.6	1.1	45.8	1.1	46.9	1.1	48.0
Total Demand	**86.5**	**-0.9**	**85.6**	**3.1**	**88.7**	**0.8**	**89.5**	**1.1**	**90.6**	**1.3**	**91.9**	**0.7**	**92.5**	**1.4**	**93.9**
Non-OPEC Supply	49.1	0.5	49.7	1.2	50.8	0.1	51.0	0.4	51.4	1.3	52.7	2.0	54.6	0.4	55.0
OPEC NGL's and non-conventional oil	4.5	0.6	5.1	0.4	5.5	0.4	5.9	0.3	6.2	0.1	6.3	0.1	6.4	0.2	6.5
Global Biofuels	1.4	0.2	1.6	0.2	1.8	0.0	1.8	0.0	1.9	0.2	2.0	0.2	2.2	0.1	2.3
Total Non-OPEC supply	**55.0**	**1.3**	**56.3**	**1.8**	**58.1**	**0.5**	**58.7**	**0.8**	**59.4**	**1.5**	**60.9**	**2.3**	**63.2**	**0.6**	**63.8**
Call on OPEC crude (and stocks)	**31.4**	**-2.2**	**29.3**	**1.3**	**30.6**	**0.3**	**30.8**	**0.3**	**31.1**	**-0.2**	**30.9**	**-1.6**	**29.3**	**0.7**	**30.1**
OPEC Crude Oil Supply	31.6	-2.5	29.1	0.1	29.2	0.7	29.9	1.4	31.3	-0.8	30.5	-0.2	30.3	0.6	30.9
Implied World Oil Stock Change	**0.2**		**-0.2**		**-1.4**		**-0.9**		**0.2**		**-0.5**		**1.0**		**0.8**

IEA World Oil Supply-Demand Balance (April 2015):	2008	Change	2009	Change	2010	Change	2011	Change	2012	Change	2013	Change	2014	Change	2015
OECD Demand	48.4	-2.0	46.3	0.6	47.0	-0.5	46.4	-0.5	45.9	0.2	46.1	-0.5	45.6	0.1	45.7
Non-OECD Demand	38.1	1.2	39.3	2.5	41.7	1.4	43.1	1.6	44.6	1.1	45.8	1.1	46.9	1.0	47.9
Total Demand	**86.5**	**-0.9**	**85.6**	**3.1**	**88.7**	**0.8**	**89.5**	**1.1**	**90.6**	**1.3**	**91.9**	**0.7**	**92.5**	**1.1**	**93.6**
Non-OPEC Supply	49.1	0.5	49.7	1.2	50.8	0.1	51.0	0.4	51.4	1.3	52.7	2.0	54.6	0.6	55.2
OPEC NGL's and non-conventional oil	4.5	0.6	5.1	0.4	5.5	0.4	5.9	0.3	6.2	0.1	6.3	0.1	6.4	0.2	6.6
Global Biofuels	1.4	0.2	1.6	0.2	1.8	0.0	1.8	0.0	1.9	0.2	2.0	0.2	2.2	0.1	2.2
Total Non-OPEC supply	**55.0**	**1.3**	**56.3**	**1.8**	**58.1**	**0.5**	**58.7**	**0.8**	**59.4**	**1.5**	**60.9**	**2.3**	**63.2**	**0.9**	**64.0**
Call on OPEC crude (and stocks)	**31.4**	**-2.2**	**29.3**	**1.3**	**30.6**	**0.3**	**30.8**	**0.3**	**31.1**	**-0.2**	**30.9**	**-1.6**	**29.3**	**0.2**	**29.6**
OPEC Crude Oil Supply	31.6	-2.5	29.1	0.1	29.2	0.7	29.9	1.4	31.3	-0.8	30.5	-0.2	30.3	0.6	30.9
Implied World Oil Stock Change	**0.2**		**-0.2**		**-1.4**		**-0.9**		**0.2**		**-0.5**		**1.0**		**1.3**

OPEC World Oil Supply-Demand Balance (March 2015):	2008	Change	2009	Change	2010	Change	2011	Change	2012	Change	2013	Change	2014	Change	2015
OECD Demand	48.4	-2.0	46.4	0.6	47.0	-0.6	46.4	-0.5	45.9	0.2	46.1	-0.3	45.8	0.0	45.8
Non-OECD Demand	37.7	0.7	38.4	1.9	40.3	1.4	41.7	1.4	43.1	1.0	44.1	1.3	45.4	1.2	46.6
Total Demand	**86.1**	**-1.3**	**84.8**	**2.5**	**87.3**	**0.8**	**88.1**	**0.9**	**89.0**	**1.2**	**90.2**	**1.0**	**91.2**	**1.2**	**92.4**
Non-OPEC Supply (Incl all Biofuel)	50.4	0.7	51.1	1.3	52.4	0.0	52.4	0.5	52.9	1.4	54.3	2.0	56.3	0.9	57.2
OPEC NGL's and non-conventional oil	4.1	0.2	4.3	0.7	5.0	0.4	5.4	0.2	5.6	0.0	5.6	0.2	5.8	0.2	6.0
Total Non-OPEC supply	**54.5**	**0.9**	**55.4**	**2.0**	**57.4**	**0.4**	**57.8**	**0.7**	**58.5**	**1.4**	**59.9**	**2.2**	**62.1**	**1.1**	**63.2**
Call on OPEC crude (and stocks)	**31.6**	**-2.2**	**29.4**	**0.5**	**29.9**	**0.4**	**30.3**	**0.2**	**30.5**	**-0.2**	**30.3**	**-1.2**	**29.1**	**0.1**	**29.2**
OPEC Crude Oil Supply	31.2	-2.5	28.7	0.5	29.2	0.7	29.9	1.4	31.3	-0.8	30.5	-0.2	30.3	0.6	30.9
Implied World Oil Stock Change	**-0.4**		**-0.7**		**-0.7**		**-0.4**		**0.8**		**0.2**		**1.2**		**1.7**

EIA World Oil Supply-Demand balance (March 2015):	2008	Change	2009	Change	2010	Change	2011	Change	2012	Change	2013	Change	2014	Change	2015
OECD Demand	47.6	-2.2	45.4	0.7	46.1	-0.3	45.8	0.1	45.9	0.2	46.1	-0.3	45.8	0.2	45.9
Non-OECD Demand	38.2	0.7	38.9	2.1	41.0	1.5	42.5	0.8	43.3	1.2	44.4	2.0	46.4	0.8	47.2
Total Demand	**85.8**	**-1.5**	**84.3**	**2.7**	**87.1**	**1.2**	**88.3**	**0.9**	**89.2**	**1.3**	**90.5**	**1.7**	**92.2**	**1.0**	**93.1**
Non-OPEC Supply (Incl all Biofuel)	49.7	0.8	50.5	1.3	51.8	0.2	52.0	0.7	52.7	1.5	54.1	2.4	56.6	1.0	57.6
OPEC NGL's and non-conventional oil	4.5	0.3	4.8	0.8	5.5	-0.3	5.3	0.5	5.8	0.4	6.1	0.3	6.4	0.1	6.4
Total Non-OPEC supply	**54.1**	**1.1**	**55.2**	**2.1**	**57.3**	**-0.1**	**57.2**	**1.2**	**58.4**	**1.8**	**60.2**	**2.7**	**62.9**	**1.1**	**64.0**
Call on OPEC crude (and stocks)	**31.7**	**-2.6**	**29.1**	**0.7**	**29.8**	**1.3**	**31.1**	**-0.3**	**30.8**	**-0.5**	**30.2**	**-1.0**	**29.2**	**-0.1**	**29.1**
OPEC Crude Oil Supply	31.3	-2.2	29.1	0.1	29.2	0.7	29.9	1.4	31.3	-0.8	30.5	-0.2	30.3	0.6	30.9
Implied World Oil Stock Change	**-0.4**		**0.0**		**-0.6**		**-1.1**		**0.6**		**0.2**		**1.1**		**1.8**

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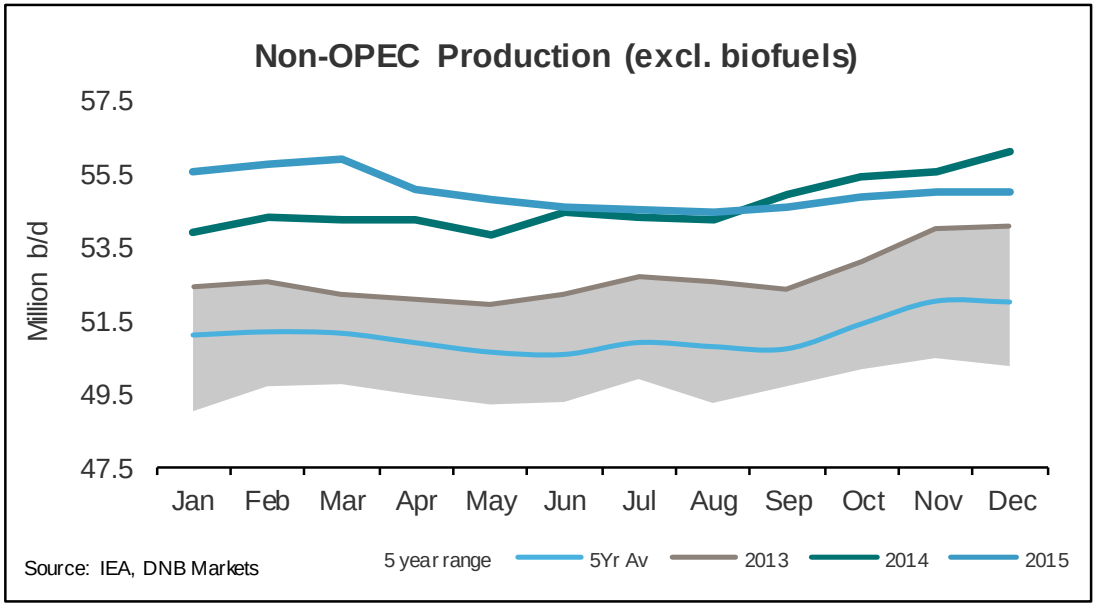
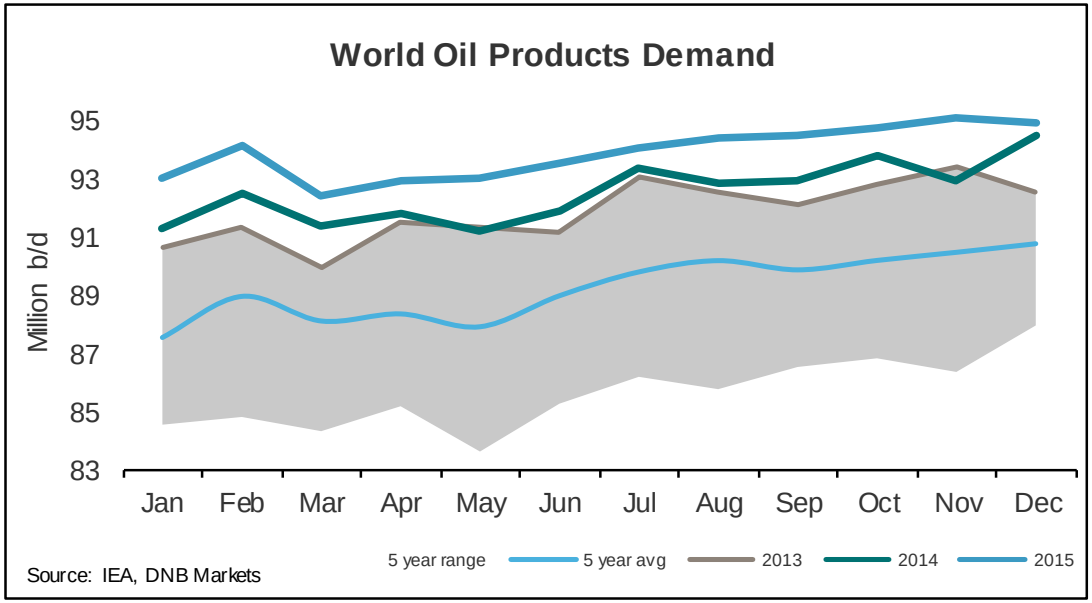
Non-OPEC Supply Growth Seen Fading & Demand Stronger

- Lower prices will stimulate demand growth and reduce supply growth





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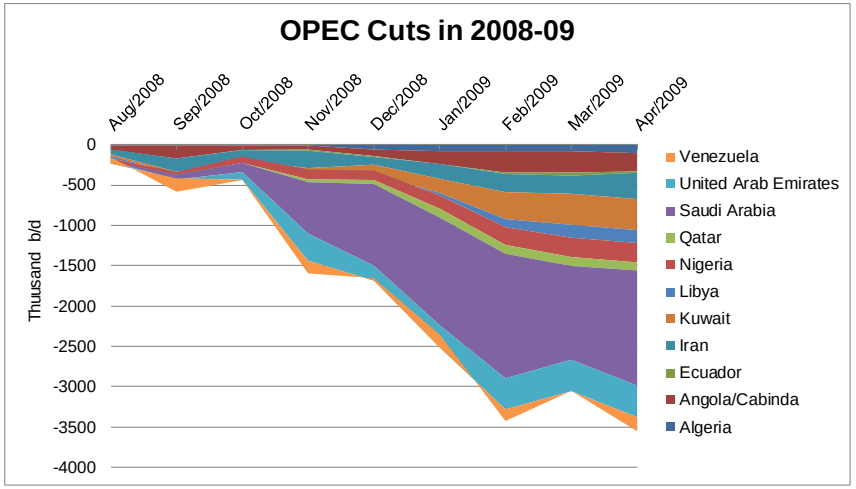
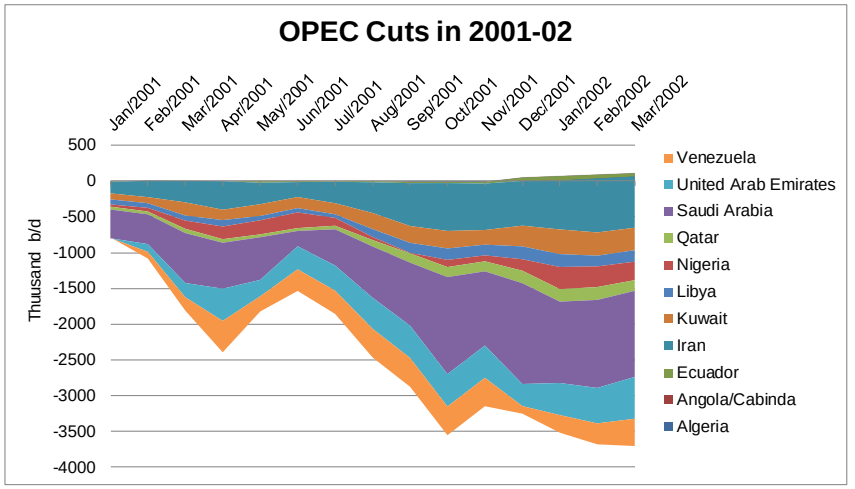
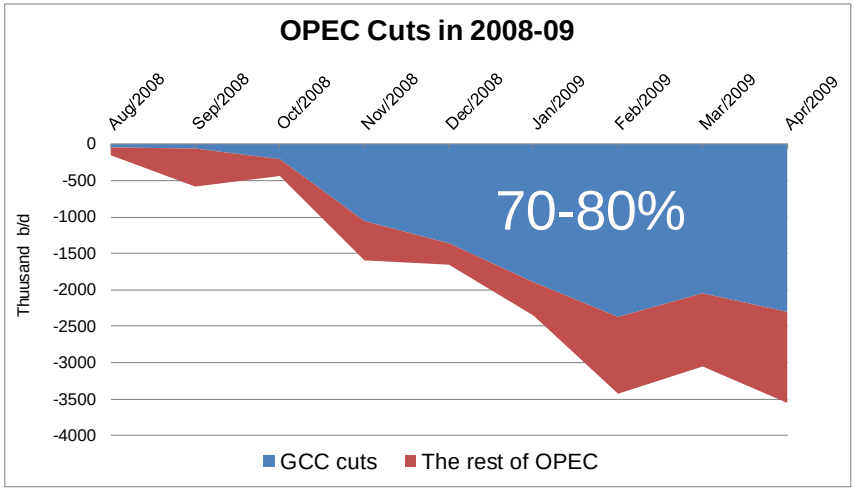
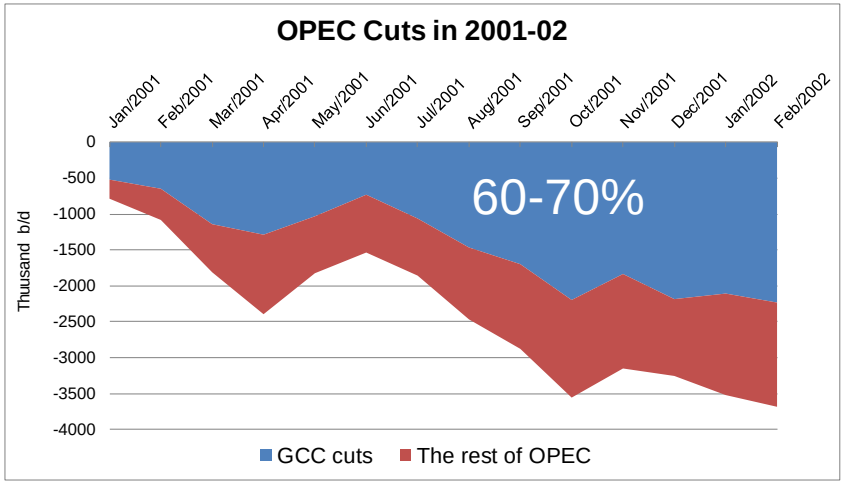
Historically Core OPEC Takes Most of the Needed Cuts

- In 2001-02 the price fell 47% and in 2008-09 the price fell 74%









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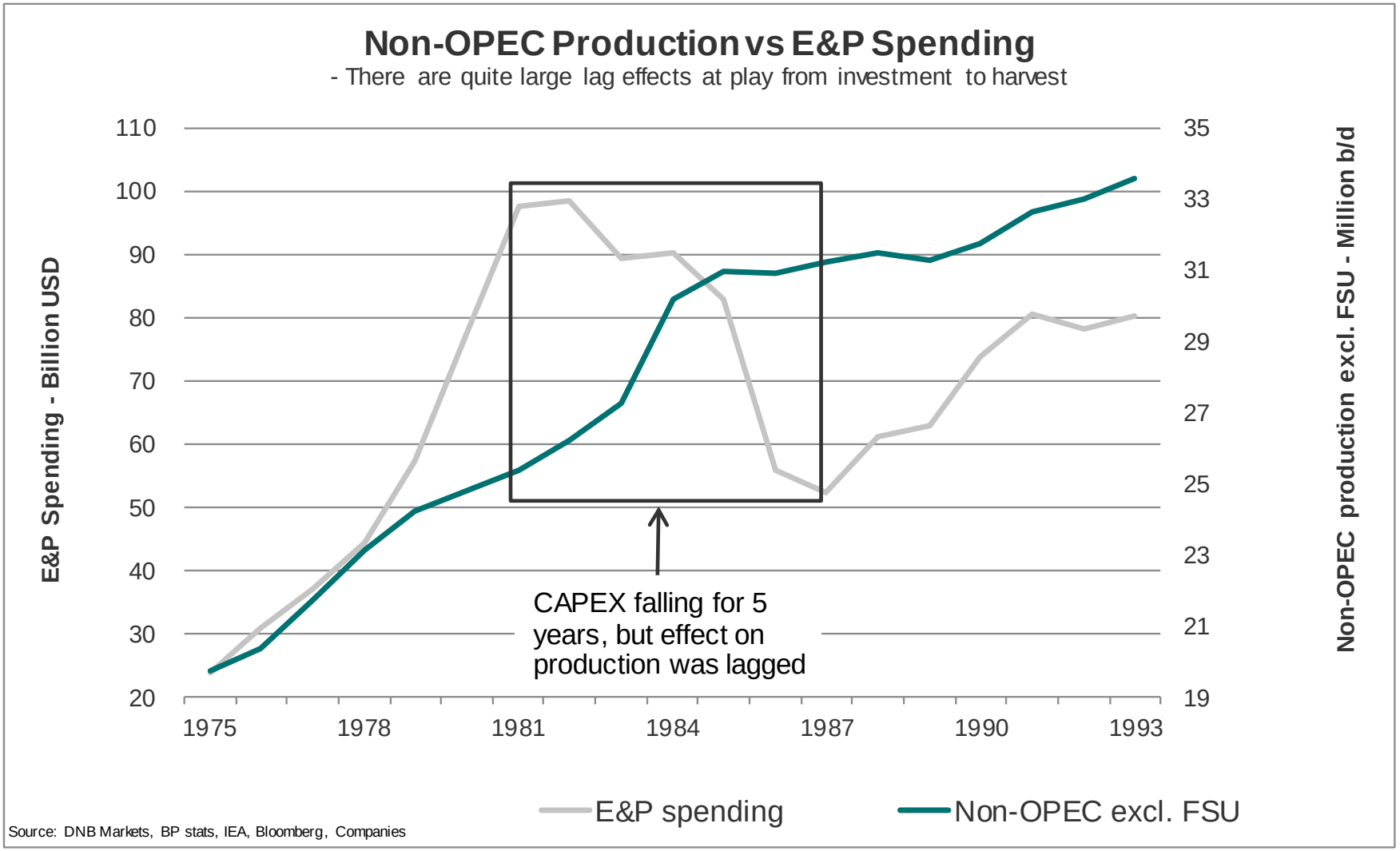
Flattish E&P CAPEX Does Not Equal No Production Growth

- CAPEX down 50% from 1982 to 1987 but non-OPEC growth not negatively affected until from 1986 to 1989



Source: DNB Markets, BP stats, IEA, Bloomberg, Companies

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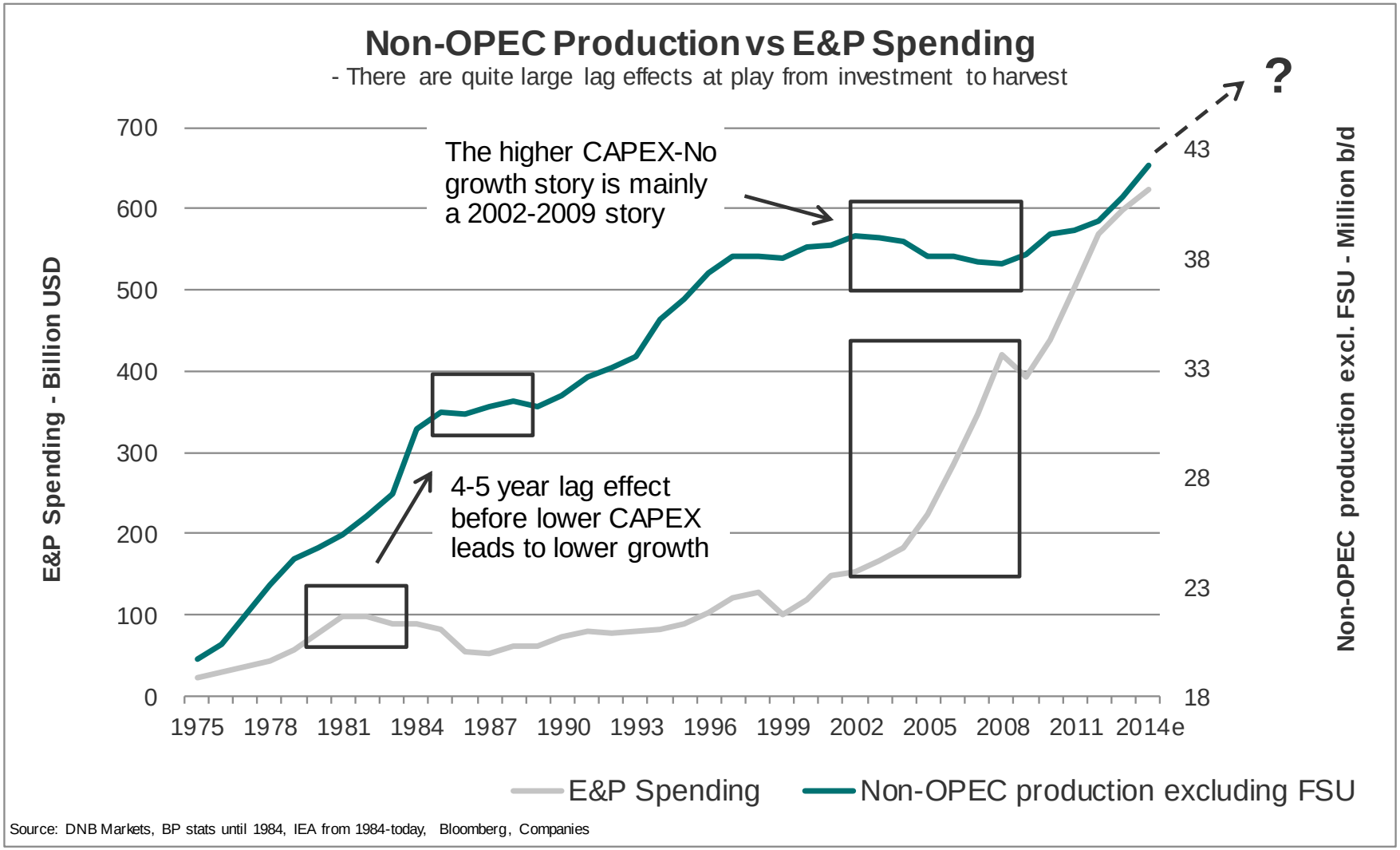
Flattish E&P CAPEX Does Not Equal No Production Growth

- The lag effects are quite large – Falling CAPEX in the early 1980's led to flattening growth 4-5 years later



Source: DNB Markets, BP stats until 1984, IEA from 1984-today, Bloomberg, Companies

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China Becoming Cleaner?

- Coal production growth used to be correlated with electricity output growth – but this is no longer the case

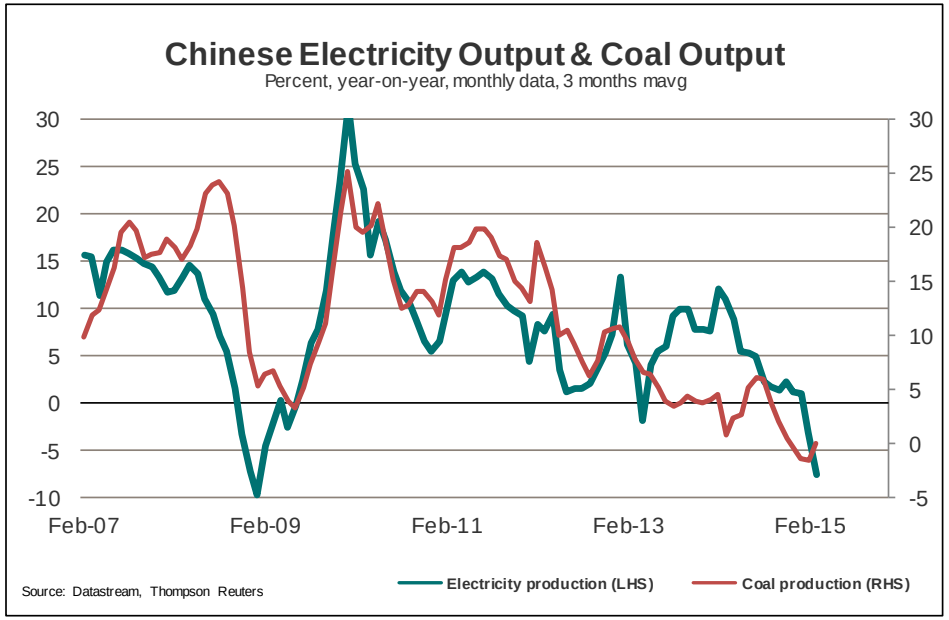
April 24, 2014 1:30 pm

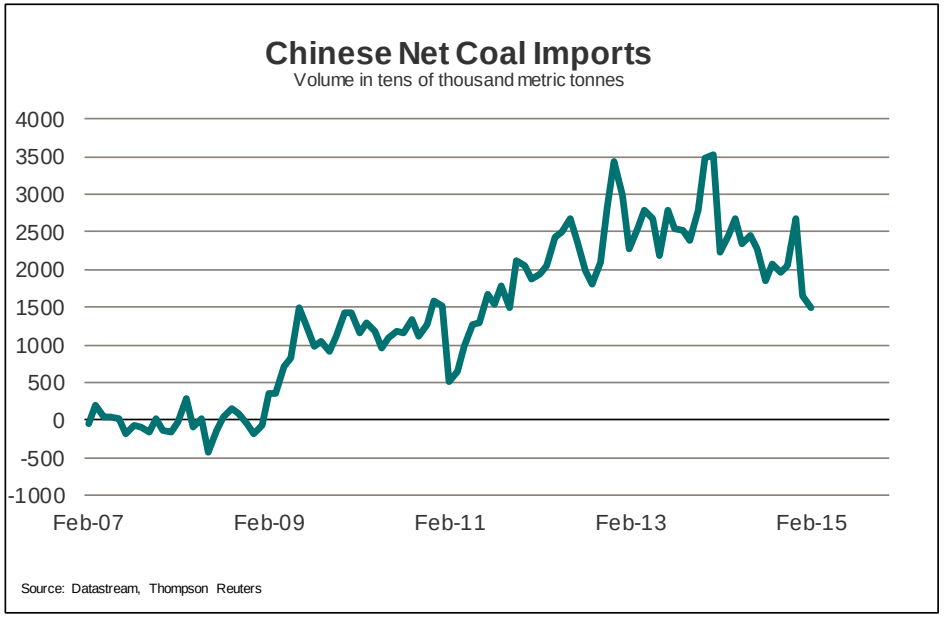
China law change opens way to huge fines for polluters

China has been gradually releasing more data on air quality and last week released an alarming report on soil pollution that had been previously classed as "secret". Earlier this year, the government began direct emissions monitoring at the nation's largest factories.

China has passed long-delayed revisions to an environmental law that will allow more punishing fines for polluters, removing what many saw as a major barrier to cleaning up the country's poisoned air, water and soil.

The revised draft of the 25-year-old Environmental Protection Law, passed by a legislature committee this afternoon, sets no limit on fines for polluters. Previous caps on fines were so low that it was often cheaper to pay the fines than install or operate emissions-reducing equipment.





Sources: Financial Times, Thompson Reuters Datastream

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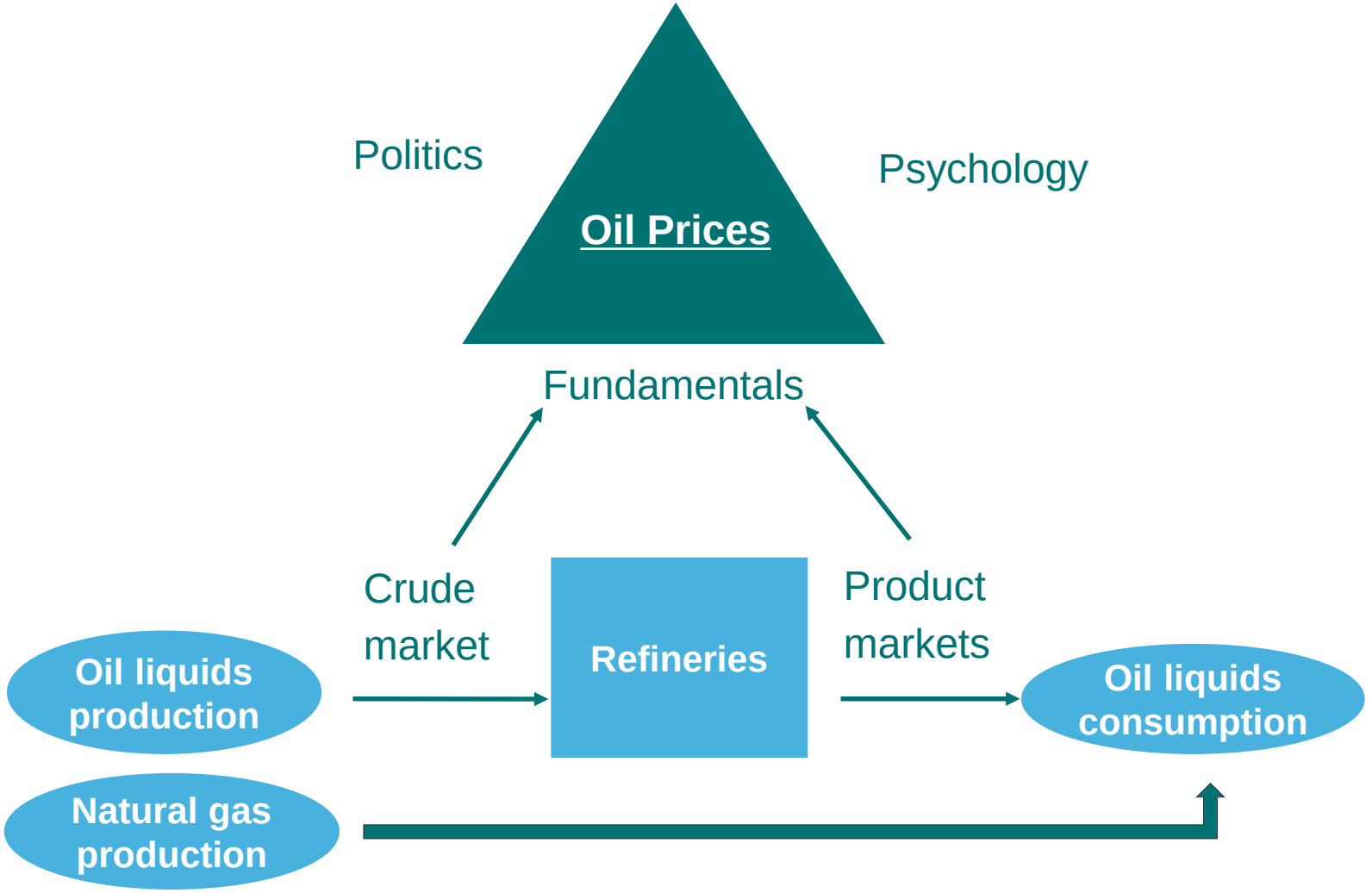
General Intro To The Oil Market



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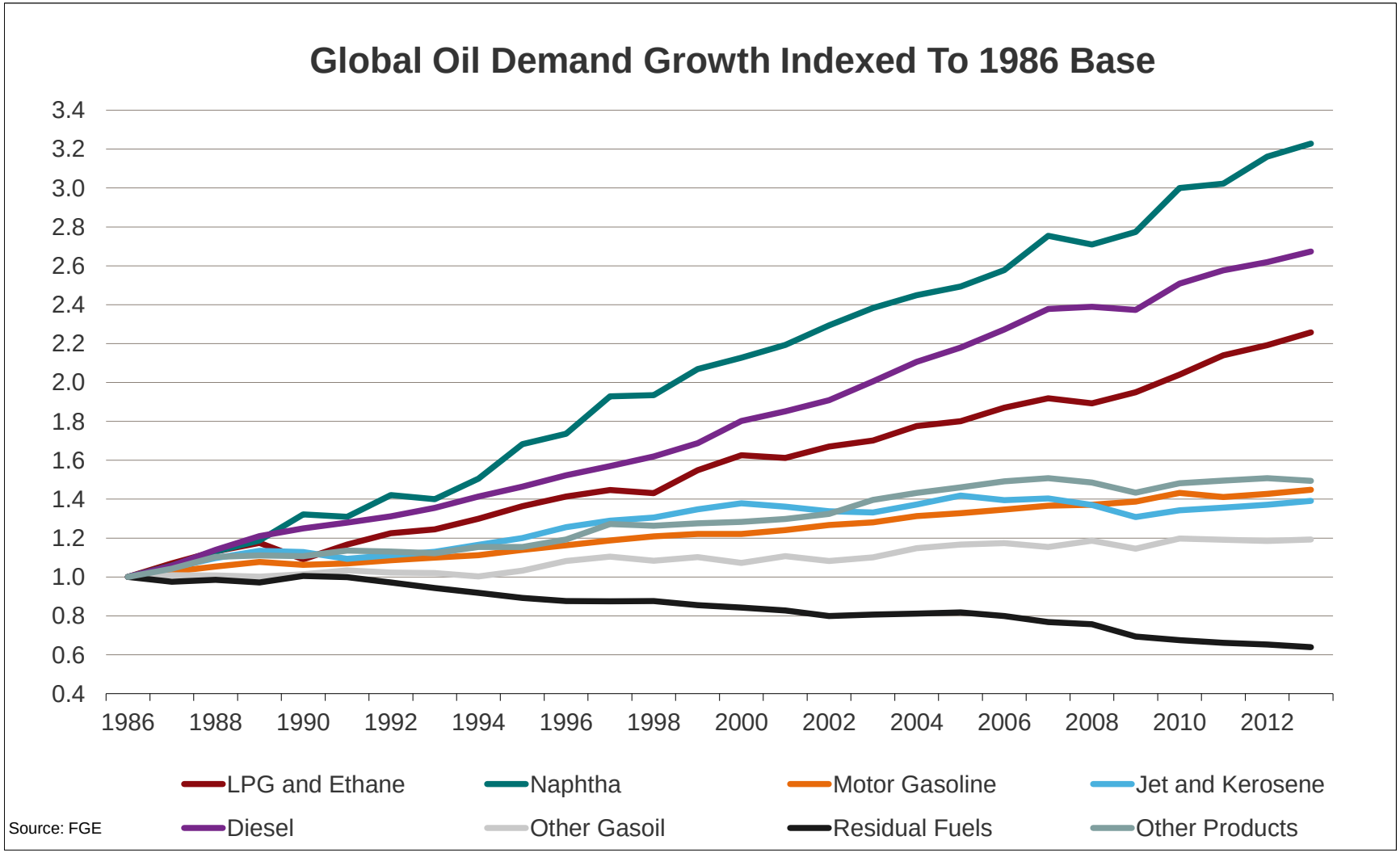
Key Growth Products Are Naphtha, Diesel & LPG

- Of these only the diesel part is dependent on crude oil feed and refineries



Source: FGE

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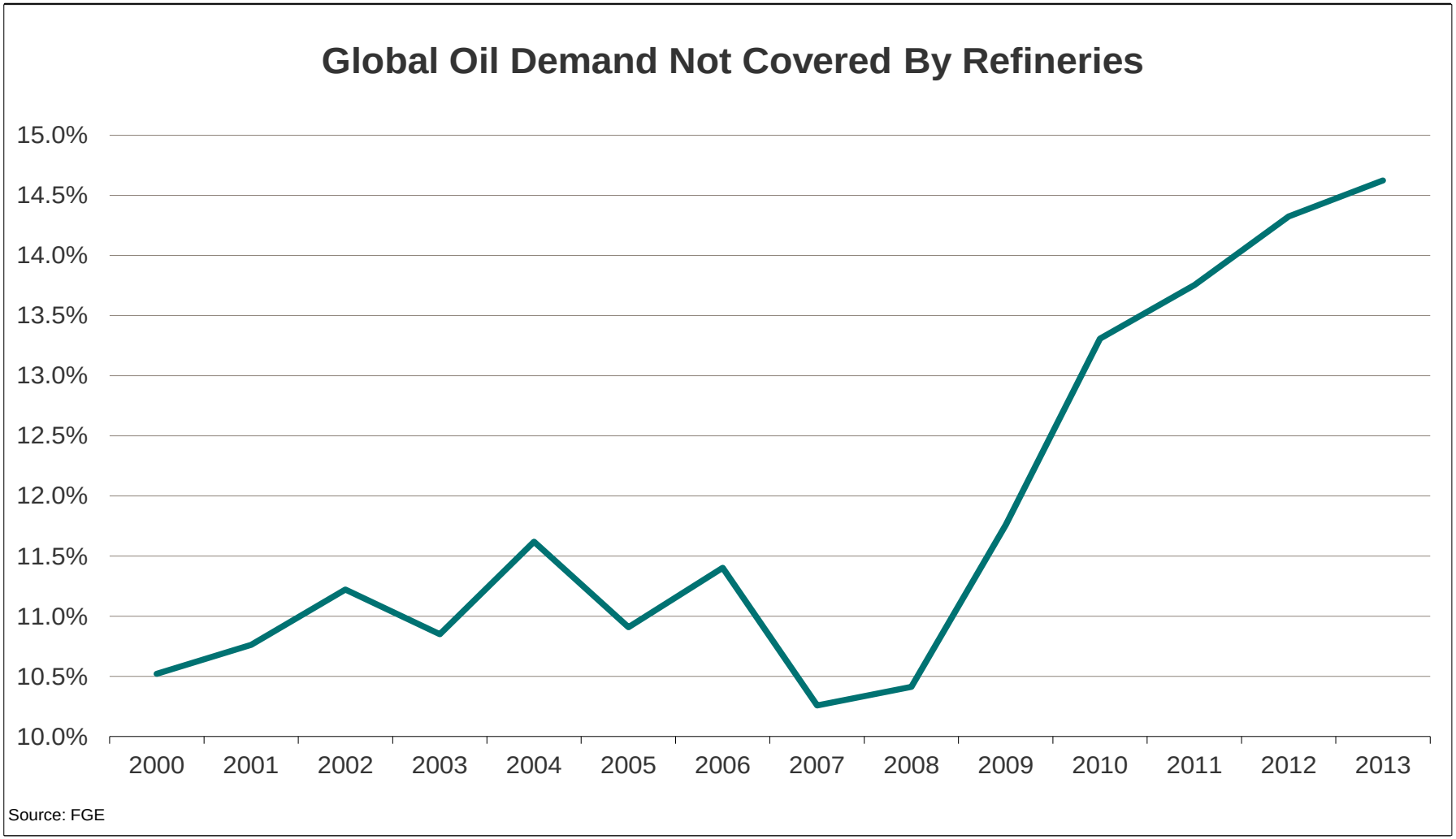
Growing Part Of Global Oil Demand Not Covered By Refineries

- The world needs a gradually less share of crude oil to cover global oil liquids demand



Source: FGE

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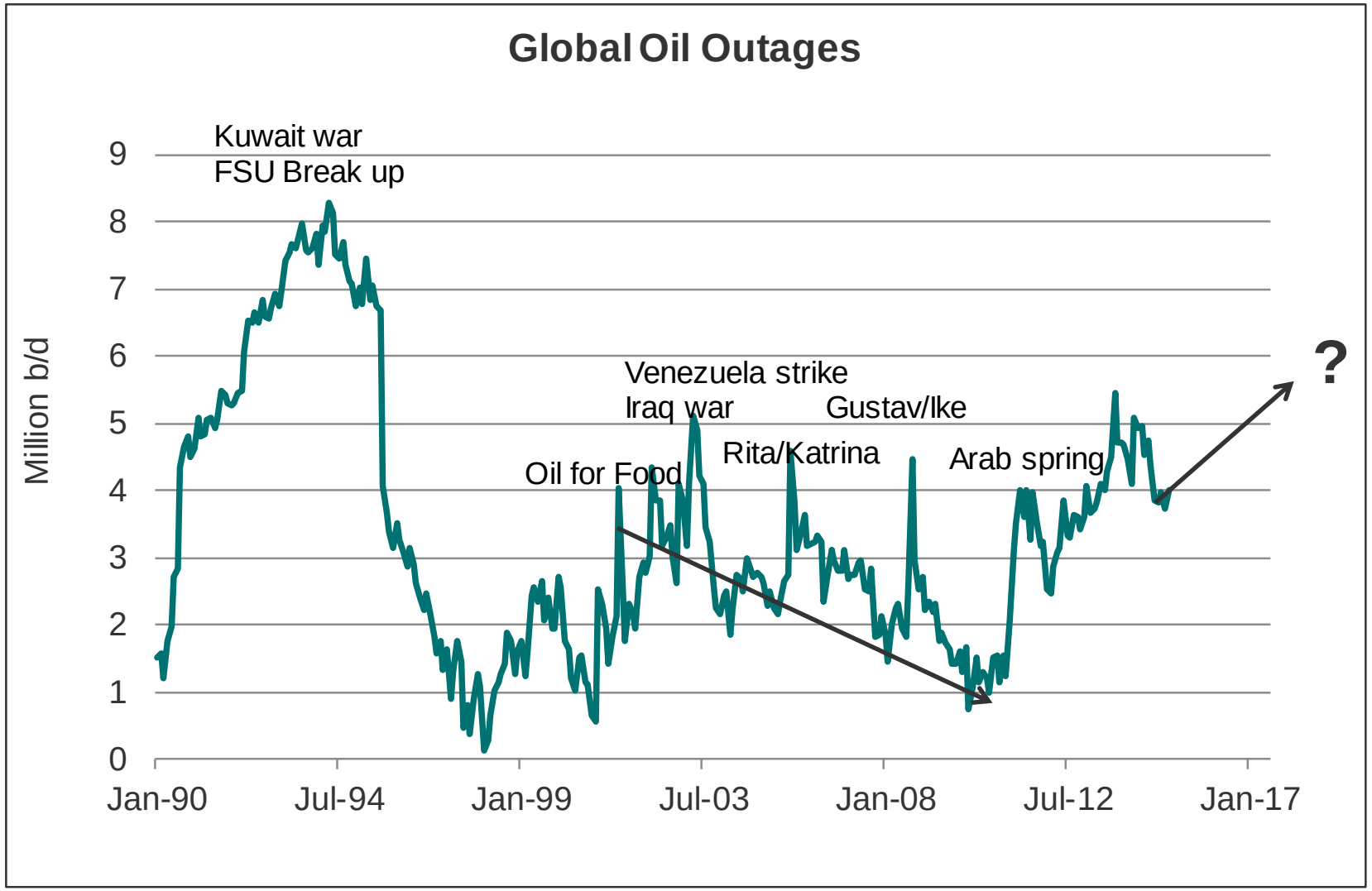
Global Unplanned Outages Are At A Historically High Level

- If you are bullish for the next three years the premise must be further increased outages in our opinion. Will that happen?



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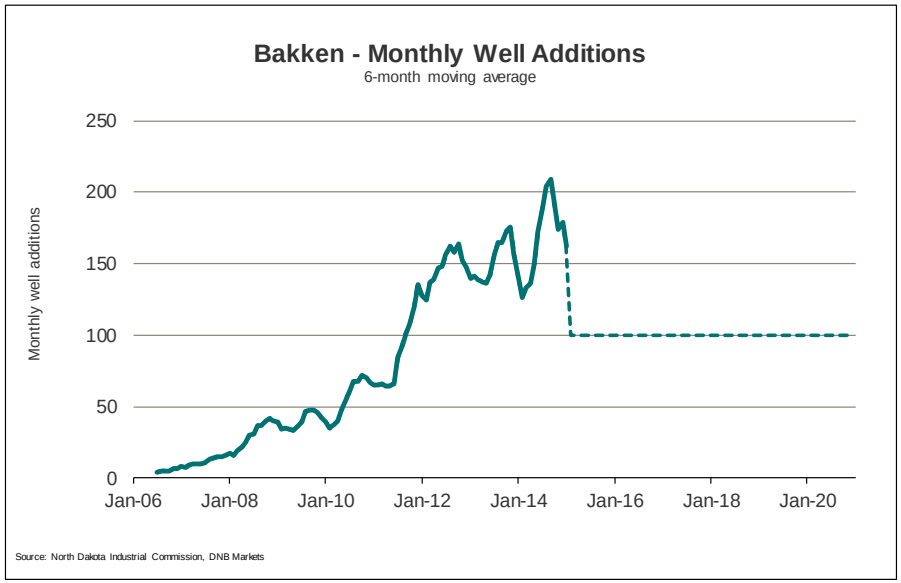
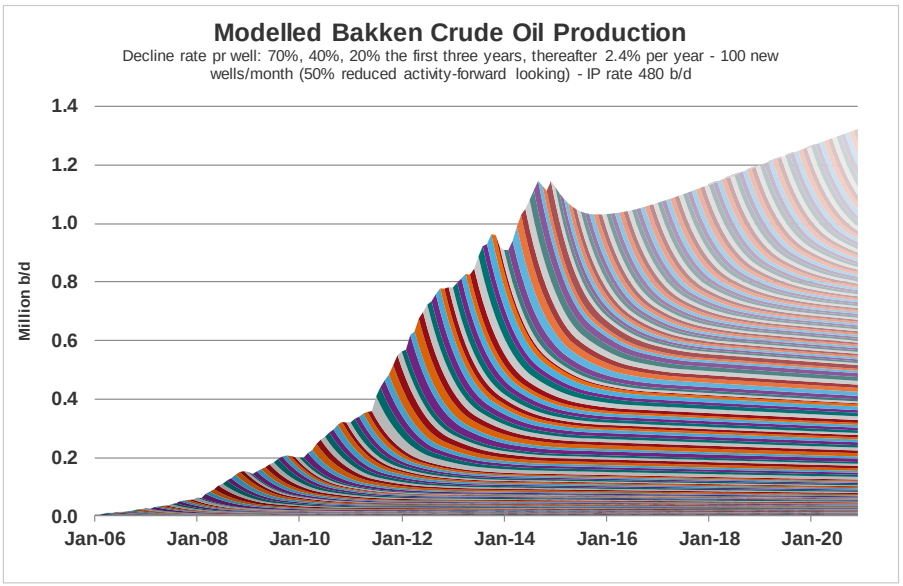
A 50% Reduction In Activity Will Stop Growth For A Year

- But then growth will again resume even without any new increase in activity





	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Accumulated production start up	34,990	111,135	315,805	540,845	895,865	1,483,200	2,343,105	3,212,225	4,233,150	4,818,545	5,400,545	5,982,545	6,564,545	7,146,545	7,728,545
Net production end of year	12,958	56,099	153,325	200,925	319,684	549,501	781,988	919,758	1,144,924	1,030,928	1,066,056	1,127,178	1,194,095	1,259,431	1,323,216
Accumulated decline	22,032	55,036	162,480	339,920	576,181	933,699	1,561,117	2,292,467	3,088,226	3,787,617	4,334,489	4,855,367	5,370,450	5,887,114	6,405,329
Yearly start up	34,990	76,145	204,670	225,040	355,020	587,335	859,905	869,120	1,020,925	585,395	582,000	582,000	582,000	582,000	582,000
Total yearly production decline	22,032	33,004	107,444	177,441	236,261	357,518	627,418	731,350	795,759	699,390	546,872	520,879	515,083	516,664	518,215
Decline vs new start up	63%	43%	52%	79%	67%	61%	73%	84%	**78%**	**119%**	**94%**	89%	89%	89%	89%
Yearly net production increase		43,141	97,226	47,599	118,759	229,817	232,487	137,770	225,166	-113,995	35,128	61,121	66,917	65,336	63,785

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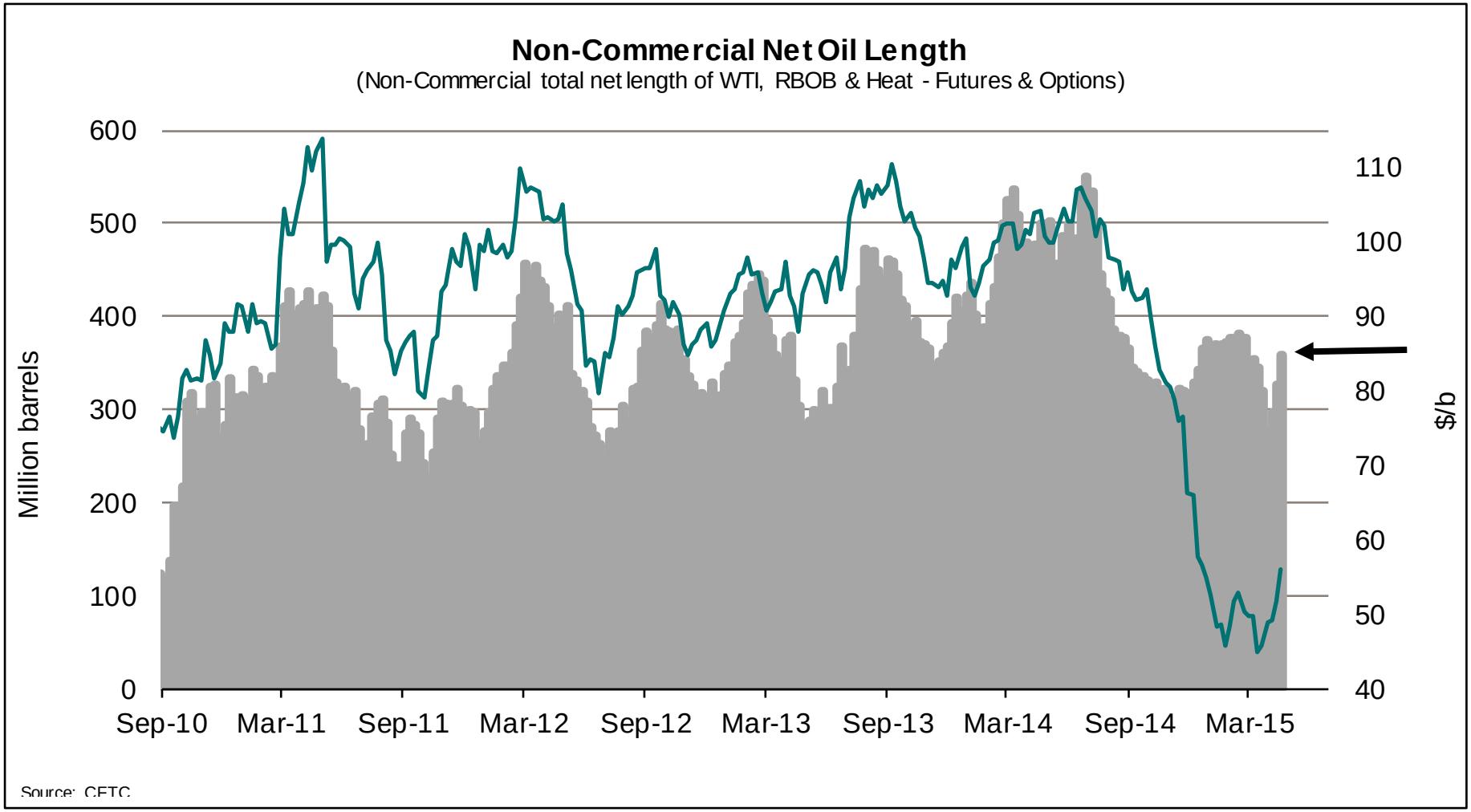
Financial Oil Positions NYMEX (WTI, RBOB, Heating Oil)



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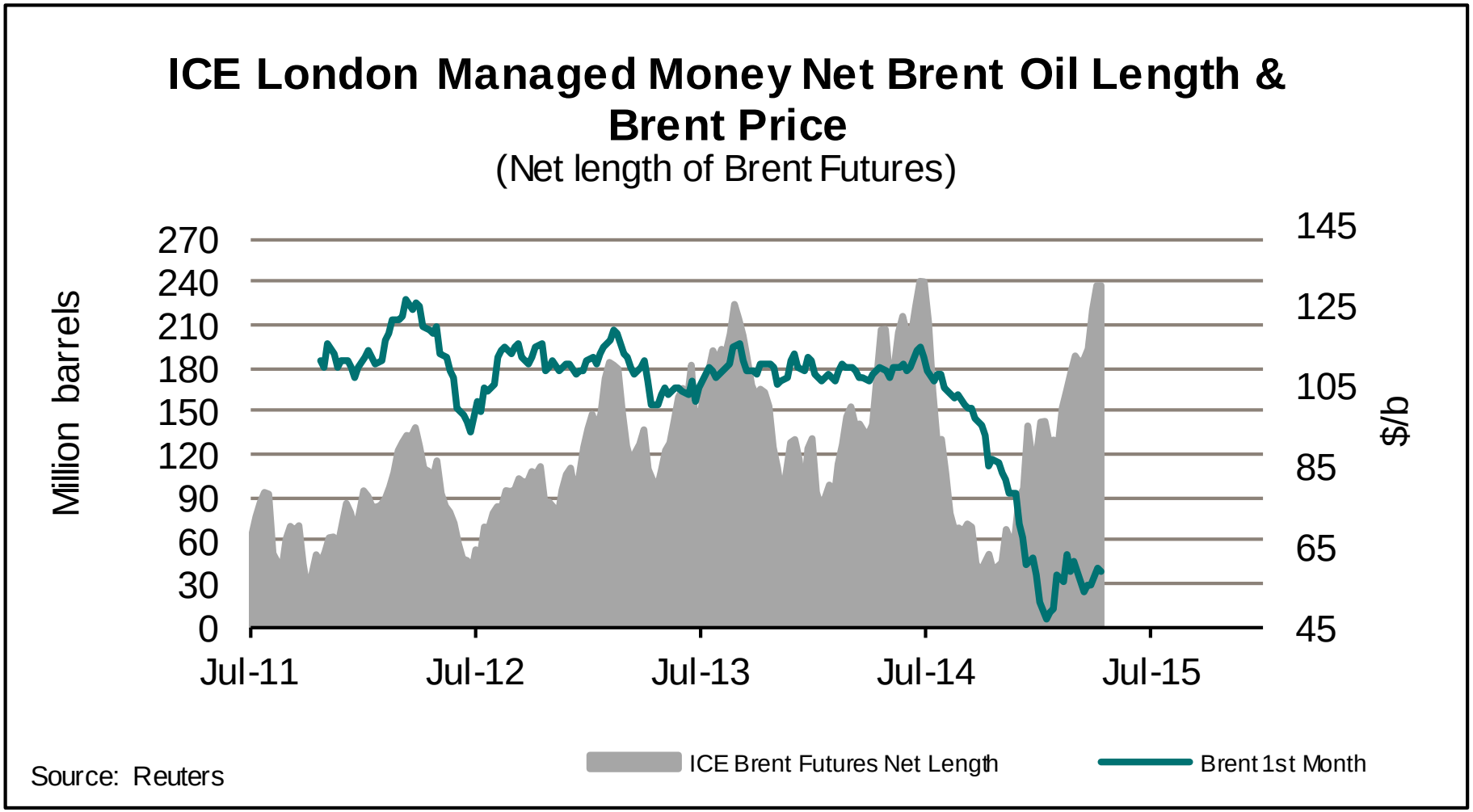
Net 'Money Managers' Exposure on ICE Brent



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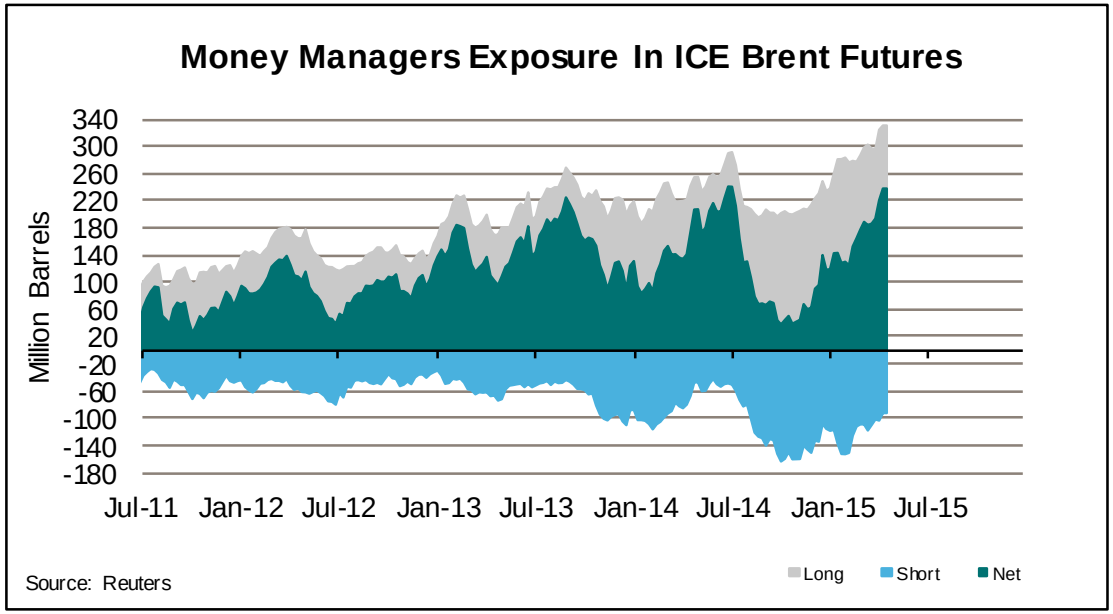
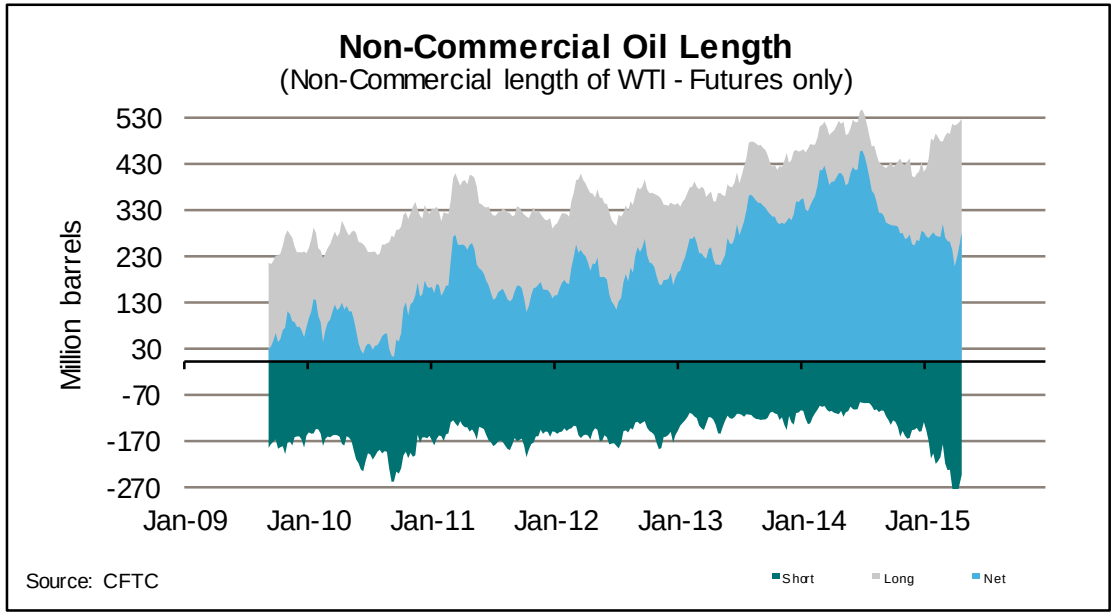
Gross ‘Non-Commercial' Exposure London/New York





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US Fuel Efficiency Standards To Significantly Improve By 2025

-CAFE-standards to reach 48.7 MPG by 2025

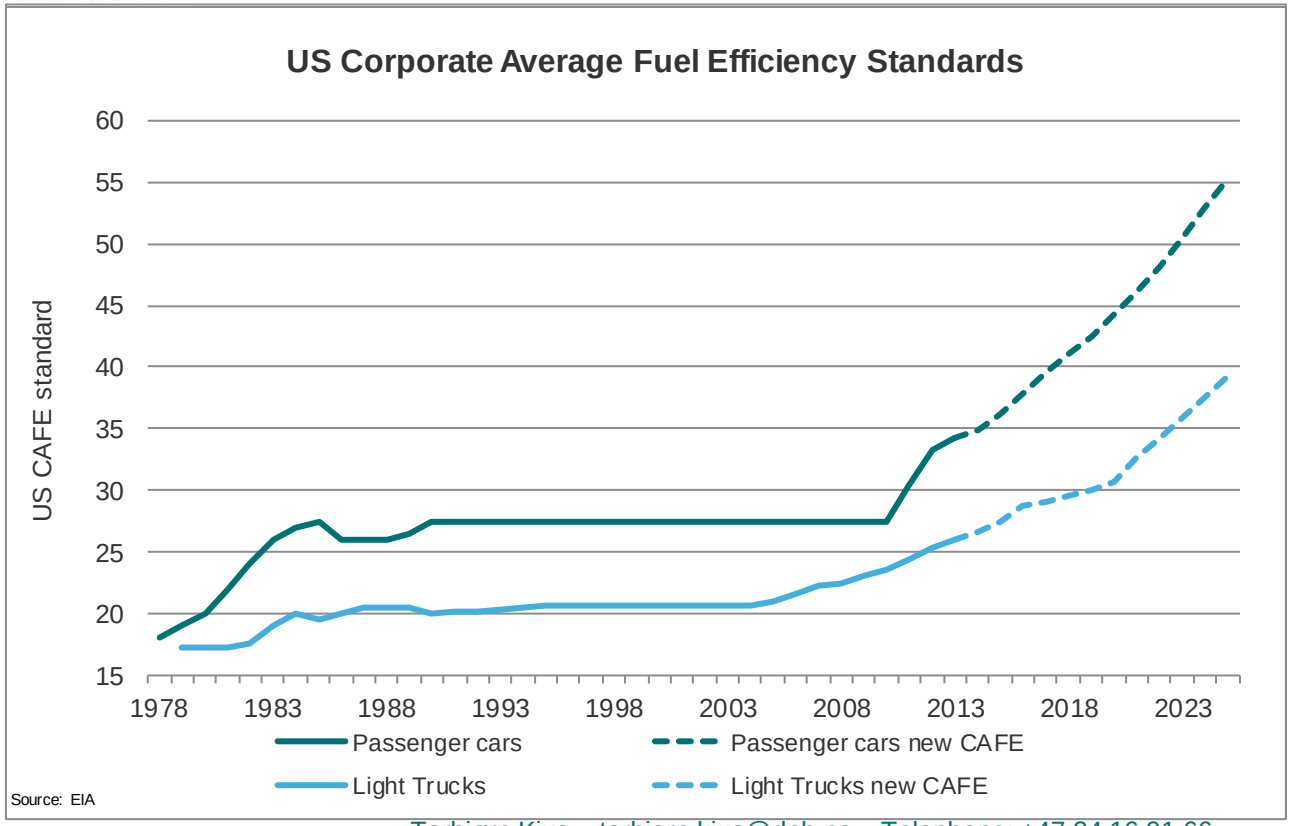
The formal proposal follows President Obama's agreement with 13 major automakers, announced in July, to gradually boost these vehicles' fuel economy to the equivalent of 54.5 miles per gallon -- up from the current standard of 27.3 mpg. Last year, the administration finalized rules to hike the standard to 35.5 mpg by 2016.

CAPTION By Brendan Smialowski, Getty Images

Source: EPA/Department of Transportation Corporate Average Fuel Economy Standards; Final Rule – July 2010

TABLE I.B.2–1—AVERAGE REQUIRED FUEL ECONOMY (mpg) UNDER FINAL CAFE STANDARDS

	2011-base	2012	2013	2014	2015	2016
Passenger Cars	30.4	33.3	34.2	34.9	36.2	37.8
Light Trucks	24.4	25.4	26.0	26.6	27.5	28.8
Combined Cars & Trucks	27.6	29.7	30.5	31.3	32.6	34.1



Source: EIA

Source: Annual Energy Outlook – EIA April 2013

Table 1. NHTSA projected average fleet-wide CAFE compliance levels (miles per gallon) for passenger cars and light-duty trucks, model years 2017-2025, based on the model year 2010 baseline fleet

Model year	Passenger cars	Light-duty trucks	Combined
2017	39.6	29.1	35.1
2018	41.1	29.6	36.1
2019	42.5	30.0	37.1
2020	44.2	30.6	38.3
2021	46.1	32.6	40.3
2022	48.2	34.2	42.3
2023	50.5	35.8	44.3
2024	52.9	37.5	46.5
2025	55.3	39.3	48.7

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