Monthly Oil – Short Term Bearish

The global supply-demand balance is weakening in coming months. It will not help neither Brent-prices nor WTI prices that the spring refinery maintenance season is just in front of us. Watch the Dubai time spread which has violently moved into contango recently. This could be an early bearish warning signal for Brent prices just like we have seen before.

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Content

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Monthly Oil Price Scorecard

-Please read on paper or zoom in on screen

Monthly Scorecard	Comments	Oil Price	Weight
Overall Outlook	The global supply-demand balance is weakening in coming months. It will not help neither Brent-prices nor WTI prices that the spring refinery maintenance season is just in front of us. Watch the Dubai time spread which has violently moved into contango recently. This could be an early bearish warning signal for Brent prices just like we have seen before.	**BEARISH**	
Fundamentals			
Global Fundamental Balance	Weakening global supply-demand balance in coming months	**BEARISH**	**HIGH**
Refinery Margins (Crack Spreads)	Refinery margins on the weak side in Europe, average in Singapore, strong in the US	NEUTRAL	MEDIUM
OECD Oil Stock Levels	Fairly neutral overall stock levels, but low distillate stocks and still plenty of winter left	BULLISH	MEDIUM
US Oil Statistics - Fundamentals	Supply keeps on growing quicker than demand	BEARISH	MEDIUM
Other Important Energy News	Watch the Dubai time spread - It has moved into contango and could be an early warning signal	**BEARISH**	**HIGH**
Chinese Oil Statistics & News	Negative oil demand growth 2 months in a row - diesel demand growth has disappeared in 2013	BEARISH	MEDIUM
OPEC	Many barrels still shut out in Libya/Iran - We think Saudi will cut in 2014 if others return	BULLISH	MEDIUM
Non-OPEC	Non-OPEC supply growth now also outside North America - IEA expect near record growth this year	BEARISH	MEDIUM
Seasonals			
Temperature Outlook	Still colder than normal in the US - Normal in Japan/Korea/Europe	BULLISH	MEDIUM
Hurricanes & Other Weather	Hurricane season is not a factor at this time of year	NEUTRAL	NA()
North Sea Fundamentals	Neutral loading program, but why do barrels keep on leaving Europe for lower priced markets?	NEUTRAL	MEDIUM
Political Risk			
Iraq, Iran, Nigeria, Venezuela, US, Russia, Israel, China, etc	Negotiations continue with Iran - still trouble in Libya/Nigeria/Venezuela	BULLISH	MEDIUM
Other factors			
Hot Money Net Exposure (Speculators)	Fairly neutral net positions right now	NEUTRAL	MEDIUM
Market Psychology/Sentiment/Macroeconomics	Equity markets are nervous due to EM turmoil - VIX is up - oil volatility is up	BEARISH	MEDIUM
Technicals/Price Trends	Strong restistance for Brent at 200 day mavg (108 $/b) and for WTI at 100 day mavg (98.2 $/b)	BEARISH	MEDIUM

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Fundamental Balances & Forecasted OECD stocks

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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
OECD Demand	48.1	-2.0	46.1	0.6	46.7	-0.6	46.1	-0.5	45.6	0.1	45.7	0.3	46.0
Non-OECD Demand	37.7	1.2	38.9	2.2	41.1	1.3	42.4	1.4	43.8	1.1	44.9	1.0	45.9
Total Demand	**85.8**	**-0.8**	**85.0**	**2.9**	**87.9**	**0.6**	**88.5**	**0.9**	**89.4**	**1.2**	**90.6**	**1.3**	**91.9**
Non-OPEC Supply	49.2	0.6	49.9	1.0	50.8	0.2	51.0	0.5	51.5	1.2	52.7	1.7	54.4
OPEC NGL's and non-conventional oil	5.0	0.1	5.1	0.5	5.6	0.4	5.9	0.4	6.3	0.1	6.4	0.2	6.6
Global Biofuels	1.4	0.2	1.6	0.2	1.8	0.0	1.9	0.0	1.9	0.1	2.0	0.1	2.1
Total Non-OPEC supply	**55.6**	**0.9**	**56.5**	**1.7**	**58.2**	**0.6**	**58.8**	**0.9**	**59.7**	**1.5**	**61.1**	**2.0**	**63.1**
Call on OPEC crude (and stocks)	**30.2**	**-1.7**	**28.5**	**1.2**	**29.7**	**0.1**	**29.7**	**0.0**	**29.8**	**-0.3**	**29.5**	**-0.7**	**28.8**
OPEC Crude Oil Supply (Last known number dragged fwd)	31.1	-2.0	29.1	0.1	29.2	0.7	29.9	1.4	31.3	-0.9	30.4	-0.6	29.8
Implied World Oil Stock Change	**1.0**		**0.6**		**-0.5**		**0.2**		**1.5**		**1.0**		**1.0**

IEA World Oil Supply-Demand Balance (Jan 2013):	2008	Change	2009	Change	2010	Change	2011	Change	2012	Change	2013	Change	2014
OECD Demand	48.4	-2.0	46.4	0.6	47.0	-0.5	46.5	-0.5	46.0	0.1	46.0	-0.1	45.9
Non-OECD Demand	37.9	1.2	39.1	2.3	41.4	1.1	42.5	1.5	44.0	1.1	45.2	1.4	46.5
Total Demand	**86.3**	**-0.8**	**85.5**	**2.9**	**88.4**	**0.6**	**89.0**	**1.0**	**90.0**	**1.2**	**91.2**	**1.3**	**92.5**
Non-OPEC Supply	49.2	0.6	49.9	1.0	50.8	0.2	51.0	0.5	51.5	1.2	52.7	1.7	54.4
OPEC NGL's and non-conventional oil	5.0	0.1	5.1	0.5	5.6	0.4	5.9	0.4	6.3	0.1	6.4	0.2	6.6
Global Biofuels	1.4	0.2	1.6	0.2	1.8	0.0	1.9	0.0	1.9	0.1	2.0	0.0	2.0
Total Non-OPEC supply	**55.6**	**0.9**	**56.5**	**1.7**	**58.2**	**0.6**	**58.8**	**0.9**	**59.7**	**1.5**	**61.1**	**1.9**	**63.0**
Call on OPEC crude (and stocks)	**30.7**	**-1.7**	**28.9**	**1.2**	**30.2**	**0.0**	**30.2**	**0.2**	**30.3**	**-0.2**	**30.1**	**-0.7**	**29.4**
OPEC Crude Oil Supply (Last known number dragged fwd)	31.1	-2.0	29.1	0.1	29.2	0.7	29.9	1.4	31.3	-0.9	30.4	-0.6	29.8
Implied World Oil Stock Change	**0.5**		**0.2**		**-1.0**		**-0.3**		**1.0**		**0.3**		**0.4**

OPEC World Oil Supply-Demand Balance (Jan 2013):	2008	Change	2009	Change	2010	Change	2011	Change	2012	Change	2013	Change	2014
OECD Demand	48.4	-2.0	46.4	0.6	47.0	-0.5	46.5	-0.5	46.0	-0.2	45.8	-0.2	45.6
Non-OECD Demand	37.7	0.7	38.4	1.9	40.3	1.3	41.6	1.3	42.9	1.2	44.1	1.2	45.3
Total Demand	**86.1**	**-1.3**	**84.8**	**2.5**	**87.3**	**0.8**	**88.1**	**0.8**	**88.9**	**1.0**	**89.9**	**1.0**	**90.9**
Non-OPEC Supply (Incl all Biofuel)	50.4	0.7	51.1	1.2	52.3	0.1	52.4	0.5	52.9	1.2	54.1	1.3	55.4
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	0.2	5.8	0.1	5.9
Total Non-OPEC supply	**54.5**	**0.9**	**55.4**	**1.9**	**57.3**	**0.5**	**57.8**	**0.7**	**58.5**	**1.4**	**59.9**	**1.4**	**61.3**
Call on OPEC crude (and stocks)	**31.6**	**-2.2**	**29.4**	**0.6**	**30.0**	**0.3**	**30.3**	**0.1**	**30.4**	**-0.4**	**30.0**	**-0.4**	**29.6**
OPEC Crude Oil Supply (Last known number dragged fwd)	31.2	-2.5	28.7	0.5	29.2	0.7	29.9	1.4	31.3	-0.9	30.4	-0.6	29.8
Implied World Oil Stock Change	**-0.4**		**-0.7**		**-0.8**		**-0.4**		**0.9**		**0.4**		**0.2**

EIA World Oil Supply-Demand balance (Jan 2014):	2008	Change	2009	Change	2010	Change	2011	Change	2012	Change	2013	Change	2014
OECD Demand	47.6	-2.2	45.4	0.7	46.1	-0.3	45.8	0.1	45.9	0.1	46.1	-0.1	46.0
Non-OECD Demand	38.2	0.7	38.9	2.1	41.0	1.5	42.5	0.8	43.3	1.1	44.3	1.3	45.6
Total Demand	**85.8**	**-1.5**	**84.3**	**2.7**	**87.1**	**1.2**	**88.3**	**0.9**	**89.2**	**1.2**	**90.4**	**1.2**	**91.6**
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	1.9	56.1
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	0.1	5.8	0.1	6.0
Total Non-OPEC supply	**54.1**	**1.1**	**55.2**	**2.1**	**57.3**	**-0.1**	**57.2**	**1.2**	**58.4**	**1.5**	**60.0**	**2.1**	**62.0**
Call on OPEC crude (and stocks)	**31.7**	**-2.6**	**29.1**	**0.7**	**29.8**	**1.3**	**31.1**	**-0.3**	**30.8**	**-0.3**	**30.4**	**-0.9**	**29.6**
OPEC Crude Oil Supply (Last known number dragged fwd)	31.3	-2.2	29.1	0.1	29.2	0.7	29.9	1.4	31.3	-0.9	30.4	-0.6	29.8
Implied World Oil Stock Change	**-0.4**		**0.0**		**-0.6**		**-1.1**		**0.6**		**0.0**		**0.3**

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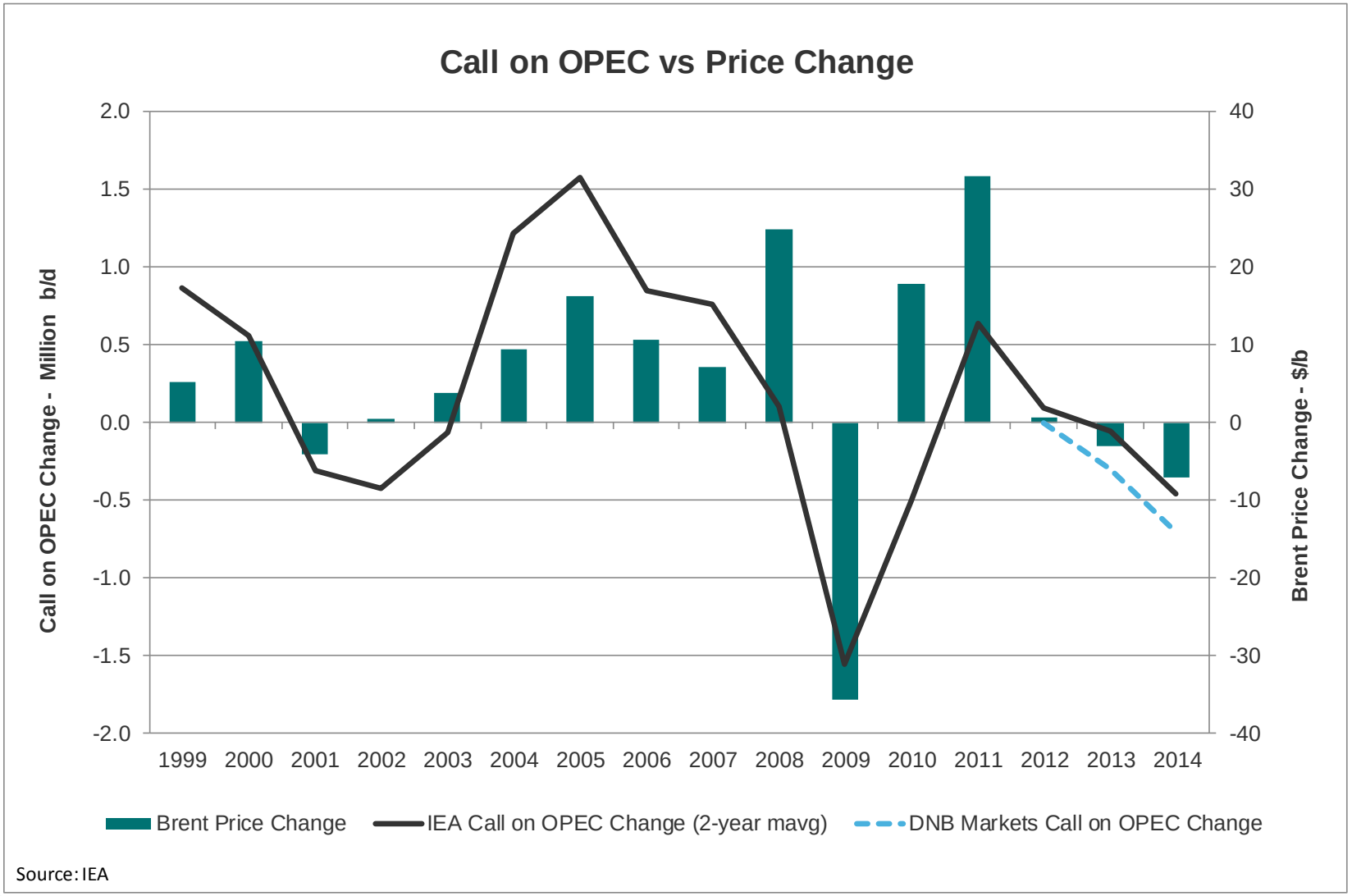
The Average Price Drops If Call On OPEC Drops

- The average oil price drops if the “Call on OPEC” drops significantly



Source: IEA

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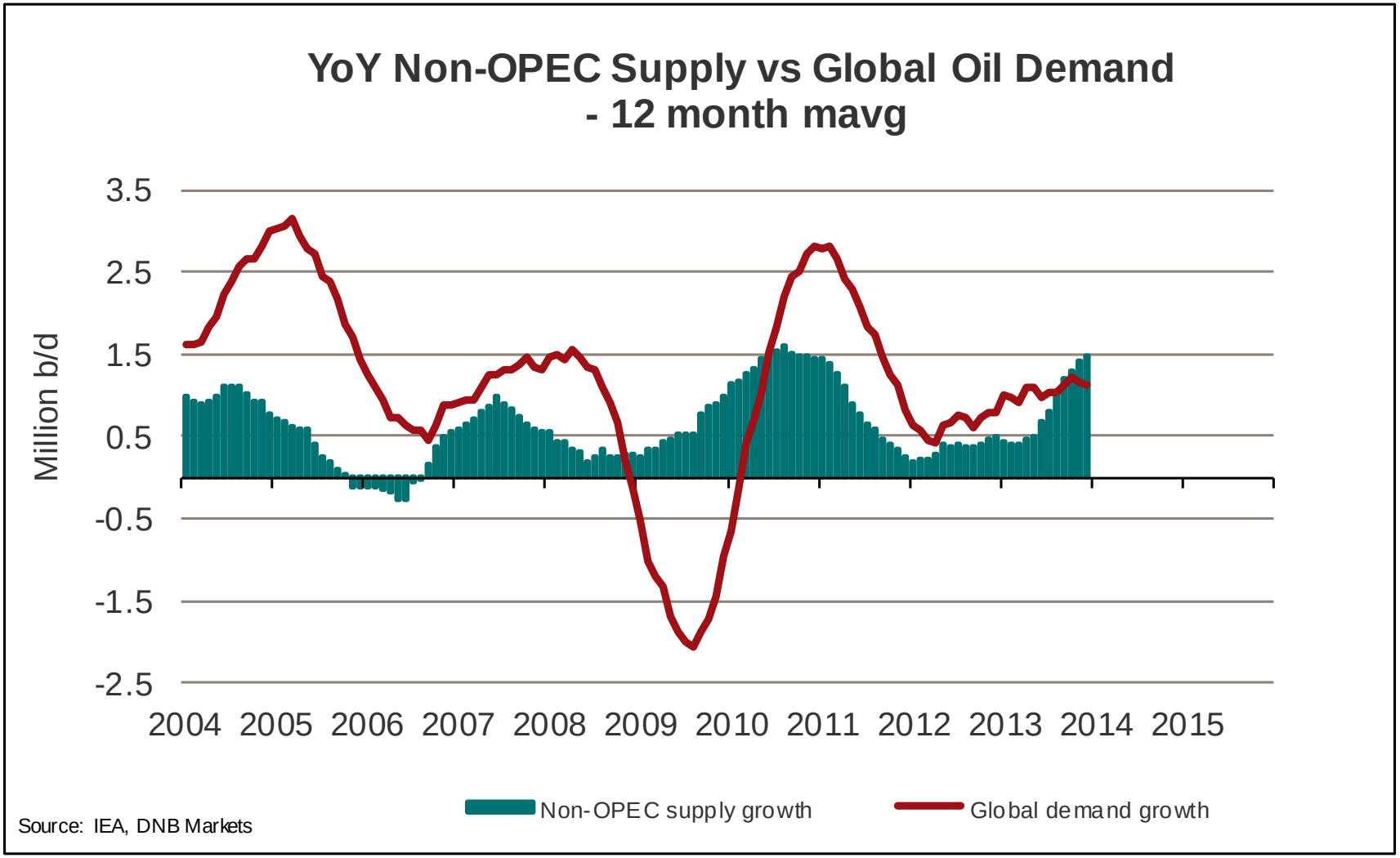
Non-OPEC Growth vs Global Oil Demand Growth

- Non-OPEC supply growth now above global oil demand growth



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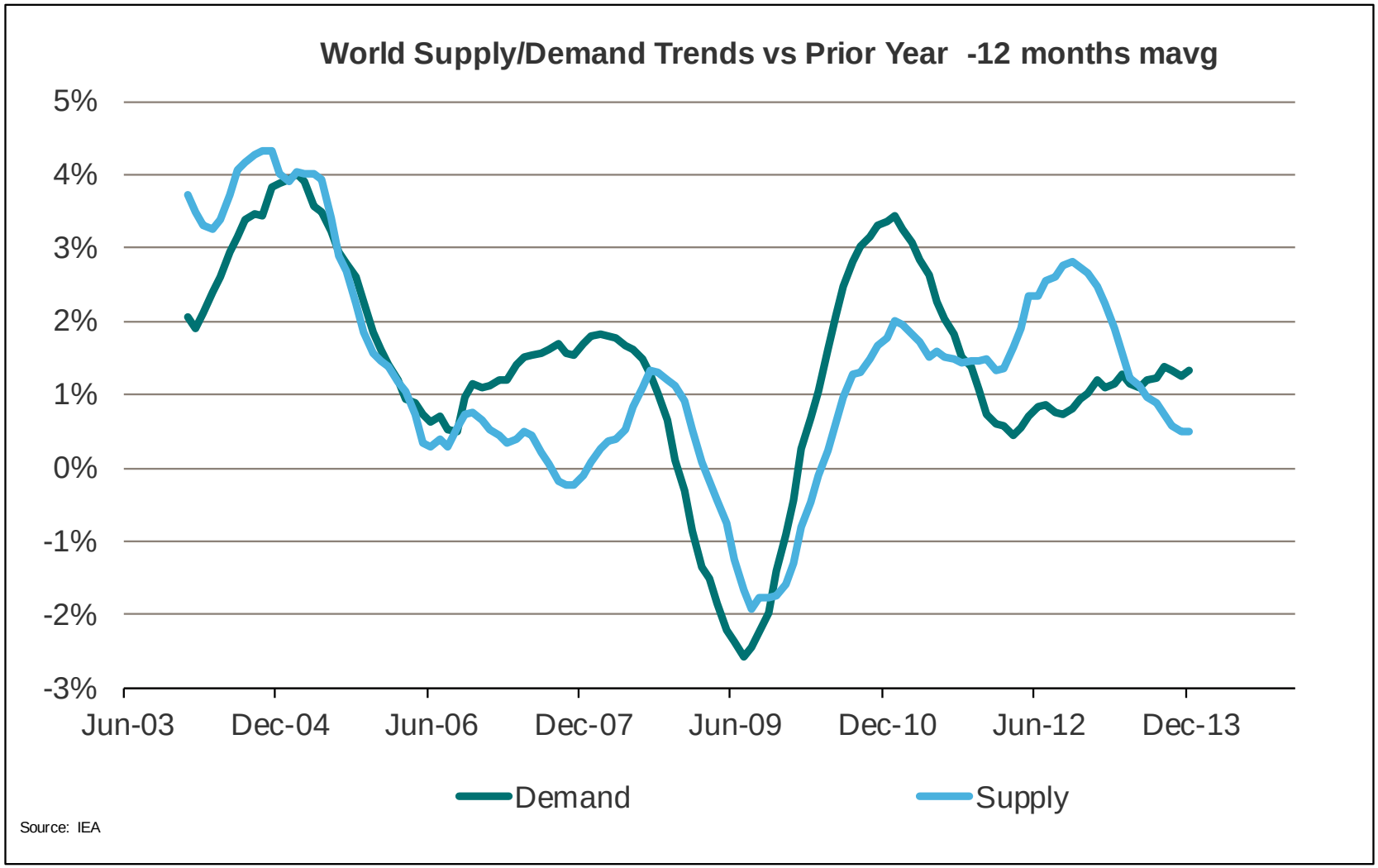
Trend Line Global Oil Supply & Oil Demand



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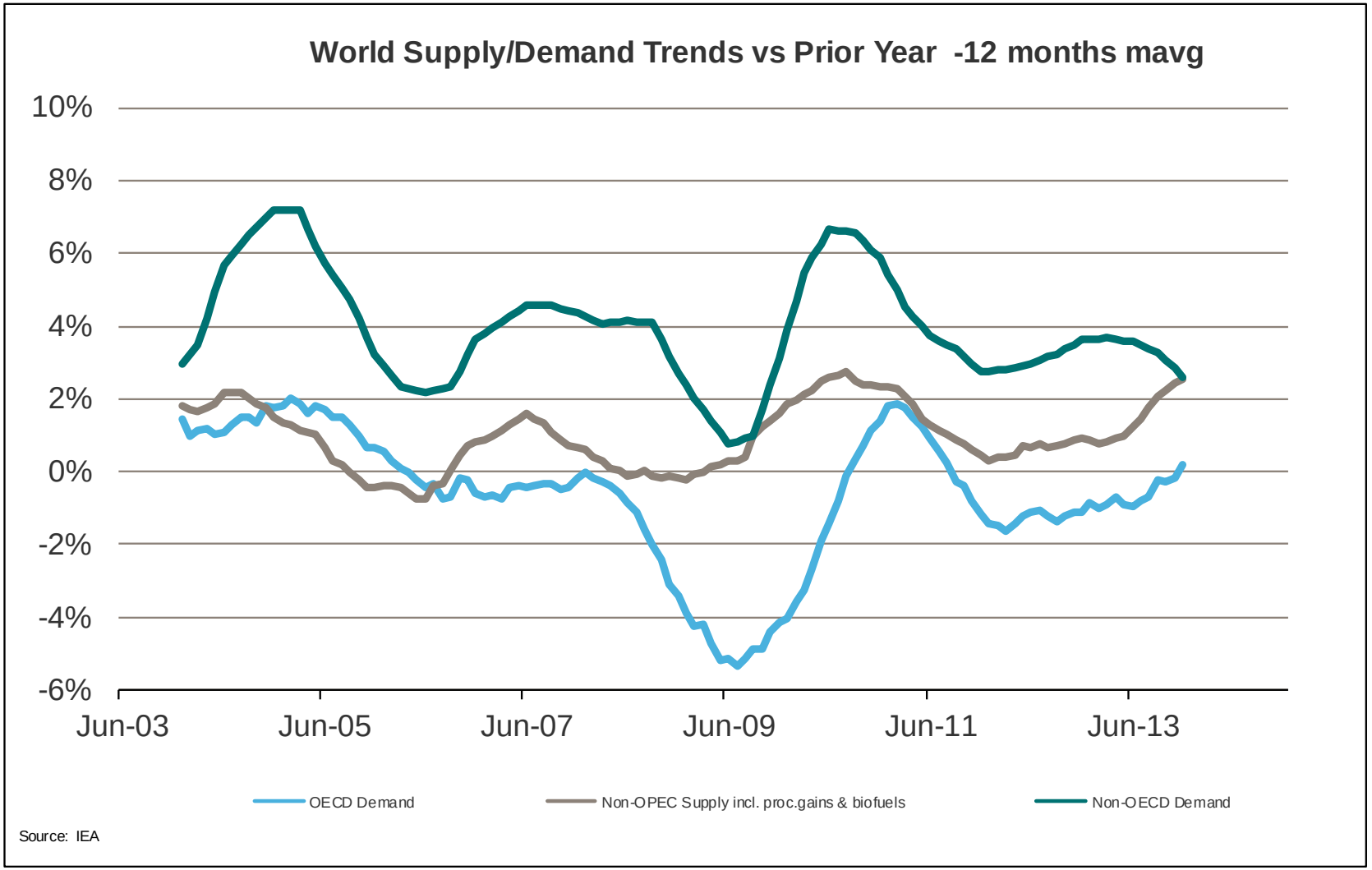
Trend Line Global Oil Supply & Oil Demand



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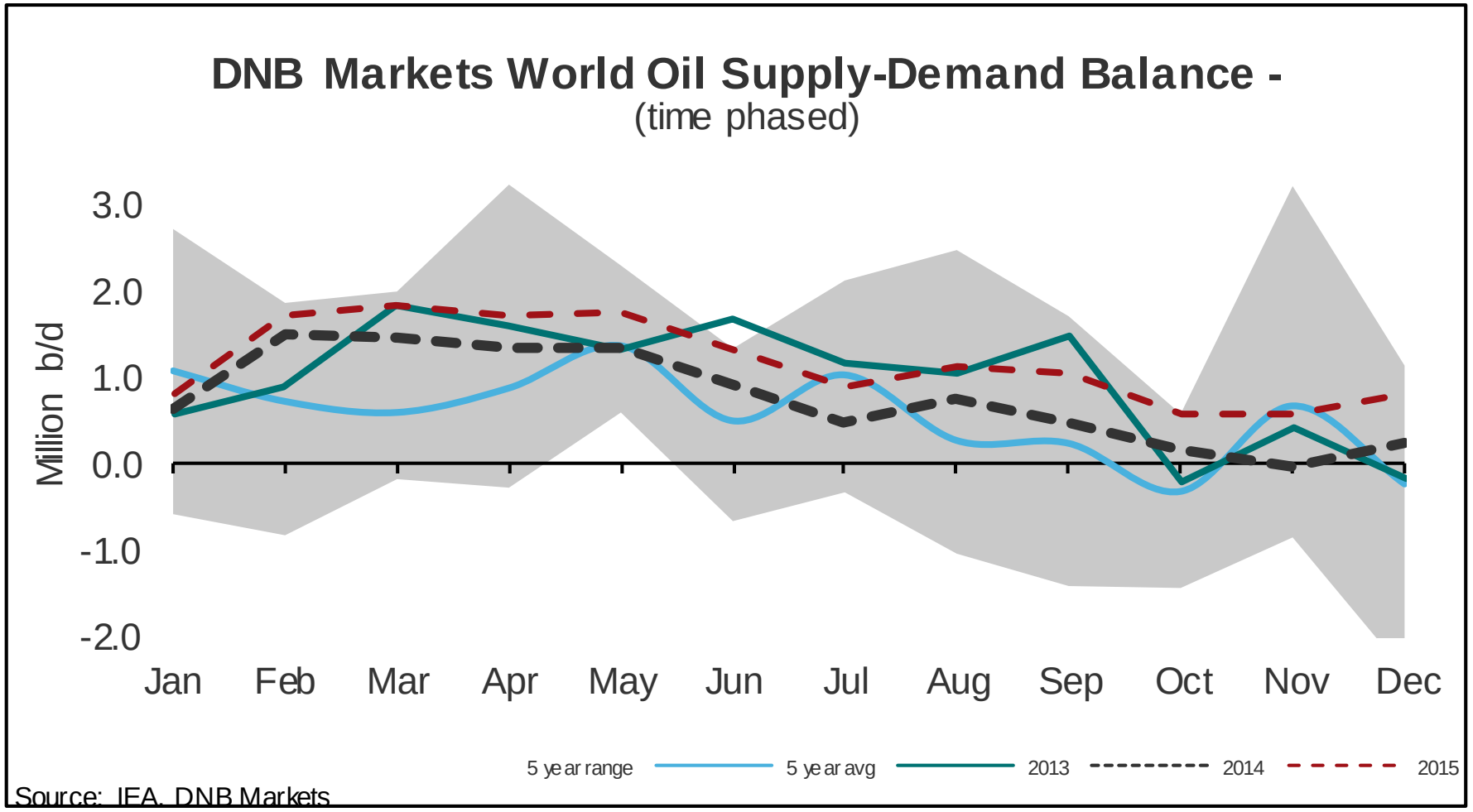
DNB Markets Global Fundamental Oil Balance

- If OPEC continue to produce at the latest known level (based on IEAs latest assessment of OPEC crude output)



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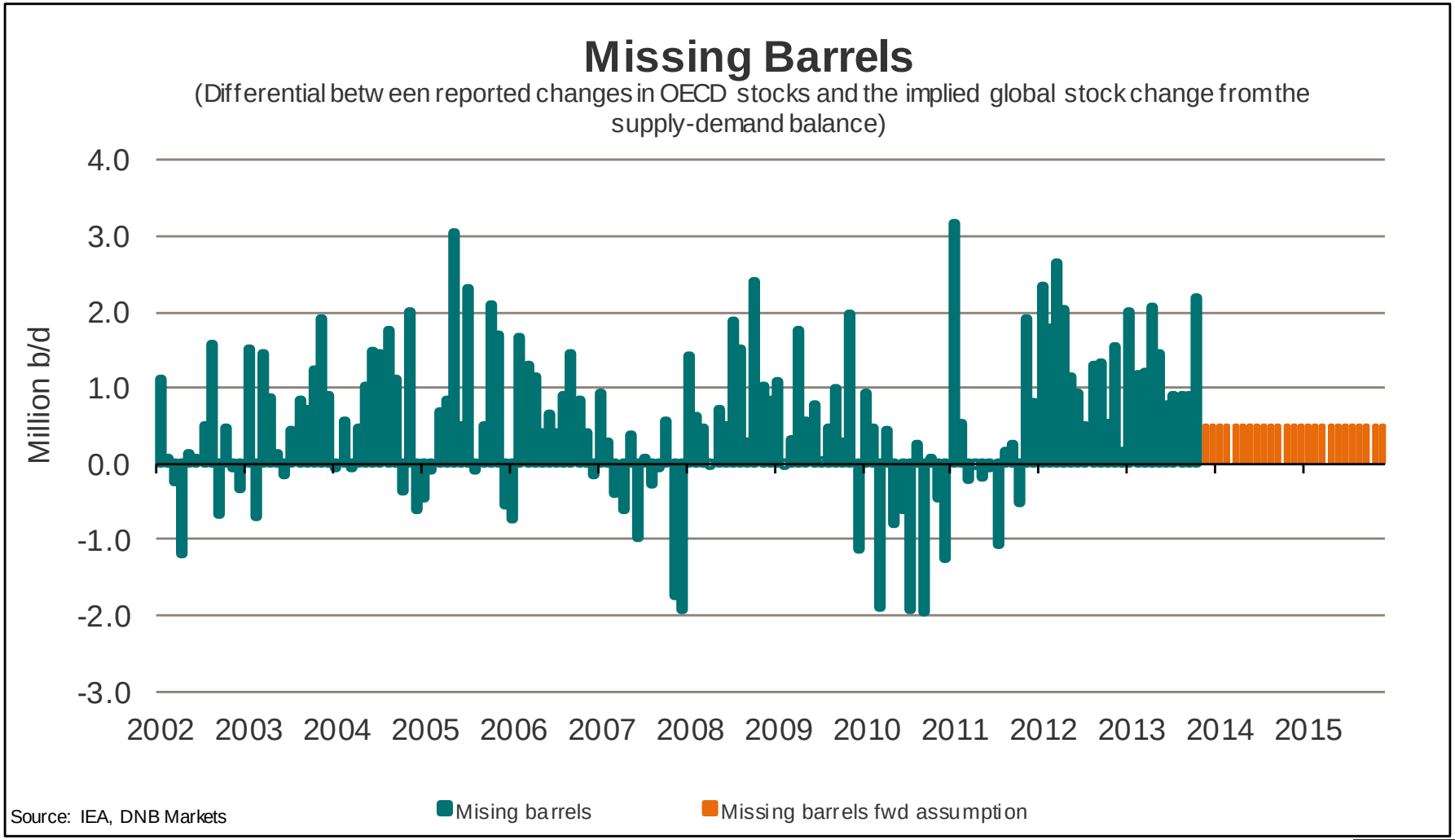
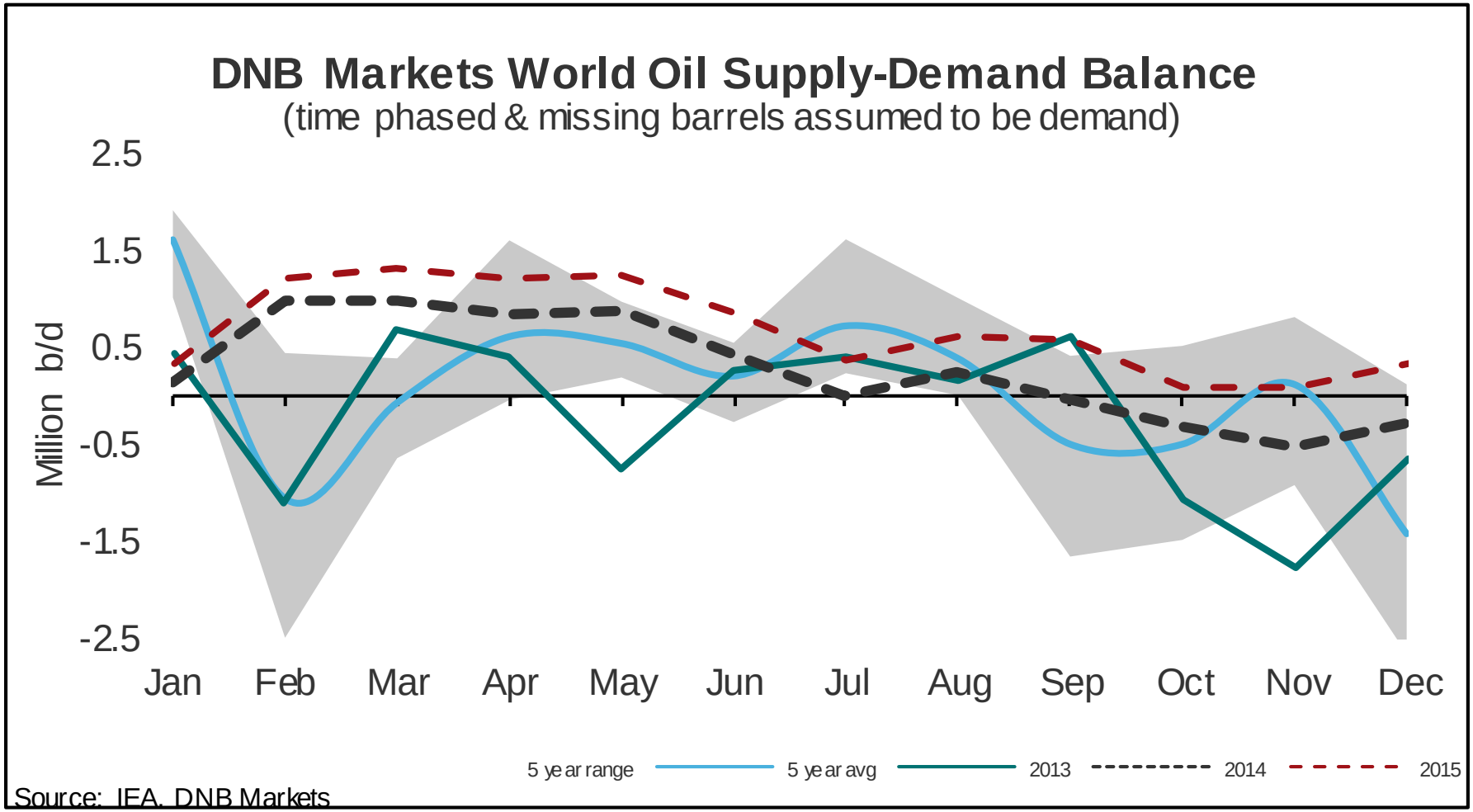
Missing Oil Barrels

- Difference between reported OECD stock changes and the calculated global stock change based on supply vs demand
- If the graph is positive it means demand was higher than reported, supply lower than reported or stock builds in Non-OECD



Global Supply-Demand Balance Adjusted For Missing Barrels

- Supply-demand balance adjusted for missing barrels better explains oil price changes in recent years



Source: IEA, DNB Markets

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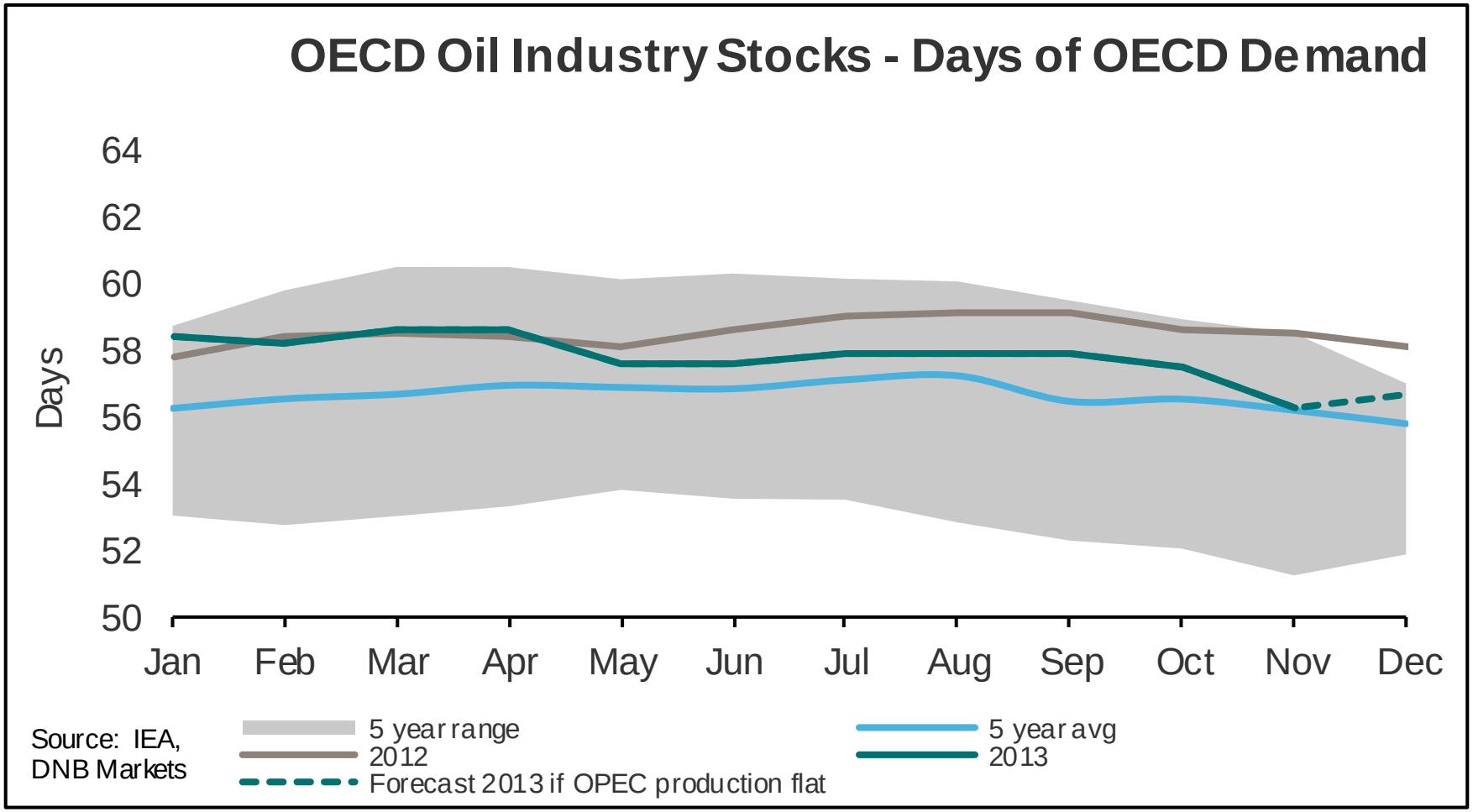
OECD Oil Stocks (Not including floating storage)

- If OPEC continue to produce at latest known level (from the IEA database)



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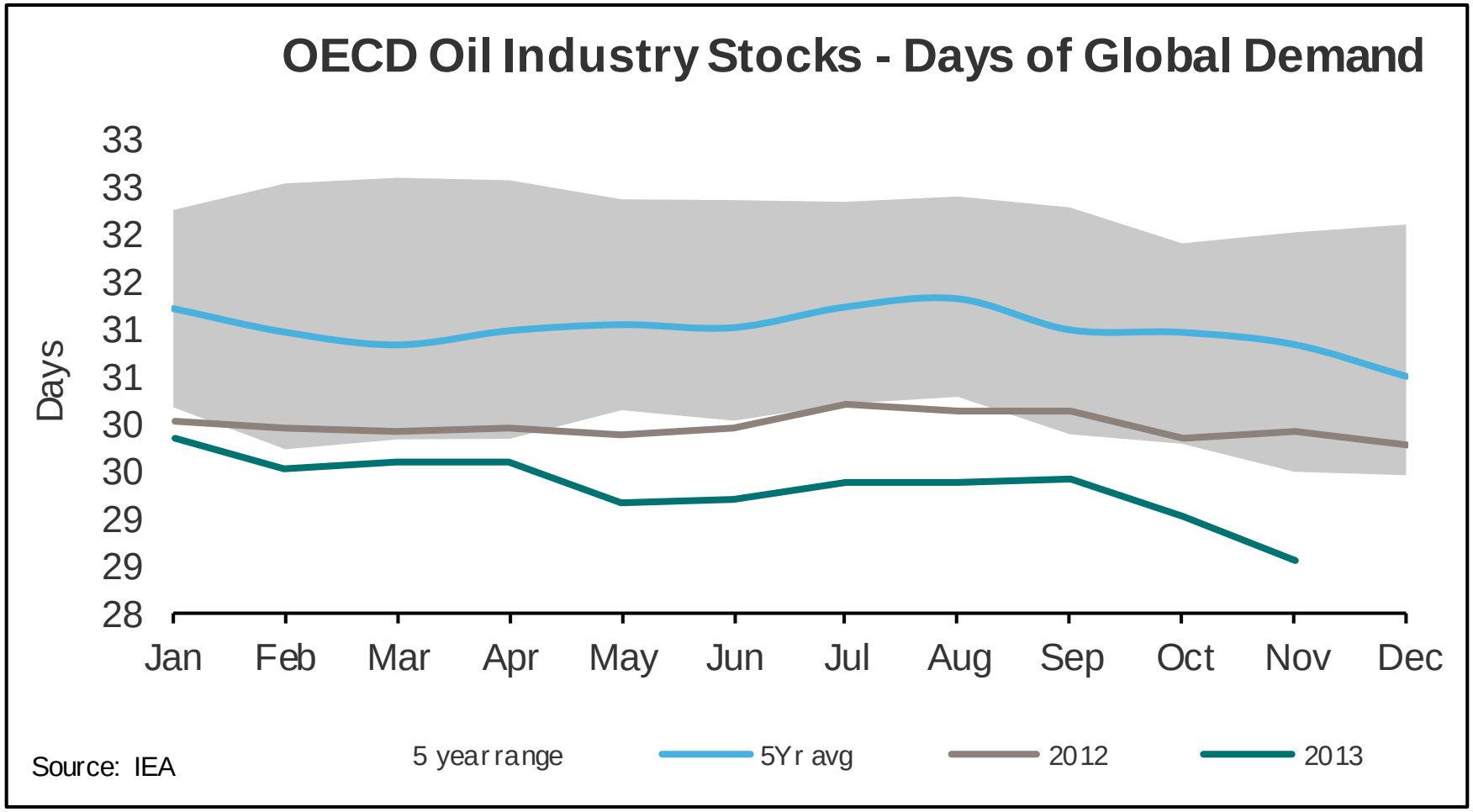
OECD Stocks vs Global Demand Instead of vs OECD Demand

- Not including floating storage



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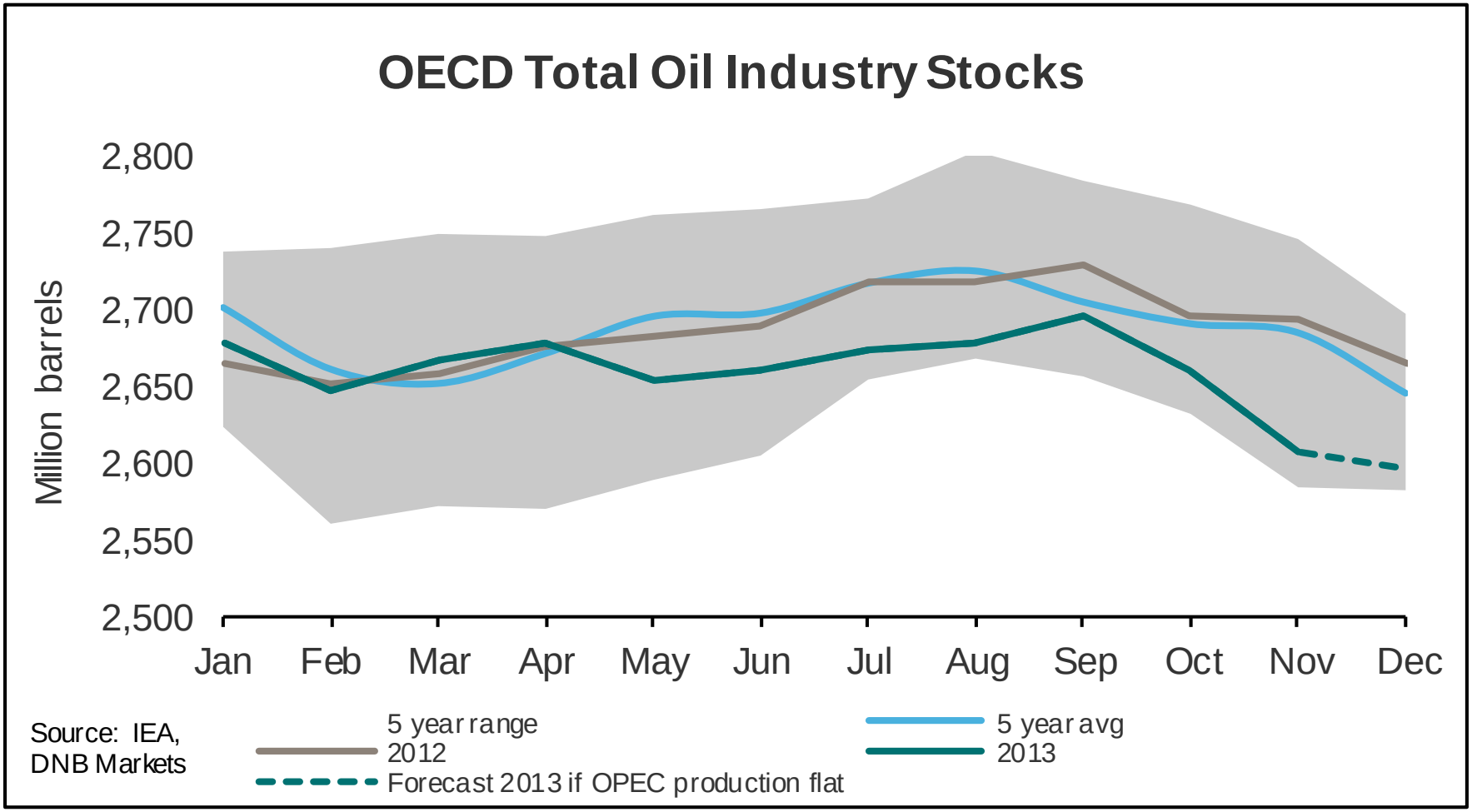
OECD Stocks Measured In Barrels Instead Of Days

- Not including floating storage



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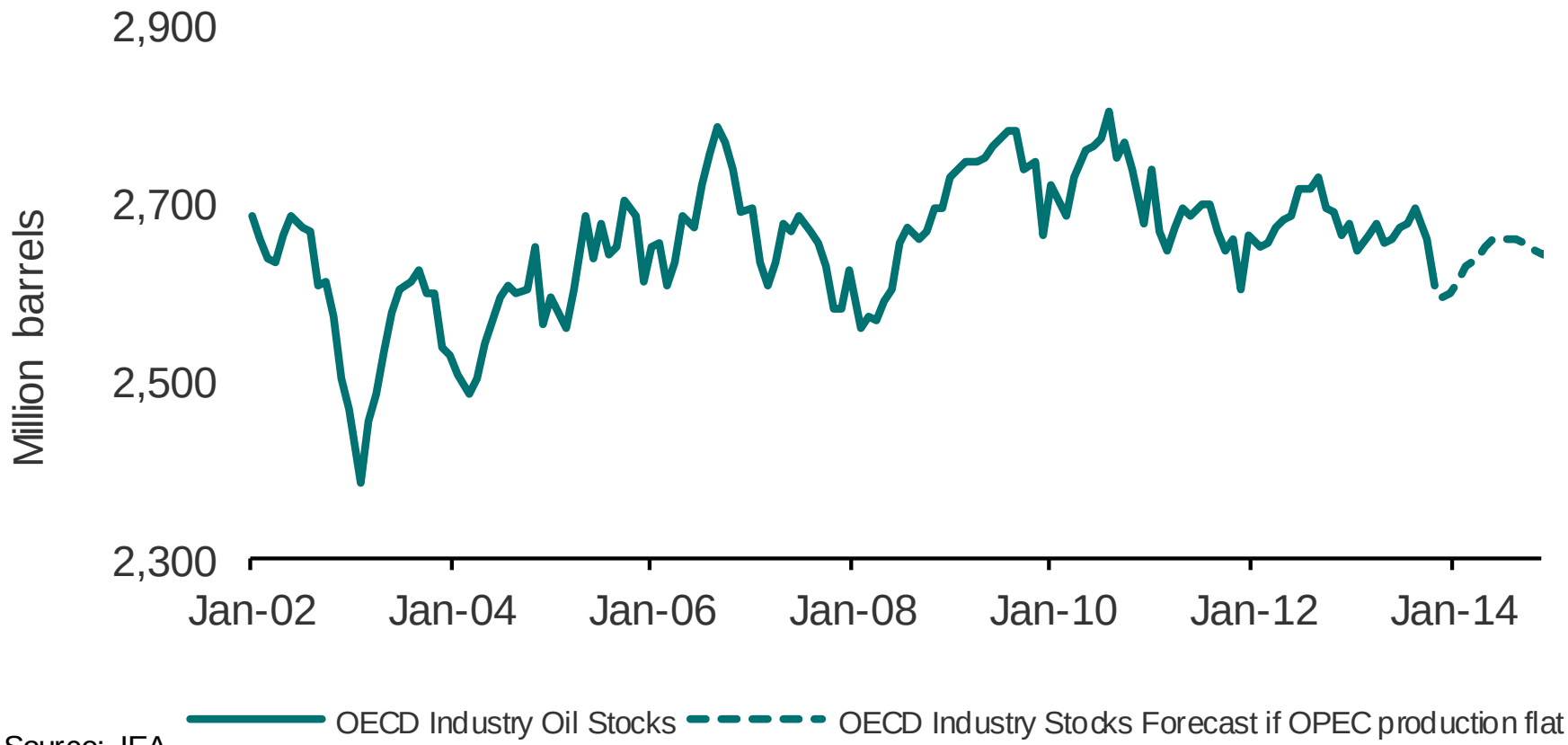
OECD Stocks Measured In Barrels Instead Of Days

- Not including floating storage



Source: IEA

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IEA’s Supply/Demand Numbers

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IEA Year-On-Year Demand Changes (IEA Forecast)

- Summary for key regions in thousand b/d

IEA Demand (YoY-changes)	2007	2008	2009	2010	2011	2012	2013	2014
North America (Canada, Mexico)	104	-70	-153	112	34	45	-22	16
US	-20	-1,243	-723	409	-227	-405	392	74
Europe	-177	-93	-758	-12	-412	-504	-135	-44
Australia, New Zealand, Japan, Korea	-7	-316	-385	121	58	342	-156	-145
Total OECD	**-100**	**-1,722**	**-2,019**	**631**	**-547**	**-523**	**80**	**-99**
Europe/Africa Med & FSU	193	150	-142	79	162	233	249	175
Middle East AG/Asia Pacific/East Africa	1,154	436	1,234	1,750	834	1,016	695	948
Middle East AG excl. Iran and Saudi	144	212	123	127	57	104	102	113
Iran	95	45	59	-209	-35	-20	-29	22
Saudi Arabia	87	152	196	218	104	133	57	92
Asia Pacific/East Africa excl. China and India	315	-16	384	541	238	152	249	273
China	381	-70	408	1,003	394	498	296	369
India	132	114	66	70	77	151	20	80
West Africa	79	51	23	89	48	65	-3	64
Latin America (excl. Mexico)	113	360	57	357	91	230	208	165
Total Non-OECD	**1,539**	**996**	**1,172**	**2,275**	**1,136**	**1,544**	**1,148**	**1,352**
North America	84	-1,313	-876	522	-193	-360	370	90
Europe/Africa Med & FSU	17	57	-900	67	-250	-272	114	131
Middle East AG/Asia Pacific/East Africa	1,146	119	849	1,871	892	1,358	539	803
Middle East AG	144	212	123	127	57	104	102	113
Asia Pacific/East Africa	308	-333	-2	662	296	493	93	128
West Africa	79	51	23	89	48	65	-3	64
Latin America (excl. Mexico)	113	360	57	357	91	230	208	165
Total World	**1,439**	**-727**	**-847**	**2,905**	**589**	**1,021**	**1,228**	**1,252**

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IEA Demand From Key Regions

- Summary for key regions in thousand b/d

Demand (levels)	2006	2007	2008	2009	2010	2011	2012	2013	2014
North America (Canada, Mexico)	4,353	4,456	4,386	4,233	4,346	4,379	4,424	4,402	4,418
US	21,050	21,031	19,788	19,065	19,474	19,247	18,842	19,234	19,308
Europe and Med	15,981	15,805	15,712	14,954	14,942	14,530	14,026	13,891	13,847
Australia, New Zealand, Japan, Korea, Chile	8,851	8,844	8,527	8,142	8,263	8,321	8,663	8,507	8,362
Total OECD	**50,235**	**50,135**	**48,413**	**46,394**	**47,025**	**46,478**	**45,955**	**46,035**	**45,936**
Europe/Africa Med & FSU	6,750	6,943	7,093	6,951	7,031	7,193	7,425	7,674	7,849
Middle East AG/Asia Pacific/East Africa	22,413	23,566	24,002	25,236	26,986	27,820	28,837	29,531	30,479
Middle East AG excl. Iran and Saudi	1,673	1,817	2,028	2,151	2,278	2,335	2,439	2,540	2,653
Iran	1,815	1,909	1,954	2,013	1,804	1,769	1,749	1,720	1,742
Saudi Arabia	2,033	2,120	2,272	2,467	2,685	2,789	2,921	2,979	3,071
Asia Pacific/East Africa excl. China and India	6,949	7,264	7,248	7,632	8,173	8,410	8,562	8,810	9,084
China	7,205	7,586	7,516	7,925	8,927	9,321	9,819	10,115	10,484
India	2,738	2,870	2,984	3,049	3,120	3,197	3,347	3,368	3,447
West Africa	1,014	1,093	1,144	1,166	1,255	1,303	1,367	1,364	1,428
Latin America (excl. Mexico)	5,194	5,308	5,667	5,724	6,081	6,172	6,402	6,610	6,775
Total Non-OECD	**35,371**	**36,910**	**37,906**	**39,078**	**41,352**	**42,488**	**44,031**	**45,179**	**46,531**
North America	25,403	25,487	24,174	23,298	23,820	23,627	23,266	23,636	23,726
Europe/Africa Med & FSU	22,731	22,748	22,805	21,905	21,972	21,723	21,451	21,565	21,696
Middle East AG/Asia Pacific/East Africa	31,264	32,410	32,529	33,378	35,249	36,141	37,499	38,038	38,841
Middle East AG	1,673	1,817	2,028	2,151	2,278	2,335	2,439	2,540	2,653
Asia Pacific/East Africa	15,800	16,108	15,775	15,773	16,435	16,731	17,225	17,318	17,446
West Africa	1,014	1,093	1,144	1,166	1,255	1,303	1,367	1,364	1,428
Latin America (excl. Mexico)	5,194	5,308	5,667	5,724	6,081	6,172	6,402	6,610	6,775
Total World	**85,606**	**87,045**	**86,319**	**85,471**	**88,377**	**88,965**	**89,986**	**91,214**	**92,466**

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IEA Supply Changes & Changes Since Prior Report

- Summary for key non-OPEC countries in thousand b/d

Liquids Supply	Change 2007	Change 2008	Change 2009	Change 2010	Change 2011	Change 2012	Change 2013	Change 2014
Canada	101	-73	-31	128	193	225	233	195
Mexico	-210	-315	-186	-20	-18	-22	-30	-7
Norway	-221	-86	-107	-222	-96	-126	-80	-23
United Kingdom	0	-96	-88	-120	-246	-172	-86	-95
United States	40	-83	455	354	351	1,050	1,161	1,012
Azerbaijan	212	44	144	-9	-118	-45	5	-59
Kazakhstan	58	24	133	60	11	-18	56	35
Russia	236	-73	196	247	141	131	148	76
South Sudan	0	0	0	0	171	-140	67	183
China	33	72	-7	273	24	74	2	100
Brazil	29	63	131	113	56	-44	-39	98
Colombia	5	57	82	116	130	29	63	110
Oman	-27	47	55	53	24	31	30	4
Sum:	**256**	**-420**	**777**	**972**	**624**	**973**	**1,529**	**1,628**

Change since prior report

Liquids Supply	Change 2007	Change 2008	Change 2009	Change 2010	Change 2011	Change 2012	Change 2013	Change 2014
Canada	0	0	0	0	0	0	0	0
Mexico	0	0	0	0	0	0	0	0
Norway	0	0	0	0	0	0	0	0
United Kingdom	0	0	0	0	0	0	0	0
United States	0	0	0	0	0	0	0	0
Azerbaijan	0	0	0	0	0	0	0	0
Kazakhstan	0	0	0	0	0	0	0	0
Russia	0	0	0	0	0	0	0	0
Sudan	0	0	0	0	0	0	0	0
China	0	0	0	0	0	0	0	0
Brazil	0	0	0	0	0	0	0	0
Colombia	0	0	0	0	0	0	0	0
Oman	0	0	0	0	0	0	0	0
Sum:	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

DNB MARKETS

IEA Supply By Key Non-OPEC Countries

- Summary for the key non-OPEC countries in thousand b/d

Liquids Supply	2006	2007	2008	2009	2010	2011	2012	2013	2014
Canada	3,208	3,309	3,236	3,205	3,333	3,526	3,751	3,984	4,179
Mexico	3,691	3,481	3,166	2,980	2,960	2,943	2,921	2,890	2,883
Norway	2,772	2,552	2,465	2,358	2,136	2,040	1,914	1,834	1,812
United Kingdom	1,664	1,664	1,569	1,481	1,361	1,115	943	857	762
United States	7,007	7,048	6,965	7,420	7,774	8,125	9,175	10,336	11,348
Azerbaijan	650	863	906	1,050	1,042	924	879	884	825
Kazakhstan	1,361	1,419	1,442	1,575	1,635	1,645	1,627	1,683	1,718
Russia	9,850	10,086	10,013	10,209	10,456	10,597	10,728	10,876	10,951
South Sudan	0	0	0	0	0	171	31	98	281
China	3,707	3,740	3,811	3,804	4,078	4,101	4,175	4,177	4,278
Brazil	1,807	1,836	1,898	2,030	2,143	2,199	2,155	2,116	2,214
Colombia	529	534	590	672	788	918	947	1,010	1,120
Oman	740	713	759	814	867	891	922	951	955
Sum:	**36,987**	**37,242**	**36,822**	**37,600**	**38,571**	**39,195**	**40,168**	**41,697**	**43,325**

DNB MARKETS

Margins, Cracks & Refinery Runs

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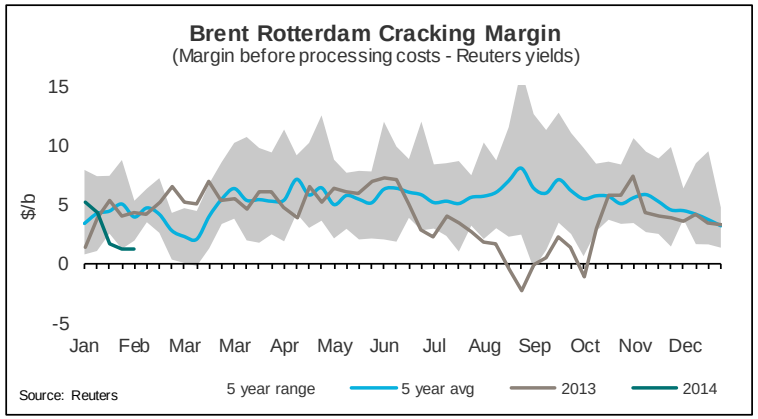
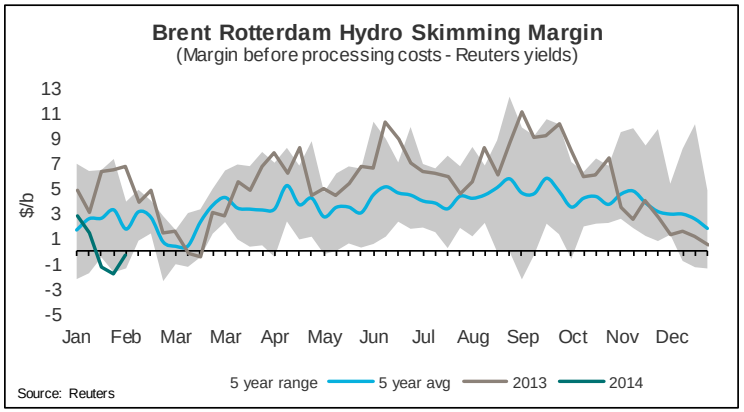
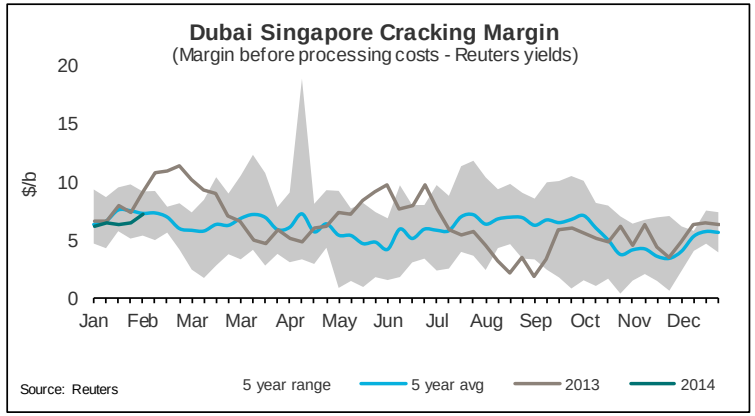
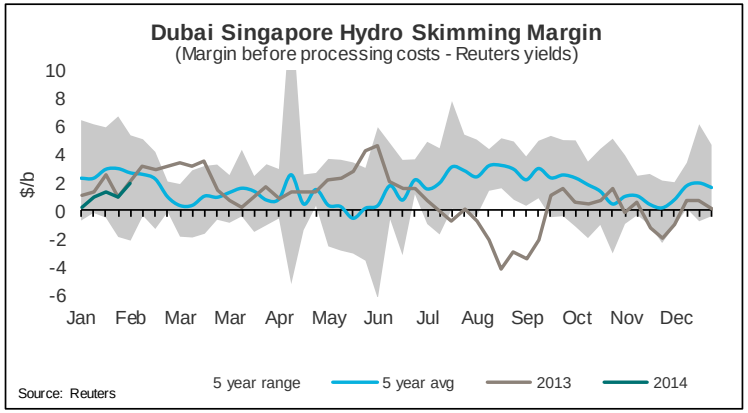
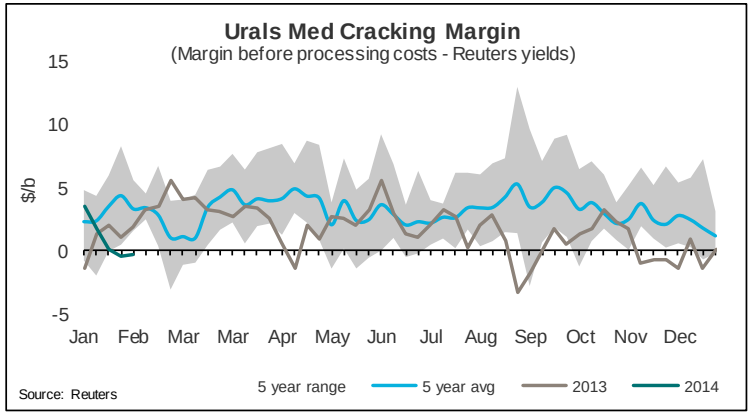
Refinery Margins Before Processing Costs

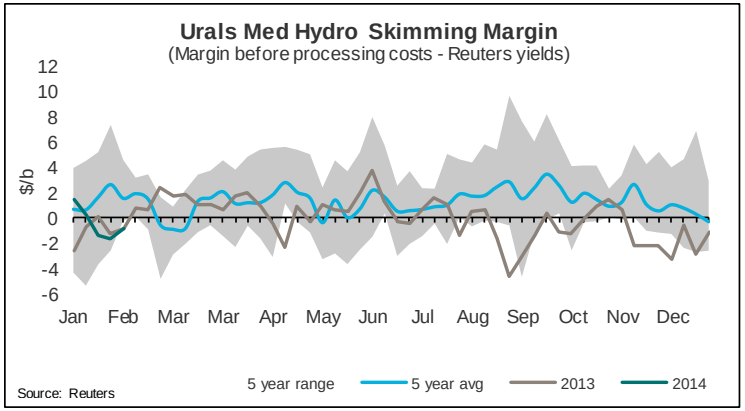












DNB MARKETS

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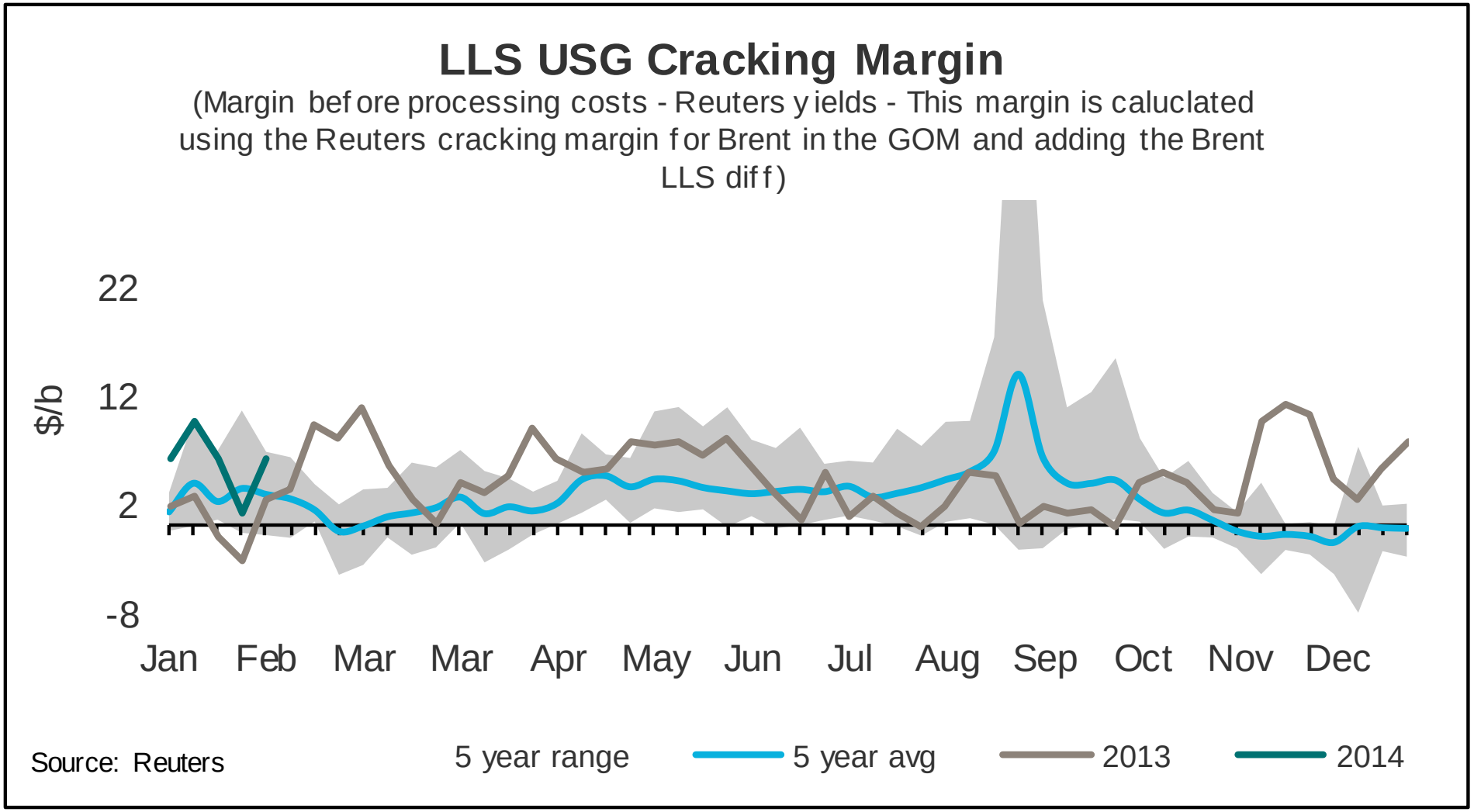
US GOM Margin Based On LLS

- Reuters yields



DNB MARKETS

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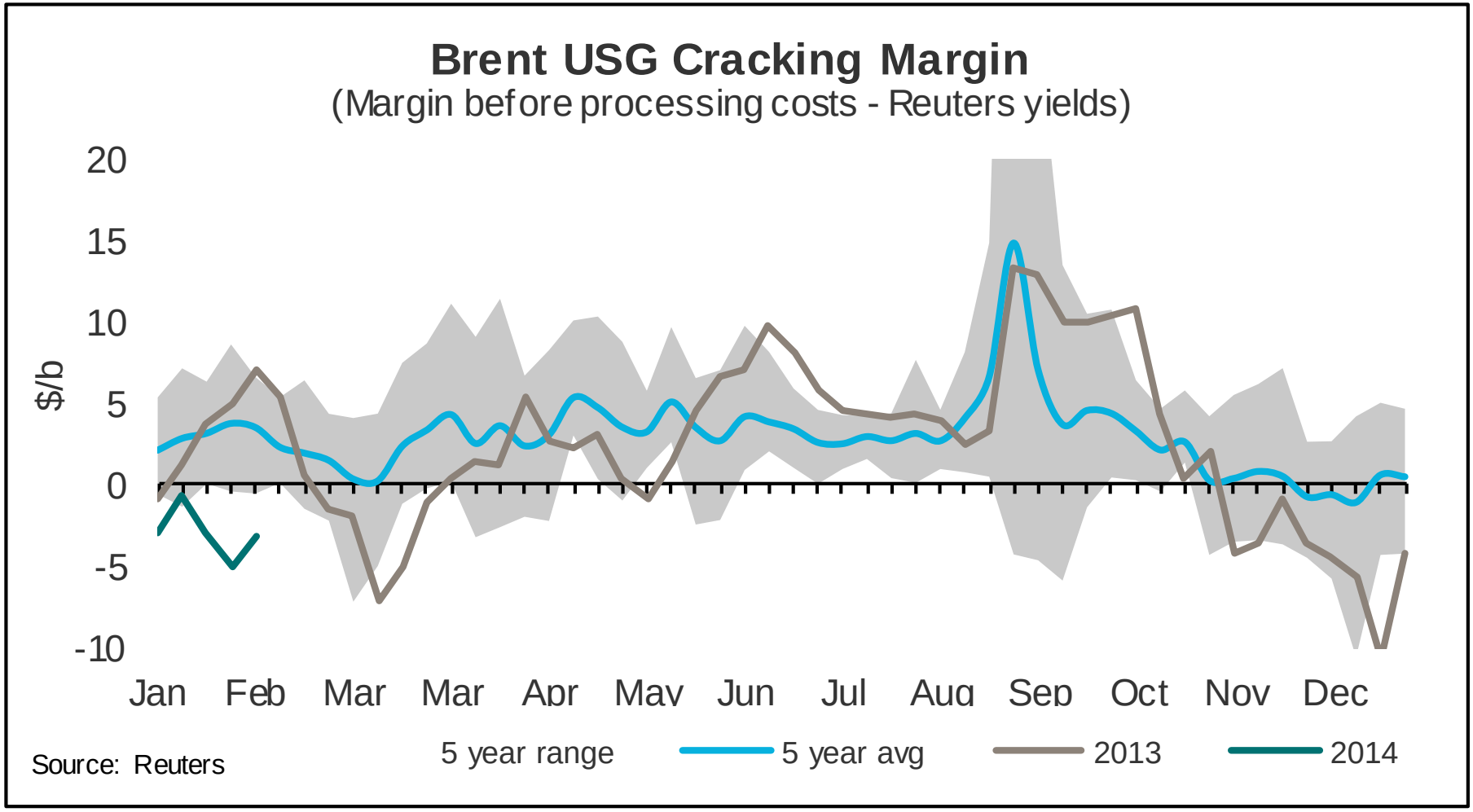
US GOM Margin Based On International Crude

- Reuters yields



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MARKETS

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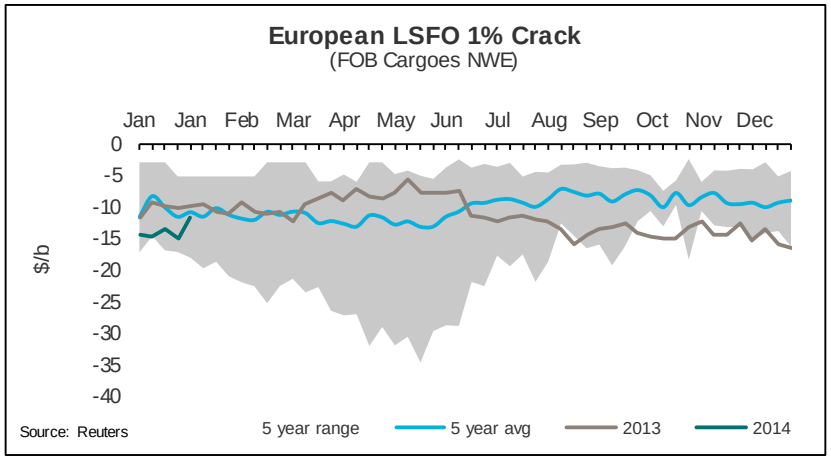
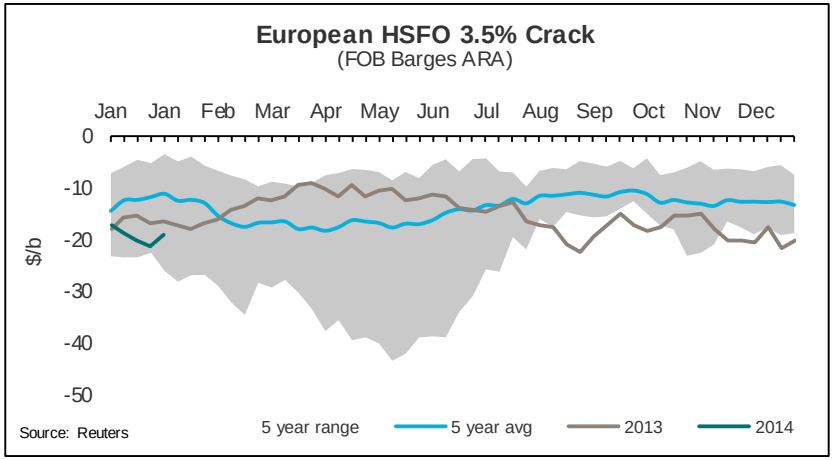
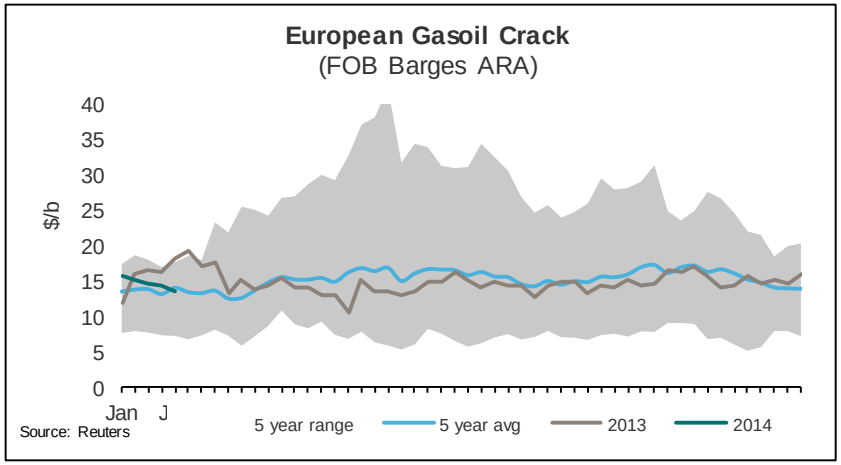
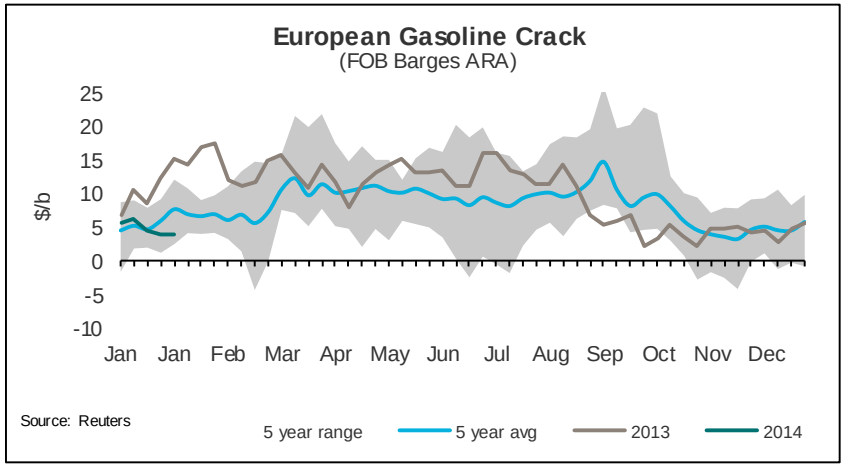
Key Product Crack Spreads - Europe









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MARKETS

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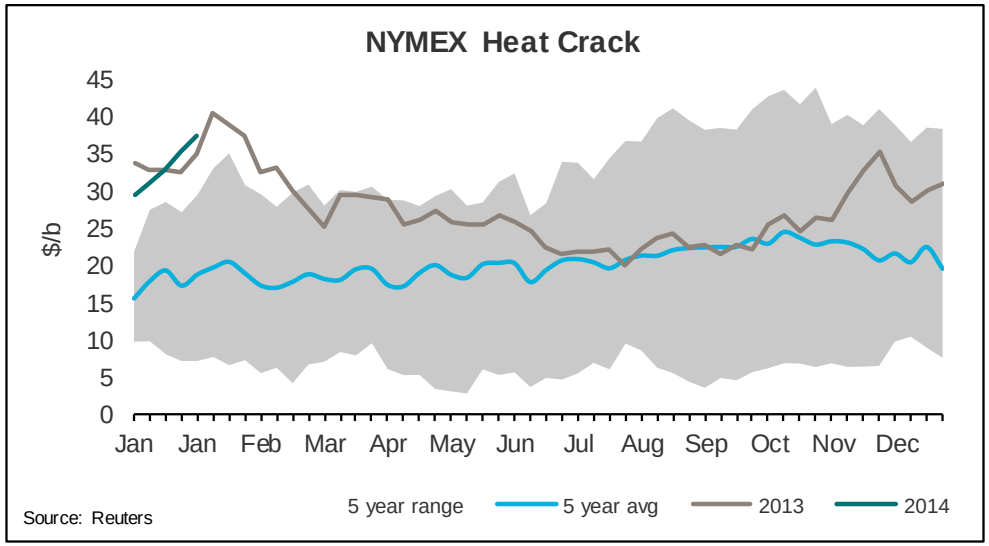
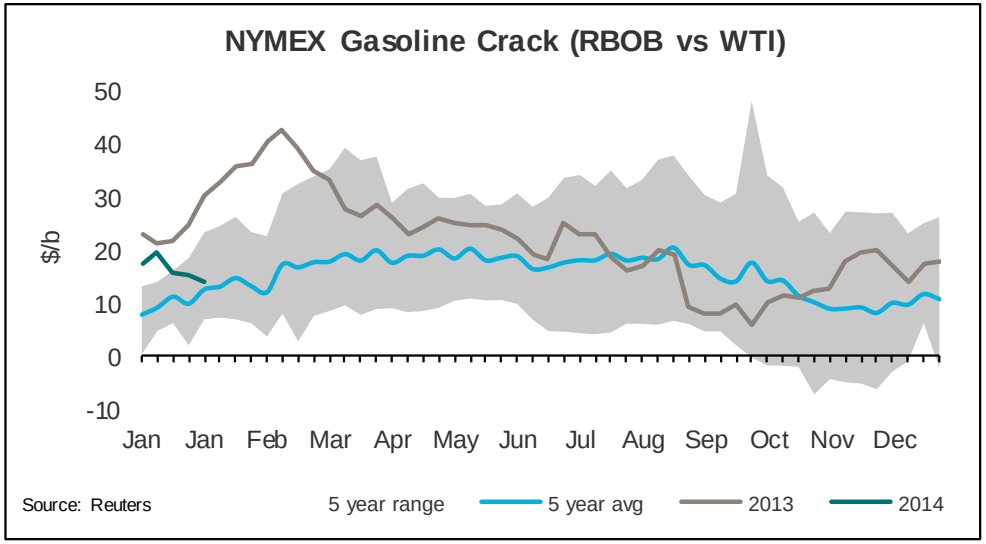
Key Product Crack Spreads – New York (NYMEX)





DNB

MARKETS

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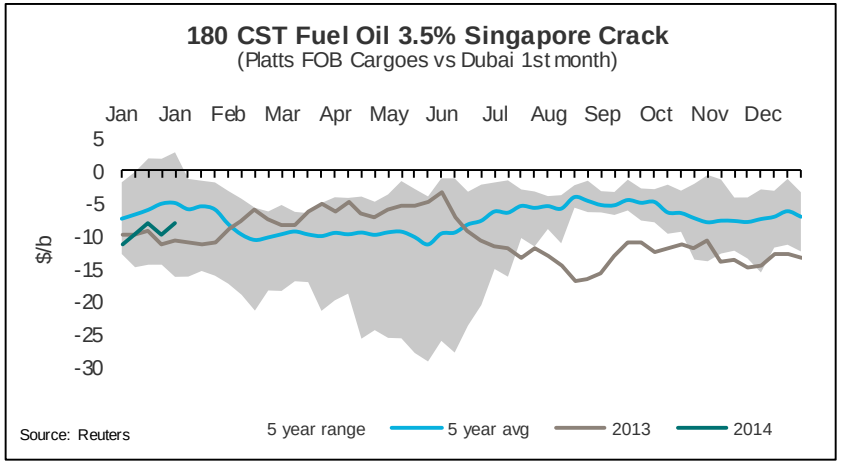
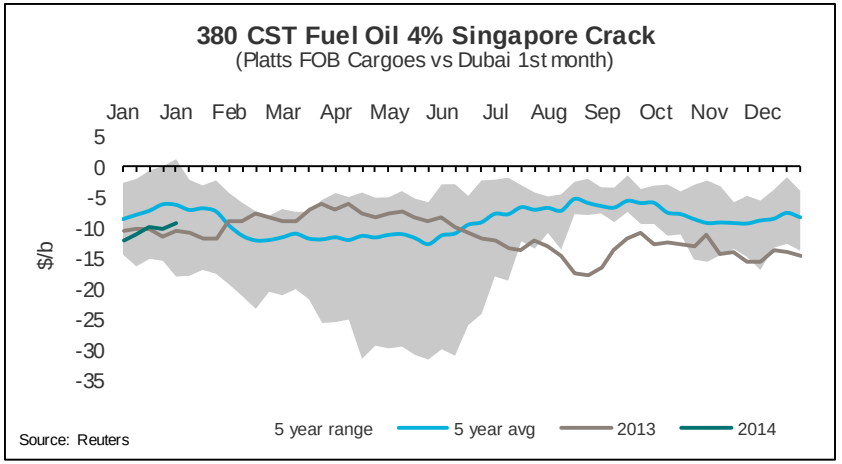
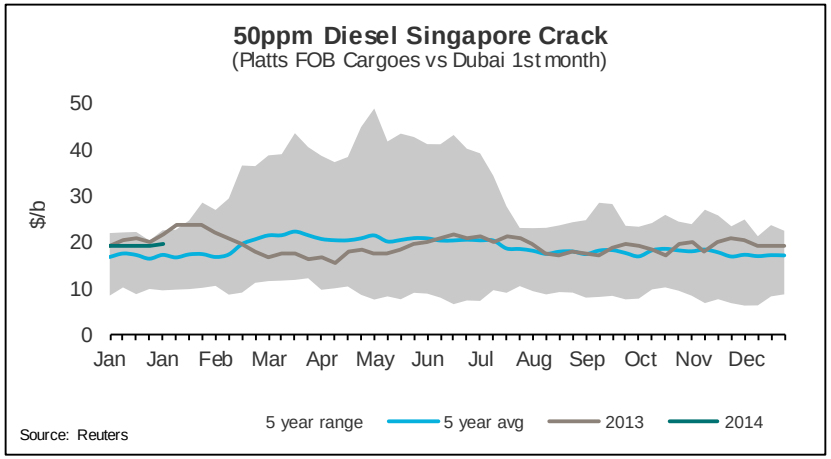
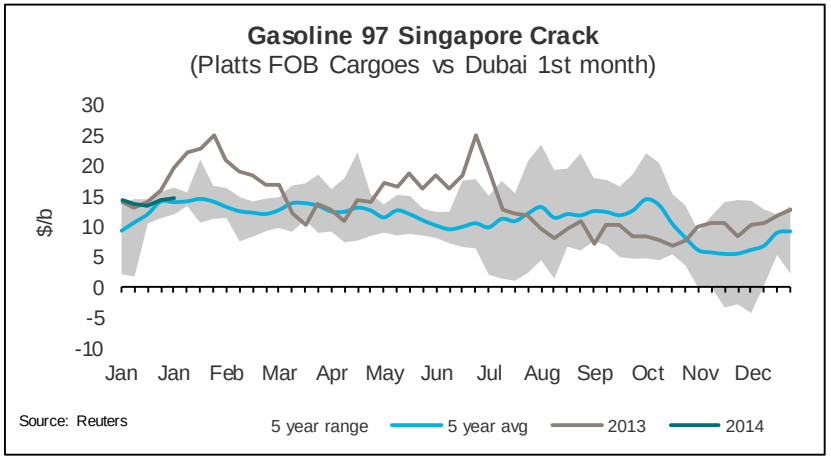
Key Product Crack Spreads - Singapore









DNB MARKETS

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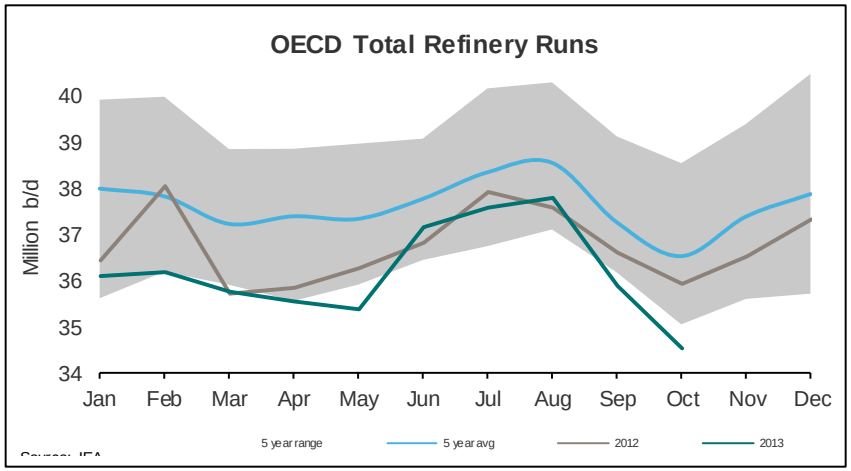
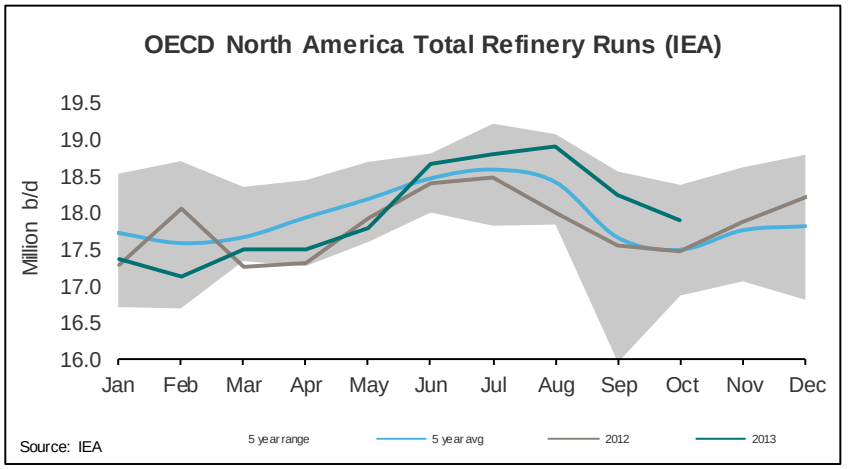
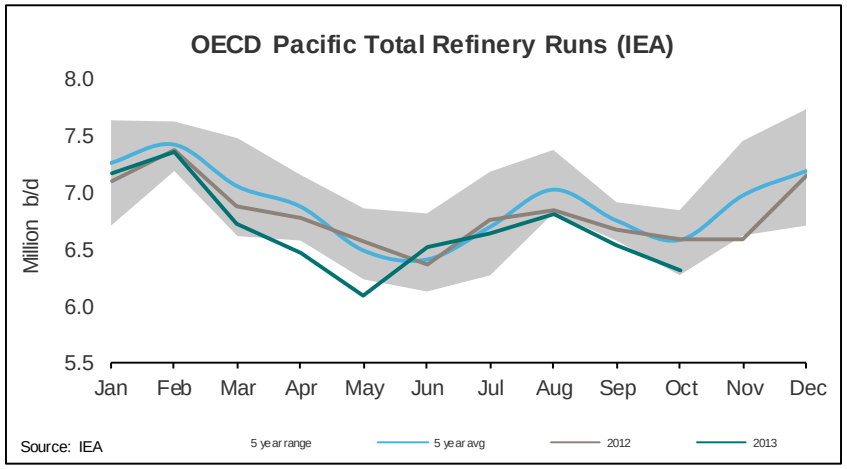
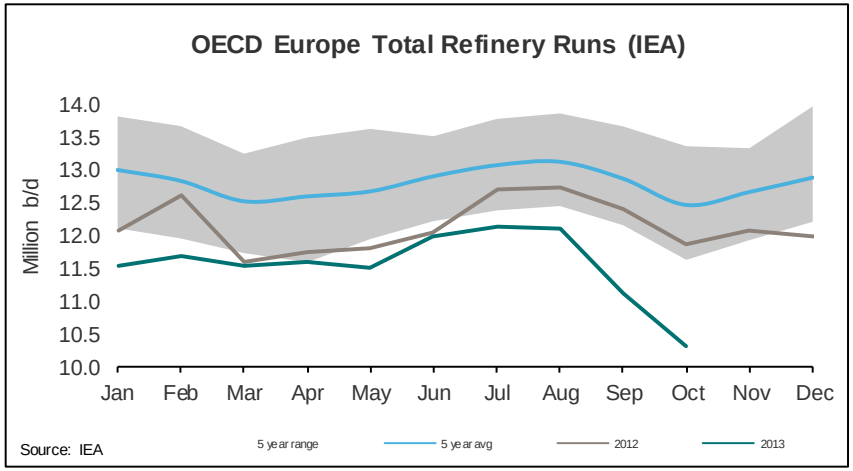
OECD Refinery Run Rates (IEA-Data)









DNB MARKETS

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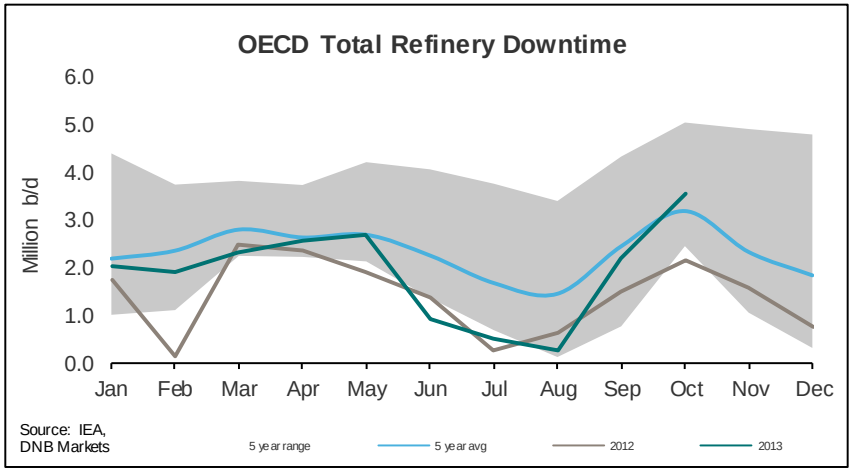
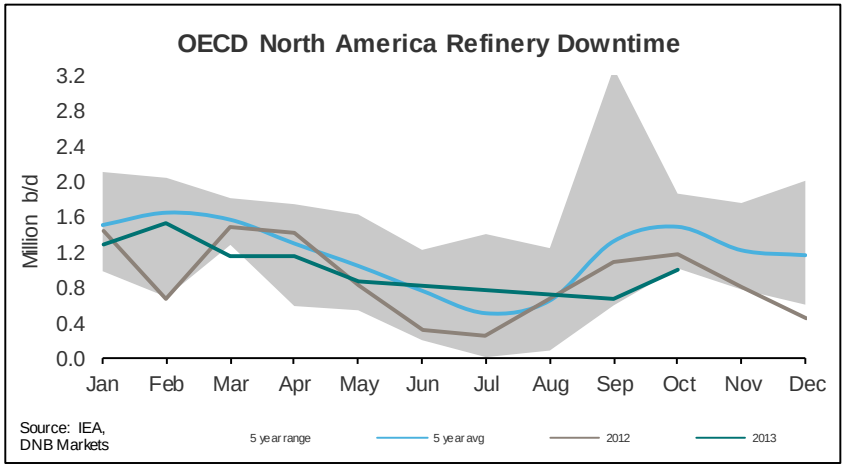
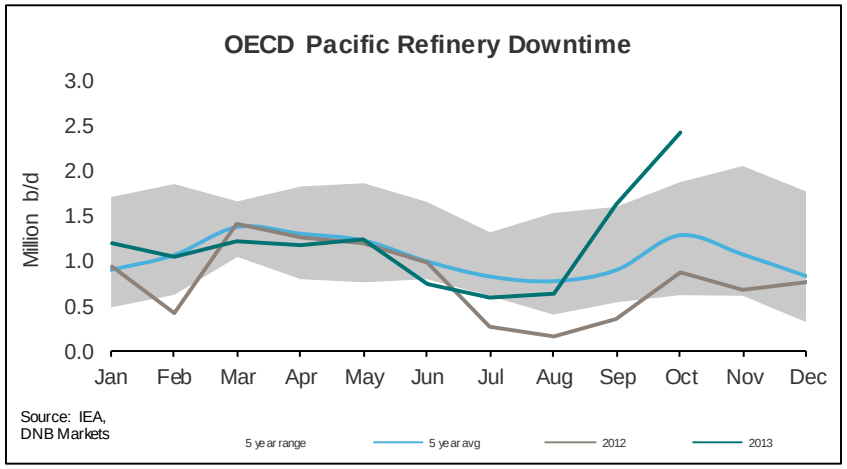
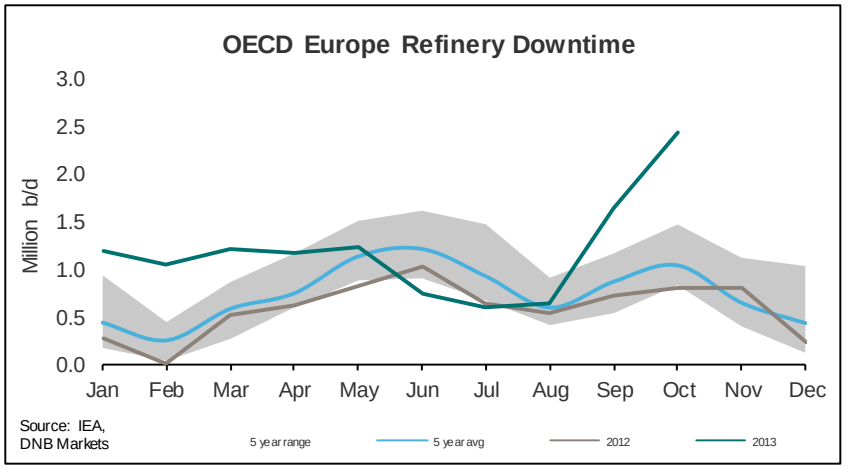
OECD Refinery Downtime (IEA-Data and DNB Calculations)









DNB MARKETS

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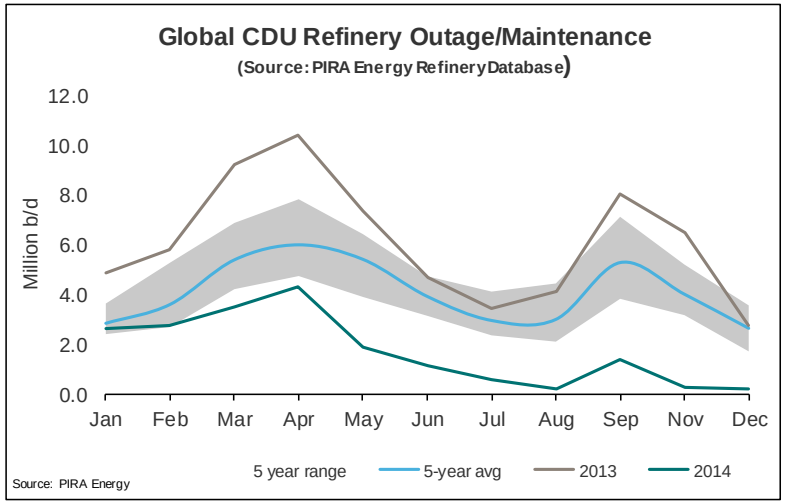
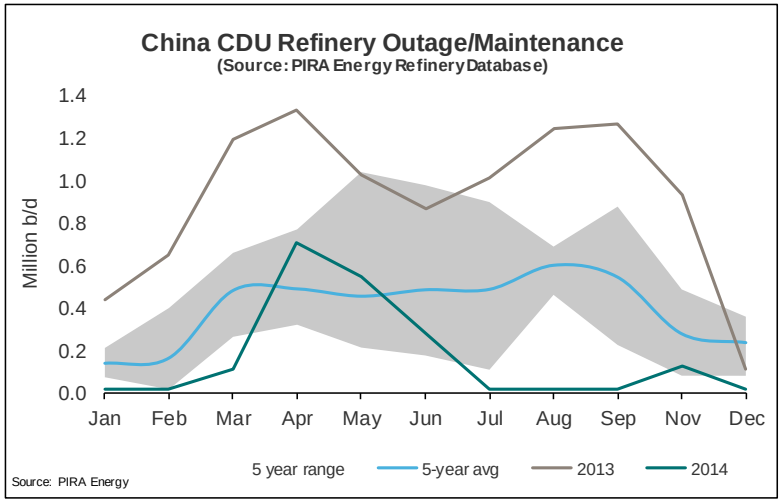
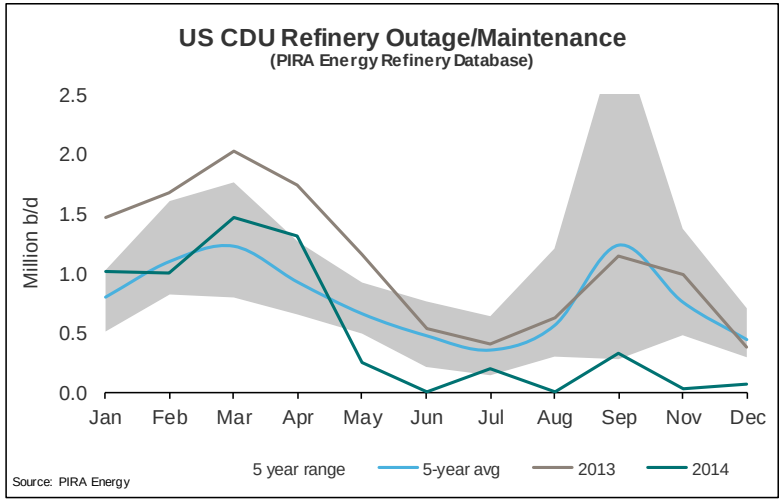
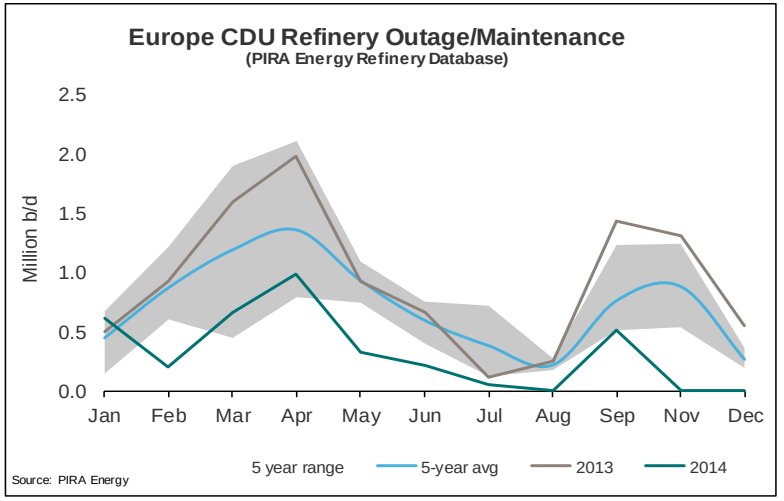
Refinery Outages & Planned Maintenance









DNB MARKETS

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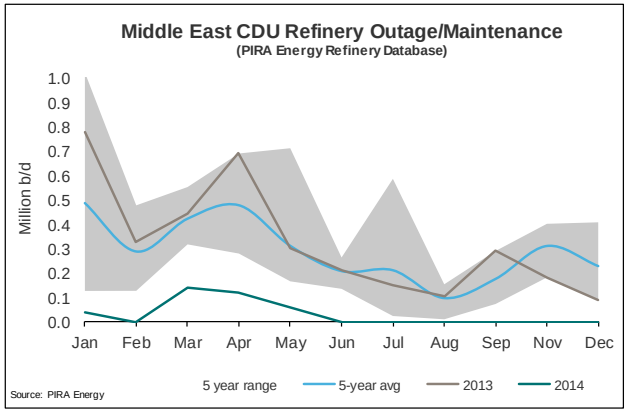
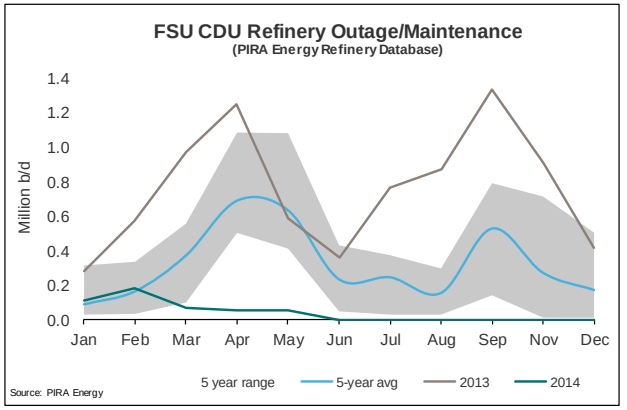
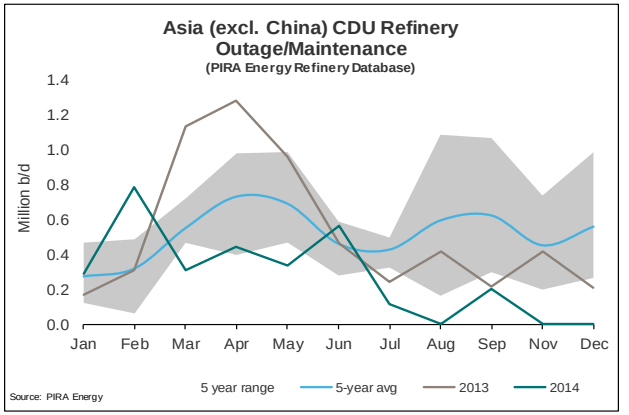
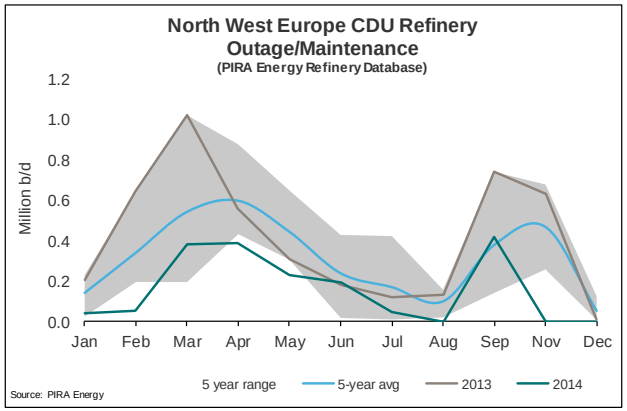
Refinery Outages & Planned Maintenance

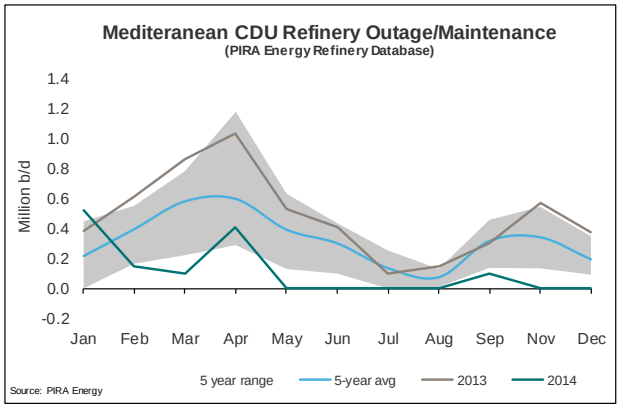
- Per region

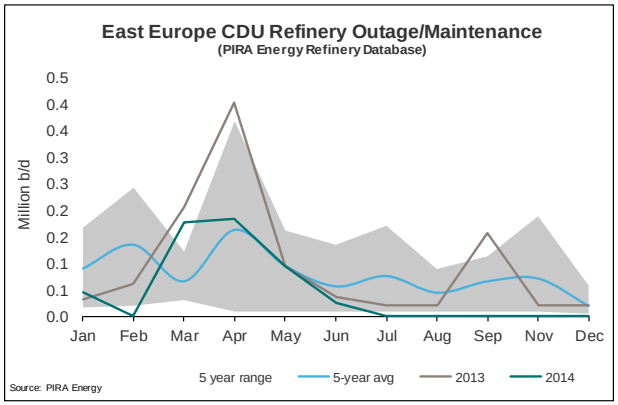












DNB MARKETS

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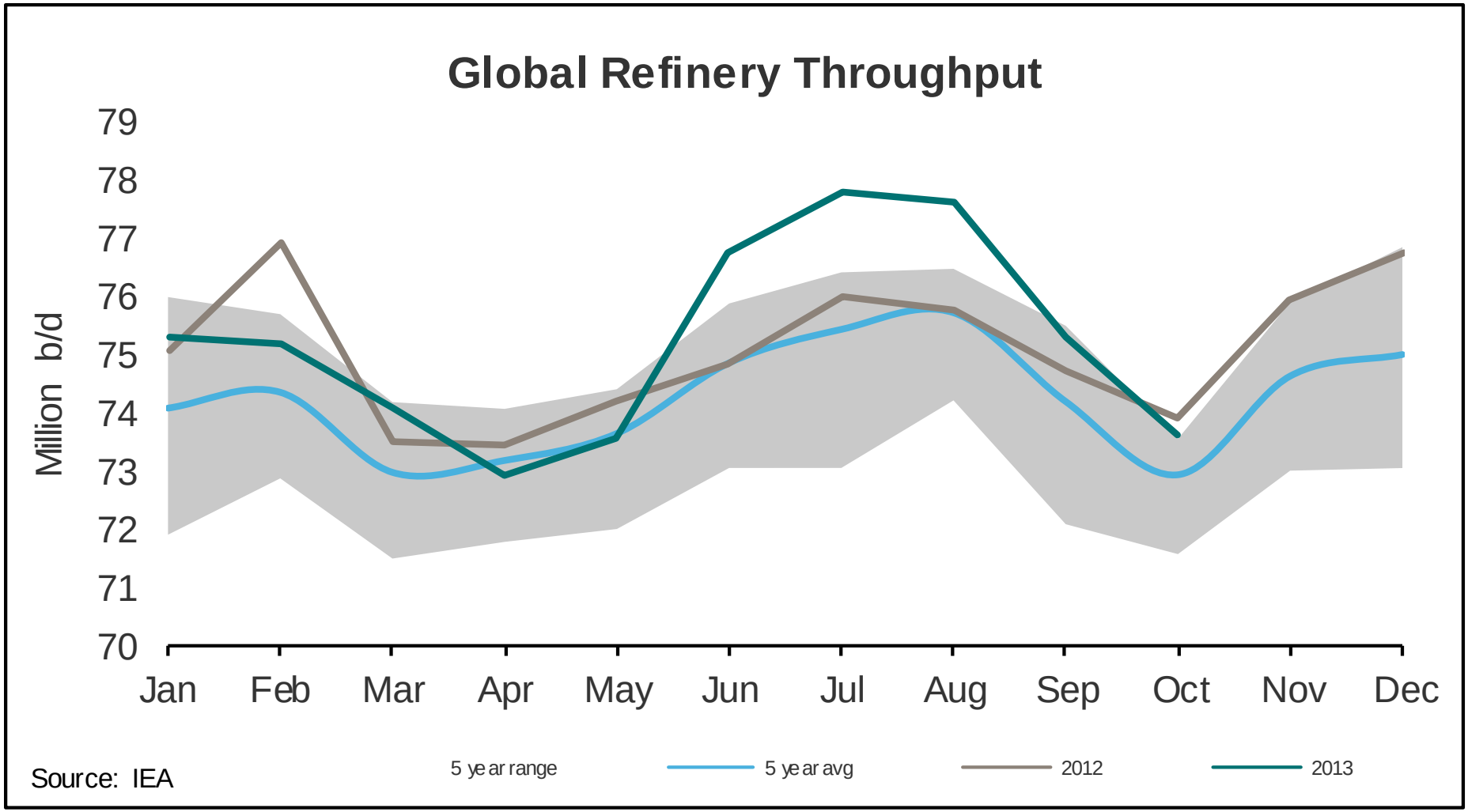
Global Refinery Intake (IEA-Assessment)



DNB

MARKETS

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Oil Stocks In Different Regions

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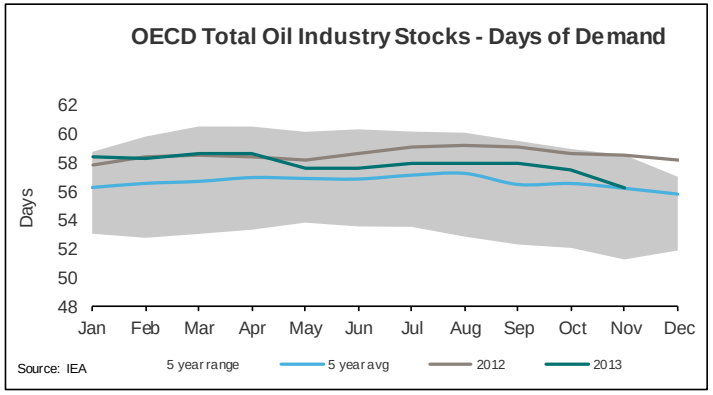
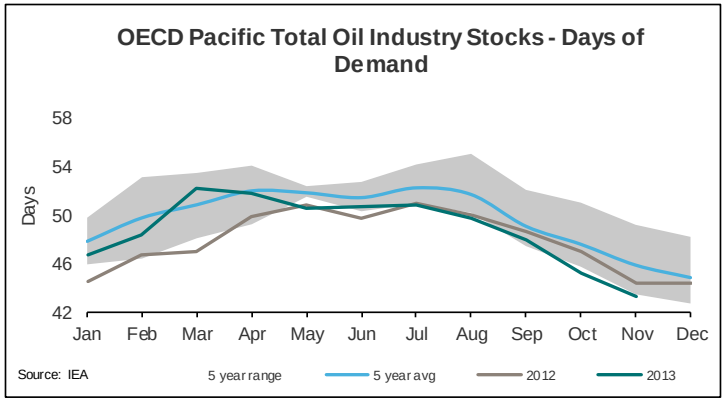
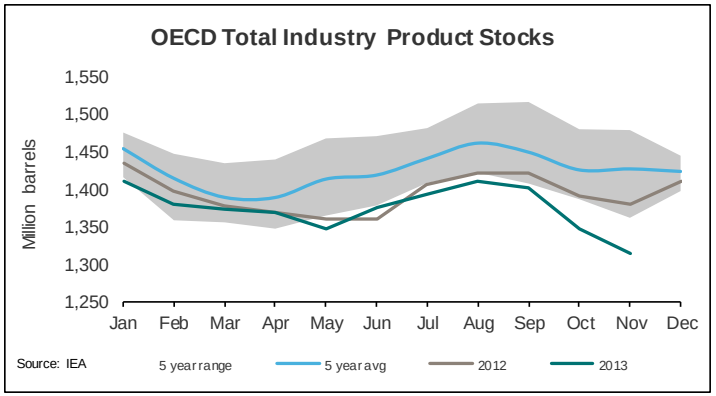
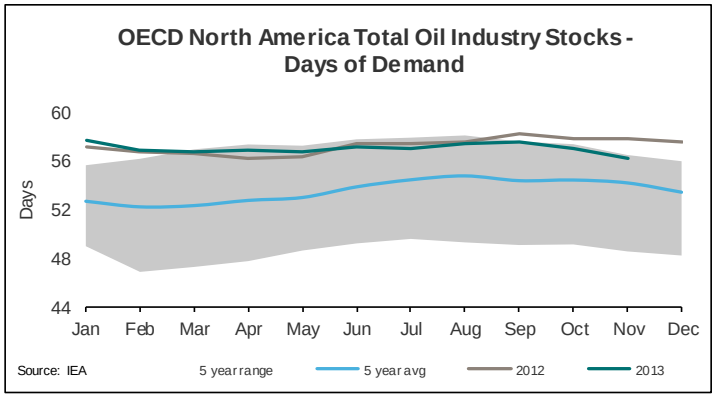
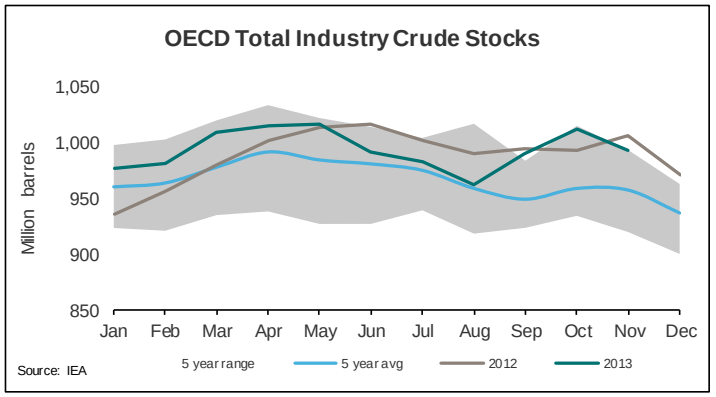
IEA's OECD Oil Stocks Reporting

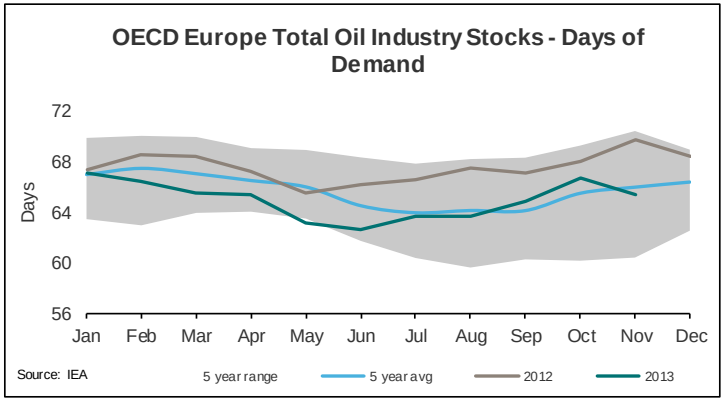












DNB MARKETS

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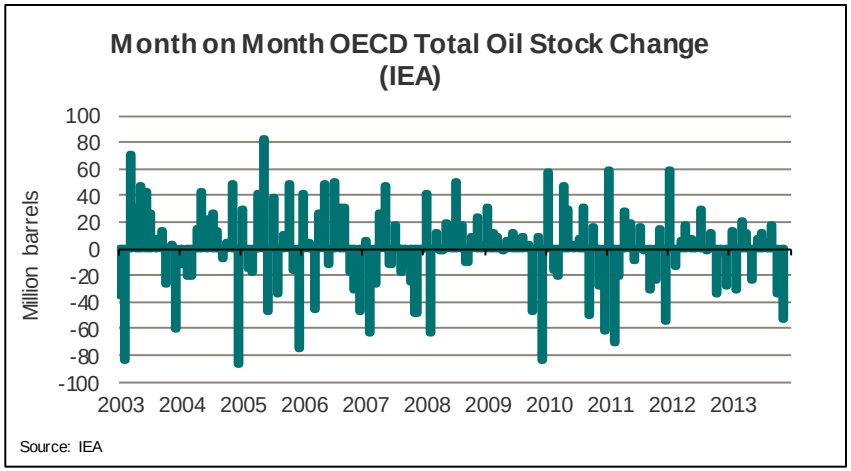
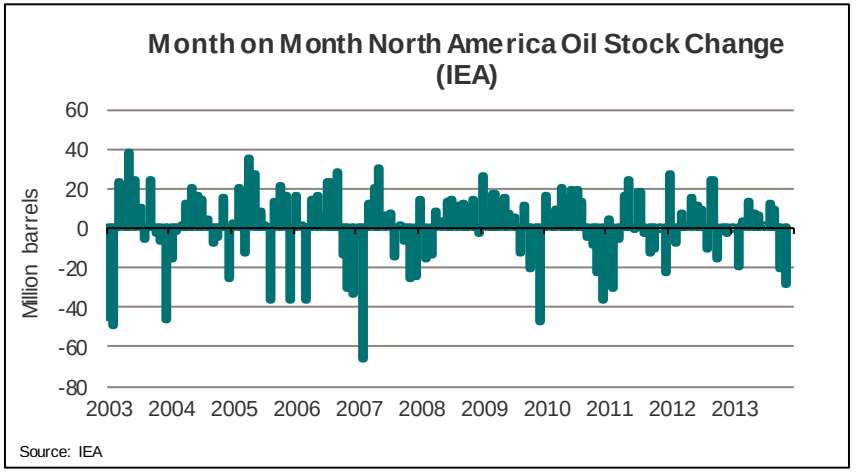
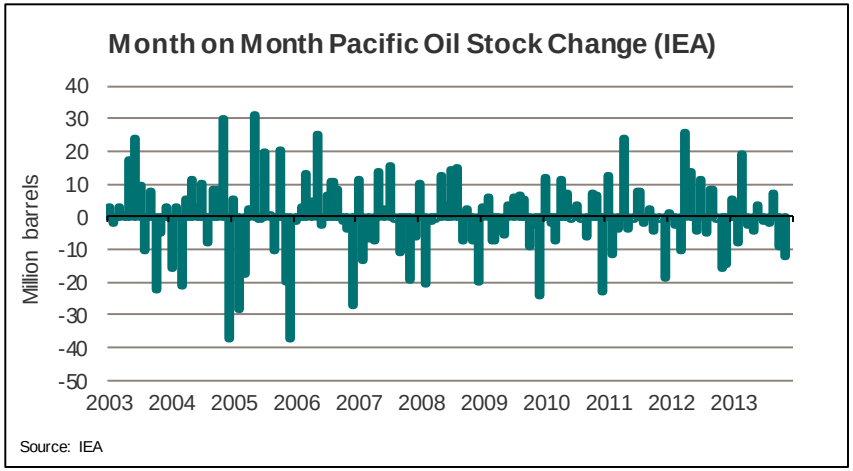
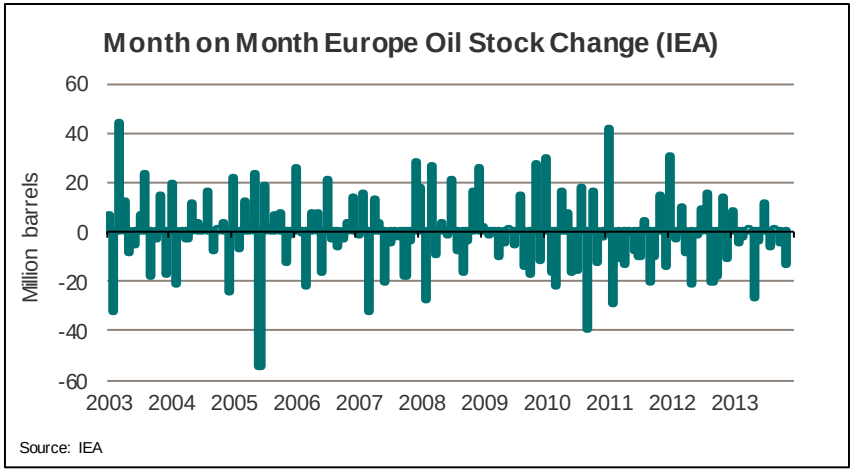
Month on Month OECD Oil Stock Changes









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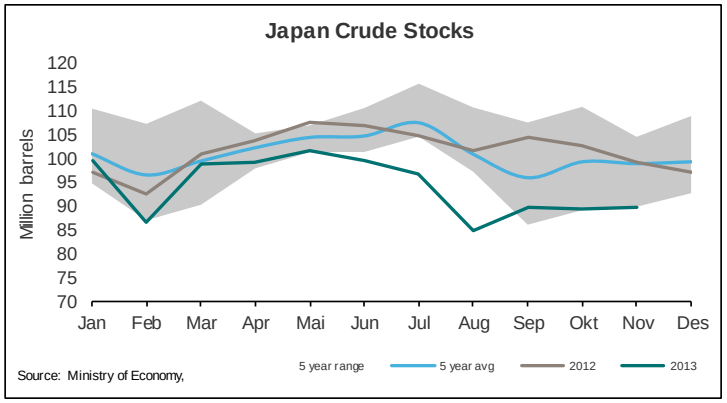
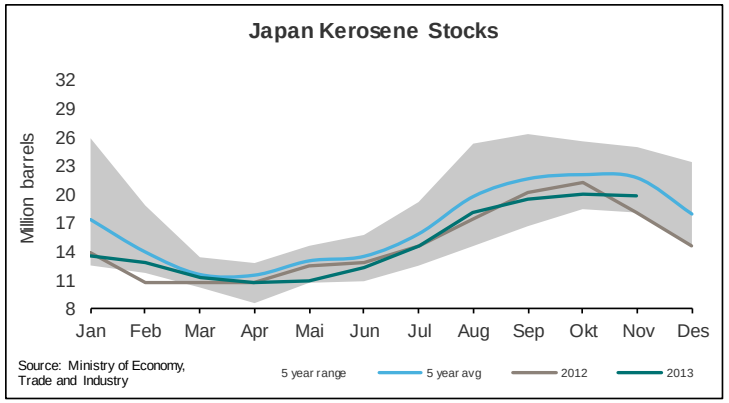
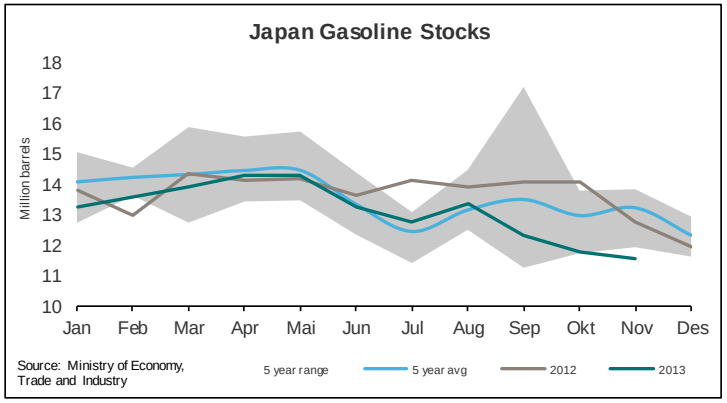
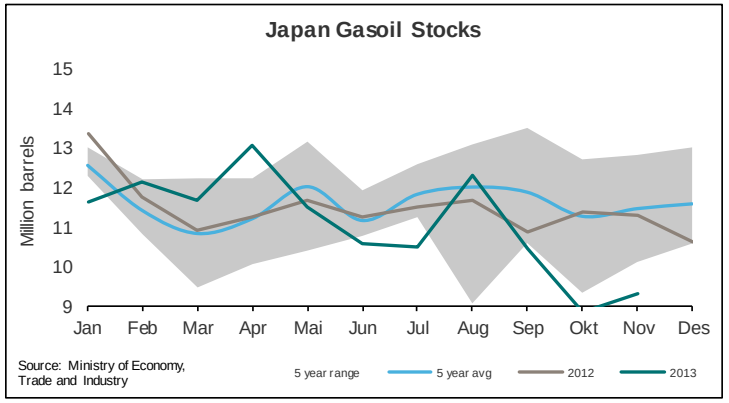
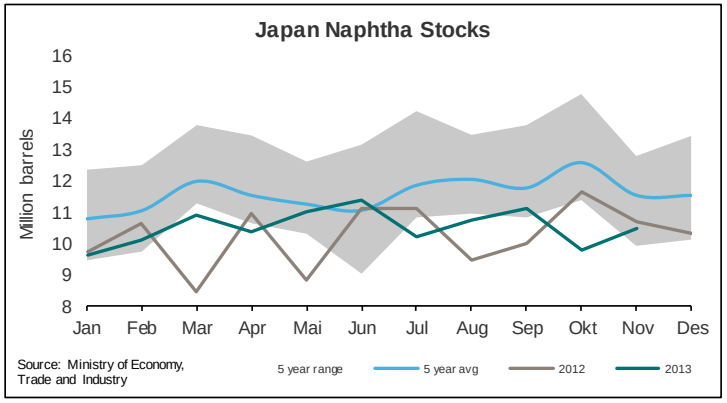
Japanese Oil Stocks

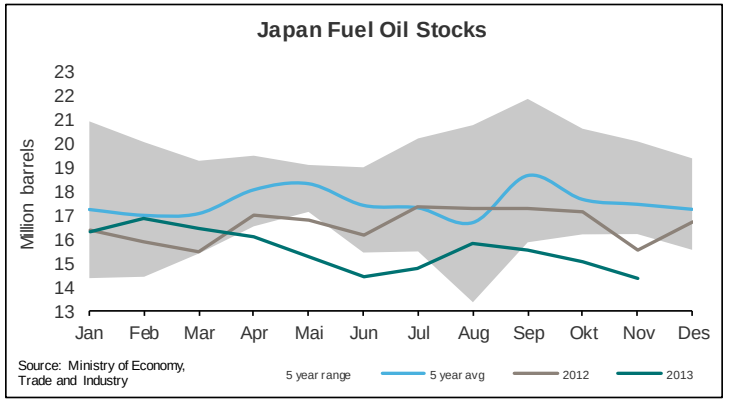












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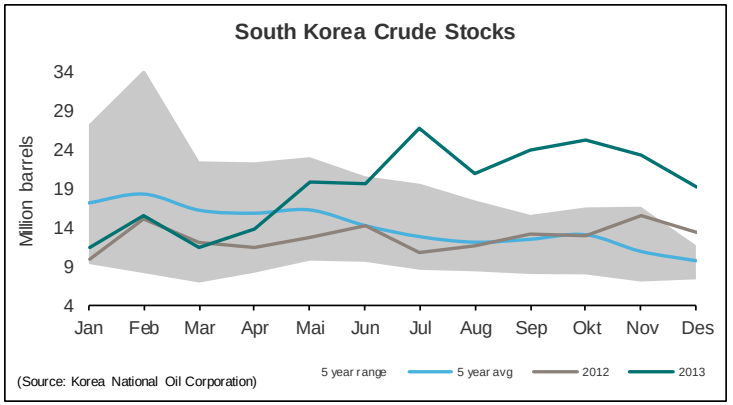
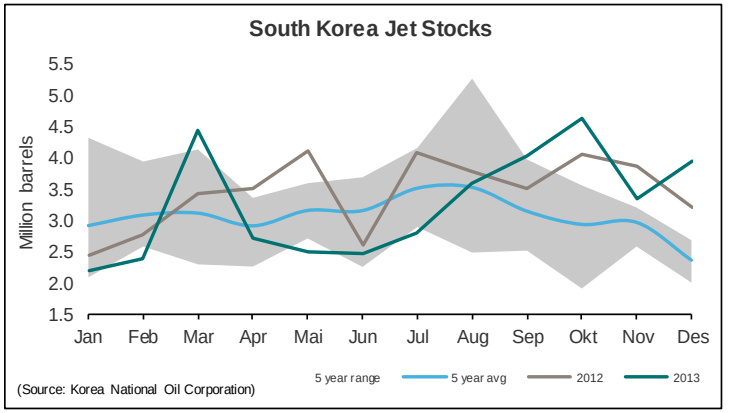
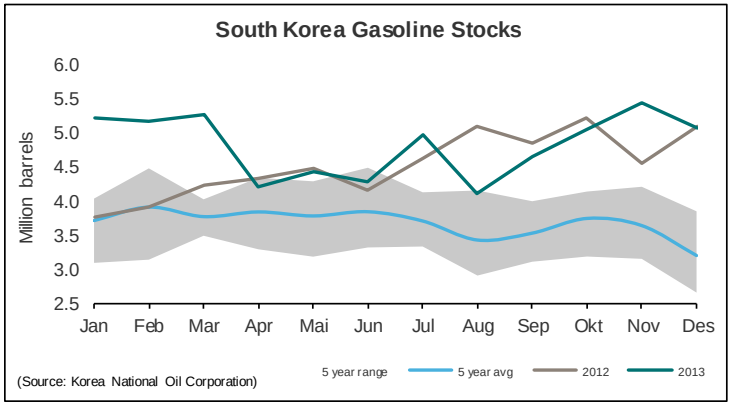
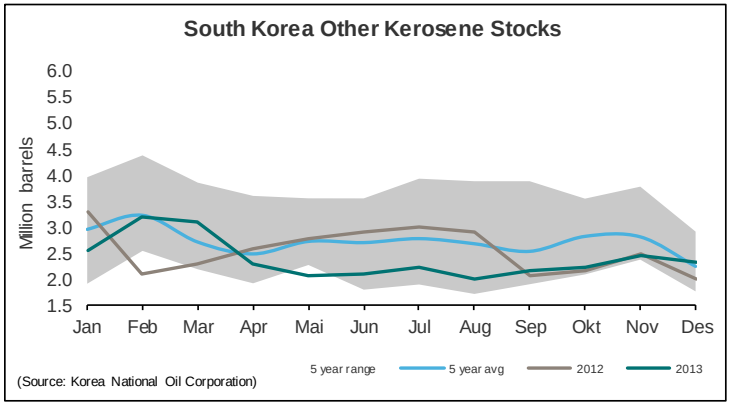
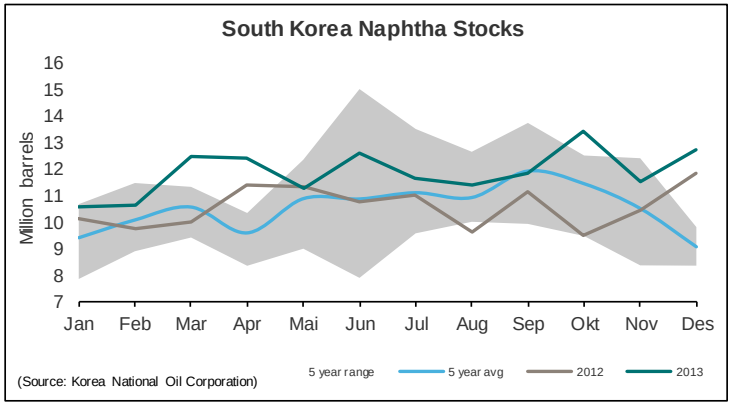
South Korean Oil Stocks

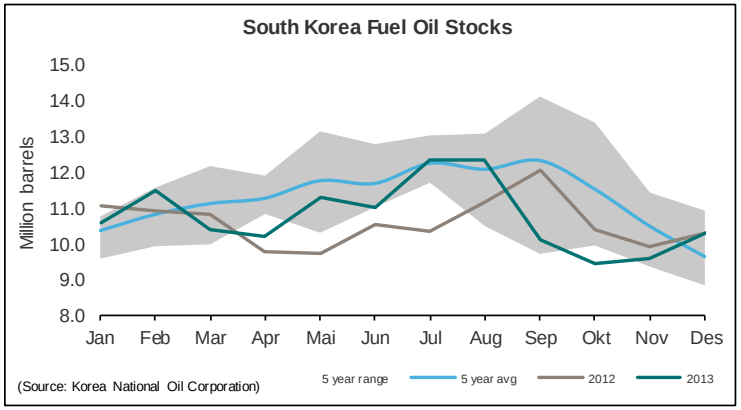












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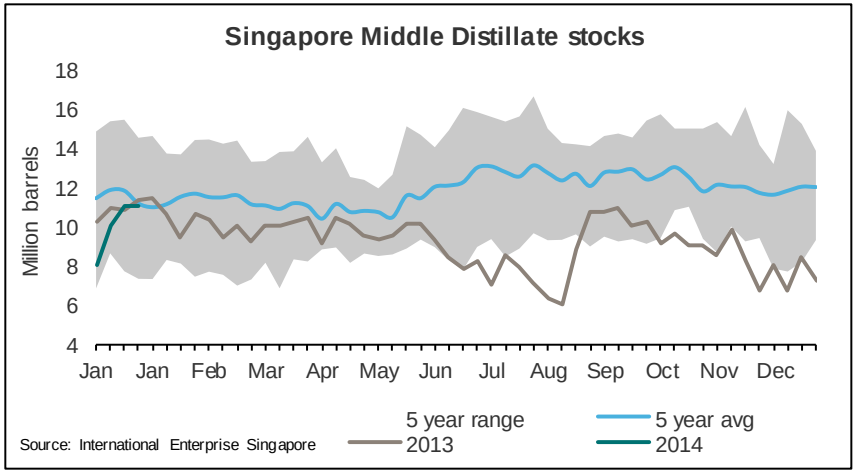
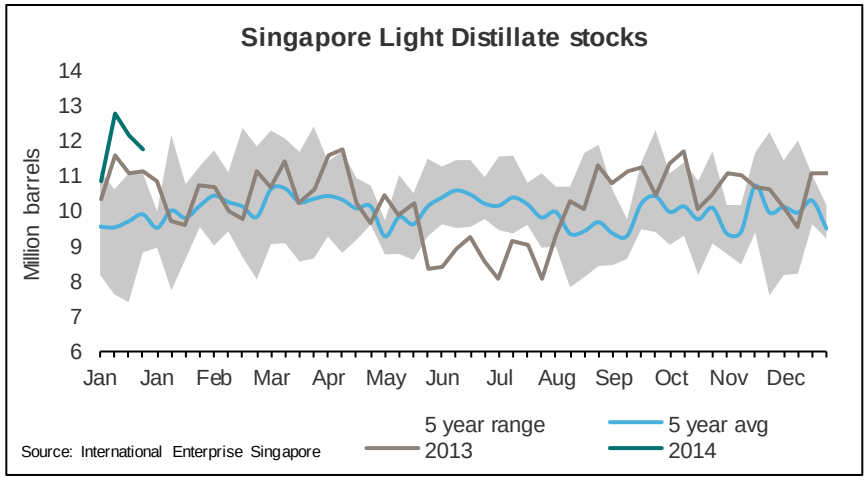
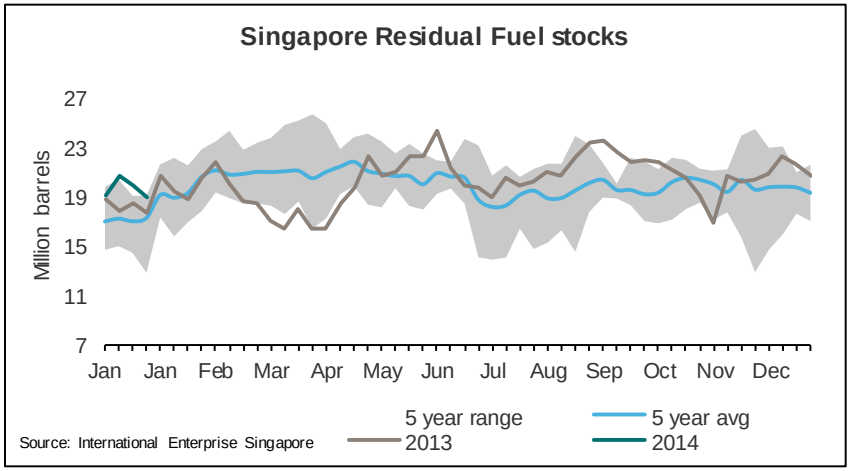
Singapore Weekly Oil Stocks







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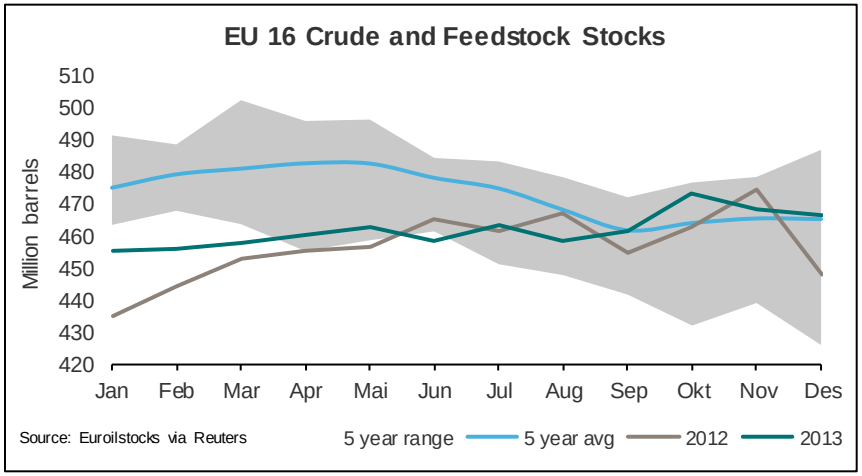
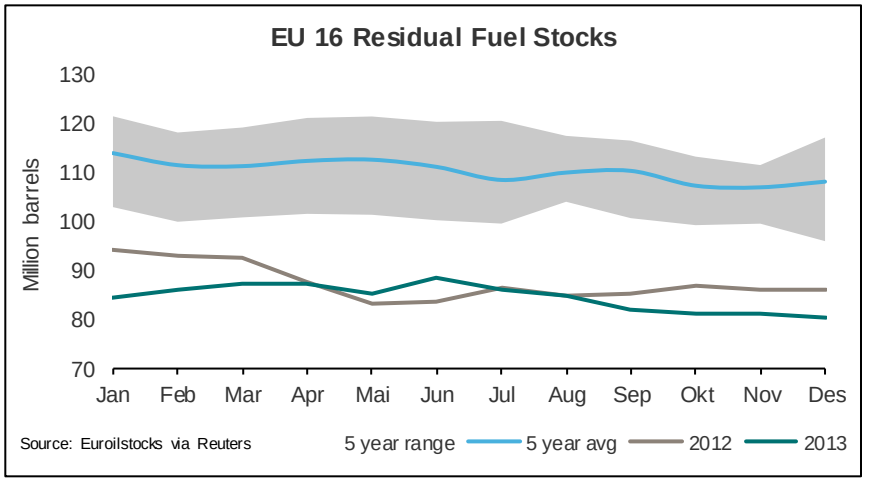
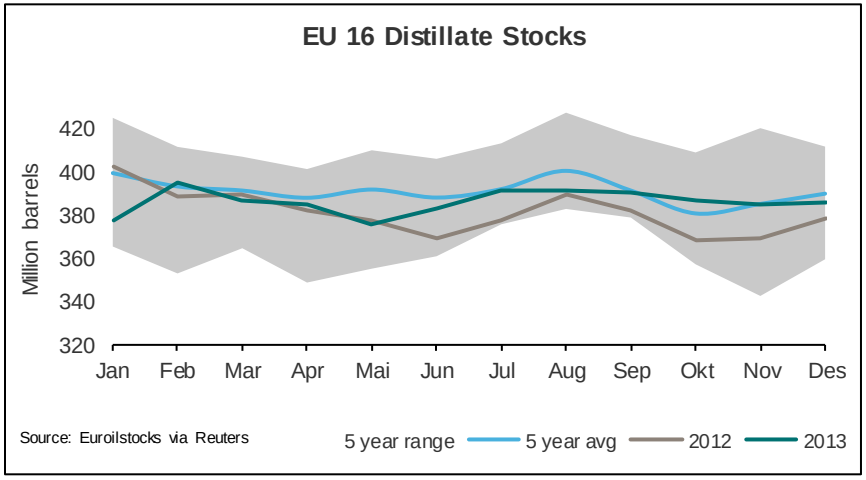
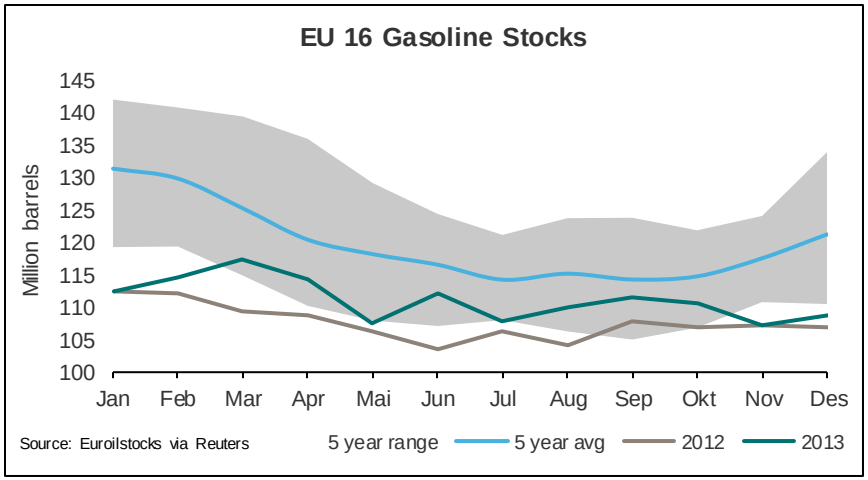
European Oil Stocks (EU 16)









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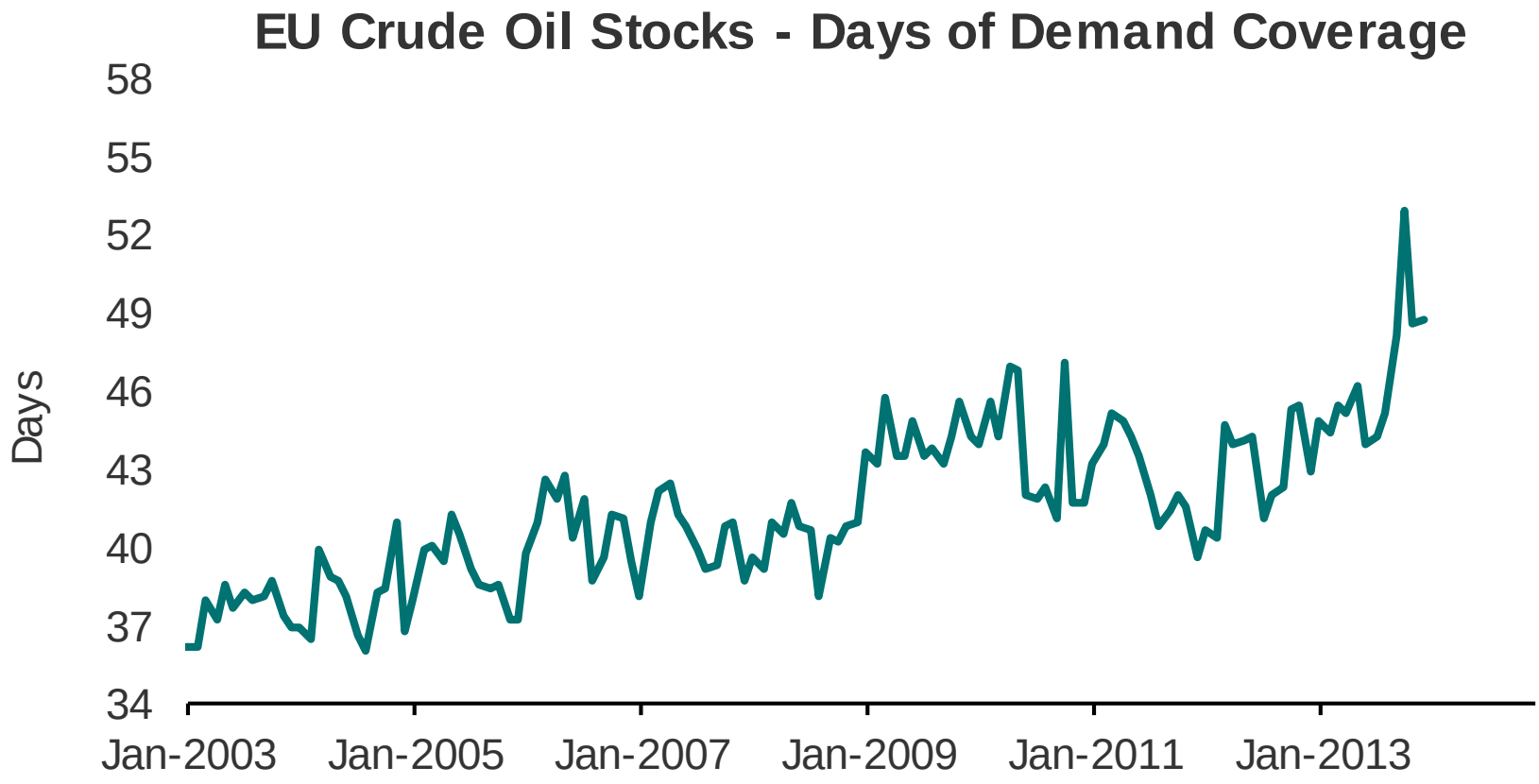
European Crude Oil Stocks In Days Of Coverage (EU 16)



Source: Euroilstocks via Reuters

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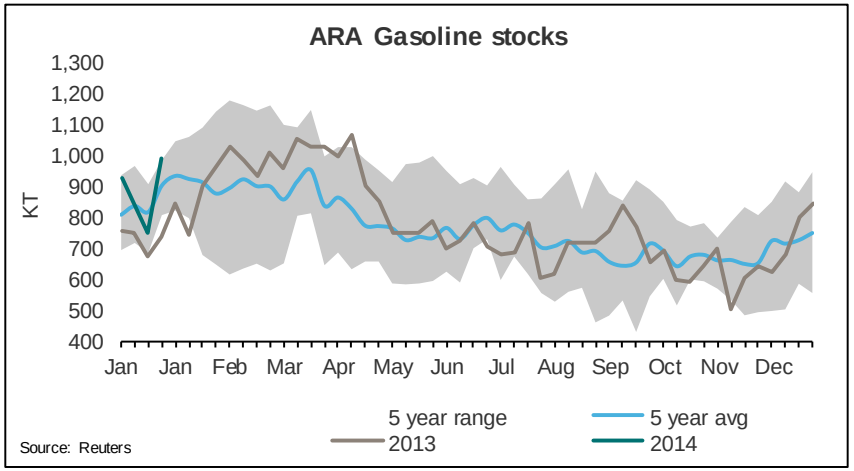
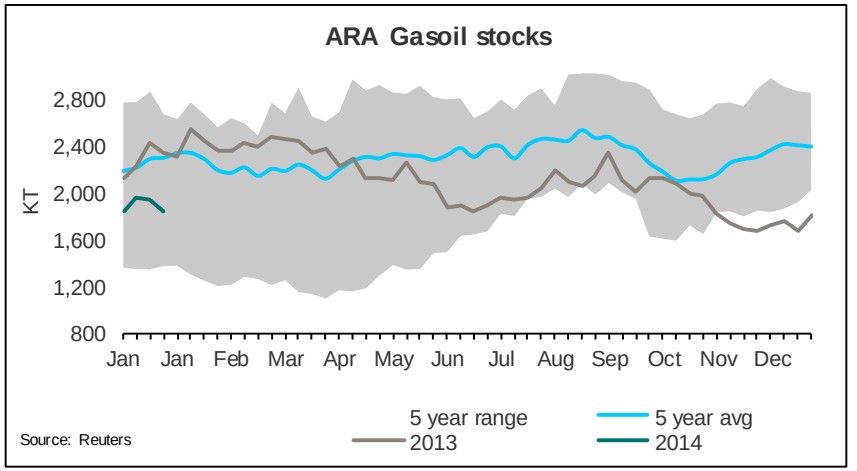
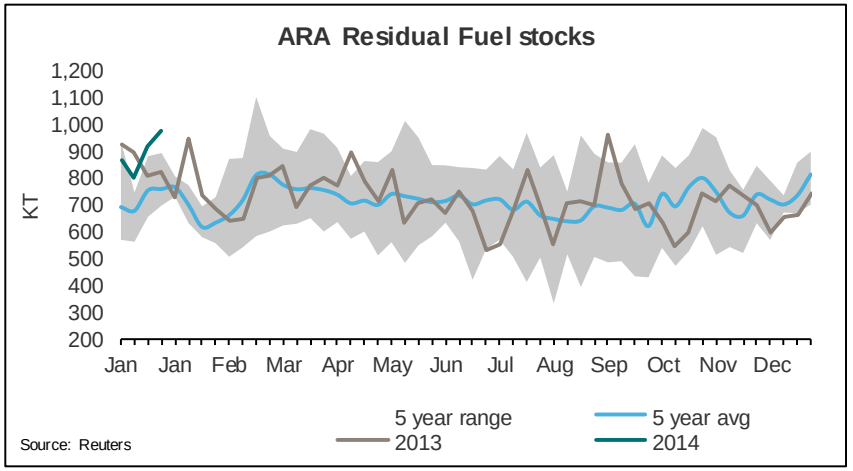
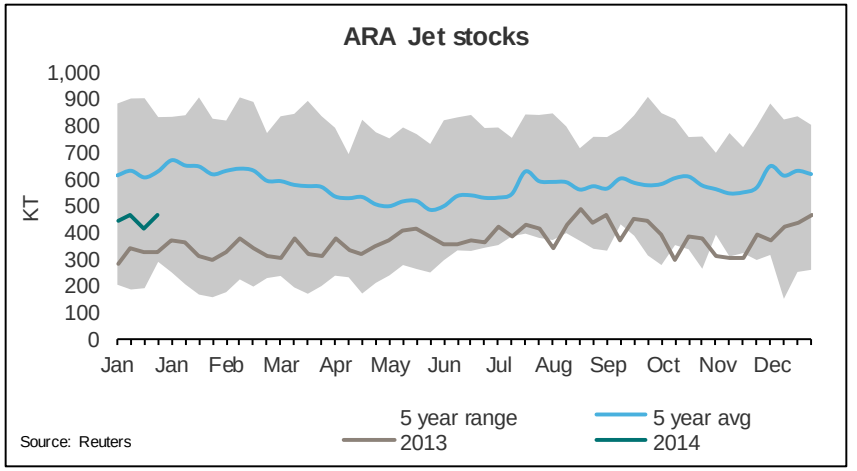
ARA (Amsterdam-Rotterdam-Antwerp) Weekly Oil Stocks









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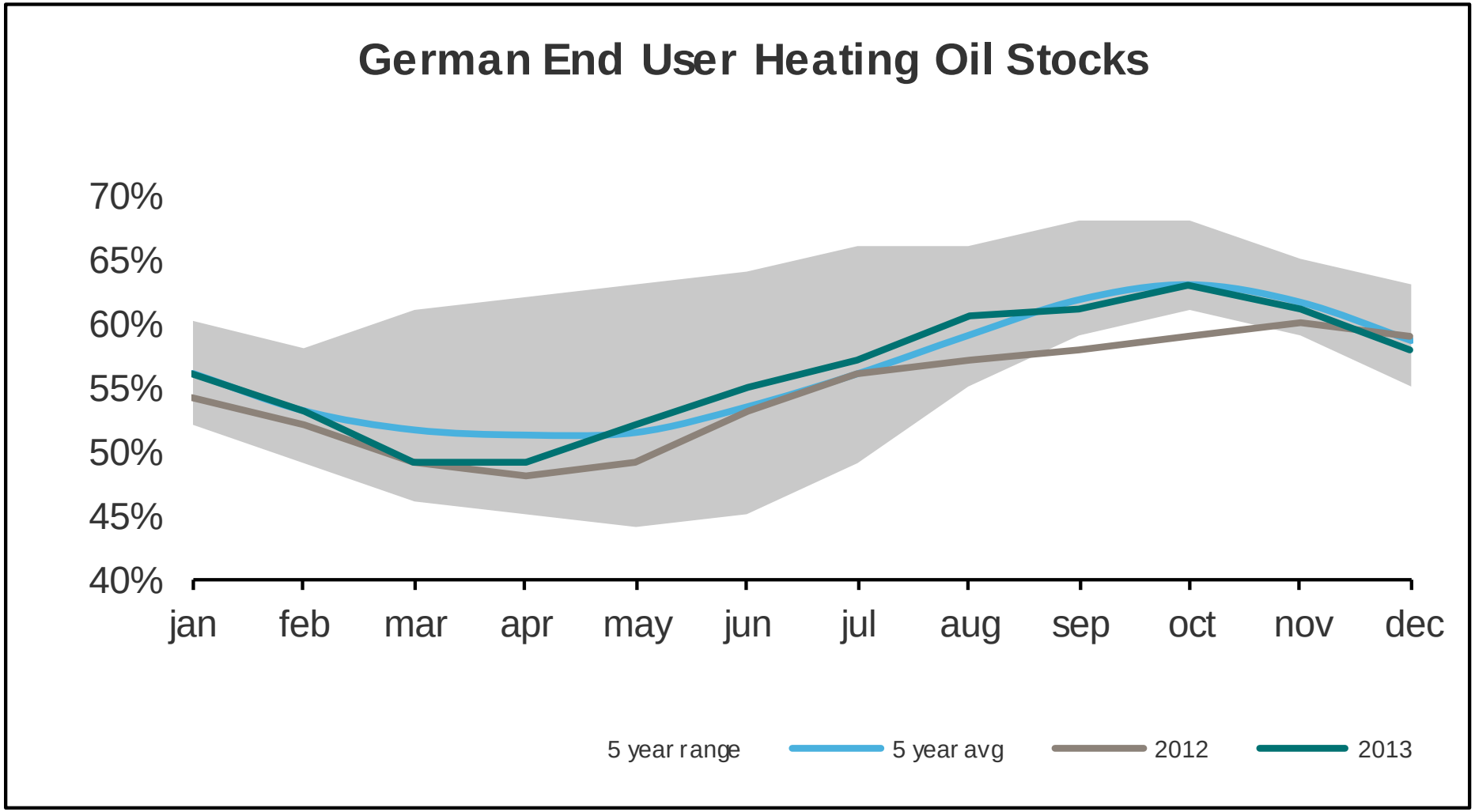
German End User Heating Oil Stocks



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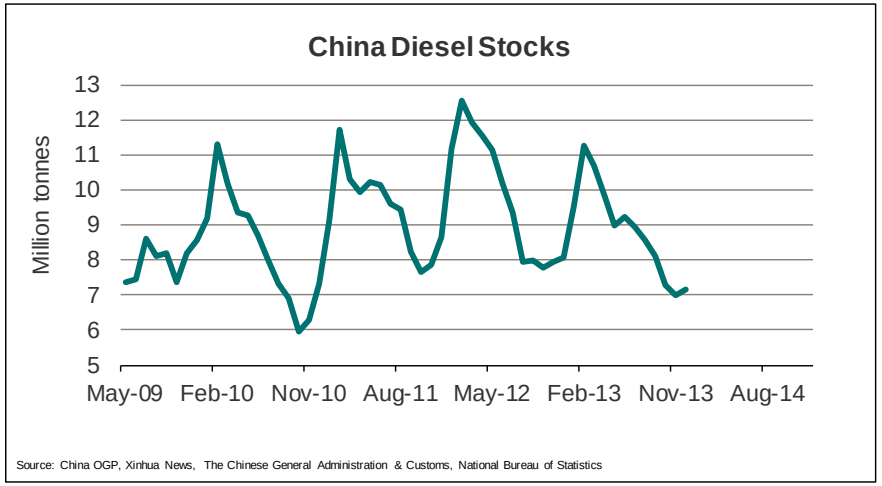
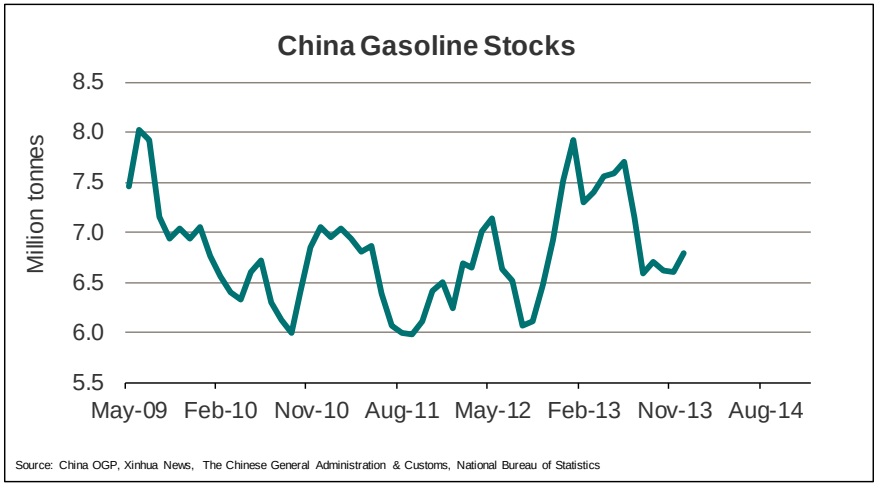
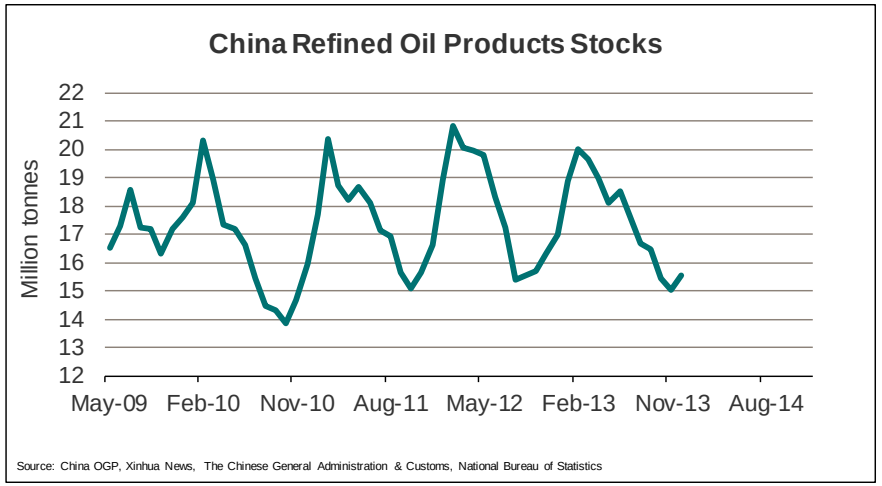
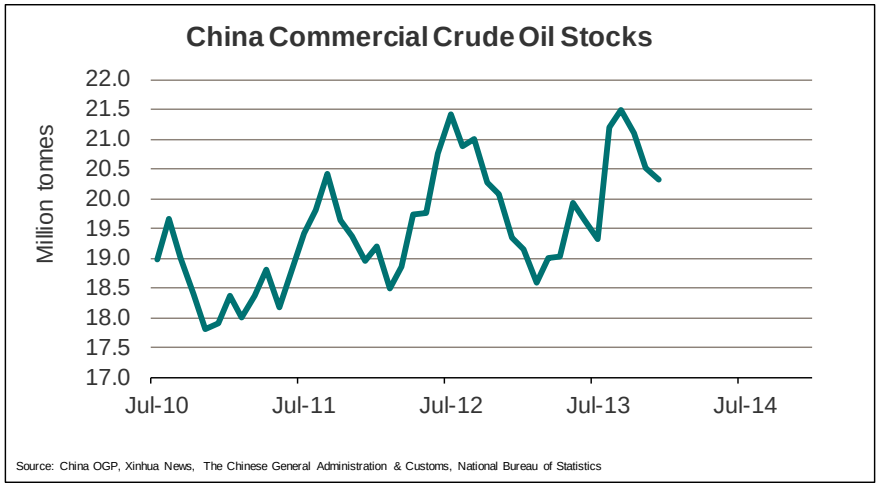
Chinese Commercial Oil Stocks









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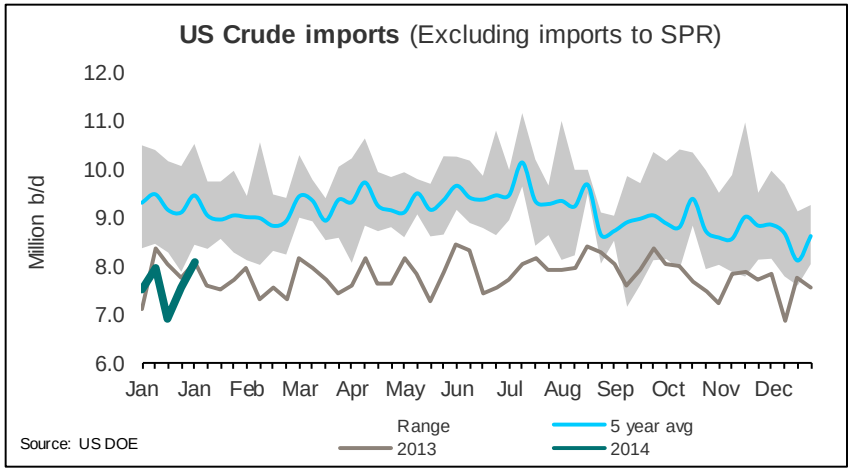
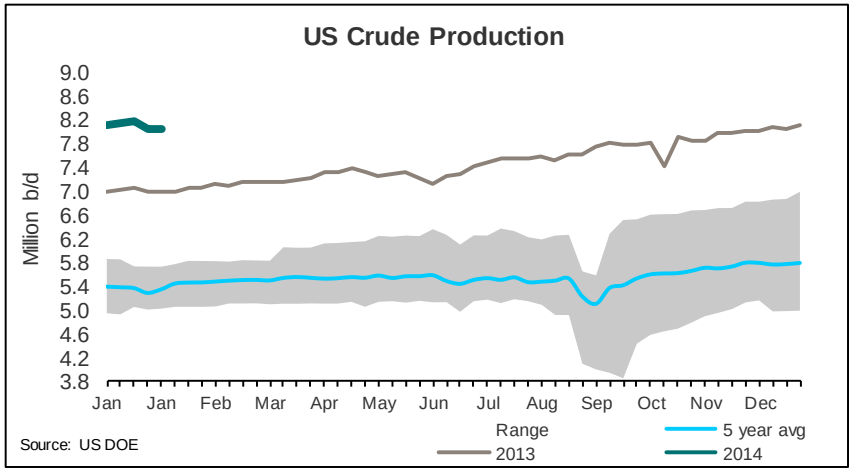
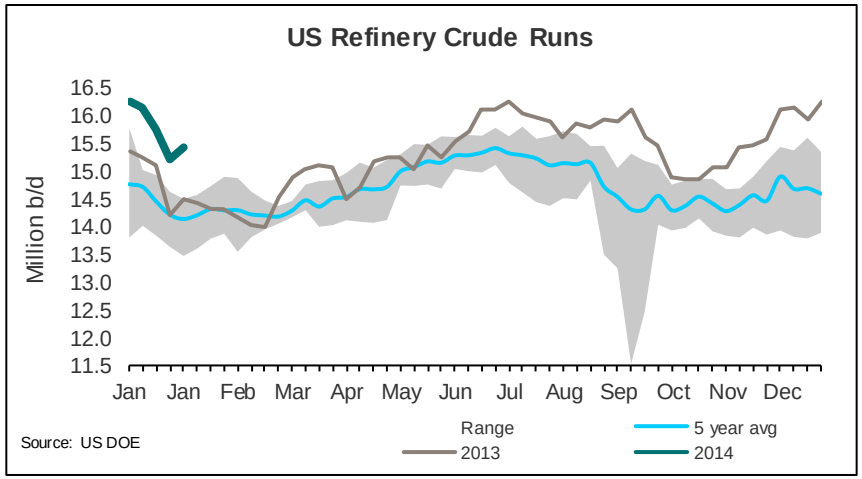
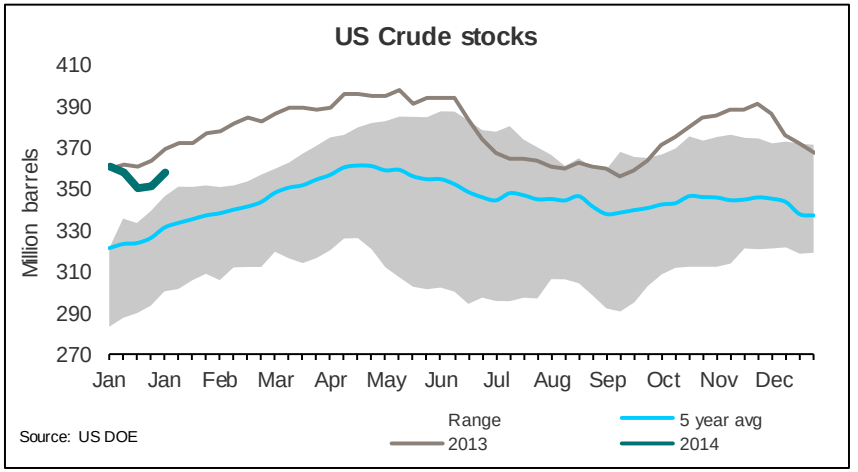
Weekly US Oil Stats

Weekly US Crude Stats









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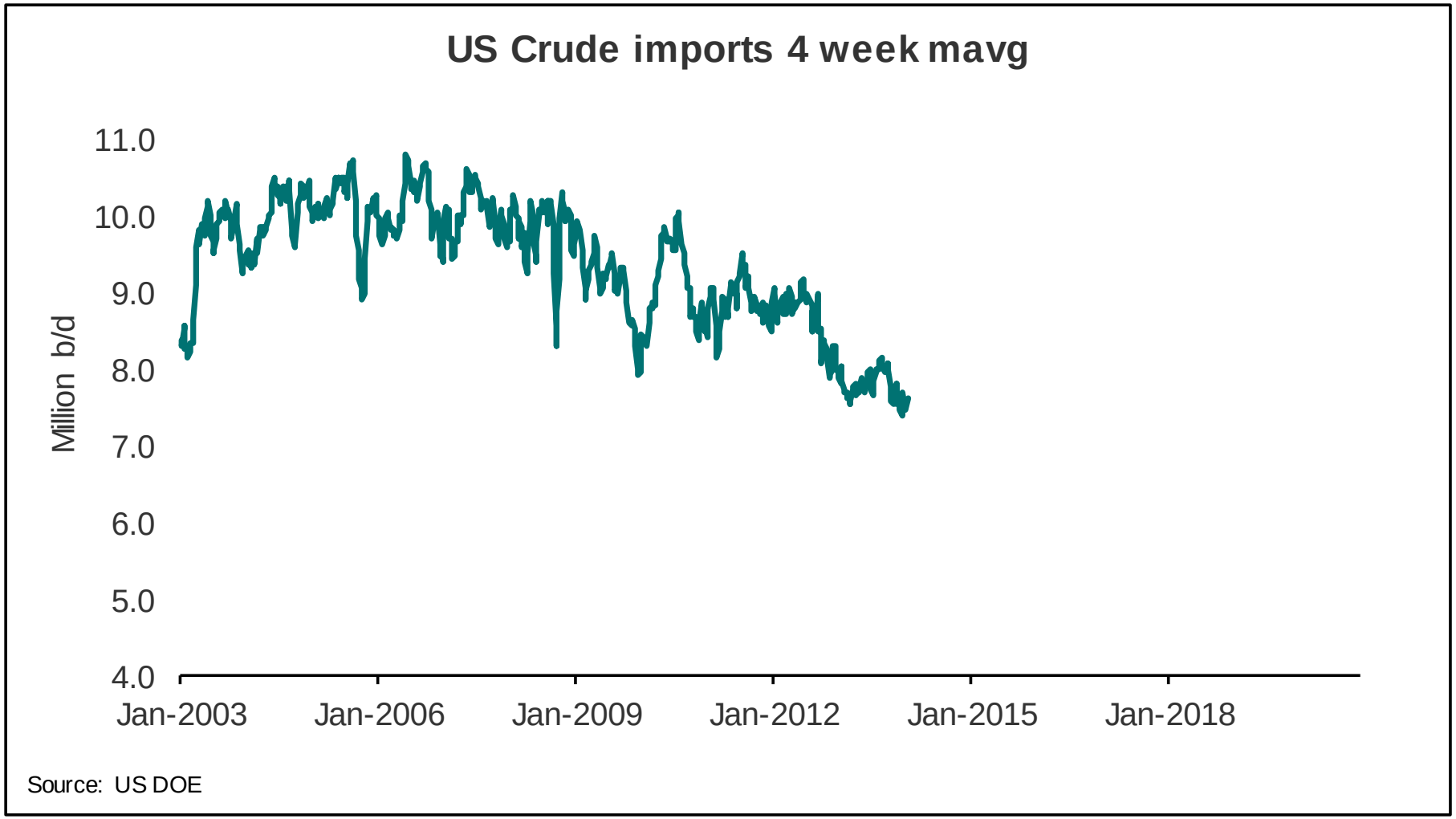
We Are Starting To See The Effect Of The US Shale Now

- US crude imports has started to drop but this is just the beginning



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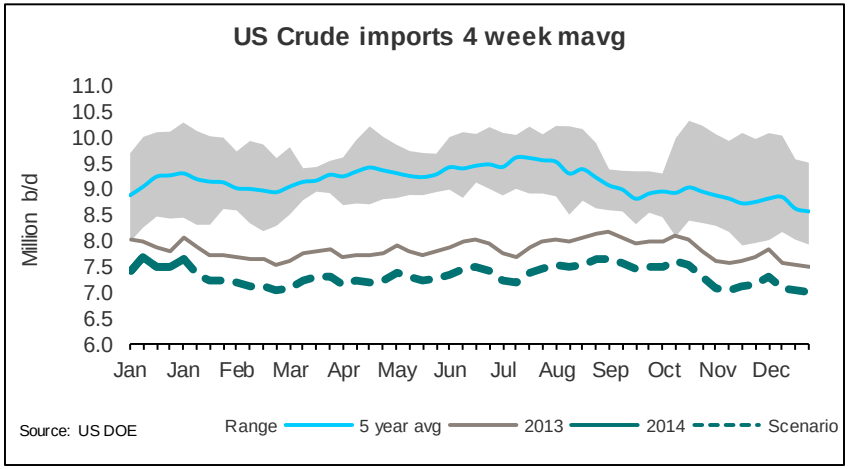
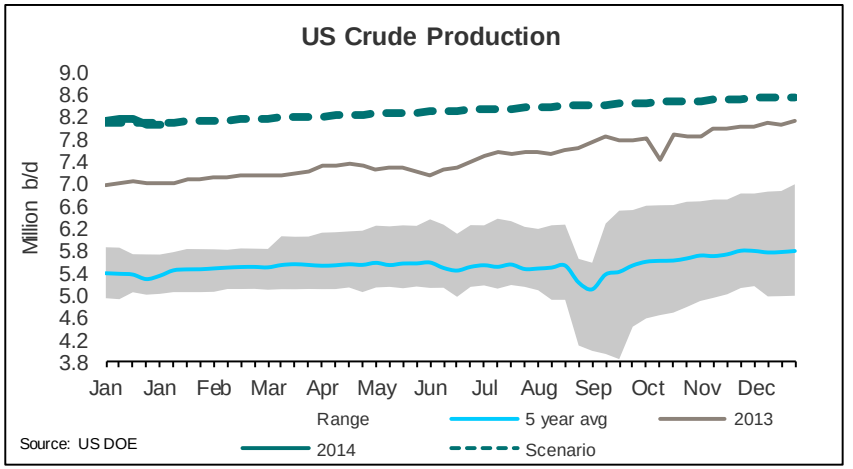
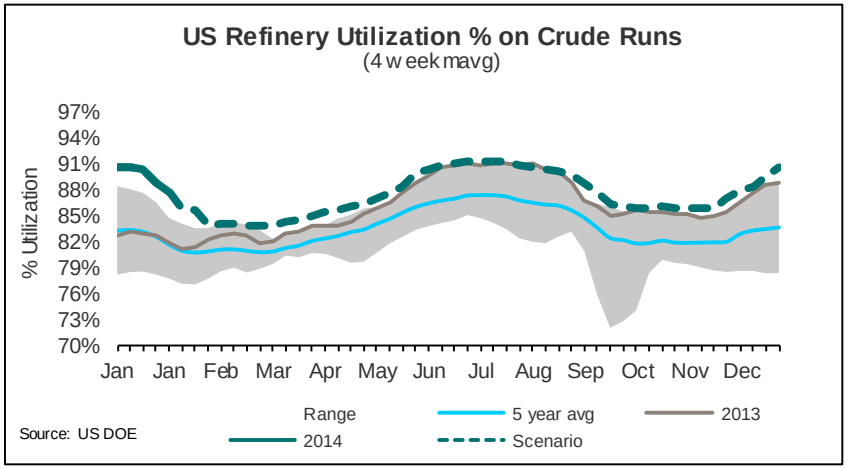
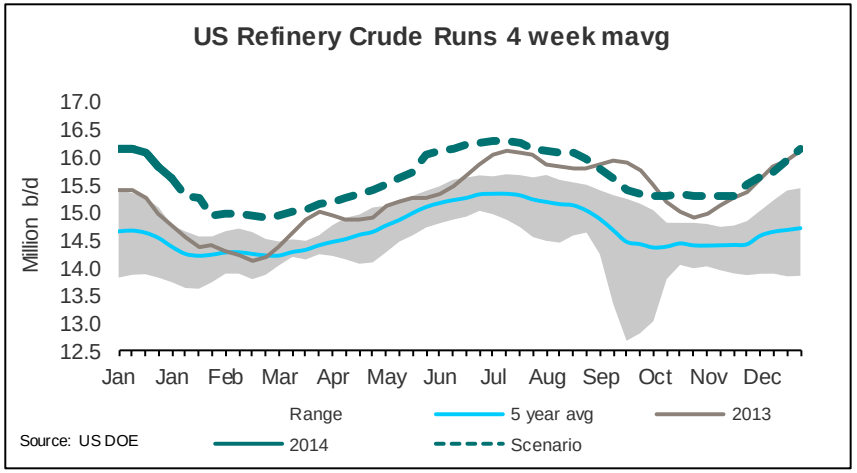
Weekly US Crude Stats – Forecast









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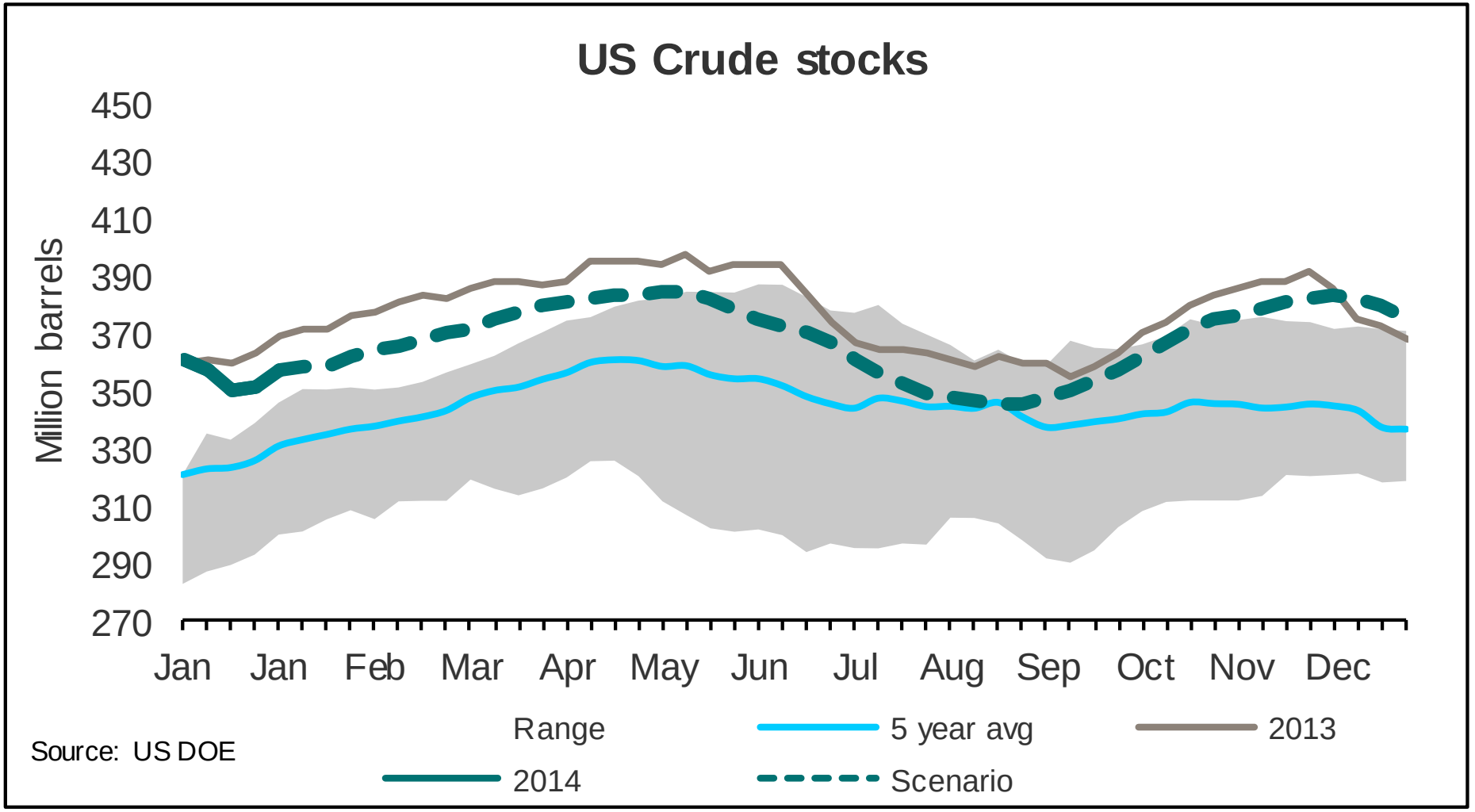
US Crude Stocks – Forecast



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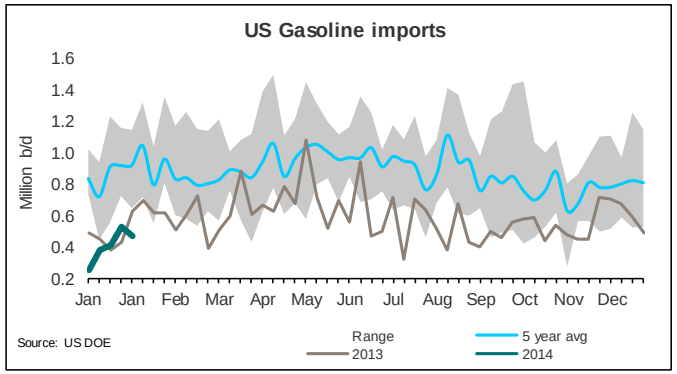
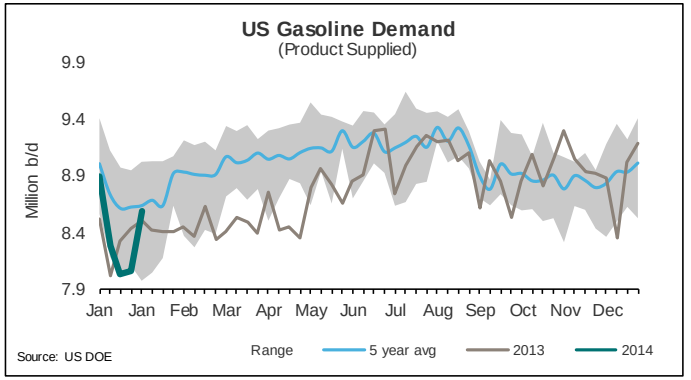
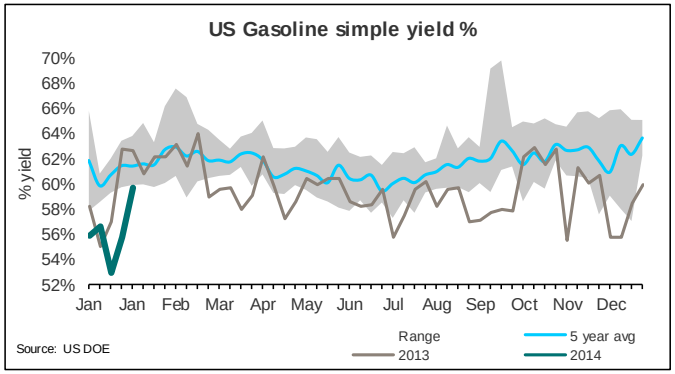
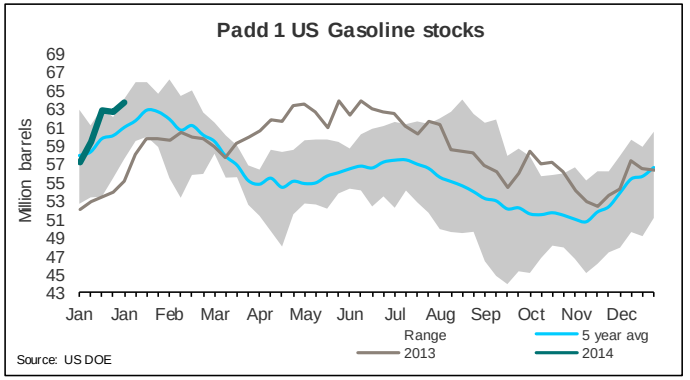
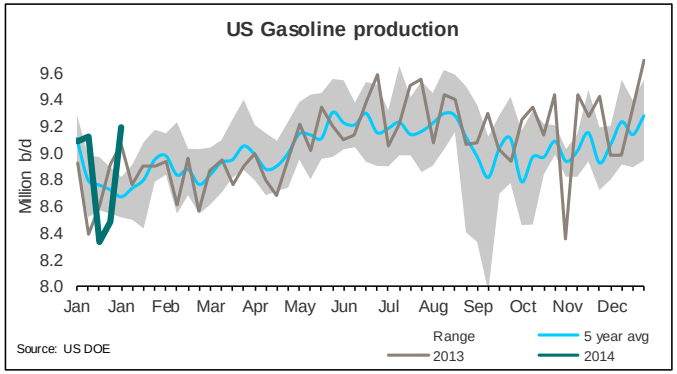
Weekly US Gasoline Stats

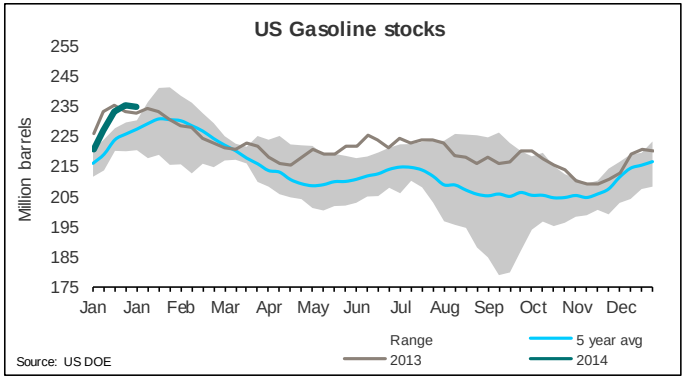












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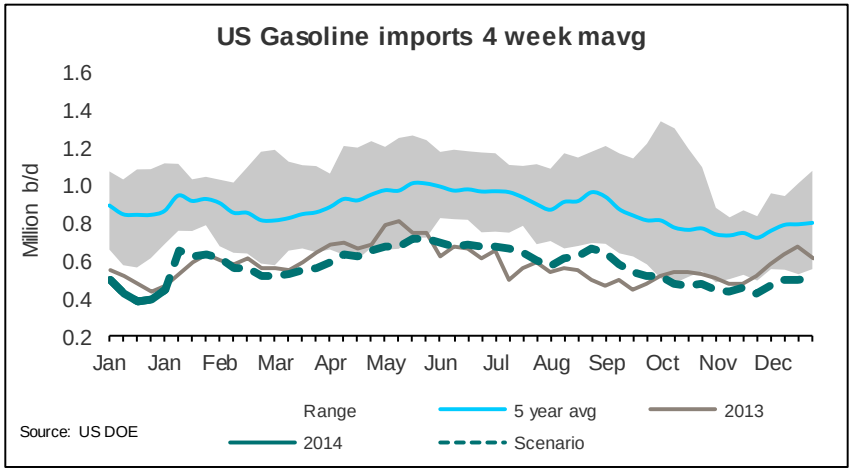
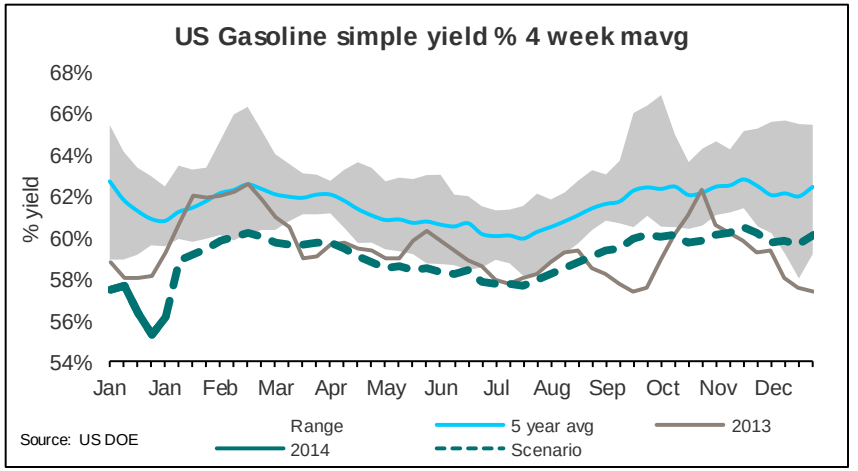
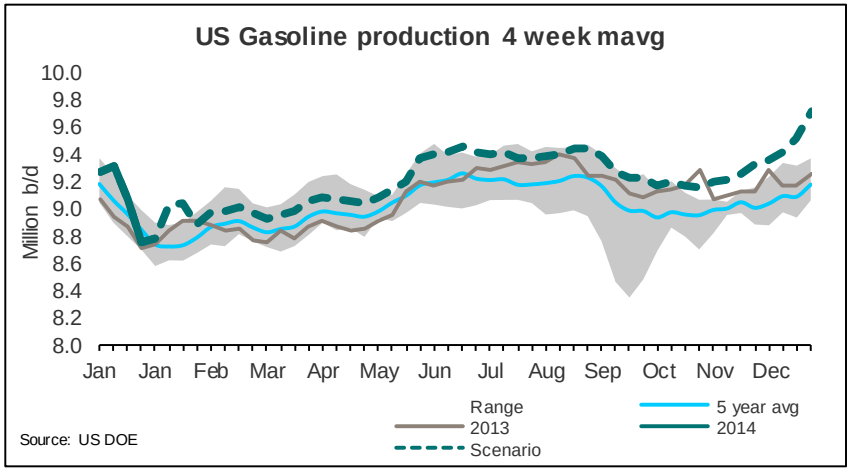
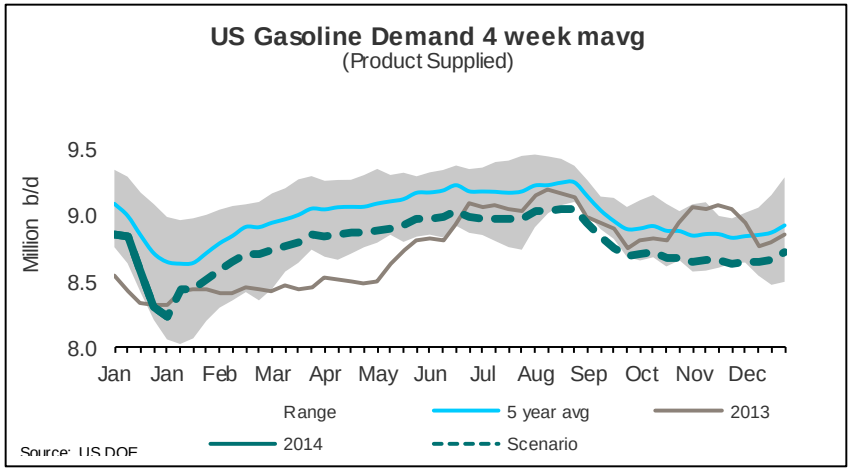
US Gasoline Stats – Forecast









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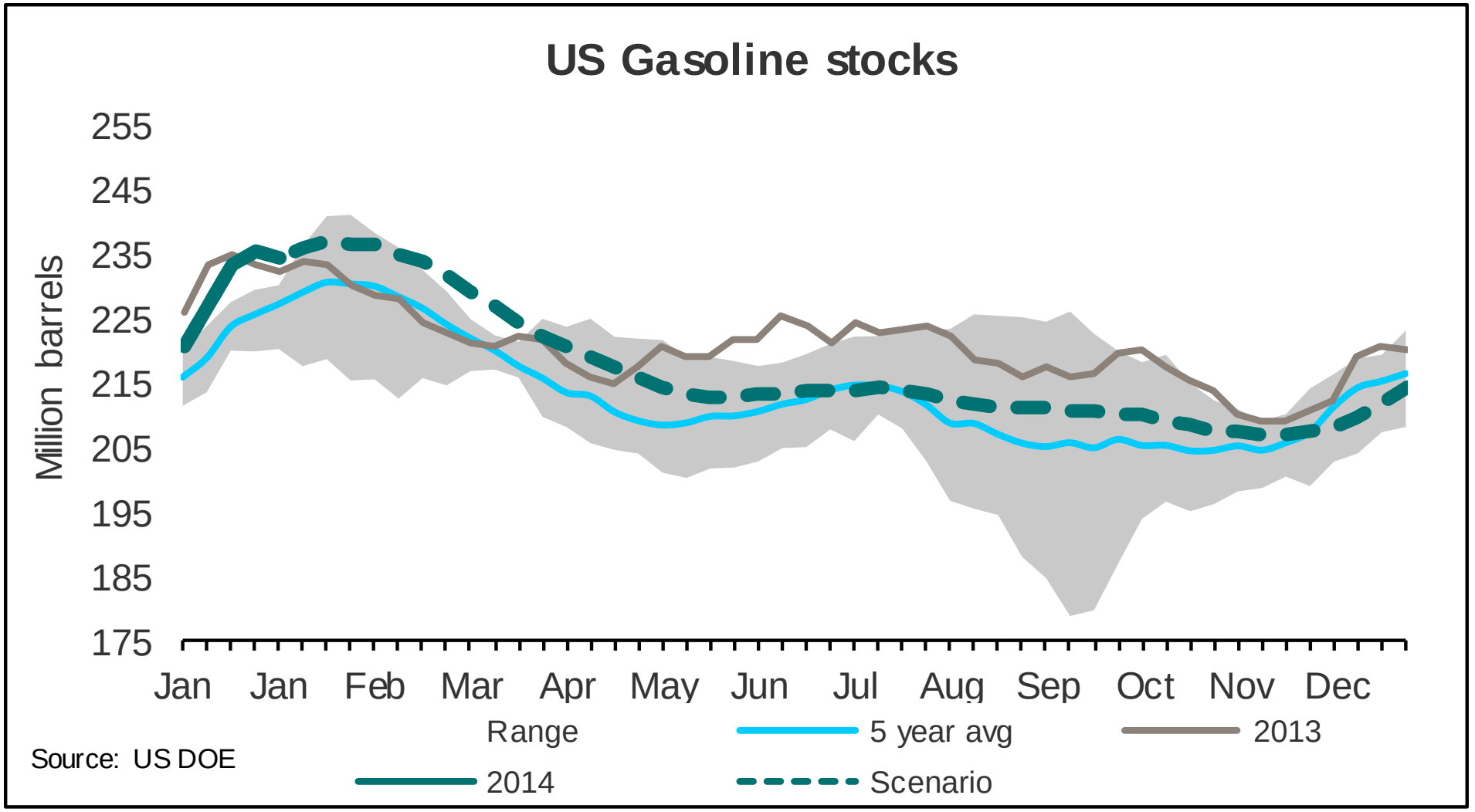
US Gasoline Stocks – Forecast



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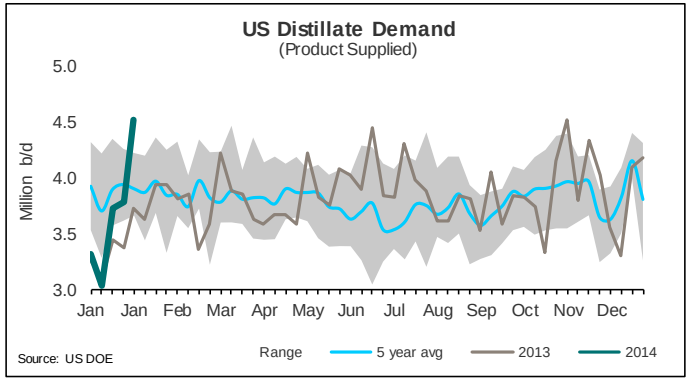
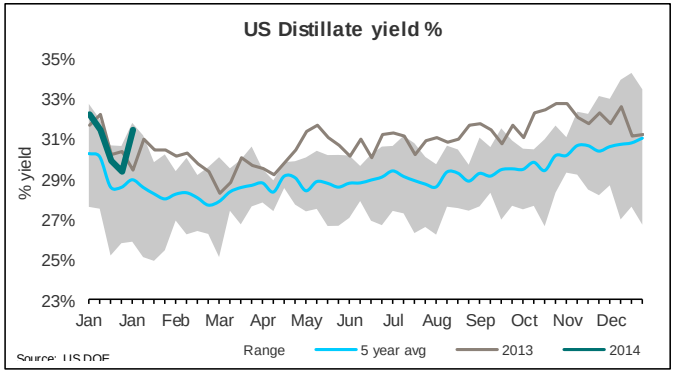
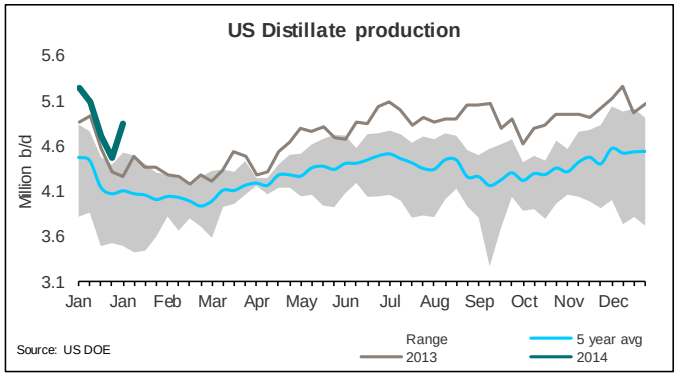
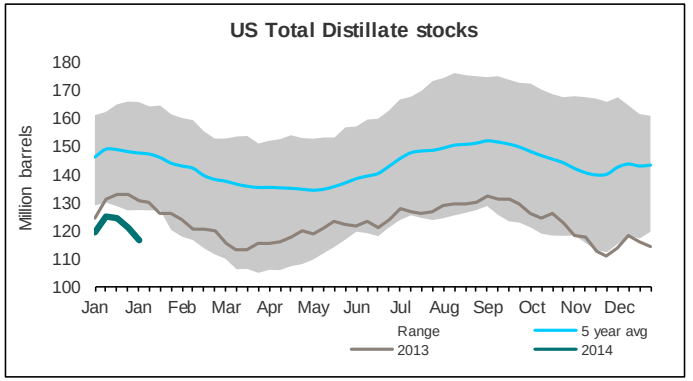
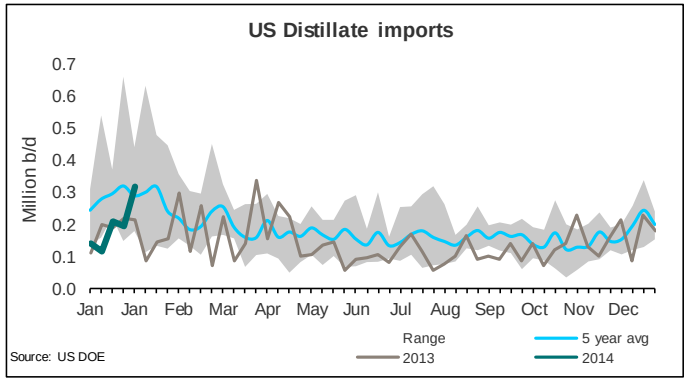
Weekly US Distillate Stats

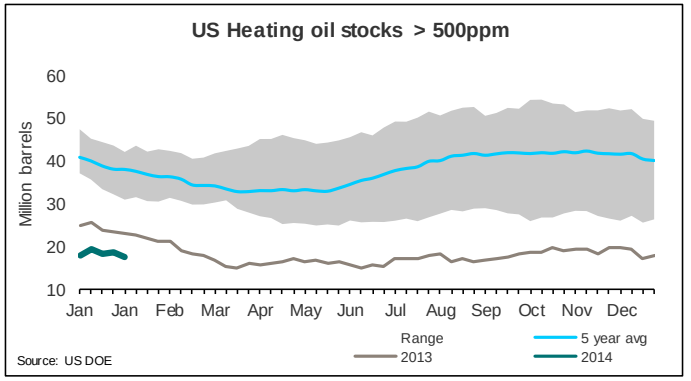












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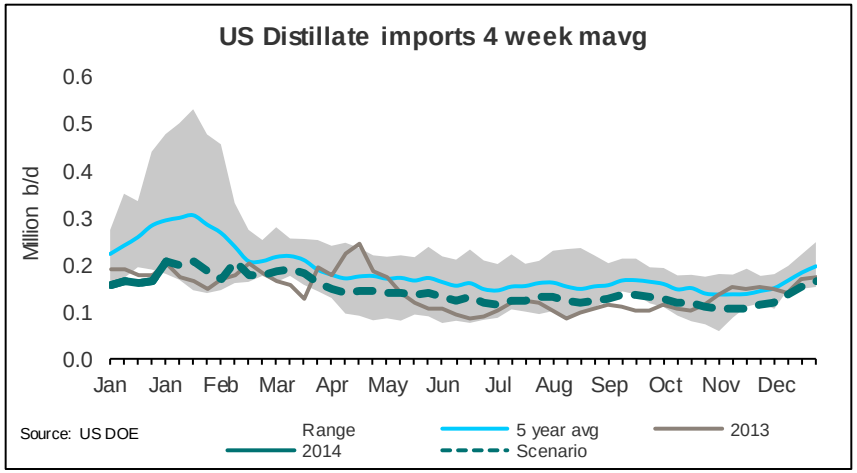
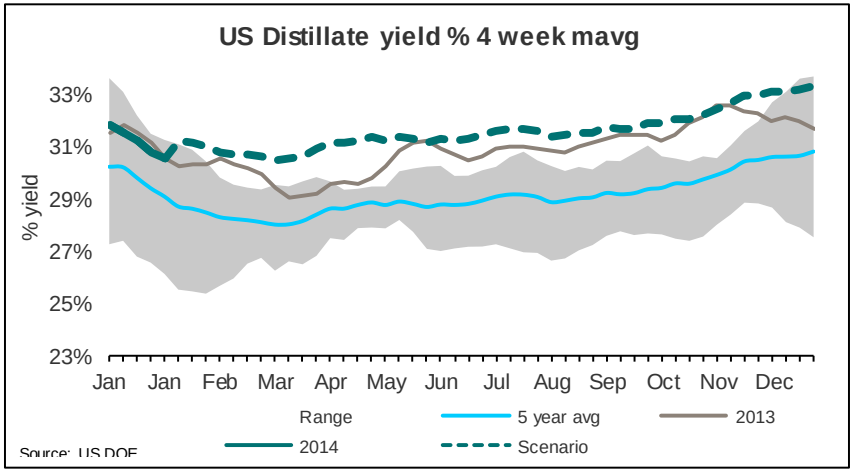
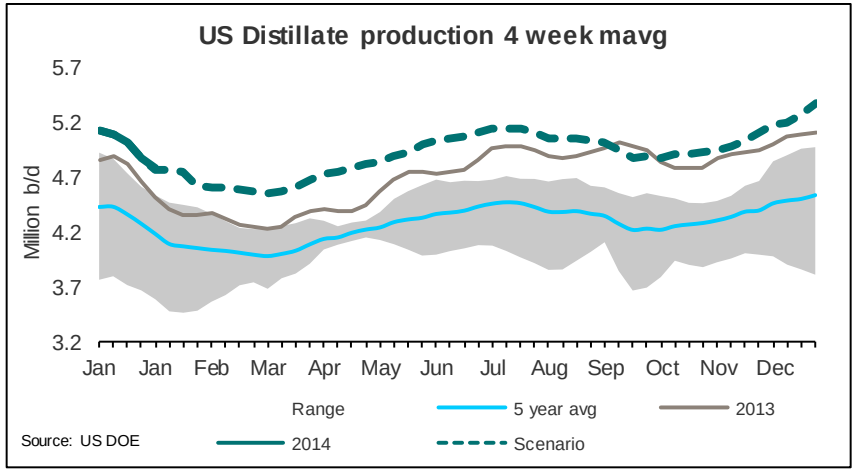
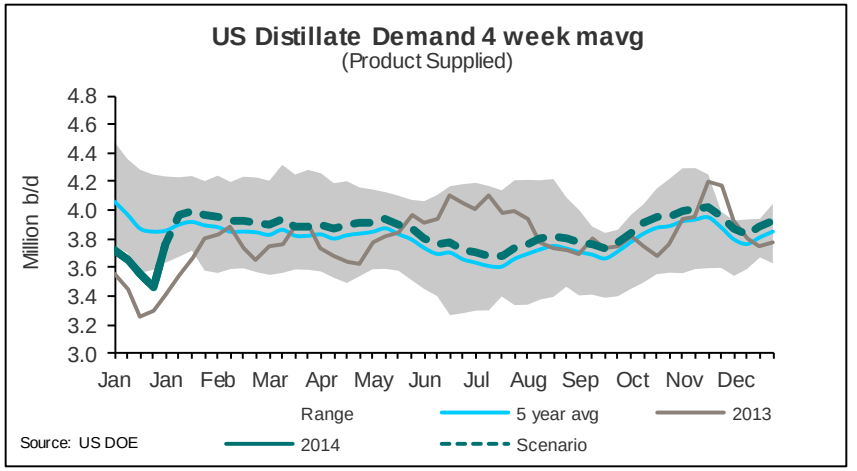
Weekly US Distillate Stats – Forecast









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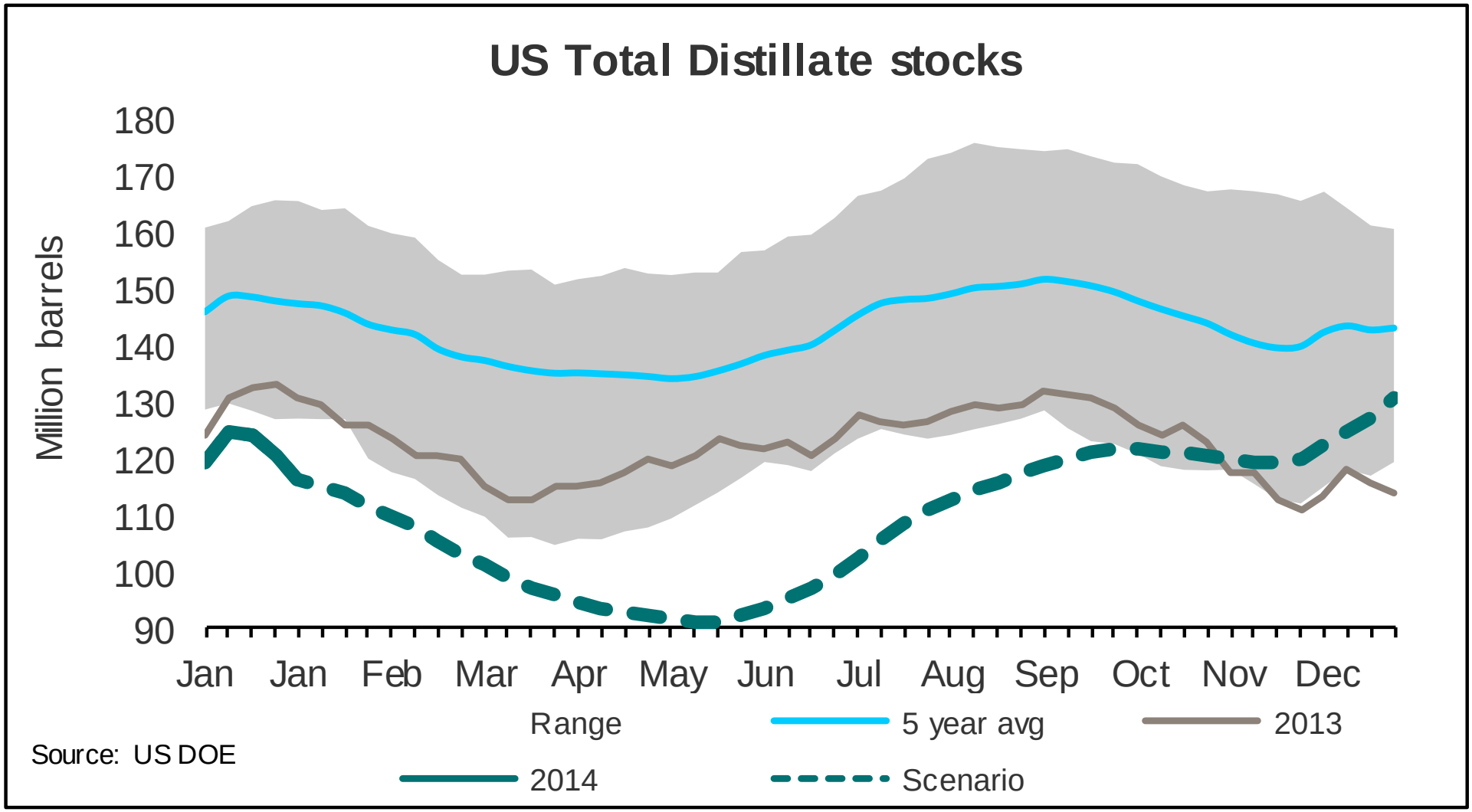
US Distillate Stocks – Forecast



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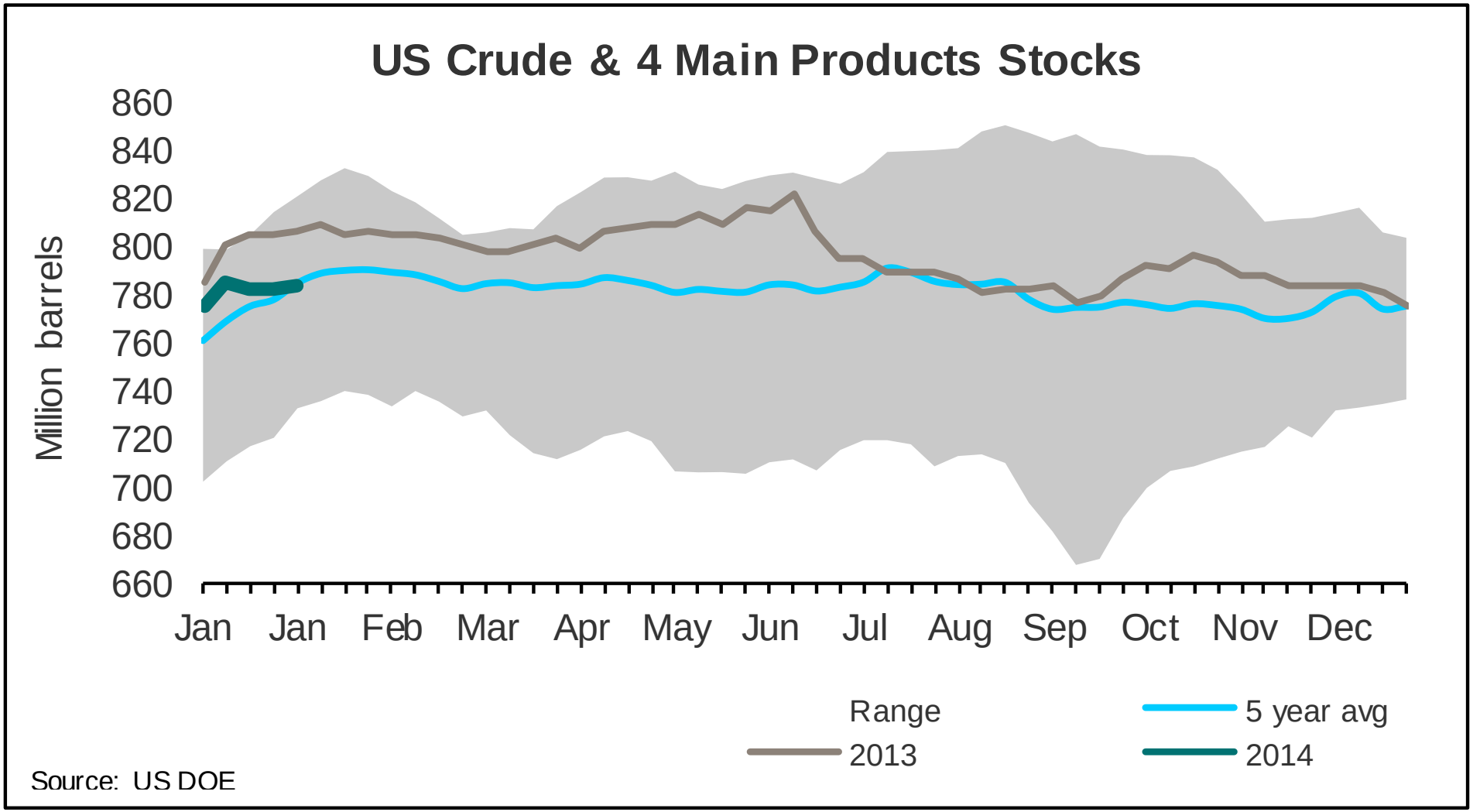
US Crude & 4 Main Products Stocks



Source: US DOE

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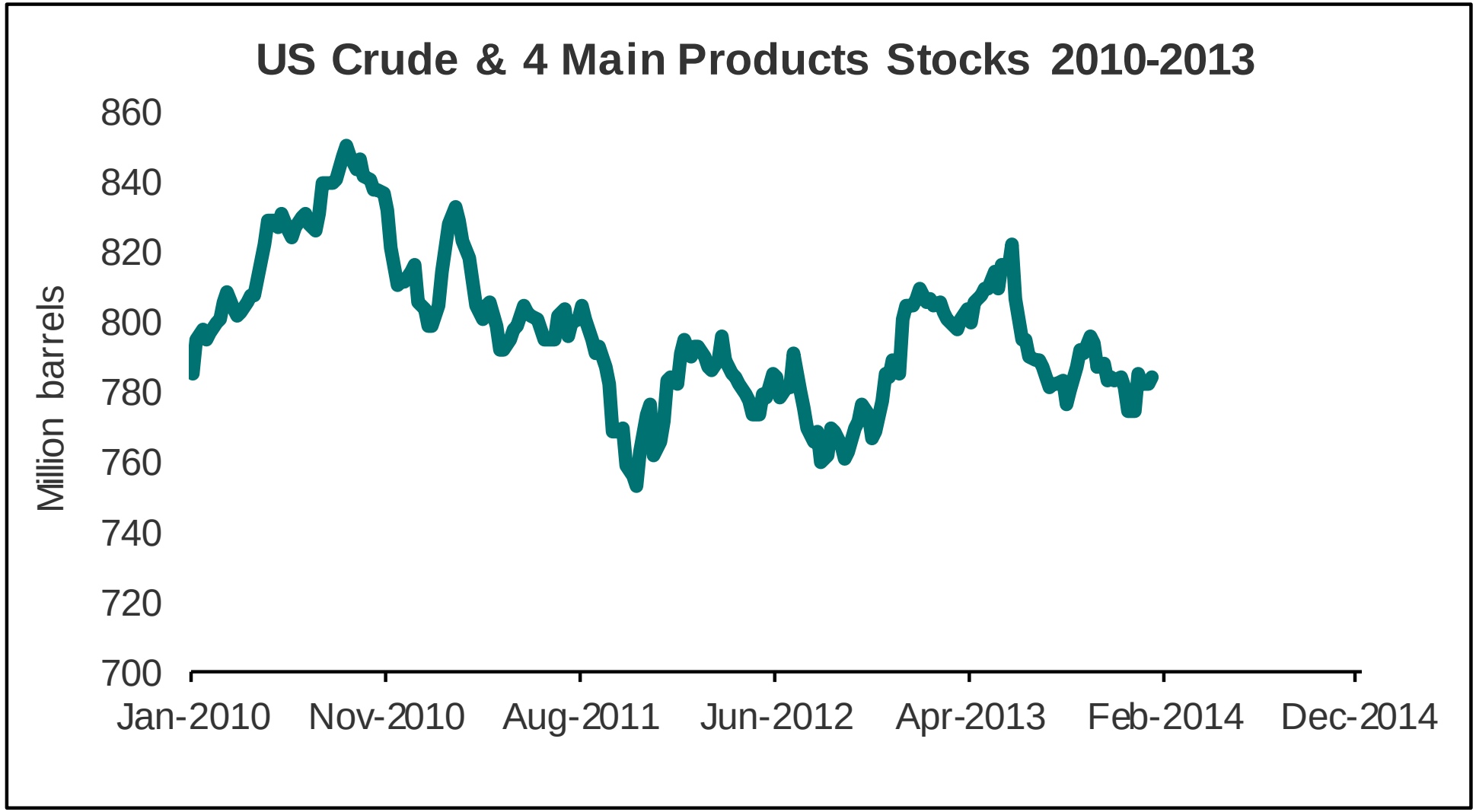
US Crude & 4 Main Products Stocks



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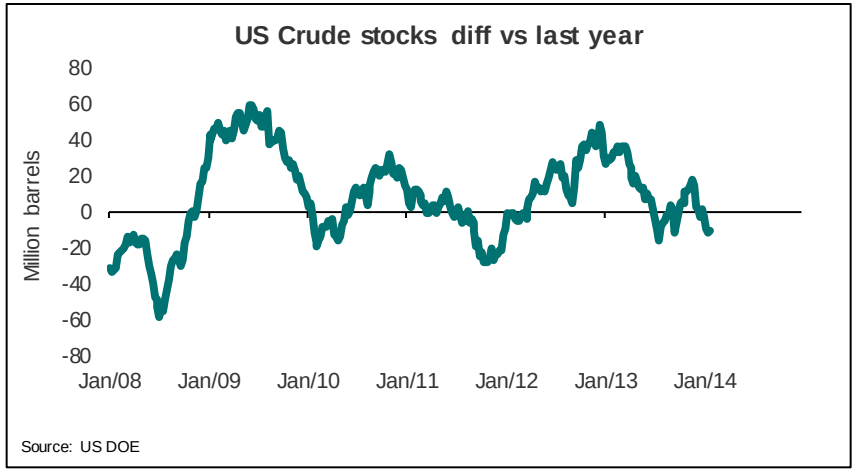
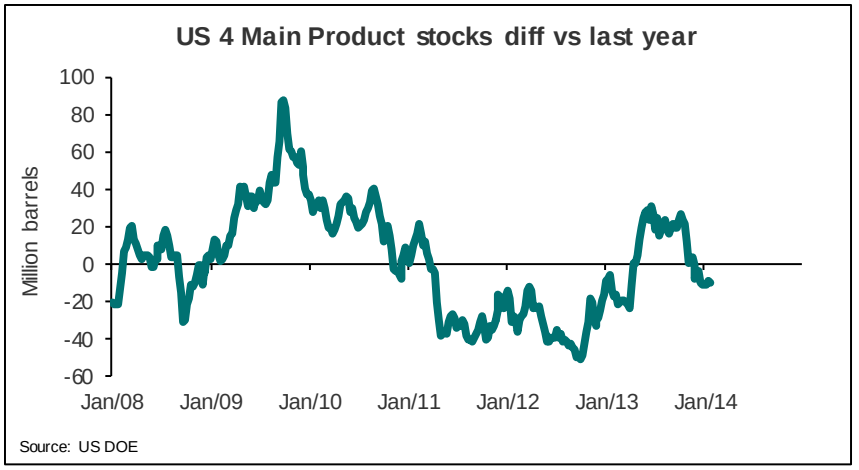
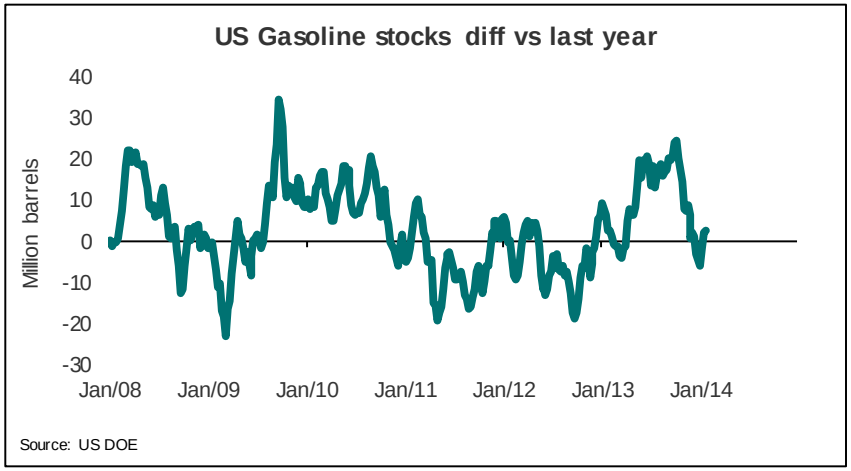
US Crude & 4 Main Products Stocks – Diff To Last Year







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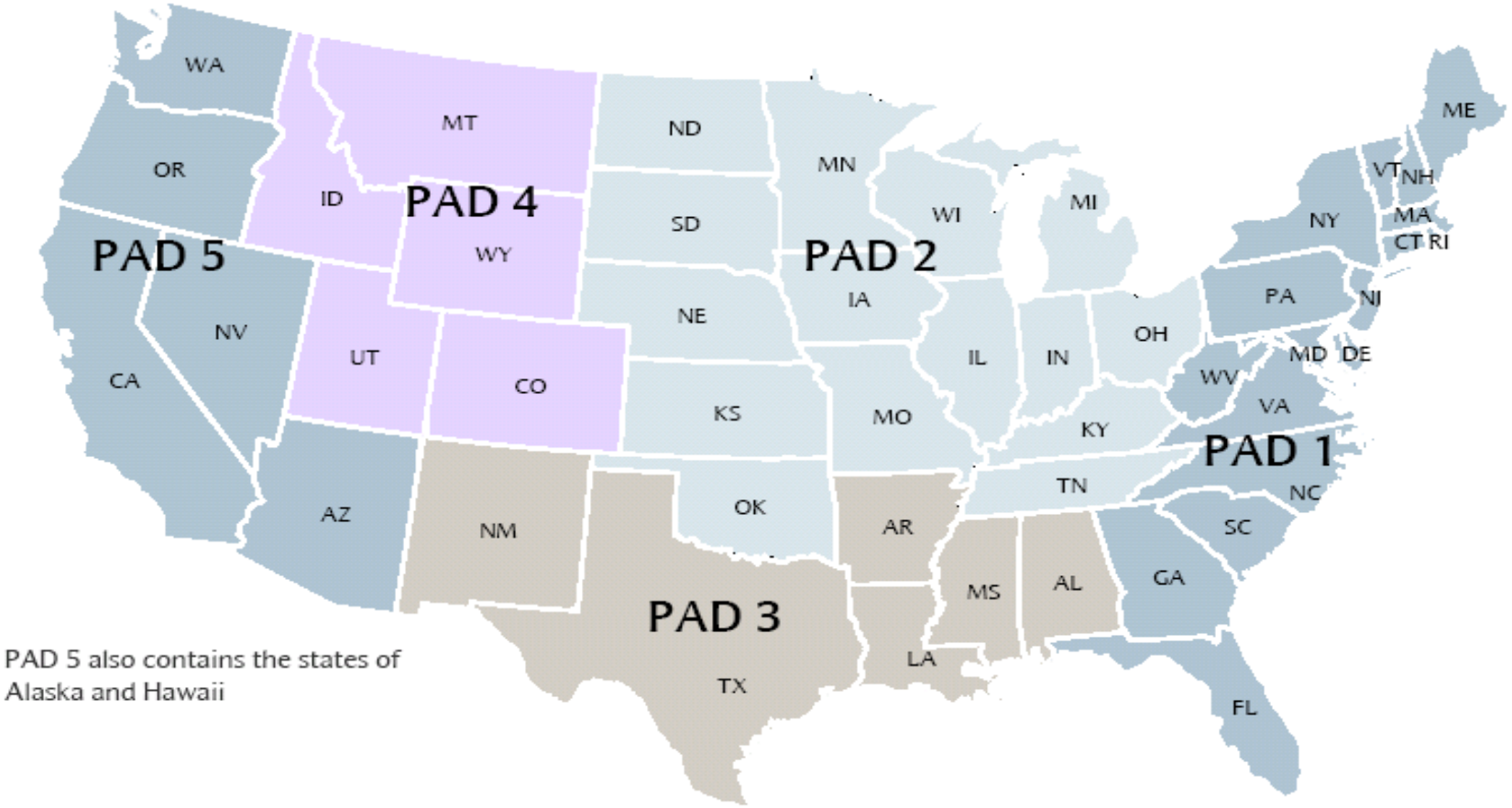
PADD's that are used in the US statistical oil data reporting

(PADD = Petroleum Administration Defense Districts)



PAD 5 also contains the states of Alaska and Hawaii

MARKETS

Demand

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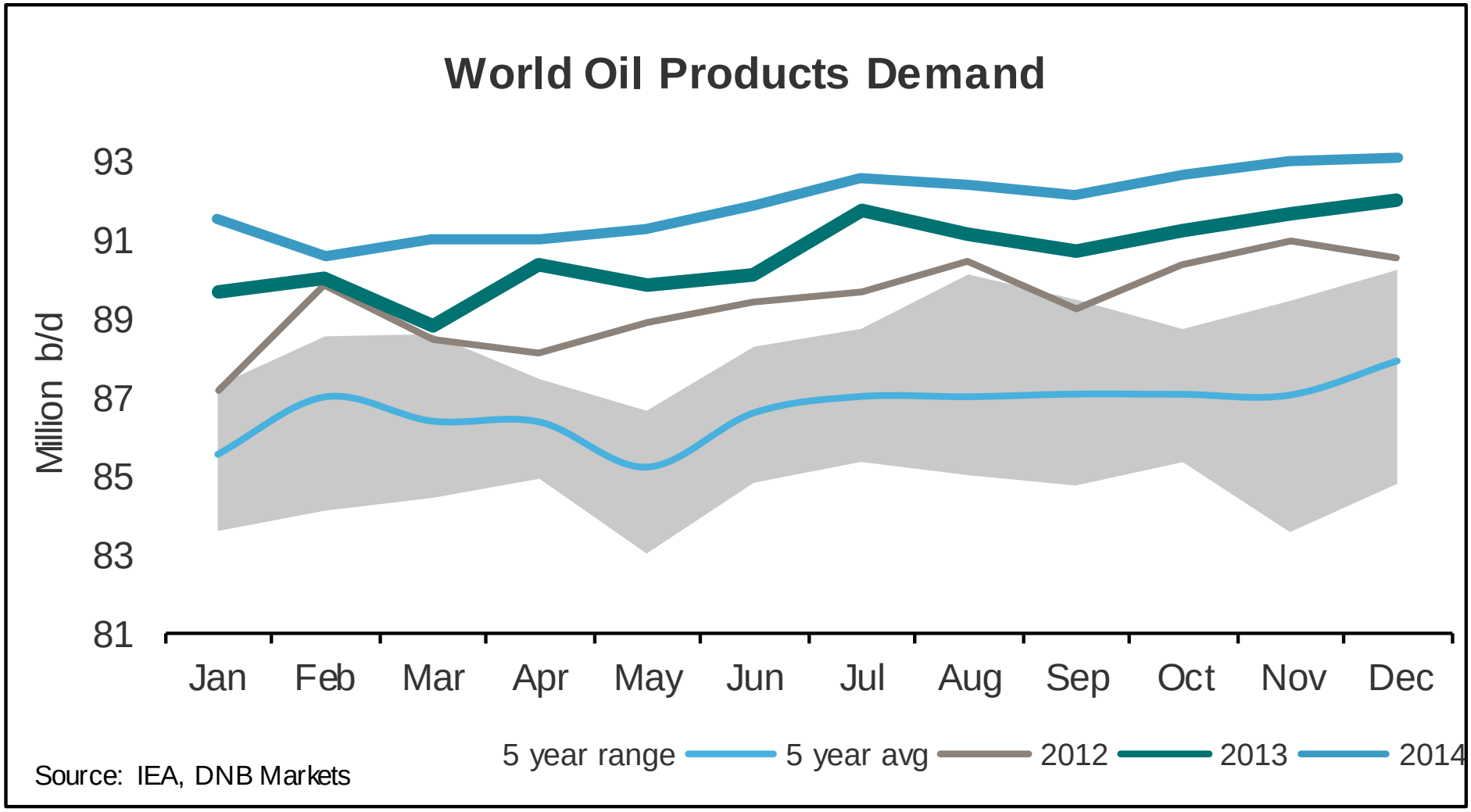
Global Oil Demand



Source: IEA, DNB Markets

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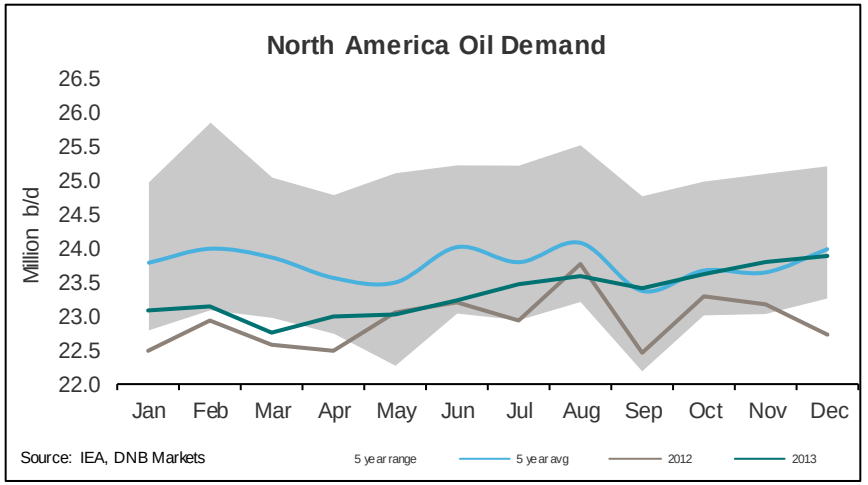
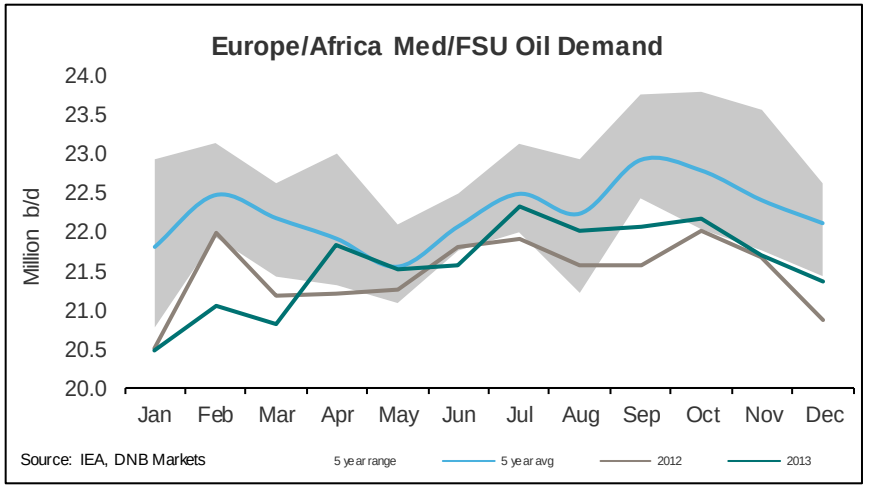
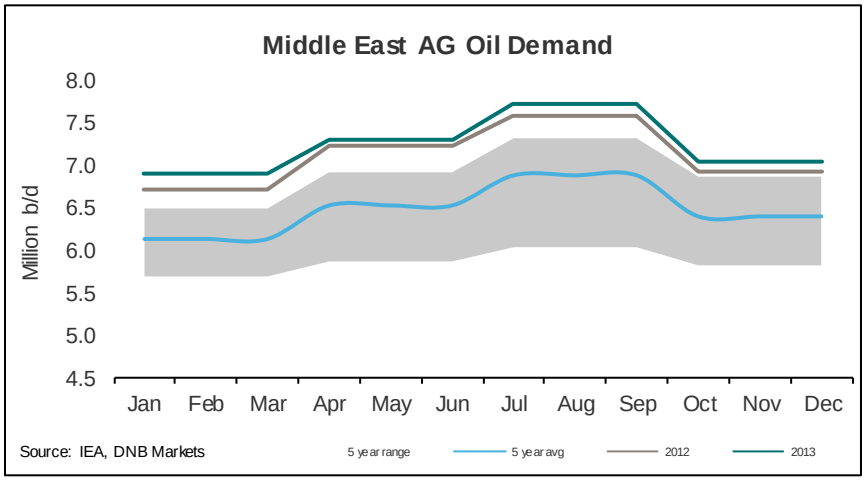
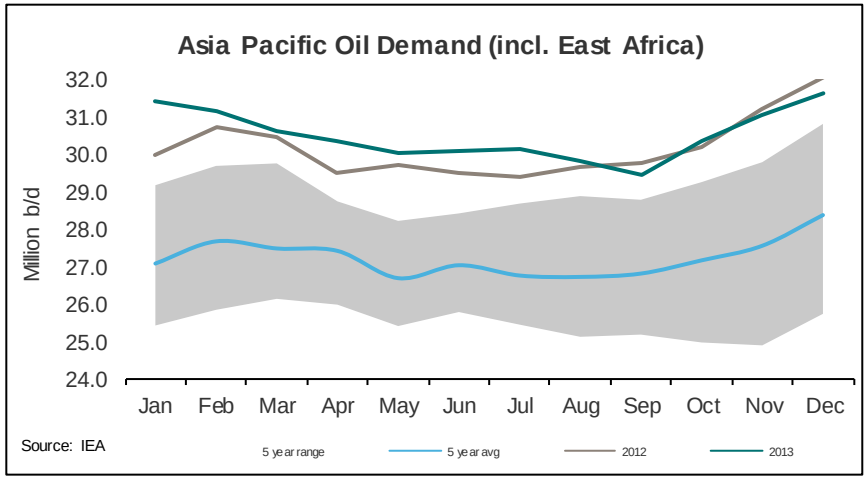
Oil Demand By Key Region









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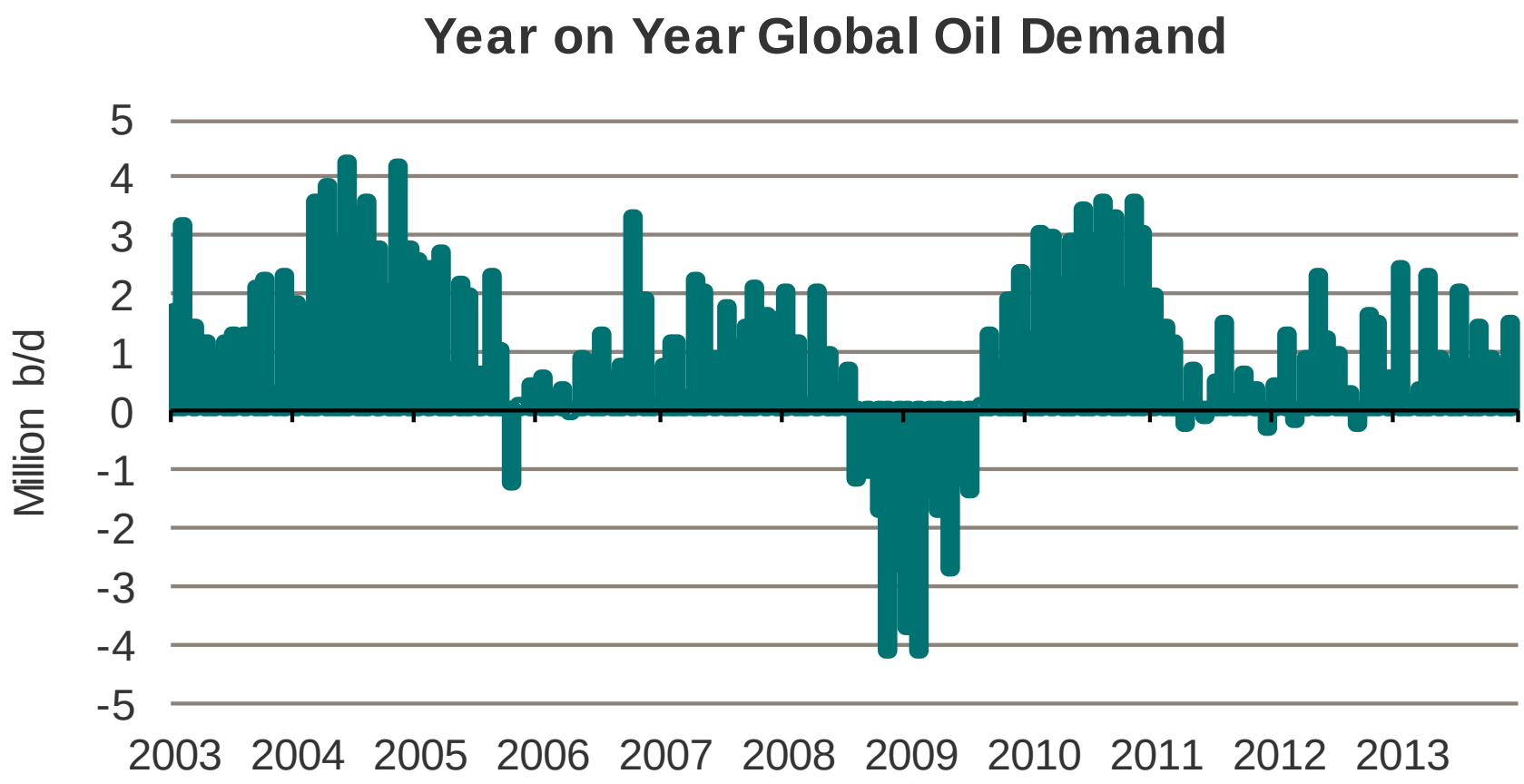
Global Oil Demand Growth



Source: IEA, EIA for US data , Chinese Government for Chinese data

DNB

MARKETS

Global Oil Demand 2012

Year-on-Year Demand Change (kbd)	Q1-12	Q2-12	Q3-12	Q4-12	2012
North America (Canada, Mexico)	-93	34	-13	250	45
US	-614	-178	-380	-394	-392
Europe	-482	-278	-851	-406	-504
Australia, New Zealand, Japan, Korea	445	547	215	160	342
Total OECD	**-744**	**126**	**-1,029**	**-391**	**-510**
Europe/Africa Med & FSU	331	208	239	152	233
Middle East AG excl. Iran and Saudi	140	117	92	66	104
Iran	-5	54	-57	-72	-20
Saudi Arabia	88	152	226	64	133
Asia Pacific/East Africa excl. China and India	10	280	133	183	152
China	260	116	286	758	355
India	143	161	198	101	151
West Africa	83	34	68	73	65
Latin America (excl. Mexico)	217	221	178	305	230
Total Non-OECD	**1,267**	**1,343**	**1,363**	**1,630**	**1,401**
North America	-707	-144	-393	-144	-347
Europe/Africa Med & FSU	-151	-70	-612	-254	-272
Middle East AG/Asia Pacific/East Africa	1,081	1,428	1,093	1,259	1,215
Middle East AG	223	323	261	58	216
Asia Pacific/East Africa	858	1,105	832	1,201	999
West Africa	83	34	68	73	65
Latin America (excl. Mexico)	217	221	178	305	230
Total World	**523**	**1,469**	**334**	**1,239**	**891**

DNB MARKETS

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DNB Global Oil Demand Assumptions For 2013

Year-on-Year Demand Change (kbd)	Q1-13	Q2-13	Q3-13	Q4-13	2013
North America (Canada, Mexico)	119	102	-50	-258	-22
US	223	57	497	957	433
Europe	-536	-29	117	-91	-135
Australia, New Zealand, Japan, Korea	-207	-96	-157	-162	-156
Total OECD	**-402**	**34**	**406**	**446**	**121**
Europe/Africa Med & FSU	96	244	339	317	249
Middle East AG excl. Iran and Saudi	109	93	130	74	102
Iran	-71	-76	12	19	-29
Saudi Arabia	157	49	2	21	57
Asia Pacific/East Africa excl. China and India	362	271	206	155	249
China	441	403	162	-143	216
India	69	13	-22	21	20
West Africa	11	19	-30	-13	-3
Latin America (excl. Mexico)	223	241	215	152	208
Total Non-OECD	**1,397**	**1,257**	**1,014**	**603**	**1,068**
North America	342	159	446	698	411
Europe/Africa Med & FSU	-440	215	456	226	114
Middle East AG/Asia Pacific/East Africa	860	657	332	-15	459
Middle East AG	195	66	144	114	130
Asia Pacific/East Africa	665	591	188	-129	329
West Africa	11	19	-30	-13	-3
Latin America (excl. Mexico)	223	241	215	152	208
Total World	**996**	**1,291**	**1,420**	**1,048**	**1,189**

DNB MARKETS

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DNB Global Oil Demand Assumptions For 2014

Year-on-Year Demand Change (kbd)	Q1-14	Q2-14	Q3-14	Q4-14	2014
North America (Canada, Mexico)	81	18	56	54	52
US	150	150	150	150	150
Europe	190	65	62	88	101
Australia, New Zealand, Japan, Korea	-38	44	-79	-58	-33
Total OECD	**383**	**276**	**190**	**234**	**271**
Europe/Africa Med & FSU	206	157	122	120	151
Middle East AG excl. Iran and Saudi	80	90	41	95	76
Iran	31	29	38	40	34
Saudi Arabia	141	100	26	161	107
Asia Pacific/East Africa excl. China and India	162	159	211	170	176
China	300	300	300	300	300
India	34	-3	94	9	34
West Africa	29	25	35	25	29
Latin America (excl. Mexico)	174	122	119	118	133
Total Non-OECD	**1,156**	**980**	**985**	**1,039**	**1,040**
North America	231	168	206	204	202
Europe/Africa Med & FSU	396	222	184	208	252
Middle East AG/Asia Pacific/East Africa	709	719	631	717	694
Middle East AG	251	219	104	296	218
Asia Pacific/East Africa	459	500	527	422	477
West Africa	29	25	35	25	29
Latin America (excl. Mexico)	174	122	119	118	133
Total World	**1,539**	**1,256**	**1,175**	**1,273**	**1,311**

DNB MARKETS

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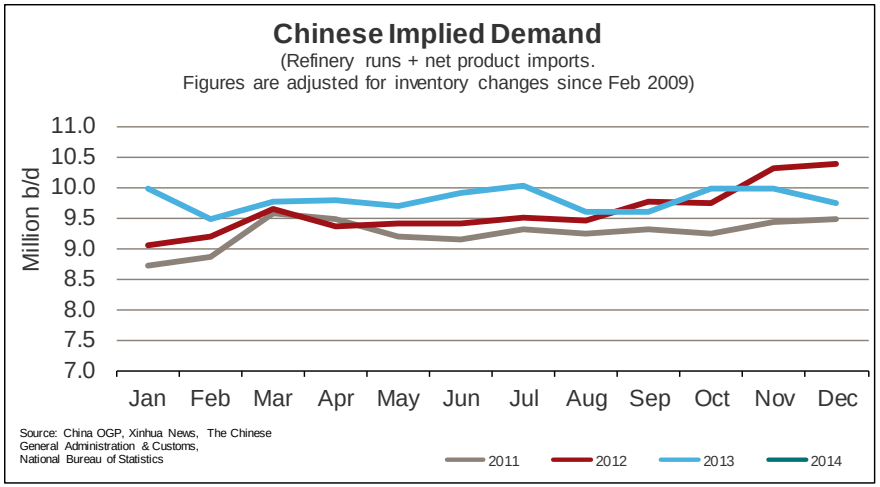
DNB Global Oil Demand – Historicals & Assumptions

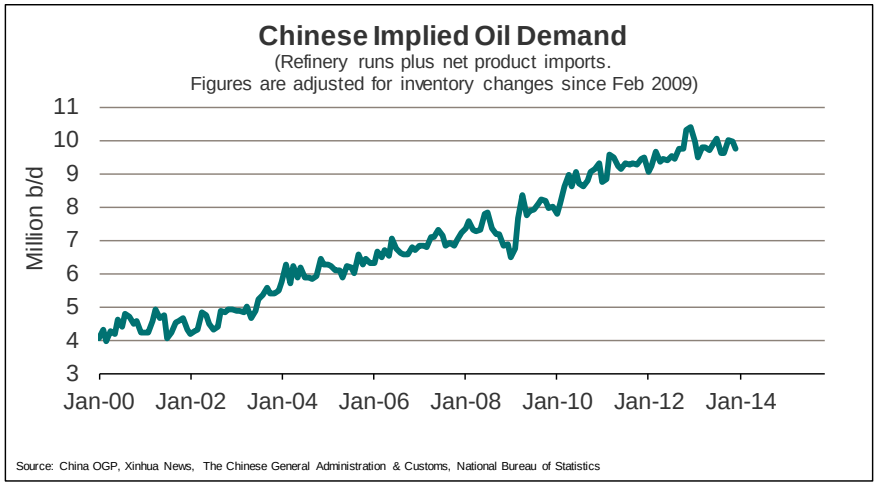
Demand change in Million b/d	Change 2008	Change 2009	Change 2010	Change 2011	Change 2012	YoY Last 3 mts	2013 YTD Chg:	Change 2013	Change 2014
North America (Canada, Mexico)	-70	-153	112	34	45	-258	-22	-22	52
US	-1,188	-725	407	-297	-392	957	433	433	150
Europe	-93	-758	-12	-412	-504	-91	-135	-135	101
Australia, New Zealand, Japan, Korea	-316	-385	121	58	342	-162	-156	-156	-33
Total OECD	**-1,667**	**-2,021**	**629**	**-616**	**-510**	**446**	**121**	**121**	**271**
Europe/Africa Med & FSU	150	-142	79	162	233	317	249	249	151
Middle East AG excl. Iran and Saudi	212	123	127	57	104	74	102	102	76
Iran	45	59	-209	-35	-20	19	-29	-29	34
Saudi Arabia	152	196	218	104	133	21	57	57	107
Asia Pacific/East Africa excl. China and India	-16	384	541	238	152	155	249	249	176
China	328	450	956	523	355	-143	216	216	300
India	114	66	70	77	151	21	20	20	34
West Africa	51	23	89	48	65	-13	-3	-3	29
Latin America (excl. Mexico)	360	57	357	91	230	152	208	208	133
Total Non-OECD	**1,393**	**1,213**	**2,228**	**1,265**	**1,401**	**603**	**1,068**	**1,068**	**1,040**
North America	-1,257	-878	519	-263	-347	698	411	411	202
Europe/Africa Med & FSU	57	-900	67	-250	-272	226	114	114	252
Middle East AG/Asia Pacific/East Africa	516	890	1,825	1,022	1,215	-15	459	459	694
Middle East AG	408	377	136	126	216	114	130	130	218
Asia Pacific/East Africa	109	514	1,689	896	999	-129	329	329	477
West Africa	51	23	89	48	65	-13	-3	-3	29
Latin America (excl. Mexico)	360	57	357	91	230	152	208	208	133
Total World	**-274**	**-808**	**2,857**	**648**	**891**	**1,048**	**1,189**	**1,189**	**1,311**

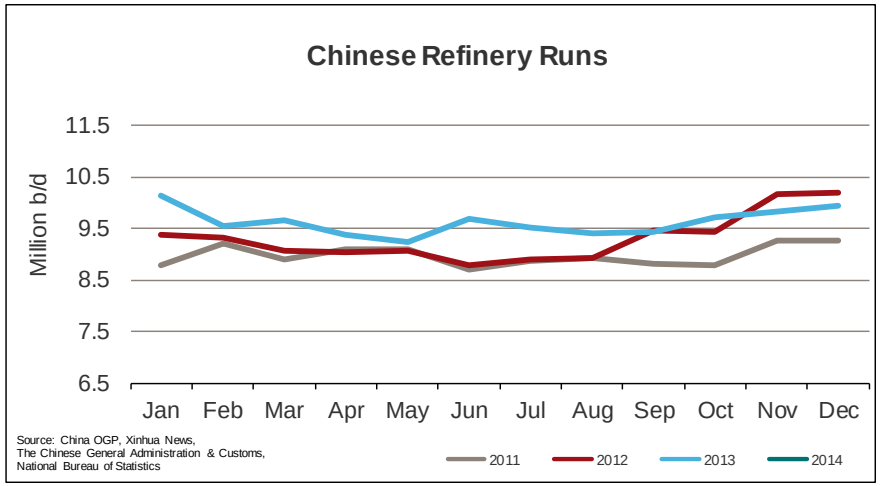
DNB MARKETS

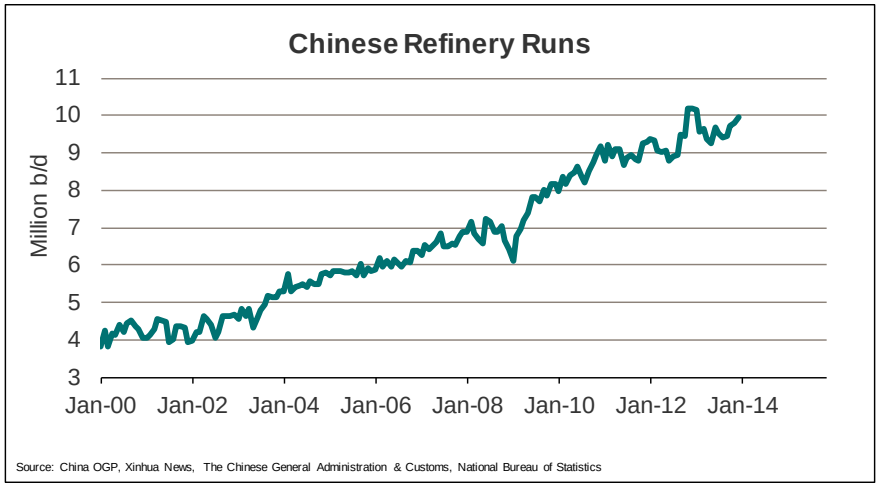
Chinese Oil Demand & Refinery Throughput

- Adjusted for inventory changes



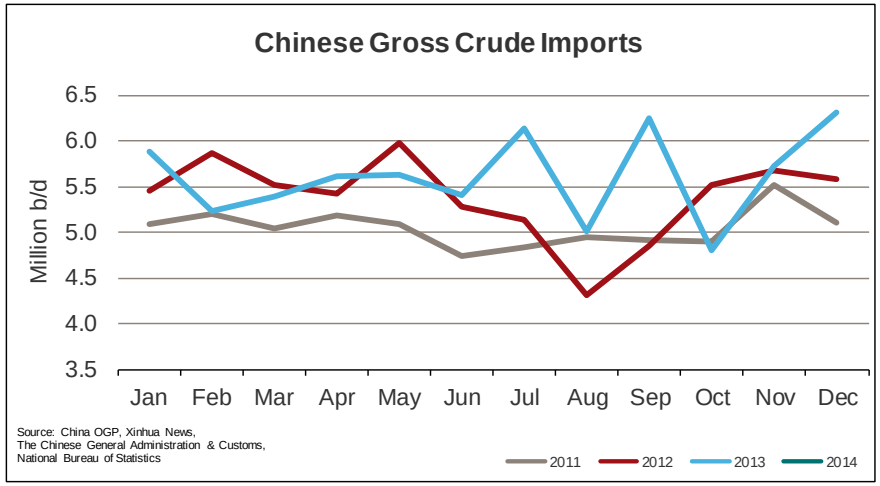


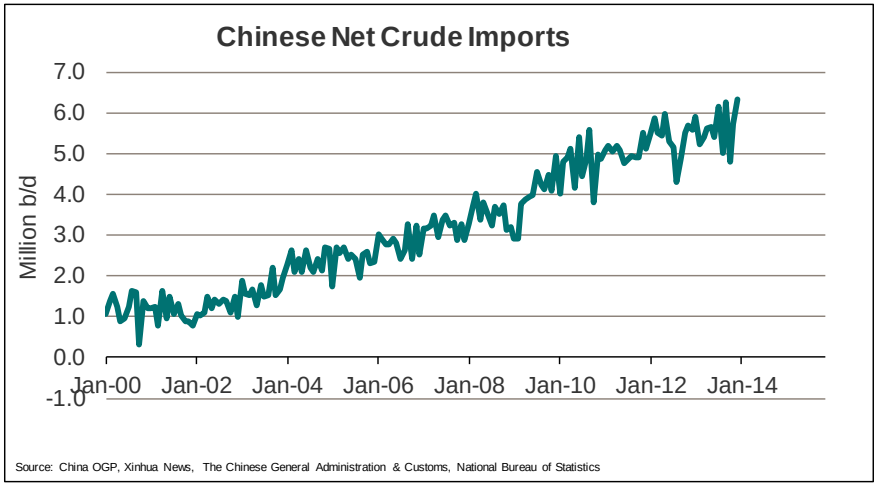


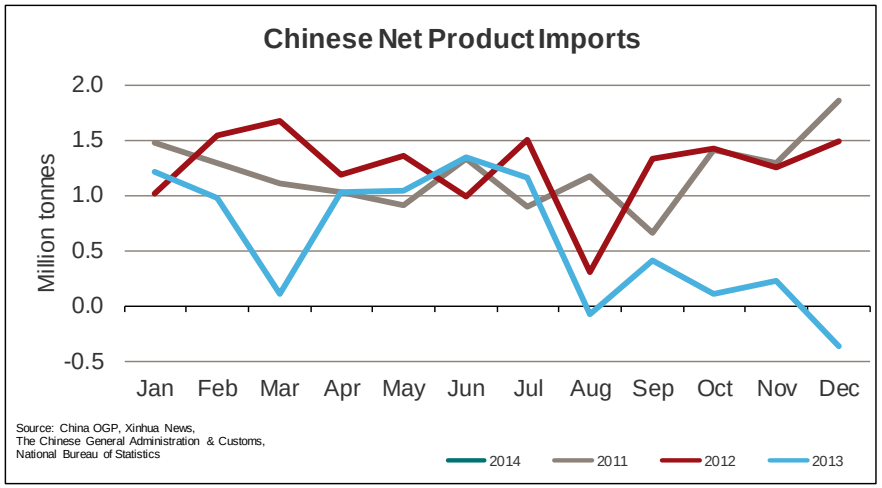


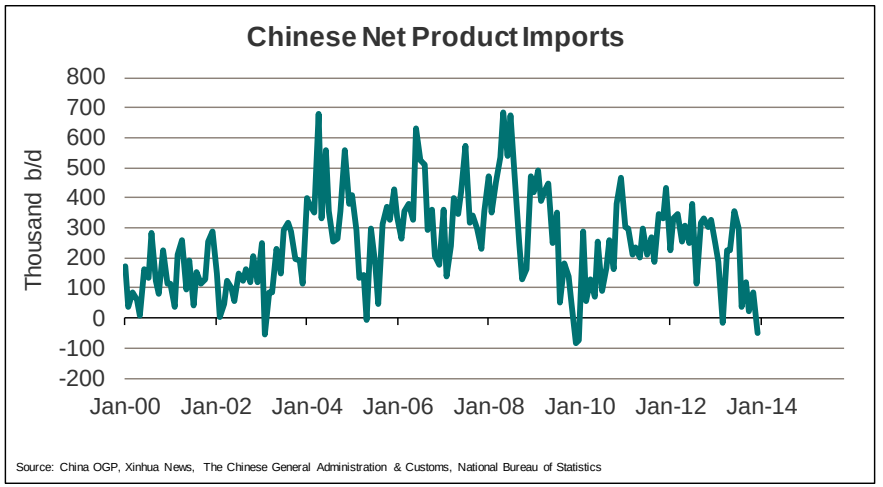
DNB MARKETS

Chinese Crude Oil & Oil Products Imports



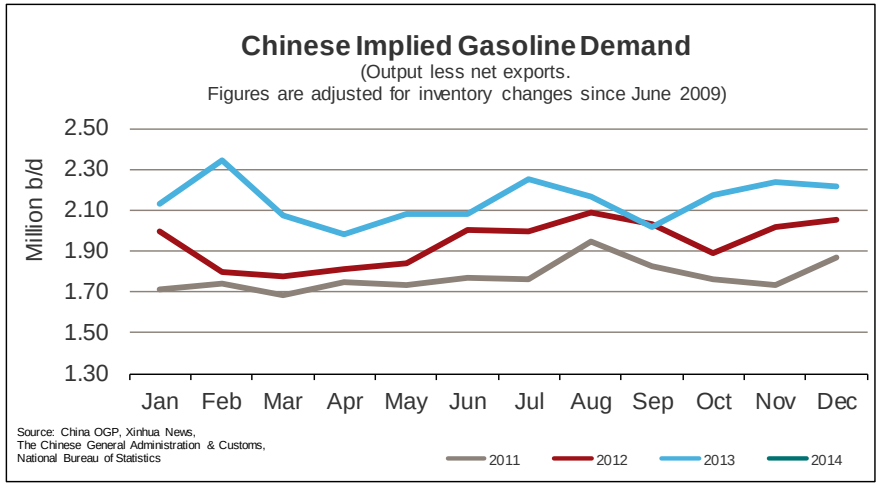


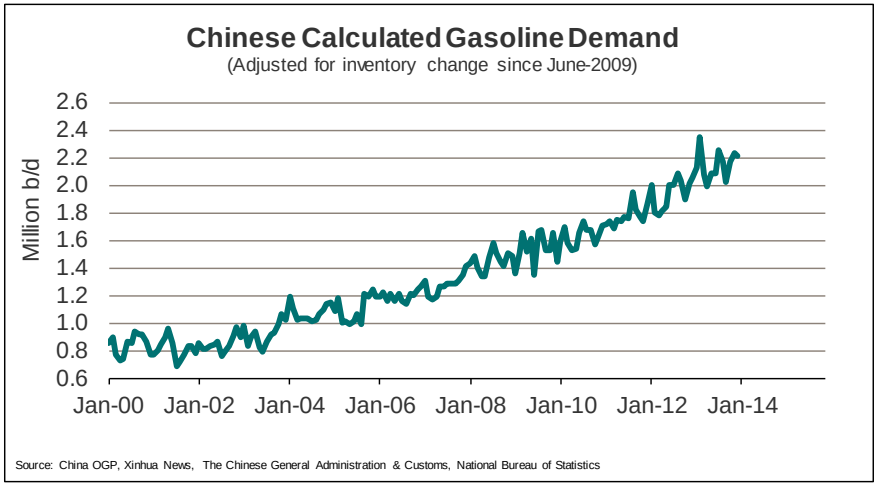


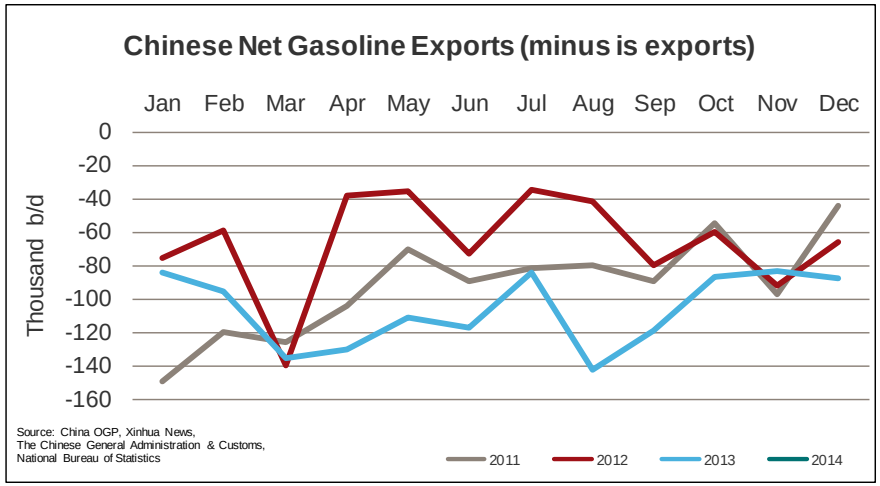


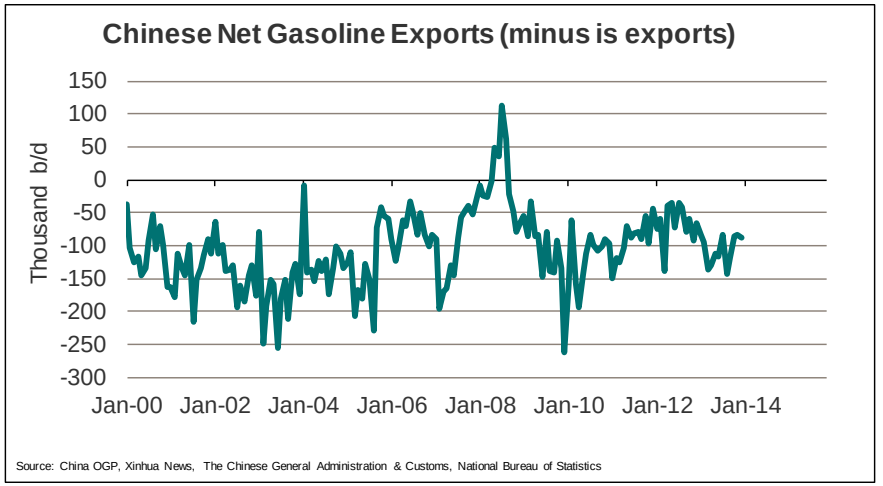
DNB MARKETS

Chinese Gasoline Demand & Net Gasoline Exports









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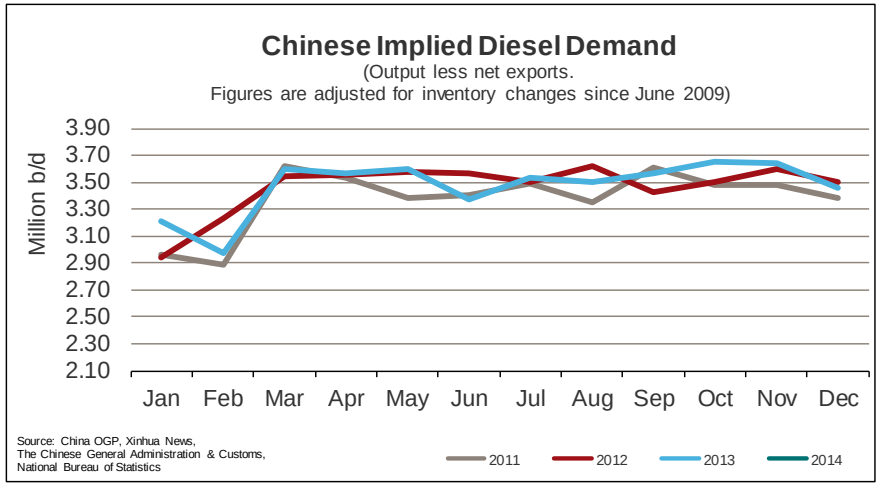
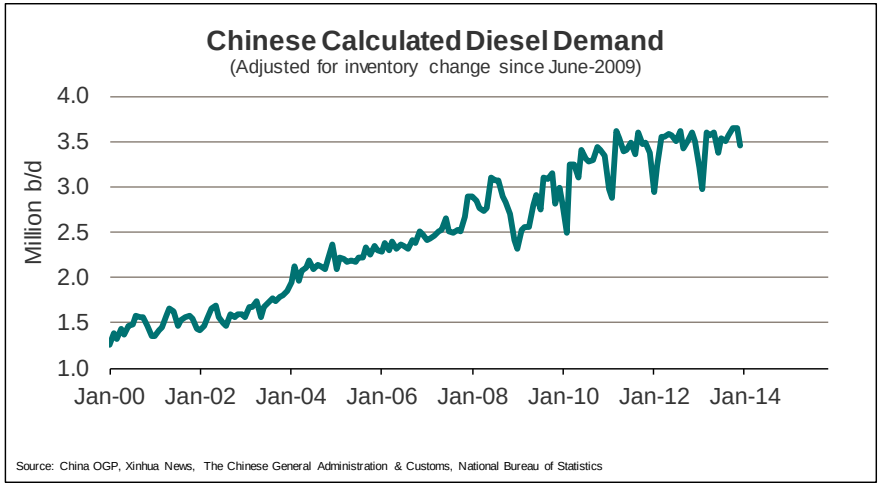
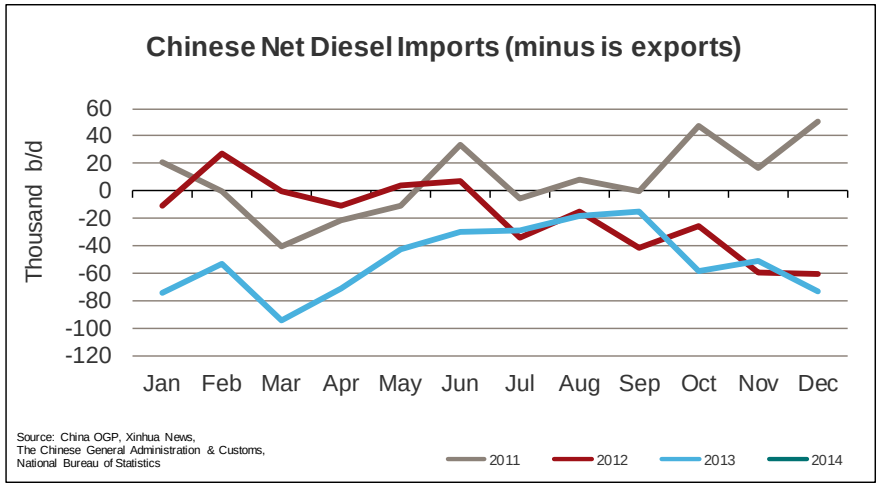
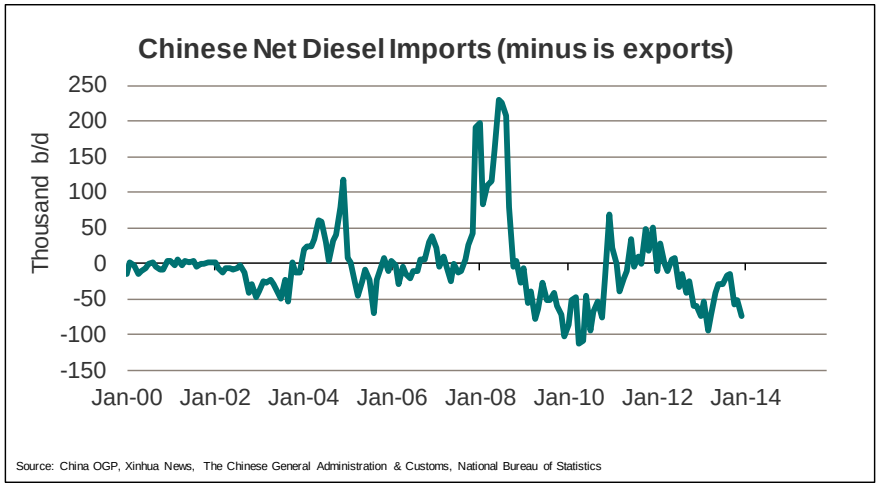
Chinese Diesel Demand & Net Diesel Imports









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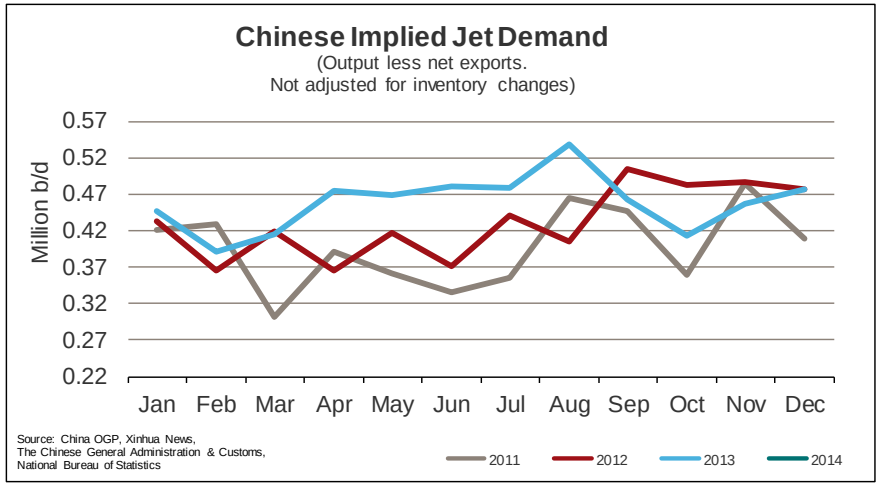
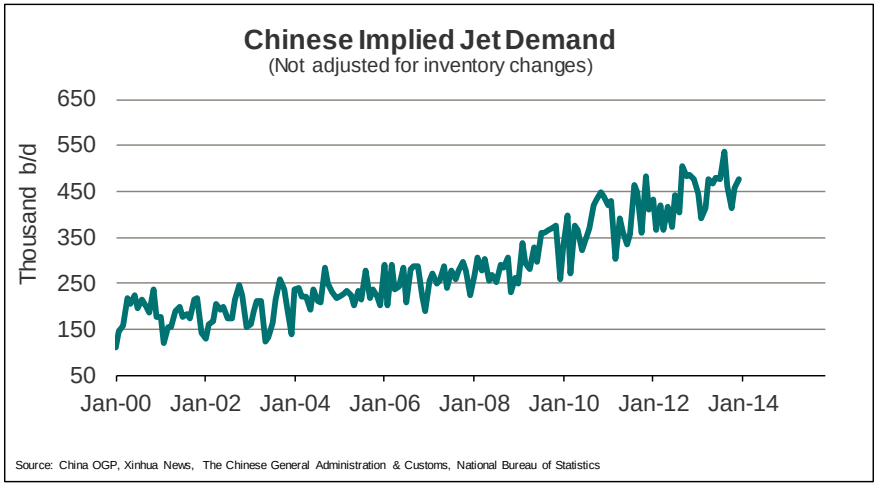
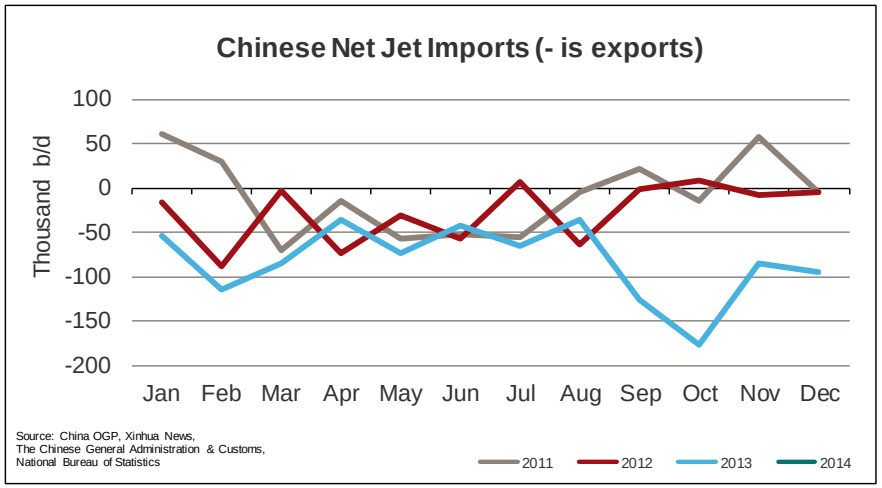
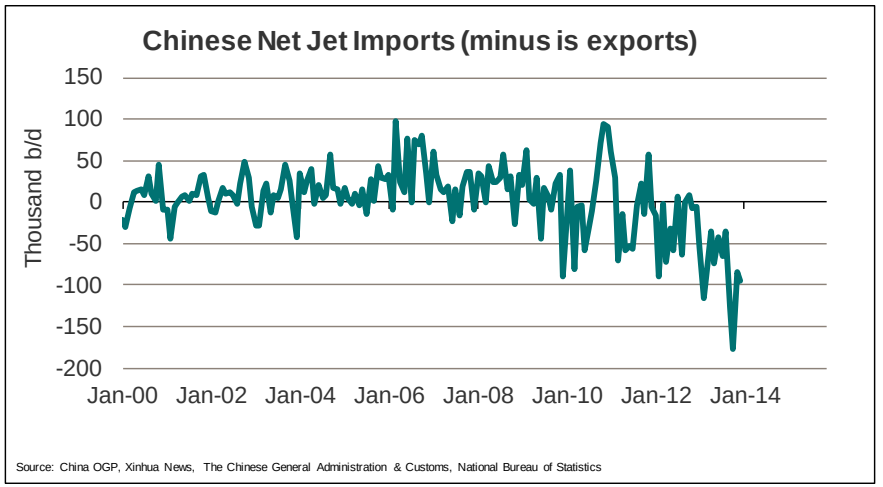
Chinese Jet Demand & Net Jet Imports









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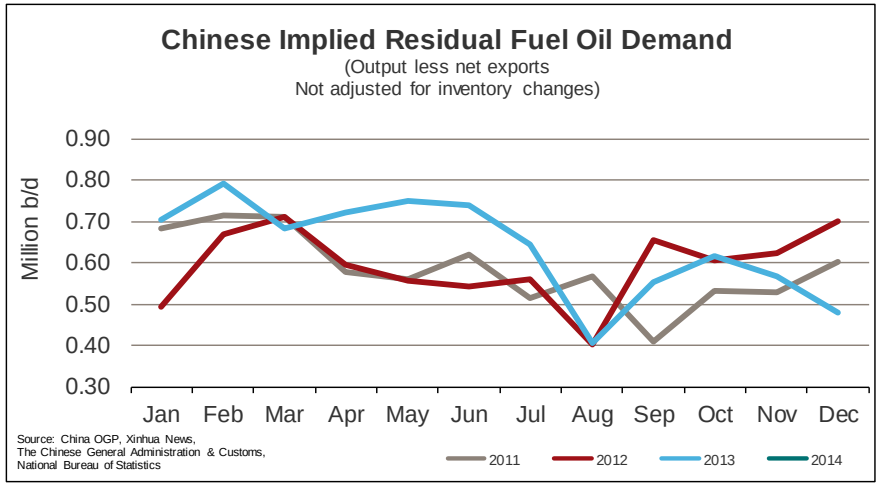
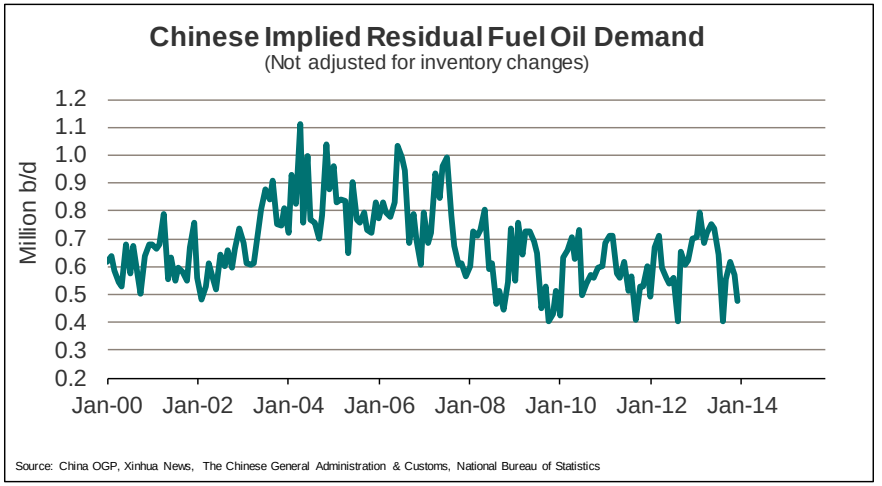
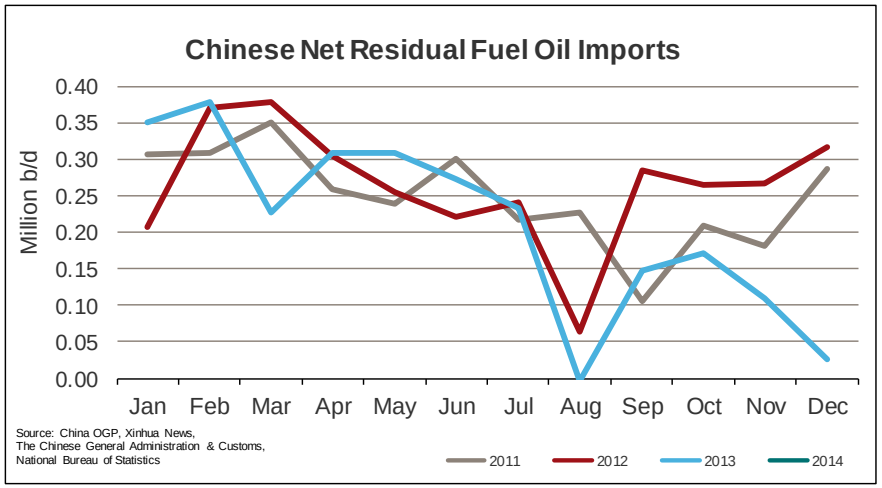
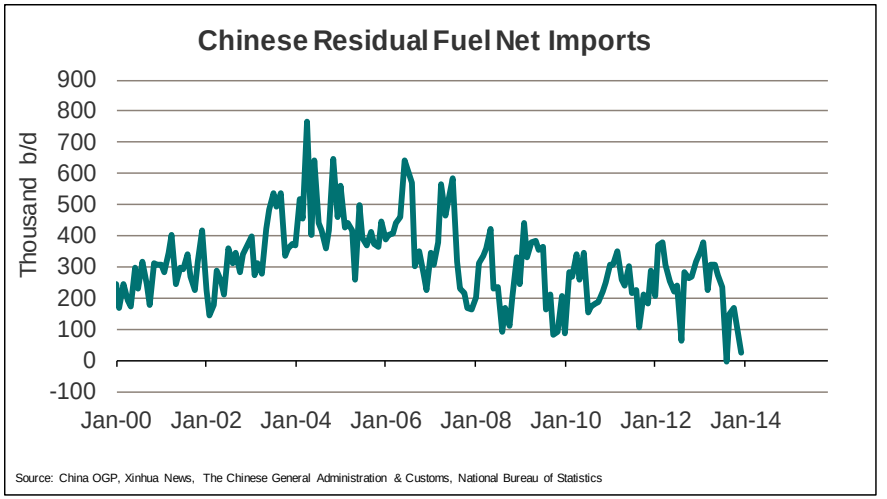
Chinese Residual Fuel Demand & Net Residual Fuel Imports









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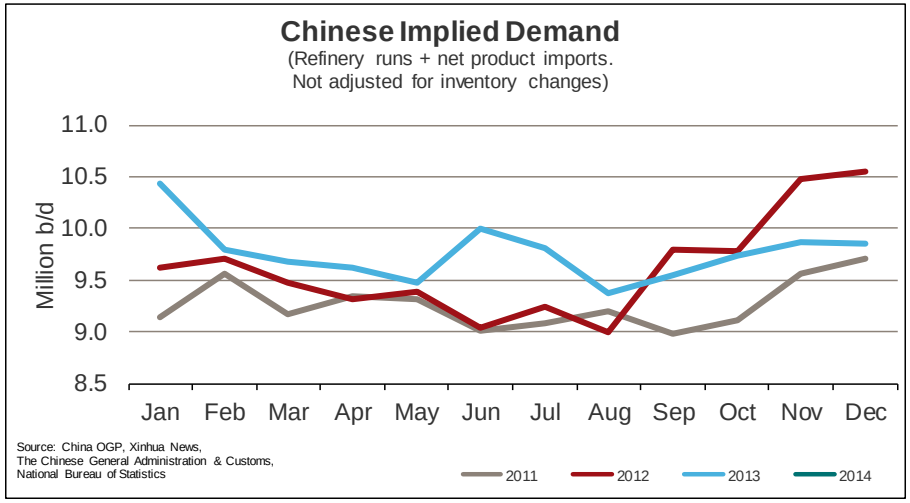
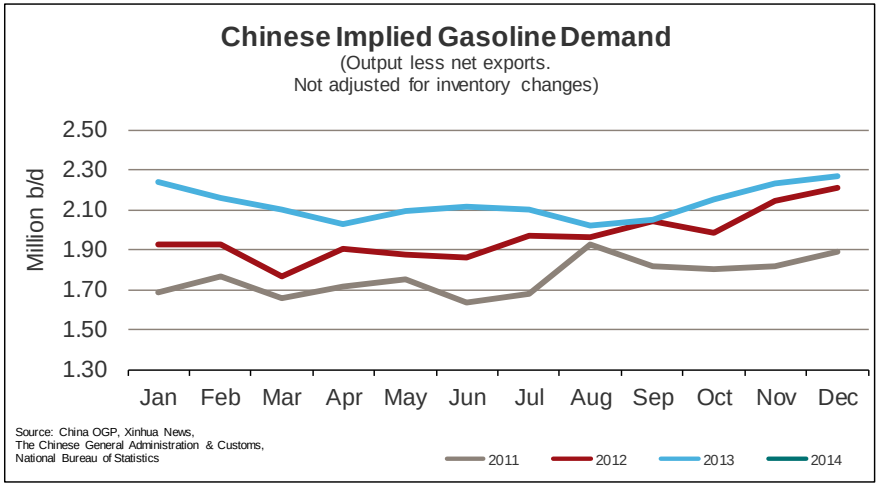
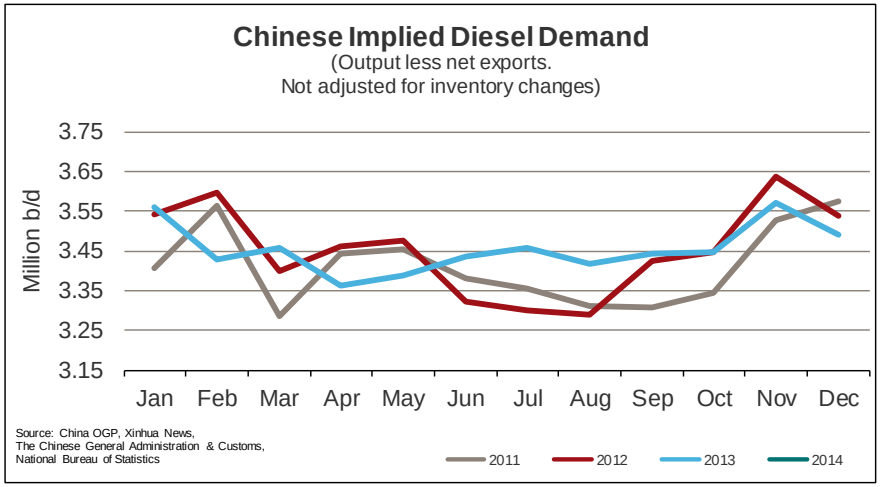
Chinese Oil Demand Without Inventory Adjustment







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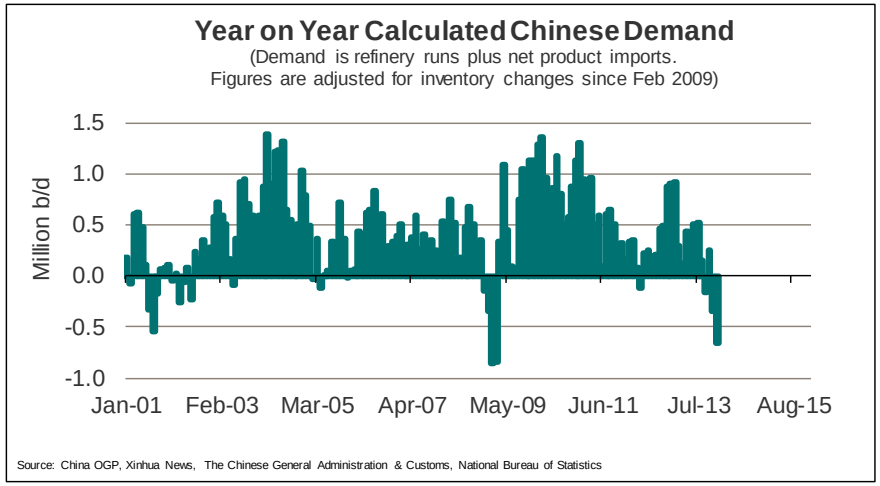
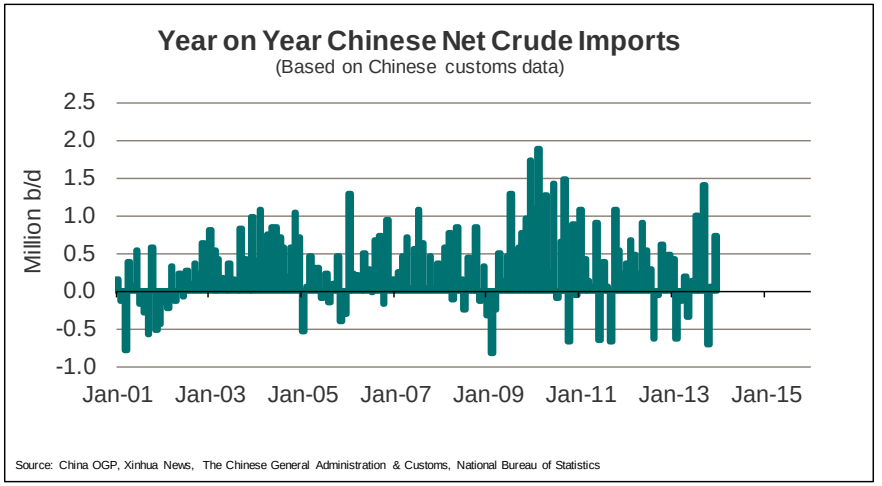
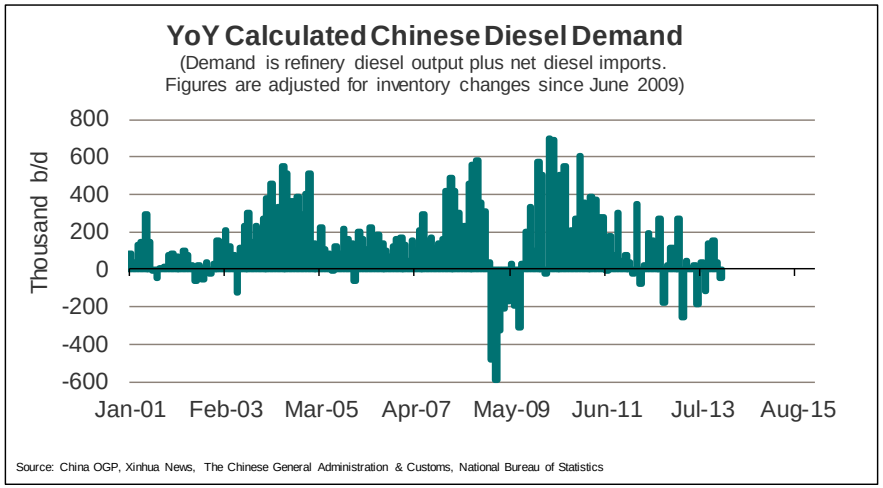
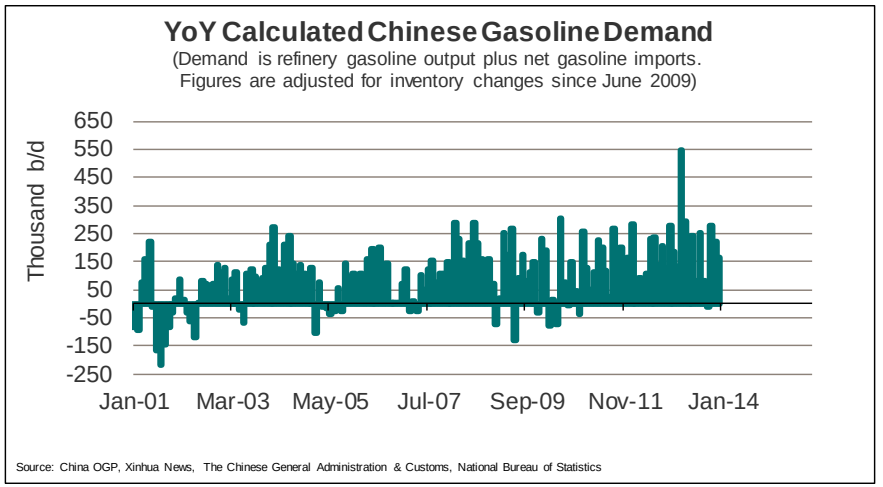
Chinese Year on Year Changes In Oil Demand & Oil Imports









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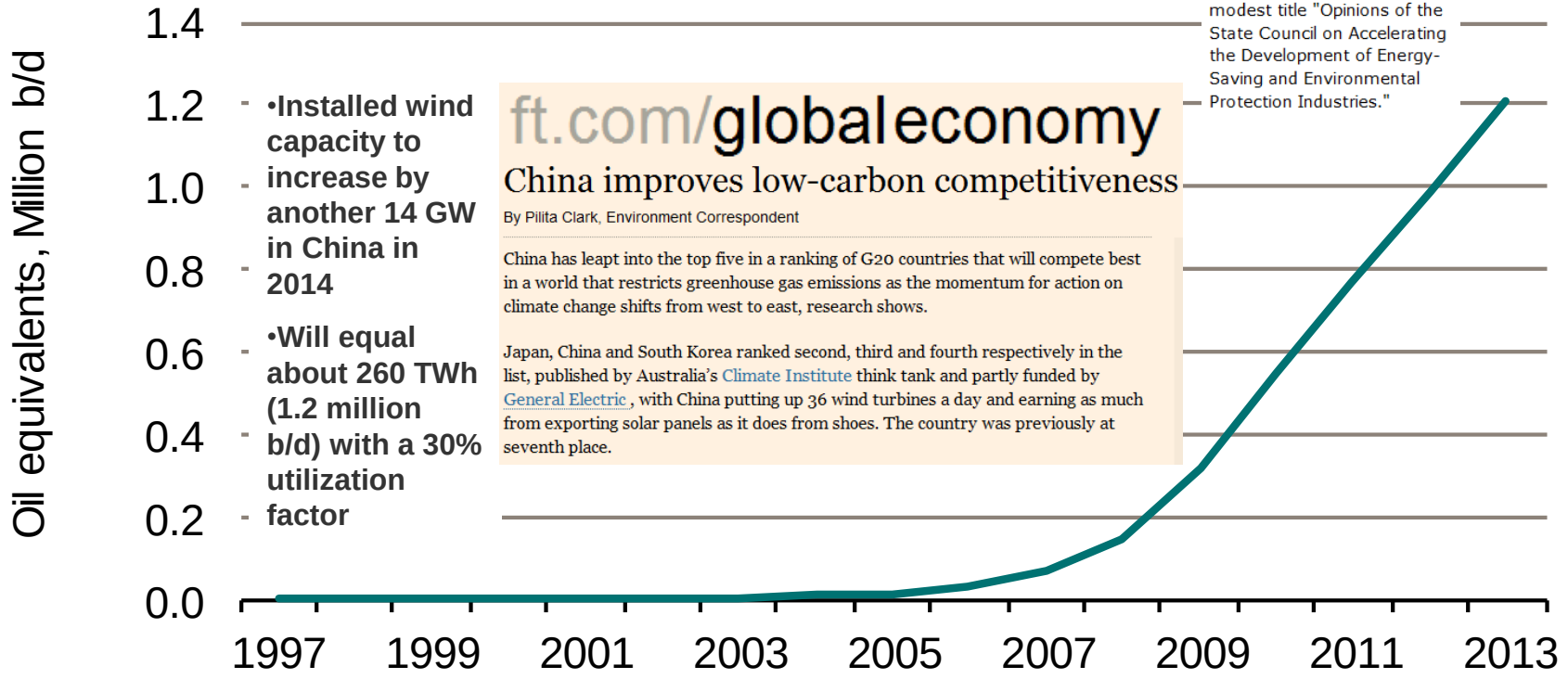
Look What The Chinese Have Done With Wind Power

- Increase from zero to 1.2 million b/d (260 TWh) in 6 years. Total German electricity consumption is about 600 TWh…



SPIEGEL ONLINE INTERNATIONAL

'Liconomics': China's Green Revolution Arrives

But that's where, on Sunday, August 11, the government released a guideline with the modest title "Opinions of the State Council on Accelerating the Development of Energy-Saving and Environmental Protection Industries."

ft.com/globaleconomy

China improves low-carbon competitiveness

By Pilita Clark, Environment Correspondent

China has leapt into the top five in a ranking of G20 countries that will compete best in a world that restricts greenhouse gas emissions as the momentum for action on climate change shifts from west to east, research shows.

Japan, China and South Korea ranked second, third and fourth respectively in the list, published by Australia's Climate Institute think tank and partly funded by General Electric , with China putting up 36 wind turbines a day and earning as much from exporting solar panels as it does from shoes. The country was previously at seventh place.

China makes fresh promises on air pollution, pledges support for solar

SHANGHAI, June 15 (Reuters) - China's cabinet approved new measures to combat air pollution on Friday, in the latest step by China's new leadership to address the country's enormous environmental problems, with pollution a key source of rising social discontent in China.

Source: BP stats, Global Wind Energy Council

DNB

MARKETS

Chinese Air Pollution Getting Out Of Control

- An index above 150 is “unhealthy”, above 200 is “very unhealthy”, above 300 is “hazardous”

China’s LNG refilling station construction boom

China witnessed an LNG refuelling station constriction boom in the first three quarters of this year, in line with the government’s policy to increase cleaner fuel use in transportation.

Sources have said that by the end of September, China had 1,700 LNG refilling stations in operation, up from 1,325 by the end of the second quarter. The three regions and provinces with the largest number of stations are Xinjiang, Hebei and Guangdong.

The ramp-up in station construction has been spurred on by government calls to prioritise gas use so as to meet vehicle emission targets for 2015 set out in the country’s Clean Air Act. The bulk of the stations being built are by the country’s top three state-owned majors – China National Petroleum Corp. (CNPC), Sinopec Group and China National Offshore Oil Corp. (CNOOC). CNPC itself intends to add 5,000 LNG stations across the country by 2015, including 248 in central China’s Henan Province.

By the end of 2012, the number of LNG-fuelled vehicles on China’s roads had reached 80,000 units, up from 38,500 units in 2011.

In Guangzhou, Guangdong Province’s capital, local authorities plan to retrofit 6,500 LPG-fuelled buses over the next eight years to run on LNG, with 1,600 of that number slated to be switched over this year.

China’s gas demand was growing by 20% per year until 2011, with growth slowing to 10.6% in 2012 as a result of an economic restructuring that slowed some of the country’s industrial development. According to the country’s 12th Five-Year Plan (2011-15), China’s gas demand will reach 230 billion cubic metres by 2015.

In addition to imports, for LNG refuelling stations will source a significant portion of their supply from trains operated by independent investors and distributors such as ENN and Xinjiang Guanghui. ■

THE WALL STREET JOURNAL.

September 23, 2013, 6:38 a.m. ET

Beijing to Limit Car Ownership to 6 Million

By Richard Silk

BEIJING--The city government of Beijing on Monday mapped out plans to combat the air pollution that plagues the Chinese capital, including a cap on the number of vehicles and transferring most electricity production outside the city.

The government set a target of reducing PM2.5--particles smaller than 2.5 microns, which are among the most harmful to human health--to 60 micrograms per cubic meter by 2017, a reduction of more than 25% from today's average levels.

The number of motor vehicles in the city will be limited to 6 million, the city said in a statement, with a target to cut gasoline and diesel use by 5% in the five years to 2017.

That will mean taking a million old vehicles off the road and replacing them with newer, more efficient models. The government said it would continue to tighten emissions standards for vehicles and aims to have 20,000 "clean energy" vehicles in service by 2017.

Public transport will also continue to get funding, with a target to have more than half of all journeys in the city center use public transport by 2017.

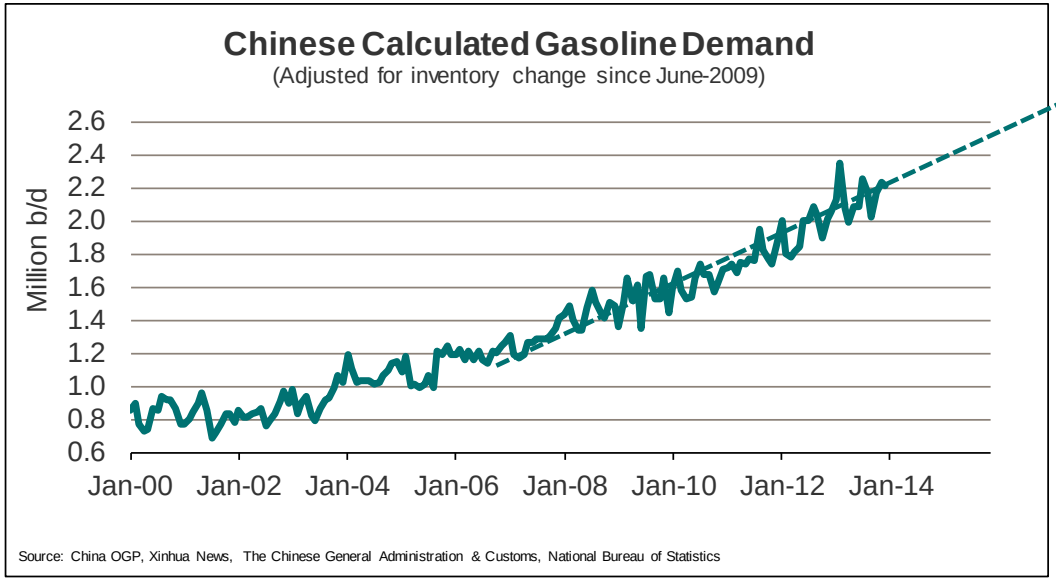
The authorities also want to transfer 70% of electricity production outside the city and build four natural gas power stations, while new coal and heavy oil plants will be banned from the capital. They also want to install electric heating to replace coal in old-style houses and promote gas or solar panels in the more remote suburbs.

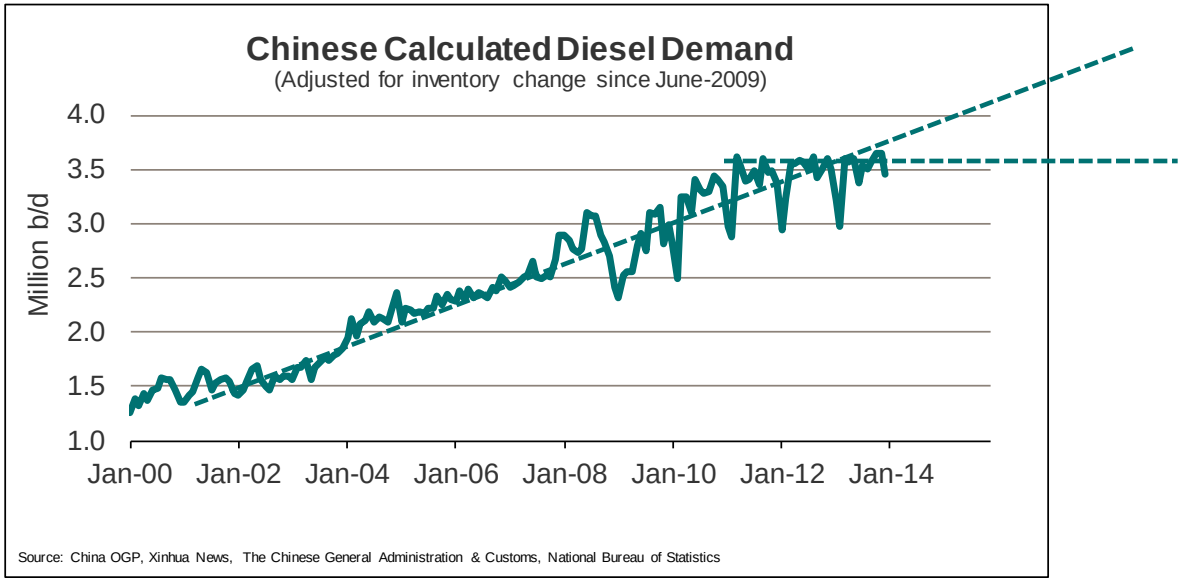
Sources:
Financial Times
Wall Street Journal
Newsbase - ChinaOil

DNB MARKETS

Chinese Oil Demand Growth To Favor Personal Consumption

- Oil products more tilted towards industrial production and the investment cycle may grow much slower in coming years





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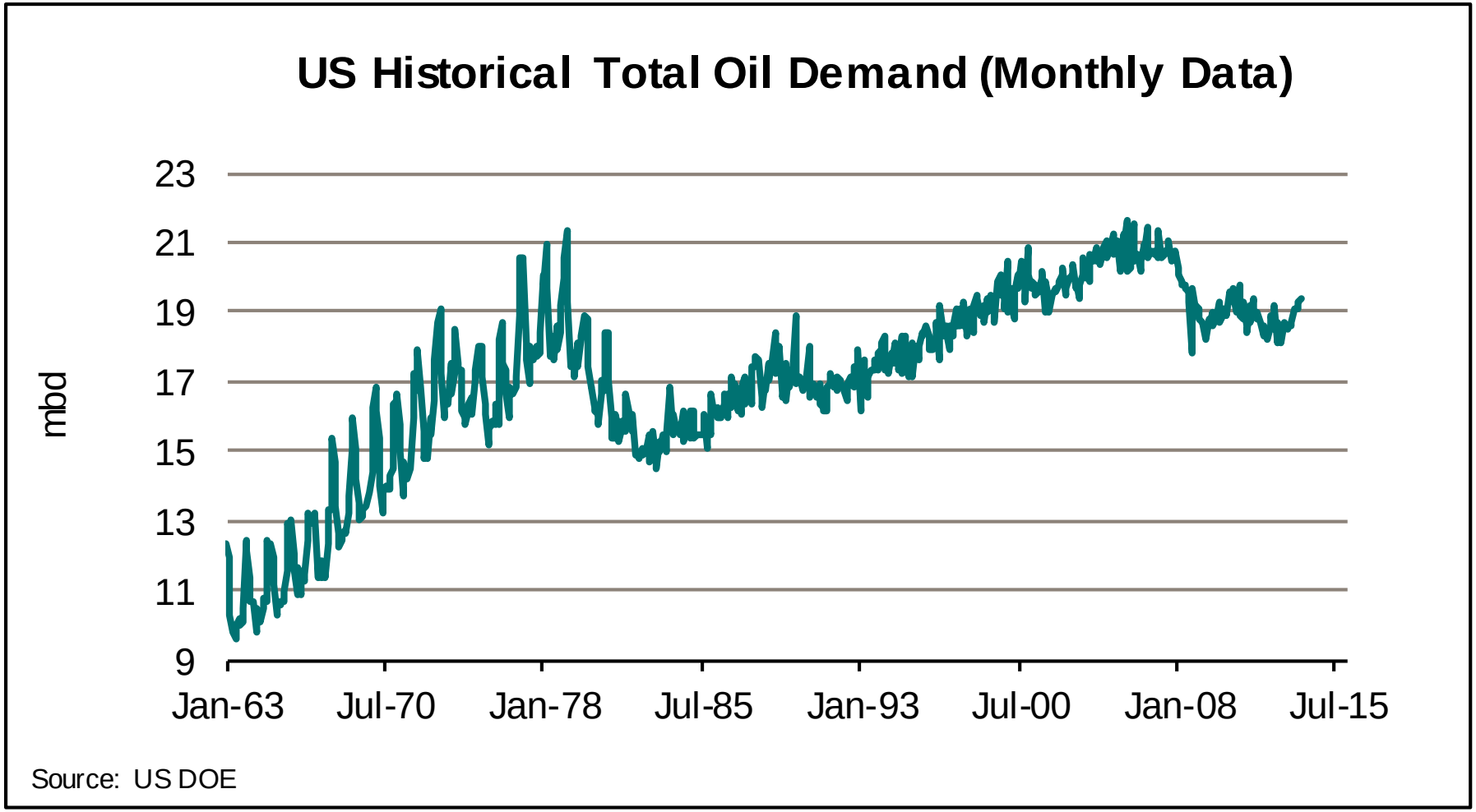
US Total Oil Demand – Monthly DOE Data



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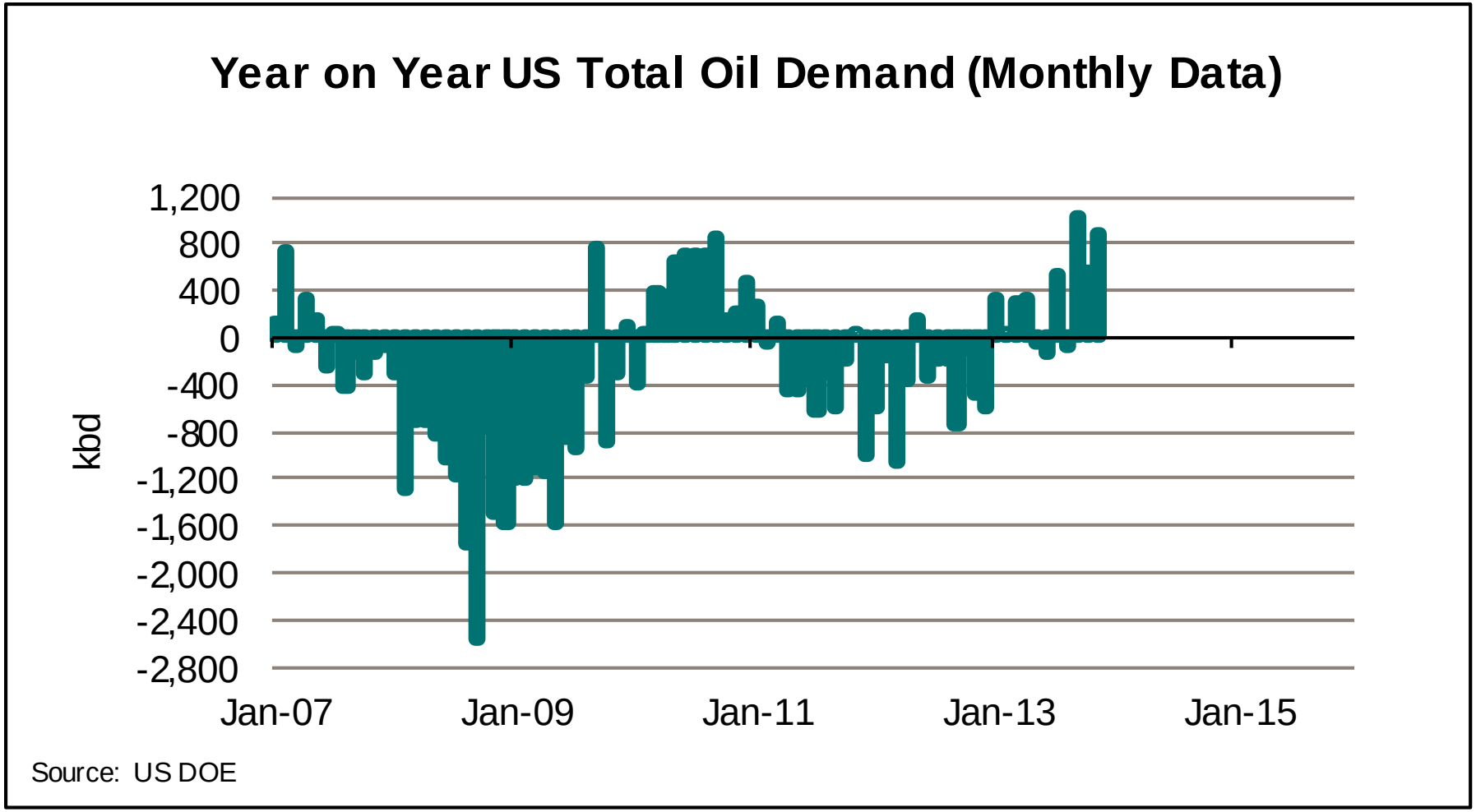
Year-on-Year US Total Oil Demand – Monthly DOE Data



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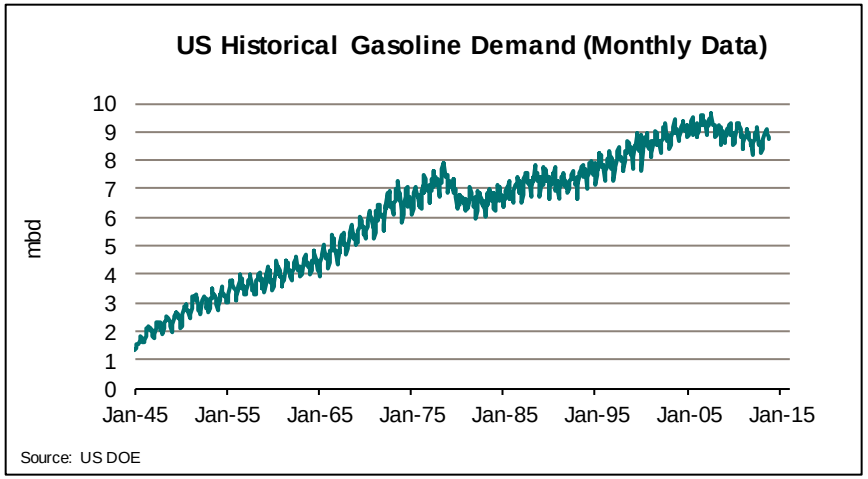
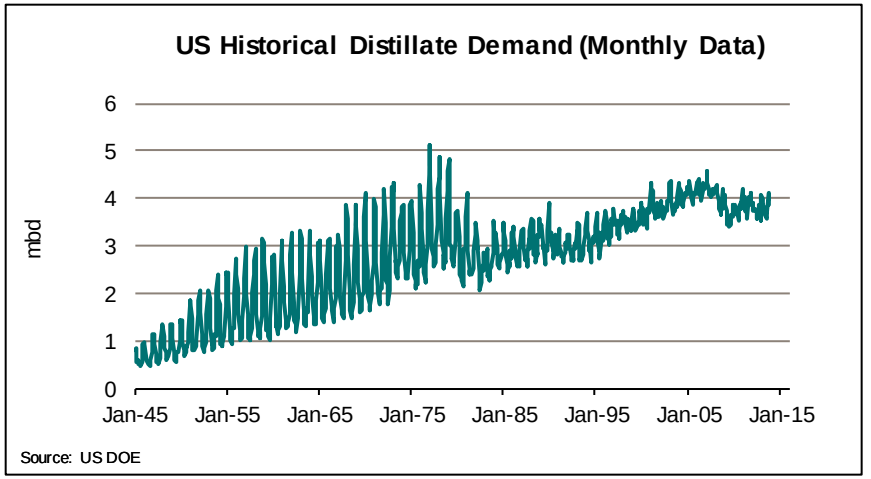
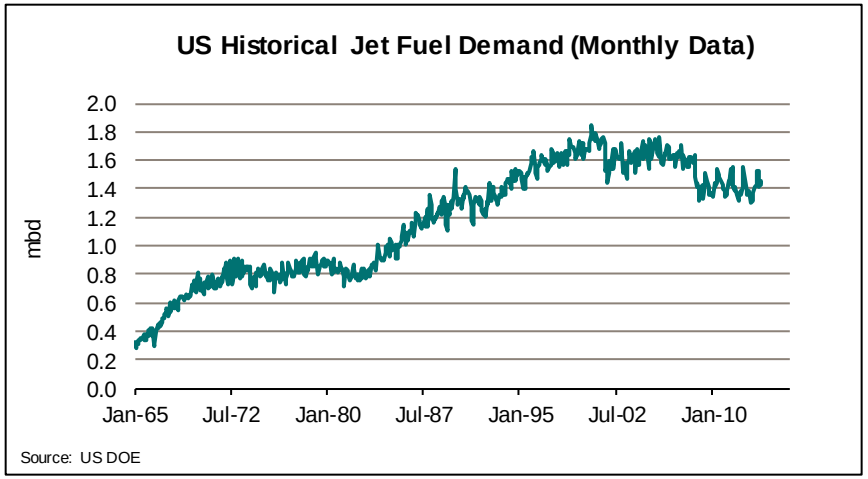
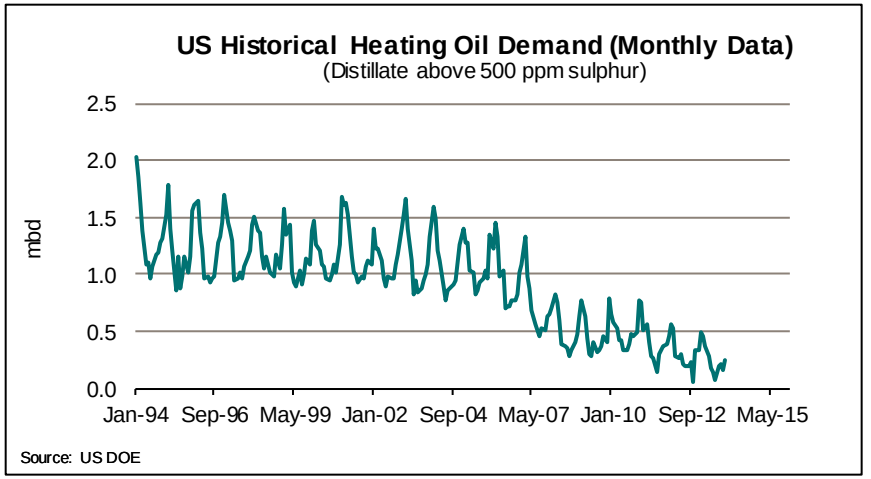
US Demand For Key Oil Products – Monthly DOE Data









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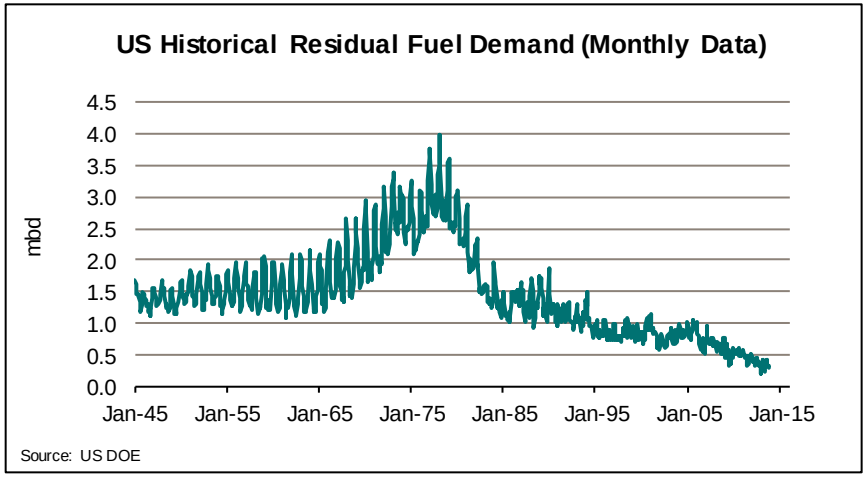
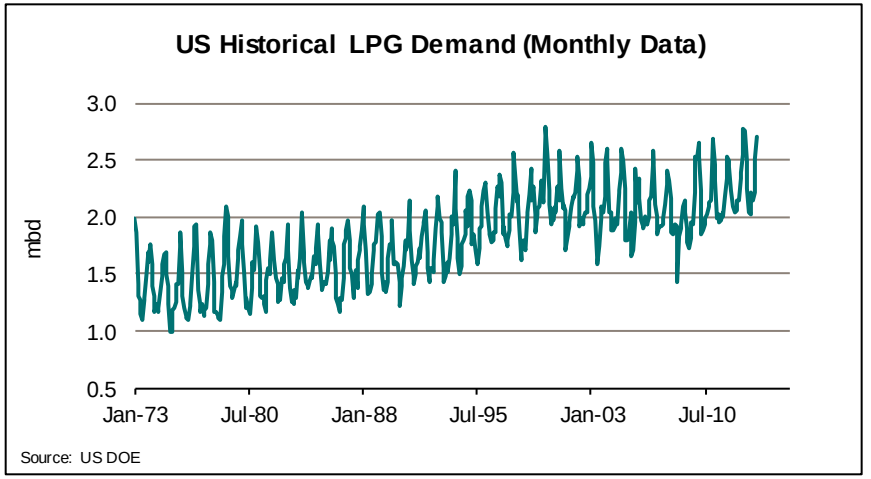
US Demand For Residual Fuel & LPG – Monthly DOE Data





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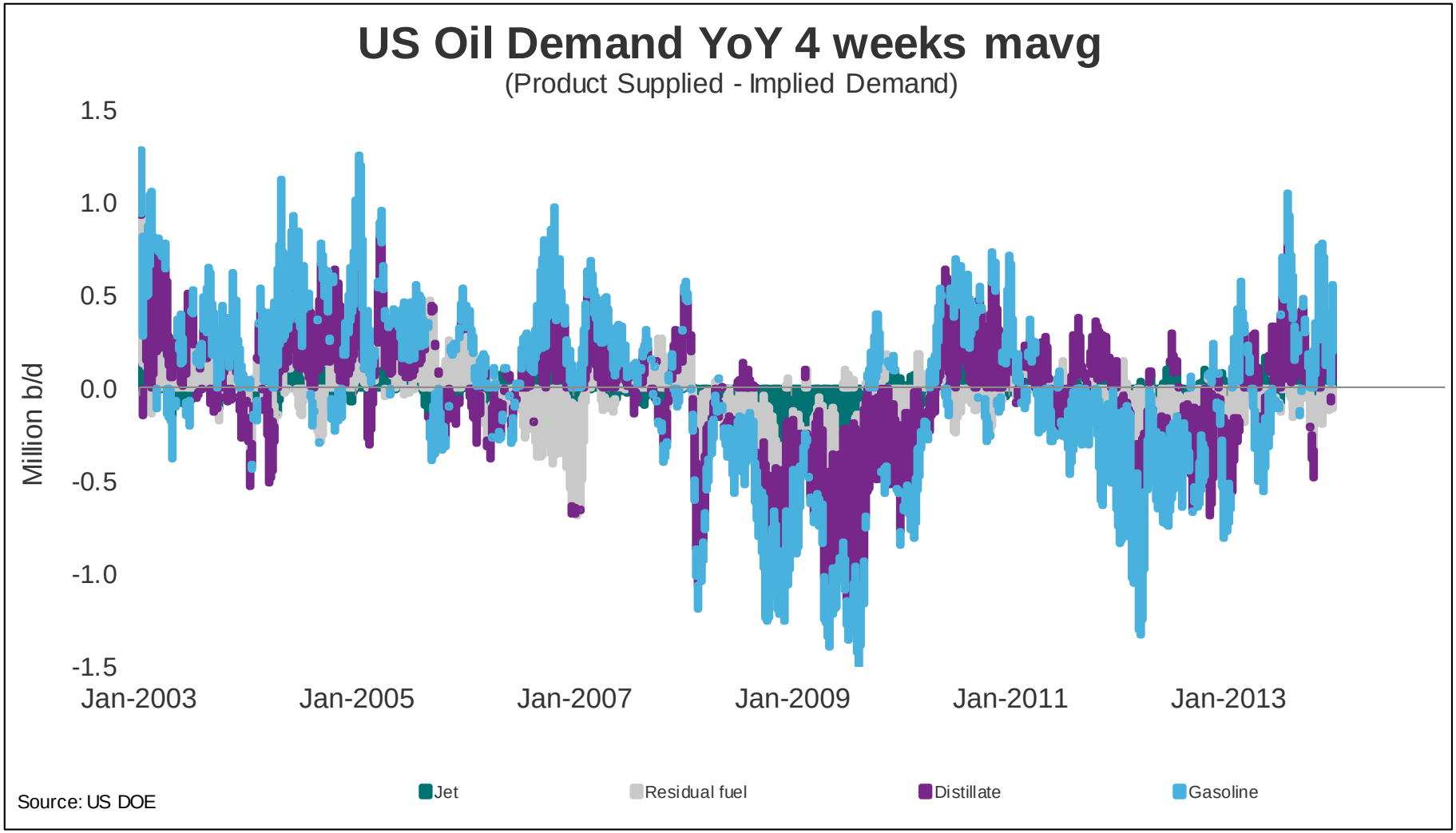
US Oil Demand – Weekly DOE Data



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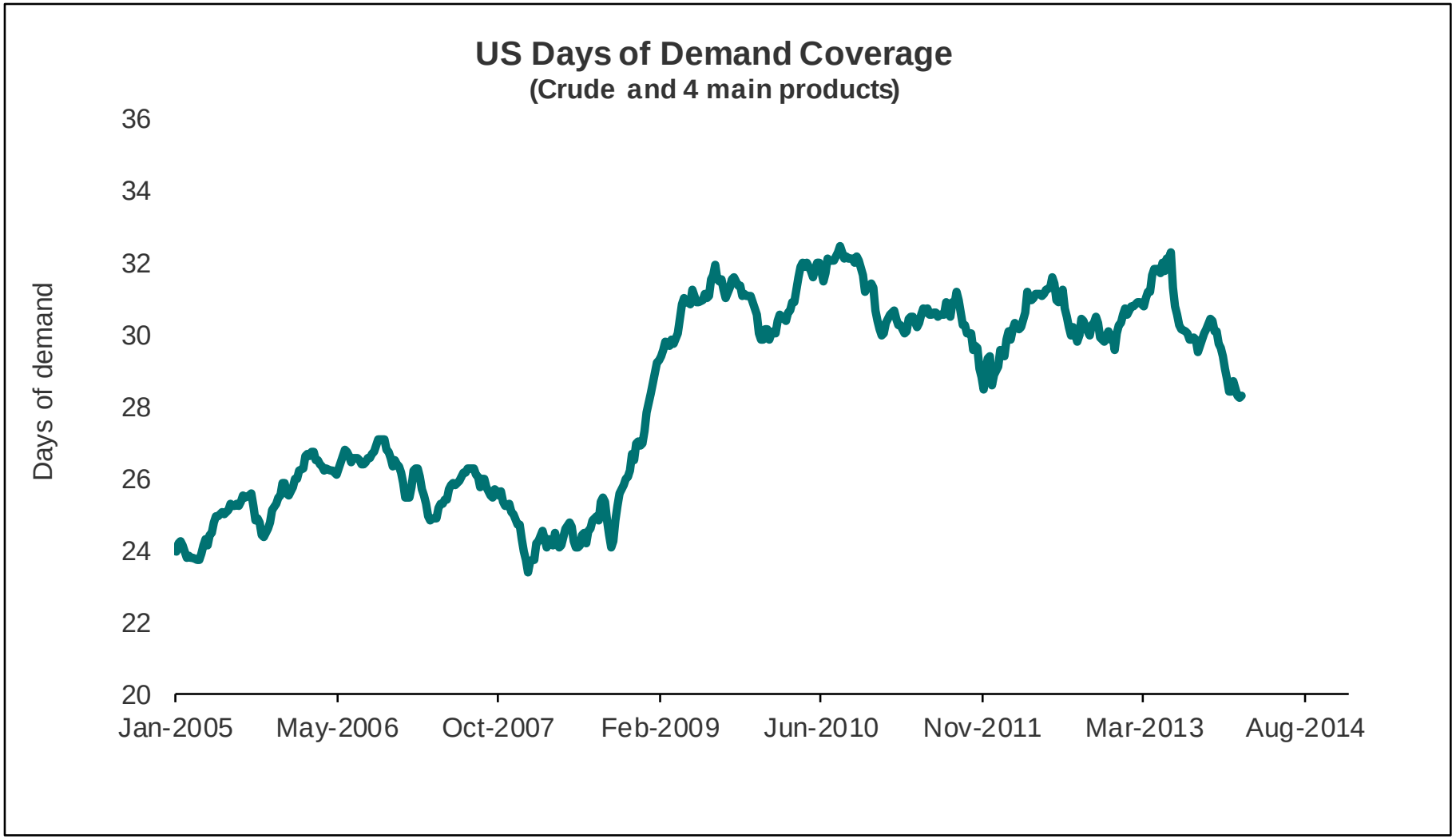
US Days Of Demand Stock Coverage – Weekly DOE Data



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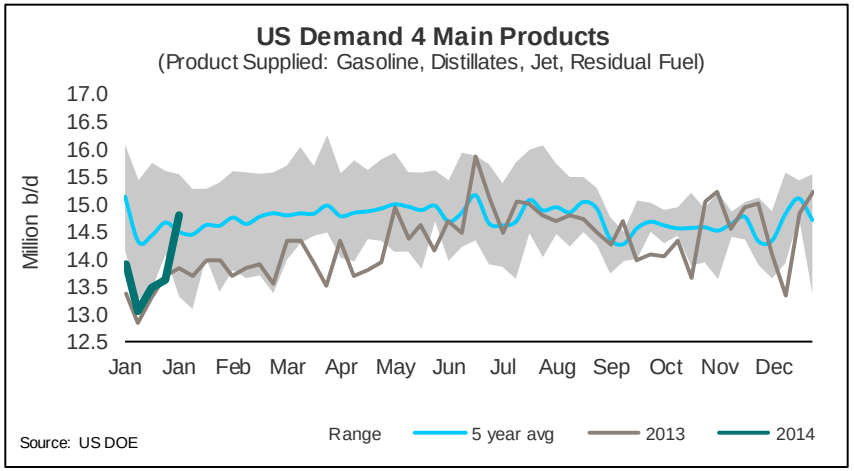
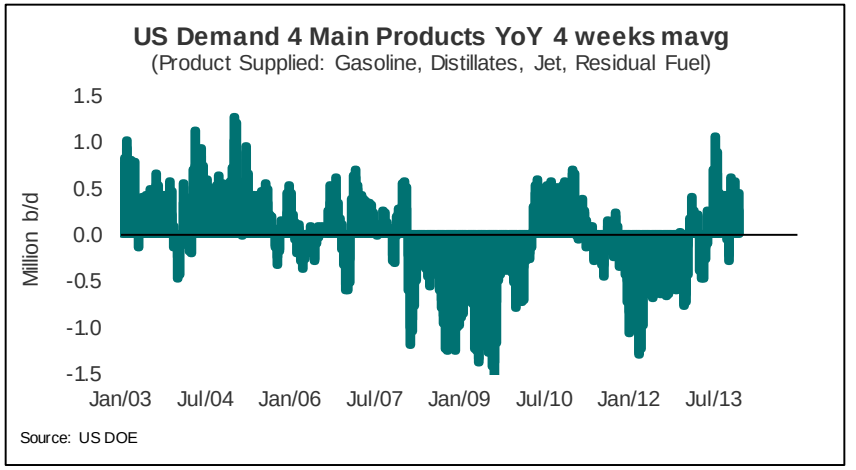
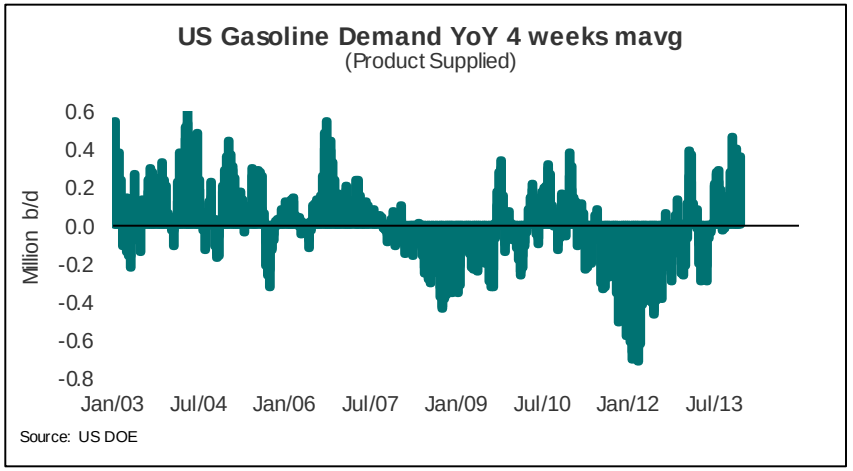
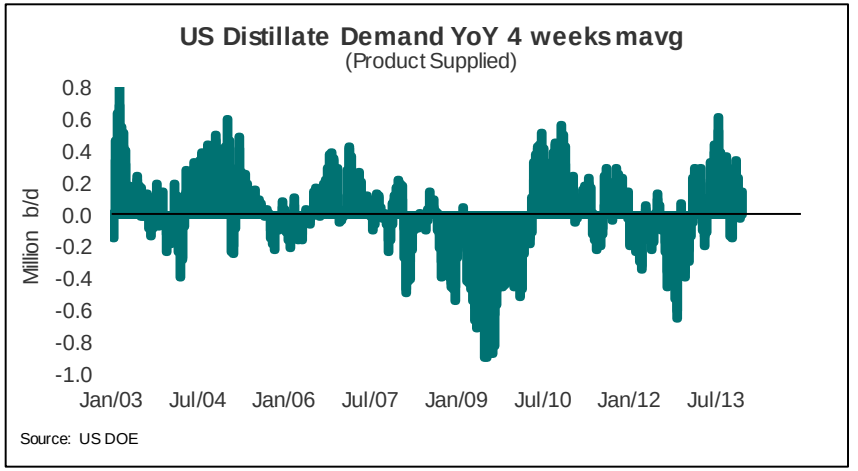
US Oil Demand Trends – Weekly DOE Data









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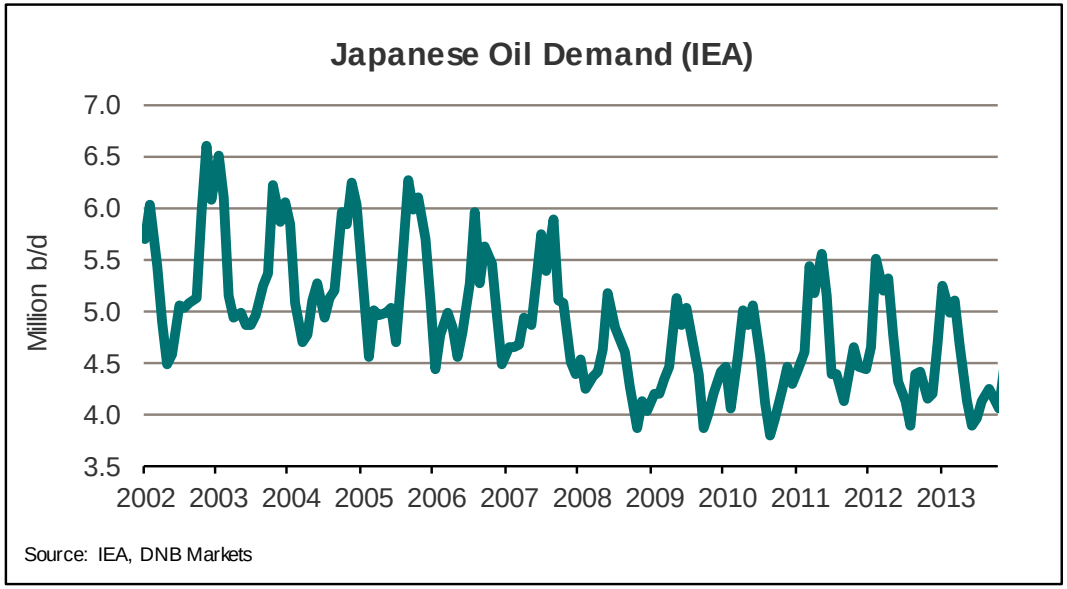
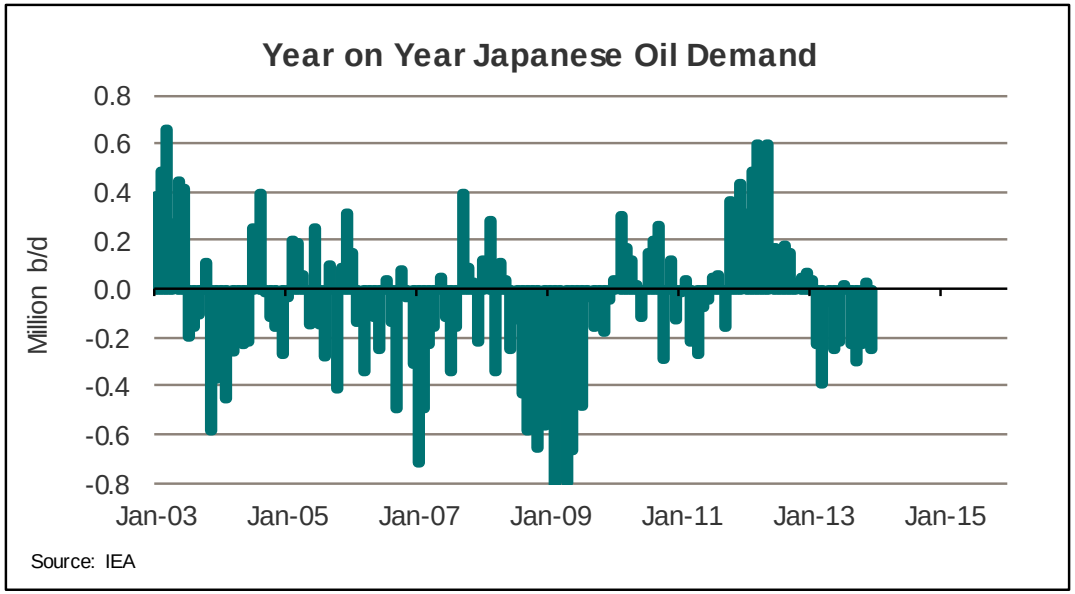
Japan – Oil Demand





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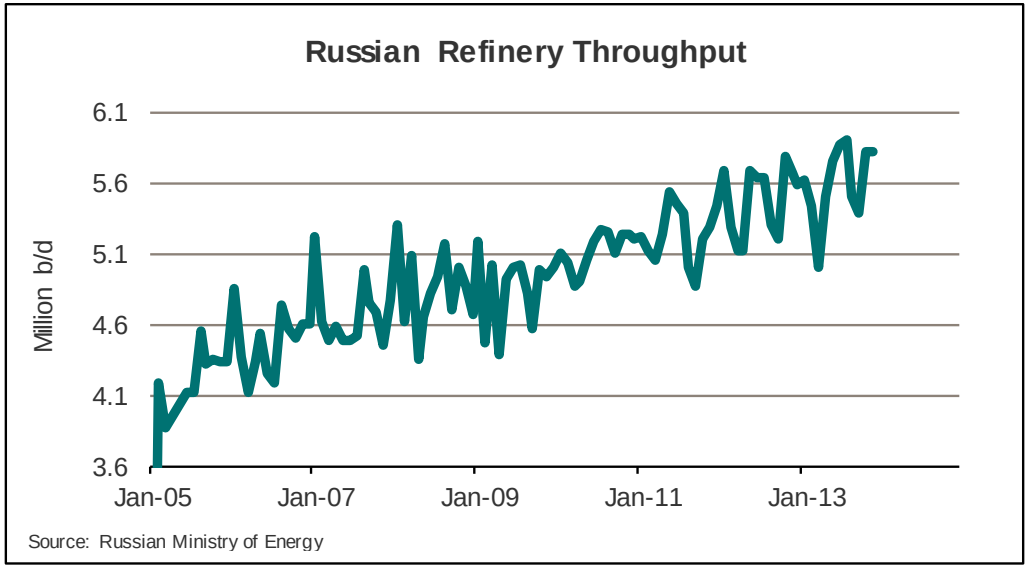
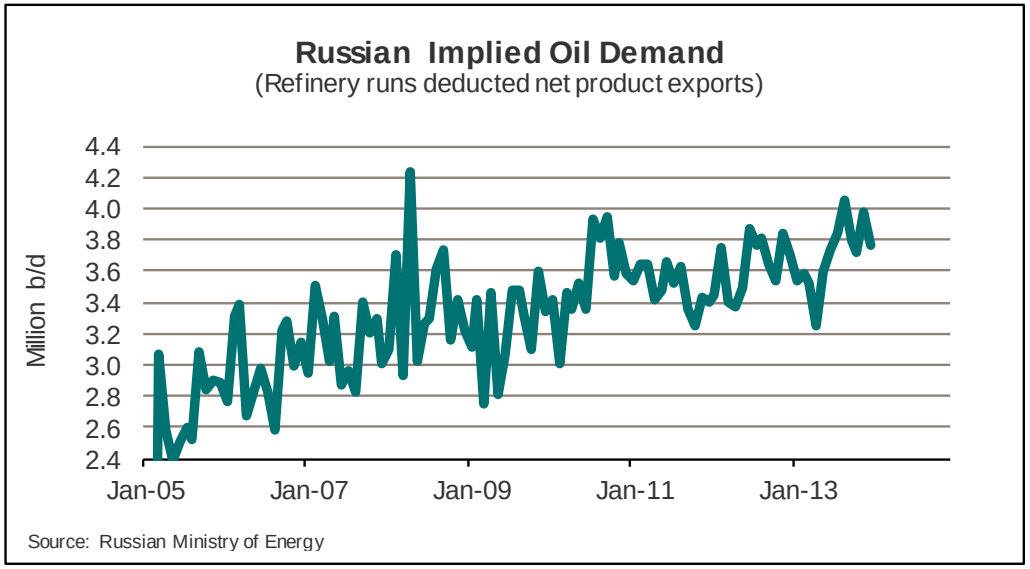
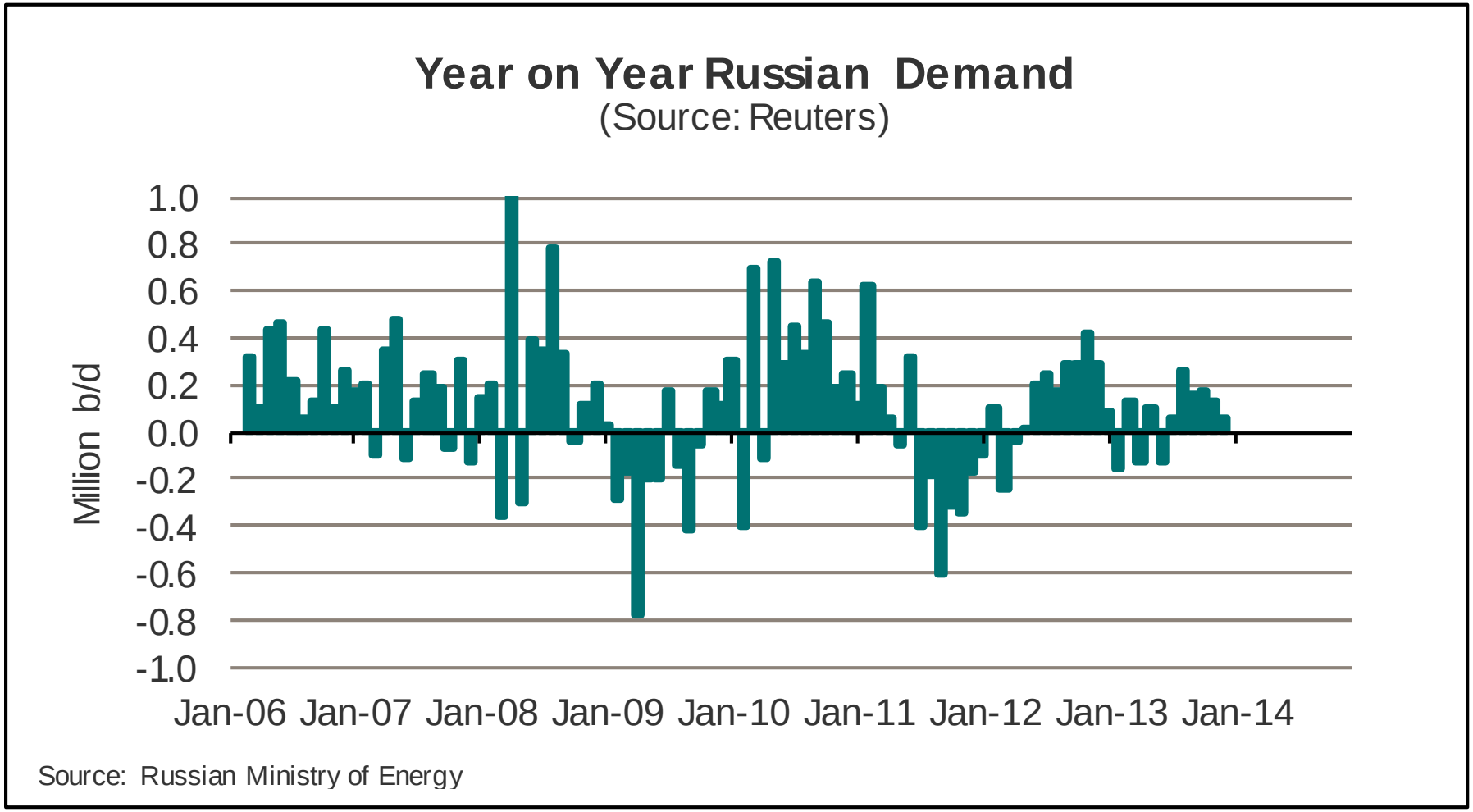
Russia – Oil Demand





Russia – Year-on-Year Oil Demand



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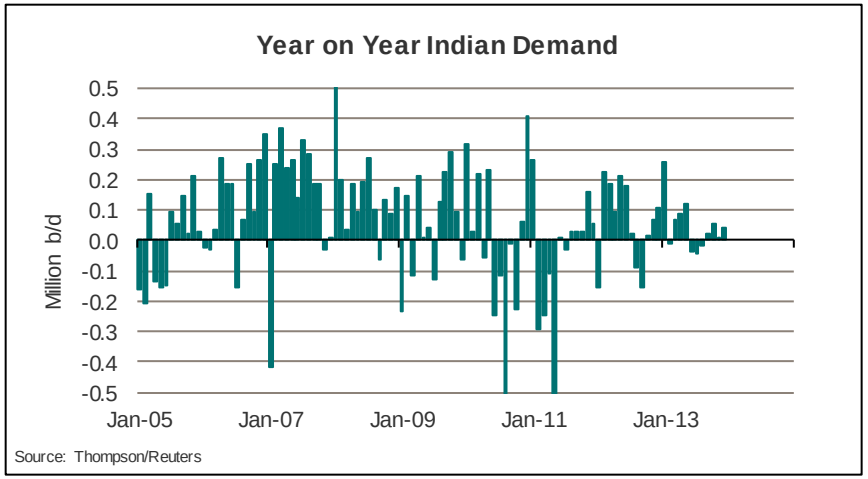
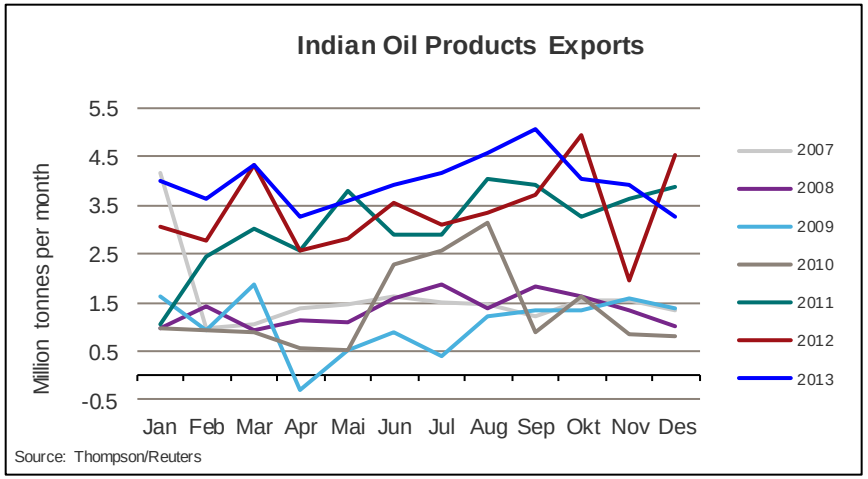
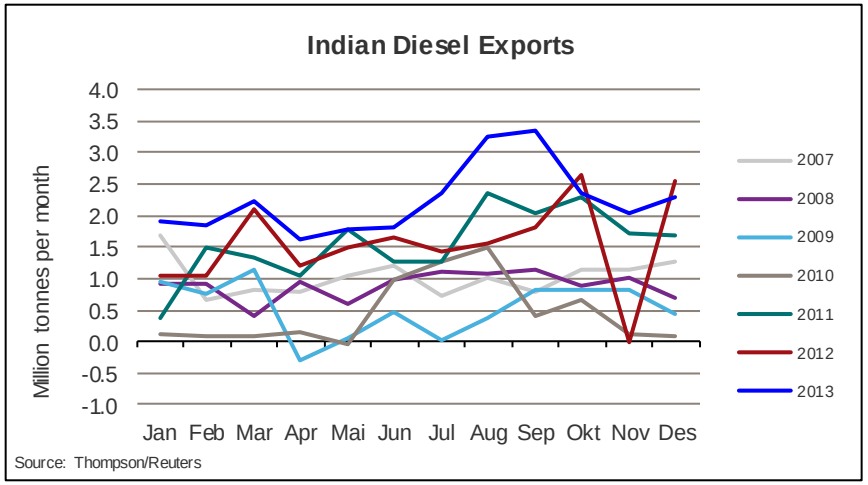
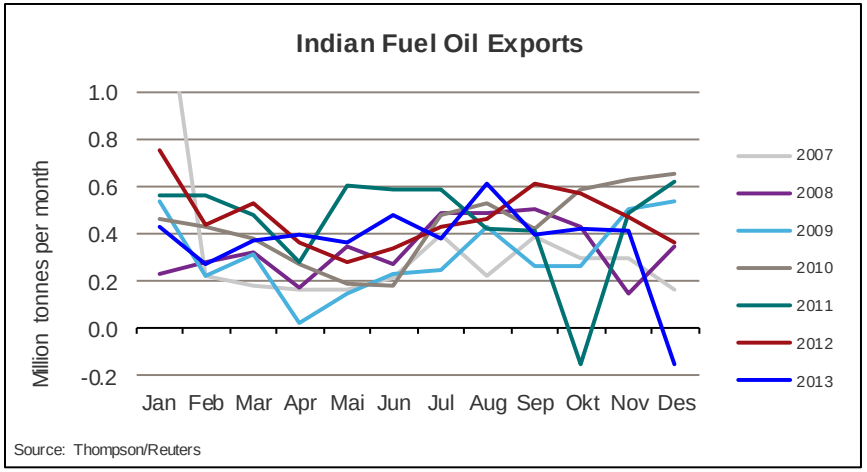
India – Year-on-Year Oil Demand & Exports By Key Product









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Supply

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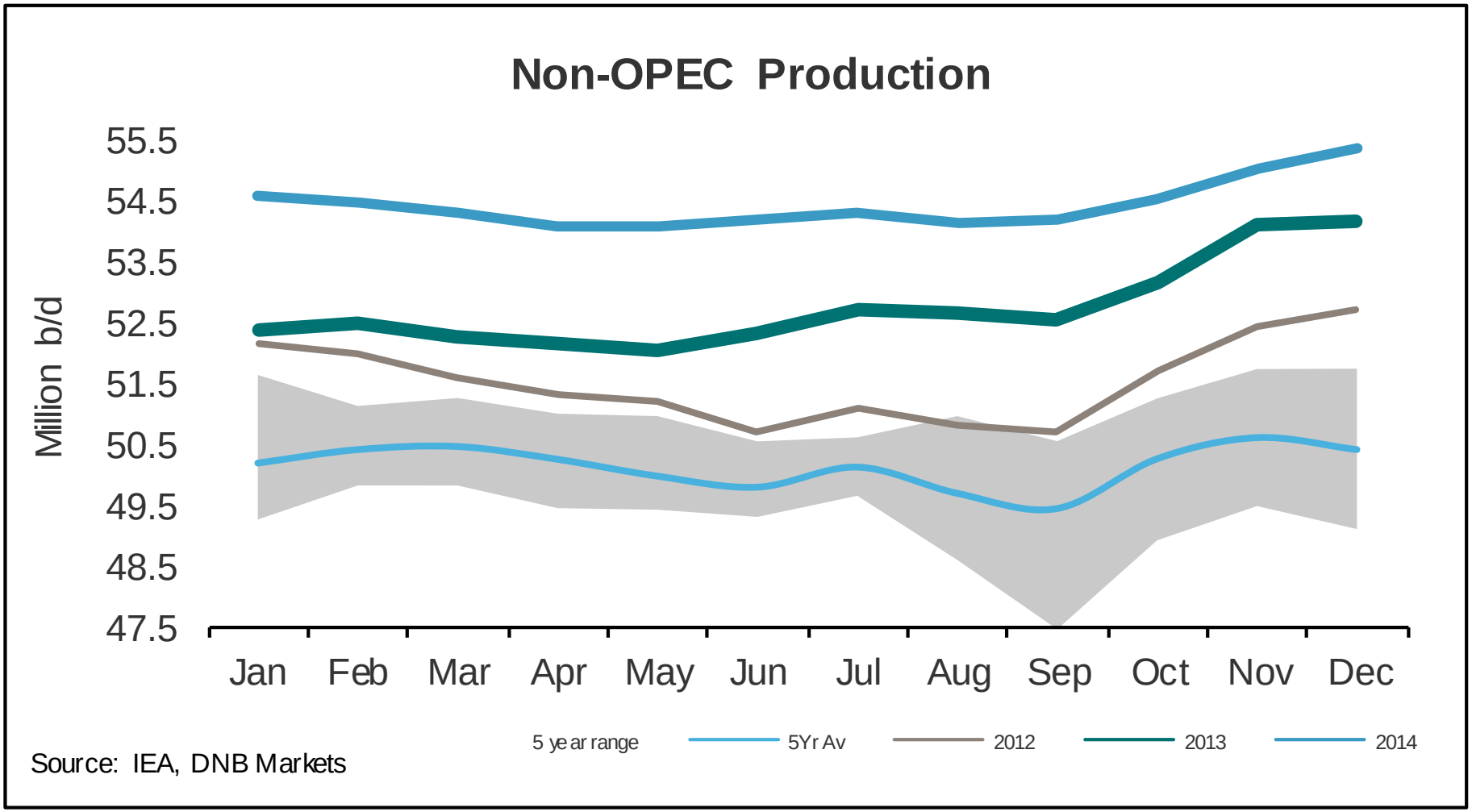
Non-OPEC Supply

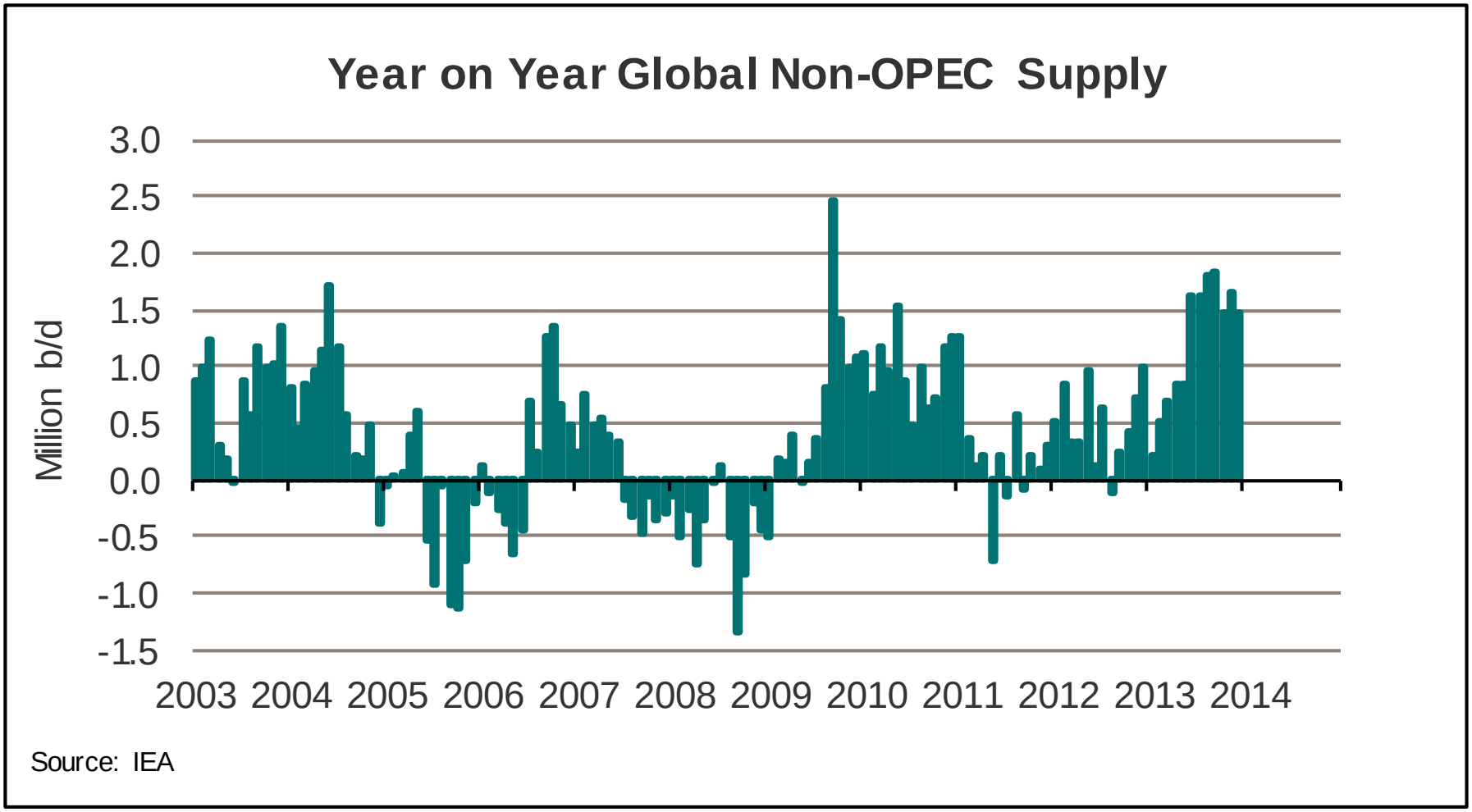


Source: IEA, DNB Markets

DNB MARKETS

Very Strong Growth In Supply Outside Of OPEC

- Growth now solidly above 1.5 million b/d and OPEC NGLs and Biofuels are not included



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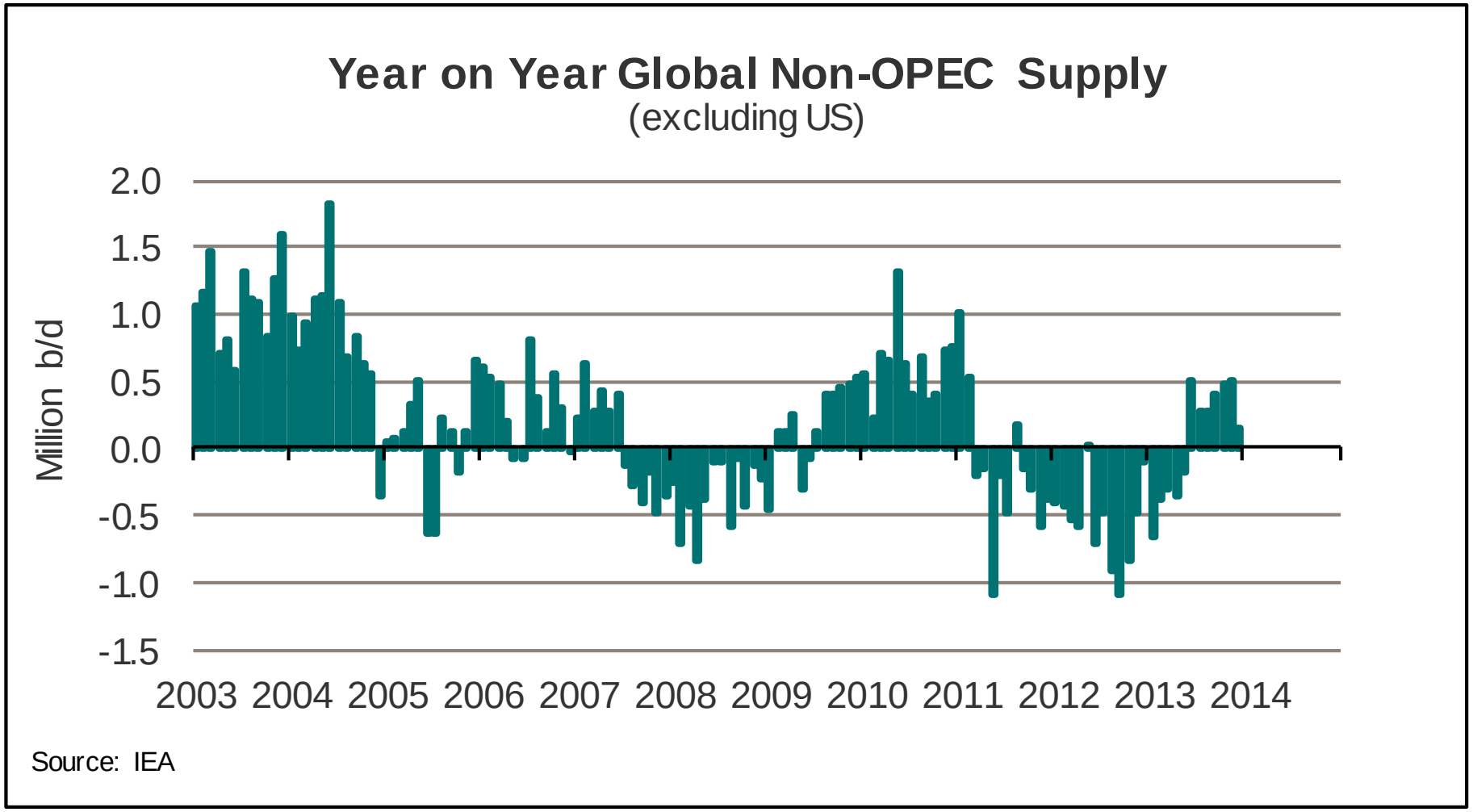
Growth In Supply Now Also Outside The USA



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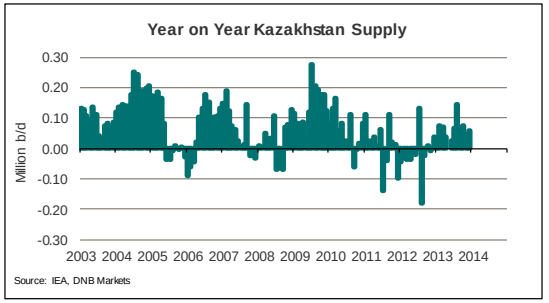
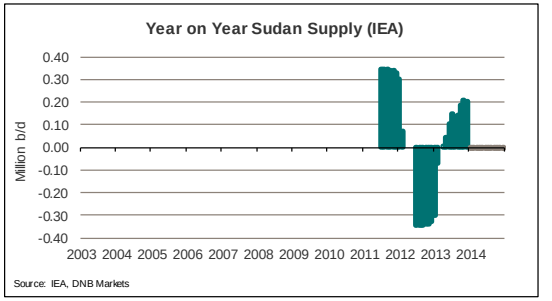
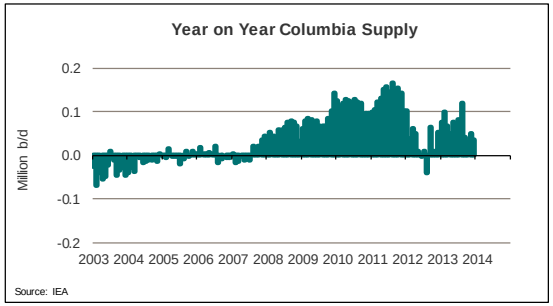
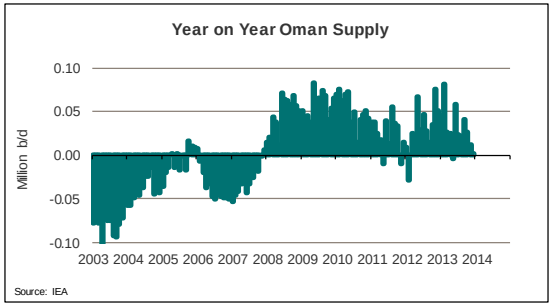
Not Only Growth In North America Now

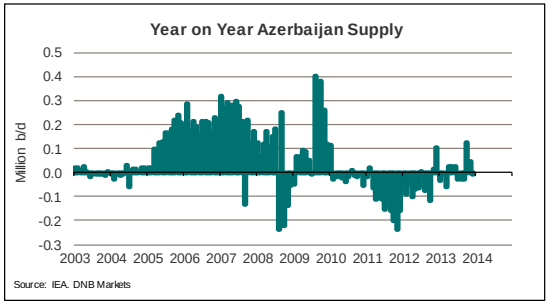
- We also see better numbers from countries like Oman, Russia, Columbia, Norway, Kazakhstan, Azerbaijan, Ghana, South Sudan

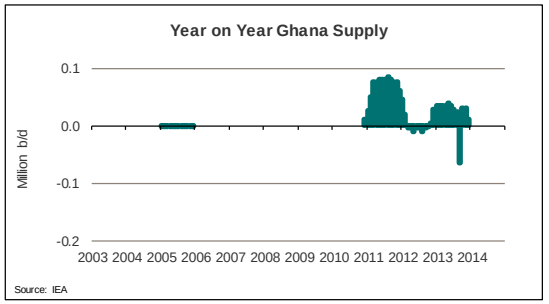


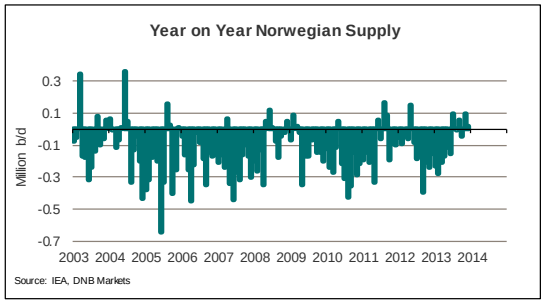












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Selected Non-OPEC Supply Historicals & Assumptions

DNB Year on Year Non-OPEC Output	Q1-2010	Q2-2010	Q3-2010	Q4-2010	Q1-2011	Q2-2011	Q3-2011	Q4-2011	Q1-2012	Q2-2012	Q3-2012	Q4-2012	Q1-2013	Q2-2013	Q3-2013	Q4-2013	Q1-2014	Q2-2014	Q3-2014	Q4-2014
Canada	-44	+195	+119	+241	+260	-12	+276	+249	+279	+357	+60	+204	+256	+110	+338	+227	+230	+265	+217	+256
Mexico	-50	-4	+5	-30	-23	-5	-35	-7	-51	-29	+12	-20	-7	-58	-47	-9	-13	-13	-3	-8
Norway	-210	-96	-366	-218	-181	-138	+65	-128	-64	+1	-244	-199	-242	-146	+46	+22	+20	+31	+3	-20
United Kingdom	-124	-171	-61	-125	-244	-240	-269	-228	-170	-143	-144	-230	-169	-113	-25	-38	-34	-38	-32	-26
United States	+515	+256	+222	+422	+144	+384	+264	+612	+1,036	+890	+1,079	+1,193	+929	+1,117	+1,445	+1,153	+1,333	+1,187	+789	+493
Azerbaijan	+23	-25	-8	-24	-22	-109	-140	-200	-65	-78	-37	+1	-33	+25	-27	+54	+13	+13	+23	+22
Kazakhstan	+126	+55	+25	+32	+53	+35	-24	-23	-38	-21	-25	+11	+55	+21	+89	+59	+58	+78	+72	+63
Russia	+343	+275	+186	+184	+142	+138	+147	+138	+167	+108	+112	+138	+107	+165	+148	+171	+163	+153	+182	+153
Ghana	+0	+0	+0	+3	+50	+78	+82	+70	+20	-7	-7	+11	+34	+36	-4	+23	+10	+11	+20	+0
South Sudan	+0	+0	+0	+0	+0	+0	+347	+337	+124	+0	-347	-337	-124	+52	+142	+200	+244	+246	+162	+104
Sudan	+23	-23	-19	-22	-10	-4	-362	-354	-359	-397	-35	-13	+13	+53	+60	+35	+13	+15	+14	+14
Malaysia	+16	+12	-13	-5	-50	-112	-56	-35	+9	+31	-2	+35	-12	+12	-5	-67	-3	+2	+0	+9
China	+221	+224	+276	+371	+235	+124	-72	-191	-21	-72	+123	+265	+24	+149	-122	-43	+6	-23	+42	-21
Brazil	+104	+140	+100	+110	+81	+28	+35	+78	+82	-54	-91	-111	-192	-25	+44	+17	+76	+41	+78	+69
Colombia	+119	+125	+123	+95	+108	+146	+135	+132	+66	+18	+11	+23	+80	+53	+81	+37	+45	+56	+45	+55
Oman	+69	+60	+35	+46	+33	+16	+35	+13	+2	+38	+30	+54	+51	+26	+29	+13	+11	+13	+14	+14
Syria	-16	-16	-16	-16	+0	-2	-30	-98	-187	-218	-190	-132	-123	-102	-112	-122	+8	-1	-0	+10
Yemen	-18	-16	-14	-13	+4	-99	-48	-105	-159	-11	-35	+5	+34	-66	-71	-49	-12	+10	+2	+1
Global Biofuels	+240	+327	+354	+34	+102	-36	+36	+34	+53	-61	-37	+49	-70	+161	+219	+223	+116	+67	+62	+66
Non-OPEC (including processing gains)	**+1,252**	**+1,453**	**+1,052**	**+1,083**	**+685**	**-139**	**+149**	**+226**	**+618**	**+408**	**+208**	**+763**	**+402**	**+1,262**	**+1,980**	**+1,753**	**+2,183**	**+2,036**	**+1,637**	**+1,220**

Liquids Supply	Change 2007	Change 2008	Change 2009	Change 2010	Change 2011	Change 2012	2013 YTD Change	Change 2013	Change 2014
Canada	101	-73	-31	128	193	225	233	233	242
Mexico	-210	-315	-186	-20	-18	-22	-30	-30	-10
Norway	-221	-86	-107	-222	-96	-126	-80	-80	9
United Kingdom	0	-96	-88	-120	-246	-172	-86	-86	-32
United States	40	-83	455	354	351	1,050	1,161	1,161	950
Azerbaijan	212	44	144	-9	-118	-45	5	5	18
Kazakhstan	58	24	133	60	11	-18	56	56	68
Russia	236	-73	196	247	141	131	148	148	163
Ghana	0	0	0	1	70	4	22	22	10
South Sudan	0	0	0	0	171	-140	67	67	189
Sudan	132	-15	14	-10	-183	-201	40	40	14
Malaysia	4	-3	-39	3	-63	18	-18	-18	2
China	33	72	-7	273	24	74	2	2	1
Brazil	29	63	131	113	56	-44	-39	-39	66
Colombia	5	57	82	116	130	29	63	63	50
Oman	-27	47	55	53	24	31	30	30	13
Syria	-17	2	-5	-16	-32	-182	-115	-115	4
Yemen	-46	-26	-9	-15	-62	-50	-38	-38	0
Sum:	**328**	**-462**	**739**	**934**	**354**	**563**	**1,421**	**1,421**	**1,759**

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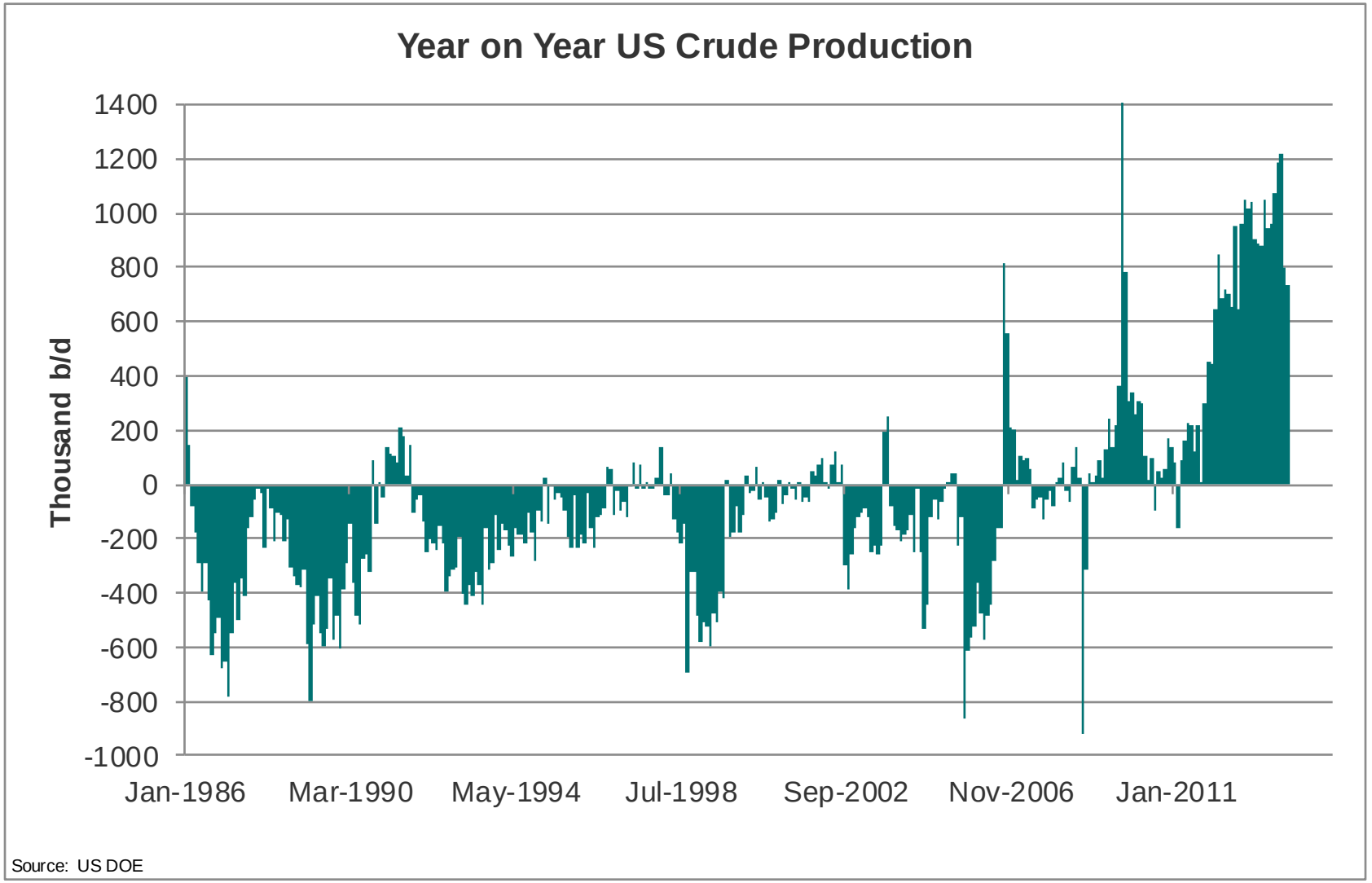
Year on Year US Crude Production



Source: US DOE

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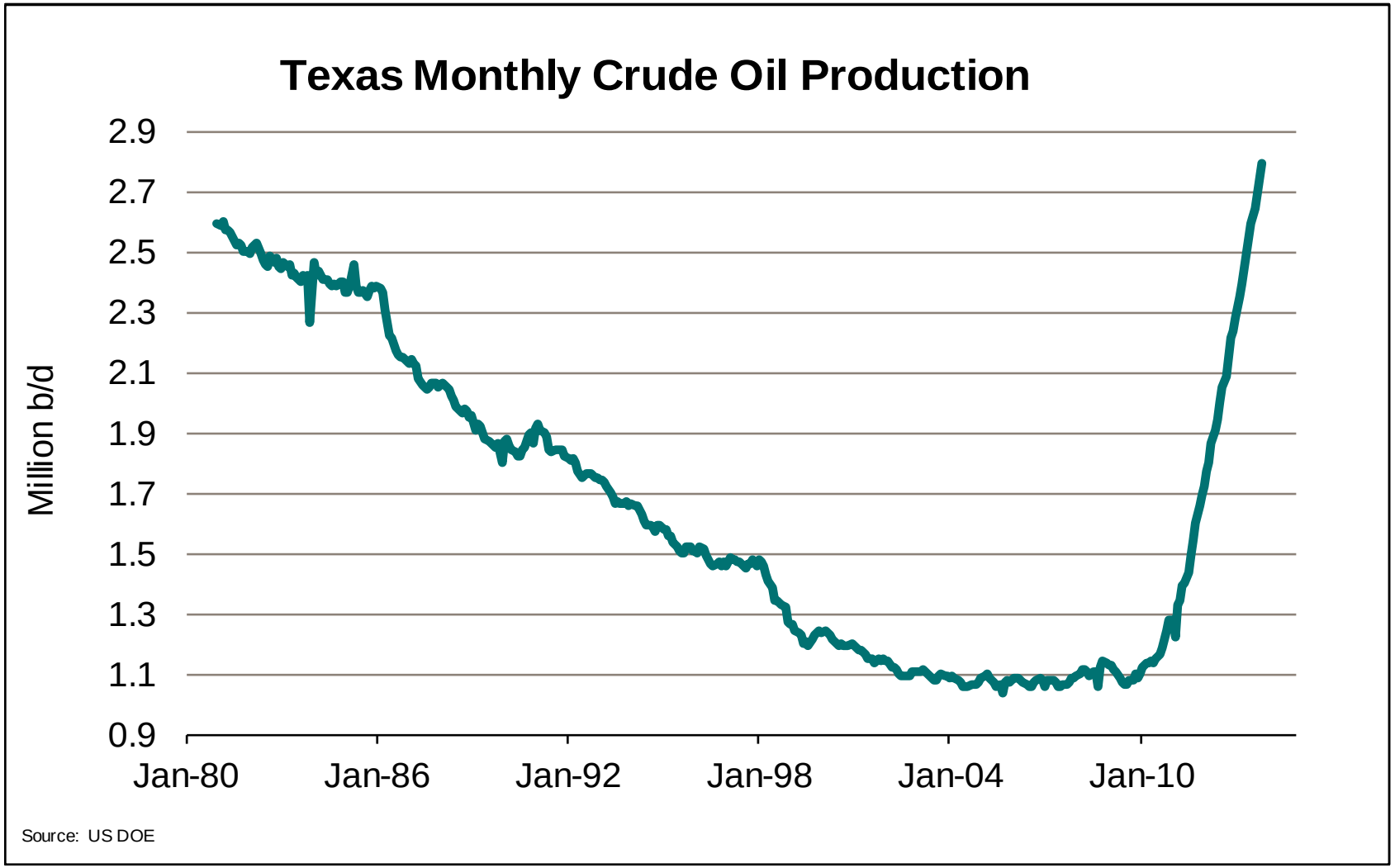
The Best Picture Of The US Shale Revolution

- After having declined for about 40 years Texas oil production is now “exploding” to the upside



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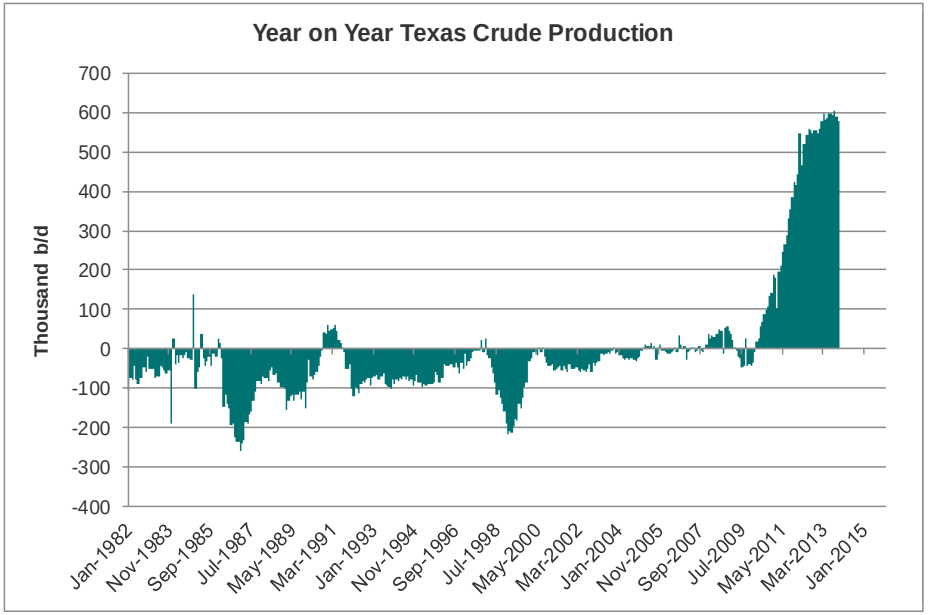
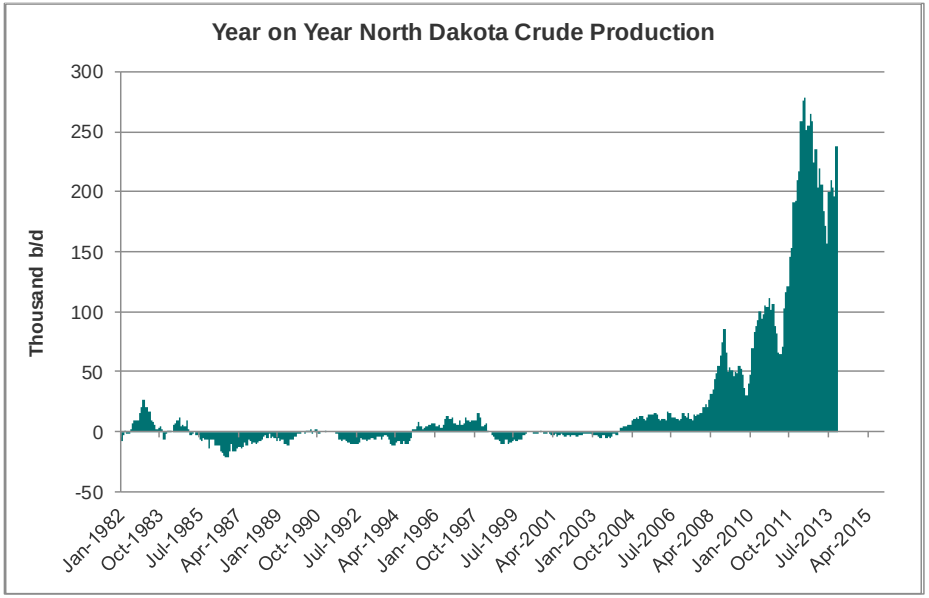
Texas & North Dakota Is Where It Has Mainly Happened So Far

- Growth in North Dakota started in 2008 while Texas was two years later in the cycle





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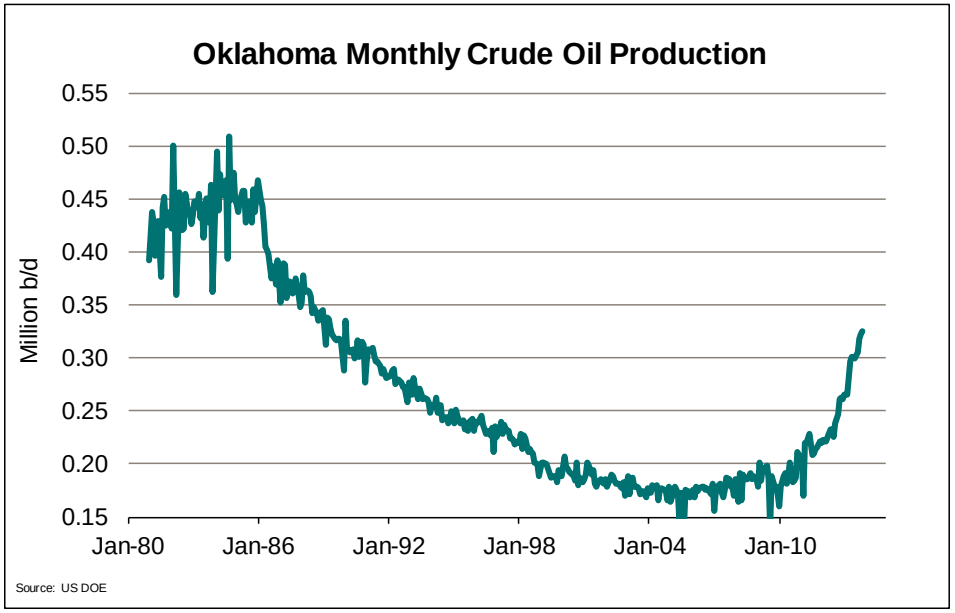
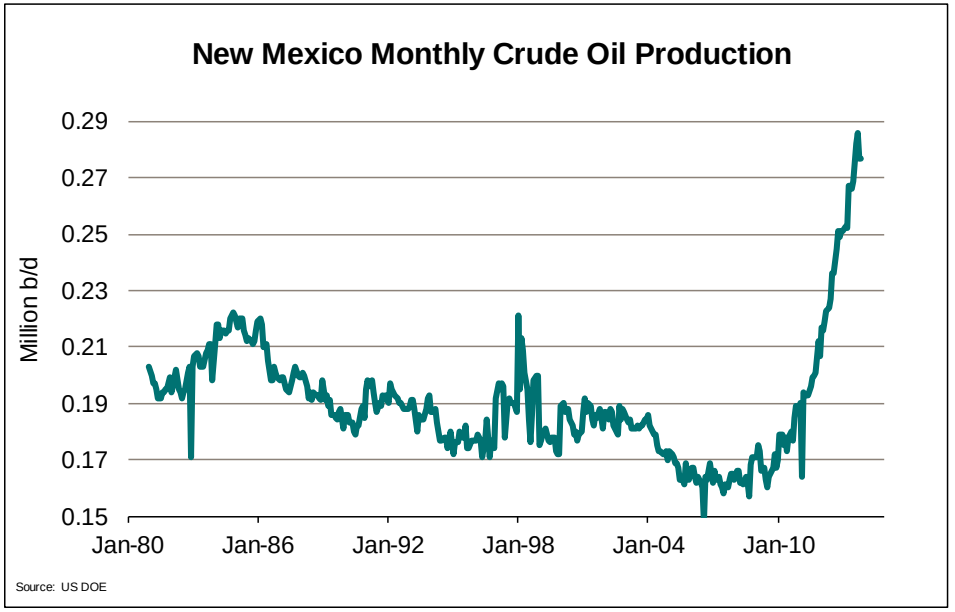
Crude Production Now On The Rise In Other States As Well

- Growth is starting to become visible also in Oklahoma and New Mexico





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IEA's Assessment Of Shale From WEO 2008

- Shale oil/oil shale not expected to make a significant contribution to world supply before 2030

•What did the IEA say about shale oil and oil shales in WEO 2008 under the discussion of unconventional resources?

•Page 217: *Oil shales are rocks that contain a large portion of solid organic compunds (kerogen) and are found at shallow depths, from surface outcrops to 1000 metres below ground. The United States has the largest resources* (note the IEA is here talking about kerogen), *followed by Brazil, Jordan, Morocco and Russia.* ***Oil shales are not projected to make a significant contribution to world oil supply before 2030****…Production costs currently range from 50-120 $/b.* (The above is all about Kerogen and not shale oil/light tight oil)

•Then a little bit about shale oil/light tight oil: *Deeper resources require the use of techniques to enhance the productivity of the formation (such as hydraulic fracturing).* ***The main US resource is the Green River Formation (Wyoming, Colorado and Utah)*** *with four basins. Early experiments in the 1980's were halted due to the unfavorable economics and poor operational performance.*

•Note: Texas and North Dakota was not discussed at all under the chapter "Non-conventional oil resources" starting at page 215. The key focus was on Extra-heavy oil and oil sands. Since 2008 we have now seen US crude output increase (mainly from shale crude) by 2.7 million b/d (one would think that should classify as significant…)

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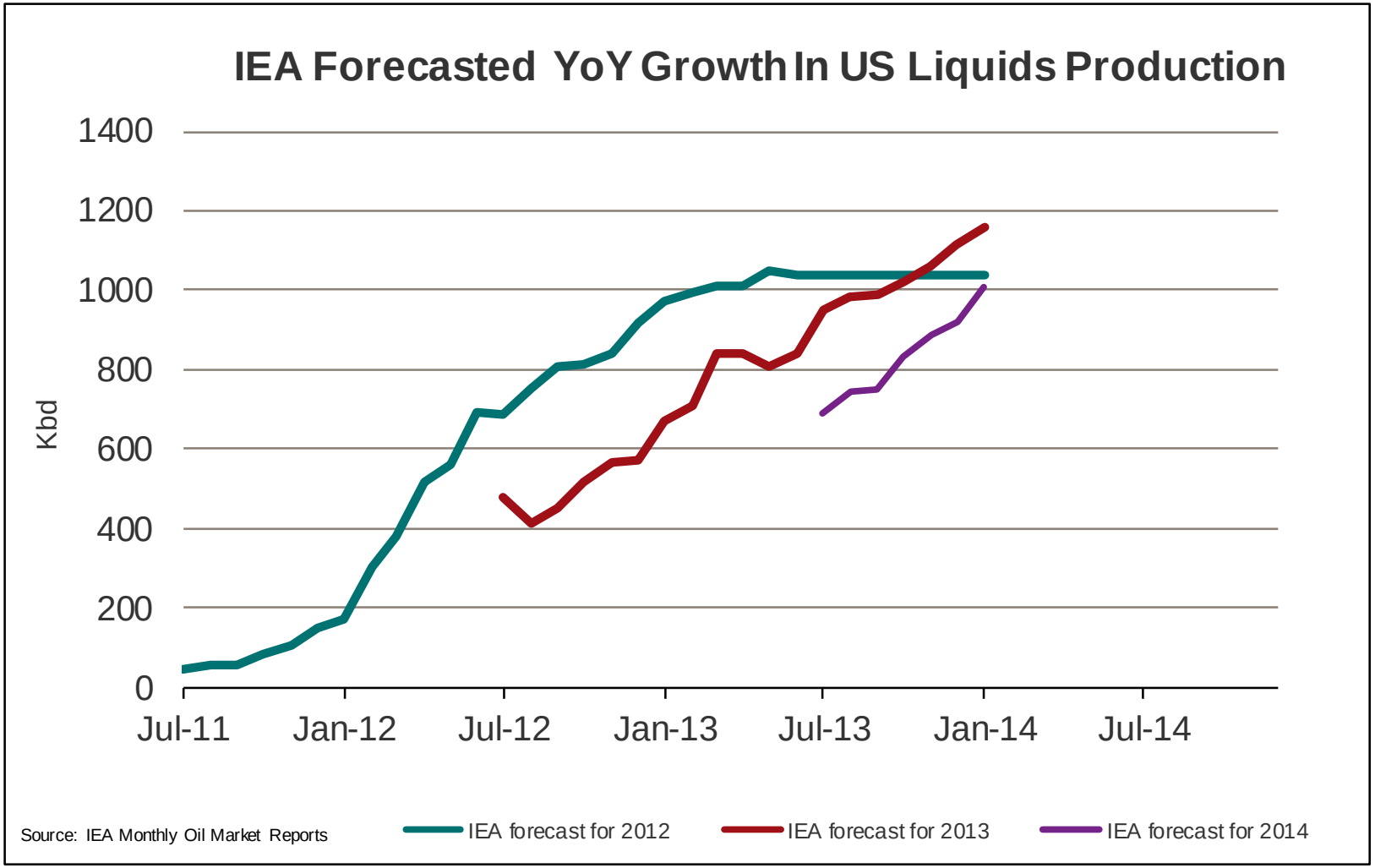
IEA's Forecasts For US Production Growth Far Too Low

- 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 1.15 million b/d



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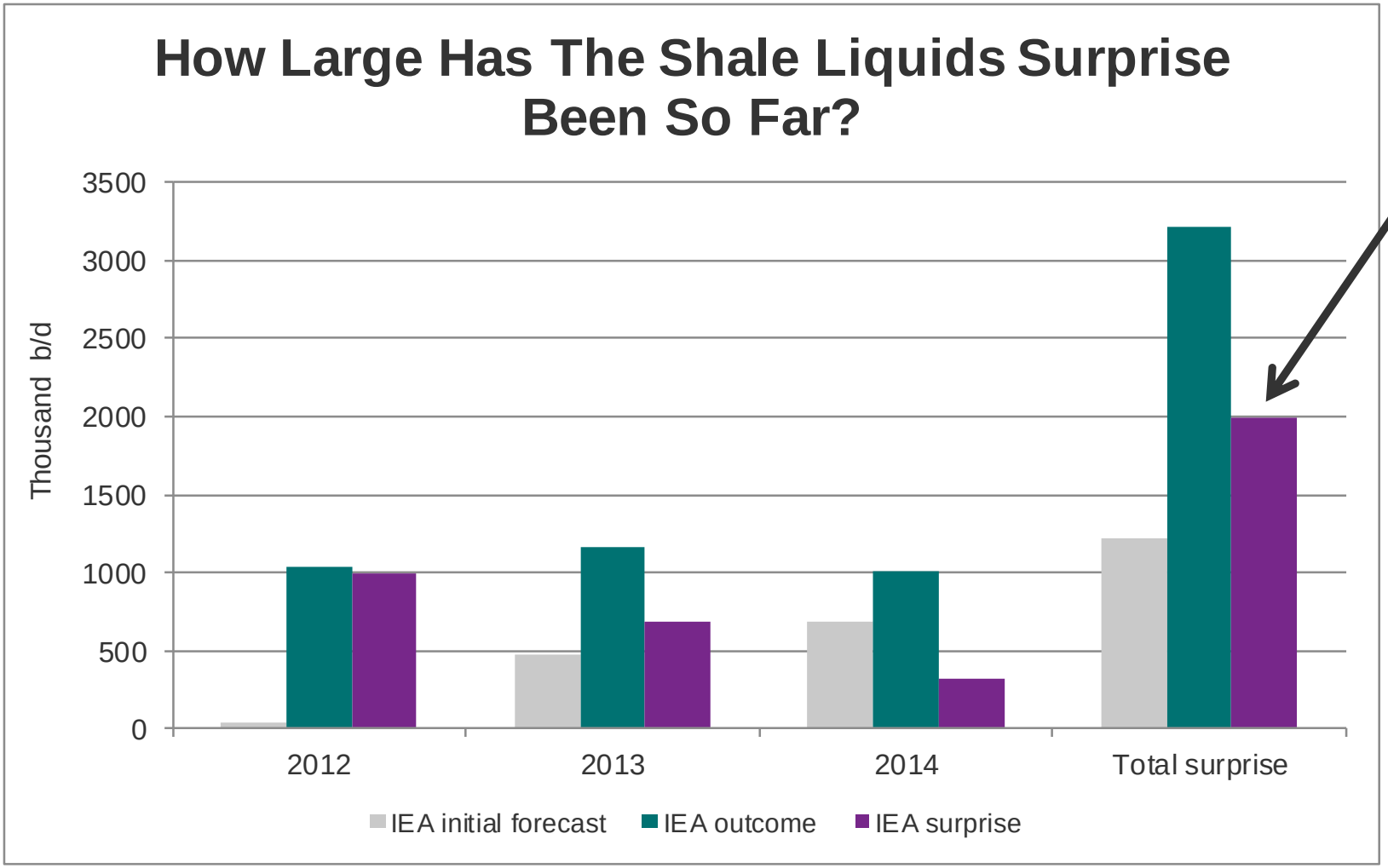
Upside Surprise Of 2 Million b/d So Far Last Two Years

- Since the summer of 2011 the IEA has “received 2 million b/d” into their balances that was not on the table in in 2011
- In other words; a new Brazil has entered the market since 2011 and it came from “out of the blue”



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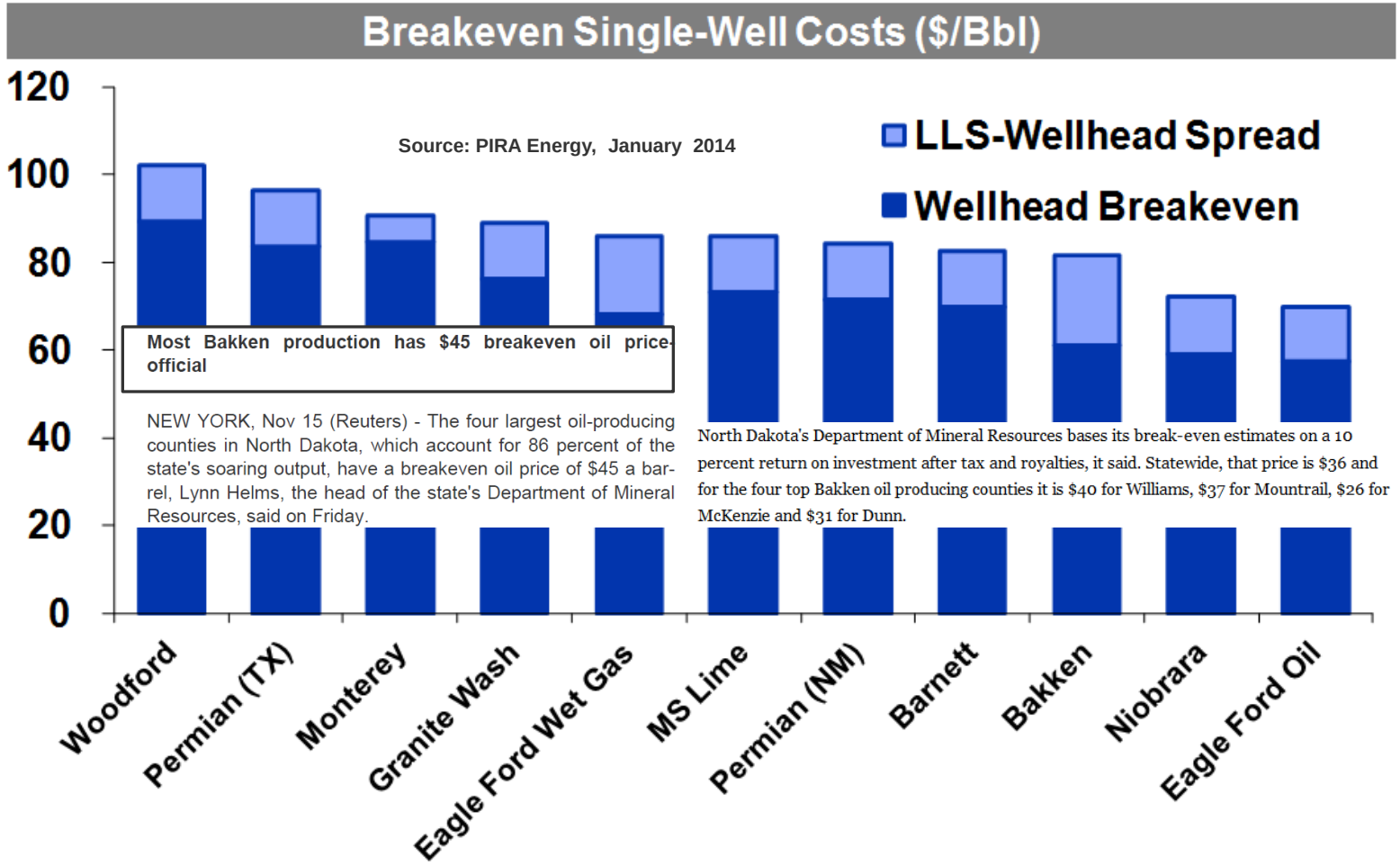
The New Shale Resources Are Not Particularly Cheap

- Oil prices needs to stay in the 75-90 $/b range or higher to make the broad shale industry economical according to PIRA Energy



Most Bakken production has $45 breakeven oil price-official

NEW YORK, Nov 15 (Reuters) - The four largest oil-producing counties in North Dakota, which account for 86 percent of the state's soaring output, have a breakeven oil price of $45 a barrel, Lynn Helms, the head of the state's Department of Mineral Resources, said on Friday.

North Dakota's Department of Mineral Resources bases its break-even estimates on a 10 percent return on investment after tax and royalties, it said. Statewide, that price is $36 and for the four top Bakken oil producing counties it is $40 for Williams, $37 for Mountrail, $26 for McKenzie and $31 for Dunn.

Analysis: Bakken drillers undaunted by local oil prices under $80

BY SABINA ZAWADZKI
NEW YORK | Thu Nov 21, 2013 12:09am EST

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(Reuters) - North Dakota crude oil prices tumbled this month to below the $80-a-barrel "sweet spot" that helps drillers attract capital from other shale areas, yet the Bakken boom shows no signs of slowing.

Wood Mackenzie has an overall Bakken break-even price of $62 a barrel at current well costs, Garrett said. But for high-quality parts of the formation such as the Parshall and Sanish fields, that number goes down to the $38-$40 range.

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The US Shale Liquids Industry's Largest 25 Players

- Note there are only 3 oil majors among these names
- The cost development for these 25 companies are the ones relevant to follow

Top US Shale Liquids Operators

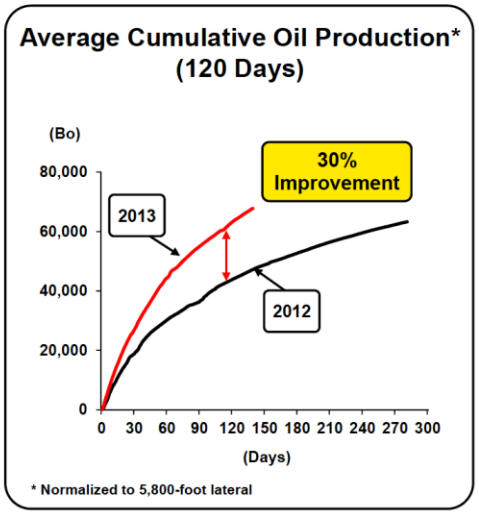
Permian Horizontal/Eagle Ford/Bakken

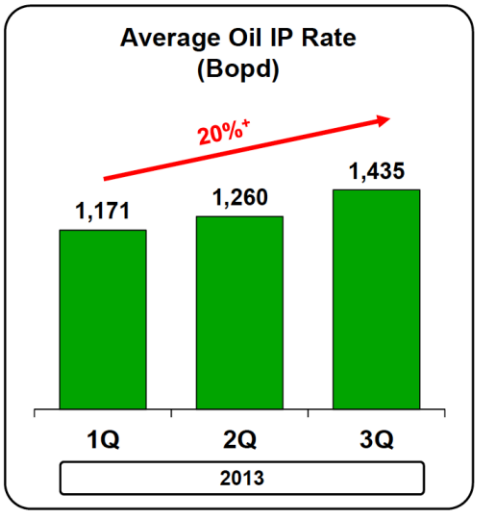
Top Producers	Total kbd	Liquids kbd
EOG	283	225
Chesapeake	185	135
ConocoPhillips	183	129
Marathon	168	129
Continental	118	97
Hess	90	74
Whiting	85	73
Anadarko	136	63
Geosouthern	85	55
Murphy Oil	66	55
Statoil	59	50
Pioneer	93	47
ExxonMobil	55	46
Kodiak	46	36
Oasis	41	36
Concho	48	30
Devon	37	24
Cimarex	34	21
BHP Billiton	58	20
Apache	26	18
Bopco, LP	26	16
Mewbourne Holdings	18	12
Energen	16	11
SM Energy	70	11
Laredo Petroleum	15	8
Total production	**2,042**	**1,420**

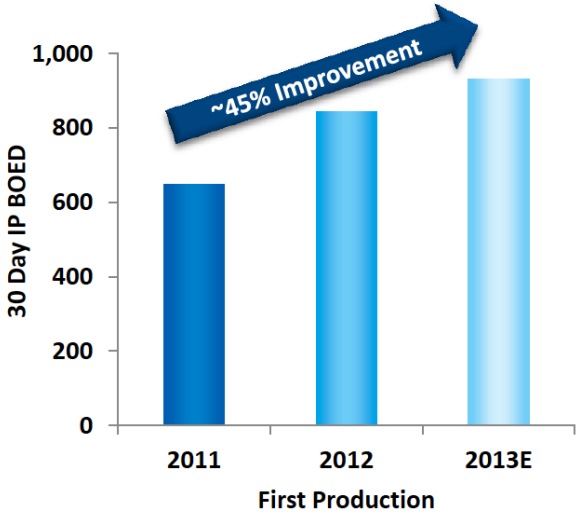
Source: PIRA Energy

Production, IP Rates, Lateral Length, Drilling Days Improving

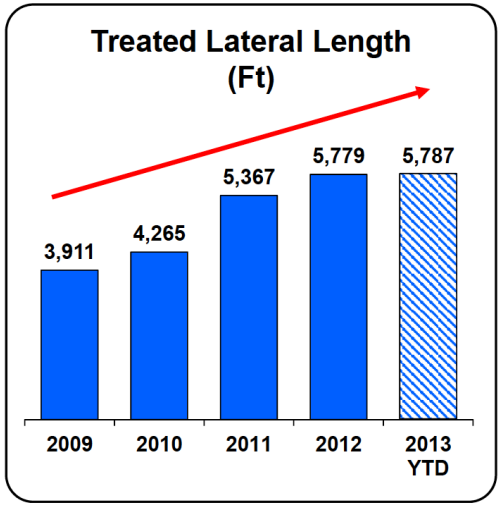
- Below are from Eagle Ford

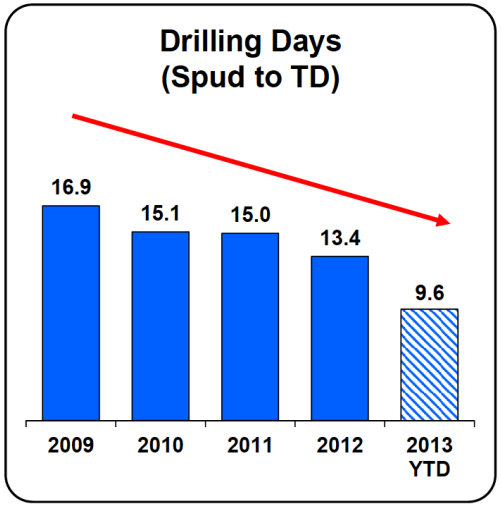




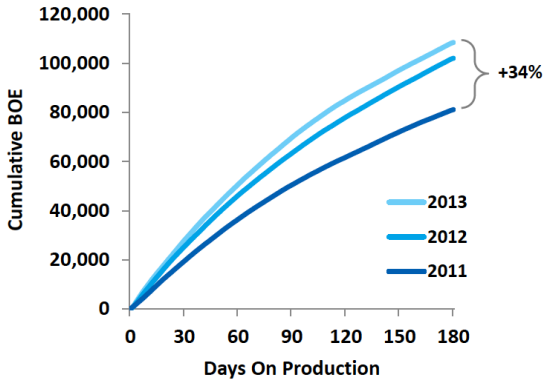


eog resources





Source: EOG



Source: Marathon

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Costs Are Coming Down – Not Up

Drilling and Completion Costs Focus

- Reducing drilling days
  - Pad drilling
  - Optimizing bit selection
  - Mud programs
- Reducing frac costs
  - Self sourcing
  - Optimizing frac designs
  - Synergies from pad drilling / frac ponds

Cost Reduction Highlights

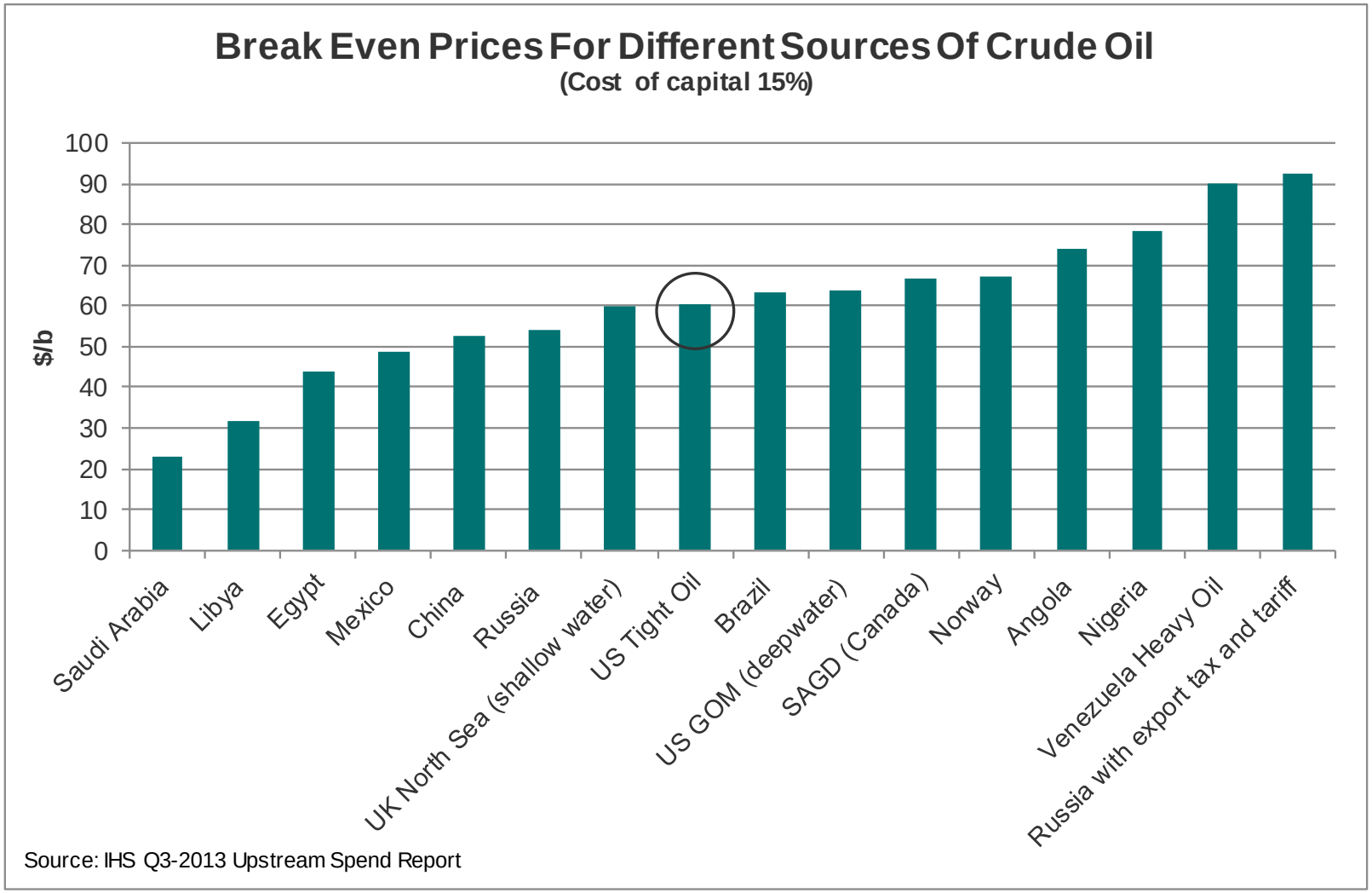
Play	Per Well D&C Cost Reduction
Wolfcamp Shale	$1 million +
Cline Shale	$1 million +
Granite Wash	$1.3 – $2.0 million
Tonkawa	$1.5 million

- **Expect further cost reductions as we apply best practices and techniques to our other plays in these regions**

Source: Apache

General World Break Even Prices By Source

- If the table below is correct then US tight oil is lower than earlier estimates we have seen



Source: IHS Q3-2013 Upstream Spend Report

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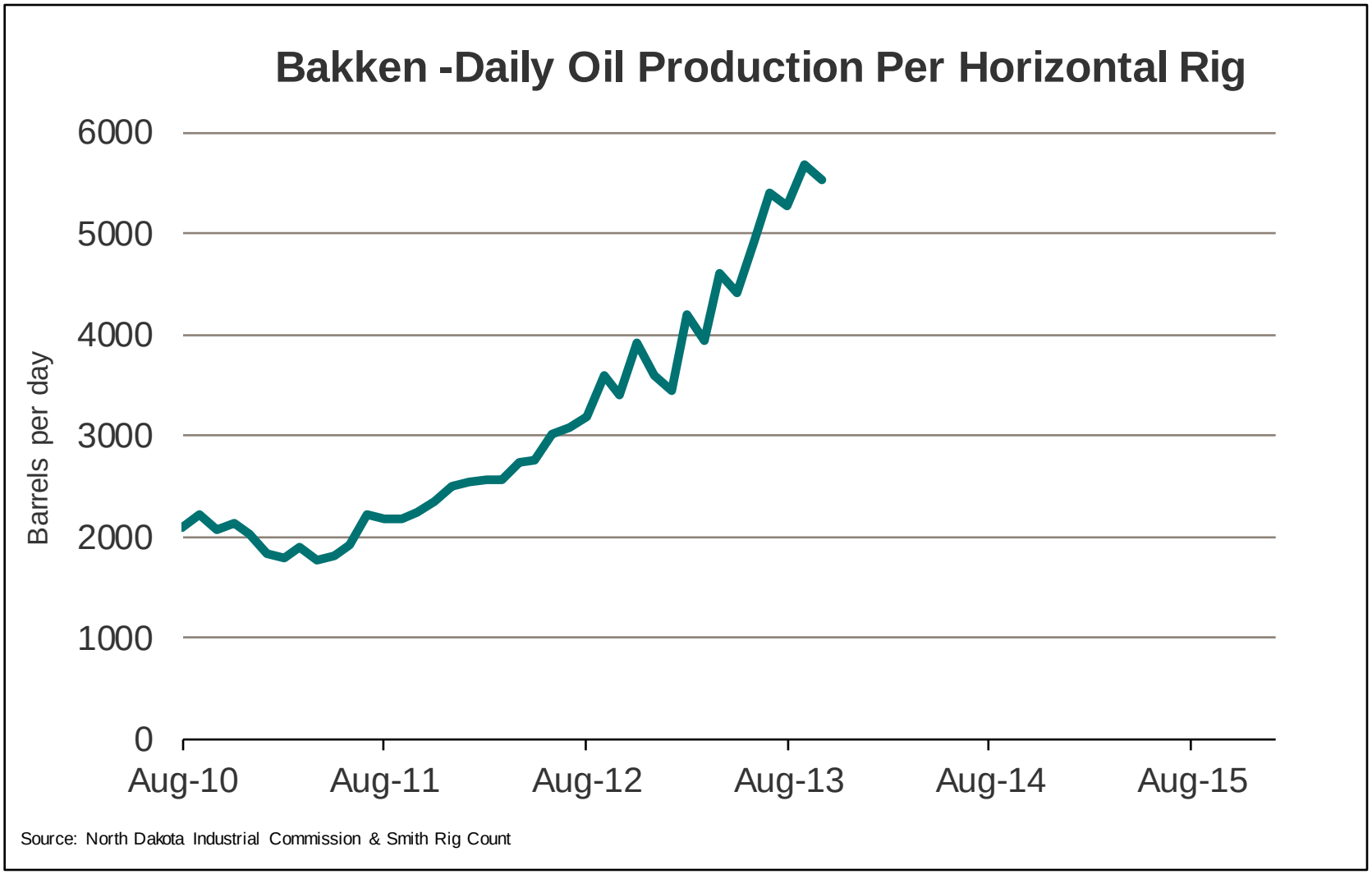
Learning Curve Still Ongoing In The Shale Plays

- Production **per rig** is exploding to the upside



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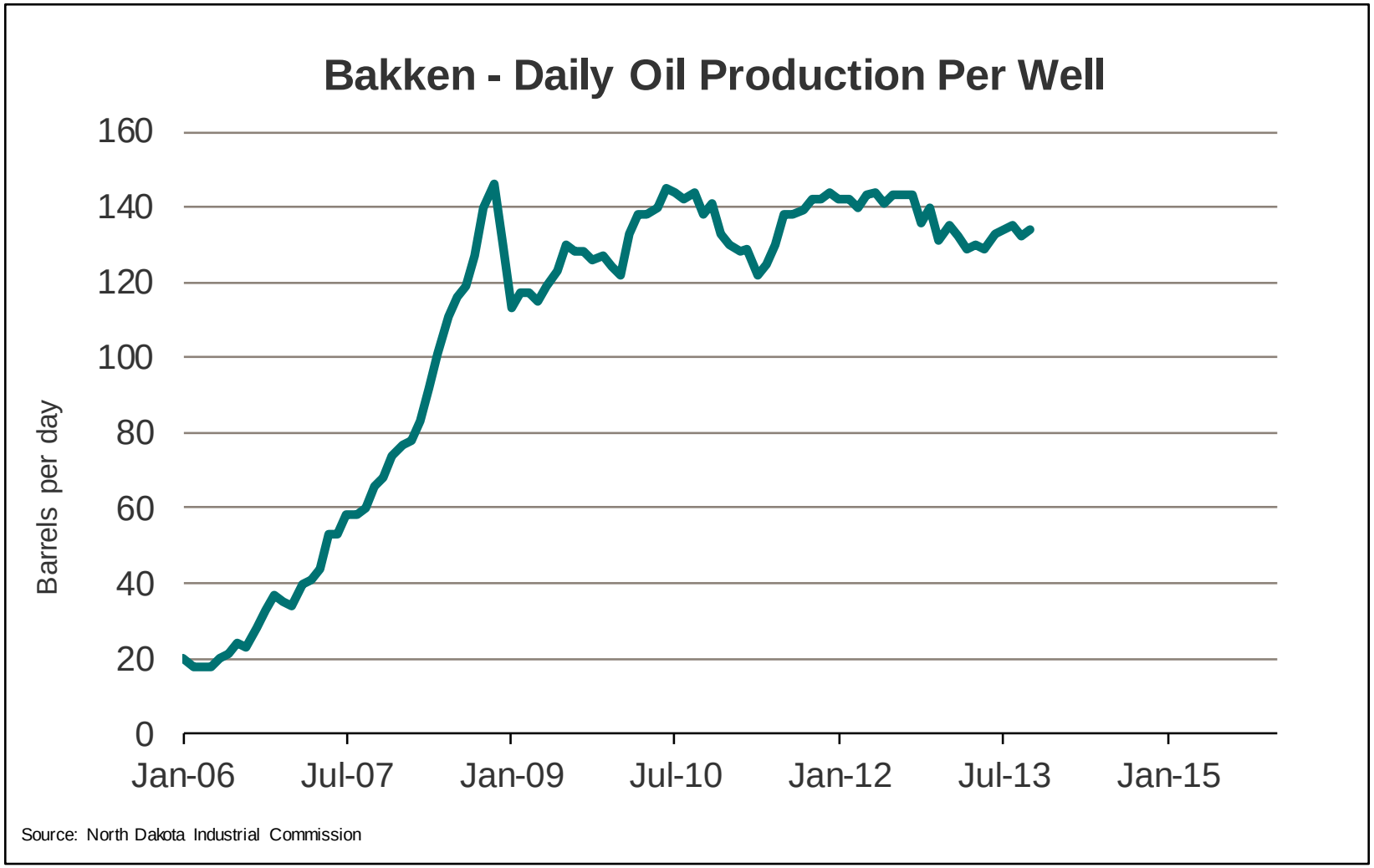
Bakken Production Per Well Stabilizing

- Stabilizing production per well in the Bakken – Either geology is still fine or processes are offsetting potential geology weakness



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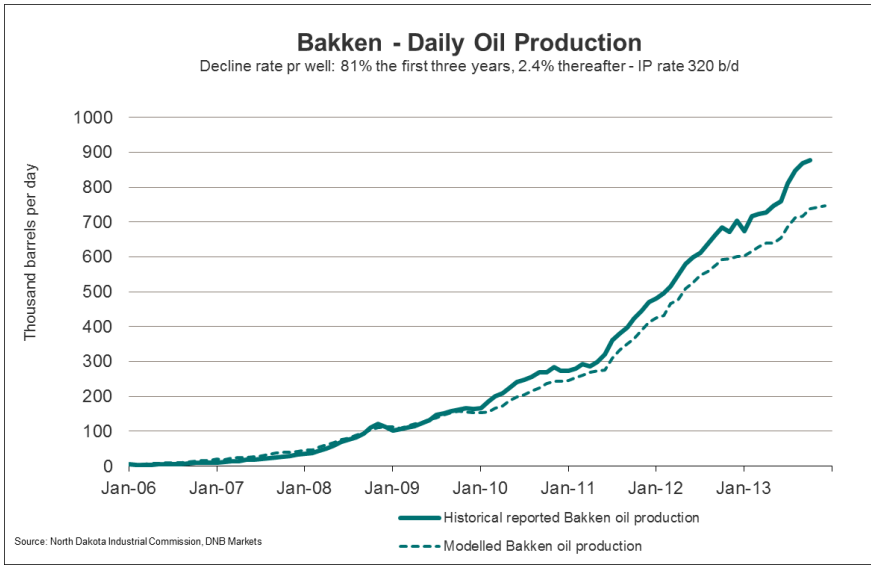
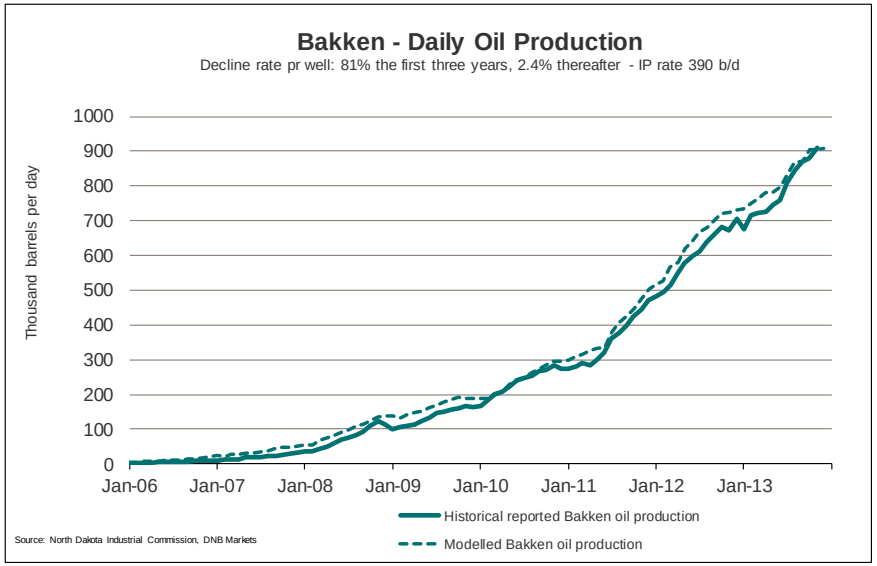
Learning Curve Is Progressing – IP Rates In Bakken Improving

- IP rates are improving so if geology is deteriorating, then technology and process improvements are more than offsetting this





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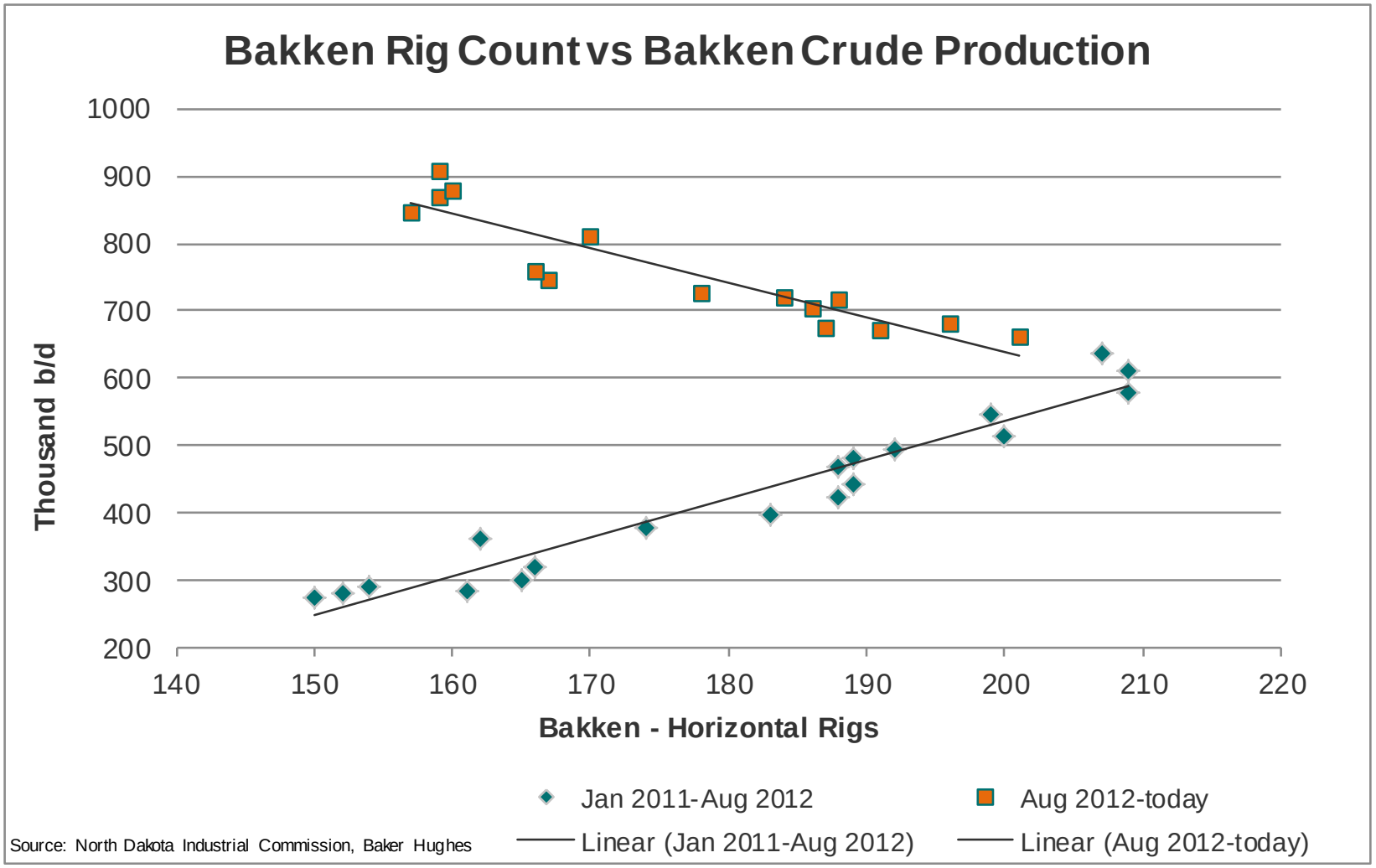
No Predictability For Oil Production In Counting Rigs Anymore

- The lower the rig count; the higher production is what we are currently seeing…



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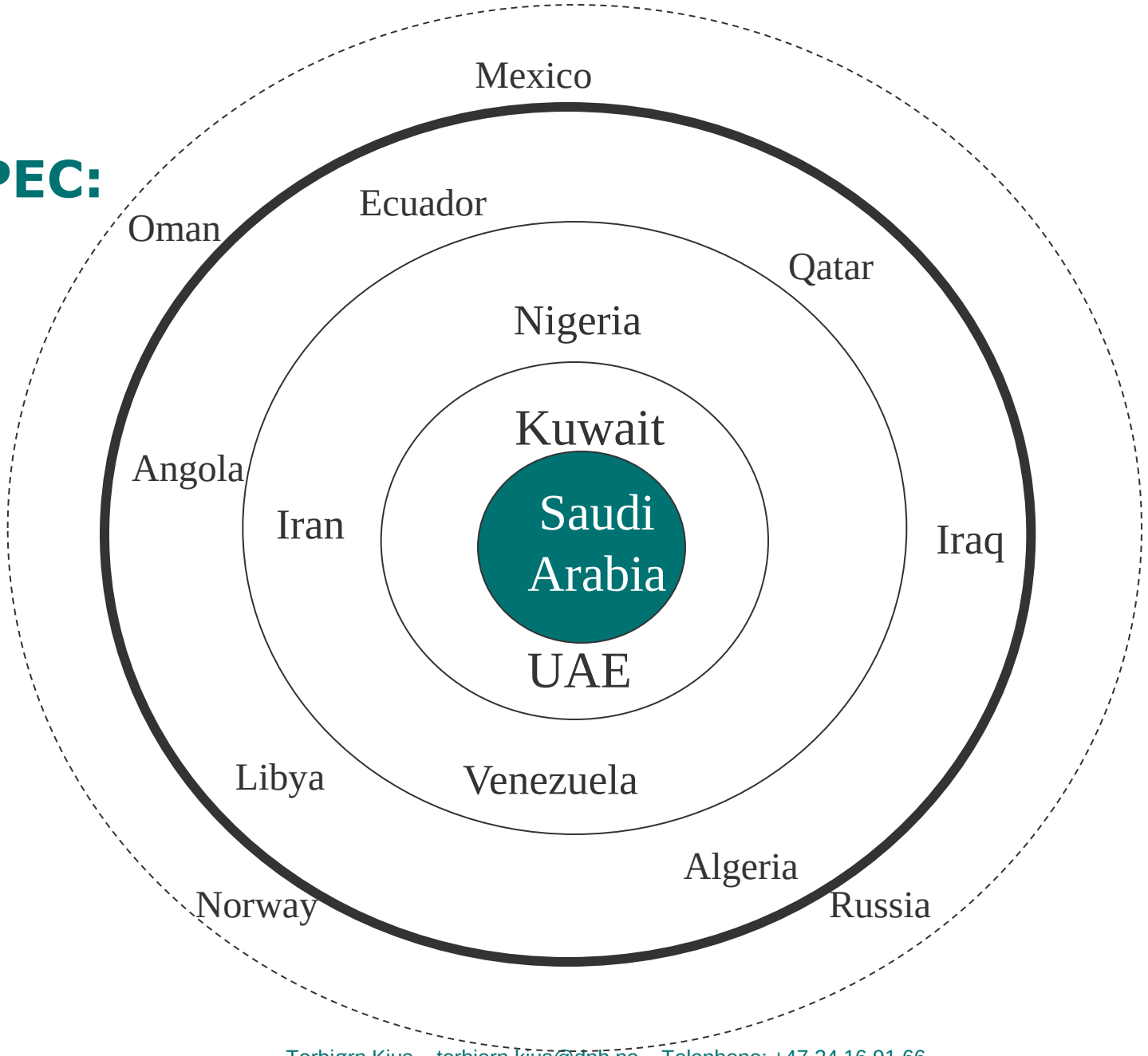
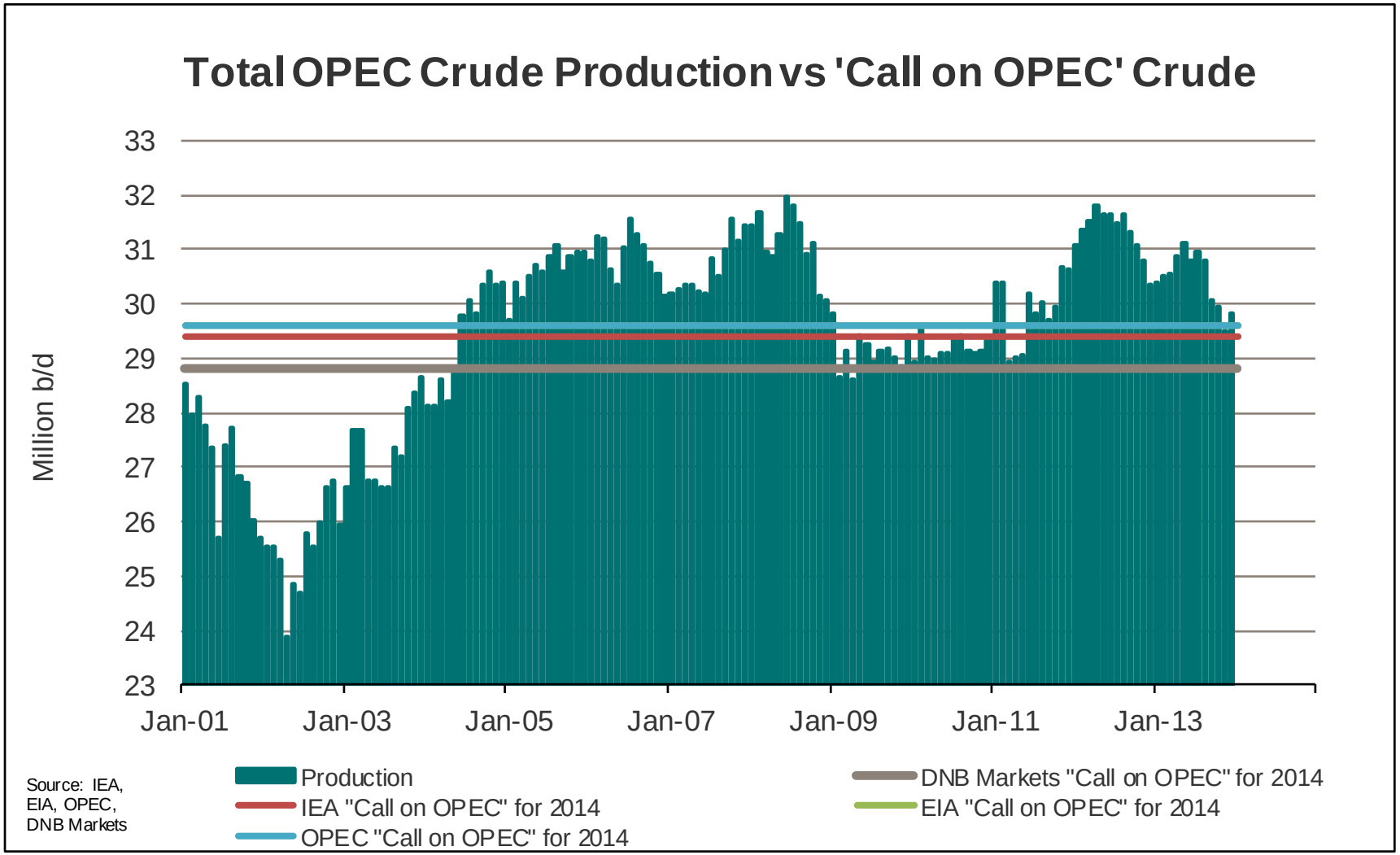
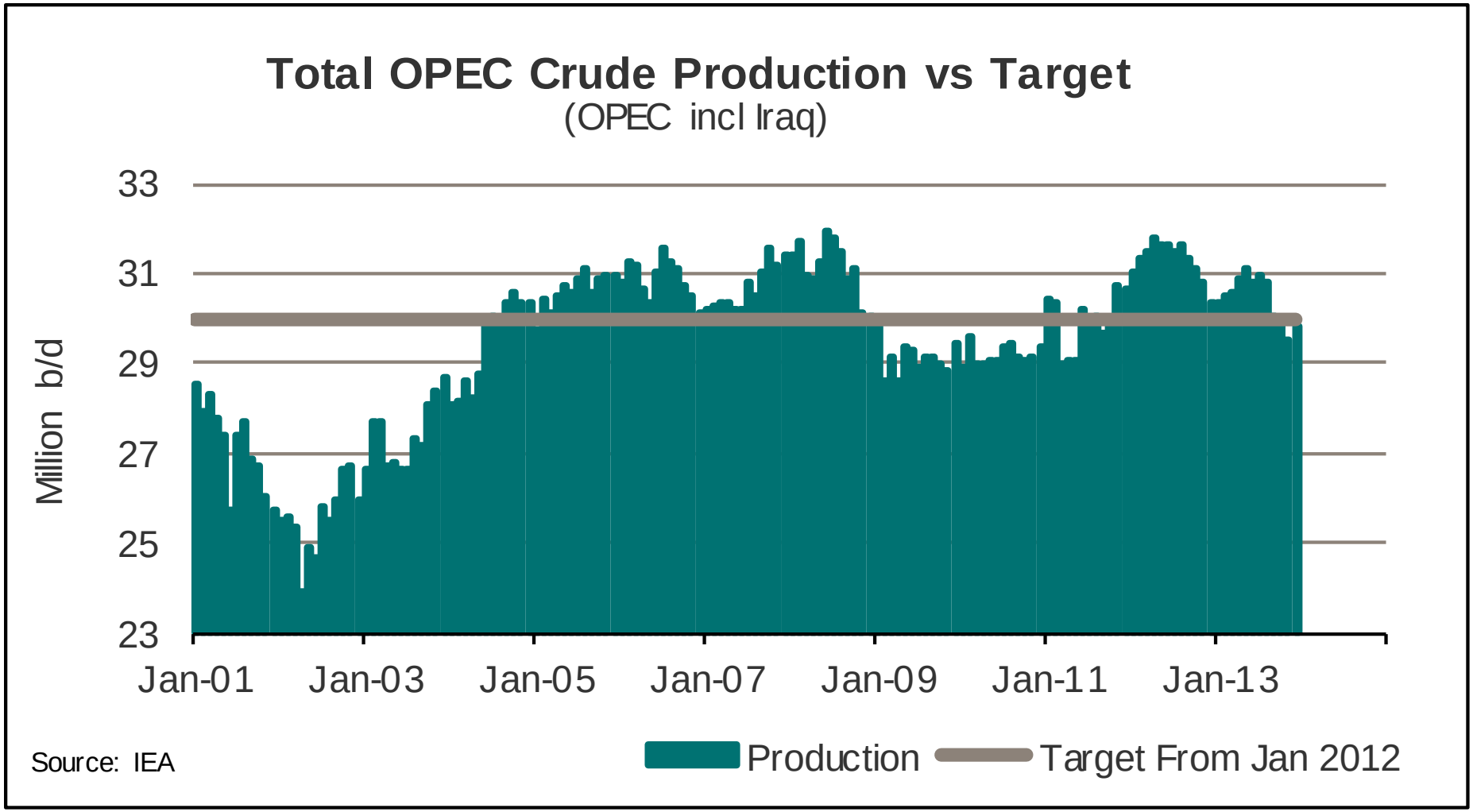
OPEC:


Mexico
Ecuador
Oman
Qatar
Nigeria
Kuwait
Angola
Iran
Saudi Arabia
Iraq
UAE
Libya
Venezuela
Algeria
Norway
Russia

OPEC - Production vs “Call on OPEC” Crude



OPEC - Production & Target



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OPEC Compliance vs Production Targets

OPEC Production Targets	Est. Jan 2009 Target	Increase from Jan 2009 Target	Current Jan-2012 Target	Latest production according to IEA	Compliance vs Jan 2012 prod. target
SAUDI ARABIA	8.01	0.81	8.82	9.82	1.00
KUWAIT	2.22	0.22	2.44	2.81	0.37
NEUTRAL ZONE					
IRAN	3.33	0.34	3.67	2.75	-0.92
IRAQ	2.40	0.24	2.64	3.07	0.43
QATAR	0.73	0.07	0.80	0.72	-0.08
U.A.E.	2.23	0.22	2.45	2.76	0.31
ALGERIA	1.20	0.12	1.32	1.15	-0.17
LIBYA	1.47	0.15	1.62	0.23	-1.39
ANGOLA	1.51	0.15	1.66	1.62	-0.04
NIGERIA	1.70	0.17	1.88	1.92	0.04
VENEZUELA	2.01	0.20	2.21	2.44	0.23
INDONESIA					
ECUADOR	0.43	0.04	0.47	0.53	0.06
TOTAL	**27.25**	**2.75**	**30.00**	**29.82**	**-0.18**
		10.1 %			

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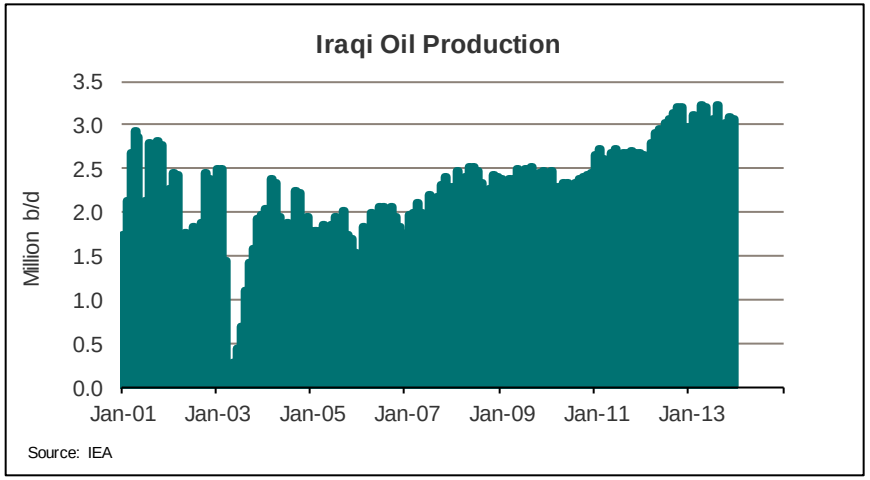
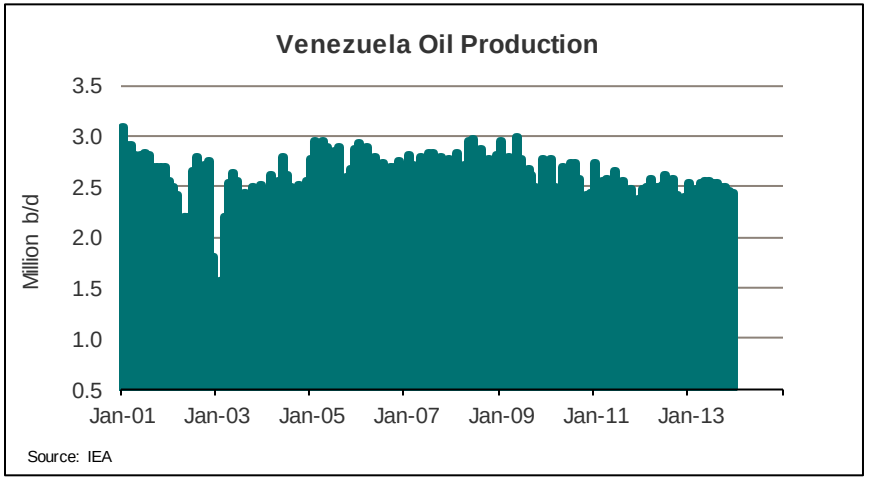
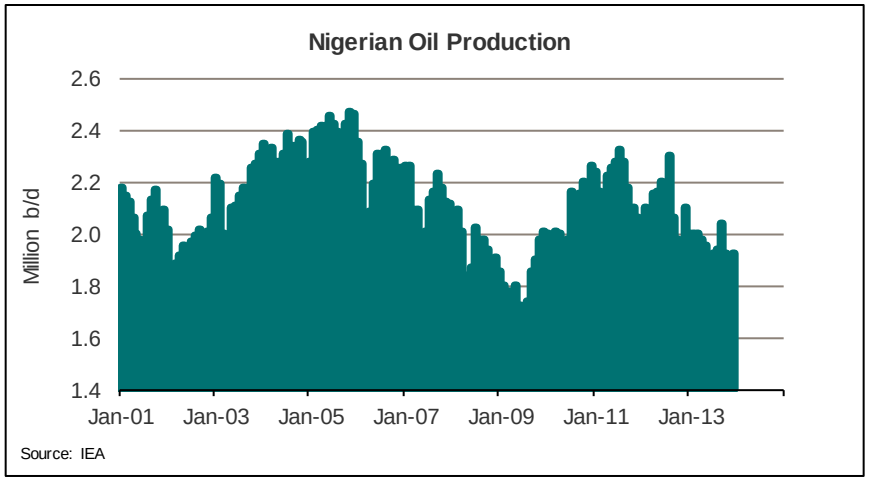
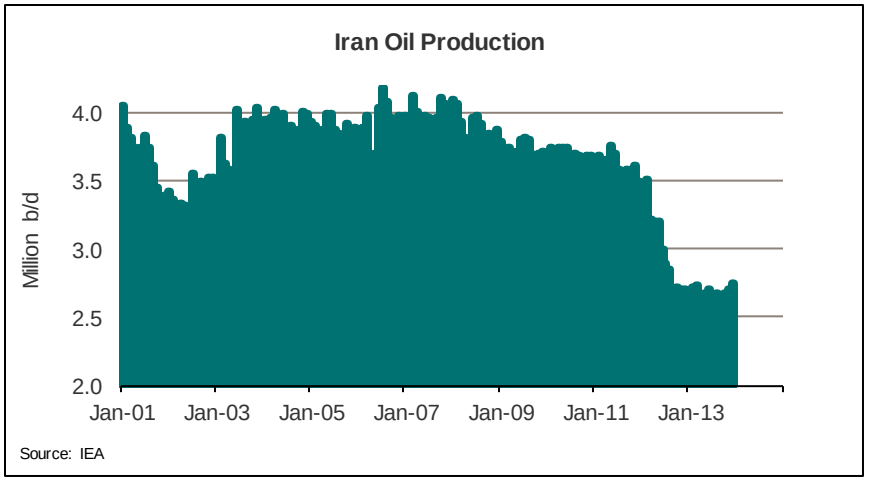
Production In Selected OPEC Members









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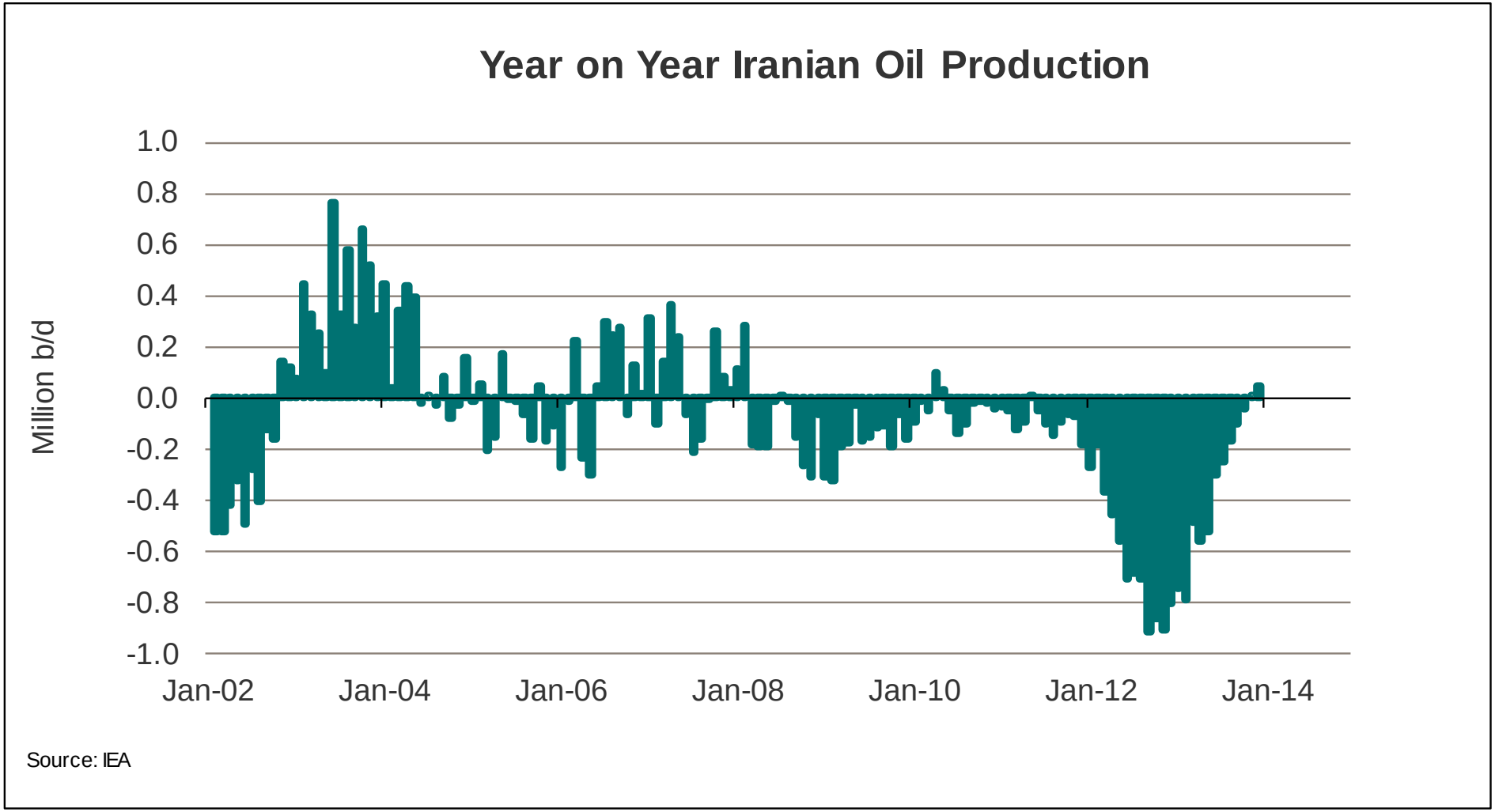
Year on Year Oil Production In Iran



Source: IEA

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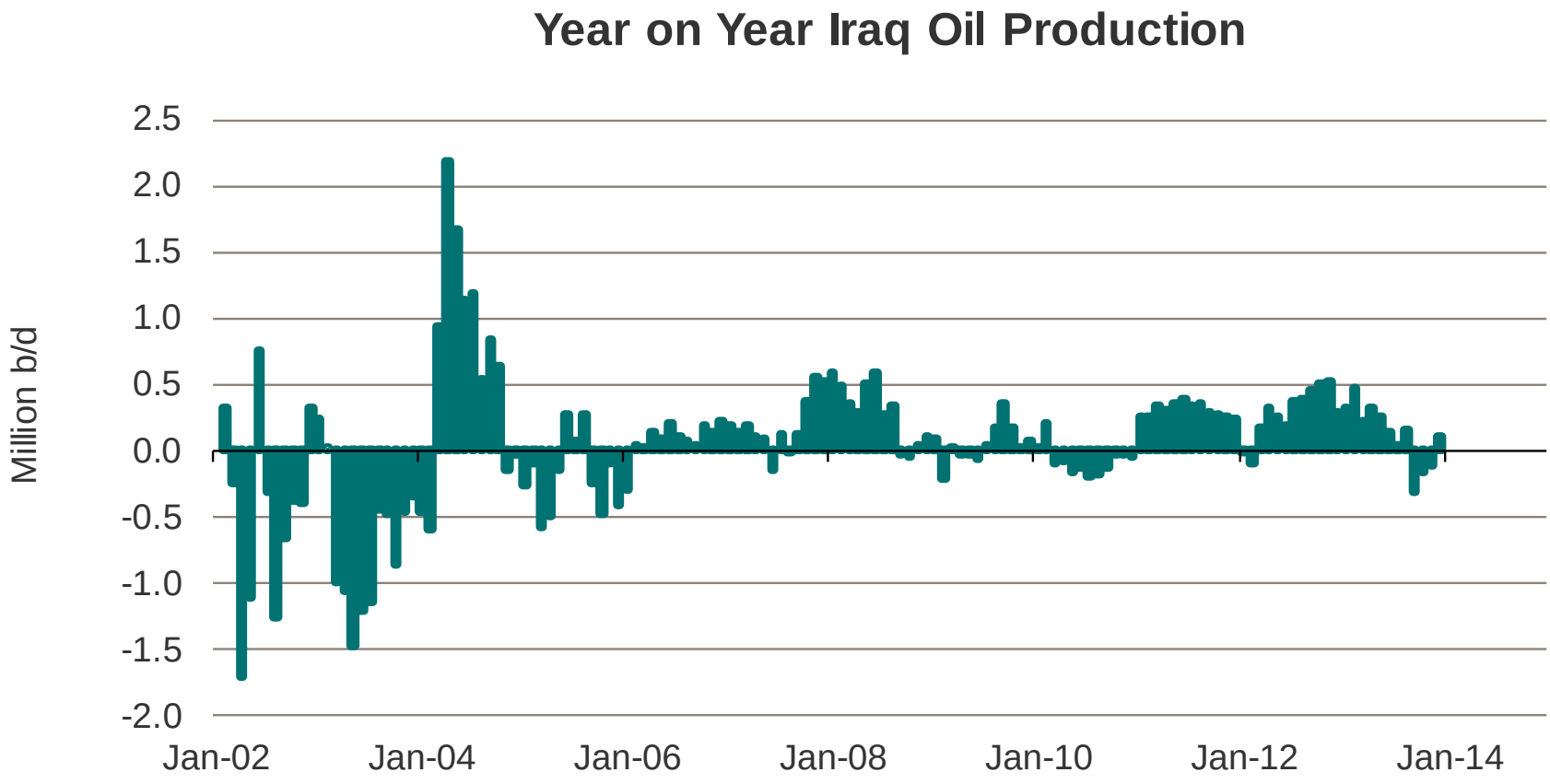
Year on Year Oil Production In Iraq



Source: IEA

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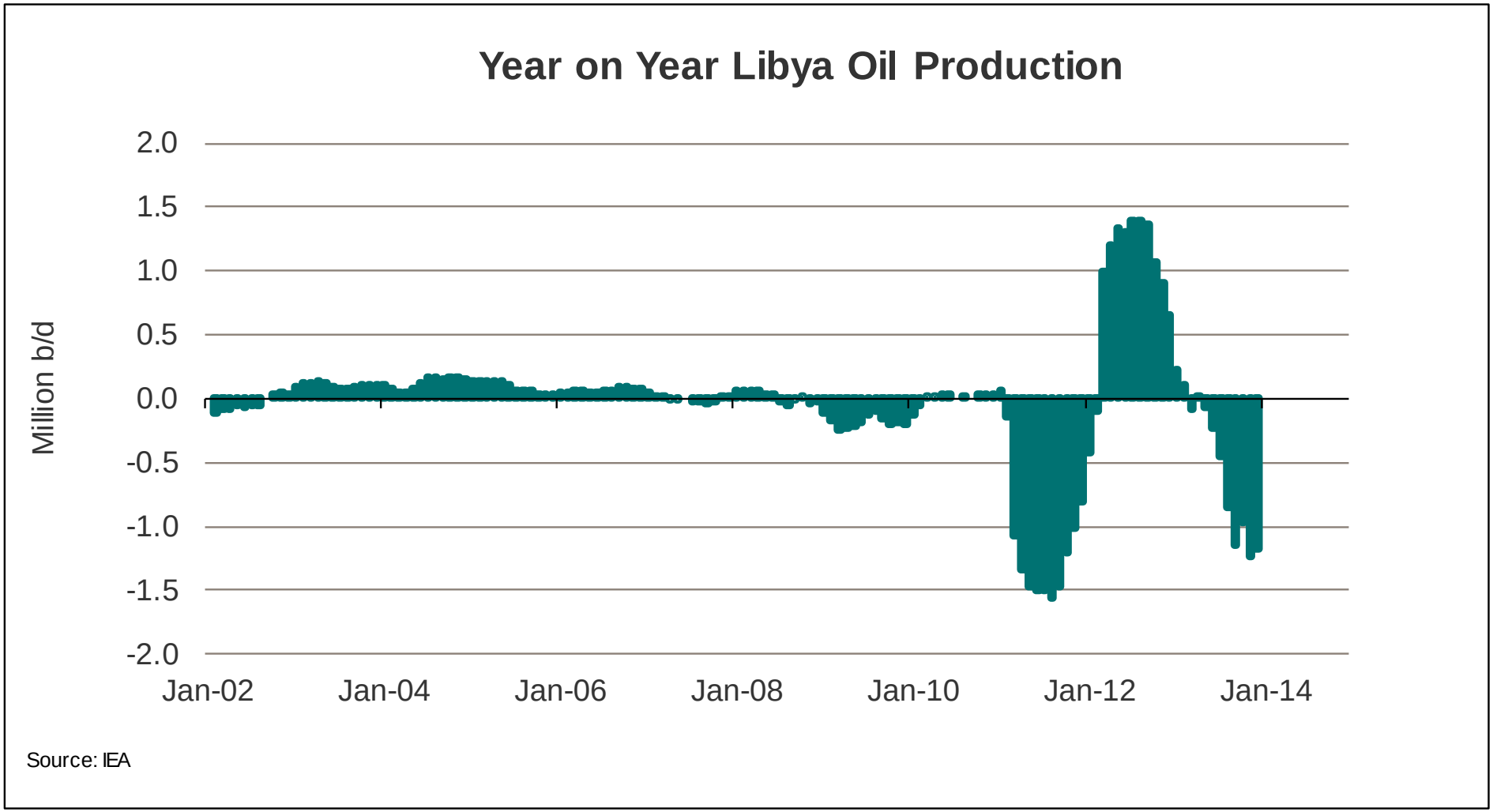
Year on Year Oil Production In Libya



Source: IEA

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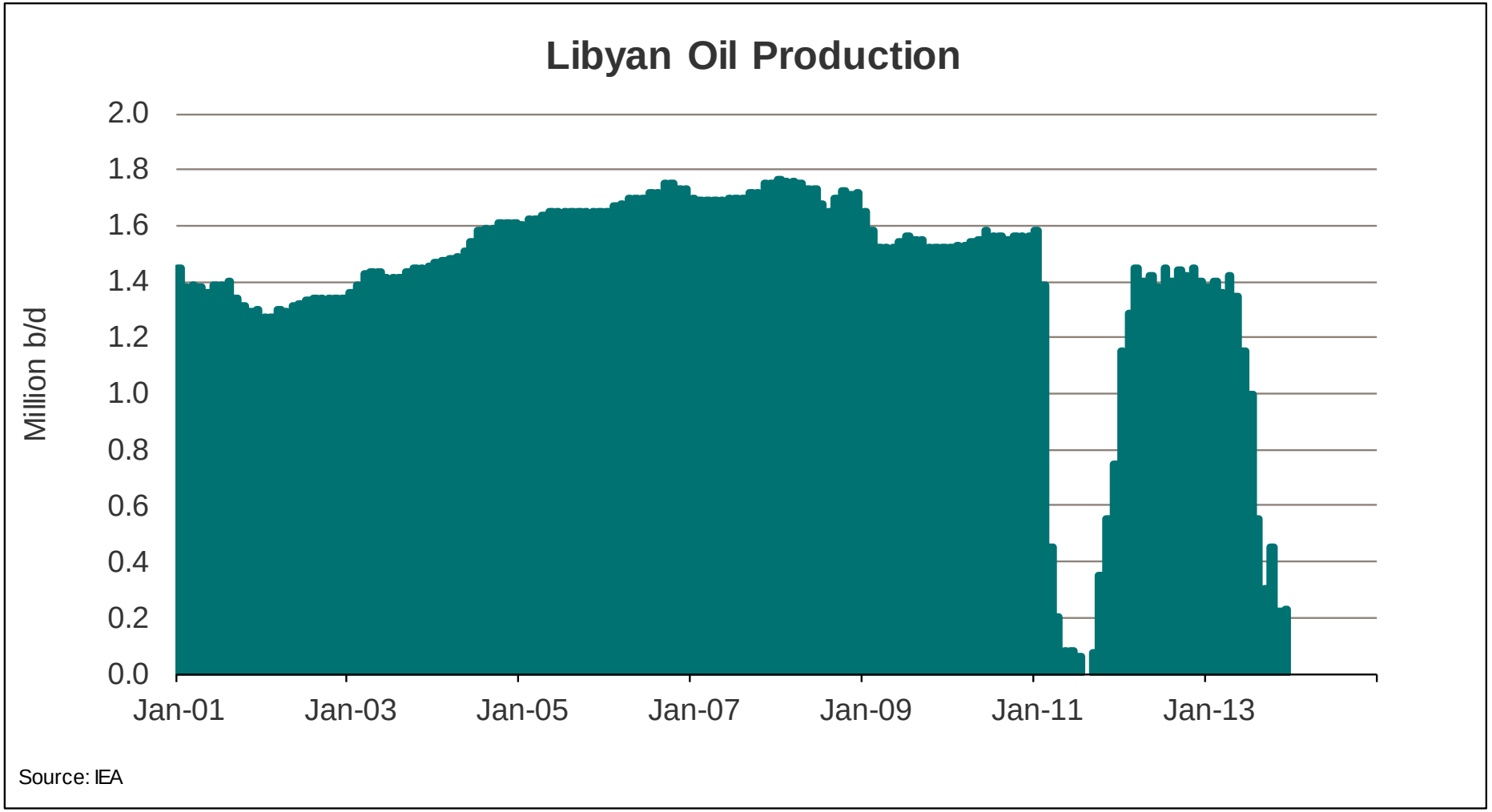
Oil Production In Libya



Source: IEA

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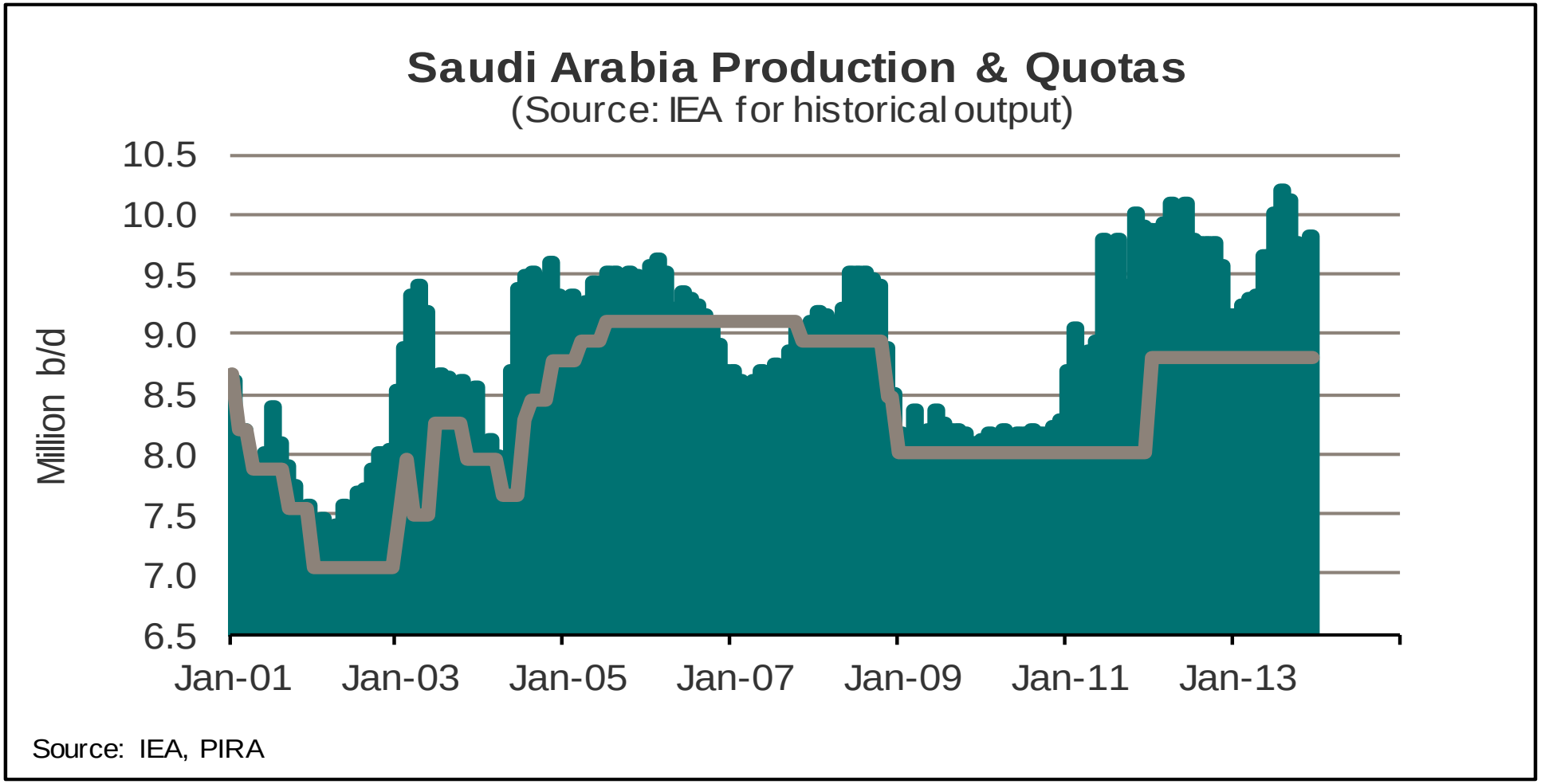
Saudi Arabia - Production & Quotas



Source: IEA, PIRA

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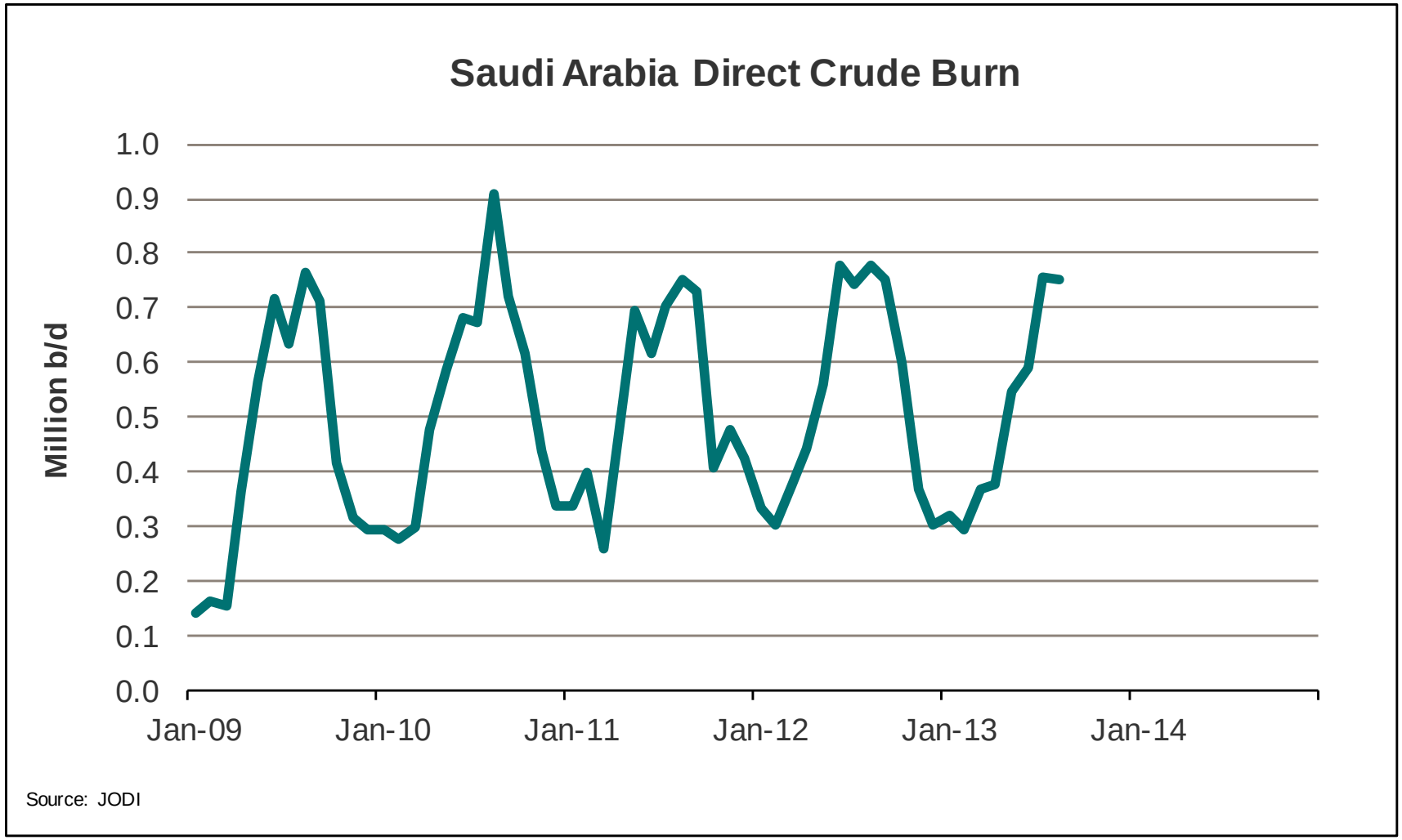
Saudi Arabia – Direct Crude Burn

-Crude oil used for generating power



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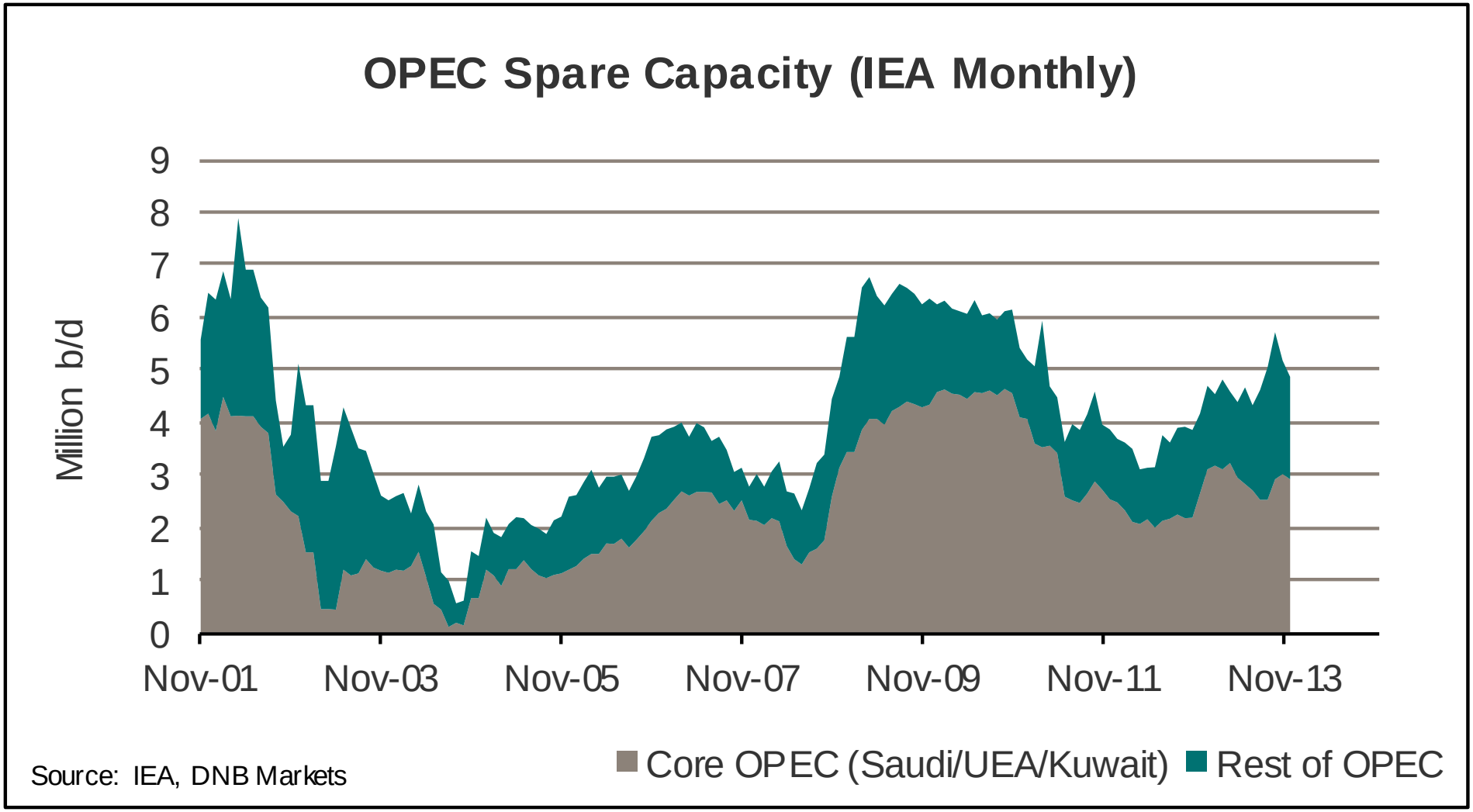
Core OPEC Spare Capacity



Source: IEA, DNB Markets

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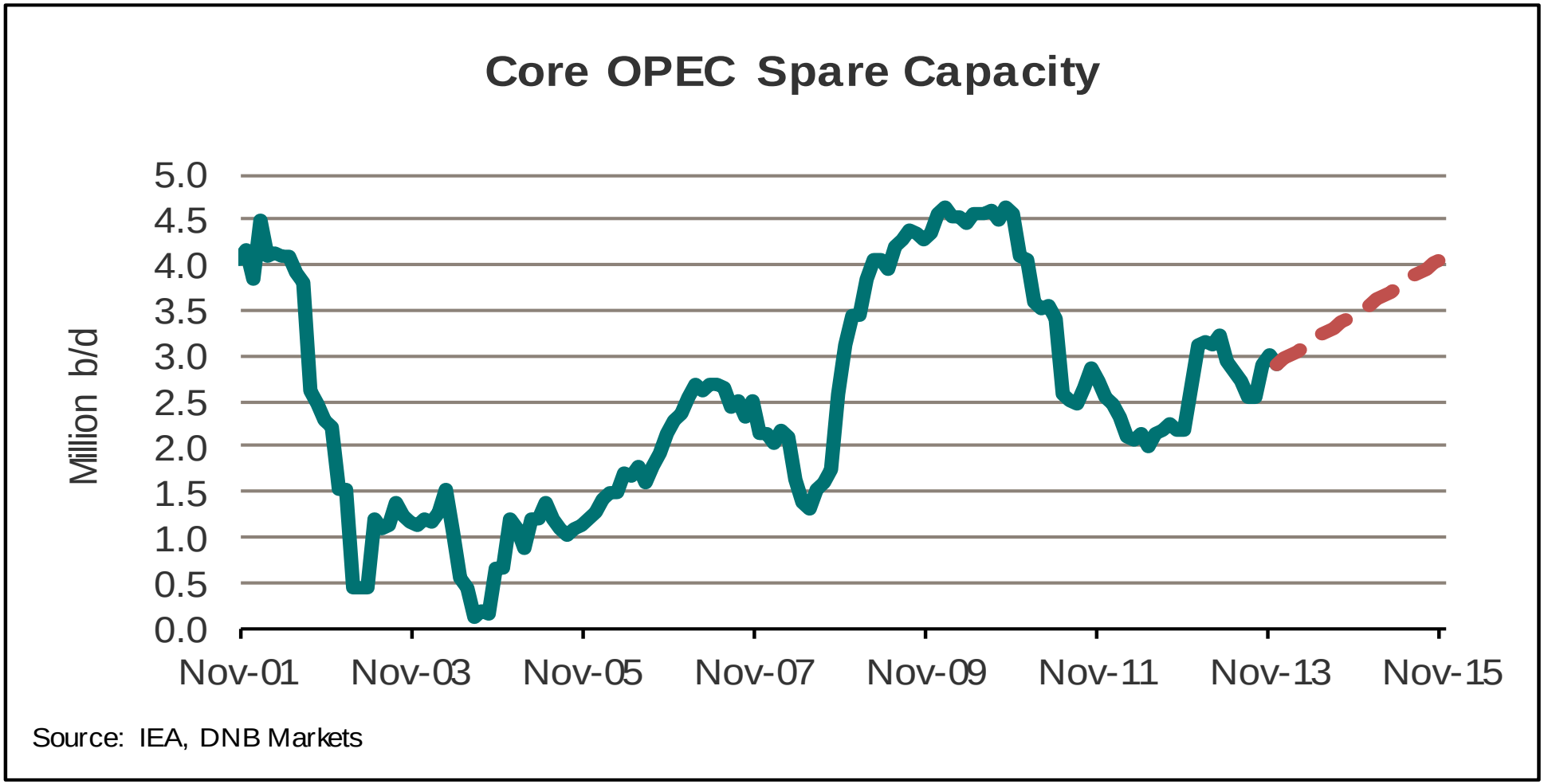
Core OPEC Spare Capacity Forecast



Source: IEA, DNB Markets

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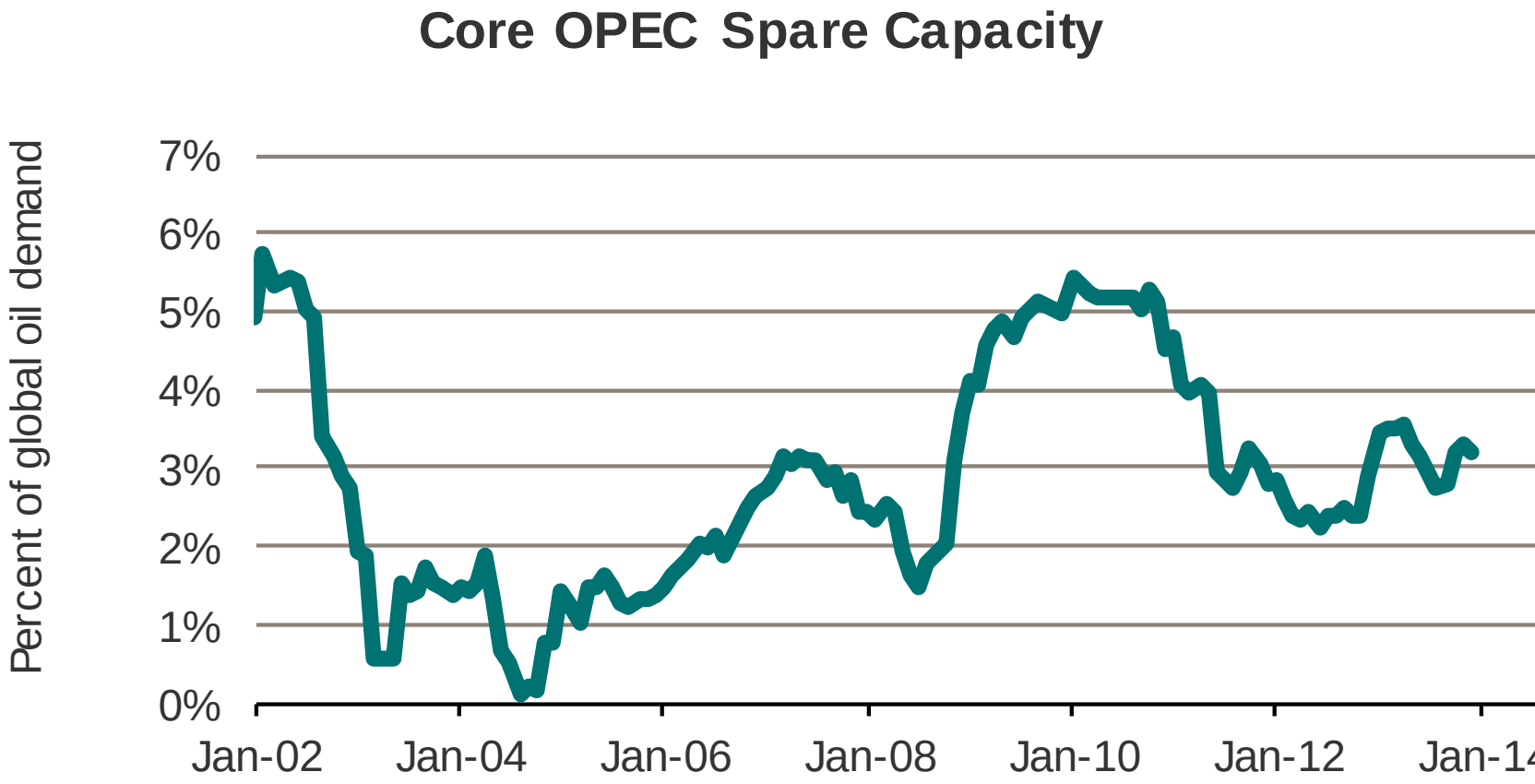
Core OPEC Spare Capacity In Percent Of Global Oil Demand



Source: IEA, DNB Markets

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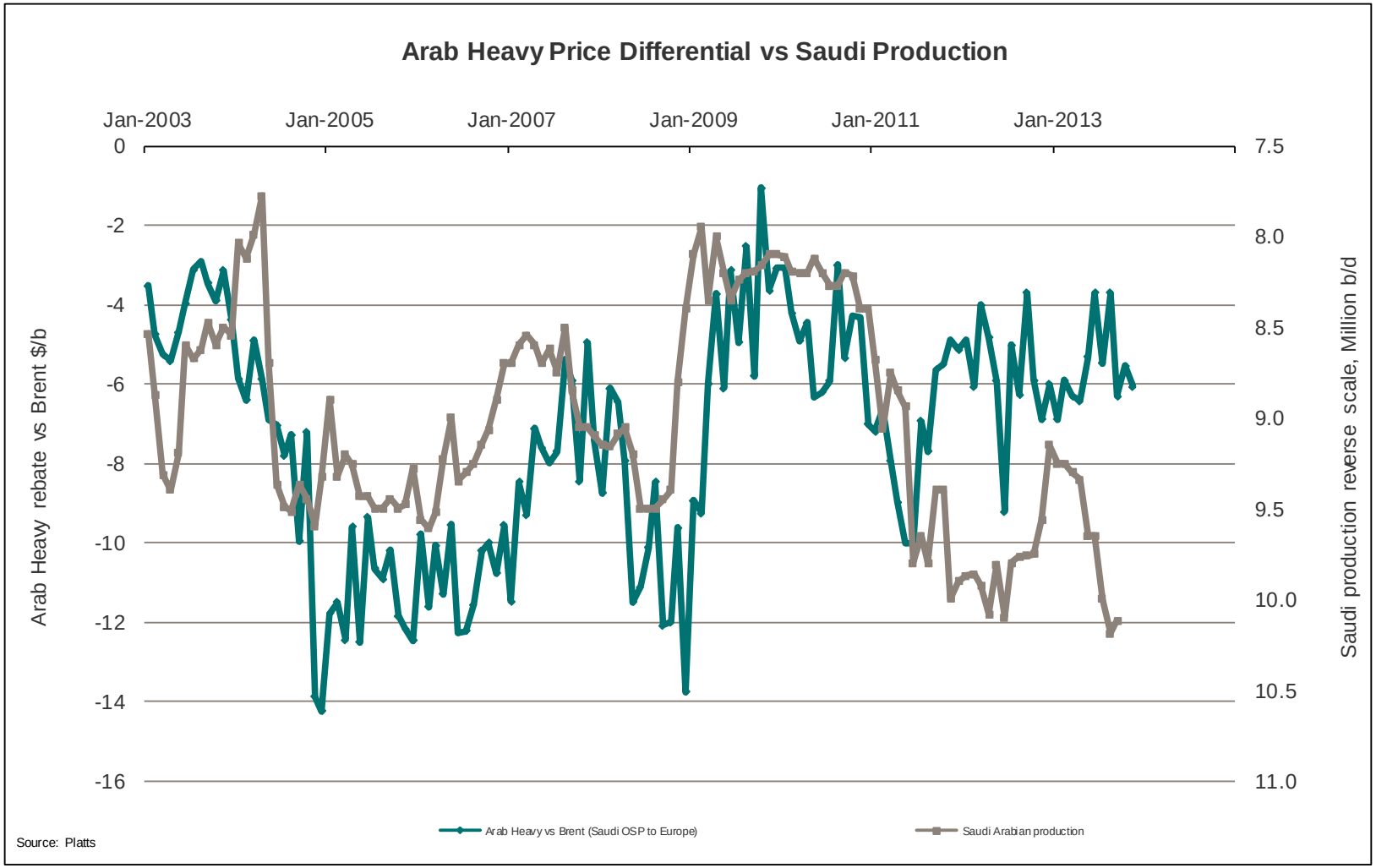
Saudi OSP To Europe (Arab Heavy) vs Saudi Oil Production



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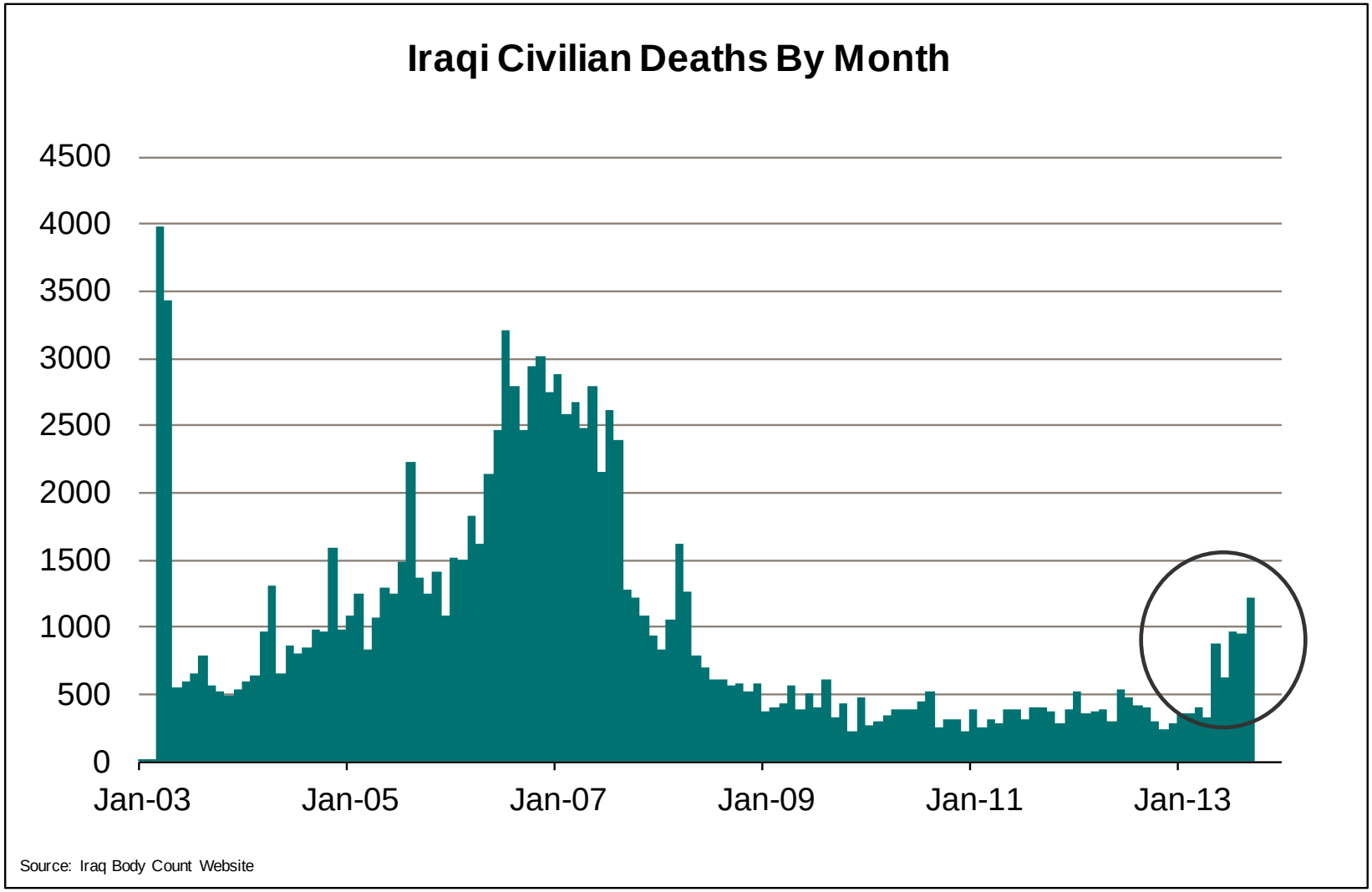
Rising Violence In Iraq - Iraq Body Count Web Site



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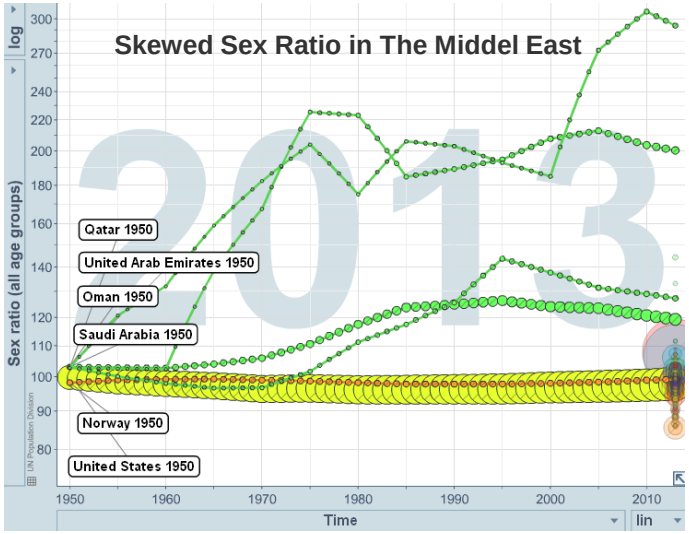
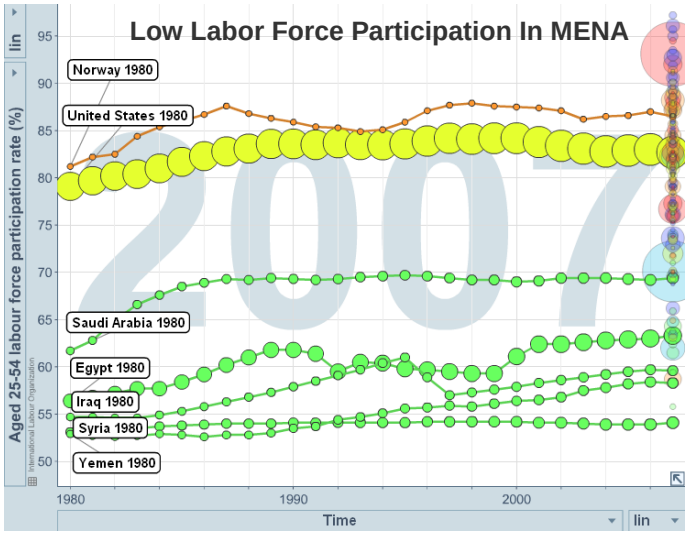
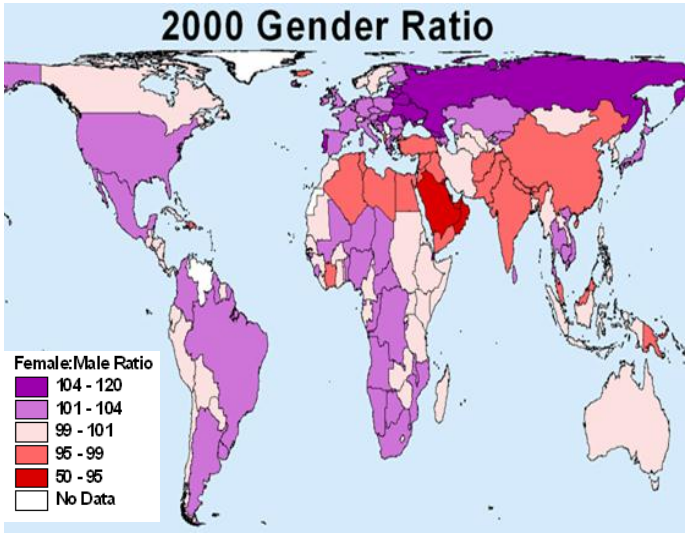
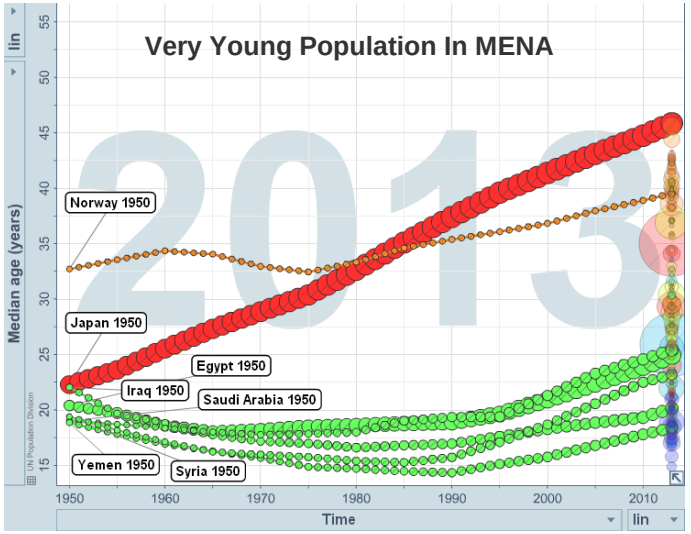
MENA: Sex Ratio – Unemployment - Young Population

- A recipe for social unrest









Source: International Labor Organization, UN Population Division, Gapminder

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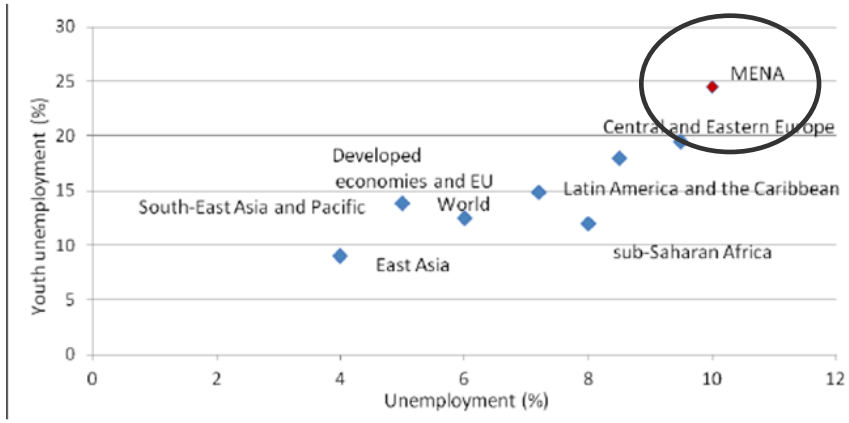
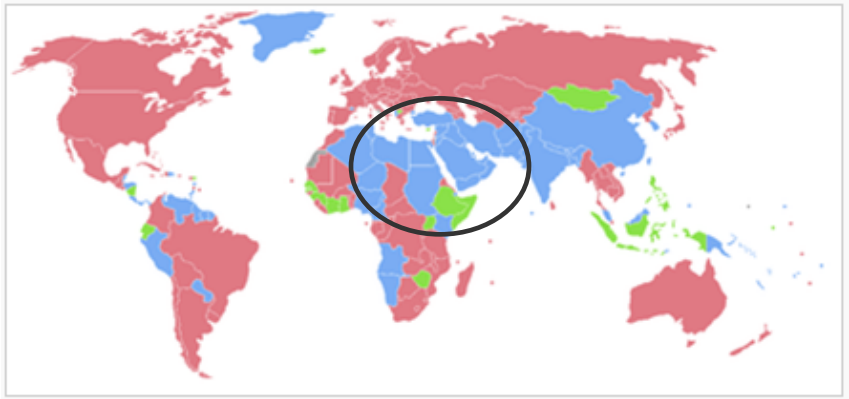
MENA Demographics: Young - Unemployed - Males

- A recipe for social unrest

Figure 1: Total and Youth Unemployment by Regions (2010)

Source: ILO and IMF data.



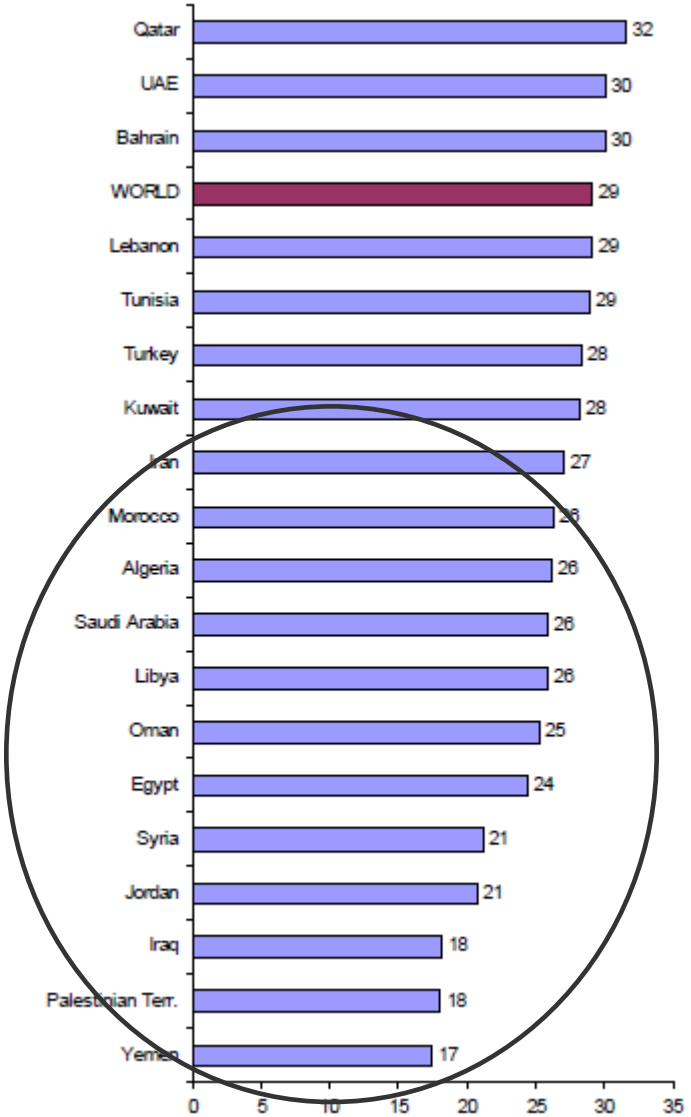


Map indicating the human sex ratio by country.[1]

Countries with more **females** than males.

Countries with the **same** number of males and females (accounting that the ratio has 3 significant figures, i.e., 1.00 males to 1.00 females).

Countries with more **males** than females.



Sources: IMF, UN Population Division, CIA World Factbook

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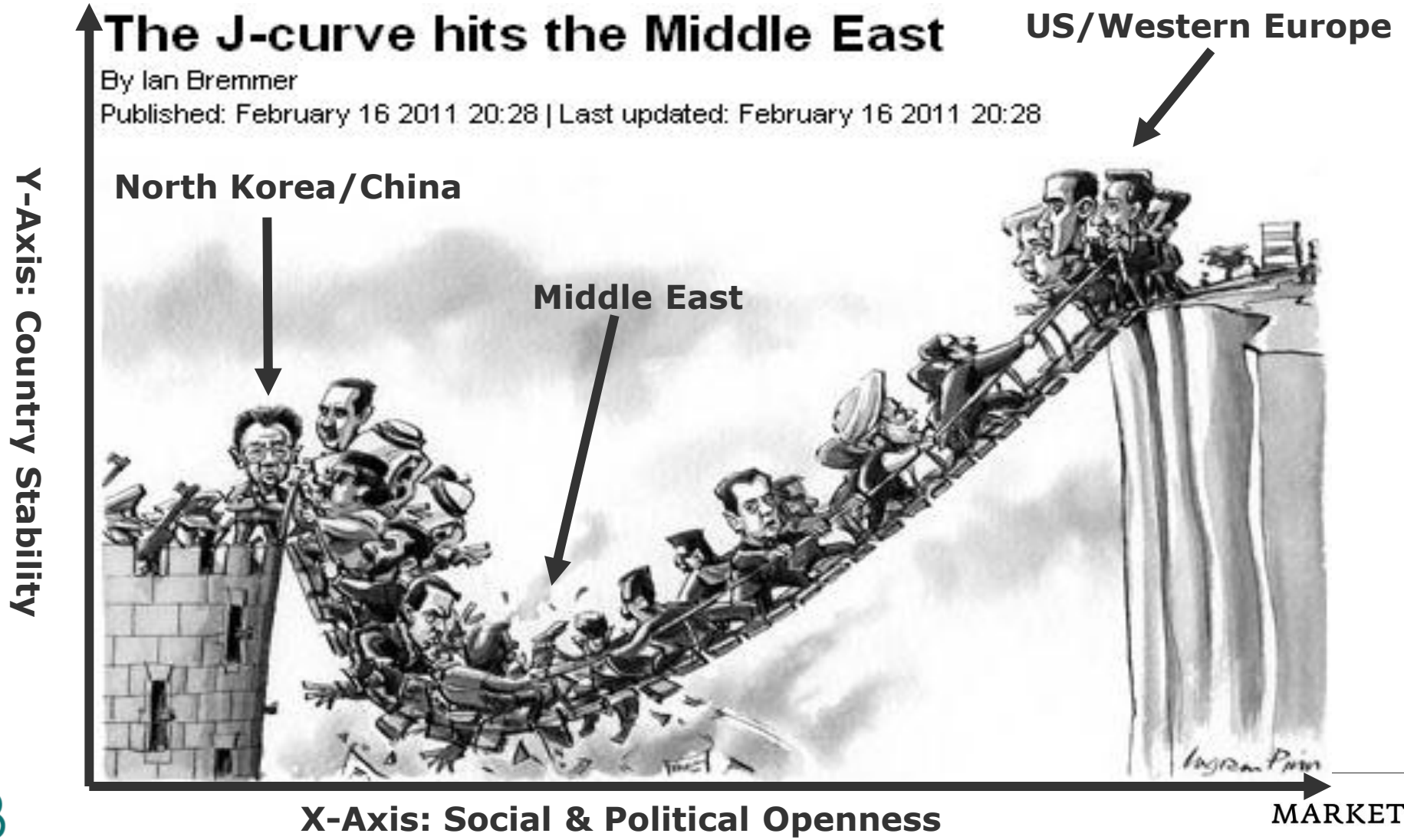
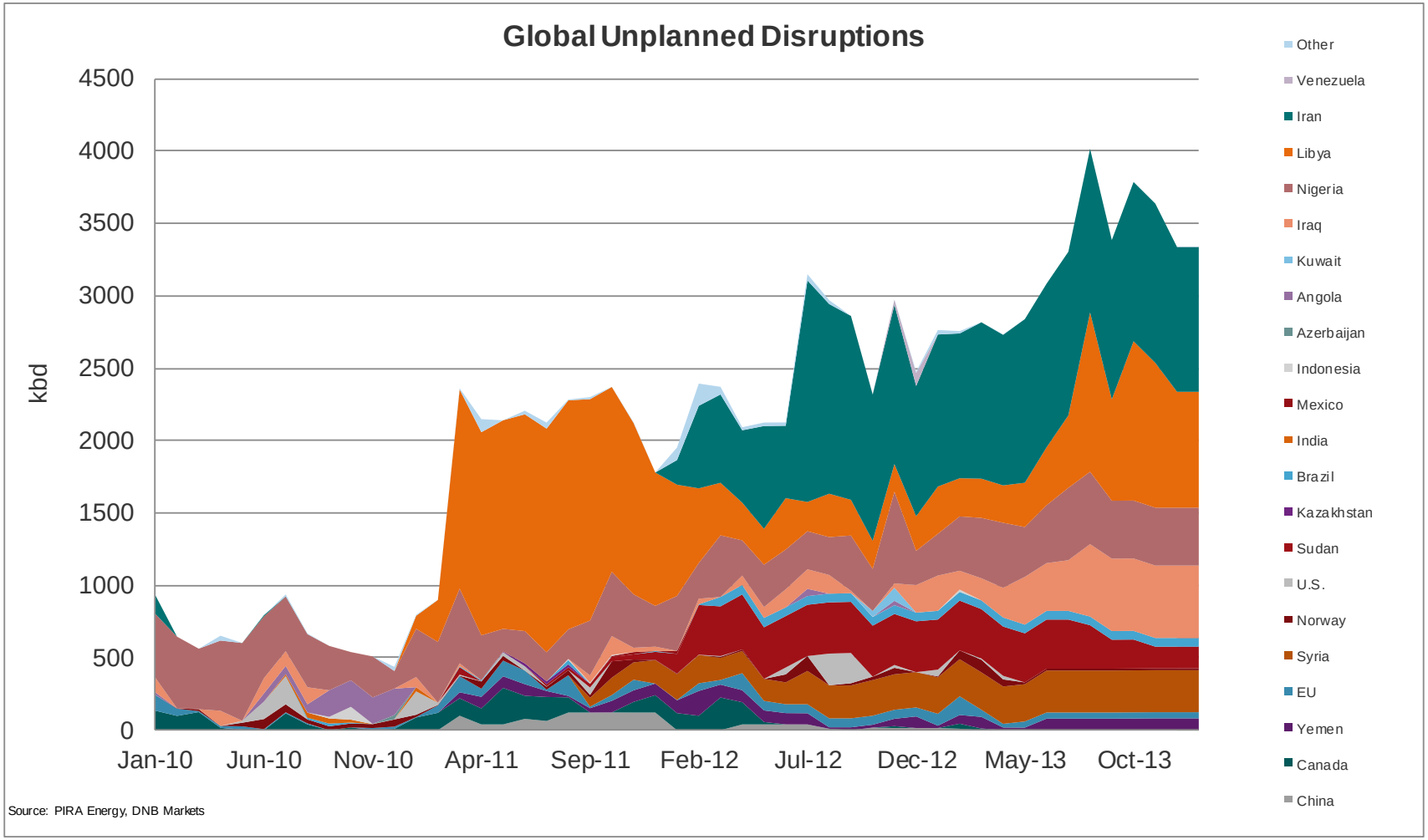
Geopolitical Risk Increase As A Society Opens Up

- Internet - Satellite-TV - Cell-phones



Global Supply Disruptions Have Been Growing

- Will unplanned outages continue at the current high level for the coming 5-years?? What happens if these barrels return?



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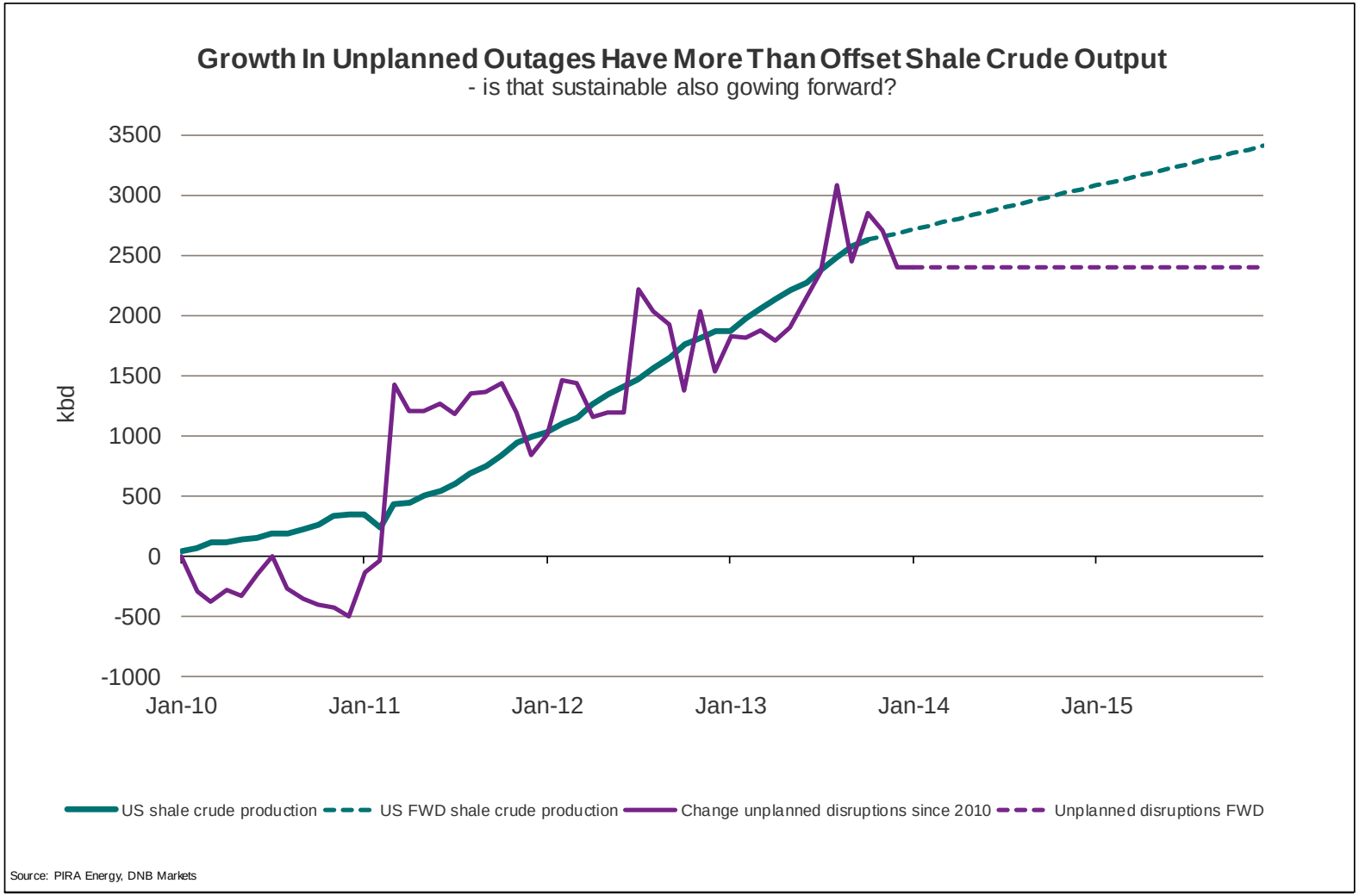
Shale Crude Output Growth Has Been Offset By Outages

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



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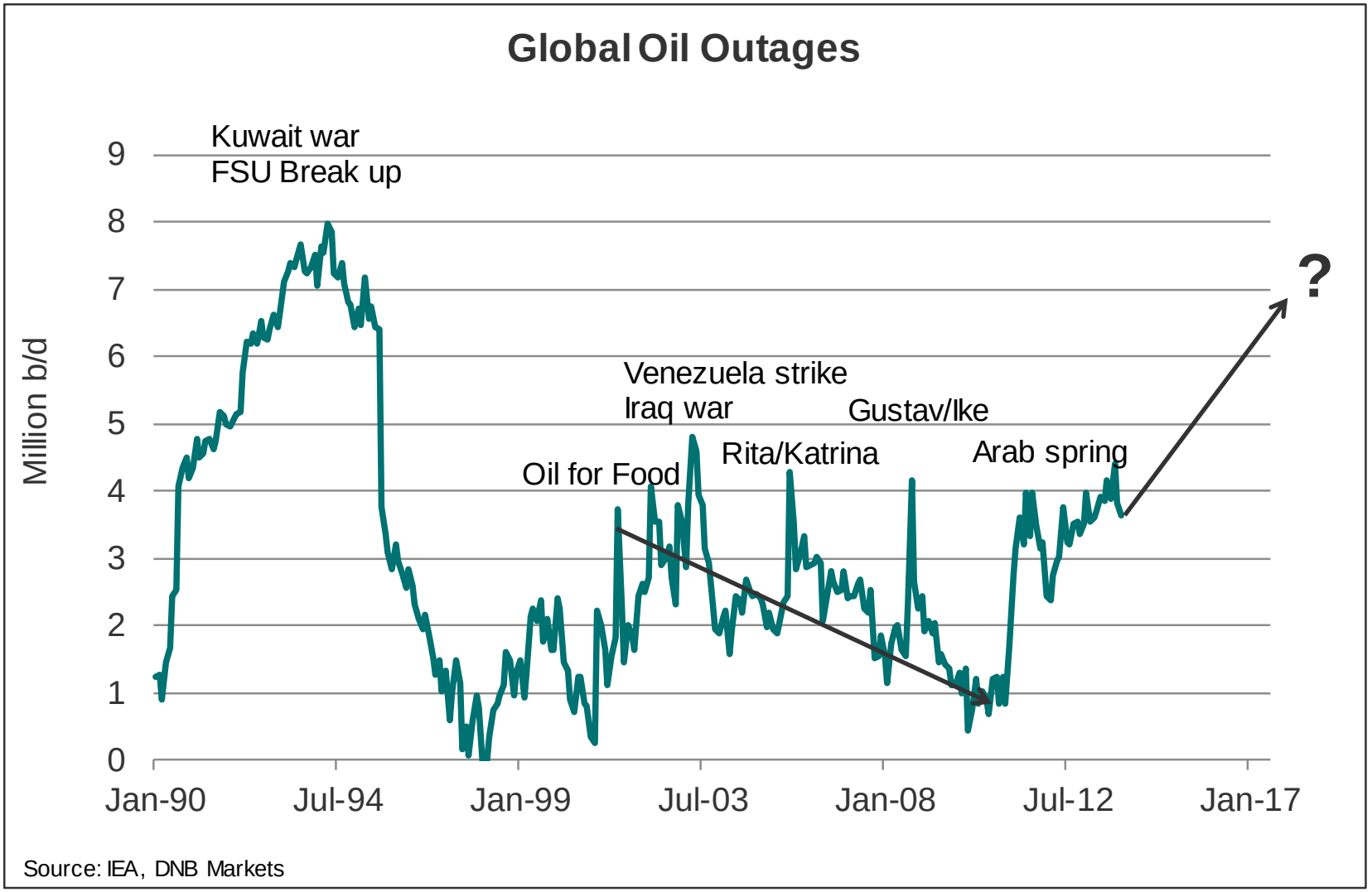
Global Unplanned Outages Are At A Historically High Level

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



Source: IEA, DNB Markets

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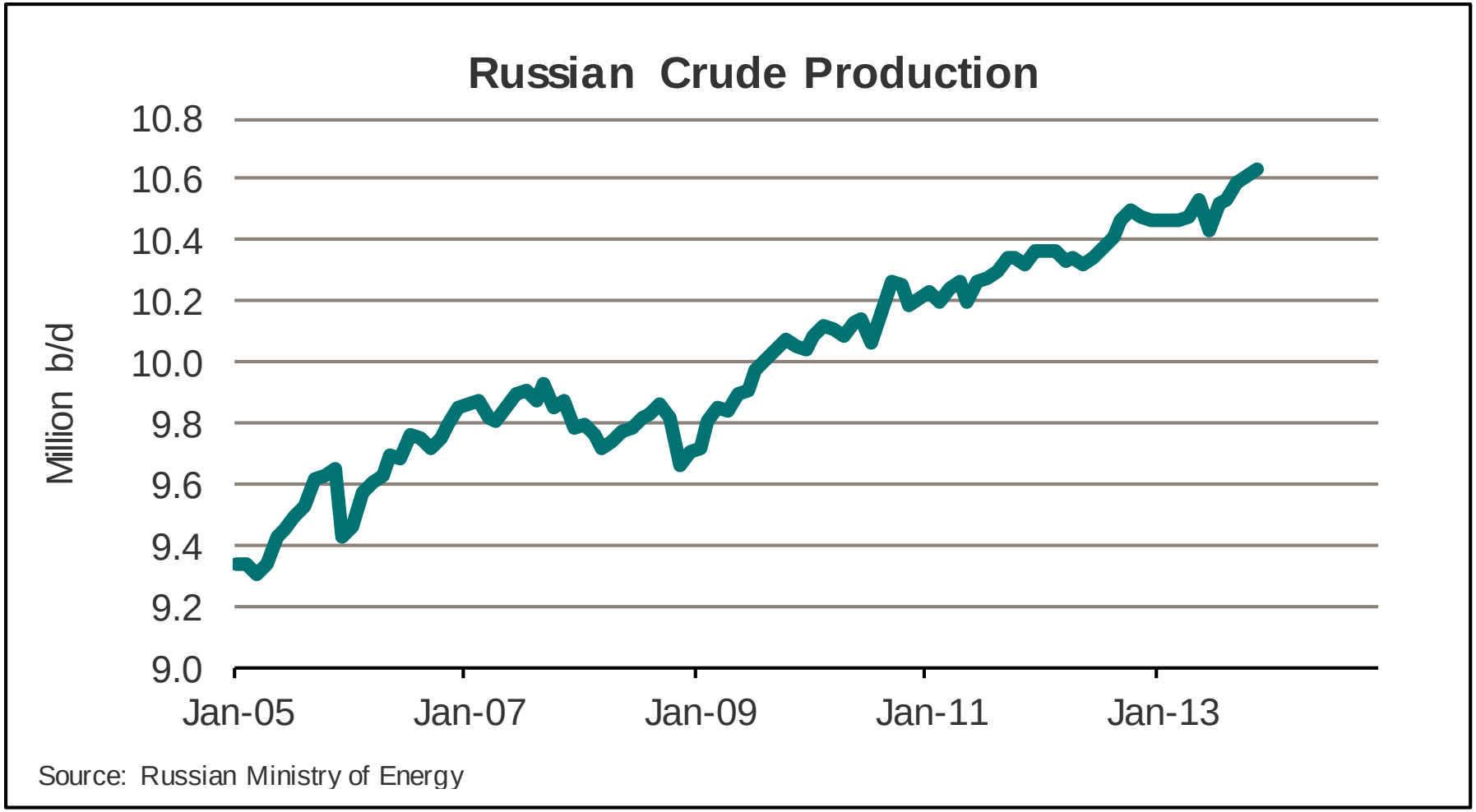
Russian Crude Oil Production



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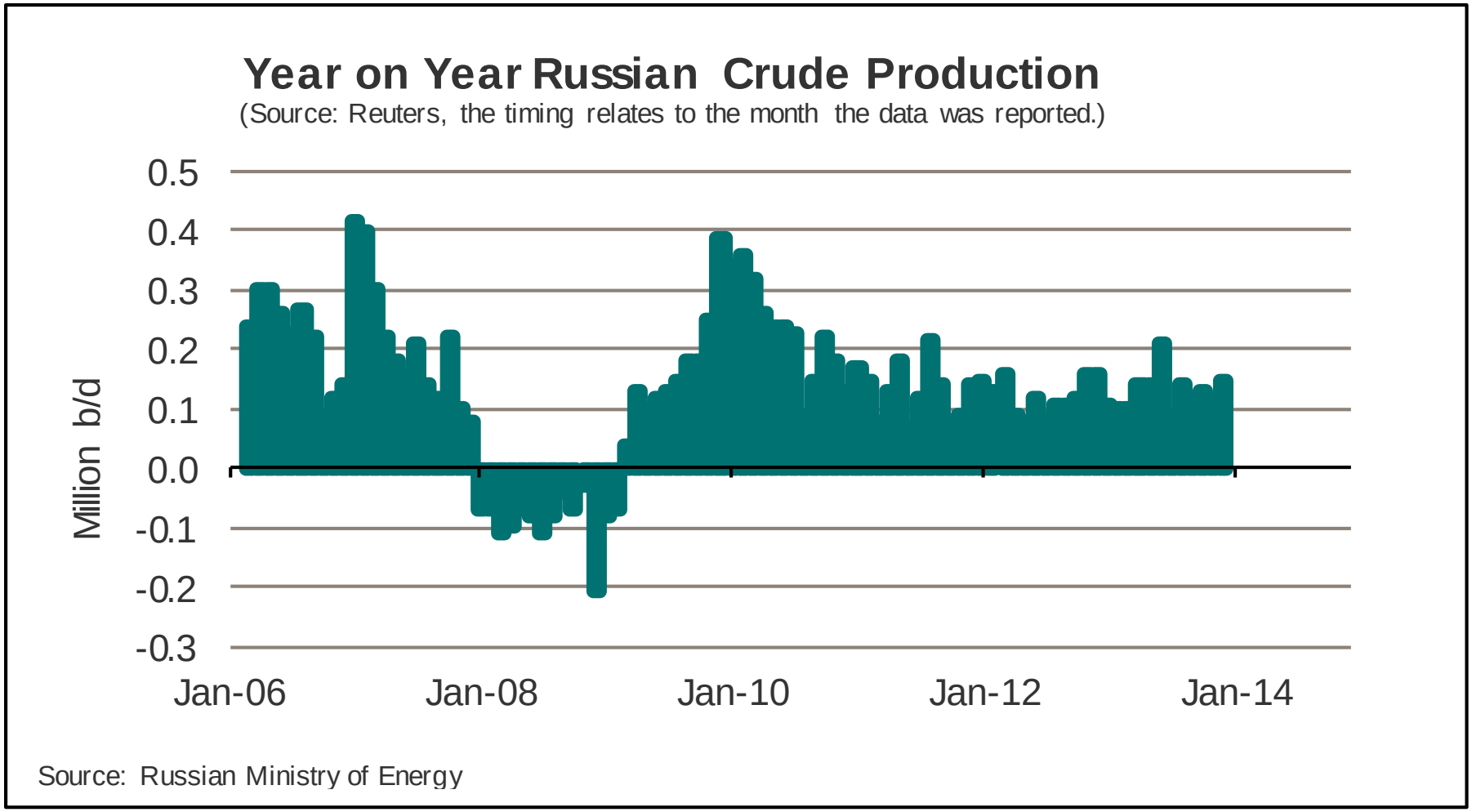
Year on Year Russian Crude Oil Production



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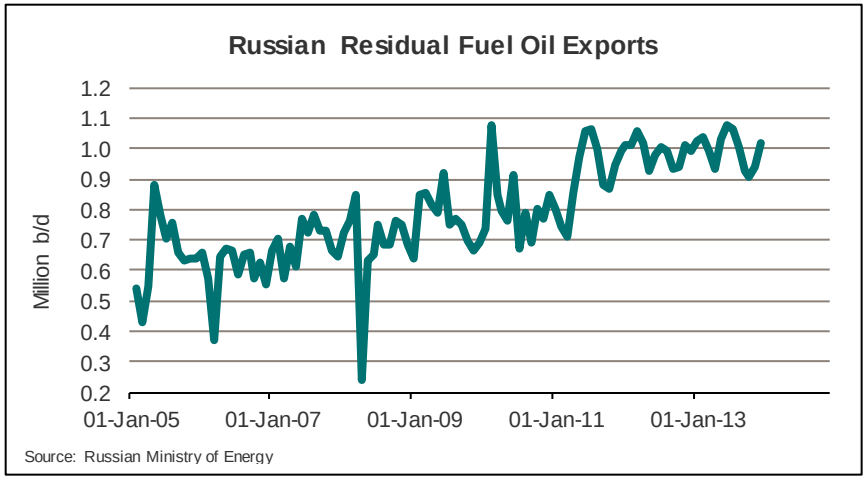
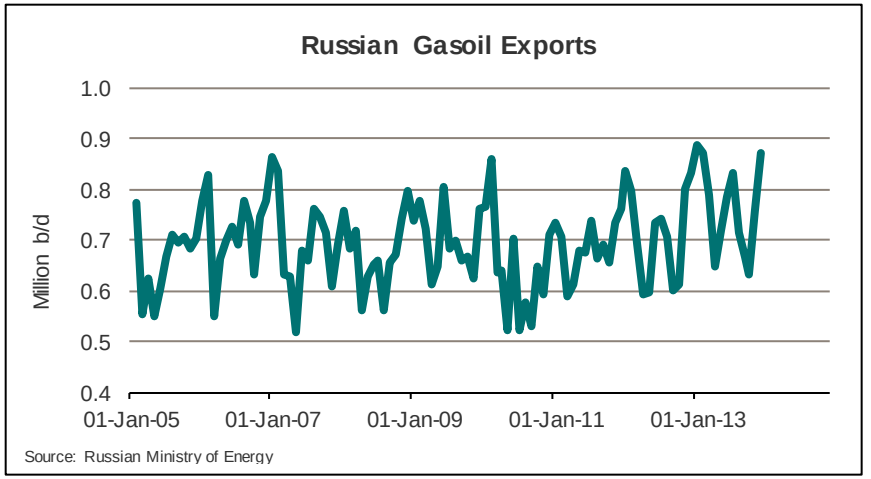
Russian Oil Exports





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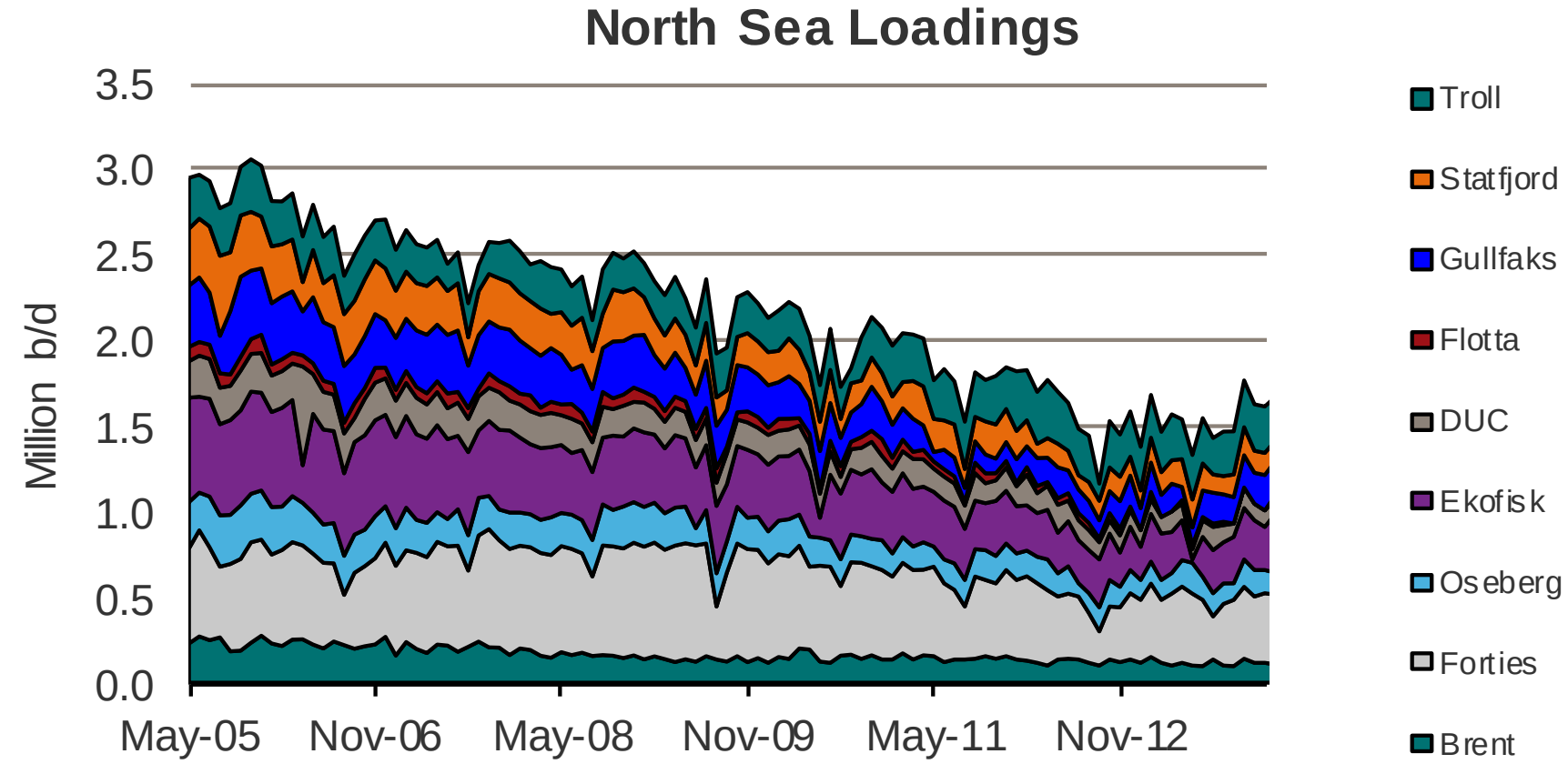
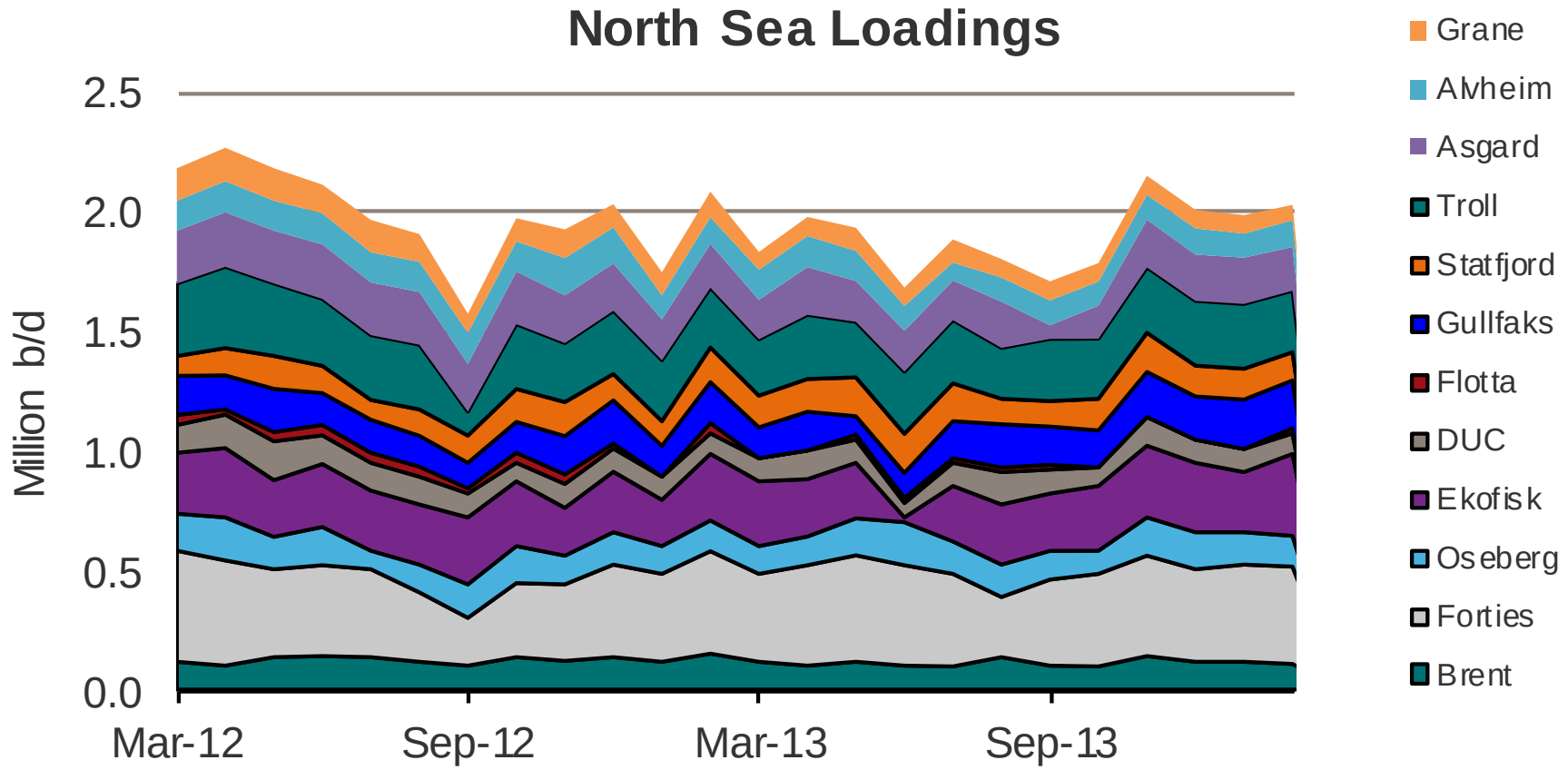
North Sea Loading Program



Source: DNB Markets, Reuters

DNB MARKETS

North Sea Loading Program



Source: DNB Markets, Reuters

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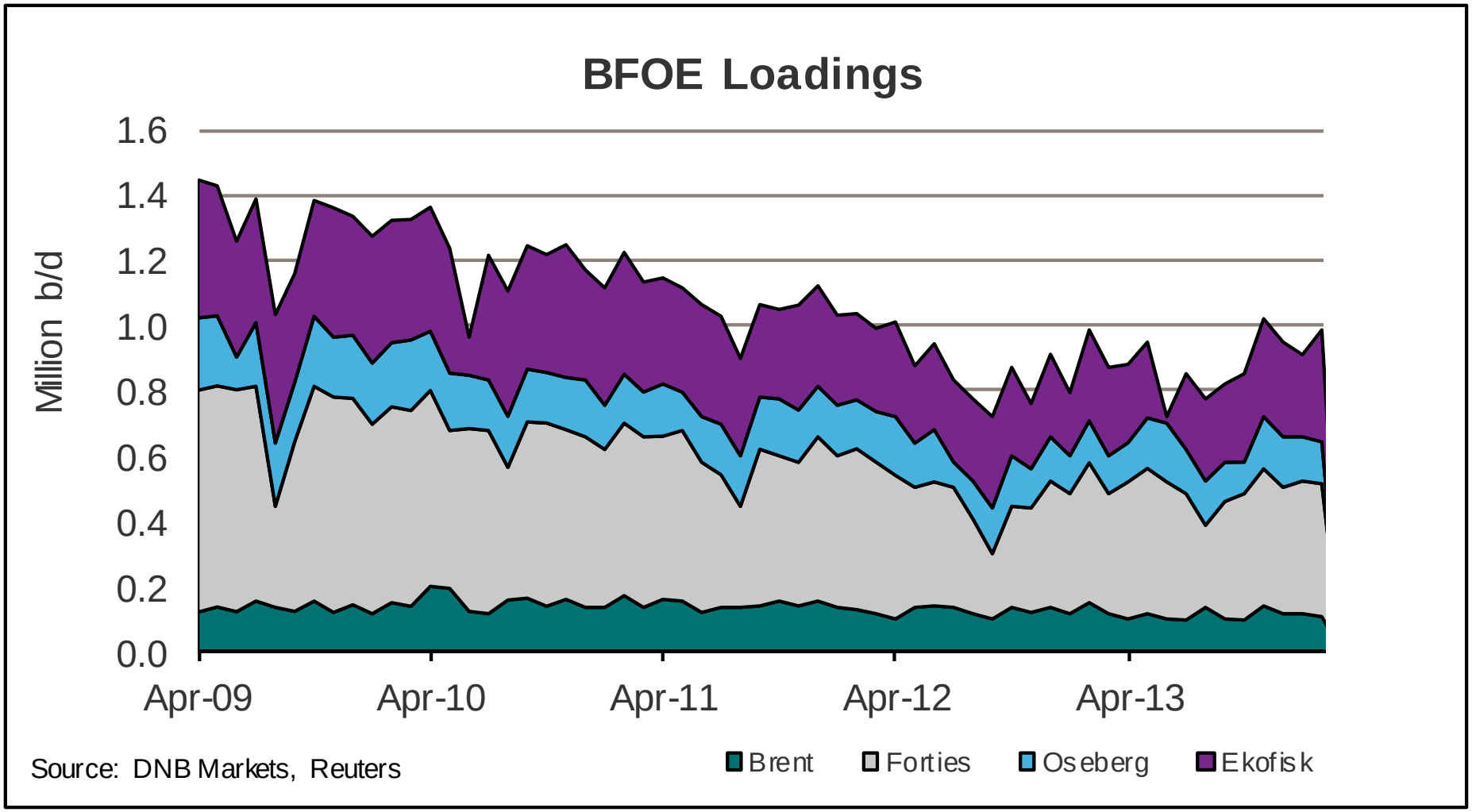
Brent, Forties, Oseberg Ekofisk (BFOE) Loading Programs

- These are the crude streams that are included in the Brent quote



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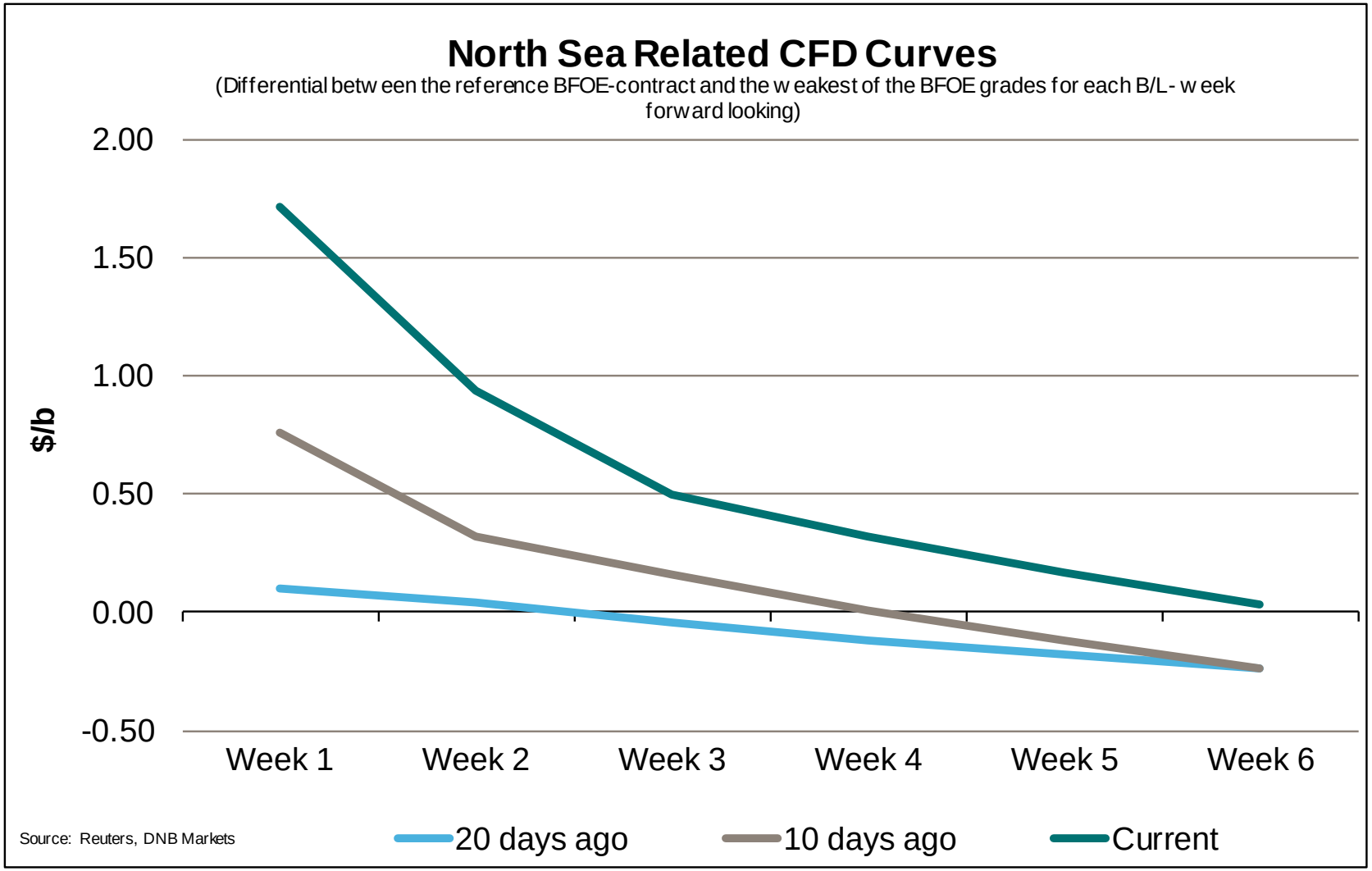
North Sea CFD Curve



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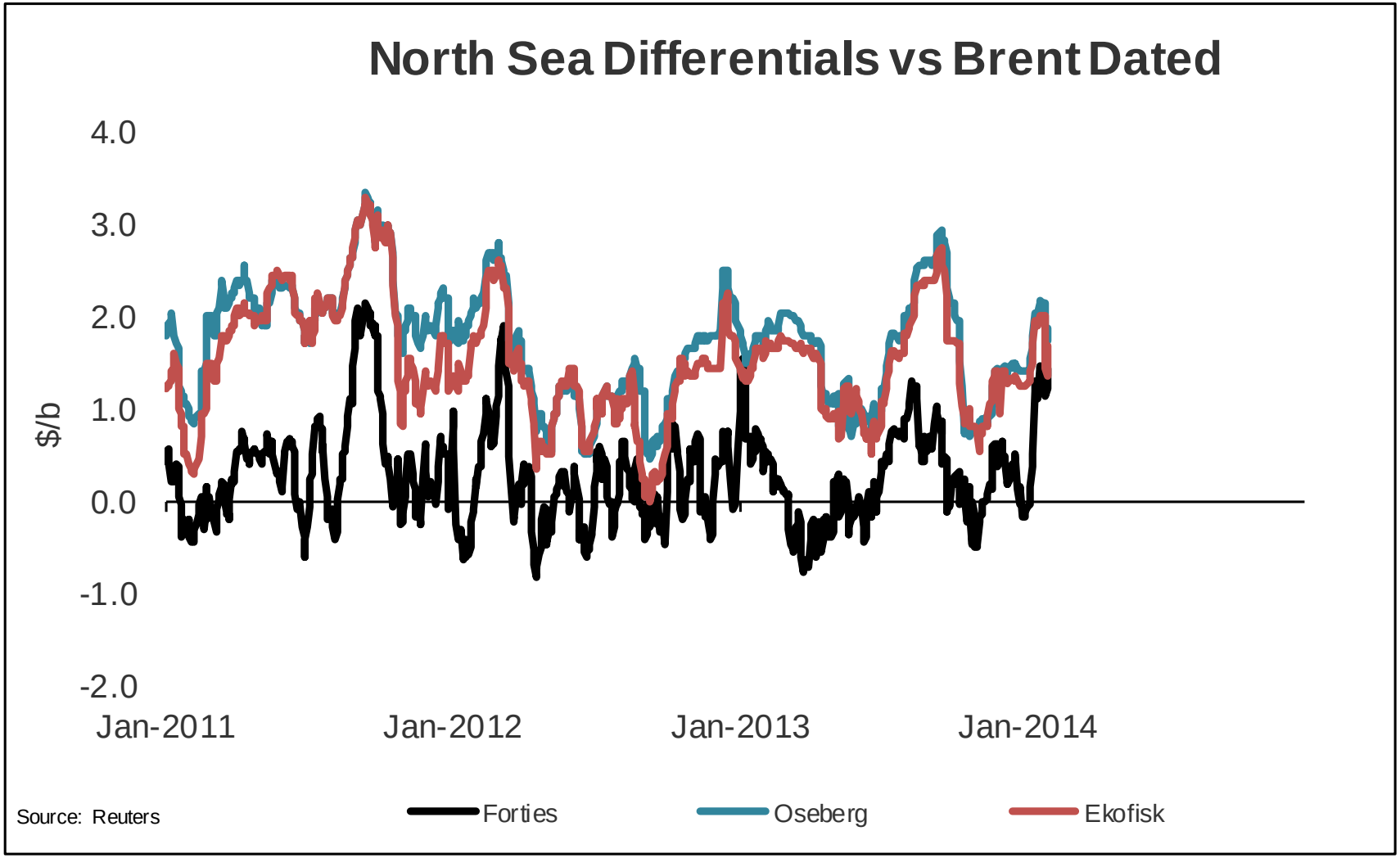
North Sea Key Crude Price Differentials vs Brent Dated



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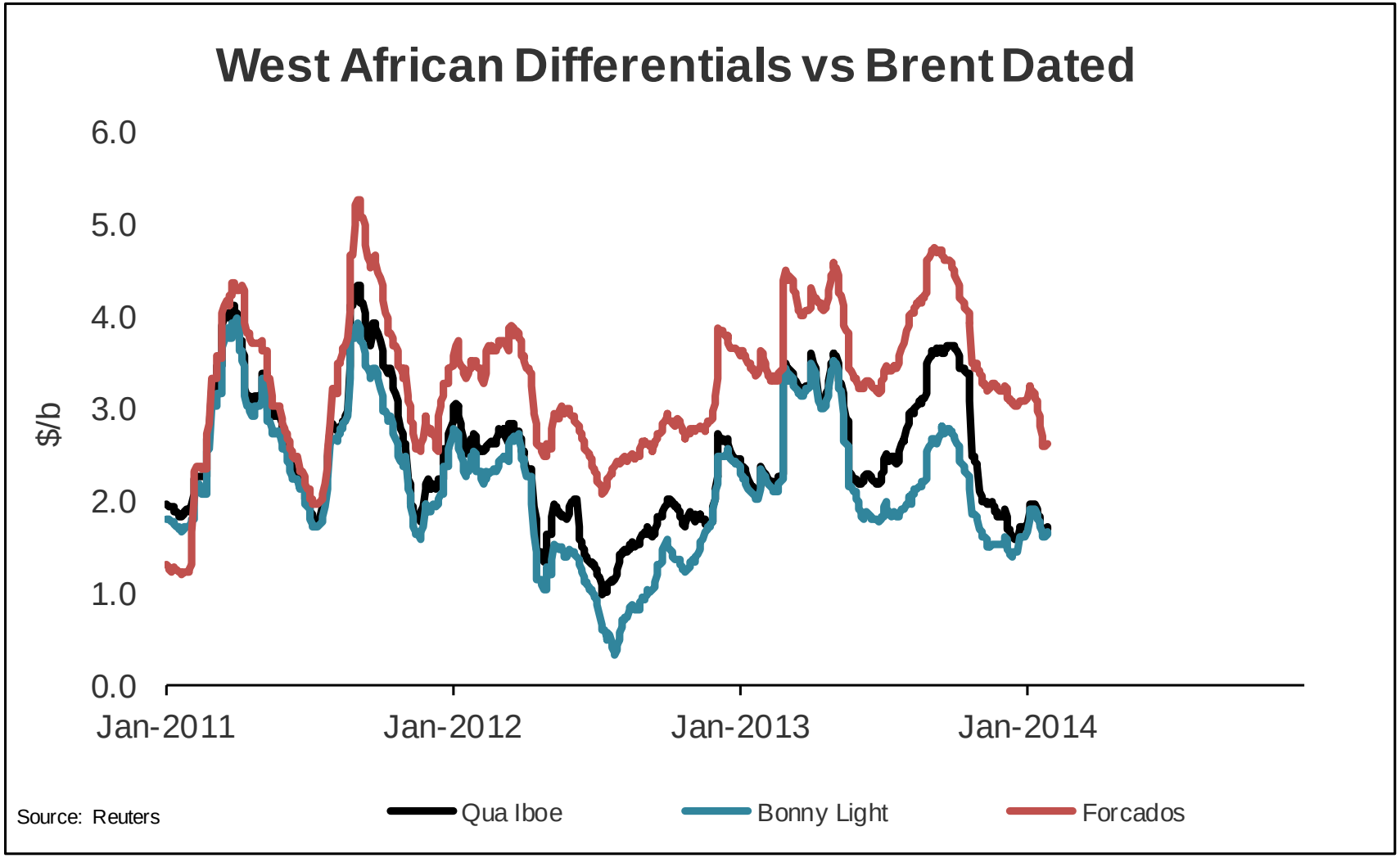
West African Key Crude Price Differentials vs Brent Dated



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Weather

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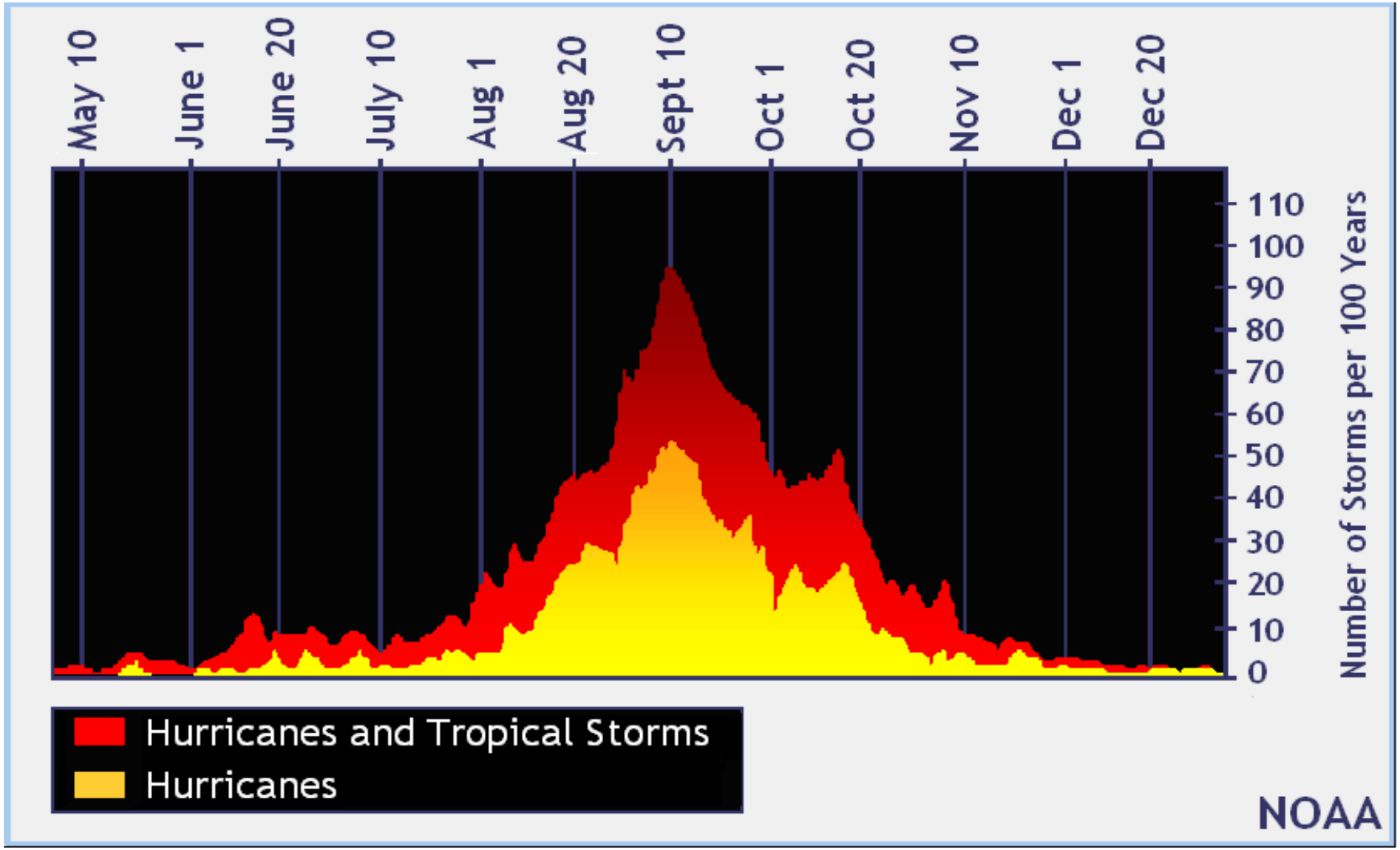
Hurricane Season - Atlantic Basin

(Atlantic Ocean, Caribbean and GOM)



Source: National Hurricane Center

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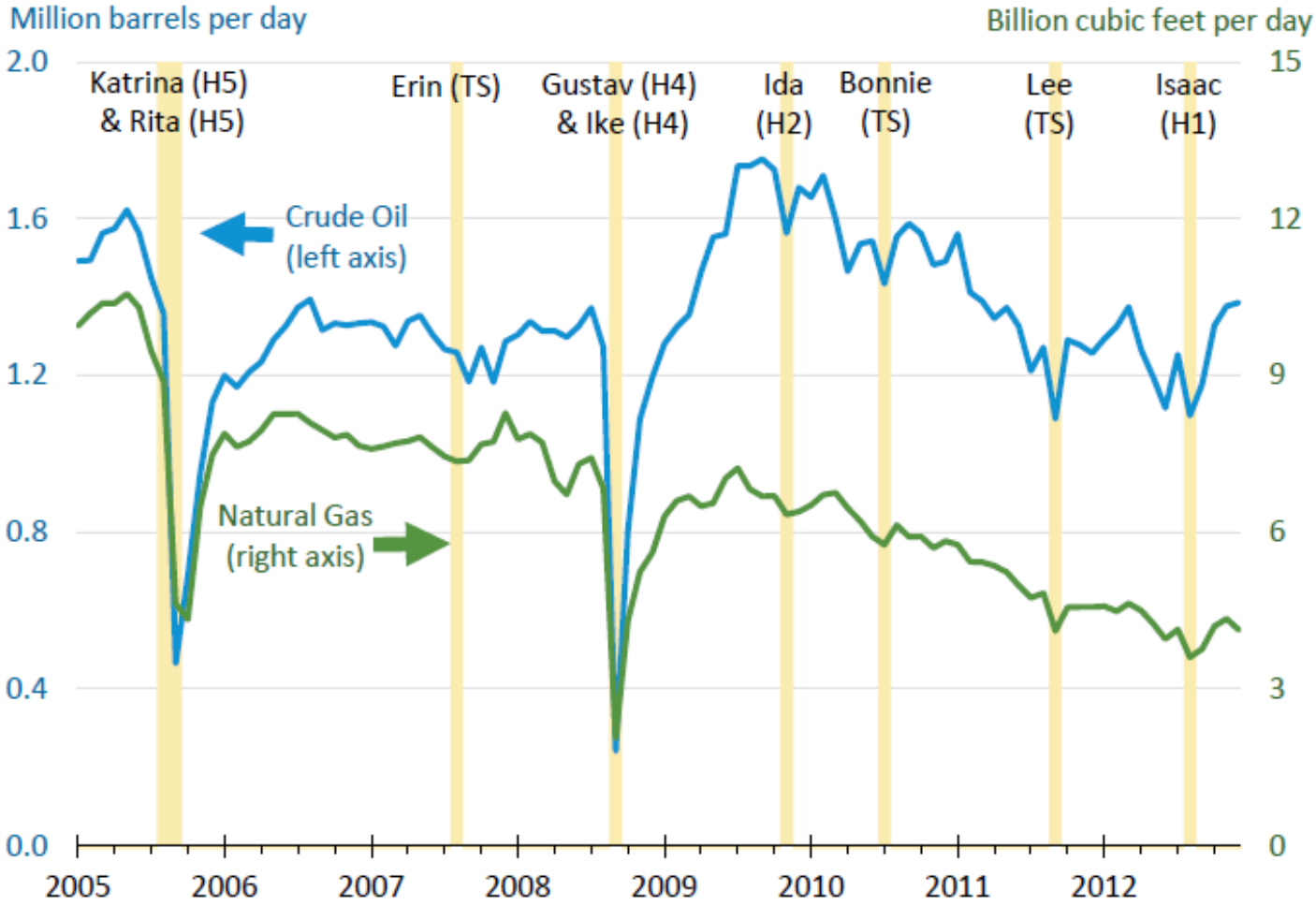
Hurricane Effects On US Oil & Gas Production Since 2005

- Particularly visible in 2005 and 2008



Note: TS = Tropical Storm. Hn = Category n hurricane.
Source: U.S. Energy Information Administration and National Oceanic and Atmospheric Administration (NOAA).

Source: EIA

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Hurricanes In the Gulf of Mexico, Historical Paths

1979-1994

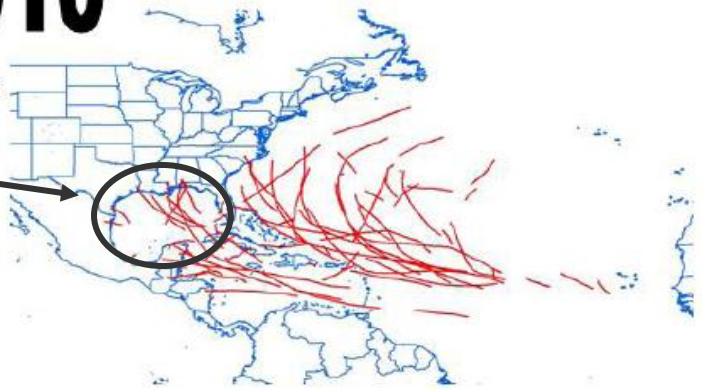
(16 years)

25 Major Hurricanes

CAT 3-4-5 TRACKS

1995-2010

(16 years)



61 Major Hurricanes

Needs to hit inside the circle
in order to get max market effect

CAT 3-4-5 TRACKS

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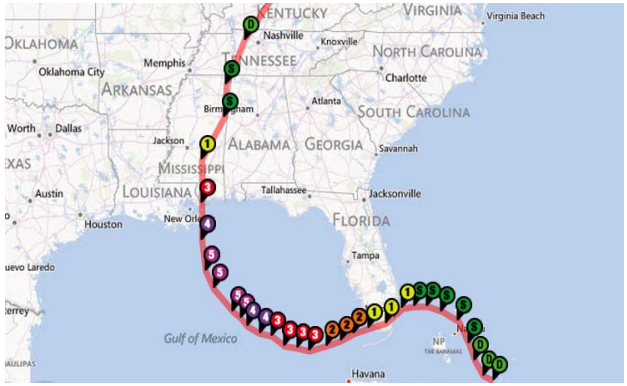
Key Historical Hurricane Paths

- Katrina, Rita (2005), Gustav, Ike (2008), Isaac (2012)

Katrina (2005)



Rita (2005)

Isaac (2012)

Gustav (2008)

Ike (2008)

Source: Accuweather

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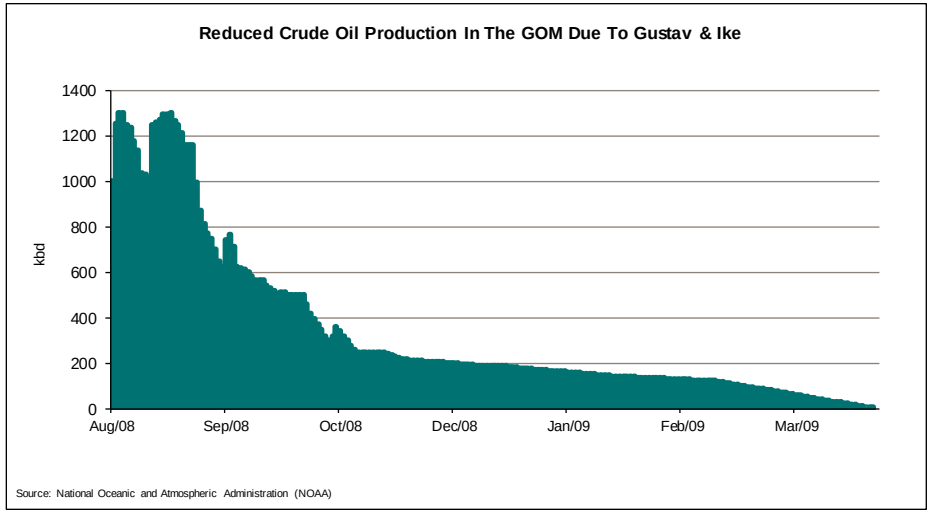
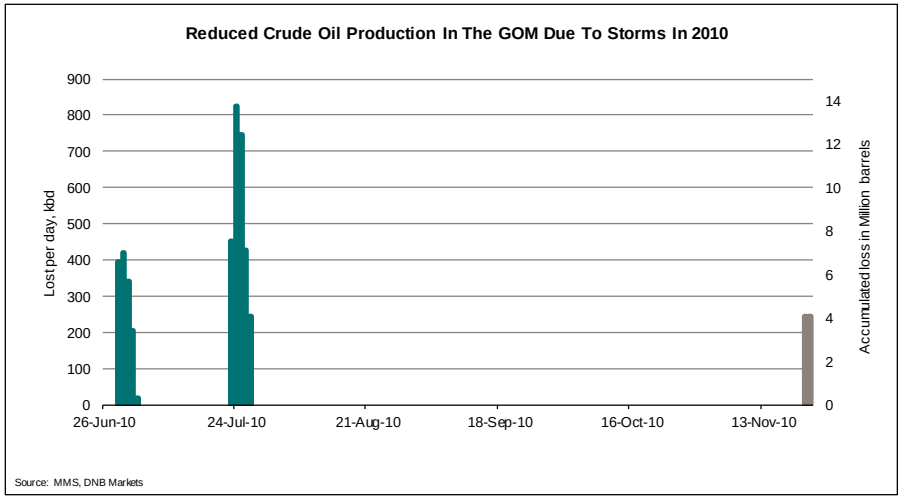
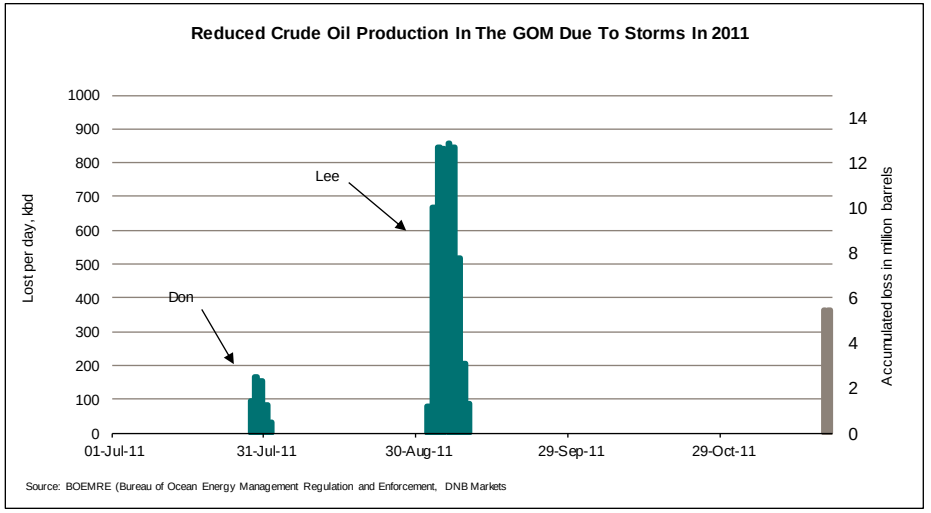
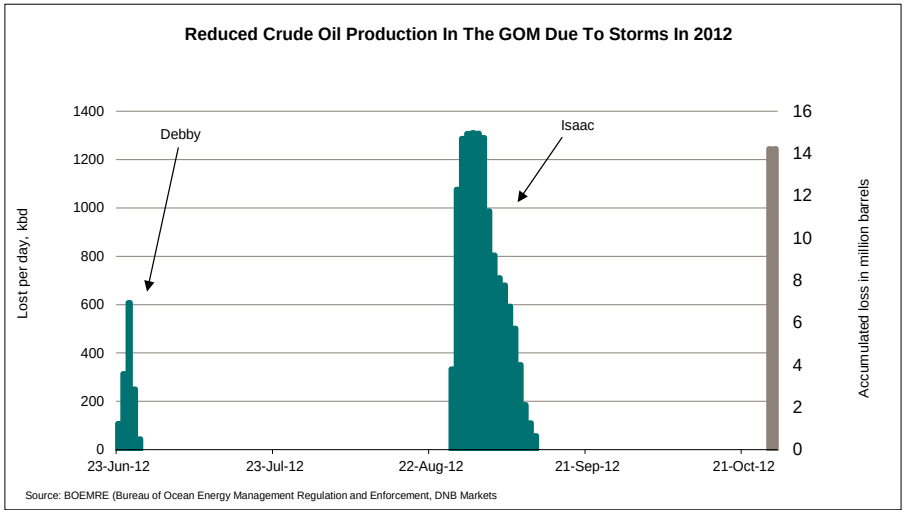
US Production Outages In The GOM By Tropical Storms

- Data from Bureau of Ocean Energy Management Regulation and Enforcement (BOEMRE)









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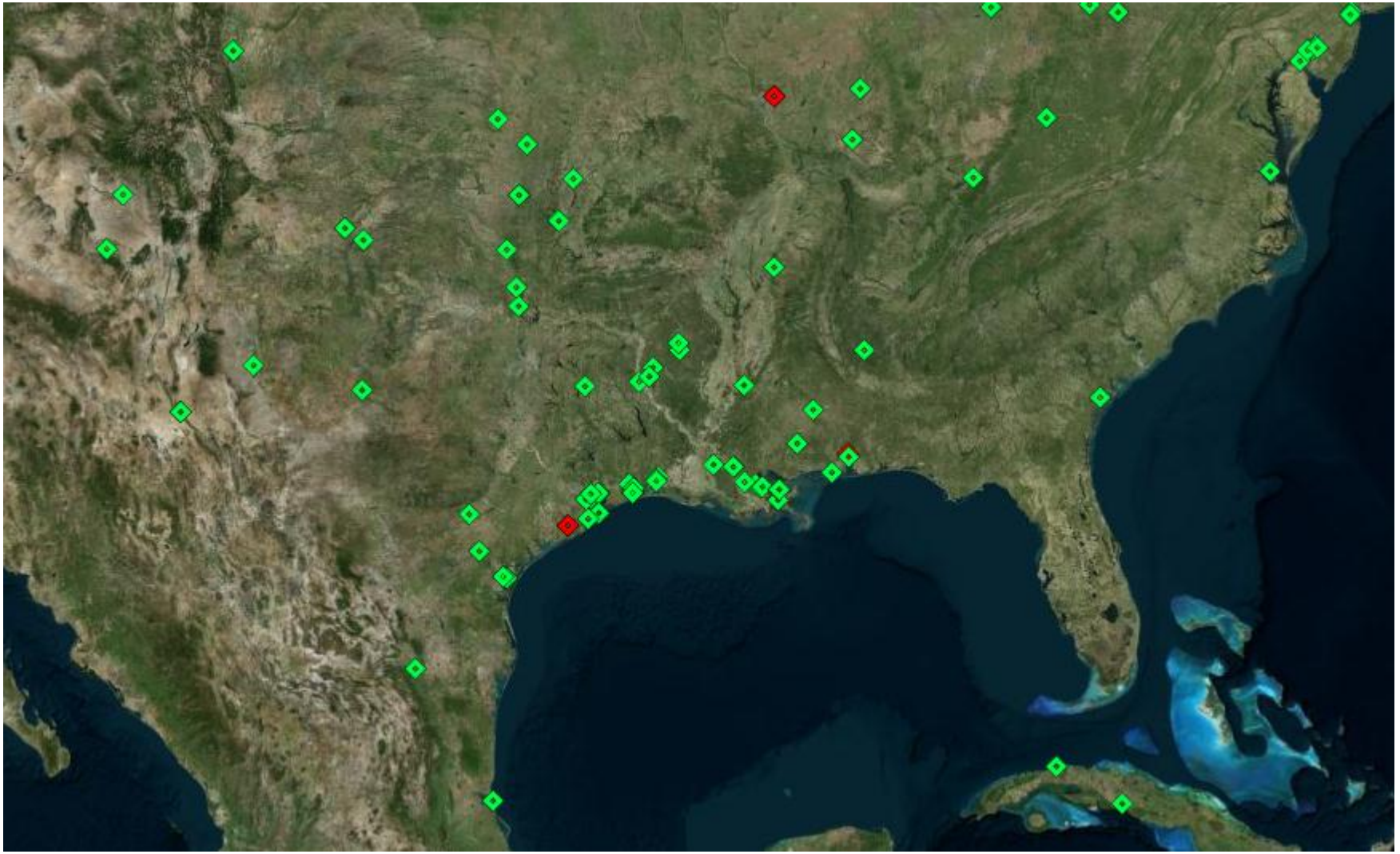
US Oil Refineries Clustered At The Gulf Coast (44% of Capacity)

- Hence refining margins are very much exposed to Atlantic Hurricanes making landfall in Texas/Louisiana



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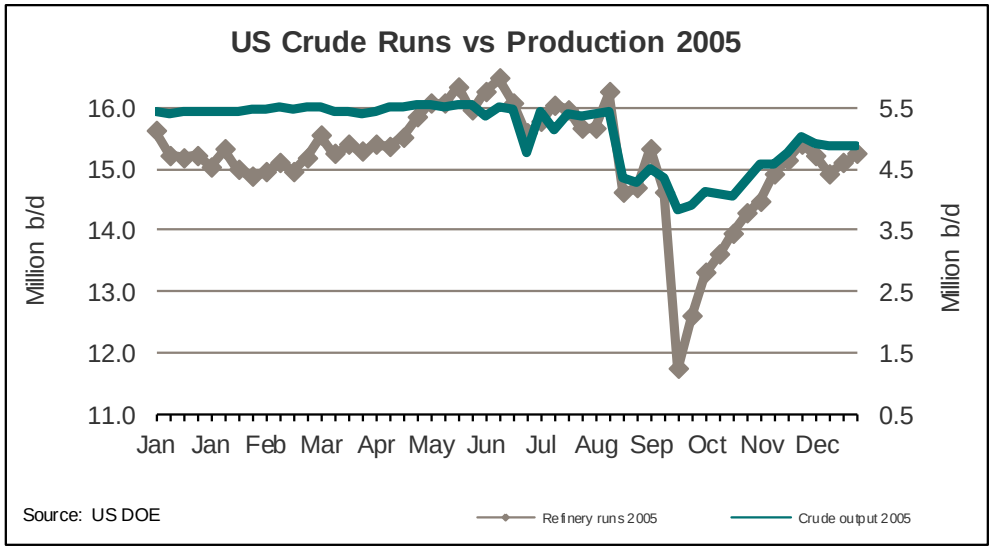
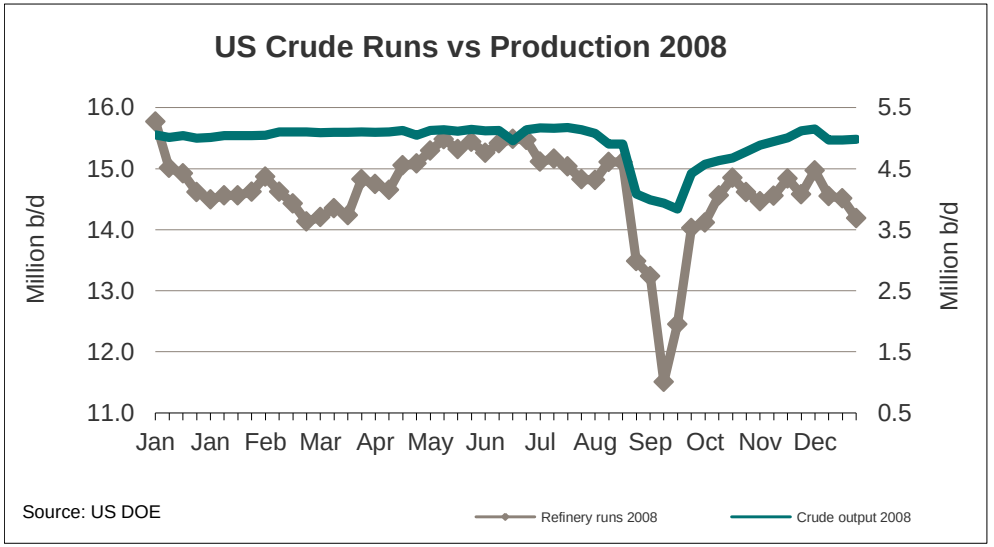
If Hurricane Landfall – More Products Than Crude Is Lost

- The below graphs shows why margins are more supported than flat price if the Hurricane make landfall at the US refinery cluster





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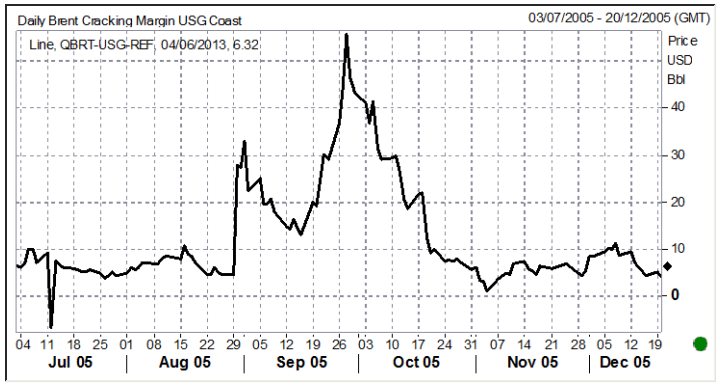
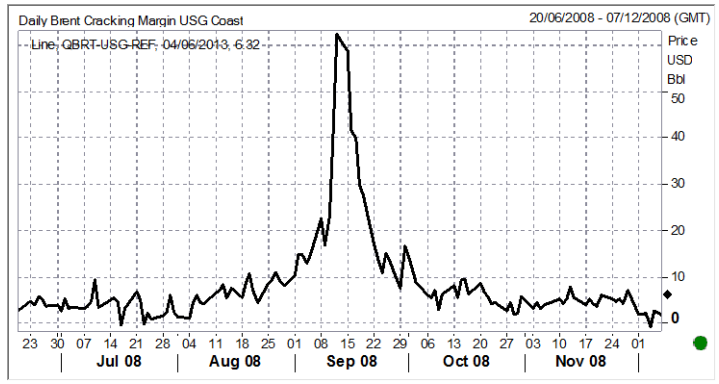
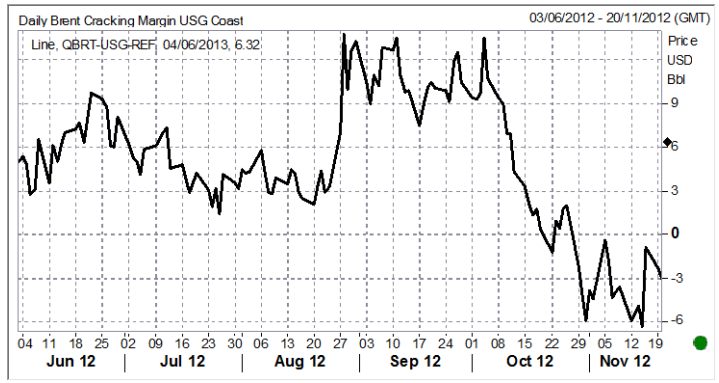
If Hurricane Landfall – Refinery Margins Could Spike

- Both in 2005 and in 2008 refinery margins exploded to the upside, but also last year saw a decent spike due to the storm Isaac







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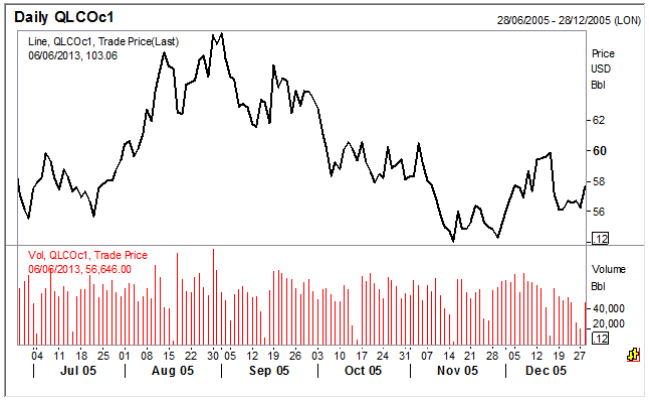
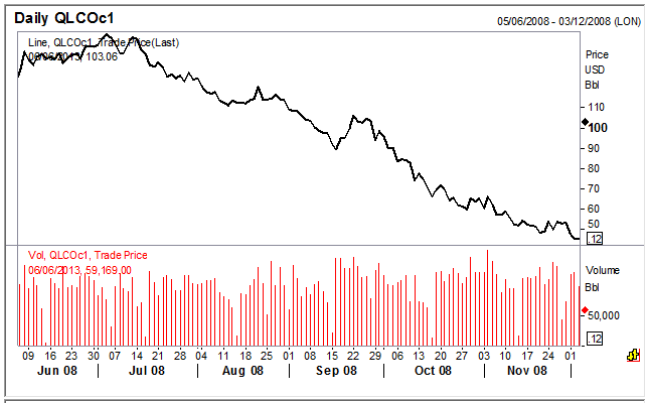
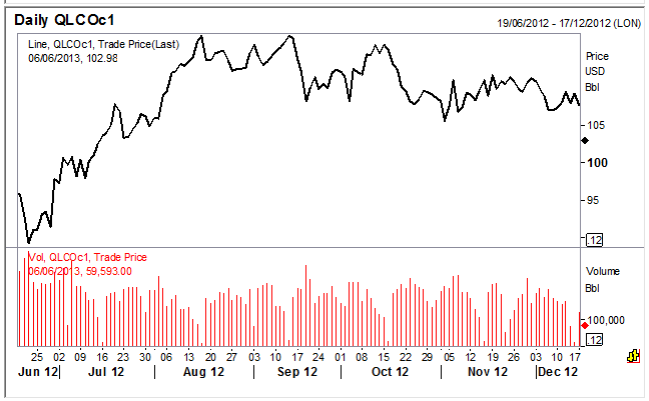
But Flat Price Suffers If The Hurricane Make Landfall

- Because we loose more crude demand than crude supply if the storm hits refineries in Texas/Louisiana







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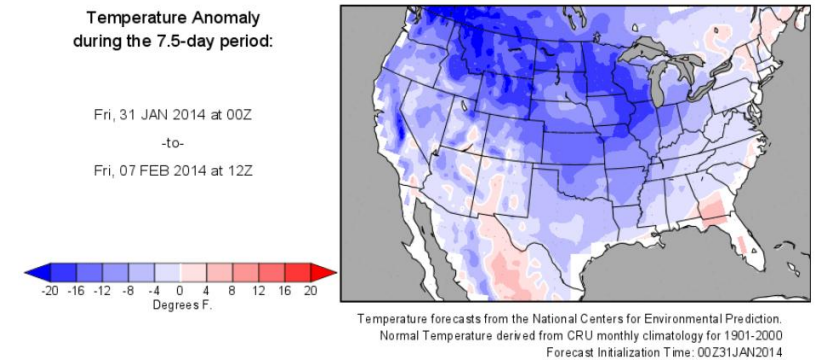
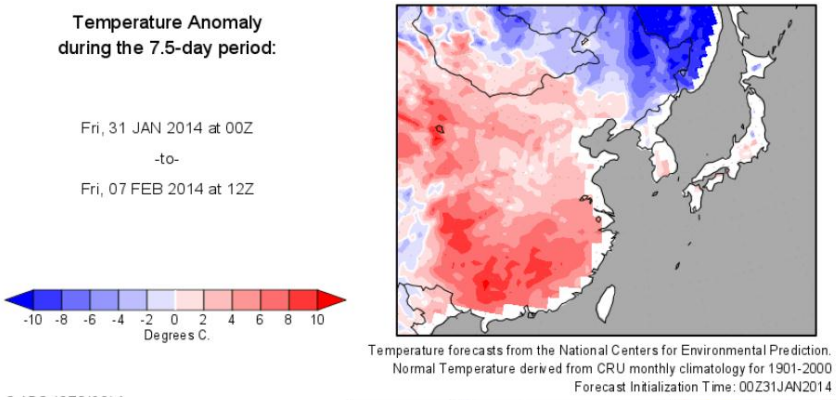
Latest Temperature Forecast Anomaly For The Coming Week

(US, Japan/Korea, Europe)



Temperature forecasts from the National Centers for Environmental Prediction.
Normal Temperature derived from CRU monthly climatology for 1901-2000
Forecast Initialization Time: 00Z31JAN2014



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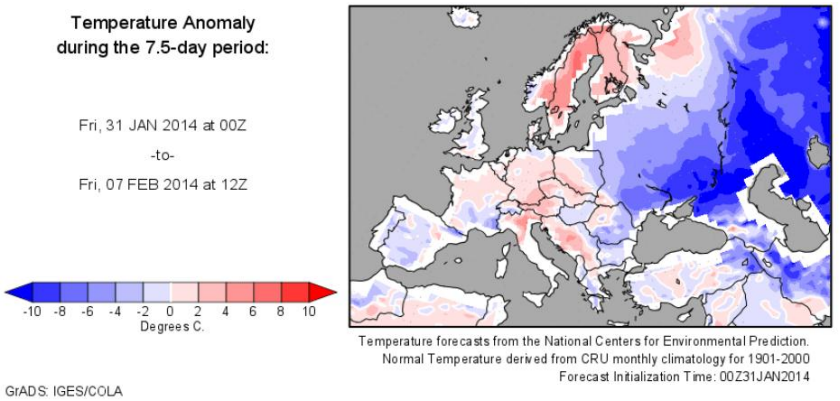

Temperature forecasts from the National Centers for Environmental Prediction.
Normal Temperature derived from CRU monthly climatology for 1901-2000
Forecast Initialization Time: 00Z31JAN2014

GrADS: IGES/COLA

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Sentiment Indicators & Macro Indicators

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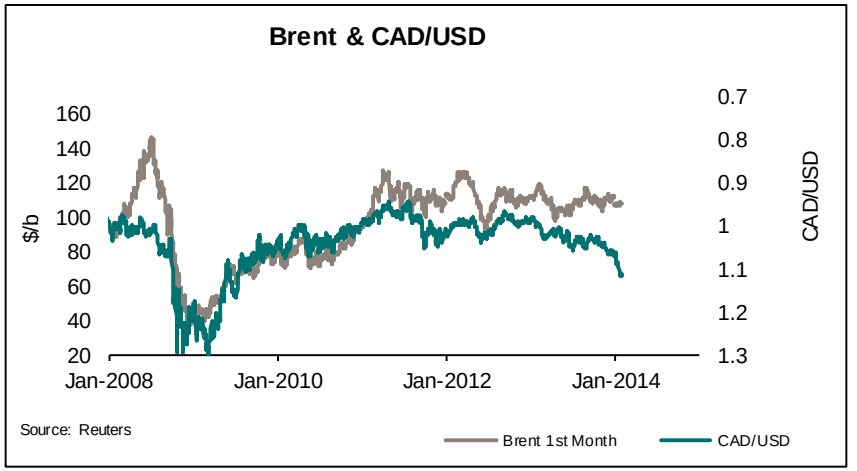
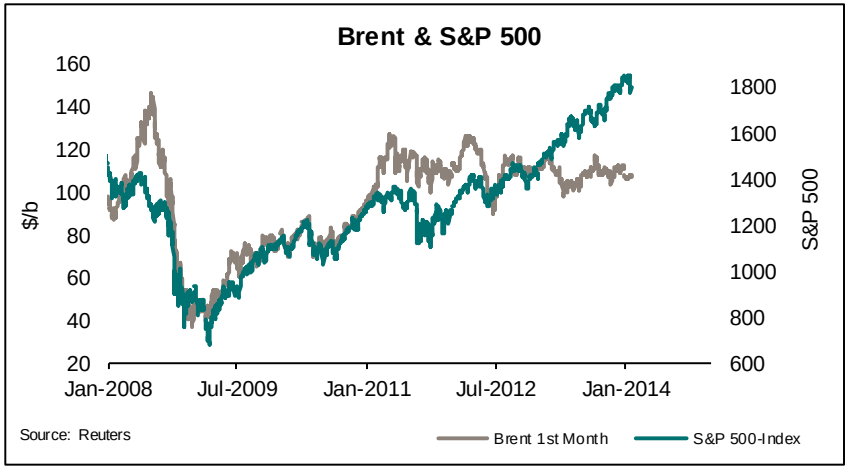
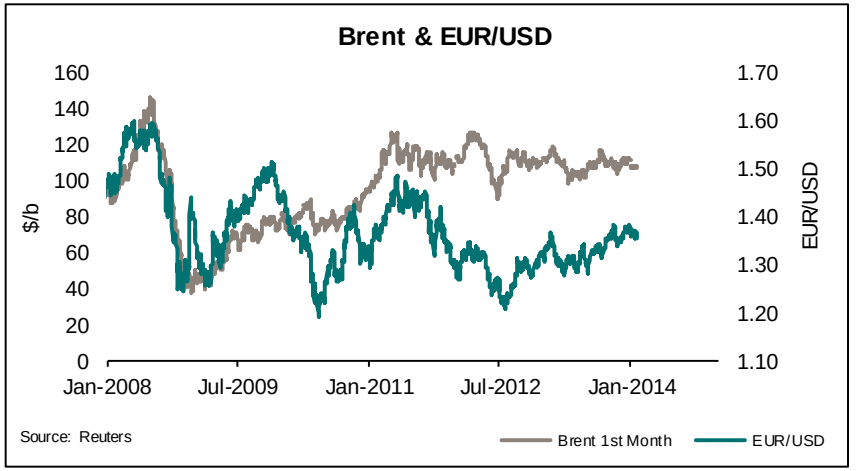
Sentiment Indicators







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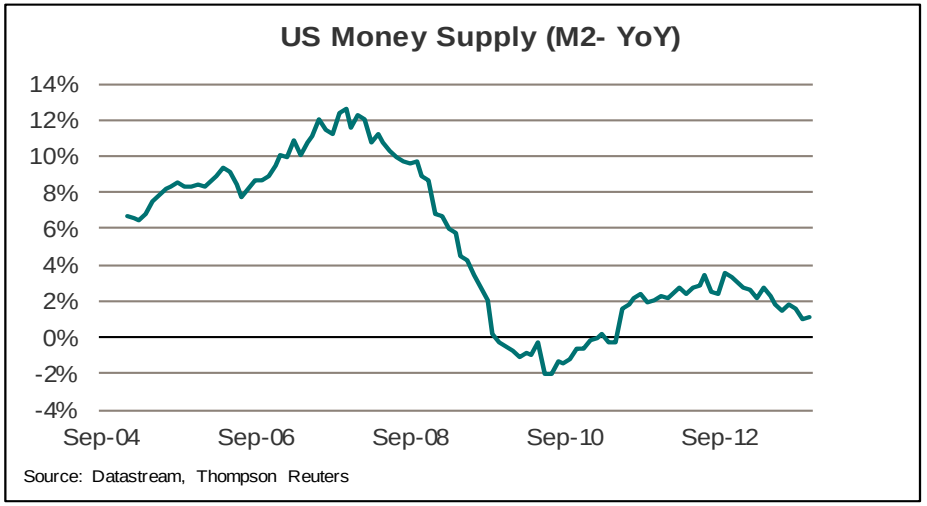
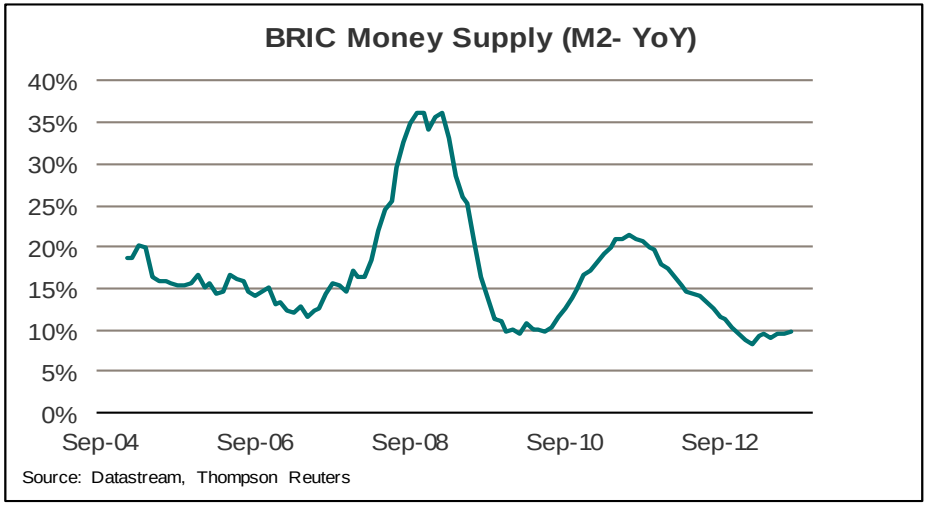
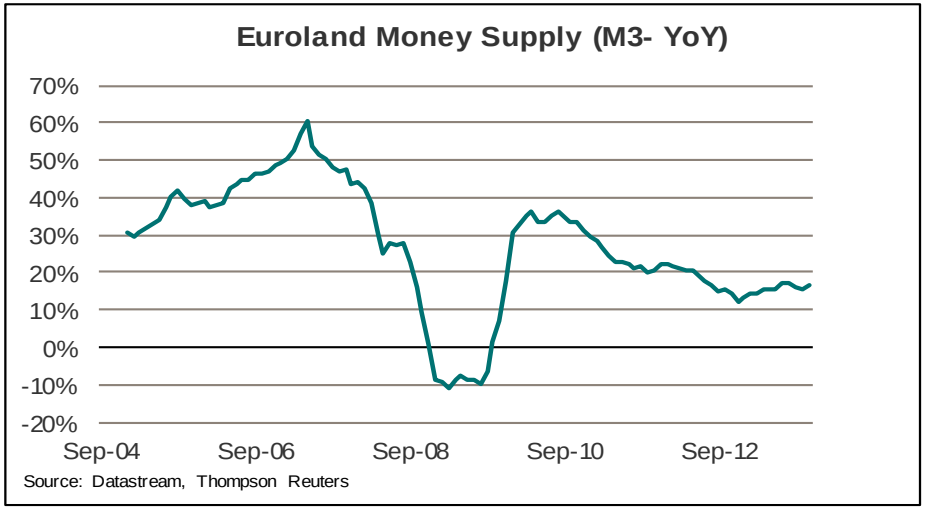
Money Supply - Key Countries







Source: Thompson-Reuters - Datastream

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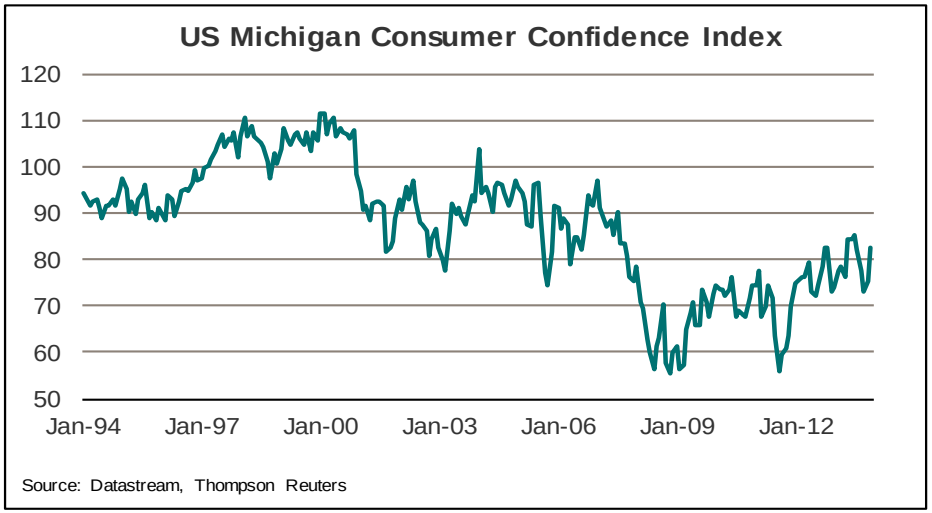
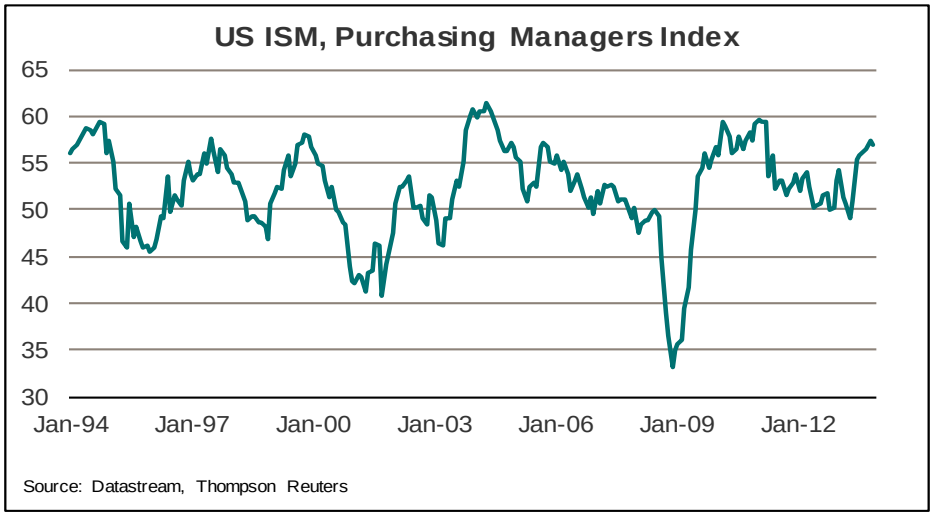
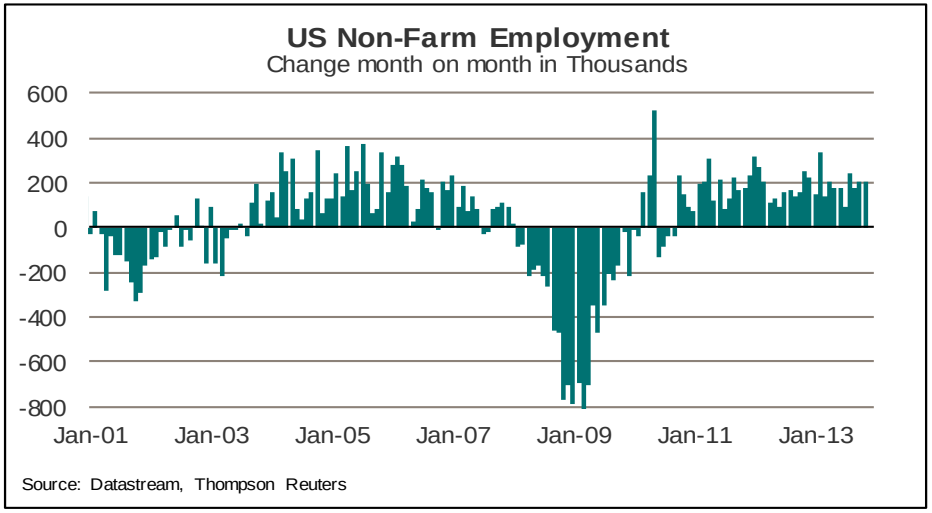
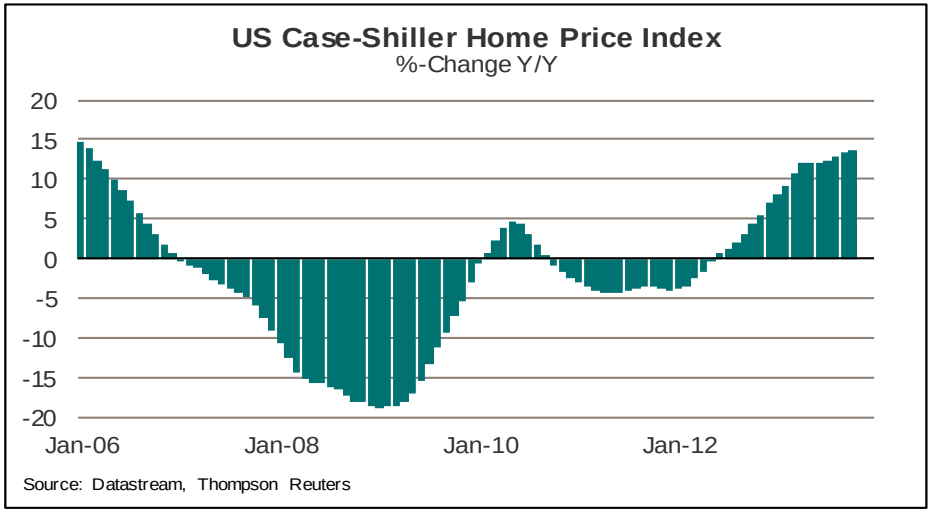
Macro Economic Indicators - USA









Source: Thompson-Reuters - Datastream

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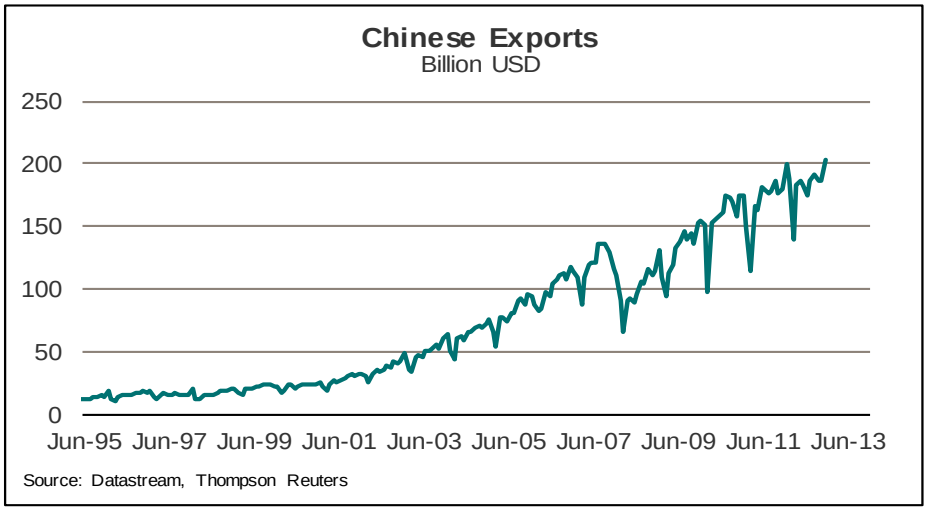
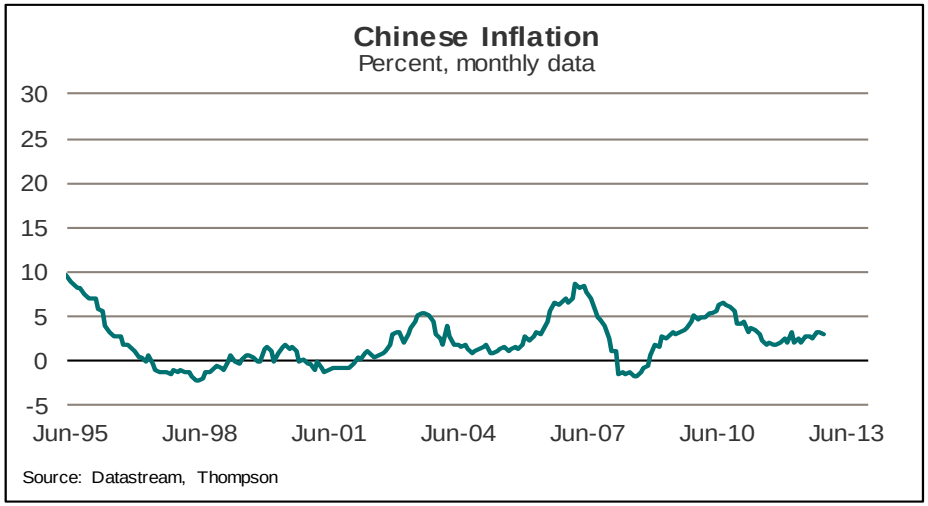
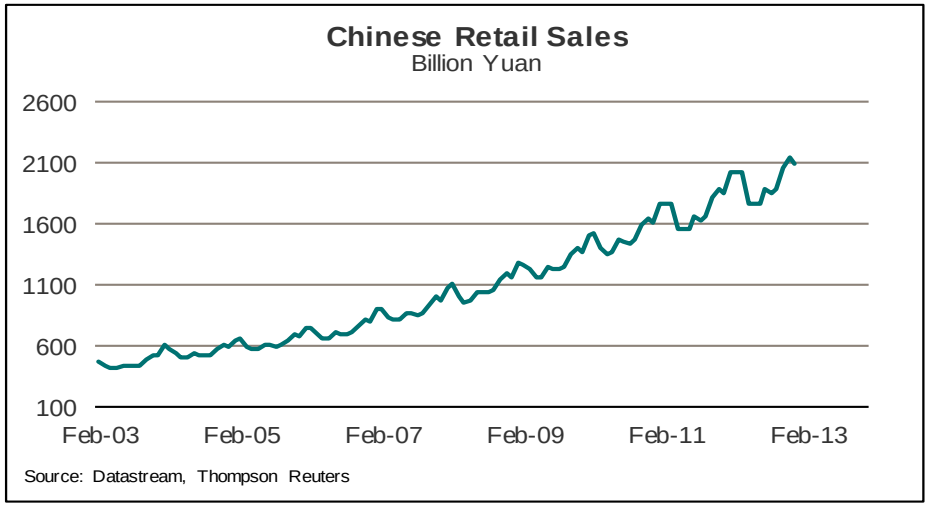
Macro Economic Indicators - China

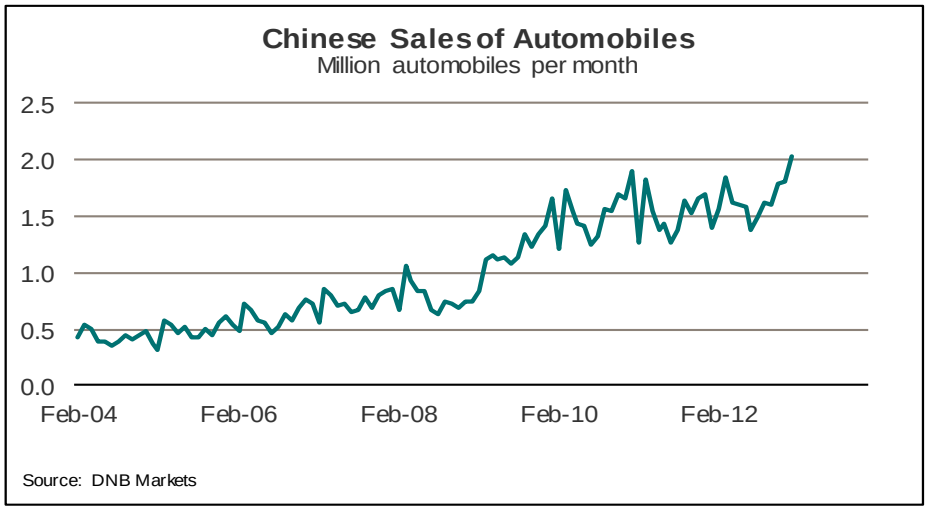


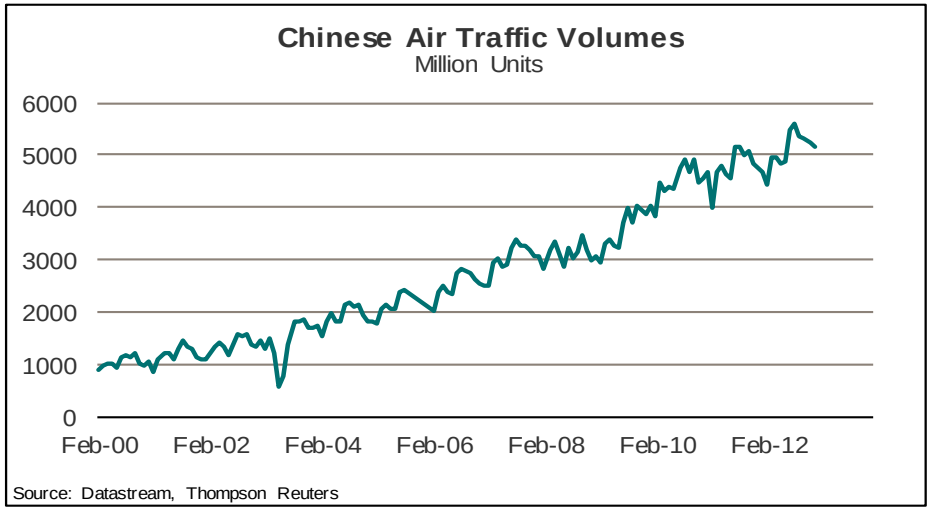
Source: Thompson-Reuters - Datastream

Macro Economic Indicators - China



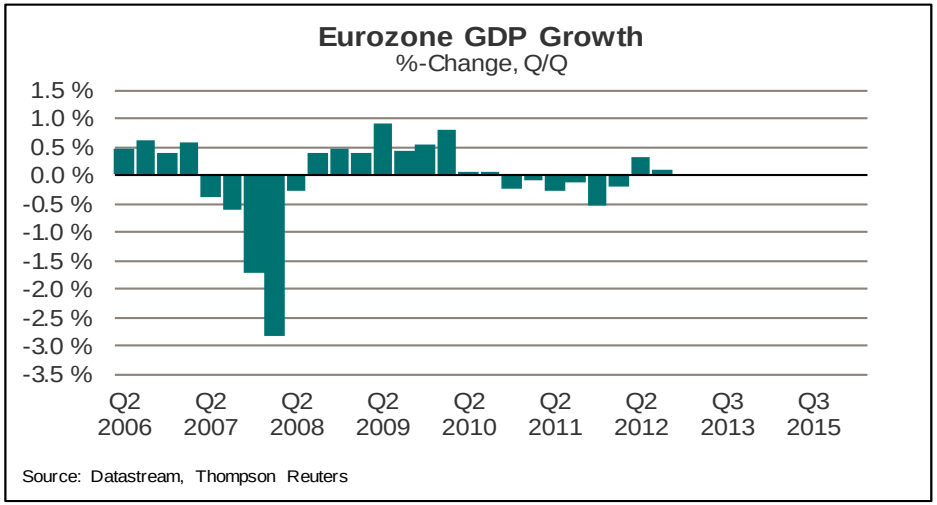


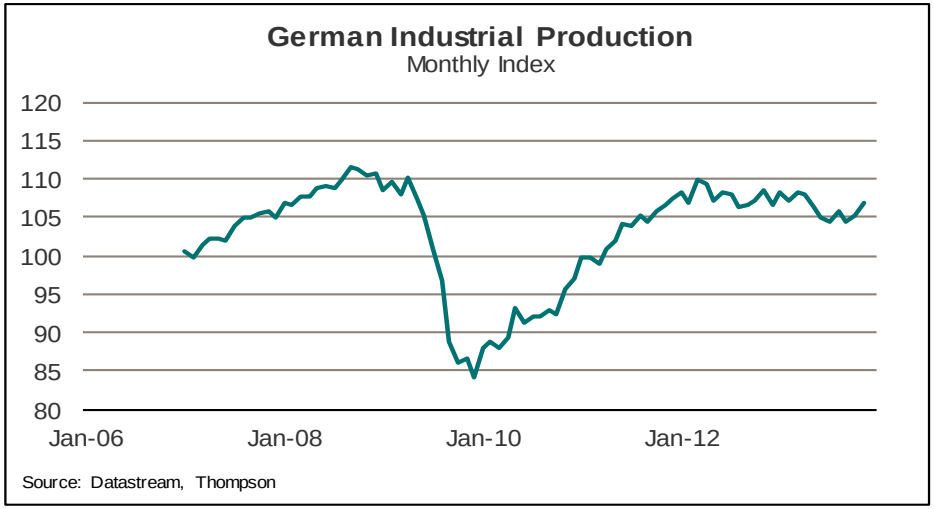


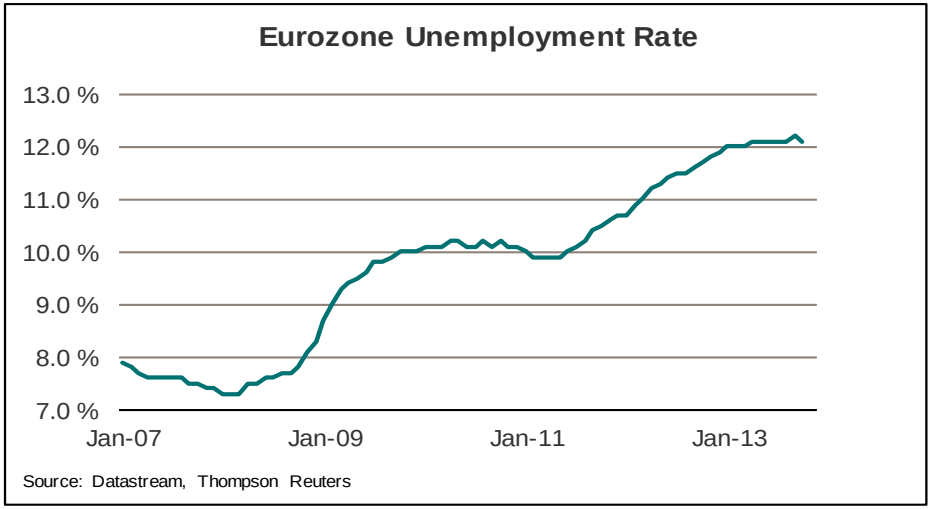


Source: Thompson-Reuters - Datastream

Macro Economic Indicators - Eurozone







Source: Thompson-Reuters - Datastream

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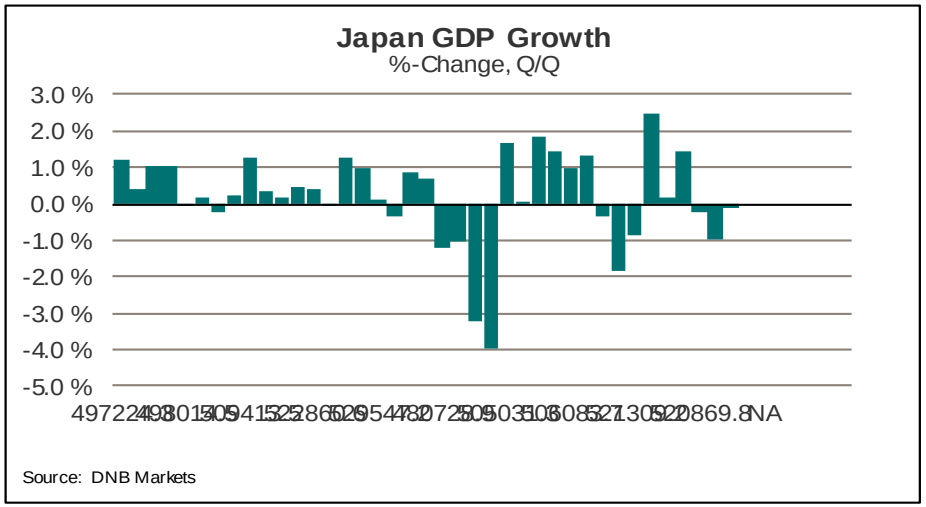
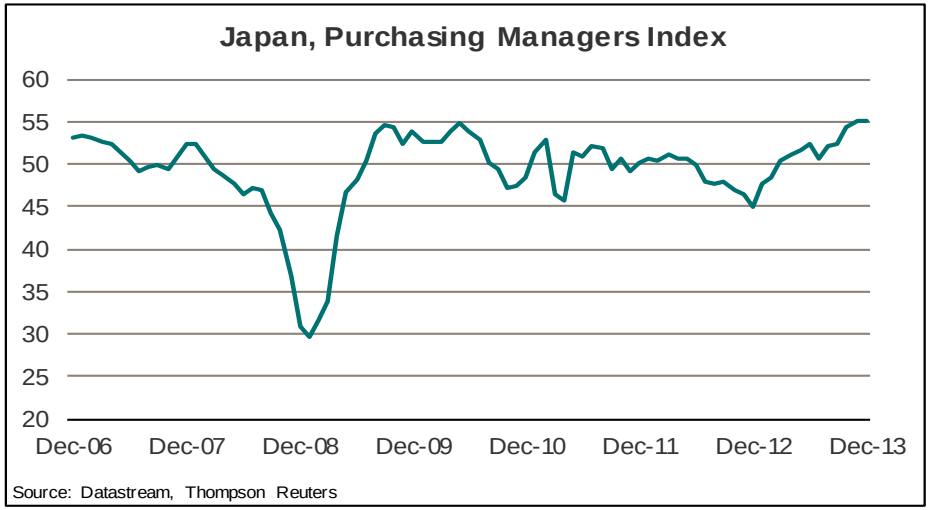
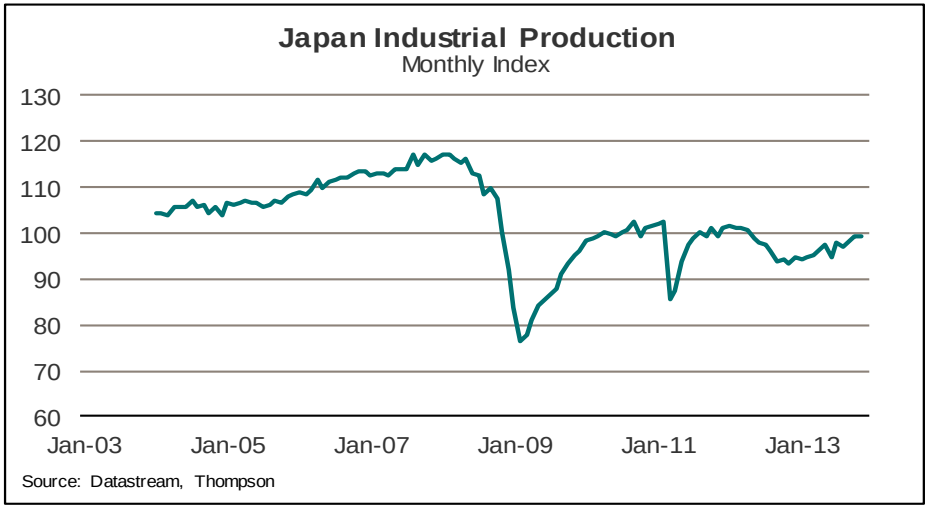
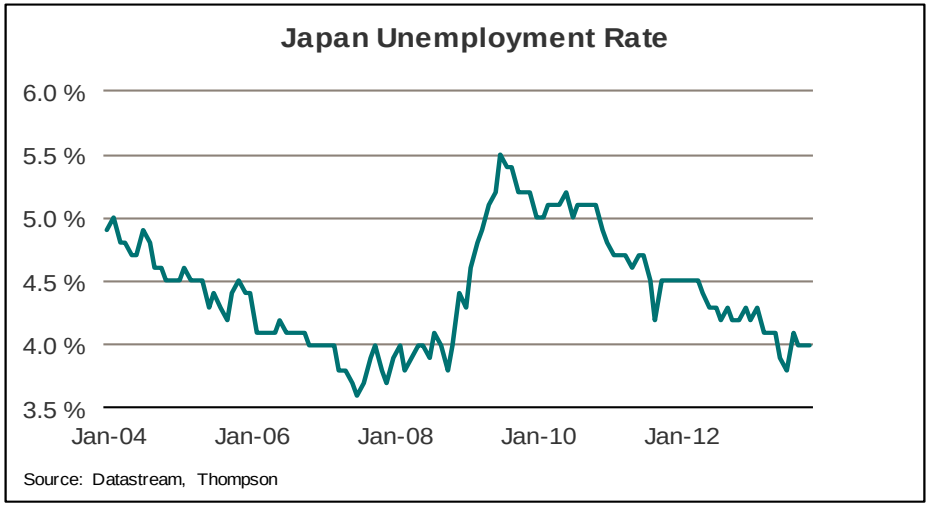
Macro Economic Indicators - Japan









Source: Thompson-Reuters - Datastream

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Equities, Currencies & Speculative Positions

MARKETS

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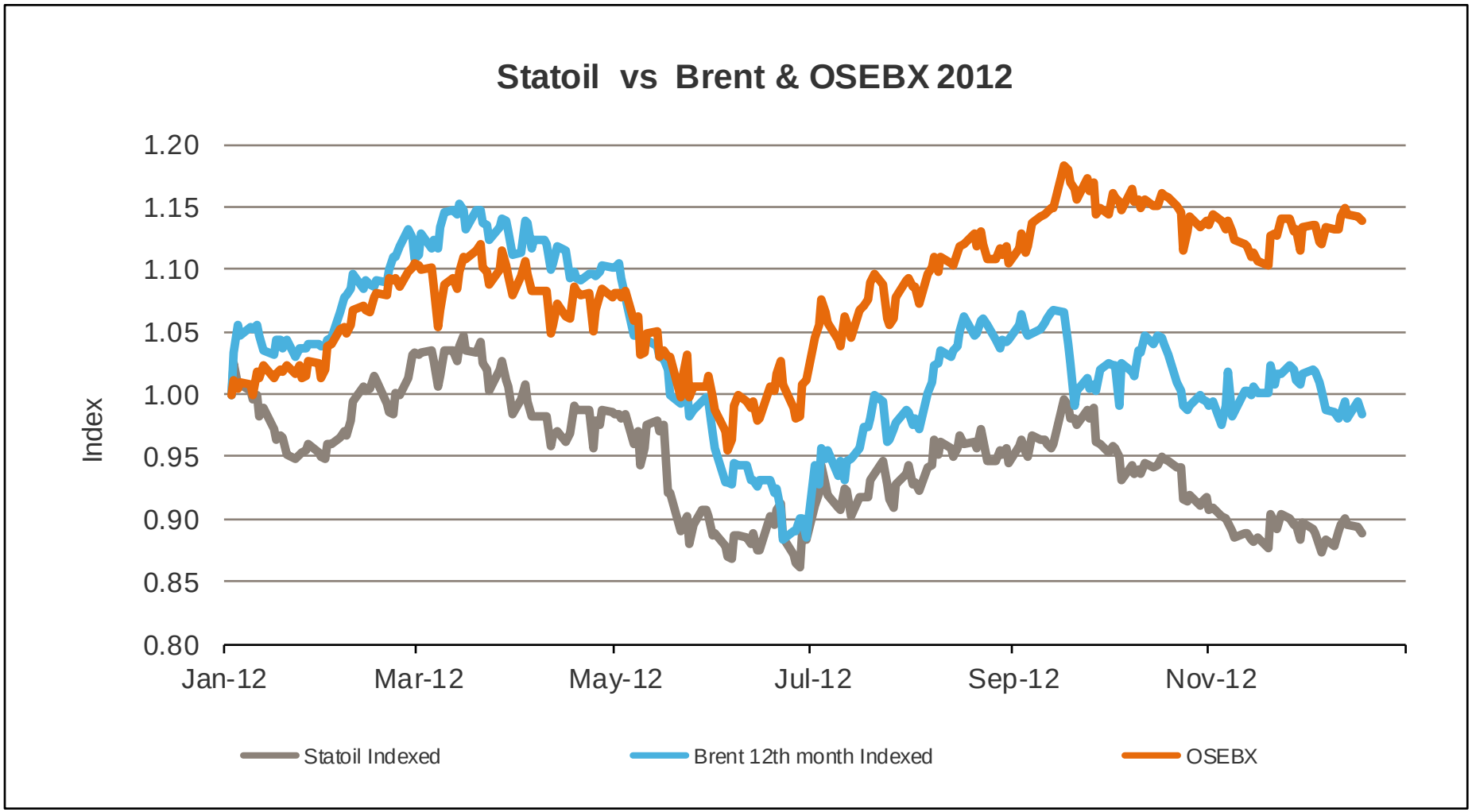
Statoil vs OSEBX & vs Oil Price



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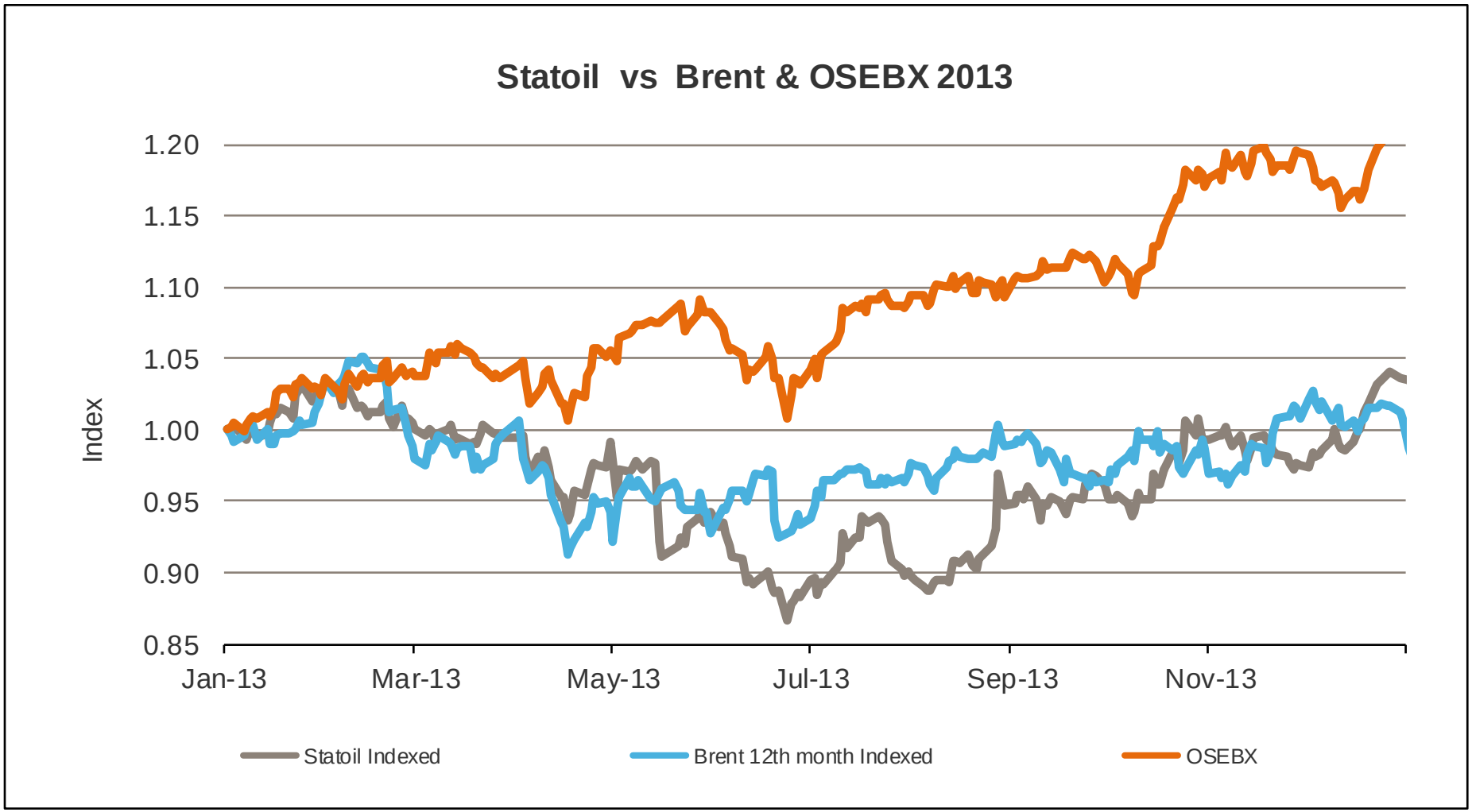

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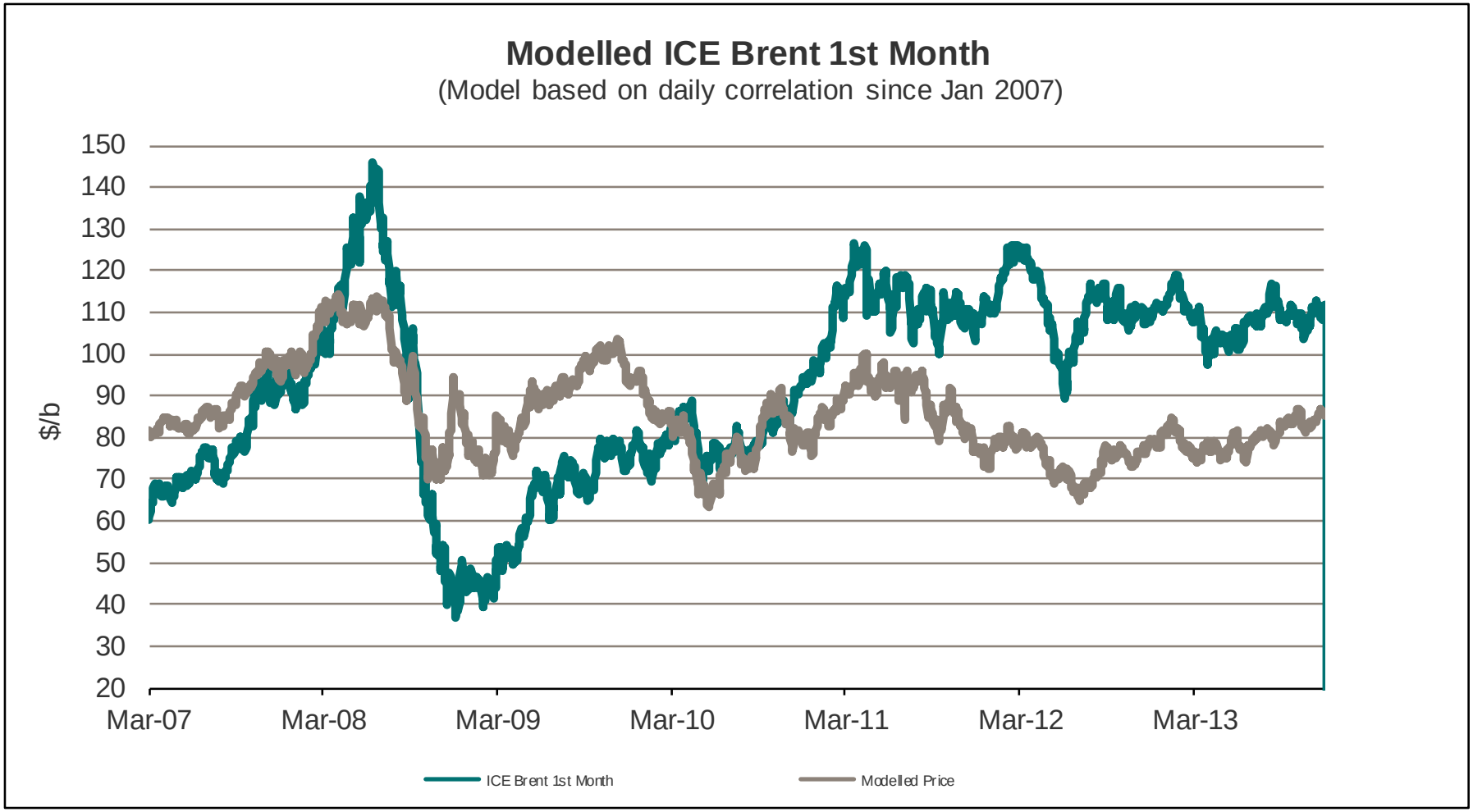
USD/EUR vs Oil Price



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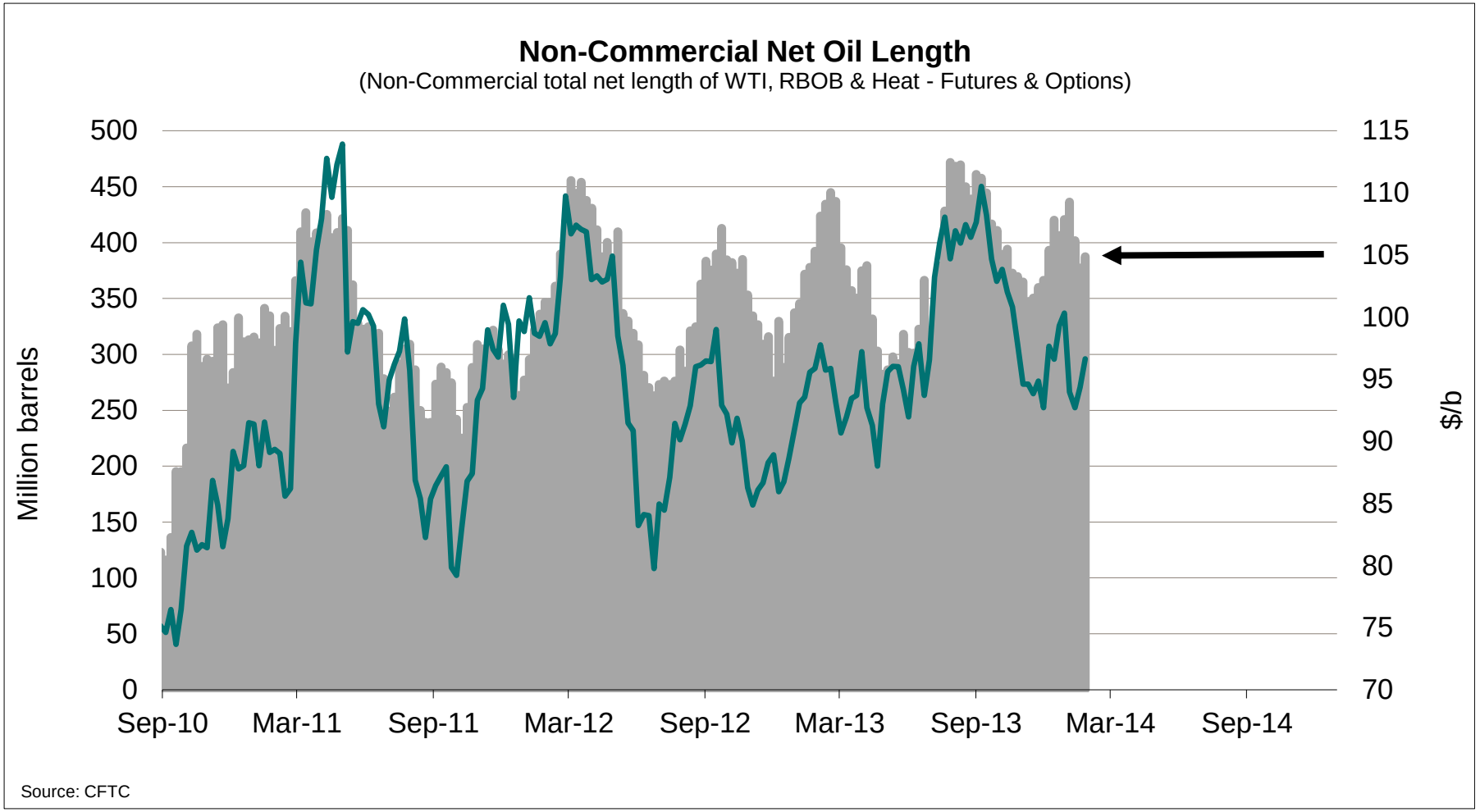
Financial Oil Positions NYMEX (WTI, RBOB, Heating Oil)



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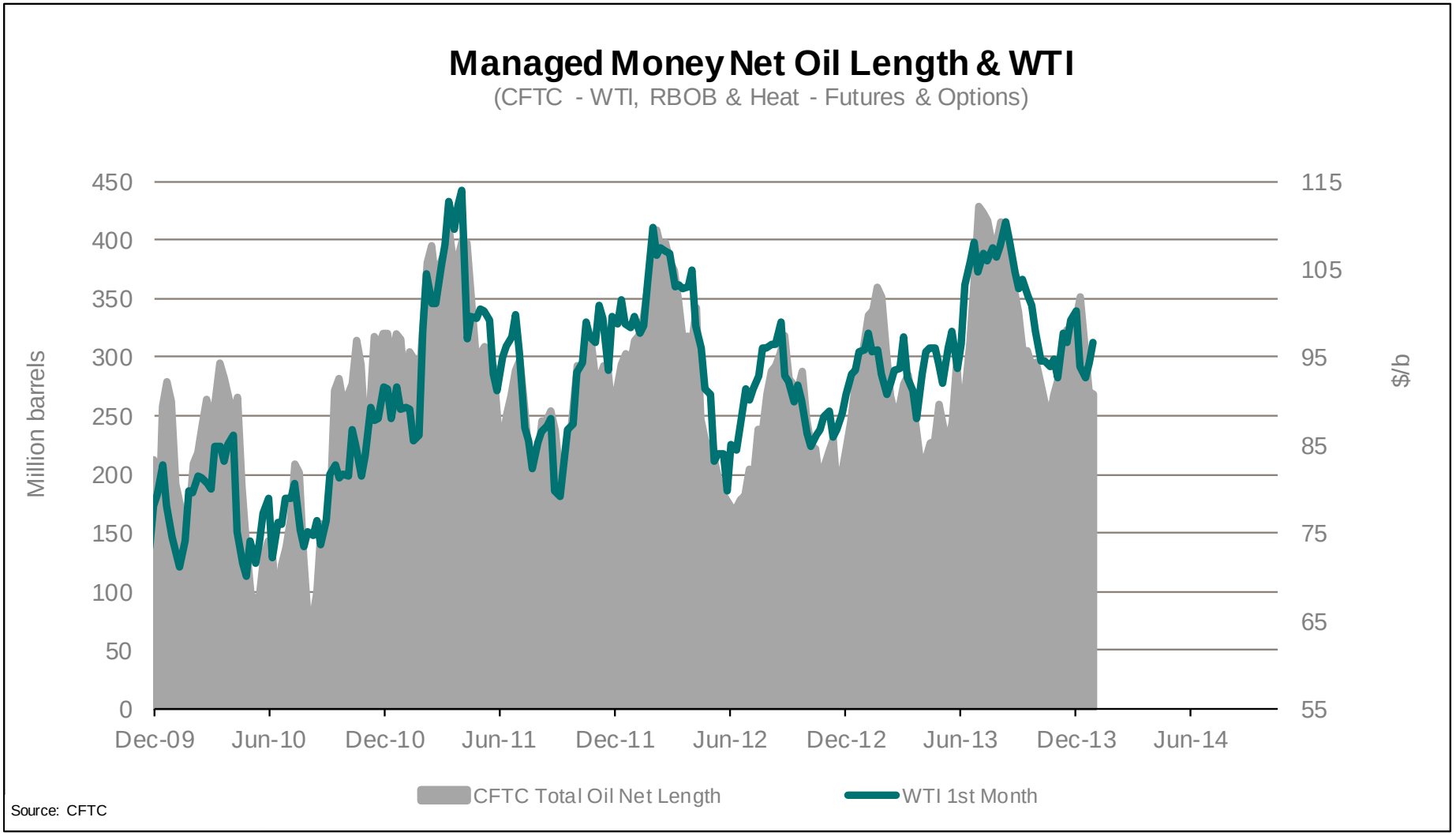

Source: CFTC

DNB

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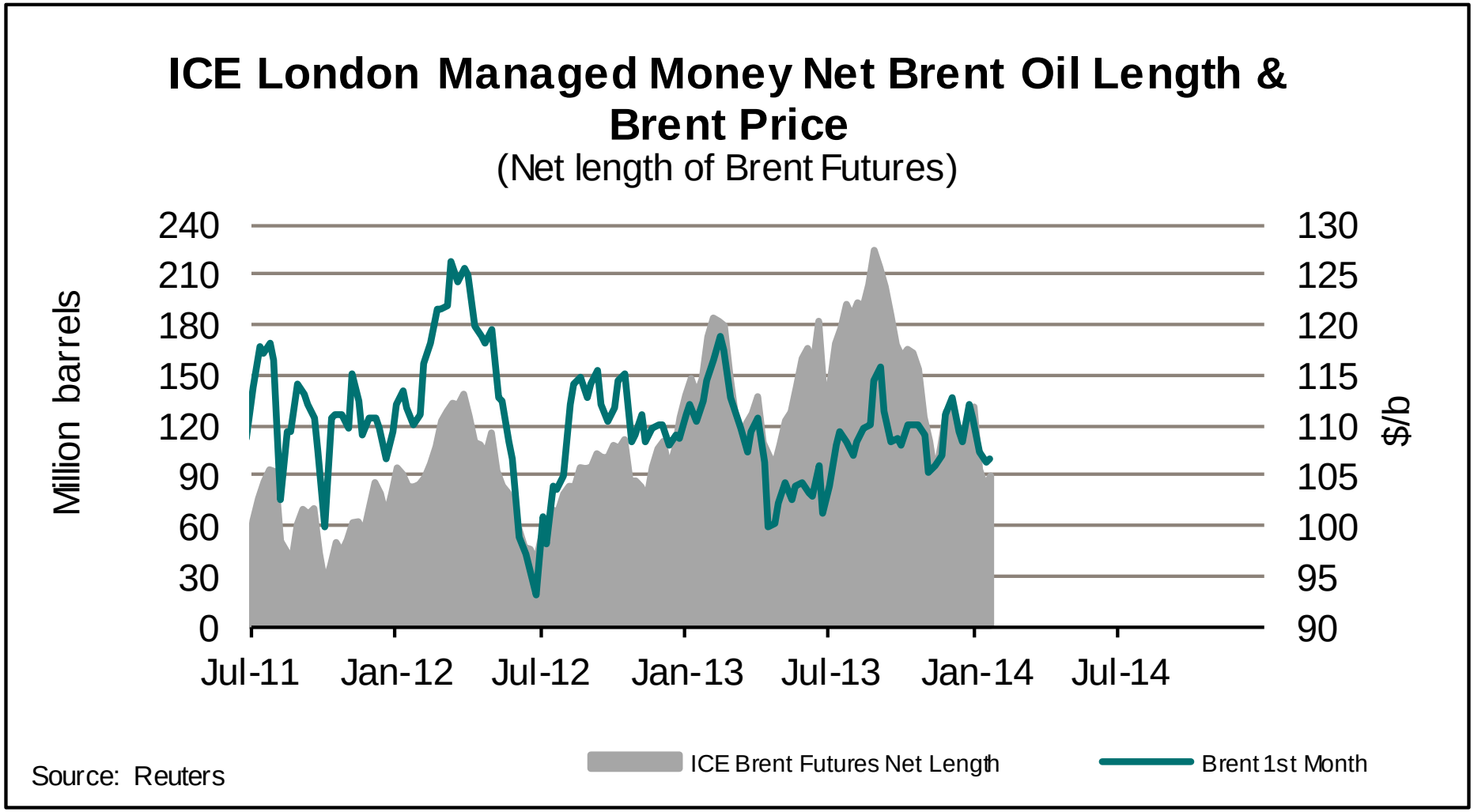
Net 'Money Managers' Exposure on ICE Brent



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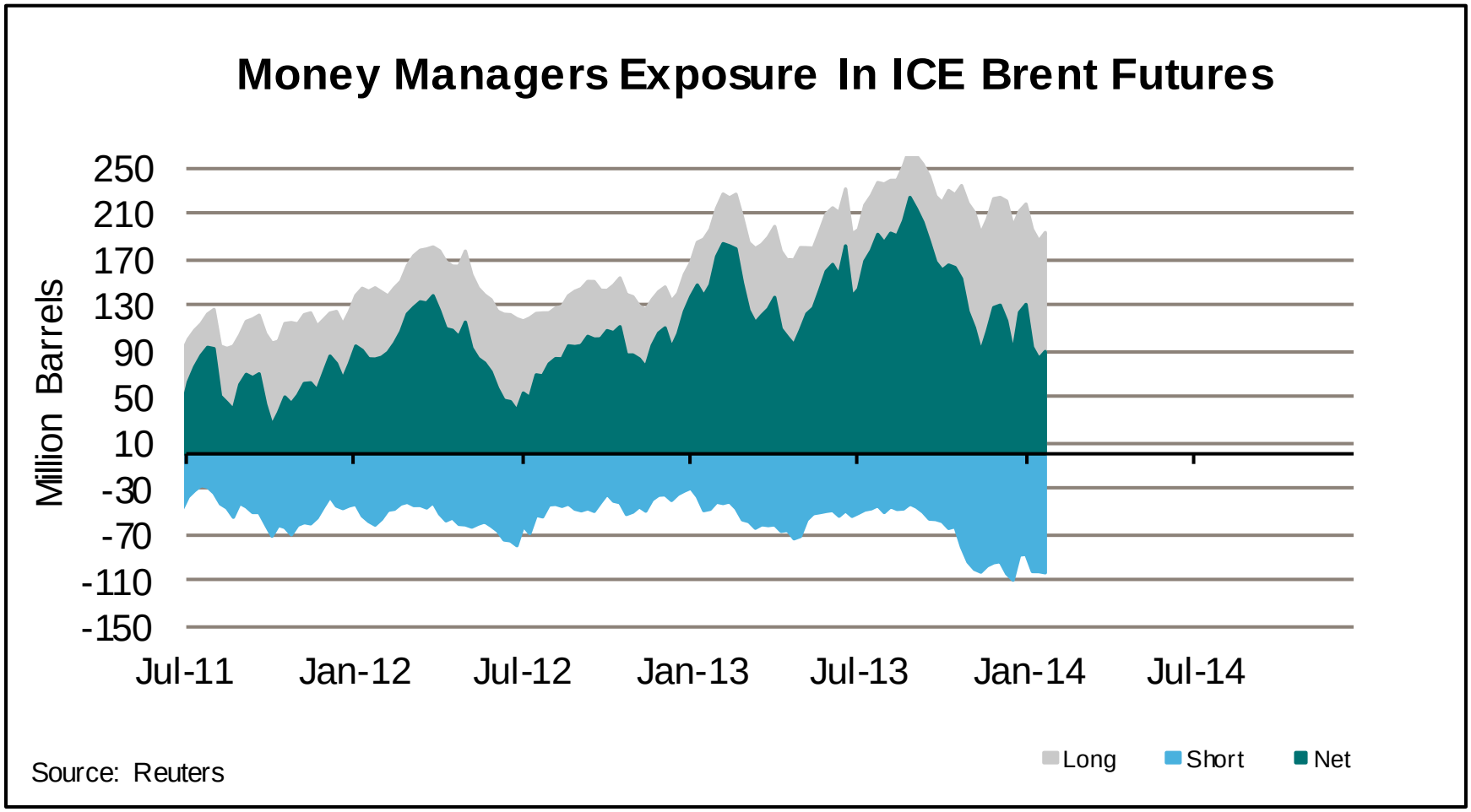
Gross 'Money Managers' Exposure on ICE Brent



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Freight Rates

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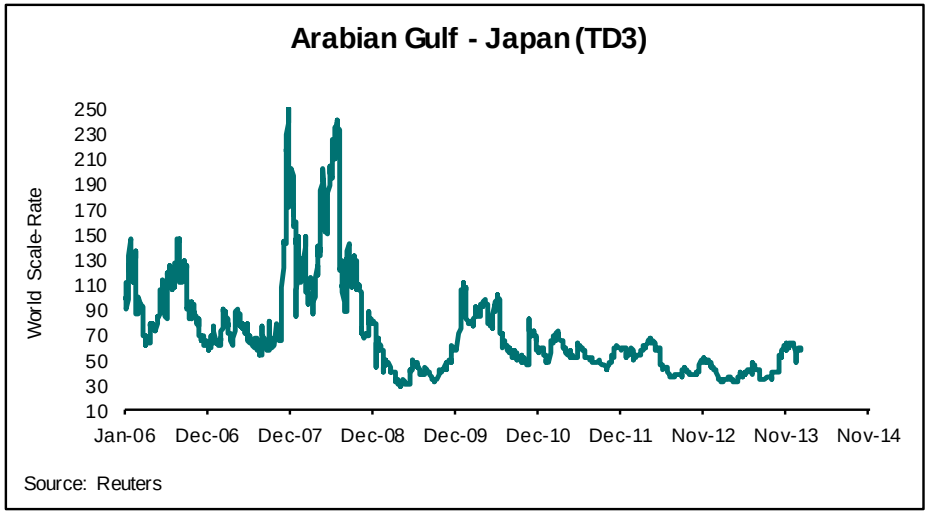
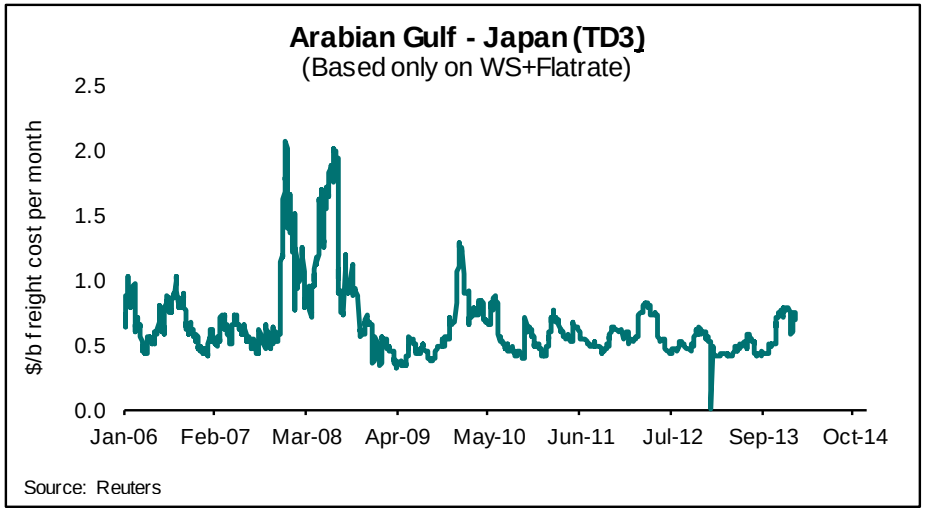
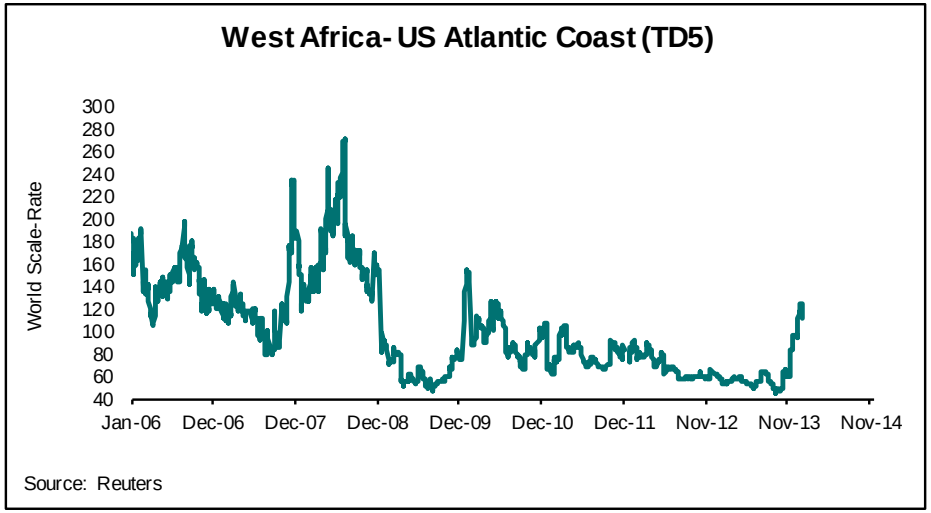
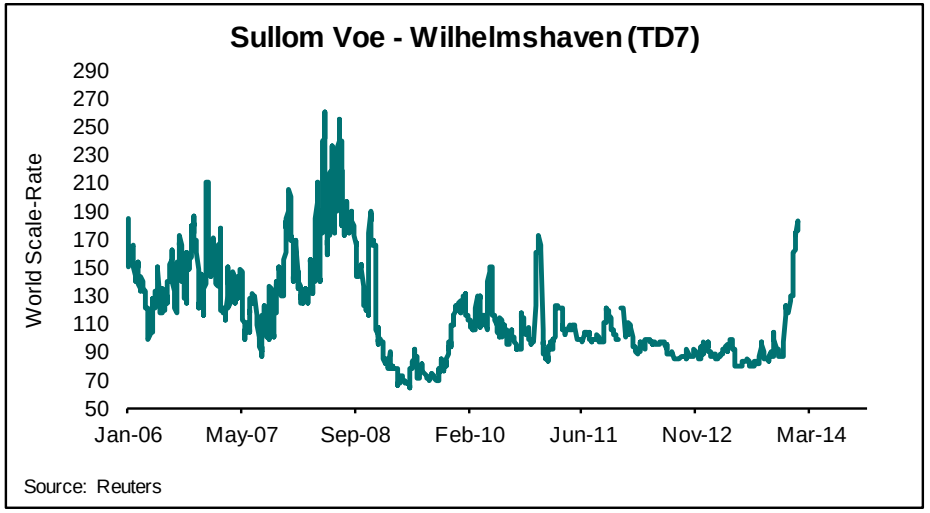
Daily Dirty Oil Tanker Freight Rates









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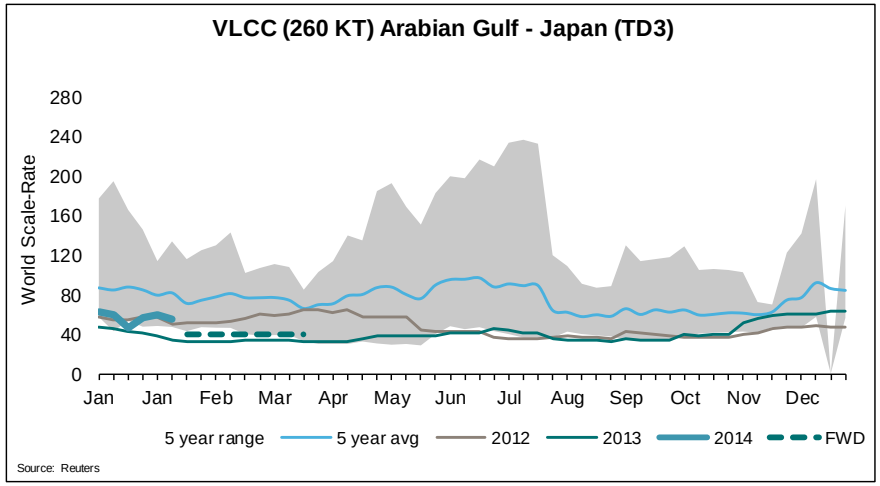
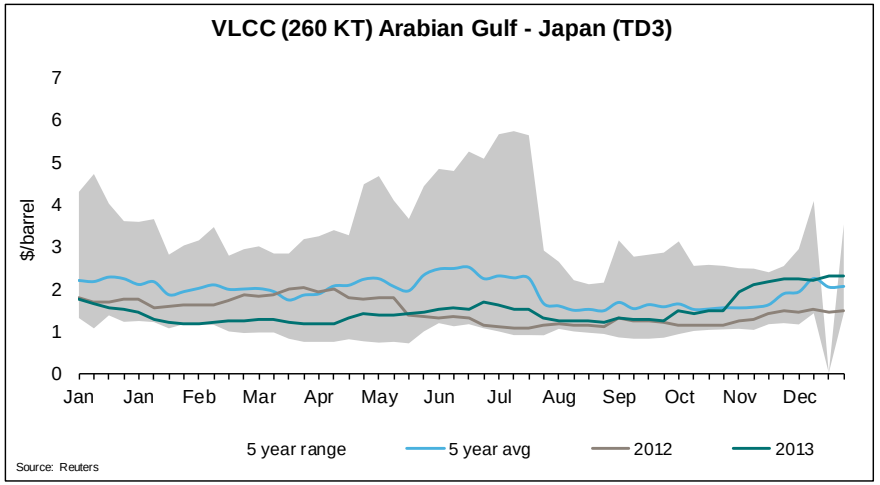
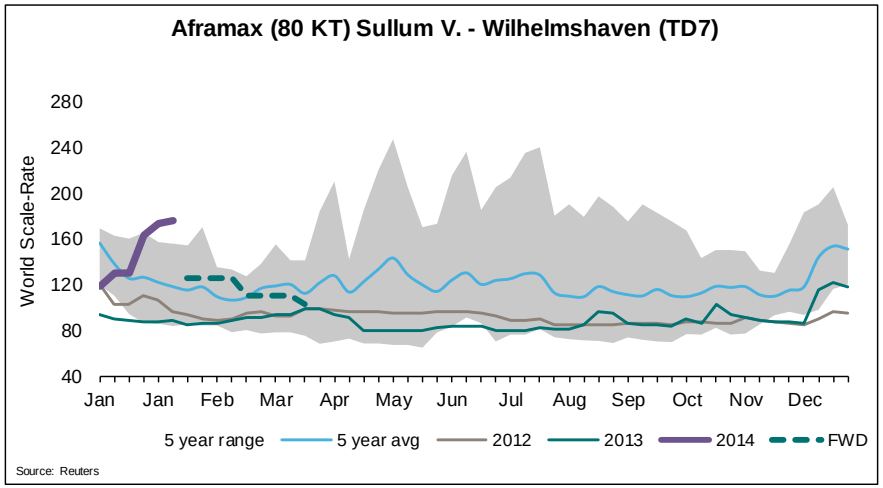
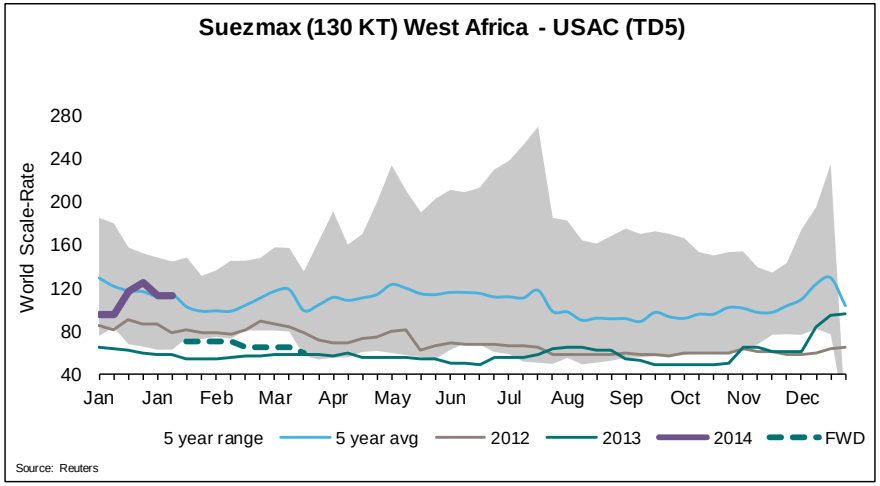
Weekly Dirty Oil Tanker Freight Rates By Size









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Forward curves,
Modeled oil price based on time spreads,
Futures volume,
Historical prices,
Regional crude spreads,
Crude quality diffs,
Oil product arbitrage,
Time spreads,
Historical forward curves,
Technical Brent & WTI charts,
Natural Gas price relations,
US Natural Gas stock levels,
Our current oil price forecast

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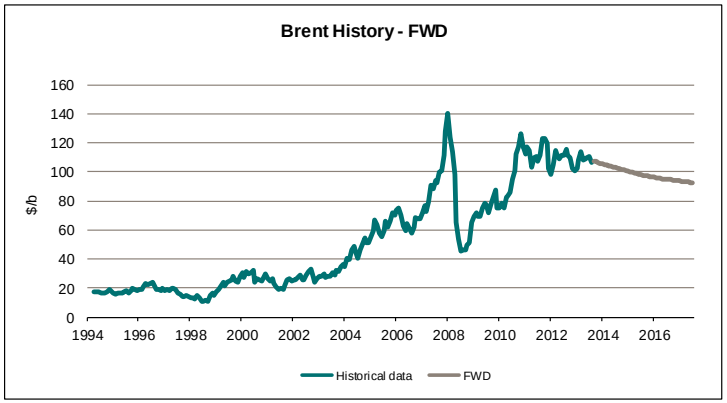
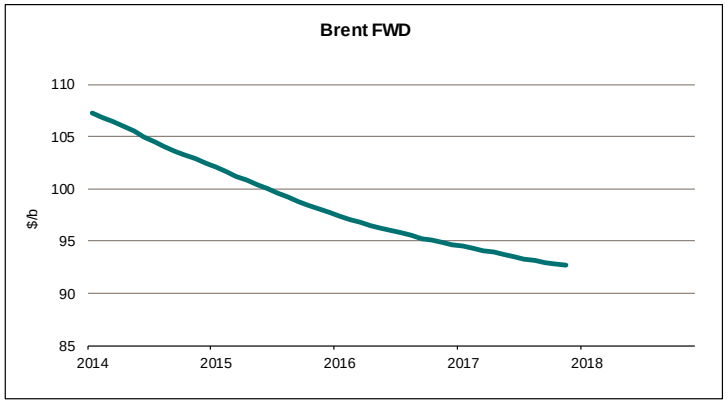
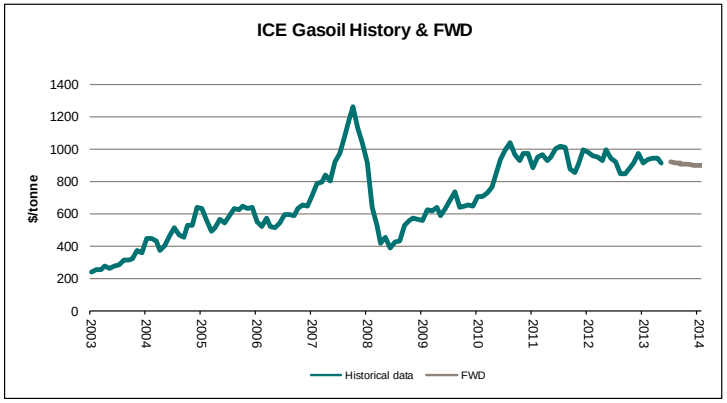
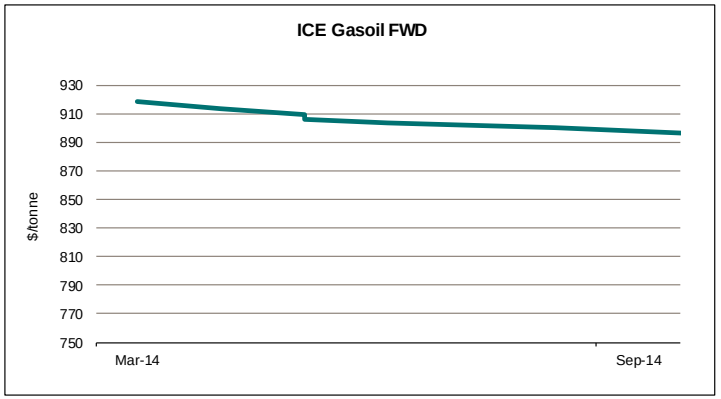
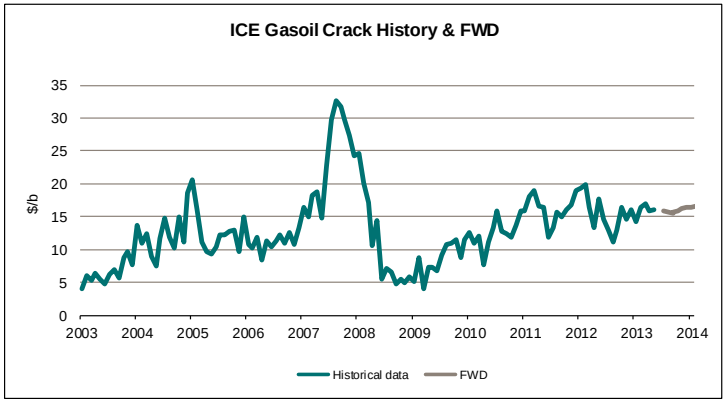
Oil FWD Curves – London

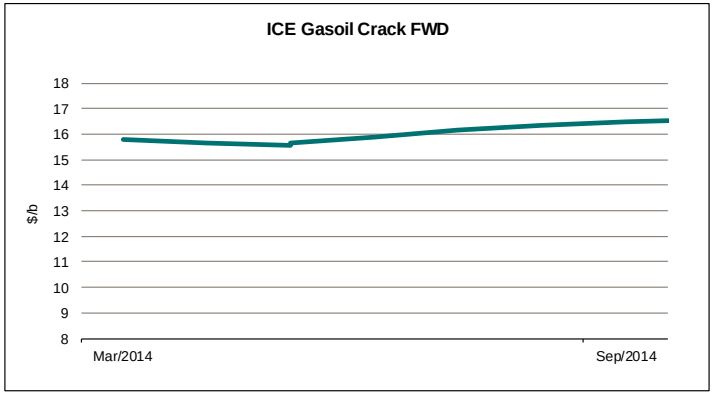












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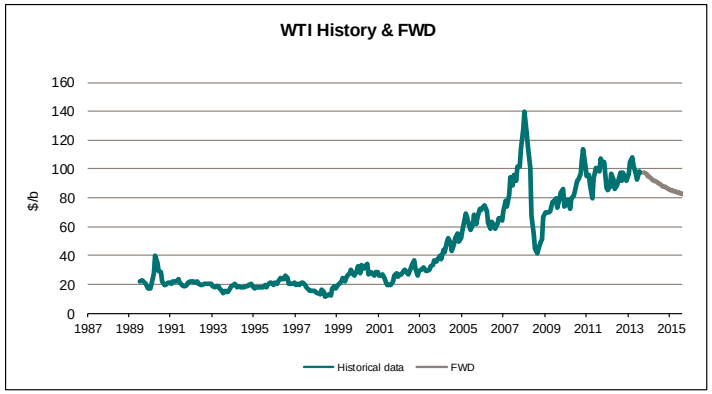
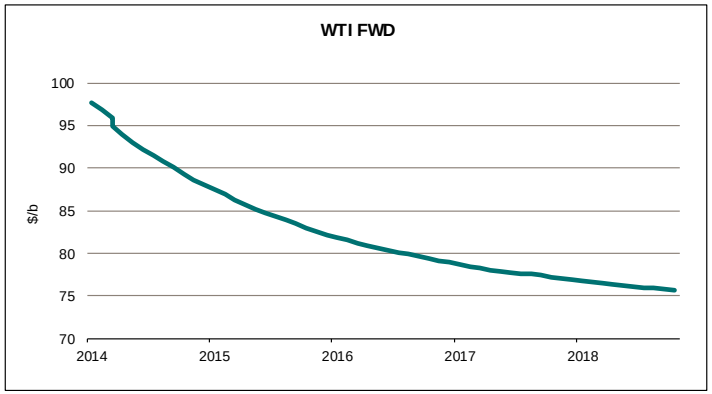
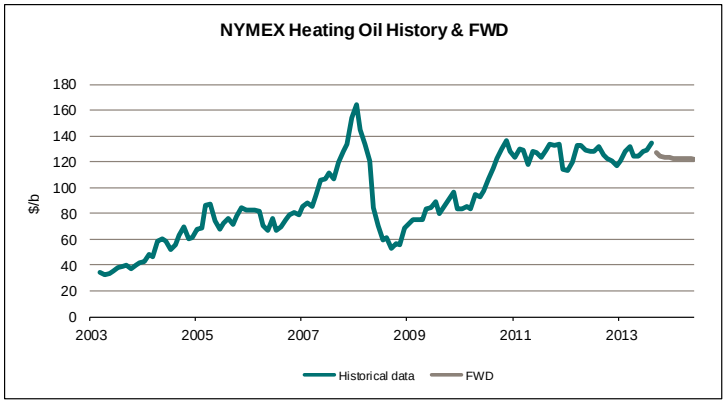
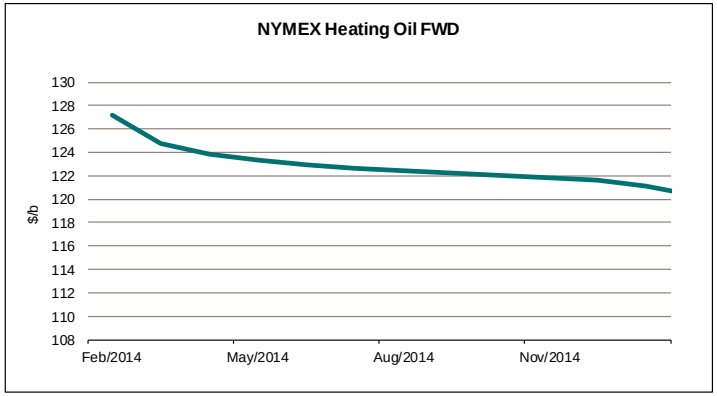
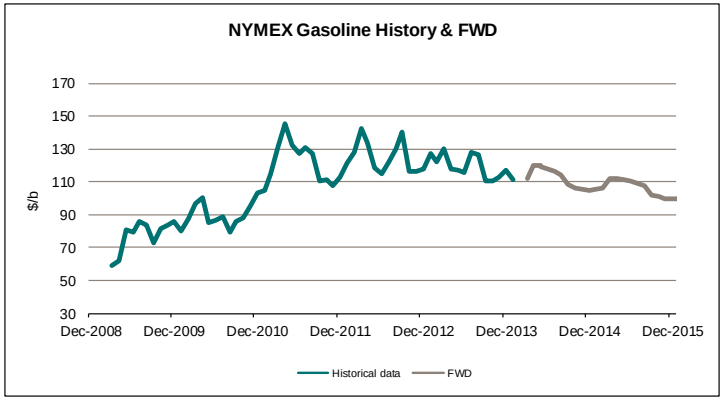
Oil FWD Curves – New York

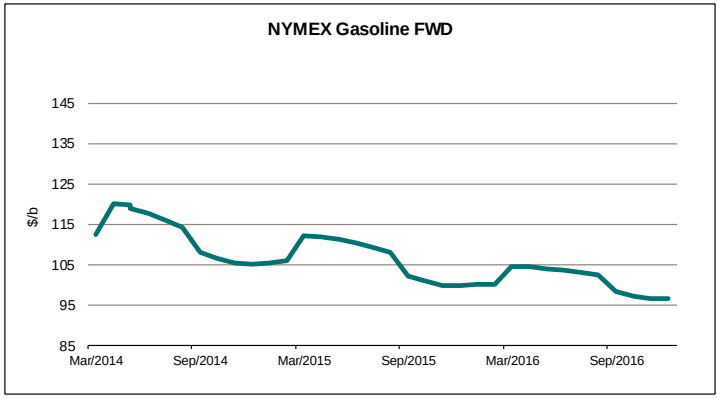












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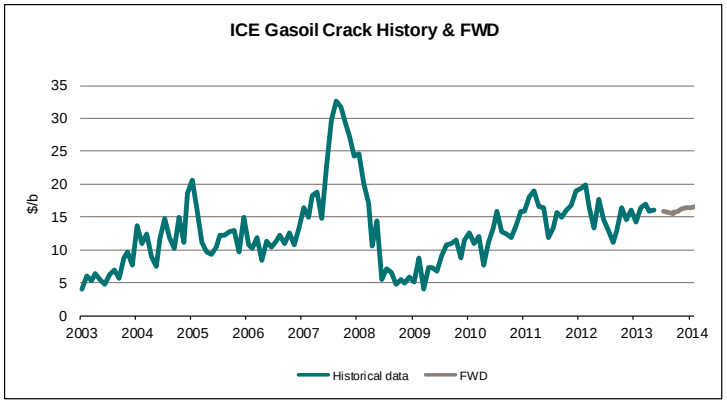
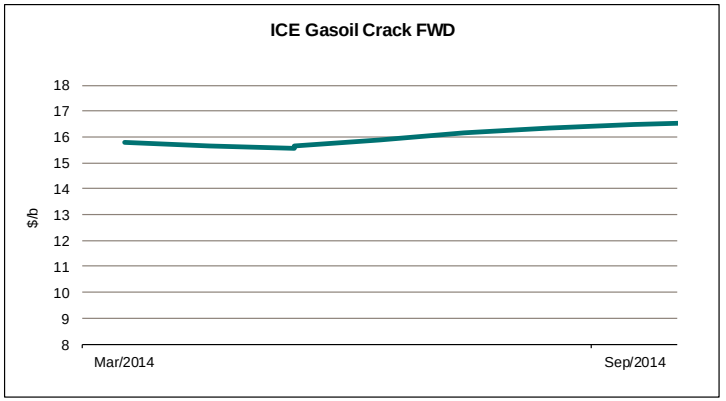
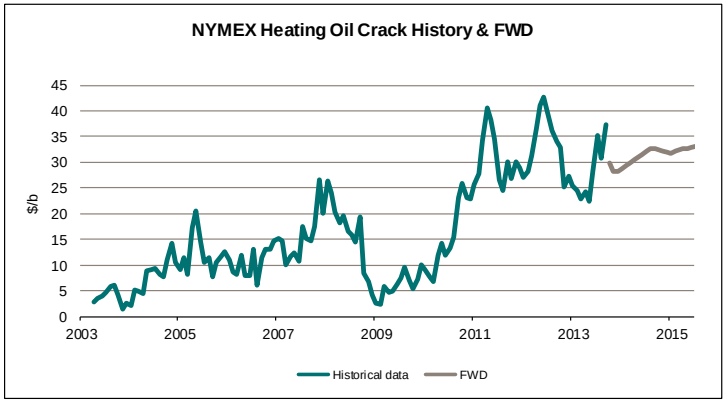
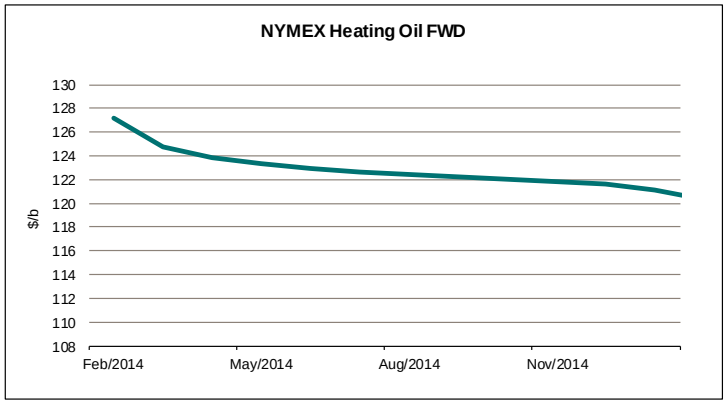
Oil FWD Curves – ICE & NYMEX

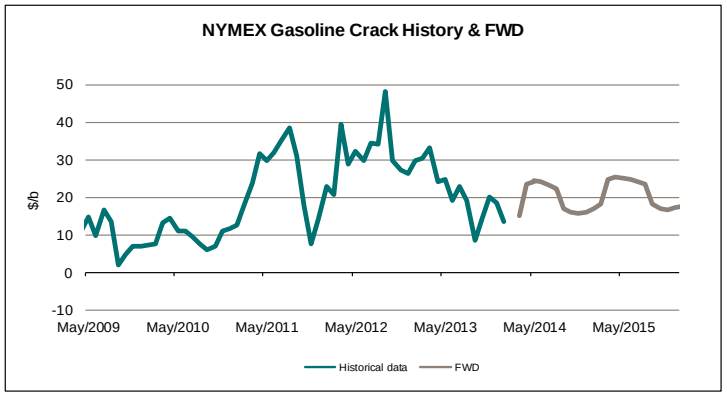
Crack Spreads

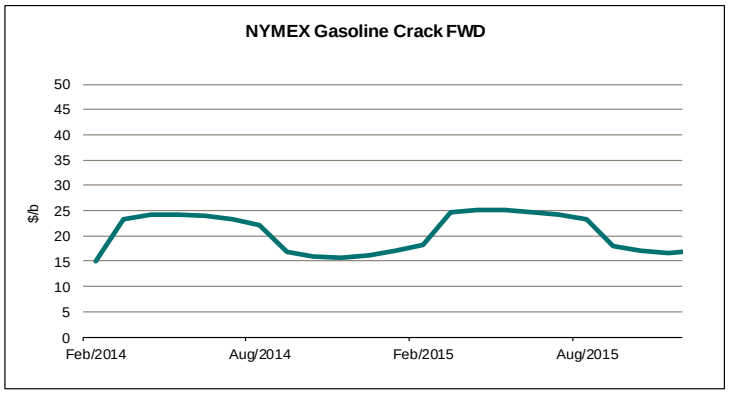












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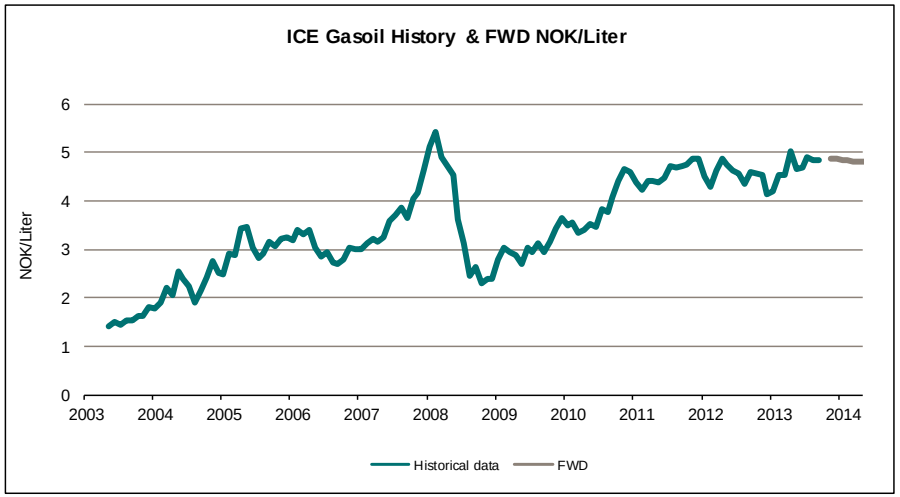
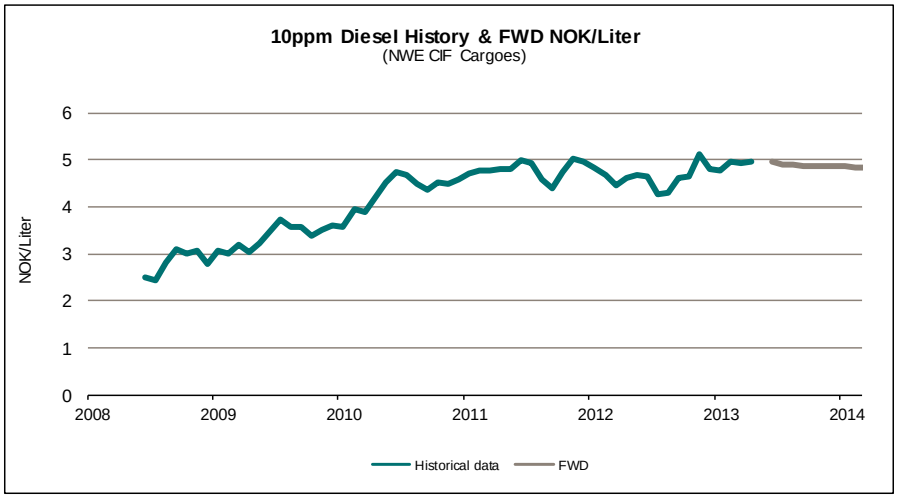
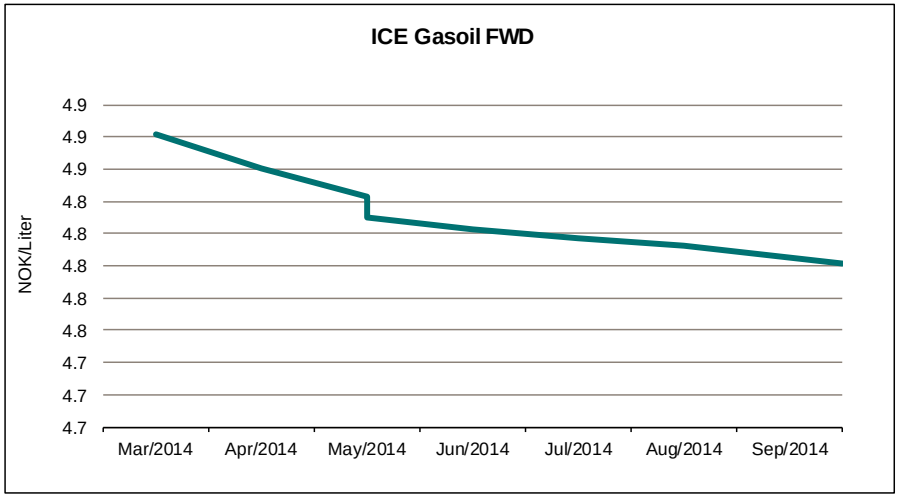
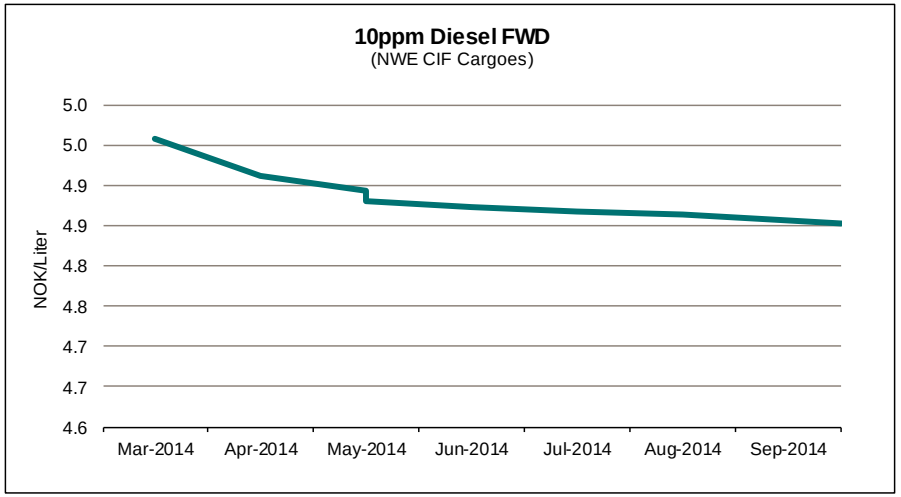
Oil FWD Curves – Gasoil & Diesel

NOK/Liter









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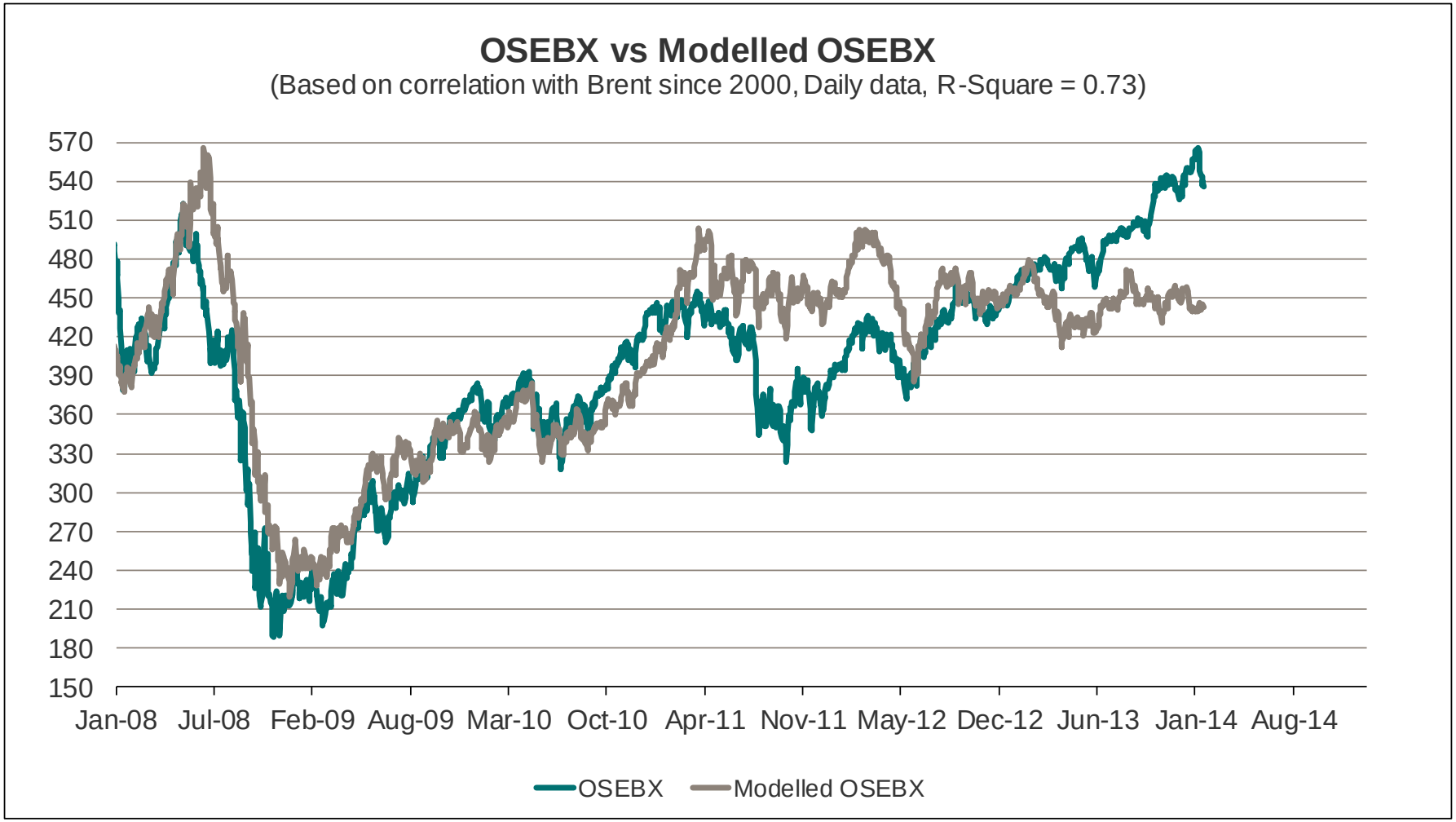
Modeled Oslo Stock Exchange Based On Oil Price



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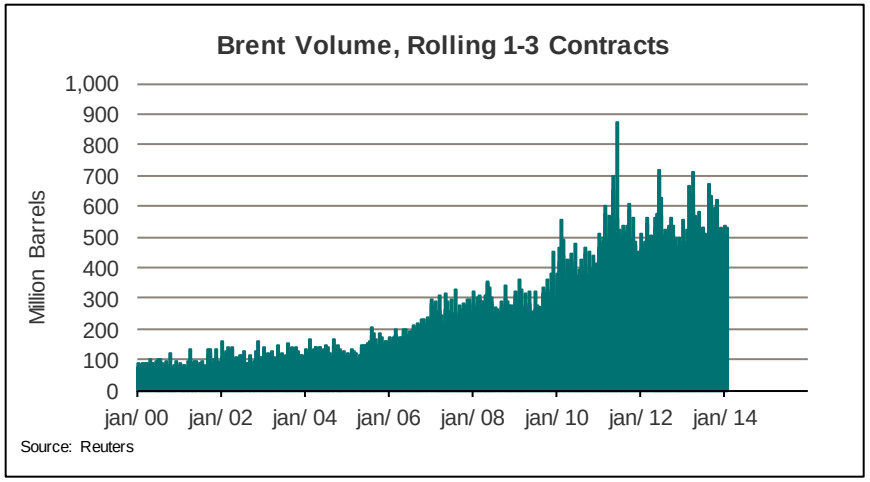
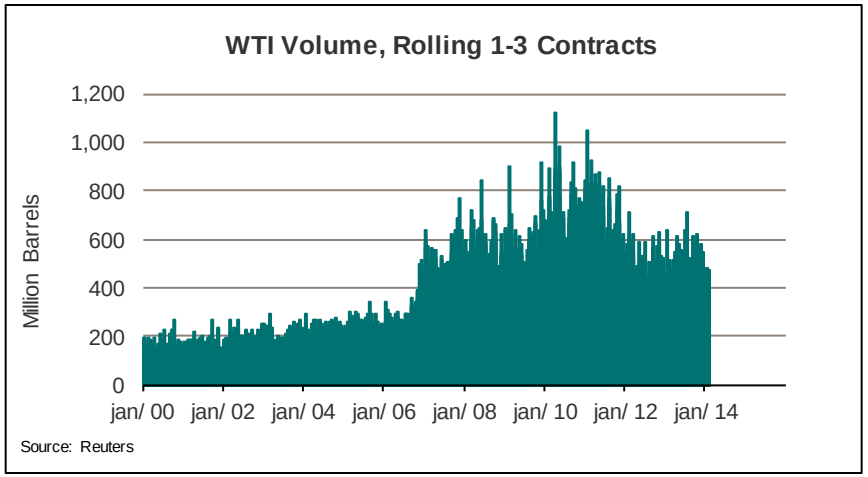
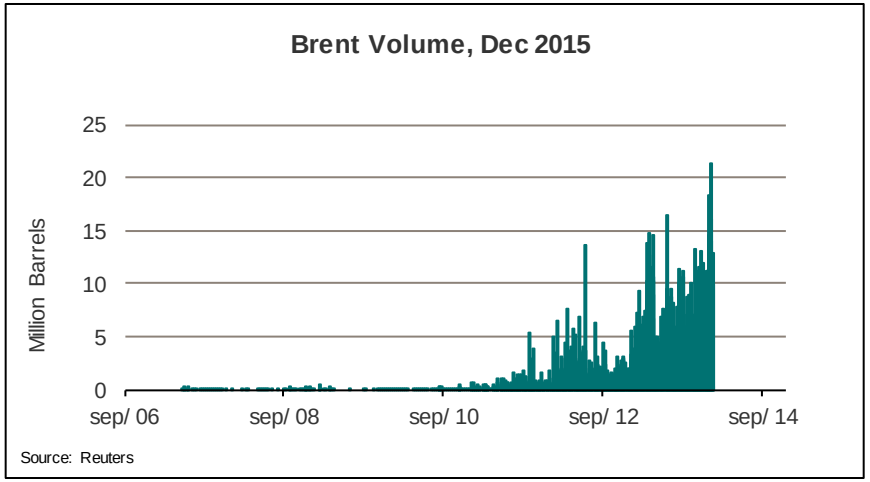
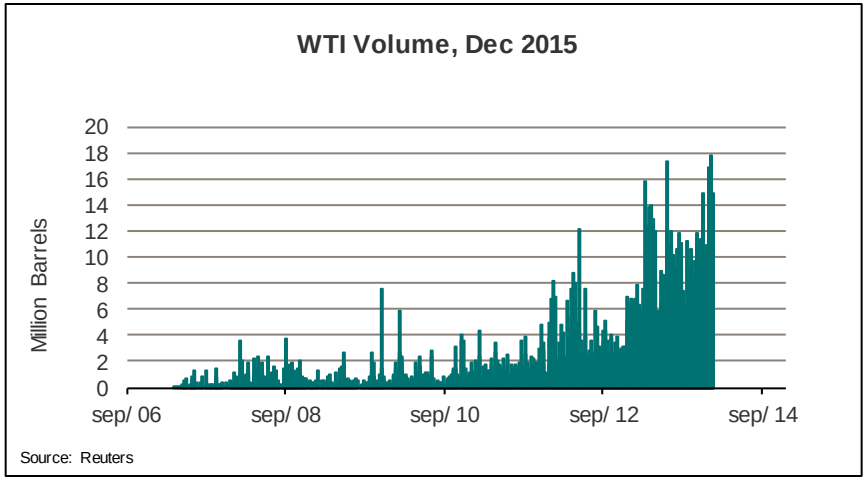
Volume Traded Brent/WTI Futures

- Volume shown for the rolling first 3 months and for Dec 2013 contracts









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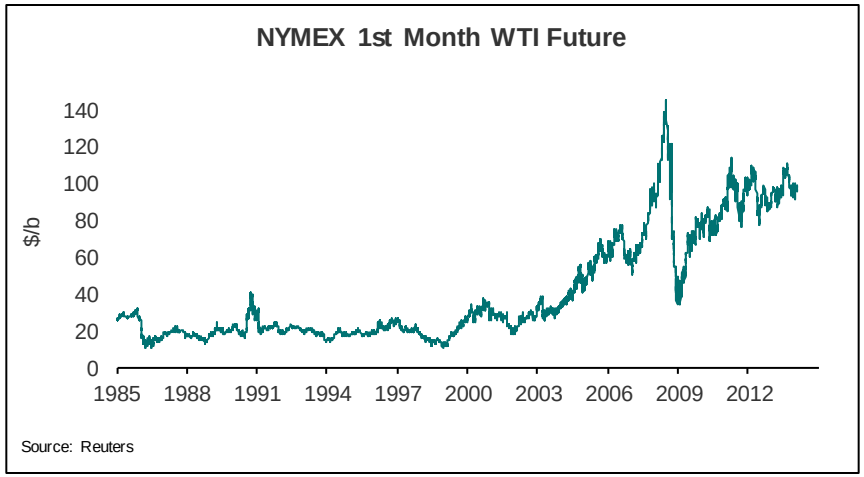
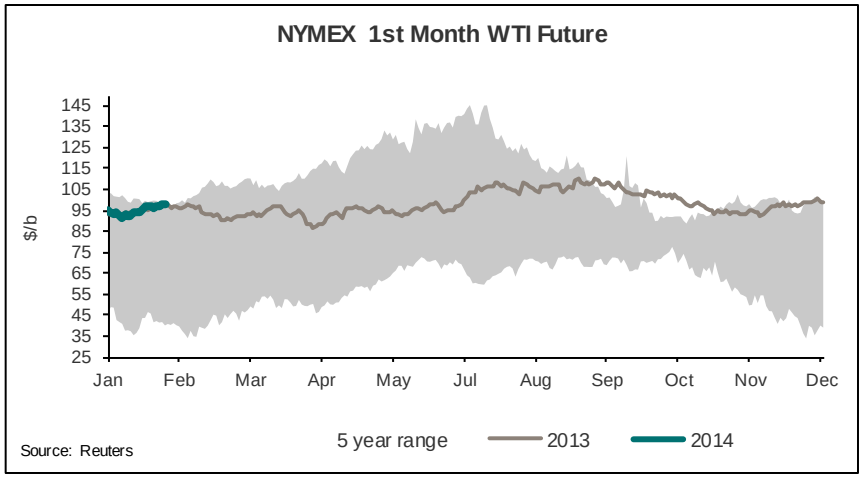
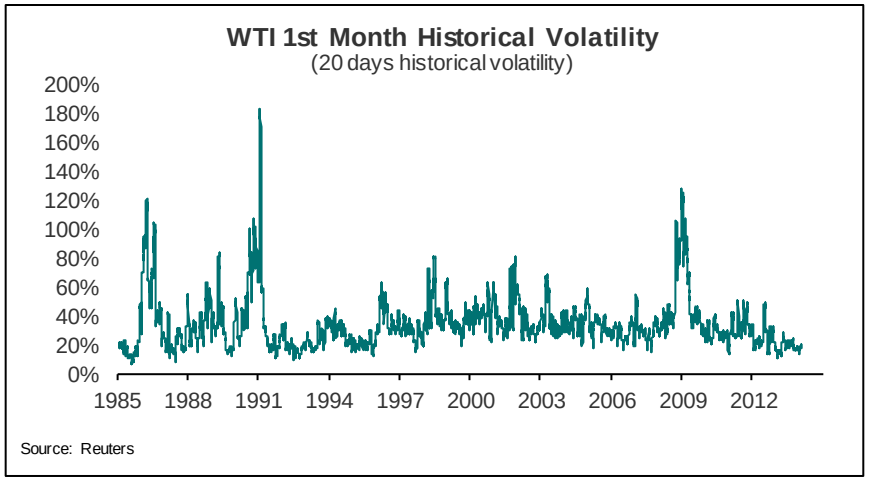
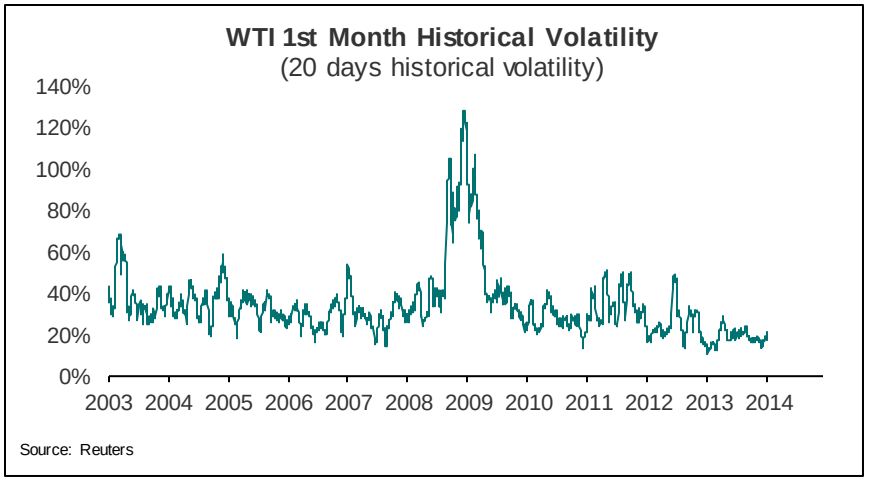
Historical WTI Prices & Volatility









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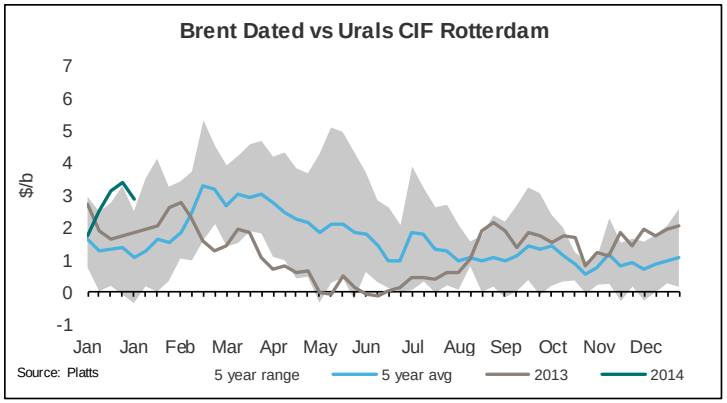
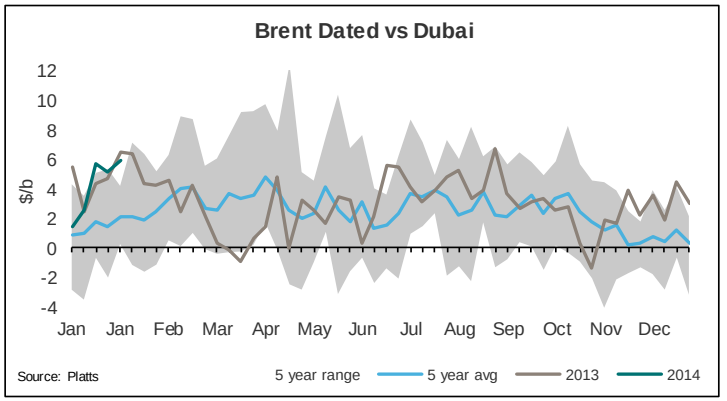
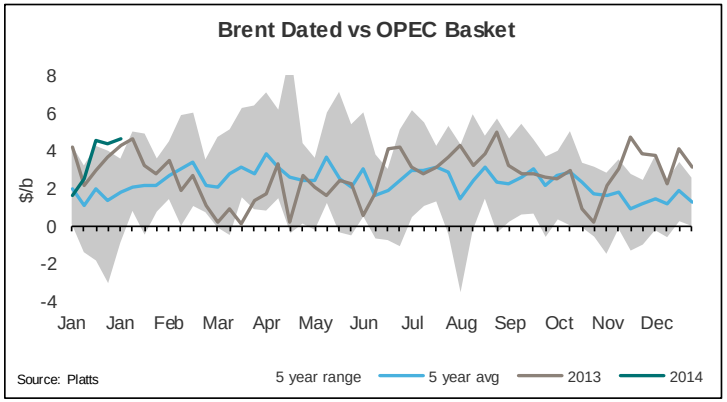
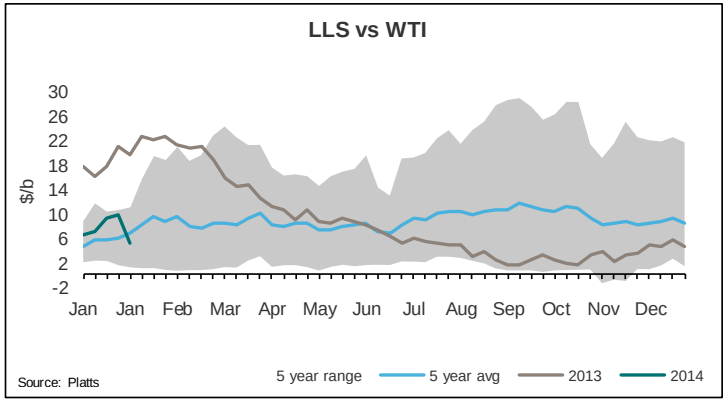
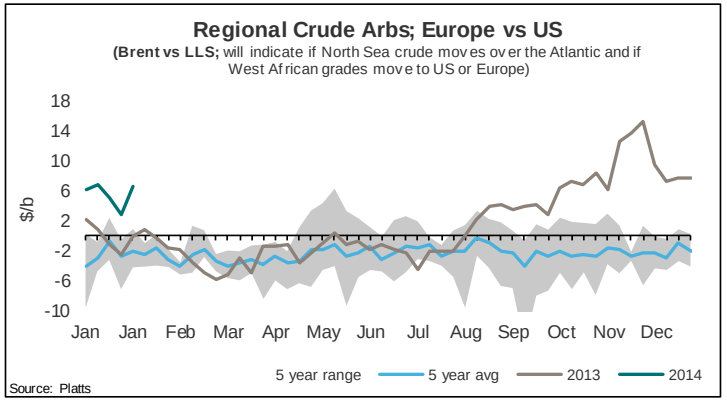
Crude Oil Differentials

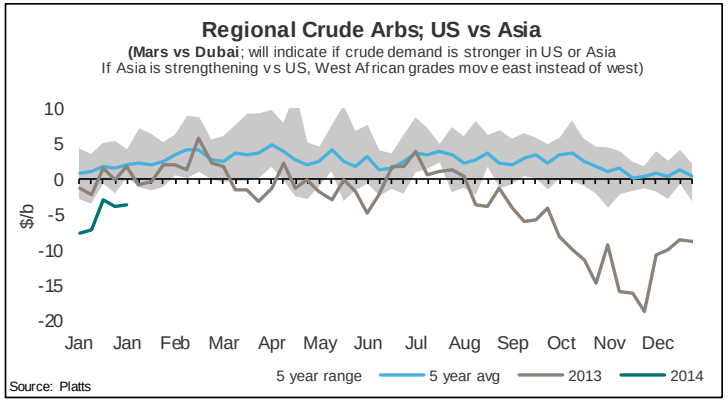












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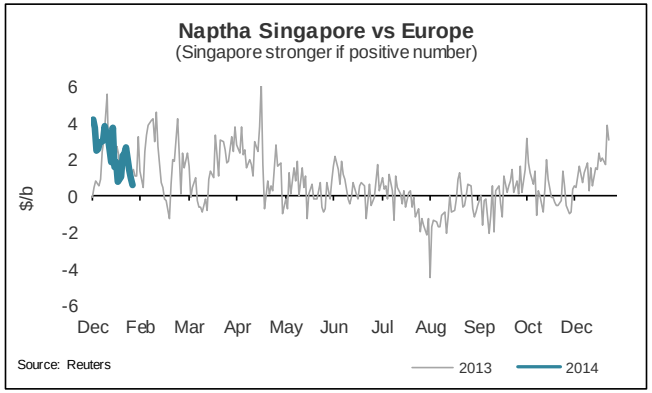
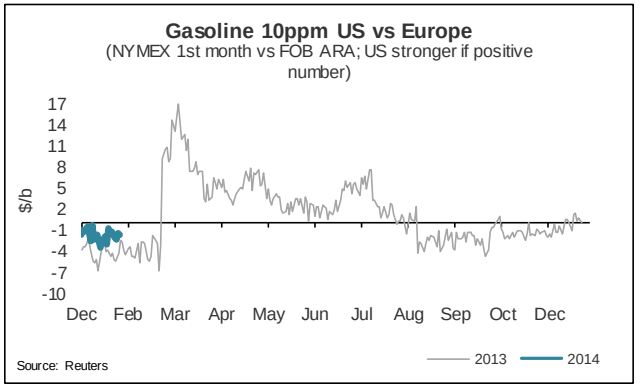
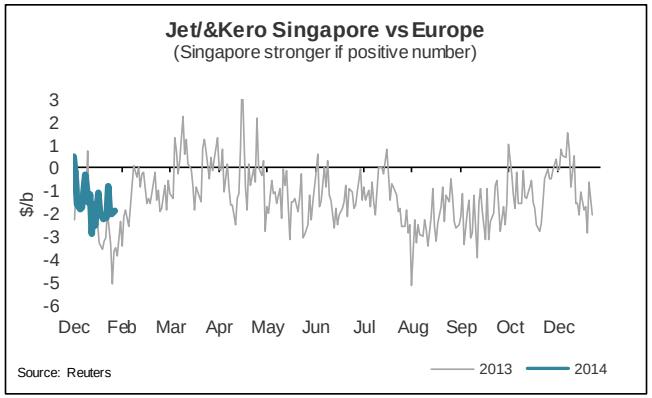
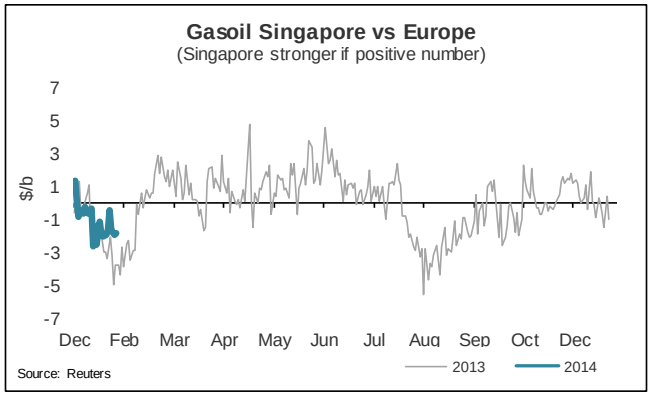
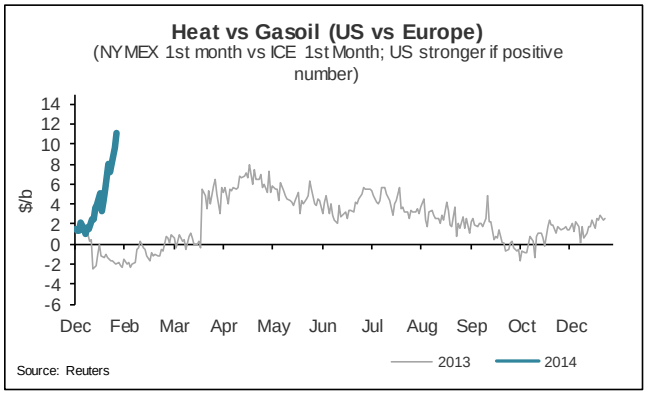
Key Oil Product Arbs

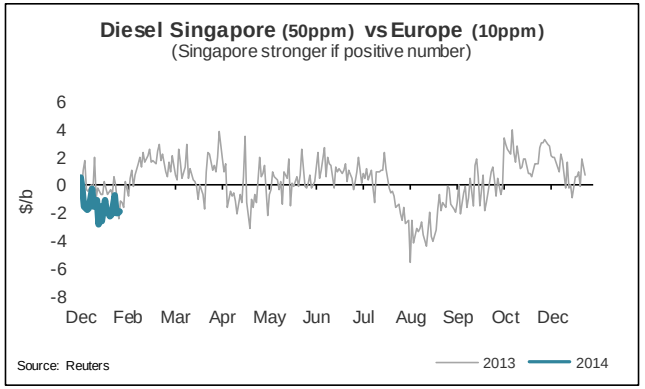












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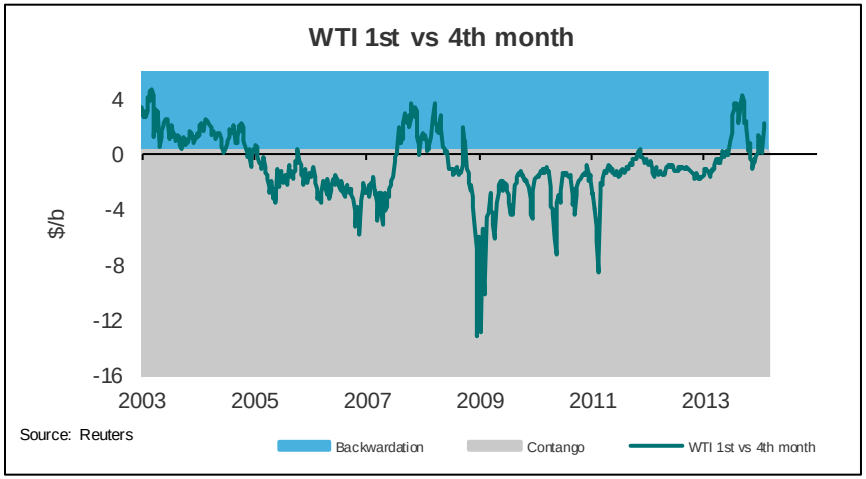
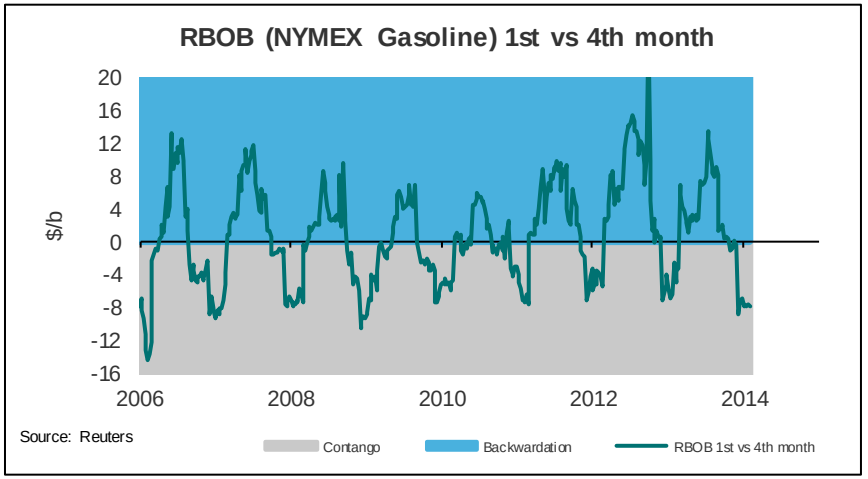
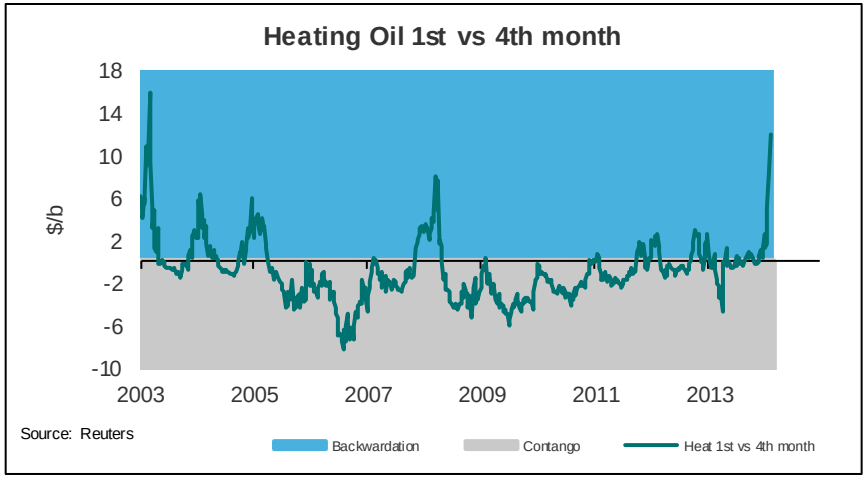
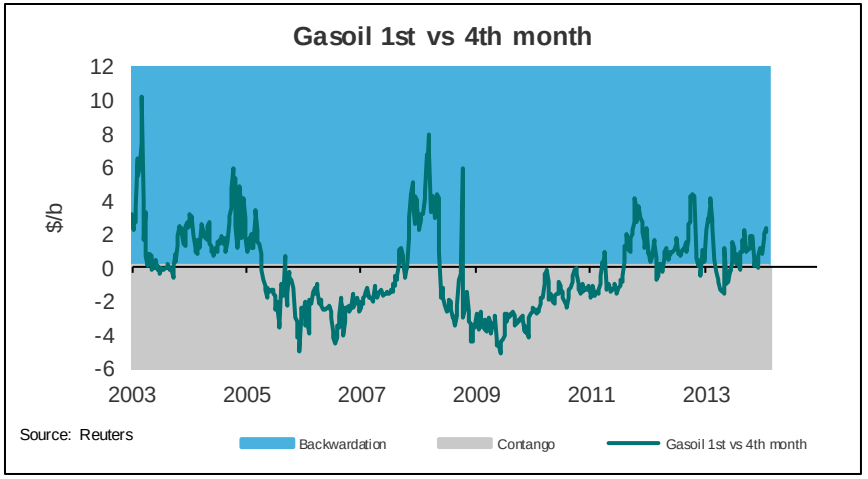
Market Structure Key Oil Prices (Structure of the FWD Curve)

- 1st vs 4th month contract









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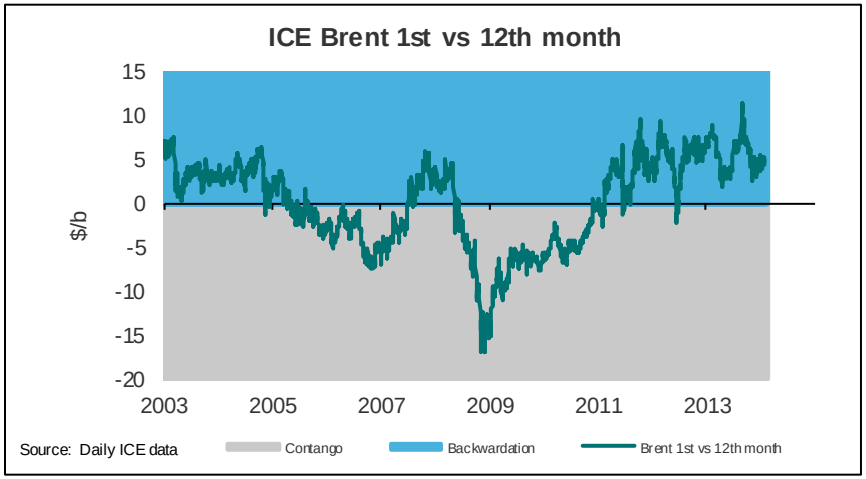
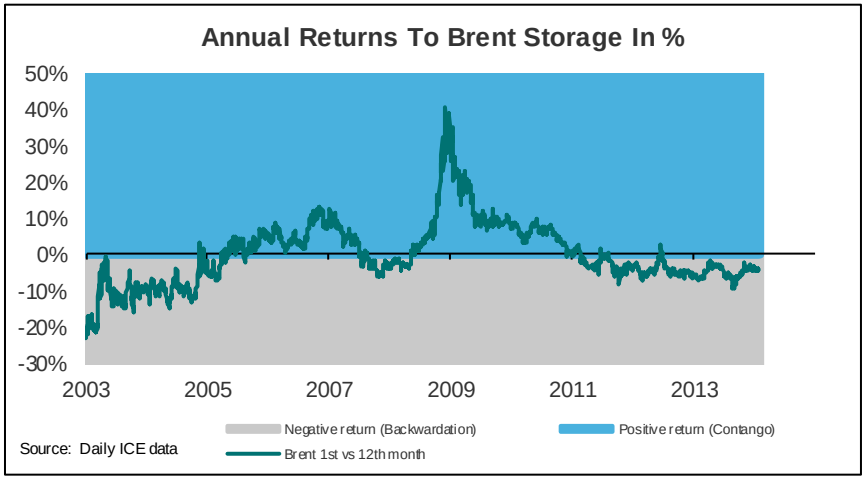
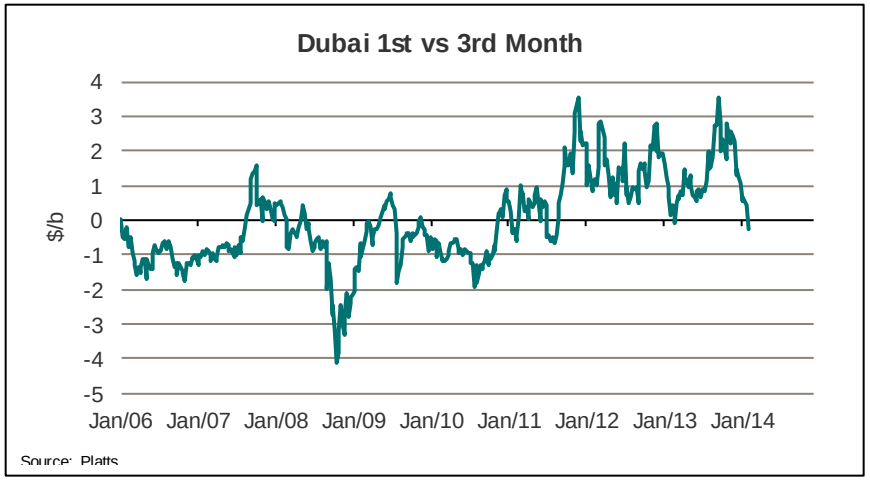
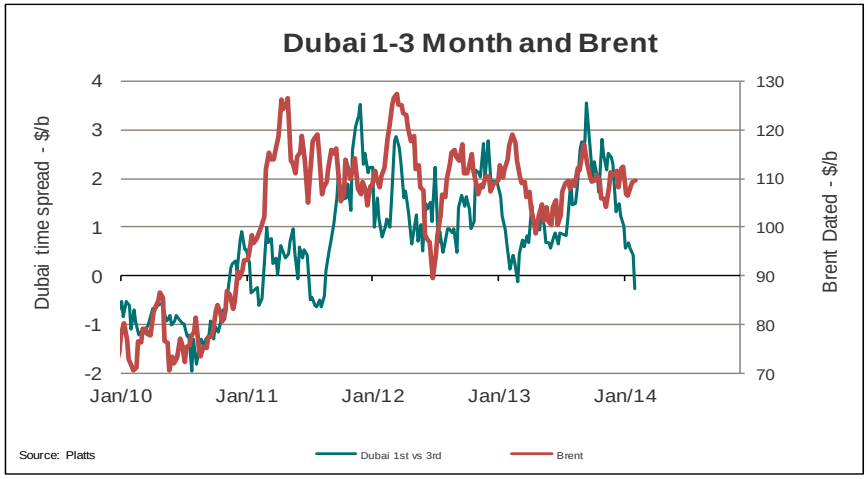
Market Structure ICE Brent & Platts Dubai

- 1st vs 12th month Brent contract & 1st vs 3rd Dubai contract









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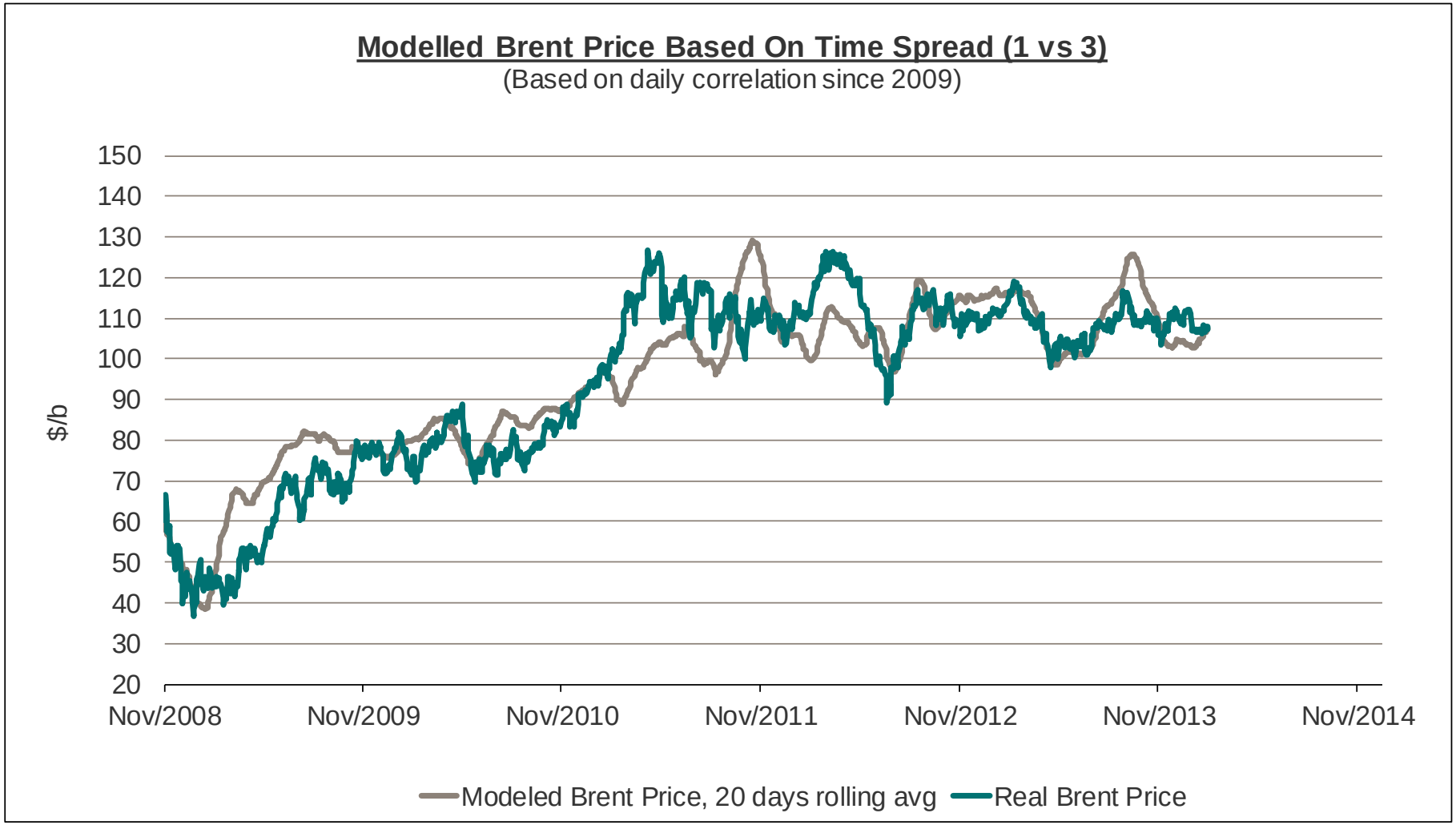
Modeled Brent Price Based On Time Spread

- Has provided early market signals several times last couple of years



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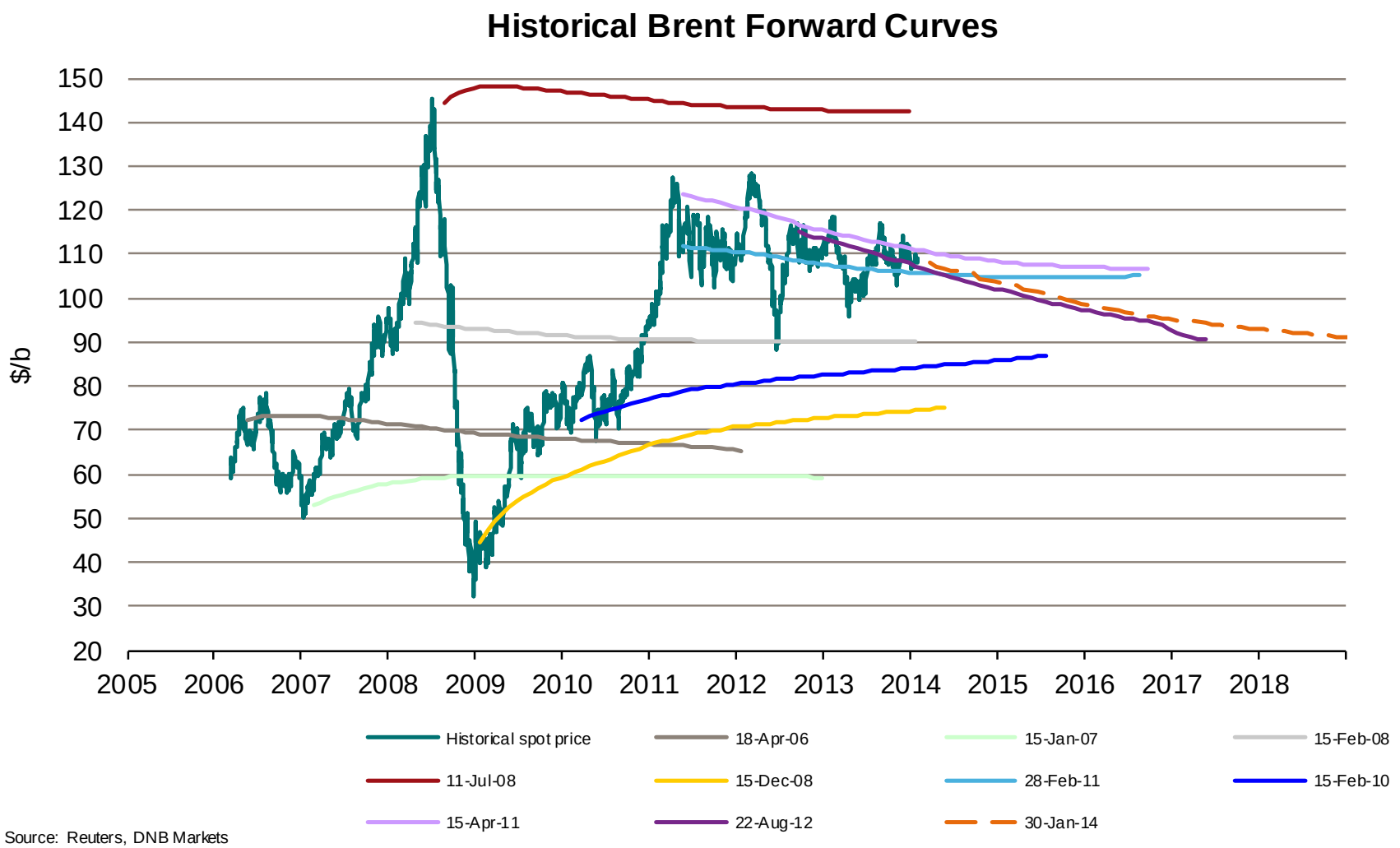
Historical ICE Brent Forward Curves



Source: Reuters, DNB Markets

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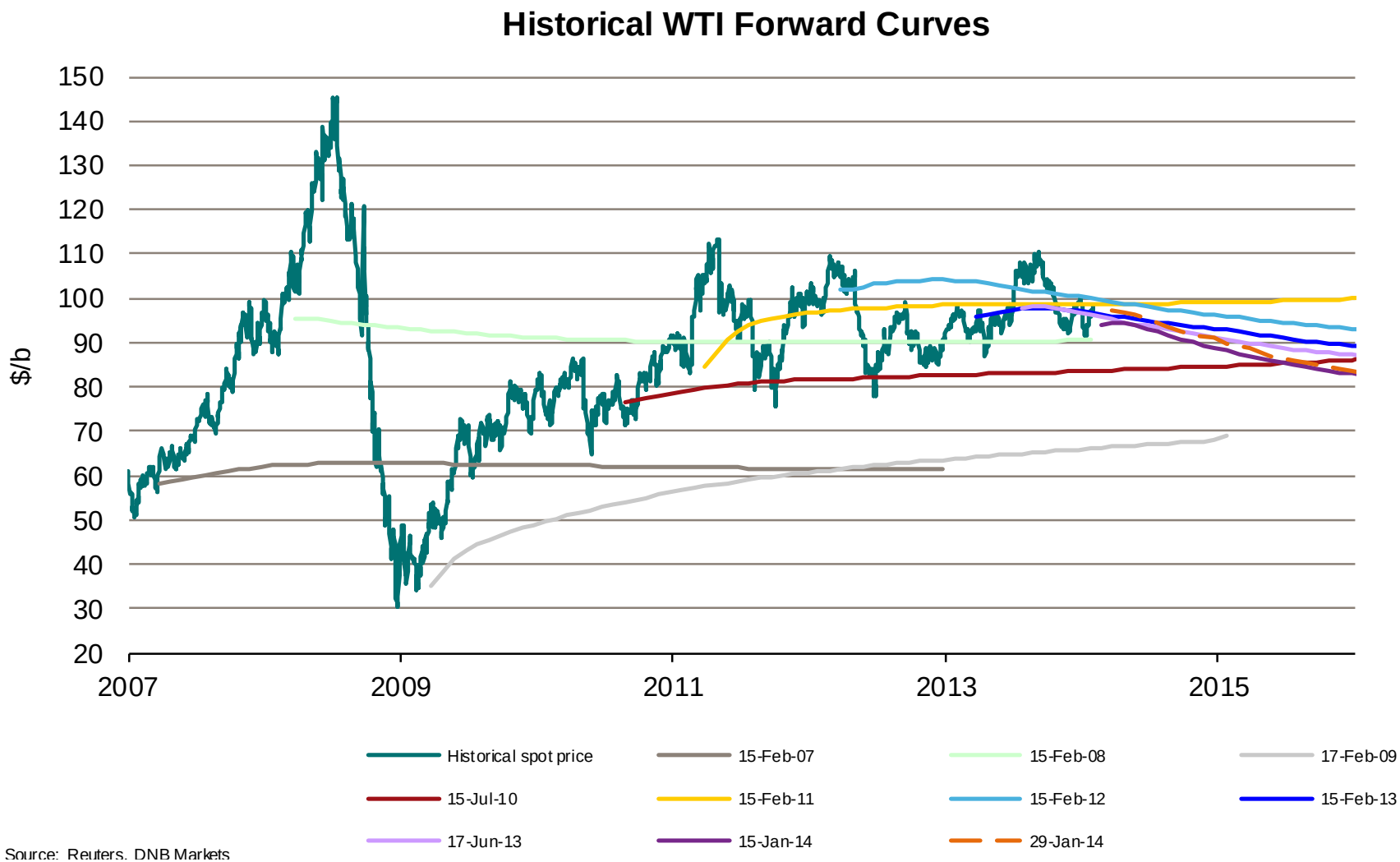
Historical NYMEX WTI Forward Curves



Source: Reuters, DNB Markets

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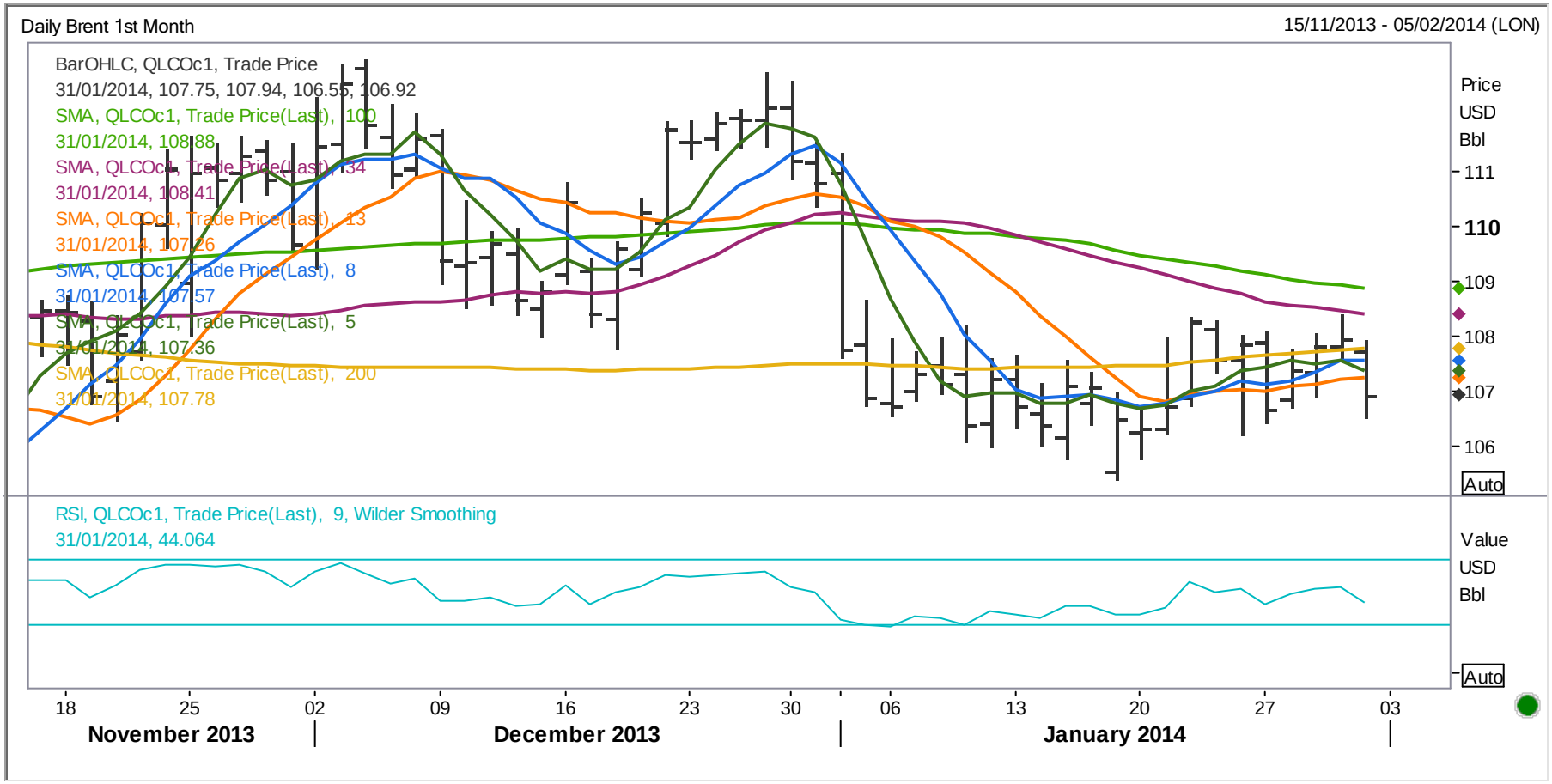
Technical Brent Chart



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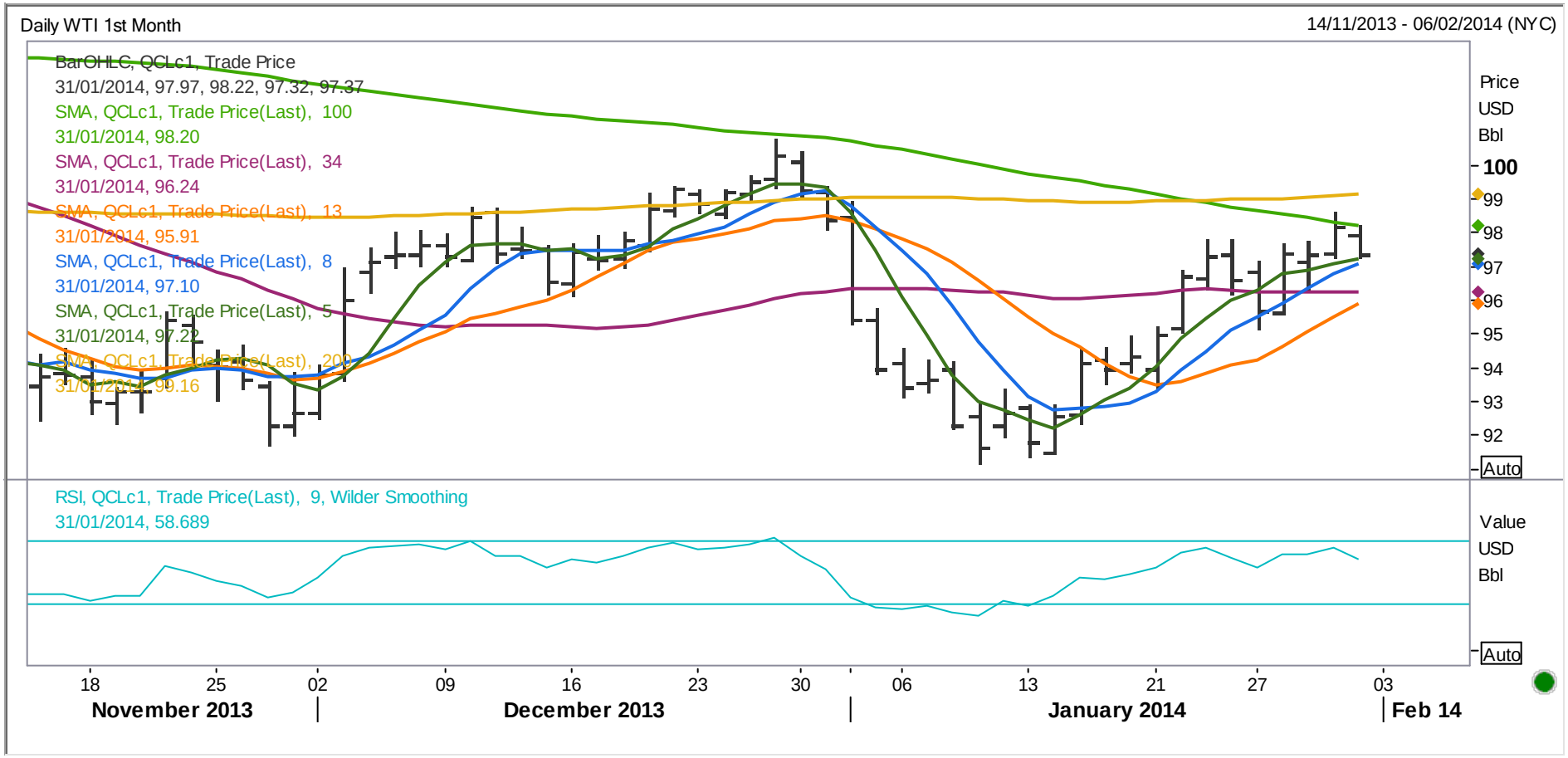
Technical WTI Chart



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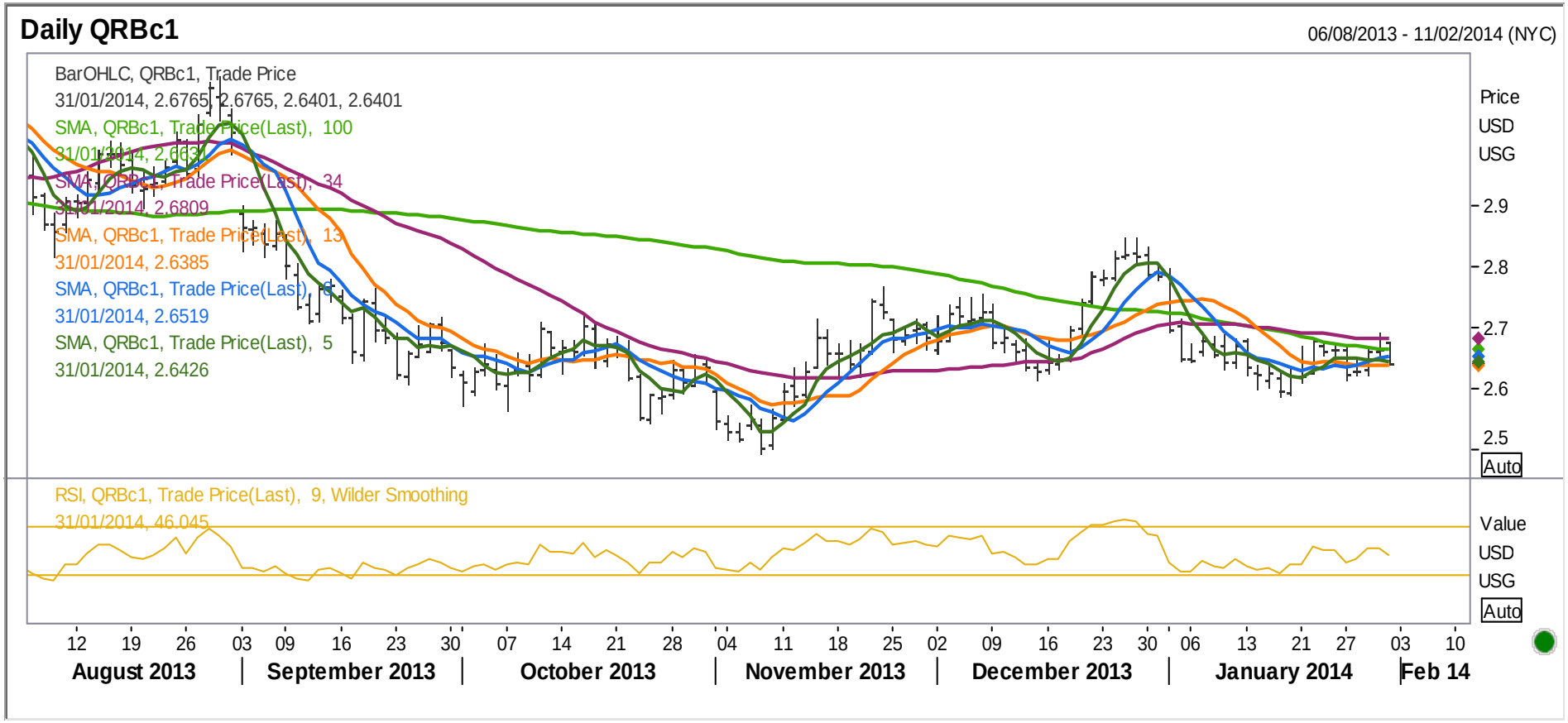
Technical RBOB (NYMEX Gasoline) Chart



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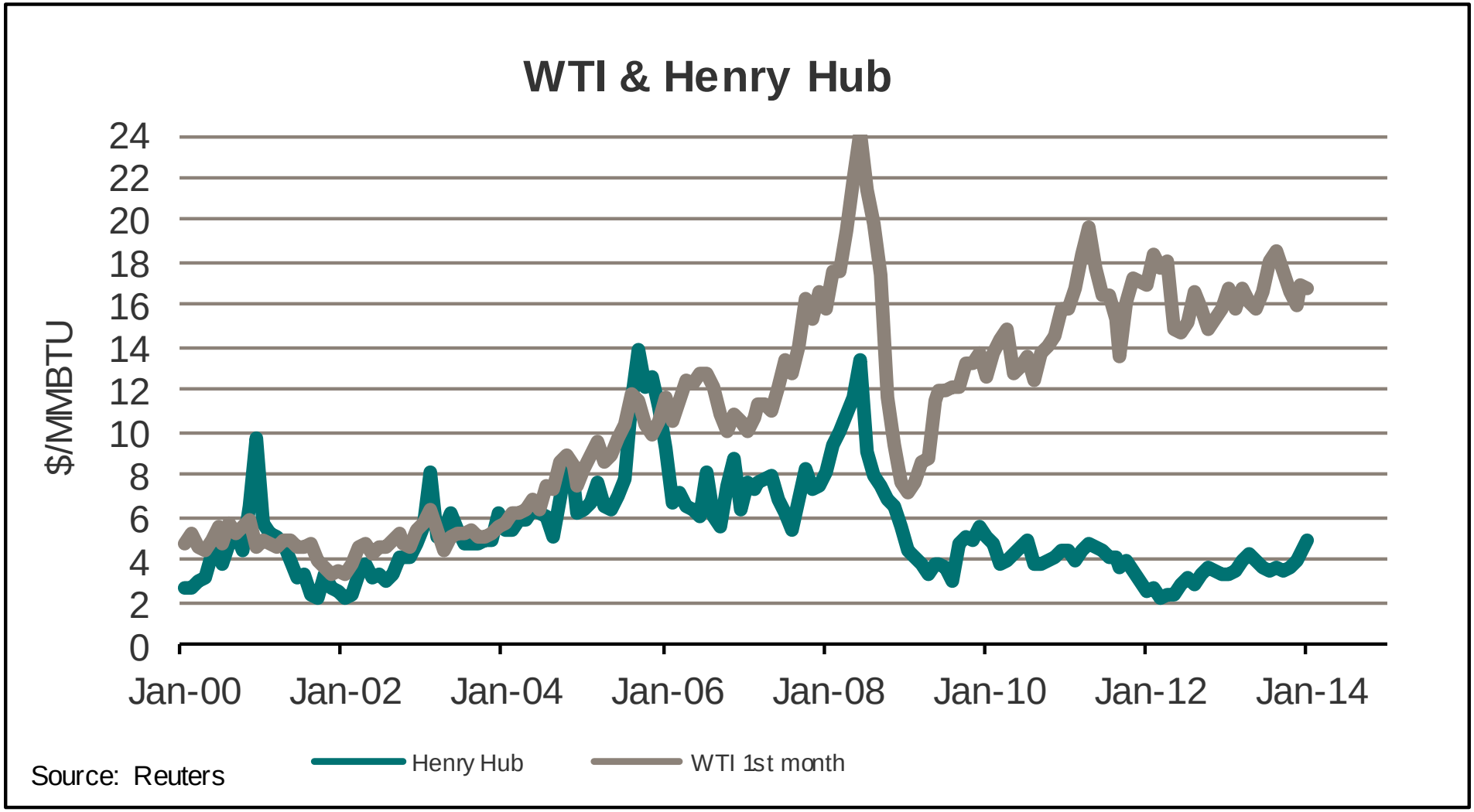
Natural Gas Price Relations



Source: Reuters

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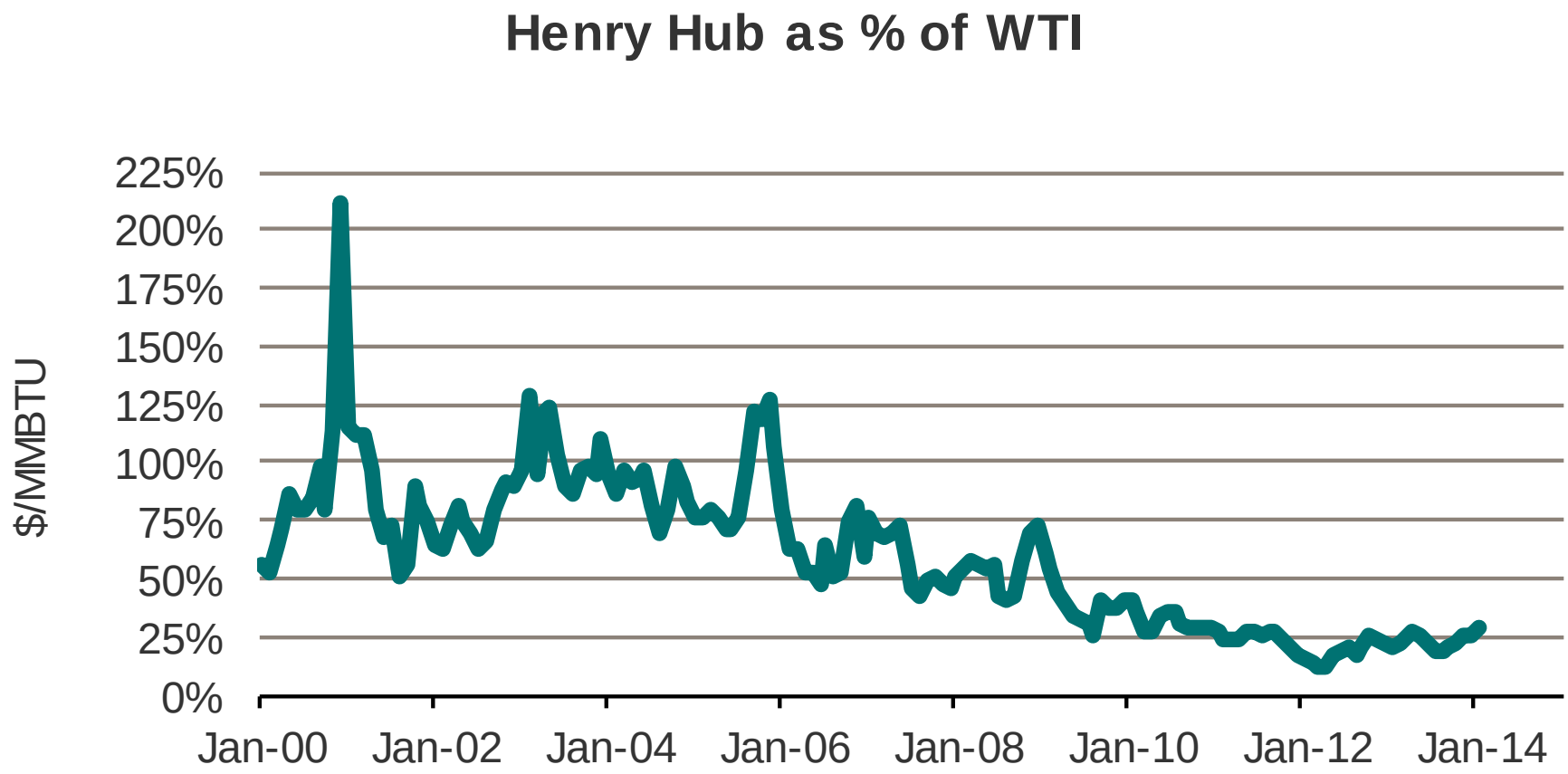
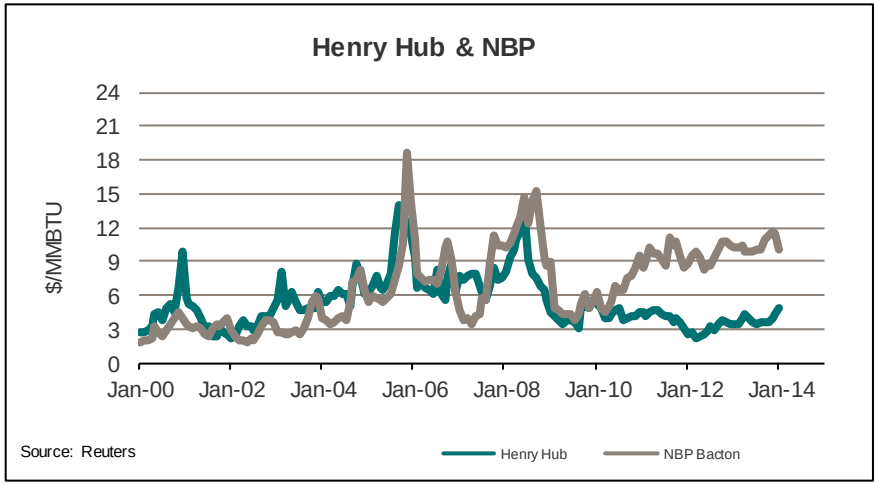
Natural Gas Price Relations

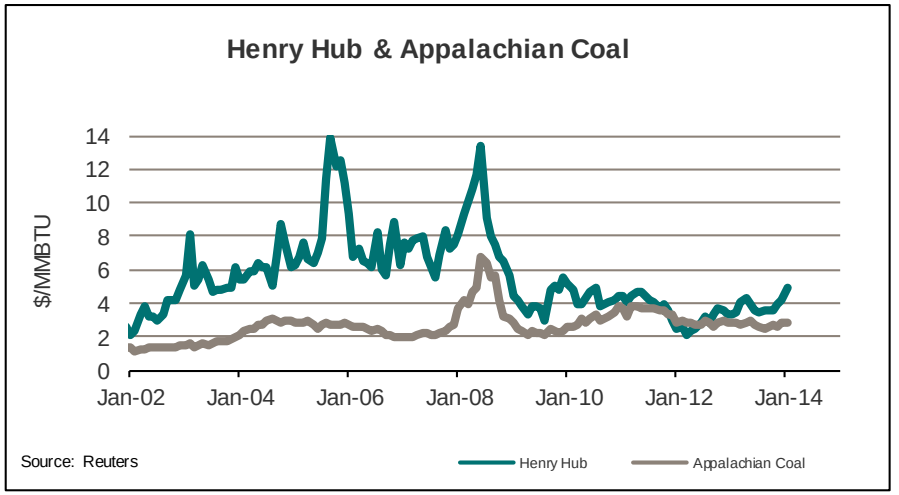


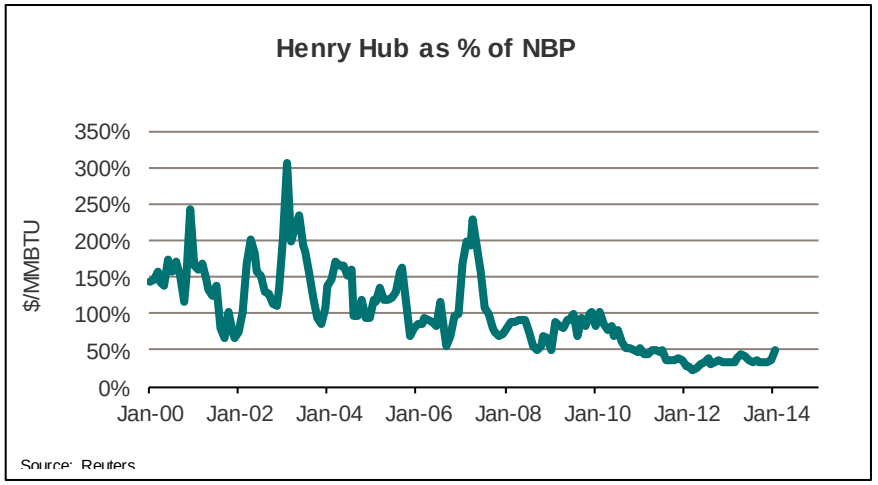
Source: Reuters

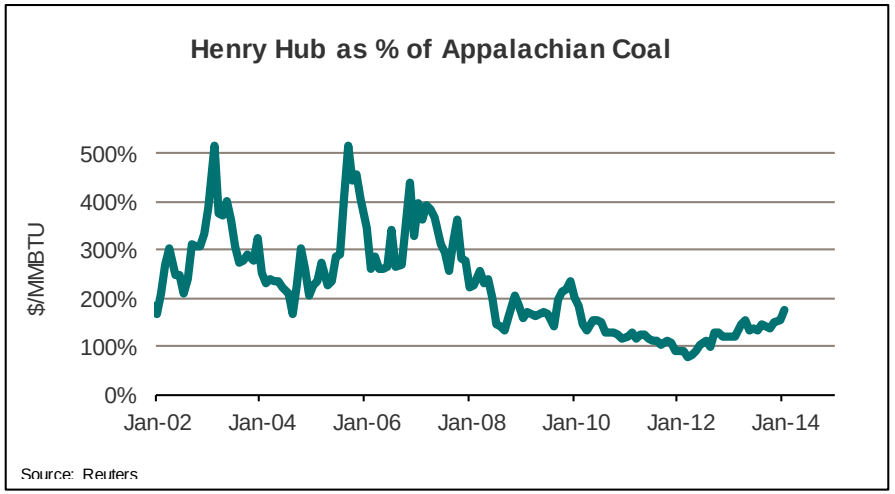
DNB MARKETS

Natural Gas Price Relations









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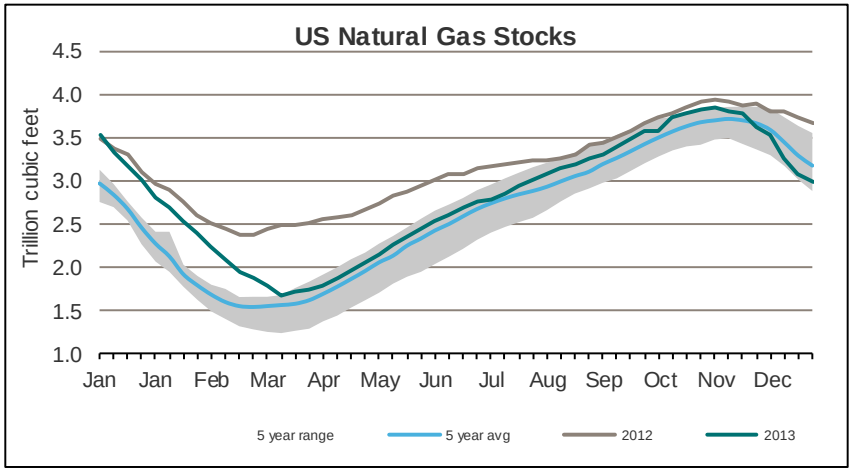
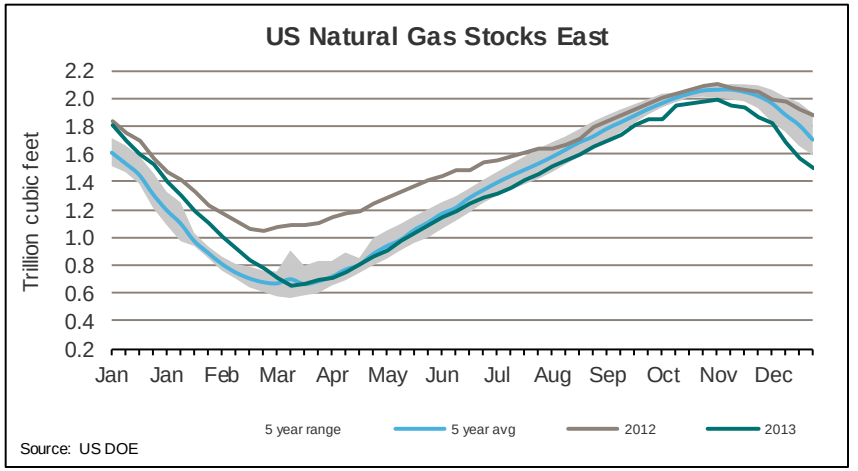
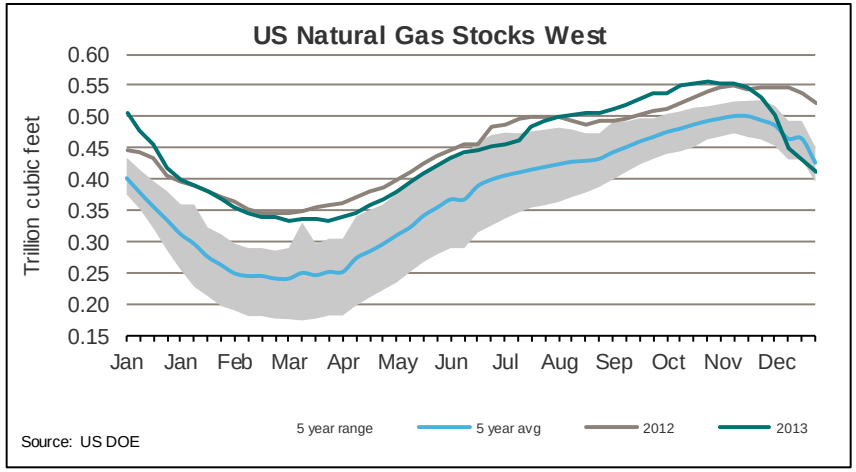
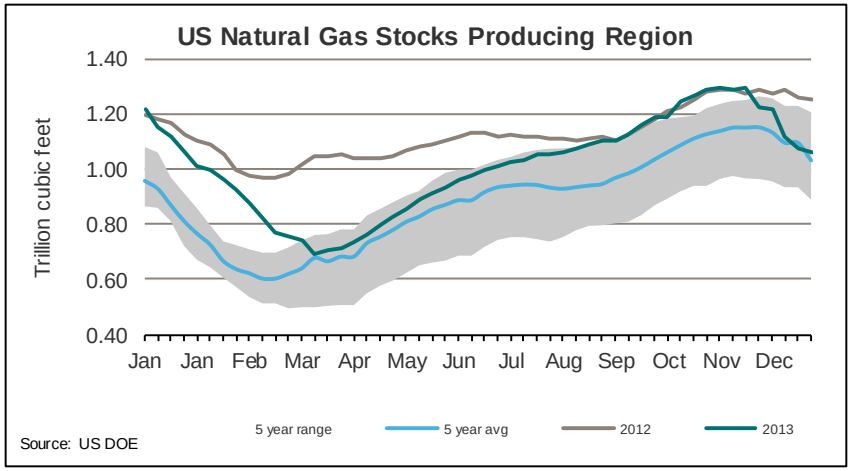
US Natural Gas Stocks – Weekly Reporting









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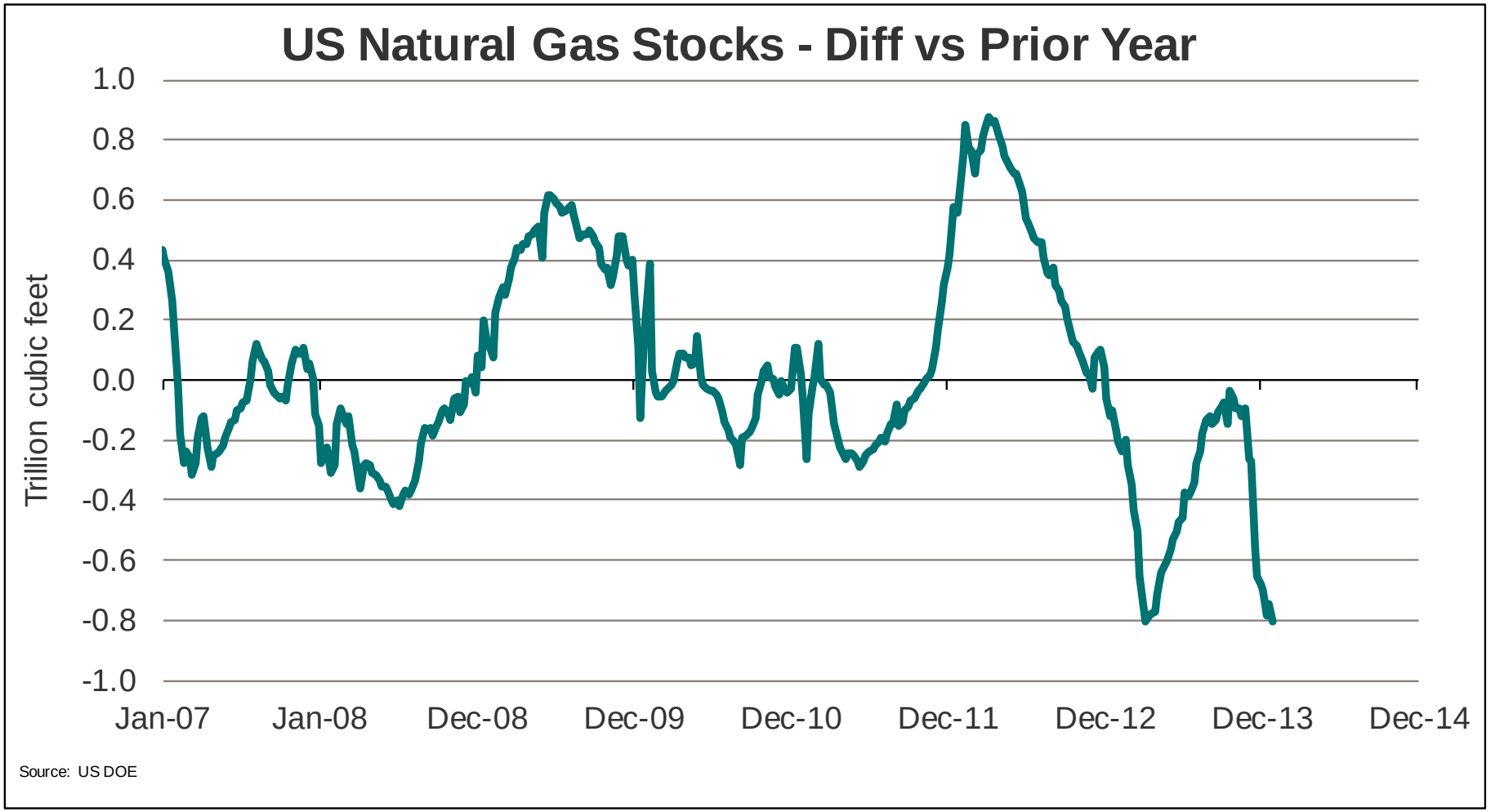

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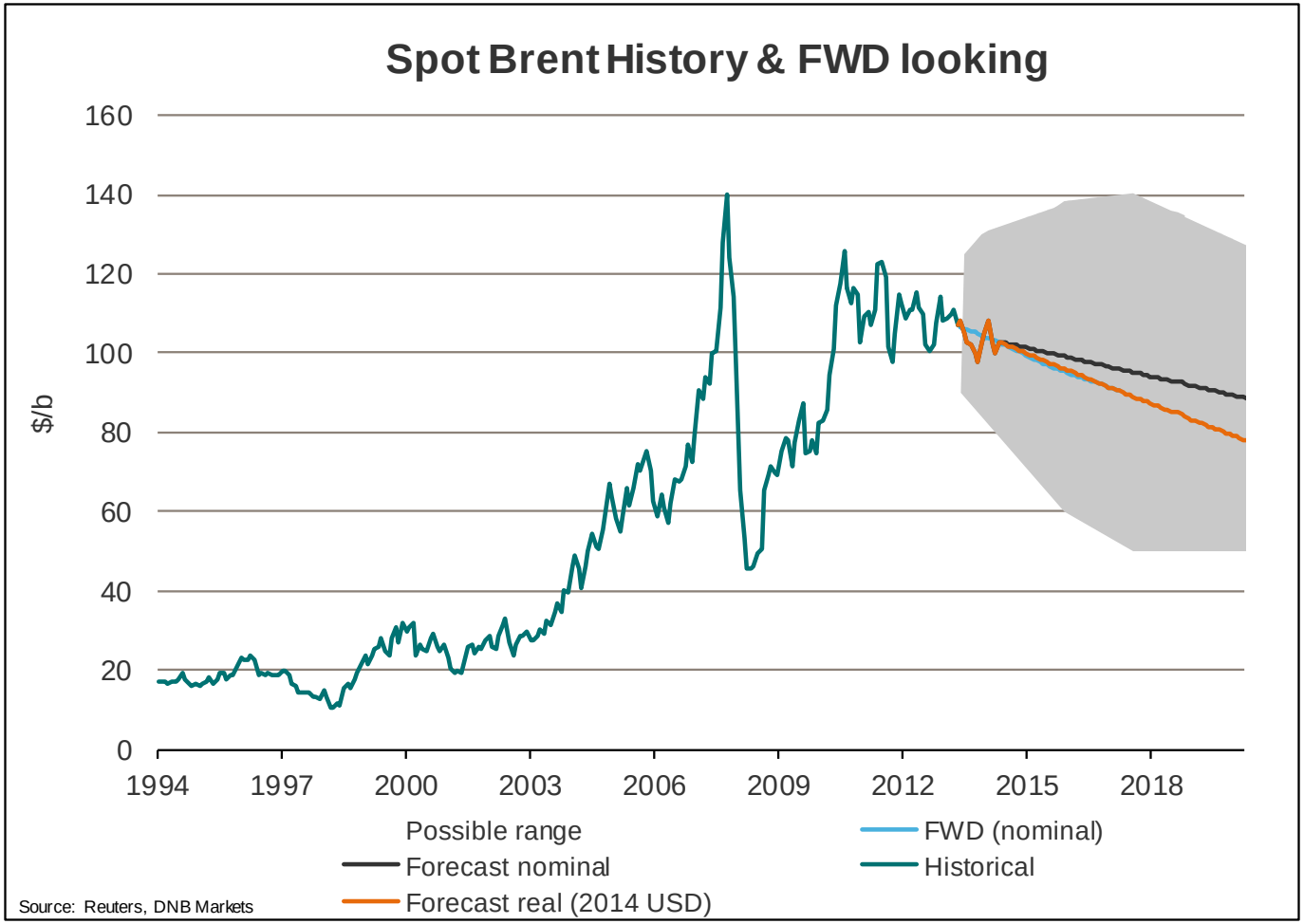
Long Term Oil Price Forecast

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

	Historical Nominal $/b	Historical Real (2012) $/b
2001	24.4	31.7
2002	25.0	31.9
2003	28.8	36.0
2004	38.3	46.5
2005	54.5	64.1
2006	65.1	74.2
2007	72.4	80.2
2008	97.3	103.7
2009	61.7	66.0
2010	79.5	83.7
2011	111.3	113.6
2012	111.7	111.7
2013	108.7	108.7
	Forecast Nominal $/b	**Forecast Real (2014) $/b**
Q1-14	105.0	105.0
Q2-14	100.0	100.0
Q3-14	104.0	104.0
Q4-14	102.0	102.0
2014	102	102
2015	100	99
2016	98	95
2017	96	91
2018	94	87
2019	92	84
2020	90	80



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