



JODI DATA: MAKING OIL MARKET ANALYSIS BETTER

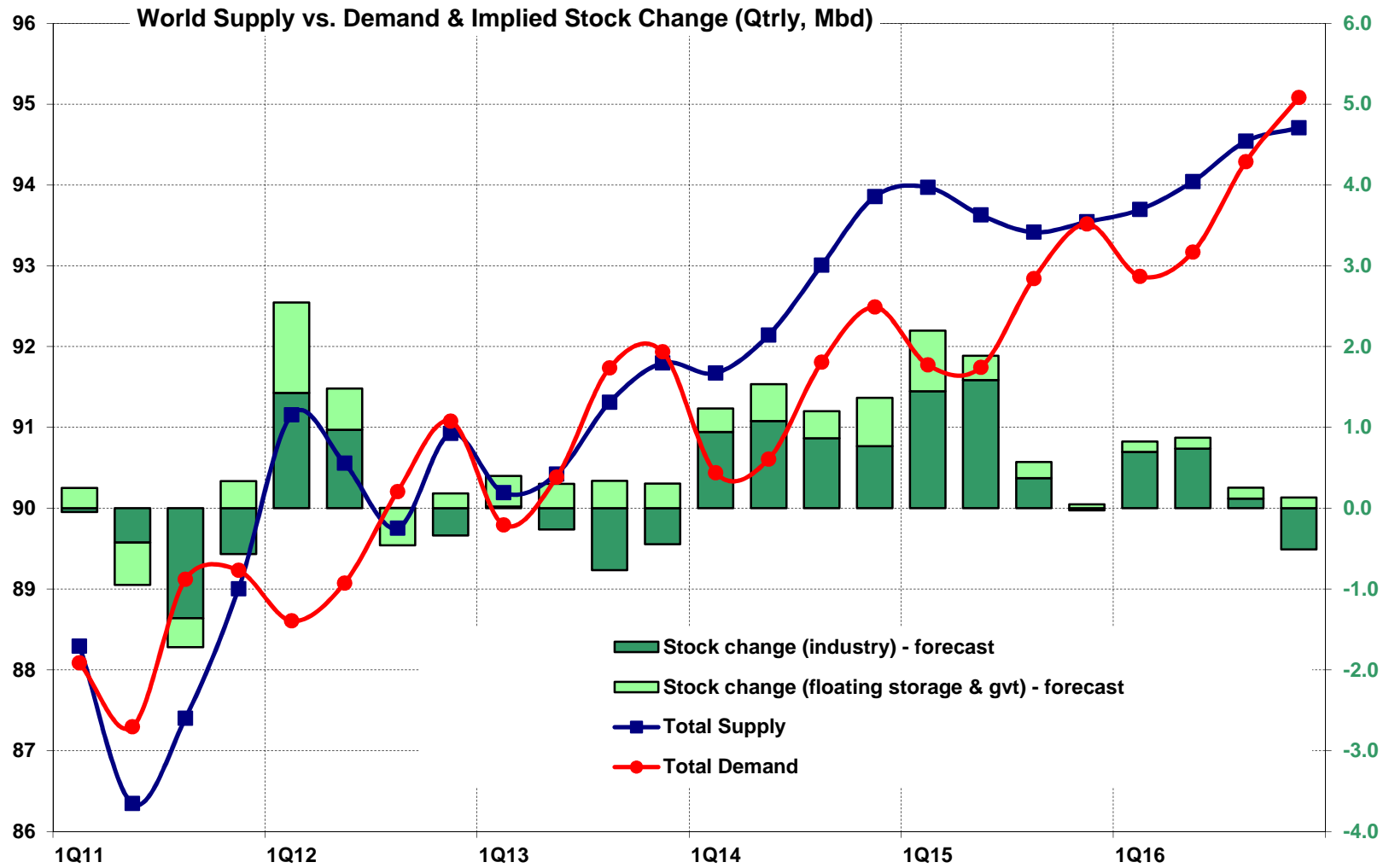
Christophe Barret
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1st JODI Data User Seminar - Geneva Switzerland, June 11th, 2015

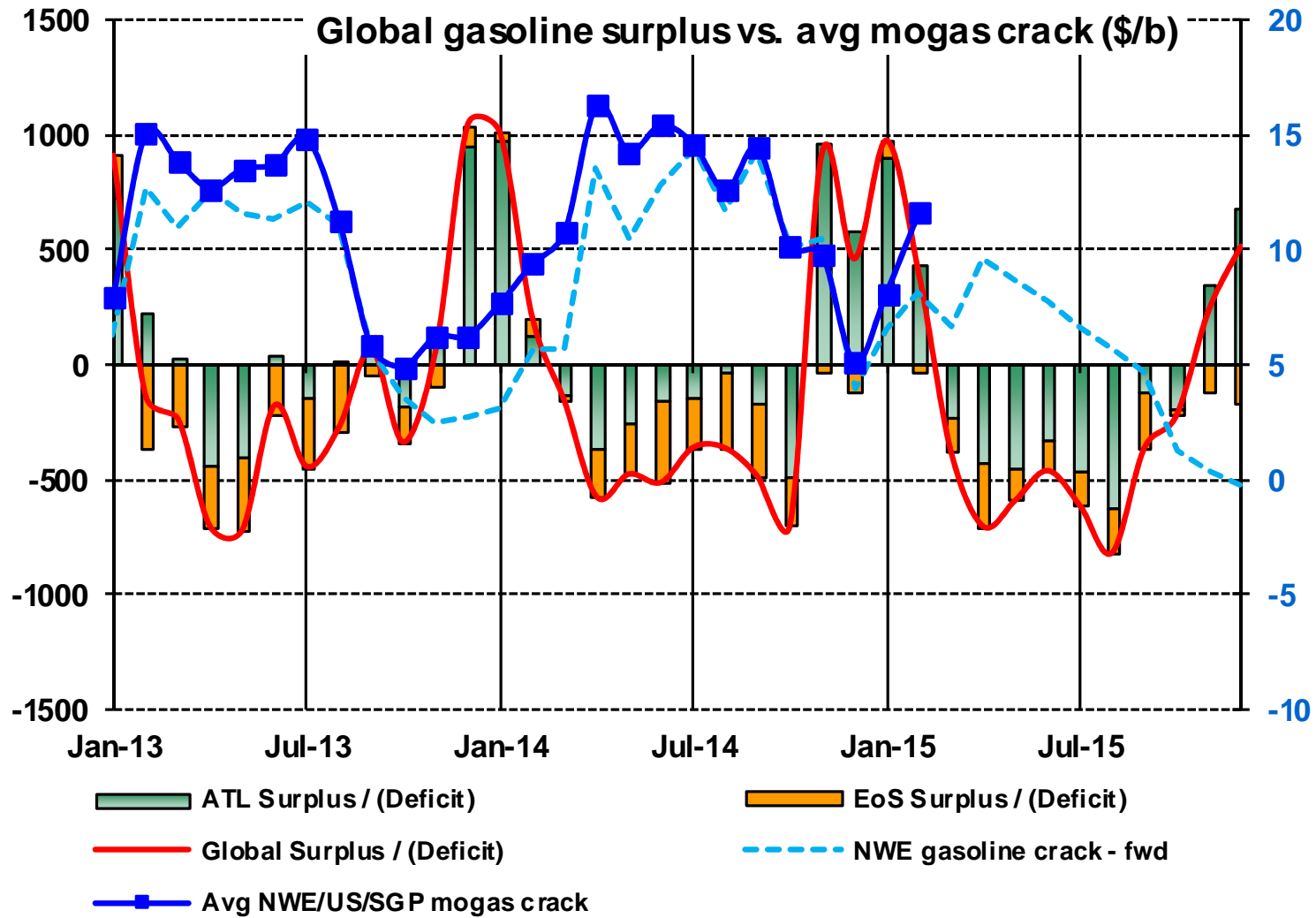
ANALYST JOB = BUILD QUARTERLY S/D

07-Apr-15 Mb/d	2014	2015	2016	2015				2016				Chng	Chng
				1Q15	2Q15	3Q15	4Q15	1Q16	2Q16	3Q16	4Q16	15/14	16/15
DEMAND													
North America	23.2	23.5	23.8	23.3	23.2	23.6	23.8	23.5	23.6	23.8	24.1	0.3	0.3
<i>of which US</i>	19.0	19.3	19.6	19.2	19.0	19.4	19.7	19.4	19.5	19.6	20.0	0.3	0.3
Europe	14.1	14.1	14.1	13.9	14.0	14.4	14.1	13.8	13.9	14.4	14.1	0.0	0.0
Asia	30.3	30.9	31.6	31.2	30.6	30.3	31.5	31.8	31.3	31.0	32.2	0.6	0.6
<i>of which China</i>	10.8	11.2	11.6	10.8	11.1	11.3	11.5	11.2	11.5	11.6	11.9	0.4	0.4
Others	23.7	24.0	24.5	23.4	23.9	24.5	24.0	23.7	24.3	25.1	24.6	0.3	0.5
Total Demand	91.3	92.5	93.9	91.8	91.8	92.8	93.5	92.9	93.2	94.3	95.1	1.1	1.4
SUPPLY													
North America	19.7	20.3	20.6	20.6	20.1	20.1	20.2	20.4	20.5	20.7	21.0	0.5	0.4
North Sea	2.9	2.9	2.8	3.0	2.9	2.7	2.9	2.9	2.7	2.6	2.8	0.0	-0.1
FSU	13.9	13.8	13.6	14.0	13.8	13.7	13.7	13.7	13.6	13.6	13.5	-0.1	-0.2
Non-OPEC Africa *	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	0.0	0.0
Other non-OPEC (incl. proc gains & OPEC NGLs)	23.5	23.8	24.0	23.7	23.8	23.8	23.9	24.0	23.9	24.0	24.1	0.3	0.2
Total Non-OPEC + OPEC NGLs	62.2	62.9	63.2	63.5	62.7	62.5	62.9	63.1	63.0	63.2	63.6	0.7	0.3
OPEC Crude *	30.4	30.7	31.0	30.5	30.9	30.9	30.6	30.6	31.1	31.4	31.1	0.3	0.3
Call on OPEC Crude & Stks	29.1	29.6	30.6	28.3	29.1	30.3	30.6	29.7	30.2	31.1	31.5	0.5	1.1
Total Supply	92.7	93.6	94.2	94.0	93.6	93.4	93.5	93.7	94.0	94.5	94.7	1.0	0.6
Change World Stocks (Mbd)	1.3	1.1	0.4	2.2	1.9	0.6	0.0	0.8	0.9	0.3	-0.4		
Government stock change	0.4	0.3	0.1	0.7	0.3	0.2	0.1	0.1	0.1	0.1	0.1		
OECD	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.0		
China Crude SPR	0.3	0.3	0.1	0.7	0.3	0.1	0.0	0.1	0.1	0.1	0.1		
Other non-OECD non-China	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1		
Industry stock change	0.9	0.8	0.3	1.4	1.6	0.4	0.0	0.7	0.7	0.1	-0.5		
OECD	0.4	0.3	0.1	0.5	0.6	0.2	0.0	0.2	0.2	0.0	-0.1		
Non-OECD	0.5	0.5	0.2	0.9	0.9	0.2	0.0	0.5	0.5	0.1	-0.4		
Floating storage stock change	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
OECD Days Stock Cover	59.6	62.6	63.7	61.1	63.5	63.1	62.7	63.4	64.6	63.8	63.0	3.0	1.1
Deseasonalized Cover	59.6	62.6	63.7	61.8	62.5	62.6	63.6	64.1	63.6	63.3	63.9	3.0	1.1

AND LOOK AT GLOBAL SUPPLY / DEMAND AND STOCKS



BUT ALSO AT MORE PRECISE S/D - GASOLINE BALANCE



LOOKS SIMPLE .. BUT VERY DIFFICULT TASK!

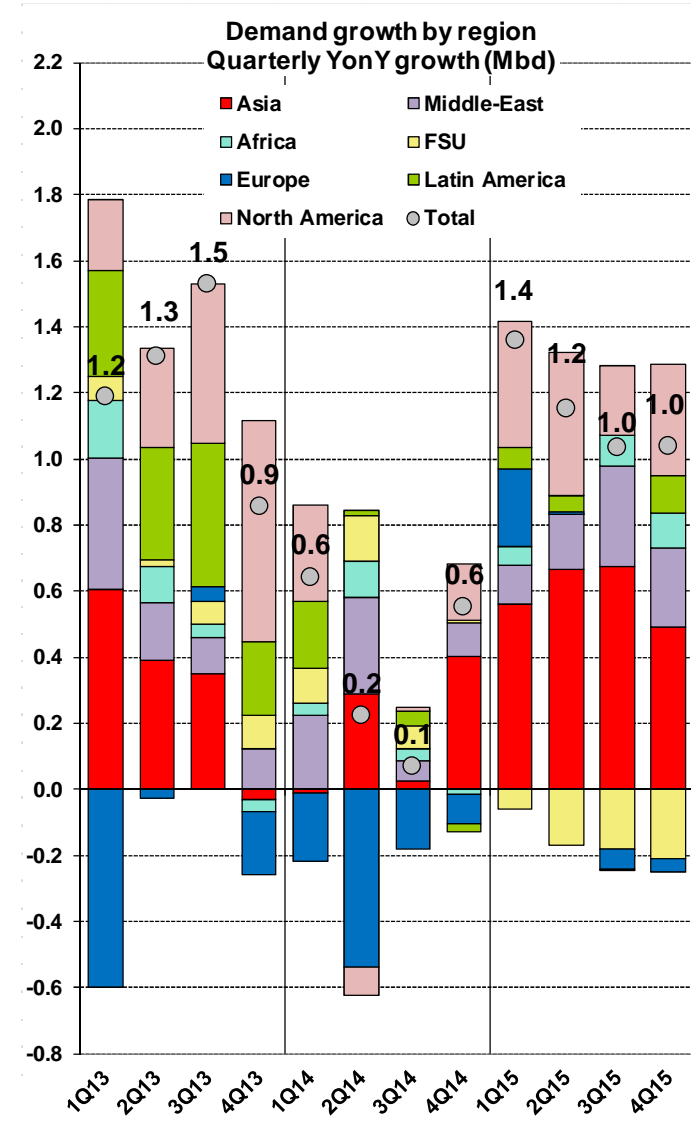
- Need to cover regions at country (or more detailed) levels
- Huge data need – we cover oil in 60 countries for
 - Refining activity: runs, production, yields - by product
 - Demand (main products)
 - Trade (exports and imports)
 - On a monthly basis
- We use IEA data (mostly for OECD countries), JODI data (mostly for non-OECD countries) and domestic data for both OECD and non-OECD countries. For example:
 - For France we use IEA data, CPDP data, 10-days data, Euroilstock data,..
 - For China we use JODI data, NBS data, OGP data,
 - And so one
- JODI data have been a huge help for several countries / regions.
 - In particular for the Middle East but also Latin America, Asia, Africa ..
 - Backbone for the organization of our non-OECD models as domestic sources may be fragmented.

JODI DATA HELPS IMPROVE DEMAND COVERAGE

Total Demand by Regions								
	2013	2014	2015	1Q15	2Q15	3Q15	4Q15	2016
02-Apr-15								
North America	21.15	21.25	21.59	21.40	21.30	21.69	21.96	21.90
Chge Mbd	0.42	0.10	0.34	0.38	0.43	0.21	0.34	0.31
Chge Pct	2.0%	0.5%	1.6%	1.8%	2.1%	1.0%	1.6%	1.5%
Europe	14.32	14.07	14.10	13.86	14.00	14.42	14.13	14.07
Chge Mbd	-0.19	-0.25	0.03	0.24	0.01	-0.06	-0.04	-0.04
Chge Pct	-1.3%	-1.8%	0.2%	1.7%	0.1%	-0.4%	-0.3%	-0.3%
FSU	4.29	4.37	4.21	4.24	4.16	4.30	4.16	4.22
Chge Mbd	0.07	0.08	-0.15	-0.06	-0.17	-0.18	-0.21	0.00
Chge Pct	1.6%	1.9%	-3.5%	-1.3%	-3.9%	-4.1%	-4.8%	0.1%
Asia	30.16	30.33	30.93	31.22	30.64	30.34	31.55	31.56
Chge Mbd	0.33	0.18	0.60	0.56	0.67	0.68	0.49	0.62
Chge Pct	1.1%	0.6%	2.0%	1.8%	2.2%	2.3%	1.6%	2.0%
of which China	10.56	10.80	11.17	10.78	11.14	11.27	11.48	11.58
Chge Mbd	0.32	0.24	0.37	0.44	0.34	0.46	0.25	0.41
Chge Pct	3.2%	2.3%	3.4%	4.2%	3.2%	4.2%	2.2%	3.7%
of which India	3.73	3.83	3.97	4.07	4.08	3.75	3.99	4.07
Chge Mbd	0.07	0.10	0.14	0.20	0.14	0.13	0.10	0.10
Chge Pct	1.8%	2.6%	3.7%	5.0%	3.6%	3.6%	2.6%	2.5%
of which OECD*	8.28	8.03	7.92	8.52	7.57	7.47	8.12	7.84
Chge Mbd	-0.23	-0.25	-0.11	-0.30	-0.02	-0.08	-0.05	-0.08
Chge Pct	-2.7%	-3.0%	-1.4%	-3.4%	-0.3%	-1.0%	-0.6%	-0.9%
of which Others	7.59	7.68	7.88	7.85	7.85	7.85	7.96	8.07
Chge Mbd	0.17	0.09	0.20	0.23	0.20	0.16	0.20	0.19
Chge Pct	2.3%	1.2%	2.6%	3.0%	2.7%	2.1%	2.5%	2.4%
Latin America**	9.16	9.22	9.28	9.14	9.22	9.31	9.45	9.34
Chge Mbd	0.33	0.06	0.06	0.06	0.05	0.00	0.12	0.06
Chge Pct	3.7%	0.6%	0.6%	0.7%	0.5%	0.0%	1.2%	0.7%
Middle East	8.13	8.30	8.54	8.09	8.59	8.92	8.43	8.84
Chge Mbd	0.20	0.17	0.21	0.11	0.16	0.30	0.24	0.33
Chge Pct	2.6%	2.1%	2.5%	1.4%	2.0%	3.5%	2.9%	3.9%
Africa	3.75	3.79	3.86	3.85	3.86	3.87	3.85	3.93
Chge Mbd	0.07	0.04	0.06	0.06	0.00	0.10	0.10	0.08
Chge Pct	1.9%	1.1%	1.7%	1.5%	0.0%	2.5%	2.7%	2.0%
Total	90.97	91.34	92.49	91.80	91.76	92.84	93.53	93.86
Chge Mbd	1.22	0.37	1.15	1.36	1.15	1.04	1.04	1.37
Chge Pct	1.4%	0.4%	1.3%	1.5%	1.3%	1.1%	1.1%	1.5%

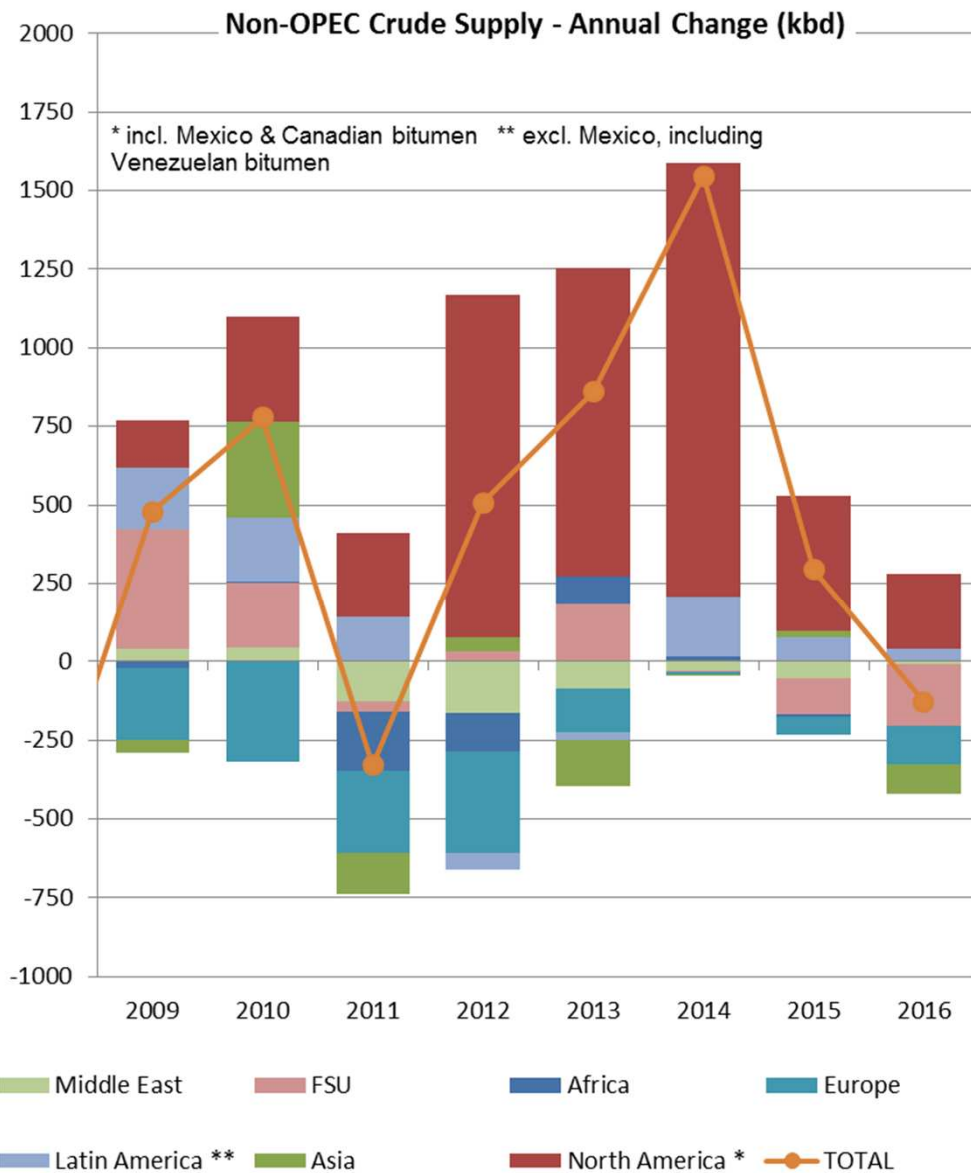
* OECD Asia-Pacific: Japan, South Korea, Australia and New-Zealand

** Latin America includes Mexico



Outlook uses over 60 individual country models, many of which require JODI data.

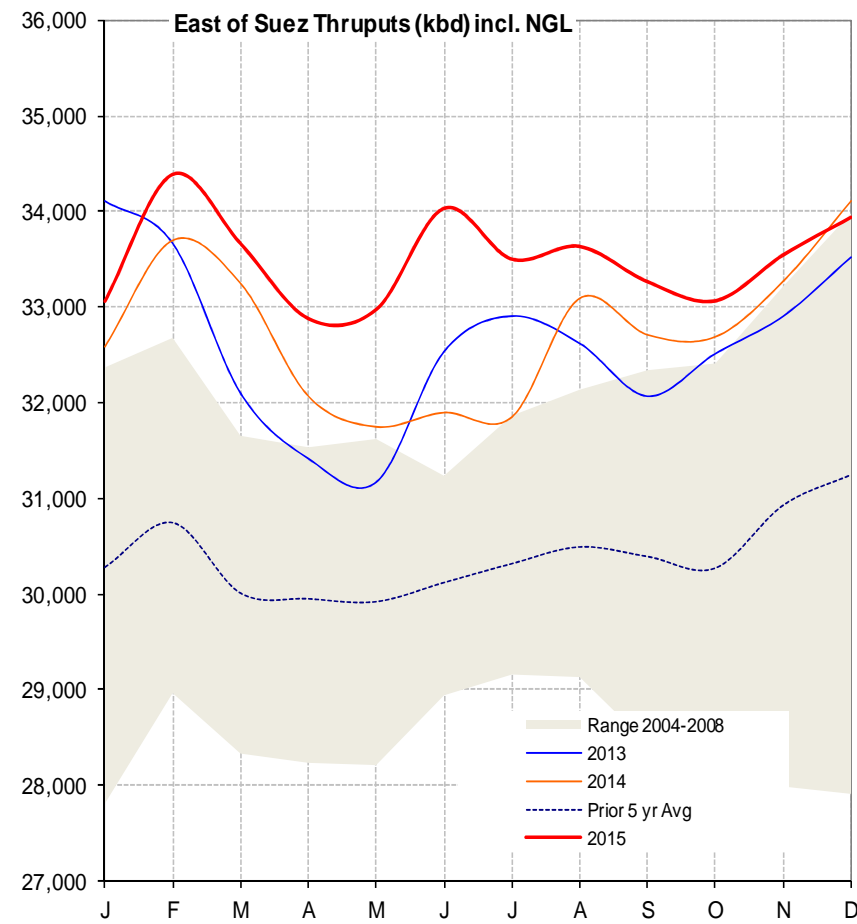
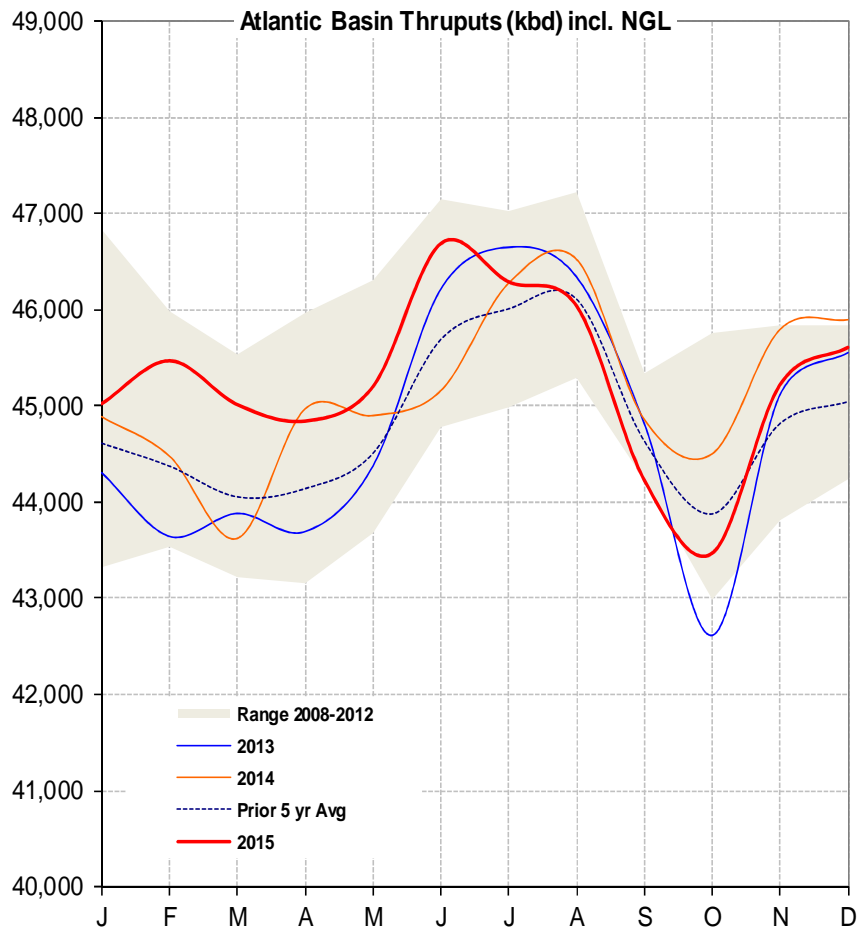
JODI DATA HELPS IMPROVE CRUDE SUPPLY COVERAGE



- JODI data provides additional insight into oil production in most regions (Middle East, FSU, Africa, Latin America, & Asia)
- Data available for NGL production and production of other liquids entering the oil market (bitumen, SCO, GTL, MTBE, etc)... but there may be some problems of consistency in the data definitions
- The growing share of NGLs, condensates, and other non-crude input to oil supply makes this data critical to a clear understanding of the oil market.

JODI DATA HELPS IMPROVE COVERAGE REFINING OUTSIDE THE OECD

- JODI data provides additional insight into refinery activity in most regions
- Data available for NGL use is incomplete but vital to understanding the sector (notably the expanding use of condensate splitters)



SOME REMARKS ON DATA QUALITY

- **Lag in data reception:** ~10% of the key countries used in our models do not show any data since at least June-14 => Lag in data reception >7 months. These countries represented ~7% of world demand growth in 2013.
- **Consistency of data** => a few examples:
 - One country where each parameter for each product suddenly drops ~-40% yoy during several months (no political turmoil) before jumping back to «normal» again.
 - Some countries for which we do not have the equation: $\text{Stock change} = P - D - E + I$.
 - One country for which total products yield surges +15% yoy
 - Such checks can be made at the time of data submission or before the data release
- **When the data is not available, use #NA instead of 0... this would save us a lot of time**
 - Need for screening of the whole database...
and need to put filters in place to identify which are actual 0 values, and which are linked to data unavailability.

CONCLUSIONS

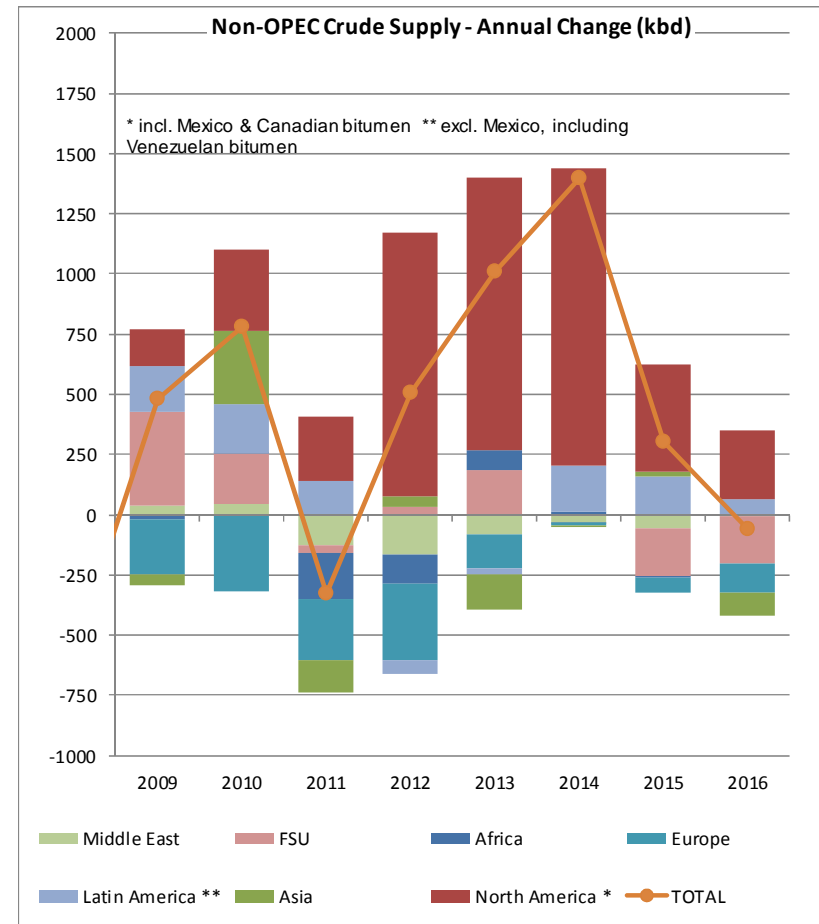
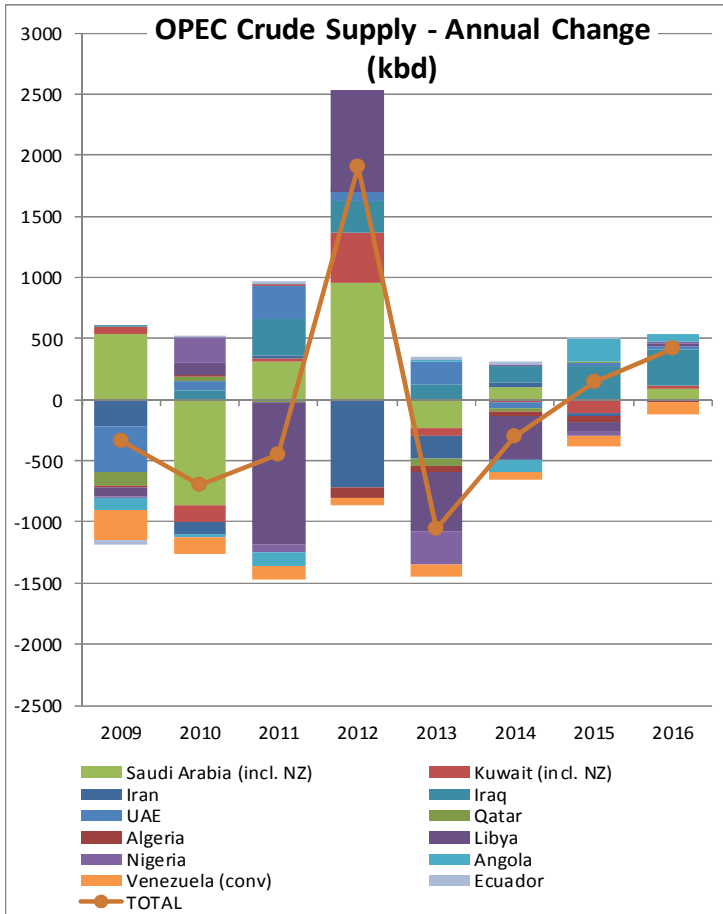
- JODI oil data has significantly improved visibility in oil markets – broader coverage allows better modelling of supply, demand, and refining activities as well as stock change expectations
- More complete data on stocks would be a substantial improvement
- We regularly see issues concerning data quality and consistency that undermine the benefits brought by the overall service. We also see regular improvements in the service.
- In order to alleviate data quality issues, we have built our own filters to identify as quickly as possible new data problems every month.
- We readily share this information with JODI on a monthly basis and raise our concerns with JODI to help improve the data.
- We remain strong supports of the JODI data initiative and applaud all the contributors for the hard work done to make it a success!!!

KEEP UP THE GOOD WORK ... BRAVO!!!

APPENDIX

OPEC/NON OPEC SUPPLY : YR-ON-YR EVOLUTION

JODI DATA HELPS IMPROVE COVERAGE OUTSIDE THE OECD



- JODI data provides additional insight into oil production in most regions (Middle East, FSU, Africa, Latin America, & Asia) for both OPEC and NON-OPEC countries
- Data available for supply of NGLs & other liquids entering oil market (bitumen, SCO, GTL, MTBE, etc): their growing share in supply to the oil market makes this data critical (need coherence in definitions)