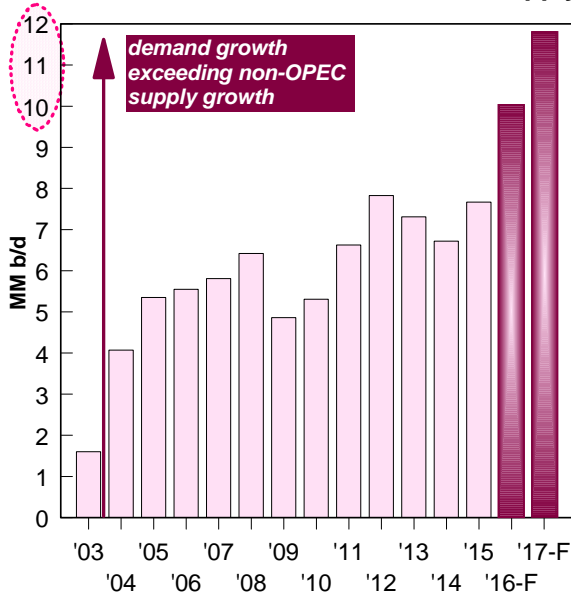




FOR EVERY BALLOON, THERE'S SOMEONE WITH A PIN

In the wake of OPEC's deal, it didn't take long (it seemed like nanoseconds, actually) for a number of market watchers to pooh-pooh the arrangement. This is hardly unusual, but that aside there appears to be a handful of specific concerns which we address in the first section of today's report.

Accumulated Gains in Global Oil Demand Vs. Accumulated Gains in Non-OPEC Supply



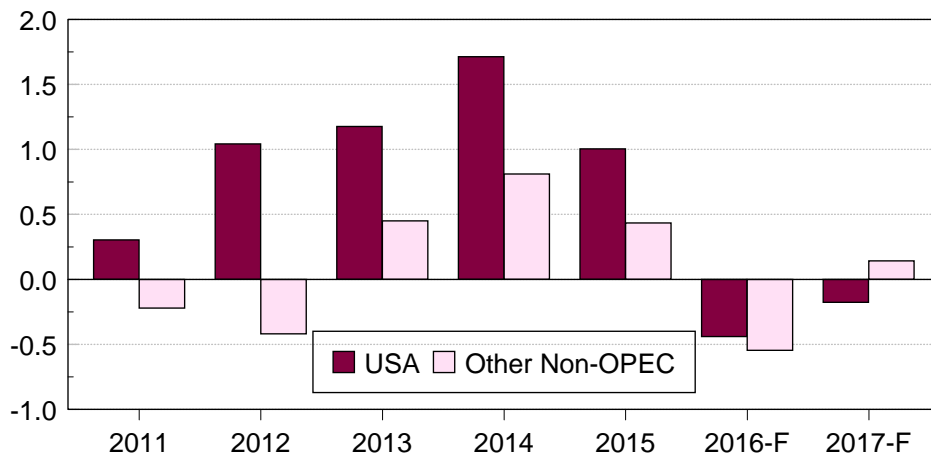
Question 1: Will higher crude prices result in the US and other non-OPEC producers increasing output making a rally self-defeating? Our short answer is "no."

There're a few parts to a more complete answer. First, keep in mind that in the case of the US, the debate before the price crash starting in '14 was whether output peak in 2017 or 2018. Yes, there were pundits who kept insisting domestic production would see a net gain of a million b/d each year, every year for many, many years (no joke). Some basins like the Permian still have good growth prospects, but the overall outlook is for 2017 to see a slight dip versus this year and then see only modest gains thereafter. As to the rest of non-OPEC, well, we saw virtually zero growth since the end of the last decade despite oil prices running north of \$100/barrel before the crash. On a much bigger picture basis, we refer back to our analysis of overall global demand growth versus total non-OPEC supply growth shown below. The trends have been uneven and strongly in favor of demand

growth. This dynamic is why OPEC's spare output capacity has been whittled down dramatically.

Annual Net Change in Non-OPEC Supply

USA versus the rest of non-OPEC, Million barrels/day

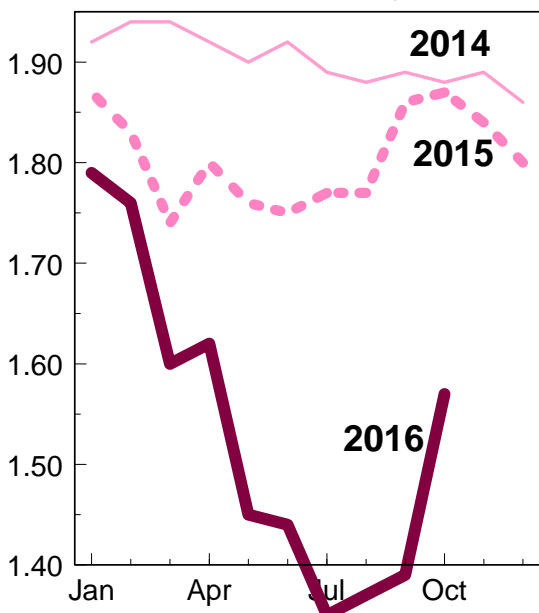


Question 2: Will OPEC members honor their new supply quota? We expect the key gulf countries will scale back production and in our oil balance model planned on there being about 800,000 b/d of actual reductions. Countries like Venezuela may see unplanned reductions owing to operational issues from on-going socio-economic problems, but we expect Saudi Arabia, Kuwait and the UAE to carry most of the proverbial water. Keep in mind that what drove OPEC to this deal largely stemmed from a Saudi push to resuscitate oil income levels. Also keep in mind that the ability of OPEC to “cheat” is vastly different than what we had to deal with in the ‘80s and ‘90s when they were, in fact, sitting on significant volumes of spare output capacity. As to countries increasing production, Nigeria and Libya come to mind. It is certainly possible that both nations could restore shut-in production, but issues that have plagued output for both those countries are still issues (and despite the multi-year tirade of some insisting “it can only get better” – actually, we’ll say that *if* production ever collapses to zero).

	October '16 Output (IEA)	Output Figure Referenced in OPEC Deal	New Quota as of 1/1/17	Production Change from October Output	Production Change from Reference Figure
Saudi Arabia	10.550	10.544	10.058	-0.492	-0.486
Iran	3.720	3.975	3.797	0.077	-0.178
Iraq	4.590	4.561	4.351	-0.239	-0.210
UAE	3.080	3.013	2.874	-0.206	-0.139
Kuwait	2.930	2.838	2.707	-0.223	-0.131
Qatar	0.620	0.648	0.618	-0.002	-0.030
Nigeria	1.570		1.570		
Libya	0.510		0.510		
Algeria	1.120	1.089	1.039	-0.081	-0.050
Venezuela	2.120	2.067	1.972	-0.148	-0.095
Angola	1.520	1.751	1.673	0.153	-0.078
Indonesia	0.740		0.740		
Ecuador	0.560	0.548	0.522	-0.038	-0.026
Gabon	0.200	0.202	0.193	-0.007	-0.009
Total Crude	33.830		32.624	-1.206	-1.432

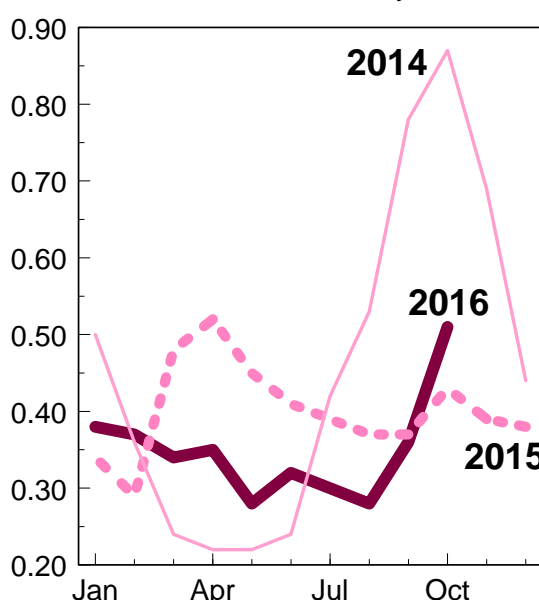
Nigeria's Monthly Oil Production

Million barrels/day



Libya's Monthly Oil Production

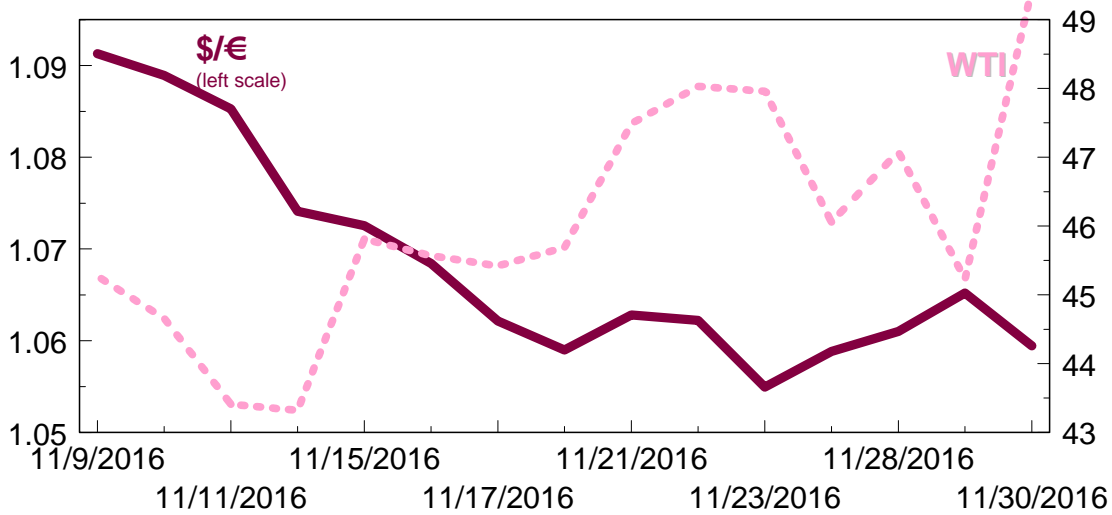
Million barrels/day



Question 3: If the US Dollar continues to strengthen, will it put downward pressure on oil prices? We are of the opinion that in the very short term, macro trades such as the \$/€ can influence crude price direction, but we expect oil balance fundamentals will be the overwhelming influence on crude prices. Changes in oil prices and the \$/€ have an on-again/off-again relationship. The analysis we detail below covers the past three weeks and the correlation coefficient is, well, crapola. When we think about where oil prices will move over the near to medium term, we revert to our supply/demand outlook and the forecasted draw on oil inventories. There is a very strong inverse correlation between oil prices and oil inventory levels, as shown below (it's the basis of our MIKER model). The prospect of OPEC cutting production to or below the 33 million b/d mark should result in significant stock draws before the 2nd half of next year (on a related matter, this portends oil price backwardation).

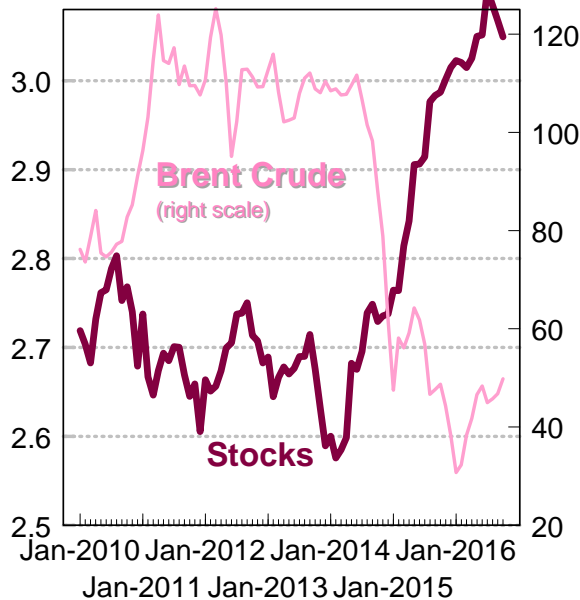
\$/Euro versus WTI Crude

Daily



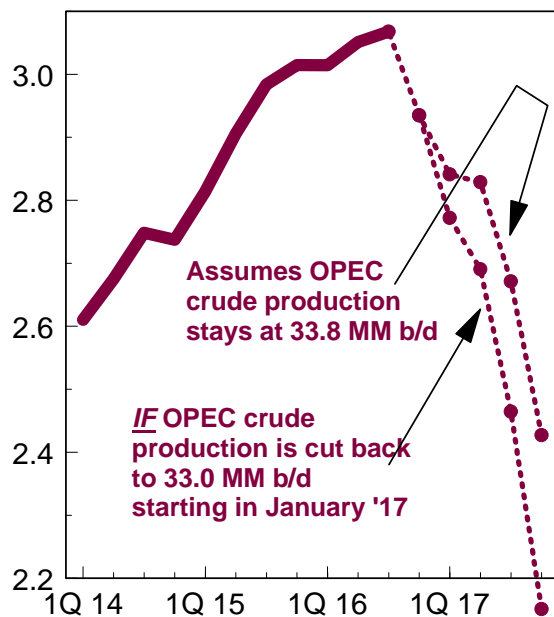
OECD Oil Inventories

Excludes emergency stocks, Billion barrels



OECD Oil Inventories

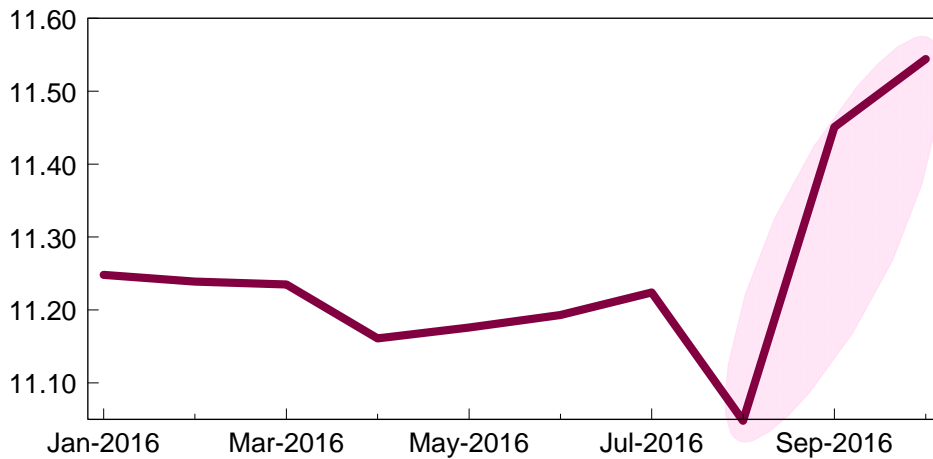
Actual and forecast, Billion barrels



Question 4: Will Russia really cut production? Actually, we think prospects for a cut are moderately high. The data for Russia's monthly oil production saw an unexpected surge of about 300,000 b/d during the past two months as detailed below (that happens to be the volume of pledged cuts). We think the surge was positioning ahead of the OPEC-related deal and the likelihood that its discussion with Saudi Arabia this year would bear fruit. While Russia has historically acted at odds with OPEC (and the Kingdom, for that matter), there does seem to have been a literal meeting of the minds with regard to lifting oil income levels.

Russia's Petroleum Production

Crude and liquids, MM barrels

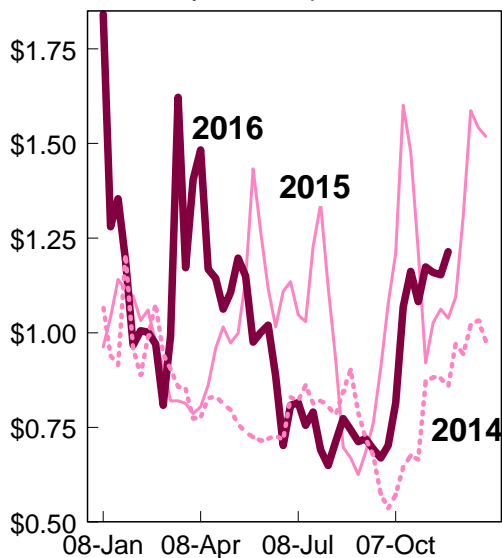


A LAST NOTE: TANKER RATES AND OIL DEMAND GROWTH

We like to gauge tanker rates to move barrels along key routes to help assess underlying oil demand trends. Rates have strengthened materially over the past 8 weeks, and our global demand estimate for October did indeed come in strong. We'll run the math for November in the next two weeks.

Oil Tanker Rates: PG to US Gulf

Weekly, Dollars per Barrel



Oil Tanker Rates: PG to Singapore

Weekly, Dollars per Barrel

