

Northwestern Transportation Center
Business Advisory Council (BAC)

Fuel Price Risk Management

Insulating Your Business in the Current Market Environment

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Bank of America Merrill Lynch Global Commodities

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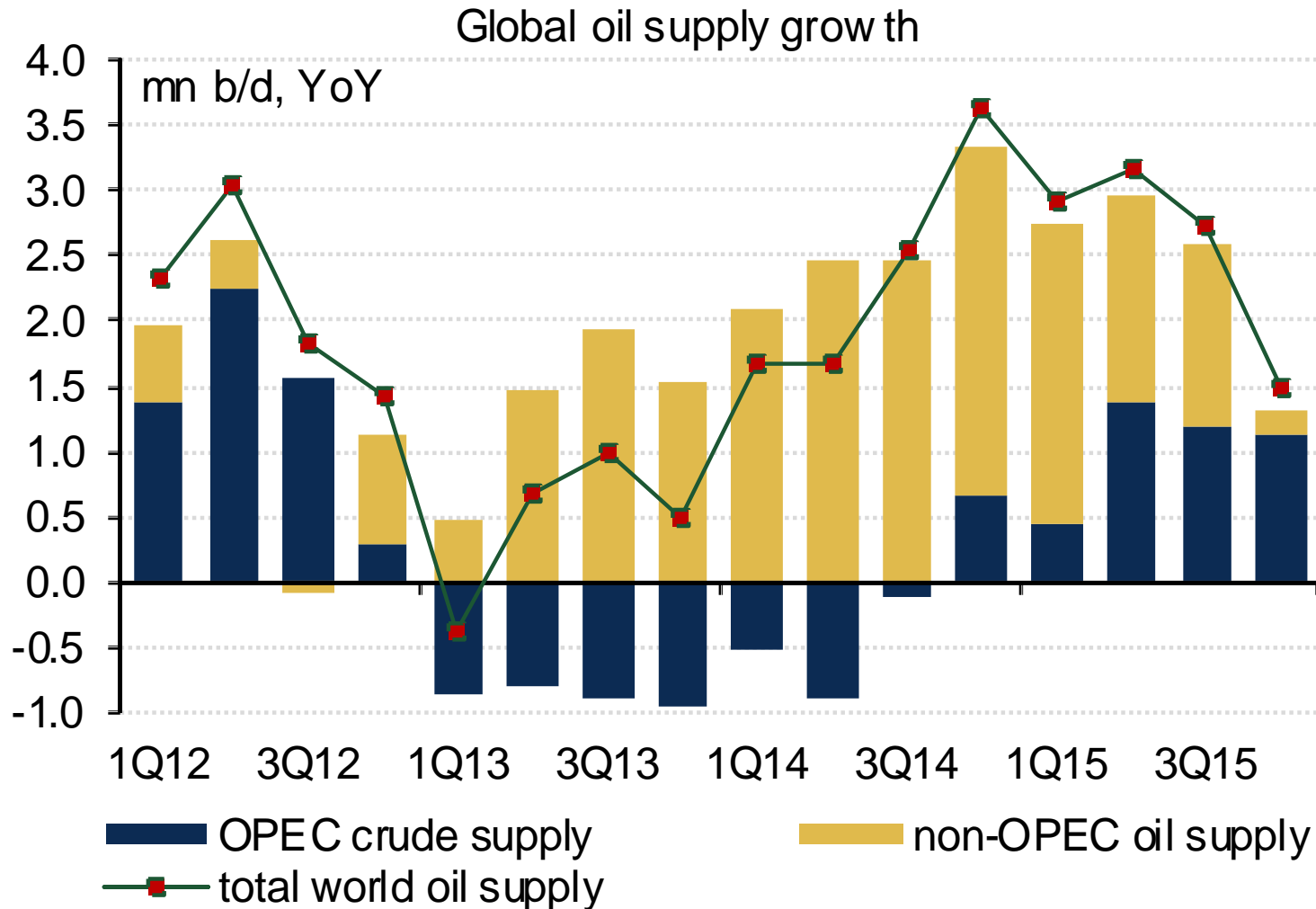
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Market Update

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Market Update

Much of the oil price meltdown can be explained by surging shale and OPEC output

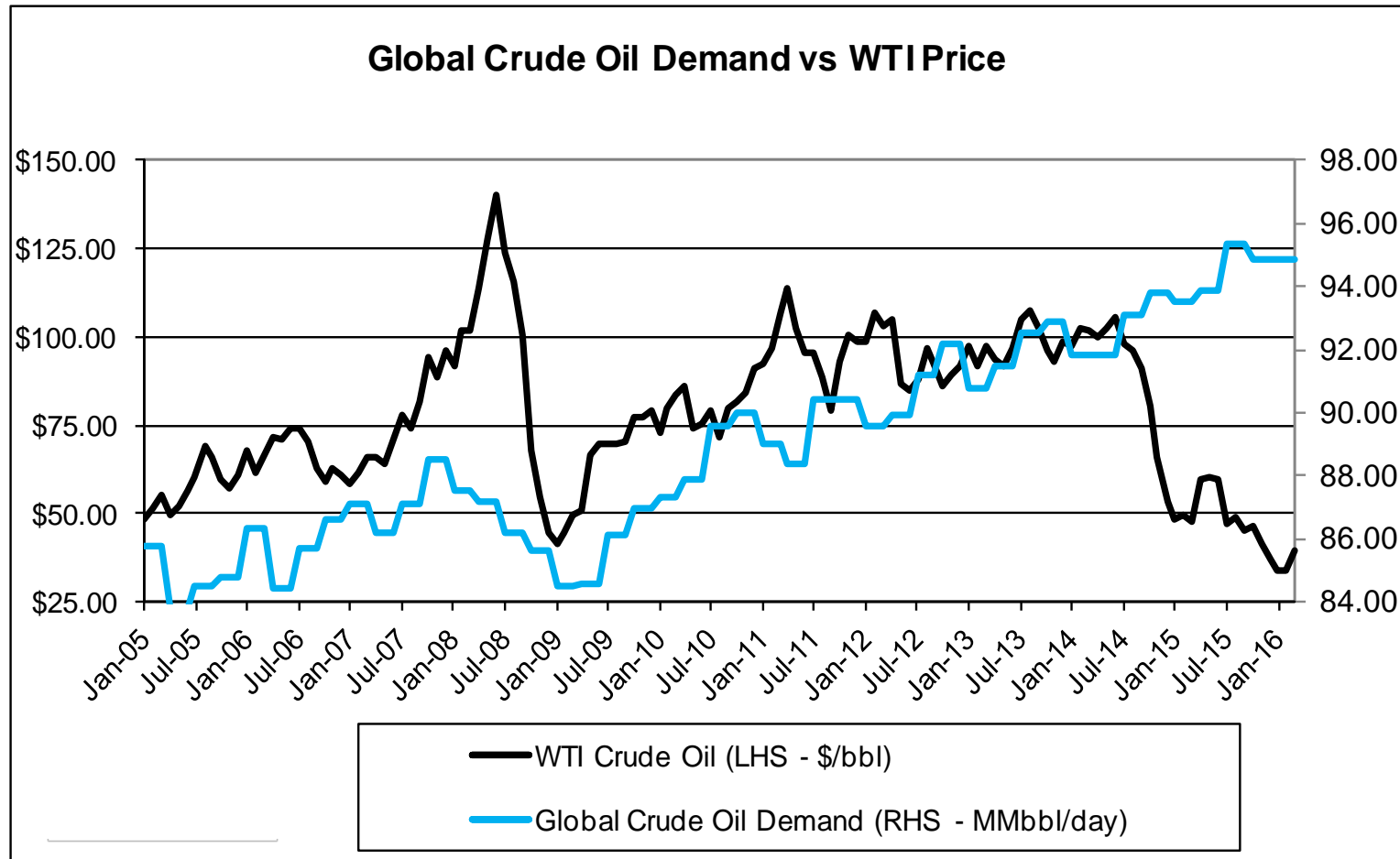


Source: Bloomberg, BofA Merrill Lynch Global Commodities Research

Market Update

Crude Oil Prices - Last time, it was demand

The 78% price drop from \$147 to \$32 during 2008 and 2009 was fueled by falling demand in the wake of the global financial crisis. Daily demand fell 4MM bbl/day (4.5%). This most recent 76% price drop from \$107 to \$26 has occurred while daily demand actually rose 3.5MM bbl/day (3.8%).

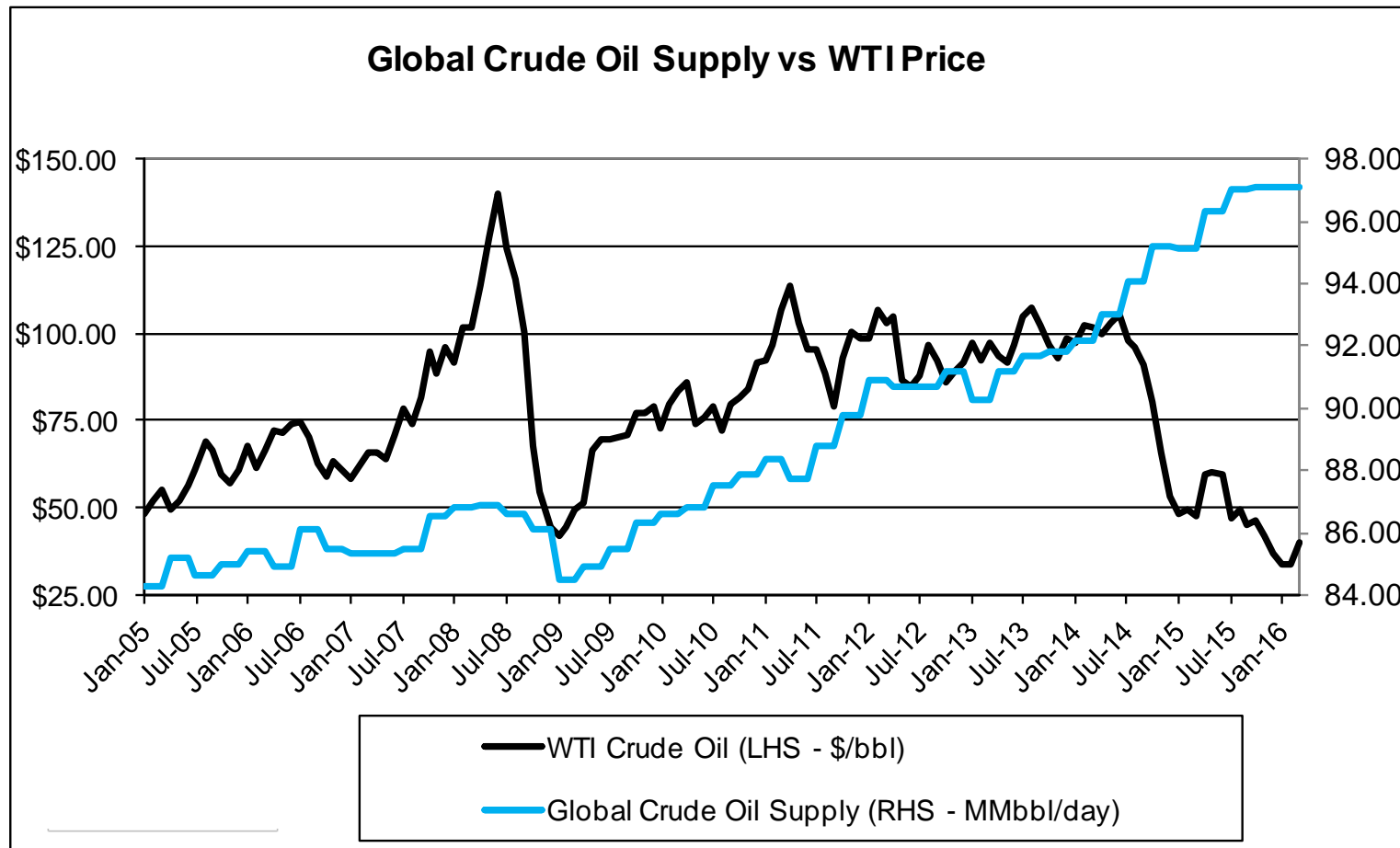


Source: Bloomberg, Merrill Lynch Commodities Inc.

Market Update

This time, it's all about supply

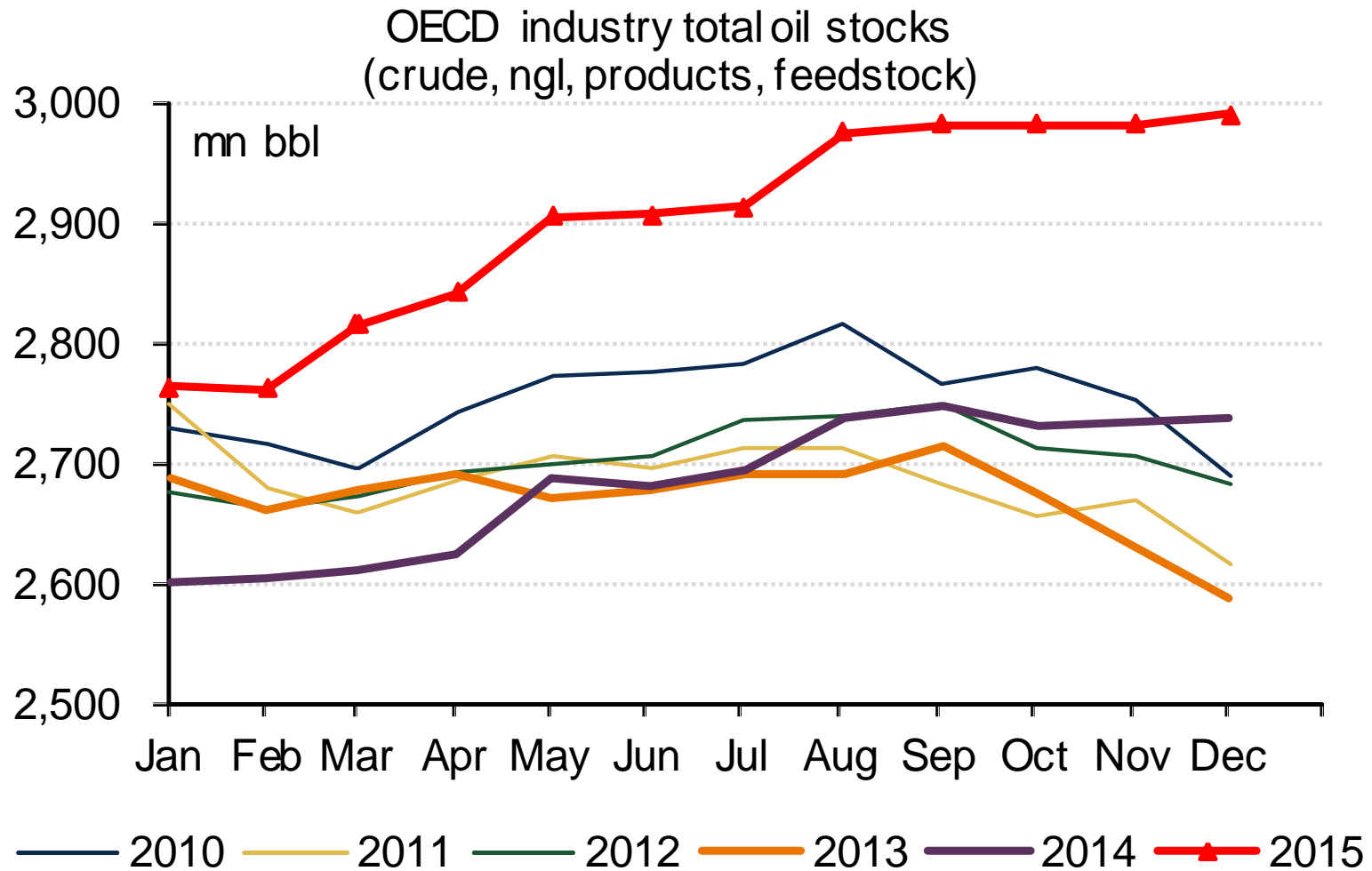
From the Jun14 peak of \$107, prices fell 76% to \$26 as supply grew 4.9MM bbl/day. After the Thanksgiving Day 2014 OPEC meeting, it became evident that Saudi Arabia's goal was to pressure the economics of high cost production and take market share from other Middle East and LATAM producers. They succeeded...but what happens next?



Source: Bloomberg, Merrill Lynch Commodities Inc.

Market Update

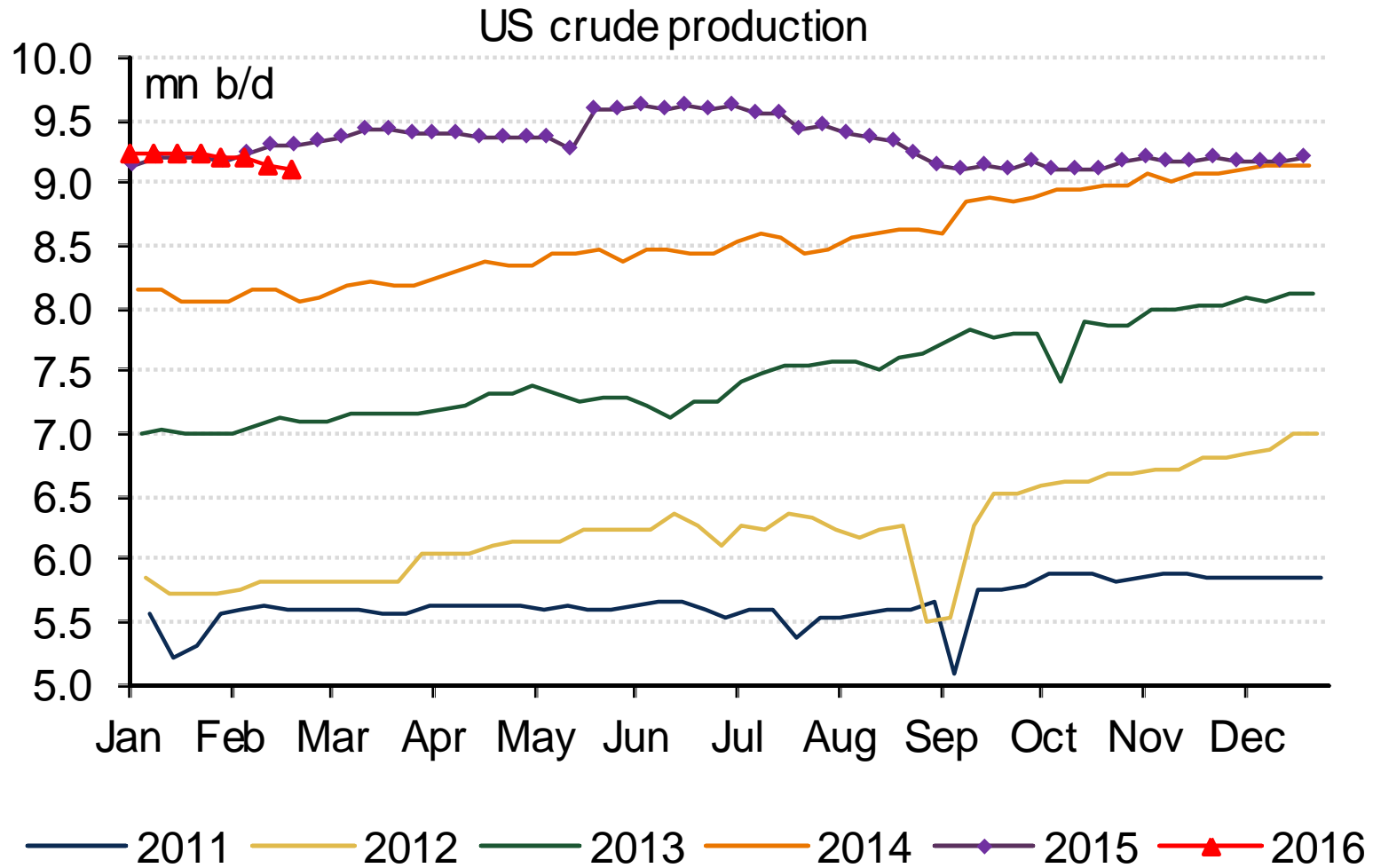
Due to elevated global inventory levels, OPEC is now discussing an oil output freeze



Source: IEA, BofA Merrill Lynch Global Commodities Research

Market Update

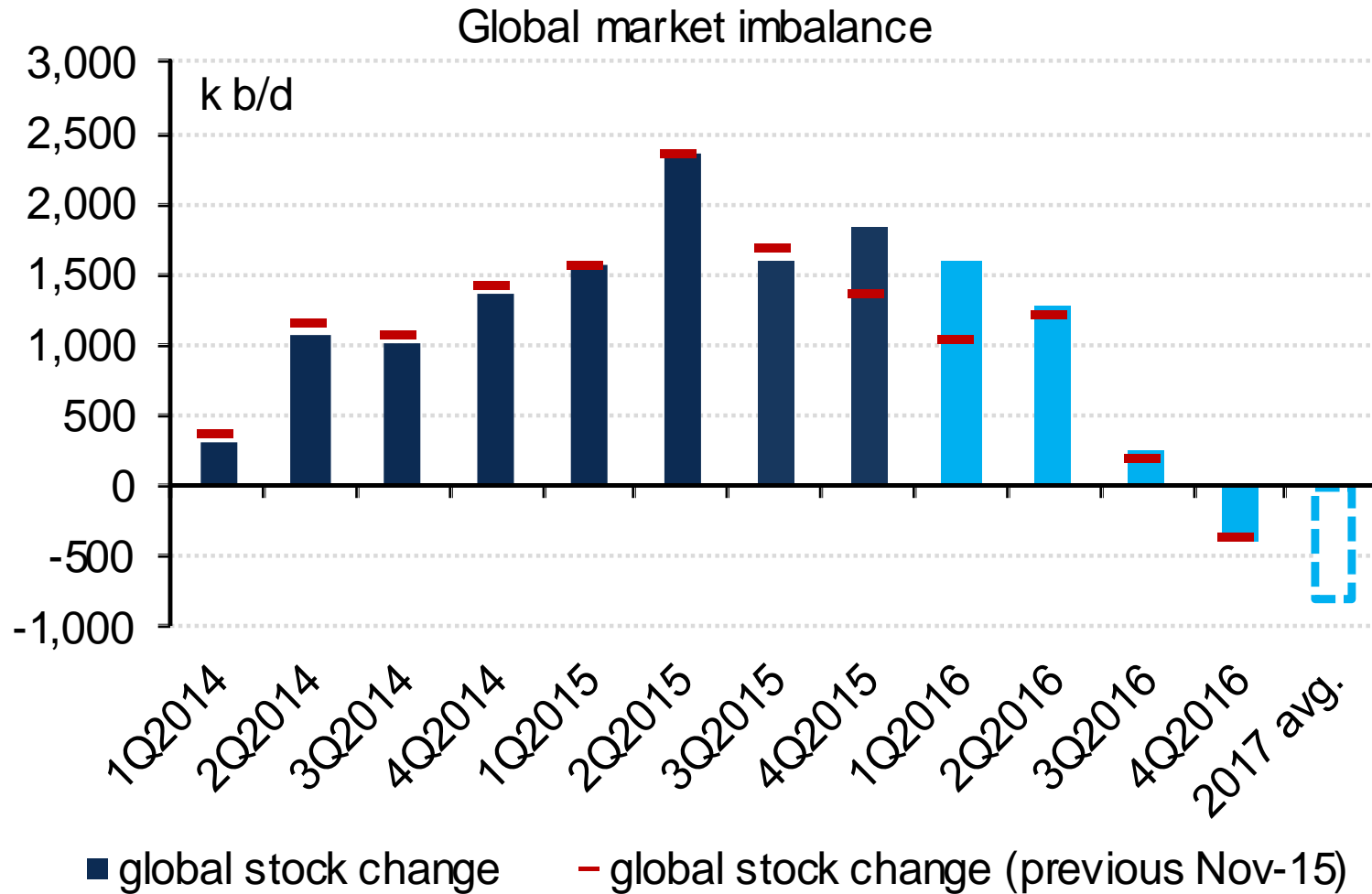
US Crude Production is now showing year over year declines



Source: EIA, BofA Merrill Lynch Global Commodities Research

Market Update

The surplus is coming to an abrupt end by the end of this year...if demand holds



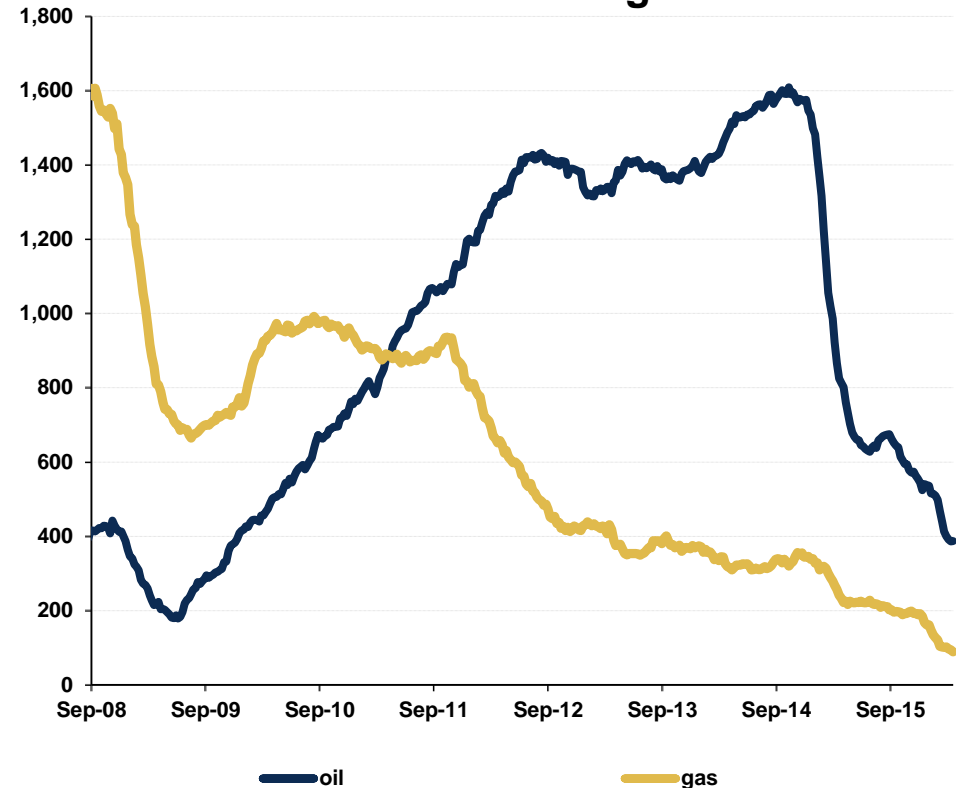
Source: IEA, BofA Merrill Lynch Global Commodities Research

Market Update

Low Prices Have Created Supply and Demand Responses

- Low prices have caused producers to scale back capex as credit liquidity diminishes.
- Uneconomic operations have been shut down, beginning the process of reducing output.
- US oil rig count has collapsed from 1,600 in late 2014 to 387 last week. US shale oil production had risen from around 1MM bbl/day in 2007 to around 5.5MM bbl/day....In 2016, it has dipped back below 5.0MM bbl/day.
- Likewise, cheaper energy has created an increase in demand as consumers purchase larger, less efficient vehicles in the US. Also, as the middle class expands in China and India, an increasing segment of the new middle class population are buying cars.
- OPEC appears to be supportive of an output freeze now that shale production is declining. We expect later this year they would begin to consider an actual production cut if other producers follow the guidelines of output freeze.

US Oil and Gas Rig Count

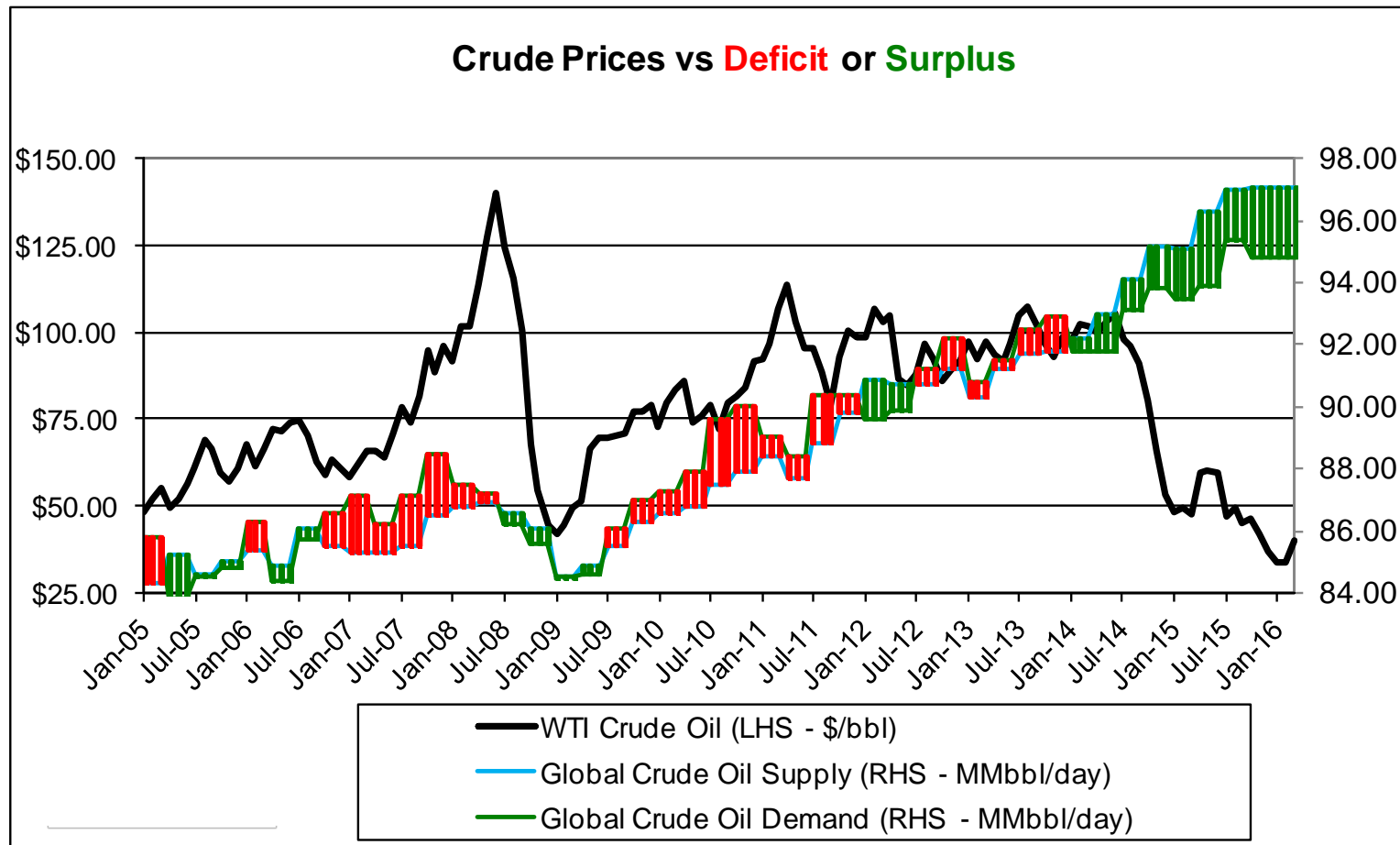


Source: Bloomberg, Merrill Lynch Global Commodities Research

Market Update

The Big Picture, You Have to Look at Supply AND Demand

- Crude oil prices have had their biggest moves when swinging between supply deficit and surplus.
- Hedging can help smooth out this volatility risk as we expect prices to continue higher.

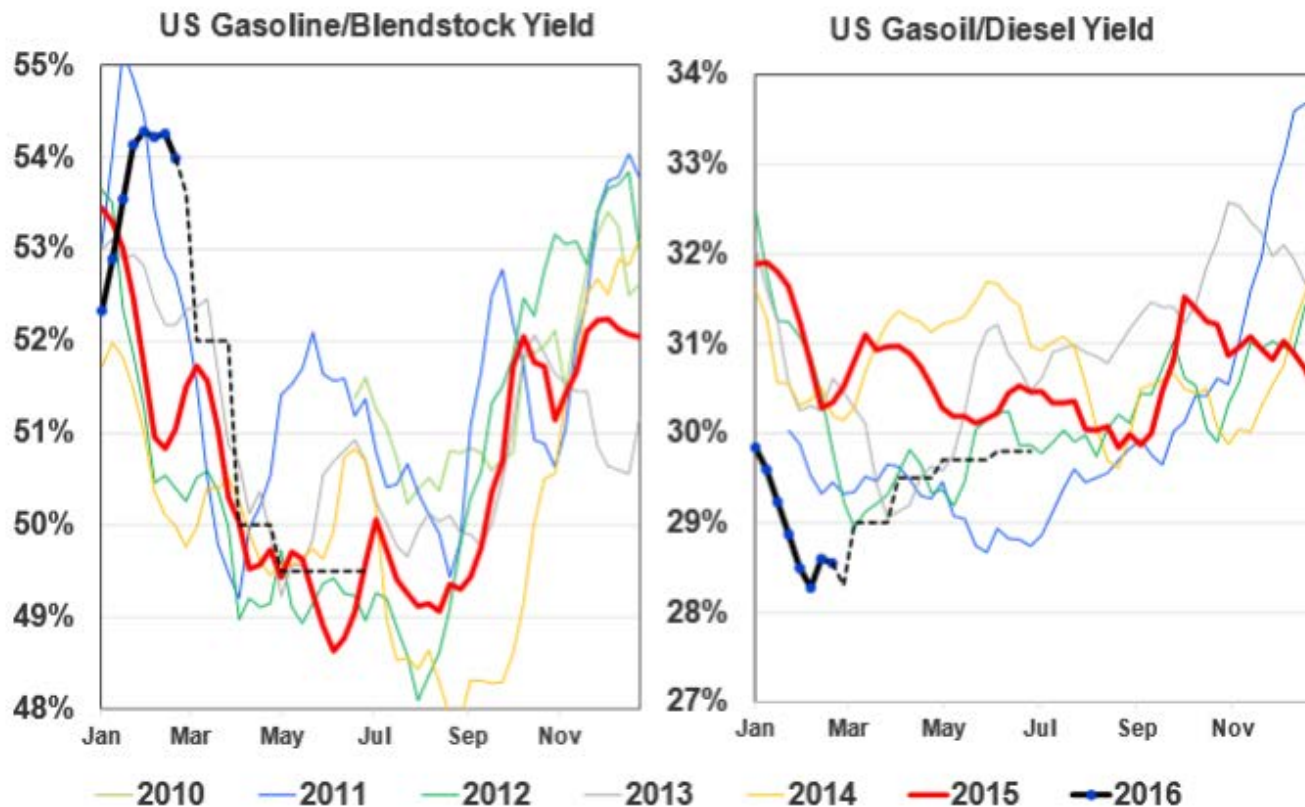


Source: Bloomberg, Merrill Lynch Commodities Inc.

Market Update

Lower Sulfur Specifications Worldwide

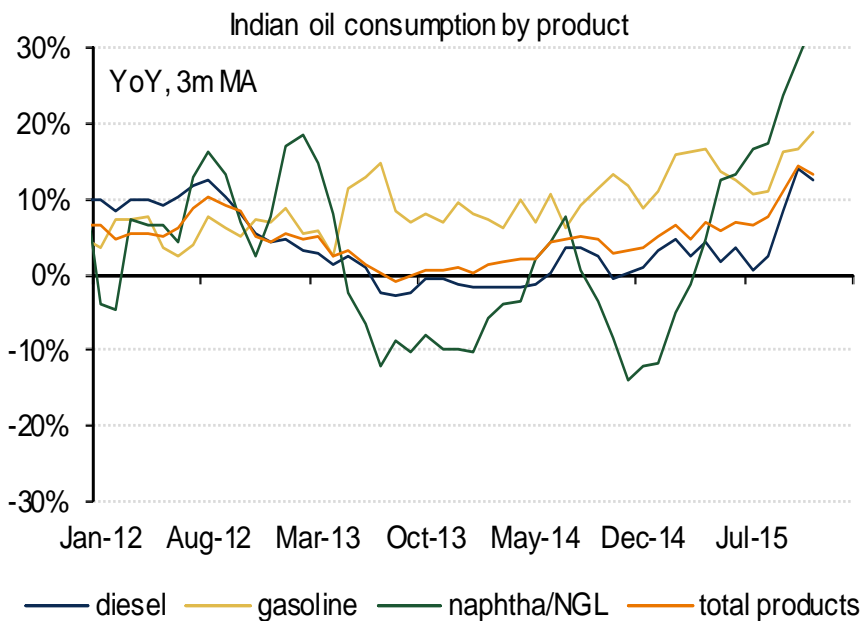
- As the world attempts to reduce emissions, increased scrutiny has been placed on the quality of gasoline and diesel.
- The US transitioned to Ultra Low Sulfur Diesel in 2013 and is in the process of transitioning to Tier 3 Gasoline in 2017. The rest of the world is following.
- These higher specifications result in higher prices due to production difficulties and more expensive refinery inputs (lighter crude slates).
- Due to a lighter crude slate and better refining economics, refiner yield of gasoline relative to distillate has been increasing.



Market Update

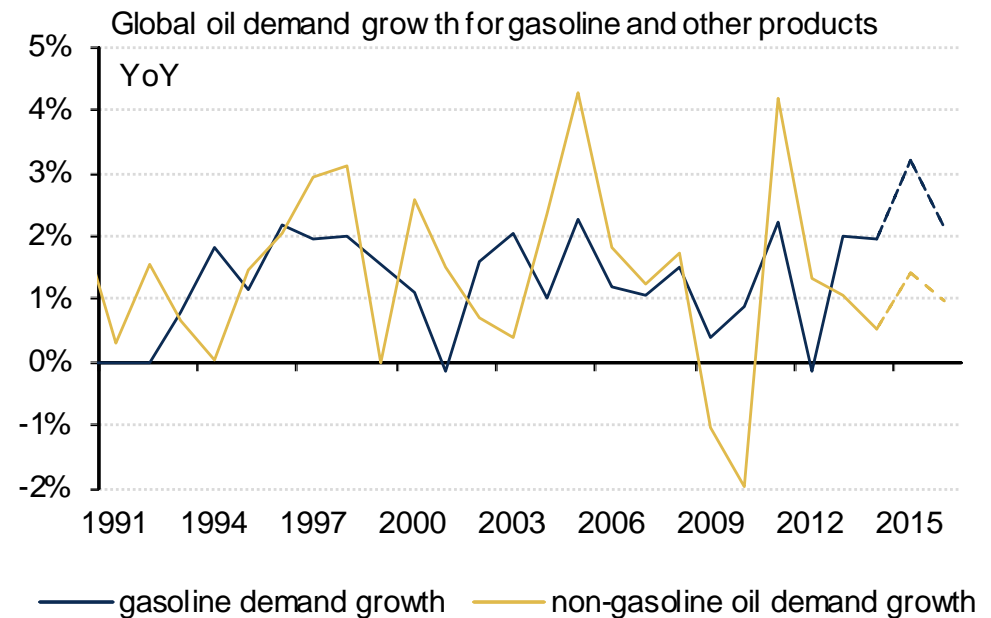
Demand Profile

- Near term, a warm winter in the Atlantic Basin has helped push inventory levels up but demand increases should start to normalize stocks.
- Refined products demand will be driven primarily by EM growth in 2017/2018, China and India will remain key players with high single/low double digit growth rates.
- The proliferation of the middle class in EM economies and car penetration rates will drive distillate and demand growth (15MM cars expected to be added to Chinese roads this year).



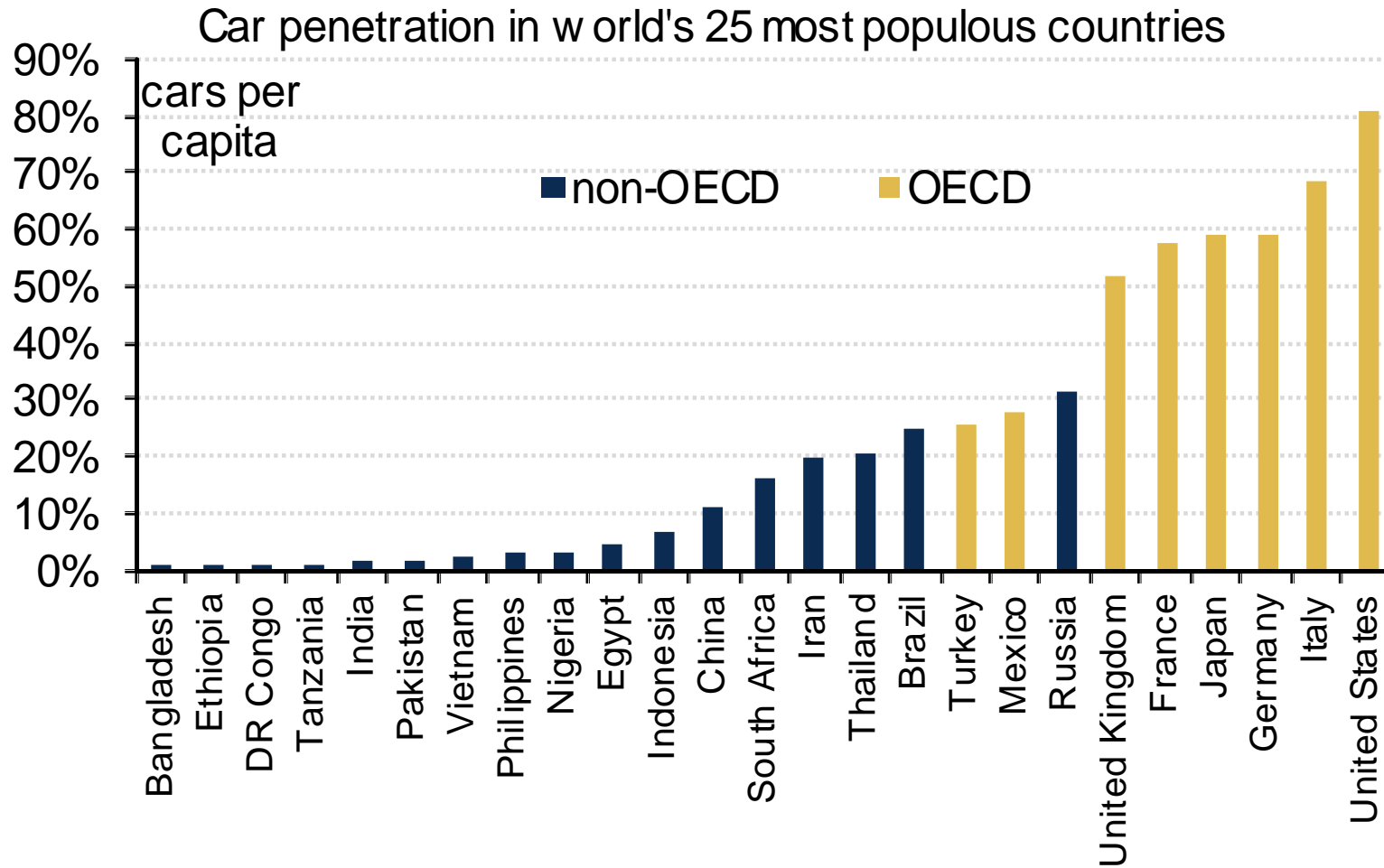
Source: PIRA

Source: BofA Merrill Lynch Global Commodities Research



Market Update

Vehicle sales are the key driver of EM demand growth as penetration rates are low

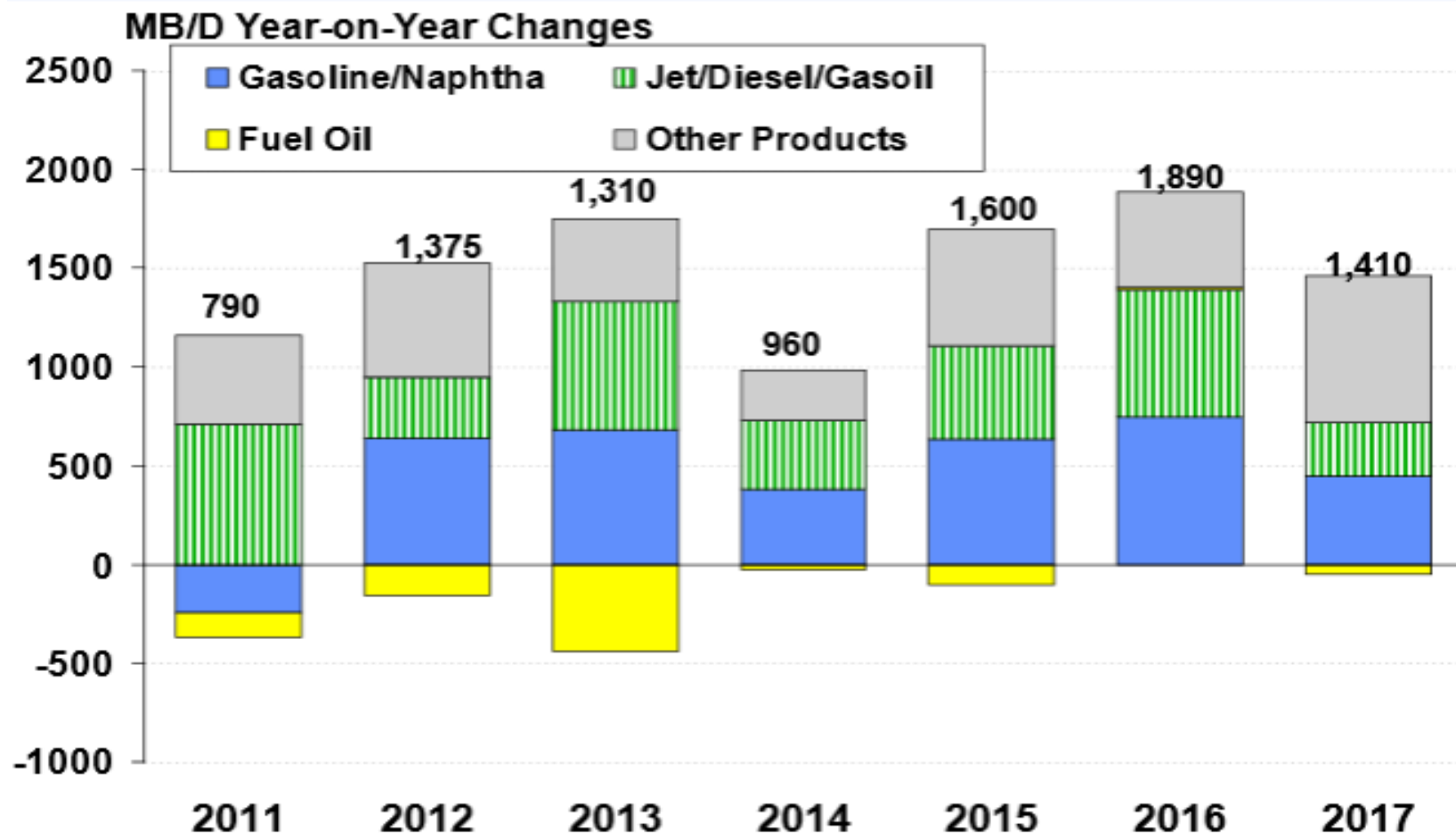


Source: World Bank, BofA Merrill Lynch Global Commodities Research

Market Update

Demand Profile – Product Breakdown

- Increased gasoline demand is expected to be the largest share of products growth in the coming years.
- OECD distillate demand was down significantly in 2015 due to very mild El Nino winter temperatures. During the subsequent La Nina years, we expect to see a very active hurricane season and normalizing winter temperatures, both of which are supportive for products prices.



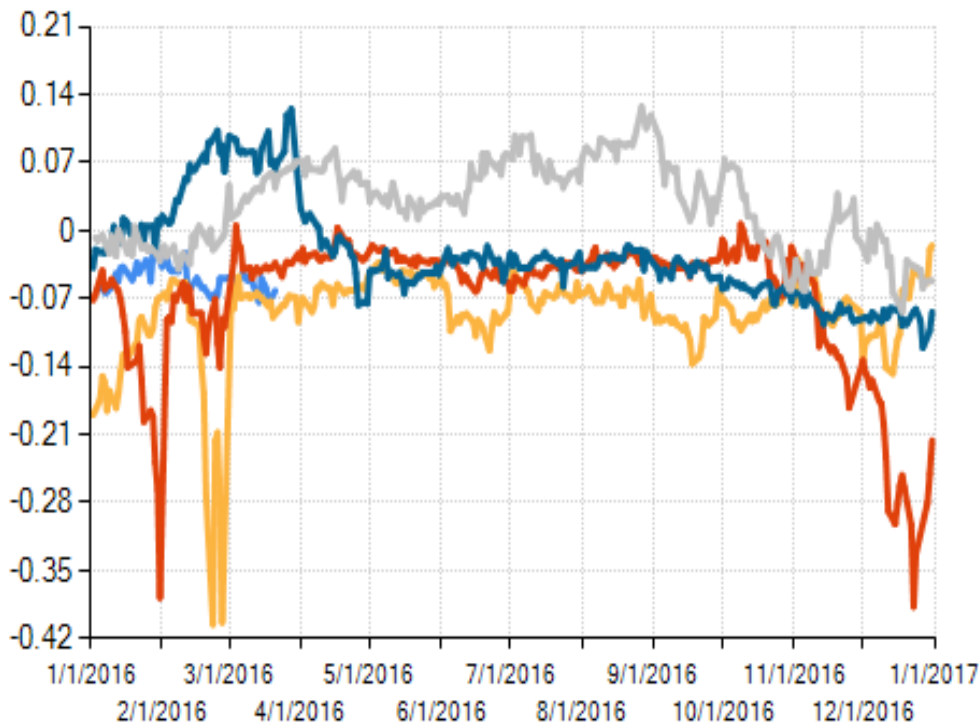
Source: PIRA

Market Update

Crude oil is a major driver of refined products prices

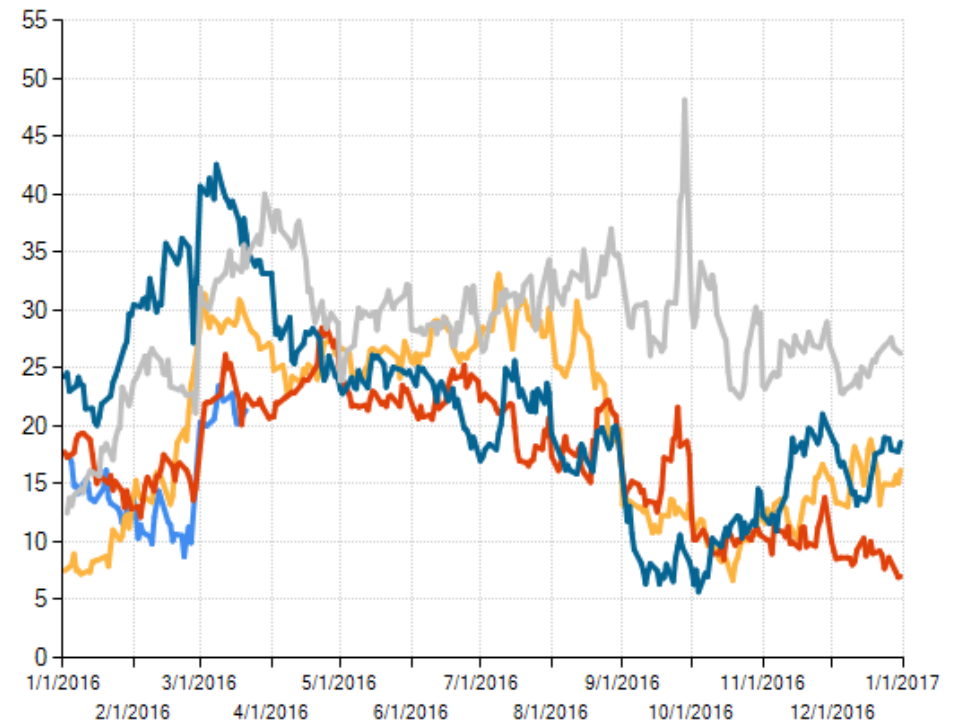
- Crude oil is a major driver of products prices, but it doesn't tell the entire story. Factors such as seasonality, refinery maintenance, and location/transport all have an impact. Refiners' margins, also known as "crack spreads," can contribute to price volatility above and beyond the effect of crude oil prices.
- When refineries return from maintenance in May, crude demand will increase in the US from roughly 15.75 kbd to 16.5-17.0 kbd which will be supportive crude and product prices.

NYMEX ULSD (New York Harbor) vs Gulf Coast ULSD (USD/gal)



— 2016 — 2015 — 2014 — 2013 — 2012

Gasoline Crack: NYMEX RBOB (New York Harbor) vs WTI (USD/gal)



— 2016 — 2015 — 2014 — 2013 — 2012

Source: World Bank, BofA Merrill Lynch Global Commodities Research

Market Update

So, where do we go from here?

- In our February 18th *Global Energy Weekly* entitled “Frozen Oil,” our research team argued that crude prices would hit \$47 by June because...
 - the collapse in prices to \$26 had forced large scale capex cuts and pushed OPEC and non-OPEC producers to freeze oil production.
 - aside from global production, US shale production has waned.
 - we should see the normal strong demand pickup as we enter the summer driving season.
 - monetary policy has remained more accommodative than expected.
 - the USD has eased off its highs allowing commodities prices across the complex to rally.

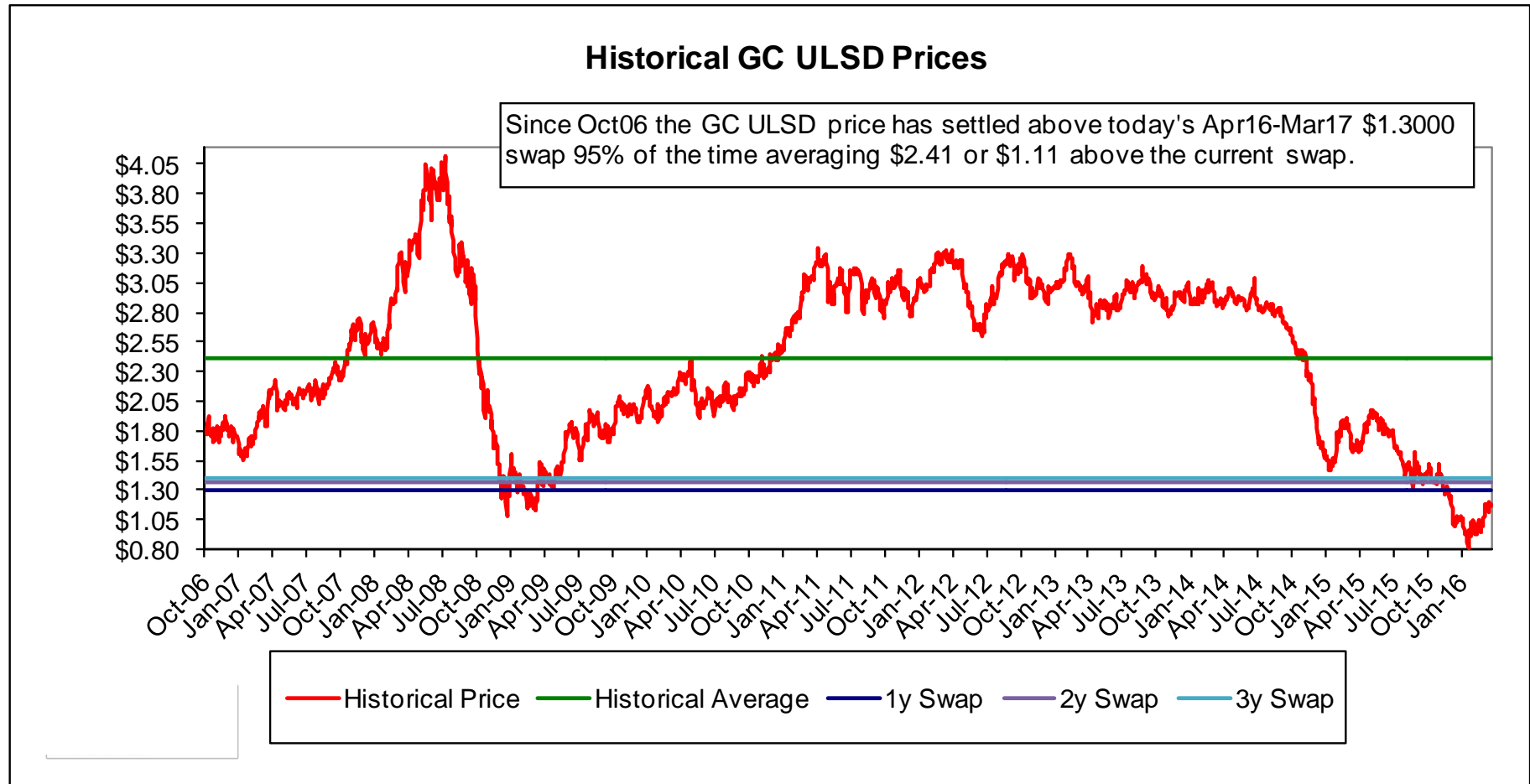
Product	Units	Q2'16	Q3'16	Q4'16	2016F	2017F
WTI	bbl	\$43.00	\$49.00	\$52.00	\$45.00	\$59.00
Brent	bbl	\$44.00	\$50.00	\$53.00	\$46.00	\$61.00
HO Crack	bbl	\$10.98	\$11.25	\$14.47	\$12.75	\$12.00
RB Crack	gal	\$18.86	\$13.75	\$6.29	\$13.00	\$15.50
HO Price	gal	\$1.3090	\$1.4585	\$1.6065	\$1.3990	\$1.7380
RB Price	gal	\$1.4965	\$1.5180	\$1.4260	\$1.3570	\$1.8215

Source: Merrill Lynch Global Commodities Research, Merrill Lynch Commodities Inc.

Despite the recent rise...

Prices are still very attractive

With spot prices that are still very low and forward curves that are relatively flat, this is still one of the best times for consumers in the last decade.



Source: Bloomberg, Merrill Lynch Commodities Inc.