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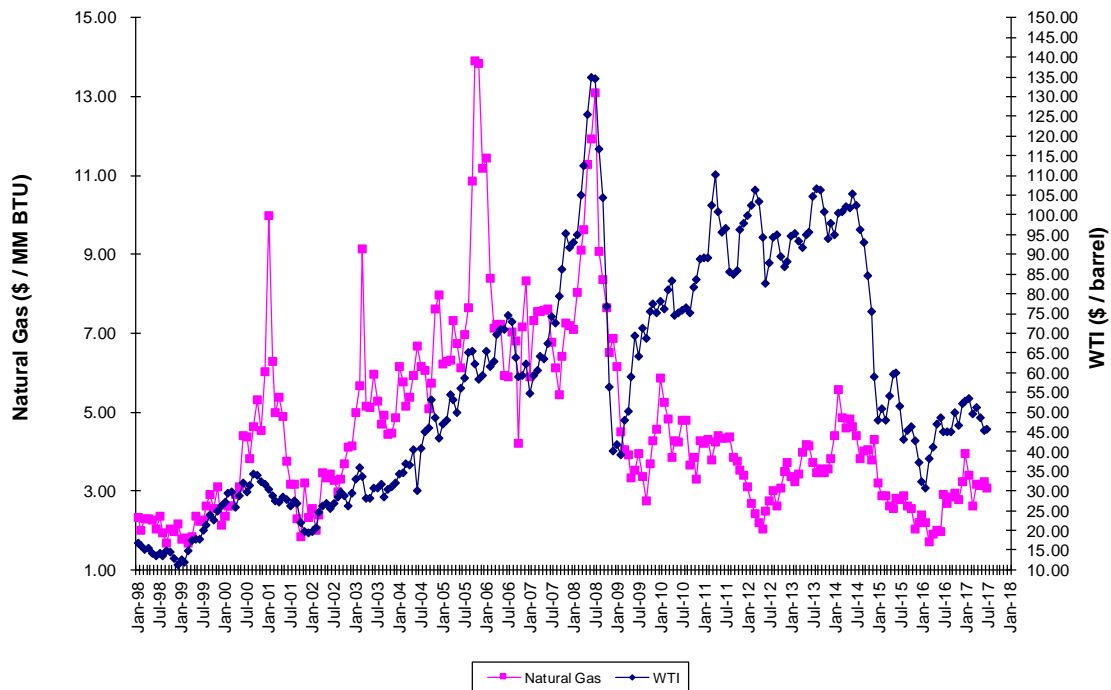
ISM – New York Commodity Corner

Second Quarter 2017 Report

It is our intent to provide you with historic commodity pricing information, define trends, discuss forecasts, and most of all, to help develop insights regarding materials pricing. Commodities will be updated each calendar quarter, or as the specific need arises. We hope you find this information useful and we are open to suggestions and questions to make this more relevant to your needs. Please send your questions and comments to: info@ismnewyork.org

Crude Oil & Natural Gas

West Texas Oil vs NYMEX Natural Gas (\$ / MM btu)



Crude Oil – Cost Drivers: World-wide supply and demand balance, gasoline refining conditions in the US, regional/geopolitical instability and issues, commodity investment/speculation, global and local weather, OPEC statements and actions.

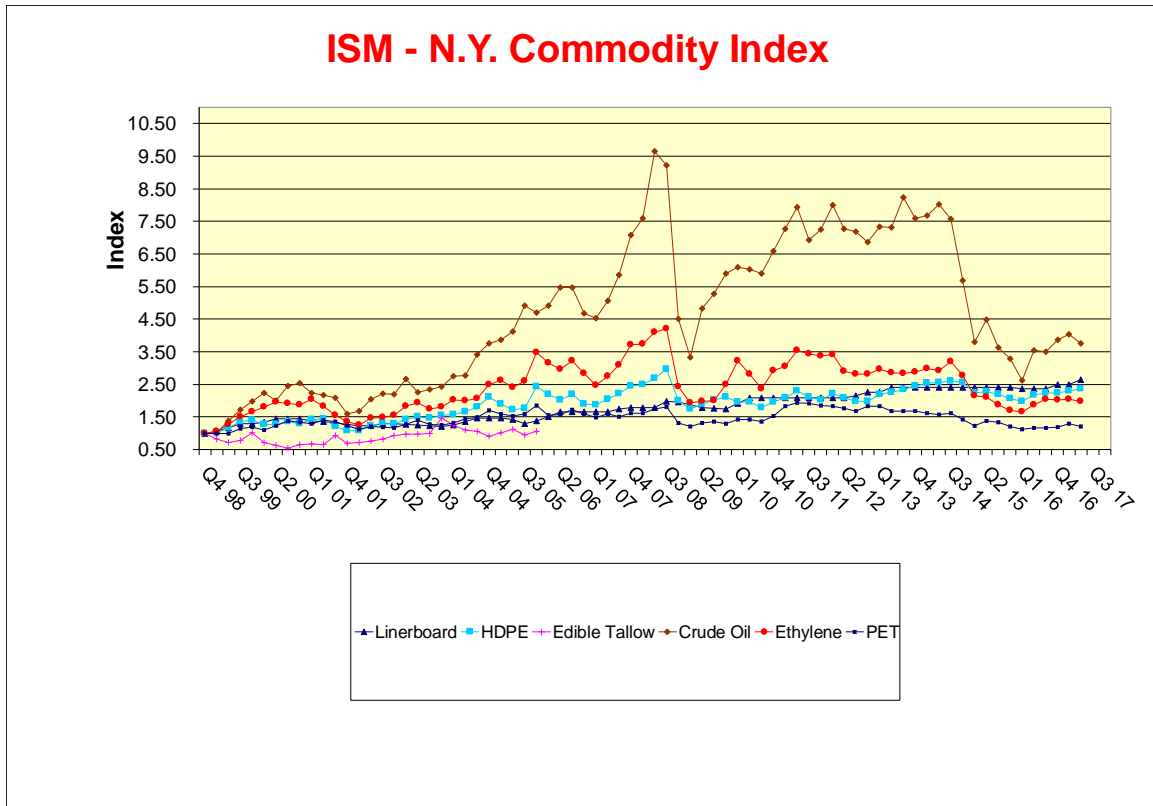
Current Pricing Summary:

2Q2016 @ \$45.60/bbl
1Q2017 @ \$51.99/bbl
2Q2017 @ \$48.32/bbl (a decrease of 7.1% from prior calendar quarter and an increase of 6% calendar period to period)
FY2011 @ \$94.54/bbl
FY2012 @ \$94.21/bbl
FY2013 @ \$98.01/bbl
FY2014 @ \$93.01/bbl
FY2015 @ \$48.88/bbl
FY2016 @ \$43.38/bbl
Estimated FY 2017 @ \$48.95/bbl (an estimated 12.8% increase from 2016 actual)

Natural Gas – Cost Drivers: Natural Gas is largely a domestic natural resource. Cost drivers are supply / demand, weather, and to some extent, sympathetic movement to oil, in particular given its recent volatility.

Current Pricing Summary:

2Q2016 @ \$1.95/MMBtu
1Q2017 @ \$3.32/MMBtu
2Q2017 @ \$3.19/MMBtu (a decrease of 3.9% from prior calendar quarter and an increase of 63.6% calendar period to period)
FY2011 @ \$4.05/MMBtu
FY2012 @ \$2.79/MMBtu
FY2013 @ \$3.66/MMBtu
FY2014 @ \$4.44/MMBtu
FY2015 @ \$2.67/MMBtu
FY2016 @ \$2.46/MMBtu
Estimated FY2017 @ \$3.20/MMBtu (an estimated 30% increase from 2016 actual)



Ethylene

Where Used: About 70% of North America’s ethylene production is derived from natural gas (30% from crude oil). Ethylene is the building block for a variety of the plastics we use daily, as well as solvents, surfactants, and other significant chemical feedstocks.

Cost Drivers: Although tied to natural gas and oil costs, ethylene is also subject to supply / demand swings, and in particular to the operating efficiency of the production facilities. Downstream end products (plastics, solvents, glycols, etc) can compete for the available pounds of ethylene, thus driving ethylene pricing.

Current Summary:

2Q2016 @ \$.303/lb

1Q2017 @ \$.331/lb

2Q2017 @ \$.319/lb (a decrease of 3.6% from prior calendar quarter and an increase of 5.3% calendar period to period)

FY2011 @ \$.543/lb

FY2012 @ \$.483/lb

FY2013 @ \$.467/lb

FY2014 @ \$.480/lb

FY2015 @ \$.317/lb

FY2016 @ \$.307/lb

Estimated FY2017 @ \$.313/lb (a projected 2% increase from 2016 actual)

- Market, at end of second quarter, has a bit more supply than demand.
- Wave of new capacity has started to enter the market, with additional jumps during late summer and into early 2018.

HDPE

Where Used: High density polyethylene is used in a wide variety of applications, including plastic milk containers, liquid detergent bottles, etc., and industrial applications such as plastic pipe for natural gas transmission and many automotive parts.

Cost Drivers: High density polyethylene is heavily influenced by the factors driving ethylene costs, and it also has its own supply / demand cost influences.

Current Summary:

2Q2016 @ \$.725/lb

1Q2017 @ \$.768/lb

2Q2017 @ \$.785/lb (a 2.2% increase from prior calendar quarter and a 8.3% increase calendar period to period)

FY2011 @ \$.708/lb

FY2012 @ \$.688/lb

FY2013 @ \$.77/lb

FY2014 @ \$.853/lb

FY2015 @ \$.728/lb

FY2016 @ \$.718/lb

Estimated FY2017 @ \$.762/lb (a projected 6.1% year on year increase)

- HDPE market supply/demand balances, tightened towards the end of Q2.
- Days of supply fell 2 days, which is now 4.5 days below “normal”.
- Operating rates at end Q2 were at 94%.
- Going forward, there are 3.57 billion pounds of new HDPE capacity coming, so prices could likely fall during the back half of 2017.

PET

Where Used: This is the plastic used to make soda bottles, water bottles and plastic beer bottles, and is also used in the manufacture of carpeting and clothing.

Cost Drivers: PET pricing is tied to ethylene glycol and to xylene markets, supply / demand balances and it has historically had a seasonal influence (increased consumption during the summer due to water and soda bottle demand).

Current Summary:

2Q2016 @ \$.597/lb

1Q2017 @ \$.653/lb

2Q2017 @ \$.616/lb (a 5.7% decrease from prior calendar quarter and a 3.2% increase calendar period to period)

FY2011 @ \$.961/lb

FY2012 @ \$.906/lb

FY2013 @ \$.876/lb

FY2014 @ \$.79/lb

FY2015 @ \$.655/lb

FY2016 @ \$.591/lb

Estimated FY2017 @ \$.628/lb (a projected 6.3% increase from 2016 actual)

- Historically, this summary has been based on the “mid-size” buyer price index, which has been discontinued in favor of a new “large buyer” formula and market based index
- U.S. PET market is tight, with producers either sold out or with little capacity to spare.
- Overall resin demand growth this year, above expectations.

Glycerine

Where Used: Glycerine is used in cosmetics, foods, pharmaceuticals, and a variety of personal care and oral care products, as well as in other applications including animal feed, antifreeze and certain energy uses.

Cost Drivers: As glycerine is a byproduct of the production of other products, its cost is principally driven by the demand for glycerine for its various uses – the supply remains driven largely by the production of other products such as biodiesel fuels, soaps, fatty alcohols, and fatty acids.

Over the past few years the increasing use of biodiesel as a fuel in Europe, and increasing volumes in North America, has resulted in significant increases in the supply of byproduct glycerine globally, which will help drive the glycerine markets.

Current Summary:

- USA 99.7% Kosher quality glycerine spot pricing:
June 2017 @ \$.37/lb
End 2017 estimated at \$.32/lb.
- Europe 99.7% Kosher quality glycerine spot pricing:
June 2017 @ EUR 850/pmt
End 2017 estimated at EUR 550/pmt
- USA 99.5% technical grade glycerine spot price:
June 2017 @ \$.36/lb

End 2017 estimated at \$.26/lb.

- Europe 99.5% technical grade glycerine spot price:

June 2017 @ EUR 650/pmt

End 2017 estimated at EUR 500/pmt.

- USA 80% crude glycerine spot price for refining:

June 2017 @ \$.11/lb

End 2017 estimated at \$.07/lb.

- Europe 80% crude glycerine spot price for refining:

June 2017 @ EUR 450/pmt

End 2017 estimated at EUR 275/pmt

- Estimates based on 1 Euro Dollar = \$1.12 US
- Tightness has gripped the global glycerine market, driving prices to levels not experienced in many years.
- Contract pricing for 3Q, being locked in at this writing, assessed higher, due to tight market conditions, less imported volume availability and limited US biodiesel production.
- Signs of improved biodiesel sales in other geographies, if sustained, will add glycerine volume into the market; could prices fall as quickly as they have risen?

Linerboard

Where Used: Linerboard is the main component and cost driver in the manufacture of corrugated shipping containers, which are used in a broad variety of consumer industries such as food and beverage, as well as the automotive industry.

Cost Drivers: Linerboard is heavily influenced by supply / demand balances, inventories, conversion cost (energy), exports and industry consolidation.

Current Summary:

2Q2016 @ \$755/tn list price

1Q2017 @ \$795/tn list price

2Q2017 @ \$845/tn list price (an increase of 6.3% from prior calendar quarter and an increase of 11.9% calendar period to period)

FY2011 @ \$670/tn list price

FY2012 @ \$687/tn list price

FY2013 @ \$758/tn list price

FY2014 @ \$770/tn list price

FY2015 @ \$770/tn list price

FY2016 @ \$765/tn list price

Estimated FY2017 @ \$832/tn list price (a projected 8.8% increase from 2016 actual)

- The PMI increased between May (54.9%) and June (57.8%), signaling that manufacturing is in solid shape.
- Corrugated box shipments in May were 4.6% ahead of a year ago level, and cumulative shipments for the first five months of 2017 are 3.2% ahead of the 2016 total.
- Containerboard operating rates in May remained close to 97%, indicating that the market remains very tight.
- Inventories represented 3.8 weeks of supply, the norm being 4.0 – 4.2 weeks of supply.