

# McCULLOUGH RESEARCH

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PRINCIPAL

Date: September 8, 2015  
To: McCullough Research Clients  
From: Robert McCullough  
Subject: August 10, 2015 PADD 2 Gasoline Spike at BP Whiting's Pipestill 12

On Saturday, August 8, 2015, British Petroleum Whiting's largest distillation unit, Pipestill 12, was closed for repairs. Pipestill 12 processes 240,000 barrels per day of BP Whiting's capacity. Overall, this reduced the Midwest's crude distillation capacity by 6.29%. In response, a dramatic spike in the price of gasoline preceded press reports of the outage. In one week the average price of gasoline in the Midwest rose over \$0.30, a 13% increase, to \$2.79 per gallon, exceeding the national average for the first time in over a year.<sup>1</sup> Chicago residents experienced a 25.5% price increase at the pump, the largest spike since Chicago's gasoline prices have been tracked. The reduction in gasoline output over the period of the repair was minimal – 3.18%.<sup>2,3</sup> In total, however, stockpiles of finished gasoline increased 13.94% over the period of the “shortage.”<sup>4</sup> Even ascribing all of the gasoline output reduction to the BP Whiting plant over the period of the repairs, BP's windfall profits may have been significant.<sup>5</sup>

The West Coast has seen a number of similar massive price reactions to relatively minor production reductions. Overall, the significant price increases in markets with relatively few competitors resembles traditional “pump and dump” exercises in market power. The price spike in the Midwest last month seems a likely candidate for market manipulation.

Pipestill 12 was restarted on August 25, 2015. Press coverage of the outage and the restart has been superficial at best. Refinery outages can be classified as either planned maintenance, unplanned maintenance, or equipment failure. Equipment failures are reported to the U.S.

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<sup>1</sup> <http://www.eia.gov/petroleum/gasdiesel/>

<sup>2</sup> EIA Weekly Petroleum Supply Estimates, [http://www.eia.gov/dnav/pet/pet\\_sum\\_sndw\\_dcus\\_r20\\_w.htm](http://www.eia.gov/dnav/pet/pet_sum_sndw_dcus_r20_w.htm).

<sup>3</sup> Gasoline production varies week to week. The level reported for the week of August 21, 2015 was higher than the average for 2015. Of the 34 weeks reported by the Energy Information Administration, it ranked 11<sup>th</sup> highest.

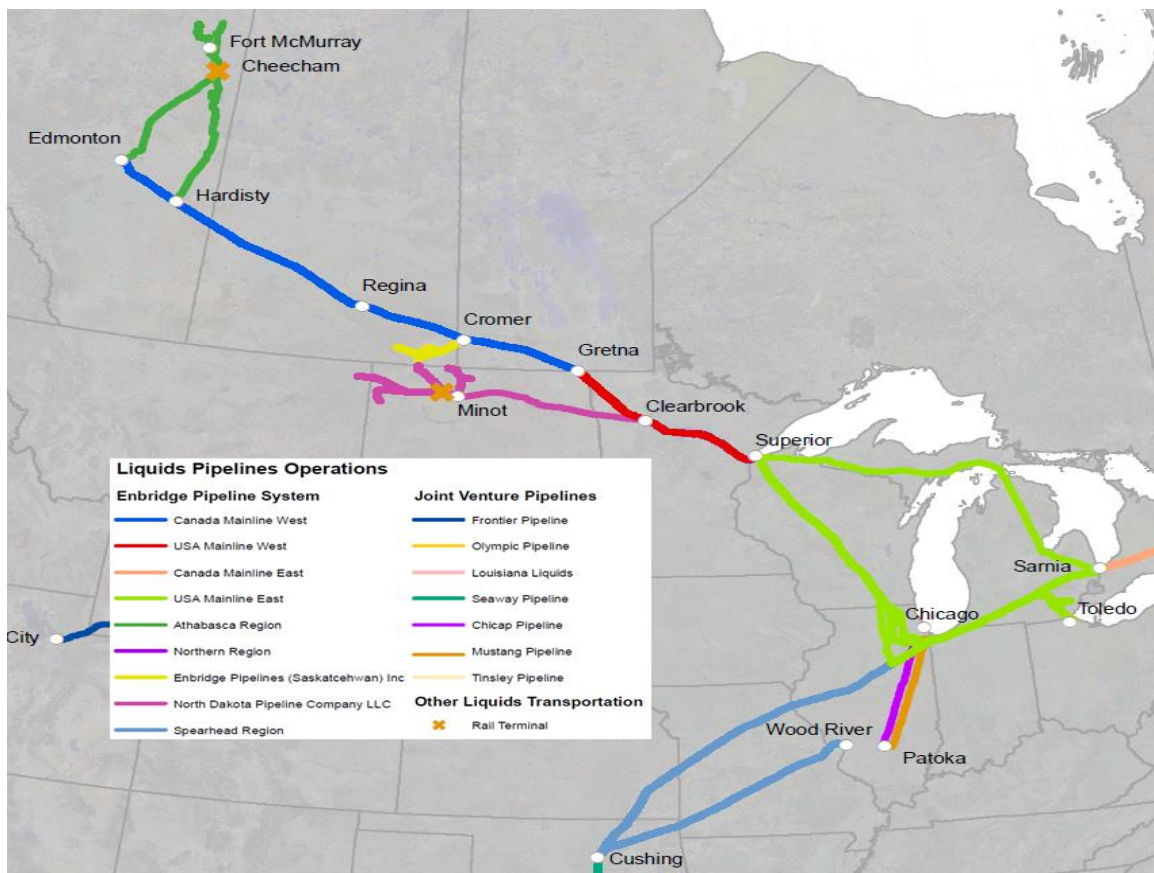
<sup>4</sup> EIA Weekly Petroleum Supply Estimates, [http://www.eia.gov/dnav/pet/pet\\_sum\\_sndw\\_dcus\\_r20\\_w.htm](http://www.eia.gov/dnav/pet/pet_sum_sndw_dcus_r20_w.htm). The level of finished gasoline stocks on the 21<sup>st</sup> of August were the 4<sup>th</sup> highest in 2015.

<sup>5</sup> Press coverage of the outage assumed that decrease in distillation capacity translated immediately into a reduction in gasoline output. Gasoline, however, is the outcome of additional refining and blending activities. Short term maintenance may, but usually does not, reduce gasoline output since existing stocks and alternative inputs can be utilized. This appears to be the case during the Pipestill 12 maintenance.

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Coast Guard’s emergency notification web site.<sup>6</sup> EPA rules concerning such reports – the so-called “sheen test” -- are stringent.<sup>7</sup> The outage on August 8, 2015 was not reported, so the outage is best described as unplanned maintenance. It should be noted that the ongoing repairs are not a “forced outage”. The decision to repair Pipestill 12 was a standard commercial decision. Press coverage on refineries is usually based on emergency notifications to the U.S. Coast Guard site. Since no such notification occurred in this case, press coverage waited two days until Reuters’ standard telephone survey of refinery operations was produced.

Pipestill 12 was recently redesigned as part of a major upgrade at BP Whiting to handle sour Canadian crude. As such, it is a very different product than the Western Texas Intermediate that dominates supplies for the Midwest. BP’s decision to reconfigure towards Canadian crude follows a historical tradition at Whiting to focus on the heaviest crude. The timing of the decision to perform maintenance on this unit may have reflected pipeline constraints carrying Canadian crude to the U.S.



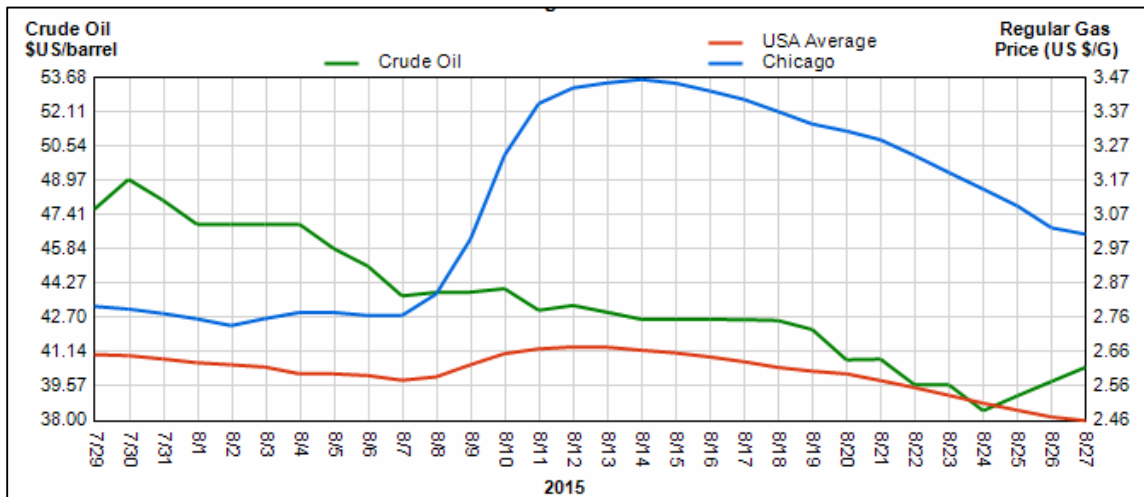
<sup>6</sup> United States Coast Guard National Response Center at <http://www.nrc.uscg.mil/>. BP Whiting has made two reports in 2015, both in February.

<sup>7</sup> Oil Discharge Reporting Requirements, EPA-550-F-06-006, December 2006.

The Spearhead pipeline connecting Chicago to Cushing has been offline since August 11, 2015.<sup>8,9</sup> The combination of two major disruptions in the delivery of Canadian sour crude may have been coincidental, but provided a major trading opportunity for BP. The price for Canadian sour crude fell sharply on the pipeline and distillation closure announcements.<sup>10</sup>

In contrast with electricity, coal, and natural gas, data collection for gasoline and oil is minimal. The only standard source, the Energy Information Administration (EIA), has preserved a set of World War II definitions established in 1942. Thus the U.S. Midwest is “PADD 2,” comprising an area including Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, South Dakota, Ohio, Oklahoma, Tennessee, and Wisconsin. As with the other PADDs, the designation is no longer terribly relevant. In PADD 2’s case, it includes the storage and market price base of Cushing, Oklahoma, which would be normally considered more related to Texas and Louisiana.

The price reaction to the story was immediate and inexplicable. As with recent price spikes on the West Coast, retail price increases began before press coverage of the repairs.<sup>11,12,13</sup>



<sup>8</sup> Spearhead oil pipeline restart date still unknown: Enbridge, Reuters, August 13, 2015.

<sup>9</sup> Incident 1125343, 8/11/2015 14:14, “CALLER STATED THERE IS A SHEEN IN A LOCAL CREEK FROM A PIPELINE DUE TO UNKNOWN REASONS.”, <http://www.nrc.uscg.mil/>.

<sup>10</sup> In the five days following the Whiting announcement, Canadian heavy crude prices at Chicago fell 14.69%. <http://www.nrcan.gc.ca/energy/fuel-prices/crude/17757>.

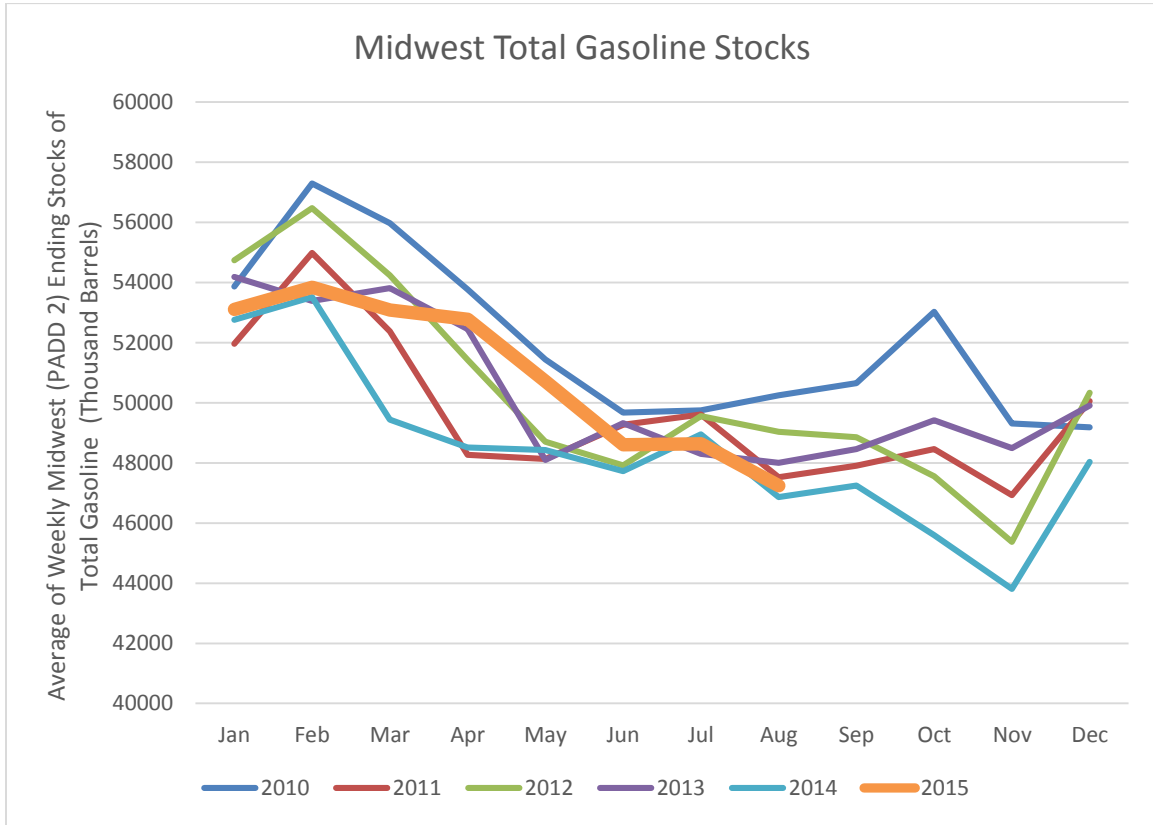
<sup>11</sup> BP Whiting refinery repairing largest crude unit—sources, August 10, 2015.

<sup>12</sup> [http://www.chicagogasprices.com/Retail\\_Price\\_Chart.aspx](http://www.chicagogasprices.com/Retail_Price_Chart.aspx)

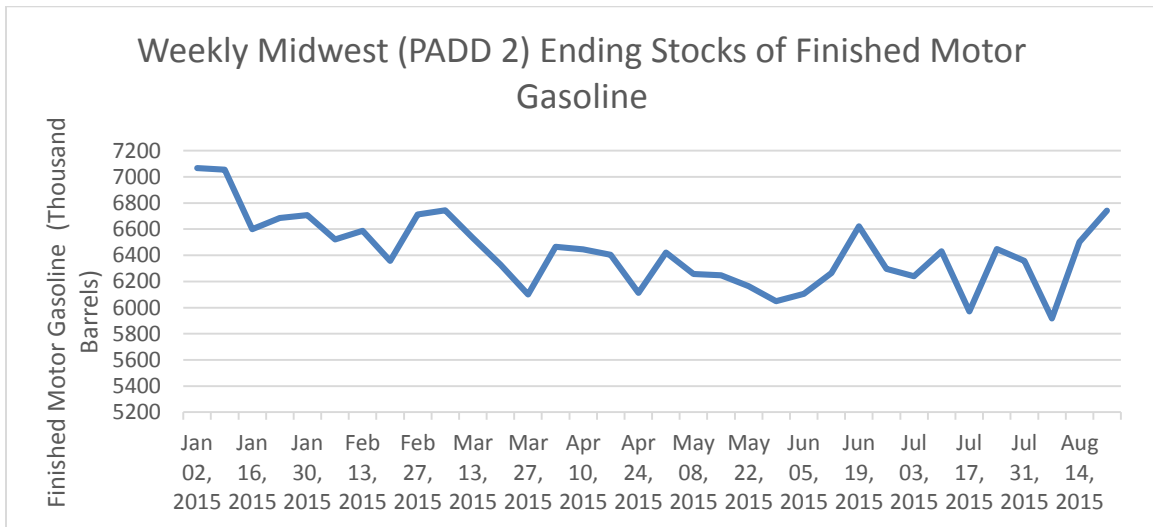
<sup>13</sup> One Wisconsin station owner reported that he was contacted on August 8, 2015 with the news that gasoline prices were increasing \$.50/gallon and he should purchase next week’s supply before the price increase. His supplier apparently knew about the presumed shortage before industry press.

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In contrast to the perceived shortage, PADD 2 gasoline stocks were in good shape with little indication that the repairs will cause a shortage:



Finished gasoline stocks actually increased over the repair period:



Obviously, if finished gasoline stocks increased during the maintenance, there was a suspicious mismatch between perceptions of shortage and reality.

Similarly, there is no evidence of a dramatic change in demand. If so, we would see retail prices diverge from wholesale prices. The Lundberg survey published two weeks ago indicates that wholesale prices for both branded and unbranded gasoline had jumped.<sup>14</sup>

**LUNDBERG RACKS: Friday, August 14, 2015**

	<b>Branded Rack Gasoline</b>	<b>Weekly Change</b>	<b>Unbranded Rack Gasoline</b>	<b>Weekly Change</b>
East Coast	182.38	7.34	176.58	9.14
Midwest	225.68	49.93	219.22	45.14
Gulf Coast	186.94	11.19	185.57	11.65
Rockies	228.64	14.65	228.26	14.64
West Coast	238.48	13.04	238.90	19.87
U.S. Average	207.80	21.12	210.71	23.00

	<b>Branded Rack Diesel</b>	<b>Weekly Change</b>	<b>Unbranded Rack Diesel</b>	<b>Weekly Change</b>
East Coast	163.22	2.09	159.70	2.31
Midwest	170.73	8.57	168.27	7.73
Gulf Coast	160.60	3.02	157.93	2.36
Rockies	172.34	2.70	171.69	2.74
West Coast	177.63	1.50	176.41	2.68
U.S. Average	167.76	3.91	167.17	3.89

Although crude distillation capacity would also affect diesel prices, the impact of the Whiting announcement appeared to have been restricted to gasoline, alone.

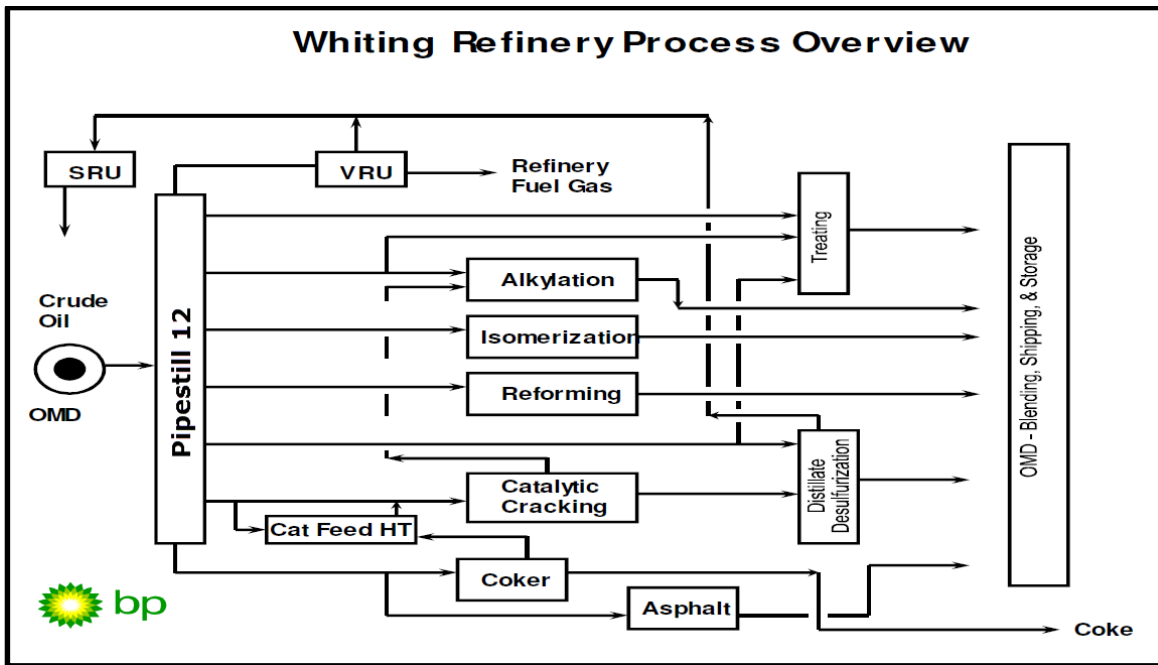
The most recent rack prices reflect a sharp decline in wholesale gasoline prices.

**LUNDBERG RACKS: Friday, August 28, 2015**

	<b>Branded Rack Gasoline</b>	<b>Weekly Change</b>	<b>Unbranded Rack Gasoline</b>	<b>Weekly Change</b>
East Coast	151.88	-11.89	147.24	-8.44
Midwest	151.80	-31.82	151.96	-22.19
Gulf Coast	156.03	-10.97	154.79	-9.51
Rockies	199.17	-17.60	198.63	-17.50
West Coast	209.72	-9.21	209.75	-0.80
U.S. Average	165.65	-16.80	170.75	-10.40

<sup>14</sup> <http://www.lundbergsurvey.com/racks.aspx>

A large integrated refinery like Whiting has numerous steps between crude oil and finished products. The simplified diagram below identifies the major components.<sup>15</sup> Since Pipestill 12 is the largest of the three distillation units at Whiting, it is surprising that only gasoline prices have been affected at the wholesale level.



Pipestill 12 has only recently returned to service. If it was so critical, we would have observed a similar “crisis” in the spring when it was also offline. While this is an important component of the Whiting refinery, it is a small part of the aggregate supply of retail petroleum products to the market.

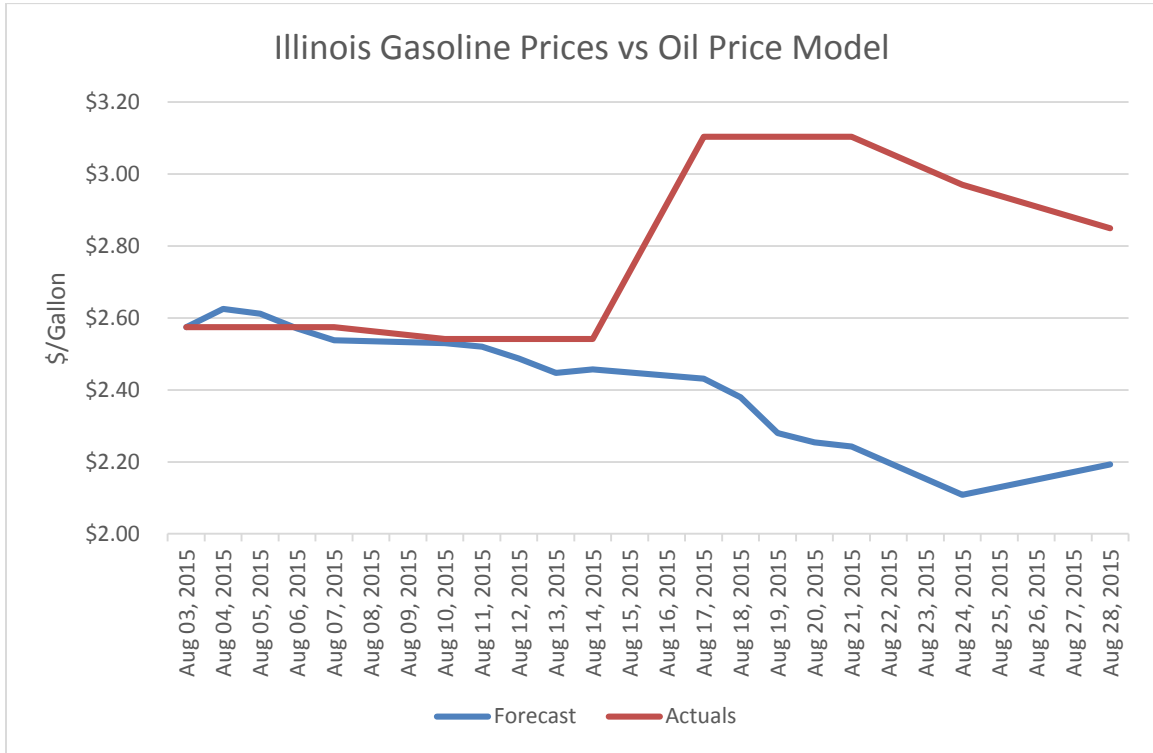
Data for sales of gasoline in Illinois are not available and have not been for some years. Based on prorated Midwestern vehicle miles driven in 2014, Illinois gasoline sales in August 2015 were 1,301,341 gallons per day.<sup>16,17</sup> The historical relationship between Brent Crude prices and retail gasoline prices in Illinois indicates the following windfall price differential between observed prices and those we would expect from the historical relationship:

<sup>15</sup> Whiting Business Unit Environmental Statement for Year 2012 (Review of Y2011 performance), BP Whiting, May 22, 2012, page 2. The position of Pipestill 12 has been added. It should be noted that Pipestill 12 is not the only distillation equipment at Whiting.

<sup>16</sup> [https://www.fhwa.dot.gov/policyinformation/travel\\_monitoring/tvt.cfm](https://www.fhwa.dot.gov/policyinformation/travel_monitoring/tvt.cfm)

<sup>17</sup> Although the EIA provides gasoline sales for many U.S. states, gasoline sales for Illinois have been masked since October 2011. The EIA masks the sales for Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, South Dakota, Ohio, Oklahoma, and Wisconsin in order to protect market data for a concentrated market sellers explaining that the data is “[w]ithheld to avoid disclosure of individual company data.”

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Since August 8, 2015, the average differential was \$.48/gallon. Across Illinois gasoline sales, this was a windfall to the industry of \$14.24 million in August.

Overall, this spike appears very similar to the October 2012 spike in California, where price adjustment occurred before press coverage in response to a relatively minor problem. In that case, a \$.50/gallon retail response followed a transformer trip in Los Angeles. Production resumed quite quickly, although the major price response continued for a month as inventories continued to increase.

It is early for any definitive conclusions, but there is a strong sense that this is a trading and pricing driven event having little to do with fundamentals.