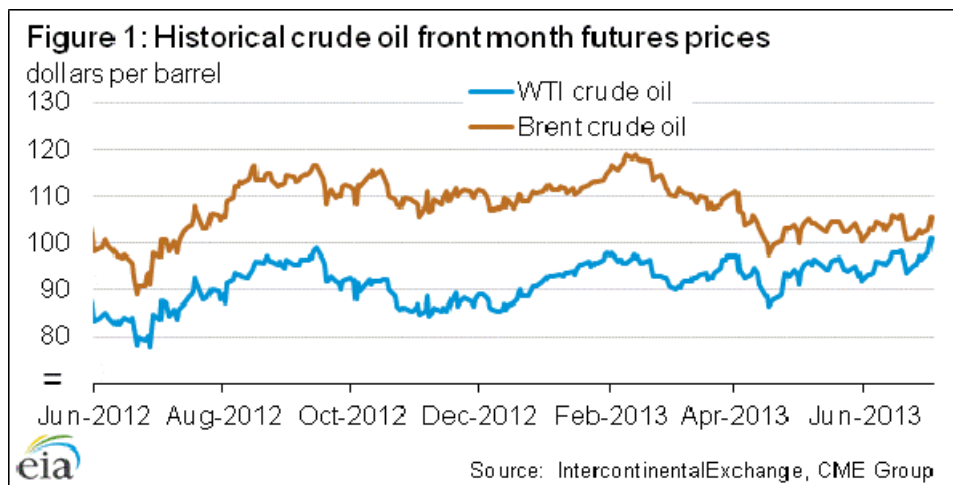


Short-Term Energy Outlook Market Prices and Uncertainty Report

Crude Oil

Prices: During June and the first week of July, Brent crude oil prices remained in the roughly \$100 to \$106 per barrel range that has held prices since mid-April. The front month futures contract for Brent settled at \$105.76 per barrel on July 3, an increase of \$3.70 per barrel compared to its settle price on June 3 and at the top of its recent range. Meanwhile, WTI crude oil prices have risen more over the last month with the front month contract settling at \$101.24 per barrel on July 3, an increase of \$7.79 per barrel since June 3 and the first settle over \$100 per barrel since May 2012 (**Figure 1**).

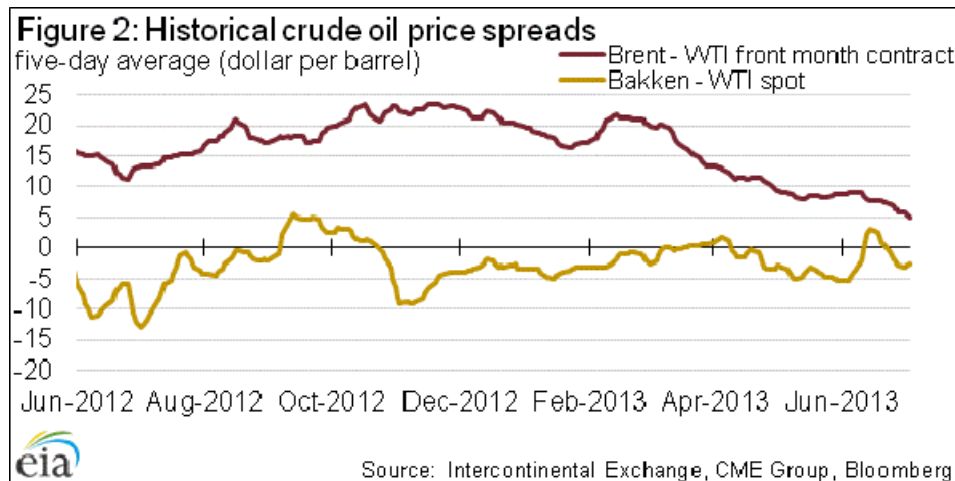


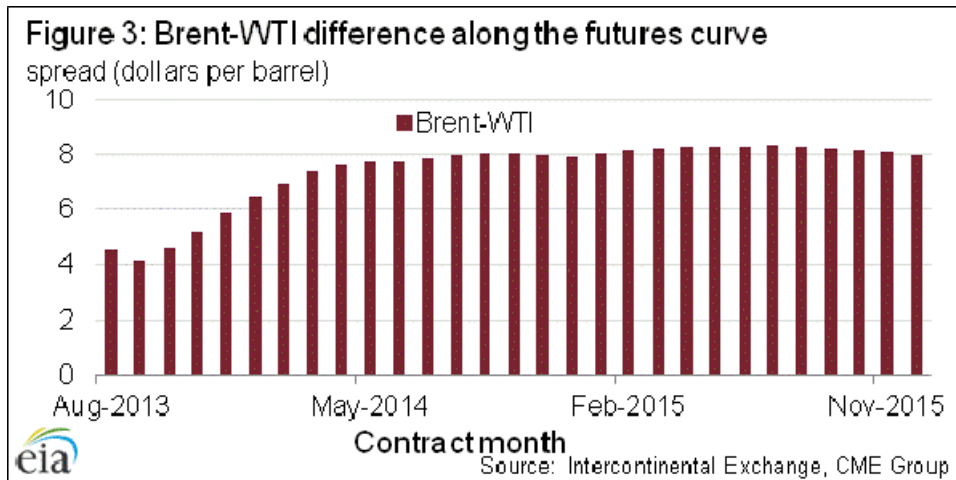
Although global crude oil prices continue to trade in a narrow range, there are still both downside economic risks and upward supply-side risks in the crude oil market. The prospect of rising interest rates on government bonds and loans around the world poses a difficult investing environment and could hamper economic growth. Recent bouts of illiquidity amongst Chinese banks could also impact near-term crude oil demand in Asia's largest economy. Although Egypt is not a major oil producer, recent developments in that country have once again highlighted the possibility of continued political turmoil in the Middle East region that plays a pivotal role in world oil markets, providing price support and a potential avenue for a price movement to the upside.

This is a regular monthly companion to the EIA Short-Term Energy Outlook
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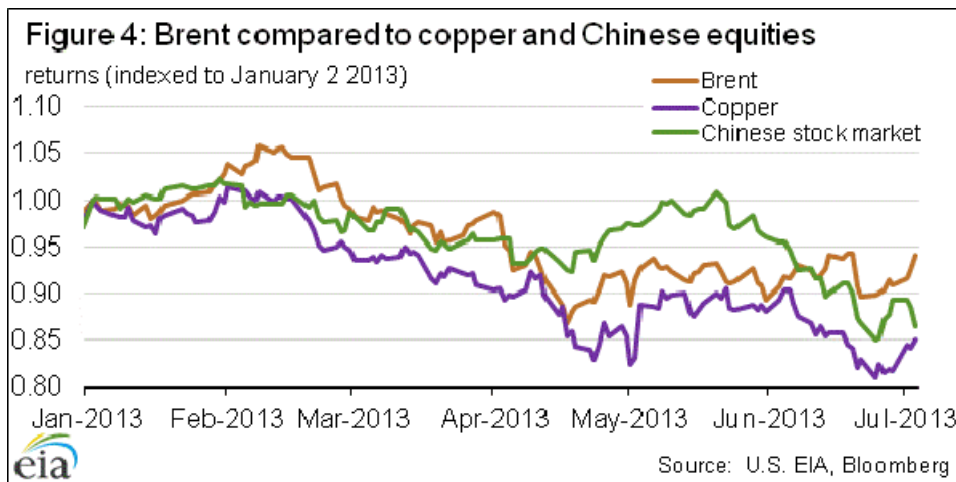
WTI prices resumed their strengthening trend against Brent prices in June. The Brent-WTI spread settled at \$4.52 per barrel on July 3, the narrowest level for the differential since January 2011 (**Figure 2**). However, this spread may not be reflecting the cost of transporting the marginal barrel of crude oil from Cushing, Oklahoma, to the U.S. Gulf Coast. An uptick in PADD 2 refinery runs, with the utilization rate in the Midwest reaching 90.7 percent for the week ending June 28, combined with issues affecting Canadian crude oil production and pipeline transportation may be diverting crude oil from Cushing to other parts of the United States Midcontinent. This can also be observed in the strength of Bakken prices compared to WTI prices in June. When refineries began increasing runs and the initial supply outages occurred, Bakken spot prices moved higher first and settled at an average premium to WTI of \$3.05 per barrel for the five-day average ending June 14. Then, as some refineries in the Midwest came out of turn-around, WTI prices moved higher as well.

Looking at the Brent-WTI spread along the futures curve, the difference between the two benchmarks increases to reach about \$7 per barrel by the end of the first quarter of 2014 and levels off at about \$8 per barrel in 2015 (**Figure 3**). The increase in the spread along the futures curve shows that the further narrowing of this differential may only be temporary and has mainly been driven by the specific short-term supply and demand developments cited above rather than by the complete resolution of bottlenecks affecting inland crude transportation.



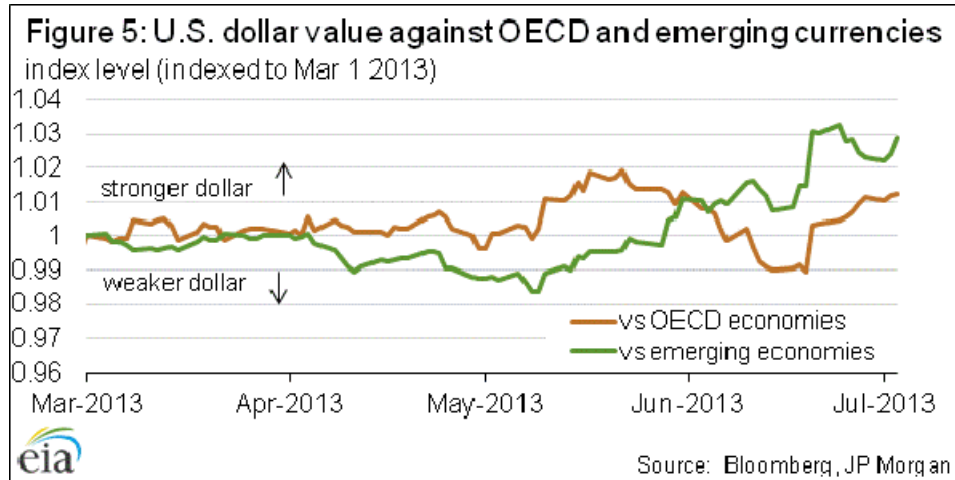


Brent vs Copper and Chinese Equities: Uncertainty over future economic growth in China over the last month has weighed on equity prices as well as commodity prices, particularly copper. From June 3 to July 3, the Hang Seng Chinese equity index has fallen by 9.6 percent while front month futures prices for copper have followed suit, declining by 4.7 percent (**Figure 4**). The Chinese government’s recent policy shift to intervene less in credit markets raises the risks associated with banks in China that may no longer have Chinese government as a reliable lender of last resort. This could affect short-term economic growth and future demand for petroleum products. Brent prices tend to be positively correlated with both copper prices and the value of Chinese equities, and weakness in these two assets could signal future weakness in crude oil prices.

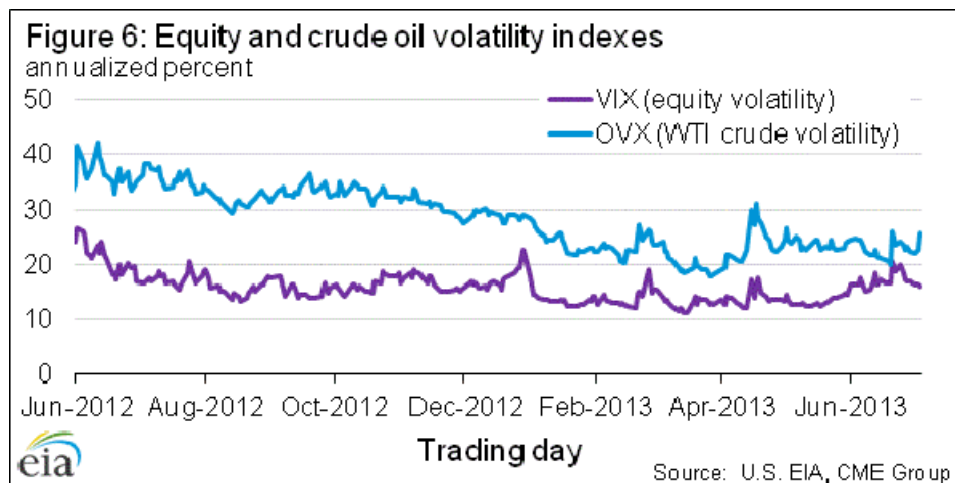


Foreign exchange rates: Since the beginning of May, the value of the U.S. dollar against emerging market economies showed a divergence from the exchange rate of the dollar against OECD currencies. From May 1 to July 3, a GDP-weighted basket of exchange rates against OECD economies increased by about 1 percent while an index of emerging currencies has increased by more than 3 percent (**Figure 5**). These two indexes tend to

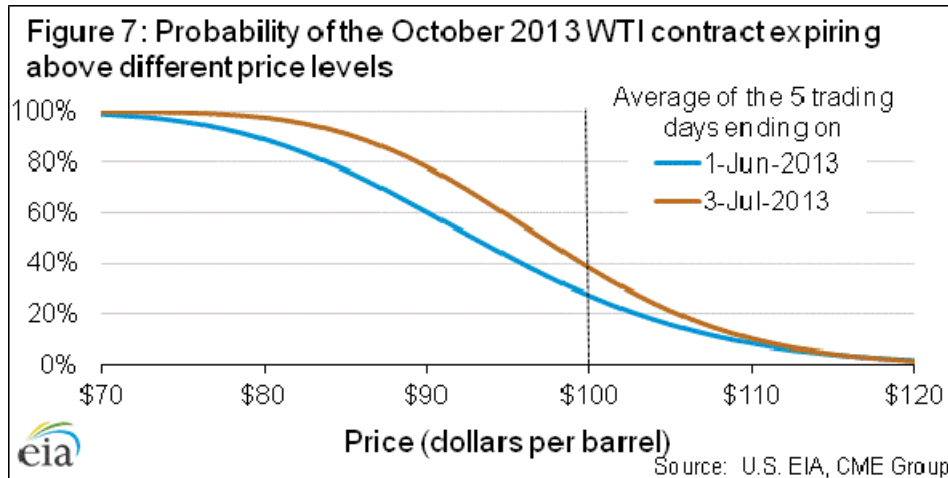
be highly correlated, with the 60-day rolling correlation of day-to-day price changes ranging from 0.5 to 0.8 from 2005 through 2012, but this correlation has dropped to below 0.35 at times since March 1. The divergence between the value of the dollar against OECD countries and its value against currencies of emerging market economies may be evidence of capital outflows from emerging market economies and could be a sign of potential weakness in their economic growth going forward.



Volatility: The OVX (an index that measures implied volatility in WTI in the next 30 days) was relatively unchanged over the last month, settling at 25.7 percent on July 3 (Figure 6). A similar measure for implied volatility on the S&P 500, the VIX, rose in the middle of June before falling back to settle at 16.2 percent on July 3. The spread between these two volatility measures recorded its lowest differential since before the financial crisis in 2008 of only 3.3 percentage points on June 19. This shows that some of the recent uncertainty in financial markets has not affected crude oil as much as other asset classes. However, with events unfolding in Egypt, the OVX moved higher and the spread settled at 9.5 percentage points on July 3.



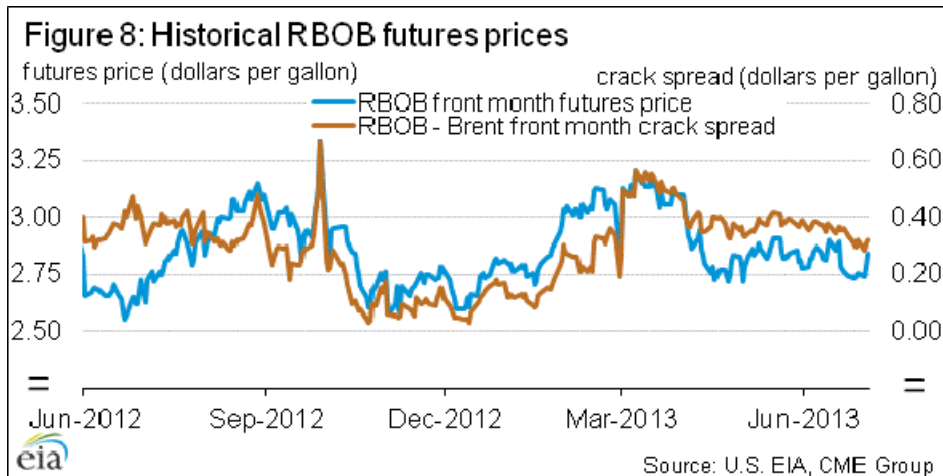
Market-Derived Probabilities: The October 2013 WTI futures contract averaged \$97.52 per barrel for the five trading days ending July 3 and has a probability of exceeding \$100 per barrel at expiration of approximately 38 percent. The same contract for the five trading days ending June 3 had a probability of exceeding \$100 of 27 percent (**Figure 7**). Given the elevated price of Brent relative to WTI, the probability of Brent futures contracts expiring above the same dollar thresholds is higher.



Petroleum Products

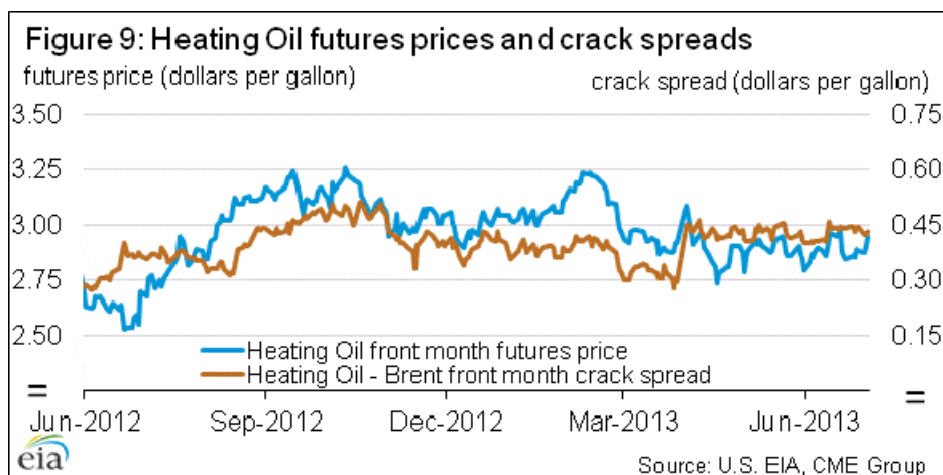
Gasoline prices: The price of the reformulated blendstock for oxygenate blending (RBOB) front month futures contract remained relatively stable during June. Prices increased \$0.05 per gallon from June 3, settling at \$2.84 per gallon on July 3 (**Figure 8**). The RBOB-Brent crack spread decreased by \$0.035 per gallon since the beginning of June, settling at \$0.32 per gallon on July 3. Current RBOB front month futures prices are up about \$0.11 per gallon from the front month prices this time last year and the RBOB-Brent crack spread seen at the beginning of July 2013 was relatively unchanged from the crack spread seen in early July 2012.

Strong implied demand for gasoline over the last two weeks has helped support prices in the face of high utilization for United States refiners. For the week ending June 28, implied United States consumption plus exports of gasoline rose to 9.6 million barrels per day, the highest amount for any week so far in 2013 and an increase of 0.2 million barrels per day compared to the same week last year. Combined with the recent strength in crude oil prices, gasoline is now trading at the high point of its recent range.



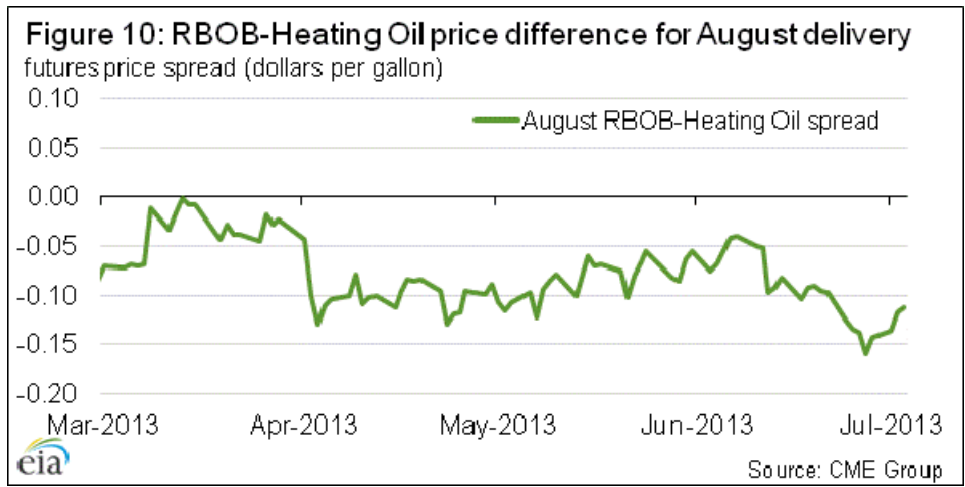
Heating Oil prices: Heating oil front month prices are showing similar strength compared to crude oil prices in June and the first week of July. The heating oil front month contract increased by \$0.12 per gallon since June 3, settling at \$2.95 per gallon on July 3. The heating oil-Brent crack spread increased \$0.03 per gallon, ending at \$0.43 per gallon on July 3 (**Figure 9**).

Heating oil futures prices followed crude oil prices closely over the last month, with the heating oil-Brent crack spread staying within the narrow trading range since April. However, recent elevated inventory levels for middle distillates compared to this time last year may provide some downward price pressure in the near future. United States jet fuel inventories are 3.5 percent higher compared to stock levels at the end of June 2012 while ULSD inventories are 13 percent higher.

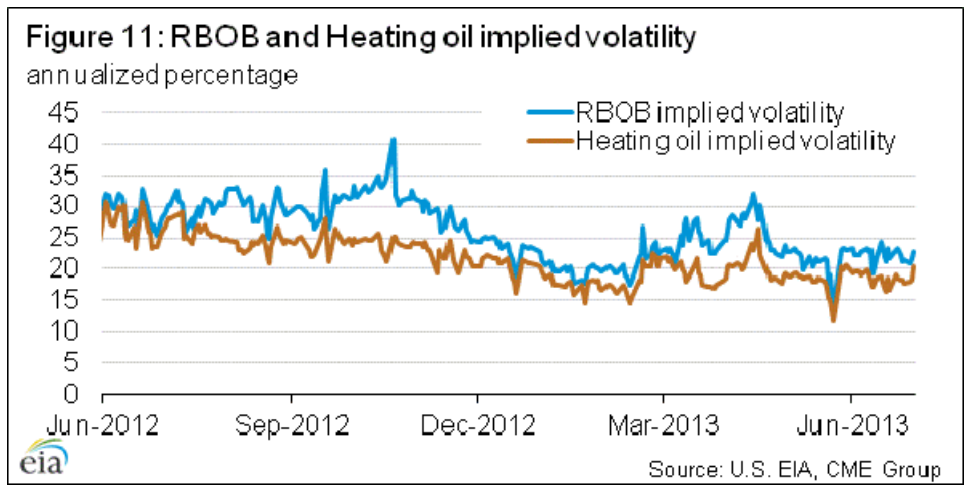


The discount of RBOB futures prices to heating oil futures prices increased during most of June but rebounded strongly in the first week of July. The spread settled at -\$0.11 per gallon on July 3, \$0.04 per gallon lower compared to June 3 but an increase of \$0.03 since its lowest point on June 28 (**Figure 10**). The recent increases in United States refinery

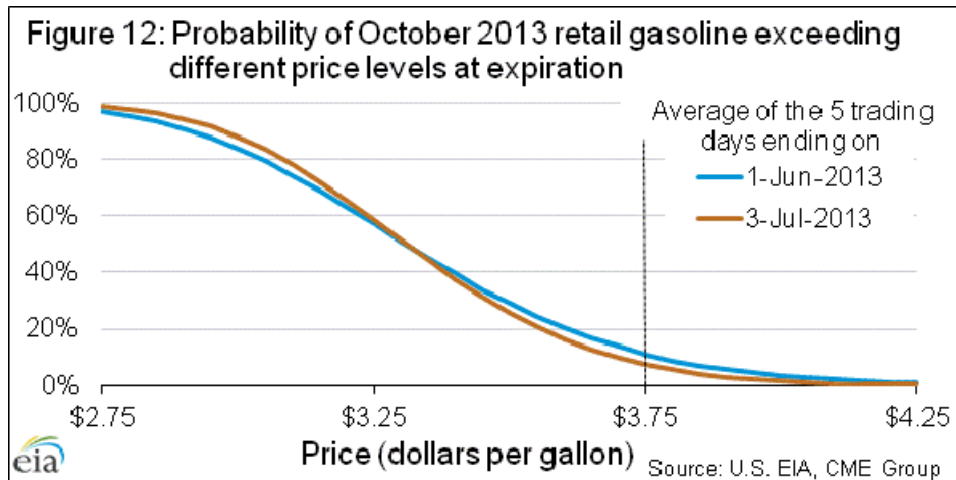
runs in the face of potentially weaker emerging market demand and robust inventory levels could signal lower distillate prices in the future.



Volatility: Implied volatilities for both the front month RBOB and heating oil contracts continued to stay relatively constant through June and into July. The implied volatility for the front month RBOB contract settled at 22.9 percent on July 3 while the implied volatility for the front month heating oil contract settled at 20.3 percent (**Figure 11**).

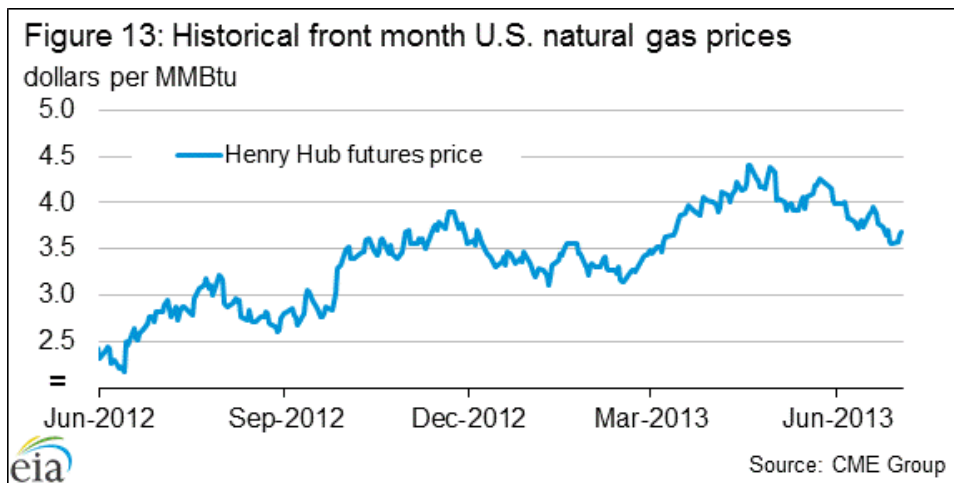


Market-Derived Probabilities: The October 2013 RBOB futures contract averaged \$2.62 per gallon for the five trading days ending July 3 and has a probability of exceeding \$3.05 per gallon (typically leading to a retail price of \$3.75 per gallon) at expiration of approximately 7 percent. The same contract for the five trading days ending June 3 had a probability of exceeding \$3.05 of 11 percent (**Figure 12**).

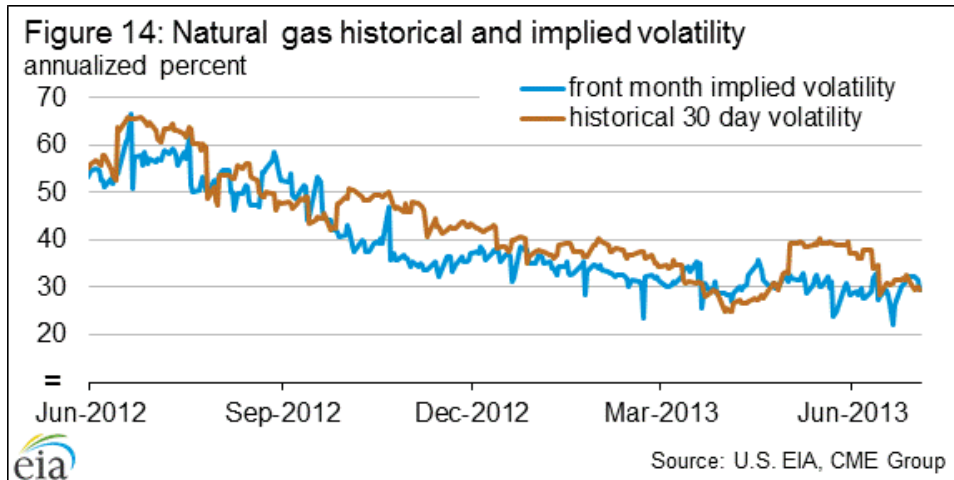


Natural Gas

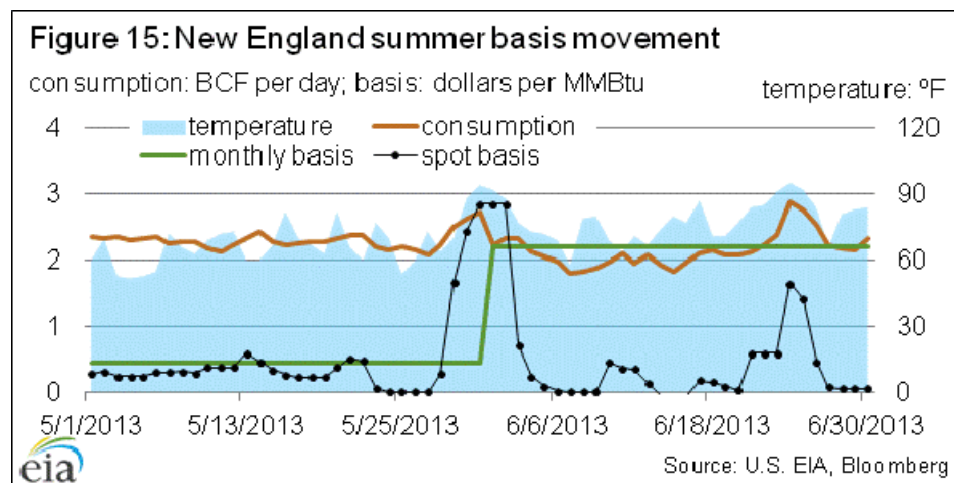
Prices: The front month futures price settled at \$3.69 per MMBtu on July 3, decreasing \$0.30 per MMBtu from the price at the beginning of June (**Figure 13**). Moderate nationwide temperatures and average storage builds helped prices pull back from the increases seen in April and May.



Volatility: Implied volatility for the front month futures contract was almost unchanged in June, settling at 29.4 percent on July 3, 0.2 percentage points higher than at the beginning of June (**Figure 14**). Historical volatility also settled at 29.4 percent on July 3, 7.9 percentage points lower than at the beginning of June. The historical volatility is sensitive to large one-day price changes. For example, the historical volatility jumped up 6.5 percentage points on May 2 in response to the 30-cent drop in price (**Figure 13**), and returned to the prior level when this one-day drop rolled off the moving average window (**Figure 14**).

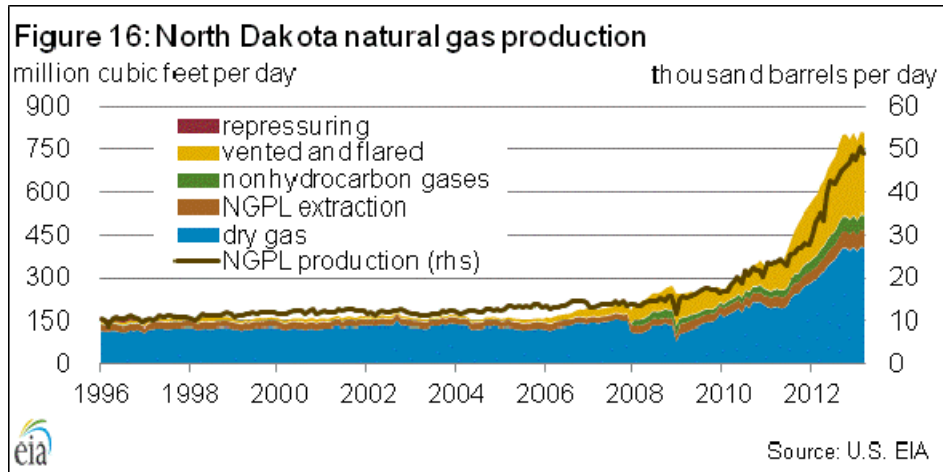


Summer market in New England: The combination of scheduled maintenance on the Algonquin pipeline and forecasts of rising temperatures helped to push up the monthly basis at the Algonquin Citygate from \$0.47 per MMBtu for the May 2013 futures contract, which settled on April 26, to \$2.21 per MMBtu for the June 2013 contract, which settled on May 29 (**Figure 15**). On May 31, the temperature at Boston reached 94°F, and the natural gas consumption in New England increased to 2.74 Bcf. At the same time, scheduled maintenance on the Algonquin pipeline reduced supply, contributing to an increase in the daily spot basis to \$2.84 per MMBtu at the Algonquin Citygate. The pressure on the summer basis eased after the main part of the maintenance was completed. On June 24, although the temperature and consumption were both higher than on May 31, at 95°F and 2.98 Bcf, the spot basis responded more moderately, rising to \$1.66 per MMBtu.



New natural gas pipeline in North Dakota: The Tioga pipeline developed by Enbridge is scheduled to be in operation in mid-2013. This pipeline will deliver up to 120,000 million cubic feet per day from Tioga, North Dakota to its connection with the Alliance pipeline, which transports natural gas from British Columbia to Chicago, Illinois. Once in operation, it will provide additional market access for Bakken producers to deliver

natural gas to downstream consumers and support ongoing increases in natural gas production from North Dakota (**Figure 16**).



Market Derived Probabilities: The probability that the October 2013 contract will settle higher than \$4.00 per MMBtu decreased 32 percentage points, from 56 percent to 24 percent, when compared to market conditions on the five trading days ending June 1 (**Figure 17**), as a result of the decline in price.

