

Gasoline and Ethanol Price Update (07142016)

For the fourth month in a row since March 2016, monthly average wholesale gasoline prices rose (see Figure 1), reflecting increasing crude oil prices this year after a price decline that began in July 2015 (see Figure 2). The average wholesale gasoline price in June (\$1.82/gallon) was up 78% from the low wholesale average price recorded during February 2016 (\$1.02/gallon). The wholesale gasoline price in June 2016 increased \$0.08/gallon relative to the previous month (\$1.74/gallon). Despite increasing monthly wholesale prices of gasoline from March to June, on average, prices during the first six months 2016 have been below last year. The wholesale gasoline price averaged \$1.46/gallon this year (January to June) compared with \$1.90/gallon during the same period last year.

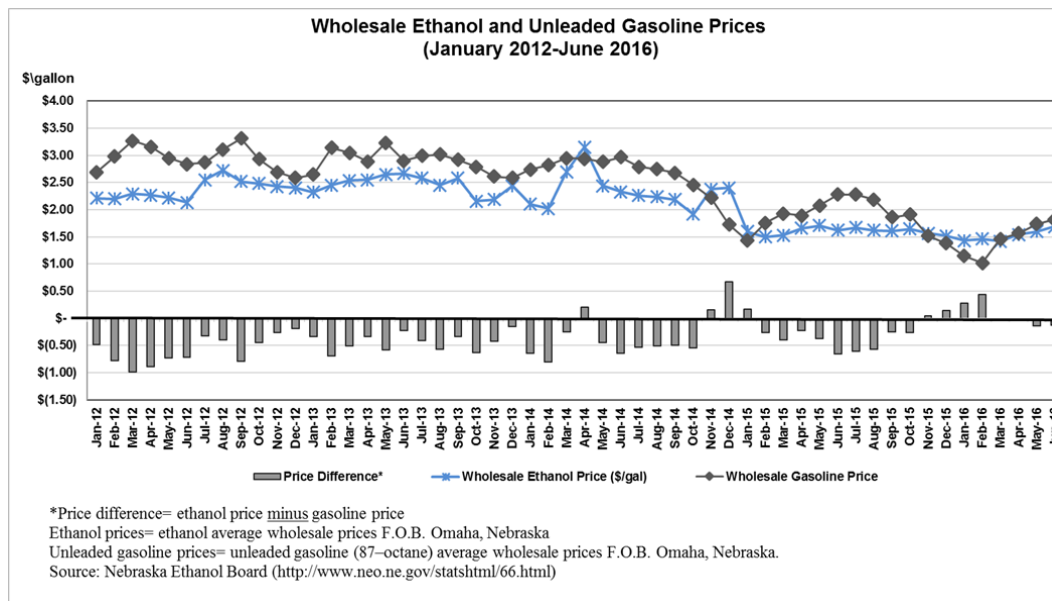


Figure 1. Wholesale Ethanol and Unleaded Gasoline Prices (January 2012-June 2016)

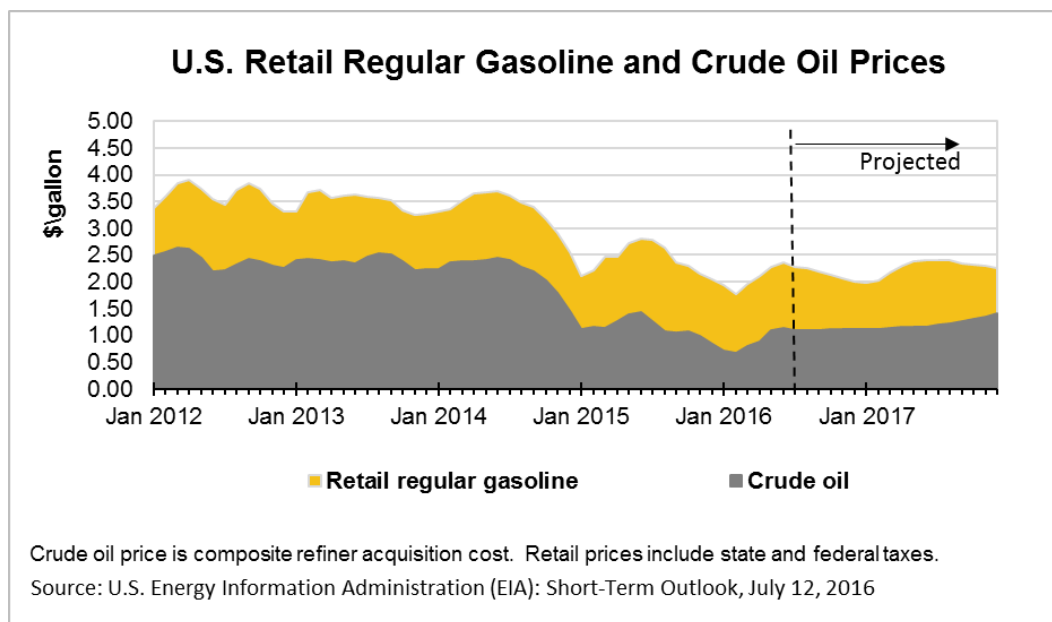


Figure 2. U.S. Retail Regular Gasoline and Crude Oil Prices

The U.S. regular gasoline retail price in June 2016 increased 4% to \$2.37/gallon compared with the previous month (\$2.27/gallon). U.S. regular gasoline retail prices for June 2016 varied from \$2.12/gallon in the Gulf Coast to

\$2.73/gallon in the West Coast. The June regular gasoline retail average price in the Midwest (PADD 2)¹ was \$2.38/gallon. The U.S. Energy Information Administration (EIA) indicates in the July 12, 2016 edition of the Short-Term Energy Outlook (STEO) that the monthly average of U.S. regular gasoline retail price reached an annual peak in June (2.37/gallon), and expects lower prices for the rest of the summer (up to September 2016). As indicated by EIA, expected declining gasoline wholesale margins (i.e., the difference between wholesale price of gasoline and the price of Brent crude oil), will be driving this reduction in retail gasoline prices. Overall, EIA expects lower prices in the second half of 2016 (see Figure 2 above), averaging \$2.16 (\pm \$0.11) per gallon from July to December 2016.

The June 2016 wholesale ethanol price (\$1.69/gallon) increased 5.6% relative to the previous month (\$1.60/gallon). The price of ethanol during the first six months of this year ranged between \$1.42 in March and \$1.69 in June, and the average ethanol price from January to June was \$1.52/gallon. The wholesale ethanol price in June 2016 was up 4.3% or \$0.07/gallon more expensive year-over-year (\$1.62/gallon). On average, ethanol prices in 2016 (January to June) have been \$0.08 lower than prices during the same time last year.

As shown in Figure 1, wholesale ethanol prices from November 2015 to February 2016 were above wholesale gasoline prices, compromising the position of ethanol as a cheap source of octane in gasoline blends. After March 2016 both gasoline and ethanol wholesale prices have been increasing, with gasoline prices outpacing ethanol prices. As of June 2016, the average wholesale ethanol price was \$0.13/gallon cheaper than the average wholesale gasoline price that month.

Ethanol and gasoline wholesale price series move together in the same direction over time as indicated by a positive correlation of 84%, which was estimated using data from January 2012 to June 2016. However, there are short periods of time where these price series experience different rates of change such as what we have seen recently. Regression analysis indicated that a 10% increase in the monthly wholesale gasoline price yielded a 6.28% increase in the monthly ethanol price during the analyzed period.

According to EIA, U.S. regular gasoline retail prices are forecasted to average \$2.12/gallon in 2016, with prices expected to decline from the average price in June (\$2.37/gallon). For ethanol to remain competitive in gasoline blends if projections are realized, ethanol prices need to adjust quickly not only in the same direction, but also at a larger rate of change given the small margin cushion that currently exist (\$0.13/gallon). During the analyzed period (January 2012 to June 2016), and using the wholesale ethanol and gasoline price data, eight out of 54 times ethanol prices have been below gasoline prices; however, during these times of negative margins, adjustments have taken longer in more recent times (i.e., November 2015 to March 2016). If this pattern continues it may affect the competitiveness of ethanol.

¹ Petroleum Administration for Defense District (PADD) 2 (Midwest) includes: Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, Oklahoma, South Dakota, Tennessee, and Wisconsin.