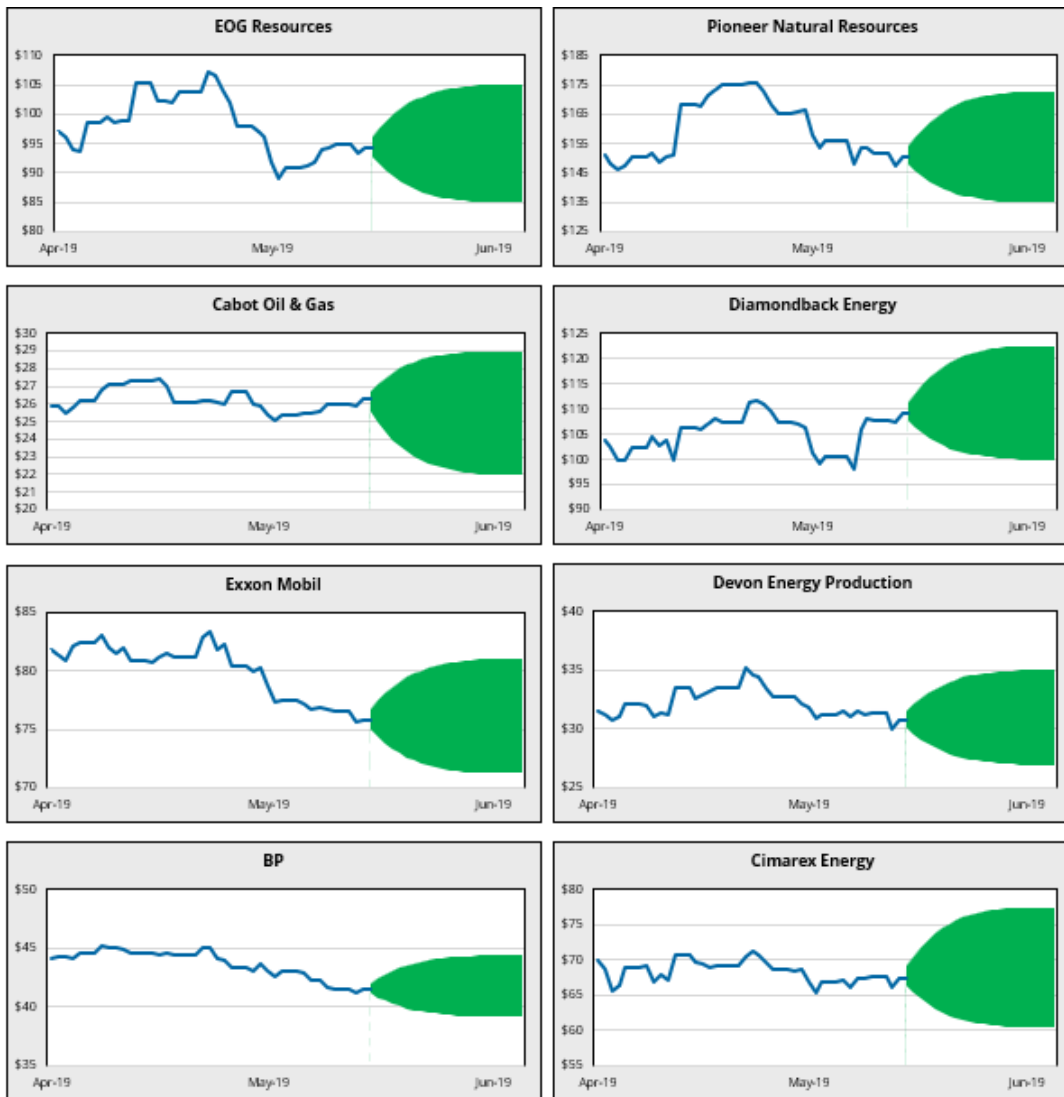


## ValueScope's Oil and Gas Price Outlook: May 16, 2019

### Expected Range Cones

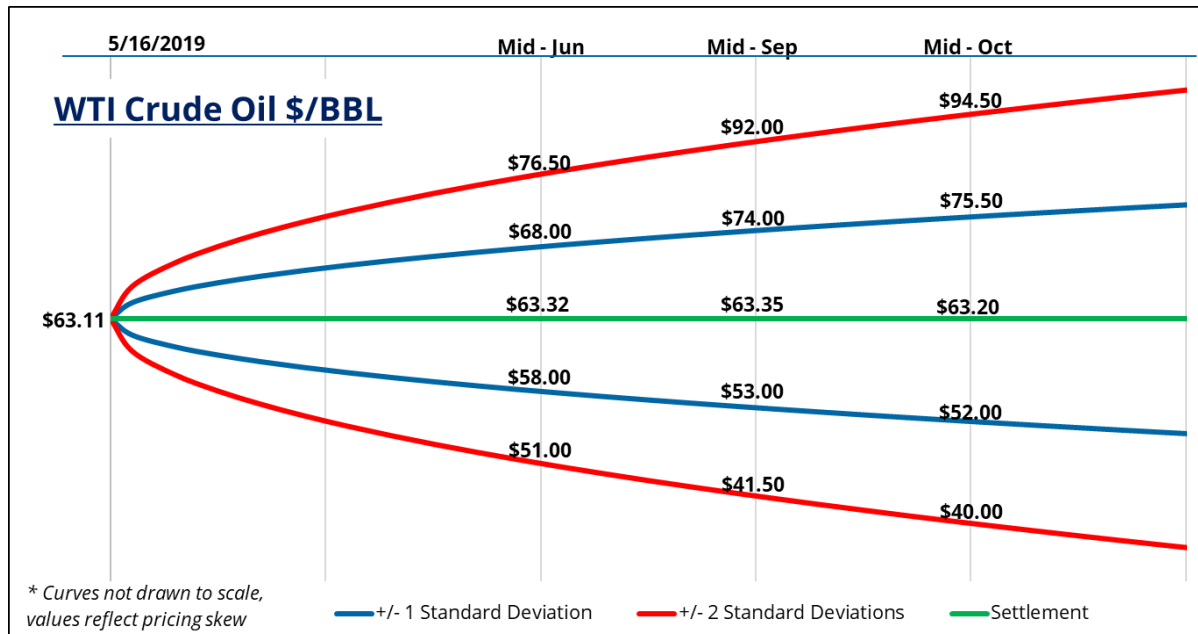
The "Expected Range Cone" for a stock's expected prices in the future represents a theoretical price range that is calculated from options' implied volatilities. A selection of large Texas oil & gas companies is shown below.



If the implied volatility is relatively high, then the market is expecting a larger potential price range for the underlying stock. From this we can derive the market's one standard deviation theoretical expectation of where prices might be in the future. In other words, the market is expecting, with a 68% theoretical probability, that prices will fall within the boundary of the cone at the end of 30 days.

## **WTI Crude Oil Outlook**

Take a look at the price distribution below, which shows the crude oil spot price on May 16, 2019 and predicted crude oil prices based on option and futures markets. The blue lines are within one standard deviation ( $\sigma$ ) of the mean and the red lines are within two standard deviations.



Based on the May 16, 2019 prices, the markets indicate that in mid-June there is a 68% chance that oil prices will be between \$58.00 and \$68.00 per barrel. Likewise, there is about a 95% chance that prices will be between \$51.00 and \$76.50. In mid-October 2019, the +/- 1 $\sigma$  price range is \$52.00 to \$75.50 per barrel and the 2 $\sigma$  range is \$40.00 to \$94.50 per barrel. In other words, there is a 95% probability that the expected price of oil will be between approximately \$40 and \$95 per barrel, and a 97.5% probability it will not be above \$95 per barrel.

## **Natural Gas Outlook**

We can do the same thing for natural gas, which is currently trading at \$2.62 per MMBTU on the Henry Hub. Although more affected by seasonal factors than crude oil, in mid-June 2019, the +/- 1 $\sigma$  price range is \$2.45–\$2.85 per barrel (68% probability) and the +/- 2 $\sigma$  range is \$2.15 to \$3.15 per MMBTU (95% probability).

## **Key Takeaways**

Remember, these option analyses deal in expected probabilities, not certainty—but that doesn't make it any less useful. If someone asks you longingly if oil will be at \$100 again soon, you now can respond with “there is about a 97.5% probability that oil prices aren't expected to get above \$95 by mid-October 2019, so I wouldn't count on it.”

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