Forecasting Gasoline Prices: A Comparison Forecasting Techniques

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Abstract

Crude oil is a volatile commodity that affects the bottom line of a number of business and consumers. The most visible aspect of these oil price fluctuations is the volatility in gasoline prices that consumers see at gas stations. It is important to study the past and future prices of gasoline in order to provide the best information for individuals that rely on this commodity. The aim of this study is to determine the best method to provide forecasts of gasoline prices by comparing Holt Winters, structural, ARIMA, vector error-correction models. We also construct a composite forecast based on these four models. From the empirical analysis, we find significant evidence from the structural model and the vector error-correction model that the movement in the U.S. gasoline spot prices can be explained by the WTI benchmark and the spread between BRENT and WTI benchmarks. In terms of forecasting performance, the structural model outperforms the other model for the within sample. For the out sample, the Holt-Winters model is the best.