Oil or gasoline, which one Has effective price forecasting: Evidence from data-driven machine learning models

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Abstract

Using a data-driven machine learning environment, we compare the long-horizon forecast performance among energy commodities prices. In terms of both the statistical and economic evaluation criteria. The empirical results indicate that artificial neural networks (ANN) based models' accuracy is better than the support vector machine (SVM) based models. More interestingly, ANN was able to achieve up to 97% accuracy in predicting the oil price than their gasoline counterparts during periods of high volatility. Furthermore, we show that connectedness is typically strengthened during crisis periods. Further analysis from the real-time application of machine learning shows supportive evidence that commodity investors' attention to oil during the recent COVID-19 outbreak causes bilateral contagion volatility effect in oil and gasoline markets.

Keywords: Oil, Support Vector Machines, Artificial Neural Networks, Forecast, Crisis.
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