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Forecasting Volatility of the U.S. Oil Market

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Abstract

We examine the information content of the CBOE Crude Oil Volatility Index (OVX) when forecasting realized volatility in the WTI futures market. Additionally, we study whether other market variables, such as volume, open interest, daily returns, bid-ask spread and the slope of the futures curve, contain predictive power beyond what is embedded in the implied volatility. In out-of-sample forecasting we find that econometric models based on realized volatility can be improved by including implied volatility and other variables. Our results show that including implied volatility significantly improves daily and weekly volatility forecasts; however, including other market variables significantly improves daily, weekly and monthly volatility forecasts.

Keywords: Oil prices, realized volatility, implied volatility, volatility forecasting,

JEL: G14, G13, Q47, L94.

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