

**The Generalized AutoRegressive Conditional Heteroskedasticity
Parkinson Range (GARCH-PARK-R) Model
for Forecasting Financial Volatility**

by

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Abstract

A new variant of the ARCH class of models for forecasting the conditional variance, to be called the Generalized AutoRegressive Conditional Heteroskedasticity Parkinson Range (GARCH-PARK-R) model, is proposed. The GARCH-PARK-R model, utilizing the extreme values, is a good alternative to the Realized Volatility that requires a large amount of intra-daily data. The estimates of the GARCH-PARK-R model are derived using the Quasi-Maximum Likelihood Estimation (QMLE). The Parkinson Range is also used to evaluate the out-of-sample forecasting performance of 68 ARCH models using inter-daily data on the peso-dollar exchange rate. Finally, the variance of the conditional variance is estimated to generate the volatility of the volatility (VoV).

Key words: Volatility, GARCH-PARK-R, QMLE, Volatility of Volatility