

Modeling Unbiased Extreme Value Volatility Estimator in Presence of Heterogeneity and Jumps: A Study with Economic Significance Analysis

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ABSTRACT

This study proposes the frameworks (HAR-AddRS and HAR-AddRS-J) to account for heterogeneity and volatility jumps in modelling the AddRS estimator (Kumar & Maheswaran, 2014a) based on the heterogeneous autoregressive (HAR) model. We evaluate the forecasting performance of the HAR-AddRS and HAR-AddRS-J models using the error statistic approach and Hansen (2005) superior predictive ability test, and compare the results with the corresponding results from the return based conditional volatility models. Our findings indicate that the HAR-AddRS and HAR-AddRS-J models provide more accurate forecasts of daily volatility than the returns based conditional volatility models. The economic significance analysis indicates that the volatility forecasts from HAR-AddRS-J model result in substantial economic gain as compared to the return based conditional volatility models.

Keywords: Volatility Modeling; Heterogeneity; Jumps; Forecast Evaluation; The AddRS estimator