The wavelet-based jump adjustment methods for high frequency financial data

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High frequency financial data have been often modeled as the jump diffusion processes observed with market microstructure noise. To estimate the integrated volatility in these models, Fan and Wang (2007) proposed the procedure which consists of the jump point detection method via wavelet, estimating these jump sizes, removing the jump effects from data, and computing the three estimators from the jump-adjusted process which still has microstructure noise; TSRV, MSRV and the wavelet-based RV with Haar wavelet filter. Barunik and Vacha (2012a,b) constructed the MODWT-based TSRV to extend this Haar wavelet-based RV to the general wavelet filter case and to improve the jump point estimation. In this study, we explore the wavelet-based jump point detection problem of log price process with measurement error and only use TSRV to estimate the integrated volatility.

References

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