



Estimation for high-frequency data under parametric market microstructure noise

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Abstract

We develop a general class of noise-robust estimators based on the existing estimators in the non-noisy high-frequency data literature. The microstructure noise is a parametric function of the limit order book. The noise-robust estimators are constructed as plug-in versions of their counterparts, where we replace the efficient price, which is non-observable, by an estimator based on the raw price and limit order book data. We show that the technology can be applied to five leading examples where, depending on the problem, price possibly includes infinite jump activity and sampling times encompass asynchronicity and endogeneity.

Keywords Functionals of volatility · High-frequency covariance · High-frequency data · Limit order book · Parametric market microstructure noise

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