



Central limit theorems for pre-averaging covariance estimators under endogenous sampling times

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We consider two continuous Itô semimartingales observed with noise and sampled at stopping times in a nonsynchronous manner. In this article we establish a central limit theorem for the pre-averaged Hayashi-Yoshida estimator of their integrated covariance in a general endogenous time setting. In particular, we show that the time endogeneity has no impact on the asymptotic distribution of the pre-averaged Hayashi-Yoshida estimator, which contrasts the case for the realized volatility in a pure diffusion setting. We also establish a central limit theorem for the modulated realized covariance, which is another pre-averaging based integrated covariance estimator, and demonstrate the above property seems to be a special feature of the pre-averaging technique.

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