

This paper shows how to carry out efficient asymptotic variance reduction when estimating volatility in the presence of stochastic volatility and microstructure noise with the realized kernels (RK) from [Barndorff-Nielsen et al., 2008] and the quasi-maximum likelihood estimator (QMLE) studied in [Xiu, 2010]. To obtain such a reduction, we chop the data into B blocks, compute the RK (or QMLE) on each block, and aggregate the block estimates. The ratio of asymptotic variance over the bound of asymptotic efficiency converges as B increases to the ratio in the parametric version of the problem, i.e. 1.0025 in the case of the fastest RK Tukey-Hanning 16 and 1 for the QMLE. The finite sample performance is investigated using simulations, while our empirical work illustrates the expected gain in practice.