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On Mixed Frequency Data with Applications to Nowcasting

Kuan-Jiun Huang（黃冠鈞）

摘要

When modeling economic relationships, it is common to encounter data sampled at difference frequencies. We have advantage to predict the low frequency data with other higher frequency variables. In the other hand, we are easily to face the high-dimensional linear regressions in which the number of covariates p is considerably larger than the sample size n. Simulation results show that a Lasso regression can be significantly more powerful than a mixed-frequency data sampling regression (MIDAS). Empirical analysis we consider the problem of predicting the growth rate of the U.S. quarterly gross domestic product (GDP), and take several macroeconomic variables with different sampling frequencies as explained variables. The sampling period was from January 1980 to February 2017, but the prediction origin started with the second quarter of 2013 and ended with the first quarter of 2017. The result also demonstrates that the Lasso procedure outperforms the MIDAS regression, Ohit regression and the autoregressive model with exogenous variables in terms of both forecasting and nowcasting. At last, we leave the study of ARCH-GARCH on MIDAS, group Lasso and group Ohit for improving nowcasting performs in future work.

Keywords：Mixed-frequency data, Lasso, Model selection, Forecasting, Nowcasting.

指導教授簽名：