

MALLOWS MODEL AVERAGING ESTIMATOR FOR THE MIDAS MODEL WITH ALMON POLYNOMIAL WEIGHT

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Abstract: This research proposes an ordinary least squares (OLS)-based model averaging estimator using the Mallows model averaging (MMA) criterion for the MIXed DATA Sampling (MIDAS) model. We use a Vandermonde matrix to approximate the unknown weighting functions for the MIDAS model, enabling us to semiparametrically estimate each candidate model for averaging with the OLS estimator. We show that the proposed MMA estimator possesses the same asymptotic optimality properties considered in the literature under suitable regularity conditions, even though the data-generating process is much more general than the previously considered cross-sectional data structure. In addition to the simplicity of implementing the proposed MMA approach for the MIDAS model, our method delivers great numerical performance under various configurations considered in our Monte Carlo simulations.

Key words and phrases: Aggregate impact parameter, asymptotic optimality, model averaging, semiparametric MIDAS model.

1. Introduction

Improving macroeconomic forecasting is of great importance to policymakers and investors with regard to daily decision-making. Recent developments in econometric methods are making this possible by considering the presence of a huge set of real-time high-frequency economic and financial time series. Among them, Aruoba and Diebold (2010) and Giannone, Reichlin and Small (2008) propose the concept of “nowcast” to popularize the idea that one can estimate current unavailable low-frequency (usually monthly or quarterly) real economic activity using timely higher frequency (such as daily) variables.

The concept of nowcasting has attracted a growing strand of the literature based on the MIXed DATA Sampling (MIDAS) model. In fact, MIDAS methods have been proposed by Ghysels, Santa-Clara and Valkanov (2005, 2006) and

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