psd

MASTER'S THESIS PRESENTATION

Macroeconomic Nowcasting via Bootstrap Particle Filtering

WHEN
May, 13th, 2021
1:30 PM, CDT

WHERE
Via ZOOM
ZOOM information will be provided in the email announcement for this seminar.

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Macroeconomic data such as the GDP growth are released with significant lags and at a low frequency. Hence, forecasting the current-quarter (nowcasing) GDP with available data released monthly is crucial to the instant and efficient decision making for governments and corporations. The two-steps nowcasting model proposed by Giannone et al. (2008) applies Kalman smoother to exploit the information from a large available dataset and predicts GDP growth.

The bootstrap particle filter (BPF) is a filtering technique based on sequential Monte Carlo with provable convergence. It allows a more generalized data model. Hence, in this paper, instead of assuming a Gaussian structure and applying Kalman smoother, we assume a Gamma structure and implement bootstrap particle filtering to estimate the model and predict GDP growth in the current quarter or in the near future. According to our empirical experiments, our model achieves improvements compared to existing forecasting methods, including the original two-steps model and the survey of professional forecasts (SPF).

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