

Nowcasting with mixed frequency data using Gaussian processes

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¹This discussion should not be reported as representing the views of the European Central Bank (ECB). The views expressed are those of the discussant and do not necessarily reflect those of the ECB.

Summary

- ▶ Develop machine learning methods for MIDAS regressions.
- ▶ Three strands of literature together: MIDAS, Big Data, machine learning.
- ▶ Use Gaussian processes (GP) to deal with MIDAS \Rightarrow GP-MIDAS: structured (not randomly) compressed GP.

Comment 1: Setup of Monte Carlo simulations

- ▶ The authors do an extensive work already.
- ▶ Clarifications on the current setup:
 - ▶ Do all the x -series follow the same AR process?
 - ▶ And do all the series relate to y in the same way? If (not) so, how do you model the degree of sparsity?

Comment 1: Setup of Monte Carlo simulations

- ▶ At the moment you do not investigate:
 - ▶ The sample length: it is set to 250 quarterly observations \Rightarrow 60 years: good for the U.S., not for the euro area.
 - ▶ Other frequency mismatches (monthly/weekly for example)
- ▶ Related to the frequency mismatch: is your method able to deal with irregular frequency mismatch?
- ▶ Computation time: very useful! but what does it mean concretely? Roughly how long could it take for a practitioner to forecast one quarter?

Comment 2: Empirical exercise

- ▶ From a "central banker" perspective, useful to know
 - ▶ The most important predictors (shown): are they changing over time? If not, is it convenient to have a smaller set of predictors?
 - ▶ More in general, the performance over time.
- ▶ What about "risks"? Can you show the quantiles?