

Replication files for “*Nowcasting from Cross-Sectionally Dependent Panels*”

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2023-03-10

Introduction

This archive contains the replication files. All results in the paper and the supplementary materials can be replicated using the files here. Please feel free to get in touch with questions.

All views belong to the authors and not to any institution they are affiliated with. All data are available in the public domain

Folder Organisation

The paper contains one simulation study and two empirical applications. Here we have three sets of codes to reproduce the different sections of the paper. They are located in three subfolders as below:

- Simulations
- GDP Nowcasting
- Inflation Nowcasting

Each folder has a main file which calls the functions, reads data and stores the results. There is a sub-folder named data in each of the folders and it contains all the relevant data.

How to replicate

We recommend the following steps:

- download and unzip the folder
- navigate to the “*Codes*” folder within the relevant folder and run the main file

Description of Data Files

Below we provide a brief description of the data files in each folder.

GDP Nowcasting

- *gdpcal_average.xlsx* : Country-wise publication lags assumed for GDP releases
- *gdplagmat.RDS* : The assumed calendar of GDP data releases on various nowcast days. The country codes are placed as column names. The rows represent the nowcast days from 1 to 155
- *IP_cal.xlsx* : Country-wise publication lags assumed for Industrial Production (IP) releases
- *iplmat.RDS* : The assumed calendar of IP data releases on various nowcast days. The country codes are placed as column names. The rows represent the nowcast days from 1 to 155
- *mbond.oecd.bss.qoq.RDS* : A list of three sub-items consisting of the main data used for the q-o-q results in the paper. Sub-items are:
 - **Data**: The panel data consists of:
 - * **X1**: Business Survey services (sourced from OECD Main Economic Indicators Database)
 - * **Y**: Q-o-Q log-differences in GDP (sourced from OECD Main Economic Indicators Database)
 - **bs.lagdays**: The release calendar assumed for different countries for the survey
- *MBOND_OECD_BSM.RDS* : Same as *mbond.oecd.bss.qoq.RDS*. Contains Business Survey Manufacturing and y-o-y log differences of GDP
- *MBOND_OECD_BSM_qoq.RDS*: Same as *MBOND_OECD_BSM.RDS*. Contains q-o-q log differences of GDP
- *MBOND_OECD_BSS.RDS*: Same as *mbond.oecd.bss.qoq.RDS*. Contains q-o-q log differences of GDP.
- *OECD_CNAMES.RDS*: A list of country names and codes
- *OECD_IP.RDS*: Same as *MBOND_OECD_BSM.RDS*. Contains y-o-y log differences of GDP and IP data.
- *OECD_IP_qoq.RDS*: Same as *OECD_IP.RDS*. Contains q-o-q log differences of GDP and IP data.
- *Other_surveys.RDS* : Data on 5 surveys together: Consumer Confidence, Services, Retail Trade, Manufacturing, and Construction surveys.

Sources:

1. <http://oe.cd/mei>
2. The release dates for GDP and IP are sourced from Bloomberg. They are also available in the public domain.
3. The release dates for the surveys were estimated approximately by tracking the releases on <http://oe.cd/mei> during 2020 and 2021.

Inflation Nowcasting

- *INFLDATA.RDS*: A list of two. The sub-items are:
 - **mom**: A list consisting of two panel datasets. X1 denotes the appropriately transformed (week-on-week) oil prices and Y is the appropriately transformed (m-o-m) HICP.
 - **yoy**: A list consisting of two panel datasets. X1 denotes the appropriately transformed (y-o-y) oil prices and Y is the appropriately transformed (y-o-y) HICP.

Sources:

1. <https://ec.europa.eu/eurostat/web/hicp/data/database>
2. https://energy.ec.europa.eu/data-and-analysis/weekly-oil-bulletin_en

Simulations

Once the codes are run, data will be generated and will get organised in two folders.

- *JAESims_3*: This folder consists of the simulated data for the frequency mix of 1:3 (i.e. the higher-frequency data is observed three times for each low-frequency data)
- *JAESims_4*: This folder consists of the simulated data for the frequency mix of 1:4 (i.e. the higher-frequency data is observed four times for each low-frequency data)

Each file within the folder will contain 1000 replications of the simulations for the respective panel dimensions. Following description of the variable names for each replication can be referred after the files are generated.

- *X1*: The predictor variable (higher frequency)
- *Y*: The target variable (lower frequency)
- *f*: The factors
- *m*: Number of factors
- *freq*: The ratio of high-frequency to low-frequency
- *phi*: Simulated parameters
- *beta*: Simulated parameters

Notes

- The tables are generated using the `knitr::kable` function. There seems to be an issue in the latex output produced by the function. It adds some extra characters to the “`begin{tabular}`” statement. These are to be deleted manually.
- Tables are just displayed on the console
- Figures are stored in the respective folders