

Organization of replication codes

The replication codes are divided into four directories:

- **Empirics:** Contains the main programs to replicate the empirical analysis of the paper. There are six files:
 - `gdp_solera.m`: Computes full-sample estimates of the GDPsolera series.
 - `real_time_parallel.m`: Computes real-time estimates of the GDPsolera series. It requires Matlab's Parallel Computing Toolbox.
 - `real_time_post.m`: Processes the real time estimates produced by the previous program.
 - `fig_data.m`: Produces figures using the data on vintages of GDE and GDI.
 - `fig_full_sample.m`: Produces figures using the full-sample estimates of our model.
 - `fig_real_time.m`: Produces figures using the real-time estimates of our model.
- **Data:** The file `data.mat` contains Matlab objects with the data on GDE and GDI vintages constructed from the BEA archive. These objects are used in the empirical analysis. We also provide some csv-files with the GDE, GDI, GDO and GDPplus vintages arranged in different ways that are used for some of the figures and calculations.
- **Simulations:** For each model in the paper, we wrote Matlab programs to implement Bayesian estimation by means of the Gibbs sampler. The models were the following ones:
 - v0.** This model features and diagonal VAR dynamics and unrestricted covariance matrices of the innovations to $\Delta x_t, v_{Et}, v_{It}$
 - v1.** This model features diagonal VAR dynamics but a single common factor structure for the covariance matrices of innovations to $\Delta x_t, v_{Et}, v_{It}$.
 - v2.** This model features unrestricted VAR dynamics for Δx_t , diagonal VAR dynamics for v_{Et}, v_{It} , and unrestricted covariance matrices of the innovations to $\Delta x_t, v_{Et}, v_{It}$.

- v3.** This model features unrestricted VAR dynamics for Δx_t , diagonal VAR dynamics for v_{Et} , v_{It} , and a single common factor structure for the covariance matrices of the innovations to Δx_t , v_{Et} , v_{It} .
- v4.** This model decomposes x_t into trend and cycle where the trend is a pure random walk and the cycle is an AR(2) model.

Directory v0 is the baseline model used in the empirical analysis in the paper. Directories v1, v2 and v3 correspond to models M1, M2 and M3 that we compare to our baseline in Supplemental Appendix SM.C.1. The trend-cycle model in directory v4 is compared to the baseline in Supplemental Appendix SM.C.4. For each model, we run Geweke's posterior simulator test in the program `geweke.m`.

- **Comparison:** The program `model_comparison.m` compares alternative models to our baseline, computes marginal likelihoods for each of them and assess the fit of statistical discrepancies.

Figures in the paper

The programs produce more figures and tables than those used in the paper. The correspondence of figure names with their numbering in the paper is as follows:

- F 1. (a) `data_all.eps`
 (b) `data_2015_2017.eps`
 (c) `data_2019_2022.eps`
- F 2. (a) `precision_gains_level_3.eps`
 (b) `historical_last_signal_2018.eps`
- F 3. (a) `solera_vintages_all.eps`
 (b) `solera_vintages_covid.eps`
- F 4. (a) `real_time_2001Q1.eps`
 (b) `real_time_2008Q4.eps`

(c) real_time_2019Q2.eps

F 5. (a) gdp_plus_o_solera_1.eps

(b) gdp_plus_o_solera_2.eps

F 6. (a) gdp_nowcast_plus_1.eps

(b) gdp_nowcast_plus_3.eps

F 7. (a) solera_2019_2023_level.eps

(b) solera_2019_2023_diff.eps

(c) solera_1984_2023_level.eps

(d) solera_1984_2023_diff.eps