

READ ME FILE

Title: The Unit-effect Normalisation in Set-identified Structural Vector Autoregressions

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Description

This 'read me' file contains instructions about how to replicate the results in RDP 2022-04.

Data

The data are contained in Uhlig_Data_Updated.mat. They were obtained from the replication files to Antolín-Díaz and Rubio-Ramírez (2018), which are available on Juan Antolín-Díaz's website: <<https://sites.google.com/site/juanantolindiaz/>>. Data used to plot the figures can be found in 'rdp-2022-04-graph-data.xlsx'.

Programs

The results were obtained using Matlab R2021b on a desktop computer running Microsoft Windows 10 Enterprise with an Intel Core i7-9700 CPU @ 3.00GHz, 8 cores and 128 GB RAM. The Matlab code uses the Optimization, Parallel Computing, and Statistics and Machine Learning toolboxes.¹ Generating the main results took about 33 hours (about 3 hours for each of Restrictions (1) and (2) and about 27 hours for Restriction (3)).

To replicate the main results and save outputs to the 'results' folder, run runAll.m. This will:

- 1) Run ACR.m, which generates the results under Restrictions (1) and (2). Full results will be saved in ACR_results.mat. The results underlying Figures 3 and 4 (along with additional results for other variables) will be exported to FigureData.xlsx. The results underlying the top half of Table 1 will be exported to PosteriorProbs.csv.
- 2) Run ACRUhlig_NR.m, which generates the results under Restriction (3). Full results will be saved in ACR_results.mat. The results underlying Figure 5 (along with additional results for other variables) will be exported to FigureData.xlsx. The results underlying the bottom half of Table 1 will be exported to PosteriorProbs.csv.

Uncommenting ACRUhlig_horizonRobustness.m before running runAll.m will replicate the results underlying Figure D1. Uncommenting ACRUhlig_optim.m will generate the results underlying Figure 4 using an alternative approach to computing the bounds of the identified set (numerical optimisation rather than simulation); this exercise is referred to in Footnote 29.

References

Antolín-Díaz J and JF Rubio-Ramírez (2018), 'Narrative Sign Restrictions for SVARs', *The American Economic Review*, 108(10), pp 2802–2829.

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1 Researchers without access to the Optimization Toolbox can replicate the main results after replacing checkEmptyIS_Read.m with checkEmptyIS_GKV.m and checkBoundedIS_Read.m with checkBoundedIS_GKV.m in mainfile_q1.m (within the auxFunctions folder). Researchers without access to the Parallel Computing Toolbox can run the code after replacing 'parfor' with 'for' in drawQs_NR.m (within the auxFunctions folder). Researchers without access to the Statistics and Machine Learning Toolbox could run the code after writing their own functions to draw random variables from the inverse Wishart distribution (replacing Matlab's iwishrnd function) and to compute sample percentiles (replacing Matlab's prctile function); this would require modifying mainfile_NR.m and mainfile_q1.m in the auxFunctions folder.