

STRUCTURAL VAR MODELS

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Course Description

This reading group aims at presenting and discussing the main econometric techniques used to identify structural shocks in VAR models, from the origins to the state of the art. The most important papers in this literature will be analysed both from an economic and an econometric point of view.

The first lecture will be devoted to introducing the Bayesian approach to VAR models (BVAR) and the main Markov-Chain Monte Carlo (MCMC) algorithms to estimate them.

The software used is Matlab. Codes and data will be provided and commented on.

Prerequisites for this course are a good knowledge of time-series econometrics and a basic knowledge of programming techniques.

Syllabus

1. Introduction to Bayesian Econometrics and Bayesian VAR Models
2. MCMC Methods
3. Introduction to SVARs
4. Short-Run and Long-Run Restrictions
5. Narrative Identification
6. Sign Restrictions
7. Proxy-SVAR

References

General references

- Lutz K., Lütkepohl H., “*Structural Vector Autoregressive Analysis*”, Cambridge University Press, 2017 (preliminary chapters can be freely downloaded on Kilian’s webpage: <http://www-personal.umich.edu/~lkilian/book.html>)
- Bayesian Estimation, Analysis and Regression (BEAR) toolbox and technical guide (the toolbox and the documentation can be downloaded from here: <https://www.ecb.europa.eu/pub/research/working-papers/html/bear-toolbox.en.html>)
- Leeper E., Sims C.A., Zha T., (1996), “*What Does Monetary Policy Do?*” Brookings Papers on Economic Activity, 2, 1-78.

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Bayesian econometrics

- Chan J., Koop G., Poirier D.J., Tobias J.L., “*Bayesian Econometric Methods*” (2nd Edition), Cambridge University Press.
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Short- and long-run restrictions

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- Canova F., Pires Pina J., (1999), “*Monetary policy misspecification in VAR models*”, CEPR Discussion Paper 2333.
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Narrative identification

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- Cloyne J., (2013), “*Discretionary Tax Changes and the Macroeconomy: New Narrative Evidence from the United Kingdom*”, *American Economic Review*, 103 (4), 1507–1528.

Sign restrictions

- Uhlig H., (2005): “*What are the effects of monetary policy on output? Results from an agnostic identification procedure*”, *Journal of Monetary Economics*, 52, 381–419.
- Fry R., Pagan A., (2011), “*Sign restrictions in vector autoregressions: a critical review*”, *Journal of Economic Literature*, 49 (4), 938-960.
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- Antolin-Diaz J., Rubio-Ramirez J.F., (2018), "*Narrative sign restrictions for SVARs*", American Economic Review, 108 (10), 2802-2829.
- Arias J.E., Caldara D., Rubio-Ramírez J.F., (2019), "*The systematic component of monetary policy in SVARs: an agnostic identification procedure*," Journal of Monetary Economics, 101(C), 1-13.

Proxy-SVAR

- Mertens K., Ravn M.O., (2013): "*The dynamic effects of personal and corporate income tax changes in the United States*", American Economic Review, 103(4): 1212–1247.
- Gertler M., Karadi P., (2015), "*Monetary policy surprises, credit costs, and economic activity*". American Economic Journal: Macroeconomics, 7 (1), 44–76.
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- Stock J., Watson M, (2018): "*Identification and estimation of dynamical causal effects in macroeconomics using external instruments*", The Economic Journal, 128, 917–948.
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