Macroeconomics II University of Padova

Efrem Castelnuovo efrem.castelnuovo@gmail.com

Aim of the course

This is a 10 hour-subject. Students will be introduced to reduced-form VARs and a variety of different identification schemes to move from the description of the data (provided by the reduced-form analysis) to the interpretation of the data (via the structural analysis). The aim of the course is to endow students with knowledge that will enable them to i) read state-of-the-art scientific papers based on Structural VAR (SVAR) analysis; ii) produce scientific research based on such approach.

Exam

2 hour-written exam, closed books.

Syllabus & readings

Note: References marked with an asterisk are exam material.

- 1. VAR: Reduced-form analysis [1.5hr]
- (*) Kilian and Lütkepohl (2017) chapter 2.
- 2. SVAR: Cholesky-identification strategy [1.5hr]

(*) Kilian and Lütkepohl (2017) - chapter 4, Sims (1980), Christiano, Eichenbaum, and Evans (1999), Christiano, Eichenbaum, and Evans (2005), Stock and Watson (2001), Castelnuovo and Surico (2010).

3. SVAR: Sign restrictions [2hrs]

Faust (1998), Canova and de Nicoló (2002), (*) Uhlig (2005), (*) Fry and Pagan (2011), Rubio-Ramírez, Waggoner, and Zha (2010), Baumeister and Hamilton (2015), Kim, Moon, and Velasco (2017).

4. SVAR: Coefficients, shocks, and other restrictions [2hrs]

(*) Ludvigson, Ma, and Ng (2019b), Ludvigson, Ma, and Ng (2019a), (*) Antolín-Díaz and Rubio-Ramírez (2019), Furlanetto, Ravazzolo, and Sarferaz (2019), (*) Arias, Caldara, and Rubio-Ramírez (2019), (*) Wolf (2019).

5. Proxy-SVARs [1.5hrs]

(*) Mertens and Ravn (2013), Stock and Watson (2018), Gertler and Karadi (2015), Caldara and Kamps (2017).

6. Local Projections [1.5hrs]

Jordà (2005), (*) Ramey and Zubairy (2018), Tenreyro and Thwaites (2016), (*) Plagborg-Møller and Wolf (2018).

References

- ANTOLÍN-DÍAZ, J., AND J. F. RUBIO-RAMÍREZ (2019): "Narrative Sign Restrictions," American Economic Review, forthcoming.
- ARIAS, J. E., D. CALDARA, AND J. RUBIO-RAMÍREZ (2019): "The Systematic Component of Monetary Policy in SVARs: An Agnostic Identification Procedure," *Journal* of Monetary Economics, 101, 1–13.
- BAUMEISTER, C., AND J. D. HAMILTON (2015): "Sign Restrictions, Structural Vector Autoregressions, and Useful Prior Information," *Econometrica*, 83(5), 1963–1999.
- CALDARA, D., AND C. KAMPS (2017): "The Analytics of SVARs: A Unified Framework to Measure Fiscal Multipliers," *Review of Economic Studies*, 84, 1015–1040.
- CANOVA, F., AND G. DE NICOLÓ (2002): "Monetary Disturbances Matter for Business Fluctuations in the G-7," *Journal of Monetary Economics*, 49, 1131–1159.
- CASTELNUOVO, E., AND P. SURICO (2010): "Monetary Policy Shifts, Inflation Expectations and the Price Puzzle," *Economic Journal*, 120(549), 1262–1283.
- CHRISTIANO, L., M. EICHENBAUM, AND C. EVANS (2005): "Nominal Rigidities and the Dynamic Effects of a Shock to Monetary Policy," *Journal of Political Economy*, 113(1), 1–45.
- CHRISTIANO, L. J., M. EICHENBAUM, AND C. EVANS (1999): "Monetary Policy Shocks: What Have We Learned and to What End?," In: J.B. Taylor and M. Woodford (eds.): Handbook of Macroeconomics, Elsevier Science, 65–148.
- FAUST, J. (1998): "The robustness of identified VAR conclusions about money," Carnegie Rochester Conference Series on Public Policy, 49, 207–244.

- FRY, R., AND A. PAGAN (2011): "Sign Restrictions in Structural Vector Autoregressions: A Critical Review," *Journal of Economic Literature*, 49(4), 938–960.
- FURLANETTO, F., F. RAVAZZOLO, AND S. SARFERAZ (2019): "Identification of financial factors in economic fluctuations," *Economic Journal*, 129, 311–337.
- GERTLER, M., AND P. KARADI (2015): "Monetary Policy Surprises, Credit Costs, and Economic Activity," *American Economic Journal: Macroeconomics*, 7(1), 44–76.
- JORDA, O. (2005): "Estimation and Inference of Impulse Responses by Local Projections," American Economic Review, 95(1), 161–182.
- KILIAN, L., AND H. LÜTKEPOHL (2017): "Structural Vector Autoregressive Analysis," Cambridge University Press, Cambridge.
- KIM, S.-H., S. MOON, AND C. VELASCO (2017): "Delayed Overshooting: Is It an Š80s Puzzle?," *Journal of Political Economy*, 125(5), 1570–1598.
- LUDVIGSON, S. C., S. MA, AND S. NG (2019a): "Shock Restricted Structural Vector-Autoregressions," New York University, Federal Reserve Board, and Columbia University.
 - (2019b): "Uncertainty and Business Cycles: Exogenous Impulse or Endogenous Response?," *American Economic Journal: Macroeconomics*, forthcoming.
- MERTENS, K., AND M. O. RAVN (2013): "The Dynamic Effects of Personal and Corporate Income Tax Changes in the United States," *American Economic Review*, 103(4), 1212–1247.
- PLAGBORG-MØLLER, M., AND C. K. WOLF (2018): "Local Projections and VARs Estimate the Same Impulse Responses," Princeton University, mimeo.
- RAMEY, V. A., AND S. ZUBAIRY (2018): "Government Spending Multipliers in Good Times and in Bad: Evidence from U.S. Historical Data," *Journal of Political Econ*omy, 126(2), 850–901.
- RUBIO-RAMÍREZ, J. F., D. F. WAGGONER, AND T. ZHA (2010): "Structural Vector Autoregressions: Theory of Identification and Algorithms for Inference," *Review of Economic Studies*, 77, 665–696.
- SIMS, C. (1980): "Macroeconomics and Reality," *Econometrica*, 48(1), 1–48.
- STOCK, J., AND M. WATSON (2001): "Vector Autoregressions," Journal of Economic Perspectives, 15, 101–115.
- STOCK, J., AND M. W. WATSON (2018): "Identification and Estimation of Dynamic Causal Effects in Macroeconomics Using External Instruments," *Economic Journal*, 128, 917–948.
- TENREYRO, S., AND G. THWAITES (2016): "Pushing on a string: US monetary policy is less powerful in recessions," *American Economic Journal: Macroeconomics*, 8(4), 43–74.
- UHLIG, H. (2005): "What Are the Effects of Monetary Policy? Results from an Agnostic Identification Procedure," *Journal of Monetary Economics*, 52, 381–419.

WOLF, C. K. (2019): "SVAR (Mis-)Identification and the Real Effects of Monetary Policy," *American Economic Journal: Macroeconomics*, forthcoming.