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Summer 2017

Institute for Employment Research
The Research Institute of the Federal Employment Agency
IAB
FAU FRIEDRICH-ALEXANDER UNIVERSITÄT ERLANGEN-NÜRNBERG
FACHBEREICH WIRTSCHAFTSWISSENSCHAFTEN

Macroeconomic Methods: Applications to Monetary Policy

Syllabus (summer 2017)

Macroeconomics aims at understanding how and why aggregate economic variables such as GDP, inflation, and employment move together. This course provides an overview of the different methods that are used in modern macroeconomic analysis. These different methods are illustrated in the context of monetary policy evaluation based on the New Keynesian model. We discuss model properties and calibration, time series evidence (structural vectorautoregressions), and the estimation of macroeconomic models (also with Bayesian techniques).

The lectures take place in the first half of the semester. The final research project will be assigned during the course and is due at the end of the term. Students may improve their grades by handing in voluntary problem sets.

Lecture: Thursday 9.45-11.15 and 11.30-13.00 (until mid of June), location 3.155.
Prerequisites: Macroeconomics (Business cycles & economic growth) and a sound knowledge of econometric methods (e.g., Applied Econometrics). Multivariate Time Series Analysis (Prof. Klein) is helpful, but not compulsory.
Language: English.
Contact: britta.gehrke@fau.de. Consultation upon email appointment.

Contents

1. Introduction and background
    a) Overview
    b) The Lucas and Sims critique
2. A basic New Keynesian model
    a) Structure and idea
    b) Solving DSGE models: Overview of different methods
    c) Solving a DSGE model with Dynare
    d) Model evaluation: Conditional vs. unconditional moments
3. Deriving stylized facts from time series data: SVARs
    a) Introduction
    b) General remarks on VAR processes
    c) Some issues in VAR implementation

   d) Structural identification of monetary policy VARs

4. Fitting the stylized facts: Model extensions

5. Estimating DSGE models

   a) Overview

   b) GMM

   c) Likelihood methods, state space representations and the Kalman filter

   d) Bayesian methods

      i. Introduction: Differences of Bayesian and Frequentist statistics, Bayes' theorem

      ii. Exploring the posterior: Markov Chain Monte Carlo (MCMC) methods

      iii. Application: Estimating our basic NK model

Literature (non-exhaustive)

Textbooks

Canova, Fabio (2007), "Methods for Applied Macroeconomic Research", Princeton University Pres.

DeJong, David N., and Chetan Dave (2011). "Structural Macroeconometrics", Princeton University Press.

Research papers

Lawrence J. Christiano & Martin Eichenbaum & Charles L. Evans, 2005. "Nominal Rigidities and the Dynamic Effects of a Shock to Monetary Policy," Journal of Political Economy, University of Chicago Press, vol. 113(1), pages 1-45, February.

Lucas, Robert E. (1976). "Econometric Policy Evaluation: A Critique." Carnegie-Rochester Conference Series on Public Policy. vol. 1. North-Holland: pages 19-46.

Sims, Christopher A. (1980). "Macroeconomics and Reality." Econometrica: Journal of the Econometric Society: pages 1-48.