Empirical Methods for Business-Cycle Analysis

Christian Wolf

This course aims to bring participants to the research frontier on how to estimate the causal effects of macroeconomic shocks, with a particular focus on monetary and fiscal policy. We will discuss how to: plausibly *identify* those shocks; best *estimate* their causal effects in finite samples; and finally *use* those shock causal effects for macroeconomic policy evaluation. The analysis throughout pushes the boundaries on how much we can say without committing to any explicit structural model of the macro-economy.

Prerequisites

Students should ideally have some experience in (i) basic linear time series analysis and (ii) linearized structural macroeconomic modeling (both state-space and sequence-space). A list of preparatory readings will be distributed before the class.

Outline

Day 1

- Lecture 1
  - impulse-propagation framework, SVMA model
  - the SVMA identification challenge
- Lecture 2
  - identification through invertibility +: exclusion restrictions (both short-run and long-run), sign/magnitude restrictions, max-share, non-Gaussianity/heteroskedasticity
  - applications: monetary policy via recursive ordering, sign restrictions, heteroskedasticity
- Lecture 3
  - identification without invertibility (via instruments/proxies)
  - applications: high-frequency financial data for monetary policy & oil shocks
- Lecture 4

  - estimating causal effects in practice: LP/VAR equivalence
  - finite-sample recommendations

Day 2

- Lectures 5-6
  - identification results: how can we go from policy shock causal effects to systematic policy rule counterfactuals?
  - applications: counterfactual evolution of U.S. economy under alternative monetary rules