Econ 210C Homework 2

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Due: 5/22/2023, 11:59PM PST, on Github.

1. VARs

Download data for the Federal Funds Rate, the civilian unemployment rate, and the GDP deflator inflation rate from FRED.

(a) Plot the data. Make sure all graphs are appropriately labelled.

(b) Aggregate all series to a quarterly frequency by averaging over months.

Estimate a VAR with 4 lags from 1960Q1:2007Q4. The ordering of your variables should be π_t, u_t, R_t.

(c) Briefly, explain why it would make sense to end the sample in 2007Q4?

(d) Plot the IRFs from the SVAR with the same ordering. [Optional: add 95% error bands]

(e) Briefly, interpret your results.

(f) Plot the time series of your identified monetary shocks.

(g) What are the identified monetary shocks in 2001Q3 and 2001Q4? How should one interpret these shocks?

2. Romer shocks

(a) Download the Romer-Romer shocks from my website and merge it with your VAR dataset. Set the values of the Romer shocks to zero before 1969Q1.

(b) Following Romer-Romer, construct the IRF from the estimation equation

$$y_t = \alpha + \sum_{s=1}^{8} \beta_s y_{t-s} + \sum_{s=0}^{12} \gamma_s RR_{t-s}$$

where $y_t \in [\pi_t, u_t, R_t]$ are the outcome variables and RR_t are the Romer shocks estimated from 1960Q1:2007Q4. [Optional: add 95% error bands]

(c) Now estimate an SVAR ordered RR_t, π_t, u_t, R_t with four lags from 1960Q1:2007Q4 and plot the IRFs. [Optional: add 95% error bands]

(d) Briefly, explain why it is sensible to order the Romer shock first in the VAR.

(e) Compare the IRFs for the Romer shocks from the two methods. How are they different, and why?

(f) Compare the VAR IRFs for the Romer shocks with the VAR IRFs for the SVAR shocks in Question (1d). How are they different, and why?

(g) Compare the Romer-Romer the identified monetary shocks in 2001Q3 and 2001Q4 with the SVAR identified monetary shocks. How are they similar / different?