Assignment 2: The effects of economic policies

I. Monetary policy

Use the JST macro panel dataset provided for this exercise.

1. Use base country interest rate changes as an instrument $z_{i,t}$ for local interest rate changes in the following way:

$$z_{i,t} = \left(\Delta r_{b(i,t),t} - \Delta \hat{r}_{b(i,t),t}\right) \times PEG_{i,t} \times PEG_{i,t-1} \times KAOPEN_{i,t},$$

$z_{i,t}\ instrument, \Delta r_{b(i,t),t}\ base\ country\ interest\ rate\ change, \Delta \hat{r}_{b(i,t),t}\ base\ country\ interest\ rate\ change\ predicted\ from\ Taylor\ rule, PEG\ peg\ dummy, KAOPEN\ capital\ account\ openness.$

Then assess the effects local interest rate policy has on local variables $y_{i,t}^{k}$ through the following model:

$$\Delta_h y_{i,t+h}^{k} = \alpha_{i,h}^{k} + \beta_h^{k} \Delta \mathrm{r}_{i,t} + \sum_{l=0}^{L} \Gamma_{l,h}^{k} X_{t-l} + u_{i,t+h}^{k}, \qquad k = 1, \dots, K; \;\; h = 1, \dots, H$$

$\Delta_h y_{i,t(r)}^{k}\ cumulative\ h-year\ change\ of\ variable\ k, \qquad \alpha_{i,h}^{k}\ country\ fixed\ effect,$

$$X_{t-l}\ control\ variables, u_{i,t}\ error\ term.$$

1.1 How strong is the instrument? Plot it against actual short-term interest rate changes.

1.2 Use the instrument to estimate the effects of monetary policy on GDP, CPI, credit, and stock prices. As control variables, use up to two lags of the first differences of: log real GDP per capita; log real consumption per capita; log real investment per capita; log consumer price index; short-term interest rate (usually a 3-month government bill); long-term interest rate (usually a 5-year government bond); log real house prices; log real stock prices; the credit to GDP ratio; and world GDP growth.

2. Does U.S. monetary policy have effects on the rest of the world? To assess this, replace $\Delta \mathrm{r}_{i,t}$ by the U.S. short-term rate change $\Delta \mathrm{r}_{i,t}^{US}$ in the above model.

2.1 Does the Fed affect global output?

2.2 Does the Fed move international stock prices?

3. What effect does U.S. monetary policy have within the U.S.? Use the annualized narrative shock measure provided by Romer and Romer (2004), $\Delta r_{i,t}^{RR}$. Use up to four lags.

3.1 What is the effect of U.S. monetary policy on U.S. GDP?

3.2 How does a +1ppt U.S. interest rate policy shock affect U.S. consumer prices?

3.3 Split the sample into a pre- and post-1985 sample. How do the estimates differ?

II. Fiscal policy

1. A long-standing debate among German historians concerns the question if the austerity policies of the Brüning government contributed the output slump in the early 1930s and thereby paved the way for the Nazis to gain power. Could Chancellor Brüning have avoided the catastrophe with different fiscal policy?

Your task is to answer this question by estimating the dynamic response of output to spending shocks using local projections. The identifying assumption is that public expenditures are predetermined within a given period (i.e., they do not react to shocks to other variables in the same time period).

Use the dataset fiscal data1930s.dta that contains data for German fiscal policy and real variables over the 1927-1935 period. Transform every variable except for the nominal interest rates into 100 times the natural logarithm of that variable.

1.1 Check the frequency of the data. Do you think the identifying assumption is convincing in your dataset? Why?

1.2 One can estimate the effects of spending shocks in the LP-framework by including current values of spending on the right hand side, but only lags of control variables. Explain why this is the case.

1.3 Use LPs to estimate impulse response functions for spending shocks over 24 months for real per-capita GDP and real per-capita spending. Use lagged values of both of these variables and lagged values of real per-capita revenues as control variables, with 6 lags each. All variables enter in levels. Show graphically how GDP responded to a 1 % drop in spending and briefly summarise your findings about the economic effects of Brüning's austerity policy.