

Assignment: Crisis prediction and crisis cost

A. Download the JST macro panel dataset (<http://www.macrohistory.net/data/#DownloadData>).

Estimate logit models for crisis prediction of the form:

$$\ln\left(\frac{P(y_{it} = 1)}{1 - P(y_{it} = 1)}\right) = X'_{it}\beta + e_{it}$$

y_{it} binary crisis indicator (crisis dummy), X_{it} regressor matrix (predictors), β coefficient vector, e_{it} error term

- i. Estimate a logit model with country fixed effects and with five lags of log changes in real credit as a predictor for JST crises and document the results in table.
 - Test for joint significance of five lags credit growth
 - Repeat with BVX crisis dates
 - Used 5-year change in the ratio of credit over GDP as a predictor
- ii. Model evaluation
 - Compare in-sample and out of sample ROC, estimating the model until 1984 and predicting crisis for post-1984 years.
 - Compare the baseline model to a logit model with money as a predictor
 - a logit model with public debt as a predictor
 - plot the ROC curves of a) and b).

B. Download the JST macro panel dataset. Merge with the recession dummies data set. Estimate the path of real GDP per capita (in constant prices, not PPP) in a normal and financial recessions through a sequence of fixed effect regressions (local projections). Consult Òscar Jordà's homepage for implementation. Compare the path of real GDP per capita over the five years following the onset of a normal recession $\{\beta_h\}_{h=1,\dots,5}$ and a financial recession $\{\gamma_h\}_{h=1,\dots,5}$. How costly are normal and financial recessions?

$$\Delta_h y_{i,t+h} = \alpha_i + \beta_h N_{i,t} + \gamma_h F_{i,t} + u_{i,t+h}, \quad h = 1, \dots, 5$$

α_i country fixed effect, $N_{i,t}$ normal recession dummy, $F_{i,t}$ financial recession dummy, $u_{i,t}$ error term