

Econometrics Lab 4

Model Selection

1. Forecast Inflation Use the data set `macrodata.xls`, forecast monthly inflation in 2018 and calculate MSE's of different predictors.

(1) Use AR(1) model. Forecasts based on AR(1) serve as the benchmark forecasts.

(2) We conjecture that the current inflation of CPI depends on the lagged inflation of PPI, the lagged growth of money supply, as well as the lagged value of inflation. Use AIC and BIC to select the best models and perform forecasts.

(3) Use all data in `macrodata.xls` and perform model selection using Lasso. The penalty term λ should be chosen by 10-fold cross-validation.

(Hint: Matlab command `>> lasso(x,y,'CV',10,'Alpha',1);`)

(4) Use all data in `macrodata.xls` and perform model selection using elastic net. The penalty term λ should be chosen by 10-fold cross-validation.

(Hint: Matlab command `>> lasso(x,y,'CV',10,'Alpha',0.5);`)