Homework 5

Eco 4306 Economic and Business Forecasting
Spring 2018
Due: Thursday, March 8, before the class

Problem 1

Obtain monthly data for change, in millions of dollars in Total Private Residential Construction Spending, for the period 1993M01-2017M12. This data is available under code `PRRESCON` on FRED and under `FRED/PRRESCON` on Quandl. Note that you either need to switch the units to 'change' on FRED and Quandl, or construct the change in EViews yourself by calculating the first differences `DCONST = CONST - CONST(-1)`.

(a) Import the data for 1993M01-2017M12 into EViews, then change your sample to 1993M01-2013M12. Use this data to create time series plot and correlogram similar to the two panels in Figure 7.19 (but for 1993M01-2013M12 instead of 2002M01-2011M01).

(b) Compare your correlogram in (a) with that in Figure 7.19. Does the change in U.S. residential construction in 1993M01-2013M12 follow a similar process as in 2002M01-2011M01?

(c) Estimate a suitable multiplicative AR(p)+S-AR(P) model for the period 1993M01-2013M12.

(d) Create a multistep forecast for period 2014M01-2017M12. Also generate the standard errors for this forecast to construct the lower and upper bounds of the 95% confidence interval. Plot the actual data together with the forecast and its 95% confidence interval. Report the RMSE for this forecast.

(e) Create a sequence of one step ahead forecasts for period 2014M01-2016M12 using fixed forecasting scheme. Also generate the standard errors for this forecast to construct the lower and upper bounds of the 95% confidence interval. Plot the actual data together with the forecast and its 95% confidence interval. Report the RMSE for this forecast.

(f) Comment on the difference in RMSE and the width of the confidence intervals between (d) and (e) .