Graduate School of Business
University of Chicago
Bus 41910, Time Series Analysis, Mr. R. Tsay

Homework Assignment #5, Due November 13, 2008

The data sets used are on the course web.

1. The data file "m-ppiaco08.txt" consists of U.S. monthly producer price index (PPI) for all commodities from January 1, 1921 to September 01, 2008. The data format is (year, month, day, ppi) with 1982 index = 100. Build a time series model for the series, check the adequacy of the fitted model, and calculate 1-step to 12-step ahead forecasts of PPI at the forecast origin September 01, 2008.

2. The data file "w-m2.txt" consists of U.S. weekly M2 Money Stock (in billion dolloars). The format is (year,month,day, m2). Build an appropriate model for the M2 Money Stock series. Check the adequacy of the model, and use the model to produce 1-step to 6-step ahead forecasts at the forecast origin October 20, 2008.

3. Consider the data in "ginterv.txt", where an intervention took place at time t=151. Build a model for the series and dicuss the intervention effect.

4. Consider the consumer price index (cpi)of U.S. from January 1947 to September 2008. Is there a unit root in the data? Why? Is there a unit root in the first differenced cpi series? Why?

5. Again, consider the consumer price index (cpi) of U.S. from January 1947 to September 2008. Build a model for the series, perform model checking, and use the model to preoduce 1- to 12-step ahead forecasts at the forecast origin September 2008.