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

Homework Assignment #6, Due in one week

1. The data file "production.txt" contains 85 observations of daily production of an automobile component. It is known that the production process was upgraded at the time point $t = 47$. Use the intervention analysis to assess the impact of the upgrade in the production.

2. The file "d-exjpus.txt" contains the daily exchange rate of Japanese yens per U.S¿ dollars from January 04, 1971 to September 9, 2005. The file has four columns; they are year, month, day and exchange rate, respectively. Consider the log series of the exchange rate. Using the 5% significance level to answer the following questions:

   - Is there a unit root in the exchange rate?
   - Build an ARIMA model for the log series of exchange rate. What is the fitted model?
   - Are there outliers in the ARIMA model built in Part 2?

3. Again, consider the daily exchange rate between Japanese yen and U.S. dollar. Focus on the last 1000 observations to repeat the analysis of Problem 2.