Macroeconometric Forecasting

Exercises in seasonal adjustment

1) Seasonal adjustment of unemployment

a) Take the unemployment series from our home page and use the work file unemp.wf1. Set the sample to “1988m1 2008m8” and use T/S for seasonal adjustment. Store the seasonally adjusted series and the irregular component. Do all residual based tests on the irregular component and prove whether it is White Noise. Check whether you removed seasonal variation completely. Write down the ARIMA model chosen by T/S for the decomposition of unemployment.  
b) Change the sample in your work file to “1988m1 2008m9” and redo the seasonal adjustment in (a), store the ARIMA model chosen automatically.   
c) Continue adding one observation after another and redo step (a) until you reach 2009m3.   
d) Now open a group with all seasonally adjusted series and compare. Do you achieve the same conclusion about the dynamics at the end of the series, regardless of the sample size? Compare the ARIMA models chosen by T/S each time. Comment on your results.   
e) Instead of T/S use X12 and redo steps (a) through (c)  
f) Now open a group with all X12 seasonally adjusted series and compare to T/S adjustment. Do you achieve the same conclusion about the dynamics at the end of the series, regardless of the sample size? Compare the ARIMA models chosen by T/S each time. Comment on your results.

2) Seasonal adjustment of industrial production

a) Suppose you are working in an industrial company and production data are given by our time series of industrial production from our homepage. Set the sample to “1969m1 2010m6”. You are supposed to make a forecast of production for the next six month. Orders for intermediate products will depend on your forecast. Use T/S for seasonal adjustment and keep the button for save forecast series active. Make a forecast of the original industrial production series (seasonally unadjusted) using the seasonally adjusted component and the seasonal factors. Take care of working day, leap year, and holiday adjustments. How can you infer on deterministic calendar effects?  
b) Add one observation to your sample by changing the sample to “1969m1 2010m7” and redo the forecasting exercise.   
c) Repeat step (b) until 2010m11 and keep on making 6-months ahead forecasts. Compute 1-step forecasting errors and comment on their quality. Are you able to predict the strong upswing in the second half of 2010?