Problem Set #9
Spring 2014

1. Take the s&p return series r from the file "s&p.dta".
   (a) Estimate an AR(2) model.
   (b) Test the hypothesis of no serial correlation within this model by testing that the two autoregressive coefficients are jointly zero. Perform the test both using the classical F test and the robust F test. Is there a difference in the statistical "finding"? Which of the two tests is appropriate?

2. The file "gdp2013.dta" has been augmented to include the following quarterly variables
   - t3= rate on 3-month T-bill
   - t12=rate on 12-month T-bill (only available starting 1953Q2)
   - t120=rate on 120-month T-bill (only available starting 1953Q2)
   - aaa=rate on AAA corporate bonds
   - baa=rate on BAA corporate bonds

   Create the transformed variables
   (a) spread12=t12-t3
   (b) spread120=t120-t3
   (c) junk=baa-aaa
   (d) dt3=t3-L.t3
   (e) dt12=t12-L.t12

   Describe in words the variables you created

3. Test the following hypotheses. For each, use three lags of all variables
   (a) *dt3* does not Granger-cause *gdp*
   (b) *dt12* does not Granger-cause *gdp*
   (c) *spread12* does not Granger-cause *gdp*
   (d) *spread120* does not Granger-cause *gdp*
   (e) *junk* does not Granger-cause *gdp*
   Intrepret your findings

4. Reestimate the same five models, restricting the sample to 1954Q2-2013Q4 (so all have the same number of observations). Of these five, which would you select to forecast GDP? Explain your reasoning.

5. Use your selected model to make point and interval forecast for 2014Q1, Q2, Q3 and Q4.