ECON

Assignment 3,

**Due:**

Use the AUTO1 data set that you have used for the previous assignments. For the period 1959.1 to 1973.1 re-run the OLS regressions of the log of per capita real expenditure on gasoline and oil on an intercept, the log of real price index for gasoline and oil, and the log of per capita disposable real personal income.

1. Run the Breush-Pagan-Godfrey (B-P-G) and White tests for heteroscedasticity. Then correct for heteroscedasticity under the assumption that each disturbance is proportional to the fitted values of the B-P-G auxiliary regression and by that manner perform GLS. In the GLS estimation which coefficients are “statistically significant” at 5% level.
2. Returning to OLS, calculate White standard errors. In this estimation which coefficients are “statistically significant” at the 5% level? Compare your answers with part 1.
3. Now use all of the available data. Consider the model:

*y*  **  * x *3  *e*

*t* 1 2 *t t*

Where *yt* is the real expenditure on gasoline and oil and *xt* the real disposable income. Perform a Lagrange Multiplier test for *Ho* : **3  1 (go through the process step by step, do NOT use pre-loaded STATA routines). Do you reject the null?