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| HW4: SAS Code Heteroscedasticity.  **PROC** **IMPORT** OUT= WORK.bm  DATAFILE= "C:\Users\bmishra\Dropbox\Ph.D. Courseworks\Semest  er II, Spring 2019\Econometric Methods\Homeworks\Homework 4\HW4-DATA.xls"  DBMS=EXCEL REPLACE;  RANGE="hw9$";  GETNAMES=YES;  MIXED=NO;  SCANTEXT=YES;  USEDATE=YES;  SCANTIME=YES;  **RUN**;  **data** bm; set bm;  /\* Condition I \*/  y = trport;  a = a;  k = k;  x = x;  lnx = log(x);  /\* White Test \*/  a2 = a\*\***2**;  k2 = k\*\***2**;  lnx2 = lnx\*\***2**;  /\* Condition II \*/  ylnx = trport/lnx;  intlnx = **1**/lnx;  alnx = a/lnx;  klnx = k/lnx;  /\* Condition III \*/  ylnx2 = trport/lnx2;  intlnx2 = **1**/lnx2;  alnx2 = a/lnx2;  klnx2 = k/lnx2;  **run**;  **proc** **print**;  **run**;  **proc** **reg** data = bm;  model y = lnx a k; /\* Condition I \*/  test a = **10**;  test k = **2**;  test lnx = **24**;  **run**;  **proc** **reg** data = bm;  model ylnx = intlnx alnx klnx; /\* Condition II \*/  test alnx = **10**;  test klnx = **2**;  test intlnx = **24**;  **run**;  **proc** **reg** data = bm;  model ylnx2 = intlnx intlnx2 alnx2 klnx2 /noint; /\* Condition III \*/  test alnx2 = **10**;  test klnx2 = **2**;  test intlnx = **24**;  **run**;  /\*GQ Test Data Preparation \*/  **data** bm;  set bm;  **proc** **sort**;  by descending x;  **run**;  **data** bm1; set bm;/\* Newly created data = bm1 and bm1 contains first 500 cases \*/  if x le **610**;  **run**;  **data** bm2; set bm; /\* Newly created data = bm1 and bm1 contains last 500 cases \*/  if x ge **611**;  **run**;  **proc** **reg** data = bm1;  model ylnx2 = intlnx intlnx2 alnx2 klnx2 /noint; /\* Condition III \*/ /\* Change this model for different conditions \*/  output out = out1 r = ehat1;  **run**;  **proc** **reg** data = bm2;  model ylnx2 = intlnx intlnx2 alnx2 klnx2 /noint; /\* Condition III \*/ /\* Change this model for different conditions \*/  output out = out2 r = ehat2;  **run**;  /\* G-Q Test \*/  **data** bmout;  merge out1 out2;  keep ehat1 ehat2;  **run**;  **proc** **means** uss data = bmout;  var ehat1 ehat2;  output out = out3 uss = sse1 sse2;  **run**;  **data** bmout1; set out3;  x1 = **500**; x2 = **500**; k = **4**;  sig1sq = sse1/(x1-k); sig2sq = sse2/(x2-k);  GQ = sig1sq/sig2sq;  **run**;  **proc** **print**;  **run**;  /\* E \*/ /\* White Heteroskedasticity Test \*/  **proc** **reg** data = bm;  model y = lnx a k; /\* Condition I \*/  output out = white  p = whyhatt /\* Predicted Value of dependent Variable y \*/  r = whyresid; /\*Residual values of y \*/  **run**;  **data** white; set white;  whyressq = whyresid\*\***2**;  **run**;  **proc** **reg** data = white;  model whyressq = lnx k a lnx2 k2 a2;  test lnx = k = a = lnx2 = k2 = a2 = **0**;  **run**;  **proc** **print**;  **run**;  /\* F \*/  /\*Variance condition = Linear; Test = Lagrange Multiplier\*/  **proc** **autoreg** data = bm;  model y = lnx k a;  hetero lnx / link = linear test = lm;  **run**;  /\*Variance condition = Linear; Test = GLS \*/  **proc** **autoreg** data = bm;  model y = lnx k a /method = ml maxiter = **1000**; /\* \*/  hetero lnx / link = linear test = lm; /\*Variance condition = Linear \*/  **run**; |