

1. Дат је следећи оцењен модел:

Dependent Variable: Y  
 Method: Least Squares  
 Date: 11/12/15 Time: 20:55  
 Sample: 1 10  
 Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	25.35655	1.922744	13.18769	0.0000
X1	4.707084	6.378735	0.737934	0.4846
X2	-2.184009	3.201000	-0.682290	0.5170

  

R-squared	0.630672	Mean dependent var	31.00000
Adjusted R-squared	0.525149	S.D. dependent var	4.294700
S.E. of regression	2.959452	Akaike info criterion	5.251210
Sum squared resid	61.30850	Schwarz criterion	5.341986
Log likelihood	-23.25605	Hannan-Quinn criter.	5.151630
F-statistic	5.976664	Durbin-Watson stat	2.079367
Prob(F-statistic)	0.030616		

Да ли је модел статистички значајан? Да ли су коефицијенти статистички значајни? Можемо ли рећи да у моделу постоји потенцијални проблем?

2. Спровести тестирање статистичке значајности параметара ако је дато:

Coefficient Confidence Intervals  
 Included observations: 10

Variable	Coefficient	95% CI	
		Low	High
C	25.35655	20.80999	29.90312
X1	4.707084	-10.37623	19.79039
X2	-2.184009	-9.753172	5.385153

3. Дефинисати хипотезе коришћене у спроведеним тестовима и протумачити добијене резултате:

a) Wald Test:  
 Null Hypothesis: C(2)=C(3)

Test Statistic	Value	df	Probability
t-statistic	-2.613178	122	0.0101
F-statistic	6.828697	(1, 122)	0.0101
Chi-square	6.828697	1	0.0090

б) Wald Test:  
 Null Hypothesis: C(2)+C(3)=1

Test Statistic	Value	df	Probability
t-statistic	0.082798	122	0.9341
F-statistic	0.006855	(1, 122)	0.9341
Chi-square	0.006855	1	0.9340

4. Дефинисати хипотезу спроведеног теста и протумачити добијене резултате:

Omitted Variables Test  
 Equation: UNTITLED  
 Specification: Y X1 C  
 Omitted Variables: X2

	Value	df	Probability
t-statistic	3.770033	7	0.0070
F-statistic	14.21315	(1, 7)	0.0070

5. Уколико су дате следеће помоћне регресије, записати их у експлицитном облику и потом спровести одговарајући тест хетероскедастичности на нивоу значајности 5%:

Test Equation:  
 Dependent Variable: ARESID  
 Method: Least Squares  
 Sample: 1 15  
 Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-45.78420	48.12550	-0.951350	0.3588
X	10.05156	2.081469	4.829071	0.0003

  

R-squared	0.642070	Mean dependent var	170.2574
Adjusted R-squared	0.614537	S.D. dependent var	110.6456
S.E. of regression	68.69508	Akaike info criterion	11.42080
Sum squared resid	61347.18	Schwarz criterion	11.51520
Log likelihood	-83.65599	Hannan-Quinn criter.	11.41979
F-statistic	23.31993	Durbin-Watson stat	2.291938
Prob(F-statistic)	0.000329		

Test Equation:  
 Dependent Variable: RESID^2  
 Method: Least Squares  
 Sample: 1 15  
 Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-12332.37	61356.96	-0.200994	0.8441
X^2	68.13755	129.5959	0.525769	0.6086
X	759.3722	5941.046	0.127818	0.9004

  

R-squared	0.535645	Mean dependent var	40413.86
Adjusted R-squared	0.458252	S.D. dependent var	46683.11
S.E. of regression	34360.42	Akaike info criterion	23.90405
Sum squared resid	1.42E+10	Schwarz criterion	24.04566
Log likelihood	-176.2804	Hannan-Quinn criter.	23.90255
F-statistic	6.921139	Durbin-Watson stat	2.333046
Prob(F-statistic)	0.010025		

6. На основу следећих резултата, проверити да ли постоји индиција да t-односи у моделу неће бити адекватно оцењени на нивоу значајности од 5%:

Dependent Variable: Y  
 Method: Least Squares  
 Sample: 1 6  
 Included observations: 6

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-509.7833	204.5733	-2.491935	0.0673
X	76.55985	15.46156	4.951623	0.0078

  

R-squared	0.859741	Mean dependent var	481.6667
Adjusted R-squared	0.824676	S.D. dependent var	245.3705
S.E. of regression	102.7409	Akaike info criterion	12.36350
Sum squared resid	42222.77	Schwarz criterion	12.29409
Log likelihood	-35.09050	Hannan-Quinn criter.	12.08563
F-statistic	24.51857	Durbin-Watson stat	1.898503
Prob(F-statistic)	0.007752		

Dependent Variable: Y  
 Method: Least Squares  
 Sample: 10 15  
 Included observations: 6

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-5.380942	1083.808	-0.004965	0.9963
X	65.77897	35.19417	1.869030	0.1350

  

R-squared	0.466188	Mean dependent var	2004.167
Adjusted R-squared	0.332735	S.D. dependent var	409.2239
S.E. of regression	334.2798	Akaike info criterion	14.72304
Sum squared resid	446972.0	Schwarz criterion	14.65362
Log likelihood	-42.16911	Hannan-Quinn criter.	14.44517
F-statistic	3.493274	Durbin-Watson stat	2.687307
Prob(F-statistic)	0.134982		

7. Интепретирати резултате следећих тестова на нивоу значајности 5%:

Heteroskedasticity Test: White

F-statistic	1.653024	Prob. F(5,14)	0.2105
Obs*R-squared	7.424275	Prob. Chi-Square(5)	0.1909
Scaled explained SS	2.574217	Prob. Chi-Square(5)	0.7653

Heteroskedasticity Test: Glejser

F-statistic	23.31993	Prob. F(1,13)	0.0003
Obs*R-squared	9.631046	Prob. Chi-Square(1)	0.0019
Scaled explained SS	6.494399	Prob. Chi-Square(1)	0.0108

8. На основу следећег резултата поставити хипотезе и интерпретирати:

**Breusch-Godfrey Serial Correlation LM Test**

F-statistic	0.046747	Prob. F(1,16)	0.8316
Obs*R-squared	0.058263	Prob. Chi-Square(1)	0.8093

9. Шта можете закључити о моделу  $Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \varepsilon_i$  на основу оцењене пересије:

**Test Equation:**

Dependent Variable: RESID

Method: Least Squares

Sample: 1990Q1 1997Q2

Included observations: 30

Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.511590	0.533044	0.959751	0.3476
X1	-0.048116	0.137380	-0.350242	0.7295
X2	-0.432082	0.375386	-1.151034	0.2621
X3	0.406819	0.370985	1.096590	0.2847
RESID(-1)	0.517770	0.183038	2.828753	0.0098
RESID(-2)	0.338340	0.218476	1.548633	0.1357
RESID(-3)	0.071152	0.218543	0.325576	0.7478
RESID(-4)	-0.582302	0.191508	-3.040615	0.0060
R-squared	0.631487	Mean dependent var	1.76E-15	
Adjusted R-squared	0.514233	S.D. dependent var	0.024365	
S.E. of regression	0.016982	Akaike info criterion	-5.090166	
Sum squared resid	0.006344	Schwarz criterion	-4.716514	
Log likelihood	84.35250	Hannan-Quinn criter.	-4.970632	
F-statistic	5.385636	Durbin-Watson stat	1.648931	
Prob(F-statistic)	0.001061			