Məmmədova Könül\_Ekonometrika

1. Explanation of Robust standard error
2. Data classification
3. Heteroskedasticity Robustv LM statistic
4. Breucsh Pagan test for heteroskedasticity
5. White test for heteroskedasticity
6. Multicollinearity
7. Which of the following are consequences of heteroskedasticity?
8. The OLS estimators, *b*ˆ *j* , are inconsistent.
9. (ii) The usual *F* statistic no longer has an *F* distribution.
10. (iii) The OLS estimators are no longer BLUE.
11. Consider a linear model to explain monthly beer consumption:

*beer* = *b*0 + *b*1*inc* + *b* 2 *price* + *b*3*educ* +*b* 4 *female* +*u*

E(*u*/*inc*, *price*, *educ*, *female*) =0

Var(*u*$/$*inc*, *price*, *educ*, *female*) =$σ^{2}inc^{2}$.

Write the transformed equation that has a homoskedastic error term.

1. True or False: WLS is preferred to OLS when an important variable has been omitted from the model.
2. Here, *trmgpa* is term GPA, *crsgpa* is a weighted average of overall GPA in courses taken, *cumgpa* is GPA prior to the current semester, *tothrs* is total credit hours prior to the semester, *sat* is SAT score, *hsperc* is graduating percentile in high school class, *female* is a gender dummy, and *season* is a dummy variable equal to unity if the student’s sport is in season during the fall. The usual and heteroskedasticity-robust standard errors are reported in parentheses and brackets, respectively
3. Do the variables *crsgpa*, *cumgpa*, and *tothrs* have the expected estimated effects?

Which of these variables are statistically significant at the 5% level? Does it matter

which standard errors are used?

1. Why does the hypothesis H0: *b crsgpa* 5 1 make sense? Test this hypothesis against

the two-sided alternative at the 5% level, using both standard errors. Describe your

conclusions.

1. Test whether there is an in-season effect on term GPA, using both standard errors.

Does the significance level at which the null can be rejected depend on the standard error used?

1. The variable *white* equals one if the respondent is white, and zero otherwise; the other independent variables are defined in Example 8.7. Both the usual and heteroskedasticityrobust standard errors are reported.

(i) Are there any important differences between the two sets of standard errors?

(ii) Holding other factors fixed, if education increases by four years, what happens to the estimated probability of smoking?

(iii) At what point does another year of age reduce the probability of smoking?

(iv) Interpret the coefficient on the binary variable *restaurn* (a dummy variable equal to one if the person lives in a state with restaurant smoking restrictions).

(v) Person number 206 in the data set has the following characteristics: *cigpric* =

67.44, *income* =6,500, *educ* =16, *age* =77, *restaurn* 5 0, *white* =0, and

*smokes* =0. Compute the predicted probability of smoking for this person and

comment on the result.

1. 
2. 
3. 
4. 
5. Classical linear assumptions for multiple regression analysis
6. F statistic for multiple regression analysis
7. Relationship and difference between F and t statistic
8. Hypothesis for multiple regression analysis
9. Practical significance versus Statistical significance
10. Unbiasedness of OLS
11. The Gauss Markov assumptions
12. Efficiency of OLS
13. Variance inflation factor
14. Perfect collinearity
15. Ceteris paribus interpretation
16. Difference between correlation and regression analysis.
17. Interpretation of semi-log functions
18. Structure of dummy variable
19. Explanation of Multiplicative and additive models.
20. Explanation of Exponential smoothing model
21. Arima models
22. Arma models
23. Durbin Watson test
24. MA models
25. Explanation of Lagged variable
26. 10 exercise about simple regression analysis
27. 11 exercises about multiple regression analysis
28. 7 exercises about semi-log functions
29. 10 exercises about arma, arma, ma models