

[Summary]

Generalised Least Squares

Subject:

Business Economics

Course:

Paper No. & Title:

Unit No. & Title:

B. A. (Hons.), 5th Semester, Undergraduate

Paper – 531 Elective Paper Q1 – Advanced Econometrics

Unit – 1 Relaxing the Assumptions of The Classical Linear Model

Lecture No. & Title:

Lecture – 4 Generalised Least Squares

Summary

In this lecture, first of all we want to know about the situation when the assumptions regarding uniform variance of disturbances are violated. This causes a new situation called heteroscadasticity. Here our usual OLS estimators are not applicable and hence a new class of estimators called Generalised least squares estimators are defined and analysed. Some testing problems are given related with GLS estimators.

A particularly specific situation is discussed for heteroscadasticity when dispersion matrix for disturbances takes the shape of a diagonal matrix. This case is shown by means of two variables model. Also the ideas of milder and harder forms of heteroscadasticity are given.

There are some reasons for generating heteroscadasticity. These are discussed briefly, while dealing with the data analysis, heteroscadasticity is generated unknowingly by means of grouping of observations, grouping of equations and imposing stochastic linear constraints upon the parameters. This needs care to deal with data analysis.

The problem of detecting heteroscadasticity is discussed by graphical methods as well as certain tests like Spearman's rank correlation test, Park test, Glejser test, goldfield and Quandt test etc.

The methods for tackling heteroscadasticity is discussed when σ_i^2 is known by Weighted Least Squares Methods. Other methods when σ_i^2 are unknown are presented for different cases.