[Summary]

Autocorrelation

Subject:	Business Economics
Course:	B. A. (Hons.), 5th Semester, Undergraduate
Paper No. & Title:	Paper – 531 Elective Paper Q1 – Advanced Econometrics
Unit No. & Title:	Unit – 1 Relaxing the Assumptions of The Classical Linear Model
Lecture No. & Title:	Lecture – 5 Autocorrelation

Summary

In this study we want to understand clearly the phenomena of autocorrelation in linear models. It is generated due to autocorrelation between pairs of disturbance as described by autoregressive (AR) first order relationship. Graphical presentation can represent the situation if we plot u_t or $\hat{u}_t$ against time and thus different forms of variations can be known. Next is to know about some reasons why autocorrelation occurs. This is mainly attributed due to data inertia, Manipulation of data, specification bias, incorrect specification of the model, cobweb phenomena, lags structure of the model etc. Due to autocorrelation phenomena the variance of regressor remains underestimated if we do not use appropriate methods. Here expression for the estimator of regressor and its dispersion matrix are obtained. Clear distinction about autocorrelation and serial correlation is shown. Case of autocorrelation is explained by the model in the case of two variables linear model.

Some methods for detecting autocorrelation are given which are mainly graphical method and tests like Von Neumann's ratio test, Durbin Watson test etc. DW test as it is practically very useful is discussed in details.

Some methods for remedial measures for autocorrelation are given when autocorrelation coefficient is known or unknown. Generalized Difference equation is obtained and its use is indicated. Details about Cochran Orcutt iterative procedure are given. A brief mention of other methods is also indicated.