[Frequently Asked Questions]

Preview of Econometric Methods

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 – 1 Preview of Econometric Methods

Frequently Asked Questions

Q1. What is econometrics?

A1. Econometrics is the subject matter dealing with methods in mathematics and statistics used for economic (and behavioral sciences) applications.

Q2. What is PRF and SRF?

A2. In the model form, PRF refers to population regression function when the relationship between dependent variable is expressed in terms of explanatory variables with population parameters and disturbances.

Such a relation when obtained from sample data and estimated parameters with sample error term refers to sample regression function (SRF)

Q3. What are endogenous and explanatory variables?

A3. Dependent variables are called endogenous and all independent variables are called explanatory or exogenous variables.

Q4. What is classical two variables linear model? Give an illustration.

A4. It is a linear regression relationship between two variables Y and X with unknown parameters α and β and the disturbance term U.

$$\binom{consumption}{Y} = \alpha + \beta \binom{Income}{X} + U$$

Shows how consumption varies as income changes.

Q5. What is MPC?

A5. In the above A.4, $\beta$is the marginal propensity to consume (MPC). It is also propensity measure showing how consumption will be affected by change in income.

Q6. What is least squares principle?

A6. From the plotted sample values of X and Y, draws a straight line in such a way that the sum of squares of the distances of the plotted points from the line is minimum

In a way it refers to estimate the parameters of the model such that the error sum of squares is minimum.

Q7. What are 5% and 1% levels of significance?

A7. Based upon normal distribution properties, 5% level significance ensures that only 5% chance for values lying outside the limits $\mu \pm 2\sigma$ (μ = Mean , σ = S.D.) similarly 1% level significance ensures that only 1% chance for values lying outside the limits $\mu \pm 3\sigma$.

Q8. What are 95% and 99% confidence intervals?

A8. 95% C.I. for a parameter ensures that we are almost 95% sure that the parameter value will lie in this interval. Similarly 99% C.I. for a parameter ensures that we are almost 99% confident that the parameter will lie in this interval.

Q9. What is ANOVA?

A9. Analysis of variance (ANOVA) is a statistical technique for testing the significance of the regression coefficients of the model. It can also be used for testing the significance of $R^2$and also for the validity of the model.

Q10. What is correlation matrix?

A10. For 3 variables model the matrix P giving product moment correlation coefficients r_{ij} (i, j=1,2,3) is called correlation matrix

Thus $P = \begin{pmatrix} 1 & r_{12} & r_{13} \\ r_{21} & 1 & r_{23} \\ r_{31} & r_{32} & 1 \end{pmatrix}_{3\times3}$

Where r_{ij} = Corr (X_i, X_j) i=1, 2, 3 (i≠j)