

OLLSCOIL NA hEIREANN, GAILLIMH
NATIONAL UNIVERSITY OF IRELAND, GALWAY

Semester 2, 2001/2002: August Exam

Econometrics (EC363)

B.A & B.Comm. Degree Examinations

Professor H. Dixon
Professor M.P. Cuddy
Mr. Eoghan Garvey

Time allowed: Two hours.

Instructions: Answer four questions only. Each question is worth 100 marks.

Q.1

- (i) Explain briefly what is meant by an unbiased, efficient and consistent estimator. (30)
- (ii) Explain intuitively the role of Monte Carlo studies for describing estimators. (40)
- (iii) Show a) that $E[b_2] = \beta_2$, and b) that $\text{var}(b_2) = \frac{\sigma^2}{\sum_i (x_i^*)^2}$
in the Simple Regression Model, given our basic assumptions. (30)

Q.2

- (i) Explain intuitively why the covariance between b_1 and b_2 will usually be negative, and why the variance of b_2 tends to rise the more clustered the x values are around the sample mean of x. (30)
- (ii) Show how $\text{var } b_2$ changes if one other x variable is added to the simple regression model. (30)
- (iii) State briefly the difference between forecasting *expected* Y for a given X [i.e. $E(Y_0|X_0)$] and forecasting a single Y for a given X. (40)

Q.3

- (i) With regard to a multivariate model, briefly discuss the 'problem' of multicollinearity in terms of its meaning, its effects and possible remedies. (40)