

Econometrics B

Time Allowed: 3 Hours.

Answer: THREE questions

Read carefully the instructions on the answer book provided and make sure that the particulars required are entered on each answer book.

1. Explain, giving economic illustrations, the concept of cointegration and discuss its importance to the modelling of relationships between economic time series. Describe in detail the ADF unit-root test and explain how to use it to investigate whether two economic time series are cointegrated. Explain how this approach is related to the construction of an Error Correction Model.
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 2. Describe how you would test a regression equation for potential structural change at a specified date. Explain why it might be important for the tests that you describe to additionally conduct other diagnostic tests of the equation. Discuss the procedures that you could use when the date of the potential change is not known.
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 3. Describe how to specify and estimate a Probit model for utility-maximising consumers deciding whether or not to purchase a particular consumer good. Discuss the interpretation of ratios of coefficient estimates in this model. Explain how you would construct generalized residuals and use them to test the distributional assumption in such a model.
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 4. Describe, with reference to an economic example, how you would formulate and estimate a Tobit model for a micro-economic constrained optimization problem. Explain how you would construct suitable diagnostic tests for such a model. Discuss briefly the relationship between the simple Tobit model and more general models of endogenous selection.
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 5. Describe the use of impulse response functions as a way of interpreting estimated VAR models, and the difficulties that arise when the VAR model disturbances are contemporaneously correlated. Explain how structural VARs (SVARs) provide a solution to this problem, and discuss whether a SVAR is superior to using a Choleski decomposition.
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