Introduction to Econometrics

1. Introduction

1.1 What is Econometrics? What its methodology?
1.2 Basic definitions: sample, population, random variable
1.3 Data: cross-section, time series, panel data
1.4 Variables: quantitative and qualitative
1.5 Measures of centralization, dispersion, and other

2. Regression analysis

2.1 Population and sample regression functions
2.2 The nature of the error term
2.3 The classical linear regression model (CLRM)
2.4 Parameter Estimation: Least Squares
2.5 Covariance, correlation coefficient, coefficient of determination (r^2)
2.6 Hypotheses testing
2.7 Forecast

3. Regression analysis: Further details

3.1 Multivariate Case of CLRM
3.2 Selection of models
3.3 Global hypothesis test (F and r^2)
3.4 Omission of relevant variables and inclusion of irrelevant variables
3.5 Functional Forms
3.6 Dummy variables
3.7 Multicollinearity
3.8 Relaxing the CLRM basic assumptions

4. Binary dependent variable

4.1 Linear probability model
4.2 Logit Model
4.3 Probit Model
4.4 Interpretation of coefficients

5. Time series

5.1 Nature of data
5.2 Trends and seasonality
5.3 Stationarity
5.4 Box-Jenkins Methodology

Literature:

• Gujarati, D., *Basic econometrics*, 5th ed. 2008.
• Gujarati, D., *Essentials of econometrics*, 4th ed. 2009.
• Gujarati, D., *Econometrics by example*, 2011.
• Stundenmund, A.H., *Using econometrics: A practical guide*, 5th ed. 2005.
• Wooldridge, J., *Introduction to econometrics: A modern approach*, 4th ed. 2008.

Assessment: final written test (around 2 hours) and weekly practices; grading is: 80 (test) / 20 (practices).