Econometric Methods I
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Content

Econometrics consists of concepts, methods and techniques that are used in the analysis of economic data.

The workhorse of econometric analysis is the linear regression model. The estimation and inference about the parameters of this model forms much of this course. This part of the course builds on the statistical theory that you have learnt in previous courses.

In analysis of economic data, an important issue usually is whether the estimates are `causal' or whether they are `identified'. This is the second part of the course: to understand this question, its importance and possible solutions.

Thirdly, we shall discuss some instances where a linear regression model is inappropriate. What are appropriate models? What statistical theory informs their estimation and inference.

The second and third parts of this course are covered in greater detail in subsequent econometrics courses. So the treatment here is by way of introduction and even that is subject to the pace at which this course unfolds relative to the availability of time.

Besides class lectures, there will be tutorials. Instruction in econometrics computing, background concepts and homework will be the subject of the tutorials.

Books

The material is standard and there are many textbooks. Greene, Econometric Analysis is a comprehensive text. Wooldridge, Introductory Econometrics is an excellent text that is especially good for concepts (the mathematical level is a little lower than that of this course). Maddala, Introduction to Econometrics is also highly recommended even though it may be a bit dated.

Indicative List of Topics

1. Linear regression model: Estimation and Inference

2. Other Issues: Rsquare and Model Selection, Dummy Variables, Multi-Collinearity, OLS asymptotics, Measurement Error

3. Heteroscedasticity and Autocorrelation

4. Panel data methods

5. Instrument Variables and Two stage least squares

6. Limited Dependent Variables Models and Sample Selection Correction