School of Economics

Academic Year 2018-19
Term 1

COURSE CODE & COURSE TITLE: ECON727 Panel Data Econometrics II

Instructor: Lee Kong Chian Professor SU Liangjun
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Lecture time/Venue: Monday, 3:30-6:45pm

COURSE DESCRIPTION:

This is a subsequent course of Panel Data Econometrics I. We will focus on various special and advanced topics in panel data analysis. We first study factor models that can be used to handle both micro and large dimensional macro/financial data sets, one of the most popular ways to introduce strong cross-sectional dependence in the model and to extract information from a big data set. Next, we introduce spatial panel data models that use spatial weights as an alternative way to model weak cross-sectional dependence. Then we study various modern techniques to test for panel unit root and cointegration with or without cross-sectional dependence and to make inference in panel cointegration models. We also study various nonlinear panel data models that include binary choice models, censored models, and truncated models. Lastly, we study various nonparametric and semiparametric panel data models with or without cross-sectional dependence. Other special topics in panel data models may be covered.

PRE-REQUISITE/CO-REQUISITE/MUTUALLY EXCLUSIVE COURSE(S)

Econ 611, Panel Data Econometrics I

ASSESSMENT METHODS

Research project	:	100 %
Total	:	100 %

CLASS TIMINGS

Student is required to attend 1 session of lecture every week over first half of the term. Each lecture lasts for three hours.

6 lessons * 3 hours = 18 hours in total.

RECOMMENDED TEXT AND READINGS (OPTIONAL)
1. *Analysis of Panel Data* (Highly recommended), by Cheng Hsiao, Cambridge University Press, 3rd edition, 2014.

2. *Econometric Analysis of Panel Dat*a (Optional), by Badi H. Baltagi, Wiley, 5th edition, 2013.

3. *Panel Data Econometrics* (Optional), Manuel Arellano, Oxford University Press, 2003.

My lecture note will be made available on e-Learn.

Tentative Schedule

1. Panel Data Models with Cross-Sectional Dependence: Factor Approach
   a. Introduction
   b. Approximate Factor Model
   c. Determination of the Number of Factors
   d. Principle Component Estimation
   e. Common Correlated Effects Estimation
   f. GMM Estimation
   g. Test for Slope Homogeneity
   h. Test for Cross-Sectional Independence

2. Panel Data Models with Cross-Sectional Dependence: Spatial Approach
   a. Introduction
   b. Static Spatial Lag Panel Data Model
   c. Dynamic Spatial Lag Panel Data Model
   d. Spatial Error Panel Data Model
   e. SARAR Panel Data Model
   f. Test for Spatial Dependence

3. Panel Unit and Cointegration Analysis
   a. Introduction
   b. First Generation Panel Unit Root Tests
   c. Second Generation Panel Unit Root Tests
   d. Spurious Panel Regression
   e. Panel Cointegration Tests
   f. Estimation and Inference in Panel Cointegration Models

4. Nonlinear Panel Data Models
   a. Binary Choice Panel Data Models
   b. Censored Panel Data Models
   c. Truncated Panel Data Models

5. Nonparametric and Semiparametric Panel Data Models
   a. Nonparametric Panel Data Models with Random Effects
   b. Nonparametric Panel Data Models with Fixed Effects
   c. Partially Linear Panel Data Models
   d. Nonparametric Panel Data Models with Cross Section Dependence