Midterm Exam

Important topics to pay attention when you prepare for Midterm-exam

List of important topics from prof. Nandi, Feb 28, 2023

(1) Know characteristics and estimation methods for following 3 types of models: (a) SUR, (b) Simultaneous Equation System, (c) models with Recursive Equation System.
- Learn about the scope of efficiency gains by using GLS over OLS in estimating SUR models

Also, in the context of SUR model,

- describe the appropriate test for checking whether off diagonal elements in Covariance matrix are zero or not.
- One important test in SUR is the homogeneity restriction. This is a test that the vector of coefficients is the same for all equations. …WALD test

(2) Describe all the characteristics of **Structural form and Reduced form** equation system. Why we need to consider reduced for model?

- learn how to derive Reduced form equations from structural equation system

(3) What is the "Identification" issue in the context of estimating Simultaneous equations system? Explain this concept analytically as well as using appropriate diagrams and examples used in class lecture.

(4) Explain clearly the **Order condition** and the **Rank condition** of Identification of equation in the context of simultaneous equation system. **Learn how to find out the identification status of any equation in the system. Learn also about the just identified, over identified and under identified concepts in this respect.**

5) Learn about different estimation methods for estimating Simultaneous equations system model (i.e., 2SLS, 3SLS etc.)

(6) in the context of Panel data model,

- Discuss the benefits of using Panel Data for econometric analysis and estimation.

- what are the various possible forms of panel data models we know

- Know what is the weak vs strong exogeneity concept and its relevance in the context of Panel data models

- what are the different types of regressors appear in the Panel data model

- **Distinguish between Random Effects and Fixed effects models.**

Study various methods of model estimation in both cases under the assumption of exogeneity of regressors Xs and error term E. and study about the weakness and strength of such methods. Very important topic regarding Panel Data Analysis

Also study what will be the appropriate methods of estimation for Random effect and Fixed effect models when we DROP the assumption of exogeneity of regressors Xs and error term E.

(6) Define the dynamic Panel data model and what problems we face to apply various estimation methods which are efficient when Panel data is **not dynamic time series**. What are the possible methods of estimation in case of dynamic Panel data?