

Fulbright Economics Teaching Program
Masters in Public Policy MPP8
Academic Year 2015-2016
Spring 2016 (11 April – 25 May, 2016)

SYLLABUS
Research Method: Applied Econometrics

Teaching team

Instructors: Dinh Cong Khai, Cao Hao Thi and Le Viet Phu
Tutor: Hoang Van Thang

Class Meeting Time

Mondays & Wednesdays: 13:30 – 15:00

Office hours

Dinh Cong Khai: Monday 15:00 – 17:00 or by email appointment
Cao Hao Thi: Tuesday 17:30 – 19:00 or by email appointment
Le Viet Phu: Tuesday and Thursday 15:30 – 17:00 or by email appointment
Hoang Van Thang: Wednesday and Friday 15:15 – 16:45 or by email appointment

Course Objectives and Description

The first aim of this course is to provide students with the ability to read and understand empirical papers done by economists. Second, it is to provide students with the skills necessary to conduct a quantitative policy research on their own.

This course is devoted to advanced techniques for econometrics. First, students are introduced to estimation problems when the assumptions of the classical model (CLRM) are violated and their corresponding remedies. Participants will also learn how to use instrumental variables to deal with endogeneity in an estimation model. Second, this course introduces estimation with time series or panel data which has become very frequently and intensively used in empirical research. Third, students are provided with other useful econometric techniques such as difference in differences estimation, cointegrating regression, Granger causality test to study numerous policy questions.

The second part of the course focuses on the application of econometric models to the evaluation of interventions on socio-economic factors. The biggest challenge to policy makers is how to know the impact of a policy, which leads to assessments and necessary modifications. For instance, what are the impacts of the investment program on infrastructure and production for extremely adverse wards, borderline wards, wards located in the historical safety zone or extremely adverse hamlets (Program 135) on the poverty rate and the livelihood of the supported residents? Another example is whether the microcredit program of the social policy bank has really assisted the targeted people in improving their lives? In those above-mentioned real examples, students should be able to identify the impacts of the policy, error factors, and what

assessment method can be applied to each of various types of data. In this course, students will also get familiar with the concepts and models commonly used in evaluating the policy impacts e.g. randomization, comparison by trend points, difference in difference with panel data, and instrumental variable.

Course Requirements

This is an elective course, yet students who wish to apply econometrics into their master thesis are encouraged to enroll.

Participants are expected to attend class regularly and required to read the assigned readings before the class. There will be 05 problem sets and one final exam.

They are also encouraged to form study groups on their own to discuss the lessons, case studies, and the assigned readings together. Yet, each participant must write his/her own solution completely.

Applied econometrics is a challenging subject therefore if participants encounter any problems or have any questions, make sure to seek help from the teaching team as soon as possible.

The course will require the use of specialized software packages such as Eviews, or Stata to replicate examples in the books and a paper.

Grading

Discussion: 15%
Problem set: 45%
Final exam: 40%

All problem set solution must be submitted by 08:20, in both electronic copy (to <http://www.fetp.edu.vn/vn/tai-nguyen/hoc-vien-hien-tai/>) and hard copy in the box in lab room, unless otherwise constructed.

Required Readings

Textbooks: Lectures will be drawn mostly from two textbooks below, both of which are available in English and Vietnamese. Specific chapter references are given in the course outline. Additional material will be distributed at appropriate times. This material will also be part of required readings.

1. *Introductory Econometrics with Applications*, 5th edition, by Ramu Ramanathan, Harcourt College Publishers, 2002. This textbook has been selected because it has a strong orientation towards applications and a clear exposition of modern econometric practice. The textbook has a good website at: <http://econ.ucsd.edu/~rramanat/embook5.htm>. (Abbreviation: RR5)
2. *Basic Econometrics*, 3rd edition, by Damodar Gujarati, McGraw-Hill, 1995 (Abbreviation: DG3)
3. *Basic Econometrics*, 4th edition, by Damodar Gujarati, McGraw-Hill, 2004. This book also has a useful website at: <http://www.mhhe.com/econometrics/gujarati4> (Please note that this website is associated with the 4th edition of the book.) (Abbreviation: DG4)

4. *Handbook on Impact Evaluation: Quantitative Methods and Practices*, Shahidur R. Khandker, Gayatri B. Koolwal, and Hussain A. Samad, 2010. The International Bank for Reconstruction and Development / The World Bank, Washington DC 20433, ISBN: 978-0-8213-8028-4 (Abbreviation: KKS)

Several illustrative examples will be discussed in class at appropriate times. The purpose is to familiarize you with the various ways in which advanced econometric techniques have been used to investigate “real world” problems and policy issues. These examples will be drawn from the two main textbooks plus some case studies developed from the context of Vietnam.

Schedule

Week 1

- ☐ **Monday 4/11/2016 (13:30 – 15:00)** **Cao Hao Thi**
Relaxing the Assumptions of the Classical Model I:
Heteroscedasticity and small size sample
 - DG3: Chapter 10
Distribute PS 1, due on 4/25/2016

- ☐ **Tuesday 4/12/2016 (15:15 – 16:45)** **Dinh Cong Khai**
Relaxing the Assumptions of the Classical Model II:
Serial Correlation
 - DG3: Chapter 11

Week 2

- ☐ **Monday 4/18/2016**
No class

- ☐ **Wednesday 4/20/2016 (13:30 – 15:00)** **Dinh Cong Khai**
Relaxing the Assumptions of the Classical Model III:
Autocorrelation
DG3: Chapter 12

Week 3

- ☐ **Monday 4/25/2016 (13:30 – 15:00)** **Cao Hao Thi**
Time Series I

- DG3: Chapter 21 and 22

PS 1 due, distribute PS 2 – due on 5/04/2016

☐ Wednesday 4/27/2016 (13:30 – 15:00)

Cao Hao Thi

Time Series II

Case study: Applying ARIMA Model to Forecast Prices and Stock Prices

- DG3: Chapter 21 and 22

Week 4

☐ Monday 5/2/2016

No class

☐ Wednesday 5/04/2016 (13:30 – 15:00)

Dinh Cong Khai

Spurious Regression in Econometrics

- DG3: Chapter 21

PS 2 due, distribute PS 3 – due on 5/16/2016

Week 5

☐ Monday 5/09/2016 (13:30 – 15:00)

Dinh Cong Khai

Dynamic Econometrics and Granger Causality Test

- DG4: Chapter 17

☐ Wednesday 5/11/2016 (13:30 – 15:00)

Dinh Cong Khai

Panel Data

- DG4: Chapter 16

Week 6

☐ Monday 5/16/2016 (13:30 – 15:00)

Le Viet Phu

Introduction of policy impact evaluation

- KKS: Chapter 2 and Chapter 3

PS 3 due, distribute PS 4 – due on 5/23/2016

□ Wednesday 5/18/2016 (13:30 – 15:00)
Comparison by trend points

Le Viet Phu

- KKS: Chapter 4
- WB, Evaluating the Impact of Development Projects on Poverty: A Handbook for Practitioners, 2002, Chapter 3.

Week 7

□ Monday 5/23/2016 (13:30 – 15:00)

Le Viet Phu

Difference in Differences

- KKS: Chapter 5

PS 4 due, distribute PS 5 – due on 5/30/2016

□ Wednesday 5/25/2016 (13:30 – 15:00)

Le Viet Phu

Instrumental Variables and Discontinuous Regression

- KKS: Chapter 6 and Chapter 7
- RR5, Chapter 13

Week 8

□ Monday 5/30/2016

PS 5 due

Distribute final exam, due on 6/13/2016
