

Fulbright School of Public Policy and Management
Masters in Public Policy
Academic Year 2017-2018
Spring 2018 (26 Feb – 08 June, 2018)

SYLLABUS
Research Methods: Applied Econometrics
4 credits

Teaching team

Instructors:	Cao Hào Thi	(thi.cao@fuv.edu.vn)
	Lê Việt Phú	(phu.le@fuv.edu.vn)
Visiting Instructor:	Trương Sĩ Ánh	(anh.truong@kantarmedia.com)
Tutor:	Hoàng Văn Thắng	(thang.hoang@fuv.edu.vn)

Class Meeting Time

Monday & Wednesday: 15:15 - 16:45

Office hours

Cao Hào Thi:	Thursday 16:45 – 18:00 or by email appointment.
Lê Việt Phú:	Friday 15:30 – 17:00 or by email appointment.
Hoàng Văn Thắng:	Wednesday and Friday 15:30 – 17:00 or by email appointment.

Objectives

This course is designed to prepare students with advanced econometric knowledge and survey designs for conducting empirical research. Students are expected to be able to:

- Read and understand economic and policy studies using quantitative methods;
- Critique and replicate studies conducted by other researchers;
- Proficiently use both time series and panel data econometric tools;
- Design surveys and collect primary data for quantitative analyses;
- Design and conduct own empirical studies using advanced econometric analyses.

Description

The course is structured in three parts. *The first part* reviews concepts related to the Classical Linear Regression Model (CLRM) and explores conditions under which the underlying assumptions this model fail, including multi-collinearity, heteroskedasticity, and autocorrelation. Then, students will learn econometric models with time series data, such as ARIMA and VAR models, and applications in economic forecasting. This part will also highlight important features of time series including non-stationarity, reverse causality, and spurious regressions. Class exercises will be conducted using EViews econometric software.

The second part introduces advanced models built up on the CLRM foundation. Restrictive conditions imposed on the classical model limits its applications in the real world. Therefore, this section opens up tools and methods to allow the estimation of many economic models when those conditions fail to hold. Student will learn the advantage of panel data over cross-sectional data. Two-stage regression and simultaneous-equation system models such as the demand-supply system can be used when economic decisions or public policies are determined endogenously. In the presence of limited dependent variables and self-selection problem, the course will introduce appropriate remedies including censored/truncated regression and Heckman correction. Class exercises in the second part will be conducted exclusively in Stata.

The last part will be an overall introduction of survey methods. Basic tasks of a real world survey from designing, implementing, to data processing and survey reporting will be presented. Basic statistics, sampling theory in empirical research are needed for students to apprehend the content of this part. Thus, the course will also spend sometimes on basic statistics in sampling theory and methods. The students will get familiar with the popular databases for analysis and research from the General Bureau of Statistics in Vietnam. The last lecture will be a practical exercise deploying actual data set and SPSS software.

Requirements

Participants are expected to attend class regularly and required to read the assigned readings before the class. There are six problem sets, one midterm exam, and one final take-home 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. The course will require the use of specialized software packages such as Eviews, Stata, and SPSS to replicate examples in the books and a research paper.

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

Grading

Problem sets	40%
Midterm exam	30%
Final exam	30%

All problem set must be submitted by 08:20, in both electronic copy and hard copy in the box in lab room, unless otherwise instructed. ***For information relating to submissions, grievances, academic dishonesty and special considerations please refer to the Student Guidelines.***

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. *Basic Econometrics*, 3rd edition, by Damodar Gujarati, McGraw-Hill, 1995
[Abbreviation: DG3]
2. *Introductory Econometrics: A Modern Approach*, 5th edition by Jeffrey M. Wooldridge, South-Western. Students can refer to STATA code to simulate for the results in the book at:

<http://fmwww.bc.edu/gstat/examples/wooldridge/wooldridge.html>. [Abbreviation: JW]

Supplementary Readings

3. *Introductory Econometrics with Applications*, 5th edition, by Ramu Ramanathan, Harcourt College Publishers, 2002. <http://econ.ucsd.edu/~rramanat/embook5.htm>.
4. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, 2nd edition by John Creswell. Sage Publications.

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

Schedule

Week 1

☐ Monday 26/02/2018

Cao Hào Thi

Relaxing the Assumptions of the Classical Linear Regression Model: Multicollinearity, small sample size, and heteroscedasticity

Reading: DG3 Chapter 10-11

Problem set 1 Distributed

☐ Wednesday 28/02/2018

Cao Hào Thi

Relaxing the Assumptions of the Classical Linear Regression Model: Introduction to EViews

Reading: DG3 Chapter 10-11

Week 2

☐ Monday 05/03/2018

Cao Hào Thi

Relaxing the Assumptions of the Classical Linear Regression Model: Autocorrelation

Reading: DG3 Chapter 12

☐ Wednesday 07/03/2018

Cao Hào Thi

Time Series – 1

DG3: Chapter 21-22

Week 3

☐ Monday 12/03/2018

Cao Hào Thi

Time Series – 2

Reading: DG3 Chapter 21-22

Problem set 1 Due/ Problem set 2 Distributed

☐ Wednesday 14/03/2018

Cao Hào Thi

Case study: Using Eviews to Estimate ARIMA Models to Forecast Prices and Stock Prices

Week 4

Monday 19/03/2018 **Cao Hào Thi**

Spurious Regression in Econometrics

Reading: DG3 Chapter 21

Wednesday 21/03/2018 **Cao Hào Thi**

Dynamic Econometrics and Granger Causality Test

Reading: DG3 Chapter 17

Week 5

Monday 26/03/2018 **Lê Việt Phú**

Regression with Pooled and Panel Data - 1

Reading: JW Chapter 13-14

Problem set 2 Due/ Problem set 3 Distributed

Wednesday 28/03/2018 **Lê Việt Phú**

Regression with Pooled and Panel Data - 2

Reading: JW Chapter 13-14

Week 6

Reading, Review, and Recitation

Week 7

Monday 09/04/2018 **Cao Hào Thi, Lê Việt Phú, Hoàng Văn Thắng**

Midterm exam

Week 8

Monday 16/04/2018 **Lê Việt Phú**

Two-stage Least Squares (2SLS) - 1

Reading: JW Chapter 15

Problem set 3 Due / Problem set 4 Distributed

Week 9

Monday 23/04/2018 **Lê Việt Phú**

Two-stage Least Squares (2SLS) - 2

Reading: JW Chapter 15

Friday 27/04/2018 **Lê Việt Phú**

Simultaneous Equations Model (SEM) - 1

Reading: JW Chapter 16

Problem set 4 Due / Problem set 5 Distributed

Week 10

Wednesday 02/05/2018 **Lê Việt Phú**

Simultaneous Equations Model (SEM) - 2

Reading: JW Chapter 16

Week 11

Monday 07/05/2018 **Lê Việt Phú**

Models with Limited Dependent Variables and Selection - 1

Reading: JW Chapter 17

Problem set 5 Due/ Problem set 6 Distributed

Wednesday 09/05/2018 **Lê Việt Phú**

Models with Limited Dependent Variables and Selection - 2

Reading: JW Chapter 17

Week 12

Monday 14/05/2018

Trương Sĩ Ánh

Survey Methods: Planning and Sampling

Problem set 6 Due

Wednesday 16/05/2018

Trương Sĩ Ánh

Survey Methods: Planning and Sampling (cont.)

Week 13

Monday 21/05/2018

Trương Sĩ Ánh

Survey method: Field Data Collection

Wednesday 23/05/2018

Trương Sĩ Ánh

Survey method: analyzing survey result with SPSS

Week 14

Reading, Review, and Recitation

Week 15

Monday 04/06/2018

Final Take-home Exam Distributed (Due 15/06/2018)