PEKING UNIVERSITY

HSBC SCHOOL OF BUSINESS

Syllabus of Applied Econometrics

Module 2

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Course Introduction

This course mainly introduces the classical parametric models and their applications in economics, management and finance. This course starts from the traditional OLS model and extend the model's assumptions one by one so that more general models and methods could be introduced in an orderly way. Each model is both motivated and illustrated with its application, and normally accompanied by corresponding data set. Special emphasis is given on analyzing the data set, operating the econometric software STATA, and interpreting the output.

Course Objectives

The whole course is designed to bridge the cap between the empirical work in both academia and industry and the more theoretical econometrics normally taught at the Ph.D. level. It aims to bestow the students with the ability of applying the econometric models to various real word problems. From this course, students could:

- Develop the ability of abstracting the econometric models from realistic problems
- Apply the econometric models in a correct manner, avoiding common pitfalls
- Obtain the skills of using STATA in a proficient way

Recommended Textbook

A. H. Studenmund (2007), Using Econometrics: A Practical Guide, 5th Edition, 机械工业出版社(English Version)

Jefferey M. Wooldridge (2009), Introductory Econometrics: A Modern Approach, 4th Edition, 清华大学出版社(English Version)

Computer Software

STATA is the econometric package you will use during the whole course. For more resources on how to use STATA, please refer to www.ats.ucla.edu/stat/**stata/** or simply search online "how to use STATA".

Grading

Class Participation 10%

Assignments 20%

Quiz 30%

Final Project 40%

Total 100%

Cheating and Plagiarism

The penalties for any form of cheating or plagiarism (whether in exams or term work) are severe. Written work submitted must be your own. Plagiarized written work will not be accepted and you should be aware that non acceptance of a submission might, in some cases, lead to failure in the course.

Tentative Course Schedule

		Main content
1	Overview	*Review how the course develops and what the main contents are, philosophy of econometrics*
2	OLS Estimation	*Benchmark model, OLS assumptions, linearity, STATA output interpretation*
3	Hypothesis Testing	*Ideas of hypothesis testing, common testing and applications*
4	Variable Selection	*Method of independent variable selection, sequential specification search method*
5	Multicollinearity	*Nature, consequence, detection and remedies of multicollinearity*
6	Serial Correlation	*Nature, consequence, detection and remedies of serial correlation, GLS*
7	Heteroskedasticity	*Nature, consequence, detection and remedies of Heteroskedasticity, WLS*
8	Instrumental Variable	*Nature of endogeneity, 2SLS*
9	Dummy dependent variable	*Dummy dependent variable, Profit, Logit models*
10	Simultaneous Equations	*Identification, 2SLS*
11	Time Series I	*Nature of time series, Granger test, AR, ARIMA*
12	Time Series II	*VAR, ARCH, GARCH*
13	Panel Data I	*Independent pooled cross-section data, 2 period panel*
14	Panel Data II	*Fixed effect and random effect models*
15	Dynamic Panel data	*GMM*
16	Final Discussion	*Final project proposal presentation and discussion*