



B.E. International Program

Faculty of Economics, Thammasat University



Course Outline

EE 435 Introductory Financial Econometrics

Semester 1/2016

Number of credits: 3 credits

Lecture Time: Tuesdays and Thursdays, 8.00-9.30 a.m.

Lecture Venue: Room 302, Faculty of Economics

Instructor: Assoc. Prof. Tatre Jantarakolica, PhD.

Office: Room 9, 60th Year Building
E-mail: tatre@econ.tu.ac.th Tel. 02 613-2467
Office hours: by appointment

Course Description:

The estimation methods of financial econometrics models, such as least square method and maximum likelihood, with the emphasis on time-series model including univariate time-series model, high frequency time-series model, multivariate time-series model; financial forecasting; The regression estimation of variables with long run relationship and short run dynamics; The application of model to analyze financial economics issues.

Prerequisites: EE325 (or EE425) and EE431

Course Objectives:

This course aims to apply econometric methodology with the economic and financial theory in explaining empirical data, and introduce a more advanced econometrics methodology beyond basic econometrics, especially time series econometrics. The objective is to train students for empirical research. The course focuses mainly on model formulation, parametric estimation method, and applications of the model. Emphasize of the course will be on empirical examples rather than theoretical proof. However, students are all expected to have a good understanding of basic statistics, calculus, and matrix algebra. Thus, students are all responsible for all pre-requisites of the course. This course also aims to have students learn how to use computer software in estimating the econometric models by letting students work on empirical assignments concerning on each topic.

Required Text:

Brooks, C. (2008). *Introductory Econometrics for Finance*. 2nd ed. New York, NY: Cambridge University Press.

Heij, C., de Boer, P., Franses, H.P., Kloek, T., & van Dijk, K.H. (2004). *Econometric Methods with Applications in Business and Economics*. New York, NY: Oxford University Press. (Chapter 4)

Supported Text:

Baltagi, B.H. (2008). *Econometric Analysis of Panel Data*. 4th ed. West Sussex, UK: John Wiley & Sons.

Berndt, E.R. (1991). *The Practice of Econometrics: Classic and Contemporary*. New York: Addison-Wesley Publishing. (Chapter 2)

Enders, W. (2003). *Applied Econometric Time Series*. 2nd ed. New York: John Wiley & Sons.

Greene, W.H. (2008). *Econometric Analysis*. 6th ed. Upper Saddle River, NJ: Prentice Hall.

Hamilton, J.D. (1994). *Time Series Analysis*. Princeton, NJ: Princeton University Press.

Johnston, J., & DiNardo, J. (1997). *Econometric Methods*. 4th ed. Singapore: McGraw-Hill.

Ruud, P.A. (2000). *An Introduction to Classical Econometric Theory*. New York: Oxford University Press.

Teaching Plan:

Class Schedule

Week	Date	Content	Reading
1	16/8/2016	<u>Review Least Squares Estimation Method</u> - Ordinary Least Squares Estimation Method	Ch 1-2
	18/8/2016	<u>Review Least Squares Estimation Method</u> - Generalized Least Squares Estimation Method - Least Squares Estimation – Matrix Approach	Ch 3-4
2	23/8/2016	<u>Application of Simple Regression Model</u> Capital Asset Pricing Model Spot & Future Market <u>Application of Multiple Regression Model</u> Fama-French Three Factor Model	Handout
	25/8/2016	<u>Application of Dummy Variable Technique</u> Calendar Effect in Stock Market	Handout
3	30/8/2016	<u>Simultaneous Equation Model</u> Simultaneous Biased	Ch 6
	1/9/2016	<u>Simultaneous Equation Model</u> Indirect Least Squares (ILS) Two Stage Least Squares (2SLS) Three Stage Least Squares (3SLS)	Ch 6
4	6/9/2016	<u>Maximum Likelihood Estimation (MLE) Method</u> Concept	Heij 4
	8/9/2016	<u>Maximum Likelihood Estimation (MLE) Method</u>	Heij 4

		Computation Inferential Statistics	
5	13/9/2016	<u>Limited Dependent Variable Models</u> Logit & Probit Model – Concept	Ch 11
	15/9/2016	<u>Limited Dependent Variable Models</u> Logit & Probit Model – Inferential Statistics	Ch 11
6	20/9/2016	<u>Limited Dependent Variable Models</u> Multinomial Logit & Probit Model Order Probit Model	Ch 11
	22/9/2016	<u>Limited Dependent Variable Models</u> Censored Regression Model Truncated Regression Model	Ch 11
7	27/9/2016	Univariate Time Series Models Stationary vs Nonstationary	Ch 5
	29/9/2016	Univariate Time Series Models (cont.) Integrated Series	Ch 5
8	4/10/2016 8:00-9:30	Midterm	

Week	Date	Content	Reading
9	11/10/2016	<u>Univariate Time Series Models</u> (cont.) Unit Root Test	Ch 5
	13/10/2016	<u>Time Series Models</u> (cont.) Cointegration & Error Correction Models	Ch 5
10	18/10/2016	<u>Univariate Time Series Models</u> (cont.) ARIMA Model – Estimation	Ch 5
	20/10/2016	<u>Univariate Time Series Models</u> (cont.) ARIMA Model – Forecast	Ch 5
11	25/10/2016	<u>Multivariate Time Series Models</u> Vector Autoregressive (VARs) Model – Concept	Ch 6
	27/10/2016	<u>Multivariate Time Series Models</u> (cont.) Vector Autoregressive (VARs) Model – Procedure	Ch 6
11	1/11/2016	<u>Multivariate Time Series Models</u> (cont.) Impulse Response Analysis	Ch 6
	3/11/2016	<u>Multivariate Time Series Models</u> (cont.) Orthogonal Impulse Response Analysis	Ch 6
12	8/11/2016	<u>Multivariate Time Series Models</u> (cont.) Forecast Error Variance Decomposition	Ch 6
	10/11/2016	<u>Modelling Long-run Relationships in Finance</u> Engle Granger Cointegration Test	Ch 7
13	15/11/2016	<u>Modelling Long-run Relationships in Finance</u> (cont.) Johansen Cointegration Test	Ch 7
	17/11/2016	<u>Modelling Long-run Relationships in Finance</u> (cont.) Vector Error Correction Models (VECM)	Ch 7

14	22/11/2016	<u>Modelling Volatility and Correlation</u> Autoregressive Conditional Heteroscedasticity (ARCH) ARCH-M	Ch 8
	24/11/2016	<u>Modelling Volatility and Correlation (cont.)</u> Generalized Autoregressive Conditional Heteroscedasticity (GARCH) EGARCH	Ch 8
15	29/11/2016	<u>Panel Data Models</u> Characteristic of Data and Problems. Model with Heteroscedasticity, Autocorrelation and Cross-sectional Correlation.	Ch 10
	1/12/2016	<u>Panel Data Models</u> Fixed Effect Models. Random Effect Models.	Ch 10
16	20/12/2016 9:00-12:00	Final Exam	

Grading:

1. Assignments	15%
2. Group Project	15%
3. Midterm Exam	30%
4. Final Exam	<u>40%</u>
	<u>100%</u>

