



Course Outline

EE435 Introductory Financial Econometrics

Semester 1/2023 (August 15 - December 4, 2023)

Lecture Time: Tuesday, 09.00-12.00 hours

Lecture Venue: Conference Room, 5th Floor.

Zoom Meeting: <https://zoom.us/j/93885683627?pwd=azkzeTVXRTRRS0k5TXZVb3BpRUdUdz09>

Meeting ID: 938 8568 3627

Passcode: TUBE

Teaching Materials Platform:

<https://classroom.google.com/c/NjE2Njc1NjI4MzMzMy?cjc=wkjicva>

Instructor:

Name: Assoc. Prof. Dr. Tatre Jantarakolica

Office Hours: Tue. 9:00am-12:00 pm

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Phone: 0-2613-2467

Number of Credit: 3 Credits (3-0-6)

Prerequisite: EE325 (or EE425) and EE431 (or EE432)

Course Description:

The application of econometrics method to financial and macroeconomics data, emphasizing at time-series models; Characteristics and properties of financial data; Univariate Time-Series Model; Regression with the long-run relationship and short-run dynamics; Volatility Model; Trainings in statistical software.

Course Objectives:

This course aims to apply econometric methodology with 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. The emphasis 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 econometric models by letting students work on empirical assignments concerning each topic.

Expected Learning Outcomes

1. Morality and Ethics **EE435**

Applicability	Expected Learning Outcomes	Evaluation Method
●	1. Students demonstrate integrity.	
○	2. Students prioritize social and public benefits over personal ones.	
●	3. Students are punctual and comply with the code of conduct of the institution and society at large.	
○	4. Students are responsible and accountable to society, the nation, and the subject of economics.	
○	5. Students realize the cultural and environmental value of a sustainable society.	

2. Knowledge

Applicability	Expected Learning Outcomes	Evaluation Method
●	1. Students know and understand modern economics principles and theories, and are up to date with new developments.	
●	2. Students know and understand Thai and global economic structure and the importance of major international economic events.	
○	3. Students know and understand the instruments of economic analysis.	
●	4. Students know and understand applied fields in economics, including monetary, public, international, business, natural resource, and environmental, industrial, agricultural, cooperative, political, developmental, and entrepreneurial economics as well as agribusiness.	
○	5. Students are informed about related fields including sociology, business administration, education, law policy, and science.	

3. Intellectual Development

Applicability	Expected Learning Outcomes	Evaluation Method
●	1. Students have developed individual critical thinking.	
●	2. Students are sufficiently trained in research skills.	
●	3. Students demonstrate an ability to analyze and synthesize data, as well as appropriately integrate economics concepts to understand the causes of current economic problems in Thailand. Based on analysis and synthesis, students demonstrate an ability to propose policy guidelines to resolve problems.	

4. Interpersonal Skills and Responsibilities

Applicability	Expected Learning Outcomes	Evaluation Method
●	1. Students are responsible for assigned tasks and work in groups effectively.	
●	2. Students have problem-solving skills.	
○	3. Students show leadership skills and team spirit.	
●	4. Students are always improving themselves.	
○	5. Students have good interpersonal skills, adapt, and work under different conditions.	

5. Quantitative Analysis, communication, and information technology

Applicability	Expected Learning Outcomes	Evaluation Method
●	1. Students select and apply appropriate statistical and mathematical methods for data processing, interpretation, conclusions, and recommendations to resolve problems.	
○	2. Students communicate effectively and select appropriate presentation methods.	
●	3. Students use information and communication technologies appropriately to gather data as well as process, interpret, and present results.	

Remark: ● Primary expected outcome ○ Secondary expected

Main Text:

Brooks, C. (2019). *Introductory Econometrics for Finance*. 4th ed. Singapore: 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)

Recommended Texts & Materials

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. (2014). *Applied Econometric Time Series*. 4th 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.

Suggested Readings:

Grading Criteria:

1. Assignments	20%
2. Group Projects	12%
3. In-class Workshop	13%
4. Midterm Exam	25%
5. Final Exam	<u>30%</u>
	<u>100%</u>

Tentative Class Schedule:

Week	Date	Content	Reading	Activity (Due)
1	15/8/2023	<u>Review Least Squares Estimation Method</u> - Ordinary Least Squares Estimation Method - Least Squares Estimation – Matrix Approach - Generalized Least Squares Estimation Method	Ch 1-4	
2	22/8/2023	<u>Application of Simple Regression Model</u> Capital Asset Pricing Model <u>Application of Multiple Regression Model</u> Fama-French Three Factor Model <u>Application of Dummy Variable Technique</u> Calendar Effect in Stock Market	Handout	WS1
3	29/8/2023	<u>Workshop:</u> <u>Database – Eikon & Datastream (By Dr.Jutamas)</u> <u>Simultaneous Equation Model</u>	Handout	Q&A (Assign 1) WS2

Week	Date	Content	Reading	Activity (Due)
		Simultaneous Biased Indirect Least Squares (ILS) Two Stage Least Squares (2SLS) Three Stage Least Squares (3SLS)	Ch 6	
4	5/9/2023	<u>Maximum Likelihood Estimation (MLE) Method</u> Concept Computation Inferential Statistics	Heij 4	Q&A (Assign 2) WS3
5	12/9/2023	<u>Limited Dependent Variable Models</u> Logit & Probit Model – Concept Logit & Probit Model – Inferential Statistics	Ch 11	Q&A (Project 1) WS4
6	19/9/2023	<u>Panel Data Models</u> Characteristic of Data and Problems. Model with Heteroscedasticity, Autocorrelation and Cross-sectional Correlation. Fixed Effects Models. Random Effects Models.	Ch 10	Q&A (Assign 3) WS5
7	26/9/2023	Univariate Time Series Models Stationary vs Nonstationary Integrated Series	Ch 5	Q&A (Assign 4) WS6
8	3/10/2023 9:00-11:00	Midterm Exam (Week 1 – 6)		
9	10/10/2023	<u>Univariate Time Series Models</u> (cont.) Unit Root Test Cointegration & Error Correction Models	Ch 5	Q&A WS7
10	17/10/2023	<u>Univariate Time Series Models</u> (cont.) ARIMA Model – Estimation ARIMA Model – Forecast	Ch 5	Q&A (Assign 5) WS8
11	24/10/2023	<u>Modelling Volatility and Correlation</u> Autoregressive Conditional Heteroscedasticity (ARCH), ARCH-M Generalized Autoregressive Conditional Heteroscedasticity (GARCH) EGARCH	Ch 8	Q&A (Assign 6) WS9
12	31/10/2023	<u>Multivariate Time Series Models</u> Vector Autoregressive (VARs) Model – Concept Vector Autoregressive (VARs) Model – Procedure	Ch 6	Q&A (Assign 7) WS10
13	7/11/2023	<u>Multivariate Time Series Models</u> (cont.) Impulse Response Analysis Orthogonal Impulse Response Analysis	Ch 6	Q&A (Project 2) WS11
14	14/11/2023	<u>Multivariate Time Series Models</u> (cont.) Forecast Error Variance Decomposition Structural Vector Autoregressive (SVARs) Model	Ch 6 Handout	Q&A (Assign 8) WS12
15	21/11/2023	<u>Modelling Long-run Relationships in Finance</u> Engle Granger Cointegration Test Johansen Cointegration Test	Ch 7	Q&A (Assign 9) WS13

Week	Date	Content	Reading	Activity (Due)
		Vector Error Correction Models (VECM)		
16	28/11/2023	<u>Review</u>	Handout	Q&A <i>(Assign10)</i>
	Friday 15/12/2023 9:00-12:00	Final Exam (Week 7 – 16)		