



FI430 Financial Econometrics (Postgraduate)

Instructor Information	<p>Jia Ren Home Institution: Shanghai University of International Business and Economics Email: j.ren@suibe.edu.cn Office Hours: Determined by Instructor</p>		
Term	June 27, 2022 - July 22, 2022	Credits	4 units
Class Hours	Monday through Friday, 120 mins per teaching day		
Discussion Sessions	2.5 hours each week, conducted by teaching assistant(s)		
Total Contact Hours	66 contact hours (1 contact hour = 45 mins, 3000 mins in total)		
Required Texts (with ISBN)	<p>Introductory Econometrics for Finance Brooks, C., Cambridge University Press 4th ed. 2019 ISBN: 9781108436823</p>		
Prerequisite	Fundamental Statistics/Business Statistics		



Course Overview

Econometrics is a widely used tool of the economic analysis in the both academic research work or financial market practice. This course is designed for graduate students to further develop their economic knowledge and solid their analysis skills with the practice of statistics software. The course starts with the classic regression model. Followed by the time series analysis, which is very often used in the financial asset valuation and risks analysis. There some extension will be discussed including the topics of Unit-root, VAR model with the co-integration and volatility model of ARCH and GARCH. Panel is last part of the course. Several important techniques will be covered, including the fixed effect and random effect. The course not only provides the solid theoretical models and techniques to the graduates but also conducts econometric trainings in exercise with real financial market data.

Learning Outcomes

Upon completion of this course, students should be able to:

1. demonstrate professional understanding of the nature and characteristics of financial data;
2. demonstrate a professional understanding of standard models used for valuation of capital assets, common stocks, bonds, options, and futures;
3. master the essential theoretical models in classical regression.
4. a good understanding of time series analysis theories, would be able of analyze the real financial data with proper models.
5. master with the panel data analysis and choose the proper models according to the characteristics of financial data.
6. explain the economic phenomena with econometric results
7. demonstrate expert knowledge and awareness of the software available for statistical analysis of financial markets; and
8. conduct a financial research project applying econometric models.



Grading Policy

Assessment	Final Grade
Attendance	10%
Homework & Assignment	20%
Mid-Term Examination	20%
Group research project+presentation	50%

Grading Scale is as follows

Number grade	Letter grade	GPA
90-100	A	4.0
85-89	A-	3.7
80-84	B+	3.3
75-79	B	3.0
70-74	B-	2.7
67-69	C+	2.3
65-66	C	2.0
62-64	C-	1.7
60-61	D	1.0
≤59	F (Failure)	0



Class Schedule

Date	Lecture	Reading/Assignments/ Examination
Day 1	Course Introduction A Brief Overview of the Classical Linear Regression Model Section.	Chapter 3 p.147-p.208 of Brooks (2019)
Day 2	Further Development and Analysis of the Classical Linear Regression Model Section	Chapter 4 p.209-p.253 of Brooks (2019)
Day 3	Classical Linear Regression Model Assumptions and Diagnostic Tests Section A	Chapter 5 p.254-p.329 of Brooks 2019
Day 4	Classical Linear Regression Model Assumptions and Diagnostic Tests Section B	Chapter 5 p.254-p.329 of Brooks (2019)
Day 5	Training I: classical regression	
Day 6	Univariate Time-Series Modelling and Forecasting Section A	Chapter 6 p.330-p.386 of Brooks (2019)
Day 7	Univariate Time-Series Modelling and Forecasting Section B	Chapter 6 p.330-p.386 of Brooks (2019)
Day 8	Multivariate Models	Chapter 7 p.387-p.436 of Brooks (2019)
Day 9	Training II: Time Series	
Day 10	Vector Auto Regression analysis	Chapter 7 p.387-p.436 of Brooks (2019)
Day 11	Stationarity and Unit Root Testing	Chapter 8 p.437-p.457 of Brooks (2019)
Day 12	Cointegration Testing	Chapter 8 p.438-p.463 of Brooks (2019)
Day 13	Methods of Parameter Estimation in Cointegrated Systems	Chapter 8 p.464-p.480 of Brooks (2019)
Day 14	Modelling Volatility and Correlation, ARCH & G-ARCH model	Chapter 9 p.497-p.572 of Brooks (2019)
Day 15	Training III: VAR GARCH	
Day 16	Switching and State Space Models Markov; Switching Model & Threshold Model	Chapter 10 p.573-p.590 of Brooks (2019)
Day 17	Panel Data models	Chapter 11 p.625-p.655 of Brooks (2019)
Day 18	Training IV: VAR GARCH	
Day 19	Presentation of Empirical Research Project	
Day 20	Presentation of Empirical Research Projects	