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# ②图玄束華大學

# 教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese	計量經濟學(三)	)-財務計量經濟	ξ. 1		學年/學期 Academic Year/Semester			
課程名稱(英文) Course Name in English	Econometrics III -Financial Econometrics							
科目代碼 Course Code	FIN_51500	系級 Department 碩士 & Year		開課單位 Course-Offer Departmen		才務金融學系		
修別 Type	選修 Elective	學分數/時 Credit(s)/Hou			3.0/3.0			
授課教師 Instructor	/林金龍							
先修課程 Prerequisite								

## 課程描述 Course Description

This course focuses exclusively on financial time series analysis or financial econometrics. I am aiming at equipping the students with proper tools for advanced empirical work and lay the foundation for future theoretical research in this area. I shall cover closely the contents of the recently published new book, An introduction to financial time series with R written by Ruey Tsay. After a quick review of linear time series modeling, I shall start the econometric analysis with volatility modeling. Univariate GARCH and stochastic volatility comes first, followed by multivariate volatility models. Extreme values analysis and VaR are the second main topic. High frequency financial econometrics comprises the third. useful.

In additional to econometric analysis, I also emphasize computational aspects of these complicated econometric techniques. R, is the statistical packages used in this course.

#### 課程目標 Course Objectives

The class of Empirical Financial Economics is designed to provide the student with an introduction to the fields of Empirical Investment and Empirical Behavior Finance. Students pursuing a concentration in financeshould view Empirical Financial Economics as an advanced course in Investments, Portfolio Management, financial markets and institutions. This class assumes no prior education in finance. It develops fundamental models of valuation and investment from first principles and applies them to problems of corporate and individual decision making. Topics covered portfolio theory and the trade-off between risk and return. It presents three asset pricing models, the Capital Asset Pricing Model, the Arbitrage Pricing Theory, the Three-Factor Model, and recent applications to the calculation of the firm's cost of capital Students are introduced to the fundamental concepts of finance: the time value of money, portfolio theory and the determinants of expected security returns

圖示說明Illustration : ● 高度相關 Highly correlated ○中度相關 Moderately correlated

#### 授課進度表 Teaching Schedule & Content

週次Week	內容 Subject/Topics	備註Remarks
1	Financial data, their properties and R programming	
2	Linear models for financial time series (I)	
3	Linear models for financial time series (II)	

4	Case studies of linear time series (I)									
5	Case studies of linear time series (II)									
6	Asset volatility and volatility models (I)									
7	Asset volatility and volatility models (II)									
8	Asset volatility and volatility models (III)									
9	期中考試週 Midterm Exam									
10	Applications of volatility models									
11	High frequency financial data (I)									
12	High frequency financial data (II)									
13	High frequency financial data (III)									
14	Value at Risk (I)									
15	Value at Risk (II)									
16	Value at Risk (III)									
17	Value at Risk (	IV)								
18	期末考試週 Fina	1 Exam								
		教	學策	略 Tea	aching S	Strateg	ies			
✓ 課堂講	✓ 課堂講授 Lecture 分組討論Group Discussion 参觀實習 Field Trip									
其他Mis	scellaneous:									
學期成績計算及多元評量方式 Grading & Assessments										
	 .分項目	配分比例	多元評量方式 Assessments							
	Items	Percentage	測驗會考	實作觀察	口頭 發表	專題 研究	創作 展演	卷宗 評量	證照 檢定	其他
平時成績(含 General Per (Attendance	formance	30%		<b>~</b>						
期中考成績 Midterm Exam		30%	<b>~</b>							
期末考成績 Final Exam		40%				~				
作業成績 Ho Assignments										
其他 Miscel										
評量方式補充說明 Grading & Assessments Supplemental instructions										

## 教科書與參考書目(書名、作者、書局、代理商、說明)

Textbook & Other References (Title, Author, Publisher, Agents, Remarks, etc.)

Textbook:

Ruey S. Tsay, An Introduction to Analysis of Financial Data with R, John Wiley & Sons, 2013.

Reference books:

Ruey S. Tsay, Analysis of Financial Time Series, 3rd , JohnWiley & Sons,

Andersen, T.G.; Davis, R.A.; Kreib, J.-P.; Mikosch, Th. (Eds.) Handbook of Financial Time Series, 2009, Springer-Verlag

John Y. Campbell, Andrew W. Lo, and A. Craig MacKinlay: The Econometrics of Financial Markets, 1996, Princeton University Press

Alexander J. McNeil (Author), Rudiger Frey (Author), Paul Embrechts (Author) (2005), Quantitative Risk Management: Concepts, Techniques, and Tools Princeton University Press

## 課程教材網址(教師個人網址請列在本校內之網址)

Teaching Aids & Teacher's Website (Personal website can be listed here.)

facultu. ndhu. edu. tw/~jli

#### 其他補充說明(Supplemental instructions)

Students must buy or borrow the main textbook.