

EF4822: FINANCIAL ECONOMETRICS

Effective Term

Semester A 2024/25

Part I Course Overview

Course Title

Financial Econometrics

Subject Code

EF - Economics and Finance

Course Number

4822

Academic Unit

Economics and Finance (EF)

College/School

College of Business (CB)

Course Duration

One Semester

Credit Units

3

Level

B1, B2, B3, B4 - Bachelor's Degree

Medium of Instruction

English

Medium of Assessment

English

Prerequisites

EF3320 Security Analysis and Portfolio Management

Precursors

Nil

Equivalent Courses

Nil

Exclusive Courses

Nil

Part II Course Details

Abstract

This course aims to equip students with econometric methods to analyse financial time series in the respect of risk and return, and return predictability and portfolio allocation. Students are expected to gain practical experience in analysing financial and macroeconomic data.

Course Intended Learning Outcomes (CILOs)

CILOs		Weighting (if DEC-A1 app.)		DEC-A2	DEC-A3
1	Apply econometric methods to analyse financial time series		x	x	x
2	Demonstrate skills in time-series return predictability regressions			x	x
3	Analyse portfolio allocation problems with risk assessment			x	x

A1: Attitude

Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability

Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to real-life problems.

A3: Accomplishments

Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

Learning and Teaching Activities (LTAs)

LTAs		Brief Description	CILO No.	Hours/week (if applicable)
1	Lectures	Students will engage in lecture and to think critically and logically by responding to questions and solving the problems.	1, 2, 3	3 hours per week
2	Peer Discussion	Students will engage in structured discussion with peers to identify areas to improve on in their returned assessment tasks.	1, 2, 3	

Assessment Tasks / Activities (ATs)

ATs		CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Assignments Assignments on basic statistics and R programming, and on application of R to financial time series analysis, including ARMA models, capital asset pricing model, and portfolio allocation, demonstrating their understanding of the concepts of time series analysis and their ability to apply R programming to real financial time series analysis.	2	30	
2	Project One project on applying return predictability analysis to Hong Kong stock market with the use of R programming, demonstrating their skills to deal with data, analyse financial time series, and perform return predictability analysis.	2	20	

Continuous Assessment (%)

50

Examination (%)

50

Examination Duration (Hours)

2

Assessment Rubrics (AR)**Assessment Task**

Assignments

Criterion

Analytical and programming skills

Excellent (A+, A, A-)

Demonstrate excellent knowledge in the subject, and a superior grasp of the critical issue and techniques

Good (B+, B, B-)

Demonstrate good knowledge in the subject, and a good grasp of the critical issue and techniques

Fair (C+, C, C-)

Demonstrate adequate knowledge in the subject, and adequate grasp of the critical issue and techniques

Marginal (D)

Demonstrate limited knowledge in the subject, and some idea of the critical issue and techniques

Failure (F)

Demonstrate poor knowledge in the subject, and no awareness of the critical issue and techniques

Assessment Task

Projects

Criterion

Analytical, programming, and writing skills

Excellent (A+, A, A-)

Demonstrate excellent knowledge in the subject, and a superior grasp of the critical issue and techniques

Good (B+, B, B-)

Demonstrate good knowledge in the subject, and a good grasp of the critical issue and techniques

Fair (C+, C, C-)

Demonstrate adequate knowledge in the subject, and adequate grasp of the critical issue and techniques

Marginal (D)

Demonstrate limited knowledge in the subject, and some idea of the critical issue and techniques

Failure (F)

Demonstrate poor knowledge in the subject, and no awareness of the critical issue and techniques

Assessment Task

Examination

Criterion

Analytical skills and knowledge about programming

Excellent (A+, A, A-)

Demonstrate excellent knowledge in the subject, and a superior grasp of the critical issue and techniques

Good (B+, B, B-)

Demonstrate good knowledge in the subject, and a good grasp of the critical issue and techniques

Fair (C+, C, C-)

Demonstrate adequate knowledge in the subject, and adequate grasp of the critical issue and techniques

Marginal (D)

Demonstrate limited knowledge in the subject, and some idea of the critical issue and techniques

Failure (F)

Demonstrate poor knowledge in the subject, and no awareness of the critical issue and techniques

Part III Other Information

Keyword Syllabus

1. Financial Time Series Analysis and its Applications
2. ARMA Models
3. Time-Series Return Predictability
4. Efficient Portfolios and Capital Asset Pricing Model
5. Portfolio Allocation and Risk Assessment

Reading List

Compulsory Readings

Title	
1	Robert H. Shumway, and David S. Stoffer, Time Series: A Data Analysis Approach Using R, Chapman and Hall/CRC, 2019. (Chapter 1, 2, 3, 4)
2	Jianqing Fan, and Qiwei Yao. The Elements of Financial Econometrics, Cambridge University Press, 2017. (Chapter 5, 7)

Additional Readings

Title	
1	Robert H. Shumway, and David S. Stoffer, Time Series Analysis and Its Applications: with R Examples, Springer, 2017.
2	Ruey S. Tsay, Analysis of Financial Time Series, John Wiley & Sons, New Jersey, 2010.
3	John Y. Campbell, Andrew W. Lo and A. Craig MacKinlay, The Econometrics of Financial Markets, Princeton University Press, 1997.