ECON3034

Financial Econometrics

Session 1, Online-scheduled-weekday 2023

Department of Economics

Contents

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General Information

Unit convenor and teaching staff
Lance Fisher
lance.fisher@mq.edu.au

Credit points
10

Prerequisites
90cp at 1000 level or above including ECON241 or ECON2041 or STAT272 or STAT2372

Corequisites

Co-badged status

Unit description
This unit is highly recommended for students majoring in economics and finance. Finance professionals use econometric techniques in portfolio management, risk management and securities analysis. This unit is intended to provide students with the tools necessary for financial applications. Statistical techniques are developed within the context of particular financial applications. Recent empirical evidence is also discussed. Although ECON2032 is not a prerequisite, it is highly recommended.

Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at https://www.mq.edu.au/study/calendar-of-dates

Learning Outcomes

On successful completion of this unit, you will be able to:

ULO1: Apply econometric methods to modelling, analysing and forecasting financial data.

ULO2: Demonstrate and explain different estimation methodologies.

ULO3: Critically evaluate empirical econometric work.

ULO4: Present results based on financial econometric analysis, to a non-technical audience, in a clear and understandable manner.

General Assessment Information

Late Assessment Submission Penalty (written assessments)

Unless a Special Consideration request has been submitted and approved, a 5% penalty (of the total possible mark) will be applied each day a written assessment is not submitted, up until the 7th day (including weekends). After the 7th day, a grade of '0' will be awarded even if the assessment is submitted. Submission time for all written assessments is set at 11.55pm. A 1-hour grace period is provided to students who experience a technical concern.

For any late submissions of time-sensitive tasks, such as scheduled tests/exams, performance assessments/presentations, and/or scheduled practical assessments/labs, students need to submit an application for Special Consideration.

Assessment Tasks

Name	Weighting	Hurdle	Due
Class test	30%	No	Week 7
Assignment	30%	No	Week 10
Final examination	40%	No	University Exam Period

Class test

Assessment Type [1]: Quiz/Test
Indicative Time on Task [2]: 15 hours
Due: **Week 7**
Weighting: **30%**

The class test will be held during the week 7 lecture. The test will consist of multiple-choice questions, and will cover all material up to and including Week 5.

On successful completion you will be able to:

- Apply econometric methods to modelling, analysing and forecasting financial data.
- Demonstrate and explain different estimation methodologies.

Assignment

Assessment Type [1]: Quantitative analysis task
Indicative Time on Task [2]: 25 hours
Due: **Week 10**
Weighting: **30%**

A series of short answer questions exploring various aspects of Financial Econometrics.

On successful completion you will be able to:

- Critically evaluate empirical econometric work.
- Present results based on financial econometric analysis, to a non-technical audience, in a clear and understandable manner.

Final examination

Assessment Type [1]: Examination
Indicative Time on Task [2]: 30 hours
Due: **University Exam Period**
Weighting: **40%**

A two-hour examination will be held during the University Examination Period, and will consist of multiple-choice and short-answer questions. Computer outputs and statistical tables will be provided.

On successful completion you will be able to:

- Demonstrate and explain different estimation methodologies.
- Critically evaluate empirical econometric work.

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[1] If you need help with your assignment, please contact:

- the academic teaching staff in your unit for guidance in understanding or completing this type of assessment
- the Writing Centre for academic skills support.

[2] Indicative time-on-task is an estimate of the time required for completion of the assessment task and is subject to individual variation

Delivery and Resources

Delivery

The intended delivery mode is as per the timetable: Macquarie University Timetables - 2.0.39 (mq.edu.au).

Resources

The prescribed textbook for the unit is:

Brooks, C. (2019) Introductory Econometrics for Finance, 4th Edition, Cambridge University

Press. The 4th Edition of the textbook has been recently published. You can use the 3rd Edition of the textbook (2014) instead if you prefer.

In addition to the textbook, the following references are useful but are not required.

(i) Hurn, S., Martin, V., Phillips, P.C.B., and Yu, J. (2020) Financial Econometric Modeling, Oxford University Press. (This book is somewhat advanced for our class, but contains a lot of interesting material).

(ii) Campbell, J., Lo, A., and Mackinlay, C. (1997) The Econometrics of Financial Markets, Princeton University Press. (This book is too advanced for our class, but contains a lot of interesting material).

(iii) Diebold, F. (2007) Elements of Forecasting, 4th Edition, South-Western College

(iv) Enders, W. (2014) Applied Econometric Time Series, 4th Edition, Wiley.

• Material such as lecture slides, examples, and tutorial questions will be available on the unit home page. The text and lecture notes, together with the lectures and additional references will provide students with a clear indication of the basic content of the unit.

• It is recommended that students attend all lectures and tutorials for several reasons including:

• Not all the material in the text is included in the unit, and not all the material in the unit is covered in the text. In some places the text deals with issues in greater depth than is necessary for the unit, and in other places it doesn't go far enough. The lectures contain all the unit material taught at the level required for the assessment tasks, and are your guide to the unit content.

• The approaches to some problems that are recommended by the lecturer are different to those in the text.

• The lectures will include guidance about the style and content of the final exam and recommendation about study technique.

• It is difficult (and often impossible) for staff to provide meaningful assistance to students outside class times on topics for which they did not attend the relevant lectures and tutorials.

Technology Used and Required

Students are required to use a computer to carry out certain tasks of the course, such as tutorials and assignments. The software programs used in this course include EViews 12 and Microsoft Excel.

Unit Web Page

• Course material is available on the learning management system (iLearn), which can be found at: http://ilearn.mq.edu.au.

Unit Schedule

Unit Schedule

Week No.	Lecture Topic	Tutorials
1	**Characteristics of Financial Data; Revision of Basic Mathematical and Statistical Concepts** Textbook: Chapter 1 and Chapter 2, all sections; 4th or 3rd Edition. Lecture Notes.	No tutorial this week.
2	**Correlation and Basic Regression Methods** Textbook: Chapter 3, all sections, excluding the appendix. 4th or 3rd Edition. Lecture Notes.	Tutorial Week 2
3	**Multiple Linear Regression Model** Textbook: 4th Edition Chapter 4, Sections 4.1 to 4.7 inclusive, Section 4.9. Lecture Notes; or Textbook: 3rd Edition Chapter 4, Sections 4.1 to 4.8 inclusive, Section 4.10. Lecture Notes.	Tutorial Week 3
4	**Regression Model Diagnostics** Textbook: 4th Edition Chapter 5, all sections. Chapter 10, Sections 10.1 to 10.3 inclusive. Lecture Notes; or Textbook: 3rd Edition Chapter 5, all sections. Chapter 10, Sections 10.1 to 10.3 inclusive. Lecture Notes.	Tutorial Week 4
5	**Time Series Models** Textbook: 4th Edition, Chapter 6, Sections 6.1 to 6.5. Lecture Notes; or Textbook: 3rd Edition, Chapter 6, Sections 6.1 to 6.5. Lecture Notes.	Tutorial Week 5
6	**Identification of Time Series Models** Textbook: 4th Edition, Chapter 6, Sections 6.6 to 6.8. Lecture Notes; or Textbook: 3rd Edition, Chapter 6, Sections 6.6 to 6.9. Lecture Notes.	Tutorial Week 6
7	**Class Test**	Tutorial Week 7
	Mid-semester Break	
8	**Forecasting with Time Series Models** Textbook: 4th Edition, Chapter 6, Sections 6.10. Lecture Notes; or Textbook: 3rd Edition, Chapter 6, Sections 6.11 and 6.12. Lecture Notes.	Tutorial Week 8
9	**Modeling Volatility: Specification and Estimation of ARCH and GARCH Models** Textbook: 4th Edition, Chapter 9, Sections 9.1 to 9.4 inclusive, Sections 9.6 to 9.9 inclusive. Lecture Notes; or Textbook: 3rd Edition, Chapter 9, Sections 9.1 to 9.4 inclusive, Sections 9.6 to 9.9 inclusive. Lecture Notes.	Tutorial Week 9

10	**Modeling Volatility: Extensions of ARCH and GARCH Models.**	Tutorial Week 10
	Textbook: 4th Edition, Chapter 9, Sections 9.10 to 9.17 inclusive, Lecture Notes; or	
	Textbook: 3rd Edition, Chapter 9, Sections 9.10 to 9.18 inclusive, Lecture Notes.	
11	**Forecasting Volatility.**	Tutorial Week 11
	Textbook: 4th Edition, Chapter 9, Sections 9.18. Lecture Notes; or	
	Textbook: 3rd Edition, Chapter 9, Sections 9.17, 9.19. Lecture Notes.	
12	**Long-Run Relationships in Finance**	Tutorial Week 12
	Textbook: 4th Edition, Chapter 8, Sections 8.1, 8.3 to 8.6.1 inclusive. Lecture Notes; or	
	Textbook: 3rd Edition, Chapter 8, Sections 8.1, 8.3 to 8.7.1 inclusive. Lecture Notes.	
13	**Bivariate Autoregressive Models**	Tutorial Week 13
	Textbook: 4th Edition, Chapter 7, Sections 7.10, 7.12. Lecture Notes; or	
	Textbook: 3rd Edition, Chapter 7, Sections 7.11, 7.13. Lecture Notes.	

Policies and Procedures

Macquarie University policies and procedures are accessible from Policy Central (https://policies.mq.edu.au). Students should be aware of the following policies in particular with regard to Learning and Teaching:

- Academic Appeals Policy
- Academic Integrity Policy
- Academic Progression Policy
- Assessment Policy
- Fitness to Practice Procedure
- Assessment Procedure
- Complaints Resolution Procedure for Students and Members of the Public
- Special Consideration Policy

Students seeking more policy resources can visit Student Policies (https://students.mq.edu.au/support/study/policies). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

To find other policies relating to Teaching and Learning, visit Policy Central (https://policies.mq.edu.au) and use the search tool.

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: https://students.mq.edu.au/admin/other-resources/student-conduct

Results

Results published on platform other than eStudent, (eg. iLearn, Coursera etc.) or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in eStudent. For more information visit ask.mq.edu.au or if you are a Global MBA student contact globalmba.support@mq.edu.au

Academic Integrity

At Macquarie, we believe academic integrity – honesty, respect, trust, responsibility, fairness and courage – is at the core of learning, teaching and research. We recognise that meeting the expectations required to complete your assessments can be challenging. So, we offer you a range of resources and services to help you reach your potential, including free online writing and maths support, academic skills development and wellbeing consultations.

Student Support

Macquarie University provides a range of support services for students. For details, visit http://students.mq.edu.au/support/

The Writing Centre

The Writing Centre provides resources to develop your English language proficiency, academic writing, and communication skills.

- Workshops
- Chat with a WriteWISE peer writing leader
- Access StudyWISE
- Upload an assignment to Studiosity
- Complete the Academic Integrity Module

The Library provides online and face to face support to help you find and use relevant information resources.

- Subject and Research Guides
- Ask a Librarian

Student Services and Support

Macquarie University offers a range of Student Support Services including:

- IT Support
- Accessibility and disability support with study
- Mental health support
- Safety support to respond to bullying, harassment, sexual harassment and sexual assault

- Social support including information about finances, tenancy and legal issues

- Student Advocacy provides independent advice on MQ policies, procedures, and processes

Student Enquiries

Got a question? Ask us via AskMQ, or contact Service Connect.

IT Help

For help with University computer systems and technology, visit http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/.

When using the University's IT, you must adhere to the Acceptable Use of IT Resources Policy. The policy applies to all who connect to the MQ network including students.