



# ECON3034

## Financial Econometrics

Session 1, Special circumstances 2021

*Department of Economics*

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#### **Notice**

As part of [Phase 3 of our return to campus plan](#), most units will now run tutorials, seminars and other small group activities on campus, and most will keep an online version available to those students unable to return or those who choose to continue their studies online.

To check the availability of face-to-face activities for your unit, please go to [timetable viewer](#). To check detailed information on unit assessments visit your unit's iLearn space or consult your unit convenor.

## General Information

Unit convenor and teaching staff

Unit Convenor

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TBA

Teaching Assistant

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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.

## Assessment Tasks

Name	Weighting	Hurdle	Due
<a href="#">Class test</a>	30%	No	Week 7 during lecture time
<a href="#">Assignment</a>	30%	No	Week 10 Thursday 4pm
<a href="#">Final examination</a>	40%	No	University's Formal Examination Period

### Class test

Assessment Type <sup>1</sup>: Quiz/Test

Indicative Time on Task <sup>2</sup>: 15 hours

Due: **Week 7 during lecture time**

Weighting: **30%**

The class test will be held online during the week 7 lecture time. 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 <sup>1</sup>: Quantitative analysis task

Indicative Time on Task <sup>2</sup>: 28 hours

Due: **Week 10 Thursday 4pm**

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 <sup>1</sup>: Examination

Indicative Time on Task <sup>2</sup>: 30 hours

Due: **University's Formal Examination Period**

Weighting: **40%**

A two-hour open book 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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<sup>1</sup> 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.

<sup>2</sup> 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

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) 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).

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

(iii) 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 10 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

Week No.	Lecture Topic	Tutorials
1	<p><b>Characteristics of Financial Data; Revision of Basic Mathematical and Statistical Concepts</b></p> <p>Textbook: Chapter 1 and Chapter 2, all sections; 4th or 3rd Edition. Lecture Notes.</p>	
2	<p><b>Correlation and Basic Regression Methods</b></p> <p>Textbook: Chapter 3, all sections, excluding the appendix. 4th or 3rd Edition. Lecture Notes.</p>	Tutorial Week 2
3	<p><b>Multiple Linear Regression Model</b></p> <p>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.</p>	Tutorial Week 3
4	<p><b>Regression Model Diagnostics</b></p> <p>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.</p>	Tutorial Week 4
5	<p><b>Time Series Models</b></p> <p>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.</p>	Tutorial Week 5

6	<b>Identification of Time Series Models</b>  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	<b>Class Test</b>	Tutorial Week 7
	<b>Mid-semester Break</b>	
8	<b>Forecasting with Time Series Models</b>  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	<b>Modeling Volatility: Specification and Estimation of ARCH and GARCH Models</b>  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	<b>Modeling Volatility: Extensions of ARCH and GARCH Models.</b>  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.  <b>Assignment due Thursday 4pm.</b>	Tutorial Week 10
11	<b>Forecasting Volatility.</b>  Textbook: 4th Edition, Chapter 9, Sections 9.18. Lecture Notes; or  Textbook: 3rd Edition, Chapter 9, Sections 9.17, 9.19. Lecture Notes.	Tutorial Week 11
12	<b>Long-Run Relationships in Finance</b>  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.	Tutorial Week 12
13	<b>Bivariate Autoregressive Models</b>  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 \(https://policies.mq.edu.au\)](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](#)
- [Grade Appeal Policy](#)
- [Complaint Management Procedure for Students and Members of the Public](#)
- [Special Consideration Policy](#)

Students seeking more policy resources can visit [Student Policies \(https://students.mq.edu.au/support/study/policies\)](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 \(https://policies.mq.edu.au\)](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](http://ask.mq.edu.au) or if you are a Global MBA student contact [globalmba.support@mq.edu.au](mailto:globalmba.support@mq.edu.au)

## Student Support

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

## Learning Skills

Learning Skills ([mq.edu.au/learningskills](http://mq.edu.au/learningskills)) provides academic writing resources and study strategies to help you improve your marks and take control of your study.

- [Getting help with your assignment](#)
- [Workshops](#)
- [StudyWise](#)
- [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

Students with a disability are encouraged to contact the [Disability Service](#) who can provide appropriate help with any issues that arise during their studies.

## Student Enquiries

For all student enquiries, visit Student Connect at [ask.mq.edu.au](http://ask.mq.edu.au)

If you are a Global MBA student contact [globalmba.support@mq.edu.au](mailto:globalmba.support@mq.edu.au)

## IT Help

For help with University computer systems and technology, visit [http://www.mq.edu.au/about\\_us/offices\\_and\\_units/information\\_technology/help/](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.