FOBE740

Quantitative Research Approaches in Business and Economics 2

S2 Day 2014

Business and Economics Faculty level units

Contents

Disclaimer

General Information

Unit convenor and teaching staff
Unit Convenor
Roselyne Joyeux
roselyne.joyeux@mq.edu.au
Contact via roselyne.joyeux@mq.edu.au
E4A440
Available on iLearn

Lecturer
Daehoon Nahm
daehoon.nahm@mq.edu.au
Contact via daehoon.nahm@mq.edu.au
E4A417
Available on iLearn

Lecturer
Chris Heaton
chris.heaton@mq.edu.au
Contact via chris.heaton@mq.edu.au
E4A414
Available on iLearn

Lecturer
Shuping Shi
shuping.shi@mq.edu.au
Contact via shuping.shi@mq.edu.au
E4A441
Available on iLearn

Lecturer
George Milunovich
george.milunovich@mq.edu.au
Contact via george.milunovich@mq.edu.au
E4A436
Available on iLearn

Credit points
4

Prerequisites
Admission to MRes
Corequisites
Co-badged status
Unit description
This unit focuses on advanced statistical approaches used in Business and Economics and related disciplines. Topics include statistical modelling, time series analysis, ARCH, GARCH model, longitudinal and panel data models, generalized linear models and limited dependent variables. The unit will also consider applications of the above models and techniques to these disciplines.

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:

Understand the theoretical basis for the linear regression model.

Understand a range of generalizations of regression such as discrete-choice models, and how to apply them

Have a broad understanding of modelling and inference in time series analysis including ARIMA models, unit roots and cointegration, GARCH models.

Understand how linear models, time series models and various generalizations are applied and how empirical results are communicated in practice

Assessment Tasks

Name	Weighting	Due
Participation - class	10%	All session
Midterm	15%	Week 8, Lecture time
Project	25%	Week 13
Final Exam	50%	As per exam timetable

Participation - class

Due: **All session**
Weighting: **10%**

Participation in lectures and tutorials.

On successful completion you will be able to:
- Understand the theoretical basis for the linear regression model.
- Understand a range of generalizations of regression such as discrete-choice models, and how to apply them
- Have a broad understanding of modelling and inference in time series analysis including ARIMA models, unit roots and cointegration, GARCH models.
- Understand how linear models, time series models and various generalizations are applied and how empirical results are communicated in practice

Midterm

Due: **Week 8, Lecture time**
Weighting: **15%**

On successful completion you will be able to:
- Understand the theoretical basis for the linear regression model.

Project

Due: **Week 13**
Weighting: **25%**

On successful completion you will be able to:
- Understand the theoretical basis for the linear regression model.
- Understand a range of generalizations of regression such as discrete-choice models, and how to apply them
- Have a broad understanding of modelling and inference in time series analysis including ARIMA models, unit roots and cointegration, GARCH models.
- Understand how linear models, time series models and various generalizations are applied and how empirical results are communicated in practice

Final Exam

Due: **As per exam timetable**
Weighting: **50%**

-

On successful completion you will be able to:

- Understand the theoretical basis for the linear regression model.

- Understand a range of generalizations of regression such as discrete-choice models, and how to apply them

- Have a broad understanding of modelling and inference in time series analysis including ARIMA models, unit roots and cointegration, GARCH models.

Delivery and Resources

Lecture and Tutorial times

Classes for FOBE740 are scheduled as per the class timetable available at
http://www.timetables.mq.edu.au/

There will be 3 hours face-to-face teaching per week consisting of one two-hour lecture and one hour tutorial. Lectures and tutorials are held in the computer labs.

Technology used and required

If you are enrolled in this unit, you will be listed in the FOBE740 online unit (iLearn). Login at
http://ilearn.mq.edu.au/

The site will be used to post any additional lecture slides, handouts, and assignment. The site contains a "forum" to which you may contribute. Please log in to the site on a regular basis.

Required and Recommended Texts and/or Materials

Two recommended textbooks for FOBE740 are:

1. Hill, C. H., Griffiths, W. E. and Lim, G. C. (2011) *Principles of Econometrics* (4th ed.) Wiley.

2. Wooldridge, J. (2008) *Introductory Econometrics: A Modern Approach (4th ed.)* Cengage Learning.

- The first one is appropriate for students who have a weaker statistical background. The second one is more advanced and provides more details.

- A list of prescribed reading will be developed on the website as the unit progresses.

Teaching and Learning Strategy

- Students are expected to complete all pre-class preparation tasks in advance of that particular class.

- Please make notes summarizing the pre-class readings. These notes do not need to be submitted for assessment; however they will permit discussion of the questions and

material in class.

- Students are expected to attend and participate in all classes.

Information

Details of the assessment tasks will be given in lectures and posted on iLearn. You should check iLearn regularly.

About this Unit

This unit is one of core courses of the MRes program for FBE students who require advanced quantitative skills in their research. This unit provides students with an introduction to quantitative research approaches within business, economics and finance. It seeks to develop students understanding of the contexts in which quantitative research can be undertaken and the ability to analyse, conduct, and evaluate quantitative forms of research. It is designed for those who have had little or no quantitative training in their undergraduate degree but who needs quantitative skills for specialisations in the areas of business, demography, economics, finance, and marketing.

Assumed background

A one—semester rigorous introduction to probability and statistics is assumed.

Unit Schedule

Week	Topic	Tutorial Topic
1	Multiple linear regression	Introduction to software
2	Multiple linear regression	Computer exercise in regression
3	Multiple linear regression	Computer exercise in regression
4	Regressions with panel data	Computer exercise in regression
5	Regressions with panel data	Computer exercise with panel data
6	discrete-choice models	Computer exercise with discrete-choice models
7	discrete-choice models	Computer exercise with discrete-choice models
Mid	**Semester**	**Break**
8	Stationary time series, ARIMA models	Mid Term Test
9	Stationary time series, ARIMA models	Computer exercise with ARIMA models
10	Unit root tests	Computer exercise
11	Spurious regressions and cointegration tests	Computer exercise
12	Volatility models	Computer exercise

13	Volatility models	Review

Details of these assessment tasks will be given in the lecturers, and will be posted on iLearn.

Tutorial exercises

The weekly exercises require access to a statistical package. These are not assessed, except as far as participation in discussion.

Midterm test

A 50 minute test covering all of the material up to week 7 will be held in lecture time in week 8.

Student Research Proposal/ Project

Students will outline a quantitative problem, research relevant literature, access data, apply one or more of the techniques discussed in class to address the problem and write up a report on the same. Submission as per the class timetable and to be further discussed in class.

This is to be completed as an individual piece of work. The report should range from between 9-10 pages or 3500-4000 words in length. A hard copy needs to be submitted as well as a copy uploaded to "Turn-it-in" (via iLearn). The project is worth 25% of the course grade.

Policies and Procedures

Macquarie University policies and procedures are accessible from Policy Central. Students should be aware of the following policies in particular with regard to Learning and Teaching:

Academic Honesty Policy http://mq.edu.au/policy/docs/academic_honesty/policy.html

Assessment Policy http://mq.edu.au/policy/docs/assessment/policy.html

Grading Policy http://mq.edu.au/policy/docs/grading/policy.html

Grade Appeal Policy http://mq.edu.au/policy/docs/gradeappeal/policy.html

Grievance Management Policy http://mq.edu.au/policy/docs/grievance_management/policy.html

Disruption to Studies Policy http://www.mq.edu.au/policy/docs/disruption_studies/policy.html *The Disruption to Studies Policy is effective from March 3 2014 and replaces the Special Consideration Policy.*

In addition, a number of other policies can be found in the Learning and Teaching Category of Policy Central.

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: https://students.mq.edu.au/support/student_conduct/

Supplementary exam information

The dates and details relating to supplementary exams are at the following link:

http://www.businessandeconomics.mq.edu.au/current_students/undergraduate/how_do_i/
special_consideration

Policy regarding late submission of assessments

No extensions will be granted. Students who have not submitted the task prior to the deadline will be awarded a mark of 0 for the task, except for cases in which an application for special consideration is made and approved.

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) provides academic writing resources and study strategies to improve your marks and take control of your study.

- Workshops
- StudyWise
- Academic Integrity Module for Students
- Ask a Learning Adviser

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

IT Help

For help with University computer systems and technology, visit http://informatics.mq.edu.au/help/.

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

Research and Practice

- The unit is designed to equip students to embark on their individual higher degree research projects.
- A number of reading, writing and analytical tasks are set. Responses to some of these tasks are discussed in class, whereas others will be submitted for assessment. The tasks will contribute directly to the Research Protocol submission and/or PhD thesis.
- The unit is delivered in accordance with current academic teaching and learning pedagogies.