ECON241

Introductory Econometrics

S2 Day 2019

Dept of Economics

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General Information

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Credit points
3

Prerequisites
15cp at 100 level or above including ((STAT150 or STAT170 or STAT171 or PSY122) and (ECON110 or ECON111))

Corequisites

Co-badged status

Unit description
This unit introduces some basic econometric techniques employed by economists in the analysis of economic relationships. These techniques are also used extensively in marketing and finance. Topics covered will usually include: estimation and hypothesis testing; simple and multiple regression; prediction; the interpretation and evaluation of regression models, including an elementary discussion of nonlinear modelling, heteroscedasticity, auto-correlation, multicollinearity and specification error; and the use of categorical or qualitative data in regression models. Emphasis throughout the unit is on the application of econometric techniques and the interpretation of estimated results rather than formal theoretical proofs and derivations.

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 and apply the key statistical concepts, including probability distributions, parameters and estimators, the sampling distribution of an estimator, point and interval estimation, and hypothesis testing.

Specify, estimate and interpret a regression model. Summarise and interpret the estimation results, and draw valid inferences utilising hypothesis tests.

Critically evaluate the assumptions of a classical (or standard) regression model and the consequences of violation of the assumptions.

Demonstrate familiarity with an econometric software program.

Assessment Tasks

Name	Weighting	Hurdle	Due
Tutorial Exercises	10%	No	Weeks 2-13 in tutorial class
Assignment 1	20%	No	Week 8, Monday 7am.
Assignment 2	20%	No	Week 12, Monday 7am
Final Exam	50%	No	University Examination Period

Tutorial Exercises

Due: **Weeks 2-13 in tutorial class**
Weighting: **10%**

Submission

The tutorial exercises must be attempted and submitted during the tutorial class in which the student is officially enrolled each week. The exercises will not be made available for assessment at any other time. Each tutorial assesses work that has been covered in previous lectures, with an emphasis on the most recent work. Students are permitted to re-attempt questions that they have incorrectly answered any number of times during the class, but a penalty of 20% will apply to each question, each time that each question is re-attempted (i.e. the maximum available marks from each question decays linearly as the number of attempts increases). Students who attain a mark of at least 50% in each of at least 9 tutorials will be awarded the full marks available for the tutorial program. Students who attain a mark of at least 50% in fewer than 9 tutorials will lose one-ninth of the full marks available for the tutorial program for each affected tutorial. More concisely, out of a maximum of 10 marks, a student will be awarded min(10X/9,10) marks where X is the number of tutorials in which the student scored 50% or better.

Following a brief review by the tutors, the tutorial results will be released each week shortly after

the last tutorial has concluded.

The tutorials are an important component of ECON241. In addition to providing students with weekly formal feedback on their progress, the tutorials give students a regular point of contact with their tutor and other students. Students who prepare for class each week will generally be able to finish the formal tutorial work with time to spare, providing ample opportunity to discuss the unit material with the tutor and other students. Following the release of the tutorial results each week, students are expected to review their work and raise any outstanding issues with their tutor the following week.

Extensions

No extensions will be granted. Students who do not submit this task by the due date and time will receive a result of zero. This penalty does not apply when an application for Special Consideration has been made and approved. In such cases, if the relevant disruption results in the student submitting fewer than 9 tutorial exercises, for the affected tutorial the student will be awarded full marks. Note: applications for Special Consideration Policy must be made within 5 (five) business days of the due date and time.

On successful completion you will be able to:

- Understand and apply the key statistical concepts, including probability distributions, parameters and estimators, the sampling distribution of an estimator, point and interval estimation, and hypothesis testing.
- Specify, estimate and interpret a regression model. Summarise and interpret the estimation results, and draw valid inferences utilising hypothesis tests.
- Critically evaluate the assumptions of a classical (or standard) regression model and the consequences of violation of the assumptions.
- Demonstrate familiarity with an econometric software program.

Assignment 1

Due: **Week 8, Monday 7am.**
Weighting: **20%**

Assignment 1 will consist of a set of questions requiring both calculation and short written answers. It will be based on material covered in the lectures prior to the submission deadline.

Submission

The assignment questions will be made available on iLearn approximately one week prior to the submission deadline. Prior to attempting the assignment, students should revise the material covered in the unit up to that point in time. In particular, students should ensure that they are able to correctly answer the questions asked in previous tutorials and non-assessable exercises that have been made available throughout the semester, and that they are able to understand and reproduce the examples presented in lectures.

The assignment must be submitted via the relevant links in iLearn prior to the deadline. No other

form of submission is acceptable. The assignment may be submitted once only. Submission instructions and information about the requirements of the assignment will be provided in class and on iLearn.

Extensions

No extensions will be granted. There will be a deduction of 10% of the total available marks made from the total awarded mark for each 24 hour period or part thereof that the submission is late (for example, 25 hours late in submission incurs a 20% penalty). Late submissions will be accepted up to 96 hours after the due date and time. This penalty does not apply for cases in which an application for Special Consideration is made and approved. Note: applications for Special Consideration must be made within 5 (five) business days of the due date and time. When an application for Special Consideration has been approved, policy allows for the provision of one additional task. The format, time and date of this task will be determined by the unit convenor.

It is intended that students will work on the assignment independently. Students who submit an assignment that is at least partly copied from an unacknowledged source, students who collude with other students, and students who misrepresent the work of others as their own, may receive a mark of zero for the assignment, and may be referred to the Faculty for further action.

On successful completion you will be able to:

- Understand and apply the key statistical concepts, including probability distributions, parameters and estimators, the sampling distribution of an estimator, point and interval estimation, and hypothesis testing.
- Specify, estimate and interpret a regression model. Summarise and interpret the estimation results, and draw valid inferences utilising hypothesis tests.
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- Demonstrate familiarity with an econometric software program.

Assignment 2

Due: **Week 12, Monday 7am**
Weighting: **20%**

Assignment 2 will consist of a set of questions requiring both calculation and short written answers. It will be based on material covered in the lectures prior to the submission deadline.

Submission

The assignment questions will be made available on iLearn approximately one week prior to the submission deadline. Prior to attempting the assignment, students should revise the material covered in the unit up to that point in time. In particular, students should ensure that they are able to correctly answer the questions asked in previous tutorials and non-assessable exercises that have been made available throughout the semester, and that they are able to understand

and reproduce the examples presented in lectures.

The assignment must be submitted via the relevant links in iLearn prior to the deadline. No other form of submission is acceptable. The assignment may be submitted once only. Submission instructions and information about the requirements of the assignment will be provided in class and on iLearn.

Extensions

No extensions will be granted. There will be a deduction of 10% of the total available marks made from the total awarded mark for each 24 hour period or part thereof that the submission is late (for example, 25 hours late in submission incurs a 20% penalty). Late submissions will be accepted up to 96 hours after the due date and time. This penalty does not apply for cases in which an application for Special Consideration is made and approved. Note: applications for Special Consideration must be made within 5 (five) business days of the due date and time. When an application for Special Consideration has been approved, policy allows for the provision of one additional task. The format, time and date of this task will be determined by the unit convenor.

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- Understand and apply the key statistical concepts, including probability distributions, parameters and estimators, the sampling distribution of an estimator, point and interval estimation, and hypothesis testing.
- Specify, estimate and interpret a regression model. Summarise and interpret the estimation results, and draw valid inferences utilising hypothesis tests.
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- Demonstrate familiarity with an econometric software program.

Final Exam

Due: **University Examination Period**
Weighting: **50%**

The final examination is of 90 minutes duration and will be held in the official Macquarie University examination period. All students must attend the examination at the time and place designated in the University Examination Timetable. The examination will be closed-book and will include short answer questions that require both calculation and written responses. Details of the structure of the final examination will be provided when available during the semester.

Students who do not attend the final examination will be awarded a grade of FA (Failed Absent).

The only exceptions to this are cases in which the University grants the student Special Consideration. In such cases, the affected student will be required to sit a supplementary examination at the place and time nominated by the University.

On successful completion you will be able to:

- Understand and apply the key statistical concepts, including probability distributions, parameters and estimators, the sampling distribution of an estimator, point and interval estimation, and hypothesis testing.
- Specify, estimate and interpret a regression model. Summarise and interpret the estimation results, and draw valid inferences utilising hypothesis tests.
- Critically evaluate the assumptions of a classical (or standard) regression model and the consequences of violation of the assumptions.

Delivery and Resources

- There is a lecture each week of semester. There is also a tutorial class held in each week except Week 1.
- The timetable for classes can be found on the University website: http://www.timetables.mq.edu.au/
- Students must register in a tutorial class during the first two weeks of the semester. After this time class changes will not be permitted. It is vital that students are available to attend the tutorial class at their registered time. Because of resource constraints, students will **not** be generally permitted to attend a tutorial class other than the one in which they are registered.
- Students are expected to attend all lectures and tutorials, read the text, and attempt the set exercises. Staff will not provide students with help outside class time until it is clear that they have first done this work. It is expected that students will spend an average of approximately 10 hours per week working on ECON241 (including class time).

Required and Recommended texts and/or materials

- Wooldridge, J. M., Wadud, M. and Lye, J. (2017) Introductory Econometrics (1st Asia-Pacific ed.) Cengage.

Additional useful textbooks and resources.

- Hill, C. H., Griffiths, W. E. and Lim, G. C. (2018) Principles of Econometrics (5th ed.) Wiley.
- Gujarati, D.N., and Porter, D.C. (2010) Essentials of Econometrics (4th ed.) McGraw-Hill.
- Stock, J.H., and Watson, M.W. (2007) Introduction to Econometrics (2nd ed.) Addition-

Wesley

- A list of prescribed reading will be developed on the website as the unit progresses.
- The datasets used in the textbook and in lectures will be provided on the website.

Technology Used and Required

- The main software package used in ECON241 is Gretl (http://gretl.sourceforge.net/). This software is available for use in the 6EaR computer labs and may be freely downloaded for use elsewhere. The Microsoft Windows version is available at http://gretl.sourceforge.net/win32/. A Mac version is available at http://gretl.sourceforge.net/osx.html. Linux users should check their repositories or download the rpm or source from http://gretl.sourceforge.net/.
- The use of a spreadsheet will often be helpful for tasks in this unit. For students who don't own or wish to use Microsoft Excel, free alternatives include OpenOffice (http://www.openoffice.org), LIbreOffice (https://www.libreoffice.org/) and Gnumeric (http://www.gnumeric.org/, https://portableapps.com/apps/office/gnumeric_portable).
- Course material is available on the learning management system (iLearn).
- Students are strongly advised to check the unit web page regularly for new material and announcements.

Learning and Teaching Activities

Tutorials

Weekly tutorial exercises

Policies and Procedures

Macquarie University policies and procedures are accessible from Policy Central (https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central). 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 *(**Note:** The Special Consideration Policy is effective from 4 December 2017 and replaces the Disruption to Studies Policy.)*

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

If you would like to see all the policies relevant to Learning and Teaching visit Policy Central (https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/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/study/getting-started/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

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

If you are a Global MBA student contact 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/.

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.

Graduate Capabilities

Creative and Innovative

Our graduates will also be capable of creative thinking and of creating knowledge. They will be imaginative and open to experience and capable of innovation at work and in the community. We want them to be engaged in applying their critical, creative thinking.

This graduate capability is supported by:

Learning outcome

- Demonstrate familiarity with an econometric software program.

Assessment tasks

- Tutorial Exercises
- Assignment 1
- Assignment 2

Discipline Specific Knowledge and Skills

Our graduates will take with them the intellectual development, depth and breadth of knowledge, scholarly understanding, and specific subject content in their chosen fields to make them competent and confident in their subject or profession. They will be able to demonstrate, where relevant, professional technical competence and meet professional standards. They will be able to articulate the structure of knowledge of their discipline, be able to adapt discipline-specific knowledge to novel situations, and be able to contribute from their discipline to inter-disciplinary solutions to problems.

This graduate capability is supported by:

Learning outcomes

- Understand and apply the key statistical concepts, including probability distributions, parameters and estimators, the sampling distribution of an estimator, point and interval estimation, and hypothesis testing.
- Specify, estimate and interpret a regression model. Summarise and interpret the estimation results, and draw valid inferences utilising hypothesis tests.
- Critically evaluate the assumptions of a classical (or standard) regression model and the

consequences of violation of the assumptions.

- Demonstrate familiarity with an econometric software program.

Assessment tasks

- Tutorial Exercises
- Assignment 1
- Assignment 2
- Final Exam

Critical, Analytical and Integrative Thinking

We want our graduates to be capable of reasoning, questioning and analysing, and to integrate and synthesise learning and knowledge from a range of sources and environments; to be able to critique constraints, assumptions and limitations; to be able to think independently and systemically in relation to scholarly activity, in the workplace, and in the world. We want them to have a level of scientific and information technology literacy.

This graduate capability is supported by:

Learning outcomes

- Understand and apply the key statistical concepts, including probability distributions, parameters and estimators, the sampling distribution of an estimator, point and interval estimation, and hypothesis testing.
- Specify, estimate and interpret a regression model. Summarise and interpret the estimation results, and draw valid inferences utilising hypothesis tests.
- Critically evaluate the assumptions of a classical (or standard) regression model and the consequences of violation of the assumptions.
- Demonstrate familiarity with an econometric software program.

Assessment tasks

- Tutorial Exercises
- Assignment 1
- Assignment 2
- Final Exam

Problem Solving and Research Capability

Our graduates should be capable of researching; of analysing, and interpreting and assessing data and information in various forms; of drawing connections across fields of knowledge; and they should be able to relate their knowledge to complex situations at work or in the world, in order to diagnose and solve problems. We want them to have the confidence to take the initiative in doing so, within an awareness of their own limitations.

This graduate capability is supported by:

Learning outcomes

- Understand and apply the key statistical concepts, including probability distributions, parameters and estimators, the sampling distribution of an estimator, point and interval estimation, and hypothesis testing.
- Specify, estimate and interpret a regression model. Summarise and interpret the estimation results, and draw valid inferences utilising hypothesis tests.
- Critically evaluate the assumptions of a classical (or standard) regression model and the consequences of violation of the assumptions.
- Demonstrate familiarity with an econometric software program.

Assessment tasks

- Tutorial Exercises
- Assignment 1
- Assignment 2
- Final Exam