



ECON333

Econometric Methods

Semester 1, 2011

Department of Economics

**MACQUARIE UNIVERSITY
FACULTY OF BUSINESS & ECONOMICS
UNIT OUTLINE**

Year and Semester:	Semester 1, 2011
Unit convenor:	Daehoon NAHM
Prerequisites:	ECON232 or ECON232 or ECON334

Students in this unit should read this unit outline carefully at the start of semester. It contains important information about the unit. If anything in it is unclear, please consult one of the teaching staff in the unit.

ABOUT THIS UNIT

The objective of this unit is to provide students, who have developed an interest in econometrics from the second-year econometrics or statistics units, with an opportunity to attain more advanced econometric techniques that can be applied to an empirical analysis of economic, financial, or business phenomena. The unit will be suitable both to students who simply want to equip themselves with more practical knowledge of econometrics before graduating and to those planning to pursue a research degree, such as Honours, MPhil, or PhD.

The topics of the unit are grouped into three parts: discrete-choice models; GLS, stochastic regressors and consistent estimation; and time-series econometrics. For each topic, after an introduction to the underlying theory, interesting examples of practical applications of the model will be provided. To give students hands-on experience for each topic, many tutorial and assignment questions will require the use of econometric software programs such as *Shazam* and *EViews*. The unit carries 3 UG credit points.

TEACHING STAFF

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CLASSES

Lectures/Tutorials: Tuesday 3:00 pm – 6:00 pm (W5C213)

There will be no formal distinction between lectures and tutorials. In some weeks, part of the three-hour session will be used to discuss tutorial questions. Students are expected to attempt the tutorial questions beforehand. Attendance to lectures/tutorials is strongly recommended.

The timetable for classes can be found on the University website at:

<http://www.timetables.mq.edu.au/>

REFERENCES

The prescribed textbook for this course is

Verbeek, Marno (2008), *A Guide to Modern Econometrics*, 3rd edition.

Other helpful references are

Greene, William H., (2007), *Econometric Analysis*, 6th edition, and
Enders, Walter, (2004), *Applied Econometric Time Series*, 2nd edition.

For all topics, supplementary notes will be provided (at the unit homepage). Students are expected to download the notes for the next lecture topic and bring them to the lecture.

UNIT WEB PAGE

Useful information and some course material will be made available at the unit homepage: learn.mq.edu.au. Visit the homepage regularly for new information and course material.

LEARNING OBJECTIVE AND OUTCOMES

The learning objective of this unit is to equip students with understanding and practical knowledge of important econometric techniques so that they can read and understand research articles and carry out econometric analyses using those techniques.

The learning outcomes of this unit are:

- To clearly understand key concepts and results for each topic covered in the unit.
- To understand the relevance of alternative econometric methods to the analysis of a certain phenomenon of interest.
- To appreciate the advantages and limitations of an econometric method in various situations.
- To be able to specify an econometric model that is appropriate for the problem at hand, estimate it using a relevant method, and interpret the estimation results.
- To understand statistical properties of the estimator used and to draw correct inferences from them (including hypothesis tests).
- To be able to report the findings of an econometric analysis.
- To understand matrix algebra.

TEACHING AND LEARNING STRATEGY

The textbook provides a good guide to each topic to be covered in the course. Reference to the relevant chapters in the textbook for each topic is provided in a later section entitled “Topics”. In addition, supplementary lecture notes will be gradually made available before the corresponding lectures throughout the semester. The notes will include key concepts and points that are to be explained and discussed in the lecture. It is essential to get a good grasp of the contents of the relevant chapters of the textbook and the lecture notes.

Useful examples are provided in the textbook and tutorials. Going through the tutorial questions will help better understand the topics discussed in lectures. Solutions to the tutorial questions will be provided on the unit homepage.

Attendance to the lectures/tutorials is not compulsory. However, you may be seriously disadvantaged by missing a lecture/tutorial. If you missed a class for an unavoidable reason, it would be a good idea to borrow notes from a friend and see what was discussed in your absence.

The other references listed above may be consulted for more detailed explanations and examples. For some topics, journal articles may be prescribed for further reading.

ASSESSMENT

The final grade of this unit will be based on two within-semester assessments and an end-of-semester examination:

- Within semester test (15%):
Topic: matrix algebra and binary choice models
Date and time: during lecture time - **3:00 pm, 15 March** (Week 4)
There will be no supplementary test even if you miss this test. If you cannot sit the test due to illness or unavoidable disruption, you will have to apply for special consideration with supporting documentations attached. If approved, this component will not be counted in computing your final grade.
- Assignment (25%) – The questions will be made available on or before 26 April (Week 8) and the due date is **17 May** (Week 11). Late submissions will be penalised by deducting 20 marks for each day after the due date. Always keep a photocopy of document that you submit for assessment, including assignment, to insure yourself against loss.
- Final examination (60%)

The University Examination period in Semester 1, 2011 is from 6 June to 24 June. You are expected to present yourself for examination at the time and place designated in the University Examination Timetable. The timetable will be available in draft form approximately eight weeks before the commencement of the examinations and in final form approximately four weeks before the commencement of the examinations:

<http://www.timetables.mq.edu.au/exam>.

The only exception to not sitting an examination at the designated time is in the case of documented illness or unavoidable disruption. In these circumstances you may wish to consider applying for Special Consideration. Information about unavoidable disruption and the special consideration process is available at <http://www.reg.mq.edu.au/Forms/APSCon.pdf>

If a Supplementary Examination is granted as a result of the Special Consideration process the examination will be scheduled for after the conclusion of the official examination period.

You are advised that it is Macquarie University policy not to set early examinations for individuals or groups of students. All students are expected to ensure that they are available until the end of the teaching semester, that is the final day of the official examination period.

PLAGIARISM

The University defines plagiarism in its rules: "Plagiarism involves using the work of another person and presenting it as one's own." Plagiarism is a serious breach of the University's rules and carries significant penalties. You must read the University's practices and procedures on plagiarism. These can be found in the *Handbook of Undergraduate Studies* or on the web at: <http://www.student.mq.edu.au/plagiarism/>

The policies and procedures explain what plagiarism is, how to avoid it, the procedures that will be taken in cases of suspected plagiarism, and the penalties if you are found guilty. Penalties may include a deduction of marks, failure in the unit, and/or referral to the University Discipline Committee.

STUDENT SUPPORT SERVICES

Macquarie University provides a range of Academic Student Support Services. Details of these services can be accessed at <http://www.student.mq.edu.au>.

TOPICS

Part 1:

- Models with Discrete Dependent Variable (Verbeek 7.1, 7.2, 6.1, and 6.2; Greene Chs. 23 and 16)
 - Binary-choice models
 - Ordered-choice models
 - Multinomial-choice models
 - Maximum likelihood (ML) estimation
- Matrix Algebra (Verbeek Appendix A, 2.1, 2.2, and 2.3; Greene Appendix A)

A supplementary note will be made available in Week 1.

Part 2:

- Nonspherical Disturbances and the Generalised Least Squares (GLS) estimation (Verbeek Ch. 4; Greene Chs. 8 & 19)
- Stochastic Regressors and Consistent Estimation (Verbeek Ch. 5; Greene Chs. 12 & 15)
 - Instrumental variables estimation
 - Method of moments estimation
 - Generalised method of moments
- Models for Panel Data (Verbeek Ch. 10; Greene Ch. 9)
 - Fixed-effects model
 - Random-effects model

Part 3:

- Time Series Models (Verbeek Chs. 8 and 9; Enders Chs 5 and 6; Greene Ch. 22)
 - Nonstationarity and unit root test
 - Cointegration (single-equation approach)
 - Cointegration (multi-equation approach)