



Division of Economic & Financial Studies

ECON840 - APPLIED ECONOMETRICS I
E1, 2008

1. Introduction

This course introduces M.Ec students to basic econometric methods needed for empirical research on economic, business and financial phenomena.

The topics covered are introductory and they are flexible enough to cater for students who previously have had only minimal exposure to the mathematical and statistical theory. Starting from first principles, standard econometric methods will be outlined to the extent necessary for students to understand key concepts, apply the methods, and interpret results.

2. Class Arrangement

CLASSES: Monday 6 – 9 pm
ROOM: W6B 320

In weeks 4 and 9 (17 March and 5 May), practical sessions will be held in a computing laboratory (E4B306). Software programs used in this course include *MS Excel*, *DxData* and *Shazam*. No previous computing experience is required, but a knowledge of spreadsheet programs would be useful. Students are required to bring a blank diskette (3.25”) or a memory stick to backup their works. *Shazam* program on CD will be made available for loans later. Students are allowed to install it on their own computer.

3. Text

- **Gujarati, Damodar N., *Essentials of Econometrics*, McGraw-Hill, 3rd edition**

Supplementary notes will be gradually made available from the unit homepage.

4. Unit Webpage

Useful information and some course materials will be made available at the unit homepage: log on from learn.mq.edu.au. Visit the homepage regularly for new information or materials.

5. Assessment

Assessment for ECON840 will consist of two assignments, and an end of semester examination:

Assignments:	30% (15% for Assignment I and 15% for Assignment II)
Examination:	70%

The first assignment will be due on Monday, 28 April (Week 8) and the second on Monday, 26 May (Week 12). **Students are strongly warned against plagiarism.**

Always keep a photocopy of documents that you submit for assessment to insure yourself against loss.

Final Examination (70%)

The University Examination period in First Half Year 2008 is 11 June to 27 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 because 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 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 Postgraduate 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.

University Policy on Grading

Academic Senate has a set of guidelines on the distribution of grades across the range from fail to high distinction. Your final result will include one of these grades plus a standardised numerical grade (SNG).

On occasion your raw mark for a unit (i.e., the total of your marks for each assessment item) may not be the same as the SNG which you receive. Under the Senate guidelines, results may be scaled to ensure that there is a degree of comparability across the university, so that units with the same past performances of their students should achieve similar results.

It is important that you realise that the policy does not require that a minimum number of students are to be failed in any unit. In fact it does something like the opposite, in requiring examiners to explain their actions if more than 20% of students fail in a unit.

The process of scaling does not change the order of marks among students. A student who receives a higher raw mark than another will also receive a higher final scaled mark.

For an explanation of the policy see

<http://www.mq.edu.au/senate/MQUonly/Issues/Guidelines2003.doc> or
<http://www.mq.edu.au/senate/MQUonly/Issues/detailedguidelines.doc>.

To pass this unit, a student has to submit all two assignments, obtain a satisfactory overall mark, and pass the final examination.

6. Course Outline

Topic 1: Introduction

- What is econometrics?
- Methodology of econometrics
- The summation operator
- Numerical summary of data
- Graphical summary of data
- Grouped Data

Topic 2: Random Variables and Probability Distributions

- Random variables
- Probability distribution for discrete random variables
- Probability distribution for continuous random variables
- Joint, marginal and conditional probabilities
- The expectation operator
- Variance and covariance
- Population and sample

Topic 3: Some Important Probability Distributions

- Normal distribution
- Student's t distribution
- Chi-square distribution
- F distribution
- Sampling distribution of the sample mean
- Central limit theorem

Topic 4: Point Estimation and Interval Estimation

- Desirable properties of a point estimator
- Confidence intervals

Topic 5: Hypothesis Testing

- Concepts of hypothesis testing
- Test procedure
- Interpretation of a test result
- Types of errors
- Significance level and power of a test
- P value method
- Confidence intervals and hypothesis testing

Topic 6: Regression Analysis

- Linear correlation and regression
- Simple regression and multiple regression
- Standard assumptions of linear regression models
- Ordinary Least Squares (OLS) estimation
- The Gauss-Markov theorem
- Population regression and sample regression
- Goodness of fit
- Reporting the results
- Interpretation of individual coefficients
- Confidence intervals and hypothesis tests for individual coefficients
- Tests on sets of regression coefficients
- Prediction

Topic 7: Other Issues

- Functional forms of the regression model
- Diagnostic checking (heteroscedasticity and autocorrelation)

Staff

Professor Lance Fisher

Lecturer in Charge

Room: E4A 435

Phone: 9850-8480

Email: lfisher@efs.mq.edu.au