ECON835
APPLIED ECONOMETRICS II

Semester 2, 2009

Department of Economics

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APPLIED ECONOMETRICS II

MACQUARIE UNIVERSITY
FACULTY OF BUSINESS AND ECONOMICS
UNIT OUTLINE
Second Semester - 2009

Unit convenor:

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Prerequisite: Basic knowledge in statistics and econometrics is recommended.

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.

INTRODUCTION

Objective: The aim of this unit is to introduce students to econometric modelling, keeping the focus on applications to actual economic issues. Upon completion of this unit, students will be expected to be able to conduct their own econometric analysis on varied topics.
The first part of the course will focus on introducing the basic tools for estimating economic models and dealing with the violations of the assumptions of the classical model. The second part will extend to more specific topics and techniques to deal with qualitative and limited dependent variables. The last set of lectures will deal with selection problems in applied econometrics.

This unit is worth four credit points.

TEACHING STAFF

Stéphane Mahuteau   **Mr. Roger Tonkin**
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CLASSES

There is one three-hour lecture per week at the following time and place:

        Lecture: Tuesday   18 pm – 21 pm   X5B-143

The timetable for classes can be found on the University web site at: http://www.timetables.mq.edu.au/

It is assumed that students will attend all lectures. Students who miss classes put themselves at a significant disadvantage for several reasons, including:

(i) Not all the material in the text is covered 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.*

(ii) The approaches to some problems that are recommended by the lecturer are different to those in the text.

(iii) The lectures will include significant guidance about the style and content of the final exam and recommendations about study technique.

(iv) 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.

UNIT WEB PAGE

The web page for this unit can be accessed via www.learn.mq.edu.au *You should check this web page regularly.* The lecture slides for each week's lecture will be posted on the web page. In order to maintain enough flexibility to the content of the lectures, some lecture notes may appear on the web page after the lecture.
We also use the web page to post important notices from time to time.

TEXT

• THE PRESCRIBED TEXTBOOKS ARE:
R. Carter Hill, William E. Griffiths & Guay C. Lim, PRINCIPLES OF ECONOMETRICS, Third Edition, John Wiley & Sons Ltd., 2008

and

Gary Koop, ANALYSIS OF ECONOMIC DATA, Third Edition, John Wiley 7 Sons Ltd., 2009

- A complete set of Lecture notes will be available on Blackboard

- A free copy of the software SHAZAM will be available on Blackboard for students to install on their computer.

- ADDITIONAL TEXTS (all available at the library):

Greene W.H., *Econometric Analysis,* (5th edition), UpperSaddle River, NJ: Prentice Hall.

Berndt E.R. (1991), *The Practice of Econometrics Classic and Contemporary,* Addison Wesley.

Gujarati, D.N., (2003), *Basic Econometrics*, 4th edition, McGraw-Hill Irwin.

Kennedy P., (2003), *A guide to Econometrics,* Blackwell publishing.

Wooldridge J.M., *Introductory Econometrics: A Modern Approach*, 3rd edition, Thomson

LEARNING OUTCOMES

At the end of this course you will be able to:
- Apply basic econometric tools to modelling, estimation and inference in practice
- Conduct econometric analyses independently, from early conception to the exploitation of the results
- To chose and utilise the appropriate estimation techniques adapted to the data they have and to their research topics
- Critically evaluate empirical econometric work;
- Engage into further studies in econometrics.

In addition to the discipline-based learning objectives, all academic programs at Macquarie seek to develop students' generic skills in a range of areas. One of the aims of this unit is that students develop their skills in the following:

Foundation skills of literacy, numeracy and information technology;
Critical analysis skills;
Problem-solving skills;
Creative thinking skills.

LEARNING AND TEACHING STRATEGY

Our role: In the 3-hour "lecture" class, we will present new material in the form of lectures. The lectures are a mix of actual lecture time and practical exercises or tutorials. Tutorials are based mainly on empirical applications which require the use of econometric software packages. How to use these packages is taught during two practical tutorials which are held in the computer labs. We will answer your questions during and after lectures. We will also answer questions during our consultation times and by e-mail.

Your role: We expect that you will attend all lectures and tutorials. We expect you to read all the material prescribed on the reading list. We expect you to be prepared to participate actively in the lectures. We also expect that you will make a good attempt at the assignment and final exam.

This unit aims at developing students' ability to apply the econometric concepts introduced in the lectures to real life issues. The lectures are designed accordingly, mixing formal developments of econometric tools with varied empirical illustrations. Every week's lecture notes booklet is complemented by an appendix containing detailed empirical estimations using the software SHAZAM. It comprises the datasets which can be uploaded by the students, the SHAZAM codes used to implement the techniques introduced in the lectures and the results. Students are encouraged to try to reproduce these models and results themselves every week. Additional tutorials are provided in order to further improve students' ability to conduct empirical applications autonomously.

Students are expected to read the relevant chapters from the recommended book and lecture note booklets before each lecture. They are also expected to reproduce the estimations performed in the appendices booklets.

RELATIONSHIP BETWEEN ASSESSMENT AND LEARNING OUTCOMES

ASSESSMENT:

- **Two Econometric projects (40%):**

    o **The first project is due on the Friday following the mid semester break at 4pm**

    o **The second project is due on the Friday of Week 12 at 4pm.**

- **A final examination (60%)**

ECONOMETRIC PROJECTS:

- Both Econometric projects **must be submitted at the ECON835 assessment box opened at Business and Economics Student Services, BESS situated in Room 106, Building E4B**

- For the econometric projects, students will be expected to demonstrate their ability to use the SHAZAM software to estimate econometric models on a topic chosen by the lecturer and to perform the appropriate statistical tests as requested by the questions handout. Each question of the handout requires students to perform the necessary calculations, to provide explanations of the techniques and methods used and an Economic discussion of the results obtained. No maximum word limit is imposed for either project.

- **Assignments submitted late will NOT BE ACCEPTED.** If any assignment cannot be delivered by the due date because of illness or unavoidable disruption, as described in the rules for obtaining Special considerations for the final examination, an extension may be granted by the lecturer in charge.

FINAL EXAMINATION:

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.

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(Individual Divisions may wish to signal when the Division's Supplementaries are normally scheduled.)

The format of the supplementary examination may be different from the usual examination. To prevent students from abusing this facility and to protect only the students with genuine reasons, **the result of supplementary examination will <u>replace</u> the result of the usual examination if a student sits a supplementary examination as well as the usual examination**. This implies that a student will fail the unit if he/she fails the supplementary examination regardless of his/her performance in the usual examination. If you believe this rule unfairly disadvantages you, contact the lecturer in charge <u>before</u> lodging the request form.

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.

Requirements to Pass This Unit

To pass ECON835, students must satisfy each of the following requirements:
    (1)   An overall satisfactory performance in all assessment components;
    (2)   **A pass in the final examination;** and
    (3)   Submission of the assignments.

Under the current grading system, a **standardised numerical grade (SNG)** will be awarded together with a band grade HD, D, Cr, P, PC, or F.

It is important for students to note that the SNG is NOT the weighted aggregate of the raw marks for the above three assessment components. It is rather a detailed grade that is chosen from 0 to 100 based on other criteria as well as the raw marks. For instance, the SNG for a student who gains a raw aggregate mark of 55 but fails the final would be lower than 45 indicating that he/she fails the unit.

As such, a SNG of say 73 or 74 does **NOT** mean that the student's aggregate mark is one or two marks below the threshold for a D. It means that his/her work and performance in the unit is of predominantly good quality and did better than other students in the Cr band but not quite of superior quality needed for a D.

The University Examination period in Second Half Year 2009 is from November 18th to December 4th inclusive.

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.

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.

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.

The Faculty of Business and Economics offers additional support for its students such as EFS Resource and Information Centre commonly known as BESS, Peer Assisted Learning (PAL), etc… Details of these services can be accessed at
http://www.businessandeconomics.mq.edu.au/current/undergraduate/bess

COURSE OUTLINE

Following is an indicative list of topics covered during the semester. These topics may be updated in order to cover some topics more in depth upon students' demand or in order to adapt the course contend to the level of technical knowledge of the majority of students joining the unit.

Topic1: Linear regression analysis with multiple regressors: Estimation and Inference.

Topic 2: Non linearities + introduction to Shazam

Topic 3: Multicollinearity

Topic 4: Auto correlation

Topic 5: Omitted variables + Applications with Shazam

Topic 6: Dummy and interaction variables and difference in difference estimators

Topic 7: Model specification and diagnostic testing + Shazam applications

Topic 8: Introduction to Time series analysis.

Topic 9: Identification problems

Topic 10: Simultaneous equation methods

Topic 11: Maximum likelihood estimations

Topic 12: Binary and multinomial Logit/ Probit

Topic 13: Selection problems

Topic 14: Tobit estimations

PROJECTS

You are required to submit 2 projects throughout this unit.

In the evaluation of written work the following factors will be considered:

1. The standard displayed in English expression and sentence construction and the level attained in the written articulation of ideas.
2. The ability to exhibit critical analysis in the subject area.
3. The ability to develop ideas in a logical or sequential fashion.

DON'T CHEAT:

The project must represent the student's own work. It is recognised that many of the points expressed in the project will have been derived from books and articles and other publications. However, students cannot simply directly copy from these or any other sources. The points made must be explained in your own words. However, to reinforce ideas explained in their essay, students may use quotes that are correctly referenced.

The following statement relating to collusion and plagiarism has been prepared by the University.

"The integrity of learning and scholarship depends on a code of conduct governing good practice and acceptable academic behaviour. One of the most important elements of good practice involves acknowledging carefully the people whose ideas we have used, borrowed, or developed. All students and scholars are bound by these rules because all scholarly work depends in one way or another on the work of others."

Therefore, there is nothing wrong in using the work of others as a basis for your own work, nor is it evidence of inadequacy on your part, provided you do not attempt to pass off someone else's work as your own.

To maintain good academic practice, so that you may be given credit for your own efforts, and so that your own contribution can be properly appreciated and evaluated, you should acknowledge your sources and you should ALWAYS:

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(i) State clearly in the appropriate form where you found the material on which you have based your work.

(ii) Acknowledge the people whose concepts, experiments, or results you have extracted, developed, or summarised, even if you put these ideas into your own words.

(iii) Avoid excessive copying of passages by another author, even where the source is acknowledged. Find another form of words to show that you have thought about the material and understood it, but remember to state clearly where you found the ideas.
If you take and use the work of another person without clearly stating or acknowledging your source, you are falsely claiming that material as your own work and committing an act of PLAGIARISM. This is a very serious violation of good practice and an offence for which you will be penalised.

YOU WILL BE GUILTY OF PLAGIARISM if you do any of the following in an assignment, or in any piece of work which is to be assessed, without clearly acknowledging your source(s) for each quotation or piece of borrowed material:
(a) Copy out part(s) of any document or audio-visual material, including computer-based material;
(b) Use or extract someone else's concepts or experimental results or conclusions, even if you put them in your own words;
(c) Copy out or take ideas from the work of another student, even if you put the borrowed material in your own words;
(d) Submit substantially the same final version of any material as a fellow student. On occasions, you may be encouraged to prepare your work with someone else, but the final form of the assignment you hand in must be your own independent endeavour."

The simplest way to avoid plagiarism is to be open about your sources. There is no academic demerit in this. Many of the ideas used in essays, articles and books inevitably build on the work of others, and it is only honest and courteous to acknowledge those to whom you are indebted.