MACQUARIE UNIVERSITY
DIVISION OF ECONOMIC AND FINANCIAL STUDIES

ECON233 – FINANCIAL ECONOMETRICS
Second Semester 2004

UNIT OUTLINE

1.   UNIT DESCRIPTION

This is one of the two 200-level Econometrics units currently offered in the School. The unit is designed for the students who want to major in Applied Econometrics in the third year and those who desire to extend their knowledge of Econometrics or to learn how to apply their statistical knowledge to the analysis of economic or financial data without the intention of majoring in Applied Econometrics. The course will provide you with the basic statistical and econometric tools needed to understand and criticise empirical work in finance and to enable you to carry out your own empirical research in the future. The mathematical knowledge necessary for this course (a priori) beyond arithmetic and basic algebra is the concepts of differentiation, functions, and summation operator. The topics included are listed below.

During the course students will be required to use *Excel, Matlab* and *Shazam*, an econometrics computer software, in solving tutorial questions and in doing the assignment. Although the computing itself is not examinable, the ability to understand and interpret its output is. Pre-knowledge of this software is not required. Instruction in the use of *Shazam* will be given in lectures as required.

2.   PREREQUISITES

ECON233 has the following prerequisites:

>   ECON232
>   or
>   3 credit points from units in the range STAT270 - STAT273
>   together with ECON110 or ECON111.

3.   TEXT AND REFERENCE BOOKS

Recommended texts for the unit are
>   **Brooks,** Chris
>   *Introductory Econometrics for Finance*
>   Cambridge University Press

and/or

>   **Watsham,** Terry J. and **Parramore,** Keith
>   *Quantitative Methods in Finance*
>   International Thomson Business Press

Gujarati, Damodar N.
Basic Econometrics
3rd edition, McGraw-Hill

References to the following texts will also be given where appropriate:

Cuthbertson, Keith
Quantitative Financial Economics, Stocks, Bonds and Foreign Exchange
John Wiley,1996

Ramanathan, Ramu
Introductory Econometrics with Applications
3rd edition, Dryden Press

Pindyck, Robert S. and **Rubinfeld**, Daniel L.
Econometric Models and Economic Forecasts
3rd edition, McGraw-Hill

4. LECTURE TOPICS

Week 1: Introduction to options, Risk-neutral valuation

Week 2: Lattice methods

Week 3: Lattice methods

Week 4: Monte Carlo methods

Weeks 5 and 6: Inference in Multiple Regression Models
      (Brooks, chapters 1-4)
      (Gujarati, chapters 1-8, 10-13)
      (Watsham & Parramore, chapters 5 and 6)
Application: The Capital Asset Pricing model

Week 7: ARIMA Models
      (Brooks, chapter 5)
      (Gujarati, chapters 21, 22)
      (Watsham & Parramore, chapter 7)
Applications: Stylised facts of financial returns.

Week 8: Class Test and ARIMA Models
      (Brooks, chapter 5)
      (Gujarati, chapters. 22)
      (Watsham & Parramore, chapter 7)

Weeks 9 and 10: Trends and Unit Roots, Tests of the Random Walk Hypothesis and Cointegration
      (Brooks, chapter 7)

(Gujarati, chapters 21, 22)
(Watsham & Parramore, chapter 7)

**Weeks 11, 12 and 13 : Volatility and Applications of ARCH and
GARCH models in Forex and Stock returns**
(Brooks, chapter 8)
(Gujarati, chapter 12)
Applications: Volatility tests for efficiency and bubbles in financial markets.

5.   ASSESSMENT

The format for assessment is as follows:

Class Test	15%
Assignment	15%
Tutorials	10%
Final Examination	60%

Class Test

There will be a class test in **Week 8 (Tuesday October 6).** It will be of one hour
duration to be held in tutorial on the material covered in Weeks 1 - 7. Calculators are
needed.

Assignment

**The Assignment is due in Week 10, Tuesday October 19, by 1 pm in the
ECON233 box provided in ERIC.**

Tutorials
Tutorials 3, 6 and 7 will be marked. Due dates will be announced in lectures.

Final Examination

This will cover all of the material discussed in the course and will be of three-hour
(plus 10 minute-reading time) duration. The schedule for this examination will be
determined by the University examination section, and thus it is individual student's
responsibility to find the time and venue for the examination when the information
becomes available. To pass the course you need to pass the final examination.

6.   CLASSES

Students are expected to attend a two-hour lecture each week. Tutorials will be held
on the following weeks and days:

3	August 17
5	August 31
6	September 7

7	September 14
8	October 6
9	October 13

Assignment due in Week 10, Tuesday October 19

11	October 26
12	November 2

Tutorials will not necessarily be held from 6 to 7 pm, rather it will be left to the discretion of the lecturer. On weeks where no tutorial has been scheduled lectures will be held from 6 to 8pm.

* **Special Examinations**: Students are entitled to apply for a special examination if unavoidable disruption has prevented them from attending an examination or significantly affected performance in the examination. However, application with supporting evidence does not automatically guarantee a permission to sit for a special examination. Students are recommended to carefully read the Bachelor Degree Rule 8 in the Calendar.

7.   WEB PAGE

The web address for the Econ233 homepage is:
http://online.mq.edu.au/pub /ECON233
On this page you will find links to the assignments, the tutes, the data sets and a bulletin board.

LECTURERS
Roselyne Joyeux (Weeks 5-13)
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Chris Heaton (Weeks 1-4)
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Phone: 9850-9921
Consultation Hours: to be announced after the lecturers' time schedules are
confirmed.