

**MACQUARIE UNIVERSITY**  
**DIVISION OF ECONOMIC AND FINANCIAL STUDIES**

**ECON233 – FINANCIAL ECONOMETRICS**  
**Second Semester 2006**

**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. Prior knowledge of this software is not 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. APPROXIMATE SCHEDULE OF LECTURE TOPICS**

**Week 1: Introduction to options**

**Week 2: Risk-neutral valuation**

**Week 3: Lattice methods**

**Week 4: Lattice methods**

**Week 5: Monte Carlo methods**

**Weeks 6 and 7: 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 8: Class Test and ARIMA Models**

(Brooks, chapter 5)

(Gujarati, chapters 21, 22)

(Watsham & Parramore, chapter 7)

Applications: Stylised facts of financial returns.

**Week 9: ARIMA Models**

(Brooks, chapter 5)

(Gujarati, chapters. 22)

(Watsham & Parramore, chapter 7)

## **Weeks 10 and 11: Trends and Unit Roots, Tests of the Random Walk Hypothesis and Cointegration**

(Brooks, chapter 7)

(Gujarati, chapters 21, 22)

(Watsham & Parramore, chapter 7)

## **Weeks 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%

To be considered for a passing grade in ECON233, students must:

1. Submit what the lecturer-in-charge considers to be a reasonable attempt of the assignment,
2. Submit what the lecturer-in-charge considers to be reasonable attempts of tutorials 3, 6 and 7,
3. Sit the class test (or be granted special consideration),
4. Pass the final examination.

### **Class Test**

There will be a class test in **Week 8 (Tuesday 3<sup>rd</sup> of October)**. It will be of one hour duration to be held in the first half of the lecture on the material covered in Weeks 1 - 7. Non-programmable calculators are needed.

### **Assignment**

**The Assignment is due in Week 10, Tuesday October 17, 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**

The final examination 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.

**Students who do not pass the final examination will not be considered for a passing grade in the unit.**

## 6. CLASSES

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

4	August 15
5	August 29
6	September 5
7	September 12
8	October 3
9	October 10

**Assignment due in Week 10, Tuesday October 17**

11	October 24
12	October 31

**Tutorials 4, 5, 6 and 7 will be held in the computer laboratories. Others will be held in the lecture room, C5A-232.** Tutorials will not necessarily be held from 8pm to 9pm, rather it will be left to the discretion of the lecturer. On weeks where no tutorial has been scheduled lectures will be held from 6pm 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 ECON233 web page is located on WebCT:

**<http://online.mq.edu.au/>**

On this page you will find links to the assignments, the tutorials, the data sets and a bulletin board.

## **8. LECTURERS**

**Chris Heaton (Weeks 1-5) (and lecturer-in-charge)**

Office: E4A-526

Phone: 9850-9921

**Roselyne Joyeux (Weeks 6-13)**

Office: E4A-527

Phone: 9850 8487

**Consultation Hours:** to be announced after the lecturers' time schedules are confirmed.