

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

**ECON233 – FINANCIAL ECONOMETRICS**  
**Second Semester 2003**

**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 is

**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 September 16)**. It will be of one hour duration to be held in class on the material covered in Weeks 1 - 7. Calculators are needed.

### **Assignment**

**The Assignment is due in Week 10, Thursday October 16, by 1 pm in the ECON233 box provided in ERIC.**

### **Tutorials**

Tutorials 3, 6 and 7 will be marked. Tutorial 3 is due in week 7. (The SHAZAM program for tutorial 3 will be discussed in week 6). Tutorials 6 and 7 are due in weeks 9 and 11 (respectively).

### **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.

## **6. CLASSES**

Students are expected to attend a two-hour lecture each week:

**Tuesday 9 am to 11 am in Room W5C-320**

and a one-hour tutorial for the following weeks:

- 3 (August 12) in C5C-213-215
- 5 (August 26) in C5C-213-215
- 6 (September 2) in C5C-213-215
- 7 (September 9) in Price Theatre
- 8 (September 16) in Price Theatre
- 9 (September 23) in Price Theatre

**Assignment due in Week 10, Thursday October 16**

- 11 (October 21) in Price Theatre
- 12 (October 28) in Price Theatre

\* **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)**

Office: C5C-390

Phone: 9850 8487

**Chris Heaton (Weeks 1-4)**

Office: C5C-305

Phone: 9850-9921

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