



School of Economics and Finance

Quan 304 FINANCIAL ECONOMETRICS

Trimester 1 2006

COURSE OUTLINE

Course Details

In Quan 304, we study the econometrics dealing with financial time series models, and their applications. Emphases will be given to the analysis of stationary and basic non-stationary time series data, if time permits. The first six weeks are contributed to the analysis of linear econometric models as an extension of Quan 201, and the second six weeks are devoted to non-linear models for stationary data and some basic linear models for non-stationary data.

Every week (except first (and second) weeks of each half) has four-hour classes: three-hour regular classes and one-hour optional tutorial. The three-hour classes will be taking place in the classrooms mentioned below, and the one-hour tutorial will be used for data analyses using computers. For the computer manipulation, we'll use statistical package called *Eviews*, available at the Cybercommon room. Although we mention that the tutorials are optional, attendances are highly recommended. Assignments, test and examination will cover the course materials taught in tutorials as well as regular classes. Further, if necessary, there will be extra problem-solving classes before the due day of assignments. Attendance to these is also optional but intended to assist students unfamiliar with mathematics.

Finally, other course information will be announced via Blackboard, and personal advice can be given by e-mail notification. If one's e-mail address in the Blackboard is incorrect, then students are advised to rectify it as soon as possible.

Course Objectives

Our main objective is given to the quantitative approach so that students can be familiar with data manipulations together with their relevant econometric theories. For this goal, we introduce relevant theories whenever they are required for a better understanding of the course materials, though not covered in the textbook.

Class Times and Room Numbers

Classrooms: GBL T4

Class time: Wednesday 11:30 to 13:20
Thursday 11:30 to 12:20

Tutorial room: Railway 415

Tutorial time: Friday 10:30 to 12:30

The two-hour tutorial is split to two classes, and each covers the same content. Students can attend one of them according their preference.

Instructors

Name:	Jin Seo Cho	John McDermott
Room:	RH303	RH427
Phone:	463-6149	463-6708
E-mail:	JinSeo.Cho@vuw.ac.nz	John.McDermott@vuw.ac.nz
Office Hours:	TBA	TBA

Teaching Assistant

Name:	James Tremewan
E-mail:	Tremewjame@student.vuw.ac.nz

Course Contents

- The First Half:
 - 1st week: Preliminaries: Statistics, Mathematics and Theory of Probability
 - 2nd week: Preliminaries: Statistics, Mathematics and Theory of Probability
 - 3rd week: Classical Regression Models and the CAPM model
 - 4th week: Classical Regression Models and the CAPM model
 - 5th week: Extensions of Classical Regression Models and Applications in Finance
 - 6th week: Extensions of Classical Regression Models and Applications in Finance
- Mid-trimester Break: April 10 to April 23
- The Second Half:
 - 7th week: Preliminaries: Maximum Likelihood Estimation
 - 8th week: Preliminaries: Maximum Likelihood Estimation
 - 9th week: GARCH
 - 10th week: GARCH
 - 11th week: Regime Switching Models
 - 12th week: Non-stationary Processes

Plan For Assessment

2 nd Week:	First assignment is distributed
4 th Week:	Second assignment is distributed; First assignment is collected
6 th Week:	Second assignment is collected
7 th Week:	Midterm test (Time and venue will be announced at 6 th week)
8 th Week:	Third assignment is distributed
10 th Week:	Fourth assignment is distributed; Third assignment is collected

12th Week: Fourth assignment is collected
 Exam Week: Final exam

Assignment and test results will be returned to students as soon as marking is completed.

Readings

- Chris Brooks, (2002), *Introductory Econometrics for Finance*, Cambridge University Press.
- Engle, R. (2001) "GARCH 101: The Use of ARCH/GARCH Models in Applied Econometrics" *Journal of Economic Perspectives*, Vol. 15, No. 4, pp 157–168.
- Handouts

Mathematics and Statistics Requirements

The prerequisites for Quan 304 are basic knowledge on probability, differentiation, algebra and basic statistics covered in Quan 201 and Quan 202. If there is any unfamiliar terminology in the following box, then extra efforts are required from students. Whenever facing with unfamiliar mathematics or statistics, consulting instructors *instantly* is highly recommended. Instructors will be happy to help students. From the prior experience, absence or reluctant meeting with instructors accumulates workloads at the final, and results in poor performance.

Limit	Expected value
Sum (Σ) and product (Π)	Variance
Univariate and multivariate normal distributions	Conditional expectation
Probability density function (PDF)	Hypothesis test
Cumulative distribution function (CDF)	First-order condition
Inverse matrix	Sum and product of matrices

Assessment Requirements

There are two examinations. The first is test, and the second is final. The test will be made for two hours of the seventh week. Exact place and time will be announced during the sixth week. The final exam will be taken in the place and at the time announced by the university authority (5 to 25 June, 2006). Assessment will be made by the following formula:

$$FM = 0.3 \text{ Asg} + 0.4 \text{ Tst} + 0.4 \text{ Fin},$$

where FM = final mark, Asg = assignments, Tst = test, Fin = final exam. In case without taking test, zero score will be endowed. Occasionally, group assessments will be made when discussions among students are encouraged.

Mandatory Course Requirements

The midterm and the final exam are mandatory course requirement.

Communication of Additional Information

Quan 304 has a course home page at Blackboard as mentioned above. Any course announcement and course handouts will be available at the course homepage.

Faculty of Commerce and Administration Offices

Railway West Wing (RWW) - FCA Student Administration Office

The Student Administration Office is located on the ground and first floors of the Railway West Wing. The ground floor counter is the first point of contact for general enquiries and FCA forms. Student Administration Advisers are available to discuss course status and give further advice about FCA qualifications. To check for opening hours call the office on (04) 463 5376.

Easterfield (EA) - FCA/Law Kelburn Office

The Kelburn Campus Office for the Faculties of Commerce & Administration and Law is situated in the Easterfield Building - it includes the ground floor reception desk (EA005) and offices 125a to 131 (Level 1). The office is available for the following:

- Duty tutors for student contact and advice.
- Information concerning administrative and academic matters.
- FCA Student Administration forms (e.g. application for academic transcripts, requests for degree audit, COP requests).
- Examinations-related information during the examination period.

Check with the Student Administration Office for opening times (04) 463 5376.

General University Policies and Statutes

Students should familiarise themselves with the University's policies and statutes, particularly those regarding assessment and course of study requirements, and formal academic grievance procedures.

Student Conduct and Staff Conduct

The Statute on Student Conduct together with the Policy on Staff Conduct ensure that members of the University community are able to work, learn, study and participate in the academic and social aspects of the University's life in an atmosphere of safety and respect. The Statute on Student Conduct contains information on what conduct is prohibited and what steps can be taken if there is a complaint. For queries about complaint procedures under the Statute on Student Conduct, contact the Facilitator and Disputes Advisor. This Statute is available in the Faculty Student Administration Office or on the website at:

www.vuw.ac.nz/policy/StudentConduct.

The policy on Staff Conduct can be found on the VUW website at:

www.vuw.ac.nz/policy/StaffConduct.

Academic Grievances

If you have any academic problems with your course you should talk to the tutor or lecturer concerned or, if you are not satisfied with the result of that meeting, see the Head of School or the Associate Dean (Students) of your Faculty. Class representatives are available to assist you with this process. If, after trying the above channels, you are still unsatisfied, formal grievance procedures can be invoked. These are set out in the Academic Grievances Policy which is published on the VUW website:

www.vuw.ac.nz/policy/AcademicGrievances.

Academic Integrity and Plagiarism Academic integrity is about honesty – put simply it means no cheating. All members of the University community are responsible for upholding academic integrity, which means staff and students are expected to behave honestly, fairly and with respect for others at all times.

Plagiarism is a form of cheating which undermines academic integrity. Plagiarism is **prohibited** at Victoria.

The University defines plagiarism as follows:

Plagiarism is presenting someone else's work as if it were your own, whether you mean to or not.

'Someone else's work' means anything that is not your own idea, even if it is presented in your own style. It includes material from books, journals or any other printed source, the work of other students or staff, information from the Internet, software programmes and other electronic material, designs and ideas. It also includes the organization or structuring of any such material.

Plagiarism is not worth the risk.

Any enrolled student found guilty of plagiarism will be subject to disciplinary procedures under the Statute on Student Conduct (www.vuw.ac.nz/policy/studentconduct) and may be penalized severely. Consequences of being found guilty of plagiarism can include:

- an oral or written warning
- suspension from class or university
- cancellation of your mark for an assessment or a fail grade for the course.

Find out more about plagiarism and how to avoid it, on the University's website at:

www.vuw.ac.nz/home/studying/plagiarism.html.

Students with Disabilities

The University has a policy of reasonable accommodation of the needs of students with disabilities. The policy aims to give students with disabilities an equal opportunity with all other students to demonstrate their abilities. If you have a disability, impairment or chronic medical condition (temporary, permanent or recurring) that may impact on your ability to participate, learn and/or achieve in lectures and tutorials or in meeting the course requirements, then please contact the Course Coordinator as early in the course as possible. Alternatively you may wish to approach a Student Adviser from Disability Support Services to confidentially discuss your individual needs and the options and support that are available. Disability Support Services are located on Level 1, Robert Stout Building, or phoning 463-6070, email: disability@vuw.ac.nz. The name of your School's Disability Liaison Person can be obtained from the Administrative Assistant or the School Prospectus.

Student Support

Staff at Victoria want students' learning experiences at the University to be positive. If your academic progress is causing you concern, please contact the relevant Course Co-ordinator, or Associate Dean who will either help you directly or put you in contact with someone who can.

The Student Services Group is also available to provide a variety of support and services. Find out more at www.vuw.ac.nz/st_services/ or email student-services@vuw.ac.nz.

VUWSA employs two Education Coordinators who deal with academic problems and provide support, advice and advocacy services, as well as organising class representatives and faculty delegates. The Education Office is located on the ground floor, Student Union Building, phone 463 6983 or 463 6984, email education@vuwsa.org.nz.

Manaaki Pihipihinga Maori and Pacific Mentoring programme (Faculties of Humanities and Social sciences and Commerce and Administration)

What

Academic Mentoring for Maori and Pacific students studying at all levels in the above faculties. Weekly sessions for an hour with a mentor to go over assignments and any questions from tutorials or lectures. Registered students can use the faculty's study rooms and computer suite at any time at Kelburn and Pipitea.

Mature student and Post grad network

If you would like to register as a mentor or mentee please contact the coordinator.

Where

Melissa Dunlop
Programme Coordinator
Room 109 D

14 Kelburn Parade: back courtyard
Ph: (04) 463 6015
Email: Maori-Pacific-Mentoring@vuw.ac.nz

Please Note: A mentoring room will also be running at Pipitea Campus starting January.
Please contact the Programme Coordinator for details.