THE UNIVERSITY OF AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND

BUSINESS SCHOOL

Course Outline 2016
ECON 723: ECONOMETRICS II (15 POINTS)

Semester 2 (1165)

Course Prescription

An overview of time series econometrics, designed to introduce a range of material in stationary and non-stationary time series including: unit root and cointegration theory, multivariate modelling techniques, and panel data econometrics. Students will also be introduced to practical time series forecasting methods and modern model determination methods.

Programme and Course Advice

Students taking this course should have a good background in econometrics and statistics to the advanced undergraduate level. Little prior knowledge of time series will be assumed. The course will emphasise how theory informs practical methodology.

Goals of the Course

This course will help you to rigorously understand issues in connecting data, statistics and economic theory and to be able to understand and carry out theoretical and empirical research using time-series data.

Learning Outcomes

By the end of this course it is expected that the student will be able to:

1. set up empirical regressions to test economic theories;
2. apply unit root and co-integration tests;
3. analyse macro data using error correction models, VARs, and panel data methods;
4. build econometric programmes to analyse economic and financial data.

Content Outline

The first part of the course provides an introduction to time series methods in econometrics and emphasizes ideas and approaches. We start with linear stationary time series. Then we introduce non-stationarity (mainly unit roots) and co-integration. We will then extend into multivariate models, including panel data methods. The course concludes with an overview of forecasting and model selection methods.

Content Outline *continued*

The following is a general outline of topics indicating how we will proceed through the course material.

Weeks 1-2: Review of probability and statistics

Weeks 3-4: Review of linear Regression; Instrumental Variables; Univariate stationary processes, ARMA.

Week 5-6: Unit root property and unit root tests

Weeks 7-8: Co-integration tests and modified regressions

Weeks 9-10: Multivariate processes: VAR and Vector Error Correction Models; Panel Data Models

Weeks 11-12: Forecasting; Model Selection; Structural Breaks.

Learning and Teaching

The course will be taught in the second semester. There will be three hours of lectures per week which will include a computer lab session for programming work. The econometric software Matlab and Eviews will be used. All will be available on the student W: drive.

Teaching Staff

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Learning Resources

Prescribed Textbook:

Hamilton, J.D. (1994), *Time Series Analysis*, Princeton University Press.

Supplementary textbooks:

Lutkepohl, H. (2005), *New Introduction to Multiple Time Series Analysis*, Springer.

Enders, Walter (2010), *Applied Econometric Time Series*, Wiley.

Baltagi, Badi H. (2013), *Econometric Analysis of Panel Data,* Wiley.

Assessment

The final grade will be assessed on 100% coursework, consisting of assignments worth 30% and a research project worth 70%.

The due date for the Research Project will be confirmed at the start of the semester.

Plussage does ***NOT*** apply.

Learning Outcome	Assignment	Research Project
1	X	X
2	X	X
3	X	X
4	X	