TE WHARE WĀNANGA O TE ŪPOKO O TE IKA A MĀUI
VICTORIA
UNIVERSITY OF WELLINGTON

School of Economics and Finance

ECON 409 ADVANCED ECONOMETRICS B

Trimester Two 2011

COURSE OUTLINE

Names and Contact Details

Course lecturer & coordinator — Dr Stefanie Schurer
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Office hours: TBA

Trimester Dates

Teaching Period: Monday 11th July – Friday 14th October 2011
Study Period: Monday 17th October – Thursday 20th October 2011
Examination Period: Friday 21st October – Saturday 12th November 2011 (inclusive)

Withdrawal from Courses:
Your fee will be refunded if you withdraw from this course on or before **22 July 2011**.

The last date for withdrawal from this course is the three-quarter point of the teaching period, i.e. **Friday 23 September.** After that date, permission to withdraw requires the permission of the Associate Dean (Students) as set out in section 8 of the Personal Courses of Study Statute http://policy.vuw.ac.nz/Amphora!~~policy.vuw.ac.nz~POLICY~000000001743.pdf

To apply for permission, fill in the Late Withdrawal form available from either of our Student Customer Service Desks.

Class Times and Room
Wednesdays 9.30 – 11.20 am RWW 128

Note: The lectures will start in Week 2 on Wednesday 20 July 2011**.** There will be an extra lecture to make up for the one lost in Week 1. Date and time of this lecture will be announced during the first lecture.

Course Content
ECON 409 will focus on issues and econometric modeling of two broad types of data: panel (or longitudinal) data; and time series data. The first 6 weeks of the course will cover panel data analysis: focusing on issues that motivate the use of panel data; the main econometric models used to analyse panel data; and methods to handle issues that arise in such analysis.

The second 6 weeks will cover time series analysis: focusing on non-stationary time series issues, and multivariate systems of equations.

Course Delivery
The first half of the course will focus on the panel data analysis; and the second half will focus on the analysis of time series analysis topics. There will be approximately four assignments throughout the course, involving a combination of theoretical and hands-on applied examples. These contribute to your final course grade and should contribute greatly to understanding the material.

Weeks 1–6:
Panel data methods and models

- Static linear panel data models
- Dynamic linear panel data models
- Static non-linear panel data models
- Dynamic non-linear panel data models

Weeks 7–12:
Time series analysis

- Time Series and Spurious Regressions, and Non-stationarity
- Cointegration and Error Correction Models
- Multivariate Systems of Equations (VARs etc)

Expected Workload
You are expected to spend roughly 150 hours completing this course. This includes preview, lecture attendance, and review and study for assignments and exams. On average this is roughly 10 hours per week from the start of the course until the final exam, but the load may vary over time and across students.

Assessment Requirements
Assessment will be based on a combination of in-term assignments, a two hour midterm exam and a two hour final exam. The midterm exam will be held soon after the mid-trimester break, at a time to be determined. The final exam will be scheduled by the University during the examination period. The overall assessment will be:

- 20% from assignments
- 40% from the midterm exam
- 40% from the final exam

Note: Your assessed work may also be used for quality assurance purposes, such as to assess the level of achievement of learning objectives as required for accreditation and audit purposes. The findings may be used to inform changes aimed at improving the quality of FCA programmes. All material used for such processes will be treated as confidential, and the outcome will not affect your grade for the course.

Materials and Equipment
The econometric software used in this course is R (http://www.r-project.org/) and STATA (http://www.stata.com/).

Course Learning Objectives

By the end of this course, students should be able to:

1. demonstrate in-depth mastery of the theories presented of econometric models of panel data and time series data.
2. assess the merits of more complicated empirical tests of these theories

Readings

This course will follow Greene (2011), as referenced below, however Wooldridge (2009) and Hsiao (2003) for panel data analysis and Hamilton (1994) and Enders (2004) for time series analysis will be used as well. In addition, relevant journal articles and chapters will be assigned throughout (a provisional list follows).

General

Greene, William H. (2011). Econometric Analysis, Pearson, 7th edition.

Panel data analysis

Texts:

Hsiao, Cheng (2003), *Analysis of Panel Data*, 2nd ed (or 1st ed 1986), Econometric Society Monograph (No. 34), Cambridge University Press.

Wooldridge, Jeffrey (2009), *Econometric Analysis of Cross Section and Panel Data*, MIT Press, 2nd edition.

Articles:

* Chamberlain, Gary (1986), "Panel Data", *Handbook of Econometrics*, Chapter 22 in Vol. 2, Elsevier Science B.V.

Linear modelling

Ashenfelter, Orley and David Zimmerman (1997), "Estimates of the Returns to Schooling from Sibling Data: Fathers, Sons and Brothers", *Review of Economics and Statistics*, 79, 1-9.

Jakubson (1991), "Estimating and Testing of the Union Wage Effect Using Panel Data", *Review of Economic Studies*, 58, 971-991.

* Mundlak, Yair (1978), "On the Pooling of Time Series and Cross-section Data", *Econometrica*, 46, 69-85.

* Hausman, Jerry A. and William E. Taylor (1981), "Panel Data and Unobservable Individual Effects", *Econometrica*, 49, 6, 1377-1398.

* Anderson, T.W. and Cheng Hsiao (1982), "Formulation and Estimation of Dynamic Models Using Panel Data", *Journal of Econometrics*, 18, 67-82.

* Arellano, Manuel, and Stephen Bond (1991), "Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations", *Review of Economic Studies*, 58, 277-297.

Non-linear modelling

*Arulampalam, Wiji and Mark B. Stewart (2009), "Simplified Implementation of the Heckman Estimator of the Dynamic Probit Model and a Comparison with Alternative Estimators", *Oxford Bulletin of Economics and Statistics*, Vol. 71, No. 5, 659-681.

* Chamberlain, Gary (1980), "Analysis of Covariance with Qualitative Data", *Review of Economic Studies*, Vol. 47, No. 3, 225-238.

Jakubson, George (1988), "The Sensitivity of Labor-Supply Parameter Estimates to Unobserved Individual Effects: Fixed- and Random-Effects Estimates in a Nonlinear Model Using Panel Data", *Journal of Labor Economics*, Vol. 6, No. 3, 302-329.

Chamberlain, Gary (1985), "Heterogeneity, Omitted Variable Bias, and Duration Dependence", in James Heckmand and Burton Singer (eds), *Longitudinal Analysis of Labor Market Data*, Cambridge University Press.

Cox, D. R. (1958), "The Regression Analysis of Binary Sequences", *Journal of the Royal Statistical Society*, Series B, Vol. 20, pp. 215-232.

Heckman, James J. (1981a), "Statistical Models for Discrete Panel Data", Chapter 3 in Manski, Charles and Daniel McFadden (eds), *Structural Analysis of Discrete Data*, MIT Press, Cambridge, MA.

Heckman, James J. (1981b), "The Incidental Parameters Problem and the Problem of Initial Conditions in Estimating a Discrete Time-Series Data Stochastic Process", Chapter 4 in Manski, Charles and Daniel McFadden (eds), *Structural Analysis of Discrete Data*, MIT Press, Cambridge, MA.

Heckman, James J. (1981c), "Heterogeneity and State Dependence", in Sherwin Rosen (ed), *Studies in Labor Markets*, University of Chicago Press.

Honoré, Bo and Ekaterini Kyriazidou (200), "Panel Data Discrete Choice Models with Lagged Dependent Variables", *Econometrica*, 68, 839-874.

Hyslop, Dean R. (1999), "State Dependence, Serial Correlation and Heterogeneity in Intertemporal Labor Force Participation of Married Women", *Econometrica*, 67(6), pp 1255-1294.

Roberts, Mark J. and James R. Tybout (1997), "The Decision to Export in Columbia: An Empirical Model of Entry with Sunk Costs", *American Economic Review*, 87(4), 545-564.

Time series analysis

Texts:

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

Enders, Walter (2004). *Applied Econometric Time Series*, John Wiley & Sons, 2nd edition.

Time series and Spurious regressions, and Non-stationarity

Campbell, John Y. and Pierre Perron (1991), "Pitfalls and Opportunities: What Macroeconomists should know about Unit Roots", *NBER Macroeconomics Annual*, 6, 141-201.

Dickey, David A. and Wayne A. Fuller (1979), "Distribution of the Estimators for Autoregressive Time Series with a Unit Root", *Journal of the American Statistical Association*, 74, 427-431.

Evans, G.B.A. and N.E. Savin (1984), "Testing for Unit Roots: 2", *Econometrica*, 52(5), 1241-1269.

Ghysels, Eric and Pierre Perron (1993), "The Effect of Seasonal Adjustment Filters on Tests for a Unit Root", *Journal of Econometrics*, 55(1), 57-98.
Granger, Clive W.J. and Paul Newbold (1974), "Spurious Regressions in Econometrics", *Journal of Econometrics*, 2, 111-120.
* Hendry, David F. (1980), "Econometrics – Alchemy or Science?", *Economica*, 47, 387-406.
* Nelson, Charles R. and Charles I. Plosser (1982), "Trends and Random Walks in Macroeconomic Time Series", *Journal of Monetary Economics*, 10, 139-162.
Perron, Pierre (1989), "The Great Crash, the Oil Price Shock, and the Unit Root Hypothesis", *Econometrica*, 57(6), 1361-1401.
* Phillips, Peter C.B. (1986), "Understanding Spurious Regressions in Econometrics", *Journal of Econometrics*, 33, 311-340.
Phillips, Peter C.B. (1987), "Time Series Regression with a Unit Root", *Econometrica*, 55(2), 277-301.
Phillips, Peter C.B. and Pierre Perron (1988), "Testing for a Unit Root in Time Series Regression", *Biometrika*, 75(2), 335-346.
Said, Said E. and David A. Dickey (1984), "Testing for Unit Roots in Autoregressive-Moving Average Models of Unknown Order", *Biometrika*, 71(3), 599-607.
Schwert, G. William (1989), "Tests for Unit Roots: A Monte Carlo Investigation", *Journal of Business and Economic Statistics*, 7(2), 147-159.
* Stock, James H. and Mark W. Watson (1988), "Variable Trends in Economic Time Series", *Journal of Economic Perspectives*, 2(3), 147-174.

Cointegration and Error Correction Models

* Engle, Robert F. and Clive W.J. Granger (1987), "Co-Integration and Error Correction: Representation, Estimation and Testing", *Econometrica*, 55(2), 251-276.
Johnasen, Soren (1988), "Statistical Analysis of Cointegration Vectors", *Journal of Economic Dynamics and Control*, 12, 231-254.
Stock, James H. (1987), "Asymptotic Properties of Least Squares Estimators of Cointegrating Vectors", *Econometrica*, 55(5), 1035-1056.
Stock, James H. and Mark W. Watson (1988), "Testing for Common Trends", *Journal of the American Statistical Association*, 83, 1097-1107.

Multivariate Systems of Equations (VARs etc)

* Bernanke, Ben S. (1986), "Alternative Explanations of the Money-Income Correlation", NBER Working Paper 1842.
* Blanchard, Olivier J. and Danny Quah (1989), "The Dynamics of Aggregate Demand and Supply Disturbances", *American Economic Review*, 79(4), 655-673.
* Blanchard, Olivier J. and Mark W. Watson (1986), "Are Business Cycles all Alike?", in Robert Gordon (ed.)*The American Business Cycle; Continuity and Change*, Chicago: NBER and University of Chicago Press, 123-156.
Buckle, Robert A., Kunhong kim, Heather Kirkham, Nathan McLellan, and Jarad Sharma (2007), "A Structural VAR Business Cycle Model for a Volatile Small Open Economy", *Economic Modelling*, 24, 990-1017.
Dungey, M. and A. Pagan (2000), "A Structural VAR model of the Australian Economy", *The Economic Record*, 76, 321-342.
* Sims, Christopher A. (1980), "Macroeconomics and Reality", *Econometrica*, 48(1), 1-48.
Sims, Christopher A. (1986), "Are Forecasting Models Usable for Policy Analysis?", *Econometrica*, 48(1), 1-48.

Examinations
Note: Students who enrol in courses with examinations are obliged to attend an examination at the University at any time during the formal examination period.
The final examination for this course will be scheduled at some time during the period **Friday 21st October – Saturday 12th November 2011**.

Penalties
Coursework submitted late will not be graded.

Mandatory Course Requirements
Mandatory course requirements will be satisfied if all assessment requirements are completed.

Communication of Additional Information
Additional information or information on changes will be conveyed to students via email and Blackboard.

For the following important information follow the links provided:

Academic Integrity and Plagiarism
http://www.victoria.ac.nz/home/study/plagiarism.aspx

General University Policies and Statutes
http://www.victoria.ac.nz/home/about/policy

AVC (Academic) Website: information including: Conduct, Academic Grievances, Students with Impairments, Student Support
http://www.victoria.ac.nz/home/about_victoria/avcacademic/Publications.aspx

Faculty of Commerce and Administration Offices
http://www.victoria.ac.nz/fca/studenthelp/

Manaaki Pihipihinga Programme
http://www.victoria.ac.nz/st_services/mentoring/