

School of Economics and Finance

ECON 423 MACROECONOMIC MODELLING OF THE NEW ZEALAND ECONOMY

Trimester Two 2009

COURSE OUTLINE

Names and Contact Details

Contact is best initiated by email or through making an appointment

The Course Coordinator is: Professor Viv Hall

Room: RH 401 in Rutherford House, 23 Lambton Quay

Voice/Message: (04) 463 5081

Email: viv.hall@vuw.ac.nz

Lectures will be presented by:

Dr Ganesh Nana, RH 430, ganesh.nana@berl.co.nz, telephone 463 5233 then 8898

Professor Viv Hall, RH 401

Trimester Dates

Teaching Period: Monday 13 July to Friday 16 October 2009

End of Year Study Period: Monday 19 October to Monday 26 October 2009

Examination Period: Tuesday 27 October to Saturday 14 November 2009 (inclusive)

Note: Students who enrol in courses with examinations should be able to attend an examination at the University at any time during the formal examination period.

Withdrawal dates: Information available via

<http://www.victoria.ac.nz/home/admisenrol/payments/withdrawalsrefunds.aspx>

Class Time and Room

Tuesdays 10.30 a.m. – 12.30 p.m.

RWW 127

Pre-requisite: ECON 305, together with suitably strong quantitative/econometric preparation; ECON 402 and ECON 403 would be ideal co-requisites, if not already completed.

Course Content

ECON 423 features macroeconomic and structural modelling of the New Zealand economy, blending relevant economic theory, applied econometric and policy relevant material. In 2009, the modelling will place most focus on the Reserve Bank of New Zealand's new core macroeconomic model, KITT, and on selected applied/computable general equilibrium (AGE/CGE) modelling.

Course Learning Objectives

By the end of this course students should be able to

1. assess the key insights from best practice international modelling, and recent New Zealand policy applications
2. critically evaluate the relative strengths and weaknesses of comparative static and dynamic approaches to computable general equilibrium modelling
3. explain and assess the relative roles of deterministic and stochastic macroeconomic models, and their steady state and dynamic properties
4. display a sound appreciation of the roles of macroeconomic and structural models in forecasting, projection and policy processes

Course Delivery

There will be 12 meetings during the trimester. Dr Ganesh Nana will present the first four two-hour lectures on structural/ CGE modelling. Of these, three sessions will cover essentially short run comparative static modelling concepts and applications, and the fourth will feature recent developments in dynamic/intertemporal CGE modelling. Professor Viv Hall will be responsible for the remaining eight two-hour sessions. The first of these will feature introductory concepts for macroeconomic modelling, with reference to “best practice” international work. Relative strengths and weaknesses of modelling and non-modelling approaches will be evaluated. The remaining seven macroeconomic modelling sessions will cover: underlying concepts and ideas; applications featuring the National Bank of New Zealand model (NBNZ-DEMONZ), and the RBNZ’s FPS model; and the structure, steady state and dynamic properties, and evaluation methods of the RBNZ’s Dynamic Stochastic General Equilibrium (DSGE) model KITT (Kiwi Inflation Targeting Technology). The final session will be presented by RBNZ staff. Reference will also be made, where appropriate, to the recently completed write-up of New Zealand Treasury’s NZTM model.

Expected Workload

ECON 423 is a 15-point course, and on the basis of VUW having designated one point = 10 hours work, expected work load would total 150 hours. If that workload were spread over 12 weeks, hours expected would average around 12.5 hours per week. This would involve attending classes (2 lectures per week), plus reading, studying and completing assignments for approximately 10.5 hours per week. The 10.5 hours would of course vary for individual students, depending on the student’s previous knowledge and understanding, and the final grade at Honours level to which the student aspires.

Readings

Topics and Readings (* denotes a key reading; ■ denotes available from Commerce Library Reserve Collection)

1. Structural/CGE Modelling: An Introduction (1 session)

Piecemeal/partial, static, and dynamic (including intertemporal) approaches

Hall, Viv B., pp 47-51 in Silverstone, Brian *et al.*, *A Study of Economic Reform: The Case of New Zealand*, North-Holland, 1996; & pp 25-37 in van Bergeijk, Peter A. G. *et al.*, *Structural Reform in Open Economies: A Road to Success?*, Edward Elgar, 1999.

* Parmenter, B. R., “Inter-Industry Analysis”, ch. 5 in L. R. Webb and R. H. Allen (eds.) *Industrial Economics: Australian Studies*, Allen & Unwin, 1982, pp. 69-110, ss. 1, 2, 3.1, 4.

Dao, Dan, Steven Ross and Robert Campbell, *Structural Change and Economic Growth*, Background Paper No. 28, Economic Planning Advisory Council, Canberra, June 1993.

Dixon, Peter B. and Daina McDonald, *An Explanation of Structural Changes in the Australian Economy: 1986-87 to 1990-91*, Background Paper No. 29, Economic Planning Advisory Council, Canberra, June 1993.

Nana, Ganesh, Viv B. Hall and Bryan P. Philpott, “Trans-Tasman CGE modelling”, *Economic Modelling*, 12 (4), 1995, pp. 377-389.

Dixon, P B and M T Rimmer, *Dynamic General and Equilibrium Modelling for Forecasting and Policy*, Contributions to Economic Analysis Volume 256, North-Holland, December 2002; also www.monash.edu.au/policy

Dixon, Peter B, K R Pearson, Mark R Picton and Maureen Rimmer, “Rational expectations for large CGE models: A practical algorithm and a policy application”, *Economic Modelling*, 22, 2005, 1001-1019.

Nana, Ganesh, A Multi-Industry Computable General Equilibrium Model with Dynamic Investor and Consumer Behaviour, PhD thesis, Victoria University of Wellington, 1999, ch. 1.

2. Comparative Static CGE modelling (2 sessions)

Introduction, Input-Output Data and Models, The Johansen Approach

* Dixon, Peter B., B. R. Parmenter, Alan A. Powell and Peter J. Wilcoxon (DPPW), *Notes and Problems in Applied General Equilibrium Economics*, North-Holland Advanced Textbooks in Economics Volume 32, 1992, chs. 1, 2 (pp. 19-45).

* Parmenter (1982), s. 3.2 (a).

For a perspective on the basic data for New Zealand, see Nana, ch. 2; and *Inter-Industry Study 1996 - 49 Industries – Interim Release of Tables*, Statistics New Zealand, available from www.stats.govt.nz (search ‘input-output tables’).

* Further detail can be found in Dixon, Peter B., B. R. Parmenter, John Sutton and D. P. Vincent (DPSV), *ORANI: A Multisectoral Model of the Australian Economy*, North-Holland Contributions to Economic Analysis Volume 142, 1982, chs. 1, 2 (ss. 3-7), 4 (ss. 24-27, 29), 5 (ss. 30-32, 34).

The Construction of a Model for Practical Policy Analysis

* Parmenter (1982), s. 3.2 (b).

* DPSV, ch. 3 (especially ss. 13, 14, 18, 19, 22)

3. Intertemporal CGE Modelling (1 session)

An Introduction to Intertemporal Modelling

Malakellis, Michael, "Should Tariff Reductions be Announced? An Intertemporal Computable General Equilibrium Analysis", *The Economic Record*, 74 (225), June 1998, pp. 121-138.

* Nana, Ganesh, chs. 1, 3, (pp. 75-101), 4 (pp. 141-149, 151-155), 5 (pp. 160-175).

4. Introduction to macroeconomic modelling for the generation of forecasts and projections, and for policy analysis (1 session)

Why model? The modelling process. Forms of macroeconomic modelling. International perspectives.

The Economist, 13 July 2006, Special Report, "Economic models: Big questions and big numbers".

John Freebairn, "Some Final Comments", pp. 193-196, in *A Comparison of Economy-Wide Models of Australia: Responses to a rise in labour productivity*, Colin Hargreaves (ed.), Commission Paper No. 2, Economic Planning Advisory Commission, Canberra, October 1994.

* *Economic Modelling*, 15(3), July 1998, Special Issue: Empirical Models and Policy Making: contributions by G. Zalm, "The relevance of economic modelling for policy decisions", pp. 309-316; Duguay, Pierre and David Longworth, "Macroeconomic models and policymaking at the Bank of Canada", pp. 357-376.

* Murphy, Christopher W. et al., *A Macroeconometric Model of the Australian Economy for Medium-Term Policy Analysis*, Office of EPAC Technical Paper No. 2, Office of EPAC, Canberra, June 1986, chs. 1-3.

* Black, Richard, Vincenzo Cassino, Aaron Drew, Eric Hansen, Benjamin Hunt, David Rose and Alasdair Scott, *The Forecasting and Policy System: the core model*, Research Paper No. 43, Reserve Bank of New Zealand, Wellington, August 1997, ss. 1, 2; available from <http://www.rbnz.govt.nz>.

Spencer, Grant and Ozer Karagedikli, "Modelling for monetary policy: the New Zealand experience", *Reserve Bank of New Zealand Bulletin*, 69 (2), June 2006, 18-25; <http://www.rbnz.govt.nz/research/bulletin>.

* Delbrück, F., A. Dunstan, D. Hargreaves, A. Lienert, H. Pepper, and C. Sleeman (2008). The evolution of the Forecast and Policy System (FPS) at the Reserve Bank of New Zealand. RBNZ Discussion Paper Series, 2008/11.

* Fukac, Martin and Adrian Pagan, “Issues in Adopting DSGE Models for Policy Decisions”, CAMA Working Paper 10/2006, March 2006; available from <http://cama.anu.edu.au/publications.htm>.

* Jaromír Beněš, Andrew Binning, Martin Fukáč, Kirdan Lees, Troy Matheson, *K.I.T.T.: Kiwi Inflation Targeting Technology*, mimeo, Reserve Bank of New Zealand, May 2009, ch. 1

Szeto, Kam Leong, “A dynamic computable general equilibrium (CGE) model of the New Zealand economy”, New Zealand Treasury Working Paper 02/07, June 2002; available from <http://www.treasury.govt.nz/workingpapers/2002>

Ryan, Michael and Kam Leong Szeto, “An Introduction to the New Zealand Treasury Model”, New Zealand Treasury Working Paper 09/##

The following websites can also be investigated to gain a useful perspective on quality, model-based technical reports and working papers:

www.bankofcanada.ca/en/pubs.htm

www.norges-bank.no

www.riksbank.com

www.econtech.com.au

www.sensiblepolicy.com

www.rbnz.govt.nz

www.treasury.govt.nz

5. Macroeconomic Modelling: Underpinning Concepts and Ideas (1 session)

The key macroeconomic relations. Long run and dynamic relations. Core and satellite models. Uncertainty. Deterministic and Stochastic Simulations. Economic Projections.

* *American Economic Review, Papers and Proceedings*, 87 (2), May 1997, “Is There a Core of Practical Macroeconomics that We Should All Believe?”, pp. 230-246, contributions by Robert M. Solow, John B. Taylor, Martin Eichenbaum, Alan S. Blinder, and Olivier Blanchard; also *American Economic Review, Papers and Proceedings*, 91(2), May 2001, John B Taylor, “The Role of the Exchange Rate in Monetary-Policy Rules”, 263-267.

* *Journal of Economic Perspectives*, Fall 2006, 20 (4), “Macroeconomic Lessons”, pp 3-46, contributions by V. V. Chari and Patrick J. Kehoe and by N. Gregory Mankiw.

* Blanchard, Olivier (2008), “The State of Macro”, NBER Working Paper 14259, August, <http://www.nber.org/papers/w14259>.

* Woodford, Michael (2009), “Convergence in Macroeconomics: Elements of the New Synthesis”, *American Economic Journal: Macroeconomics*, 1(1), 267-279.

* Black *et al.*, s. 2.

* Jaromír Beněs, Andrew Binning, Martin Fukáč, Kirdan Lees, Troy Matheson, *K.I.T.T.: Kiwi Inflation Targeting Technology*, mimeo, Reserve Bank of New Zealand, May 2009, chs. 1, 6

* Conway, Paul, “Monetary Policy in an Uncertain World”, *Reserve Bank of New Zealand Bulletin*, 63 (3), September 2000, pp. 5-15; available from <http://www.rbnz.govt.nz/research/bulletin>.

* *Monetary Policy under Uncertainty*, Benjamin Hunt and Adrian Orr (eds.), Reserve Bank of New Zealand, 1999, pp. 1-9; available from <http://www.rbnz.govt.nz>.

Turner, Jane, “An Assessment of Recent Reserve Bank Forecasts”, pp 38-43 in *Reserve Bank of New Zealand Bulletin*, Vol. 69, No. 3, September 2006; available from <http://www.rbnz.govt.nz/research/bulletin>.

Matheson, Troy, “Phillips curve forecasting in a small open economy”, RBNZ DP2006/01, March 2006; available from <http://www.rbnz.govt.nz/research/discusspapers>.

Lees, K., T. Matheson, and C. Smith (2007), “Open economy DSGE-VAR forecasting and policy analysis — head to head with the RBNZ published forecasts”, Reserve Bank of New Zealand Discussion Paper Series, 2007/01.

Khoo Lek Gho and Daniel Lawrence, “Treasury’s Forecasting Performance: A Head-to Head Comparison”, New Zealand Treasury Working Paper 06/10, July 2006; available from <http://www.treasury.govt.nz/workingpapers/2006>

<http://www.treasury.govt.nz/publications/informationreleases/forecastingperformance/reviews/tsyforperf08.pdf>

6. A Deterministic Practical Application, using NBNZ-DEMONZ (1 session)

* Hall, Viv B. and David Rae, “Fiscal Expansion, Monetary Policy, Interest Rate Risk Premia, and Wage Reactions”, *Economic Modelling*, 15 (4), 1998, pp. 621-640.

* Rae, David, “NBNZ-DEMONZ: A Dynamic Equilibrium Model of New Zealand”, *Economic Modelling*, 13 (1), 1996, pp. 91-166.

Szeto, Kam Leong, “A dynamic computable general equilibrium (CGE) model of the New Zealand economy”, New Zealand Treasury Working Paper 02/07, June 2002; “An econometric analysis of a production function for New Zealand”, Working Paper 01/30; Kam Leong Szeto and Melody Guy, “Estimating a New Zealand NAIRU”, Working Paper 04/10, September 2004; Ryan, Michael and Kam Leong Szeto, “An Introduction to the New Zealand Treasury Model”, New Zealand Treasury Working Paper 09/##, available from <http://www.treasury.govt.nz/workingpapers/>

7. **FPS: An Application (1 session)**

Hall, Viv B, “An Australasian currency, New Zealand adopting the US dollar, or an independent monetary policy?”, CAMA Working Paper 21/2005, October 2005, available from <http://cama.anu.edu.au/publications.htm>

* Drew, Aaron, Viv Hall, C John McDermott and Robert St. Clair, “Would adopting the Australian dollar provide superior monetary policy in New Zealand?”, *Economic Modelling*, 21(6), December 2004, 949-964.

* Hall, Viv and Angela Huang, “Would adopting the US dollar have led to improved inflation, output and trade balances for New Zealand in the 1990s?”, *New Zealand Economic Papers*, 38(1), June 2004, 49-63.

Hall, Viv B and C John McDermott (2009), “An unobserved components common cycle for Australasia? Implications for a common currency”, mimeo, June.

8. **KITT: Economic Structure, Steady State and Dynamic Properties, Evaluation Methods, and possible future research directions (3 sessions)**

* Jaromír Beněš, Andrew Binning, Martin Fukáč, Kirdan Lees, Troy Matheson, *K.I.T.T.: Kiwi Inflation Targeting Technology*, mimeo, Reserve Bank of New Zealand, May 2009, Chs. 2, 3, 4, 5.

9. **KITT: An application (1 session)**

Specific application, presenter from the RBNZ: Reading to be advised.

Assessment Requirements and relation to Course Learning Objectives

For assessment purposes, you are required to sit the final examination in the Trimester Two final examination period, and to complete coursework requirements. The coursework consists of two short assignments (to be distributed in the first half of the trimester), and an essay of no more than 2500 words (see the final page of this outline). Unlike the situation that exists in undergraduate papers, your final grade will be determined on the basis of your overall performance in the Honours programme. However, as a guide to the allocation of your efforts, the assessment in ECON 423 will be based on:

15% for assignments: Ass. 1 due Tues. 11 August, Ass. 2 due Mon. 24 August

25% for the essay: due no later than Tuesday 6 October

60% for the final two-hour examination.

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.

Examinations

The final TWO HOUR examination for this course will be scheduled at some time during the period from Tuesday 27 October to Saturday 14 November 2009.

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 through emails 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/academic.aspx>

Faculty of Commerce and Administration Offices

<http://www.victoria.ac.nz/fca/studenthelp/Contactus.aspx>

Manaaki Pihipihinga Programme

http://www.victoria.ac.nz/st_services/mentoring/

Victoria University of Wellington School of Economics and Finance

ECON 423

2/3 2009

ESSAY

(Due no later than Tuesday 6 October 2009)

Critically evaluate any one major reference or set of references (not covered directly in class sessions), relevant to any one of ECON 423's Computable General Equilibrium or Macroeconomic Modelling topics 1 to 8.

Guidelines

- The maximum length (excluding footnotes, list of references, and a 100 word Abstract) is 2500 words.
- The essay should be written legibly, typed or word-processed on A4 paper, with adequate margins on each side and spacing between lines.
- The original should be handed in at the class on or before the above date. You should retain a copy of your essay.

Viv Hall
June 2009