

School of Economics and Finance

ECON 423: MACROECONOMIC MODELLING OF THE NEW ZEALAND ECONOMY

Trimester One 2012

COURSE OUTLINE

Names and Contact Details

Contact is best initiated by email or by making an appointment time for a
Monday, Tuesday or Wednesday only

The Course Coordinator is: Professor Viv Hall
Room: RH 201 in Rutherford House, 23 Lambton Quay
Voice/Message: (04) 463 5081
Email: viv.hall@vuw.ac.nz

Trimester Dates

Teaching Period: Monday 5 March – Friday 8 June

Study Period: Monday 11 June – Thursday 14 June

Examination Period: Friday 15 June – Wednesday 4 July (inclusive)

Withdrawal from Course

1. Your fees will be refunded if you withdraw from this course on or before Friday 16 March 2012.
2. The standard last date for withdrawal from this course is Friday 18 May. After this date, students forced to withdraw by circumstances beyond their control must apply for permission on an '*Application for Associate Dean's Permission to Withdraw Late*' including supporting documentation

The application form is available from either of the Faculty's Student Customer Service Desks.

Class Times and Room Numbers

Tuesdays 2.30 p.m. – 4.30 p.m.
RWW 125

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 2012, the modelling will place most focus on the Reserve Bank of New Zealand 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. The first four two-hour lectures will feature an introduction to structural/ CGE modelling. The first session will feature introductory concepts, including how to assess structural change and the role of interindustry analysis. The next two sessions will complete our coverage of essentially short run comparative static CGE modelling concepts and applications, and the fourth session will feature a recent New Zealand dynamic CGE modelling application. The eight macroeconomic modelling sessions will cover: macroeconomic modelling processes, including evaluation of the relative strengths and weaknesses of modelling and non-modelling approaches; underlying macroeconomic concepts and ideas; applications featuring the National Bank of New Zealand model (NBNZ-DEMONZ) and the RBNZ's FPS model; and four sessions on 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). Reference will also be made, where appropriate, to features of the recent 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 15 weeks, hours expected would average around 10 hours per week. This would involve attending classes (2 lecture hours per week, for the 12 teaching weeks), plus reading for and completing assignment work and preparing for the final examination, for approximately 8.5 hours per week over 15 weeks. The 8.5 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.

Indicative Topics and Readings (* denotes a key reading, available from Blackboard where a pdf is able to be provided; ■ denotes available from box of readings in SEF Reception, RH 321).

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

Why model?

* John Freebairn (1994), "Some Final Comments", p. 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.

Ryan, Michael and Kam Leong Szeto, "An Introduction to the New Zealand Treasury Model", New Zealand Treasury Working Paper 09/02, p 39

* *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.

Structural modelling: inter-industry analysis and types of CGE modelling

* 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.

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

Claus, Iris and Kathy Li (2003), "New Zealand's Production Structure: An International Comparison", New Zealand Treasury Working Paper 03/16, September 2003, www.treasury.govt.nz.

Stroombergen, Adolf (2008), "ESSAM general equilibrium model: estimation of 2005/06 input-output tables", Motu Working Paper 08-01, April, www.motu.org.nz.

Claus, Iris (2009), "New Zealand's economic reforms and changes in production structure", *Journal of Economic Policy Reform*, 12:2, 133-143.

Giesecke, James (2008), "The effects of recent structural, policy and external shocks to the Australian economy, 1996/97- 2001/02", *Australian Economic Papers*, March, 15-37.

Giesecke, James and Chris Schilling (2010), "The economic impact of the New Zealand fiscal stimulus package", *New Zealand Economic Papers*, December, 231-257.

2, 3. 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; *Inter-Industry Study 1996 - 49 Industries – Interim Release of Tables*, Statistics New Zealand, available from www.stats.govt.nz (search ‘input-output tables’); also Stroombergen (2008).

* 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).

Construction of a Model for Practical Policy Analysis

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

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

4. A dynamic CGE modelling application (1 session)

* Nana, Ganesh, ch. 1.

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

* Giesecke, James (2008), “The effects of recent structural, policy and external shocks to the Australian economy, 1996/97- 2001/02”, *Australian Economic Papers*, March, 15-37.

* Giesecke, James and Chris Schilling (2010), “The economic impact of the New Zealand fiscal stimulus package”, *New Zealand Economic Papers*, December, 231-257; a version tailored to wider audiences is available as Giesecke and Schilling (2009), “Short term gain, long term pain?”, NZIER Working paper 2009/3, via <http://nzier.org.nz/publications/browse-by-type/results/taxonomy%3A5>

NZIER Working Paper 2010/2, “Save now, prosper later: increasing new Zealand’s savings rate – a preliminary dynamic CGE analysis”, prepared by James Zuccollo and John Ballingal, available via <http://nzier.org.nz/publications/browse-by-type/results/taxonomy%3A5>

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

The modelling process. Forms of macroeconomic modelling. International perspectives.

* *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.

* Fukac, Martin and Adrian Pagan, “Structural Macro-Econometric Modelling in a Policy Environment”, RBNZ DP2009/16, December 2009; available from <http://www.rbnz.govt.nz>.

* De Grauwe, Paul (2010), “Top-Down versus Bottom-Up Macroeconomics”, *CESifo Economic Studies*, December, 56(4), 465-497.

* 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>.

* 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.

* Lees, Kirdan, “Introducing KITT: The Reserve Bank of New Zealand new DSGE model for forecasting and policy design”, *Reserve Bank of New Zealand Bulletin*, 72 (2), June 2009, 5-20; <http://www.rbnz.govt.nz/research/bulletin>.

* Jaromír Beněš, Andrew Binning, Martin Fukáč, Kirdan Lees, Troy Matheson, *K.I.T.T.: Kiwi Inflation Targeting Technology*, Reserve Bank of New Zealand, 2009, ch. 1; available from <http://www.rbnz.govt.nz/research/kitt/>

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 09/02

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.bcentral.cl/eng/stdpub

www.econtech.com.au

www.sensiblepolicy.com
www.rbnz.govt.nz
www.treasury.govt.nz

6. 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.

* Fair, Ray C. (2009), “Has Macro Progressed?”, Cowles Foundation Discussion Paper No. 1728, September, <http://cowles.econ.yale.edu/P/cd/d17a/d1728.pdf>

* Pesaran, M Hashem and Ron P Smith (2011), “Beyond the DSGE Straitjacket”, Institute for the Study of Labour (IZA) Discussion Paper No. 5661, April.

* Wickens, M. R. (2010), “What’s Wrong with Modern Macroeconomics? Why its Critics have Missed the Point?”, *CESifo Economic Studies*, December, 56(4), 536-553.

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

* Jaromír Beněš, Andrew Binning, Martin Fukáč, Kirdan Lees, Troy Matheson, *K.I.T.T.: Kiwi Inflation Targeting Technology*, 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>.

Labbé, Felipe and Hamish Pepper (2009), “Assessing recent external forecasts”, pp 19-25 in *Reserve Bank of New Zealand Bulletin*, Vol. 72, No. 4, December 2009; available from <http://www.rbnz.govt.nz/research/bulletin>.

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.

Khoon 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/tsyforperf11.pdf>

7. **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 09/02, available from <http://www.treasury.govt.nz/workingpapers/>

8. **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 (2011), “Is there an unobserved components common cycle for Australasia? Implications for a common currency”, *New Zealand Economic Papers*, published online 15 November 2011 (iFirst); available from <http://www.tandfonline.com/action/showAxaArticles?journalCode=rnzp20> or <http://dx.doi.org/10.1080/00779954.2011.623297>.

9. **KITT: Model design, microfoundations and economic structure**

* Jaromír Beněš, Andrew Binning, Martin Fukáč, Kirdan Lees, Troy Matheson, *K.I.T.T.: Kiwi Inflation Targeting Technology*, Reserve Bank of New Zealand, 2009, Chs. 1, 2, 7.

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

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 from Friday 15 June – Wednesday 4 July (inclusive).

Penalties

Coursework submitted late will not be graded.

Mandatory Course Requirements

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

Class Representative

A class representative will be elected in the first class, and that person's name and contact details made available to VUWSA, the Course Coordinator and the class. The class representative provides a communication channel to liaise with the Course Coordinator on behalf of students.

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

Find key dates, explanations of grades and other useful information at

www.victoria.ac.nz/home/study

Find out about academic progress and restricted enrolment at

<http://www.victoria.ac.nz/home/study/academic-progress.aspx>

The University's statutes and policies are available at www.victoria.ac.nz/home/about/policy, except qualification statutes, which are available via the Calendar webpage at

<http://www.victoria.ac.nz/home/study/calendar.aspx> (See Section C).

Further information about the University's academic processes can be found on the website of the Assistant Vice-Chancellor (Academic) at

www.victoria.ac.nz/home/about_victoria/avcacademic/default.aspx

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/>

Te Putahi Atawhai

Maori and Pacific Mentoring Programme

http://www.victoria.ac.nz/st_services/tpa/index.aspx

**Victoria University of Wellington
School of Economics and Finance**

ECON 423

1/3 2012

ESSAY

(Due no later than 5 pm Tuesday 29 May 2012)

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 submitted on or before the above date. You should retain a copy of your essay.

Viv Hall
February 2012