



School of Economics and Finance

ECON 305 MACROECONOMICS: GROWTH, CYCLES AND SUSTAINABILITY

Trimester 1 2006

COURSE OUTLINE

Contact Details

Lecturers

Dr Geoff Bertram (course co-ordinator) - geoff.bertram@vuw.ac.nz RH 423 (ext. 5814)
Dr Kun-Hong Kim - kunhong.kim@vuw.ac.nz RH 425 (ext. 5786)

Lectures Monday 3.40-5.30 pm in GB Lt3, and
Tuesday 3.40-4.30 pm in GB Lt3

Tutorials

There will be four or five tutorial groups meeting weekly on Tuesdays and Wednesdays at the following times and rooms. A survey will be carried out at the first class to allocate students into groups and determine which times are finally used.

Tuesday 9.30-10.20 am in RLWY 222
Tuesday 10.30-11.20 am in RLWY 222
Tuesday 11.30am -12.20 pm in RLWY 313
Tuesday 2.40-3.30 pm in RLWY 222
Wednesday 1.40-2.30 pm in RLWY 224
Wednesday 2.40-3.30 pm in RLWY 223

Terms Tests Friday 28 April 4.30-5.20 pm.
Friday 26 May 4.30-5.20 pm.
(Note that you must sit – not pass - both tests to get Terms).

Course Description

This course assumes a basic knowledge of the macroeconomic models taught in ECON 202, and moves on to consider formal market-clearing ("Walrasian") models, dynamic macroeconomic theories of growth and business cycles, systematic discussion of the microeconomic foundations of new-Keynesian macroeconomics, stability issues, and open-economy modeling.

The first half of the course provides an introduction to closed-economy and open-economy market-clearing macro models, real business cycle theories and models, and theories of economic growth. The aim here is to make students familiar with major theoretical developments in macroeconomics during the past three decades, flowing from the so-called "new-classical" or "real business cycle" perspective.

The second half discusses new-Keynesian macroeconomic models. Key issues in this area will be price and wage stickiness; the consequences of assuming imperfect competition and quantity rationing in goods and labour markets; explanations for unemployment; stability issues and transition dynamics in macroeconomic models; and some introductory open-economy modeling.

Tutorial Programme and Assignments

In each of the weekly tutorial sessions, with the exception of the first tutorial, the discussion will be led by class members, under the guidance of the tutor. A roster of dates for presentations will be drawn up at the first tutorial and from time to time after that. All tutorial participants are expected to prepare for each tutorial and to be in a position to discuss the topic with the student presenters, but only the presenters will be required to submit their individual written answers for assessment.

Each student will have three tutorial assignments marked, at least one from each half of the course. In order for their assignment answers to be marked, students must participate in the relevant oral presentation. Assignment answers will be covered in tutorials; so-called "model answers" will not be provided on Blackboard. Assignment topics will be posted on Blackboard.

Assessment and Terms Requirements

Students' final grades will be taken as the greater of:

either: tutorial assignments (20%)
two one-hour tests (15% each)
final examination (50%)

or: final examination (100%)

Terms ("mandatory course requirements") are satisfied by students completing in writing, and verbally presenting, three tutorial assignments to a satisfactory standard, and sitting both tests.

Textbooks and Recommended Reading

There are two prescribed texts for the course which students are expected to purchase:

Williamson, Stephen D., *Macroeconomics* (second edition), Pearson Addison Wesley 2005.

Carlin, W and Soskice, D *Macroeconomics: Imperfections, Institutions and Policies* Oxford: Oxford University Press, 2006.

Useful supplementary texts are:

Bénassy, Jean-Pascal, *The Macroeconomics of Imperfect Competition and Nonclearing Markets: a Dynamic General Equilibrium Approach*, MIT Press 2002 (challenging)

Blanchard, Olivier, *Macroeconomics* (third edition), Prentice-Hall 2003 (this was last year's ECON 202 textbook so many of you will have copies to which you are encouraged to refer back).

Heijdra, B. and Van der Ploeg, F., *Foundations of Modern Macroeconomics*, Oxford University Press 2002 (strongly recommended to students with good maths as an excellent up-to-date treatment of the course material, which would be the textbook if it were a little less hard going)

Scarth, W., *Macroeconomics: An Introduction to Advanced Methods*, second edition, Dryden Press, 1995 (a difficult but very rewarding advanced textbook, especially recommended for mathematically strong students).

Farmer, Roger E A, *Macroeconomics* (second edition), South-Western, 2002.

Additional reading will be prescribed for each topic from other books and from the journal literature.

Week 1: Introduction and Measurement Issues

Williamson, Stephen D., *Macroeconomics* (second edition), Addison Wesley, 2005, Chs. 1, 2, 3.

Barro, Robert and Vittorio Grilli, *European Macroeconomics*, Macmillan, 1994, Ch. 1 (pp.1-21).

Farmer, Roger E A, *Macroeconomics* (second edition), South-Western, 2002, Ch. 3.

Lucas, R.E., "Understanding Business Cycles", in Lucas, R E, *Studies in Business-Cycle Theory*, Cambridge, MIT Press, 1981, pp. 215-239 (ss. 1, 2).

Kim, K., R.A. Buckle and V.B. Hall, "Key Features of New Zealand Business Cycles", *The Economic Record* Vol. 70, March 1994, pp. 56-72.

Hall, Viv B and C John McDermott, "Regional Business Cycles in New Zealand: Do they exist? What might drive them?", mimeo, November 2004

Crosby, M. and G. Otto, "Real Business Cycle Models: An Introduction", *The Australian Economic Review*, 3rd Quarter 1995, pp. 55-70.

Weeks 1 and 2: A Static Optimisation – Market Clearing Model of the Macroeconomy

Williamson (2005), Chs. 4, 5.

Weeks 2, 3, 4: An Intertemporal Optimisation – Market Clearing Model of the Macroeconomy

Williamson (2005), Chs. 8, 9.

Weeks 4, 5: A Monetary Intertemporal Model

Williamson (2005), Ch. 10.

McCandless, G. and W. Weber, “Some Monetary Facts”, *Federal Reserve Bank of Minneapolis Quarterly Review*, Summer 1995, pp. 2-11.

Week 5: Market Clearing Models of the Business Cycle

Williamson (2005), Ch. 11.

Lucas, R.E., “Understanding Business Cycles”, in Lucas, R E, *Studies in Business-Cycle Theory*, Cambridge, MIT Press, 1981, pp. 215-239.

Crosby, M. and G. Otto, “Real Business Cycle Models: An Introduction”, *The Australian Economic Review*, 3rd Quarter 1995, pp. 55-70.

Weeks 5, 6: The International Economy

Williamson (2005), Ch. 13.

Kim, Kunhong, Viv B. Hall, and Robert A. Buckle, “Consumption-smoothing in a small, cyclically volatile open economy: Evidence from New Zealand”, mimeo, 22 September 2004.

Otto, Glenn, “Can an Intertemporal Model Explain Australia’s Current Account Deficit?”, *The Australian Economic Review*, 36 (3), September 2003, pp. 350-359

Milesi-Ferretti, G. and A. Razin, “Persistent Current Account Deficits: a Warning Signal?”, *International Journal of Finance and Economics*, Vol. 1, 1996, pp. 161-181

Collins, S., F.N. De Simone, and D. Hargreaves, “The Current Account Balance: An Analysis of the Issues”, *Reserve Bank of New Zealand Bulletin*, Vol. 61 No. 1, March 1998, pp. 15-34. <http://www.rbnz.govt.nz/research/bulletin>

Week 6: Economic Growth

Williamson (2005), Chs. 6, 7.

Young, A., “The Tyranny of Numbers: Confronting the Statistical Realities of the East Asian Growth Experience”, *Quarterly Journal of Economics*, 110, 1995, pp. 641-680.

Bollard, Alan, "New Zealand's Potential Growth Rate", Address to Canterbury Employers' Chamber of Commerce, 28 January 2005. <http://www.rbnz.govt.nz/speeches>

Weeks 7 – 12 (Geoff Bertram's section) to come

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.

Class Representatives

A class representative will be chosen by course participants at the beginning of the course. Class reps play a vital role in the University community, liaising between staff and students to represent the interests of students to the lecturers, and liaising between VUWDSA and the class. If you are willing to put yourself forward for this position please advise the course coordinator.

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.

REFERENCE CHART

The Greek Alphabet and English Counterparts

<i>Greek</i>		<i>Name</i>	<i>English</i>	
<i>Upper Case</i>	<i>Lower Case</i>		<i>Upper Case</i>	<i>Lower Case</i>
A	α	alpha	A	a
B	β	beta	B	b
Γ	γ	gamma	C	c
Δ	δ	delta	D	d
E	ε	epsilon	E	e
Z	ζ	zeta	Z	z
H	η	eta	Y	y
Θ	θ	theta	-	-
I	ι	iota	I	i
K	κ	kappa	K	k
Λ	λ	lambda	L	l
M	μ	mu	M	m
N	ν	nu	N	n
Ξ	ξ	xi	X	x
O	ο	omicron	O	o
Π	π	pi	P	p
P	ρ	rho	R	r
Σ	σ	sigma	S	s
T	τ	tau	T	t
Υ	υ	upsilon	U	u
Φ	φ	phi	F	f
X	χ	chi	-	-
Ψ	ψ	psi	G	g
Ω	ω	omega	W	w

Macroeconomics: Growth, Cycles and Sustainability**TERMS TEST 1**

Time allowed: 60 minutes

Instructions: Answer TWO questions. All questions are of equal value.

1. Explain, and illustrate diagrammatically, how a classical business cycle differs from a growth cycle. Summarise briefly the relative advantages and disadvantages of using each type.

- 2.(a) State the Ricardian Equivalence Theorem, and in this context write down algebraically the representative consumer's lifetime budget constraint. Also in this context, illustrate diagrammatically and explain briefly, the effects on current consumption, future consumption, and savings, of a cut in current taxes for a borrower;
AND
(b) Using the two-period closed economy model of Williamson (2005), illustrate diagrammatically and explain briefly, the effects on current output, employment, the real interest rate and the real wage rate, of a permanent increase in government purchases.

3. (a) Using the monetary intertemporal model of Williamson (2005), illustrate diagrammatically and explain briefly, the effects on real output, employment, the real interest rate, the real wage rate and the aggregate price level, of a one-off decrease in the nominal money supply. State briefly whether the effects on the real variables are the same, for a decrease in the growth rate of the nominal money supply;
AND
(b) Set down algebraically in per-worker form, key equations for a Malthusian model of economic growth. Illustrate diagrammatically and explain briefly, the effects of state-ordered population control on the steady state levels of population, consumption per worker and land per worker, and on steady state population growth.

ECON 305 2005
Macroeconomic Theory

TERMS TEST 2

Answer any TWO questions.
All questions are of equal value.
Time Allowed: ONE HOUR.

1. Consider a firm which is an imperfect competitor in the goods market but a price-taker in the labour market. Why will it not be profit-maximising for this firm to offer employment along its marginal product of labour curve? If the firm is representative of the total population of firms in the economy, what are the consequences of this for the aggregate effective demand for labour? Construct a diagram of the labour market to illustrate your answer, and show why the labour demand curve will shift pro-cyclically.

2. (a) Explain the derivation of the GG and MM loci in the Findlay-Rodriguez model, accounting in particular for (i) their positive slopes in (e, p) space and (ii) why the region to the right of GG is one of excess demand for goods, while the region to the right of MM is one of excess supply of money; AND

(b) Use the model to predict the effect on output, the price level, the exchange rate, and the real wage, of a sharp fall in export demand.

3. EITHER:

(a) A striking long-run result from the IS-LM model is that a government which funds a budget deficit by selling bonds may trigger a cumulative spiral of rising government debt. Explain how this comes about, using the IS-LM-GT framework. How can an accelerating rightward drift of the GT locus be reversed?

OR:

(b) Use an IS-LM-BT diagram (or where appropriate, an IS-LM-BP diagram) to show the short-run effect on output of a monetary contraction under (i) a fixed exchange rate with zero capital mobility; (ii) a fixed exchange rate with free capital mobility; (iii) a floating exchange rate with zero capital mobility; and (iv) a floating exchange rate with free capital mobility. Explain the transmission of the shock through the model in each case.

4. In the fixprice closed-economy model of Malinvaud, it is possible for employment and the real wage to move in the same direction over the business cycle, provided that unemployment is “Keynesian”. In contrast, these two variables move in opposite directions over the cycle in a neoclassical-Keynesian synthesis model, while in a pure Classical model they do not move at all. Explain these divergent predictions, assuming that the business cycle is driven by aggregate effective demand.

EXAMINATIONS – 2005

MID YEAR

ECON 305

MACROECONOMICS: GROWTH, CYCLES AND SUSTAINABILITY

Time allowed: THREE HOURS

Instructions: Answer FOUR questions, TWO from Section A and TWO from Section B.

All questions are of equal value. Each question is worth 25 marks.

Non-programmable calculators are allowed.

SECTION A

1. Suggest four possible reasons why a country's total factor productivity (TFP) might change over time. Then, in the context of the one-period closed economy model of Williamson (2005), illustrate diagrammatically and explain the effects of an increase in TFP on the country's consumption, leisure, and aggregate standard of living. Comment on the extent to which taking a short run or long run perspective would affect the usefulness of this model to assist with business cycle analysis.
[25 marks]
2. Set down the key empirical business cycle regularities that Williamson (2005) suggests as reflecting movements in post-World War II consumption, investment, the price level, the money supply, employment, the real wage and average labor productivity in the U.S. Illustrate and explain the effects of an unanticipated increase in the money supply in a Friedman-Lucas Money Surprise Model, and the effects of a persistent increase in TFP in the closed economy real business cycle model of Williamson (2005). Assess which key regularities are not explained by each model, and suggest a model that might overcome these limitations.
[25 marks]

3. “Current account deficits in a country’s balance of payments need not be a bad thing”. (Williamson, 2005) Assess this view, in the context of small open economy intertemporal models advanced by Williamson (2005). Where relevant, make reference to key business cycle facts and other empirical evidence for the U.S. and New Zealand. **[25 marks]**
4. “In the data, there is evidence for conditional convergence among the richest countries of the world, but convergence does not appear to be occurring among all countries or among the poorest countries.” (Williamson, 2005) Assess the extent to which the Solow growth model and Williamson’s (2005) endogenous growth model with human capital accumulation, are consistent with these empirical observations. Comment briefly on whether your assessment for the Solow model is conditional on the ‘golden rule of capital accumulation’ being satisfied. **[25 marks]**

SECTION B

5. Several times during the second half of the ECON 305 course we have encountered problems of potential model instability, which have been resolved either by imposing limits on the range of values taken by key parameters, or by appealing to policy intervention by a benevolent and well-informed government. For any TWO of the following, describe the instability issue and explain how it has been neutralised:
- (a) A fiscal deficit arising from a permanent shock to government expenditure on final goods and services, and funded by the issuing of bonds;
 - (b) The economy’s aggregate marginal propensity to spend out of current income, and the associated income-expenditure multiplier;
 - (c) The Marshall-Lerner Condition;
 - (d) A liquidity trap;
 - (e) The sign on the partial derivative of investment with respect to the real interest rate.
- [25 marks]**
6. Consider an economy with a floating exchange rate and free international capital mobility, which relies on imports of intermediate goods. Using the Findlay-Rodriguez model, trace the effects that a negative monetary shock would be predicted to have on output, the exchange rate, and the balance of payments current account. **[25 marks]**
7. (a) Explain clearly the difference between “Keynesian” and “Classical” unemployment in Malinvaud’s model of the labour market. **[10 marks]**
- (b) In the bargained-real-wage model, explain the mechanism by which nominal wage inflation is triggered when unemployment falls below the NAIRU. **[5 marks]**
- (c) Explain why the CCE locus is downward-sloping in (y, θ) space. **[10 marks]**

8. Suppose the economy is open to trade but has a fixed exchange rate and zero capital mobility. Using the full AD/BT/CCE model,
- (a) explain the consequences of a negative monetary shock in this regime; **[10 marks]**
 - (b) show and describe how the outcome changes if the exchange rate is floated but capital remains immobile. **[15 marks]**
