

THE UNIVERSITY OF
NEW SOUTH WALES



SCHOOL OF ECONOMICS
ECON 2102 MACROECONOMICS 2
SESSION II, 2006

COURSE INFORMATION AND LECTURE SCHEDULE

Lecturer in Charge:

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**UNIVERSITY OF NEW SOUTH WALES
SCHOOL OF ECONOMICS
ECON2102 MACROECONOMICS 2
SEMESTER 2, 2006**

COURSE OUTLINE

1. TEACHING STAFF

Lecturer: Glenn Otto

Location: Room 116, John Goodsell Building

Phone No: 9385 3332

Email: g.otto@unsw.edu.au

Consultation Times - Tuesday 10-11 and Friday 10-12 (or by appointment).

The lecturer is responsible for the overall direction and content of the course. You should feel free to approach your lecturer about any academic matter. The best way to contact the lecturer is by email. However the best way to address any academic issue demanding more than a brief response is by attending consultation times.

Course Administrator: Xuan Vinh Vo

Location: Room 219, John Goodsell Building

Phone No: 9385 3398

Email: x.vo@unsw.edu.au

Any questions regarding administrative matters (such as your allocation to a tutorial group) should be directed to the Course Administrator. However, much of the information concerning administrative matters may also be obtained from the School of Economics Office on the second floor of the John Goodsell Building (JG 223 Ph. 9385 - 3335).

A list of tutors for the course will be published on the course website. Consultation hours will be posted on the course website as soon as they are available.

2. INFORMATION ABOUT THE COURSE

2.1 Units of Credit

The course is worth 6 units of credit.

Formal contact hours comprise a 2 hour lecture and a 1 hour tutorial.

2.2 Teaching Times and Location

Lecture: Tuesday 12-2 pm (Physics Theatre)

Tutorials: Enrolment in tutorials is via www.my.unsw.edu.au

Tutorials start in Week 3. Once enrolled, moving from one tutorial group to another will not be permitted unless you have compelling reasons. You should consult the Course Administrator about such matters.

2.3 Relationship with other Course Offerings

This course provides intensive training in macroeconomics at the intermediate level. The content builds on the introductory economics courses: ECON1101 Microeconomics 1 and especially ECON1102 Macroeconomics 1.

ECON2102 Macroeconomics 2 provides the foundation for undertaking more advanced study in macroeconomics at the third year, Honours and Masters levels.

2.4 Approach to Teaching and Learning

The philosophy underpinning this course and its Teaching and Learning Strategies (see 3.3 below) are based on “Guidelines on Learning that Inform Teaching at UNSW. These guidelines may be viewed at: www.guidelinesonlearning.unsw.edu.au.

3. COURSE AIMS AND OUTCOMES

3.1 Course Aims

The aim of this course is to provide a theoretical framework for understanding and analysing macroeconomic behaviour. Long-run and short-run issues in macroeconomics are considered. Topics include: economic growth, issues in fiscal policy, inflation, models of consumption and investment, aggregate demand and aggregate supply, monetary policy and models of the open economy. While the focus is on the development and understanding of macroeconomic models, an additional aim is to show how theory contributes to an understanding of current policy issues. Some of the empirical evidence that macroeconomists use to evaluate various economic models will be examined and students will have the opportunity to increase their familiarity with economic data.

3.2 Learning Outcomes

On completion of the course, students should be able to:

- Understand and explain the assumptions and structure of standard models in macroeconomics
- Analyze and manipulate simple versions of these such models
- Apply the models to interpret and analyze real problems in macroeconomics
- Have a good understanding of key institutions and important policy issues in the macro-economy

3.3 Teaching Strategies

The examinable content of the course is defined by the references given in the Lecture Schedule, the content of Lectures, and the content of the Tutorial Program.

Lectures

The purpose of lectures is to provide a logical structure for the topics that make up the course; to emphasise the important concepts and methods of each topic, and to provide relevant examples to which the concepts and methods are applied.

Tutorials

Tutorials are an integral part of the subject. They will be devoted to examining the structure of standard macroeconomic models of the economy and to learning how to analyze and interpret such models. They also provide an opportunity for small group discussion of issues to which economic concepts and methods can be applied, and to provide practice and feed-back in writing short essays addressing specific questions (e.g., the discussion questions).

A Tutorial Program of exercises and problems is provided for tutorial meetings. Students should attempt each set of weekly exercises. Solutions to the tutorial questions will be provided on the course website in the week following each tutorial.

Out-of-Class Study

While students may have preferred individual learning strategies, it is important to note that most learning will be achieved outside of class time. Lectures can only provide a structure to assist your study, and tutorial time is limited.

An “ideal” strategy (on which the provision of the course materials is based) might include:

1. Reading of the relevant chapter(s) of the text and accessing the lecture overheads from the subject website before the lecture. This will give you a general idea of the topic area.
2. Attendance at lectures. Here the context of the topic in the course and the important elements of the topic are identified. The relevance of the topic should be explained.
3. Attending tutorials and attempting the tutorial questions.

4. STUDENT RESPONSIBILITIES AND CONDUCT

4.1 Formal Requirements

It is expected that you will spend at least ten hours per week studying this course. This time should be made up of reading, research, working on exercises and problems, and attending classes.

Over-commitment has been a cause of failure for many students. You should take the required workload into account when planning how to balance study with employment and other activities.

4.2 Attendance

Your regular and punctual attendance at lectures and tutorials is expected in this course. University regulations indicate that if students attend less than eighty per cent of scheduled classes they may be refused final assessment.

4.3 General Conduct and Behaviour

You are expected to conduct yourself with consideration and respect for the needs of your fellow students and teaching staff. Conduct which unduly disrupts or interferes with a class, such as ringing or talking on mobile phones, is not acceptable and students

may be asked to leave the class. More information on student conduct is available at: www.my.unsw.edu.au

4.4 Keeping Informed

You should take note of all announcements made in lectures, tutorials or on the course web site. In particular you should check the subject website at least once a week. From time to time, the University will send important announcements to your university e-mail address without providing you with a paper copy. You will be deemed to have received this information.

5. ASSESSMENT

5.1 Formal Requirements

In order to pass this course, you must:

- achieve a composite mark of at least 50; and
- make a satisfactory attempt at all assessment tasks.

Mid-session Exam	20% (Tuesday 19 September – in lecture time)
Problem Sets	10%
Final Exam	70%

5.2 Mid-Session Examination

The mid-session exam will be held during the lecture time on Tuesday 19 September (Week 9). All students are expected to attempt the mid-session exam. The location and exact time of the mid-session will be announced in lectures and will be posted on the website.

The exam will cover lecture and tutorial material related to the topics covered in Weeks 1-5 inclusive, and will consist of twenty multiple choice questions.

The purpose of this assessment is to test knowledge of concepts and models, the ability to manipulate and analyse macroeconomic models and to use economic reasoning to make deductions.

There will be no supplementary exam offered for the Mid-Session Examination. Students who fail to attend the Mid-session Examination will need to apply for Special Consideration. Special Consideration applications must be made within 3 days of the Exam through NewsouthQ in the Chancellery. You will need to provide full documentation of the reason for the absence (e.g., illness). Employment obligations of any kind are not acceptable reasons for absence from any test/examination.

Those students whose request is granted for Special Consideration for the mid-session examination, will have their final mark re-weighted according to the weight of the missed piece of assessment.

5.3 Problem Sets

Students will be required to hand-in two problem sets based on the material that is covered in lectures and tutorials. The problem sets will be marked and are each worth 5% of the total marks.

Problem Set No 1: Due Tuesday 5 September at 4 pm

Problem Set No 2: Due Tuesday 3 October at 4 pm

Penalties for late submission: One mark will be deducted for each day late.

The purpose of these problem sets is to provide practice in applying macroeconomic concepts and models in a practical setting.

Further information on the problem sets will be provided in lectures.

5.4 Final Examination

This will be held in the University examination period (November/December) and will be 2 hours long. The final exam will cover the entire course. The format of the examination will be:

Part A: short-answer questions

Part B: longer essay type questions and/or problems

The purpose of the final exam is to test knowledge of concepts and models, the ability to manipulate and analyse macroeconomic models and to use economic reasoning to make deductions.

Further information on the content of the final exam will be provided towards the end of session.

5.5 Special Consideration and Supplementary Examination

A supplementary final examination *may* be offered to students who failed to attend the final examination for medical reasons, or whose performance during the final examination has been severely affected by illness, or other extraordinary circumstances that can be documented by the student. Supplementary examinations are not offered as a matter of course. The following conditions *must* be fulfilled before such an application to sit for a supplementary final examination will be considered:

- (i) the student's performance during the session (based on the student's tutorial assessment mark and mid-session exam mark) must be deemed to be at a satisfactory level by the lecturer-in-charge, and
- (ii) the student has applied for special consideration which is made through NewsouthQ within 3 days of the final examination, and the application is supported with full documentation.

Notes:

If a supplementary examination is granted, the format of that examination will be similar to that of the final examination.

Students who are granted a supplementary examination will be advised of the date of the supplementary exam as soon as possible, and students have the responsibility to make themselves available to sit for the supplementary exam on the date specified.

6. ACADEMIC HONESTY AND PLAGIARISM

The University regards plagiarism as a form of academic misconduct, and has very strict rules regarding plagiarism. For full information regarding policies, penalties and information to help you avoid plagiarism see:

www.my.unsw.edu.au/student/atoz/Plagiarism

Plagiarism is the presentation of the thoughts or work of another as one's own.* Examples include:

- direct duplication of the thoughts or work of another, including by copying work, or knowingly permitting it to be copied. This includes copying material, ideas or concepts from a book, article, report or other written document (whether published or unpublished), composition, artwork, design, drawing, circuitry, computer program or software, web site, Internet, other electronic resource, or another person's assignment without appropriate acknowledgement;
- paraphrasing another person's work with very minor changes keeping the meaning, form and/or progression of ideas of the original;
- piecing together sections of the work of others into a new whole;
- presenting an assessment item as independent work when it has been produced in whole or part in collusion with other people, for example, another student or a tutor; and,
- claiming credit for a proportion a work contributed to a group assessment item that is greater than that actually contributed.†

Submitting an assessment item that has already been submitted for academic credit elsewhere may also be considered plagiarism.

The inclusion of the thoughts or work of another with attribution appropriate to the academic discipline does *not* amount to plagiarism.

Students are reminded of their Rights and Responsibilities in respect of plagiarism, as set out in the University Undergraduate and Postgraduate Handbooks, and are encouraged to seek advice from academic staff whenever necessary to ensure they avoid plagiarism in all its forms.

The Learning Centre website is the central University online resource for staff and student information on plagiarism and academic honesty. It can be located at:

www.lc.unsw.edu.au/plagiarism

The Learning Centre also provides substantial educational written materials, workshops, and tutorials to aid students, for example, in:

- correct referencing practices;

- paraphrasing, summarising, essay writing, and time management;
- appropriate use of, and attribution for, a range of materials including text, images, formulae and concepts.

Individual assistance is available on request from The Learning Centre.

Students are also reminded that careful time management is an important part of study and one of the identified causes of plagiarism is poor time management. Students should allow sufficient time for research, drafting, and the proper referencing of sources in preparing all assessment items.

* Based on that proposed to the University of Newcastle by the St James Ethics Centre. Used with kind permission from the University of Newcastle

† Adapted with kind permission from the University of Melbourne.

7. STUDENT RESOURCES

7.1 Course Website

The website for this course can be found at two locations:

www.vista.elearning.unsw.edu.au

and

www.economics.unsw.edu.au/COURSES/ECON1104/Econ2102/

The Website contains copies of the course outline; lecture slides; the tutorial program; tutorial solutions; mid-session exam marks; and any announcements.

Students should consult this website at least once a week as it contains important information about the course. It will be assumed that all students have seen any notice posted on the course website.

7.2 Textbook and References

The textbook for this subject is

Mankiw, G. (2006), *Macroeconomics*, 6th Edition, Worth Publishers.

The 5th edition of the book is also suitable.

The examinable content of the textbook is defined by the Lecture Schedule and the Tutorial Program.

Additional References

Students may find the following textbooks useful for some parts of the course.

Blanchard, O., Sheen J., *Macroeconomics* Australasian Edition, Pearson, Prentice Hall, 2004.

Sachs, J. and F. Larrain, *Macroeconomics in the Global Economy*, Harvester Wheatsheaf, 1993.

Wells, G., *Macroeconomics*, Nelson, 1995.

7.3 Other resources, support and information

The University and the Faculty provide a wide range of support services for students, including:

- Learning and study support;
- Counselling support;
- Library training and support services;
- Disability support services;

Educational Development Unit

Additional learning support, tailored to the needs of FCE students, is available from the Education Development Unit (EDU) in the Faculty. The EDU offers a range of services for FCE students including: academic skills workshops run throughout the session; printed and on-line study skills resources e.g. referencing guide, report writing and exam preparation; a drop-in resource centre containing books and audio visual material that may be borrowed; a limited consultation service for students with individual or small group learning needs.

More information about the EDU services including on-line resources, workshop details and consultation request forms are available from the EDU website.

Contacts and location:

EDU Web: <http://education.fce.unsw.edu.au>

EDU Location: Room 2039, Level 2 Quadrangle Building

EDU services are free and confidential and are available to students of the Faculty of Commerce and Economics.

Other UNSW Support

In addition to the EDU services, the UNSW Learning Centre provides academic skills support services for students. The Learning Centre is located on Level 2 of the Library and can be contacted by Phone: 9385 3890 or through their website: www.lc.unsw.edu.au

Students experiencing problems of an academic or personal nature are encouraged to contact the Counselling Service at UNSW. This service is free and confidential and run by professional counsellors. The Counselling Service is located on Level 2, Quadrangle East Wing, and can be contact on 9385 5418.

Those students who have a disability that requires some adjustment in their teaching and learning environment are encouraged to discuss their study needs with the Lecturer in Charge or with the Equity Officer (Disability) prior to, or at the commencement of, their course. The Equity and Diversity Unit can be contacted through 93854734 or

www.equity.unsw.edu.au/disabil.html .

Students should be aware of Faculty Occupational Health and Safety policies and expectations. See

www2.fce.unsw.edu.au/nps/servlet/portalservice?GI_ID=SystemLoggedOutInheritableArea&maxWnd= Staff Info OHS

8. CONTINUAL COURSE IMPROVEMENT

Each year feedback is sought from students and other stakeholders about the courses offered in the School and continual improvements are made based on this feedback.

UNSW's Course and Teaching Evaluation and Improvement (CATEI) Process (http://www.ltu.unsw.edu.au/ref4-5-1_catei_process.cfm) is one of the ways in which student evaluative feedback is gathered.

9. LECTURE TOPICS AND SCHEDULE

Part 1: The Economy in the Long Run

Week 1 (25 July): Long Run Model - Closed Economy

We develop a model for the closed economy in the long run. Prices are assumed to be fully flexible. The key relative price is the real interest rate.

Mankiw: Chapters 1,2 & 3

Week 2 (1 August): Long Run Model – Small Open Economy

The long run model is extended to account for international trade in capital and goods. The role of a new relative price – the real exchange rate – is examined.

Mankiw: Chapter 5

Week 3 (8 August): Economic Growth

Introduces the fundamental model for explaining economic growth – the Solow-Swan model.

Mankiw: Chapter 7

Week 4 (15 August): More Economic Growth

What is the role of technological change in explaining economic growth? Growth accounting. Endogenous growth theory.

Mankiw: Chapter 8

Week 5 (22 August): Money and Inflation

What is the relationship between money and inflation in the long run? Nominal and real interest rates - the Fisher effect. What are social costs of fully anticipated inflation?

Mankiw: Chapter 4

Part 2: The Economy in the Short Run – Business Cycle Fluctuations

Week 6 (29 August): Consumption and Investment

Consumption and investment expenditure are two key components of aggregate demand. We consider various theories that seek to explain these two variables.

Mankiw: Chapters 16 & 17

Week 7 (5 September): Aggregate Demand - Closed Economy

We develop the IS-LM model. This is a standard model for explaining short run fluctuations in output and the effects of monetary and fiscal policy.

Mankiw: Chapters 9, 10 & 11

Week 8 (12 September): Aggregate Demand – Open Economy

We develop the Mundell-Fleming Model with perfect capital mobility. This is the traditional model for explaining short run fluctuations in output in small open economies and the effects of monetary and fiscal policy.

Mankiw: Chapter 12

Week 9 (19 September): Mid-Session Exam (Held during lecture time)

This is a one hour exam that consists of 20 multiple choice questions. It covers the lecture and tutorial material related to Weeks 1 to 5 (inclusive).

Week 10 (3 October): Aggregate Supply

Theories of the short run aggregate supply curve. Inflation and unemployment – the Phillips curve.

Mankiw: Chapter 13

Week 11 (10 October): Monetary Policy

Central bank operating procedures for implementing monetary policy. A New Keynesian policy model.

Mankiw: Chapter 14 and Lecture Notes

Week 12 (17 October): More Monetary Policy

Interest rate rules – the Taylor Rule. Optimal monetary policy.

Mankiw: Lecture Notes

Week 13 (24 October): Fiscal Policy

Theories of public debt. Traditional views versus Ricardian views.

Mankiw: Chapter 15

Week 14 (31 October): Review

10. TUTORIAL PROGRAMME

The tutorial questions are from the 6th edition of Mankiw. However I have also indicated the corresponding question in the 5th edition of Mankiw, when there is any difference.

TUTORIAL 1 (Week 3: beginning 7 August)

Question 1

Consider an economy in the long run that is described by the following equations:

$$\begin{aligned}Y &= C + I + G \\Y &= 5000 \\G &= 1000 \\T &= 1000 \\C &= 250 + 0.75(Y-T) \\I &= 1000 - 50r\end{aligned}$$

- In this economy, compute private saving, public saving and national saving.
- Find the equilibrium interest rate.
- Now suppose that G increases to 1,250. Compute private saving, public saving and national saving.
- Find the new equilibrium interest rate.

Question 2

Chapter 3, Problem 5 (Problem 3 in 5th edition)

Question 3

Use the long run model to examine the effect of an increase in taxes of \$100 billion. If the marginal propensity to consume is 0.6, what happens to the following?

- Public saving
- Private saving
- National saving
- Investment.

Question 4

Chapter 3, Problem 6 (Problem 2 in the Appendix in 5th edition)

TUTORIAL 2 (Week 4: beginning 14 August)

Question 1

Explain the difference between the nominal and the real exchange rate. In the December quarter 2005 the US CPI was 129.8 and the Australian CPI was 129.0. What was the value of the real \$A/\$US exchange rate if the nominal exchange rate $\$A/\$US = 0.7337$?

Question 2

Go to the Dell Corporation <http://www.dell.com/> website. Choose a piece of computer equipment eg. a particular Notebook. You should try and choose a model that is common to the following countries – Australia, United Kingdom, United States, New Zealand, Ireland and Canada. Use current exchange rates to convert the price of the good into Australian dollars. You can get the relevant exchange rates from <http://www.xe.com/ucc/>

Does the law of one price hold for your particular good. If it does not, why might this be the case?

Question 3

Chapter 5, Problem 2

Question 4

Short-term interest rates are currently about 5.50 percent per year in Australia and about 4.50 percent per year in the US. Suppose that real interest rates are equalised in the two countries and PPP holds.

- (a) Use the Fisher equation to infer the expected difference in inflation rates for Australia and US.
- (b) What can you infer about the expected change in the exchange rate between the Australian dollar and the US dollar?
- (c) Your bank manager proposes a get-rich-quick scheme: borrow from a US bank, deposit the money in an Australian bank and in a year you should make a profit of about 1 percent. What should you tell your bank manager?

Question 5

Examine the effect on net exports and the real exchange rate of an investment boom in a small open economy like Australia.

TUTORIAL 3 (Week 5: beginning 21 August)

Question 1

The Swan-Solow growth model without technical progress can be represented by the following equation,

$$\Delta k = sf(k) - (\delta + n)k$$

- (a) Explain in words what the above equation means and represent it on a diagram.
- (b) What is meant by the concept of the steady-state or balanced growth, in this model?
In the steady-state with no technological progress, what is the growth rate of output per-worker.
- (c) Can the empirical observation that output per-worker increases over time be explained by this model?

Question 2

Chapter 7, Problem 1

Question 3

Chapter 7, Problem 3

Question 4

Chapter 7, Problem 7

TUTORIAL 4 (Week 6: beginning 28 August)

Question 1

Suppose the production function in the Swan-Solow model is

$$y = \sqrt{k} .$$

- (a) Solve for the steady-state value of y as a function of s , n , g and δ .

- (b) A developed country has a saving rate of 28 percent and a population growth rate of 1 percent per year. A developing country has a saving rate of 10 percent and a population growth rate of 4 percent per year. In both countries, $g = 0.02$ and $\delta = 0.04$. Find the steady-state value of y for each country.
- (c) What policies might the developing country pursue to raise its level of income?

Question 2

Suppose that the production function in the Swan-Solow growth model does not exhibit diminishing marginal returns to capital. Instead the production function is

$$y = Ak$$

where A is a positive constant.

- (a) Show that this production function implies that the marginal product of capital is a constant.
- (b) Show that, in this case, a higher saving rate leads to a permanently higher growth rate.
- (c) Why does this conclusion differ from the standard Swan-Solow model?

Question 3

Chapter 8, Appendix Problem 2

TUTORIAL 5 (Week 7: beginning 4 September)

Question 1

What does the Baumol-Tobin model predict about how often *you* go to the bank to withdraw cash?

- (a) How much do you buy per year using currency? This is your value of Y .
- (b) How long does it take you to go to the bank? What is your hourly wage? (If zero, estimate the opportunity cost of your time). Use these figures to compute your value of F .
- (c) What interest rate do you earn on the money you leave in your bank account? This is your value of i . (Note that you should write 6% as 0.06).
- (d) According to the Baumol-Tobin model how many times should you go to the bank each year and how much should you withdraw each time?
- (e) In practice how often do you go to the bank and how much do you withdraw?
- (f) Compare the predictions of the Baumol-Tobin model to your behaviour. Does the model describe how you actually behave? If not, how might you change the model to make it a better description of your behaviour?

Question 2

Explain the difference between nominal and real interest rates. According to the Fisher effect what is the relationship between inflation and nominal interest rates. It is sometimes claimed that the current low level of interest rates is bad for lenders (or savers) relative to the 1980s when interest rates were much higher. What do you think about such a claim?

Question 3

Chapter 4, Problem 8

Question 4

Chapter 4, Problem 9

TUTORIAL 6 (Week 8: beginning 11 September)

Question 1

Chapter 16, Problem 2

Question 2

Use Fisher's model of consumption to analyse an increase in second-period income. Compare the case in which the consumer faces a binding borrowing constraint and the case in which they do not.

Question 3

Explain the permanent income hypothesis. Explain why changes in consumption are unpredictable if consumers obey the permanent income hypothesis and have rational expectations.

Question 4

Chapter 17, Problem 1

Question 5

Suppose a firm wishes to buy 100 units of capital at a cost of \$5 per unit. The nominal interest rate is 10% per annum and the physical depreciation rate for capital is 5% per annum. At the end of the year the per unit cost of capital is \$5.40.

- What is the net cost to the firm of buying 100 units of capital for the year?
- Express the net cost in per dollar terms of the initial capital outlay.
- Use the standard formula to obtain the rental (or user cost) of capital. Explain the difference between your answers to (a) and (c).

TUTORIAL 7 (Week 9: beginning 18 September)

No tutorials this week due to mid-session exam on Tuesday 19 September.

TUTORIAL 8 (Week 10: beginning 2 October)

Question 1

Chapter 9, Problem 3

Question 2

Chapter 10, Problem 3

Question 3

Chapter 10, Problem 5

Question 4

Use the IS-LM model to predict the effects of the following shocks on income, the interest rate, consumption and investment. In each case explain what the Reserve Bank could do to stabilize output.

- After the development of a new computer chip, a large number of firms decide to upgrade their computer systems.
- A growing aversion to banks and bank charges increases the frequency with which people use cash to make transactions.
- Increased uncertainty about the future leads people to increase the percentage of their income they save.

Question 5

Consider the following model economy.

$$C = 200 + 0.75(Y-T)$$

consumption function

$$I = 200 - 25r$$

$$(M/P) = Y - 100i$$

investment function

money demand function

Government purchases and taxes are both 100. The money supply M is 1000 and the price level is 2.

- Find the equilibrium interest rate r and the equilibrium level of income. Illustrate this equilibrium on a diagram.
- Derive and graph an equation for the aggregate demand curve. What happens to the aggregate demand curve if G and M are changed?

TUTORIAL 9 (Week 11: beginning 9 October)

Question 1

Chapter 11, Problem 7

Question 2

Chapter 11, Appendix Problem 1

Question 3

Use the Mundell-Fleming model to predict what will happen to aggregate income, the exchange rate and the trade balance under both floating and fixed exchange rates, in response to the following shocks.

- an exogenous increase in private saving
- an exogenous increase in import demand
- the introduction of EFPOS reduces the demand for money.

Question 4

In the Mundell-Fleming model, explain why the equilibrium level of output and the interest rate are not affected by a change in government expenditure when the exchange rate is flexible. Does the trade balance worsen or improve as a result of the increase in government spending?

Question 5

The Mundell-Fleming model takes the world interest rate r^* as an exogenous variable. Consider what happens when this variable changes.

- What might cause the world interest rate to rise?
- What happens to income, the exchange rate and the trade balance when world interest rates rise?

TUTORIAL 10 (Week 12: beginning 16 October)

Question 1

Chapter 13, Problem 3

Question 2

What is the rational expectations hypothesis? Do you think it is a good model of how people actually form their expectations of future variables? What other assumptions about expectations might be used?

Question 3

Assume that people have rational expectations and the economy is described by the sticky-wage model. Explain why each of the following propositions is true:

- Only unanticipated changes in money supply affect real output. Changes in the money supply that were anticipated when wages were set do not have any real effects.

- (b) If the Reserve Bank chooses the money supply at the same time as people are setting wages, so that everyone has the same information about the state of the economy, then monetary policy cannot be used systematically to stabilize output. Hence a policy of keeping the money supply constant will have the same real effects as a policy of adjusting the money supply in response to the state of the economy. (This is called the *policy irrelevance proposition*).

Question 4

Some economists believe that taxes have an important effect on labour supply. They argue that higher taxes cause people to work less and lower taxes cause them to work more. Consider how this effect alters the standard macroeconomic analysis of tax changes.

- How does a tax cut affect the aggregate demand curve?
- How does a tax cut affect the long-run aggregate supply curve and the short-run aggregate supply curve?
- What is the short and long-run impact of a tax cut on output and the aggregate price level?

TUTORIAL 11 (Week 13: beginning 23 October)

Question 1

To obtain the New Keynesian IS curve we started with a consumer's optimal consumption problem. We can use the method of Lagrange multipliers to solve this optimisation problem.

$$U(C_1, C_2) = \log C_1 + \log C_2 \quad - \text{Utility}$$

$$C_1 + \frac{C_2}{1+r} = Y_1 + \frac{Y_2}{1+r} \quad - \text{Budget constraint}$$

The Lagrangian for this problem is given by

$$L(C_1, C_2, \lambda) = \log C_1 + \log C_2 + \lambda \left(Y_1 + \frac{Y_2}{1+r} - C_1 - \frac{C_2}{1+r} \right)$$

- (a) Obtain the first-order conditions for the above function by computing the following partial derivatives and setting them to zero;

$$\frac{\partial L(C_1, C_2, \lambda)}{\partial C_1} = 0$$

$$\frac{\partial L(C_1, C_2, \lambda)}{\partial C_2} = 0$$

$$\frac{\partial L(C_1, C_2, \lambda)}{\partial \lambda} = 0$$

- Use the first order conditions to show that in equilibrium consumption must satisfy $C_2 = (1+r)C_1$.
- Take logs of the above equation and show that *ceteris paribus* (log) consumption in period one is negatively related to the real interest rate (use the approximation $\log(1+r) \approx r$).
- Finally suppose that $\log Y_1 = \log C_1 + \log I_1$. Derive the New Keynesian IS curve.

Question 2

Use the formula on page 422 of Chapter 14 and the data in the Excel file *Tayloroz.xls* on the course website to compute a Taylor rule for the Australian cash rate. Use Excel to graph the nominal cash rate against the Taylor rule.

- How closely do the two series match?
- What explanations can be given for the divergence between the two series around the time of the 1990 recession?

Question 3

What is meant by the “time inconsistency” of economic policy? Why might governments be tempted to renege on announcements they made earlier? In this situation, what is the advantage of a policy rule?

TUTORIAL 12 (Week 14: beginning 30 October)

Question 1

According to the Keynesian view, how does a debt-financed tax cut affect public saving, private saving and national saving? According to the Ricardian view how does a debt-financed tax cut affect public saving, private saving and national saving?

Question 2

Suppose a tax cut is financed by the sale of bonds to the non-bank public. Assume consumers are rational, forward-looking and make intertemporal choices. How would consumers who face binding borrowing constraints respond to the tax cut?

Question 3

The *cyclically adjusted budget deficit* is the budget deficit corrected for the effects of the business cycle. Some economists have proposed the rule that the cyclically adjusted budget deficit always be balanced. Compare this to a strict balanced-budget rule. Which is preferable? What problems do you see with the rule requiring a balanced cyclically adjusted budget?

Question 4

Here is a simple model of the behaviour of the debt to income ratio for an economy.

Let the *debt-income ratio* $= d = \frac{D}{PY}$ where D is the nominal stock of debt outstanding, PY is nominal income.

- (a) Show that the change in the debt-income ratio Δd is given by

$$\Delta d = \frac{\Delta D}{PY} - d \left(\frac{\Delta P}{P} + \frac{\Delta Y}{Y} \right)$$

[Hint use the following result from calculus: $\Delta \left(\frac{D}{PY} \right) \approx \frac{\Delta D}{PY} - \frac{D}{PY^2} \Delta Y - \frac{D}{P^2 Y} \Delta P$]

- (b) Now ΔD is just the budget deficit/surplus. We can decompose this into interest payments on government debt (iD) plus the non-interest budget deficit/surplus $B\tilde{S}$.

$$\Delta D \equiv iD - B\tilde{S}$$

Show that we can write Δd as follows

$$\Delta d = id - b\tilde{s} - d(\pi + y)$$

where $b\tilde{s} = \frac{B\tilde{S}}{PY}$, $\pi = \frac{\Delta P}{P}$ and $y = \frac{\Delta Y}{Y}$

(c) Finally define the real interest rate as $r = i - \pi$ and show that

$$\Delta d = d(r - y) - b\tilde{s}$$

(d) Use the above equation to explain what factors influence whether or not a country's debt to income ratio is rising, falling or constant.