ECON332
Econometric Models
Second Semester, 2011

UNIT OUTLINE

Department of Economics
The purpose of this unit is to provide economics and econometrics students with an overview of the major types of economy-wide econometric models used in practice. At least two major Australian econometric models, one macro-based and one micro-based, are discussed in detail.

Topics include: A taxonomy of economy-wide macroeconometric models from Klein to Johansen; the solution of linear and non-linear systems; multiplier analysis in linear and non-linear models; model simulation; policy analysis; the Orani model; the Monash Model; the Murphy model; the Access Economics Model (AEM), and the Treasury Model of the Australian Economy (TRYM).

Familiarity with matrix algebra is desirable, but not essential. Model simulations are implemented using an econometric computer package.

Prerequisites

Students must have obtained a Pass grade (i.e. a grade of PC or better) in:

1. ECON200 or ECON201 or ECON203 or ECON204, and
2. ECON141, or ECON241, or 3 credit points from STAT270 - STAT272.

ECON332 Web-Site

The login page for the Blackboard web-site for this unit can be found at: http://learn.mq.edu.au/. Note: This web address is case sensitive.
References:

There is no text-book for the unit. Core references for topics covered in the unit are given below. References for preliminary and background readings, introductory matrix algebra, and other additional reference sources are provided on the next two pages. However, it is not intended that students should attempt to assimilate the material in the those additional references independently of guidelines which will be laid down in the lectures.

Core References:


(4) Murphy, C.W.
The Macroeconomics of a Macroeconometric Model
ECONTECH, 1990

(5) Murphy, C.W.
The Model in Detail
ECONTECH, 1990

(6) Murphy, C.W.
Murphy Model of the Australian Economy
User’s Guide for version 2.0
ECONTECH, 1990

(7) Powell, A.A. & C.W. Murphy
INSIDE A MODERN MACROECONOMETRIC MODEL:
A GUIDE TO THE MURPHY MODEL
Springer-Verlag, 1995

Note:

References (1), (3) and (4) above are the major examinable references for the unit.
References for Preliminary and Background Reading (See page 6.):

(8) Pindyck, R.S. and R.L. Rubinfeld

(9) Wynn, R.F. & K. Holden
AN INTRODUCTION TO APPLIED ECONOMETRIC ANALYSIS
The Macmillan Press, 1974

Introductory Matrix Algebra References (See page 6.):


Additional References:


(23) Whiteley, J.D., A COURSE IN MACROECONOMIC MODELLING AND FORECASTING, Harvester/Wheatstead, London Business School, 1994

(24) Klein, L.R., A. Welfe and W. Welfe, PRINCIPLES OF MACROECONOMETRIC MODELING, North-Holland, 1999
Preliminary Reading:

The book by Challen & Hagger, the first item on the list of references, has been used previously as a textbook for ECON332. It is now somewhat dated, and the unit now places greater emphasis on the actual models themselves than is the case in the book. (It is now out of print.) However, chapter one in Challen & Hagger has a very good overview of economy wide models classified into various types. This classification is still relevant and an interesting way of looking at the whole area.


Policy simulation using economy wide models is discussed extensively in ECON332. Along with forecasting, policy simulation is the major reason why economy wide models are constructed. The policy simulation aspects are more important and arguably more reliable than the forecasting aspects, but the two are very closely related.

Another very good introductory book is the book by Wynn R.F. and K. Holden (listed in the references, on page 4). This book was written in 1974, so it also is dated, but it has an extremely good introduction to economy wide econometric modelling. The entire book is worth reading. The first half of the book is devoted to particular sectors of the economy, Production, Investment and Wages and Prices. The second half, i.e. chapters 5 & 6, is devoted to early examples of major economy wide models, forecasting and multiplier analysis. Multiplier analysis is more general than policy simulation and is also discussed extensively in ECON332. If you don't have time to read the whole book, it is recommended that you read at least chapters 5 & 6.

Finally, if you need a basic introduction to Matrix Algebra, the last half (pages 189-314) of the book by D.E. James & C.D. Throsby, INTRODUCTION TO QUANTITATIVE METHODS IN ECONOMICS, is very good. Matrix Algebra is not essential for ECON332 but much of the literature in econometric modelling uses matrix algebra, so it is helpful to have had some exposure to it. Matrix algebra is avoided as much as possible in lectures and tutorials, and it is not examinable in ECON332, but, unfortunately, it is used in some of the key references because it is a very efficient technique for dealing with linear systems of equations. The major focus in ECON332 is not on linear systems of equations, it is on non-linear systems of equations, but it is often useful to discuss various aspects of systems modelling in the context of a linear system before moving on to the discussion of those aspects in the context of non-linear systems. This is the approach taken in ECON332.
Class Arrangements:

There will be a three hour lecture/tutorial each week. Tutorials will normally be conducted in the last hour, but not necessarily.

In week 2, and again in week 5, if required, a computing practical will replace the lecture/tutorial during the last hour.

Lecture/Tutorials: Thursday 6 - 9 pm, E7B-164
Computing Practicals: Thursday 8 - 9 pm, E4B-206
(Weeks 2 and 5 only)

If required, a computing practical will also be held from 8 till 9 pm in Week 8.

Computing Software:

Students will be required to use the Econometric Computing software SHAZAM (Version 10) for tutorial exercises and for the Within-Semester Project. Instruction in the use of SHAZAM commands will be provided in Lectures and in the Computing Practicals. Students will be able to download and install a copy of the SHAZAM (Version 10) software on their home computer or laptop. Computing is not examinable in the End-of-Semester (Final) Examination.

Workload:

Students are expected to devote at least nine hours each week to ECON332, including attendance at Lectures, Tutorials and Computing Practicals.

Topics (Second Semester, 2011):

Weeks 1 – 5  Multiplier Analysis in Non-linear models
Weeks 6 – 9  The Murphy Model (and the Access Economics AEM Model)
Weeks 10 – 12 The Orani Model (and the MONASH Model)
Week 13 Exam Briefing and Review
Assessment:

(a) Week Two Tutorial Test.
(b) A major (computer-based) Project.
(c) A three hour written End-of-Semester (Final) Examination

The Week Two Tutorial Test has a weight of zero% in determining final grades.
The Project has a weight of 40%.
The End-of-Semester Examination has a weight of 60%.

Week Two Tutorial Test:

The University’s Examinations Policy stipulates that the assessment for every
unit must include a low-risk diagnostic component before the end of the fourth
week of the semester. The first two tutorial exercises in ECON332 are
diagnostic tasks designed to assist students decide if they have the required
level of competence and confidence with mathematics to continue with the unit,
or withdraw. To comply with the University’s Examinations Policy, students will
be required to submit their worked solutions for the Week Two Tutorial Exercise
to the Lecturer at the start of the Week 3 Lecture at 6 pm on Thursday 19th
August. The solutions will be marked and returned before the end of Week 4.
Although the Test has a “low-risk” weight of zero% in the overall assessment for
the unit, and there is no penalty for non-submission, it is highly recommended
that students participate in the Test.

Project:

The Project will be in two parts, Part A and Part B.
Part A has a weight of 10%. Part B has a weight of 30%.

The deadline for submission of Part A of the Project is 4:00 pm on Friday 7th
October, (Week 8).
The deadline for submission of Part B of the Project is 4:00 pm on Friday 4th
November, (Week 12).

Both parts of the Project must be submitted in the ECON332 box located in the
FBE Student Services Centre (BESS), in E4B-106.

End-of-Semester Examination:

The format for the End-of-Semester (Final) examination is provided on the
second page of the Appendix. Additional exam preparation guidelines will be
provided on the ECON332 web-site on Blackboard.
Learning Outcomes and Graduate Capabilities:

In addition to learning objectives specific to individual units, all academic programs at Macquarie assist students develop generic skills.

In this unit students develop and enhance the following capabilities:

1. Discipline Specific Knowledge and Skills
2. Critical, Analytical and Integrative skills
3. Problem Solving and Research skills
4. Effective Communication skills
5. Social and Environmental Awareness
6. Self-motivated and self-directed continuous learning

ECON332 Discipline Specific Knowledge and Skills

The ability to:

a. Understand existing economic theories
b. Apply economic theories to practical situations or problems
c. Critically evaluate competing economic theories
d. Develop new theories based on the critical evaluation of existing economic theories
e. Build illustrative examples of economy-wide econometric models
f. Use estimated economy-wide econometric models for policy simulation
g. Examine real world issues from an economic perspective

Link with Research and Research Practice

This unit gives students the opportunity to apply research skills and research procedures in a major assessable computer-based project.
Unit Convenor and Lecturer: Roger Tonkin  
Room: E4A-408  
Phone: 9850-8494  
Email (Gmail): roger.tonkin@mq.edu.au  

ECON332 students are requested to use the Mail facility on the ECON332 web-site on Blackboard to send emails to the Unit Convenor about any ECON332 matter, rather than the Macquarie University official Gmail address.

Office Consultation Hours:  
Tuesday 4 pm – 6 pm  
Wednesday 4 pm – 6 pm  
Friday 4 pm – 6 pm (By appointment only)  
(Other times by appointment)  

Please note that the scheduled Consultation Hours may be subject to change at short notice. Any changes will be notified on Blackboard.

Roger Tonkin  
Unit Convenor & Lecturer  
3rd August, 2011
APPENDIX

Format of the End-of-Semester (Final) Examination
University Policy on Examination Attendance
Plagiarism, and the University’s Policy on Academic Honesty
Grades, and Standardised Numerical Grades (SNGs)
Special Consideration, and Supplementary Assessment
Exam Script Viewing, Grade Reviews, and Grade Appeals
IT Conditions of Use
Student Support Services
Format of the End-of-Semester (Final) Examination

The examination will consist of five (5) questions. Students are required to attempt each question.

Questions will be of equal value.

Answers are to be in essay form. Students may use equations and mathematical arguments in their answers if they wish, but they will not be required to produce mathematical proofs or derivations.

SHAZAM computing commands and procedures are not examinable in the End-of-Semester Examination.

The following is a list of major examinable topics:

2. The Newton-Raphson procedure for solving a nonlinear system of equations.
3. Multiplier Analysis in linear econometric systems.
4. Multiplier Analysis in nonlinear econometric systems.
5. The (stylised) Murphy model: structure, features, characteristics, uses, limitations, advantages and disadvantages.
6. The (stylised) Orani model: structure, features, characteristics, uses, limitations, advantages and disadvantages.
University Policy on Examination Attendance

Students are expected to attend the End-of-Semester examination at the time and place designated in the University Examination Timetable. The timetable will be available in draft form approximately eight weeks before the commencement of the examinations and in final form approximately four weeks before the commencement of the examinations. The Draft and Final Examination Timetables will be available at:
http://www.timetables.mq.edu.au/exam

It is Macquarie University policy not to set special early examinations for particular individuals or groups of students. **All students are expected to ensure that they are available for examinations until the end of the teaching semester; that is, until the final day of the official examination period.**

Supplementary examinations for second semester units are normally scheduled during the period between the release of grades and the last week of December.

If a student is granted a Supplementary Examination but does not attend the examination on the scheduled date, the student will be given a grade of FA for the unit.

Plagiarism, and the University’s Policy on Academic Honesty

Plagiarism involves using the work of another person and presenting it as one’s own. Plagiarism is a serious breach of the University’s rules and carries significant penalties. For a the University’s definition of Plagiarism, see page 17 of the Macquarie University 2011 Handbook of Undergraduate Studies. Students are required to ensure they read and understand the definition and discussion of plagiarism which can be found on the University web-site at:
http://www.student.mq.edu.au/plagiarism/

The Universities policy on plagiarism and academic honesty can be found by clicking on the above link. The policy explains what plagiarism is, how to avoid it, the procedures that will be taken in cases of suspected plagiarism, and the penalties if you are found guilty. Penalties may include a deduction of marks, failure in the unit, and/or/referral to the University Discipline Committee.
Grades, and Standardised Numerical Grades

At the completion of all of the components of assessment for each unit, students at Macquarie University are awarded a descriptive grade (HD - High Distinction, D - Distinction, Cr - Credit, P - Pass, or F- Fail), and a standardised numerical grade (SNG).

Grade descriptors and other information concerning grades are contained in the Macquarie University Grading Policy which is available at: http://www.mq.edu.au/policy/docs/grading/policy.html

Grades in ECON332 are based solely on academic merit. The raw marks (i.e. the total of the marks received for each component of assessment) are used to construct a list of the results for all of the students in the unit in order of merit. Descriptive grades are determined from this list on the basis of the Unit Convenor’s assessment of the minimum level of academic performance that must be achieved for each of the descriptive grades.

Standardised numerical grades may be identical to the raw marks. However, it is usually necessary to determine the standardised numerical grades by scaling the raw marks appropriately.

Scaling is deemed necessary by the University Senate to ensure that the numerical results are comparable across all of the units offered by the university. Students who are awarded a High Distinction (HD) must receive an SNG between 85 and 100, students who are awarded a Distinction (D) must receive an SNG between 75 and 84, students who are awarded a Credit (CR) must receive an SNG between 65 and 74, students who are awarded a Pass (P) must receive an SNG between 50 and 64, students who are awarded a Pass Conceded (PC) must receive an SNG between 45 and 49, and students who are awarded a Fail (F) must receive an SNG between 0 and 44.

The process of scaling does not change the order of merit among students. A student who receives a higher raw mark than another student will also receive a higher SNG.

Grades at Macquarie University are NOT required to fit a predetermined distribution. It is technically possible, but unlikely, for every student to be awarded a High Distinction. It is technically possible, but unlikely, for every student to be awarded a Fail. The Unit Convenor is required to provide an explanation to the University Senate if more than 20% of students fail the unit.

For a definition of Standard Numerical Grade see page 18 of the Macquarie University 2011 Handbook of Undergraduate Studies.
Special Consideration, and Supplementary Assessment

Students who are prevented by serious illness or unavoidable disruption from completing a component of the assessment for the unit may submit a request for Special Consideration to have those circumstances taken into account in determining their final grade.

If Special Consideration is granted with respect to the ECON332 End-of-Semester (Final) Examination, the student may be required to sit for a Supplementary Examination.

If Special Consideration is granted with respect to the Part A or Part B of the Assignment, the weights of the various components of assessment may be varied. Students will not be able to request permission to submit a Supplementary or Deferred Assignment, Part A, or a Supplementary or Deferred Assignment, Part B

The University’s policy on Special Consideration is available at http://www.mq.edu.au/policy/docs/special_consideration/policy.html

Information about the Special Consideration process is also available on the FBE web-site, and at: http://www.reg.mq.edu.au/Forms/APScons.pdf

It is the responsibility of all students enrolled in ECON241 to ensure that they read and understand the rules and procedures governing Special Consideration.

Note: The University Senate has determined that minor illnesses are NOT sufficient grounds for being granted special consideration.

Note: The University Senate has determined that students in a unit will not be granted special consideration if their coursework for that unit is unsatisfactory, or if their participation in the unit is unsatisfactory.

In ECON332, results in the Week 2 Tutorial Test, the Mid-Semester Assignment, participation in online discussions via Mail Messages and/or Discussions on Blackboard, and consultations with the Unit Convenor, will be used as indicators of the extent to which a student’s coursework and participation in the unit can be deemed to be satisfactory.
Exam Script Viewing, Grade Reviews, and Grade Appeals

After the completion of the unit, and the grades have been released, students may view their End-of-Semester exam script, request a Grade Review, or lodge an Appeal against their Grade. ECON332 students may also request a discussion of their exam performance with the Unit Convenor.

The rules and procedures of the Faculty of Business and Economics for viewing exam scripts, requesting a Grade Review, or lodging a Grade Appeal, can be inspected on the Faculty’s web-site at:

http://www.businessandeconomics.mq.edu.au > Information For > New and Current Students > Undergraduate > How Do I? > Appeal my grade

IT Conditions of Use

Access to all student computing facilities within the Faculty of Business and Economics is restricted to authorised coursework for approved units. Student ID cards must be displayed in the locations provided at all times.

Students are expected to act responsibly when utilising University IT facilities. The following regulations apply to the use of computing facilities and online services:

- Accessing inappropriate web sites or downloading inappropriate material is not permitted. Material that is not related to coursework for approved unit is deemed inappropriate.

- Downloading copyright material without permission from the copyright owner is illegal, and strictly prohibited. Students detected undertaking such activities will face disciplinary action, which may result in criminal proceedings.

Non-compliance with these conditions may result in disciplinary action.

Students must use their Macquarie University email addresses to communicate with University staff. It is University policy that students use their University issued student email account for all official University communication.

(Note: When sending an email message to the ECON332 Unit Convenor about any aspect of the unit, students enrolled in ECON332 are requested to use the Mail facility on the ECON332 web-site on Blackboard, not the Unit Convenor's University Gmail account.)
Student Support Services

Macquarie University provides a range of Academic Student Support Services. Details of these services can be accessed at http://www.student.mq.edu.au.

For FBE students, the BESS drop-in office, located in E4B108, also provides a range of support services. The web address for BESS is:

http://www.businessandeconomics.mq.edu.au/for/new_and_current_students/undergraduate/bess