

ECON6203

Applied Macroeconometrics

Course Outline

Semester 1, 2017

Part A: Course-Specific Information

Students are also expected to have read and be familiar with **Part B Supplement to All Course Outlines**. This contains Policies on Student Responsibilities and Support, Including Special Consideration, Plagiarism and Key Dates. It also contains the BUSINESS SCHOOL PROGRAM LEARNING GOALS.

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1 STAFF CONTACT DETAILS

Lecturer-in-charge: Arpita Chatterjee
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Consultation Times – Wednesdays 3-6 pm

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1.1 Communications with staff

Email correspondence on administrative matters will generally be responded to within 48 hours, except over weekends. We strongly encourage all enquiries about the course material to be made in lectures or during consultation time.

2 COURSE DETAILS

2.1 Teaching Times and Locations

Lectures run from Weeks 1-12. The time and location are: Wednesdays 6-9 pm, UNSW Business School 105.

2.2 Units of Credit

The course is worth 6 units of credit.
This course is taught in parallel to both honours and postgraduate students.

2.3 Summary of Course

“If applied econometrics were easy, theorists would do it.” – Angrist and Pischke, Mostly Harmless Econometrics

This course provides an introduction to econometrics as it is applied in macroeconomics. Emphasis is on hands-on implementation of the methods covered in the course. Topics include macroeconomic data, linear and nonlinear time series models, practical issues with likelihood-based inference for these models, computational approaches to hypothesis testing and model comparison, forecast evaluation, and structural identification. The course will equip students with the necessary knowledge to be able to undertake econometric analysis of the type commonly associated with modern macroeconomic research.

2.4 Aims and Relationship to Other Courses

This course is an elective subject for the Economics Honours program and the MPhil, MEd and PhD programs in Economics. The formal prerequisite for postgraduate students is Econometric Analysis (ECON6003), and for honours students the prerequisite is covered by the entry requirements to the Honours program. We will assume some

familiarity with matrix algebra and introductory statistics and econometrics. Also, some prior knowledge in using statistical software or programming language will be handy, although all the programming relevant for this course will be covered in class. To do well in the course, you will need the aptitude to learn quickly and work hard.

Two important objectives of this course are to survey the most widely-used and useful methods for analysing macroeconomic data and to provide insights into the practical issues and challenges in implementing these methods. However, the primary objective of the course is to stimulate interest in the application of time series econometrics to macroeconomic data, with the ultimate aim of helping students develop the necessary tools to conduct their own original research in empirical macroeconomics.

2.5 Student Learning Outcomes

The Course Learning Outcomes are what you should be able to do by the end of this course if you participate fully in learning activities and successfully complete the assessment items.

The Learning Outcomes in this course also help you to achieve some of the overall Program Learning Goals and Outcomes for students in the Business School. Program Learning Goals are what we want you to be or have by the time you successfully complete an undergraduate degree. You demonstrate this by achieving specific Program Learning Outcomes - what you are able to do by the end of an undergraduate degree.

For more information on Undergraduate Program Learning Goals and Outcomes, see Part B of the course outline.

The following table shows how your Course Learning Outcomes relate to the overall Program Learning Goals and Outcomes, and indicates where these are assessed:

Program Learning Goals and Outcomes		Course Learning Outcomes	Course Assessment Item
<i>This course helps you to achieve the following learning goals</i>		<i>On successful completion of the course, you should be able to:</i>	<i>This learning outcome will be assessed in the following items:</i>
1	Knowledge	Understand some of the pitfalls, problems, and solutions that arise in applied econometric work. Solve problems associated with identification using macroeconomic data.	<ul style="list-style-type: none"> • Assignments • Presentation • Exam
2	Critical thinking and problem solving	Critically evaluate applied econometric research. Use EViews and Matlab effectively for a range of econometric analysis.	<ul style="list-style-type: none"> • Assignments • Presentation • Exam
3a	Written communication	Construct written work which is logically and professionally presented	<ul style="list-style-type: none"> • Assignments • Exam
3b	Oral communication	Communicate ideas in a succinct and clear manner.	<ul style="list-style-type: none"> • Presentation
4	Teamwork	Work collaboratively to complete a task.	<ul style="list-style-type: none"> • Presentation
5a.	Ethical, environmental and sustainability considerations	Objectively evaluate policy decisions for governments and firms based on independent, replicable analysis.	<ul style="list-style-type: none"> • Exam
5b.	Social and cultural awareness	Recall historical economic outcomes in a wide range of countries.	<ul style="list-style-type: none"> • Assignments

3 LEARNING AND TEACHING ACTIVITIES

3.1 Approach to Learning and Teaching in the Course

The philosophy underpinning this course and its Teaching and Learning Strategies are based on “Guidelines on Learning that Inform Teaching at UNSW”. These guidelines may be viewed at: www.guidelinesonlearning.unsw.edu.au. Specifically, the lectures and assessments have been designed to appropriately challenge students and support the achievement of the desired learning outcomes. A climate of inquiry and dialogue is encouraged between students and teachers and among students (in and out of class). The assessments aim to provide meaningful and timely feedback to students to improve learning outcome.

3.2 Learning Activities and Teaching Strategies

The examinable content of the course is defined by the references given in the Lecture Schedule.

Lectures

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

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.

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

- Reading of the relevant references **before the lecture**. This will give you a general idea of the topic area.
- 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 will be explained.

4 ASSESSMENT

4.1 Formal Requirements

In order to pass this course, you must:

- achieve a composite mark of at least 50 out of 100; and
- make a satisfactory attempt at ALL assessment tasks. This means attendance at 80% of lectures (9 out of 12) and a mark of at least 40% in all assessment items.
- Achieve a satisfactory level of performance in the final exam. This means a minimum mark of 40 per cent. Any student having an overall mark of 50 or more but less than 40 per cent in the final examination will be given an UF grade (unsatisfactory fail).
- (For graduate students, other rules apply with regard to satisfactory progress.)

4.2 Assessment Details

Assessment Task	Weighting	Length	Due Date
Class Participation	5%	n/a	n/a
Assignments	50%	As needed	Weeks 4, 8 and 10
Group presentation	15%	30 minutes	Weeks 11 and 12
Final Exam	30%	2 hours	Examination Period
	100%		

4.3 Assignments and Presentations

The assignments will require the use of econometrics software. Many standard methods can be implemented in EViews, which is a “canned” econometrics package that is widely used for time series analysis. However, implementation of some of the methods requires programming. For this, we will use MATLAB. MATLAB is available for download via the UNSW IT website. We will discuss MATLAB codes relevant for our course in class.

We encourage students to study together. However, for homework assignments, you must write up your own answers in your own words. Evidence of copying on written work will be treated as a serious breach of academic integrity.

In terms of the group presentations, you will form teams to present a key article in the macroeconometrics literature. Depending on the paper, you will form teams of two or three people. Also, depending on the paper, you should try to replicate and/or update some of the empirical results in the paper. We will list potential papers on the class website. Prospective groups should consult with us about which paper they plan to present. We will discuss this in more detail early on in the semester.

4.3.1 Submission Procedure for Assignments

Students must submit a hard copy of their assignment at the beginning of the class in which an assignment is due.

4.3.2 Late Submission of Assignments

Please note that late assignments will be penalized 20% of the total grade for each 24-hour period (or portion thereof) from the beginning of the class in which the assignment was due.

4.4 Final Exam Format

Due to the nature of the course material and the need to use econometric software, the final exam will be a take-home exam. The exam will be posted on the class website before the university examination period. Submission instructions and other details will be provided on the exam.

4.5 Quality Assurance

The Business School is actively monitoring student learning and quality of the student experience in all its programs. A random selection of completed assessment tasks may be used for quality assurance, such as to determine the extent to which program learning goals are being achieved. The information is required for accreditation purposes, and aggregated findings will be used to inform changes aimed at improving the quality of Business School programs. All material used for such processes will be treated as confidential and will not be related to course grades.

5 COURSE EVALUATION AND DEVELOPMENT

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 myExperience Survey Tool is one of the ways in which student evaluative feedback is gathered. You are strongly encouraged to take part in the feedback process.

6 COURSE RESOURCES

The website for this course is on UNSW Moodle at: <http://moodle.telt.unsw.edu.au>

Because the methods applied in econometrics are constantly changing, there is no single textbook that is able to serve as a reference for all of the material we will discuss in the course. Instead, the lecturers will collect together some readings (listed in the course schedule below) from journal articles and chapters in textbooks. We will discuss the distribution of these readings in class.

Meanwhile, there is a recommended (but not required) textbook that provides a useful reference for the basic econometric theory needed in the course: Applied Econometric Time Series, by Walter Enders, 2009. This should be available from the campus bookstore.

7 COURSE SCHEDULE

7.1 Lecture Schedule

Lectures start in Week 1 and finish in Week 13.

LECTURE SCHEDULE		
Week	Topic	Reference
Week 1 27 February	Intro to Macro Data	Stock and Watson, Ch. 12
Week 2 6 March	Methodology, Basic Univariate Models: ARMA, GARCH	Stock and Watson, Ch. 12;
Week 3 13 March	Basic Multivariate Models: Single-equation, VARs, Factor Models	Sims (1996); Davidson and MacKinnon, Ch. 13
Week 4 20 March	Maximum Likelihood Estimation Assignment 1 due	Hamilton, Ch. 5
Week 5 27 March	Bayesian Inference	Koop, Chs. 1-2; Greenberg, Ch. 7
Week 6 03 April	Trends	Enders, Ch. 4
Week 7 10 April	Structural Breaks <i>(Friday 14 April is Good Friday public holiday)</i>	Hansen (2001); Qu and Perron (2007)
Mid-semester break: Friday 14 – Saturday 22 April inclusive		
Week 8 24 April	Cointegration Assignment 2 due <i>(Tuesday 25 April is Anzac Day public holiday)</i>	Enders, Ch. 6; Granger (2004)
Week 9 1 May	Forecasting: Loss Functions, Forecast Evaluation	Hamilton, Ch. 4; Elliott and Timmermann (2004); Diebold (2013)
Week 10 8 May	Structural Analysis: Granger Causality, Timing/Sign Restrictions Assignment 3 due	Diebold (1998); Stock and Watson (2001), Hamilton, Ch. 11, Sims (1996), Hoover, Ch. 5
Week 11 15 May	In-class presentations	
Week 12 22 May	In-class presentations	
Week 13 29 May	NO CLASS	