Course Outline
2018
ECON 221: INTRODUCTION TO ECONOMETRICS (15 POINTS)
Semester 2 (1185)

Course Prescription
An introduction to model building and empirical research methods in economics. Emphasises the use and interpretation of single equation regression techniques in formulating and testing microeconomic and macroeconomic hypotheses. There will be examples of the uses of econometrics in a variety of areas through statistical analysis, problem solving and econometric estimation using a statistical computer package.

Programme and Course Advice
Prerequisites: ECON 152 or ECON 101 or ECON 191 or ECON 111 or MATHS 108 or 150 or 153 or STATS 101 or 102 or 108 or 125 or 191.

This course builds on knowledge of introductory statistics and economics, requiring some knowledge of algebra and calculus (such as logarithmic functions and differentiation). Ideal preparation is STATS 125 and MATHS 150. BCOM students – we recommend that you substitute STATS 125 for STATS 108 in the core. For further study in econometrics, students can progress to ECON 321 Econometrics or ECON 322.

This is a recommended course for all students interested in Economics, and is a prerequisite for the Honours and Master’s programmes in Economics. It is one of the prerequisites for the Stage III Economics courses ECON 321 Econometrics and ECON 322 Applied Econometrics and is recommended for ECON 302 Economics of Labour Markets.

Goals of the Course
The course will provide a base of understanding for students when conducting econometric research, as well as understanding applied econometric results. These skills may be enhanced by further econometric courses.

Learning Outcomes
By the end of this course it is expected that the student will:

<table>
<thead>
<tr>
<th>Learning Outcome</th>
<th>Graduate capability</th>
<th>profile</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1 Learn the mathematical and statistical tools required for econometric analysis</td>
<td>Disciplinary knowledge and practice</td>
<td></td>
</tr>
<tr>
<td>L2 Know the basic principles of econometric modelling and analysis</td>
<td>Critical thinking</td>
<td></td>
</tr>
<tr>
<td>L3 Be able to understand both the fundamental techniques and wide array of</td>
<td>Disciplinary knowledge and practice</td>
<td></td>
</tr>
</tbody>
</table>
applications involving linear regression estimation

<table>
<thead>
<tr>
<th>L4</th>
<th>Be able to understand the assumptions that underpin the classical regression model</th>
<th>Disciplinary knowledge and practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>L5</td>
<td>Know how to apply regression analysis to real-world economic examples and data sets</td>
<td>Solution seeking</td>
</tr>
<tr>
<td>L6</td>
<td>Conduct hypothesis testing and prediction</td>
<td>Disciplinary knowledge and practice</td>
</tr>
<tr>
<td>L7</td>
<td>Be able to recognise and make adjustments for a number of common regression problems.</td>
<td>Critical thinking</td>
</tr>
</tbody>
</table>

### Content Outline

Topics to be covered include (with corresponding text book chapters: J.M. Wooldridge, *Introductory Econometrics, 5th edition, 2013, South-Western*)

<table>
<thead>
<tr>
<th>Week/Module</th>
<th>Topic</th>
<th>Relevant learning resources/activities</th>
<th>Assessment due this period</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-3</td>
<td>Introduction and Fundamentals of Mathematics and Statistics</td>
<td>Chapter 1, parts of Appendix A, B, C, Tutorial 1, 2</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Simple Regression Model</td>
<td>Chapter 2, Tutorial 3</td>
<td>Test 1</td>
</tr>
<tr>
<td>5</td>
<td>Multiple Regression Analysis</td>
<td>Chapter 3, Tutorial 4</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Hypothesis Testing</td>
<td>Chapter 4, Tutorial 5</td>
<td>Assignment 1</td>
</tr>
<tr>
<td>7</td>
<td>Comments on OLS asymptotics</td>
<td>Chapter 5, Tutorial 6</td>
<td>Test 2</td>
</tr>
<tr>
<td>8</td>
<td>Further issues</td>
<td>Chapter 6, Tutorial 7</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Qualitative information: binary variables</td>
<td>Chapter 7, Tutorial 8</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Heteroskedasticity</td>
<td>Chapter 8, Tutorial 9</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>More on Specification and Data Issues</td>
<td>Chapter 9, Tutorial 10</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Review</td>
<td>Chapters 1 – 9, Tutorial 11</td>
<td>Assignment 2</td>
</tr>
</tbody>
</table>
Learning and Teaching
This course is taught in the first and second semesters. There will be three hours of lectures and a one-hour tutorial per week.

Teaching Staff
Asha Sundaram
Office: OGGB - Room 6103
Tel: 923 8312
Email: a.sundaram@auckland.ac.nz

Learning Resources
Prescribed Text:

This book is closely followed. You will find it essential for success in the course to regularly follow the textbook readings and applications on the topics covered. There are helpful questions at the end of each chapter. The book has a useful appendix on review of probability and statistical distributions.

Main Supplementary Reading:


Additional resources:
The following are other useful introductory econometrics books, and they are available in the General Library.


Lecture Recordings and Online Material
Lectures will be recorded. Lecture recordings and lecture slides will be made available online on CANVAS weekly.

Tutorials
Tutorials are an integral part of the course, and it is expected that much of the learning and application of econometric concepts will be achieved through these tutorials. It is also expected that you will spend additional hours of reading, problem solving and econometric estimation each week.

Weekly tutorial questions will be available on CANVAS. Solutions to the tutorial questions are handed out in tutorials and will be available on CANVAS on the week of the tutorial. The tutorials emphasise applications of regression analysis.

Empirical Exercises
The course will use the statistical package STATA for empirical exercises. The STATA software is available on the student network on campus. STATA will be used for empirical exercises in lectures and students will get hands-on experience with the package during
their tutorials. Please note that the STATA empirical exercises conducted during lectures and tutorials will NOT be available online.

Assessment

<table>
<thead>
<tr>
<th>Assessment Task</th>
<th>Weight %</th>
<th>Group and/or individual</th>
<th>Submission</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test 1</td>
<td>10</td>
<td>Individual</td>
<td>August 6, 2018 Exam conditions</td>
</tr>
<tr>
<td>Assignment 1</td>
<td>8</td>
<td>Individual</td>
<td>August 24, 2018 Hand in: Student Resource Centre, Level 0, Owen G. Glenn Building.</td>
</tr>
<tr>
<td>Test 2</td>
<td>34</td>
<td>Individual</td>
<td>September 13, 2018 Exam conditions</td>
</tr>
<tr>
<td>Assignment 2</td>
<td>8</td>
<td>Individual</td>
<td>October 18, 2018 Hand in: Student Resource Centre, Level 0, Owen G. Glenn Building.</td>
</tr>
<tr>
<td>Final examination</td>
<td>40</td>
<td>Individual</td>
<td>Final exam period</td>
</tr>
</tbody>
</table>

Pass Requirements

As a general rule, you will need to score 50% to pass the course. Plussage does NOT apply.

Students must be able to show understanding of the course material and extend the mechanics of linear regression analysis. Emphasis will be placed on the ability to: (1) correctly interpret coefficients in the context of specific regression models, (2) construct appropriate regression specifications that can be used to test economic hypotheses of interest; (3) recognise and understand the consequences when confronted with a variety of common regression problems, and (4) understand appropriate modelling solutions for econometric modelling.

<table>
<thead>
<tr>
<th>Learning Outcome</th>
<th>Test 1</th>
<th>Assignment 1</th>
<th>Test 2</th>
<th>Assignment 2</th>
<th>Final Examination</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

Academic Integrity

The University of Auckland will not tolerate cheating, or assisting others to cheat, and views cheating in coursework as a serious academic offence. The work that a student submits for grading must be the student’s own work, reflecting his or her learning. Where
work from other sources is used, it must be properly acknowledged and referenced. This
requirement also applies to sources on the worldwide web. A student’s assessed work may
be reviewed against electronic source material using computerised detection to provide an
electronic version of their work for computerised review.

The way of avoiding plagiarism is to reference your work properly. If you are in doubt
about how to reference properly, ask someone – your lecturers, tutors and the Student
Learning Centre are good places to start. Please refer to the following website for further
information about academic referencing:  www.cite.auckland.ac.nz/

The penalties for plagiarism can be severe, including losing some or all of the marks for
the work. Major offences can be sent to the University’s Discipline Committee, where
further penalties can be imposed.

Inclusive Learning
Students are urged to discuss privately any impairment-related requirements face-to-face
and/or in written form with the course convenor/lecturer and/or tutor.

Student Feedback
Student feedback is encouraged in this course. During the semester, students may directly
submit their feedback to the lecturer through a face-to-face appointment, or they may
wish to submit feedback through the class representative.

Class representatives
At the beginning of each semester, you will elect a class representative for the course[1].
The role of the class representative is to gather feedback from students in the course and
bring this to the lecturer and/or the Department. Class representatives’ email addresses
are posted on CANVAS and you are encouraged to contact them with feedback relating to
the course. You are also encouraged to talk to the class representatives in person.

Staff-Student Consultative Committee
Class representatives also submit feedback to the Department of Economics Staff Student
Consultative Committee (SSCC), which meets up to three times per semester to gain
feedback regarding the course. Only class representatives may attend the SSCC meetings,
and they will ask the class for feedback before the SSCC meeting.

Course and teaching evaluations
At the end of the semester, you could have the opportunity to submit an evaluation of the
course in a formative feedback questionnaire.

In the event of an unexpected disruption
We undertake to maintain the continuity and standard of teaching and learning in all your
courses throughout the year. If there are unexpected disruptions, the University has
contingency plans to ensure that access to your course continues and your assessment is
fair, and not compromised. Some adjustments may need to be made in emergencies. In
the event of a disruption, the University and your course coordinators will make every
effort to provide you with up to date information via Canvas and the University website.

[1] An election will not take place if the number of applicants for the class representative positions
equals the number of positions available.
Graduate Profile for BCOM (Economics)

The following six themes represent the capabilities that the Business School seeks to foster in all of its graduates. The development of these capabilities does not come all at once, but rather is expected to build from year to year. Each course is not expected to contribute to all capabilities, but each course will have its own goals and learning outcomes that relate to the overall development of this profile.

1) DISCIPLINARY KNOWLEDGE AND PRACTICE - Graduates will be able to demonstrate and apply a breadth of knowledge across disciplines, as well as specialist knowledge within one or more of them, while recognising the relevancy of this knowledge within a global context

   Disciplinary knowledge and practice

2) CRITICAL THINKING - Graduates will be able to analyse and critique theory and practice to develop well-reasoned arguments

   Critical thinking

3) SOLUTION SEEKING - Graduates will be able to identify and frame problems using analytical skills to create and evaluate innovative solutions.

   Solution seeking
   Quantitative reasoning

4) COMMUNICATION AND ENGAGEMENT - Graduates will be able to collaborate and communicate effectively in diverse business contexts using multiple formats.

   Oral communication
   Written communication
   Engagement

5) INDEPENDENCE AND INTEGRITY - Graduates will be able to respond professionally and ethically, demonstrating a capacity for independent thought and learning.

   Independence
   Integrity

6) SOCIAL AND ENVIRONMENTAL RESPONSIBILITIES - Graduates will recognise the significance of the principles underpinning the Treaty of Waitangi and consider their obligations in relation to sustainability, whilst displaying constructive approaches to diversity.

   Social responsibility
   Environmental responsibilities