ECON90033
Quantitative Analysis of Finance I

SUBJECT GUIDE

Semester 2, 2014

Prepared by
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Department of Economics
Faculty of Economics and Commerce
## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contents</td>
<td>1</td>
</tr>
<tr>
<td>Subject Outline</td>
<td>3</td>
</tr>
<tr>
<td>Prerequisite</td>
<td>3</td>
</tr>
<tr>
<td>Contact Details</td>
<td>4</td>
</tr>
<tr>
<td>Lectures and Tutorials</td>
<td>4</td>
</tr>
<tr>
<td>Lecture Time</td>
<td>4</td>
</tr>
<tr>
<td>Lecture Schedule</td>
<td>4</td>
</tr>
<tr>
<td>Reading</td>
<td>5</td>
</tr>
<tr>
<td>Tutorial</td>
<td>6</td>
</tr>
<tr>
<td>Assessment</td>
<td>6</td>
</tr>
<tr>
<td>Ongoing Feedback Assessment</td>
<td>6</td>
</tr>
<tr>
<td>Final Exam</td>
<td>6</td>
</tr>
<tr>
<td>Plagiarism and Collusion</td>
<td>7</td>
</tr>
<tr>
<td>Special Consideration</td>
<td>7</td>
</tr>
<tr>
<td>Further Assistance</td>
<td>8</td>
</tr>
<tr>
<td>Centre for Excellence in Learning and Teaching</td>
<td>8</td>
</tr>
</tbody>
</table>
Subject Outline

This course introduces current quantitative techniques used in empirical finance. The emphasis is on applications, focusing on model building, forecast evaluation, and interpretation of results.

- Topics will include:
  - Estimation methods in finance;
  - Unit root tests and ARIMA models;
  - ARCH models;
  - VAR models;
  - Cointegration and VECMs; and
  - Structural break analysis.

- These quantitative techniques will be applied in the following areas in finance:
  - CAPM, SIM, APT, RVM and Fama-French Three-Factor model
  - Property investment pricing models
  - Credit risk analysis
  - Value-at-risk analysis; and
  - Speculation & hedging.

All estimations and simulations are to be computed in EViews.

Prerequisite

ECON20003 Quantitative Methods 2 or equivalent
Contact Details

Maurice Ng
Office Hours: Mon 1:00pm – 2:00pm
Office: Room 345, 3rd floor, FBE building (111 Barry Street).
Email: wng@unimelb.edu.au

Lectures and Tutorials

Lecture Time

Monday 2:15 – 4:15pm Medley Lowe Theatre, Redmond Barry Building.

Lecture Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>28 Jul</td>
<td>Least squares method in finance (I): Estimation &amp; interpretation</td>
</tr>
<tr>
<td>2</td>
<td>4 Aug</td>
<td>Least squares method in finance (II): Hypothesis testing</td>
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<tr>
<td>3</td>
<td>11 Aug</td>
<td>Maximum likelihood estimation in finance</td>
</tr>
<tr>
<td>4</td>
<td>18 Aug</td>
<td>Dynamics in the mean: ARMA models</td>
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<td>5</td>
<td>25 Aug</td>
<td>Stationarity and unit root test</td>
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<tr>
<td>6</td>
<td>1 Sep</td>
<td>Forecasting &amp; forecast evaluation</td>
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<tr>
<td>7</td>
<td>8 Sep</td>
<td>Dynamics in the variance: ARCH models</td>
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<tr>
<td>8</td>
<td>15 Sep</td>
<td>VAR (I): Specification</td>
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<tr>
<td>9</td>
<td>22 Sep</td>
<td>VAR (II): Impulse-response analysis</td>
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<td>29 Sep</td>
<td>~ Mid-term break ~</td>
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<tr>
<td>10</td>
<td>6 Oct</td>
<td>Cointegration and VECM (I): Johansen test</td>
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<tr>
<td>11</td>
<td>13 Oct</td>
<td>Cointegration and VECM (II): Specification and interpretation</td>
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<tr>
<td>12</td>
<td>19 Oct</td>
<td>Structural break &amp; Markov regime switching models</td>
</tr>
</tbody>
</table>
Reading

Prescribed Reading (Compulsory):

The key reading for this course is the lecture slides which will be made available on the LMS.

Reference Books (Optional):

There is no single textbook covering all the topics in this course. Below is a selection of books written at the right level for this course [library call numbers in brackets]:

[UniM Giblin Eunson 332.015195 BROO]

[UniM ERC 332.60151955 TSAY]

[UniM Giblin Eunson High Use 332.09414 CAMP]

[UniM Giblin Eunson 332.015195 MILL]

[UniM Giblin Eunson 332.015195 FINA]

[UniM Giblin Eunson 332.015195 WANG]
**Tutorial**

Tutorials start from the second teaching week. Students must enrol in a tutorial via the Student Portal. If you need to change your allocated tutorial day or time, please do so in the first two weeks.

Late enrolment will be handled by the Melbourne School of Business (MBS). For more information and help, please visit the MBS on the 4th floor in The Spot building at 198 Berkeley Street.

**Assessment**

*Ongoing Feedback Assessment*

One assignment (30%) to be completed by a group of no more than 6 students due by 12:00pm (midday) Monday 22nd September.

*Final Exam*

One 3-hour written exam (70%) to be held during the University’s exam period. Details will be available towards the end of the semester.
Plagiarism and Collusion

Presenting material from other sources without full acknowledgement (referred to as plagiarism) is heavily penalised. Penalties for plagiarism can include a mark of zero for the piece of assessment or a fail grade for the subject.

PLAGIARISM is the presentation by a student of an assignment identified as his or her own work even though it has been copied in whole or in part from another student’s work, or from any other source (e.g. published books, web-based materials or periodicals), without due acknowledgement in the text.

COLLUSION is the presentation by a student of an assignment as his or her own work when it is, in fact, the result (in whole or in part) of unauthorised collaboration with another person or persons. Both the student presenting the assignment and the student(s) willingly supplying unauthorised material are considered participants in the act of academic misconduct.

For more information, please visit the website at:
http://academichonesty.unimelb.edu.au/turnitin/

Special Consideration

Students who have been significantly affected by illness or other serious circumstances during the semester may be eligible to apply for Special Consideration.

The following website contains detailed information relating to who can apply for Special Consideration and the process for making an application:
http://gsbe.unimelb.edu.au/students/services/special_consideration
Further Assistance

Centre for Excellence in Learning and Teaching

The FBE Centre for Excellence in Learning and Teaching (CELT) provides services and resources to enhance your learning in Business and Economics.

Maximise your academic success by taking part in CELT services that develop:

- Skills in research, referencing and academic writing
- Mastery of different assignment types
- Effective study techniques
- Abilities to learn effectively with your peers
- Transition to the faculty and understanding of academic expectations

The Centre also provides an extensive range of helpsheets that can enhance your academic performance in Business and Economics. These are available or online or at the Centre.

Visit the CELT site [www.fbe.unimelb.edu.au/celt](http://www.fbe.unimelb.edu.au/celt) to learn more and get involved.