



# AFIN328

## Financial Risk Management

S2 Day 2014

*Applied Finance and Actuarial Studies*

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#### **Disclaimer**

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## General Information

Unit convenor and teaching staff

Unit Convenor

Dr Joel Fabre

[joel.fabre@mq.edu.au](mailto:joel.fabre@mq.edu.au)

Contact via policy in unit outline

E4A 543

Consultation time: refer to iLearn

Tutors

Refer to iLearn for details

Geoff Loudon

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Angela Chow

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Credit points

3

Prerequisites

39cp including (ACCG252 or AFIN252)

Corequisites

Co-badged status

### Unit description

The aim of this unit is to prepare students for analytical duties a graduate is expected to carry out in a financial institution, or for research for a higher degree. On completing the unit, successful students also attain practical knowledge of how to apply and evaluate the quantitative methods covered in the unit in analysing and managing portfolios as well as the risk arising from various financial investments. In particular, students are expected to be able to: examine and find optimal investments strategies with respect to risk and return; attain an excellent knowledge of the role and characteristics of international financial markets and institutions; understand the pricing of various financial products and how they can be used for hedging; evaluate econometric models for financial variables; and acquire an extensive knowledge on the major approaches to managing market, credit and operational risks. By undertaking this unit, students have an opportunity to consolidate and extend the knowledge they attained in first and second year finance units. Students are introduced to advanced techniques in financial markets and risk management practices with plenty of opportunities to apply them to real-world data through several tutorial tasks and a written assignment.

## Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at <https://www.mq.edu.au/study/calendar-of-dates>

## Learning Outcomes

On successful completion of this unit, you will be able to:

Examine and find optimal investments strategies with respect to expected returns and risks involved and dependencies between financial instruments.

Attain an excellent knowledge of the role and characteristics of international financial markets and the institutions and intermediaries.

Understand the pricing of various financial products like equity, fixed income instruments or derivatives and know how these products can be used for risk management and hedging.

Evaluate econometric models for financial variables, for example with respect to their volatility, dependence structure and time series properties.

## General Assessment Information

### Group Work

The Assessed Coursework (Group Tutorial Submissions) and Assignment (Group Assignment) require each student to join a group and work as a team. The same groups will be used for the Group Tutorial Submissions and the Group Assignment.

## Group Formation

The following points apply to group formation:

- All group members must be in the same tutorial;
- Students can form groups of four or five members (to be confirmed by the Unit Convenor in Week 1);
- Once you have formed a group, complete a group agreement form available on iLearn (one per group), and hand this to your tutor by the tutorial in Week 3;
- To be recognized as a group, we must receive the completed group agreement form by the tutorial in Week 3; and
- Students who are not in a group by the tutorial in Week 3 may be allocated to a group by the Unit Convenor.

## Group Work Submission

Submission instructions for group work will be provided via iLearn. All group work submitted in this unit must have attached:

- Group assessment cover sheet, available from [http://www.businessandconomics.mq.edu.au/new\\_and\\_current\\_students/undergraduate/assignment\\_coversheets](http://www.businessandconomics.mq.edu.au/new_and_current_students/undergraduate/assignment_coversheets); and
- Group contribution form, available from this unit's iLearn site.

## Scaling

A Standardised Numerical Grade (SNG) gives you an indication of how you have performed within the band for your descriptive grade. The SNG is not a mark, and you may not be able to work it out based on your raw examination and other assessment marks. Nor are you able to determine you are “one mark away” from a different grade.

## GradeBook

It is the responsibility of students to view their marks for each within session assessment on iLearn within 20 working days of posting. If there are any discrepancies, students must contact the unit convenor immediately. Failure to do so will mean that queries received after the release of final results regarding assessment marks (not including the final exam mark) will not be addressed.

## Assessment Tasks

Name	Weighting	Due
<a href="#">Assessed Coursework</a>	10%	Start of tutorials from Week 4
<a href="#">Class Test</a>	15%	Thu 18/9/2014 11am-12pm

Name	Weighting	Due
<u>Assignment</u>	20%	Fri 31/10/2014 11:59pm AEST
<u>Final Examination</u>	55%	University examination period

## Assessed Coursework

Due: **Start of tutorials from Week 4**

Weighting: **10%**

The Assessed Coursework will comprise Group Tutorial Submissions, requiring students to work in groups to prepare and submit answers to selected tutorial questions from four tutorials throughout the semester. The specific tutorials will be notified in advance via iLearn. The group's submission is to be handed to your tutor at the start of the respective tutorial. The groups for this assessment task are the same as assignment groups. Refer to the General Assessment Information section in the unit outline for further information on groups and group formation. All groups will have the same two randomly selected tutorial submissions marked, and the group's average of these marks will comprise the group's mark for this assessment task.

No extensions will be granted. Students who have not submitted the task prior to the deadline will be awarded a mark of 0 for the task, except for cases in which an application for special consideration is made and approved.

On successful completion you will be able to:

- Examine and find optimal investments strategies with respect to expected returns and risks involved and dependencies between financial instruments.
- Attain an excellent knowledge of the role and characteristics of international financial markets and the institutions and intermediaries.
- Understand the pricing of various financial products like equity, fixed income instruments or derivatives and know how these products can be used for risk management and hedging.
- Evaluate econometric models for financial variables, for example with respect to their volatility, dependence structure and time series properties.

## Class Test

Due: **Thu 18/9/2014 11am-12pm**

Weighting: **15%**

The Class Test will be a Mid-Semester Test. This will be a closed-book test comprising multiple choice questions. These questions may include calculations as well as “verbal” answers. The test will be of one hour in duration and will be held during normal lecture hours in Week 7. It will cover the course material up to and including Week 5. A formula sheet and any necessary statistical tables will be provided.

No extensions will be granted. Students who have not submitted the task prior to the deadline will be awarded a mark of 0 for the task, except for cases in which an application for special consideration is made and approved.

On successful completion you will be able to:

- Examine and find optimal investments strategies with respect to expected returns and risks involved and dependencies between financial instruments.
- Attain an excellent knowledge of the role and characteristics of international financial markets and the institutions and intermediaries.
- Understand the pricing of various financial products like equity, fixed income instruments or derivatives and know how these products can be used for risk management and hedging.
- Evaluate econometric models for financial variables, for example with respect to their volatility, dependence structure and time series properties.

## Assignment

Due: **Fri 31/10/2014 11:59pm AEST**

Weighting: **20%**

The Assignment will comprise a Group Assignment, requiring students to work in groups on specified topics covering important concepts addressed in this unit. The assignment question will be provided by the end of Week 6. All groups are required to submit the assignment using Turnitin via iLearn. The assignment provides further opportunity for students to develop their critical analysis skills, problem-solving skills and creative thinking skills. The groups for this assessment task are the same as tutorial submission groups. Refer to the General Assessment Information section in the unit outline for further information on groups and group formation.

No extensions will be granted. Late tasks will be accepted up to 72 hours after the submission deadline. There will be a deduction of 20% of the total available marks made from the total awarded mark for each 24 hour period or part thereof that the submission is late (for example, 25 hours late in submission - 40% penalty). This penalty does not apply for cases in which an application for special consideration is made and approved.

On successful completion you will be able to:

- Examine and find optimal investments strategies with respect to expected returns and risks involved and dependencies between financial instruments.
- Attain an excellent knowledge of the role and characteristics of international financial markets and the institutions and intermediaries.
- Understand the pricing of various financial products like equity, fixed income instruments or derivatives and know how these products can be used for risk management and

hedging.

- Evaluate econometric models for financial variables, for example with respect to their volatility, dependence structure and time series properties.

## Final Examination

Due: **University examination period**

Weighting: **55%**

The Final Examination will be a closed-book examination comprising calculation questions and short answer questions. The test will be of three hours in duration (plus 10 minutes of reading time) and will be held during the university's examination period. It will cover the course material for the entire semester. A formula sheet and any relevant statistical tables will be provided.

Please watch this space for your final examination information: [http://students.mq.edu.au/student\\_admin/exams/](http://students.mq.edu.au/student_admin/exams/)

On successful completion you will be able to:

- Examine and find optimal investments strategies with respect to expected returns and risks involved and dependencies between financial instruments.
- Attain an excellent knowledge of the role and characteristics of international financial markets and the institutions and intermediaries.
- Understand the pricing of various financial products like equity, fixed income instruments or derivatives and know how these products can be used for risk management and hedging.
- Evaluate econometric models for financial variables, for example with respect to their volatility, dependence structure and time series properties.

## Delivery and Resources

### Classes

Classes in this unit are composed of a two-hour lecture, and a one-hour tutorial. Lectures commence in Week 1 and tutorials commence in Week 2. Tutorials will lag the lectures. For example, the tutorial in Week 2 will cover the questions assigned from the lecture in Week 1.

Unit materials are learnt by attending lectures, by attempting tutorial questions prior to the tutorial, and through independent learning. The lectures provide a general overview of the topics highlighting a number of concepts and techniques. Further additional reading material may be provided. Students are strongly advised to study the additional reading material provided provided by the unit convenor, and further explore all relevant concepts and techniques.

## Timetables

All students are required to attend their timetabled classes. The timetable for classes can be found on the University web site <http://www.timetables.mq.edu.au/>

## Required Text

Hull, J. (2012) *Risk Management and Financial Institutions*, 3rd Edition, Wiley.

This book can be purchased from the Macquarie University Co-op Bookshop.

We may supplement the text with readings from journals and other textbooks as required.

*Students needing assistance with **mathematics** should first consult:*

Dowling, E.T. (1992) *Introduction to Mathematical Economics*, (2<sup>nd</sup> Ed) New York: McGraw-Hill

Gujarati, D. (2003) *Basic Econometrics*, (4<sup>th</sup> Ed), McGraw-Hill

## Technology Used and Required

- Internet access;
- Access to iLearn;
- Non-programmable financial or scientific calculator (see below about calculators);
- Computer with Microsoft Excel; and
- DerivaGem software available on the CD obtained by purchasing the required text.

## Calculators

Financial and scientific calculators may be used in any examination for this unit. Only non-programmable calculators (no text retrieval capacity) are allowed in an examination

If you choose to buy a financial calculator and are planning to enrol in the Chartered Financial Analysts (CFA) course after you graduate from Macquarie University, you may wish to purchase a financial calculator that meets CFA examination requirements. For specific requirements, see the CFA Institute's web-site, <http://www.cfainstitute.org>. The two CFA-approved calculators are:

- Texas Instruments BA II Plus (including BA II Plus Professional); or
- Hewlett Packard 12C (including Hewlett Packard 12C Platinum).

Another recommended calculator is the Hewlett Packard HP17BII or HP17BII+. This is used in Macquarie University's Master of Applied Finance program.

## Unit Schedule

Week	Lecture Topics
1	Hull Chapter 1, 2, 4 & 5: Introduction, Risk and Return, Portfolio Construction, Mutual Funds and Hedge Funds, Trading in Financial Markets
2	Hull Chapter 6 & 7: Credit Crisis of 2007, How Traders Manage Their Exposure



3	Hull Chapter 8: Interest Rate Risk, Duration, Convexity
4	Hull Chapter 9: Value-at-Risk
5	Hull Chapter 10: Volatility, EWMA and GARCH models
6	Hull Chapter 11: Correlations and Copulas
7	<b>Mid-Semester Test</b> / Hull Chapter 12 & 13: Regulation, Basel II, III, WCDR
	<b>Mid-Semester Break</b>
8	Hull Chapter 12 & 13: Regulation, Basel II, III, WCDR
9	Hull Chapter 14 & 15: Market Risk VaR: Historical Simulation and Model Building Approach
10	Hull Chapter 16: Credit Risk: Estimating Default Probabilities
11	Hull Chapter 18: Credit Value at Risk
12	Hull Chapter 20: Operational Risk
13	Revision Lecture

## Learning and Teaching Activities

### Teaching and Learning Strategy

The teaching strategy in this unit recognises that students learn independently and assume responsibility for the learning process and with academic integrity. Students are expected to participate in the unit by attending lectures, reading the provided material, thoroughly revising the lecture notes, preparing answers to the provided tutorial and other exercise questions, and reading additional material about important issues in investment and risk. What we aim to achieve in this unit is deep (as opposed to surface) learning. Thus, learning is interpreted as making sense or abstracting meaning. Learning involves relating parts of the subject matter to each other and to the real world. Further learning is understood as comprehending the world by understanding and re-interpreting knowledge. The teaching philosophy is articulated as comprising large group learning, small group learning, and independent learning.

### Large group learning

Lectures are intended to provide an overview of conceptual frameworks and issues in applied finance that are critical to the core themes of the unit.

### Small group learning

Tutorials are intended to provide an opportunity to work through solutions to exercise questions attached the lectures, and for discussion of the course materials. Group assessment tasks also provide an opportunity for students to learn together in small groups.

## Independent learning

This unit also relies on independent learning where students read the textbook and other relevant material, revise the lecture notes, prepare answers to the provided exercise questions, participate in discussions and extend themselves by doing additional reading, questions, exercises and problems.

## Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central](#). Students should be aware of the following policies in particular with regard to Learning and Teaching:

Academic Honesty Policy [http://mq.edu.au/policy/docs/academic\\_honesty/policy.html](http://mq.edu.au/policy/docs/academic_honesty/policy.html)

Assessment Policy <http://mq.edu.au/policy/docs/assessment/policy.html>

Grading Policy <http://mq.edu.au/policy/docs/grading/policy.html>

Grade Appeal Policy <http://mq.edu.au/policy/docs/gradeappeal/policy.html>

Grievance Management Policy [http://mq.edu.au/policy/docs/grievance\\_management/policy.html](http://mq.edu.au/policy/docs/grievance_management/policy.html)

Disruption to Studies Policy [http://www.mq.edu.au/policy/docs/disruption\\_studies/policy.html](http://www.mq.edu.au/policy/docs/disruption_studies/policy.html) *The Disruption to Studies Policy is effective from March 3 2014 and replaces the Special Consideration Policy.*

In addition, a number of other policies can be found in the [Learning and Teaching Category](#) of Policy Central.

## Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: [https://students.mq.edu.au/support/student\\_conduct/](https://students.mq.edu.au/support/student_conduct/)

## Contact policy

Students are required to follow the contact policy for this unit when communicating with staff. The following points describe the contact policy:

- For any issues, first consult the unit outline;
- If your issue is not addressed in the unit outline, search the relevant iLearn forum;
- If your issue is not already addressed on iLearn, raise it on iLearn by posting in the relevant forum;
- If the issue is of a private nature, use e-mail.

The goal of this contact policy is to provide all students with authoritative information and to maximise information sharing, while still allowing for any issues of a private nature to be raised.

Students may of course attend scheduled staff consultation times for any issues.

## Supplementary Exams

Further information regarding supplementary exams, including dates, is available here [http://www.businessandconomics.mq.edu.au/current\\_students/undergraduate/how\\_do\\_i/special\\_consideration](http://www.businessandconomics.mq.edu.au/current_students/undergraduate/how_do_i/special_consideration)

## Student Support

Macquarie University provides a range of support services for students. For details, visit <http://students.mq.edu.au/support/>

## Learning Skills

Learning Skills ([mq.edu.au/learningskills](http://mq.edu.au/learningskills)) provides academic writing resources and study strategies to improve your marks and take control of your study.

- [Workshops](#)
- [StudyWise](#)
- [Academic Integrity Module for Students](#)
- [Ask a Learning Adviser](#)

## Student Services and Support

Students with a disability are encouraged to contact the [Disability Service](#) who can provide appropriate help with any issues that arise during their studies.

## Student Enquiries

For all student enquiries, visit Student Connect at [ask.mq.edu.au](http://ask.mq.edu.au)

## IT Help

For help with University computer systems and technology, visit <http://informatics.mq.edu.au/help/>.

When using the University's IT, you must adhere to the [Acceptable Use Policy](#). The policy applies to all who connect to the MQ network including students.

## Graduate Capabilities

### Discipline Specific Knowledge and Skills

Our graduates will take with them the intellectual development, depth and breadth of knowledge, scholarly understanding, and specific subject content in their chosen fields to make them competent and confident in their subject or profession. They will be able to demonstrate, where relevant, professional technical competence and meet professional standards. They will be able to articulate the structure of knowledge of their discipline, be able to adapt discipline-specific

knowledge to novel situations, and be able to contribute from their discipline to inter-disciplinary solutions to problems.

This graduate capability is supported by:

## **Learning outcomes**

- Examine and find optimal investments strategies with respect to expected returns and risks involved and dependencies between financial instruments.
- Attain an excellent knowledge of the role and characteristics of international financial markets and the institutions and intermediaries.
- Understand the pricing of various financial products like equity, fixed income instruments or derivatives and know how these products can be used for risk management and hedging.
- Evaluate econometric models for financial variables, for example with respect to their volatility, dependence structure and time series properties.

## **Assessment tasks**

- Assessed Coursework
- Class Test
- Assignment
- Final Examination

## **Critical, Analytical and Integrative Thinking**

We want our graduates to be capable of reasoning, questioning and analysing, and to integrate and synthesise learning and knowledge from a range of sources and environments; to be able to critique constraints, assumptions and limitations; to be able to think independently and systemically in relation to scholarly activity, in the workplace, and in the world. We want them to have a level of scientific and information technology literacy.

This graduate capability is supported by:

## **Learning outcomes**

- Examine and find optimal investments strategies with respect to expected returns and risks involved and dependencies between financial instruments.
- Attain an excellent knowledge of the role and characteristics of international financial markets and the institutions and intermediaries.
- Understand the pricing of various financial products like equity, fixed income instruments or derivatives and know how these products can be used for risk management and hedging.
- Evaluate econometric models for financial variables, for example with respect to their

volatility, dependence structure and time series properties.

## Assessment tasks

- Assessed Coursework
- Class Test
- Assignment
- Final Examination

## Problem Solving and Research Capability

Our graduates should be capable of researching; of analysing, and interpreting and assessing data and information in various forms; of drawing connections across fields of knowledge; and they should be able to relate their knowledge to complex situations at work or in the world, in order to diagnose and solve problems. We want them to have the confidence to take the initiative in doing so, within an awareness of their own limitations.

This graduate capability is supported by:

### Learning outcomes

- Examine and find optimal investments strategies with respect to expected returns and risks involved and dependencies between financial instruments.
- Understand the pricing of various financial products like equity, fixed income instruments or derivatives and know how these products can be used for risk management and hedging.
- Evaluate econometric models for financial variables, for example with respect to their volatility, dependence structure and time series properties.

### Assessment task

- Assignment

## Effective Communication

We want to develop in our students the ability to communicate and convey their views in forms effective with different audiences. We want our graduates to take with them the capability to read, listen, question, gather and evaluate information resources in a variety of formats, assess, write clearly, speak effectively, and to use visual communication and communication technologies as appropriate.

This graduate capability is supported by:

### Learning outcome

- Attain an excellent knowledge of the role and characteristics of international financial markets and the institutions and intermediaries.

## Assessment task

- Assignment

## Changes from Previous Offering

The mid-semester test will now be held in Week 7. The Presentation assessment task was replaced by the Tutorial Submissions assessment task.

## Research and Practice

- This unit uses research by Macquarie University researchers
- This unit uses research from external sources
- This unit gives you practice in applying research findings in your assignments
- This unit gives you opportunities to conduct your own research

## Changes since First Published

Date	Description
18/08/2014	Corrected typographical error.
31/07/2014	Updated Assessed Coursework