ECFS881

Derivatives Valuation

AFC Term 4 City 2019

Department of Applied Finance

Contents

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General Information

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Credit points
2

Prerequisites
(Admission to MAppFin or MAppFin(Adv) or GradDipAppFin) and ECFS867

Corequisites

Co-badged status

Unit description
This unit deals with important quantitative issues for derivatives market participants. The aim
is to extend the student's understanding of derivatives valuation. This unit will cover a variety
of models and techniques and applies them to value a variety of derivative products including
Equity, Foreign Exchange and Interest Rate derivatives. Teaching uses both lectures and
hands-on sessions with computer software.

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:

Analyse and explain how to appropriately adjust and apply discounted expected cash
flow valuation to a derivative context.

Employ key analytical and numerical techniques for derivatives valuation including their
appropriate applications and limitations.

Apply appropriate derivative valuation and hedging techniques to various situations, both

as an individual and as a group.

Develop skills in communicating the application of complex technical concepts.

General Assessment Information

To pass this unit the student needs to (1) Achieve an aggregate mark of 50 or more, and; (2) Pass the Final Assessment.

Assessment Tasks

Name	Weighting	Hurdle	Due
Pre-unit Assignment	15%	No	Before First Class
In-class Assessment	30%	No	Refer to iLearn
Final Assessment	55%	Yes	Refer to Timetable

Pre-unit Assignment

Due: **Before First Class**
Weighting: **15%**

Summary of Assessment Task

Individual / Group: Individual.

Due Date: First lecture.

Submission Method: Online via Turnitin on the unit's iLearn site.

Duration: Maximum 12 standard A4 pages (font size 10 point minimum).

Extension Requests:

- No extensions will be granted.
- There will be a deduction of 10% of the total available marks for each 24 hour period or part thereof. This penalty does not apply for cases in which an application for Special Consideration has been made and approved.
- No submission will be accepted after solutions have been discussed or posted by the lecturer. As this normally occurs on day 2 of classes, students need to be aware that submissions are rarely accepted beyond the first 24 hour late period.
- Note: Applications for Special Consideration must be made within 5 (five) business days of the due date and time.
- Refer to MAFC Program Rules at https://mafcstudents.mq.edu.au/ for information on the University's Special Consideration Policy.

Other Information: The pre-unit assignment will be available on iLearn.

On successful completion you will be able to:
- Analyse and explain how to appropriately adjust and apply discounted expected cash flow valuation to a derivative context.

In-class Assessment

Due: **Refer to iLearn**
Weighting: **30%**

Summary of Assessment Task

Individual / Group: Individual.

Due Date: One online quiz to be completed at the end of day 1, 2, 3 of class (three quizzes in total) - refer to iLearn for more information.

Submission Method: Online via the unit's iLearn site.

Duration: 30 minutes per quiz.

Extension Requests:

- You are expected to make yourself available for assessment during the relevant quiz window.
- Students who do not submit this task by the due date and time receive a result of zero. This penalty does not apply when an application for Special Consideration has been made and approved.
- Students who do not attempt the quiz receive a mark of zero. This penalty does not apply in cases where an application for Special Consideration has been made and approved.
- Note: Applications for Special Consideration must be made within 5 (five) business days of the due date and time.
- Refer to MAFC Program Rules at https://mafcstudents.mq.edu.au/ for information on the University's Special Consideration Policy.

Other Information: Each quiz will be available in iLearn at the relevant day of class.

On successful completion you will be able to:
- Employ key analytical and numerical techniques for derivatives valuation including their appropriate applications and limitations.
- Apply appropriate derivative valuation and hedging techniques to various situations, both as an individual and as a group.

Final Assessment

Due: **Refer to Timetable**
Weighting: **55%**
This is a hurdle assessment task (see assessment policy for more information on hurdle assessment tasks)

Summary of Assessment Task

Individual / Group: Individual and Group.

Due Date: Start of Exam Week. The final assessment will commence on the last day of lectures with a group task which will then be used to support an individual task to be submitted on the first day of Exam Week. Refer to iLearn for more details.

Submission Method: In class and online via Turnitin on the unit's iLearn site.

Extension Requests:

- Students who do not attend receive a mark of zero. This penalty does not apply in cases where an application for Special Consideration has been made and approved.

- No extensions will be granted. There will be a deduction of 10% 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 incurs a 20% penalty). This penalty does not apply for cases in which an application for Special Consideration is made and approved.

- Late submissions will be accepted up to 96 hours after the due date and time.

- Note: Applications for Special Consideration must be made within 5 (five) business days of the due date and time.

- Refer to MAFC Program Rules at https://mafcstudents.mq.edu.au/ for information on the University's Special Consideration Policy.

On successful completion you will be able to:
- Analyse and explain how to appropriately adjust and apply discounted expected cash flow valuation to a derivative context.
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Delivery and Resources

CLASSES

Face-to-Face Teaching: Generally 20 hours.

Timetable: Detailed timetable for classes are available at https://www.mq.edu.au/about/about-the-university/faculties-and-departments/business/study-with-us/macquarie-applied-finance-centre/timetables.

Consultation Times:

Students who wish to contact any of the teaching staff may do so through:

- The unit's iLearn site, in relation to general queries (so that all students may benefit); or
- Individual consultation with the lecturer by email in the first instance, if necessary.

REQUIRED AND RECOMMENDED TEXTS AND/OR MATERIALS

Text: Nil.

Additional Readings:

- Additional readings are available on iLearn.

Lecture Notes: Available electronically via iLearn.

Pre-unit Materials: Information papers on statistics, regression, accounting and other material may be found at http://mafcstudents.mq.edu.au/new-to-mafc/pre-course-materials/. Students should work through this material prior to commencing the degree. The material will remain a useful reference as students progress through the program.

Useful Article References:

- John C. Hull Options, *Futures, and Other Derivative Securities*, Prentice-Hall 10th Edition, 2018.
- Other books which may be of some value for parts of the unit include:
  - Robert Jarrow and Stuart Turnbull, *Derivatives Securities*, South-Western Publishing 2nd Edition, 2000. (This is now out of print.)
  - McDonald, Robert L. *Derivatives Markets (3rd edition)*. Pearson Education/ Addison Wesley/Prentice Hall (they're all the same), Boston 2013.
  - Kerry Back, *A Course in Derivative Securities: Introduction to Theory and Computation*, Springer Finance, 2005. (Note: This is a bit more mathematical than Hull, but still accessible for some students and much more accessible than many such books.)

Calculators:

- For classes, any of the following calculators are recommended but not required:
  - Hewlett Packard hp17bII+
  - Hewlett Packard hp12c platinum or hp12c
  - Texas Instruments BAII PLUS (also the PROFESSIONAL version).

Assumed Knowledge:

- To complete the final assessment, students will have to modify some Excel macros, written in Microsoft's VBA language.
- Students are not required to have VBA experience, but will need to be comfortable with learning how to modify the supplied macros. You will be shown how to do such modifications during the hands-on sessions.
- Support will also be provided via iLearn.

Assumed Access:

- Access to a computer, laptop or high-end tablet with word processing and MS Excel (with VBA) spreadsheet capability is assumed, as is general student computer literacy.
- Almost any version of MS Office (back to Office 95) on either Mac or Windows, will do. If you have a Mac, you will need Office 2004 or earlier, or Office 2011 (with Service Pack 1) or later. (**Office 2008 won't suffice since it doesn't have VBA.**)
- **A computer, laptop or high-end tablet will be required at all classes in order to complete the in-class assessments.**

TECHNOLOGY USED AND REQUIRED

Unit iLearn Site:

- Found by logging on to iLearn ilearn.mq.edu.au, then clicking on *ECFS881 Derivatives Valuation*.
- This is where you will find lecture notes, forums, downloadable resources and links to important pages.
- The forum allows you to communicate with other students and lecturer(s) and may provide supplementary material.
- You are requested to post your questions on the forums at least 24 hours prior to the assessment's submission date. Questions posted after that time may not be answered. **Please try to not leave your questions to the last few days.**

Important:

- It is important that you familiarise yourself with the unit's iLearn site.
- Students should check the unit's iLearn site regularly (minimum twice a week and prior to

all lectures) and look for updates and distribution of materials (including case studies) related to the unit or assessments and, if relevant, participate in forum discussions.

Unit Schedule

Refer to iLearn.

Learning and Teaching Activities

Strategy

The Master of Applied Finance degree adopts a deep teaching and learning strategy, in which students acquire and retain knowledge and also are able to make sense of the issues and concepts and apply them in the "real world". The degree relies heavily on student engagement and participation by: (a) Continuous learning throughout the term. This is encouraged through a combination of students undertaking prescribed reading throughout the units and/or completion of practice problems, case studies, assignments, class presentations etc and interaction via forums in the unit's iLearn site; and (b) Assessments, which enable the student to demonstrate his/her understanding of the learning objectives achieved through the continuous learning.

Student Participation

Students participate in this unit by: (a) Attending lectures and participating in class discussion; (b) Before each class, completing the recommended readings of notes and text, and working systematically through suggested problem sets; (c) Interacting on the unit's iLearn site; and (d) Completing all assessment tasks and exams. On average, the unit will require students to complete, for every hour of class time, approximately 3 hours private study.

Policies and Procedures

Macquarie University policies and procedures are accessible from Policy Central (https://staff.m q.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-centr al). Students should be aware of the following policies in particular with regard to Learning and Teaching:

- Academic Appeals Policy
- Academic Integrity Policy
- Academic Progression Policy
- Assessment Policy
- Fitness to Practice Procedure
- Grade Appeal Policy
- Complaint Management Procedure for Students and Members of the Public
- Special Consideration Policy *(**Note:** The Special Consideration Policy is effective from 4 December 2017 and replaces the Disruption to Studies Policy.)*

Undergraduate students seeking more policy resources can visit the Student Policy Gateway (htt

ps://students.mq.edu.au/support/study/student-policy-gateway). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

If you would like to see all the policies relevant to Learning and Teaching visit Policy Central (https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/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/study/getting-started/student-conduct

Results

Results published on platform other than eStudent, (eg. iLearn, Coursera etc.) or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in eStudent. For more information visit ask.mq.edu.au or if you are a Global MBA student contact globalmba.support@mq.edu.au

Students should also consult the MAFC Program Rules found at https://mafcstudents.mq.edu.au/.

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) 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 enquiry service (MAFC-specific)

For all student enquiries, please contact studentsupport@mafc.mq.edu.au

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

If you are a Global MBA student contact globalmba.support@mq.edu.au

IT Help

For help with University computer systems and technology, visit http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/.

When using the University's IT, you must adhere to the Acceptable Use of IT Resources Policy. The policy applies to all who connect to the MQ network including students.

Graduate Capabilities

PG - Discipline Knowledge and Skills

Our postgraduates will be able to demonstrate a significantly enhanced depth and breadth of knowledge, scholarly understanding, and specific subject content knowledge in their chosen fields.

This graduate capability is supported by:

Learning outcomes

- Analyse and explain how to appropriately adjust and apply discounted expected cash flow valuation to a derivative context.
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Assessment tasks

- Pre-unit Assignment
- In-class Assessment
- Final Assessment

PG - Critical, Analytical and Integrative Thinking

Our postgraduates will be capable of utilising and reflecting on prior knowledge and experience, of applying higher level critical thinking skills, and of integrating and synthesising learning and knowledge from a range of sources and environments. A characteristic of this form of thinking is the generation of new, professionally oriented knowledge through personal or group-based critique of practice and theory.

This graduate capability is supported by:

Learning outcomes

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- Develop skills in communicating the application of complex technical concepts.

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- Pre-unit Assignment
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- Final Assessment

PG - Research and Problem Solving Capability

Our postgraduates will be capable of systematic enquiry; able to use research skills to create new knowledge that can be applied to real world issues, or contribute to a field of study or practice to enhance society. They will be capable of creative questioning, problem finding and problem solving.

This graduate capability is supported by:

Learning outcomes

- Analyse and explain how to appropriately adjust and apply discounted expected cash flow valuation to a derivative context.
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Changes from Previous Offering

The unit Learning Outcomes and Assessment Tasks were updated in September 2019.

Important Notice

This Unit Guide may be subject to change. Students will be advised, via an "Announcement" on iLearn, if the Unit Guide is changed.

The latest version is available at https://unitguides.mq.edu.au/.

Students should read the Unit Guide carefully at the start of term. It contains important information about the unit. If anything is unclear, please consult one of the unit lecturers.