



ACST404

Investment and Asset Modelling

S2 Day 2017

Dept of Applied Finance and Actuarial Studies

Contents

<u>General Information</u>	2
<u>Learning Outcomes</u>	3
<u>General Assessment Information</u>	4
<u>Assessment Tasks</u>	4
<u>Delivery and Resources</u>	7
<u>Policies and Procedures</u>	9
<u>Graduate Capabilities</u>	11
<u>Changes from Previous Offering</u>	15
<u>Research and Practice</u>	15

Disclaimer

Macquarie University has taken all reasonable measures to ensure the information in this publication is accurate and up-to-date. However, the information may change or become out-dated as a result of change in University policies, procedures or rules. The University reserves the right to make changes to any information in this publication without notice. Users of this publication are advised to check the website version of this publication [or the relevant faculty or department] before acting on any information in this publication.

General Information

Unit convenor and teaching staff

Unit Administrator

Hong Xie

hong.xie@mq.edu.au

Contact via hong.xie@mq.edu.au

LECTURER AND UNIT COORDINATOR

Tim Kyng

timothy.kyng@mq.edu.au

Contact via email or via iLearn

E4A614

BY APPOINTMENT

LECTURER

Mark Berry

mark.berry@mq.edu.au

Contact via email or via iLearn

N/A

BY APPOINTMENT

LECTURER

John Peters

john.peters@mq.edu.au

Contact via email or via iLearn

N/A

BY APPOINTMENT

Angela Chow

angela.chow@mq.edu.au

Credit points

3

Prerequisites

ACST306 and ACST355 and ACST357

Corequisites

Co-badged status

Unit description

This unit examines investment from an actuarial practitioner's perspective. The unit examines the attributes and characteristics of asset classes and the application of models from economics and finance to investment management. Stochastic asset models are constructed and evaluated, with particular emphasis on the relationship between assets and liabilities. Students gaining a grade of credit or higher in all of ACST402, ACST403 and ACST404 are eligible for exemption from Part 2 of the professional exams of the Institute of Actuaries of Australia.

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:

Explain the behaviour of different investment types under different economic conditions, recognising risk factors including issuer default, counterparty failure, systemic liquidity, the collapse of speculative bubbles, shocks to the system and cyclical/structural changes. Develop an understanding of the methods used for valuation of the common forms of debt, equity, property and derivative investments. In particular students should be aware of: valuation methods and principles, data requirements and sources, assumptions and limitations of the valuation models.

Develop an understanding of the major economic and financial theories relevant to investment including the capital asset pricing model, multifactor pricing models, efficient markets hypothesis and ideas from behavioural finance.

Construct, critically evaluate and apply asset models that are appropriate to the management of liabilities. Define appropriate investment objectives based on the liability profile of a fund, specify appropriate investment constraints based on the liability profile of a fund, identify the characteristics of different types of asset models, critically evaluate the appropriateness of an asset model for a given context.

Understand the effective investment governance of an institutional investor. The role of the board, the investment committee, the internal investment team and external investment managers including setting an effective delegation matrix. Investment beliefs and philosophy. Describe and critically evaluate approaches to asset allocation. Manage agency issues. Assess investment managers. Investment performance measurement and analysis. Investment and operational risk analysis.

Demonstrate the capacity to conduct research related to investments, in particular

regarding application of valuation methods to hybrid securities, derivatives and real options.

General Assessment Information

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 criteria for all assessment tasks will be provided on the unit iLearn site.

Assignment and assessed coursework submission is through iLearn.

Assessment Tasks

Name	Weighting	Hurdle	Due
assessed coursework	10%	No	TBA
Assignment	20%	No	TBA
Final exam	70%	No	University examination period

assessed coursework

Due: **TBA**

Weighting: **10%**

We will have 4 assessed coursework (homework) tasks for this unit, due in weeks 3, 6, 8, and 11. These will be worth 2.5 marks each. The tasks will cover the course content of the weeks prior to the week in which the task is due but not covered previously: so task 1 due in week 3 will cover weeks 1 and 2, task 2 due in week 6 will cover weeks 3,4,5, etc. Typically these will have 5 small questions which will be marked on a pass / fail basis. Task 1 feedback will be provided before the census date. Students may decide whether to discontinue the unit based on this feedback. 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 disruption to studies is made and approved. These assessment tasks will be submitted electronically via iLearn. Details of the submission method will be provided on iLearn.

On successful completion you will be able to:

- Explain the behaviour of different investment types under different economic conditions, recognising risk factors including issuer default, counterparty failure, systemic liquidity, the collapse of speculative bubbles, shocks to the system and cyclical/structural

changes. Develop an understanding of the methods used for valuation of the common forms of debt, equity, property and derivative investments. In particular students should be aware of: valuation methods and principles, data requirements and sources, assumptions and limitations of the valuation models.

- Develop an understanding of the major economic and financial theories relevant to investment including the capital asset pricing model, multifactor pricing models, efficient markets hypothesis and ideas from behavioural finance.
- Construct, critically evaluate and apply asset models that are appropriate to the management of liabilities. Define appropriate investment objectives based on the liability profile of a fund, specify appropriate investment constraints based on the liability profile of a fund, identify the characteristics of different types of asset models, critically evaluate the appropriateness of an asset model for a given context.
- Understand the effective investment governance of an institutional investor. The role of the board, the investment committee, the internal investment team and external investment managers including setting an effective delegation matrix. Investment beliefs and philosophy. Describe and critically evaluate approaches to asset allocation. Manage agency issues. Assess investment managers. Investment performance measurement and analysis. Investment and operational risk analysis.

Assignment

Due: **TBA**

Weighting: **20%**

There will be two assignments (worth 10% each) due during the session requiring analysis and written response. The first will be made available during week 4 and due in week 7. The second will be made available during week 7 and due in week 9. These will be individual assignments, not group assignments. Note that there is a 2 week mid semester break between the end of week 7 and the start of week 8.

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 disruption to studies is made and approved. The assignment will be submitted electronically via iLearn.

Details of the submission method will be provided on iLearn.

On successful completion you will be able to:

- Explain the behaviour of different investment types under different economic conditions, recognising risk factors including issuer default, counterparty failure, systemic liquidity,

the collapse of speculative bubbles, shocks to the system and cyclical/structural changes. Develop an understanding of the methods used for valuation of the common forms of debt, equity, property and derivative investments. In particular students should be aware of: valuation methods and principles, data requirements and sources, assumptions and limitations of the valuation models.

- Develop an understanding of the major economic and financial theories relevant to investment including the capital asset pricing model, multifactor pricing models, efficient markets hypothesis and ideas from behavioural finance.
- Construct, critically evaluate and apply asset models that are appropriate to the management of liabilities. Define appropriate investment objectives based on the liability profile of a fund, specify appropriate investment constraints based on the liability profile of a fund, identify the characteristics of different types of asset models, critically evaluate the appropriateness of an asset model for a given context.
- Understand the effective investment governance of an institutional investor. The role of the board, the investment committee, the internal investment team and external investment managers including setting an effective delegation matrix. Investment beliefs and philosophy. Describe and critically evaluate approaches to asset allocation. Manage agency issues. Assess investment managers. Investment performance measurement and analysis. Investment and operational risk analysis.
- Demonstrate the capacity to conduct research related to investments, in particular regarding application of valuation methods to hybrid securities, derivatives and real options.

Final exam

Due: **University examination period**

Weighting: **70%**

A 3 hour final examination for this unit will be held during the university examination period. This will be an open book examination where students may bring notes. Details of what will be permitted during the final exam will be given during the unit.

Calculators will be allowed in the final examination but a clear indication of the steps involved in every calculation must be shown. Any machines that have a text-retrieval capacity, specifically those with a full alphabet on the keyboard, are not allowed. Calculators may be checked at the commencement of the examination and the make/model may be recorded.

Dictionaries are not permitted in the final examination and no reference materials are allowed to be taken into the final examination.

No extensions will be granted. Students who have not sat the exam will be awarded a mark of 0 for the task, except for cases in which an application for disruption to studies is made and approved

On successful completion you will be able to:

- Explain the behaviour of different investment types under different economic conditions, recognising risk factors including issuer default, counterparty failure, systemic liquidity, the collapse of speculative bubbles, shocks to the system and cyclical/structural changes. Develop an understanding of the methods used for valuation of the common forms of debt, equity, property and derivative investments. In particular students should be aware of: valuation methods and principles, data requirements and sources, assumptions and limitations of the valuation models.
- Develop an understanding of the major economic and financial theories relevant to investment including the capital asset pricing model, multifactor pricing models, efficient markets hypothesis and ideas from behavioural finance.
- Construct, critically evaluate and apply asset models that are appropriate to the management of liabilities. Define appropriate investment objectives based on the liability profile of a fund, specify appropriate investment constraints based on the liability profile of a fund, identify the characteristics of different types of asset models, critically evaluate the appropriateness of an asset model for a given context.
- Understand the effective investment governance of an institutional investor. The role of the board, the investment committee, the internal investment team and external investment managers including setting an effective delegation matrix. Investment beliefs and philosophy. Describe and critically evaluate approaches to asset allocation. Manage agency issues. Assess investment managers. Investment performance measurement and analysis. Investment and operational risk analysis.
- Demonstrate the capacity to conduct research related to investments, in particular regarding application of valuation methods to hybrid securities, derivatives and real options.

Delivery and Resources

Classes

Any alterations to the class times or locations will be advised in class and on the iLearn subject page.

Campus classes

Lectures for this unit will be held on Saturdays between 9am and 12pm in building C5C Theatre

1, Macquarie University, North Ryde. The first lecture will be on 5 August 2017.

For further details relating to the timetables, please refer to the following link: <http://timetables.mq.edu.au>

Distance education class

If you have enrolled for the distance education offering of this unit you will have access to all materials from the face to face classes (learning guides, lecture slides/overheads, handouts, exercises etc) and the same discussions and other activities via the ACST404/871 iLearn page.

The 2 hour lecture and 1 hour tutorial will be stored using *iLearn* software and will be available as a download from *iLearn*.

Required and Recommended texts and/or materials

There are 2 textbooks for this course:

Recommended:

Fitzherbert, Richard

Investment Principles for Actuaries, ISBN 978 0 85813 072 2

(Referred to elsewhere in this unit guide as **FITZ**)

Required

Bodie, Drew, Basu, Kane and Marcus

Principles of Investments, ISBN 9780071012386

(Referred to elsewhere in this unit guide as **BDBKM**)

BDBKM is available from the Macquarie University Co-op Bookshop. Distance education students can obtain **BDBKM** from on-line booksellers such as Amazon. **FITZ** is available from the Actuaries Institute of Australia online bookshop web address <http://www.actuaries.asn.au/TechnicalResources/OnlineBookshop.aspx>.

Additional readings as PDF files will also be made available via the iLearn system or will be available in the public domain or on the internet.

Unit web page & Technology Used and Required

All Students

The ACST404/871 iLearn page is integral to this course unit, whether you are a distance student or in a face to face class.

iLearn can be accessed via <http://ilearn.mq.edu.au>.

We will make announcements about unit administration and assessment tasks via iLearn. These announcements will be sent as emails to your Macquarie University student email account. You should check your student email account regularly, at least every couple of days.

Distance Education Students

The 2 hour lecture and 1 hour tutorial will be stored using *iLearn* software and will be available as a download from *iLearn*.

It is very important that distance students check their student email for unit announcements regularly, at least every couple of days. In particular, towards the end of semester you should check for announcements on the final exam.

Teaching and Learning Strategy

Important – Students are expected to have completed the assigned reading BEFORE each lecture.

Most of the 3 hour sessions will consist of a 2 hour lecture covering the material for the week followed a workshop / tutorial in the last 1 hour.

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

Assessment Policy http://mq.edu.au/policy/docs/assessment/policy_2016.html

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

Complaint Management Procedure for Students and Members of the Public http://www.mq.edu.au/policy/docs/complaint_management/procedure.html

Disruption to Studies Policy (in effect until Dec 4th, 2017): http://www.mq.edu.au/policy/docs/disruption_studies/policy.html

Special Consideration Policy (in effect from Dec 4th, 2017): <https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policies/special-consideration>

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/

Results

Results shown in *iLearn*, 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.

Supplementary Exams

Information regarding supplementary exams, including dates, is available at:

http://www.businessandeconomics.mq.edu.au/current_students/undergraduate/how_do_i_disruption_to_studies

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 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

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

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

- Explain the behaviour of different investment types under different economic conditions, recognising risk factors including issuer default, counterparty failure, systemic liquidity, the collapse of speculative bubbles, shocks to the system and cyclical/structural changes. Develop an understanding of the methods used for valuation of the common forms of debt, equity, property and derivative investments. In particular students should be aware of: valuation methods and principles, data requirements and sources, assumptions and limitations of the valuation models.
- Develop an understanding of the major economic and financial theories relevant to investment including the capital asset pricing model, multifactor pricing models, efficient markets hypothesis and ideas from behavioural finance.
- Construct, critically evaluate and apply asset models that are appropriate to the management of liabilities. Define appropriate investment objectives based on the liability profile of a fund, specify appropriate investment constraints based on the liability profile of a fund, identify the characteristics of different types of asset models, critically evaluate the appropriateness of an asset model for a given context.
- Understand the effective investment governance of an institutional investor. The role of the board, the investment committee, the internal investment team and external investment managers including setting an effective delegation matrix. Investment beliefs and philosophy. Describe and critically evaluate approaches to asset allocation. Manage agency issues. Assess investment managers. Investment performance measurement and analysis. Investment and operational risk analysis.
- Demonstrate the capacity to conduct research related to investments, in particular regarding application of valuation methods to hybrid securities, derivatives and real options.

Assessment tasks

- assessed coursework
- Assignment
- Final exam

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

- Explain the behaviour of different investment types under different economic conditions, recognising risk factors including issuer default, counterparty failure, systemic liquidity, the collapse of speculative bubbles, shocks to the system and cyclical/structural changes. Develop an understanding of the methods used for valuation of the common forms of debt, equity, property and derivative investments. In particular students should be aware of: valuation methods and principles, data requirements and sources, assumptions and limitations of the valuation models.
- Develop an understanding of the major economic and financial theories relevant to investment including the capital asset pricing model, multifactor pricing models, efficient markets hypothesis and ideas from behavioural finance.
- Construct, critically evaluate and apply asset models that are appropriate to the management of liabilities. Define appropriate investment objectives based on the liability profile of a fund, specify appropriate investment constraints based on the liability profile of a fund, identify the characteristics of different types of asset models, critically evaluate the appropriateness of an asset model for a given context.
- Understand the effective investment governance of an institutional investor. The role of the board, the investment committee, the internal investment team and external investment managers including setting an effective delegation matrix. Investment beliefs and philosophy. Describe and critically evaluate approaches to asset allocation. Manage agency issues. Assess investment managers. Investment performance measurement and analysis. Investment and operational risk analysis.
- Demonstrate the capacity to conduct research related to investments, in particular regarding application of valuation methods to hybrid securities, derivatives and real

options.

Assessment tasks

- assessed coursework
- Assignment
- Final exam

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

- Explain the behaviour of different investment types under different economic conditions, recognising risk factors including issuer default, counterparty failure, systemic liquidity, the collapse of speculative bubbles, shocks to the system and cyclical/structural changes. Develop an understanding of the methods used for valuation of the common forms of debt, equity, property and derivative investments. In particular students should be aware of: valuation methods and principles, data requirements and sources, assumptions and limitations of the valuation models.
- Develop an understanding of the major economic and financial theories relevant to investment including the capital asset pricing model, multifactor pricing models, efficient markets hypothesis and ideas from behavioural finance.
- Construct, critically evaluate and apply asset models that are appropriate to the management of liabilities. Define appropriate investment objectives based on the liability profile of a fund, specify appropriate investment constraints based on the liability profile of a fund, identify the characteristics of different types of asset models, critically evaluate the appropriateness of an asset model for a given context.
- Understand the effective investment governance of an institutional investor. The role of the board, the investment committee, the internal investment team and external investment managers including setting an effective delegation matrix. Investment beliefs and philosophy. Describe and critically evaluate approaches to asset allocation. Manage agency issues. Assess investment managers. Investment performance measurement and analysis. Investment and operational risk analysis.
- Demonstrate the capacity to conduct research related to investments, in particular

regarding application of valuation methods to hybrid securities, derivatives and real options.

Assessment tasks

- assessed coursework
- Assignment
- Final exam

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 outcomes

- Explain the behaviour of different investment types under different economic conditions, recognising risk factors including issuer default, counterparty failure, systemic liquidity, the collapse of speculative bubbles, shocks to the system and cyclical/structural changes. Develop an understanding of the methods used for valuation of the common forms of debt, equity, property and derivative investments. In particular students should be aware of: valuation methods and principles, data requirements and sources, assumptions and limitations of the valuation models.
- Understand the effective investment governance of an institutional investor. The role of the board, the investment committee, the internal investment team and external investment managers including setting an effective delegation matrix. Investment beliefs and philosophy. Describe and critically evaluate approaches to asset allocation. Manage agency issues. Assess investment managers. Investment performance measurement and analysis. Investment and operational risk analysis.
- Demonstrate the capacity to conduct research related to investments, in particular regarding application of valuation methods to hybrid securities, derivatives and real options.

Assessment tasks

- Assignment
- Final exam

Changes from Previous Offering

There are no changes in the assessment tasks. The assessment is the same as last year.

Research and Practice

The unit will develop students' abilities to conduct research in a practical context through a wide range of readings, discussions and class activities.