AFCP8071

Risk and Portfolio Construction

AFC term 3, Weekday attendance, City 2020

Department of Applied Finance

Contents

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General Information

Unit convenor and teaching staff
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Contact via Email

Credit points
5

Prerequisites
AFCP801 or AFCP8001 or ECFS865

Corequisites

Co-badged status

Unit description
This unit deals with the key issues relating to the building of institutional portfolios. Students will learn how to identify, measure and control various risks within a portfolio. Building on this knowledge the unit examines practical and theoretical aspects in the application of Modern Portfolio Theory (MPT) to the real world. Several extensions of MPT and alternative portfolio construction approaches are also examined. Emphasis is placed on the impact that errors in inputs and incorrect assumptions have on portfolio outcomes. Teaching uses a mixture of lectures and hands-on spreadsheets to illustrate the ideas.

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:

ULO1: Identify and measure the various sources of institutional portfolio risks.

ULO2: Apply alternative portfolio construction and risk control techniques to 'real world' situations.

ULO3: Apply and interpret a range of return forecasting methods to construct and effectively manage an institutional portfolio.

General Assessment Information

Further information on submitting an Application for Special Consideration can be found at http

s://students.mq.edu.au/study/my-study-program/special-consideration

Assessment Tasks

Name	Weighting	Hurdle	Due
Assignment	5%	No	Refer to iLearn
Assignment	35%	No	Refer to iLearn
Final Examination	60%	No	Refer to Timetable

Assignment

Assessment Type [1]: Case study/analysis
Indicative Time on Task [2]: 3.00 hours
Due: **Refer to iLearn**
Weighting: **5%**

A short individual assignment of up to 1,500 words assessing prior knowledge relevant to the unit.

On successful completion you will be able to:

- Identify and measure the various sources of institutional portfolio risks.
- Apply alternative portfolio construction and risk control techniques to 'real world' situations.

Assignment

Assessment Type [1]: Case study/analysis
Indicative Time on Task [2]: 11.00 hours
Due: **Refer to iLearn**
Weighting: **35%**

Individual assignment submitted as a paper of up to 3,000 words.

On successful completion you will be able to:

- Identify and measure the various sources of institutional portfolio risks.

- Apply alternative portfolio construction and risk control techniques to 'real world' situations.

- Apply and interpret a range of return forecasting methods to construct and effectively manage an institutional portfolio.

Final Examination

Assessment Type [1]: Examination
Indicative Time on Task [2]: 17.00 hours
Due: **Refer to Timetable**
Weighting: **60%**

A two-hour examination will be held during the Term's Exam Week.

On successful completion you will be able to:

- Identify and measure the various sources of institutional portfolio risks.

- Apply alternative portfolio construction and risk control techniques to 'real world' situations.

- Apply and interpret a range of return forecasting methods to construct and effectively manage an institutional portfolio.

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[1] If you need help with your assignment, please contact:

- the academic teaching staff in your unit for guidance in understanding or completing this type of assessment

- the Writing Centre for academic skills support.

[2] Indicative time-on-task is an estimate of the time required for completion of the assessment task and is subject to individual variation

Delivery and Resources

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.
- **Students should assume these readings are examinable unless otherwise advised.**

Lecture Notes: Available via iLearn.

Laptop Computer: Spreadsheet examples are used frequently to illustrate course content. It is *recommended* that you bring a laptop computer to most effectively participate in class exercises. This is not compulsory. If you do not have access to a laptop you can do the exercises at another time.

Study Problems: Students are required to work systematically through suggested technical examples. These examples will not be collected but they will help you prepare for the exams. Answers to the examples will be posted on iLearn.

Calculators: In examinations, hand held calculators are permitted. Mobile phones and computers are not permitted.

Pre-unit Materials: Students should have a thorough understanding of the statistical topics from the AFCP6018 Quantitative and Economic Analysis gateway unit and all topics in AFCP8001 Portfolio Management and Valuation.

Assumed Access: Access to a computer with word processing and spreadsheet capability is assumed, as is general student computer literacy.

TECHNOLOGY USED AND REQUIRED

Unit iLearn Site:

- Found by logging on to iLearn ilearn.mq.edu.au, then clicking on **AFCP8071 Risk and Portfolio Construction**

- This is where you will find 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 assignment submission date or the examination 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

Sources of Portfolio Risk

- Deconstructing the investment process
- Sources of portfolio risks: market, competitor, absolute (e.g. volatility), relative (e.g. tracking error vs a benchmark), downside, upside, legal, behavioural
- Control of risks using qualitative means: what risks can be controls and how
- Quantitative: pros and cons of alternative metrics
- Decomposing quantitative risk and how that's used for risk budgeting and alpha transport
- Benchmarking – principles and issues

Sources of Error and their Implications

- What types of errors occur in a portfolio construction process? What are their impacts? Are some more serious than others? Is an optimiser an error maximiser?
- How can we mitigate the impact of errors?
- Topics covered are: utility theory, optimisation algorithms, statistical characteristics of financial data, measurement of errors, the impact of errors, shrinkage estimators

Factor Models

- Types of factor models: macroeconomic, statistical and fundamental
- Building a returns model
- Performance attribution using a fundamental factor model
- Building a risk model

Alternative Portfolio Construction Approaches

- Reverse optimisation/Implied returns
- Black-Litterman
- Asset-Liability modelling
- Using resampling – Monte-Carlo techniques
- Life Cycle Investing
- Risk focused strategies – minimum variance, risk parity
- Capital protection strategies - using derivatives

Forecasting Returns

- Smart Beta

- Theoretically consistent forecasts

Case Studies

- Small groups will be formed to review and present a relevant paper to the class. This is not assessable.

Policies and Procedures

Macquarie University policies and procedures are accessible from Policy Central (https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central). 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.)*

Students seeking more policy resources can visit the Student Policy Gateway (https://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

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 help you improve your marks and take control of your study.

- Getting help with your assignment
- Workshops
- StudyWise
- Academic Integrity Module

The Library provides online and face to face support to help you find and use relevant information resources.

- Subject and Research Guides
- Ask a Librarian

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.