AFIN8090

Financial Modelling and Forecasting

Session 2, Special circumstance 2020

Department of Applied Finance

Contents

Disclaimer

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Notice

As part of Phase 3 of our return to campus plan, most units will now run tutorials, seminars and ot her small group learning activities on campus for the second half-year, while keeping an online ver sion available for those students unable to return or those who choose to continue their studies onli ne.

To check the availability of face-to-face and onlin e activities for your unit, please go to timetable vi ewer. To check detailed information on unit asses sments visit your unit's iLearn space or consult yo ur unit convenor.

General Information

Unit convenor and teaching staff
Unit Convenor
Abhay Singh
abhay.singh@mq.edu.au

Credit points
10

Prerequisites
ACST603 or ACST6003 or AFIN6012 or AFIN613 or AFIN6013 or AFIN858

Corequisites

Co-badged status

Unit description
This unit applies financial modelling and forecasting principles to various methods and theories covered in the corporate finance and financial statement analysis fields. This is an excellent course for students with an interest in a career in corporate finance or financial statement analysis. The modelling and forecasting principles covered in this course are not simply an application of extrapolative techniques to historical data. Rather, there is an emphasis on modelling the uncertainty, and alerting decision makers, of corporate change as the forecast horizon increases.This is very much a hands-on course and the lectures use worked examples throughout, requiring students to be at computer terminals with access to excel and industry standard simulation packages. The worked examples are designed to reinforce the financial modelling and forecasting principles covered in the course.

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: Evaluate and summarise with appropriate statistics the empirical properties of financial time series data.

ULO2: Build and estimate a range of quantitative, statistical models used by financial analysts and forecasters using software tools.

ULO3: Apply both traditional and modern time series methods in forecasting financial

risk and return using software tools.

ULO4: Present a complex model in simple and credible terms, understandable by decision makers.

ULO5: Model uncertainty in the financial markets to include these effects in their analysis.

General Assessment Information

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

It is the responsibility of students to view their marks for each within-session-assessment on iLearn within 20 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 tasks (not including the final exam mark) will not be addressed.

Late submissions and extensions

Tasks 10% or less – 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.

Tasks above 10% - 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 – 20% penalty). This penalty does not apply for cases in which an application for special consideration is made and approved. No submission will be accepted after solutions have been posted.

Assessment Tasks

Name	Weighting	Hurdle	Due
Online Quiz	5%	No	Week 4
Modelling Task 1	35%	No	Week 7
Modelling Task 2	60%	No	Week 13

Online Quiz

Assessment Type [1]: Quiz/Test
Indicative Time on Task [2]: 2 hours
Due: **Week 4**
Weighting: **5%**

The online quiz will consist of 10 to 15 multiple choice and/or short answer questions. Please use the quiz result as an indicator of whether you are progressing satisfactorily in the unit.

On successful completion you will be able to:

- Evaluate and summarise with appropriate statistics the empirical properties of financial time series data.

Modelling Task 1

Assessment Type [1]: Modelling task
Indicative Time on Task [2]: 20 hours
Due: **Week 7**
Weighting: **35%**

The assignment requires students to employ selected financial modelling techniques discussed in the class lectures to analyse real world data. The task involves using Excel and R software to generate financial analytics for Financial Portfolio Modelling and Financial Risk Modelling.

On successful completion you will be able to:

- Evaluate and summarise with appropriate statistics the empirical properties of financial time series data.

- Build and estimate a range of quantitative, statistical models used by financial analysts and forecasters using software tools.

- Apply both traditional and modern time series methods in forecasting financial risk and return using software tools.

- Present a complex model in simple and credible terms, understandable by decision makers.

- Model uncertainty in the financial markets to include these effects in their analysis.

Modelling Task 2

Assessment Type [1]: Modelling task
Indicative Time on Task [2]: 30 hours
Due: **Week 13**
Weighting: **60%**

The assignment requires students to employ selected financial risk forecasting techniques discussed in the class lectures to analyse real world data. The task involves using R software and econometrics methods to quantify financial risk for individual assets and portfolios. The analysis will need to be discussed and presented in a document. An oral presentation may also be required.

On successful completion you will be able to:

- Evaluate and summarise with appropriate statistics the empirical properties of financial time series data.

- Build and estimate a range of quantitative, statistical models used by financial analysts

and forecasters using software tools.

- Apply both traditional and modern time series methods in forecasting financial risk and return using software tools.

- Present a complex model in simple and credible terms, understandable by decision makers.

- Model uncertainty in the financial markets to include these effects in their analysis.

[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

Required Text:	The unit will utilise various library resources, including research papers, book chapters, case studies etc., and relevant material will be made available on ilearn.
Unit Web Page:	Log in via https://ilearn.mq.edu.au
Technology Used and Required:	**Necessary technology**: Computer with MS Excel, R and RStudio software, scientific or business calculator without alphanumeric capabilities, internet access. Useful technology: The MATLAB and Python software environment is very useful if you intend doing this sort of work professionally.
Delivery Format and Other Details:	**Classes** A typical class will be structured as recorded lecture(s) and a live lecture with hands on example. The two parts will mostly flow together and not separately. Please feel free to ask (and answer!) questions throughout the class. Attendance at the live sessions is expected. **Teaching and Learning Activities** The teaching in the unit will be interactive case study style delivery where financial modelling and forecasting methods will be discussed along with hands on examples using Excel and R. You are strongly advised to attempt all examples before the weekly lectures, and before consulting the solutions. You are encouraged to submit your workings of the class examples for further feedback.

Recommended Readings:	We will supplement the lecture materials with readings from journals and other textbooks. A list of relevant material will be provided on iLearn site.
	Following are some of the recommended readings:
	• Rees, M. (2015). Building Blocks: Selected Excel Functions and Tools. In Financial Modelling in Practice (pp. 1-48). Hoboken, NJ, USA: John Wiley & Sons.
	• Fairhurst, D. (2015). Using Excel in Financial Modelling. In Using Excel for Business Analysis (pp. 71-92). Hoboken, NJ, USA: John Wiley & Sons.
	• Pfaff, B. (2013). *Financial Risk Modelling and Portfolio Optimization with R*. New York: John Wiley & Sons, Incorporated.
	• Hands-On Programming with R (1st ed.). (2014). O'Reilly Media.Also available at https://rstudio-education.github.io/hopr/index.html
	• Ha?rdle, Wolfgang, Chen, Cathy Yi - Hsuan, Overbeck, Ludger, & Springer - Verlag Gmbh. (2017). *Applied quantitative finance* (Statistics and computing). Berlin, Germany: Springer.
	• Choe, G., & Springer International Publishing Ag. (2016). *Stochastic analysis for finance with simulations* (Universitext).
	• Singh, A., & Allen, David E. (2017). R in finance and economics : A beginner's guide / Abhay Kumar Singh, David Edmund Allen.

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.