IB9MJ-15 Financial Analytics

26/27

Department
Warwick Business School
Level
Taught Postgraduate Level
Module leader
Credit value
15
Module duration
9 weeks
Assessment
20% coursework, 80% exam
Study location
University of Warwick main campus, Coventry

Description

Introductory description

The module provides an introduction to financial analytics by applying various (analytical, statistical and mathematical) techniques to financial market and investment portfolios. As an important aspect of financial analytics we introduce various modelling and solving approaches for decision making problems arising in finance. We look at the analytics process from data management, modelling and computational tools perspectives. We will review various widely used approaches to portfolio analytics and introduce modelling approaches for portfolio analytics system design. The theoretical and practical aspects of various approaches will be motivated through underlying financial decision making problems using the financial market data and complexities of financial decision making problems will be addressed.
This module doesn’t require any prior knowledge of finance and is designed for beginners in this subject.

Module aims

The module aims are:

- to identify the underlying foundation and role of business analytics in financial decision making,
- to make students aware of complexities and special issues related to financial analytics,
- to provide a basic understanding how these complexities and practical issues can be

tackled, and
- to prepare students for a variety of industrial and academic roles.

Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

Some topics to be covered in this module may include:

- Introduction to investment theory (time value of money)
- Asset valuation (fixed income securities, equities, and their valuations)
- Asset allocation problem (single-period mean-variance portfolio optimization)
- Asset pricing models (such as CAPM and APT)
- Practical issues for portfolio/risk management (such as parameter estimation, robust asset allocation, risk management models)
- Liability driven portfolios (such as asset and liability management, corporate debt management)
- Derivatives (forwards, futures, options)

Learning outcomes

By the end of the module, students should be able to:

- Demonstrate a comprehensive understanding of various analytics concepts commonly used in finance
- Demonstrate an understanding of theoretical and practical aspects of modelling and solving financial problems
- Critically evaluate the strengths and weaknesses of different approaches
- Analyse and evaluate case studies and model and solve the underlying problems effectively

Indicative reading list

Reading lists can be found in Talis

Subject specific skills

Evaluate and apply analytics to financial decision making problems
Develop and demonstrate modelling skills to formally describe and model typical financial problems
Appraise, evaluate and then use a range of modelling and solution approaches for typical financial decision making problems

Transferable skills

Demonstrate problem solving skills and implementation of computational tools

Study

Study time

Type	Required
Lectures	9 sessions of 1 hour (6%)
Practical classes	(0%)
Online learning (scheduled sessions)	(0%)
Other activity	18 hours (12%)
Private study	51 hours (34%)
Assessment	72 hours (48%)
Total	150 hours

Private study description

Private study to include preparation for lectures and own reading

Other activity description

9 x 2 hr workshops

Costs

No further costs have been identified for this module.

Assessment

You do not need to pass all assessment components to pass the module.

Assessment group D4

Assessment component	Weighting	Study time	Eligible for self-certification
Problem solving and modelling project	20%	14 hours	No

Problem solving and modelling that include presentation and written and numerical elements (1500 words)

	Weighting	Study time	Eligible for self-certification
Reassessment component			
Individual Assignment Individual Assignment 1000 words			Yes (extension)
Assessment component			
In-person Examination	80%	58 hours	No

- Answerbook Green (8 page)
- Students may use a calculator

Reassessment component is the same

Feedback on assessment

Feedback via myWBS

Past exam papers for IB9MJ

Availability

Pre-requisites

To take this module, you must have passed:

- All of
  - IB94Z-15 Optimisation Models

Courses

This module is Optional for:

- Year 1 of TIBS-H60Z MSc Financial Technology
- Year 1 of TIBS-N1N3 Postgraduate Taught Business Analytics