IB359-15 Derivatives and Risk Management

22/23

Department
> Warwick Business School

Level
> Undergraduate Level 3

Module leader
> Alexander Stremme

Credit value
> 15

Module duration
> 10 weeks

Assessment
> Multiple

Study location
> University of Warwick main campus, Coventry

Description

Introductory description

This is an elective for WBS and non-WBS students.
To build and extend students' understanding of …
the nature and characteristics of different types of financial risks
the characteristics of different types of "derivative securities":

- the mechanics of the markets on which they trade,
    - their usage in risk management,
    - the factors that determine their value, and
    - the risks associated with trading them.

[Module web page](#)

Module aims

To build and extend students' understanding of …
the nature and characteristics of different types of financial risks
the characteristics of different types of "derivative securities":

- the mechanics of the markets on which they trade,
  - their usage in risk management,
  - the factors that determine their value, and
  - the risks associated with trading them.

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.

A Introduction to Risk, Value-at-Risk
B Derivatives
B.1 Interest Rates and Bonds
B.2 Forwards and Futures
B.3 Options:
a) Foundations
b) Pricing
c) Advanced Topics
B.4 Interest Rate Derivatives
C Selected Advanced Topics (time permitting)
a) Current Issues
b) Credit Derivatives
c) Exotic Options
d) Term Structure Models

Learning outcomes

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

- Define and explain the characteristics of different types of derivative securities and markets..
- Define and explain different types of financial risk and the markets on which they trade.
- Define and explain mechanics, properties and limitations of models for the dynamics of asset prices.
- Define and explain the '(no)-arbitrage principle' for derivatives pricing by replication.
- Analyse and interpret financial market data in the context of the theory developed in the module.
- Discuss and evaluate quantitative results in the context of the theory developed in the module.

Indicative reading list

Core:
Hull, John C. (2018): "Options, Futures, and Other Derivatives", 10th ed. Pearson
Other:
Hull, John C. (2018): "Risk Management and Financial Institutions", 5th ed. Wiley
Sundaram, R. and S. Das (2016): "Derivatives", 2nd ed. McGraw-Hill
Jorion, P. (2003): "Financial Risk Manager's Handbook" Wiley

Subject specific skills

Use a variety of quantitative and statistical methods to:

- use financial market data to estimate and validate various measures of risk;
- operationalise models to compute and analuse the value and risks of derivatives;
- propose and assess performance of strategies for risk management in practice.

Transferable skills

- Report and present quantitative findings to specialist and lay audiences;
- Use a variety of quantitative and statistical software;
- Work effectively as leader or member of a team;
- Communicate effectively and efficiently.

Study

Study time

Type	Required
Lectures	10 sessions of 2 hours (13%)
Seminars	9 sessions of 1 hour (6%)
Private study	48 hours (32%)
Assessment	73 hours (49%)
Total	150 hours

Private study description

Private Study.

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

	Weighting	Study time
Participation	10%	7 hours
Group Project	20%	15 hours
In-person Examination	70%	51 hours

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

Assessment group R1

	Weighting	Study time
Individual Assignment	30%	
In-person Examination - Resit	70%	

Feedback on assessment

my.wbs, verbal feedback in lectures/revision sessions.

[Past exam papers for IB359](#)

Availability

Pre-requisites

To take this module, you must have passed:

- Any of

  - IB235-12 Finance 1: Financial Markets
  - [IB253-15 Principles of Finance 1](#)
  - [IB266-15 Fundamentals of Finance](#)

Courses

This module is Optional for:

- UIBA-MN34 Law and Business Four Year (Qualifying Degree)
  - Year 3 of MN34 Law and Business Studies Four Year (Qualifying Degree)
  - Year 4 of MN34 Law and Business Studies Four Year (Qualifying Degree)
- UECA-3 Undergraduate Economics 3 Year Variants
  - Year 3 of L100 Economics
  - Year 3 of L100 Economics
  - Year 3 of L100 Economics
  - Year 3 of L116 Economics and Industrial Organization

- ○ Year 3 of L116 Economics and Industrial Organization
- UECA-4 Undergraduate Economics 4 Year Variants
  - ○ Year 4 of L103 Economics with Study Abroad
  - ○ Year 4 of LM1H Economics, Politics & International Studies with Study Abroad
  - ○ Year 4 of LM1H Economics, Politics & International Studies with Study Abroad
  - ○ Year 4 of L114 Industrial Economics with Study in Europe
- UECA-LM1D Undergraduate Economics, Politics and International Studies
  - ○ Year 3 of LM1D Economics, Politics and International Studies
  - ○ Year 3 of LM1D Economics, Politics and International Studies
- Year 3 of UIBA-MN31 Undergraduate Law and Business Studies
- UIBA-MN32 Undergraduate Law and Business Studies
  - ○ Year 3 of MN32 Law and Business Studies (Four-Year)
  - ○ Year 4 of MN32 Law and Business Studies (Four-Year)
- Year 5 of UIBA-MN37 Undergraduate Law and Business Studies (Qualifying Degree) with Intercalated Year
- UIBA-MN35 Undergraduate Law and Business Studies with Intercalated Year (3+1)
  - ○ Year 3 of MN35 Law and Business Studies with Intercalated Year (3+1)
  - ○ Year 4 of MN35 Law and Business Studies with Intercalated Year (3+1)
- Year 5 of UIBA-MN36 Undergraduate Law and Business Studies with Intercalated Year (4+1)
- USTA-G300 Undergraduate Master of Mathematics,Operational Research,Statistics and Economics
  - ○ Year 3 of G300 Mathematics, Operational Research, Statistics and Economics
  - ○ Year 4 of G300 Mathematics, Operational Research, Statistics and Economics
- Year 3 of UMAA-GL11 Undergraduate Mathematics and Economics
- Year 4 of UECA-GL12 Undergraduate Mathematics and Economics (with Intercalated Year)

This module is Unusual option for:

- UPHA-V7ML Undergraduate Philosophy, Politics and Economics
  - ○ Year 3 of V7ML Philosophy, Politics and Economics (Tripartite)
  - ○ Year 3 of V7ML Philosophy, Politics and Economics (Tripartite)
  - ○ Year 3 of V7ML Philosophy, Politics and Economics (Tripartite)

This module is Option list A for:

- Year 4 of USTA-G300 Undergraduate Master of Mathematics,Operational Research,Statistics and Economics
- Year 5 of USTA-G301 Undergraduate Master of Mathematics,Operational Research,Statistics and Economics (with Intercalated

This module is Option list B for:

- USTA-Y602 Undergraduate Mathematics,Operational Research,Statistics and Economics
  - ○ Year 3 of Y602 Mathematics,Operational Research,Stats,Economics
  - ○ Year 3 of Y602 Mathematics,Operational Research,Stats,Economics

This module is Option list G for:

- UPHA-V7ML Undergraduate Philosophy, Politics and Economics
  - Year 2 of V7ML Philosophy, Politics and Economics (Tripartite)
  - Year 2 of V7ML Philosophy, Politics and Economics (Tripartite)
  - Year 2 of V7ML Philosophy, Politics and Economics (Tripartite)