APPLIES TO ACADEMIC YEAR 2014/2015

DRE 4014 Valuation of Derivatives

Programme
Finance

Responsible for the course
Richard Priestley, Richard Stapleton, University of Manchester

Department
Department of Financial Economics

Term
According to study plan

ECTS Credits
6

Language of instruction
English

Introduction

Please note that this course will be revised before it is offered again.

This course covers the valuation of derivatives within a complete markets model, using preference restrictions. It is based on several chapters from Poon and Stapleton, Asset pricing in discrete time: a complete markets approach.

Learning outcome

Learning Outcome:
1. To appreciate how the shape of the pricing kernel aects the pricing of options
2. To understand the utility theoretic determinants of the pricing kernel
3. To derive the Black model in a single-period economy
4. To appreciate the limitations of the Black model and derive extensions, including
option bounds
5. To derive the Black model in a single-period economy
6. To understand the dierence between futures and forward prices

Prerequisites
Admission to a PhD Programme is a general requirement for participation in PhD courses at BI Norwegian Business School.

External candidates are kindly asked to attach confirmation of admission to a PhD programme when signing up for a course with the doctoral administration. Other candidates may be allowed to sit in on courses by approval of the courseleader. Sitting in on courses does not permit registration for courses, handing in exams or gaining credits for the course. Course certificates or conformation letters will not be issued for sitting in on courses

Compulsory reading
Books:
Cochrane, John H.. 2005. Asset pricing. Rev. ed. Princeton, N.J. : Princeton University Press
Huang, Chi-fu and R. H. Litzenberger. 1988. Foundations for financial economics. New York : North-Holland
Poon, Ser-Huang and Richard C. Stapleton. 2005. Asset pricing in discrete time : a complete markets approach. Oxford : Oxford University Press

Recommended reading

Course outline

Lecture Outline
1. The complete markets model: Valuation of options
Reading: Poon and Stapleton, ch 3, Option Pricing in a single-period model.
Huang and Litzenberger, ch 6, Valuation of Complex Securities and Options with Preference Restrictions
Cochrane, ch 3, Option Pricing
2. Utility theory and the pricing kernel
Poon and Stapleton, ch 2
Eekhoudt, Gollier and Schlesinger, Economic and Financial Decisions Under Risk, Princeton UP, 2005
3. Extensions to Black-Scholes
Poon and Stapleton, ch 4, Valuation of contingent claims: extensions
Cochrane, ch 18, Option Pricing without perfect replication
4. Conditions for the Black model and the pricing of Interest-Rate Options
Franke, Huang and Stapleton, `A two-dimensional risk-neutral valuation relationship
for the valuation of options' Review of Derivatives Research, (2007)
5. Futures prices in the multi-period model
Poon and Stapleton, ch 5, 6

Cox, Ingersoll and Ross, `The relationship between forward and futures prices', JFE (1981)

Computer-based tools

Learning process and workload

Workload (6 ECTS)

Lectures	30 hours
Specified learning activities (including reading)	75 hours
Autonomous student learning (including exam preparation)	75 hours
Total	180 hours

Examination
Will be graded on the ECTS scale (A to F). There will be 3 hour written exam that counts 100% of the grade

Examination code(s)
DRE 40141 3 hour written exam that counts 100% of the grade.

Examination support materials
BI-approved exam calculator only

BI-approved exam calculator: TEXAS INSTRUMENTS BA II PlusTM.
Instruction manuals can only be used at examinations where “all exam aids” are allowed. In cases where a BI-approved calculator is allowed, only one – 1- such calculator can be brought to the examination premises. In addition one simple calculator can be brought.

Re-sit examination
Re-takes are only possible at the next time a course will be held. When the course evaluation has a separate exam code for each part of the evaluation it is possible to retake parts of the evaluation. Otherwise, the whole course must be re-evaluated when a student wants to retake an examffered

Additional information

Honour Code
Academic honesty and trust are important to all of us as individuals, and represent values that are encouraged and promoted by the honour code system. This is a most significant university tradition. Students are responsible for familiarizing themselves with the ideals of the honour code system, to which the faculty are also deeply committed.

Any violation of the honour code will be

dealt with in accordance with BI's procedures for cheating. These issues are a serious matter to everyone associated with the programs at BI and are at the heart of the honor code and academic integrity. If you have any questions about your responsibilities under the honour code, please ask.