



APPLIES TO ACADEMIC YEAR 2013/2014

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 affects 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 difference 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 course leader. Sitting in on courses does not permit registration for courses, handing in exams or gaining credits for the course. Course certificates or confirmation 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 Plus™.

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 exam.

Additional information

Code

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.

Honour

Academic

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.

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