



APPLIES TO ACADEMIC YEAR 2013/2014

EXC 3613 Risk Management with Derivatives

Programme

Bachelor of Business Administration (3. year), Exchange Program

Responsible for the course

Costas Xiouros

Department

Department of Financial Economics

Term

According to study plan

ECTS Credits

7,5

Language of instruction

English

Introduction

The recent financial crisis and the growing popularity of financial derivative instruments has brought into light the importance and usefulness of financial risk management with the use of derivative securities both by financial institutions as well as corporations in general. However, it has also brought into light the dangers that arise from the improper use of derivative instruments. Derivatives, for example options and futures, offer ways to manage financial risk by altering the risk profile of the corporation. At the same time derivatives facilitate speculation while a third type of participants are the parties who neither speculate nor manage their risk but try to make small profits from mispricing between derivatives and their underlying assets. As a result a basic understanding and intuition of derivatives markets and its instruments is essential not only to students and specialists in finance, but also to general business practitioners.

During this course you will learn the principles behind risk management and how derivative instruments can be used to change the risk profile of a corporation or simply a financial position. You will also learn the basics about the derivatives markets, namely the regulated exchanges and the over-the-counter markets, and their main characteristics that are important from the point of view of the use and pricing of derivative instruments. The course then delves deeper into the two basic derivative instruments, options, forwards and futures (both financial and commodity), and deals with their structure, use, pricing and hedging. The central ideas around which the whole course is constructed are those of hedging, replication and arbitrage. These ideas will be developed mostly through economic reasoning and practical examples rather than technical applications. However, a certain level of mathematically based theory is required to fully understand and appreciate such a technical subject.

Learning outcome

Acquired Knowledge

The students will acquire a good understanding of the derivatives markets and the derivatives securities available for trading. More specifically the students will develop their understanding with respect to the following topics:

- The principle behind risk-management and the ability to evaluate risk-management practices.
- The derivatives markets which are the regulated exchanges and the over-the-counter markets, their participants, their basic functioning and the idiosyncrasies of each.
- The structure and specifics of the basic derivative securities, futures, forwards, options and swaps.
- The principles behind the pricing of each of the derivative securities, namely no-arbitrage when replication is possible and the bounds and relationships that the no-arbitrage assumption imposes.
- Understand the applicability and limitations of the standard pricing techniques.
- The economic role of the derivative securities and the way they are being and can be used in practice.

Acquired Skills

During the acquisition of the above mentioned knowledge the students will acquire the following skills:

- Represent the payoff of a derivative product both diagrammatically and mathematically.
- Alter the exposure to a risk factor using derivative securities and plot the final exposure.
- Construct and evaluate various strategies using derivatives.
- Price forwards and futures using the cost of carry model.
- Price options and other derivative securities using the binomial model.
- Price options using the Black & Scholes option pricing model.
- Hedge forwards and futures.
- Hedge options using the binomial model.

Reflection

The acquired theoretical and practical knowledge provided by the course should enable the student to first understand and be able to apply the basic principle behind the pricing and hedging of derivative instruments especially from the point of view of risk-management. Further the student should acquire the ability to appreciate the financial and economic opportunities that derivative instruments offer while also being able to critically assess their role and practical value in light of how these products are being used in practice.

Prerequisites

EXC 2110 Basic Financial Management, EXC 3601 Financial Decision Making, EXC 3612 Investment Analysis, EXC 3610 Empirical Methods in Finance, or equivalent.

Compulsory reading

Books:

McDonald, Robert L. 2013. Derivatives markets. 3rd ed. Pearson Education

Other:

Lecture notes, cases, additional exercises and examples will be available on the course-website.

Recommended reading

Books:

Hull, John C. 2013. Fundamentals of futures and options markets. 8th ed. Pearson

Course outline

1. Introduction to risk-management and derivative securities
2. Basic strategies, insurance and hedging using futures, options and swaps
3. Financial Forwards and Futures: Pricing and hedging
4. Commodity Futures: Pricing and cross hedging
5. Parity and other Option relationships
6. Binomial Option pricing: Static replication
7. Black-Scholes Option pricing model

Computer-based tools

Spreadsheets (Excel) will be used for certain practical applications and examples. It is recommended that students become familiar with their use.

Learning process and workload

The course will include a combination of lectures and plenary tutorials where solutions to exercises will be explained and practical examples will be presented.

Specific Information regarding any aspect of student evaluation will be provided in class. It is the student's responsibility to obtain this information. Please note that whilst attendance is not compulsory, it is the students responsibility to obtain any information provided in class that is not included on the course homepage/It's learning or in the text book. Homepages and/or It's learning are not designed for the purpose of students who choose not to attend class.

The following is an indication of the time required:

Activity	Hours
Lectures	39
Plenary tutorials where exercises will be explained	6
Preparation for lectures and plenary tutorials	110

Preparation for the final exam	45
Total recommended use of time	200

Use of hours

39 hours - Lectures

6 hours - Plenary tutorials where exercises will be explained

45 hours in total

Examination

The final grade in the course will be based on the following activities and weightings:

- 40% class work (in the form of a mix of some/ all of the following: hand in of case write ups, projects, and homework; case presentations and class participation; in class midterm and quizzes).

- 60% 3 hour written final exam.

Both parts of the evaluation need to be passed in order to get a grade in the course.

Specific information regarding student evaluation beyond the information given in the course description will be provided in class. This information may be relevant for requirements for term-papers or other hand-ins, and/or where class participation can be one of several elements of the overall evaluation.

This is a course with continuous assessment (several exam elements) and one final exam code. Each exam element will be graded using points on a scale (e.g. 0-100). The elements will be weighted together according to the information in the course description in order to calculate the final letter grade for the course. You will find detailed information about the point system and the cut off points with reference to the letter grades on the course website.

Examination code(s)

EXC 36131 Process evaluation, counts 100% towards the final grade in the course EXC 3613 Risk Management with Derivates, 7,5 ECTS.

Examination support materials

No support materials allowed except the BI-defined exam calculator TEXAS INSTRUMENTS BA Plus, interest rate tables and a bilingual dictionary. For more information, please visit our web-based Student Handbook at <http://bi.edu/studenthandbook/examaids>.

Re-sit examination

A re-sit is held in connection with the next scheduled examination in the course.

Students who are retaking the examination must take the course all over again including all parts of the assessment.

Additional information