

DERIVATIVES AND RISK MANAGEMENT

Degree in Finance

Code: 12535

Main Scientific Area: Finance

Lecturer: Vanda Cristina Rodrigues Roque

Language of Instruction: Portuguese

Regime: S1

Contact Hours: 60h Total Workload: 108h

ECTS: 6,0

Objectives

Students must understand the fundamental characteristics of the main financial derivatives, namely forwards, futures, swaps and options, as well as how to price and to use these derivatives in risk hedging.

Learning Outcomes

In the final of the curricular unit, students should:

Be able to characterize the main financial derivatives, namely forwards, futures, swaps and options;
Know how to use forwards, futures, swaps and options to hedge risk;
Know how to price derivatives, namely forwards, futures, swaps and options.

Course Contents

Chapter 1: Introduction to Derivatives

- 1.1. What is a derivative?
- 1.2. Four basic derivatives: forwards, futures, swaps and options
- 1.3. Common underliers: commodities, currencies, interest rates, equity
- 1.4. Derivative markets: Exchange and OTC markets
- 1.5. Why are derivatives used? Hedging, speculation and arbitrage

Chapter 2: Forwards

- 2.1. Forwards: general characteristics
- 2.2. Forward Foreign Exchange Contracts (FX)

2.3. Forward Rate Agreements (FRA)

Chapter 3: Futures

3.1. Futures: general characteristics

3.2. Mechanics of futures markets

3.3. Hedging with Futures

3.4. Interest Rate Futures

Chapter 4: Swaps

4.1. Interest Rate Swaps

4.2. Currency Swaps

Chapter 5: Options

5.1. Definition and Typology

5.2. Basic Strategies with Options

5.3. Other Strategies with Options

5.4. Pricing Options

Recommended Bibliography

Chisholm, Andrew M. (2011), *Derivatives demystified: a step-by-step guide to forwards, futures, swaps and options*, Wiley, 2nd ed.

Dubofsky, David A. e Miller, Thomas W. (2003), *Derivatives: Valuation and Risk Management*, Oxford University Press, 2nd ed.

Durbin, Michael (2011), *All About Derivatives*, McGraw-Hill, 2nd ed.

Hull, John C. (2021), *Options, futures and other derivatives*, Pearson Prentice Hall, 11th ed.

Learning and Teaching Methods

Chapter 1 provides a broad overview of the curricular unit. It discusses the main characteristics of derivatives and introduces the main four classes of derivatives securities that will be discussed in great detail in the following chapters (forwards, futures, swaps and options). It also shows the purposes of using derivatives (hedging, speculation and arbitrage).

Chapters 2 to 5 discuss in detail the main characteristics of forwards, futures, options and swaps, respectively, and how can these instruments be used to hedge risk, as well as analyse how these instruments are priced.

Assessment Methods

The continuous evaluation system includes consists in two in-class tests, each one with the weight of 50% in the final classification. The final classification is the weighted average of the grades obtained in both tests.

There is no oral evaluation.

The use of mobile phones, smartphones, smartwatches during tests and exams is not allowed.