

Market Finance

Course title - Intitulé du cours	Market Finance
Level / Semester - Niveau /semestre	M1 / S2
School - Composante	Ecole d'Economie de Toulouse
Teacher - Enseignant responsable	MOINAS SOPHIE
Other teacher(s) - Autre(s) enseignant(s)	
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Lecture Hours - Volume Horaire CM	30
TA Hours - Volume horaire TD	
TP Hours - Volume horaire TP	
Course Language - Langue du cours	Anglais
TA and/or TP Language - Langue des TD et/ou TP	

Teaching staff contacts - Coordonnées de l'équipe pédagogique :

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T.630

The best way to discuss and ask any questions you may have is before or after class. Otherwise, you can also send me an email, and I will either try to answer your question directly or propose to meet.

Course's Objectives - Objectifs du cours :

This course provides an introduction to Market Finance. Modern managers can use financial assets such as stocks, bonds, futures, or options to raise cash, invest, hedge particular kinds of risk, or change the returns on their portfolios in certain ways. The aim of this course is to provide students with a broad vision of financial instruments, asset pricing, portfolio theory, and derivatives pricing, from reasoning to the practical implementation of the modern theory of asset pricing.

The first part of the course consists of an overview of financial markets and instruments, which will cover various asset classes and an introduction to trading. In the second part of the course, we focus on derivatives markets and instruments. We study (no-) arbitrage theory and its applications to price and delta-hedge financial derivatives (forward contracts, options in the Cox-Ross-Rubinstein binomial model.) In the third part of the course, we study equilibrium asset pricing theory, introducing classical models like the Capital Asset Pricing Model (CAPM). Building on theory in a frictionless environment, we discuss the major implications for investors, e.g., with respect to diversification and systematic versus idiosyncratic risk, and empirical challenges for the theory, i.e., puzzles and market anomalies.

To provide a valuable treatment of these topics, it is necessary to stress fundamentals and explore issues at a (somewhat) technical level. By the end of the module, students should be able to:

- Recognize different types of financial assets and markets, and their characteristics.
- Describe how trading takes place in various financial markets.
- Describe the characteristics and payoffs of the financial assets.

- Explain how derivative instruments may be used to manage risks or design directional strategies.
- Describe and compute the payoffs at maturity of standard derivatives (forward, European options).
- Describe and compute the payoffs at maturity of combinations of short and long positions in European options and forwards.
- Identify combinations of short and long positions in options, forwards, and underlying assets that enable to reach a given stream of cashflows.
- Identify arbitrage strategies.
- Price forward contracts on financial assets by arbitrage.
- Price a European call or put option in the multi-period binomial model of Cox-Ross-Rubinstein.
- Identify delta-hedging strategies for options' writers.
- Price American or exotic options in the multi-period binomial model.
- Price simple structured products.
- Explain the risk/return trade-off.
- Describe the benefit of diversification of holding a portfolio of assets.
- Compute a stock's expected return using traditional asset pricing models.

The course aims to provide the necessary prerequisites to enable students in economics to continue with a master 2 in finance. Consequently, the lectures will cover a broad spectrum of topics in market finance. Students must work regularly and autonomously on the problem sets to complement the lectures.

Prerequisites - Pré requis :

This course is technical. Students are expected to have a minimum preparation in probability theory (random variables, expectation, conditional expectation, variance, covariance, binomial distribution, normal distribution) and statistics. Basic knowledge of intermediate microeconomics (expected utility theory) is also required.

Practical information about the sessions - Modalités pratiques de gestion du cours :

Lecture handouts will be made available via Moodle. I strongly recommend that you download or print them out before coming to class. This will allow you to take notes more effectively and concentrate on following the class discussion. While much of the class will take the lecture style, I will occasionally encourage interactions by having open conversations and short problems. Tablets dedicated to taking notes on the slides are allowed during class. Laptops are not allowed. The class will start on time, and I expect all students to respect a punctual beginning by not showing up late to class.

A problem set will be posted on Moodle at the end of each chapter. Solutions will be discussed in class upon request and posted after the following lecture.

Grading system - Modalités d'évaluation :

The final grade will be based on a 1h30 examination at the end of the course. This is a closed-book exam. Simple pocket calculators are allowed.

Bibliography/references - Bibliographie/références :

The books for this class are:

Derivatives Markets (3rd edition), by Robert L McDonald.

Asset Pricing, Revised Edition, by John Cochrane, Princeton University Press, 2005.

Session planning - Planification des séances :

The tentative course outline is as follows:

Ch1. Introduction

Ch2. Equity, bond, and derivatives: an overview of financial markets and instruments

Ch3. Trading

Ch4. Derivatives securities

Ch5. Pricing forwards and futures

Ch6. Pricing options

Ch7. Portfolio Theory

Ch8. Capital Asset Pricing Model

Ch9. Market anomalies

Conclusion, Revision & exam practice

Distance learning – Enseignement à distance :

Synchronous distance learning would be implemented when necessary. It would include Online lectures and quizzes.

Occasionally, I will offer collective office hours as a Zoom session to address students' questions – attendance is not mandatory.