

SECURITIES MARKETS

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PRESENTATION - PRÉSENTATION

This course explains how prices of financial securities are set in real markets, and how the structure of the market affects (1) price formation (market efficiency), (2) cost of capital (expected return), (3) ease of trading (market liquidity), and (4) investment policy (asset allocation). In many finance courses, the mechanism of determining a security price is a black box, with no connection to the market in which the security is traded. By contrast, this course focuses on the actual market structure: the identity of the market participants and the market trading mechanism. As a result, this course also speaks to financial crises, and explains why markets can suddenly become more inefficient, liquidity can dry up, and investors withdraw from the market.

We discuss in detail: (1) how trading frictions generate deviations of asset prices from their correct value, and how these inefficiencies are exploited, i.e., arbitrage; (2) how the cost of capital is determined for various type of firms, depending on their size, book value, liquidity, profitability, etc.; (3) price formation when markets are designed as limit order markets, dealer markets, dark pools, call auctions, etc.; (4) how liquidity is defined in connection with trading costs and funding constraints, and how market design maximizes liquidity; (5) how liquidity is affected by various market participants in the trading industry: the "buy-side" (investors, asset managers, arbitrageurs), and the "sell-side" (brokers, dealers, exchanges); and (6) how liquidity affects the decisions of the various types of traders and investors, as well as their performance.

INTENDED LEARNING OBJECTIVES - OBJECTIFS PÉDAGOGIQUES

When you complete this course, you should be able to understand:

- *Market efficiency, cost of capital, and arbitrage.* Are markets efficient or irrational? How does risk affect the cost of capital? Are there limits to arbitrage? How does price discovery work?
- *Market design.* How do today's complex securities markets operate? What is the difference between electronic limit order markets, dark pools, over-the-counter markets, call auctions?
- *Liquidity.* What does it mean that a market is liquid? How is liquidity related to trading costs? What is the difference between market liquidity and funding liquidity?
- *Asset allocation in real markets.* How do we account for illiquidity and transaction costs in managing a portfolio? How does illiquidity affect performance, and the cost of capital?
- *High Frequency Trading (HFT) and market instability.* What are the strategies of HFTs? How do they affect liquidity and stability? How do market crashes occur and what causes them?

KEY TOPICS - THEMES PRINCIPAUX

Part 1: Market efficiency and arbitrage

- The role of information in market efficiency
- Anomalies and risk factors; behavioral finance
- Arbitrage: exploiting market inefficiencies; arbitrage costs and risks

Part 2: Trading Industry and Trading Mechanisms

- Trading and price discovery
- Trading industry: key players
- Trading mechanisms: limit order markets, OTC markets, dark pools

Part 3: Illiquidity and Asset Management

- Liquidity: definition and connection with trading costs
- Asset management in illiquid markets
- Market structure (participants, information, design); High Frequency Trading

TEACHING METHODS - MÉTHODES PÉDAGOGIQUES

COURSE MATERIALS - MATÉRIEL PÉDAGOGIQUE

We combine lectures, classroom discussions, readings, and cases, to strengthen your understanding of basic topics, and to sharpen your analytic and problem-solving skills. The course presents a thorough conceptual framework for understanding securities markets, yet at the same time offers much practical knowledge. The course is therefore challenging and requires a significant amount of work outside of class in order to get most out of it.

Textbook

Pedersen, Lasse (2015), *Efficiently Inefficient*, Princeton University Press.

Additional Textbook

Harris, Lawrence (2003), *Trading and Exchanges*, Oxford University Press.

Lecture Notes, Assignments, Cases, and Other Materials

Course materials can be downloaded from Blackboard. The most important are the lecture notes, which are posted on Blackboard before each class.

INDIVIDUAL WORK - TRAVAIL PERSONNEL

Students will need to complete three assignments throughout the course. The assignments are completed in groups, which enhances learning.

Students will need to pass a final exam. The exam is to be completed individually.

GRADING - ÉVALUATION

Grades are based on assignments (40%), and the final exam (60%). Therefore, weightings on the various components of the final grade are as follows:

Assignments (Team)	40%
Final Exam (Individual)	60%

The assignments should be submitted on Blackboard before the scheduled date. No late submissions are accepted. The assignments may be discussed only with the members of your group. Only one solution per group should be handed in.

The final exam is closed-book and closed-notes, with more details to be given later.

Exam Re-grading Policy: You may request a re-grade on the final exam. The re-grade request must be accompanied by a concise written explanation of the request (e-mail is preferable). The request should be submitted to me within one week after the exams are distributed. The whole exam may be re-graded, so your score can either increase or decrease as a result. For the re-grade request, you should do the following: 1. Choose at most 3 questions from the exam (e.g., 1b, 2a, 4c) for which you think that you deserve more points than were given by the grader; 2. Scan the part of the graded exam in which you answered those questions, and attach the images to the email (or to the written request); 3. Explain briefly why you think the questions were graded unfairly, and why you deserve to get more points; 4. Send the request by e-mail (see the address at the beginning of the syllabus).

BIOGRAPHY - BIOGRAPHIE / PUBLICATIONS

Ioanid Rosu has joined HEC Paris as Associate Professor in 2010. A graduate of University of Bucharest, he earned two PhDs from MIT, one in mathematics in 1999 and one in financial economics in 2004. Between 2004 and 2010 he was Assistant Professor of Finance at the University of Chicago, Booth School of Business, where he taught the introductory finance course in the MBA and Executive MBA programs. His work has been published in top finance journals such as the *Journal of Finance* or *Review of Financial Studies*. His research focuses on the liquidity of financial markets and its effect on asset prices and investor decisions. He is also interested in mergers and acquisitions, option pricing, and high frequency trading.

SCHEDULE – DÉROULÉ

COURSE CONTENT – CONTENU

<u>Class</u>	<u>Topic</u>	<u>Assignments</u>
Topic 1: Sep 14,18,21,25	1. Introduction - Risk and Return; CAPM vs. APT	
Topic 2: Sep 28,30; Oct 5	2. Market Efficiency - Random Walks and Predictability, Event Studies, Anomalies and Risk Factors	Assignment #1 Due: Wed, Sep 30, 8:00
Topic 3: Oct 7,12	3. Market Inefficiency - Behavioral Finance, Short Selling, Arbitrage	
Topic 4: Oct 14	4. Trading and Price Discovery; Market Design and Trading Mechanisms (Limit Order Markets, Call Auctions, Dark Pools, etc.)	Assignment #2 Due: Wed, Oct 14, 8:00
Topic 5: Oct 19	5. Liquidity - Market Liquidity and Funding Liquidity, the Illiquidity Premium, Asset Allocation in Practice; Harvard Management Co.	
Topic 6: Oct 21	6. The Market Ecosystem – Main Participants; Return Patterns; Trends in Market Participation; HFT, Flash Crashes, LTCM	Assignment #3 Due: Sat, Oct 24, 8:00
Final Exam (Topics 1-6): Mon, Oct 26, 10:00-11:00		