

# FINANCIAL MARKETS

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## OVERVIEW

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This is a core class that offers the basic concepts and tools necessary to understand how financial markets work, and how financial instruments are used for sound investment decisions.

Topics covered include the following: stocks and bonds; time value of money and net present value; models of risk and return; market efficiency, anomalies, and behavioral finance; derivatives: forwards, futures, options; asset allocation and modern portfolio theory; the structure and performance of the money management industry: pension funds, mutual funds, hedge funds.

Effort will be made to relate the course material to current financial issues and problems relevant to practitioners.

## LEARNING OUTCOMES

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

- ✓ The basic tradeoff between risk and (expected) return, and how it applies to various types of financial instruments.
- ✓ The time value of money (TVM) and net present value (NPV), and their connection to the discount rate, cost of capital, and the required risk premium of a financial asset.
- ✓ The main model of asset pricing: the Capital Asset Pricing Model (CAPM). How do we compute the cost of capital/risk premium?
- ✓ Market efficiency and arbitrage. Are markets efficient, or are they dominated by irrational investors? Are prices predictable?
- ✓ Financial instruments: stocks, bonds, and derivatives. How are they used for risk hedging or speculation? How are their prices related to interest rates, volatility, etc.?
- ✓ Diversification: how to select a portfolio of securities that maximizes return while minimizing risk. How does diversification work in practice?
- ✓ The money management industry and its key players: pension funds, mutual funds, and hedge funds. Do they have any superior investment skills?

## KEY TOPICS

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### Part 1: Finance Fundamentals

Topic 1: Risk and Return

Topic 2: Present Value and Asset Valuation

Topic 3: Asset Pricing Models: CAPM and APT

Topic 4: Market Efficiency and Arbitrage

## **Part 2: Applications to Financial Markets**

Topic 5: Bonds and Interest Rates

Topic 6: Derivatives: Forwards and Futures, Options

Topic 7: Asset Allocation and Diversification

Topic 8: Money Management Industry: Structure and Performance

## **COURSE MATERIALS**

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### ***Recommended Textbook***

Bodie, Zvi, Alex Kane, and Alan Marcus (2018). *Investments*. McGraw-Hill, 11<sup>th</sup> Edition.

### ***Additional Textbook***

Malkiel, Burton (2015). *A Random Walk Down Wall Street*. Norton, 11th Edition.

### ***Required Cases, Assignments, and Other Course Materials***

Lecture notes, homework assignments and other course materials can be downloaded from Blackboard.

## **TEACHING METHODS**

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We combine lectures, classroom discussions, readings, cases and homework assignments 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 financial 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 the most out of it.

To contribute successfully to class discussions, you should keep up with the materials covered in class. Finally, many of you have useful professional experience that can undoubtedly benefit our class discussions. Do not hesitate to share your experience with the rest of the class!

## **PREREQUISITES**

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For this class, you need to have a good understanding of the basic concepts of Statistics.

Use of a spreadsheet package such as Excel will be vital for the exercises, saving time and aiding in understanding the material.

## GRADING

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Grades are based on 4 homework assignments and a final exam with the following weights for each component:

- Homework Assignments      **40%**
- Final Exam                      **60%**

The homework assignments should be submitted (in Word or PDF format) on BlackBoard before the scheduled date. The homework may be discussed only with the members of your group. Only one solution per group should be handed in. No late submissions will be accepted.

The exam is closed-book and closed-notes, with a calculator allowed but no other electronic device (e.g., calculator software on a smart phone is not permitted). You are allowed a "cheat sheet" available on Blackboard ahead of the exam.

**Exam Re-grading Policy:** You may request a re-grade on the 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 or by HEC mail to my office address (see above).

Class participation is very important. Many of you have useful professional experience that can undoubtedly benefit our class discussions. Do not hesitate to share your experience with the rest of the class!

## BIOGRAPHY

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**Ioanid Rosu** is Associate Professor of Finance at HEC Paris since 2010. Previously, 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 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. He enjoys fine dining (including sushi), and plays soccer, chess and bridge.

## SCHEDULE

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<u>Class</u>	<u>Topic</u>	<u>Assignments</u>
<b>ES1:</b> Mon 21 Jan, 13:00-16:10 <b>ES2:</b> Mon 21 Jan, 8:00-11:10	1. Financial System Risk and Return	
<b>ES1:</b> Mon 28 Jan, 13:00-14:30 <b>ES2:</b> Tue 29 Jan, 13:00-14:30	2. Present Value	
<b>ES1:</b> Mon 28 Jan, 14:40-16:10 Mon 4 Feb, 13:00-16 :10 <b>ES2:</b> Tue 29 Jan, 14:40-16:10 Tue 5 Feb, 13:00-16 :10	3. Capital Asset Pricing Model (CAPM) Arbitrage Pricing Theory (APT)	<b>Assignment #1 Due (Sat 2 Feb, 8:00)</b>
<b>ES1:</b> Mon 11 Feb, 13:00-16:10 Wed 20 Feb, 8:00-11:10 <b>ES2:</b> Tue 12 Feb, 13:00-16:10 Mon 18 Feb, 8:00-9:30	4. Market Efficiency and Arbitrage	<b>Assignment #2 Due (Sat 16 Feb, 8:00)</b>
<b>ES1:</b> Mon 25 Feb, 13:00-14:30 <b>ES2:</b> Mon 25 Feb, 8:00-9:30	5. Bonds and Interest Rates	
<b>ES1:</b> Mon 25 Feb, 14:40-16:10 <b>ES2:</b> Mon 25 Feb, 9:40-11:10	6. Derivatives: Forwards and Futures	<b>Assignment #3 Due (Sat 2 Mar, 8:00)</b>
<b>ES1:</b> Tue 5 Mar, 8:00-11:10 <b>ES2:</b> Mon 4 Mar, 13:00-16:10	7. Derivatives: Options	
<b>ES1:</b> Thu 7 Mar, 8:00-11 :10 <b>ES2:</b> Tue 5 Mar, 13:00-16 :10	8. Asset Allocation and Money Management Course Roadmap	<b>Assignment #4 Due (Thu 14 Mar, 8:00)</b>
<b>Final Review:</b> Thu 14 Mar, 9:40-11 :10		
<b>Final Exam:</b> Wed 20 Mar, 14:30-17:30		