

## 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. This knowledge is especially important in the present environment, in the aftermath of the Financial Crisis of 2007-2009, and during the ongoing debt crisis in Europe. Topics covered include the following: models of risk and return; time value of money and net present value; market efficiency, anomalies, and behavioral finance; asset allocation and modern portfolio theory; bonds and interest rates, forwards and futures, options; 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: stocks, bonds, futures, options.

The time value of money (TVM) and net present value (NPV), and their connection to the discount rate (cost of capital), and the risk premium of a financial asset.

The two main models of asset pricing: the Capital Asset Pricing Model (CAPM) and Arbitrage Pricing Theory (APT). 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?

Diversification: how to select a portfolio of securities that maximizes return while minimizing risk. How does diversification work in practice?

Financial instruments: bonds, stocks, currencies, and derivatives (futures, options, swaps). How are these related to interest rates, risk hedging, speculation, or volatility?

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

- Risk and Return
- Time Value of Money and Net Present Value
- Asset Pricing Models: CAPM and APT
- Market Efficiency and Arbitrage
- Modern Portfolio Theory and Diversification

### Part 2: Applications to Financial Markets

- Practical Asset Allocation
- Bonds and Interest Rates
- Derivatives: Futures and Options
- Money Management Industry: Structure and Performance

## Course materials

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### Required Textbook

Bodie, Zvi, Alex Kane, and Alan Marcus (2011). *Investments and Portfolio Management*. McGraw-Hill/Irwin, Global Edition/9th Edition.

### Additional Textbook

Malkiel, Burton (2012). *A Random Walk Down Wall Street*. Norton, 10th Edition.

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

Course materials can be downloaded from the course web page, which will be announced by e-mail before the first week of classes. In lectures, I will follow my lecture notes, which I will make available before each class.

## Teaching methods

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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 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 most out of it.

## 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 assignments, saving time and aiding in understanding the material.

## Grading

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Grades are based on 3 case/assignments (20%), 2 graded group cases (20%), the midterm exam (20%) and the final exam (40%). If the normalized midterm score is below the normalized final exam score, the midterm score will be dropped, and the weight will be added to the final exam (60%). Weightings on the various components of the final grade are as follows:

|                           |     |    |     |
|---------------------------|-----|----|-----|
| Case/Assignments (Team)   | 20% |    |     |
| Graded Group Cases (Team) | 20% |    |     |
| Midterm Exam (Individual) | 20% | or | 0%  |
| Final Exam (Individual)   | 40% | or | 60% |

The homework (case/assignments and graded group cases) should be typed or written legibly, and submitted in hard copy at the beginning of class on 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.

Both exams are 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" provided by me, on which you can add your own hand-written annotations.

Exam Re-grading Policy: You may request a re-grade on any exam. Each re-grade request must be accompanied by a concise written explanation of the request (e-mail is acceptable). The request should be submitted to me within one week after exams are distributed. The whole exam will be re-graded, so your score can either increase or decrease as a result.

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!

## Ioanid Rosu

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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 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

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This is an approximate schedule of topics that will be covered. You should read the corresponding material prior to the lecture. "BKM" refers to the textbook of Bodie, Kane and Marcus. Required readings are denoted by "R", optional readings by "O". Reading should be only done in enough detail so that you get a general idea.

| <u>Class</u>          | <u>Topic</u>  | <u>Readings</u>   | <u>Assignments</u>                                       |
|-----------------------|---|---|--|
| Week 1: Sep. 24/25/28 | 1: The Financial System; Risk and Return  | BKM: chapters 1,2,3,5 (R), 22 (O)<br><i>Case</i> : The Historical Risk of T-Bills, T-Bonds and Equities in the U.S.           |  |
| Week 2: Oct. 1/2/3    | 2: Time Value of Money; Net Present Value   | <i>Case</i> : Is Getting an MBA a Positive NPV Project?   |  |
| Week 3: Oct 8/9/10    | 3: Capital Asset Pricing Model; Arbitrage Pricing Theory                              | BKM: chapters 9,10 (R), 8,13 (O)<br><i>Case</i> : The Cost of Capital for Apple and K-Mart                                    | <b>Case/Assignment #1<br/>Due (beginning of class)</b>   |
| Week 4: Oct 15/16/17  | 4: Market Efficiency and Arbitrage - Part 1: Predictability, Event Studies, Anomalies | BKM: chapter 11 (R)   | <b>Case/Assignment #2<br/>Due (beginning of class)</b>   |
| Week 5: Oct 22/23/24  | 4: Market Efficiency and Arbitrage - Part 2: Limits of Arbitrage, Behavioral Finance  | BKM: chapter 12 (O)<br><i>Cases</i> : (1) The Red Dollar versus the Blue Dollar; (2) The Porsche and Volkswagen Short Squeeze |  |
| Week 6: Nov 5/6/7     | 5: Modern Portfolio Theory; Practical Asset Allocation                                | BKM: chapters 6,7 (R), 25, 27.3 (O)<br><i>Case</i> : Harvard Management Company   |  |
| Week 7: Nov 12/13/14  | 6: Bonds and Interest Rates   | BKM: chapters 14,15 (R), 16 (O)<br><i>Case</i> : Interpreting the Yield Curve   | <b>Graded Group Case #1<br/>Due (beginning of class)</b> |
| Week 8: Nov 19/20/21  | 7: Derivatives: Forwards and Futures<br>8a: Derivatives: Options                      | BKM: chapter 19 (R), 20.1-3 (O)<br><i>Case</i> : Hedging Gasoline Prices with Futures   |  |
| Week 9: Nov 26/27/28  | 8b: Options: Prices and Volatility  | BKM: chapters 17,18 (R)<br><i>Case</i> : Speculating with IBM Options   | <b>Case/Assignment #3<br/>Due (beginning of class)</b>   |
| Week 10: Dec 3/4/5    | 9: Money Management Industry  | BKM: chapters 4,26 (R), 24,27 (O)<br><i>Case</i> : Long-Term Capital Management   | <b>Graded Group Case #2<br/>Due (beginning of class)</b> |

**Midterm Exam (Topics 1-4): Mon, Oct 29, 9:30-11:00**

**Final Exam (Topics 1-9): Fri, Dec 14, 13:00-16:00**