CORPORATE FINANCE

AND A TOUCH OF

RESPONSIBLE INVESTMENTS AND BEHAVIORAL ECONOMICS

Course Manual

UCM
University College Maastricht

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Period: 5
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University College Maastricht (UCM)
Course coordinator: Prof. Dr. Rob Bauer, Professor of Finance

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Course profile

Semester	Period	ECTS	Concentration
Spring	5	5	Social Sciences

Prerequisite

Students should have taken at least one of the following courses:

- Introduction to Business Administration (SSC2036)
- Principles of Economics
- Accounting and Accountability

Broad Course Objectives

- You get a broad overview of the field of finance.
- You will be able to better understand financial articles in newspapers like the Financial Times, the Wall Street Journal and the Economist.
- You will be able to apply your knowledge to understand basic financial information of the firm or institution you will work for.
- You deepen your knowledge on a specific financial topic of your choice on which you will work in your project.

Targeted Course Objectives

- You learn about the economics of shareholder value and the risk-return relation.
- You learn about market efficiency.

- You learn about the most important methods of valuing companies.
- You discern the influence of social values and corporate social responsibility on investment decisions.
- You learn about the psychological decision-making biases of managers and individual investors.
- You get insights into recent trends in finance research.

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1 Introduction

Today's business environment is more complicated than ever. This is illustrated by the recent financial crisis and its aftermath and emerging topics like climate change and corporate social responsibility which increasingly affect corporate decision making. The field of corporate finance deals with the financing and investment decisions made by the management of companies in the pursuit of shareholder wealth maximization and dealing with the preferences of stakeholders in a broader sense. This course gives a broad overview of important issues in corporate finance and combines insights from (behavioral) economics and finance. The economic side of corporate finance deals with the maximization of shareholder wealth. Managers aim at securing the greatest possible return in exchange for accepting the smallest amount of risk. For instance, a company can finance itself by borrowing money from banks, by issuing bonds or through issuing equity at the stock market. These types of decisions influence the expected return and risk of the company.

Traditional economics assumes that managers and investors are rational, self-interested people. However, there is a large body of evidence from social psychology and behavioral economics that people often act irrationally and behave pro-socially by taking the social impact of (investment) decisions into account. This course also shows how decision-making biases managers and investors in their financial decisions and how social preferences of shareholders and stakeholders impact corporate social responsibility. Investors in both equity and debt claims of these companies have (heterogeneous) social preferences. Increasingly, large institutional asset owners such as public pension funds exert pressure on the management of companies with the purpose to increase the governance quality, and the environmental and social performance of their investments.

The course is largely based on real-life cases that we discuss in an interactive manner during the tutorial groups. Students will debate on topics such as “What amount of risk should companies take?” “Should CEO bonuses be reduced?” and “Is it important for firms to put corporate social responsibility high on their agenda?”.

Looking forward to meeting you and enjoy the course!
Rob Bauer

2 Literature

2.1 Mandatory literature

- Berk, J. & DeMarzo, P. (2017). *Corporate Finance* (4th global edition). New York: Pearson Education Limited. Given the nature of many examples in small tables etc., I strongly recommend buying the physical copy of the book.
- Several scientific articles (introduced in section 5.2).
- ICPM Case Study: "Climate Change and Pension Funds: Risk, Opportunity, or Distraction?". It will be available on Eleum soon and downloadable here: http://www.icpmnetwork.com/case-studies

2.2 Recommended literature

My research interests are pension economics, finance and investments, corporate governance and sustainability (especially how it can be applied to financial markets and its participants).

Also, check out these websites as they show my colleagues' research interests that are closely connected to the topics in the last few weeks of this course:

www.corporate-engagement.com (ECCE: the European Centre for Corporate Engagement based at the Maastricht University School of Business and Economics). I am the founder and managing director of this Centre and also the Sustainability Research Theme Leader at SBE. A new website will be introduced in due course. I will announce this at the block opening of the course.

www.tobaccofreeportfolios.org This is a not-for-profit organization (NGO). I serve at its internationally Advisory Board. Its mission is to inform, prioritize and advance tobacco free investment by eliminating tobacco from investment portfolios across the globe. Have a look at their toolkit. A group of students (including a student from last year's course) and I have explored the impact of (institutional) investors withdrawing on the valuation of Tobacco stocks. They will present their (preliminary) results in week 6.

www.icpmnetwork.com (ICPM: International Centre for Pension Management at the Rotman School of Management, University of Toronto). I am the Executive Director of this global network of pension funds based in Toronto. The cases study (week 5) on pension funds has been developed there.

Regularly have a look at the websites of the Economist, the Financial Times, and the Wall Street Journal. Maybe you see interesting articles that deal with the topics we discuss in our tutorials.

My colleague, Dr. Paul Smeets, will give a guest lecture on behavioral finance. He very much likes the following three books. Have a look if you are interested (not exam relevant).

Ariely, D. (2009). *Predictably Irrational: The Hidden Forces that Shape our Decisions.* Harper Collins. ISBN: 978-0-06-185454-5.

This book gives a very nice introduction into the field of behavioral and experimental economics. Dan Ariely is a master in making research fun and easy to grasp for a wide audience by giving great real-life examples.

Dubner, S. J. & Levitt, S. D. (2006). *Freakonomics: A Rogue Economist Explores the Hidden Side of Everything (Revised and Expanded Edition).* William Morrow. p. xiv. ISBN: 978-0060731328.

Freakonomics shows how to use data in a clever way such that you can shed a new light on economic problems. The book covers topics such as organized drug crime and cheating and it shows that different parenting methods largely yield the same results.

Sunstein, C.R. & Thaler, R. H. (2008). *Nudge: Improving Decisions about Health, Wealth, and Happiness.* Yale University Press. ISBN: 978-0143115267.

Registering people as an organ donor by default saves lives and presenting salads before desserts in a cafeteria makes people eat healthier. These are examples of nudges and choice architecture that steer people into the right direction. Most people spend more time buying a TV than deciding on health care and investment choices, so they can likely benefit from a nudge. As you may have noticed, Richard Thaler won the Noble Prize Economics in 2017.

3 Course Content

The course has three main building blocks: The Berk and DeMarzo textbook and articles, company reports, and tutorials. Because of the small-scale nature of the course, each session will be highly interactive. I expect you all to contribute significantly to the tutorial group discussion and assume that you prepared these sessions well. Most sessions will be a blend of a tutorial group session with extensive discussions and additional explanation of the literature in the form of an interactive mini-lecture. Furthermore, the sessions focus on practical implications of the study material. Please read the literature before the relevant session. There will be three plenary sessions: a case study on climate change (week 5), a lecture on behavioral finance (week 6) and a lecture on Responsible Investments (week 7) in which we also briefly discuss the exam.

The first half of the course focuses on the basics of corporate finance, with topics such as calculating the net present value of a project or investment, the concept of market efficiency, the risk-return trade-off and the pricing and valuation of companies (stocks). The second part of the course also draws on knowledge from other fields that relate to important issues in (corporate) finance. We study how behavioral biases influence investors and managers in their decision making. Similarly, we discuss how extrinsic rewards such as bonuses might crowd out intrinsic motivation. These factors can have a large influence on major financial decisions and the returns achieved by investors. Moreover, we focus on the way social values influence investment decisions and we concentrate on socially responsible investments.

In the first session (April 10th), we will create subgroups (three per tutorial group). During the course, you will prepare and present several company reports and assignments with the members of your subgroup.

Company reports

In the first session, each subgroup picks a publicly listed company they would like to follow and report on during the course. To apply the knowledge from the chapters and articles, you will present information on your company to the tutorial group. For instance, if we discuss the balance sheet in the tutorial, you will present the balance sheet of the company you track. *Choose a well-known blue-chip company as it will be easier to find relevant information.* Note that the companies of each subgroup need to be from different economic sectors (hint: understanding the balance sheet of a financial institution is less intuitive and a bit boring, and it is wise to choose a company that pays dividends….).

Case study lecture (plenary session)

The course contains a business case study on climate change within the context of a Canadian pension fund.

Topic lectures (plenary sessions)

The course also contains two topic lectures on Behavioral Finance and Responsible Investments.

4 Course organization and schedule (for each session, the tasks and relevant literature are specified in section 5.2.)

Week	Session	Topic	Datum
1	1	Block opening (Chapters 1 and 2)	Mo 4/9
1	2	<u>Assignment 1</u>: Balance sheet and income statement of your company	Thu 4/12
2	1	Net Present Value (NPV) and Arbitrage (Chapter 3)	Mo 4/16
2	2	Valuing Stocks (Chapter 9)	Thu 4/19
3	1	<u>Assignment 2</u>: Value the stock of your company	Mo 4/23
3	2	Pricing of risk (Chapter 10)	Thu 4/26
4	1	Capital Asset Pricing Model (CAPM) (Chapter 11)	Mo 30/4
4	2	<u>Assignment 3</u>: Asset pricing for your company	Thu 5/3
5	1	Case study “Climate Change and Pension Funds: Risk, Opportunity, or Distraction?” (plenary)	Mo 5/7
6	1	Guest lecture by Dr. Paul Smeets (plenary): Behavioral Finance. What do individual investors want with respect to socially responsible investments?	Mo 5/14
6	2	Presentation Tobacco Free Portfolios (in each tutorial)	Thu 5/17
7	1	Lecture (plenary) by Rob Bauer on Socially Responsible Investments (SRI) and exam preparation and <u>Assignment 4</u>: score your	Thu 5/24

		company on Corporate Social Responsibility (CSR).	
8	Exams	Oral Exams	Week of 5/28

5 Grading and Tasks

5.1 Determination of course grades

There are three grading elements in the course Corporate Finance

1. Oral exam (50%)
2. Assignments: company reports and climate change case (40%)
3. Participation in tutorial group discussion and plenary sessions (10%)

To pass this course, the overall course grade must be 5.5 or higher and the oral exam grade must be 5.5 or higher. The oral exam is based on the material covered in the course. This comprises the mandatory book chapters, the academic articles and the material from the lectures, all tutorials and the guest lectures.

5.1.1 Oral exam

The oral exams will take place in the first few days of the week starting at Monday 28 May. The exact day and time of the oral exam will be communicated later. Please inform the block coordinator at least two weeks in advance of the exam if you cannot make it to the exam and explain the reason for this.

5.1.2 Participation requirement and grade

You are expected to participate in each session. If you cannot attend, please email the block coordinator to explain the reason for your absence.

The participation grade is based upon your overall participation in the course. This includes the company reports, the extra articles and insights you bring to the tutorial group and the feedback you give to the research papers and presentations of others. Quality rather than quantity is the main criterion for participation grades.

5.2 Detailed Session Overview

Week 1, Session 1 — Block opening

This session will introduce the course and the topic of corporate finance. In this first session, each subgroup chooses a company they prefer. During the course, the subgroup will follow this company, study the balance sheet, its stock price, breaking news etc. We will use the students' company reports to get a practical application of the book chapters and articles.

Literature: Chapters 1 and 2 of Berk and DeMarzo

Discussion: The course starts with the basics about the organization of firms. What is the role of shareholders, what is the relation between management and owners of a firm?

The following topics will be the main focus of this session:

- Four major types of companies
- Ownership vs. control of corporations
- Balance sheet
- Income statement
- Basics of the stock market

Week 1, Session 2 – Balance sheet and income statement of your company

Learning goal: Get practical insights into financial metrics reported by companies.

Assignment 1:

Present the analysis of your company to the class. Discuss at least the following but not restricted to these items):

1. Interpret the most important items of the balance sheet and income statement of your company and compare these to three most closely related companies in the same industry or sector.
2. What are the total assets of your company and what are they mainly composed of?
3. How do they compare to other firms in the same industry?
4. What are the total liabilities and stockholders' equity of your company and what are they mainly composed of?
5. How do they compare to other firms in the same industry?

6. How do the earnings per share, Return on Equity (ROE), and Price-Earnings-Ratio (PE) compare to that of other firms in the industry and what are the most important reasons for these differences?
7. Give an overview of the most important (financial) news surrounding your company.

Prepare the analysis in a PowerPoint document. Please bring a copy of a printed version of your document to the tutorial group, preferably in color with max. two slides per page (double-sided) and send a digital copy to me by email.

Hint: Google Finance has an option to find comparable firms.

Week 2, Session 1 – Net Present Value (NPV) and arbitrage

Learning goal: Understand the concepts of Net Present Value and arbitrage.

Literature: Chapter 3 of Berk and DeMarzo

Discussion: This session introduces the most important tool that is used to make investment decisions. This concept is the so-called Net Present Value (NPV) rule and it involves discounting future cash flows to allow the comparison of Euros today with Euros in the future. This NPV rule is the foundation for evaluating projects and the valuation of assets (and hence companies).

Financial assets are priced in such a way that it is impossible to make a risk-free profit from exploiting mispricing in these assets, which is the idea of arbitrage. We will discuss arbitrage and the law of one price.

Week 2, Session 2 — Valuing Stocks

Learning goal: Understand how you can value stocks using finance models.

Literature: Chapters 3 and 9 of Berk and DeMarzo

Discussion: One of the most fundamental ideas in the field of (corporate) finance is asset pricing. In this session, we discuss various methods of valuing stocks. We will discuss several examples to make the differences between these methods clear.

Week 3, Session 1 – Value the stock of your company

Learning goal: Learn to apply stock valuation techniques to your company.

Assignment 2:

Present the valuation analysis of your company to the class. Discuss at least the following:

- Value your company stock by taking the P/E ratio as **valuation multiple**. Work with the average P/E ratio of the three most closely related companies to yours. How close is this valuation to the actual share price of your company?
- Value your company with the **total payout model.** How close is this valuation to the actual share price of your company?
- Value your company with the **constant growth dividend discount model**. What assumption did you make regarding the growth rate? If your company does not pay dividends, please use another company, preferably in the same industry. How close is this valuation to the actual share price of your company?
- Calculate the **implied growth rate** of your company by using the constant growth dividend discount model. The assumption is that the growth rate of your company will be constant. Hint: you need to use your company's stock prices, dividends and equity cost of capital rate. If your company does not pay dividends, please use another company, preferably in the same industry.

Prepare the analysis in a PowerPoint document. Please bring a copy of a printed version of your document to the tutorial group, preferably in color with max. two slides per page (double-sided) and send a digital copy to me by email.

Week 3, Session 2 — Pricing of risk

Learning goal: Understand the pricing of risk of financial investments.

Literature: Chapters 9 and 10 of Berk and DeMarzo

Discussion:
- Risk-return trade-off (and how to measure?)
- Common vs. independent risk
- Diversification in stock portfolios

The idea of arbitrage implies that investors cannot make a risk-free profit from exploiting mispricing in assets. Therefore, one can only make a profit by taking more risk and is thus confronted with a risk-return trade-off. However, investors can gain by diversifying away unsystematic risk that is specific to a certain company, by "not putting all eggs in one basket".

Week 4, Session 1 — Capital Asset Pricing Model (CAPM)

Learning goal: Understand the CAPM, the most widely used **asset pricing model** in finance.

Literature: Chapters 9, 10 and 11 of Berk and DeMarzo

Discussion: Of all the different models to value stocks, the Capital Asset Pricing Model **(CAPM)** is the most widely used model. The key parameter of the model is the so-called "beta". A high positive beta implies that a stock is riskier than the market portfolio and a low positive beta that the stock is less risky. A negative beta means that the stock can be used to hedge the portfolio. We will discuss the advantages and drawbacks of the model and see how it is applied in practice.

In particular, focus on:

- **Covariance and correlations**
- **Benefits of portfolio diversification**
- **Efficient frontier**
    - o How does the frontier change when the correlations between stocks in the portfolio change?
    - o How does the frontier change when we add more stocks to the portfolio?
    - o How does the frontier change when we add the opportunity to invest in a risk-free asset?
- **Sharpe ratio** and its relation with the efficient frontier
- The Capital Asset Pricing Model **(CAPM)** and its assumptions

Week 4, Session 2 – Asset pricing for your company

Learning goal: Learn to apply asset pricing to your company.

Assignment 3:

- Calculate the Sharpe Ratio for your company and compare this to three other companies in your industry. Which time period did you use and why?

- Present a history of the stock price of your company, the beta, the trading volume and other information you find relevant. You can find the data in Yahoo Finance, Google Finance, and Factset. For an introduction video on Factset, please see: www.sustainable-finance.nl and go to the E-Learning Student Portal.
- Why does the beta in Yahoo Finance and Google finance differ? Hint: Factset can provide you with the answer.
- Compare the beta of your company to that of 5 random other companies. Interpret the differences.
- What is the relation between your company's beta and the equity cost of capital? Remember, if beta is 2, then the CAPM predicts that the equity cost of capital should be twice that of the risk premium (return market – risk free rate) on the market index, (p.321 of Chapter 10). Is this the case? Explain why.

Prepare the analysis in a PowerPoint document. Please bring a copy of a printed version of your document to the tutorial group, preferably in color with max. two slides per page (double-sided) and send a digital copy to me by email.

Week 5, Session 1 — Case "Climate Change and Pension Funds: Risk, Opportunity, or Distraction?"

Learning goal: Understand the impact of climate change for financial institutions such as pension funds.

Task: Prepare (individually) the case "Climate Change and Pension Funds: Risk, Opportunity, or Distraction?". For more details, see the case study that will be available on Eleum. I expect you all to be actively involved in the plenary case discussion in class, which counts for your participation grade.

Week 6, Session 1 — Behavioral Finance. What do individual investors want with respect to socially responsible investments?

Learning goal: Get an introduction into the field of behavioral finance in the context of socially responsible investments (SRI). The focus will be on what individual investors want.

Literature:

- Riedl, A., & Smeets, P. (2017). Why do investors hold socially responsible mutual funds? Forthcoming in *Journal of Finance*.
- Smeets, P., Bauer, R. and U. Gneezy (2015), "Giving Behavior of Millionaires", *Proceedings of the National Academy of Sciences of the United States of America (PNAS)*, 112(34), pp. 10641-10644.
- Bauer, R. and P. Smeets (2015). Social Identification and Investment Decisions, *Journal of Economic Behavior and Organization*, 117, pp. 121-134. (this last article is just additional literature, not exam relevant)

Discussion: This guest lecture will be given by Dr. Paul Smeets, a behavioral economist of the School of Business and Economics (Finance Department) specialized in the field of socially responsible investments, pensions and philanthropy. The three articles provide new insights into what individual investors want with respect to socially responsible investments (SRI). The assets under management by SRI mutual funds have grown exponentially. Paul Smeets will share the results of a few recent research projects in which he conducts surveys and (field) experiments with individual investors.

Week 6, Session 2 — Presentation by Honors Students of the School of Business and Economics on the Tobacco Free Portfolio Initiative

Learning goal: Learn how the valuation of companies can be influenced by societal developments. The presentation will show how tobacco stocks are impacted by consumer boycotts, regulation, litigation and more recently investor boycotts.

Literature: No literature that is exam relevant. The presentation is exam-relevant. Have a look at the toolkit.

Week 7, Session 1 — Socially responsible investments (SRI) and exam preparation

Learning goal: Get an introduction into socially responsible investments (SRI) and the role of Corporate Social Responsibility (CSR) in finance.

Assignment 4:

- Present a summary of the CSR report of your company (if any) or other sustainability / responsibility issues important for your company.

- Did your company have any environmental or corporate governance scandals? What was the reaction of the stock market? How did the company respond? The longer the history, the more you will have to say….!
- Do you see a development in the quality of the company's CSR report (quality and quantity) throughout the last years?
- What else do you want to share about the company.
- During the lecture, I will ask you to comment on the CSR performance of your company. So be prepared!

Prepare the analysis in a PowerPoint document. Please bring a copy of a printed version of your document to the lecture, preferably in color with max. two slides per page (double-sided) and send a digital copy to me by email.

Literature: - Derwall, J., Horst, J. ter & Koedijk, K. (2011). A tale of values-driven and profit-seeking social investors. *Journal of Banking & Finance*, 35(8), 2137-2147.

Discussion: CSR (reporting) has been growing in importance for both companies and investors. This session discusses socially responsible investing from the perspective of large institutional investors that jointly own more than 60% of each stock world-wide. What do these investors want, which fiduciary duty do they have? Which options do they have to be a socially responsible investor?