CARNEGIE MELLON UNIVERSITY
Tepper School of Business – Fall 2016
Finance II (45-820)

Syllabus

Professor	Dr. Lars-Alexander Kuehn
Office	GSIA 314b
Telephone	(412) 268-8501
Secretary	Work Processing Center
E-mail	kuehn@cmu.edu
Webpage	http://tepper.instructure.com
Twitter	Risky_Arbitrage
Office hours	Tuesday, Thursday 3-5pm

Lecture	Monday and Wednesday, 10:30am to 12:15pm, Cooper Auditorium
Lecture	Tuesday, 6:30pm to 10:00pm, Posner 153

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1 Objective

Finance I covered valuation mainly from the corporate side, dealing with questions of how firms and investors should value real investment opportunities such as a new factory, the development of a new product, and so on. In doing the valuations, you saw how to compute the free cash flows that come from the firms operating decisions and how to discount the expected free cash flows. Finance II focuses on the interaction between financial markets and firms. What discount rate should the firm use in the valuation? How should a firm calculate its cost of capital to do a valuation? How the firm should be financed? When does the source of financing matter? The course also deals with the nature of the securities that trade in the markets, the determination of securities prices, the relationships between these prices, the optimal choice of a portfolio or strategy involving these securities. There are three ideas underlying all tools and techniques that we will use in class:

1. There should be no arbitrage in well-functioning financial markets. No-arbitrage allows us to calculate the value, payoffs and risk profiles of many securities and financial activities, and to calculate required returns in many situations.

2. Combining securities reduces portfolio volatility. The benefits of diversification depend on the correlations among securities.

3. There is a risk and return trade-off in financial markets. The risk and return trade-off allows you to determine appropriate portfolio benchmarks and required returns for different financial and real investments.

You will apply the tools you learn in class to analyze firms cost of capital, the determinants of that cost of capital, and to analyze different fixed-income, equity, and derivative securities and portfolios. Specifically, you will be able to:

- Compute the cost of capital for firms with different business risk and with different capital structures. You will be able to use the cost of capital to discuss how a firm should choose its capital structure considering the effects of taxation and bankruptcy costs of the firms value.
- Analyze the risk and reward characteristics of risky securities including stocks, bonds, and options and investment strategies.
- Use and understand portfolio optimization techniques to evaluate, design, and implement efficiently diversified strategies.
- Use the CAPM and factor pricing models to evaluate the risk and performance various financial and real investments, and to evaluate portfolio managers.
- Evaluate the riskiness of corporate debt in terms of default probabilities and losses in default.
- Explain how you can use options in risk management and calculate option values using the binomial option-pricing model.
- You will also learn empirical facts about security returns and capital structure decisions in the class.

2 Course Material

Each lecture is accompanied by slides. These slides contain the tools to solve the homework assignments. In addition, there will be supplementary readings and Excel files, all posted on Canvas. My favorite book on corporate finance is the text book by Berk and DeMarzo; but the book by Brealey, Myers, and Allen is a classic. Note, I do not require that you purchase the book. Please read the Wall Street Journal.

- Lecture notes
- Supplementary readings
- Excel files

- Wall Street Journal
- Text books:
  - Brealey, Myers, Allen: Principles of Corporate Finance
  - Berk, DeMarzo: Corporate Finance

3 Evaluation

- **Homework** (40%): There will be five hand-in homework problem sets. You are welcome to work in groups of up to 4 students on the homework. Please hand in one solution per group. The homework in the course is to help you work through and to apply the material in the course.
- **Final exam** (60%): The exam is scheduled for Saturday October 15th, 2-5pm.
- **Class participation**: This is important to the success of the course. Please come to class prepared and feel free to ask questions. Many of the key concepts are very challenging and often a strategic question by you will make the concept clearer for others in the class. If, for some reason, you have to miss a class, please get the notes from one of your classmates and review them carefully. Class participation will affect grades in borderline cases (e.g., to discriminate between an A- or a B+).

In general, and for the final project in particular, students are expected to abide by the **Tepper School's Code of Conduct**. A student's responsibilities include refraining from lying, cheating, stealing, misuse of computing resources, and other distrustful behavior. Cheating includes, but is not limited to, (i) submission of work which is not the student's own for papers, assignments, or exams and (ii) collaboration in the preparation of an assignment, if such collaboration is explicitly prohibited by faculty. Please see Section 8 of the MBA Student Handbook for more information. I use the following grading scheme.

Grade	Value	Meaning
A+	10	Outstanding
A	9	Excellent
A–	8	Very good
B+	7	Above average
B	6	Average
B–	5	Below average
C+	4	Poor
C	3	Very poor
C–	2	Extremely poor
D+, D, R	1	Failure

4 Schedule for Full-Time Students

Week	Day	Lecture	Assignment
1	M	1. Introduction	
	W	2. Mean-Variance Investing	
2	M	Labor Day Holiday	
	W	2. Mean-Variance Investing	
3	M	3. Factor Models	
	W	3. Factor Models	HW 1 due
4	M	4. Option Pricing	
	W	4. Option Pricing	HW 2 due
5	M	4. Option Pricing	
	W	5. Corporate Debt	HW 3 due
6	M	5. Corporate Debt	
	W	5. Corporate Debt	HW 4 due
7	M	6. Leverage and WACC	
	W	6. Leverage and WACC	HW 5 due

5 Schedule for Part-Time Students

Week	Lecture	Assignment
1	1. Introduction 2. Mean-Variance Investing	
2	2. Mean-Variance Investing	
3	3. Factor Models	HW 1 due
4	4. Option Pricing	HW 2 due
5	5. Corporate Debt	HW 3 due
6	6. Leverage and WACC	HW 4 due
7	No class	HW 5 due