

ICEF, Higher School of Economics, Moscow
MSc in Financial Economics, 2nd year

Financial Economics II
Fall 2017
Course Syllabus

PLEASE NOTE that the course consists of two parts: “Corporate Finance” and “Advanced Asset Pricing and Market Microstructure”

The grade for each part (on the 100 point scale) is determined separately; the grades are then aggregated with weights 80% (Corporate Finance) and 20% (Advanced Asset Pricing) to obtain the final grade for the course.

Lectures:

- Arkaja Chakraverty and Sergey Stepanov (Corporate Finance part)
- Dimitrios Tsomocos, Saïd Business School (Advanced Asset Pricing part)

Case studies: James Lewis, Canandaigua Management LLC

Seminars: Oksana Kabakova

CORPORATE FINANCE PART:

Objective

The main objective of this part is to present the modern approach to the financial analysis of a company and to teach the principles and techniques of evaluating the most important corporate decisions. The core of the course is the analysis of investment (capital budgeting) and financing (capital structure) decisions of a firm. We will first discuss the principles and techniques of selecting investment projects. Secondly, we will examine the determinants of the capital structure choices by firms as well as the notion of the optimal capital structure. We will then discuss how to value a company, taking into account its capital structure. We will also analyze how firms decide on their payouts to shareholders and what the optimal payout policy should be. Finally, we will cover initial public offerings, mergers and acquisitions, corporate governance, and risk management.

Prerequisites

Financial Economics I (Asset Pricing), Microeconomics

Methods

The following methods and forms of study are used in the course

- Lectures (one or two lectures of 80 minutes per week, alternating from week to week).
- Seminars (one seminar of 80 minutes once every two weeks).
- Self-study
- Case studies (4 cases in total). Cases are to be solved in groups of max. 5 people. Each case will be discussed in a session of 80 minutes. You may be asked to present your solutions in class.

- Homework assignments (problem sets) to be solved individually

Course Material

Required reading: Jonathan Berk and Peter DeMarzo (BD), *Corporate Finance*, 2007, Pearson (or a later edition)

Additional readings:

- Welch, Ivo, *Corporate Finance*, 4th edition, 2017, available for free at <http://book.ivo-welch.info/read/>
- Hillier, David, Mark Grinblatt, and Sheridan Titman (HGT), *Financial Markets and Corporate Strategy: 2nd European Edition*, 2011, McGraw-Hill.
- Copeland, Thomas E., Weston, J. Fred, and Kuldeep Shastri (CWS), *Financial Theory and Corporate Policy*, 4th edition, 2005, Pearson.
- Tirole, Jean, *The Theory of Corporate Finance*, Princeton and Oxford: Princeton University Press, 2006.

Other materials and lecture slides will be available at icef-info.hse.ru

Evaluation

Home Assignments: 15%

Cases (including evaluation of presentations): 15%

Midterm test: accounts for 20%

Final exam: 50%

The weights given above combine into your final grade for the course. You need to receive at least 35% at the final exam and 35% in the aggregate (after accounting for the Asset Pricing part) in order to pass the course. There is only one re-take for the final exam. There will be no re-take for the midterm test. If you have to skip the midterm test due to a valid documented reason, the final exam will automatically carry 70% weight. If you skip the midterm test for no valid reason, you simply get 0 points for it.

Course Outline

1 academic hour = 40 min.

1. Introduction to corporate finance. Notion of corporation, financial statements and financial ratios (4 hours)
Readings: BD, ch. 1, 2; Welch, ch. 1, 14
2. Fundamentals of capital budgeting (4 hours)
 - a. Refresher on time value of money, discounting, stocks and bonds valuation, risk and return, CAPM
 - b. Basic investment decision rules (NPV, IRR, payback period, etc.)
 - c. Projects with unequal lives: matching cycle, Equivalent Annual Cost (Benefit) method, replacement problem
 - d. Evaluating a project: forecasting earnings, determining cash flows, computing NPV
 - e. Sensitivity analysis, scenario analysis
 Readings: BD, ch. 4-13; Welch, ch. 2-10; 13
3. Advanced capital budgeting: real options (5 hours)

- a. Financial options: notion, properties, pricing (binomial model, Black and Scholes formula, Monte-Carlo simulations)
 - b. Real options: types and examples, valuation of projects with real options

Readings: BD, ch. 20-22; Welch, ch. 13.6; CWS, ch. 9
- 4. Capital structure in a frictionless world (2 hours)
 - a. Irrelevance of capital structure

Readings: Lecture notes; BD, ch. 14, 23, 24; Welch, ch. 16, 17.
- 5. Capital structure in real world (5 hours)
 - a. Effect of taxes
 - b. Direct and indirect costs of financial distress
 - c. Trade-off theory, viz. static and dynamic
 - d. Case discussion (Blaine Kitchenware)

Readings: Lecture notes; BD, ch. 15-16.4; Welch, ch. 18, 19
- 6. Capital structure and valuation methods (4 hours)
 - a. Direct valuation method, i.e. earning based
 - b. Relative valuation method, i.e. peer based

Readings: BD, ch. 9, 18-19; Welch, ch. 13.1-13.3, 15, 16.6-18.3
- 7. Capital structure. Effects of agency problems (4 hours)

Readings: BD, ch. 16.5-16.7; HGT, ch. 16-18; Welch, ch. 18; Tirole, ch. 3-5 (more advanced level)
- 8. Capital structure. Effects of asymmetric information (3hours)

Readings: BD, ch. 16.8-16.9; HGT, ch. 19; Welch, ch. 19; Tirole, ch. 6 (more advanced level)
- 9. Capital structure: A review of empirical research (2 hours)
 - a. Limitations of theoretical models
 - b. Variation in firms' capital structure – within and between firms

Readings: list of reference papers will be provided
- 10. Initial public offerings (5 hours)
 - a. Advantages and disadvantages of going public
 - b. Price performance post listing
 - c. Case discussion (Huaneng Power International)

Readings: BD, ch. 23; Welch, ch. 21F-G (from companion to main textbook, <http://book.ivo-welch.info/companion/companion.pdf>)
- 11. Payout policy (5 hours)
 - a. Motivation – information asymmetry
 - b. Ways of rewarding shareholders – dividend and share repurchase
 - c. Impact of tax on payout policies
 - d. Case discussion (Linear Technology)

Readings: BD, ch. 17; Welch, ch. 20
- 12. Corporate risk management (2 hours)
 - a. Types of corporate risks
 - b. Benefits and costs of risk management

Readings: Lecture notes; BD, ch. 30; HGT, ch. 21-23.

13. Corporate governance + Case discussion (Seagate Technology) (5 hours)
Readings: BD, ch. 29; HGT, ch. 20; Tirole, ch. 11 (more advanced level); a few academic papers, to be provided

Advanced Asset Pricing and Market Microstructure (Prof. Tsomocos' part)

Purpose

This course serves two functions. First, it provides students with a thorough coverage of the principles of asset pricing and market microstructure. It introduces students to advanced finance theory that forms the foundation of modern finance. It provides the necessary background to conduct research. Second, the course offers students with hands-on experience of using computable pricing models to analyze and price modern financial instruments such as options and introduces econometric techniques used in market microstructure.

Topics

The course is divided into three parts. The first part covers asset pricing by arbitrage and by equilibrium arguments. The second part deals with issues of asymmetric information and the third with the theory and applications of market microstructure. After each part there will be a class/lecture summarising the lectures, developing applications and discussing the problem sets.

Course Lecturers

Dr. D. Tsomocos (DT)

Assessment Method

Mid-term test (100% for this part of the course; 20% of the final grade for the course)

If you have to skip this midterm test due to a valid documented reason, the weight of the mid-term test shifts to the overall mark for the course, i.e. $\text{final grade} = 100\% \times \text{the mark for the part taught by Stepanov/Chakraverty}$.

If you skip the midterm test for no valid reason, you simply get 0 points for it, i.e. $\text{final grade} = 20\% \times 0 + 80\% \times \text{the mark for the part taught by Stepanov/Chakraverty}$.

Course Texts

The relevant chapters of the course texts are required for the first five lectures.

T. Copeland and J. Weston (1992), Financial Theory and Corporate Policy, Addison Wesley. A good mixture of theory and evidence.

J-P Danthine and J. Donaldson (2002), Intermediate Financial Theory, Prentice Hall

C.- F Huang and R.H. Litzenberger (1988), Foundations of Financial Economics, Prentice Hall

J. Hull (2003), Options, Futures and Other Derivatives, Prentice Hall.

J. Ingersoll (1987), Theory of Financial Decision Making, Rowman and Littlefield

S. E. Shreve (2004), Stochastic Calculus for Finance I: The Binomial Asset Pricing Model, Springer.

S.F. Le Roy and J. Werner (2001), Principles of Financial Economics, Cambridge University Press.

Term 1

• LECTURE # 1 : Equilibrium in security markets (DT)

- Consumption-Based Security Pricing / Lucas Model
- First Pass at the CAPM
- Equity Premium Puzzle
- Complete vs. incomplete markets
- Representative vs. heterogeneous agent models

Readings:

- Le Roy and Werner, ch. 14 and 15

- Danthine and Donaldson, ch. 9
- Lucas, R. (1978), "Asset Prices in an Exchange Economy", *Econometrica*, Vol 46 (6), pp 1429-1445
- Mehra, R. and E. Prescott (1985) "The Equity Premium: A Puzzle", *Journal of Monetary Economics*, Vol. 10, pp 335-359
- Weil P. (1992) "Equilibrium asset prices with undiversifiable labor income risk", *Journal of Economic Dynamics and Control* Vol. 16, pp. 769-790

• LECTURE # 2 : General Equilibrium with Incomplete Markets (DT)

- State prices and risk-neutral probabilities
- Spanning
- Constrained inefficiency
- Modigliani and Miller
- Effectively Complete Markets

Readings:

- Geanakoplos, J.D. 1990. "An Introduction to General Equilibrium with Incomplete Asset Markets," *Journal of Mathematical Economics*, 19:1-38.
- Le Roy and Werner, ch. 5, 6, 16.1-16.7
- Ross, S.A. 1976. "Options and Efficiency," *Quarterly Journal of Economics*, 90: 75-89

• LECTURE # 3: Options Pricing (DT)

- Binomial Asset Pricing Model
- Options
- Dynamic completion of the markets
- Cox-Ross-Rubinstein
- Radom-Nikodym Derivative Process
- Exotics
- Numerical Procedures

Additional readings:

- Hull, ch. 8-10, 18
- Shreve, ch. 1 and 3
- Cox, J., Ross S.A. and Rubinstein, M. 1979. "Option Pricing: A Simplified Approach," *Journal of Financial Economics*, 7: 229-63
- Polemarchakis, H.M., and Bon-Il Ku.1990. "Options and Equilibrium," *Journal of Mathematical Economics*, 19:107-112

• LECTURE # 4: C.A.P.M. and A.P.T.

- Portfolio theory
- Mutual fund, SML, efficiency theorem
- Factor pricing
- A.P.T.

Additional readings:

- Geanakoplos, J. and Shubik M. 1990. "The Capital Asset Pricing Model as a General Equilibrium with Incomplete Markets." *The Geneva Papers on Risk and Insurance Theory*, 15(1): 55-71
- Huberman, G. 1982. "A Simple Approach to Arbitrage Pricing Theory," *Journal of Economic Theory*, 28: 183-91.
- Markowitz, H.M. 1952. "Portfolio Selection," *Journal of Finance*, 7:77-91
- Mossin, J. 1965. "Equilibrium in a Capital Asset market," *Econometrica*, 34(4):768-783.
- Sharpe, W.F.1964. "Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk," *Journal of Finance*, 19(3):425-442.
- Tobin, J. 1958. "Liquidity Preference as Behaviour Towards Risk," *Review of Economic Studies*, 26:65-86.

• **LECTURE # 5 : Money and Default**

- Liquidity / Cash-in-advance
- Endogenous Default
- Collateral Equilibrium

Additional readings:

- Dubey P., Geanakoplos J., and Shubik M.(2005), "Default and Punishment in General Equilibrium", *Econometrica*, vol. 73 No. 1 (Jan.), 1-37
- Espinoza, R. A and Tsomocos, D. P. (2007), "Asset Prices in an Exchange Economy with Money and Trade", working paper
- Geanakoplos J. (2003), "Liquidity, Default, and Crashes: Endogenous Contracts in General Equilibrium", *Advances in Economics and Econometrics: Theory and Applications, Eighth World Conference, Volume II, Econometric Society Monographs*, pp. 170-205
- Geanakoplos J., and Zame, W. R. (1997), "Collateral, Default and Market Crashes", *Cowles Foundation Discussion Paper*
- Goodhart CAE, Sunirand P. and Tsomocs D.P. 2004, "A model to analyse financial