CORPORATE FINANCE
Course Outline

Approved by the
Academic Council of _____
Protocol # __ of _____

Prepared by	Pavel Malyshev, Associate Professor of the School of Finance, Faculty of Economic Sciences
Credits	3
Lectures and classes (hours)	40
Self-study (hours)	74
Year Programme	3rd year Economics, Economics and Statistics
Study format	Blended learning

1. Course objectives and prerequisites

The course develops theoretical framework for understanding and analysing major financial problems of a corporation operating in market environment. The course covers capital budgeting issues, capital structure theory, payout policy, risk management discussions and M&A motives. Corporate finance course is intended to provide necessary knowledge and basic skills in evaluating financing and investment decisions and their influence on corporate performance and value. The course is based on lectures, classes, groupwork and self-study.

At the end of the course students are expected to:

- Understand and apply principles of modern financial analysis;
- Be able to discuss different stakeholders' goals as a source of agency conflicts;
- Understand and apply capital budgeting techniques when making investment decisions;
- Be able to discuss the logic of capital structure decisions and understand how market imperfections influence capital structure decisions;
- Understand corporate payout decisions and be able to discuss market reaction to dividend payout;
- Be able to discuss logic of risk management decisions and sources to increase company value;
- Be able to discuss M&A motives and value creation via restructuring.

The course prerequisites include Financial economics, Microeconomics (basic level) and Financial accounting. Students are obliged to take Financial Economics right before taking Corporate Finance. Successful candidates should be familiar with asset pricing and valuation of individual financial assets.

2. Course structure

#	Topic	Total hours	Lectures	Classes	Self-study
1	Corporate Finance: Introduction	8	2	0	6
2	Investment decisions	16	4	4	8
3	Capital structure choice and corporate value	24	6	6	12
4	Interrelation of financing and investment decisions	12	2	2	8
5	Payout policy and corporate value	12	2	2	8
6	Risk management policy and corporate value	10	2	2	6
7	M&A and restructuring	10	2	2	6
8	Group project presentations	22	0	2	20
Total hours		**114**	**20**	**20**	**74**

1. Corporate finance: Introduction

From accounting to financial approach. Market capitalization and enterprise value. Maximizing the value of the business as a key shareholders' goal: financing decisions, investment decisions, payout policy and risk management decisions. Financial decisions: changes across the lifecycle.

Perfect capital market as environment to develop noncompromising Net Present Value rule. No arbitrage condition on capital markets versus possibility of arbitrage on markets of real assets: the main reason to invest in real assets.

Company's stakeholders: their goals and agency conflicts. Theory of the firm: ownership versus control of corporations. Corporations in emerging and developed markets: does business environment matter?

What do equityholders buy: the dividend stream vs. capital gains. Prioritizing investment decision and dividend payout decisions when capital markets don't offer arbitrage

opportunities. The Free Cash Flow concept to determine dividend size. Two stage approach to valuation compared to stable growth case. Positive return spread together with investment decisions as an opportunity to increase equity value.

2. Investment decisions

Investment opportunities of a corporation. Cash flows of an investment project. Project risk, cost of capital and discounted cash flows. Applying net present value (NPV) methodology in capital budgeting. Mutually exclusive projects. Profitability index (PI) as a relative measure of present value. Internal rate of return (IRR): methodology and limitations. Time constraints: discounted payback method. Value creation with efficient investment projects.

3. Capital structure choice and corporate value

Modigliani and Miller theorem (MM) on capital structure, perfect capital market assumptions and basic MM irrelevance propositions. Weighted average cost of capital (WACC): a portfolio approach to determine the overall opportunity cost of capital. Competing definitions of WACC. Cost of debt, cost of equity and WACC under pure MM. Shareholder reaction to changes in capital structure. MM propositions with corporate income taxes. Income tax shield as motivation to take debt. Motivation of WACC behavior. The effect of personal taxes on capital structure. Miller equilibrium model.

Tradeoff theory as a model of optimal capital structure: tax shield vs financial distress costs. Firm value vs WACC under tradeoff theory. The pecking order of financing theory. The information conveyed by capital structure decisions.

A debtholder – equityholder conflict: debt overhang problem, asset substitution problem, debt covenants and monitoring opportunities as means to agency costs.

An equityholder – manager conflict: overinvestment problem, deficient management efforts, aligning the conflicting interests with capital structure. Minimizing the total cost of two agency conflicts with capital structure choice.

4. Interrelation of financing and investment decisions

Adjustments to capital budgeting techniques when evaluating a project under certain financing plan. Adjusted present value (APV), weighted average cost of capital (WACC) approach and free cash flow to equity (FCFE): three classical approaches to account for side effects.

5. Payout policy and corporate value

Types of dividends: cash dividend, stock dividend, share repurchase. Payout policy as a financing problem. The Modigliani-Miller payout irrelevance theorem. Neither dividend size nor means of delivery matters under MM. The effect of investor taxes: a preference for capital gains compared to cash distributions. The dividend puzzle. Static clientele theory. Lintner's stylized empirical facts. Signaling role of dividends. Payout decisions as means to align the interests of managers and shareholders.

6. Risk management policy and corporate value

Risk and the M&M theorem. The motivation to hedge: decrease tax payments, decrease costs of financial distress, improve planning for capital needs. The methods of interest rate risk management. Foreign exchange risk management. Application of risk management to industrial firms.

7. M&A and restructuring

Types of M&A. Reasons to acquire: economies of scale, vertical integration, financing side motivation. Hubris hypothesis by Roll. Empirical evidence of inefficient M&As. Value creation via restructuring. Divestitures and bankruptcy as types of corporate restructuring. The sources for synergy in restructuring.

3. Evaluation criteria

Cumulative mark (0-10): 50%
including

- *Class participation: 5%*
- *Quiz: 5%*
- *Group project: 15%*
- *Mid-term test: 25%*

Final exam (0-10): 50%
Total (0-10): 100%

Class participation includes answering questions, participation in the group discussion and problem solving.
Quiz is brief in-class test mostly covering the topics discussed during the previous class;
Mid-term test includes essay-type theoretical questions and problem solving;
Group project includes work with real company and market data. A group of maximum 5 students is supposed to describe and evaluation an investment decision in a real company. This work is limited to publicly available data. Students are expected to present their results in class;
Final exam includes essay-type theoretical questions and problem solving.

Linear system applies. No part of the total mark is blocking.

Grades criteria:

From	To	Mark
0	3	Fail
4	5	Satisfactory

6	7	Good
8	10	Excellent

Both Cumulative and Final Exam marks are rounded to an integer number (0-10) according to general mathematical rules. Rounding of Cumulative mark is applied only at the final stage of the course. Components of the Cumulative mark are not rounded.

4. Final Exam: example

Problem 1. Agency conflicts (total: 25 marks)

Suppose that the Company exists for one period only. Company's current assets should generate a cash flow of $100 at the end of the period in any state of the economy. Face value of the Company's debt equals $200 and has to be paid off at the end of the period.

Company can invest in one of 2 mutually exclusive projects. Both projects require $110 as initial investment today. The cash flows at the end of the period are estimated as it follows:

- Project A will generate the cash flow of $80 or $280 with equal probabilities;
- Project B will generate the cash flow of $150 or $220 with equal probabilities.

Assume that all agents are risk-neutral and the discount rate equals 0.

Question 1.1 (7 marks)

Calculate the NPVs for these projects. Which project, if any, will the Company choose if debt financing is not available?

Question 1.2 (8 marks)

Can this problem be solved if the projects can be financed by issuing senior debt? Which project will be chosen in this case? Show your calculations of cash flows for shareholders and the two types of debtholders (new and existing). Explain your answer.

Question 1.3 (6 marks)

Which project will the Company choose if debt financing is not available but the liability of shareholders is not limited? Show your calculations of cash flows for shareholders and explain your answer.

Question 1.4 (4 marks)

Provide at least four possible financial solutions (other than mentioned in Questions 1.2 and 1.3) which may help the Company mitigate the negative effect of risk shifting and (or) debt overhang.

Problem 2. Assets and capital structure (total: 25 marks)

Chocolate Inc. is a mature oil producing company quoted at the national exchange. The company has 500 million common stocks outstanding. At the moment Chocolate Inc. keeps a part of its assets worth $200 million in cash. The company's annual interest payment on debt is $72 million and the debt is assumed to be risk-free. The current debt-to-equity (D/E) ratio of the company is 1.

The corporate tax rate is 25%. Suppose that CAPM holds. The risk-free rate is 6%, the market risk premium is 7% and Chocolate Inc. equity beta equals 2. For simplicity assume that all cash flows are perpetuities.

Question 2.1 (10 marks)

Work out the Chocolate Inc. current stock price, enterprise value (EV) and weighted average cost of capital (WACC).

Question 2.2 (10 marks)

Now suppose that Chocolate Inc. decides to invest all free cash into its primary business. This should only expand the company's current operating activity with no synergy effects. As a result, the risk of the company's productive assets will stay the same as before. This action, however, is likely to make the market require a 1.2% risk premium on the company's bonds outstanding (i.e. the debt is not risk-free any longer). Work out the company's new present value of tax shield (PVTS), D/E ratio and equity beta.

Question 2.3 (5 marks)

Does the investment decision in Question 2.2 appear to be beneficial for the shareholders of Chocolate Inc.? Does it create additional value for the company? Explain.

Problem 3. Valuation with leverage (total: 25 marks)

XYZ Company has perpetual debt with the face value of $1,000 million and the market value of $800 million. Last year the company paid $65 million as interest on debt. The corporate tax rate is 20%. All cash flows occur at the end of the year. Required return on equity is 12%. The company has 100 million common stocks outstanding.

Last year's free cash flow to the firm (FCFF) was $840 million, which is supposed to grow perpetually at 3% every year, starting this year. The company neither borrowed nor redeemed its debt last year. The company's policy is to keep D/E ratio stable by adjusting its debt annually.

Question 3.1 (18 marks)

Work out the price of one XYZ common stock using Flow-to-equity (FTE) method. What is the D/E ratio of the company?

Question 3.2 (7 marks)

What would happen to the WACC of XYZ Company in the long run if the company's debt is not adjusted annually in order to maintain the D/E ratio stable?

Problem 4. Stable growth and payout (total: 25 marks)

You are a shareholder of BCD, the public limited stable growing company with long history of dividend payments. The company has no debt and the required return on BCD equity in 12%. There are 500 shares outstanding, which are traded today (Jan 1, 2019) at the fair value of $90 per share.

Last year (2018) BCD equity book value was $20,000. The return on equity (ROE) is 20%, the same as in previous and future years. BCD management follows the investment rule which corresponds to the company's stable growth strategy: every year capital expenditures (CAPEX) include compensation of depreciation of existing fixed assets and the additional investment of 25% of net income (NI). This gives the company an opportunity to pay out 75% of net income as cash dividends every year.

For simplicity assume all cash flows (including dividend payments) are end-of-year. Corporate tax of 20% is the only imperfection of the market.

Question 4.1 (15 marks)

Build a table for the three nearest years (2019-2021) which includes:

- Equity book value;
- Net income;
- CAPEX (in addition to the compensation of depreciation of existing assets);
- Dividend per share.

Illustrate that the fair value of one share is $90.

Question 4.2 (5 marks)

Suppose you propose to double the cash dividend payable at the end of 2019 (keeping other forecasted dividends unchanged). Since you don't want to change expected CAPEX flows or attract new debt, this dividend will be financed by issuing new equity. Determine the fair value of one BCD share and the number of additional shares to be issued at the end of 2019. Determine the dividend per share (DPS) for the three nearest years (2019-2021). Illustrate the Modigliani & Miller irrelevance argument related to payout decisions.

Question 4.3 (5 marks)

Now suppose that instead of doubling cash dividend in 2019 you propose an alternative decision: not to pay cash dividends for the year 2020 and use these funds to repurchase a part of BCD equity. Determine the fair value of one BCD share and the number of shares to be repurchased at the end of 2020 (assume shares are divisible). Determine the dividend per share (DPS) for the three nearest years (2019-2021). Illustrate the Modigliani & Miller irrelevance argument related to payout decisions.

5. Study resources

5.1. Recommended essential reading

#	Title

1	Jonathan Berk, Peter DeMarzo (B&D). Corporate Finance. Pearson: 3rd edition, 2014

5.2. Recommended supplementary reading

#	Title
1	Black, F., and Scholes, M. The Effects of Dividend Yield and Dividend Policy on Common Stock Prices and Returns. Journal of Financial Economics 1 (1974), pp. 1–22.
2	Richard Brealey, Stuart Myers (B&M). Principles of Corporate Finance. McGraw Hill. 6th Edition.
3	Grossman, S., and Hart, O. Takeover bids, the free rider problem, and the theory of the corporation, Bell Journal of Economics 11 (1980), 42-64.
4	Jensen, M., and Meckling, W. Theory of the firm: Managerial behavior, agency costs and ownership structure, Journal of Financial Economics, (1976), 305-360.
5	Litzenberger, R., and Ramaswamy, K. The Effects of Dividends on Common Stock Prices: Tax Effects or Information Effects? Journal of Finance, no. 2 (1982), pp. 429–437.
6	Modigliani, F., and Miller, M. The cost of capital, corporation finance and the theory of investment, American Economic Review, (1958), 261-297.
7	Modigliani, F., and Miller, M. Corporate income taxes and the cost of capital, American Economic Review, 53 (June 1963), 433-443.
8	Miller, M. Debt and Taxes, Journal of Finance, (1977), 261-275.
9	Myers, S. The capital structure puzzle, Journal of Finance, 39 (1984), 575-592.
10	Myers, S., and Majluf, N. Corporate financing and investment decisions when firms have information that investors do not have, Journal of Financial Economics, 13, (1984), 187-221.
11	Pettit, J. Is a Share Buyback Right for Your Company? Harvard Business Review, April 2001.
12	Roll, R. The Hubris Hypothesis of Corporate Takeovers, Journal of Business, 59 (1986), 197-216.
13	Ross, S. The determination of financial structure: The incentive signalling

	approach, Bell Journal of Economics 8 (Spring 1977), 23-40.

5.3. Software

#	Name	Access/download conditions
No specific software required		

5.4. Professional databases, information reference systems, online resources (electronic educational resources)

#	Name	Access/download conditions
1	Bloomberg	Available only in specialized university classrooms
2	Thomson Reuters Eikon	Available only in specialized university classrooms
3	Capital IQ	Available only in specialized university classrooms

5.5. Technical support

No specific technical devices required

6. Organization of training for persons with disabilities

If necessary, students with disabilities (at request) and for the disabled also in accordance with the individual rehabilitation program of the disabled, may be offered the following options for the perception of educational information, taking into account their individual psychophysical characteristics, including the use of e-learning and distance technologies:

6.1.1. For persons with visual impairments: in print large print; in electronic form; in the form of an audio file (the translation of educational materials in audio format); in printed form, in Braille; individual assignments and tutorials.

6.1.2. For persons with hearing impairments: in printed form; in the form of an electronic document; video materials with subtitles; individual consultations with the assistance of a sign language interpreter; individual tasks and tutorials.

6.1.3. For persons with disorders of the musculoskeletal system: in printed form; in the form of an electronic document; in the form of an audio file; individual assignments and tutorials.

7. Supplementary information

Please follow the link below to use supplementary readings, assignments, past exams. The referred below online course don’t contain lecture videos, but allows you to use lecture notes. The course MIT “Finance Theory 2” fits our logic well, but it is broader, provides more credits

than our HSE Corporate Finance course. We don't include a number of topics in order not to overlap with HSE Business Valuation which is a part of 4th year students' program.

In the 2019/20 study year we expect students to use MIT "Finance Theory 2" as a supplementary source. It will NOT be a part of the final Corporate finance course final grade.

https://ocw.mit.edu/courses/sloan-school-of-management/15-402-finance-theory-ii-spring-2003/calendar/

Topics to accompany:

#	Topic	Blended course topic
1	Corporate Finance: Introduction	#1. Introduction
2	Investment decisions	N/A
3	Capital structure choice and corporate value	#4. Capital Structure 1 #5. Capital Structure 2 #8. Capital Structure: Informational and ynamic Considerations
4	Interrelation of financing and investment decisions	#14. WACC and APV 1 #15. WACC and APV 2
5	Payout policy and corporate value	N/A
6	Risk management policy and corporate value	N/A
7	M&A and restructuring	N/A