Financial Management

Professor: Filippo Ippolito
E-mail: filippo.ippolito@upf.edu
Office hours: by appointment

Course Description

This is an introductory course on corporate finance with a focus on capital structure, liquidity and payout policy, and capital budgeting. It comprises a mix of lectures, seminars and case studies.

We first analyze the capital structure decision in a setting of perfect capital markets in which all securities are fairly priced, there are no taxes or transactions costs, and the total cash flows of the firm’s projects are not affected by how the firm finances them. We then examine the impact of taxes and of other frictions on the capital structure decision to explain the observed differences in capital structure across firms and industries.

We then shift the attention to liquidity and payout policy and to how these policies are shaped by market imperfections, such as taxes, agency costs, transaction costs, and asymmetric information, just as capital structure is. We discuss why some firms pay dividends and some do not, and why some firms prefer share repurchases.

Next, we investigate the complexities of capital budgeting, how to estimate the appropriate cost of capital, and also how the financing decision can affect the cost of capital and cash flows. We introduce the three main methods for capital budgeting with leverage and market imperfections: the weighted average cost of capital (WACC) method, the adjusted present value (APV) method, and the flow-to-equity (FTE) method.

Finally, we study how corporations raise equity capital and debt financing in its different forms.
Objectives

In terms of general competences, the course will strengthen the ability to reason through complex arguments and defend an argument on the basis of theory and evidence. It also provides students with the ability to assess risk and to make decisions in the presence of uncertainty. The course strengthens the ability of students to identify the core decision variables in a problem.

In terms of specific competences, the course will strengthen the understanding of: corporate finance, asset pricing, accounting, financial mathematics, budgeting, capital markets, financial institutions, bankruptcy regulation, financial modeling.

Methodology

The course comprises lectures, seminars and cases studies. The course builds on previous knowledge of accounting, corporate finance, asset pricing, and financial markets.

Evaluation criteria

During the course problems sets will be distributed as individual homework. Solutions to the problem sets will be provided and discussed in the practical classes (seminars). The problem sets will not be graded.

A case study will be used for the intermediate exam. The final exam is based on exercises and open questions and covers all chapters discussed in class. Active participation in class is also evaluated.

Weight of final exam: 60%

Weight of the case studies: 10%*3 = 30% (in groups)

Weight of participation: 10%

To pass the course students need a minimum grade of 50% in the final exam.

Students are required to attend 80% of classes. Failing to do so without justified reason will imply a Zero grade in the participation/attendance evaluation item and may lead to suspension from the program.

As with all courses taught at the UPF BSM, students who fail the course during regular evaluation will be allowed ONE re-take of the examination/evaluation. Students that pass any Retake exam should get a 5 by default as a final grade for the course. If the course is again failed after the retake, students will have to register again for the course the following year.

In case of a justified no-show to an exam, the student must inform the corresponding faculty member and the director(s) of the program so that they study the possibility of rescheduling the exam (one possibility being during the “Retake” period). In the meantime, the student will get an “incomplete”, which will be replaced by the actual grade after the final exam is taken. The “incomplete” will not be reflected on the student’s Academic Transcript.

Plagiarism is to use another’s work and to present it as one’s own without acknowledging the sources in the correct way. All essays, reports or projects handed in by a student must be original work completed by the student. By enrolling at any UPF BSM Master of Science and signing the “Honor Code,” students acknowledge that they understand the schools’ policy on plagiarism.

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Note: This document is only informational, detailed contents and faculty may change.
Contents

Part I: How to finance a corporation: the capital structure decision

Capital structure in a perfect market: Define the types of securities usually used by firms to raise capital; define leverage. Describe the capital structure that the firm should choose. List the three conditions that make capital markets perfect. Discuss the implications of MM Proposition I, and the roles of homemade leverage and the Law of One Price in the development of the proposition. Calculate the cost of capital for levered equity according to MM Proposition II. Illustrate the effect of a change in debt on weighted average cost of capital in perfect capital markets. Calculate the market risk of a firm’s assets using its unlevered beta. Illustrate the effect of increased leverage on the beta of a firm’s equity. Compute a firm’s net debt. Discuss the effect of leverage on a firm’s expected earnings per share. Show the effect of dilution on equity value. Explain why perfect capital markets neither create nor destroy value.

Tax shields of debt: Explain the effect of interest payments on cash flows to investors. Calculate the interest tax shield, given the corporate tax rate and interest payments. Calculate the value of a levered firm. Calculate the weighted average cost of capital with corporate taxes. Describe the effect of a leveraged recapitalization on the value of equity. Discuss why the optimal level of leverage from a tax-saving perspective is the level at which interest equals EBIT. Describe the relationship between the optimal fraction of debt and the growth rate of the firm. Assess the apparent under-leveraging of corporations, both domestically and internationally.

Financial distress costs: Describe the effect of bankruptcy in a world of perfect capital markets. Discuss several direct and indirect costs of bankruptcy. Illustrate why, when securities are fairly priced, the original shareholders of a firm pay the present value of bankruptcy and financial distress costs. Calculate the value of a levered firm in the presence of financial distress costs.

Contracting costs when leverage is high: Discuss how equity and debt arise as optimal contracts in the presence of contracting costs. Show how high leverage can lead to conflicts of interests between shareholders and debt holders. Explain the concepts and implications of the “risk shifting” problem and of the “debt overhang” problem. Discuss the possible solutions to these two problems.

Part II: How much cash to hold

Provide reasons why firms might accumulate cash balances rather than pay dividends. Describe the effect of agency costs on payout policy. Assess the impact of information asymmetry on payout policy.

Part III: How to return capital to investors

List two ways a company can distribute cash to its shareholders. Discuss the effect of dividend payment or share repurchase in a perfect world. Assuming perfect capital markets, describe what Modigliani and Miller (1961) found about payout policy. Discuss the effect of taxes on dividend policy; compute the effective dividend tax rate as the opportunity cost of paying dividends versus returning capital with a stock repurchase.

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Part IV: Valuation

Capital Budgeting and Valuation with Leverage: Describe three methods of valuation, and list the steps in computing each. Compute the unlevered and equity costs of capital, and explain how they are related. Estimate the cost of capital for a project, even if its risk is different from that of the firm as a whole. Estimate the cost of capital for a project, given the project’s debt-to-value ratio, assuming (1) the firm maintains a target leverage ratio, or (2) some tax shields are predetermined. Discuss the importance of considering the overall incremental impact of the leverage of a project on the firm. Calculate the levered value of a project if (1) the firm has a constant interest coverage policy, or (2) the firm keeps debt at a constant level. Define what is meant by a constant interest coverage policy and describe the impact of such a policy on the levered value of a project. Describe situations in which the WACC method is best to use and situations in which the APV method is advisable. Discuss how issuance costs and mispricing costs should be included in the assessment of the project’s value. Describe the effects of financial distress on the use of leverage.

Part V: Long-Term Financing

Use it only as an example of costly external finance: don’t spend time on the ipo process. Just highlight the cost of 7% and how rights help

The Mechanics of Raising Equity Capital in the Public Market: Define an initial public offering, and discuss their advantages and disadvantages. Distinguish between primary and secondary offerings in an IPO. Describe typical methods by which stock may be sold during an IPO; discuss risks for parties involved in each method. Evaluate the role of the underwriter in an IPO. Describe the IPO process, including the methods underwriters use to value a company before its IPO. Identify ways in which underwriters can mitigate risk during an IPO. List and discuss four puzzles associated with IPOs. Define a seasoned equity offering, describe two ways in which they are brought to market, and identify the stock price reaction to the announcement of a seasoned equity offering.


Calendar

The timing of the topics covered in class and of the intermediate exam are subject to possible variations. Please consider the following table only as a general reference.

<table>
<thead>
<tr>
<th>Session</th>
<th>Content</th>
<th>Chapter</th>
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</table>
| 25 Oct  | The big picture  
|         | • The key questions of the course  
|         | Logistics of the course  
|         | Syllabus | |

Part I: How to finance a corporation: the capital structure decision

| 25 Oct | Equity versus Debt Contracts | 14 |

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<table>
<thead>
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<th>Date</th>
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| 2 Nov | - The nature of the equity and debt contract  
- The asymmetry of payoff between equity and debt contracts  
**Capital Structure in a Perfect Market**  
- The irrelevance of capital structure: Modigliani Miller Proposition I  
  - Example of LBO  
  - Does capital structure affect the return on equity?  
- The relation between leverage and equity returns: Modigliani Miller Proposition II  
  - How returns vary across different capital structures  
  - An accounting identity of returns in levels and in rates  
  - The formula of re and the computation of re for various capital structures  
  - A graph of returns and leverage  
  - MM Proposition II  
  - Example of a leveraged recapitalization and how the return of equity is affected  
- Leverage and risk and CAPM betas  
  - Example of how changing leverage affects the exposure of equity to systematic risk  
  - Betas of various assets and MMII in terms of betas  
  - CAPM formulas to predict re for various capital structures  
  - Example: Change in leverage and betas at McDonalds  
- Modigliani Miller and bankruptcy risk  
  - The graph of returns and leverage with bankruptcy risk (without costs of bankruptcy)  
  - Revisiting the formula of returns to equity when there is bankruptcy risk  
  - The special case of no systematic risk  |
| 8 Nov | **Friction 1: Corporate and Personal Taxes**  
- Pre-tax balance sheet accounting only for corporate taxes  
- Adjusted Present Value to compute the value of the firm:  
\[ V_L = V_u + PV(Tax\ shield) \]  
  - Example of tax shield as annuity or perpetuity  
- Tax shield in the cost of capital  
- WACC method to compute the value of the firm  
  - Example of WACC method with a firm with constant growth and constant leverage  
- Leveraged recapitalization to capture a tax shield  
- Personal taxes  
  - Pre-tax balance sheet accounting for corporate and personal taxes  
  - Tax shield with personal and corporate taxes  
  - Effective tax shield: tax shield with corporate and personal taxes: \( r_{eff} \)  |
<table>
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<th>Date</th>
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<td>8-9 Nov</td>
<td><strong>Friction 2: Financial Distress Costs</strong></td>
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<td></td>
<td>• Bankruptcy without and with bankruptcy costs.</td>
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<td>o Economic versus financial distress</td>
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<td>o Who bears the cost of bankruptcy?</td>
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<td><strong>Trade-off theory of capital structure:</strong> $V_L = V_u + PV(Tax shield) - PV(Bankruptcy Costs)$</td>
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<td>• Examples: Finding the optimum leverage</td>
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<td>8-9 Nov</td>
<td><strong>Friction 3: Contracting Costs: The conflict of interests between equity and debt when leverage is high</strong></td>
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<td></td>
<td>• Why debt and equity exist as contracts</td>
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<td>• Risk shifting problem: why equity holders may want to increase risk when debt is high</td>
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<td>o Example of risk shifting (overinvestment)</td>
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<td>o Who pays for the inefficiency of risk shifting</td>
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<td>o Possible solutions to risk shifting</td>
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<td>o The general rule for risk shifting to occur</td>
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<td>• Debt Overhang problem: why equity holders might be unwilling to finance positive NPV investments when debt is high</td>
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<td>o Example of debt overhang (underinvestment)</td>
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<td>o Who pays for the inefficiency of the debt overhang</td>
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<td>o Possible solutions to the debt overhang problem</td>
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<td>o Estimating the debt overhang problem</td>
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<td><strong>Part II: How much cash to hold</strong></td>
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<td>• The opportunity cost of retaining cash in the firm: $t^*$ret</td>
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<td><strong>Friction 2: Financial constraints (and the need for precautionary cash holdings)</strong></td>
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<td>• Asymmetric information between managers and equity investors</td>
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<td>o Pecking order theory of capital structure (Myers-Majluf 1984)</td>
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<td>o Signalling with a stock repurchase</td>
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<td><strong>Case study on optimal capital structure (Blain Kitchen)</strong></td>
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<td><strong>Part III: How to return capital to investors: Dividends versus stock repurchases</strong></td>
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<td>Nov 22</td>
<td><strong>Payout policy in perfect markets</strong></td>
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<td>• Irrelevance theorem of dividend policy</td>
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<td><strong>Friction 1: Taxes</strong></td>
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<td>• The opportunity costs of paying dividends: $t^*$div</td>
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<td>o Self-selection of tax clienteles</td>
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<td>Nov 23</td>
<td><strong>Case Study on cash policy (Infineon)</strong></td>
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<td><strong>Part IV: Capital Budgeting and Valuation with Leverage</strong></td>
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<tr>
<td>Nov 29</td>
<td><strong>Cash flow statement identities</strong></td>
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Definitions of Cash flows
- Free cash flow to equity in the unleveraged firm (FCF_U)
- Free cash flow to equity in a leveraged firm (FCFE)
- Free cash flow to the leveraged firm (FCF)

Valuation methods
- Valuation with adjusted present value (APV)
- Valuation with WACC
- Valuation with FCFE
- Equivalence of the three methods

Firm valuation examples
- Valuation of AMC (Ex 18.11)
- Stock pricing of Procter and Gamble
- Stock pricing of Amarindo

Capital budgeting
- Valuation of a new project at Avco
- Valuation of an acquisition at Avco
- Assuming different market risk for the new project
- Assuming a cost of external finance
- Valuation of a new project at Lucent Technologies

Nov 30
Case Study on dividend policy (Linear Technologies)

Part V: Long-term financing

Time permitting

The Mechanics of Raising Equity Capital
- The reasons for an IPO
- Primary versus secondary offerings
- Types of IPO: Best effort, Auction, Commitment
- Steps of the IPO
- Example of IPO for Real Networks
- Over allotment option and fees
- Under-pricing and rationing
- Types of seasoned equity offerings: cash versus rights

Pricing of rights in a seasoned equity offering

Debt contracts
- Seniority, Security, Maturity, Interest rates, covenants, options
- Loans, bonds, commercial paper, ABS

Example of a leveraged buyout at Hertz Co.

Reading Materials / Bibliography/ Resources
The main textbook is Jonathan Berk and Peter DeMarzo, Corporate Finance, Second Edition, 2011 (or a later edition), published by Pearson Prentice Hall. Additional slides, a case and class notes will be distributed.

Bio of Professor
Filippo Ippolito is Associate Professor of Financial Management at Universitat Pompeu Fabra and research affiliate at the Centre for Economic Policy Research (CEPR), London, and Director of the Master in Finance at the Barcelona Graduate School of Economics. Prof
Ippolito holds a PhD in finance from Said Business School, Oxford, and an MPhil in Russian and Eastern European Studies from the University of Oxford. In the past he has worked in the financial and consulting sectors. His research focuses on corporate debt, capital structure, corporate liquidity management and private equity. Prof Ippolito has published in the *Journal of Finance, Journal of Financial Economics, Journal of Financial Intermediation*, and *Journal of Corporate Finance.*