

Introduction to Corporate Finance

ECON 255, Summer 2017

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Office Hours: Before class and by appointment.

Course Pre-Requisites

This course requires Introductory Microeconomics and comfort with algebra. You will also need familiarity with probability concepts such as expected value and variance. No prior knowledge of finance is necessary but a desire to learn about these concepts will be helpful. The topics introduced in class will be new to most students but they are not difficult and will be made accessible.

Course Description

The goal of this course is to introduce the fundamental underpinnings of finance and to create a broad financial toolkit for students. The class will start with present value analysis and apply this knowledge to annuities and perpetuities. We will then examine bonds, equities and corporate capital structure and use discounting techniques for their valuation. Next we will discuss risk (diversifiable and nondiversifiable) in the equity market and how risk it is priced. The efficient portfolio frontier will be defined and then motivate The Capital Asset Pricing Model. We will also introduce the Arbitrage Pricing Theory. The price of risk can then be used by corporate managers to make proper investment decisions. Option pricing techniques will also be studied (binomial and Black-Scholes-Merton) and applied to corporate capital structure.

We will introduce the Modigliani-Miller Theorem, agency problems and the pecking order of capital. We will also discuss how the capital structure (the composition of debt and equity) of the firm can alter agency problems, reduce the cost of capital but increase the likelihood of financial distress.

Course Requirements and Grading

Problem Sets (4): (15%) Weekly applications of the concepts introduced in the class.

Weekly Quizzes (4): (20%) Short tests to help everyone understand their progress with the material. These quizzes will be open book and you may use a calculator.

Midterm Exam: (20%) Closed book but you will be allowed to bring one page of notes or equations. You may also use a calculator.

Final Exam: (35%) Closed book but you will be allowed to bring one page of notes or equations. You may also use a calculator.

Class Participation and Attendance: (10%) The quality of your questions, comments and contributions will add greatly to the course discussions and will be judged accordingly. Each class we will work on numerical problems of topics introduced. Please bring a calculator and scratch paper.

To maximize comprehension and participation no electronic devices will be allowed during lectures other than a calculator.

Textbooks

The required textbook for this course is *Corporate Finance, 10th edition*, by Ross, Westerfield and Jaffe (McGraw-Hill 2012). No other books are necessary but here are some others that will supplement the course topics:

- 1) Hogg, R., E. Tanis and D. Zimmerman (2014) *Probability and Statistical Inference*. Pearson New York, NY 9th Edition.
- 2) Brealey, R., S. Myers and A. Marcus (2014) *Fundamentals of Corporate Finance*. McGraw-Hill New York, NY 8th Edition.
- 3) Bodie, Z., A. Kane, and A. Marcus (2013) *Investments*. McGraw-Hill New York, NY 10th Edition.
- 4) Damodaran, Aswath (2001) *Corporate Finance: Theory and Practice*. John Wiley New York, NY 2nd Edition.

Academic Integrity

We will review what plagiarism is, how to identify it, and how to avoid plagiarizing in our own research. We will look at examples of direct and more subtle forms of plagiarism and stress the importance of integrity in academic research). (For more suggestions visit the Writing Center website at

<http://www.yale.edu/bass/faculty/index.html>

Course topics

May 29th

Lecture 1: Time value of money. Present value, annuities, perpetuities. Investment decisions using Net Present Value. Statistics, expected value and standard deviation. Balance Sheet, Income and Cash Flow Statements. Enterprise Value.

Chapter 1-3 (skim, background) Chapter 4-6. (6.2 example)

May 31st

Lecture 2: Bond valuations. Bond prices and yields. Zero coupon and coupon bonds. Interest rate and default risk. Risk-free asset and spreads. Term structure of interest rates, zero and forward rates. Duration and convexity. Chapter 8 and 15.

June 2nd 1st quiz

Lecture 3: Dividends and equity valuation. Dividend policy and signalling. Agency problems (Equity and management. Bonds and equity). Operating income and EBITDA. Chapter 9 and 19.

June 5th 1st problem set due

Lecture 4: Capital markets and asset classes. Capital structure of the firm (debt and equity). Why corporations exist and how they are financed. Balance sheet analysis and financing decisions. Modigliani and Miller. Risk premium of equity. Taxes (corporate, dividend, interest and capital gains) and depreciation.

Chapter 16 and 19.

June 7th

Lecture 5: Portfolio construction, expected value, variance and covariance. Modern Portfolio Theory. Decomposition and diversification of risk. Index weightings. Chapter 11.

June 9th 2nd quiz

Lecture 6: Mean-variance efficient frontier. Equity premium. Uncertainty, risk and diversification. Systematic and idiosyncratic risk. Risk-free asset. Mutual fund theorem. Private vs. public financing required returns. Chapter 10-11.

June 12th 2nd problem set due

Lecture 7: Capital Asset Pricing Model. Chapter 11 and 13.

June 14th 3rd quiz

Lecture 8: Arbitrage Pricing Theory. Chapter 12.

June 16th Midterm exam

Lecture 9: Efficient Market Hypothesis evidence and behavior economics. Market anomalies (small stocks, low P/E, January effect and low book/market). Chapter 14.

June 19th 3rd problem set due

Lecture 10: Derivative pricing: binomial model. Put and call payoff diagrams. Chapter 22-23.

June 21st

Lecture 11: Black-Scholes-Merton model. Put call parity. Chapter 22-23.

June 23rd 4th quiz

Lecture 12: Modigliani-Miller with taxes, dividend policy, stock repurchases, and taxes. Optimal capital structure with bankruptcy costs. Credit risk. Chapter 16-17.

June 26th 4th problem set due

Lecture 13: Mergers and acquisitions. IPOs and LBOs. Corporate governance, agency issues, employee stock options and executive compensation. Chapter 20 and 29.

June 28th 5th quiz and final exam prep

Lecture 14: Pecking order theory of capital and signalling. Debt and equity as contingent claims. WACC. Chapter 7, 18, 17.7 and 22.9.

June 30th

Lecture 15: Final exam!

