

COMM 3720: Intermediate Corporate Finance

Prof. Robert Parham

Spring 2020

Instructor

Robert Parham

Office: 380 Rouss & Robertson Halls

Web: <https://kn.owled.ge>

E-mail: kn.owled.ge@virginia.edu

Office hours: Wednesday 11:00-13:00

Class times: Tue & Thu, 11:00-12:15 (RRH 410); 12:30-13:45 (RRH 410); 15:30-16:45 (RRH 221)

Course materials

Textbook: Corporate Finance, by Jonathan Berk and Peter DeMarzo. ISBN-13: 978-0-13-299247-3. We will be following the book closely, and readings are assigned from the book.

Readings: You are required to read four scientific articles and two books during the semester. The articles are available on the course website (Blackboard). The books are:

1. The Ascent of Money, by Niall Ferguson (2008). ISBN-13: 978-1-59-420192-9
2. Animal Spirits, by George Akerlof and Robert Shiller (2010). ISBN-13: 978-0-69-114592-1

Course objective

A rigorous introduction to the full field of corporate finance, with an eye for valuation. You will (hopefully) understand the “Why” and the “How” of finance; Build a toolkit to assist you in analyzing financial situations and decisions; Learn how to value risky assets using modern portfolio theory; Understand which decisions are faced by corporate financial managers and how to make these decisions; And attain some understanding of advanced subjects including options, IPOs, M&As, and blockchains. A unifying theme of the course is how no-arbitrage conditions and the law of one price can be used to value most financial assets.

This is not a theory class. However, it includes a large theoretical part meant to build the foundations for the practical applications we will do. The course will require several hours of work and studying a week.

Chapter 1 – Introduction and preliminaries

Intro

Introduction. The black-box approach. Alex Tabarrok discusses prices. We discuss the no-arbitrage condition and the base principle of finance – no free lunch.

Papers: Read, (1958). "I, Pencil: My family tree as told to Leonard E. Read", Irvington-on-Hudson: Foundation for Economic Education.

Books: Berk DeMarzo Ch. 3

Home: Read "I, Pencil"; View Yuval Noah-Harrari lecture; View clips on 5 core economic principles – tradeoffs; true cost; decision at the margin; incentives; free trade.

Finance is applied statistics

Statistics as a language. The gambler's problem and Pascal's wager. Statistical concepts, distributions, CLTs and LLNs, linear regressions, S.D. as a measure of risk.

Papers: None

Books: None

Home: Assignment 1 – Stats refresher

Time

History of finance. Why does money have time-value? Rules for time travel. NPV, IRR, and other algebraic manipulations. Different periods and continuous compounding. Interest rates – theory and practice.

Papers: None

Books: Berk DeMarzo Ch. 4, 5; "The ascent of money" / Niall Ferguson (2008)

Home: Read "The ascent of money"

Simple models

Valuing equity, debt, options, and firms in a simple setting. Introducing limited liability, risk-aversion, taxes, interest deduction, default, and uncertainty.

Papers: None.

Books: None.

Home: Assignment 2 – Time + Models

Bonds

The mechanics and valuation of bonds. Bond dynamics. The yield curve.

Papers: None.

Books: Berk DeMarzo Ch. 6

Home: None.

Firms

The major values on a financial statement. Obtaining and reading statements. Creating accounting ratios. Understanding accounting modifiers. Valuation vs. pricing.

Papers: None

Books: Berk DeMarzo Ch. 1, 2

Home: Assignment 3 – Bonds + Firms

Chapter 2 – Valuation using Modern Portfolio Theory

Risk

Modern portfolio theory. Risk-return tradeoff. Sharpe ratio, systemic and idiosyncratic risk, diversification.

Papers: Markowitz, (1952). “Portfolio selection”, The Journal of Finance, Vol. 7, No. 1, 77-91.

Books: Berk DeMarzo Ch. 10

Home: Assignment 4 – Risk; Read “portfolio selection”

CAPM

Volatility of a two-stock portfolio, and of a large portfolio. The efficient frontier, CML, SML, and market portfolio.

Papers: None.

Books: Berk DeMarzo Ch. 11

Home: Assignment 5 – CAPM

Beta and Cost of Capital

Introduce APT and factor models, estimate equity beta from historical data, tame the beta zoo: stock beta, asset beta, debt beta, levered and unlevered beta, comparable beta, betas for other factors.

Papers: None.

Books: Berk DeMarzo Ch. 12

Home: Assignment 6 – Cost of Capital

Market Efficiency

Are markets efficient? What does that even mean?

Papers: Dunn, Gilbert and Wilson, (2011). “If money doesn’t make you happy, then you probably aren’t spending it right”, Journal of Consumer Psychology, Vol. 21, 115-125.

Books: Berk DeMarzo Ch. 13

Home: Read “If money doesn’t make you happy”.

Chapter 3 – The firm

Introduction to firms

The firm's purpose. Introduction to the three decisions facing the firm. The firm life-cycle.

Papers: None.

Books: None.

Home: Assignment 7 – Purpose.

M&M

Introduction to capital structure and the Modigliani & Miller theorems.

Papers: Modigliani and Miller, (1958). "The cost of capital, corporation finance and the theory of investment", The American economic review, Vol. 48, No. 3, 261-297

Books: Berk DeMarzo Ch. 14

Home: Read "The cost of capital, corporation finance and the theory of investment".

Imperfections - debt, taxes and bankruptcy

Deviations from the M&M world.

Papers: None.

Books: Berk DeMarzo Ch. 15, 16

Home: Assignment 8 – Capital structure

Agency costs, asymmetric information, signaling

Agency conflicts. The role of firm debt. Externalities. The role of taxes. Information, and who controls it.

Papers: None.

Books: Berk DeMarzo Ch. 16, 29; "Animal Spirits" / George Akerlof and Robert Shiller (2009)

Home: Assignment 9 – Imperfections and agency. Read "Animal Spirits".

Chapter 4 – Advanced Topics

Advanced valuation

Capital budgeting and valuation with leverage, APV, WACC, comparables, and final valuation project.

Papers: None.

Books: Berk DeMarzo Ch. 18, 19

Home: Start final valuation project.

Options

Intro to financial and real options. Binomial option pricing model. Intro to Black-Scholes.

Papers: None.

Books: Berk DeMarzo Ch. 20, 21, 22

Home: None.

IPO, M&A

Equity financing, IPO puzzles, reasons to acquire, takeover process.

Papers: None.

Books: Berk DeMarzo Ch. 23, 28

Home: Assignment 10 – Advanced Topics.

Crypto-finance, blockchains, Bitcoin

Ledgers, consensus, immutability, blockchains, PoW, PoS, and other ways to trust.

Papers: None.

Books: None.

Home: None.

Tentative Schedule

#	Day	Date	Description	Home	BDM
1	Tue	1/14/2019	Intro, boxes, arbitrage, prices	Read "I, Pencil"; Watch Yuval Noah-Harrari; Watch Econ. Principles	Ch. 3
2	Thu	1/16/2019	Stats refresher	Home Assignment #1	N/A
3	Tue	1/21/2019	Time – interest & inflation	Read "Ascent of Money"	Ch. 4,5
4	Thu	1/23/2019	Simple models	Home Assignment #2	N/A
5	Tue	1/28/2019	Box 1: Bonds	N/A	Ch. 6
6	Thu	1/30/2019	Box 2: Firms	Home Assignment #3	Ch. 1, 2
7	Tue	2/4/2019	Risk 1	N/A	Ch. 10
8	Thu	2/6/2019	Risk 2	Home Assignment #4	Ch. 10
9	Tue	2/11/2019	CAPM	Read Markowitz 1952 Home Assignment #5	Ch. 11
10	Thu	2/13/2019	Beta	Finish "Ascent of Money"	Ch. 12
11	Tue	2/18/2019	Cost of Capital	Home Assignment #6	Ch. 12
12	Thu	2/20/2019	Market efficiency	Read "If Money Doesn't Make You Happy"; Start Animal Spirits	Ch. 13
13	Tue	2/25/2019	Capital Budgeting / Valuation	N/A	Ch. 7,8,9
14	Thu	2/27/2019	Buffer	N/A	N/A
15	Tue	3/3/2019	Midterm exam (afternoon)	N/A	N/A
Spring Break					
16	Tue	3/17/2019	Firm purpose	N/A	N/A
17	Thu	3/19/2019	Firm decisions	Home Assignment #7	N/A
18	Tue	3/24/2019	Capital structure	Read Modigliani-Miller 1958	Ch. 14
19	Thu	3/26/2019	Imperfections	Home Assignment #8	Ch. 15
20	Tue	3/31/2019	Agency	Finish Animal Spirits	Ch. 16
21	Thu	4/2/2019	Information	Home Assignment #9	Ch. 29
22	Tue	4/7/2019	Payout policy	N/A	Ch. 17
23	Thu	4/9/2019	Valuation	N/A	Ch. 18
24	Tue	4/14/2019	Levered Valuation	Start final project	Ch. 19
25	Thu	4/16/2019	Options	N/A	Ch. 20,21
26	Tue	4/21/2019	IPO and M&A	Home Assignment #10	Ch. 23,28
27	Thu	4/23/2019	Blockchain & Crypto	N/A	N/A
28	Tue	4/28/2019	Buffer	N/A	N/A

Assignments

You will have 9-10 home assignments, as follows:

#	Name	Description
1	Stats refresher	Conduct statistical analysis of data: create histograms, estimate distributions, run regressions, calculate covariances, correlations, moments and expectations.
2	Time and Models	Get comfortable with time-travel: NPV, IRR, duration, perpetuities, # payments, and implied interest rates. Draw various firm claims on the cashflow-payout plane and calculate the value of such claims in the one-period model.
3	Bonds and Firms	Learn about two specific money boxes: Bonds and Firms. Understand the implications of simple bond valuation rules on bond dynamics. Practice opening the firm box to collect information useful for valuing/pricing it.
4	Risk	Learn to understand, quantify, and price risk, using Modern Portfolio Theory.
5	CAPM	Learn how to create Var-Cov matrices, find tangent portfolios, teleport along the CML, calculate betas, and value boxes.
6	Cost of Capital	Practice estimating cost of debt, cost of equity, and cost of capital for projects. Play with various betas. Think about investor behavior and the failings of CAPM.
7	Purpose	What is the firm's purpose? Why? Can it be justified?
8	Capital structure	Understand the implications of capital structure decisions in a perfect and imperfect world. Why do firms use debt/equity to finance investments?
9	Imperfections	Review the firm's decisions in an imperfect world – taxes, bankruptcy costs and agency.
10	Advanced Topics	TBD

Readings

1. Read, (1958). "I, Pencil: My family tree as told to Leonard E. Read", Irvington-on-Hudson: Foundation for Economic Education.
2. Markowitz, (1952). "Portfolio selection", The Journal of Finance, Vol. 7, No. 1, 77-91.
3. Dunn, Gilbert and Wilson, (2011). "If money doesn't make you happy, then you probably aren't spending it right", Journal of Consumer Psychology, Vol. 21, 115-125.
4. Modigliani and Miller, (1958). "The cost of capital, corporation finance and the theory of investment", The American economic review, Vol. 48, No. 3, 261-297.

Exams

The midterm exam will take place on March 3rd. The final exam date and time will be announced. The exams are **closed book**, but you are allowed a **one sided, 8x11 sheet** with **your** notes (cheat sheet). Using another student's sheet is not admissible.

Class participation and quizzes

Class participation is expected and encouraged. You will be evaluated on your level of participation, attentiveness, and quality of your contributions to class discussion. Low-quality contribution **will be awarded a higher evaluation** than no contribution. You are expected to be responsible, respect each other and each other's time, and show adequate and professional demeanor. **Use of electronic devices** during class, unless merited by class, **is disrespectful**. There will be **several** quick quizzes **each class**. There are no make-up quizzes. **Your class participation grade will be 0**, unless you attend office hours at least once in the first half of the semester (before spring break).

Guests

There will be 1-2 guest lectures during the semester. These will mostly take place in the evening hours, and will be combined for all six sections of the class. **Attendance is required**, and class quizzes during the following class will pertain to subjects discussed during the guest lectures.

Grades

Your final grade will be composed of: Home assignment grades (20%), class participation and quiz grades (20%), midterm exam (25%), final project (10%), and final exam (25%). All grades are curved. Partial credit is not a thing.

Academic Integrity

The McIntire School of Commerce relies upon and cherishes its community of trust. We firmly endorse, uphold, and embrace the University's Honor principle that students will not lie, cheat, or steal, nor shall they tolerate those who do. We recognize that even one honor infraction can destroy an exemplary reputation that has taken years to build. Acting in a manner consistent with the principles of honor will benefit every member of the community both while enrolled in the McIntire School and in the future. Students should report all suspected honor violations to an honor representative immediately, and faculty will report all suspected honor violations immediately to an honor representative. *Examinations are to be the work of the individual student using only material explicitly permitted.*

McIntire School of Commerce Wellbeing Statement

The McIntire School of Commerce proudly serves as a safe space for its students and aims to promote their wellbeing. If you are feeling overwhelmed, stressed, or isolated, there are many individuals here who are ready and wanting to help. If you wish, you can make an appointment with me and come to my office to talk in private. The faculty members at the Student Services Office, located on the third floor, are also readily accessible to talk during walk-in hours or through setting up an appointment. Alternatively, there are also other University of Virginia resources available.

The Student Health Center offers Counseling and Psychological Services (CAPS) for its students. Call 434-243-5150 (or 434-972-7004 for after hours and weekend crisis assistance) to get started and schedule an appointment. If you prefer to speak anonymously and confidentially over the phone, call Madison House's HELP Line at any hour of any day: 434-295-8255.

If you or someone you know is struggling with gender, sexual, or domestic violence, there are many community and University of Virginia resources available. The Office of the Dean of Students, Sexual Assault Resource Agency (SARA), Shelter for Help in Emergency (SHE), and UVA Women's Center are ready and eager to help. Contact the Director of Sexual and Domestic Violence Services at 434-982-2774.