

# **FNCE 238/738: Capital Markets**

**Professor Michael Schwert**

**Fall 2020**

## **Contact Information**

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Office Hours: Monday 6:00-7:00 PM ET

Teaching assistants: Sarfraz Ahmed

Wednesday 8:00-9:00 AM

Rachel Levin

or by appointment

Jodi Ng

## **Course Objectives**

The objective of this course is to introduce students to the economics of capital markets and the ways that firms and governments raise external financing. As most financing is raised through debt issuance, the course focuses primarily on the economic features of debt markets. We will explore issues from the perspectives of both issuers and investors.

Topics covered include basic fixed income calculations, the Treasury market and the yield curve, money markets, short-term funding of financial institutions and associated fragility, corporate credit markets, the pricing of credit risk, credit derivatives, structured finance, hedge funds and arbitrage activity, mutual funds, and municipal finance.

## **Course Format**

Given the current circumstances, this course will be delivered synchronously online, with no in-person meetings. We will use Zoom as a platform for lectures, case discussions, and office hours. All class meetings will be recorded and posted to Canvas.

There are two guest lectures on the course schedule. One these dates, we will not meet at the normal class time, and instead all sections will meet at 6:00 PM ET.

## **Course Materials**

The course is in lecture format, with case discussions interspersed. I will post lecture slides and any assigned reading on the Canvas course site several days prior to class. Students are advised to do the assigned readings prior to class and will be responsible for their content on the quizzes.

I will also post optional readings that are not subject to testing except to the extent that we discuss them in class. In general, students are responsible for any content discussed in class, regardless of whether it appears in the assigned reading or the lecture slides.

Readings come from a variety of sources, including Lecture Notes on Debt Markets, by Darrell Duffie of the Stanford Graduate School of Business, and some academic journal articles. There is a required course pack consisting of cases that students will prepare for in-class discussion.

I am grateful to Darrell Duffie, David Musto, and Krista Schwarz for their contributions to the materials used in this course.

## **Classroom Expectations**

Students are expected to adhere to all elements of the Wharton Learning Agreement:

<https://mba-inside.wharton.upenn.edu/mba-learning-agreement/>

This includes attending every lecture, arriving on time and remaining until class is dismissed. To maintain an engaging and interactive classroom environment, I require that all students keep their cameras on during class, unless they contact me directly with an excuse.

## **Interaction outside of Class**

We will use Piazza to aggregate student questions and answers from myself and the teaching assistants. Please use this platform to ask questions about course content and the logistics of the class. Students will be able to post anonymously, but are encouraged to sign their names. They will also be able to ask questions directly to the teaching assistants and are encouraged to do so.

For the case preparation assignments, students are limited to discussing the case with their groupmates. To ensure an even playing field, teaching assistants will only answer clarifying questions (i.e., about the facts of the case) before the in-class discussion.

I will have office hours at two times each week, for students who prefer to ask me questions directly. These office hours will be on Mondays at 6:00 PM and on Wednesdays at 8:00 AM.

Outside of office hours, students should address questions to the TAs on Piazza. If the TAs are unable to answer a question, then I will address it myself.

## Grading

### Quizzes (55% of total)

There will be 5 quizzes occurring periodically throughout the semester. There is no final exam in the regularly scheduled final exam period. The schedule is quizzes is:

September 17	bond basics, Treasury market
October 8	financial fragility, money markets, options
October 29	corporate securities, financial distress
November 19	credit risk, structured finance
December 10	investment funds, arbitrage

To accommodate students in different time zones and minimize the potential for information diffusion across sections, there are two time slots for each quiz: 8:00 AM and 6:00 PM.

Each quiz will consist of multiple choice and short answer questions on Canvas. Any material covered in the lectures or the required readings, including from case discussions, may appear on the quizzes. In general, the questions will focus on material covered since the prior quiz, but questions will often build on concepts developed earlier in the course.

### Homework Assignments (30% of total)

There will be 6 homework assignments. Homework assignments are to be submitted to Canvas **before class** on the date specified in the course schedule. **There will be no extensions of deadlines or make-up assignments, with no exceptions.**

The assignments consist of preparation questions for the case discussions and other small projects intended to build understanding of the course materials. Students may work with up to two other classmates (i.e., groups of three students at most) and submit one writeup per group.

### Participation (15% of total)

Participation will be graded based on a student's attendance record and engagement in class. Engagement will be measured based on activity during in-class discussions, asking questions, and answering poll questions on assigned reading, preparation questions from the previous lecture, and in-class example problems.

## Tentative Class Schedule

September 1	<b>Course Overview</b>
September 3	<b>Bond Basics</b> <b>Reading: Duffie, <i>Lecture Notes on Debt Markets</i>, Chapter 1</b> Basic coupon bonds, yield, duration, convexity
September 8	<b>The Treasury Market</b> <b>Reading: Duffie, <i>Lecture Notes on Debt Markets</i>, Chapter 4</b> Treasury auctions, the yield curve, STRIPS
September 10	<b>Case: The Yield Curve and Growth Forecasts</b> <b>Reading: Yield Curve Basics</b> <b>HW: Case Preparation</b>
September 15	<b>Financial Fragility</b> Models of deposit runs, prevention
September 17	<b>Money Markets I</b> <b>Quiz 1: bond basics, Treasury market</b> <b>Reading: Duffie, <i>Lecture Notes on Debt Markets</i>, Chapter 2</b> Repurchase agreements
September 22	<b>Money Markets II</b> Fed funds, money market funds

- September 24      **Money Markets III**  
**Reading:** Duffie, *Lecture Notes on Debt Markets, Section 3.3*  
Benchmark rates, floating rate notes, interest rate swaps  
Optional reading: Duffie and Stein (2015), “Reforming LIBOR and Other Financial Market Benchmarks”
- September 29      **Guest Lecture: Sebastian Infante, Federal Reserve Board**  
**6:00 PM ET on Zoom. No meeting during normal class time.**  
**HW: Repo Financing Assignment**
- October 1          **Options**  
Binomial pricing model, connection to capital structure
- October 6          **Corporate Debt**  
**Reading:** Duffie, *Lecture Notes on Debt Markets, Section 5.1*  
Capital structure, shareholder-creditor conflict
- October 8          **Equity Issuance**  
**Quiz 2: financial fragility, money markets, options**  
Seasoned equity offerings, private placements, IPOs
- October 13        **Case: Wells Fargo Convertible Bonds**  
**HW: Case Preparation**
- October 15        **Financial Distress**  
**Reading:** Duffie, *Lecture Notes on Debt Markets, Section 5.3*  
Absolute priority waterfall, liquidation vs. reorganization

- October 20            **Debt Contracting**  
Covenants and contingent control rights  
Optional reading: Baird and Rasmussen (2006), “Private Debt and the Missing Lever of Corporate Governance”
- October 22            **Syndicated Loans**  
**Reading: HBS Note by Ivashina, Note on the Leveraged Loan Market**  
Private vs. public debt, direct lending
- October 27            **Case: Momentive Performance Materials, Inc.**  
**HW: Case Preparation**
- October 29            **Credit Risk I**  
**Quiz 3: corporate securities, financial distress**  
**Reading: Duffie, *Lecture Notes on Debt Markets*, Sections 6.1 and 6.2**  
Credit ratings, default prediction, pricing models
- November 3           **Credit Risk II**  
**Reading: Duffie, *Lecture Notes on Debt Markets*, Sections 7.1 and 7.2**  
Credit default swaps, binomial pricing model
- November 5           **Structured Finance I**  
**Reading: Duffie, *Lecture Notes on Debt Markets*, Section 7.3**  
Introduction to securitization  
Optional reading: Coval, Jurek, and Stafford (2009), “The Economics of Structured Finance”

- November 10            **Structured Finance II**  
**Reading: SEC Complaint and Response from Goldman Sachs from the trial over the ABACUS 2007-AC1 CDO**  
Effect of securitization on incentives
- November 12            **Structured Finance III**  
Collateralized loan obligations, asset-backed securities
- November 17            **Case: Blackstone and the Sale of Citigroup’s Loan Portfolio**  
**HW: Case Preparation**
- November 19            **Mutual Funds and ETFs**  
**Quiz 4: credit risk, structured finance**  
**Reading: Lettau and Madhavan (2018), “Exchange-Traded Funds 101 for Economists”**  
Liquidity transformation, open vs. closed end funds
- November 24            **No Class – Thanksgiving Break**
- November 26            **No Class – Thanksgiving Break**
- December 1             **Hedge Funds and Arbitrage**  
**Reading: Mitchell and Pulvino (2012), “Arbitrage Crashes”**  
Convergence strategies, funding fragility, redemption restrictions
- December 3             **Guest Lecture: Rocky Bryant, CNH Partners**  
**6:00 PM ET on Zoom. No meeting during normal class time.**

December 8

**Case: Fixed Income Arbitrage in a Financial Crisis**

**HW: Case Preparation**

December 10

**Municipal Finance**

**Quiz 5: investment funds, arbitrage**

Tax exemption, pension crisis and restructuring

Optional reading: Novy-Marx and Rauh (2009), “The Liabilities and Risks of State-Sponsored Pension Plans”