

B8306 Capital Markets and Investments
Prof. Paul Tetlock
Fall 2021 Syllabus

Contact Details:

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I. Course Description

This course has three specific goals:

1. To understand and apply the principles of investing. The course covers the valuation of bonds, stocks, and options. Key applications include personal and professional portfolio management, risk management, security valuation, and capital structure.
2. To develop the following concepts: risk-return trade-offs, diversification, systematic and idiosyncratic risk, expected returns, market efficiency, performance evaluation, arbitrage, the term structure of interest rates, bond duration, and options.
3. To provide sufficient background knowledge for students seeking an overview of capital markets and an introduction to advanced finance courses.

The main topics can be summarized in the following groups:

- 3 classes: Overview of Capital Markets
- 5 classes: Fixed Income
- 4 classes: Stocks and Portfolio Choice
- 3 classes: Investment Performance
- 3 classes: Behavioral Finance
- 5 classes: Valuation of Options

Throughout the course, we will address two basic questions:

1. How should we manage and evaluate portfolios of investments?
2. Which methods do we use to value securities?

Connection with the Core

Capital Markets builds on knowledge from Corporate Finance, Managerial Statistics, and Business Analytics courses by advancing students' understanding of asset valuation and investment decisions. **The corporate finance and statistics courses or their equivalents are co-requisites for Capital Markets.** We build on the valuation tools in Corporate Finance, such as time value of money, risk-return trade-offs, the CAPM, cost of capital, and arbitrage. Capital Markets uses many concepts from Statistics, including statistical modeling, random variables and distributions, parameter estimators, hypothesis testing, and regression. Particularly in the portfolio and risk management section, the course uses optimization methods and modeling tools from Business Analytics. Finally, our discussions of the economy's impact on financial markets, especially bond markets, build on ideas from the Global Economic Environment course.

II. Course Materials

Class Notes – We will distribute handouts of the lecture notes in class and will post electronic copies of the lecture notes and other reading materials on Canvas.

Readings – The textbook below is a **useful but optional** supplement for this course:

- *Investments* by Bodie, Kane, and Marcus (hereafter BKM), 10th or later edition
- *Solutions Manual for Investments* by Nicholas Racculia, 10th or later edition

The book and solutions manual are available on reserve in Watson library. The course outline below lists relevant chapters in BKM that correspond to each lecture. The three most recent editions of BKM (10 to 12) have the same chapter topics and numbers.

Beyond the textbook, **supplementary readings** are available on Canvas, including articles from industry, academia, and the media that relate to key lecture topics.

III. Course Administration

Finance and Economics Division: Michelle Zern: mz2492@gsb.columbia.edu

Teaching Assistants:

The names, roles, and e-mail addresses of the teaching and course assistants are:

- Dhruv Singal (Teaching Assistant): dsingal23@gsb.columbia.edu
- Samruddha “Sam” Gujrathi (Course Assistant): sg3905@columbia.edu
- William Tran (Course Assistant): wt2314@columbia.edu

Teaching and course assistants post Zoom links and times for weekly office hours on Canvas. Please contact them if you have questions about the course.

Review Sessions – Optional weekly (Friday) review sessions will be held throughout the semester to help students with questions about cases, problem sets, or lectures:

- Fridays, 5:15-6:45pm, Uris 142, HyFlex, led by TA, Dhruv Singal

See the review session calendar and Zoom links on Canvas for exceptions and updates. Review sessions emphasize examples and material requested by students in attendance.

Special sessions will be held for an initial math/stats review and before each of the two exams (midterm and final) as follows:

- Review of Math and Stats Background
 - o Sept. 10th, 5:30-7:00pm, Uris 140, HyFlex, led by TA, Dhruv Singal
- Midterm Review Sessions
 - o Oct. 15th, 3:15-4:45pm, Zoom, led by Prof. Tetlock
 - o Oct. 15th, 5:15-6:45pm, Uris 142, HyFlex, led by TA, Dhruv Singal
- Final Review Sessions
 - o Dec. 10th, 3:15-4:45pm, Zoom, led by Prof. Tetlock
 - o Dec. 10th, 5:15-6:45pm, Uris 142, HyFlex, led by TA, Dhruv Singal

Teams – Cases and problem sets should be done in **teams of at most 3 members** (MBA Assignment Type A). Learning teams will be assigned randomly. Teams might span across Professor Tetlock's four Capital Markets sections, and team composition might change during the add/drop period. All team members must contribute to each group assignment. Each team member receives the same grade for all team assignments.

IV. Grading

Students' course grades are based on applying the standard CBS elective grading distribution to overall course scores. The CBS grading curve applies only to the overall course score, not to individual assignments. The six components of the overall course score appear below:

- 20% Cases (team)
- 20% Problem sets (team)
- 15% Midterm exam (individual)
- 20% Final exam (individual)
- 15% Quizzes (individual)
- 10% Class participation/attendance (individual)

Cases (20%): There will be four case assignments. Each case will be distributed one week in advance and **must be submitted by 8am ET on the due date**. All assignments can be submitted online via Canvas. Cases and solutions will be available only on Canvas. Submitted cases will be graded on a 0 to 5 scale. Because we discuss case solutions in class, late cases cannot be accepted.

Problem Sets (20%): There will be four problem sets. Each problem set will be distributed at least one week in advance and **must be submitted by 8am ET on the due date**. All assignments can be submitted online via Canvas. Problem sets and solutions will be available only on Canvas. Submitted problem sets will be graded on a 0 to 5 scale. Late problem sets cannot be accepted.

Midterm Examination (15%) – The midterm will be a timed 3-hour online exam administered via Canvas. Students will **individually** take the exam between **Friday, October 15th at 8pm ET and Friday, October 22nd at 11:59pm ET (a one-week interval)**.

Final Examination (20%) – The final will be a timed 3-hour online exam administered via Canvas. Students will **individually** take the exam between **Friday, December 10th at 8pm ET and Friday, December 17th at 11:59pm ET (a one-week interval)**. Students can use any books, references, and computing devices.

Quizzes (15%) – Students will **individually** take short weekly quizzes on **Canvas**. Quizzes are timed and must be submitted within **15 minutes** of starting. Each weekly quiz will be available on **Canvas** between Thursday at 6pm and the following **Tuesday at 8am ET**. Because we discuss solutions soon after quizzes are due, late quizzes cannot be accepted. Quizzes usually consist of **three questions** based on the week's lectures and readings.

- **Quiz Scores (10%)**: Scores on Canvas quizzes are two-thirds of the quiz grade.
- **Submitting Quizzes (5%)**: The final third of the quiz grade comes from the fraction of weekly Canvas quizzes submitted.

Exam/quiz Rules: Students can use any books, references, or computing equipment on exams/quizzes but they cannot communicate with others. During exam/quiz periods, students who have taken the exam/quiz must not discuss the exam/quiz with other students who have not yet taken the exam/quiz. The CBS Honor Code applies.

Class Participation/Attendance (10%): We use Poll Everywhere software to record in-person and synchronous remote attendance. To receive full attendance credit, students must submit responses to all in-lecture Poll Everywhere questions. Submit an **Excused Absence Form** on the course home page if you must miss class for an excused reason, such as an illness. Interviews are not excused. If you have an excused absence or permission to attend lecture asynchronously, watch the recorded lecture, and for attendance credit submit the asynchronous quiz on Canvas by 8am two days after lecture.

V. Expectations Inside and Outside the (Physical and Virtual) Classroom

Bring your nameplate and expect cold calling in class. Activities that enhance learning in the classroom include listening thoughtfully, answering questions, keeping up with readings, sharing well-formulated ideas, helping a classmate understand a concept, and coming to review sessions. **Please do not use mobile devices, including phones, laptops, or tablets for non-classroom uses. CBS iPads are encouraged for class uses.**

Activities that enhance learning outside the classroom include taking weekly Canvas quizzes, helping team members solve assignments, and attending the guest lecture.

VI. Content for Tu/Th Sections: 8:30am, 10:20am, 2:00pm, and 3:50pm (ET)

Class	Date	Topic	Chapters in BKM	Assignment (Type)*
1	7-Sep	MARKETS - Overview	1, 2	
2	9-Sep	MARKETS - Investing	2, 3	Case 1 (A) due 16-Sep
3	14-Sep	MARKETS - Valuation and Returns	14	
4	16-Sep	FIXED INCOME - Bond Yields	15	
5	21-Sep	FIXED INCOME - Interest Rate Risk (Duration)	16	Case 2 (A) due 28-Sep
6	23-Sep	FIXED INCOME - Managing Rate Risk	16	
7	28-Sep	FIXED INCOME - Applications	16	PS 1 (A) due 5-Oct
8	30-Sep	FIXED INCOME - Default Risk	16	
9	5-Oct	PORTFOLIO CHOICE - Equity Valuation	5, 18	PS 2 (A) due 12-Oct
10	7-Oct	PORTFOLIO CHOICE - Portfolio Optimization	6, 7	
11	12-Oct	PORTFOLIO CHOICE - The Market and the CAPM	8, 9	
12	14-Oct	PORTFOLIO CHOICE - Beating the Market?	8, 9	
multiple		Midterm Exam: Canvas, Oct 15 8pm to Oct 22 11:59pm		
13	26-Oct	PERFORMANCE EVALUATION - Beyond the CAPM	9, 11	Case 3 (A) due 4-Nov
14	28-Oct	PERFORMANCE EVALUATION - Skill versus Luck	10, 13	
15	4-Nov	PERFORMANCE EVALUATION - Applications	4, 24	PS 3 (A) due 11-Nov
16	9-Nov	BEHAVIORAL FINANCE - Limits to Arbitrage	12	
17	14-Nov	Guest: TBA	26, 27	
18	16-Nov	BEHAVIORAL FINANCE - Behavioral Biases	26, 27	
19	18-Nov	OPTIONS - Payoffs and Arbitrage Relationships	20	PS 4 (A) due 30-Nov
20	23-Nov	OPTIONS - Valuing an Option	21	
21	30-Nov	OPTIONS - Black-Scholes Valuation	21	Case 4 (A) due 7-Dec
22	2-Dec	OPTIONS - Applications	21	
23	7-Dec	OPTIONS - Option Case and Applications		
24	9-Dec	SUMMARY - Course Recap		
multiple		Final Exam: Canvas, Dec 10 8pm to Dec 17 11:59pm		

* Cases and problem sets must be submitted to Canvas by 8am on their due dates

Official MBA assignment types appear in parentheses

A = team/team, B = team/individual, C = individual/individual