

**Debt MARKETS
FALL 2021**

INSTRUCTOR: Suresh Sundaresan

Office Location: 401 Uris Hall

E-mail: ms122@columbia.edu

Office Hours: Fridays 12:30 to 1:30 PM and via email and zoom

Bio of Instructor (see the link below):

<https://www.dropbox.com/s/f15vp5goz8c9df1/Suresh%20Sundaresan%20Bio%202019.pdf?dl=0>

TEACHING ASSISTANT: MEHA SADASIVAM MSadasivam26@gsb.columbia.edu

REQUIRED COURSE MATERIAL

- Copies of slides/course readings/articles that will be distributed in class and posted in Canvas.
- “Fixed-Income Markets and Their Derivatives”, Academic press, Third Edition, by Suresh Sundaresan.

RECOMMENDED COURSE MATERIAL

- I will provide you with detailed slide decks, and reference material in the course.
- *Fundamentals of Futures and Options Markets* by John Hull

REQUIRED PREREQUISITES AND CONNECTION TO THE CORE

The learning in this course will utilize, build on and extend concepts covered in the following courses: Capital Markets, *Corporate Finance*, *Managerial Statistics and Business Analytics*. Students will be expected to have mastered concepts developed in these courses and be able to apply them to key policy, corporate and day-to-day questions in debt capital markets and investments. Our discussions of global capital markets and central banks will draw on concepts learnt in the Global Economic Environment course.

COURSE DESCRIPTION

The course will describe the major players in Capital Markets, key institutions, broad empirical regularities, and analytical tools that are used for pricing securities/portfolios, portfolio management, and risk management. Some parts of the course will be analytical while others will be largely institutional. Each session will be organized around one or two key topics. In addition, class notes will be used to supplement and clarify issues. Some selected papers will also be kept in Canvas to serve as background reading for class discussions.

MAJOR TOPICS COVERED IN THE COURSE:

Topic Number	Broad Topic	Issues to be addressed
Topic 1	DEBT CAPITAL MARKETS, ARCHITECTURE AND INSTITUTIONS (Introduction and Overview)	<ul style="list-style-type: none">a. Size and diversity of debt capital markets.b. PLAYERS:<ul style="list-style-type: none">a. Sell side – dealers, inter-dealer brokers, credit rating agencies, etc.b. Buy side – pension funds, insurance companies, mutual funds, Investment advisors, ETFs, etc.

		<ul style="list-style-type: none"> c. Issuers – corporates, governments, banks, etc. d. Regulators – SEC, Fed, US Treasury, etc. e. Other intermediaries.
Topic 2	CENTRAL BANKS	<ul style="list-style-type: none"> a. Central Banks (CB) b. Tools of CBs c. Actions of CBs during GFC. d. Actions of CBs during COVID-19; e. Links between CB policies and Debt markets. f. Global actions of CBs.
Topic 3	BANKS	<ul style="list-style-type: none"> 1. Bank assets. 2. Bank liabilities. 3. Leverage. 4. Capital standards. 5. Liquidity standards. 6. CAMELS ratings 7. FDIC premium 8. CoCo bonds
Topic 4	MONEY MARKETS/SHADOW BANKS	<ul style="list-style-type: none"> 1. Money market mutual funds 2. Interbank market (LIBOR) 3. SOFR – alternatives to LIBOR. 4. Forward Rate Agreements (FRAs) 5. Commercial Paper (CP) markets. 6. Overnight Index Swaps (OIS). 7. FRA – OIS spreads and Tail risk.
Topic 5	BOND ANALYTICS & Term Structure of interest rates.	<ul style="list-style-type: none"> a. Price, Yield calculations; b. Yield to Maturity; Yield to Call; c. Real and Nominal yields; d. Break-even yields; e. Stripping coupon bonds; f. Spot and forward rates; g. Duration measures; h. Convexity and negative convexity; i. Bullet and barbell portfolios. j. TIPS.
Topic 6	SOVEREIGN BOND MARKETS - Developed markets/Emerging Markets	<ul style="list-style-type: none"> a. Overview of global sovereign bond markets. b. Fiscal and current account deficits; c. Book building in Primary Markets; d. Bidding in Sovereign bond Auctions (Dutch and Discriminatory Auctions); e. Sovereign Yield Curve; f. Safety Premium in Sovereign Debt of US and Germany. g. Emerging Market Debt h. Sovereign Ratings i. Sovereign Credit spreads. j. Local currency and FX-denominated bonds.

Topic 7	MORTGAGES, GSEs, AND SECURITIZATION	<ol style="list-style-type: none"> 1. Fixed and variable rate mortgages; 2. Prepayment option; 3. Government Sponsored Enterprises (Fannie Mae, Freddie Mac and FHLBs) 4. Securitization 5. Mortgage-Backed Securities (MBS) 6. Modeling prepayments. 7. Option Adjusted Spreads
Topic 8	CORPORATE BOND MARKETS	<ol style="list-style-type: none"> 1. Commercial Paper. 2. Corporate bonds. 3. Models of credit spreads. 4. Credit Rating Agencies. 5. High yield and Investment Grade debt. 6. Ownership of corporate bonds. 7. Modeling default risk. 8. Bankruptcy & Distress Resolution <ol style="list-style-type: none"> a. Chapter 11 b. Chapter 7 c. Workouts
Topic 9	REPO MARKETS	<ol style="list-style-type: none"> 1. Secured lending and borrowing of cash and securities. 2. “Safe-harbor” rights, and super-priority rights to lenders of cash in this market. 3. Money markets mutual funds. 4. Possibility of “creditor run” with systemic risk implications. 5. Bi-lateral, tr-party and GFC repos. 6. Spread trades and forward markets using repos. 7. Fails and penalties.
Topic 10	Fixed-Income Investment Strategies	<ol style="list-style-type: none"> 1. Duration matching. 2. Dedicated bond portfolios. 3. Macro-investing. 4. Yield curve trades. 5. Barbell portfolios and convexity. 6. Passive investing. 7. Macro-indexes. 8. Relative Value Strategies
Topic 11	Corporate and Public Pension Plans and Investing	<ol style="list-style-type: none"> 1. Defined-Benefits Plans. 2. Defined Contribution Plans. 3. Funding status of pension plans. 4. Portfolio immunization and duration gap. 5. Active and passive portfolio strategies. 6. Valuing pension liabilities. 7. Pension Benefits Guarantee Corporation (PBGC). 8. Asset Allocation. 9. Pension Risk Transfer.

Topic 12	INTEREST RATE AND CROSS-CURRENCY BASIS SWAPS AND THEIR APPLICATIONS	<ul style="list-style-type: none">a. Domestic and FX bond issuance decisions;b. Cross Currency Basis Swaps;c. Covered Interest Rate Parity;d. Interest Rate Swaps;e. Swap Spreads;f. Limits to Arbitrage;g. Credit Default Swaps;<ul style="list-style-type: none">a. Single-Name Swaps (CDS)b. Index Swaps (CDX);
Topic 13	CREDIT DEFAULT SWAPS & CDOs/CLOs	<ul style="list-style-type: none">1. Single-name CDS.2. Index products.3. Credit events.4. Sovereign CDS.5. Applications in investments.6. Major market developments since inception.7. CDOs- trenching credit risk.

COURSE OBJECTIVES

The purpose of this course is to provide a sound and comprehensive working knowledge of debt capital markets and their institutions. In addition to providing the students with a clear knowledge of institutions, pricing relationships, applications and analytics, the course will help the students to think through major issues facing institutional investors, market makers, issuers, and policy makers.

ASSIGNMENTS

- There will be two quizzes, (take home) which will be assigned as follows:
 - At the end of about 1/3rd of the course.
 - At the end of about 2/3rd of the course.

Quizzes can be taken by student groups not exceeding 2 members. The groups will get a weekend to work through and hand back the quizzes in canvas by the deadline that will be posted ahead of time.

Students will be expected to participate responsibly in class. Class participation, punctual attendance and responsible conduct in the course will carry 20% weight.

There will be a final examination, which will be take home. The final exam (cumulative) will carry 40% weight. The final exam will

METHOD OF EVALUATION

Attendance & Class participation	20%
Quiz 1	20%
Quiz 2	20%
Final Exam	40%

CLASSROOM NORMS AND EXPECTATIONS

- Attendance is mandatory for each class session. The TA will record student attendance at the commencement of class; students who arrive 5 minutes after the scheduled commencement time will not be recorded as having attended the session. In addition, informed class participation is expected. Together, as mentioned earlier, they carry 20% of the course grade.
- Students who have a medical or other emergency reason for not attending class should contact the professor in advance of the session. Once in the classroom, students are expected not to leave the room until the session is completed.
- There will be a seating chart. Students must bring their name cards and occupy the same seat in each class.
- **I would expect you NOT to use mobile phones or laptops or digital aids during class hours.**