

**MBA/EWMBA 283 – REAL ESTATE FINANCE AND SECURITIZATION**

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Class meets Thursdays, 6:00-9:30 pm in C220

**COURSE OVERVIEW**

This applied finance and economics course focuses on ways real estate and other large investments are financed. Half the course will center on understanding and navigating mortgage and asset-backed securities markets—both how debt is used to finance real estate and the economics and finance behind *The Big Short*. A series of guest speakers from private equity, investment banking, REITs, and non-profit development describe various other ways real estate is financed, career opportunities, case studies from their own firms, and current market conditions. The course has historically had success at placing students at finance and real-estate firms, but more broadly draws students from diverse career paths who anticipate facing decisions about debt financing and/or hedging risk using financial instruments. Much of our material will be directly applicable to understanding the Great Recession and the causes and consequences of past, current, and future Federal Reserve monetary policy—important concepts for any industry. After overviewing the fundamentals of bond math and mortgage contracts, we analyze ways mortgages are used in residential and commercial real estate to manage risk. Through a set of case studies, we learn how these concepts have been pivotal in real-world situations, including a proposal to use securitization to cure cancer. A final project gives students an impressive way to showcase their skills when they describe their coursework in job interviews.

**LEARNING EXPECTATIONS**

Upon completing the class you should:

1. Understand the merits of various methods used to finance real estate.
2. Know the causes and impacts of the housing bust and subsequent financial crisis.
3. Know and be able to use the basics of fixed-income analytics (aka bond math).
4. Understand residential and commercial mortgages and be able to make related financial calculations, including understanding trade-offs in your future mortgage decisions.
5. Become familiar with the structure and functioning of the primary and secondary markets for mortgages.
6. Understand the structure of mortgage-backed securities and related products, as well as the virtues and perils of securitization more broadly as a method of debt financing.
7. Learn how to analyze the cash flows of mortgage-backed securities, assess the value of the prepayment option, and use this knowledge to analyze a security for the class project.
8. Understand the risks investors face with mortgages and mortgage-backed securities. Be able to identify a particular security's risks and suggest how these could be managed.
9. Be familiar with the current condition of the primary and secondary mortgage markets.

## PERSONNEL

Office hours by appointment ([palmer@haas.berkeley.edu](mailto:palmer@haas.berkeley.edu)) in Haas F622.

GSI is Dayin Zhang ([dayinzhang@berkeley.edu](mailto:dayinzhang@berkeley.edu)). Office Hours: Wed 5-6 pm (F689)

## TEXTBOOKS AND READINGS

- Readings through bCourses and study.net
- Required textbook: Fabozzi *Bond Markets, Analysis and Strategies*, 8<sup>th</sup> or 9<sup>th</sup> Ed.
- Lecture notes will be handed out in class and will be available on bCourses

Recommended reading:

- Michael Lewis, *The Big Short*
- Vicky Ward, *The Liar's Ball: The Extraordinary Saga of How One Building Broke the World's Toughest Tycoons*
- Tim Geithner, *Stress Test*
- Ben Bernanke, *The Courage to Act*

## GRADING

- Participation – 10%
- Midterm Exam – 30%
- Assignments – 35%
- Final Project – 25%

## CLASS PARTICIPATION

The course depends heavily on student participation. Students are expected to prepare for each class in advance, attend each class, and contribute throughout the course. Please bring your name cards to class and display them prominently. Absences from class and unprepared attendance will affect class participation grades materially. Individual class participation will count for 10% of the grade. **Please put away all laptops, tablets, and phones in class.** Our dinner break halfway through class will allow us all to catch up on our devices.

## MIDTERM EXAM

There is one midterm on October 20, counting for 30% of your grade. The midterm is designed to sufficiently incentivize you to learn the nitty-gritty of the material from the first half of the class and help you evaluate yourself on its core concepts. There is no final exam.

## ASSIGNMENTS

There are five assignments in total that are to be handed in (three problem sets and two case study write-ups). You can do the problem sets in groups of 2-3, but the case studies must be on your own. These assignments count for 35% of your grade.

## **FINAL PROJECT**

The course has a final project due on the last day of class. Proposals for the final project are due on Thursday, November 10. Students can work in groups of 3 for the final project. Every member of the group must participate in the in-class oral presentation of the project as well. The final project makes up 25% of your final grade.

## **SCHEDULE**

- 1. INTRODUCTION TO REAL ESTATE FINANCE** **August 25**
  - History of real estate finance
  - Financial Crisis and aftermath
  - Case Study: Subprime Lending
  
- 2. BASIC BOND MATHEMATICS** **September 1**
  - Fabozzi, 8<sup>th</sup>/9<sup>th</sup>: Chapters 1-3, Chap 4 pages 58-85 (just skim sections on convexity)
  - **Homework Set #1:** Will be posted on bCourses, **due 9/8**
  
- 3. DESIGNING RESIDENTIAL MORTGAGES** **September 8**
  - Fabozzi, 8<sup>th</sup>/9<sup>th</sup>: Chapter 10.
  - Consumer Financial Protection Bureau, “Summary of the Ability-to-Repay and Qualified Mortgage Rule and the Concurrent Proposal”, January, 2013
  - **Homework Set #2:** Will be posted on bCourses, **due 9/15**
  
- 4. DESIGNING COMMERCIAL MORTGAGES** **September 15**
  - Fabozzi, 8<sup>th</sup>/9<sup>th</sup>: Chapter 14.
  - Mary MacNeill, Erin Stafford, and Lee Green, “Defeasance by Design,” FitchRatings 2001.
  - **Case #1:** The Right of Acquisition: Options in Commercial Real Estate, **due 9/22**
  
- 5. MORTGAGE VALUATION I: THE PREPAYMENT OPTION** **September 22**
  - (and Case #1 discussion)
  - Fabozzi, 8<sup>th</sup>: Ch. 16 and 18 (9<sup>th</sup> ed: Ch. 17+19). (Optional: Fabozzi 8<sup>th</sup>, Ch. 17 (9<sup>th</sup> ed: Ch. 18)
  - Hayre, L., Chaudhary, S. and Young, R. “Anatomy of Prepayments: The Salomon Smith-Barney Prepayment Model” United States Fixed Income Research, Salomon Brothers, 2003.

**(September 29: Fisher Center Policy Advisory Board Meeting – No Class)**
  
- 6. MORTGAGE VALUATION II: THE DEFAULT OPTION** **October 6**
  - Optional: Fabozzi, 8<sup>th</sup>: Chap. 21 (9<sup>th</sup> ed: Ch. 23)
  - Lakhbir, S. H. Saraf, R. Young, and J. Chen, “Modeling Mortgage Defaults,” Fixed Income and Strategy Analysis, Citi, January, 22, 2008.
  
- 7. THE FINANCE OF *THE BIG SHORT* (MBSs, CDOs, CDSs, ETC.)** **October 13**
  - Mortgage-backed Security structures

- MBS as an asset class
- Midterm Review
- Fabozzi, 8<sup>th</sup>/9<sup>th</sup>: Chap. 12
- Hayre, L. “Guide to Mortgage-Backed Securities,” United States Fixed Income Research, Salomon Brothers, March, 1999.

- 8. MIDTERM AND REAL ESTATE PRIVATE EQUITY **October 20****
- Exam lasts 90 minutes
  - **Guest Speaker #1:** Brian Dilley, Rubicon Point Partners
  - **Homework:** Read or watch *The Big Short*

- 9. THE ECONOMICS OF THE BIG SHORT **October 27****
- The Economics of Securitization
  - Also: Midterm Review, Can Securitization Cure Cancer?
  - **Guest Speaker #2:** Steve Peers, Strategic Finance Partners
  - **Homework Set #3:** Will be posted on bCourses, **due 11/3**

- 10. NONPROFIT FINANCING OF AFFORDABLE HOUSING **November 3****
- Also: Commercial Mortgage Securitization, Projects Introduction, Case #2 Intro
  - Fabozzi, 8<sup>th</sup>/9<sup>th</sup>: Chap. 14.
  - Esaki, H., de Beur, M.J., and Pearl, M. “Transforming Real Estate Finance: A CMBS Primer,” Morgan Stanley, Fixed Income Research, Spring, 2003.
  - **Guest Speakers #3:** Mary Corley and Brad Wiblin, BRIDGE Housing
  - **Case #2:** Pier One, **due 11/10**

- 11. COMMERCIAL MORTGAGE UNDERWRITING **November 10****
- Case #2 discussion
  - Also: Introduction to REITs
  - **Guest Speaker #4:** Dennis Williams, Northmarq Capital
  - **Project Proposals due on 11/17**

- 12. FINANCIAL CRISIS AND AFTERMATH **November 17****
- Causes and Consequences, Regulatory Response
  - 12 Facts About the Housing Bust
  - Federal Reserve and Conventional & Unconventional Monetary Policy
  - Dodd-Frank Act Stress Tests
  - **Guest Speaker #5:** Connie Moore, former CEO of BRE Properties, Inc.

**(November 24: Thanksgiving – No Class)**

- 14. PROJECT PRESENTATIONS **December 1****