UGBA183 – REAL ESTATE FINANCE AND SECURITIZATION
Professor Amir Kermani

COURSE OVERVIEW

This is an applied finance and economics course that focuses on the structure and operation of the U.S. mortgage and asset-backed securities market. The course begins with an overview of the fundamentals of bond and mortgage contracts and a review of basic concepts in the analysis of fixed income securities such as yield to maturity and duration. The course then considers the fundamentals of residential and commercial real estate contracting and mortgage design. We will then focus on the multi-trillion dollar mortgage and asset-backed securities markets. The course will cover the fundamentals of securitization, strategies to structure deals, and methods to price bonds. We will study how mortgages and mortgage backed securities are valued, including the impact of embedded options such as prepayment, default, extension and cancellation. The course will develop skills in analysis and valuation, provide a working knowledge of Excel-based option pricing software, and offer all students an opportunity to develop their business skills through case discussions and a final project presentation.

Real estate finance has changed profoundly as a result of the housing bubble and subsequent financial crisis. Real estate finance continues to change as it finds its place in a still-evolving economic and financial landscape. We will study the causes, history, and impacts of the housing bubble and financial crisis. We will review regulatory responses to the crisis, and keep current on developments in real estate finance during the semester.

LEARNING EXPECTATIONS

On completing the class you should:

1. Know and be able to use the basics of fixed-income analytics (aka bond math)
2. Understand residential and commercial mortgages and be able to carry out the financial calculations related to them.
3. Become familiar with the structure and functioning of the primary and secondary market for mortgages.
4. Understand the structure of pass-throughs and structured mortgage-backed securities.
5. Learn how to analyze the cashflows of mortgage-backed securities and use the knowledge to analyze a security for the class project.
6. Understand the risks investors face with mortgages and mortgage-backed securities. Be able to identify the risks in a particular security and suggest how these risks could be managed.
7. Know the causes and impacts of the housing bubble and subsequent financial crisis.
8. Be familiar with the current condition of the primary and secondary mortgage markets.

COORDINATES

Class meets Monday and Wednesday, 2:00 to 3:30 pm in C110.

Amir Kermani’s office hours: Monday 5:00-6:00 pm in Haas F614.
Questions by email: amir@haas.berkeley.edu

The GSI is Calvin Zhang (cs_zhang@haas.berkeley.edu). His office hours are Thursday 2-3:30 p.m. in Haas F625.

TEXTBOOKS AND READINGS

Readings through bSpace and study.net


Lecture notes will be handed out in class and will be available on the class bSpace web page.

REQUIREMENTS

There will be graded homework sets, business cases, an in-class mid-term, a group project with an oral presentation in class, and a final exam. Class participation will be included in your grade. You will need a financial hand calculator or a laptop computer with Excel for the exams and homework sets. Course grades will be assigned based on the higher value of the following:

Plan 1: Midterms 30%, Final Exam 30% OR Plan 2: Midterms 20%, Final Exam 40%
PLUS: Homework sets and cases 15%, Class project 20%, Class participation 5%
(Lowest score on homework or cases will be dropped to calculate homework and case grade.)

SCHEDULE FOR PROJECT AND EXAMS

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<tr>
<td>In-class Mid-term</td>
<td>March 19</td>
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<td>Project Proposal Due</td>
<td>April 7</td>
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<td>Project Presentations</td>
<td>May 5 - 7</td>
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BA183 – SYLLABUS

1. **INTRODUCTION TO REAL ESTATE FINANCE**  [Week 1 - 2: 1/22 – 1/27]

2. **BASIC BOND MATHEMATICS**  [Week 2 - 3: 1/29 – 2/5]
   • Fabozzi, 8th: Chapters 1 – 3 Chap 4 pp 58-85 (just skim sections on convexity).
   • *Homework Set #1: Chap 1,#1, Chap 2, #7,8,11 Chap 3, #5* Due 2/5

3. **DESIGNING RESIDENTIAL MORTGAGES**  [Week 4 - 5: 2/10 – 2/19]
   • Fabozzi, 8th: Chapter 10.
   • *Homework Set #2: Chap 3, #16, Chap.4, #4,5,17* Due 2/12
   • *Homework Set #3: Will be posted on bSpace* Due 2/24

4. **DESIGNING COMMERCIAL MORTGAGES**  [Week 6 - 7: 2/24 – 3/5]
   • Fabozzi, 8th: Chapter 14.
   • Daniel Chambers and Mary Metz, U.S. CMBS: Where Have All the Good Loans Gone? FitchRatings, 2005.
   • *Case 1: Bourland Companies* Due 3/5

5. **ECONOMICS OF REAL ESTATE SECURITIZATION**  [Week 8 - 9: 3/10 – 3/17]
   • Fabozzi, 8th: Chaps 11 & 13
   • *Case 2: The Return of the Loan* Due 3/17

MIDTERM: IN CLASS ON Thursday March 19

6. **SPRING BREAK**  [Week 10: 3/24 – 3/26]

PROJECT PROPOSALS DUE ON Thursday April 2

7. **MORTGAGE-BACKED SECURITIES**  [Week 11: 3/31 – 4/2]
   • Fabozzi, 8th: Chap. 12
8. MORTGAGE VALUATION I: THE PREPAYMENT OPTION  
[Week 12: 4/7 – 4/9]
- Fabozzi, 8th: Chaps. 16 and 18. (Optional: Fabozzi, Chap. 17.)

9. MORTGAGE VALUATION II: THE DEFAULT OPTION  
[Week 13: 4/14 – 4/16]
- Optional: Fabozzi, 8th: Chap. 21

10. COMMERCIAL MORTGAGE SECURITIZATION  
- Fabozzi, 8th: Chap. 14.
- Case 3: Rockefeller Center CMBS  
Due 4/28

11. FINANCIAL CRISIS  
[Week 15: 4/30]

PRESENTATIONS AND REVIEW  
[Week 16: 5/5 – 5/7]

FINAL EXAM  
5/13, 11:30-14:30