

Mortgages, Mortgage-backed Securities and Real Estate Capital Markets

RED 544 (79409R)

Wednesday, 4:00 to 5:50 PM, RGL 101

12/2004

A. COURSE OVERVIEW

This course provides graduate-level exposure to theory and analytical methods used for valuing and pricing mortgages and mortgage-backed securities. It also examines the role of public and private capital markets in facilitating investment in commercial real estate markets.

Recent years have witnessed dramatic ups and downs in real estate markets, financial markets as well as regional economies. Many scholars and analysts attribute the recent financial crisis that swept across the South-eastern Asia region to the unhealthy real estate sector and real estate capital markets of the region. On the contrary, in the U.S. market the real estate sector shows resilience despite the recent crash of stock markets and slowdown in the rest of economy.

The US secondary mortgage market is viewed by many as the most advanced real estate capital market system in the world. The US residential MBS market has grown dramatically over the last two decades. The volume of residential MBS tripled during the 1990s, from \$1 trillion in 1990 to over \$3 trillion in 2000, and \$3.5 trillion in 2001. Since 2000, the residential MBS market has become the largest capital market in the U.S. The volume of new CMBS originations has increased from less than \$10 billion in 1990 to \$97 billion in 2001, a new record, and 24 percent higher than the 1998 record year, which totaled \$78 billion.

The primary objective of this course is to combine the theory of finance with the practice of real estate capital markets to enable you to make intelligent business decisions in increasingly complex real estate markets. The main topics covered in the course include an overview of various mortgage instruments; prepayment and default risk analyses and pricing of residential and commercial mortgages; structured finance in residential and commercial real estate industries.

B. COURSE ORGANIZATION AND REQUIREMENTS

The course is a combination of lectures, guest presentations, and discussions. There is one take-home assignment before the midterm, one in-class midterm and one final project to be completed by individual student.

A list of topics for the final projects will be distributed during the semester. Each student will pick a topic of her final project before February 9th. A draft of the final project report is due on April 6th. Each student should prepare a 15-minute PowerPoint presentation of the highlights of the project in classes on April 13th and 20th. Each student will also read and prepare comments on one project prepared by one of her classmates. The discussant should prepare a 5-minute PowerPoint presentation of the comments in classes on April 13th and 20th. A final written report of the project is due on April 25th. The report may not exceed 15 pages (double-spaced). The discussant team should also submit a written comment (2-3 pages) by April 20th.

You must have a financial or programmable calculator that can compute annuities and present values. You are responsible for knowing how to use these functions. You will be very unhappy if you take the midterm without one.

C. COURSE GRADING

Assignments	10%
Midterm	50%
Final Project	30%
Class Participation	<u>10%</u>
	100%

D. TEXTBOOKS AND READINGS

Reference Books:

Peter Linneman, (2004) *Real Estate Finance & Investments: Risks and Opportunities*. Linneman Associates. ISBN: 0-9744518-3-5.

Anthony Saunders and Marcia Millon Cornett, (2004) *Financial Markets and Institutions*, 2nd Ed. McGraw Hill. ISBN: 0-07-282454-9

E. BLACKBOARD COURSE INFO WEB SITE

Lecture notes, assignments, solutions, your grades and other communications will be posted on a Blackboard Course Info web site at <http://totale.usc.edu> under "20051_RED_544_79409." Your login ID to the RED 544 course web site is the first part of your USC email ID before @usc.edu. Your password is your USC e-mail password. Please make sure you can access the course web site and download the course materials there.

F. INSTRUCTOR ACCESS

I will hold office hours on Wednesdays, 2:00pm - 4:00pm *or by appointment*. Appointments are recommended even during office hours as meeting schedules may occasionally conflict with office hours. E-mail is a dependable way to communicate with me.

Professor Yongheng Deng
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G. ACADEMIC DISHONESTY

The Use of unauthorized material, communication with fellow students during an examination, attempting to benefit from the work of another student, and similar behavior that defeats the intent of an examination, or other class work is unacceptable to the University. It is often difficult to distinguish between a culpable act and inadvertent behavior resulting from the nervous tensions accompanying examinations. Where a clear violation has occurred, however, the instructor may disqualify the student's work as unacceptable and assign a failing mark on the paper.

H. DISABILITY STATEMENT


















Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me (or to TA) as early in the semester as possible. DSP is located in STU 301 and is open early 8:30 a.m. - 5:00 p.m., Monday through Friday. The phone number for DSP is (213) 740-0776.

I. CLASS MEETINGS

Date	Topics and References
1. Jan. 12	Introduction: Overview of Real Estate Capital Markets. <ul style="list-style-type: none">• Linneman (2004) <i>Real Estate Finance & Investments: Risks and Opportunities</i>, Ch 1-2.• Saunders and Cornett (2004) <i>Financial Markets and Institutions</i>, Ch 1.
2. Jan. 19	Mortgage Basics. <ul style="list-style-type: none">• Linneman (2004) <i>Real Estate Finance & Investments: Risks and Opportunities</i>, Ch 12-13, Prereq III.• Saunders and Cornett (2004) <i>Financial Markets and Institutions</i>, Ch 2, 7.
3. Jan. 26	Fixed-Income Basics: Yield Curve and Term Structure of Interest Rates, Term Structure Models and Bond Pricing Models. <ul style="list-style-type: none">• Saunders and Cornett (2004) <i>Financial Markets and Institutions</i>, Ch 3, 10.
4. Feb. 2	Mortgage-Backed Security Markets: Mortgage Pass-Through Securities, and Stripped Mortgage-Backed Securities. <ul style="list-style-type: none">• Saunders and Cornett (2004) <i>Financial Markets and Institutions</i>, Ch 7, 25.• Hendershott, P. and Van Order, R. (1987) "Pricing Mortgages: An Interpretation of Models and Results." <i>Journal of Financial Services Research</i>, 1, pp. 77-111.
5. Feb. 9	Mortgage-Backed Security Markets: Multi-Class Mortgage-Backed Securities, CMOs, REMICs. <ul style="list-style-type: none">• Saunders and Cornett (2004) <i>Financial Markets and Institutions</i>, Ch 7, 25.
6. Feb. 16	Option-Based Empirical Models of Mortgage Prepayment and Default Risks. <ul style="list-style-type: none">• Deng, Quigley and Van Order (2000) "Mortgage Terminations, Heterogeneity and the Exercise of Mortgage Options," <i>Econometrica</i>, 68(2): 275-307.• Deng and Gabriel (2003) "Are Underserved Borrowers Lower Risk? New Evidence on The Performance And Pricing Of FHA-Insured Mortgages," USC Lusk Center Working Paper Series 2004-1004.
8. Feb. 23	Commercial Mortgage Underwriting <ul style="list-style-type: none">• Chen and Deng (2003) "Commercial Mortgage Workout Strategy and Conditional Default Probability: Evidence from Special Serviced CMBS Loans," <i>Lusk Center Working Paper</i> 2003-1008, University of Southern California.
9. March 2	Commercial Mortgage-Backed Securities <ul style="list-style-type: none">• Ambrose and Sanders (2003) "Commercial Mortgage-backed Securities: Prepayment and Default," <i>Journal of Real Estate Finance and Economics</i>, 26(2/3): 179-196.
9. March 9	Midterm
10. March 16	Spring Break. No Class

11. March 23 **CMBS Analysis**
- A Guide to CMBS.COM
12. March 30 **Overview of the REITs Market**
- Linneman (2004) *Real Estate Finance & Investments: Risks and Opportunities*, Ch 18.
 - Gyourko and Nelling (1996) “Systematic Risk and Diversification in the Equity REIT Market,” *Real Estate Economics*, 24(4): 493-515.
13. March 28
7:00pm~8:50pm **Guest Speaker on International Real Estate Market**
(Change of date and time to March 28, Monday 7:00pm ~ 8:50pm)
Draft of Final Project Report Due on April 6
14. April 13 **Final Project Presentations**
15. April 20 **Final Project Presentations**
Discussant Comment Reports Due
16. April 25 **Final Project Reports Due**

H. USEFUL WEBSITE LINKS

-  [Lusk Center for Real Estate](http://www.usc.edu/schools/sppd/lusk) (<http://www.usc.edu/schools/sppd/lusk>)
-  [Glossary of Finance and Economic Terms](http://www.freddiemac.com/finance/smm/a_f.htm#A)
(http://www.freddiemac.com/finance/smm/a_f.htm#A)
-  [REMIC & SMBS Securities Glossary](http://www.fanniemae.com/markets/mbssecurities/product_info/remic/r_glossary.html)
(http://www.fanniemae.com/markets/mbssecurities/product_info/remic/r_glossary.html)
-  [Bloomberg Market Rates](http://www.bloomberg.com/markets/rates/index.html) (<http://www.bloomberg.com/markets/rates/index.html>)
-  [U.S. Census Bureau](http://www.census.gov/pub) (<http://www.census.gov/pub>)
-  [NAHB Economic and Housing Data](http://www.nahb.org/facts/default.htm) (<http://www.nahb.org/facts/default.htm>)
-  [Financial Services Facts](http://www.financialservicefacts.org/index.html) (<http://www.financialservicefacts.org/index.html>)
-  [Office of Federal Housing Enterprise Oversight](http://www.ofheo.gov) (<http://www.ofheo.gov>)
-  [FannieMae](http://www.fanniemae.com) (<http://www.fanniemae.com>)
-  [FreddieMac](http://www.freddiemac.com) (<http://www.freddiemac.com>)
-  [National Association of Real Estate Investment Trusts](http://www.nareit.org) (<http://www.nareit.org>)
-  [Mortgage Bankers Association of America](http://www.mbaa.org) (<http://www.mbaa.org>)
-  [National Mortgage News](http://www.nationalmortgagenews.com) (<http://www.nationalmortgagenews.com>)
-  [American Real Estate and Urban Economics Association](http://www.areuea.org) (<http://www.areuea.org>)
-  [Urban Land Institute](http://www.uli.org) (<http://www.uli.org>)
-  [Journal of Real Estate Finance and Economics](http://www.jrefe.org) (<http://www.jrefe.org>)
-  [Real Estate Economics](http://www.areuea.org/publications/ree/) (<http://www.areuea.org/publications/ree/>)