

Real Estate Capital Markets 19820R
Monday & Wednesday, 4:00 to 5:50 PM, ACC 205

A. COURSE OVERVIEW

This course exposes undergraduate students 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 recent emergence of REITs in U.S. real estate markets has proven a viable alternative to private/institutional capital sources, and is expected to continue to be important to real estate markets. At the same time, it provides new challenges to investors and analysts to understand the potentials and limits of this relatively new investment vehicle and source of capital for real estate development.

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; structure and investment analysis of REIT vehicles.

B. COURSE ORGANIZATION AND REQUIREMENTS

The course is a combination of lectures, guest presentations, and discussions. Students are expected to have read the suggested readings prior to each session so that constructive discussion can take place. There are two take-home assignments, two in-class midterms, one hands-on modeling project, and one final exam.

You must have a financial or programmable calculator that can compute annuities and present values. You will be very unhappy if you take the midterm and final without one.

C. COURSE GRADINGS

Assignments and Modeling Projects	30%
Midterms	30%
Final	30%
Class Participation	<u>10%</u>
	100%

D. TEXTBOOKS AND READINGS

Required Textbooks:

Joseph Hu (2001) *Basics of Mortgage-Backed Securities*, 2nd ed. John Wiley & Sons, Inc. ISBN: 1883249872.

Optional Reference Books:

David Geltner and Norman G. Miller (2001) *Commercial Real Estate Analysis and Investments*. South-Western College Publishing Co. ISBN: 0-324-13676-5.

Su Han Chan, John Erickson and Ko Wang (2003) *Real Estate Investment Trusts: Structure, Performance, and Investment Opportunities*. Oxford University Press, ISBN 0-19-515534-3.

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://learn.usc.edu> under “20033_fbe_489_19820.” Your login ID to the FBE 489 course web site is the first part of your USC email ID before @usc.edu. Your password is your USC UNIX 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.

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G. 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.

H. CLASS MEETINGS

Week / Date	Topics and Readings
1. Aug. 25	Introduction: Course mechanics. Blackboard Course Info Website Overview of Real Estate Capital Markets <ul style="list-style-type: none">• Hu (2001) <i>Basics of Mortgage-Backed Securities</i>, Ch 1-2.
2. Aug. 27	Mortgage Basics <ul style="list-style-type: none">• Hu (2001) <i>Basics of Mortgage-Backed Securities</i>, Ch 5.• Geltner and Miller (2001) <i>Commercial Real Estate Analysis and Investments</i>, Ch 16. (optional)
2. Sept. 1	Labor Day. No Class.
2. Sept. 3	Continue on Mortgage Basics <ul style="list-style-type: none">• Hu (2001) <i>Basics of Mortgage-Backed Securities</i>, Ch 5.• Geltner and Miller (2001) <i>Commercial Real Estate Analysis and Investments</i>, Ch 16. (optional)
3. Sept. 8	Continue on Mortgage Basics <ul style="list-style-type: none">• Hu (2001) <i>Basics of Mortgage-Backed Securities</i>, Ch 5.• Geltner and Miller (2001) <i>Commercial Real Estate Analysis and Investments</i>, Ch 16. (optional)
3. Sept. 10	Fixed-Income Basics: Yield Curve and Term Structure of Interest Rates, Term Structure Models and Bond Pricing Models <ul style="list-style-type: none">• Hu (2001) <i>Basics of Mortgage-Backed Securities</i>, Ch 5.• Geltner and Miller (2001) <i>Commercial Real Estate Analysis and Investments</i>, Ch 17, 19. (optional)
4. Sept. 15-17	Continue on Fixed-Income Basics: Yield Curve and Term Structure of Interest Rates, Term Structure Models and Bond Pricing Models <ul style="list-style-type: none">• Geltner and Miller (2001) <i>Commercial Real Estate Analysis and Investments</i>, Ch 17, 19. (optional)
5. Sept. 22 ~ 24	Pricing of Mortgage Prepayment Options <ul style="list-style-type: none">• 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. (optional)
6. Sept. 29	First Midterm
6. Oct. 1	Option-adjusted Spreads and Monte-Carlo Simulation
7. Oct. 6 ~ 8	Mortgage-Backed Security Markets: Mortgage Pass-Through Securities, CMOs and REMICs <ul style="list-style-type: none">• Hu (2001) <i>Basics of Mortgage-Backed Securities</i>, Ch 3, 7.

8. Oct. 13-15 **Mortgage-Backed Security Markets: Stripped Mortgage-Backed Securities**
 • Hu (2001) *Basics of Mortgage-Backed Securities*, Ch 3, 7.
9. Oct. 20-22 **Option-Based Empirical Models of Mortgage Prepayment and Default Risks**
 • Hu (2001) *Basics of Mortgage-Backed Securities*, Ch 4.
 • Deng and Gabriel (2003) “Are Underserved Borrowers Lower Risk? New Evidence on The Performance And Pricing of Fha-Insured Mortgages,” University of Southern California, Lusk Center Working Paper. (optional)
 • Deng and Quigley (2001) “Woodhead Behavior and the Exercises of Mortgage Options,” University of Southern California, Lusk Center Working Paper. (optional)
10. Oct. 27 **Second Midterm**
10. Oct. 29 **Project Assignment: Modeling Mortgage Prepayment and Default Risks.**
11. Nov. 3-5 **Commercial Mortgage and Commercial Mortgage-Backed Securities**
 • Geltner and Miller (2001) *Commercial Real Estate Analysis and Investments*, Ch 18, 20. (optional)
12. Nov. 10 **Continue on Commercial Mortgage and Commercial Mortgage-Backed Securities**
 • Ambrose and Sanders (2001) “Commercial Mortgage-backed Securities: Prepayment and Default,” Ohio State University, Mimeo. (optional)
 • Chen and Deng (2003) “Commercial Mortgage Workout Strategy and Conditional Default Probability: Evidence from Special Serviced CMBS Loans,” University of Southern California, Lusk Center Working Paper. (optional)
12. Nov. 12 **The Emergence of REITs in the US Real Estate Market**
 • Chan, Erickson and Wang (2003) *Real Estate Investment Trusts: Structure, Performance, and Investment Opportunities*, Ch 1-2. (optional)
13. Nov. 17 **Investment Analysis of REITs**
 • Chan, Erickson and Wang (2003) *Real Estate Investment Trusts: Structure, Performance, and Investment Opportunities*, Ch 10-11. (optional)
 • Geltner and Miller (2001) *Commercial Real Estate Analysis and Investments*, Ch 24. (optional)
13. Nov. 19 **Private REITs and Real Estate Opportunity Funds**
14. Nov. 24-26 **Modeling Project Presentations**
15. Dec. 1 **Modeling Project Presentations**

















15. Dec. 3

Review Session

16. Dec. 10

4:30 – 6:30 pm. Final Exam. (ACC 205)

H. USEFUL WEBSITE LINKS

-  [Lusk Center for Real Estate](http://www.usc.edu/schools/sppd/lusk/index.html) (http://www.usc.edu/schools/sppd/lusk/index.html)
-  [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) (http://www.bloomberg.com/markets/rates)
-  [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)
-  [Journal of Real Estate Finance and Economics](http://www.jrefe.org) (http://www.jrefe.org)
-  [Real Estate Economics](http://www.areuea.org/reecon.htm) (http://www.areuea.org/reecon.htm)