



## REAL ESTATE MARKETS (RE 386.1)

SPRING 2011

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### Course Objectives

This course's primary objective is to examine the various real estate markets – the market for space, the market for real estate investments, and real estate capital markets, both debt and equity.

The first part of the course provides an overview of the markets for real estate space and assets, and basic urban economics. The goal of this section is to provide students with a better understanding of the economic issues surrounding the development of cities and the value of real estate.

Next, we will cover the basics of valuation of commercial real estate. This will include construction of pro forma models and estimation of discount rates. As part of this discussion, we will also discuss the use of real option techniques and intuition in real estate, including the value of raw land.

We then turn our attention to the real estate capital markets, beginning with the debt markets. The primary focus is on the structure and cash flow characteristics of real estate debt instruments. We start by studying the primary residential mortgage market and the mathematics and finance of residential mortgage cash flows and pricing. We then move into the secondary market for mortgage funds with a study of simple pass-through residential mortgage pass-through securities. The problem of prepayment and the complications that prepayment introduces to the valuation of mortgage backed securities is analyzed. The prepayment problem in simple residential mortgage pass-through securities led to the creation of Collateralized Mortgage Obligations (CMOs). Following our study of the prepayment problem we go directly to a study of the creation, structure, and pricing of CMOs, including a discussion of mortgage strip securities (IOs and POs) and specialized CMO tranches (PACs and Zs). Students will analyze an actual \$250 million Fannie Mae CMO (REMIC) issued in August 2002 as a case assignment. After working through the residential mortgage instruments we will go directly into our study of Commercial Mortgage Backed Securities (CMBS). CMBS are very similar in spirit and structure to MBS, but significant differences in both prepayment and default characteristics make CMBS an interesting twist on the original MBS model.

The final part of the course is dedicated to the study of real estate equity markets, both public and private. We will study how real estate fits within a diversified investor's portfolio, and the various alternatives an institutional investor has to invest in commercial real estate. We will spend several meetings discussing Real Estate Investment Trusts (REITs), including their structure,

corporate governance, and valuation. We will also analyze alternative ways to invest in private equity in the real estate sector, such as commingled real estate funds and limited partnerships.

## Leadership and this Course

The Texas MBA program is designed to develop influential business leaders. The MBA Program has identified four fundamental and broad pillars of leadership: knowledge and understanding, communication and collaboration, responsibility and integrity, and a worldview of business and society.

In this course, you will enhance your knowledge and understanding of real estate, securitization, and fixed income markets. Through class discussion, informal study groups, and formal group projects (written and oral) you will enhance your communication and collaboration skills. You will learn how incentives in these markets may induce some participants to act irresponsibly or without integrity. Finally, many of the issues discussed transcend U.S. boundaries, providing a global perspective on financial markets.

## Materials

Required (These will eventually be available at the Co-op, but you should also check Amazon and/or other sources):

Commercial Real Estate, Analysis and Investments, by Geltner, Miller, Clayton and Eichholtz, 2<sup>nd</sup> Edition, 2007, Thomson South-Western.

Liar's Poker, by Michael Lewis (1989 Penguin Books).

The Big Short, by Michael Lewis (2010 Norton & Company)

Recommended:

Mortgage-Backed Securities, Frank J. Fabozzi, Anand K. Bhattacharya, and William S. Berliner, 2007, Wiley.

Real Estate Investment Trusts, by Chan, Erickson, and Wang, 2002, Oxford.

## Course Requirements and Grading

Grades will be based on the student's performance on one quiz (on Liar's Poker), two tests (the midterm and the final), and cases. The weights on each component of the overall course grade are as follows:

Class Participation	Ongoing	5%
Michael Lewis books quiz	Mon., Mar 28 (planned)	5%
Angus Cartwright Case, CMO Case	Various	20%
Other Cases (Groups)	Various	10%
First half test	Wed., Mar 2	30%
Second half test	Wed., May 4	30%

Make-up and extra-credit assignments are generally not possible. Your grade will be determined solely by the components listed above. If you fail to turn in the case assignment or the problem set when they are due you will not be able to make up the assignment or the points. Don't miss the quiz or the tests.

The Angus Cartwright and CMO cases are to be done individually, while the remaining cases will be done in groups of two or three students (no exceptions). Each group must work independently. Students are left to form their own groups, but please see me if help is needed.

Though attendance will not be taken, you are responsible for everything covered or assigned in class. The lectures may depart significantly from the material assigned and it is important that you review the assigned readings prior to the class session.

## **McCombs Classroom Professionalism Policy**

The highest professional standards are expected of all members of the McCombs community. The collective class reputation and the value of the Texas MBA experience hinges on this.

Faculty are expected to be professional and prepared to deliver value for each and every class session. Students are expected to be professional in all respects.

The Texas MBA classroom experience is enhanced when:

- **Students arrive on time.** On time arrival ensures that classes are able to start and finish at the scheduled time. On time arrival shows respect for both fellow students and faculty and it enhances learning by reducing avoidable distractions.
- **Students display their name cards.** This permits fellow students and faculty to learn names, enhancing opportunities for community building and evaluation of in-class contributions.
- **Students minimize unscheduled personal breaks.** The learning environment improves when disruptions are limited.
- **Students are fully prepared for each class.** Much of the learning in the Texas MBA program takes place during classroom discussions. When students are not prepared they cannot contribute to the overall learning process. This affects not only the individual, but their peers who count on them, as well.
- **Students attend the class section to which they are registered.** Learning is enhanced when class sizes are optimized. Limits are set to ensure a quality experience. When section hopping takes place some classes become too large and it becomes difficult to contribute. When they are too small, the breadth of experience and opinion suffers.
- **Students respect the views and opinions of their colleagues.** Disagreement and debate are encouraged. Intolerance for the views of others is unacceptable.
- **Laptops are closed and put away.** When students are surfing the web, responding to e-mail, instant messaging each other, and otherwise not devoting their full attention to the topic at hand they are doing themselves and their peers a major disservice. Those around them face additional distraction. Fellow students cannot benefit from the insights of the students who are not engaged. Faculty office hours are spent going over class material with students who chose not to pay attention, rather than truly adding value by helping students who want a better understanding of the material or want to explore the issues in more depth. Students with real needs may not be able to obtain adequate help if faculty time is spent repeating what was said in class. There are often cases where learning is enhanced by the use of laptops in class. Faculty will let you know when it is appropriate to use them. In such cases, professional behavior is exhibited when misuse does not take place.
- **Phones and wireless devices are turned off.** We've all heard the annoying ringing in the middle of a meeting. Not only is it not professional, it cuts off the flow of discussion when the search for the offender begins. When a true need to communicate with someone outside of class exists (e.g., for some medical need) please inform the professor prior to class.

Remember, you are competing for the best faculty McCombs has to offer. Your professionalism and activity in class contributes to your success in attracting the best faculty to this program.

## **Academic Dishonesty**

I have no tolerance for acts of academic dishonesty. Such acts damage the reputation of the school and the degree and demean the honest efforts of the majority of students. The minimum penalty for an act of academic dishonesty will be a zero for that assignment or exam.

The responsibilities for both students and faculty with regard to the Honor System are described on <http://mba.mcombs.utexas.edu/students/academics/honor/index.asp> and on the final pages of this syllabus. As the instructor for this course, I agree to observe all the faculty responsibilities described therein. During Orientation, you signed the Honor Code Pledge. In doing so, you agreed to observe all of the student responsibilities of the Honor Code. If the application of the Honor System to this class and its assignments is unclear in any way, it is your responsibility to ask me for clarification.

As specific guidance for this course, you should consider the *writing* of all examinations to be an individual effort. Group *preparation* for examinations is acceptable and encouraged. Homework assignments are to be turned in individually but I encourage you to work together in answering the questions. You should, however, develop your own answer and not cut and paste the work of others.

### **Students with Disabilities**

Upon request, the University of Texas at Austin provides appropriate academic accommodations for qualified students with disabilities. Services for Students with Disabilities (SSD) is housed in the Office of the Dean of Students, located on the fourth floor of the Student Services Building. Information on how to register, downloadable forms, including guidelines for documentation, accommodation request letters, and releases of information are available online at <http://deanofstudents.utexas.edu/ssd/index.php>. Please do not hesitate to contact SSD at (512) 471-6259, VP: (512) 232-2937 or via e-mail if you have any questions.

### Schedule (Tentative and Subject to Change)

MEETING	DAY	DATE	TOPIC	READING
1	Wed	Jan 19	Syllabus, Course Overview, Current Conditions in Real Estate Markets	
2	Mon	Jan 24	The Markets for Space and Real Estate Assets	GMCE 1-2
3	Wed	Jan 26	Basics of Urban Economics	GMCE 3-4
4	Mon	Jan 31	Basics of Urban Economics II	GMCE 5-6
5	Wed	Feb 2	Real Estate Market Analysis	
6	Mon	Feb 7	Introduction to Real Asset Valuation	GMCE 11
7	Wed	Feb 9	More on Real Asset Valuation	GMCE 12
8	Mon	Feb 14	Angus Cartwright Case	
9	Wed	Feb 16	Real Options in Real Estate I	GMCE 27
10	Mon	Feb 21	Real Options in Real Estate II	
11	Wed	Feb 23	The Primary Residential Mortgage Market and Products Mortgage Math and Analytics Payments, Amortization, OSB	GMCE 16, 17
12	Mon	Feb 28	Mortgage Backed Securities (MBS) – Creation and players MBS Cash Flow and Cash Flow spreadsheet	
13	Wed	Mar 2	Midterm	
<i>Global Trips, Spring Break</i>				
14	Mon	Mar 21	Prepayment Modeling	
15	Wed	Mar 23	CMOs Assign and discuss CMO case: FNMA REMIC Trust 2002-46	
16	Mon	Mar 28	(Lewis quiz at beginning of class) Non-Agency MBS	
17	Wed	Mar 30	Commercial Mortgage Backed Securities (CMBS) CMBS Intro, Structure, and Property Types	GMCE 20
18	Mon	Apr 4	CMBS – Call Protection, Default and Credit Performance	
19	Wed	Apr 6	Valuation and Analysis of MBS – Spreads (Zero-vol and OAS), Yield Measures, and Interest Rate Sensitivity (MBS Duration) CMO Case Due	
20	Mon	Apr 11	Real Estate in an Institutional Investor's Portfolio	GMCE 21
21	Wed	Apr 13	REITs (1)	GMCE 23
22	Mon	Apr 18	Guest speaker	
23	Wed	Apr 20	REITs (2)	
24	Mon	Apr 25	REITs (3)	
25	Wed	Apr 27	REIT Case	
26	Mon	May 2	Commingled funds and RELPs	
27	Wed	May 4	Second Exam	

## **Honor Code Purpose**

Academic honor, trust and integrity are fundamental to The University of Texas at Austin McCombs School of Business community. They contribute directly to the quality of your education and reach far beyond the campus to your overall standing within the business community. The University of Texas at Austin McCombs School of Business Honor System promotes academic honor, trust and integrity throughout the Graduate School of Business. The Honor System relies upon The University of Texas Student Standards of Conduct (Chapter 11 of the Institutional Rules on Student Service and Activities) for enforcement, but promotes ideals that are higher than merely enforceable standards. Every student is responsible for understanding and abiding by the provisions of the Honor System and the University of Texas Student Standards of Conduct. The University expects all students to obey the law, show respect for other members of the university community, perform contractual obligations, maintain absolute integrity and the highest standard of individual honor in scholastic work, and observe the highest standards of conduct. Ignorance of the Honor System or The University of Texas Student Standards of Conduct is not an acceptable excuse for violations under any circumstances.

The effectiveness of the Honor System results solely from the wholehearted and uncompromising support of each member of the Graduate School of Business community. Each member must abide by the Honor System and must be intolerant of any violations. The system is only as effective as you make it.

## **Faculty Involvement in the Honor System**

The University of Texas at Austin McCombs School of Business Faculty's commitment to the Honor System is critical to its success. It is imperative that faculty make their expectations clear to all students. They must also respond to accusations of cheating or other misconduct by students in a timely, discrete and fair manner. We urge faculty members to promote awareness of the importance of integrity through in-class discussions and assignments throughout the semester.

## **Expectations Under the Honor System**

### **Standards**

If a student is uncertain about the standards of conduct in a particular setting, he or she should ask the relevant faculty member for clarification to ensure his or her conduct falls within the expected scope of honor, trust and integrity as promoted by the Honor System. This applies to all tests, papers and group and individual work. Questions about appropriate behavior during the job search should be addressed to a professional member of the Career Services Office. Below are some of the specific examples of violations of the Honor System.

### **Lying**

Lying is any deliberate attempt to deceive another by stating an untruth, or by any direct form of communication to include the telling of a partial truth. Lying includes the use or omission of any information with the intent to deceive or mislead. Examples of lying include, but are not limited to, providing a false excuse for why a test was missed or presenting false information to a recruiter.

### **Stealing**

Stealing is wrongfully taking, obtaining, withholding, defacing or destroying any person's money, personal property, article or service, under any circumstances. Examples of stealing include, but are not limited to, removing course material from the library or hiding it from others, removing material from another person's mail folder, securing for one's self unattended items such as calculators, books, book bags or other personal property. Another form of stealing is the duplication of copyrighted material beyond the reasonable bounds of "fair use." Defacing (e.g., "marking up" or highlighting) library books is also considered stealing, because, through a willful act, the value of another's property is decreased. (See the appendix for a detailed explanation of "fair use.")

## **Cheating**

Cheating is wrongfully and unfairly acting out of self-interest for personal gain by seeking or accepting an unauthorized advantage over one's peers. Examples include, but are not limited to, obtaining questions or answers to tests or quizzes, and getting assistance on case write-ups or other projects beyond what is authorized by the assigning instructor. It is also cheating to accept the benefit(s) of another person's theft(s) even if not actively sought. For instance, if one continues to be attentive to an overhead conversation about a test or case write-up even if initial exposure to such information was accidental and beyond the control of the student in question, one is also cheating. If a student overhears a conversation or any information that any faculty member might reasonably wish to withhold from the student, the student should inform the faculty member(s) of the information and circumstance under which it was overheard.

## **Actions Required for Responding to Suspected and Known Violations**

As stated, everyone must abide by the Honor System and be intolerant of violations. If you suspect a violation has occurred, you should first speak to the suspected violator in an attempt to determine if an infraction has taken place. If, after doing so, you still believe that a violation has occurred, you must tell the suspected violator that he or she must report himself or herself to the course professor or Associate Dean of the Graduate School of Business. If the individual fails to report himself or herself within 48 hours, it then becomes your obligation to report the infraction to the course professor or the Associate Dean of the Graduate School of Business. Remember that although you are not required by regulation to take any action, our Honor System is only as effective as you make it. If you remain silent when you suspect or know of a violation, you are approving of such dishonorable conduct as the community standard. You are thereby precipitating a repetition of such violations.

## **The Honor Pledge**

The University of Texas at Austin McCombs School of Business requires each enrolled student to adopt the Honor System. The Honor Pledge best describes the conduct promoted by the Honor System. It is as follows:

"I affirm that I belong to the honorable community of The University of Texas at Austin Graduate School of Business. I will not lie, cheat or steal, nor will I tolerate those who do."

"I pledge my full support to the Honor System. I agree to be bound at all times by the Honor System and understand that any violation may result in my dismissal from the Graduate School of Business."