

DEPARTMENT OF FINANCE
MCCOMBS SCHOOL OF BUSINESS
UNIVERSITY OF TEXAS AT AUSTIN

RE 388 - Seminar in Real Estate Finance: Real Estate Debt Markets

Spring 2005

Tuesday & Thursday 12:00 – 2:00, UTC 1.130, unique #02985

Professor: Greg Hallman

CBA 6.262, 471-1538, Greg.Hallman@mcombs.utexas.edu

Class website: Blackboard

Office Hours: Tuesday & Thursday 10:00 – 11:00 and by appointment

Course Description

This course examines real estate debt markets in particular, and fixed income instruments in general. Real estate debt markets constitute an important and growing segment of overall U.S. capital markets. There is currently (Q304) \$5.4 trillion in mortgage-backed securities outstanding, making the mortgage-related debt market the largest debt market in the U.S. (By comparison, there is \$3.8 trillion in U.S. Treasury debt outstanding and approximately \$4.6 trillion in U.S. corporate debt outstanding.) Through lectures, readings, and casework, students will develop an understanding of the general structure of both primary and secondary real estate debt markets and pricing and valuation of real estate debt securities such as Mortgage Backed Securities (MBS), Commercial Mortgage Backed Securities (CMBS), and Collateralized Mortgage Obligations (CMOs). In the course of learning to price and analyze the mortgage-related debt instruments that are the primary focus of the class, students will also gain an understanding of fixed income valuation and analysis techniques that are applicable to a wide variety of fixed income instruments (e.g., Treasury securities, corporate debt, and bonds with embedded options such as convertible and callable corporate debt).

The first half of the course is primarily focused on the structure and cash flow characteristics of real estate debt instruments. The course begins with a study of the primary residential mortgage market and the mathematics and finance of residential mortgage cash flows and pricing. The course then moves into the secondary market for mortgage funds with a study of simple 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 (MBS) 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 a very interesting twist on the original MBS model. The midterm will cover all of the material from the first half of the course.

Where the first half of the course concentrates on the structure and cash flow characteristics of MBS and CMBS, the second half of the course is designed to provide analysis tools for fixed income instruments in general, and MBS and CMBS securities in particular. The first five lectures of the second half of the course cover general FI material applicable to almost all debt instruments. The final four or five lectures show how the general FI tools are adapted for the analysis of MBS and CMBS.

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 two cases/problem sets. The weights on each component of the overall course grade are as follows:

Liar's Poker quiz	Tuesday, Feb 1	5%
MBS/CMO Case	due Tues, Feb 15	25%
Midterm	Tuesday, Mar 1	25%
Yield Curve Problem Set	due Tues, April 19	20%
Final	date TBA	25%

Make-up and extra-credit assignments are generally not possible. Your grade will be determined solely by the components listed above. If you miss the Liar's Poker quiz or midterm for a valid reason (e.g., severe sickness and/or injury (doctor's note required), death in the family, incarceration) the missed-test percentage will go on your midterm and/or final exam (e.g., if you miss the Liar's Poker quiz your midterm will count 30%, if you miss the midterm, your final will count 50%). 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 final.

Course Materials

The required books for the course, supposedly available at the Co-op (but you should also check Amazon), are:

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

The Handbook of Mortgage Backed Securities, Frank J. Fabozzi, Editor, 5th edition, 2001, McGraw-Hill;

I will be teaching about half of the second half of the course out of the following book:

Fixed Income Securities, Bruce Tuckman, 2nd Edition, 2002, John Wiley & Sons.

Policies

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.

Academic dishonesty will not be tolerated. Your responsibilities with regard to scholastic dishonesty are described in detail in the Policy Statement on Scholastic Dishonesty for the McCombs School of Business. In particular, it is expected that the work on your examination will be entirely your own and that you will provide a level and quality of work on your group projects commensurate with your colleagues. Failure in these regards may result in failure on the examination, projects, or course.

The University of Texas at Austin provides upon request appropriate academic accommodations for qualified students with disabilities. For more information, contact the Office of the Dean of Students at 471-6259.

Course Schedule and Readings

meeting	DAY	DATE	TOPIC	READING
1	Tues	18-Jan	Course Introduction and description The Primary Residential Mortgage Market	Fabozzi 1
2	Thurs	20-Jan	Mortgage Math and Analytics Payments, Amortization, OSB, points, yield	
3	Tues	25-Jan	Mortgage Backed Securities (MBS) – Creation and players The Agencies: Ginnie, Fannie, and Freddie	Fabozzi 2, 5
4	Thurs	27-Jan	MBS Cash Flow and Cash Flow spreadsheet	
5	Tues	1-Feb	<i>(Liar's Poker quiz at beginning of class)</i> Prepayment Modeling	Fabozzi 19, 21
6	Thurs	3-Feb	CMOs <i>Assign and discuss CMO case : FNMA REMIC Trust 2002-46</i>	Fabozzi 9
7	Tues	8-Feb	CMOs – PACs and Zs Strips – IOs, POs, and Inverse Floaters	Fabozzi 10,11 Fabozzi 8
8	Thurs	10-Feb	CMOs – PACs and Zs Strips – IOs, POs, and Inverse Floaters	Fabozzi 10,11 Fabozzi 8

9	Tues	15-Feb	Commercial Mortgage Backed Securities (CMBS) CMBS Intro, Structure, and Property Types <i>(With a Quick Review of Commercial Property Pro-Forma)</i> CMO Case Due	Fabozzi 35, 38
10	Thurs	17-Feb	CMBS – Call Protection	
11	Tues	22-Feb	CMBS – Default and Credit Performance	
12	Thurs	24-Feb	Speaker – CMBS collateral	
	Tues	1-Mar	Midterm	
<i>Spring Break and MBA Plus</i>				
13	Tues	29-Mar	Return and review midterm and CMO case; Overview of 2 nd half of the course	
14	Thurs	31-Mar	Intro to FI – Treasuries and Discount Factors	Tuckman 1
15	Tues	5-April	Discount factors, Spot Rates, and Forward Rates ISOMORPHISM	Tuckman 2&3
16	Thurs	7-April	Constructing the Yield Curve	Tuckman 4
17	Tues	12-April	FI value analysis with a constructed yield curve: A treasury example and a REIT debt example <i>Hand out Yield Curve Problem Set</i>	
18	Thurs	14-April	Interest Rate Swaps and Swap Spreads	Tuckman 18
19	Tues	19-April	Valuation and Analysis of MBS – Spreads (Zero-vol and OAS), Yield Measures, and Interest Rate Sensitivity Yield Curve Problem Set Due	Fabozzi 23
20	Thurs	21-April	Valuation and Analysis of MBS – Spreads (Zero-vol and OAS), Yield Measures, and Interest Rate Sensitivity	Fabozzi 23
21	Tues	26-April	Valuation and Analysis of CMBS	
22	Thurs	28-April	CMBS and REIT debt	
23	Tues	3-May	Speaker - Pricing, trading, and analysis of MBS and/or CMBS	
24	Thurs	5-May	Course wrap-up and course evaluation	
		TBA	FINAL	