

University of Pennsylvania
The Wharton School

**Real Estate Finance: Investment and Analysis
Fall 2007, JMHH G50**

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Course Objectives:

There are two primary goals of this class:

- 1) To expose you to the terms, issues, and topics in commercial real estate;
- 2) To give you the basic skills and intuition you need to begin to evaluate a variety of real estate investments.

Real estate is a multi-faceted field, encompassing both an operating industry and a broad category of investments. It has its own institutional features, jargon, and investment structures. As the survey course in the Real Estate Department, this class aims to provide a broad overview of the real estate field, rather than a narrow focus on any particular topic. We delve more deeply into a handful of aspects of the real estate field when I believe they are particularly relevant or when the example provides a more general insight. Higher-level classes in the Real Estate Department examine in more detail many of the topics from this class.

The presumption in this class is that you have no prior real estate experience, and no pre-existing knowledge of the real estate industry is necessary to do well in this class. However, if you have prior experience in the real estate industry, some topics might be familiar to you already.

Course Materials:

- The required **textbook** is *Real Estate Finance and Investments, Second Edition*, by Linneman. It is available in the Bookstore. In my opinion, the Linneman book is the best one out there. However, I have made two alternative texts, *Commercial Real Estate Analysis and Investments* by Geltner and Miller and *Real Estate Finance and Investments* by Brueggman and Fisher, as well as two supplemental books, *Investing in REITs* (Block) and *A Primer on Securitization* (Kendall and Fishman), available on reserve at Lippincott. In addition, these books are available new or used at Internet bookstores. You may find them useful as supplemental resources or for additional background and context.
- Three **coursepacks** are available from Reprographics:
 - (a) Required readings
 - (b) Recommended (but optional) readings
 - (c) Copies of the lecture notes used in class (also downloadable from Web Café).

- Additional **handouts** will be distributed in class and billed by the bursar. I will bring handouts to class only once. After that, extra copies will be available outside my office door. You can pick them up there or, if I can convert them to electronic format, you will be able to download them from the Web Café.
- On **Web Café** you will find:
 - Updates to the Reprographics class notes bulkpack, when necessary
 - Sample Excel spreadsheets from the in-class examples
 - Answers to questions that are of general interest (e.g., about a case)
 - Practice problems, old exams, and solutions
 - Supplemental class material
 - Case materials (when available)
 - Announcements, updates, and clarifications
 - Electronic versions of Reprographics materials (when available)
- You must have a **financial calculator** capable of computing annuities and present values. The calculator you were supposed to obtain for FNCE 601 will be more than adequate. You are also responsible for knowing how to use the annuity and present value functions. You will need the calculator for the exams.

Class Preparation:

- **Required readings** are listed on the syllabus with an asterisk (*) and are in bold print. They are drawn from the textbook and the readings bulkpack. You should read them before the class in which they are listed. I encourage you to do the recommended (but optional) readings that are listed on the syllabus, especially if you are a real estate major. These readings either expand upon or reinforce the topics we cover in class, but are not required for the class and typically will not be referenced in any depth in lecture.
- **Guest speakers** are scheduled outside of normal class time, and are listed on the syllabus. These sessions are **required** material and will be videotaped in case you have a conflict with another class. These guest lectures are:
 - Monday, September 17, noon-1:20 p.m. Sam Zell, “The Man, The Legend, The Grave Dancer,” Zellerbach Auditorium.
 - Tuesday, November 13, 6:00-7:20 p.m. Darren Tangen, Senior Vice President, Colony Capital: “Meadowlands Xanadu.”
 - Tuesday, November 27, 6:00-7:20 p.m., TBA.

In addition, Professor Wong is hosting a lecture that may be of interest to you (but it is not required for this class): November 7, 6:00-7:20 p.m. Peter Linneman, “Private Equity.”

- **Practice problems** and **old exams** will be made available on Web Café, along with detailed solutions. I strongly recommend that you do these. The problem sets are not graded and will not be handed in. But they provide reinforcement for the class material and good preparation for the exams.

Cases:

There will be three group project cases handed out in class. You will choose your own

group of three to five members, and must work with the same team on all three cases. If you cannot find a group, I will either form a group for you or assign you to different teams over the course of the semester. Students in 721 may form groups with members from either section. Students in 209 may form groups only with students in their section. You and your teammates should sign up under the “team sign-up” section on Web Café.

The cases require a variety of skills, from financial savvy to management. You should try to have a mix of talents and backgrounds on your team. In addition, I strongly encourage you *not* to take the “divide and conquer” approach of having only one or two team members work on each case. You will be much more successful if the group uses a truly collaborative process.

You may discuss the cases with other groups. However, each group is responsible for preparing the case materials and writeups independently. **Late cases will not be accepted nor will extensions be given.**

Examinations:

Two midterm exams will be held in regularly scheduled class time, one on Wednesday, October 10 and the other on Wednesday, December 5. Exam 2 is not cumulative in content, but assumes proficiency in basic skills taught in the first portion of the class. Exams will cover the material examined in class and during guest lectures, the class notes, the cases, the practice problems, and the required readings. The exams are closed-book, but you are allowed to bring one 8.5 x 11” piece of paper (double-sided) of notes into each exam. You will need to bring a financial calculator to the exams. You will not be allowed to use a computer. In addition, seats will be randomly assigned on exam days.

Both exams must be passed in order to receive a passing grade for the course. Exams must be taken at the assigned time. If you cannot attend class on these dates, please drop the class now. Make-ups are not given unless you have a Wharton Dean’s Office-approved excuse. For a medical excuse, you must have been admitted to student health or the hospital, or have a doctor’s note explaining that you were incapacitated.

Grading:

The course grade will be based on the following: Exams: 50 percent (25 percent each); Cases: 50 percent (16.7 percent each). While I will not explicitly record your attendance in the class, I reserve the right to use superb or sub-par class participation to help decide grades. This may contribute up to 10 percent of the final grade.

Course Expectations:

- I expect you to be prepared for class. That means: having completed the *required* readings in advance of the lecture and being ready to comment on or discuss the class material.
- I expect you to be willing to participate in class discussions, and to speak up if you’re bewildered.
- I expect you to be physically present for the talks by outside speakers unless you have a conflict with another class.
- I expect that you will not find every topic we cover to be of interest to you, but that you

will be a good sport about it. Students who are considering a career in real estate development, for example, are interested in very different things than students who are considering a career on Wall Street. All the topics we will cover are of interest to someone in the class, but few are of interest to everyone. Please recognize that your classmates and you do not necessarily share the same tastes when I go into depth on a topic that you feel is not especially relevant to you.

Other policies:

- You may not use computers, PDAs, Treos, Blackberries, etc., unless medically necessary. (I apologize if you truly like to take notes on a laptop computer, but past abuses have forced me to this policy.)
- Students must attend the course section in which they are officially enrolled. If you have an unavoidable conflict, check with me (by email) well in advance of the class.
- Whatever seat you choose on the second class meeting (September 10) is yours for the entire semester. Please sit there every class, except during exams, where I will randomly assign new seats.
- Please display name tents.
- The class schedule is an ambitious goal and may not reflect the actual timing, or even sequence, of covering material.
- Be aware that it is the policy of the Real Estate Department that MBA students who take the class pass/fail cannot count the course toward the four credits necessary to complete the real estate concentration.

Getting help:

- Contact me. Do not think that a question is too “basic” to ask me. I am happy to help students understand any material they are having difficulty with. All I ask is that you take a serious stab at it yourself before turning to me. I hold regular office hours, take appointments, and answer questions by email.

Course Schedule

| Date | Topic | Preparation |
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| September 5 | Topic #1: Course requirements, class overview, and overview of real estate markets | <i>Emerging Trends in Real Estate 2007</i> , chapters 1-2. (Available in pdf format on Web Café.) Linneman, chapter 2: “What Is Real Estate?” |
| September 10 | Topic #2: Property-level income; sources, risk, and value | *Linneman, chapter 4: “Property Level Pro Forma Analysis”, pp. 37-46. *Linneman, chapter 5: “Financial Modeling” *Linneman, chapter 7: “The Use and Selection of Cap Rates” Linneman, “Prerequisite I: The Basics of Discounted Cash Flow and Net Present Value Analyses” Linneman, “Prerequisite II: IRR: What It Is and What It Isn’t” |
| September 12 | Topic #3: Debt financing and simple mortgages | *Linneman, chapter 4: “Property Level Pro Forma Analysis”, pp. 50-52. *Linneman, chapter 13: “The Use of Debt and Mortgages” Linneman, chapter 11: “Real Estate Bankruptcy Basics” Linneman, chapter 12: “Should You Borrow?” Linneman, “Prerequisite III: Amortization Fundamentals” Brealey and Myers, <i>Principles of Corporate Finance</i> , chapter 3: “How to Calculate Present Values.” |
| September 17 | Special Monday Class, 12:00-1:20, Zellerbach Auditorium. Sam Zell. “The Legend, the Man, the Grave Dancer.” | |
| September 19 | Topic #4: Appraisals and Evaluating Pro Forms | *BP #1: <i>Nine Abuses Common in Pro Forma Cash Flow Projections</i> *Linneman, chapter 8: “Development Pro Forma Analysis” OPT #1: <i>How Reliable Are Commercial Appraisals? Another Look</i> |
| September 24 | Topic #5: Taxes and Real Estate Case 1 handed out | *Linneman, chapter 4: “Property Level Pro Forma Analysis”, pp. 47-50, 52-57. *Linneman, chapter 16: “Real Estate Exit Strategies.” |
| September 26 | Topic #6: Introduction to leases and the economics of retail malls | *Linneman, chapter 3: “The Fundamentals of Commercial Leases.” OPT #3: <i>Mall Myths</i> OPT #4: <i>The Changing Design of Shopping Places</i> OPT #5: <i>The Evolution of Retailing in the United States</i> |
| October 1 | Topic #7: Debt structures and managing real estate risk | *BP #2: <i>Guide to Real Estate Capital Markets: Participating Debt and Equity.</i> [This article is a bit dry. Do your best to wade through, and don’t worry about the “Parameters” sections.] |

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| | | *Linneman, Chapter 15: “Ground Leases as a Source of Finance.” |
| October 3 | Topic #7: Debt structures and managing real estate risk, continued. Hand out midterm exam review sheet | *Linneman, chapter 17: “Real Estate Private Equity Funds” OPT #2: <i>Real Estate Private Equity Funds</i> First part of Case #1 due before 10 a.m. No discussion. |
| October 8 | Topic #8: Real estate cycles. | *BP #3: <i>Adjustment Mechanisms in Real Estate Markets</i> Linneman, chapter 20: “Real Estate Cycles” Linneman, chapter 9: “Development Feasibility Analysis” OPT #6: <i>Superstar Cities</i> OPT #7: <i>Will We Need More Office Space?</i> OPT #8: <i>Living Downtown</i> OPT #9: <i>Developer: Villain or Hero?</i> OPT #10: <i>(When) Will We Do It Again?</i> |
| October 10 | Midterm Exam 1 | |
| October 15 | NO CLASS, FIP | |
| October 17 | NO CLASS, FIP | |
| October 22 | Case #1 discussion | Remainder of Case #1 due by October 22, 10 a.m. |
| October 24 | Topic #8: Real estate cycles, continued. | |
| October 29 | Topic #9: Securitization of Debt Interests: Commercial Mortgage-Backed Securities Case #2 handed out. | *BP #13: <i>How to Build a Bond</i> *Linneman, chapter 14: “Commercial Mortgage Backed Securities Basics” Linneman, “Supplemental II: A Look at a Real CMBS Issue” |
| October 31 | Topic #9: Securitization of Debt Interests: Commercial Mortgage-Backed Securities, continued | *BP #14: <i>Defaults in Securitized Real Estate Loans</i> OPT #14: <i>The CMBS Market Learns a Lesson: Wall Street is a Two Way Street</i> OPT #15: <i>The Mortgage REITs: Dynamos or Duds?</i> OPT #16: <i>Lending Without a Net</i> |
| November 5 | NO CLASS | |
| November 7 | Topic #10: Equity securitization and the REIT market | *BP #4: <i>REITs for Rookies</i> *BP #5: <i>Basic Valuation of a Real Estate Investment Trust</i> *Linneman, chapter 18: “REITs and Liquid Real Estate” OPT #10: <i>REIT Share Prices and the Declining Relative Importance of Commercial Real Estate</i> OPT #11: <i>Liquid Real Estate</i> OPT #12: <i>REITs as an Alternative Investment in Volatile Financial Markets</i> |

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| November 12 | Case #2 discussion | Case #2 due before 10 a.m., November 12 |
| November 13 | Special Tuesday class, 6:00 – 7:20 p.m. Darren Tangen, Senior Vice President, Colony Capital: “Meadowlands Xanadu.” | |
| November 14 | Topic #10: Equity securitization and the REIT market, continued. | *Linneman, chapter 10: “Real Estate Company Analysis.” *BP #6: <i>UPREITs: A Vehicle for Tax Deferral and Asset Growth</i> *BP #7: <i>Real Estate: Past, Present, and Future</i> *BP #8: <i>Inside the Revolution</i> *BP #9: <i>Forces Changing the Real Estate Industry Forever</i> *BP #10: <i>The Forces Changing Real Estate Forever: Five Years Later</i> *BP #11: <i>The Five Overlooked Features of the Real Estate Capital Markets</i> *BP #12: <i>The Pressure on Public REITs to Grow Larger</i> OPT #13: <i>REITs and Taxes</i> |
| November 19 | Topic #11: Return and Risk in Housing Markets (with a parallel to commercial real estate) Case #3 handed out | *BP #15: <i>Bubble Trouble? Not Likely</i> OPT #17: <i>Assessing High House Prices: Bubbles, Fundamentals, and Misperceptions</i> |
| November 21 | NO CLASS | |
| November 26 | Topic #11: Return and Risk in Housing Markets (with a parallel to commercial real estate) | |
| November 27 | Special Tuesday class, 6:00 – 7:20 p.m., TBA. | |
| November 28 | Topic #12: The rent/own decision in residential and corporate real estate. | Linneman, chapter 19: “Corporate Real Estate Decision Making” |
| December 3 | Case #3 discussion | Case #3 due before 10 a.m., December 3. |
| December 5 | Midterm Exam 2 | |