

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

Finance 397.1 - Investment Theory and Practice

Spring 2010

Tuesday & Thursday 8:00 – 9:20 UTC 1.104, unique #03155
Tuesday & Thursday 9:30 – 10:50 UTC 1.104, unique #03160
Tuesday & Thursday 12:30 – 13:50 UTC 1.104, unique #03165

Professor: Shimon Kogan
GSB 5.132T, Shimon.Kogan@austin.utexas.edu
Class website: Blackboard
Office Hours: Tuesday, 4:00 – 6:00

TAs: Harvey Jing
TA office hours and location: to be determined

Course Description

Finance 397.1 is an introductory survey investments course. The course covers the primary financial securities - stocks (equity), bonds (fixed income and/or debt), and options (derivatives) – and methods for combining these underlying assets into a portfolio (portfolio theory). The first half of the course covers general overview material, portfolio theory, and equilibrium models of capital markets. The second half of the course is devoted to fixed income analysis and derivatives (futures and options). Students will get an opportunity to apply the concepts learned in class through an ongoing group portfolio project.

We will first cover the overall layout of the U.S. financial markets and the financial instruments available in the markets. After this overview we will go directly into the study of portfolio theory and equilibrium models of capital markets. After discussing portfolio construction, we will then look at market efficiency issues and the process of judging portfolio performance. The first half of the course will include a discussion of behavioral finance and its effect on markets. We will ask what may give rise to large price fluctuations, bubbles, and crashes.

Following global trip week and spring break, we will take up the study of fixed income instruments (bonds). We will show how the term structure is derived out of Treasury bonds and discuss the economic content of the term structure. After that, we will develop measures of risk for individual bonds and for fix-income portfolios.

After the fixed income section of the course we take up derivative securities (options, futures, and swaps). The options material will include an analysis of the uses of options to construct various payoff schemes generally unavailable with stocks and bonds, and will

cover the construction and use of option pricing models such as the Black-Merton-Scholes Option Pricing Model and the Binomial Option Pricing Model. Following our study of options we will cover futures contracts, and look at the use of derivative instruments in hedging risk. The course will conclude with a final exam that will be cumulative and will test student's knowledge on all of the material covered in the course.

Course Requirements and Grading

Grades will be based on the student's performance on the three problem sets, the ongoing portfolio project, the final exam, and class participation. The weights on each component of the overall course grade are as follows:

| | | |
|------------------------------|---------------------|-----|
| Portfolio Theory Problem Set | Tuesday, Feb 9 | 15% |
| Fixed Income Problem Set | Tuesday, April 6 | 10% |
| Derivatives Problem Set | Tuesday, April 27 | 10% |
| Portfolio Project | ongoing | 20% |
| Final exam | University Schedule | 35% |
| Class Participation | ongoing | 10% |

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 portfolio assignments or problem sets when they are due you will not be able to make up the assignment or the points.

Problems from the text will be assigned and occasionally discussed in class, but will not be graded. The problems assigned will be useful as study guides for the exam. I will post solutions to the end-of-chapter problems on the blackboard site.

Class Attendance, Participation, and the use of laptop computers in class

I expect you to come to class having read the chapter and readings for the day. If you miss more than four classes without some form of prior approval from me, I reserve the right to drop your grade by one letter grade (e.g., an A drops to a B, an A- to a B-, etc.). If you miss more than six classes, I reserve the right to fail you so that you may take the class again when it is more convenient for you.

You cannot use your laptops in class; it just doesn't seem to work.

Course Materials

The main required text for the course, available at the Co-op, is:

Investments, Bodie, Kane, and Marcus, Seventh Edition, © 2008, McGraw-Hill.

Guest Speakers

I have arranged for three guest speakers to come and provide their perspective as leading practitioners on various investment related topics. Due to the logistics involved in arranging these talks, I will combine sections on the days scheduled for the talks. To minimize conflict with other classes, these talks are scheduled for the late afternoon. Please take a note of these dates to ensure your attendance. We will have question(s) on the final exam related to materials that will be covered exclusively in these talks.

Portfolio Project

Set-up

Student teams of 3-5 members will invest a fictitious \$1,000,000 in 10 stocks and 5 bonds, with \$600,000 invested in stocks (\$60,000 in each stock) and \$400,000 invested in bonds (\$80,000 in each bond). Portfolio teams are encouraged to trade the portfolio over the course of the semester as economic and firm-specific factors change.

Deliverables for the Portfolio Project

- 1) Thursday, February 4 - submit team portfolio selections. Purchase the stocks and bonds for your portfolio through Stocktrak on Friday, January 29. The portfolio selection memo due on the 4th will contain the team's picks – 10 stocks and 5 bonds – and a short paragraph on each of the 10 stock picks explaining why the team believes the stock will perform well over the next three months. You do not need to explain your bond selection, and in fact the TAs will email you a “default” bond position you may use in place of choosing the bonds yourself. The portfolio selection memo will be no longer than five pages.
- 2) March 4, April 1, and April 29 - submit a three to five page memo (five pages max) containing, but not necessarily limited to, the following items:
 - ◆ A table summarizing portfolio performance for the period since the last memo;
 - ◆ A list of trades made, with a brief explanation as to why each trade was made;
 - ◆ Explanation of period results, including identification of the biggest gainer and the biggest loser for the period;
 - ◆ Evaluation of last period's expectations (e.g., performance occurred as expected, or, performance deviated from expectations and why);
 - ◆ Expectations for the upcoming period, including thoughts on general economic conditions and the effect of those conditions on your investments.

- 3) Tuesday May 4 - make a presentation to the class explaining portfolio performance over the semester. You will sell all of your stocks and record your final portfolio value on Friday, April 30. The presentation will replicate a professional presentation (but dress casual) with team members using PowerPoint slides (transparencies preferred, of course).
- 4) Thursday May 6 (last day of class) - (the class after the presentation), each student will submit a memo to me grading their fellow team members on a scale of 1 – 5 (5 = excellent team member, pulled their weight, pleasure to work with, had good ideas, etc.; 1 = was no help at all, difficult to work with, contributed no ideas or analysis, didn't show up to meetings or return emails or calls, etc.), with brief explanation of any score of 1 or 2. These peer-grades will be strictly confidential, so please be honest.

Total points (20) earned on the portfolio project will be assigned as follows:

- ◆ 15 points: portfolio selection memo, periodic update memos, final presentation (3 points for each deliverable)
- ◆ 5 points: portfolio performance (see below)

Individual grades will be allocated in accordance to the average of team member grades (see point 4 above).

Portfolio performance will be evaluated by looking at the ratio between the average daily return and the daily standard deviations of returns. Your objective is to maximize this ratio.

General and Miscellaneous Policies

- Though attendance will not be taken, you are responsible for everything covered or assigned in class. The lectures may depart 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 examinations 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 | CHAPTER |
|--|-----|--------|---|---------|
| <u>FIRST HALF</u> | | | | |
| 1 | Tue | Jan-19 | Class introduction; Financial Instruments | 1, 2 |
| 2 | Thu | Jan-21 | Financial Markets | 3 |
| <u>PORTFOLIO THEORY</u> | | | | |
| 3 | Tue | Jan-26 | Mean-Variance Choice Criteria | 5, 6 |
| 4 | Thu | Jan-28 | Simple two-asset portfolios and the Capital Market Line; Portfolio Math for dealing with N -risky assets | 6, 7 |
| 5 | Tue | Feb-2 | Optimal Risky Portfolios and the Efficient Frontier; Computing Optimal Portfolios Using the Markowitz Selection Model | 7 |
| <u>EQUILIBRIUM AND PRICING MODELS</u> | | | | |
| 6 | Thu | Feb-4 | CAPM <i>(First portfolio memo due)</i> | 9 |
| 7 | Tue | Feb-9 | Market Efficiency <i>Problem Set 1 (Portfolio Theory) DUE</i> | 11, 12 |
| 8 | Thu | Feb-11 | Behavioral Finance | |
| 9 | Tue | Feb-16 | Empirical Evidence on Equilibrium Pricing Models | 13 |
| 10 | Thu | Feb-18 | Portfolio Performance Evaluation | 24 |
| 11 | Tue | Feb-23 | Mutual Funds and Hedge Funds | 26 |
| 12 | Thu | Feb-25 | Price Bubbles | |
| 13 | Tue | Mar-2 | Market Crashes | |
| 14 | Thu | Mar-4 | Guest Speaker Talk 4:00-5:30 <i>(Second portfolio memo due)</i> | |
| <i>GLOBAL TRIP WEEK AND SPRING BREAK</i> | | | | |
| <u>SECOND HALF</u> | | | | |
| <u>FIXED INCOME and DERIVATIVES</u> | | | | |
| 14 | Tue | Mar-23 | Term Structure | 15 |
| 15 | Thu | Mar-25 | Managing Bond Portfolio | 16 |
| 16 | Tue | Mar-30 | Managing Bond Portfolio (cont.) | 16 |
| 17 | Thu | Apr-1 | Option Markets, Instruments, and Payoffs <i>(Third portfolio memo due)</i> | 20 |
| 18 | Tue | Apr-6 | Option Valuation <i>Problem Set 2 (Fixed Income) DUE</i> | 21 |
| 19 | Thu | Apr-8 | Guest Speaker Talk 5:00-6:30 | |

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|----|-----|--------|--|----|
| 20 | Tue | Apr-13 | The Black, Scholes and Merton Model | 21 |
| 21 | Thu | Apr-15 | Futures and Forwards | 22 |
| 22 | Tue | Apr-20 | Swaps and Hedging | 22 |
| 23 | Thu | Apr-22 | Hedging Equity Risk | 23 |
| 24 | Tue | Apr-27 | Active Portfolio Management | 27 |
| | | | <i>Problem Set 3 (Derivatives) DUE</i> | |
| 25 | Thu | Apr-29 | Guest Speaker Talk 5:00-6:30 <i>(Fourth portfolio memo due)</i> | |

WRAP-UP

| | | | | |
|----|-----|-------|--|--|
| 26 | Tue | May-4 | Group Portfolio Presentations | |
| 27 | Thu | May-6 | Last Day of Class - Catch-up/Review and course evaluations <i>(Portfolio Group Peer Evaluations Due)</i> | |

May 10 - 16 FINAL - EVERYTHING (all of the above)