



Bus 35000: Investments

Summer 2010

Professor Ioanid Rosu

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Lectures	Thu 6:00–9:00pm, Gleacher 204 (Sec. 81) Fri 6:00–9:00pm, Gleacher 204 (Sec. 82) Sat 9:00–12:00pm, Gleacher 204 (Sec. 85)
Office Hours	Thu 3:00-4:00pm, or by appointment
Review Sessions	Sat 4:45-6:15pm, Gleacher 200
TA	Yoshio Nozawa, ynozawa@ChicagoBooth.edu

Course Description

This course offers the financial theory and quantitative tools necessary for understanding how stock, bond, and option prices are determined, and how financial assets are used for investment decisions. Topics covered include modeling the relation between risk and return, optimal portfolio selection based on mean–variance analysis, asset pricing models, money management, practical asset allocation, and more. The focus is mainly on common stocks, but fixed income securities (bonds) and derivative securities (options, futures, swaps) are also analyzed.

The course is quantitative and challenging. Rather than delving into the details of current practice, it takes a rigorous and critical view to the process of investing. The aim is to provide the students with a lasting conceptual framework in which to view and analyze investment decisions. At the same time, the course will discuss alternative philosophies of investing, and relate the material to current financial news and to problems relevant to the practitioner.

Prerequisites

Business 30000 (Financial Accounting), 33001 (Microeconomics), and either 41000 (Business Statistics) or 41100 (Applied Regression Analysis). Students are expected to understand the fundamentals of statistics and multiple regression analysis, and to be able to apply these fundamentals using a software package such as Excel or Matlab.

Office Hours, Review Sessions

My office hours are every Thursday, 3:00-4:00pm, in Harper 512. You are welcome to stop by my office if you have any questions. If it is not convenient for you to come during my office hours, feel free to email or call me to set up an appointment. I also encourage you to share with me any comments you might have on the course.

The teaching assistant for this course is Yoshio Nozawa, a PhD student in finance, and a former Booth MBA student. Feel free to contact Yosh with questions regarding the course material, especially those related to the projects and homework assignments. The best way to reach him is by e-mail at ynozawa@ChicagoBooth.edu.

Yosh will hold weekly review sessions every Saturday, 4:45-6:15pm in Gleacher 200, starting on the **first** week of classes (June 19), with the exception of Saturday, July 3rd. These regular review sessions will be recorded and posted on the Booth Portal. Because the Evening MBA sections (81 and 82) start with a one-week lag, I scheduled two make-up review sessions for Sections 81 and 82: one on Saturday, June 26th, 1:30-3:00pm in Gleacher 204; and the other one on Tuesday, July 6th, 6:00-7:30pm in Gleacher 204. In all the review sessions, Yosh will first go over some relevant problems (selected by me), and then he will answer your questions. The sessions are optional, but strongly recommended for those with questions about the course material, assignments, projects, and exams.

Course Web Page

I have set up the course Web page on the University's Chalk system

<http://chalk.uchicago.edu>

To access the web page, you need the University's CNetID and password. In case you don't have these yet, you can claim them at <http://cnet.uchicago.edu>.

Grading

The course requirements are a Midterm exam, a Final exam, six graded Homework assignments, one Case write-up, and a Stock Tracking project. The midterm exam is optional, in that it is only added to the total score if it increases the average. This places the added weight on the final. This will be done automatically by the computer, so there is no need to contact me about it.

Weightings on the various components of the final grade are as follows:

Homework Assignments	20%		
DFA Case Write-up	4%		
Stock Tracking Project	6%		
Midterm	25%	or	0%
Final	45%	or	70%

Class participation is very important. Many of you have useful professional experience that can undoubtedly benefit our class discussions. Do not hesitate to share your experience with the rest of the class!

Exams

The Midterm exam will be held during the first half of the class on Week 5; more precisely: **Thu Jul 22, 6:00–7:20pm** (Sec. 81), **Fri Jul 23, 6:00–7:20pm** (Sec. 82), **Sat Jul 24, 9:00–10:20am** (Sec. 85). The Final exam will be held on **Thu Aug 26, 6:30–9:30pm** (Sec. 81), **Fri Aug 27, 6:30–9:30pm** (Sec. 82), **Sat Aug 28, 9:00–12:00pm** (Sec. 85). Exams are *closed-notes* but you can bring with you a “cheat sheet” created by me (handwritten annotations are allowed), and one additional sheet of paper with your own *handwritten* formulas and notes. You are allowed to bring a scientific or financial calculator. Laptops and cell phones are not allowed.

You may request a re-grade on any exam or assignment. Each re-grade request must be accompanied by a concise written explanation of the request and submitted to me within one week after I distribute graded exams or assignments. The whole exam will be re-graded, so your score can either increase or decrease as a result.

You can take the exams with a different section, if there are enough seats in the room. Otherwise, exam rescheduling requests will not be granted except in extraordinary circumstances.

Homework Assignments and Case Write-Up

Six homework assignments will be given, which consist of problems and several applications to real data. The latter are designed to apply techniques learned in the course to real data in a manner similar to what might be applied in practice. Keep in mind that exam questions will be similar to the assigned homework problems. In determining your total grade for the homework, I will only count **your best five problem sets**.

There will be a case write-up in this course, separate from the homework assignments. Details of the case write-up are to be provided later.

You may do the homework problems and the case write-up in groups that **are not to exceed FOUR people**. (Groups with more than four people will not receive credit.)

Stock Tracking and Investment Project

The purpose of this project is to enhance your understanding of what makes stock prices move and to improve your ability to follow and digest financial news. Moreover, you will manage a portfolio formed with various financial assets, including the stock of a company of your choice.

At the beginning of the quarter, you will choose one company whose stock you will follow throughout the quarter. At the end of the quarter, you will turn in a brief report on how the company has done and why. At the same time, you will manage a portfolio formed with any financial assets you want, including futures, mutual funds, international assets, and options. You will then trade in these assets, and write a report on how your portfolio performed. The portfolio will be managed using Stock-Trak (<http://www.stocktrak.com>). Each student registered in the course will automatically be given a free account on the Stock-Trak webpage.

The work on these reports is to be done **individually**. The reports will be graded. In addition, your portfolios will be ordered according to their realized returns during the quarter, and the best portfolio managers will be announced in the last class session. Don't worry, the performance of your portfolio will not affect your grade.

Honor Code

Students in this course are required to adhere to the standards of conduct in the Honor Code and Standards of Scholarship. Each student shall sign the following pledge on each exam: “I pledge my honor that I have not violated the Honor Code during this examination.” Except for members of your study group, you should not discuss the problems, cases, or exams with other members of this or any other class, or with former BUS 35000 students. In the future, you should not discuss the problems and cases with students then taking BUS 35000. If you are in doubt about whether something is acceptable under the honor code, you should not hesitate to ask me.

Course Materials

- **Required Text**

1. Bodie, Zvi, Alex Kane, and Alan Marcus, *Investments*, McGraw-Hill, 8th Edition, 2009 (BKM).

- **Recommended Texts**

1. Malkiel, Burton, *A Random Walk Down Wall Street*, Norton, 9th Edition, 2007 (RWDWS);

The recommended texts will not be explicitly employed in the course, but provide additional insight into some of the topics covered.

- **Course Packet**

The packet contains the syllabus and some relevant articles from practitioner as well as academic journals. Some of the articles are required and some are optional, as detailed later in the syllabus. I will require you to read only the relevant material that is within your reach. Nevertheless, students planning on a finance career are encouraged to read through the packet in its entirety.

- **Lecture Slides and Handouts**

When presenting the class material, I tend to follow my lecture notes. These notes are not included in the packet, because I often update them with new information shortly before class. I will make these notes available to you before each class.

Practice exams will also be posted on the class web page prior to the exams. I may also periodically hand out current newspaper and magazines articles relevant to the course topic.

Course Outline and Readings

This an *approximate* schedule of topics that will be covered. You should read the corresponding material in the text prior to the lecture. “BKM” refers to the book by Bodie, Kane and Marcus; and “RWDWS” refers to the book by Malkiel. Unless otherwise stated, the listed articles are included in the course packet. Required readings are denoted by **R**, and optional readings are denoted by **O**.

Course Outline and Readings

(Required readings are denoted by “**R**”, optional readings by “**O**”.)

Week One – *Risk and Return; Asset Pricing and Present Value* (June 24/25/19)

- Course Outline and Introduction
- Overview of Financial Markets
- Risk and Return
- Asset Pricing and the Present Value Formula
 - BKM: chapters 1, 2, 3, 5 (**R**: all), chapter 18 (**O**)
 - Course Pack: *Understanding the Financial Data in the Wall Street Journal*, Dow Jones, 1989 (updated 2004) (**O**)
 - Course Pack: *Risk and Return in the 20th and 21st Centuries*, Business Strategy Review, 2000 (**R**)
 - RWDWS: chapters 3, 13 (**O**)

Week Two – *Fixed Income* (July 1/2/June 26)

Problem Set #1 Due (beginning of class)

- Bond Prices and Yields
- The Term Structure of Interest Rates
- Duration Matching and Immunization; Convexity
 - BKM: chapters 14, 15 (**R**: all), 16 (**R**: sections 1, 2)

Week Three – *Asset Allocation; Mean-Variance Analysis* (July 8/9/10)

Part I of Stock Tracking and Investment Report Due (beginning of class)

Problem Set #2 Due (beginning of class)

- Portfolio Theory and Mean-Variance Analysis
- Diversification
 - BKM: chapters 6, 7 (**R**: all)
 - RWDWS: chapter 8 (**O**)

Week Four – *The Capital Asset Pricing Model; Arbitrage Pricing Theory* (July 15/16/17)

****Problem Set #3 Due**** (beginning of class)

- The Capital Asset Pricing Model (CAPM)
- Multifactor Models and Arbitrage Pricing Theory
- The Fama–French 3-Factor Model
 - BKM: chapter 9, sections 13.1–13.3 (**R**); chapters 8, 10, sections 13.4–13.6 (**O**)
 - Course Pack: *A Primer on Arbitrage Pricing Theory*, 1986 (**O**)
 - Course Pack: Fama & French, *The Cross-Section of Expected Stock Returns*, 1992 (**O**)
 - RWDWS: chapter 9 (**O**)

Week Five – *Midterm; Practical Asset Allocation* (July 22/23/24)

****MIDTERM EXAM**** (first half of class)

- Harvard Management Company
- International Investments; Life-Cycle Investing
- The Black and Litterman Model
 - BKM: chapters 24, 25, section 27.3 (**O**: all)
 - Course Pack: *In Praise of Common Sense*, Economist, Jun.22, 2002 (**O**)
 - Course Pack: *Harvard Management Company*, Harvard Business School Case, 2001 (**R**)
 - Course Pack: *Asset Allocation with Hedged and Unhedged Foreign Stocks and Bonds*, 1989 (**O**)
 - RWDWS: chapters 12, 14 (**O**)

Week Six – *Derivatives: Forwards, Futures, Swaps, Options* (July 29/30/31)

****Problem Set #4 Due**** (beginning of class)

- Forwards, Futures, Swaps
- Derivatives Markets
- Options Strategies
 - BKM: chapters 22 (**R**), 23 (**O**)

Week Seven – *Option Pricing; The Black–Scholes Formula* (August 5/6/7)

****Problem Set #5 Due**** (beginning of class)

- Option Pricing: the replicating portfolio method
- Option Pricing: the risk-neutral method
- The Black–Scholes Formula
 - BKM: chapters 20, 21 (**R**: all)
 - Course Pack: Black, *How We Came Up with the Option Formula*, JPM 1989 (**O**)

Week Eight – *Market Efficiency and Anomalies; Behavioral Finance* (August 12/13/14)

****Problem Set #6 Due**** (beginning of class)

- The Efficient Market Hypothesis
- Market Predictability and Random Walks
- Market Efficiency: Event Studies
- Market Anomalies; the Rational vs. Behavioral Debate; Efficiency and Arbitrage
 - BKM: chapter 11 (**R**)
 - BKM: chapter 12 (**O**)
 - RWDWS: chapters 2, 4, 5, 6, 7 (**O**)

Week Nine – *The Money Management Industry; Hedge Funds* (August 19/20/21)

****Case Write-up for DFA due**** (beginning of class)

****Stock Tracking and Investment Report Due**** (beginning of class)

- The Money Management Industry: Pension Funds, Mutual Funds, Hedge Funds
- Long-Term Capital Management
 - BKM: chapters 4, 26 (**R**)
 - Course Pack: *Dimensional Fund Advisors*, Harvard Business School Case, 2002 (**R**)
 - Course Pack: *Ivory-tower Investing*, Institutional Investor, 1998 (**O**)
 - Course Pack: Gladwell, *Blowing Up: How Nassim Taleb Turned the Inevitability of Disaster into an Investment Strategy*, New Yorker, Apr.22, 2002 (**O**)
 - Course Pack: *From Harvard to Hedge Funds*, Bloomberg Markets, Apr. 2004 (**O**)
 - Course Pack: Lewis, *How the Eggheads Cracked*, New York Times Magazine, Jan.24, 1999 (**O**)
 - Course Pack: Cochrane, *New Facts in Finance*, Economic Perspectives, 1999 (**O**)
 - RWDWS: chapters 2, 4, 5, 6, 7, 10, 11; chapter 15 (**O**: all)

Week Ten – *Final Exam* (August 26/27/28)

****FINAL EXAM****