

Graduate School of Business
University of Chicago

Bus 35000: Investments

Winter 2006

Professor Ioanid Rosu

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Lectures	Wed 1:30–4:30pm, HPC 10 (Sec. 02) Tue 6:00–9:00pm, HPC 10 (Sec. 03)
Office Hours	Thu 1:30-3:00pm or by appointment
Review Sessions	Fri 11:45-1:15pm, HPC 10
TA	Marlena Lee, mlee5@ChicagoGSB.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, 1:30-3:00pm. 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 Marlena Lee, a Ph.D. student in Finance. Feel free to contact Marlena with questions regarding the course material, especially those related to the projects and homework assignments. The best way to reach her is by e-mail at

mlee5@ChicagoGSB.edu.

Marlena will hold weekly review sessions every Friday, 11:45-1:15pm in HPC 10, starting on the first week of classes. In those sessions, she will first go over some relevant problems and calculations, and then 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, eight graded Homework assignments, one Case write-up, and a Tracking and Investment project. You will have the option to drop the Midterm in favor of more weight on the Final exam. Weightings on the various components of the final grade are as follows:

<u>Method A</u>			<u>Method B</u>	
Problem Sets	21%		Problem Sets	21%
Case Write-up	4%		Case Write-up	4%
Tracking & Investment Project	10%	or	Tracking & Investment Project	10%
Midterm	25%		Midterm	0%
Final	45%		Final	70%

In other words the final exam, homework assignments, the case write-up and the stock tracking and investment project are mandatory. The midterm is optional, in that it can only help your grade.

Class participation will help decide letter grades at the margin. 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 exams will be held on **Wed Feb 8, 1:30–2:50pm** (Sec 02), and on **Tue Feb 7, 6:00–7:20pm** (Sec 03). The Final exams will be held on **Wed Mar 15, 3:00–6:00pm** (Sec 02), and on **Tue Mar 14, 6:30–9:30pm** (Sec 03). The final exam will be cumulative, but it will focus more on the issues covered after the midterm. Both exams will be *open-book*. Calculators are permitted, except those with word-processing capabilities.

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.

Homework and Case Assignments

Eight 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 final grade for the homework, I will only count **your best seven problem sets**. Note that the case write-up is separate from the homework assignments.

There will be a case write-up in this course. Details of this assignment will 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.) The case write-up is not to exceed four typed pages.

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 your chosen stock, a wide stock index, and a risk-free asset (bond). You will then trade in these assets, and write a report on how your portfolio performed.

In addition to the three-asset portfolio described above, you will be given the option to trade in another portfolio formed with any financial assets of your choice, including futures, mutual funds, international assets, and options.

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.

More details will be given in class and on the course web page.

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 BUS35000 (BUS332) students. In the future, you should not discuss the problems and cases with students then taking BUS35000. 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, 6th Edition, 2005 (**BKM**).

- **Recommended Texts**

1. Malkiel, Burton, *A Random Walk Down Wall Street*, Norton, 8th Edition, 2004 (**RWDWS**);
2. Siegel, Jeremy, *Stocks for the Long Run*, McGraw-Hill, 3rd Edition, 2002 (**SLR**).

The recommended texts will not be explicitly employed in the course, but may 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; “RWDWS” refers to the book by Malkiel; and “SLR” refers to the book by Siegel. 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**.

Week One – *Risk and Return; Asset Pricing and Present Value* (January 3–4)

- 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)
 - BKM, chapter 18 (**O**)
 - Greenleaf, Foster, and Prinsky, *Understanding the Financial Data in the Wall Street Journal*, Dow Jones, 1989 (updated 2004) (**O**)
 - Economist Staff, *Finance: Trick or Treat?*, Economist, Oct.23, 1999 (**R**)
 - Dimson, Marsh, and Staunton, *Risk and Return in the 20th and 21st Centuries*, Business Strategy Review, 2000 (**R**)
 - RWDWS, chapters 5, 13 (**O**)
 - SLR, chapters 1, 2 (pp. 25–34), 5, 6, 9 (**O**)

Week Two – *Fixed Income* (January 10–11)

Problem Set #1 Due (beginning of class)

- Bond Prices and Yields
- The Term Structure of Interest Rates
- Duration Matching and Immunization
 - BKM, chapters 14, 15 (**R**: all), 16 (**R**: sections 1–3)
 - Fabozzi, *The Term Structure of Interest Rates*, Bond Markets, Analysis and Strategies, 1993 (**R**)
 - Economist Staff, *Admiring Those Shapely Curves*, Economist, Apr.4, 1998 (**O**)
 - Kopprasch, *Understanding Duration and Volatility*, Salomon Brothers 1985 (**R**: pp.1–10)

Week Three – *Asset Allocation; Mean–Variance Analysis* (January 17–18)

**Problem Set #2 Due ** (beginning of class)

- Risk and Risk Aversion
- Asset Allocation
- Portfolio Theory and Mean-Variance Analysis
- Diversification
 - BKM, chapters 6, 7, 8 (**R**: all)
 - Barberis, *Asset Allocation—Have Investors Got It Wrong?*, FT, Jun.1, 1997 (**O**)
 - RWDWS, chapter 9 (**O**)
 - SLR, chapters 2 (pp. 36–41), 10 (**O**)

Week Four – *CAPM* (January 24–25)

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

- The Capital Asset Pricing Model (CAPM)
- Applications of CAPM
 - BKM, chapter 9 (**R**)
 - BKM, section 13.1 (**R**)
 - Mullins, *Does the Capital Asset Pricing Model Work?*, Harvard Bus. Review, 1982 (**R**)
 - RWDWS, chapter 10 (**O**)

Week Five – *Practical Asset Allocation* (Jan.31–Feb.1)

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

- Harvard Management Company
- International Investments
- The Black and Litterman Model
- Life-Cycle Investing
 - BKM, chapter 25, 26 (**O**: all)
 - Economist Staff, *In Praise of Common Sense*, Economist, Jun.22, 2002 (**R**)
 - Light, *Harvard Management Company*, Harvard Business School Case, 2000 (**R**)
 - Jorion, *Asset Allocation with Hedged and Unhedged Foreign Stocks and Bonds*, Journal of Portfolio Management, Jul. 1989 (**O**)
 - RWDWS, chapters 12, 14 (**O**)
 - SLR, chapter 21 (**O**)

Week Six – *Midterm; APT* (February 7–8)

- ****Midterm Exam****
- Multifactor Models and the Arbitrage Pricing Theory (APT)
 - BKM, chapters 10, 11 (**R**: all)
 - BKM, sections 13.2, 13.3 (**R**: all)
 - Roll and Ross Asset Management Corp., *APT: Balancing Risk and Return* (**O**)
 - Bower, Bower, and Logue, *A Primer on Arbitrage Pricing Theory*, Midland Corporate Finance Journal, 1986 (**O**)
 - Fama and French, *The Cross-Section of Expected Stock Returns*, Journal of Finance, Jun. 1992 (**O**)

Week Seven – *Market Efficiency and Anomalies* (February 14–15)

Problem Set #5 Due (beginning of class)

- Market Predictability
- The Efficient Market Hypothesis; The Random Walk Hypothesis
- Anomalies; Bubbles and Market Crashes
- Behavioral Finance
 - BKM, chapter 12 (R)
 - BKM, sections 13.4, 13.5, 13.6 (O)
 - Malkiel, *Efficient Market Hypothesis*, The New Palgrave Dictionary of Money and Finance (R)
 - Fox, *Is the Market Rational?*, Fortune, Dec.9, 2002 (R)
 - Schwert, *Anomalies and Market Efficiency*, ch.15 in Constantinides et al, *Handbook of the Economics of Finance*, 2003 (O)
 - DeBondt and Thaler, *Anomalies: A Mean-Reverting Walk Down Wall Street*, Journal of Economic Perspectives, 1989 (O)
 - Ritter, *Behavioral Finance*, Pacific-Basin Finance Journal, 2003 (O)
 - RWDWS, chapters 2, 4, 6, 7, 8, 11 (O)
 - SLR, chapters 17, 18, 19 (O)

Week Eight – *Money Management Industry; Forwards, Futures and Swaps* (February 21–22)

Problem Set #6 Due (beginning of class)

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

- Dimensional Fund Advisors
- The Money Management Industry and Performance Evaluation
- Forwards, Futures, and Swaps
 - BKM, chapters 4 (R), 24 (O), 22 (R), 23 (O)
 - Cohen, *Dimensional Fund Advisors*, Harvard Business School Case, 2002 (R)
 - Lappen, *Ivory-tower Investing*, Institutional Investor, 1998 (O)
 - Barber and Leftwich, *The Elusive Butterfly of Superior Returns* (R)
 - Lakonishok, Shleifer, and Vishny, *The Structure and Performance of the Money Management Industry* (O)
 - Donahue, Froot, and Light, *Note on Commodity Futures*, Harvard Business School Case, 1996 (R)
 - Mason, *Financial Futures*, Harvard Business School Case, 1999 (R)
 - RWDWS, chapter 15 (O)
 - SLR, chapter 20 (O)

Week Nine – *Derivatives; Option Pricing* (Feb.28–Mar.1)

Problem Set #7 Due (beginning of class)

- Derivatives Markets
- Option Pricing
 - BKM, chapters 20, 21 (**R**: all)
 - Economist Staff, *Future Perfect*, Economist, Nov.27, 1999 (**R**)
 - Schwartz, *Options and Portfolio Insurance*, Finanzmarkt und Portfolio Management, 1986 (**O**)
 - Black, *How We Came Up with the Option Formula*, Journal of Portfolio Management, 1989 (**O**)
 - RWDWS, Supplement, and Appendix to Supplement (**O**)
 - SLR, chapter 15 (**O**)

Week Ten – *Lessons on Investing; Hedge Funds* (March 7–8)

Problem Set #8 Due (beginning of class)

- Stock Tracking & Investment Discussion
- Securitization; Structured Finance: Asset Backed Securities
- Financial Markets and the Macroeconomy
- Hedge Funds
 - BKM, chapter 17 (**R**)
 - Economist Staff, *The Future of Finance*, Economist, Dec.11, 1999 (**R**)
 - Singer, *Securitization Basics*, ch.2 in Fabozzi, *Accessing Capital Markets Through Securitization*, 2001 (**O**)
 - Economist Staff, *A Blunt Tool*, Economist, Jun.30, 2001 (**R**)
 - Economist Staff, *Hubble, Bubble, Inflation Trouble*, Economist, May 9, 1998 (**O**)
 - Gladwell, *Blowing Up: How Nassim Taleb Turned the Inevitability of Disaster into an Investment Strategy*, New Yorker, Apr.22, 2002 (**O**)
 - Lewis, *How the Eggheads Cracked*, New York Times Magazine, Jan.24, 1999 (**O**)
 - Cochrane, *New Facts in Finance*, Economic Perspectives, 1999 (**O**)
 - SLR, chapters 12, 13, 14 (**O**)

Week Eleven – *Final Exam* (March 14–15)

****FINAL EXAM****