

FINA 221: Investment Analysis and Portfolio Management

(Fall 2003)

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Sessions: L1 and L2

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Class schedule

L1	Tue. and Thu.	10:30 am - 11:50 p.m.	Rm#: 1401
L2	Tue. and Thu.	12:00 pm - 1:30 p.m.	Rm#: 1401

Course description

This course offers *basic* knowledge about investments in financial securities. The key issue to an investor is how to invest her money. To understand the issue, we first introduce some financial instruments and financial markets investors have to rely on. From your previous finance courses, you learned stocks and (government and corporate) bonds. We have also other financial instruments, including derivative securities, to facilitate the investor's investments. How to trade in financial markets is viewed as a practical issue (in this course) so that we briefly introduce it. Given the basic institutional elements, some fundamental concepts and theories will then be studied toward a good understanding of the investor's problem. These include, for example, the concepts of expected return and risk, risk diversification, Portfolio Theory, the CAPM (the Capital Asset Pricing Model) and the APT (the Arbitrage Pricing Theory), Market Efficiency Hypotheses, and some market "anomalies" that are still hotly debated today. Following the above development, we discuss the issue of security analysis (mainly on stocks) in which we investigate whether a firm's stock is *fairly* priced. Active portfolio management critically depends on this type of analysis. These concepts, theories and models are widely applicable in finance. Fixed-income securities and portfolios, however, deserve a special attention in this course. We further study them in the second half of the course (though a more comprehensive treatment of fixed-income portfolio management is offered in another finance course in the department). To hedge risks more effectively in investments, derivative securities (futures and options) are introduced too, around the end of this course. A complete picture of investments will be seen at the end of the course.

If time is allowed, I will also discuss how to evaluate the performances of portfolio managers. In early Oct., I will invite Bonnie Tse, the Vice President of the JF Asset Management Ltd., to give a practical talk on the topic of mutual funds to help you gain some intuition and practical experience on investments. You also need to have some hands-on experience on touching financial data. The database demonstration will help you toward this direction. The major statistical tools used in this course are the computation (and understanding) of the expected value and variance of a random variable (i.e., security return), the correlation between two security returns, and simple linear regression (i.e., OLS, its R^2). A good understanding of the basic statistical concepts would help you substantially in this course. Practically, you will learn how these concepts and regressions can be implemented in MS Excel by using the data retrieved from a financial database, and how the statistical results are interpreted within the context of finance.

Reading materials

1. Textbook

Bodie, Z., A. Kane and A.J. Marcus, **Essentials of Investments** (5th edition), McGraw-Hill, 2003)

2. Supplementary materials

Asian Wall Street Journal

You are encouraged to read the AWSJ. It helps you understand timely financial issues in the (investment) world. It should be interesting to apply the concepts, principles and insights you gain from the course to analyzing these financial issues. It is also helpful in looking for a job in financial industry.

3. Optional readings or references

[1] Leslie S.F. Young & Raymond C.P. Chiang, 1997, *Hong Kong Securities Industry*, The Stock Exchange of Hong Kong Limited.

[2] Robert A. Haugen, 1999, *The New Finance*, Prentice Hall

[3] Robert A. Haugen, 1999, *The Inefficient Stock Market*, Prentice Hall

[4] George Constantinides, Milton Harris, and Rene Stulz, 2001, *Handbook of the Economics of Finance*, Ch17 (Anomalies and Market Efficiency), this is an interesting survey!

The first book offers some details of the financial system in Hong Kong. If you are interested in the financial markets of HK or finding a job in the financial industry in HK, reading this book is rewarding. The second and third books are for casual reading, and show some different views (from what I teach in class) on financial investments. A copy of each of the books will be put into library reserves, so that you can check them out (2 hours) and glance through to determine whether you want to order them from the bookstore (in campus).

4. Getting hands-on experience

You are encouraged to participate in the market simulation game at the website: <http://www.stocktrak.com/index.shtml>. This account gives you US\$100,000 in virtual money and lets you trade in almost 700 stocks at 13 different exchanges from around the world (including Hong Kong). The account gives you the opportunity to apply the material you will learn in this course in a real setting without committing your own money. The registration fee is US\$18.95 (about HK\$148) per account, which must be paid by credit card. Each homework team signs up for one account. At the end of the game, each team needs to submit a brief report (within one page) to describe:

1. What is the goal of your investment or portfolio management?
2. What is your investment strategy (to reach your goal)?
3. Briefly evaluate your portfolio management performance based on your track records?

The top three winners of the game will get some bonus points in your final grades. The report will be accounted as part of your last homework assignment.

5. Background (you should have)

- ◆ You should have basic knowledge about finance. Any courses being equivalent to fina110 or fina111 (in HKUST) is the minimum.
- ◆ Statistical knowledge (minimum): Must understand well random variables, mean, variance, covariance, correlation and simple regression techniques. Please try to have a review by yourself as soon as possible, if you forgot these concepts. They are critically important to your understanding the materials in the course.

6. Exam

- ◆ There are two (comprehensive) exams, mid-term and final, which consist of MC questions, structured problem solving questions and short essay questions.
- ◆ Absence from the exams will *not* be excused except for a serious medical reason (require a doctor's note or letter as a formal proof in this case).

7. Homework

- ◆ You have three or four homework assignments, and are required to work on a team basis. Each team consists of four members. You need to form your team and inform my TA (Ms. Kao) your team members by Sept. 11. Each team will need to submit only **one** write-up for each homework assignment, and all team members receive the same grade for their work.
- ◆ All homework assignments have to be **typed**. If not, your homework won't be graded. Credits will also be given on the basis of the clarity and neatness of your presentation.
- ◆ Some homework assignments require the use of *Microsoft Excel* for analysis. If you have never used Excel, it is strongly recommended that you go through the self-guided Excel Tutorial.
- ◆ All homework assignments have to be submitted on the due dates.
- ◆ Each team must work **independently**. A strong penalty will be imposed on those teams who copy other teams' solutions or whose solutions are allowed to be copied by others. If such a case is found, all the teams involved will receive zero credit on the assignment and may face further disciplinary action.

8. Grading

Homework	30%
Mid-term exam	35%
Final exam	35%

9. Rules of the class

- ◆ Always turn off your mobile phone before entering the class!
- ◆ Class attendance is not compulsory. But if you come, please come to the class on time.
- ◆ Your class participation is invaluable to both your learning and my teaching. Raising and answering questions in class are strongly encouraged.

10. Important dates (tutorial, homework, and exam schedule):

	<i>Date</i>	<i>Tutorial date</i>
<i>Excel Session</i>		Sept. 15 (Rm #: 3211/3212)
<i>HWK#1</i>	Sept 18	Setp. 22 (Rm #: 3598)
<i>HWK#2</i>	Oct. 9	Oct. 20 (Rm # 3598)
<i>Mid-term exam</i>	Oct. 21	
<i>Stock Trading Game</i>		Oct. 27 (Rm#: 3211)
<i>HWK#3</i>	Nov. 13	Nov. 24 (Rm#: 3598)
<i>HWK#4</i>	Dec. 4	Dec. 8 (Rm#: 3598)
<i>Final exam</i>	TBA	

Course outline (tentative)

- Sept. 2 **Overview of the Course**
- Sept. 4 **Investments – Background and Issues**
- Financial vs. real Assets
 - Overall investment process
- Readings: BKM (Chapter 1)
- Sept. 9 **Global Financial Instruments**
- Financial Assets or Securities
 - Stock Indexes
- Readings: BKM (Chapter 2)
The Hong Kong Securities Industry, Chapter 3: Hong Kong's
Financial Markets
- Sept. 11, 16 **Trading Securities**
- Security Exchanges and Markets
 - Trading Arrangements: Orders, Margin Trading, Short Sales
- Readings: BKM (Chapter 3)
- Sept. 18* **Returns on Securities I**
- Probability distribution of returns
 - How to measure (expected) return and risk
- Readings: BKM (Chapter 5)
- [The HWK#1 is due on Sept. 18.](#)*
- Sept. 23 Database demonstration (Compulsory)*
Conducted by Mr. Sam Chu at Library Computer Lab
(LG 1344 on LG1, next to Media Resources)
- Sept. 25 **Returns on Securities II**
- Tradeoff between risk and expected return
 - Portfolios formation and capital allocation line
- Readings: BKM (Chapter 5)
- Sept. 30, Oct. 2 **Efficient Diversification**
- Portfolio mathematics
 - Systematic and firm-specific risk
 - Efficient diversification
- Readings: BKM (Chapter 6)
- Oct. 7 Mutual Funds and Other Investment Companies**
- Open-end and closed-end funds
- Readings: BKM (Chapter 4)
[Invited talk from HKIFA]
- Oct. 9*,14 **Capital Asset Pricing and Arbitrage Pricing Theory**
- CAPM
 - Security Market Line
 - Arbitrage pricing theory
- Readings: BKM (Chapter 7)
[The HWK#2 is DUE on Oct. 9.](#)

- Oct. 16 **Review Session for the Mid-term Exam**
- Answer your questions (pls. bring your questions to class)
 - Brief summary or review of the chapters covered so far.
- Oct. 21*** **Mid-term Examination**
- Oct. 23 **Market Efficiency I**
- Random walk hypothesis
 - Efficient market hypothesis
- Readings: BKM (Chapter 8)
- Oct. 27 **Stock Trading Game - Market Efficiency**
- Location: Stock Trading Lab, Room # 3211
- [Note: We shift the class on Oct. 28 to that on Oct. 27 because of the Trading Lab room was not available on Oct. 28. This class will be held on the tutorial time!]
- Oct. 30 **Market Efficiency II**
- Implication of market efficiency
 - Empirical tests
- Readings: BKM (Chapter 8)
- Nov. 4 **Macroeconomics and Industry Analysis**
- Macroeconomic factors
 - Fiscal and monetary policies
 - Business cycles
- Readings: BKM (Chapter 11)
- [Miss May Cheung, from the HK finance industry, will give the talk.]
- Nov. 6, 11 **Equity Valuation**
- Dividend discount model
 - Constant growth model
 - Shifting growth rate model
- Readings: BKM (Chapter 12)
- Nov. 13*, 18 **Bond Prices and Yields**
- Bond pricing
 - Term structure of interest rates
- Readings: BKM (Chapter 9)
- HW# 3 is DUE on Nov. 13!**
- Nov. 20 **Managing Bond Portfolios**
- Active and passive strategies
 - Duration
 - Active bond management
- Readings: BKM (Chapter 11)
- Nov. 25 **Futures and Options**
- Futures markets and trading
 - Options markets and trading

Readings: BKM (Chapters 14-16)

Nov. 27,2

Portfolio Management

- Performance Evaluation
- Passive and Active Portfolio Management
- Investment Companies

Readings: BKM (Chapter 20)

Dec. 4*

Review session for the final exam

- Answer your questions (pls. bring your questions to class)
- Brief summary or review of the course

HW# 4 is DUE on Dec. 4!

Dec. 11-20

Final Examination (to be announced)