

FINA 221: Fundamentals of Investments I, Spring 2005 L2

Instructor: Assistant Professor Mungo Wilson

Department of Finance, Room 2415, HKUST

Email: mwilson@ust.hk

Tel: 2358-7672

Office hours: 10.30 – 12.00, Tuesdays and Thursdays, room 2302.

Teaching assistant: Zhibo Yuan

Email: fnyzb@ust.hk

Class time: Tuesdays and Thursdays, 12.00 – 13.20 p.m. There will be no classes on either 13th or 18th. The first class will be on 1st February and the last on May 16th.

Location: Room 2302.

Course website: webct.ust.hk, go to FINA221 L2 (my course).

Course description: This course is an introduction to the study of capital markets and finance. We will study and apply basic theories to the valuation of stocks, bonds, derivatives and other financial assets. We will also discuss the empirical performance of these theories. The emphasis will be on intuition rather than formal mathematical treatments, but some mathematics will be unavoidable.

Prerequisites: FINA 111 or equivalent.

Reading material: The principal textbook is *Investments*, 6th edition, by Bodie, Kane and Marcus, (“BKM”), published by McGraw-Hill. This is a very thorough and detailed reference source for US financial markets. Another excellent source of accessible information on capital markets is Jeremy J. Siegel’s *Stocks for the Long Run*, 3rd ed., available from amazon.com. *Triumph of the Optimists* by Elroy Dimson, Paul Marsh and Mike Staunton is a recent comprehensive survey of global capital markets over the past century. Although it is also available from amazon.com, it is rather expensive. The library has a copy, which is reserved for your use.

For coverage of the Hong Kong markets, I recommend *The Hong Kong Financial System*, by Simon Ho, Robert Haney Scott and Kie Wong, 2004, part II only. I will not pay much attention to institutional details between national financial markets, however.

The classes will sometimes be more technical than either of these books, and this technical material will be contained in class notes or assigned readings available on the course website. A full reading list is attached.

Assessment: There will be three problem sets, one midterm exam and one final exam. The problem sets will be a mixture of analytical, numerical and written work. Since this course is part of the Writing and Speaking through the Curriculum program (“WSC”), one of your assignments will receive communications training, feedback and assessment

on your communications skills in English from the Language Centre. You will then have the opportunity to submit a revised draft that I will grade for content. You will also be required to use Excel software and the Reuters stock price database for some of the numerical assignments. The grading breakdown is as follows:

- Written exercises and reports: 30%
- Midterm exam: 20%
- Final exam: 50%

Preliminary course outline

1. Introduction
 - a. Financial assets, markets and institutions in Hong Kong and around the world
 - b. Key concepts: arbitrage, optimality and equilibrium
 - c. States of the world and state prices
 - d. Statistics overview, return and risk
 - e. Expected utility and risk aversion
2. Risk and return
 - a. Mean-variance efficient portfolios and mutual fund theorems
 - b. The CAPM, anomalies and empirical problems
 - c. Multifactor models and style measurement
 - d. Advanced topics: the ICAPM, international asset pricing, investors with non-traded assets and optimal portfolios for long-term investors

Assignment 1

3. Present value relations and efficient markets
 - a. Constant discount rates and random cash flows
 - i. Market efficiency
 - ii. Measuring returns and calculating net present values
 1. Rational expectations and the law of iterated expectations
 2. Rational bubbles
 - iii. The dividend discount model and the Gordon growth model
 - iv. Evidence on market efficiency and portfolio performance evaluation.

Assignment 2

Mid-term exam

- b. Constant cash flows and random discount rates
 - i. Fixed income securities
 - ii. The term structure of interest rates
 - iii. The expectations hypothesis and uncovered interest parity
 - iv. Inflation and bonds
- c. Random discount rates and random cash flows – further reading

Assignment 3: Essay: Why do financial asset prices change?

4. Derivatives
 - a. Futures, forwards and swaps
 - b. Hedging and speculating
 - c. Options and put-call parity
 - d. Some option pricing relationships

- e. The Black-Scholes model
- f. Optimal exercise of American options
- g. Applications of option pricing theory

Final exam

Assignments

Each assignment will contain some analytical problems designed to test your understanding of the material. The basic format will be a simple confidence-building question, a second question which asks you to apply what you have learned, and a third question that is designed to stretch you. Answering the first two questions correctly ensures you a passing grade for that assignment. Sometimes there will be a fourth question asking you to go beyond what we have covered. In addition, there will be some numerical exercises for which you will need to use Excel (but nothing more elaborate) and data from Reuters.

Reuters is an international corporation that provides financial data via dedicated terminals to subscribers. The school provides this service to undergraduates through the library. The library has arranged for several training sessions which are available exclusively to students enrolled in this course. The dates of these sessions are: 1st session: Feb 15 4:00PM to 5:20PM, 2nd session: Feb 15 5:30PM to 6:50PM, 3rd session: Feb 16 3:00PM to 4:20PM, 4th session: Feb 16 4:30PM to 5:50PM, 5th session: Feb 16 6:00PM to 7:20PM. You should attend one session and you can register for a session online at [TBA].

Assignment 3 will ask you to write a short essay (no more than four sides of A4). You will receive feedback on your English communication skills on this piece of written work before you submit a final version for grading.

More on the written assignment

This year I will ask you to write a short essay answering the question “Why do financial asset prices change?” This is often a question asked in investment banks hiring interviews at every level. Your answer should be no longer than four sides of A4, plus figures and graphs, and can include mathematics.

You will have two weeks to complete each assignment after it has been handed out (I will tell you the exact date and time by when it must be returned when I hand it out). You can work in groups of up to four people and submit one answer per group, except when writing the essay. Please ensure your answers are typewritten, not handwritten. When answering the numerical questions, do NOT submit a spreadsheet with thousands of numbers – this will get you a low grade. Write a short, focused answer using numbers where relevant to support your claims. Late returns of assignments will be severely penalized, as not to do so would be unfair to all students who return their work on time.

Midterm and final exam

You can use a calculator and a “cheat sheet” with formulas, limited to two sides of A4 paper. The composition of your cheat sheet is up to you. I will also supply formulas in the exam itself where I consider it desirable. Remember that even if you can’t answer the question completely, demonstrating a clear understanding of the intuition underlying the question is almost as good. The midterm will cover only material taught in class up to that point in the semester, while the exam will ask questions on all of the course material. Obviously, cheating will not be tolerated.

Course readings – I will update these from time to time.

Course textbook

Zvi Bodie, Alex Kane and Alan J. Marcus, *Investments*, 6th ed., 2005, McGraw-Hill.

Recommended books

Jeremy J. Siegel, *Stocks for the Long Run*, 3rd ed., 2002, McGraw-Hill.

Elroy Dimson, Paul Marsh and Mike Staunton, *Triumph of the Optimists*, 2002, Princeton University Press.

Simon Ho, Robert Haney Scott, Kie Wong, *The Hong Kong Financial System*, 2004, Oxford University Press. (Read Part II only.)

Other books

Peter L. Bernstein, *Capital Ideas: The Improbable Origins of Modern Wall Street*, 1992, Free Press. A non-technical, intellectual history of modern finance from the point of view of an investment professional.

John Y. Campbell, Andrew W. Lo and A. Craig MacKinlay, *The Econometrics of Financial Markets*, 1997, Princeton University Press. An advanced graduate-level textbook on empirical finance, now slightly showing its age.

John H. Cochrane, *Asset Pricing*, 2001, Princeton University Press. An advanced graduate-level textbook on asset pricing.

John C. Hull, *Options, Futures and Other Derivatives*, 5th ed., 2002, Prentice Hall. The leading modern textbook on derivatives.

Leslie Young and Raymond Chiang, *The Hong Kong Securities Industry*, 3rd ed., 1997, The Stock Exchange of Hong Kong.

Survey articles

John Y. Campbell, “Asset Pricing at the Millennium”, *Journal of Finance*, August 2000. A non-technical survey for the profession.

John C. Cochrane, “New Facts in Finance”, *Economic Perspectives Federal Reserve Bank of Chicago*, 1999. (See also Part IV of Cochrane’s book, above.)

Introduction

BKM chapters 1 and 2 (skim read)

BKM chapter 6 section 1 and Appendix B

Present value relations and efficient markets

Constant discount rates and random cash flows

BKM chapters 12 and 18

Siegel chapter 1 (skim read)

Lamont, Owen and Richard H. Thaler, “Can the Market Add and Subtract? Mispricing in Tech-Stock Carve-Outs”, *Journal of Political Economy*, 2003.

Random discount rates and constant cash flows

BKM chapters 14-15

Random discount rates and random cash flows

Shiller, Robert S., “Do stock prices move too much to be justified by subsequent changes in dividends?”, *American Economic Review*, 1981. (See for one of the two best graphs in financial economics.)

Campbell, Lo and MacKinlay, chapter 7.

Risk and return

Mean-variance analysis

BKM chapters 6-8

The CAPM and multifactor models

BKM chapters 9-13 and 24.6

Cochrane, “New Facts in Finance” (see above)

Fama, Eugene F. and Kenneth R. French, 1992, “The Cross-Section of Expected Stock Returns”, *Journal of Finance*, 47, 2, 427-465.

Advanced topics

BKM chapter 25

Derivatives

Forwards, futures and swaps

BKM chapters 22-23

Siegel chapter 15 (for the other of the two best graphs in financial economics)

Options

BKM chapters 20-21

Tentative course schedule

Date	Topic	Remarks	
2 nd February	Introduction and statistics review		
7 th February	Financial assets etc		
9 th February	Basic concepts in finance		
14 th February	Portfolio theory		
16 th February	Portfolio theory	Reuters sessions, 15-16 th in library	
21 st February	The CAPM	Assignment 1 handed out	

23 rd February	The CAPM		
28 th February	The CAPM and anomalies		
2 nd March	Multifactor models		
7 th March	Multifactor models		
9 th March	Advanced topics		
14 th March	Market efficiency	Assignment 1 due back. Assignment 2 handed out.	
16 th March	Security analysis		
21 st March	Calculating NPVs		
23 rd March	Calculating NPVs		
28 th March	Portfolio performance analysis and evidence on market efficiency.		
30 th March	Midterm exam		
4 th April	Fixed income securities	Guidance on assignment 3 essay.	
6 th April	The yield curve	Assignment 2 due back. Assignment 3 handed out. WSC class visit about now	
11 th April	The term structure of interest rates		
20 th April	The expectations hypothesis and UIP	Submit first draft of assignment 3 to WSC office	
25 th April	Bond portfolio management		
27 th April	Inflation.	First draft returned to you by WSC office about now	Consultation on written English, WSC office, about now
2 nd May	Futures etc		
4 th May	Futures etc	Assignment 3 due back.	
9 th May	Options		
11 th May	Options		
16 th May	Options		

The final exam will be between 20th and 30th May.

Feedback and professor-student interaction

Please give me feedback at the end of classes or via email, or come to my office hour. Can you understand me? What can we do better? What was useful or interesting? This and future courses will benefit greatly from your comments.

I will always be happy to answer questions on the topics covered in class. However, some questions require quite lengthy answers, and it may not be a suitable use of everybody's time for me to compose answers via email. Therefore, if you have a question, if possible please ask it in class, discuss it with your colleagues or come to my office hour. If you ask me via email, I may not reply but instead bring up the issue in class.