

FINA 221: Fundamentals of Investments I, Spring 2005

Instructor: Assistant Professor Mungo Wilson

Department of Finance, Room 2415, HKUST

Email: mwilson@ust.hk

Tel: 2358-7672

Office hours: Monday, 12-1.55 p.m., to be held in my office until further notice.

Teaching assistant: Samuel Liang

Email: sxliang@ust.hk

Class time: Mondays and Wednesdays, 2.00 – 3.20 p.m. There will be no classes on either 9th February, 28th March or 2nd May. The first class will be on 31st January and the last on May 11th.

Location: Room 1403

Course website: webct.ust.hk, go to FINA221 (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.

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 four 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: 30%
- Final exam: 40%

Preliminary course outline

1. Introduction
 - a. Financial assets, markets and institutions
 - b. Key concepts: arbitrage, optimality and equilibrium
 - c. States of the world and state prices
 - d. Expected utility and risk aversion
2. 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

Assignment 1

- 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 2

Mid-term exam

3. 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 3

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

Assignment 4

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 class on Wednesday 16th February will consist of a training session with Sam Chu. For those of you who would like a more hands-on session Sam has also offered to provide extra help on the same day at 5 pm. I will give you directions in an early class.

Assignment 3 will ask you to write a short discussion (no more than two pages) of the criticisms leveled against academic asset pricing theory by Warren Buffett, America's most successful stock investor. You will receive feedback on your English communication skills on this piece of written work before you submit a final version for grading.

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. 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

These will be closed book, with calculators allowed. All formulas necessary to answer questions will be supplied in the exam question itself. 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.

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.

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

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 one of the two best graphs in financial economics)

Options

BKM chapters 20-21

Tentative course schedule

| Date | Topic | Remarks | |
|---------------------------|--------------------------------------|---|--|
| 31 st January | Introduction and statistics review | | |
| 2 nd February | Financial assets etc | | |
| 7 th February | Basic concepts in finance | | |
| 14 th February | Basic concepts in economics | | |
| 16 th February | Reuters session | | |
| 21 st February | Market efficiency | Assignment 1 handed out | |
| 23 rd February | Calculating NPVs | | |
| 28 th February | Calculating NPVs | | |
| 2 nd March | Evidence on market efficiency | | |
| 7 th March | Fixed income securities | Assignment 1 due back. Assignment 2 handed out. | |
| 9 th March | The term structure of interest rates | | |
| 14 th March | The expectations hypothesis and UIP | | |

| | | | |
|------------------------|-----------------------------|-------------------------|--|
| 16 th March | Inflation and bonds | | |
| 21 st March | Midterm exam | Assignment 2 due back. | |
| 23 rd March | Portfolio theory | | |
| 30 th March | Portfolio theory | | |
| 4 th April | The CAPM | | |
| 6 th April | The CAPM and anomalies | Assignment 3 handed out | |
| 11 th April | Multifactor models | | |
| 13 th April | International asset pricing | | |
| 18 th April | Advanced topics | | |
| 20 th April | Futures etc | Assignment 3 due back | |
| 25 th April | Futures etc | | |
| 27 th April | Options | Assignment 4 handed out | |
| 4 th May | Options | | |
| 9 th May | Options | | |
| 11 th May | Review | Assignment 4 due back | |

The final exam will be during the exam period, 19th-28th May inclusive.

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.