FINA 521: Investment Analysis, MSc Spring 2007 L1

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Class time: Thursdays, 2.00 p.m. – 5.20 p.m.
Location: Room 4219

Course website: webct@ust.hk

Course description: This course is designed to introduce students to the theory and practice of portfolio management and financial asset pricing, with an emphasis on equities. We will discuss how to construct efficient portfolios, the Capital Asset Pricing Model ("CAPM") and its critics, multifactor asset pricing models, stock valuation with the CAPM and derivatives such as options and futures. The course will consist of lectures as well as interactive class discussions of applications of the theory.

An asset pricing theory should state a relationship between an asset's price and its risk, properly understood. Because prices are difficult to compare across time or different assets, it is usually simpler to relate expected return (broadly, the inverse of the asset's valuation) to risk. The theory is then tested against data. This course therefore deals with the following questions:

- What is an asset's risk, properly understood?
- What should be the relationship between this risk and expected return?
- Is this relationship a good description of what we observe or is it routinely wrong?
- If it is (or isn't) wrong, how should an investor behave?

Prerequisites: elementary economics and statistics. We will review some of the most important concepts very briefly in the first session, but you will need to be comfortable with the statistical concepts of mean, variance, covariance and univariate regression, together with the economic notions of risk, return and risk aversion.

Reading material: The principal textbook is *Investments*, 6th edition, by Bodie, Kane and Marcus, ("BKM"), published by McGraw-Hill. Supplemental readings will be available on the course website and handed out in class.

Assessment: You will be assessed on your performance in a mix of class presentations, written reports and problems and a final exam. For the purposes of preparing written work and for class discussions, I recommend that you form into groups of 5-6 (or fewer) and collaborate. Such groups are quite good at punishing free riders, but if you have serious

problems with an individual not contributing, let me know and I will deal with your complaints in confidence. I will give guidance on how to succeed in the written exercises and class discussion.

- Written exercises, reports and presentations: 40%
- Exam: 60%

Preliminary course outline: L1

Date	Topics	Reading	Discussions and exercises	
1st February	• Course outline • Financial assets and capital markets • Concepts review • Rates of return	• BKM chapters 1-3 and 6		
8th February	• Diversification • Efficient portfolios	• BKM chapters 7-8 and 25	• Problem set handed out • Guidance on problem set	
15th February	• CAPM • Multifactor asset pricing models • OLS review	• BKM chapters 9-11 • Fama and French		
1st March	• Stock valuation and the dividend discount model • Efficient markets hypothesis	• BKM chapters 18-19 • Huberman and Regev	• Guidance on valuation assignment	
8th March	• Testing asset pricing models • Excess volatility and predictability • The ICAPM and the equity premium puzzle (if time)	• BKM chapters 12-13	• Problem set due	
15th March	• Derivatives • Hedging with forwards and futures and basis risk • Options, option strategies and volatility	• BKM chapters 20-23		
22nd March	• Financial product and performance evaluation • Present reports	• BKM chapter 24	• Class groups present reports	
29th March	• Final exam			

Cases, discussions, exercises and exams

Problem set

The problem set asks you to think about portfolio diversification and constructing efficient portfolios. The main task will be to use Excel software and real data on asset returns to construct mean-variance efficient portfolios, with and without constraints on leverage and short selling. I provide you with the data. Answers will be due at the end of class on 8th March.

Class reports

The second assignment asks you to find a stock trading on the main board of the Hong Kong Stock Exchange which is likely to be undervalued: the expected excess return implied by its price and your conservative forecast of future earnings is large, given the stock's risk. Each group will present, on 22nd March, a **short** (5 minutes, maximum) report to the class on their stock pick, with slides. I will take your reports (i.e. your slides) and grade them. I will give guidance in class.

Final exam

The last session will consist of a final exam of about 3 hours, which will be open-book.

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.

Name plates

In the first class I will give you a plate with your name on it. Please keep it and bring it to future classes. If you don't bring it, I can't ask you a question and that means you can't impress me and your fellow students, and we can't start a discussion. Classes without discussions are dull and you learn less.

Data and software

At the heart of financial economics lie theories of asset prices and their testable implications. Anyone can test an asset pricing theory: you need to be familiar with Excel, with basic concepts in regression analysis and you need asset price data. HKUST has first-class data resources – you can gain access through the library. The textbook gives lists of free data resources. Two particularly good sources of free data on US stock markets are Kenneth

French's website http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html and Robert Shiller's website http://www.econ.yale.edu/~shiller/ By the end of the course, if you have taught yourself how to download data, put it in a spreadsheet, run a regression and interpret the results as evidence for or against some asset pricing theory (and therefore a method of making or losing money) you will have increased your human capital to a significant degree.

Another excellent resource is Professor John H. Cochrane's website at Chicago University http://faculty.chicagogsb.edu/john.cochrane/research/Papers/index.htm. Everything he writes is worth reading and his slide presentations are for non-specialists.