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FINANCE FOR EXECUTIVES: PART 2

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Course Overview

Foundations of Finance provides an introduction to the key concepts and the associated analytical tools that are the basic building blocks for all financial analysis. These concepts and tools are essential in order to understand the material in later courses, e.g., Risk Measurement and Management, Corporate Finance, but they are also interesting and important in their own right. In this course, we will develop two primary approaches to valuation—discounted cash flow and no-arbitrage pricing—and apply these techniques to value fixed income securities and equities. The course also provides an introduction to debt and equity instruments and markets.

One obvious and critical component of discounted cash flow analysis is the determination of the appropriate discount rate to apply in various contexts. In the context of equity markets, this search for a model of discount rates will naturally take us to a study of risk and return and portfolio choice. The outcome of this journey will be an intuitive derivation of one of the most powerful and famous models in finance—the Capital Asset Pricing Model (CAPM)—and its more recent extensions. Along the way, the course will highlight the role of diversification and the associated classification of risk. In the context of debt markets, we will examine the discount rates implied by the prices of traded bonds—the so called term structure of interest rates—and we will consider what factors might explain the observed patterns. Evidence on changes in these interest rates over time leads naturally to an examination of the associated returns on debt securities and measures of interest rate risk.

Finance, by its nature, is rigorous and quantitative, and the relevant techniques lean heavily on tools and results from statistics and economics. That said, the key concepts are also intuitive. Consequently, the goal of this course is both to teach you how to apply these techniques to solve numerical problems and to give you a firm grasp on the key ideas and insights. In fact, it is often through solving problems that these insights become clear. Given the amount and nature of the material, the course itself is split into two parts to allow you time to absorb everything prior to moving on to more advanced courses. Part 1, was taught in Module 1 in London. Part 2, which covers the remaining material as outlined below, will pick up from where we left off in London (following a brief review of some of the earlier content).

Required Course Materials

The required materials for the course include the following text:

Essentials of Investments (2013), 9th edition, Zvi Bodie, Alex Kane and Alan J. Marcus, McGraw-Hill Irwin, New York.

There are also a few short handouts that will be provided in a reading packet.

In addition, you will need a spreadsheet program (Excel) and a financial calculator (or an App that simulates such a calculator) to complete both in-class exercises and out-of-class assignments. You should bring to class whatever you need to use both Excel and your financial calculator. (These tools will also be used in later courses.)

Pre-Module Preparation and Required Reading

Class time is a scarce resource, and thus we want to preserve as much of it as possible for presenting and discussing more advanced, difficult, and conceptual material. Fortunately, much of the background and introductory material can be covered using online learning. Therefore, we have given you access to a series of short online courses on Zoologic. (Please use your triumemba email account to login to Zoologic.) Before Part 1 of the course, I asked you to learn the material covered in the short courses required for the Quantitative Analysis course plus the following:

- Statistics Essentials – v2: Lessons 2-5
- Calculus Essentials: Lessons 1-2
- Finance Essentials I: Lessons 1-2
- Finance Essentials II: Lessons 1-4

You may want to look over this material again before Part 2.

In addition, you should now completely digest the material in the main text, *Essentials of Investments*, by Bodie, Kane, and Marcus (“BKM”) that was covered in Part 1. Specifically, read Chapters 1-3, 5.1-5.3, 6.1-6.2, 10.1-10.4, and 10.6. To make sure that you understand this material, look at the following end-of-chapter problems:

Chap. 1: 1, 2, 5, 7

Chap. 5: 5, CFA Problems 2, 7-9

Chap. 6: 1, 8

Chap. 10: 5, 6, 8, 9, 12, 20, 23, 24, 36-39, 40a-b, 41a-b, 43, CFA Problems 1b-d

Solutions will be provided for all of these problems, but it is very important to try to do the problems before looking at the solutions.

Finally, it is an excellent idea to prepare yourself for Part 2 of the course. Skim the material in the chapters from BKM and the short handouts that are listed on the course outline below. (Don’t worry if a couple of the handouts seem slightly mystifying. They sometimes contain advanced material.) Having some familiarity with the content will make it easier to absorb during the class sessions.

The videos listed below also cover the topic of portfolio theory, which we started in London and will continue in New York. This topic is probably the most difficult in the course, but it is also the most important because it underlies the CAPM and how we think about the tradeoff between risk and return.

This tradeoff in turn determines both the discount rates that firms use for projects and the expected returns that investors receive in the capital markets. You may find it helpful to take a look at these videos before arriving in New York.

Introduction to Modern Portfolio Theory <http://www.youtube.com/watch?v=tYkERfU1stw>

Portfolio Theory: Tutorial 1 http://www.youtube.com/watch?v=IPKtI90f_sE

Portfolio Theory: Tutorial 2 http://www.youtube.com/watch?v=zVsCgU26U_8

Pre-Module INDIVIDUAL Assignments

Problem Set #1—After you are comfortable with the material from Part 1 of the course, complete Problem Set #1 and submit it electronically through Moodle by Friday, 19 December 2014, 23:55 (GMT). More detailed instructions can be found on the assignment. Solutions to this problem set will be distributed shortly after the submission deadline and prior to the administration of the quiz below.

Quiz—Before you arrive in New York you will also be expected to complete a relatively short quiz on this same material. The quiz will be administered through Moodle and will consist of multiple choice questions and short numerical problems. It will be available from Friday, 2 January 2015, 00:05 (GMT) through Monday, 5 January 2015, 23:55 (GMT).

Post-Module INDIVIDUAL Assignment

Problem Set #2—After you are comfortable with the material from Part 2 of the course, you should complete Problem Set #2 and submit it electronically through Moodle by Friday, 23 February 2015, 23:55 (GMT). This problem set will be similar in format to Problem Set #1.

Grading Breakdown

Your grade in the course will be calculated as follows:

Problem Set #1	30%
Quiz	20%
Problem Set #2	50%

SESSION OUTLINE

Topic 0: Introduction

1. Where are we going?
2. Valuation
 - a. DCF valuation—cash flows and discount rates
 - b. No-arbitrage pricing

Topic 1: Portfolio Theory

(BKM: Chapters 5 & 6; Handouts: “Statistics Review”, “Finding the Minimum Variance Portfolio, the Tangency Portfolio, and the Efficient Frontier”)

1. Statistics review
2. Risk and return
3. Portfolio risk and return
 - a. Two risky assets
 - b. Preferences and efficient portfolios
 - c. Adding a risk-free asset
 - d. Multiple risky assets

Topic 2: The CAPM and Beyond

(BKM: Chapter 7; Handout: “Deriving the Security Market Line”)

1. Imposing equilibrium
2. The Security Market Line
3. Applying the CAPM
 - a. Estimating inputs
 - b. Cost of capital & required returns
4. Beyond the CAPM

Topic 3: Equity Valuation

(BKM: Chapter 13)

1. Fundamental value
2. Dividend discount models
 - a. No growth
 - b. The Gordon growth model
 - c. Multi-stage growth
3. Growth

Topic 4: Interest Rate Risk

(BKM: Chapter 11)

1. The yield curve (review)
2. Interest rate sensitivity
3. Duration