Financial Markets and Investments

Course Objectives and Outline

This course is concerned with the choice and evaluation of investment strategies and portfolio management. The goal of the course is to provide you with a deeper understanding and appreciation of the complex questions and tradeoffs facing any investor, along with the necessary theoretical background for critically evaluating investments and understanding the modern literature on investments. That is, the course is designed to provide you with a conceptual framework for analyzing investment decisions; <u>not</u> a recipe for how to make a quick buck on Wall Street.

The topics covered, time permitting, include:

    I.   Portfolio Theory and Asset Allocation

    II.   Portfolio Theory and Asset Allocation: Some Practical Considerations

    III.   Risk and Return in Equilibrium: The Capital Asset Pricing Model (CAPM)

    IV.   The CAPM: Empirical Evidence

    V.   Multi-Factor Models and the Arbitrage Pricing Theory (APT)

    VI.   Performance Evaluation

    VII. Market Efficiency and Return Predictability

    VIII. Options

Course Requirements

The treatment of uncertainty is essential to investment management. Consequently, the course will entail the use of a number of different statistical tools, ranging from the notion of probability distributions through linear regression analysis. The prerequisites for the course are Economics 205D (105D) or Economics 372 (172), and a statistics course, such as Statistics 103, 104, 113 or 114.

Course Evaluation

Your course grade will be based on two group projects, a midterm quiz, and a final exam. The group projects and the midterm quiz are optional. The final is required. The midterm quiz will be held in class on Wednesday, October 16. The final exam is scheduled for Wednesday, December 11, 9:00-11:00am (<u>two hours</u>). You <u>must</u> take the exams at the scheduled times. Topics not covered in class prior to the exams will not be on the exams. Late group projects are <u>not</u> accepted under any circumstances.

Your course grade will be determined by the <u>maximum</u> total score obtained by weighting each of

the group projects by 10%, the midterm quiz by 30%, with the remainder allocated to the score for the final exam:

	Date	Maximum Percent	Minimum Percent
Project #1	TBA	10%	0%
Midterm Quiz	October 16	30%	0%
Project #2	TBA	10%	0%
Final Exam	December 11	100%	50%

For example, if your score for the two group projects are 95 and 90, respectively, your score for the midterm is 80, and your score for the final is 75, your total score for the class would be $0.10·95 + 0.10·90 + 0.30·80 + (1 - 0.10 - 0.10 - 0.30)·75 = 80$. Thus, if you do well on both of the group projects and the midterm, the final will "only" account for 50% of your overall grade. In some cases, I may also add a few <u>bonus</u> points to the total score based on your class participation and contribution to the classroom atmosphere. Since everything, except for the final exam, is optional, the final will be comprehensive.

Contact Info

My office is Room 228E in the Social Science Building (Econ). My email is: boller@duke.edu. My office hours are Tuesdays from 1:30-3:00 pm. If you are unable to see me during my regular office hours, or immediately after class, please email to set up an appointment.

Teaching Assistant

Leonardo Salim Saker Chaves (lsalimsaker@gmail.com) is the teaching assistant for the class. Leonardo will be holding weekly office hours on Tuesdays from 5:00-6:00pm in Room 107 in the Social Science Building (Econ). He will also be available by appointment on Mondays from 6:00-7:00pm in Room 111 in the Social Science Building (Econ). Leonardo should be your first point of contact in terms of questions about the lectures, projects, and end-of-chapter problems.

Texts and Readings

The required text for the course is:

> <u>Investments</u>, Zvi Bodie, Alex Kane and Alan J. Marcus, 11th Edition, New York, NY: McGraw-Hill/Irwin, 2018.

The Bodie, Kane and Marcus (BKM) book provides a very comprehensive treatment of modern investment theory (the 10th Edition of the book from 2014 is very similar, and a lot cheaper). We will not be able to cover the entire book in a single semester course. The book also comes with several online tools and Excel spreadsheets that will be useful for solving some of the homework problems.

The Bodie, Kane and Marcus textbook has a number of concept checks throughout, with solutions at the end of each chapter. It is a good idea to carefully study these. There are also some problems at the end of each chapter. I will be posting suggestive solutions to these on the class website. Even though these problems are entirely optional, from past experience, there is

usually a strong correlation between the time and effort spent on solving these problems and the final exam performance.

I also encourage you to keep abreast of daily events in financial markets by reading the Wall Street Journal or other financial news sources. If you come across something that is relevant for what we have been discussing in class, please bring it up. I will try do the same.

The recent book:

Efficiently Inefficient: How Smart Money Invests & Market Prices Are Determined, Lasse H. Pedersen, Princeton, NJ: Princeton University Press, 2015,

provides an excellent practically oriented discussion of many of the concepts that we are going to cover in the class, and how these ideas form the basis for the strategies employed by some the most successful hedge funds.

Class Website

I will be posting all of my lecture notes and problems on the class website:

www.econ.duke.edu/~boller/Econ.471-571.F19

I will also be posting some additional readings and background material. Some of these additional readings are fairly technical. I do not expect you to fully understand every detail of these.

Class Outline and Reading List

Some of my lectures will follow the BKM book fairly closely. However, for some of the topics, I will provide more in-depth discussions and a different point of view.

Lecture Series 0: Review Material

A) Institutional Background

BKM, Chapters 1-4.

B) Statistical Review

BKM, "Quantitative Review," Appendix A.

Mark Kritzman, "What Practitioners Need to Know about Uncertainty," Financial Analysts Journal, 1991, Vol.47, No.2, pp.17-21.

Mark Kritzman, "What Practitioners Need to Know about Regressions," Financial Analysts Journal, 1991, Vol.47, No.3, pp.12-15.

Lecture Series I: Portfolio Theory and Asset Allocation

BKM, Chapters 5, 6 and 7.

Lecture Series II: Portfolio Theory and Asset Allocation: Some Practical Considerations

BKM, Chapter 8

Lecture Series III: Risk and Return in Equilibrium: The Capital Asset Pricing Model (CAPM)

BKM, Chapter 9 and Section 27.3.

Lecture Series IV: CAPM: Empirical Evidence

BKM, Chapter 13.

Lecture Series V: Multi-Factor Models and the Arbitrage Pricing Theory (APT)

BKM, Chapter 10.

Lecture Series VI: Performance Evaluation

BKM, Chapter 24.

Lecture Series VII: Market Efficiency and Return Predictability

BKM, Chapters 11 and 12.

Lecture Series VIII: Options

BKM, Chapters 20 and 21.