INVESTMENTS AND PORTFOLIO MANAGEMENT

MASTER IN FINANCE

2021 – 2022

CFA Program Partner of CFA Institute

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SYLLABUS

PART I – FINANCIAL MARKET STRUCTURE AND INSTRUMENTS

1. Market Organization and Structure
   1.1. Functions of the financial system
   1.2. Market Classification
   1.3. Financial Instruments
   1.4. Trading in financial markets
   1.5. Security Market Indices

2. Pooled Investments
   2.1. Investment Funds
   2.2. The process of portfolio management

PART II – THEORY OF PORTFOLIO MANAGEMENT

1. Portfolio Concepts
   1.1. Definitions of risk and return
   1.2. Emergence of portfolio theory
2. Mean – Variance Theory (MVT)
   2.1. Assumptions of MVT
   2.2. Combination of two assets
   2.3. Including the risk-free asset
   2.4. Three or more assets
   2.5. Allowing for short selling
   2.6. Investment Opportunity sets
   2.7. Minimum variance portfolios

PART III – SELECTING OF OPTIMAL PORTFOLIOS

PART IV – MODELS OF EQUILIBRUM IN CAPITAL MARKETS

1. The Capital Asset Pricing Model (CAPM)
    1.1. Assumptions of standard CAPM
    1.2. The standard CAPM
        1.2.1. The market portfolio
        1.2.2. The capital market line (CML)
        1.2.3. The securities market line (SML)
    1.3. Limitations of CAPM
    1.4. Non-standards forms of CAPM
    1.5. Empirically testing CAPM

2. The Arbitrage Pricing Theory (APT)
    2.1. Assumptions of APT
    2.2. Estimating and testing APT
    2.3. APT versus CAPM

3. Market Efficiency
    3.1. Forms of efficiency
    3.2. Testing market's efficiency
    3.3. Week versus strong arbitrage

4. Behavioral Finance
    4.1. Anomalies in financial markets
    4.2. Behavioral issues and APT

PART V – EVALUATING THE INVESTMENT PROCESS

1. Portfolio Performance Evaluation
    1.1. Issues of performance evaluation
    1.2. Evaluating performance using CAPM
    1.3. Other measures of performance
    1.4. Problems with performance evaluation

2. Issues in Portfolio Management
    2.1. Portfolio management revisited
    2.2. Styles of portfolio management: Active vs. Passive Management
    2.3. Contemporary issues of Portfolio Management

BIBLIOGRAPHY

Mandatory

Textbooks

Joshi, M. S., and J. M. Paterson (2013). *Introduction to mathematical portfolio theory*. Cambridge University Press.

Elton E.J., M. J. Gruber, S. J. Brown and W. N. Goetzmann (2014), *Modern Portfolio Theory and Investment Analysis*, 9th Edition, Wiley.

Lecture Notes

Gaspar R.M. (2021), *Investments and Portfolio Management*, preprint.

Optional (recommended) readings

Textbooks

Maginn, J. L., Tuttle, D. L., McLeavey, D. W., & Pinto, J. E. (Eds.). (2007). Managing investment portfolios: a dynamic process, 3rd edition, John Wiley & Sons.

CFA Readings 2022

Level I

Study Session 16

1. Reading # 47 – Introduction to alternative investments

Study Session 17

2. Reading # 48 – Portfolio management: an overview
3. Reading # 49 – Portfolio risk and return: part I
4. Reading # 50 – Portfolio risk and return: part II

Study Session 18

1. Reading # 51 – Basics of portfolio planning and construction
1. Reading # 52 – The behavioral biases of individuals
2. Reading # 53 – Introduction to Risk management
3. Reading # 54 – Technical Analysis
4. Reading # 55 – Fintech and Investment Management

Level II

Study Session 14

1. Reading # 35 – Real estate investments
2. Reading # 36 – Private equity investments
3. Reading # 37 – Introduction to Commodities and Commodity Derivatives

Study Session 15

4. Reading # 38 – Exchange-traded funds: mechanisms and applications
5. Reading # 39 – Using multifactor models
6. Reading # 40 – Measuring and managing market risk
7. Reading # 41 – Backtesting and Simulation

Study Session 16

8. Reading # 42 – Economics and Investment Markets
9. Reading # 43 – Analysis of active portfolio management
10. Reading # 44 – Trading costs and Electronic Markets

Level III

Study Session 1

1. Reading # 1 – The behavioral biases of individuals
2. Reading # 2 – Behavioral finance and investment processes

Study Session 3

3. Reading # 5 – Overview of asset allocation
4. Reading # 6 – Principles of asset allocation
5. Reading # 7 – Asset allocation with real-world constraints

Study Session 9

6. Reading # 19 – Hedge fund strategies
7. Reading # 20 – Asset Allocation to alternative investments

Study Session 10 & 11

8. Reading # 21 – Overview of Private Wealth Management
9. Reading # 22 – Topics in Private Wealth Management
10. Reading # 23 – Risk Management for individuals

Study Session 12

11. Reading # 24 – Portfolio management for institutional investors

Study Session 13

12. Reading # 25 – Trade strategy and execution
13. Reading # 26 – Portfolio performance evaluation
14. Reading # 27 – Investment manager selection

Study Session 14

15. Reading # 28 – Case study in Portfolio Management: institutional
16. Reading # 29 – Case study in Risk Management: private wealth
17. Reading # 30 – Case study in risk management: institutional

ASSESSMENT

Students have the first two weeks of the semester to decide whether or not they wish to enroll in the **continuous evaluation regime**, or if they prefer to be evaluated based upon the **one exam regime**.

Students under the **continuous evaluation regime** are evaluated based upon individual and group assignments and have access to the usual two exam seasons. In the first exam season the final grade is the weighted average of all outcomes (including the first final exam). Continuous evaluation outcomes only count for the second exam season final grade when students fail to pass the course in the first season. I.e. continuous evaluation outcomes do not count when the 2nd seating exam is taken for the purpose of grade increase.

Students under the **one exam regime** have access only to the second exam season and are evaluated only based upon their performance at the second seating exam.

All students are encouraged to *diversify risk* and choose the continuous evaluation regime. Handling all continuous evaluation assignments, students face a variety of different challenges and, thus, learn naturally a large portion of the course material. In addition, real life future tasks related to investments and portfolio management are likely to be similar to the proposed continuous evaluation challenges. So, while studying this curricular unit students also get some real life "experience".

The one exam regime is only recommended for a very particular group of students, namely those who are taking the course of the second time and have already participated in the continuous evaluation tasks in a previous year, or working students who feel they do not need the market experience. But do not forget … it is your choice, thus, your risk!

Continuous evaluation regime

Students who decide to enroll in the continuous evaluation regime, should do so by sending an e-mail with to their Professor till **30th September 2021** with the following information: (i) name of the groups, (ii) name, e-mail and phone of each student belonging to that group.

Each group must have between 3 to 5 students <u>at all times</u>. The Professor may assign additional members to Groups with less than 5 students.

The <u>continuous regime</u> is based upon:
- ◦ Simulation Game (group) - SG (10%)
- ◦ Empirical Assignment (group) - EA (25%)
- ◦ CFA-style online Quiz Questions (individual) -QQ (15%)
- ◦ First Final Exam (individual) – 1st FE (50%*)

The first season final grade (1st Grade) is computed as

$$\textbf{1st Grade = 0.1 x SG + 0.25 x EA + 0.15 x QQ + 0.5 x 1st FE}$$

* it is, nonetheless, still required a minimum of 8 points (out of 20) at the final exam.

The second season final grade (2nd Grade) is computed:

- If the student had a 1st Grade <10, then
  $$\textbf{2nd Grade = max (0.1 x SG + 0.25 x EA + 0.15 x QQ + 0.5 x 2nd FE ; 2nd FE)}$$

- If the student had a 1st Grade >=10, then

  $$\textbf{2nd Grade = 2nd FE}$$

One exam regime

All students that do not enroll in the continuous evaluation regime till September 30 2021, automatically chose the one exam regime.

Students who decide to enroll in the one exam regime can only attend the second seating final exam (2nd FE), their final grade will simply be:

$$\textbf{Grade = 2nd FE .}$$

SCHEDULE

IPM students are divided into two slots – class S12 and class S42. In this course there are both regular LECTURES and TUTORIALS.

LECTURES are of 3h per week -- <u>for Class S12 on Thursdays from 14h to 17h, and for Class S42 on Tuesdays from 14h to 17h</u>. LECTURES are <u>presential (room: AF21, F1)</u>. Students that are not able to be present during lectures can watch the lecture life online via MS Teams (but cannot interact). Lectures are not recorded. All students attending from home must have their <u>cameras always on.</u>

TUTORIALS are of 1.5h per week, always take place <u>online</u> via MSTeams, and are simultaneous to all students (S12+S42) on <u>Fridays, from 14.30h to 16h</u>. All students attending the tutorials must have their cameras always on. Some tutorials may be recorded.

Presential Lectures at ISEG

Health restrictions: Students must: (i) wear face masks all the time in the entire campus (including classrooms), (ii) whenever possible keep physical distance (2 meters) from colleagues, professors and ISEG's staff, (iii) follow any other rules that DGS (the Portuguese Health Authority) may impose during the semester.

Electronic restrictions: When present in classrooms, students should ideally keep all electronic devices (computers, tablets, mobiles, etc.) totally turned off. If absolutely necessary they should at least be in mute mode, with cameras and microphones off, in order not to interfere with the professor's/room's network and devices, crucial to live stream the class to those that cannot be in the campus.

Students that belong to risk groups or feel sick should inform ISEG's administrative staff and should take all classes online.

Online Tutorials

Life stream of Lectures are on MSTeams: check IPM2021 (S12), IPM 2021 (S42) teams.

Online tutorials are also on MS TEAMS: check IPM 2021 Tutorials (S12+S42) team.