Asset Pricing and Financial Markets

ICEF, Higher School of Economics, Moscow

BSc Asset Pricing and Financial Markets, 3rd year

Draft version to be adjusted

Course description

This course is aimed at students who wish to understand how financial markets work and how securities are priced. Using present value techniques, it gives a theoretical treatment of bond and stock valuation including portfolio theory and a development of the Capital Asset Pricing Model. The concept of financial market efficiency is introduced, and evidence for efficiency evaluated. Finally, there is a presentation of derivative pricing using absence of arbitrage arguments. The course is based on lectures, seminars, team work and self-study. “Asset pricing and Financial markets” is a two-semester course designed to prepare students for UOL examination.

Course Objective

The main objective of the course is to provide the conceptual background for valuation of individual financial assets and professional discussion of asset pricing approaches. The course is focused on developing skills in analyzing valuation and pricing behavior on financial markets.

The course aims include:
Develop no-arbitrage condition as a major valuation principle
Provide students with a thorough grounding in asset pricing
Develop students’ skills in applying pricing methods to realistic scenarios.
Provide a critical overview of the research on financial market efficiency.
Allow students to develop an understanding of how securities markets operate

Methods of Instruction

The following methods and forms of study are used in the course:

- Lectures (2 hours a week)
- Classes (2 hours a week)
- Home assignments
- Teachers’ consultations (2 hours per week)
- Self-study
- Current control includes: home assignments, essays and their assessment, participation in classwork and team works
- Intermediate control is based on 2 mid-term exams plus midyear exam in December
- Final exam (end of study year)

Reading List

Required Reading

1. Brealey, Myers. Principles of Corporate Finance.10th Edition (or earlier). (B&M for short)

Supplementary Reading

1. Grinblatt, Titman. Financial Markets and Corporate Strategy. McGraw Hill. 2nd edition 2001 (G&T for short).
2. Copeland T. and Weston J.: Financial Theory and Corporate Policy. 1998

Academic Journal Articles

1. Chen, N-F. 'Some empirical tests of the theory of arbitrage pricing', The Journal of Finance 38(5) 1983, pp.1393–414.
2. Chen, N-F., R. Roll and S. Ross 'Economic Forces and the Stock Market', Journal of Business 59 1986, pp.383–403.
3. Cochrane, J.H. 'Explaining the variance of price-dividend ratios', Review of Financial Studies 5 1992, pp.243–80.
4. Fama, E. 'The behavior of stock market prices', Journal of Business 38(1) 1965, pp.34–105.
5. Fama, E. 'Efficient capital markets: a review of theory and empirical work', Journal of Finance 25(2) 1970, pp.383–417.
6. Fama, E. 'Efficient capital markets: II', Journal of Finance 46(5) 1991, pp.1575–617.
7. Fama, E. and K. French 'Dividend yields and expected stock returns', Journal of Financial Economics 22(1) 1988, pp.3–25.
8. Fama, E. and K. French 'The cross-section of expected stock returns', Journal of Finance 47(2) 1992, pp.427–65.
9. Fama, E. and K. French 'Common risk factors in the returns on stocks and bonds', Journal of Financial Economics 33 1993, pp.3–56.
10. Fama, E. and J. MacBeth. 'Risk, return, and equilibrium: empirical tests', Journal of Political Economy 91 1973, pp.607–36.
11. Jegadeesh, N. and S. Titman 'Returns to buying winners and selling losers', Journal of Finance 48 1993, pp.65–91.
12. Jensen, M. 'Some anomalous evidence regarding market efficiency', Journal of Financial Economics 6(2–3) 1978, pp.95–101.
13. Lakonishok, J., A. Shleifer and R. Vishny 'Contrarian investment, extrapolation, and risk', Journal of Finance 49(5) 1994, pp.1541–78.
14. Lo, A. and C. McKinlay 'Stock market prices do not follow random walks: evidence from a simple specification test', Review of Financial Studies 1(1) 1988, pp.41–66.
15. Poterba, J. and L. Summers 'Mean reversion in stock prices: evidence and implications', Journal of Financial Economics 22(1) 1988, pp.27–59.
16. Roll, R. 'A critique of the asset pricing theory's texts. Part 1: on past and potential testability of the theory', Journal of Financial Economics 4(2) 1977, pp.129–76.

Special Equipment and Software Support

- Laptop, projector, Internet connection
- MS Word, MS Excel, MS PowerPoint

Internet Resources

- ICEF Information system (https://icef-info.hse.ru)
- Virtual Learning Environment (Student Portal) (https://my.london.ac.uk/)

- HSE Library e-resources (https://library.hse.ru/en/e-resources/)

Grading System and Examination Type

Means of student control:

- Home assignments
  - Individual assignments
  - Group work
- Midterm exam 1 (October)
- Midyear exam (December)
- Midterm exam 2 (March)
- Final exam

Examination is in writing.
Sample materials for knowledge assessment are available in ICEF Information system at https://icef-info.hse.ru.

Grades criteria

Grades	Status
0-3	Not passed
4-5	Satisfactory
6-7	Good
8-10	Excellent

Grade Determination

All grades are given initially out of 100. The final grades are also transferred to 10- and 5-points grades

*Fall Semester*****
First term grades are calculated as weighted average with the following weights:
- Exam in December – 45%
- Class Participation** - 10%
- Home assignments*** – 25%
- Midterm exam - 20%

Total – 100%

*Spring Semester*****
Final Course grade is calculated as weighted average with the following weights:
- Final Exam* – 40%
- Class Participation** - 10%
- Home assignments*** - 5%
- Group assignment – 5%
- Midterm exam - 20%
- Fall semester grade - 20%

Total – 100%

* In case of a passing total grade on the 100-point scale, if the student received a low grade for a final exam (<25), final grade is unsatisfactory.

A passing total grade can be assigned only provided that the student attempted the corresponding final exam, even when the final grade on the 100-point scale, before the final exam, is sufficient to obtain a passing grade on the 10-point scale. In case of a failing total grade on the 100-point scale, the lecturer has the right to give a passing total grade on the 10-point scale, if the student received a high grade for a final examination.

** Class participation includes class activity and attendance

*** Includes written and online home assignments weighted with similar weights and one large assignment on the literature that has a weight of 5 small ones.

**** To have a satisfactory mark the cumulative grade for the fall semester and for the spring semester cannot be less than satisfactory. For the fall semester, the resit is necessary if the cumulative mark is lower than satisfactory; for the spring semester the resit and the second (the last one resit) resit could take place in case of unsatisfactory grades.

Retakes

The final total grade after the retake includes the grade for the retake and the initial total grade. The weight of the exam retake grade equals the weight of final exam grade in the initial total grade. If the weighted grade after the final exam retake is a pass, the student receives this weighted grade for the course. If the weighted grade after the final exam retake is unsatisfactory, but the grade for the retake is a pass, the student receives a minimal satisfactory grade for the course

If a student retook the exam after receiving a failing grade based on the result of fall semester assessment, the final total grade for the academic year does not include the results of these retakes, and the final total grade is calculated on the basis of the initial grade for interim assessment.

Course Plan

1. Introduction to the Course. No arbitrage condition as a basic valuation principle.

No arbitrage rule and the principle of tracking (replicating) portfolio. Net present value rule of corporate analysis. The sources of NPV. The consumption choice and the first Fisher separation theorem.

(B&M Ch.1-3 and 11; G&T Ch.1, 9, 11.1)

2. Fundamentals of Bond Valuation

The yield curve. Spot rates and forward rates. Defining forward rate from the yield curve. The term structure of interest rates: theoretical explanation. The role of term structure of interest rates in constructing tracking (replicating) portfolio for Corporate Bonds. Intrinsic value of stand-alone bond. Discounted cash flow valuation of corporate bonds. Corporate bond's types. Bond's covenants: assets covenants, dividend covenants, financing covenants. The influence of covenants over bond's valuation. Bond's yields: promised yield to maturity, realized (horizon yield), promised yield to call. Theorems of bond's pricing. Bond's rating and yields to maturity.

(B&M Ch.4, 23; G&T Ch.2)

3. Fundamentals of Stock Valuation

Types of preferred stock by voting rights, dividend rates and dividend payments. Discounted dividend model (DDM) for preferred (preference) shares. Discounted dividend model for common stock (ordinary shares): the criteria for stable growing company, Gordon constant growth dividend rate model. Multistage DDM: 2 stages dividend growth, negative rate of dividend growth. Growth opportunities value. The limitations of DCF valuation.
(B&M Ch.4; G&T Ch.3)

4. Risk and Expected Return: Principles of Portfolio Analysis

Principles and assumptions of mean-variance analysis. Mean and variance of returns of a risky asset. Portfolio expected returns. Portfolio risk and assets's covariances. Feasible set of assets and the efficient frontier. Capital market line. Two-fund separation.
(B&M Ch.7; G&T Ch.4, 5)

5. Asset Pricing Approaches: CAPM, APT and alternatives

Assumptions for capital asset pricing model. Market portfolio and its derivation. Security market line. Stocks' beta. Empirical evidence and critiques of CAPM. Understanding single-factor and multi-factor model representation. Systematic risk and diversification. Arbitrage price theory. Empirical evidence of multi-factor models and applications in practice.
(B&M Ch.8; G&T Ch.5-6)

6. The role of Efficient Market Hypothesis in Corporate Analysis: Theory and Evidence

Types of information for investor's decision-making. The value of information for the investor. The efficient market hypothesis. Weak, semi-strong, strong form efficiency. Implications of Efficient Market Hypothesis.
(B&M Ch.13; Guide Ch.5)

7. Derivatives Valuation Models

The definition of a derivative contract; how to price derivatives using absence of arbitrage; forwards and futures contracts; pricing forwards on stocks, currencies and commodities; option contracts; practical uses of options contracts; bounds on option premia; option pricing via binomial models and Black-Scholes.
(B&M Ch.20, 22; G&T Ch.7, 8)

Teaching Hours for Topics

No. of topic	Total (hours)	Class (hours)		Self-study
		Lectures	Practice	
1	14	2	2	10
2	36	6	6	24
3	38	6	6	26
4	44	6	6	32
5	48	8	8	32
6	66	8	8	50
7	114	20	20	74
Total	**360**	**56**	**56**	**248**