

Asset Pricing: Theoretical Foundations

Teacher: Thierry Foucault

Duration: 24 hours

Number of ECTS credits: 4

Education Level	Period	Language of instruction	Max. Staffing	Teaching Mode
Master	S1	English	25	PRESENTIAL

Deanship Department: FINANCE

Domain : FINANCE & ECONOMICS

Keywords: Asset Pricing, Portfolio choice, Informational efficiency, Pricing Anomalies, Asymmetric Information

SYNOPSIS

This course is an introduction to the modern theory of asset pricing and portfolio theory. It is followed by a course given by Professor I. Zviadadze (“Empirical Asset Pricing”) that focuses on empirical applications and recent developments (e.g., macro-finance).

DETAILED DESCRIPTION

Course overview: This course is an introduction to the modern theory of asset pricing and portfolio theory. It develops foundations for more specialized courses on securities valuation (e.g., derivatives pricing, continuous time finance, empirical estimation of asset pricing models, market microstructure, limits to arbitrage, behavioral finance etc...). Topics covered include (i) CAPM, mean-variance analysis, CCAPM, Arrow-Debreu pricing, factor pricing, arbitrage, (ii) pricing anomalies, (iii) asymmetric information and asset pricing, and (iv) liquidity and asset pricing. It is followed by a course given by Professor I. Zviadadze (“Empirical Asset Pricing”) that focuses on empirical applications and recent developments.

Part 1: Economic Foundations

- Arrow-Debreu model
- Risk sharing
- Stochastic Discount Factor and risk neutral probabilities
- Consumption based asset pricing

Part 2: Mean-variance analysis and the CAPM

- Efficient frontier
- Sharpe ratios
- CAPM

Part 3: Factor Pricing Models and Pricing Anomalies

- Factor pricing models
- Pricing anomalies and alphas
- Liquidity and asset prices

Part 4: Intertemporal models

- Present value relationships
- Excess volatility
- Asset pricing puzzles

Part 5: Asymmetric Information and Liquidity

- Rational expectations equilibria
- Adverse selection and liquidity
- Value of information in securities markets
- Liquidity and asset prices

Pedagogical Objectives: At the end of the course, the students will have acquired knowledge of

- Economics of asset pricing models
- Foundations of main asset pricing models
- Factor pricing models and their interpretation
- Effects of asymmetric information on asset prices and the notion of price informativeness

Course organization

Course Date	Topic	Readings (Optional)
1. Oct. 9	Risk sharing and Asset Prices	Pennachi, Ch.4
2. Oct. 16	Stochastic Discount Factor and Risk Premia	Pennachi, Ch.4
3. Nov. 6	Mean Variance Analysis and Portfolio Choice	Pennachi, Ch.2
4. Nov. 13	Mean Variance Analysis and CAPM	Pennachi, Ch.3
5. Nov. 20	Factor Pricing and Anomalies	Pennachi Ch.3; Fama and French (1996); Fama and French (2004)
6. Nov. 27	Intertemporal Models and Present Value Formula	Pennachi, Ch.6
7. Dec. 4	Intertemporal Models and Present Value Formula	Pennachi, Ch.6
8. Dec. 11	Asset Pricing with Asymmetric Information	Pennachi, Ch.16

TEACHING MATERIALS

Books: There is no required book for the class. A good textbook for this course is: “Asset Pricing” by George Pennachi, Pearson, 2008.

Other useful references are given in the course below.

1. Campbell, J. (2000), “Asset Pricing at the Millenium”, Journal of Finance, 55, 1515-1567.
2. Campbell, J. (2018): “Financial Decisions and Markets”, Princeton University Press.
3. Cochrane J. (2001), “Asset Pricing”, Princeton University Press.

4. Fama, E. and French, K. (1992), "The cross-section of expected stock returns", *Journal of Finance*, 47, 427-465.
5. Fama, E., and French, K. (1996), "Multifactor explanations of asset pricing anomalies", *Journal of Financial Economics*.
6. Fama, E. and French, K. (2004), "The Capital Asset Pricing Model: Theory and Evidence", *Journal of Economic Perspectives*, 18, 25-46.
7. Mc Lean, J. and Pontiff, J. (2016), "Does academic research destroy stock return predictability", *Journal of Finance*, 5-32.
8. "Understanding asset prices", scientific background on the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel, 2013. Available at: http://www.nobelprize.org/nobel_prizes/economic-sciences/laureates/2013/advanced-economicsciences2013.pdf
9. Varian, H. (1987), "The Arbitrage Principle in Financial Economics," *Journal of Economic Perspectives*, 1, 55-72.

Readings for each session are only recommended and not compulsory unless stated otherwise.

Some lectures will be based on slides distributed to students prior to the lecture.

TEACHING METHODS

Lectures based/ Problem sets

WORK AND EVALUATIONS

Work requested: Students will have to prepare 4 homeworks that count toward the final grade (see below)

Assessment of achievement:

Tool/method of evaluation	Duration	Weight in the final grading
Take home assignments	2h each (4 overall)	40%
Final exam	2h	60%

Additional details: Students auditing the course must decide after the third session whether they want to take the final exam or not. They must also hand out assignments.

BIOGRAPHY

Thierry Foucault is Professor of Finance at HEC, Paris and a research fellow of the Centre for Economic Policy (CEPR). He has a Ph.D in Finance from HEC, Paris and he has taught in various institutions, e.g., Universitat Pompeu Fabra (Spain), Carnegie Mellon University (USA), Ecole Polytechnique Fédérale de Lausanne (Switzerland), Studienzentrums Gerzensee (Switzerland), Saïd Business School at Oxford, the Tinbergen Institute (Netherlands). His research focuses on the determinants of financial markets liquidity, the industrial organization of these markets, and their effect on the real economy. It is published in top-tier academic journals such as *Journal of Finance*, *Review*

of *Financial Studies*, or *Journal of Financial Economics*. He has received research awards from the Europlace Institute of Finance, the HEC Foundation, and the Analysis Group award for the best paper on Financial Markets and Institutions presented at the 2009 Western Finance Association (WFA) meetings. He serves or has served on the scientific committees of the Autorité des Marchés Financiers (AMF), the Research Foundation of the Banque de France, the Group of Economic Advisors of the Committee of Economic and Markets Analysis of the European Securities and Markets Authority (ESMA) and was a member the executive committee of the European Finance Association (EFA). He is currently an Associate Editor of the *Journal of Finance*, *The Review of Financial Studies*, and the *Review of Asset Pricing Studies*. He also was co-editor of the *Review of Finance* from 2009 to 2013. He co-authored, with Marco Pagano and Ailsa Röell, "*Market Liquidity: Theory, Evidence, and Policy*", a textbook on market liquidity published by Oxford University Press in 2013.

WAIVER POLICY

None