

## FINANCIAL MARKETS (FM255)

**Course duration:** 54 hours lecture and class time (Over three weeks)

**LSE Teaching Department:** Department of Finance

**Lead Faculty:** Dr Christian Julliard and Dr Andrea Tamoni

**Pre-requisites:** Introductory finance and elementary quantitative methods.

### Course Outline:

This course is about characteristics of financial markets and optimal investment strategies with a strong focus on asset pricing, active portfolio management and risk immunization, portfolio performance evaluation, predictability of returns, dynamic trading strategies, and behavioral finance. We will also consider the recent developments in both theory and practice of cross-sectional asset pricing and evaluation of risky securities. The aim of the course is to provide a thorough understanding of both mechanics and operations of modern financial markets, focusing on the trading and evaluation of securities in equity and bond markets.

### The topics covered in this course include:

- Time-Varying Expected Returns and Market Efficiency
- Optimal portfolio selection (asset allocation and security selection);
- Risk and return in Equilibrium: The CAPM;
- Empirical evidence on the capital asset pricing model;
- Performance of the C-CAPM, the equity premium and risk-free rate puzzles;
- Anomalies and trading strategies (size effect, value premium, momentum, reversal, Betting-Against-Beta);
- Multi-factor models: APT and I-CAPM.
- Optimal investment strategy when privately informed;
- Active portfolio management, insurance, and immunisation;
- Organisation of financial markets and exchanges;
- Determinants of bid-ask spreads;
- Behavioral finance;
- Bond portfolio management and immunisation.

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**Text:**

- Z. Bodie, A. Kane, and A. J. Marcus, *Investments* (9th edition), McGraw-Hill International Edition (2011).
- W.F. Sharpe, *Investors and Markets: Portfolio Choices, Asset Prices, and Investment Advice*, Princeton Lectures in Finance (2008).

These textbooks are supplemented by selected chapters from finance and investments textbooks, and relevant articles published in the finance literature.

**Lectures:** 36 hours **Classes:** 18 hours

**Assessment:** 2 written exams

**Detailed Schedule of Lectures:**

**Week 1**

**Lecture 1: Optimal Portfolio Selection**

- Introduction to the course
- Portfolios and their Statistics
- Optimal Portfolio Diversification
- Two-Fund Separation Theorem
- Optimal Portfolio Diversification with Short-Selling Constraints
- The Capital Allocation Decision
- The Security Selection Decision

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**Core Readings:**

- Chapter 6 – Risk Aversion and Capital Allocation to Risky Assets [*Investments and Portfolio Management* (Bodie, Kane, and Marcus)].
- Chapter 7 – Optimal Risky Portfolios [*Investments and Portfolio Management* (Bodie, Kane, and Marcus)].

**Lecture 2: Review of Asset Pricing (Risk and Expected Return)**

- Valuation of stocks
- Risk and return in Equilibrium
- Mean-Variance Frontier and Beta Representation
- The Capital Asset Pricing Model (CAPM)
- Performance of the CAPM / Betting Against Beta

**Core Readings:**

- Chapter 8 – Index Models [*Investments and Portfolio Management* (Bodie, Kane, and Marcus)].
- Chapter 9 – The Capital Asset Pricing Model [*Investments and Portfolio Management* (Bodie, Kane, and Marcus)].

**Supplementary Readings:**

- Black F., M. C. Jensen, and M. Scholes (1972). *The Capital Asset Pricing Model: Some Empirical Tests*, in M. Jensen ed., *Studies in the Theory of Capital Markets*. Praeger Publishers.

**Lecture 3: C-CAPM**

- The Consumption CAPM (C-CAPM )
- Equity premium and risk-free rate puzzle
- Relation between discount factors, betas and mean-variance frontiers

**Core Readings:**

- Chapter 13 – Empirical Evidence on Security Returns [*Investments and Portfolio Management* (Bodie, Kane, and Marcus)].

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**Lecture 4: Multifactor Models**

- Multifactor Models
- Arbitrage Pricing Theory
- Do multifactor models really perform well?
- The CAPM Revisited
- Conditional vs. Unconditional CAPM

**Core Readings:**

- Chapter 10 – Arbitrage Pricing Theory and Multifactor Models of Risk and Returns [*Investments and Portfolio Management* (Bodie, Kane, and Marcus)].

**Supplementary Readings:**

- Fama Eugene F. and Kenneth R. French (1996), “The Cross-Section of Expected Stock Returns”, *Journal of Finance*, 47, 427-465.
- Roll R., S. Ross, (1984), “The Arbitrage Pricing Theory approach to strategic portfolio planning”, *Financial Analysts Journal*, 40(3), 14–26, 1984.

## Lecture 5: Anomalies and Multifactor Models in practice

- Characteristics vs. Covariances
- Momentum and Long term reversal

### Core Readings:

- Fama Eugene F. and Kenneth R. French (1996), "Multifactor Explanations of Asset Pricing Anomalies", *Journal of Finance*, 51, 55-84.

### Supplementary Readings:

- Chapter 13 Empirical Evidence on Security Returns [*Investments and Portfolio Management* (Bodie, Kane, and Marcus)].
- Davis J., E. Fama, and K. French, "Characteristics, covariances, and average returns: 1929-1997," *Journal of Finance*, 55(1), 2000.
- Fama, Eugene F., and Kenneth R. French, (2006), "Dissecting Anomalies", *Journal of Finance*, 63 (4) 1653-1678.
- Jegadeesh N., S. Titman, "Returns to Buying Winners and Selling Losers: Implications for Stock Market Efficiency," *Journal of Finance*, 48(1), 65-91, 1993.
- J. Lakonishok, A. Shleifer, and R. Vishny (1994) "Contrarian Investment, Extrapolation, and Risk", *Journal of Finance*, 49, 1541-1578.
- Schwert, G. W., "Anomalies and Market Efficiency", *Handbook of the Economics of Finance*, (2003).

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## Week 2

### Lecture 6: Extension of the Fama–French model

- Profitability Anomalies
- Investment Anomalies (asset growth and capital investment)

### Core Readings:

- Fama, Eugene F., and Kenneth R. French (2014), "A five-factor asset pricing model", *Journal of Financial Economics*.
- Novy-Marx, Robert, (2013), "The Other Side of Value: The Gross Profitability Premium", *Journal of Financial Economics*, 108(1), 2013, 1-28.

### Lecture 7: Efficient Markets and History Dependent Trading Strategies

- Weak-form efficiency

- The random walk model
- Tests of return autocorrelation
- Returns to momentum strategies
- Returns to contrarian strategies

#### Core Readings:

- Chapter 11 The Efficient Market Hypothesis [*Investments* (Bodie, Kane, and Marcus)].

#### Supplementary Readings:

- Jegadeesh N., S. Titman, "Returns to Buying Winners and Selling Losers: Implications for Stock Market Efficiency," *Journal of Finance*, 48(1), 65-91, 1993.
- N. Jegadeesh and S. Titman (2001), "Profitability of Momentum Strategies: An Evaluation of Alternative Explanations", *Journal of Finance*, 56, 699-720

#### Lecture 8: Return autocorrelation and behavioural finance

- Psychological biases in behavioral finance
- Underreaction and overreaction
- Long-horizon return autocorrelations
- Explaining evidence of return autocorrelation
- Rational arbitrageurs and mispricing

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#### Core Readings:

- Chapter 12, Behavioural Finance and Technical Analysis [*Investments* (Bodie, Kane, and Marcus)].

#### Supplementary Readings:

- W. F. M. De Bondt and R. Thaler (1985), "Does the Stock Market Overreact?", *Journal of Finance*, Vol. 40, No. 3, pp. 793-805.
- K. Daniel, D. Hirshleifer and A. Subrahmanyam (1998), "Investor Psychology and Security Market under- and Overreactions", *Journal of Finance*, Vol. 53, No. 6, pp. 1839-1885.
- N. Barberis, A. Shleifer, R. Vishny (1998), "A model of investor sentiment", *Journal of Financial Economics*, Volume 49, Issue 3 Pages 307-343.
- H. Hong, T. Lim and J. C. Stein (2000), "Bad News Travels Slowly: Size, Analyst Coverage, and the Profitability of Momentum Strategies", *Journal of Finance*, Vol. 55, No. 1, pp. 265-295.
- J. B. de Long, A. Shleifer, L. H. Summers and R. J. Waldmann (1990), "Positive Feedback Investment Strategies and Destabilizing Rational Speculation", *Journal of Finance*, Vol. 45, No. 2, pp. 379-395.

## Lecture 9: Market microstructure - Institutions and Theory

- Bid-ask spreads
- Liquidity
- Orders
- Exchanges and market structures
- Why do people trade?
- Exchanges and market structures
- Models of market microstructure with asymmetric information:
  - Sequential trading and bid-ask spread
  - Strategic use of private information

### Core Readings:

- Chapter 3, How Securities are Traded [*Investments* (Bodie, Kane, and Marcus)].

### Supplementary Readings:

- Chapter 1 [Market Microstructure Theory (O'Hara)]
- A. Kyle (1985) "Continuous Auctions and Insider Trading", *Econometrica*, 53, 1315-1336.
- L. Glosten and P. Milgrom (1985) "Bid, Ask and Transaction Prices in a Specialist Market with Heterogeneously Informed Traders", *Journal of Financial Economics*, 13, 71-100.

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## Lecture 10: Market microstructure - Empirical Evidence

- Estimating the bid-ask spread
- The bid-ask bounce
- Block trades
- Empirical evidence on institutional trading
- Microstructure effects on asset pricing

### Supplementary Readings:

- R. Roll (1984) "A Simple Implicit Measure of the Bid-Ask Spread in an Efficient Market", *Journal of Finance*, 39, 1127-1139.
- D. B. Keim and A. Madhavan (1995), "Anatomy of the trading process Empirical evidence on the behavior of institutional traders," *Journal of Financial Economics*, Elsevier, vol. 37(3), pages 371-398.
- L.K. C. Chan and J. Lakonishok (1995), "The Behavior of Stock Prices Around Institutional Trades," *Journal of Finance*, Vol. 50, No. 4, pp. 1147-1174.
- T. Chordia, R. Roll, and A. Subrahmanyam (2000), "Commonality in liquidity," *Journal of Financial Economics*, Elsevier, vol. 56(1), pages 3-28, April.

- D. B. Keim and A. Madhavan (1998), "The Cost of Institutional Equity Trades," *Financial Analysts Journal*, Vol. 54, No. 4: 50-69.

### **Lecture 11: Bond markets and the term structure of interest rates**

- Zeros and coupon bonds
- Types of bonds
- Default risk
- Bond pricing
- Bond yields
- The term structure of interest rates
- Forward rates

#### **Core Readings:**

- Chapter 2 (sections 1 and 2), Chapter 14 Bond Prices and Yields [*Investments*(Bodie, Kane and Marcus)]

### **Lecture 12: The term structure of interest rates and Bond portfolio management**

- Theories of the term structure:
- The expectations hypothesis
- The liquidity preference hypothesis
- The market segmentation hypothesis
- Drawing inference from the term structure
- Principles of bond portfolio immunization
- Duration
- Convexity

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#### **Core Readings:**

- Chapter 15, The Term Structure of Interest Rates, Chapter 16, Managing Bond Portfolios [*Investments* (Bodie, Kane and Marcus)]

**Credit Transfer:** If you are hoping to earn credit by taking this course, please ensure that you confirm it is eligible for credit transfer well in advance of the start date. Please discuss this directly with your home institution or Study Abroad Advisor.

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