Investments (60h – 9CFU)

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Course learning objectives and skill acquisition

The course provides students with concepts, theories, and instruments for understanding and realizing investment strategies in the financial market. It mixes the knowledge of rigorous and analytical tools with the analysis and discussion of real data and cases. The course focuses on equity, bond and derivatives markets as core market segments, their functioning and how it is possible to construct and manage portfolio strategies by efficiently combining stocks, bonds and derivatives. It also focuses on measuring risk and performance of such strategies.

Assessment

The course assessment is based on oral exam

Course general schedule

1. The investment environment and process: securities, stock exchanges and financial intermediaries
2. Securities and markets: the buying and selling process, types of orders, price formation, transaction costs, short sales.
3. Market indexes: construction and analysis; Exchange-Traded Funds (ETF)
4. Market efficiency: weak, strong, and semi-strong efficiency, investor behavior and market anomalies
5. Fundamental analysis vs. technical analysis – principles, main techniques, and trading rules
6. Equity portfolio selection and analysis: the process of constructing and analyzing efficient portfolios; CAPM and factor models; investment and portfolio management strategies (passive vs. active strategies, growth vs. value strategies, fundamental vs. technical strategies, momentum strategies, tax efficient strategies)
7. Evaluation of portfolio performance and risk:
    - Return measurement: TWR vs. MWR; one period vs. multiperiod
    - Risk measurement: absolute, downside, relative risk
    - Risk and return measures when returns are not normally distributed
    - Risk-adjusted measures of performance
    - Assessing skills: stock selection vs. market timing; distinguishing skill from luck
    - Performance attribution procedures
8. Bond analysis and portfolio management strategies:
    - Bond market
    - Valuation of standard, convertible, callable and other structured bonds
    - Yield curve, term structure theories, and empirical evidence
    - Determinants of yield spreads and default prediction models

- Bond portfolio management: indexing strategies, interest rate anticipation strategies, credit risk strategies.

9. Asset management industry (investment firms and mutual funds): categories, strategies, fees, performance; hedge funds

Teaching material

Teaching material can be downloaded by joining the Teams group dedicated to the course

Textbooks

Bodie, Z., Kane, A., Marcus, A. J., (last edition), ***Investments****, International Edition, McGraw-Hill.*

Additional readings

Additional material will be provided by the instructor during the course

Detailed teaching agenda

Lecture #1: Introduction to the course: book, exam, program

Lecture #2: Mutual funds, open- and closed-end funds, investment companies, premium and discount in closed-end funds, cost of investing in mutual funds; hedge funds

Lecture #3: Cost of mutual funds in Italy; ETFs and how they work

Lecture #4: Introduction of return and risk measures; property of normally distributed returns and limits of traditional risk measures in case of skewness and kurtosis

Lecture #5: Analysis of risk and return of the last 100 years of US stock exchange; forecasting stock returns over the long-term and the problem of lognormally distributed returns

Lecture #6: Efficient Market Hypothesis and its implications; different forms of efficient market; event studies; the role of active and passive funds when markets are efficient

Lecture #7: Problems in verifying market efficiency (magnitude issue, selection bias and lucky event issue) and ways of testing marker efficiency: momentum effect, reversal effect, price drift, small firm effect, P/E effect, book-to-market ratio effect and other anomalies

Lecture #8: Behavioral explanations of market anomalies: errors in information processing e limits to arbitrage; framing, affect, conservatism, overconfidence, prospect theory, mental accounting

Lecture #9: Some examples of limits to arbitrage and the main tools of technical analysis: moving averages, relative strengths, Elliot waves, breadth, trin, etc.

Lecture #10: Application of some technical analysis tools by Excel

Lecture #11: Explanation of Refinitiv Eikon and Yahoo Finance! for conducting technical analysis

Lecture #12: Tests of CAPM: Lintner test, Black-Jensen-Scholes test, Fama-French tests and Jagannathan-Wang test; introduction to multifactor models with labor income and credit spread

Lecture #13: Multifactor models and their testing; Fama-French three-factor model and possible explanations of the value and size effect

Lecture #14: Liquidity as risk factor; Pastor and Stambaugh's models; Amihud's illiquidity measure; liquidity beta; possible explanations of equity risk premium puzzle

Lecture #15: Application with real data of cross-sectional tests of CAPM; analysis of the efficiency of the market portfolio
Lecture #16: Term structure of interest rates: zero-coupon yield curve, par yield curve and on-the-run yield curve; forward rates and future short rates; liquidity premium
Lecture #17: Dependence of yield curves and changes in yield curves: horizontal shifts and changes in convexity and slope; interest rate risk: price and reinvestment risk and how they interact with each other and affect the value of a bond portfolio
Lecture #18: Duration, convexity, and immunization of bond portfolios
Lecture #19: Characteristics and valuation of callable and putable bonds
Lecture #20: Teamwork on valuation of callable bonds and immunization strategies
Lecture #21: Introduction to convertible bonds valuation
Lecture #22: A real case of convertible bond valuation with binomial tree approach
Lecture #23: Passive and active bond portfolio strategies: immunization, indexation, and swapping strategies
Lecture #24: Portfolio performance evaluation; money- and time-weighted returns
Lecture #25: Risk-adjusted performance measures: Sharpe, Treynor, MM2, alpha, etc.
Lecture #26: Style analysis, the role of market timing and security selection in explaining fund performance
Lecture #27: Risk-adjusted performance ratios with changing portfolio composition; index manipulation; market timing; performance attribution procedures
Lecture #28: Portfolio selection with the Treynor-Black model
Lecture #29: Portfolio selection with the Black-Litterman model
Lecture #30: Recap exercises