

## **JEM092 Portfolio analysis and investment management**

### Topics for examination

1. Basic concepts of expected utility analysis: expected utility function, St Petersburg paradox, measures of risk aversion, decision-making in risk-return space, risk-return paradox.
2. Properties of the investment opportunity set: shape of the opportunity set with respect to correlation among risky securities, efficient and inefficient frontier, market portfolio.
3. Capital Asset Pricing Model: capital and security market lines, coefficient beta, two-funds separation theorem.
4. Extensions of CAPM: zero-beta CAPM, Roll's critique, different risk-free borrowing and lending rates.
5. Single-index model: historical and fundamental beta, portfolio diversification, systemic and nonsystemic risks.
6. Techniques of passive portfolio management: index matching, immunization of bond portfolio, cash flow matching.
7. Techniques of active portfolio management: quest for alpha, beta trading, bond switching.
8. Mixed techniques of portfolio management: contingent immunization, stock-bond portfolio insurance.
9. Securitization: building blocks of securitization, sequential structures, subordination structures, pros and cons of securitization.
10. Measurement of portfolio performance: money-weighted and time-weighted rate of return, measures adjusted for portfolio risk, Fama decomposition.
11. Value at risk: definition of VAR, historical approach, parametric approach, Monte Carlo simulation.
12. Linear and non-linear risk: definitions, examples of financial instruments.
13. Analysis of credit spreads: risk-neutral probabilities of default, loss given default, historical probabilities of default, mortality and survival rates.
14. Credit at risk: definition and shortcomings of CaR, CaR for individual bond, CaR for two bonds portfolio.