Advanced methods for risk management

ECTS : 6

Description du contenu de l'enseignement :

Session

1. Market risk and the definitions of "price", "risk factor" and "sensitivity"
2. Risk factors and risk mapping for linear, non linear and structured products
3. Spread risk single name (CSR risk): bond and CDS spread
4. Credit risk models: structural and intensity based models
5. Correlation risk and copula functions
6. Modern Portfolio Theory and Risk Model Review: from CAPM to advanced Statistical Multi Factor risk model
7. Top Level and Position based risk indicators for Risk Analysis and Risk Management
8. Advanced Risk measures: Tail Risk and Asymmetrical Risk - VaR and ES with Monte Carlo Approach
9. Risk & Performance Attribution: Position Based vs Risk Based - Factor Based performance Attribution
10. Portfolio Construction and Optimization
11. Final Exam

Compétence à acquérir :

At the end of the course the student is familiar with the main principles and tools of market risk analysis and the hedging techniques. She/He is able to design a process of market risk measurement and reporting, and to make market risk management decisions. Risk management will be examined from both a sell-side and buy-side perspective.

Mode de contrôle des connaissances :

The numerical grade distribution will dictate the final grade. The passing grade for a course is 10/20. **Class participation:** Active class participation - this is what makes classes lively and instructive. Come on time and prepared. Class participation is based on quality of comments,not quantity. **Exam policy:** In the exam, students will not be allowed to bring any document (except if allowed by the lecturer). Unexcused absences from exams or failure to submit cases will result in zero grades in the calculation of numerical averages. Exams are collected at the end of examination periods.

Bibliographie, lectures recommandées :

1. F. Chauvet, Allocation d'Actifs - Théorie et Pratiques, ch. 5: La Gestion du risque, 2024 2. S. Ross, Return, Risk and Arbitrage, 1976 Additional reading will be provided during the course