

Credit and liquidity risks (coordinator: E. Vannucci)

Course Description:

Credit risk is one of the main topics for Risk Management. We propose many quantitative approaches to model and evaluate this kind of risk with a specific focus on rating system for risk assessment.

Credit risk in banks: measurement, management and pricing. Ways to transfer credit risk and their implications: credit derivatives and securitization.

We propose a survey of the most common mathematical models to describe liquidity risk.

Liquidity risk and interest rate risk in the banking book: the asset and liability management model.

Objectives:

- Skills: quantitative analysis of rating system, models for retail credit risk, quantitative approach to liquidity risk. Develop understanding and application of the tools for credit, liquidity and interest rate management
- Knowledge: Analyze the different approaches to measuring and control credit, liquidity and interest rate risks. Understand the main implications of the management techniques and models. Markov chains model for the rating system.
- Attitudes: Understanding the effect of credit and liquidity risks for Risk Management also in terms of interaction with other kinds of risks. Ability to analytically recognize and assess resolutions to the different banking risk exposures

Main Contents:

1. Markov chains properties and applications to credit rating system
2. Mathematical models for retail credit risk.
3. Technical and operating aspects of credit and liquidity risk management processes in bank
4. A mathematical approach to liquidity risk evaluation