

Credit Risk Management
MSc in Finance and Banking
Athens University of Economics & Business Instructor:
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Aims and objectives:

The aim of this course is to introduce students in modern tools of credit risk management and to evaluate options on credit risky debt. These instruments are very popular among bankers to manage and hedge their position against risky debt. The effective management of credit risk is a critical component of a comprehensive approach to risk management and essential to the long-term success of any banking organisation.

The course is organized as follows. The first section presents standard interest rates models. These are then used in practice to price option or futures on Treasury Bills and Bonds, as well as interest caps and floors. They can also be used to hedge against risky debt. Having introduced the above tools, the second section the course makes an introduction to the credit risk, credit ratings, estimation of default probabilities, calculates the credit risk on debt instruments, presents credit risky bonds, credit default swaps, futures and options on credit default swap spreads, options on swaps, and finally introduces the mortgage-backed securities. The latter can be found very useful for practitioners in the markets for their every day activities, while students will learn all the necessary tools for credit risk management.

Course outline and reading list

1. **Credit Risk**
(Analysis of Credit Risk, Dredit Risk Models, Modeling Default Correlation)
2. **Credit Derivatives**
(Asset Swaps, Total Return Swap, CDS, CDOs, Valuing Credit Derivatives)
3. **Credit Risky Debt**
(Credit Risk Management by Banks, Yield enhancement)
4. **Mortgage-Backed Securities**
(Description of MBSs, Priving of MBSs)
5. **Interest Rate Risk**
(Interest Rate processes and interest rate models)
6. **Interest Rate Derivatives**
(Options/Futures on Treasury Bills and Bonds, caps and floors)
7. **European Swap Options,**
(Swaptions, Swaps with Embedded Options)
8. **Risk Management with Interest Rate Derivatives**
(Trading strategies of Interest Rate options for hedging interest rate risk)

Text Books:

John C. Hull “Options, Futures, & Other Derivatives” Prentice Hall.

Jarrow & Turnbull “Derivative Securities,” South Western.

Antulio Bomfim, “Understanding Credit Derivatives and Related Instruments”, Academic Press Advanced Finance Series

Janet Tavakoli, “Credit Derivatives & Synthetic Structures” Wiley Finance

Chacko, Sjomana, Motohashi, Dessain, “Credit Derivatives, A primer on Credit Risk, Modeling, and Instruments”, Wharton School Publishing

De Servigny A. and Renault O, “Measuring and Managing Credit Risk”, Standard & Poor's Press

Loeffler G. and Posch P.N., “Credit Risk Modelling Using Excel and VBA” , The Wiley Finance Series

Felsenheimer J, Gisdakis P and Zaiser M., “Active Credit Portfolio Management: A Practical Guide to Credit Risk Management Strategies”, Wiley.