

Rating Based Modelling and Stress Testing (8 hours)

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PROGRAM AND AIM OF THE COURSE

The aim of the course is to introduce some basic concepts related to Basel 2 Regulation and IRB approach, in particular development of credit risk models for the estimation of the Expected Loss (PD, LGD, CCF/EAD and Stress Test). The course is divided into four parts:

Part I: Overview of IRB Regulation and credit risk models

The first part provides an overview of the Basel 2 Regulation main concepts, focusing on credit risk and IRB Approach, as well as credit risk models:

- **Overview of Basel 2 Regulation and IRB Approach**
 - ✓ Basel 2 Regulation: general overview and key concepts
 - ✓ IRB Approach: aim and benefits

- **General concepts for credit risk models**
 - ✓ regulatory references
 - ✓ segmentation
 - ✓ default definition
 - ✓ general overview of credit risk models (PD, LGD, CCF/EAD, Stress Test)

Part II: Rating models for SME/Corporate portfolios

The second part provides an overview of the best practice approach for the development of rating models for corporate clients, illustrating all the steps of the development process; the theoretical explanation is integrated with a case study:

- **Rating models development – SME and Corporate portfolios – development process**
 - ✓ introduction
 - ✓ behavioural and application models
 - ✓ possible approaches
 - ✓ overview of statistical model (logistic regression model)
 - ✓ development sample construction
 - ✓ variable transformation and treatment of outliers and missing values
 - ✓ long list construction and univariate analysis: Accuracy Ratio, Default Curve, Power Curve, Hit Rate, “Good/Bad” histogram, average ratios for good and bad, ...
 - ✓ short list selection: performance and correlation analysis
 - ✓ model selection
 - ✓ model performance
 - ✓ model calibration
 - ✓ mapping to master scale

- **Rating models development – SME case study**
 - ✓ long list construction and univariate analysis: Accuracy Ratio, Default Curve, Power Curve, Hit Rate, “Good/Bad” histogram, average ratios for good and bad, ...
 - ✓ short list selection: performance and correlation analysis
 - ✓ model selection
 - ✓ model performance

Part III: LGD and CCF/EAD models

The third part provides a brief overview of the best practice approach for the development of LGD and CCF/EAD models for retail and corporate clients, illustrating all the steps of the development process:

- **LGD models development – development process**
 - ✓ introduction
 - ✓ available approaches
 - ✓ overview of econometric model (multiple linear regression)
 - ✓ overview of Gross LGD approach
 - ✓ Gross LGD calculation
 - ✓ treatment of open defaults
 - ✓ cash-flows discounting
 - ✓ model selection
 - ✓ model performance

- **CCF/EAD models development – development process**
 - ✓ introduction
 - ✓ available approaches
 - ✓ overview of econometric model (multiple linear regression)
 - ✓ CCF/EAD calculation criteria for different products
 - ✓ model selection
 - ✓ model performance

Part IV: Stress Test

The fourth part aims at providing an overview of the approach used for Stress Test models development):

- **Use test and use of credit risk models in the banking process**
 - ✓ introduction
 - ✓ scenarios
 - ✓ macroeconomic factors and their correlation
 - ✓ models estimation

READING LIST

- Oesterreichische Nationalbank (OeNB) and Financial Market Authority (FMA) “*Rating models and validation*”, Vienna, 2004.