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 proving 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**