

Credit Portfolio Management

Key Concepts

A two-day intermediate level workshop on how credit portfolios are managed, modelled and sensitised within the Basel II, Basel III and economic capital frameworks.

TARGET AUDIENCE

Bankers, regulators and analysts who wish to gain insight into the credit portfolio management process, without being modellers themselves. The course is targeted at an intermediate level. Related workshops include: Credit Risk: Introduction to Key Concepts, which provides an introduction to the topic, and Risk Management in Banks and the Capital Implications which provides a broader overview of all risk management areas.

COURSE OBJECTIVES

Participants will be equipped to:

- Identify the key elements of credit risk: probability of default, loss given default and exposure at default
- Evaluate the inter-action of credit risk within a portfolio exposures (especially default correlation), and how these can be measured and quantified
- Review how the main drivers of credit risk are modelled and sensitised
- Understand how credit portfolio modelling is used within firm-wide risk management and regulatory and economic capital process.

CONTENT

CREDIT RISK OVERVIEW

The goal of this section is to teach the fundamental concepts of credit risk

- Traditional and current definitions of credit risk: default and credit migration
- Credit risk for different market participants e.g. bank lender, fixed income investors, CDS counterparty, credit insurer
- Categories of credit risk: lending, issuer, contingent, pre-settlement, settlement, country / transfer, other
- Differing approaches under Basel Framework, US GAAP, IFRS, internal models and market practices (e.g. ISDA agreements).

PORTFOLIO RISK MANAGEMENT

The goal of this section is to review the various techniques used to manage and measure credit risk within a portfolio and to understand the key drivers of credit risk.

Risk Management Strategy

- Portfolio management objectives: balancing risk appetite and diversification to maximise risk adjusted returns
- Diversification, granularity and correlation concepts
- Contagion risk – lessons learned in mature and emerging markets
- Techniques to spread risk: syndication, sub-participation, whole loan sales, credit derivatives, securitisation
- Focus on credit default swaps:
 - Basic structure and uses,
 - Variants: index and basket products
 - Using index tranche products to understand default correlation.
- Practical issues and uncertainties to consider when managing credit risk: liquidity, basis and wrong way risk, hedging Credit Valuation Allowance (CVA) on derivatives.

Measuring Portfolio Risk

- Portfolio credit risk vs. single credit risk
- Credit risk loss distributions: quantifying expected and unexpected losses
- Contrasting credit and market risk measurement

- Key drivers of credit risk:
 - Probability of default: using rating models and rating migration
 - Default correlation: importance and issues with estimation
 - Loss given default: recognition, calculation issues
 - Exposure at default: estimation issues for different risk types.

Case study: How major international banks approach Credit Portfolio Management

CREDIT RISK MODELS

The goal of this section is to review the key types and approaches of credit portfolio models.

Introduction to Credit Portfolio Models

- Basic statistics for risk management:
 - Volatility, correlation, VaR, Monte Carlo simulation
- Use of copula functions to model default correlation.
- Alternative modelling approaches
 - Default models and mark to market / multi-state models
 - Structural and reduced form models
 - Conditional and unconditional models.
- Widely used models: KMV, Credit Risk+, CreditMetrics, CreditPortfolioView, Algorithmics
 - Key features and advantages and disadvantages of each model
 - Who uses what model?

Scenario and Sensitivity Analysis

- Why scenario analysis is necessary and different methodologies
- Role of scenario analysis within the stress testing framework
- Sensitivity of key inputs: probability of default, number of rating scales etc.

Case study: analysing a simple structural Credit Portfolio model

CAPITAL ALLOCATION

Regulatory Framework

- Basel II capital adequacy framework for credit risk:-
 - Rationale for replacing the simple Basel I approach
 - Basel II standardised and internal ratings approaches
 - Basel II credit risk formula and comparison with other models.
- Impact of changes to the framework proposed under Basel III.

Economic Capital:

- Key differences between regulatory (Basel II) and economic capital
- Uses of economic capital and economic value added concepts in a bank
- Relationship between shareholder, regulatory and economic capital.

Case study: calculation and sensitivities under the Basel framework

CONCLUSION

- Role of credit portfolio management: veto rights, advisory or profit centre.
 - Within credit department: controller or adviser
 - Decisions makers: front office credit treasurers
- Lessons learned from and impact of the sub-prime and the Global Financial Crisis.

