
Market Risk

Overview

This course defines key concepts of Market risk measurement and management in a simplified manner. It discusses the mathematics in computing sensitivities and Value-at-Risk (VaR) using examples of commonly traded financial products.

Learning Outcome Statements

- Learn methods of identifying, measuring, analyzing & controlling market risk
- Comprehend basic statistics & their application to market risk
- Get an overview of most commonly traded financial instruments & risks associated with them
- Learn to manage and control risk in a volatile market environment
- Determine risks in trading and accrual (banking) portfolio
- Quantify market risk for commonly traded instruments
- Identify, measure, analyze & control liquidity risk
- Understand the process of regulatory reporting of market risk
- Understand Basel III recommendations & requirements for measuring market risk

Key Contents

- Risk Management Process
 - Rise of derivatives & risk management
 - Risk assessment and management process
 - Various types of risks in financial markets
 - Roles of risk takers/dealers/traders
 - Framework of price risk
 - Development of VaR & its usefulness
 - VaR and financial derivatives
 - VaR and regulatory reporting – Basel II & III
 - Bank's balance sheet composition & risk analysis
 - Risk measurement and accounting
 - Price risk management & limit structure
 - Key risk management controls
- Analytical Framework for Understanding Market Risk
 - Basic statistics in finance
 - Data classification , data analysis
 - Measuring returns
 - Application of statistics in measuring market conditions

- Normal & Log normal distribution
- Volatility
- Risk at portfolio level
- Market Factor Sensitivity and VaR
- Computation of factor sensitivity & VaR
- Bond factor sensitivities for different tenors

- Fixed Income market & Risk Management
 - Concept of zero coupon discount rates and factors
 - Calculation of discount factors
 - Present value of cash-flows
 - Mathematics of zero coupon discount factor
 - Forward rate & its calculation
 - Duration and modified duration
 - Convexity
 - Money markets instruments

- Measurement & Control of Risks in Accrual or Banking Book
 - Understanding Interest Rate Exposure (IRE) and Accrual
 - IRE calculation
 - Re-pricing profiles of balance sheet
 - Interest rate gaps
 - Defeasance time & period
 - IRE / Accrual Limits
 - Basis risk

- Liquidity Risk
 - Objectives of liquidity management
 - Trading liquidity
 - Funding liquidity
 - Balance sheet management
 - Basics of Liability & Asset management
 - Cost of liquidity

- Financial Options and Risk Management
 - Black Scholes option pricing equation
 - Garman Kohlhagen pricing equation
 - Calculation of factor sensitivity of FX option contracts
 - Option hedging
 - Option Greeks
 - Role of Greeks in risk management

- Other Risk Related Topics
 - Model validation process
 - Rate reasonability process
 - Stress testing process
 - Audit and related control process
 - Dealing room policies and practices