

RISK MANAGEMENT

1. Fundamentals of Risk Management
2. Enterprise Risk
3. Liquidity Risk
4. Credit Risk
5. Market Risk
6. Business Risk
7. Operational Risk
8. Early Warning Signs and Crisis Management

FUNDAMENTALS OF RISK MANAGEMENT

Learning Outcome Statements

- Understand the role and importance of risk management in a bank
- Identify the composition and relative importance of the different measures of capital from a regulatory perspective
- Appreciate the concepts of core capital, additional capital requirements for trading books, counterparty risk, liquidity management and leverage
- Appreciate the potential impact on bank's strategy and likely composition of a bank balance sheet resulting from these changes.

Key Contents

Introduction

- Importance of Risk management
- Defining and quantifying risk
 - Credit risk
 - Market risk
 - Liquidity risk
 - Operational risk
 - Others Risks
- Significance of risk groups for different banking businesses
- Economic capital
- Supervisory approach

Credit Risk

- Identifying types of credit risk
- Credit Risk key concepts
 - exposure at default
 - probability of default
 - loss given default

- Value at Risk (VaR) models
- Regulatory requirements; confidence intervals and holding periods, back-testing, stress testing

Operational Risk

- Definitions & sources of operational risk
- Importance of Operational Risk
- Categories Operational risk examples

Liquidity Risk

- Fundamental nature of liquidity risk
- Principles for liquidity management
- stress testing
- contingency planning
- risk tolerance
- liquidity pricing

ENTERPRISE RISK

Learning Outcome Statements

- Essential technical and non-technical elements necessary for establishing the ERM programme
- Key line management elements related to establishing and utilizing risk-based pricing with respect to market, credit and operational risk exposures
- How to set and execute portfolio management objectives along with allocating portfolio capital
- How to utilize essential risk-transfer mechanisms including financial derivatives, credit derivatives, synthetic securitizations and operational risk insurance within an ERM framework
- Essential risk-analytic components associated with developing internal models of market, credit and operational risk that support risk-based pricing, risk-transfer and transparency
- Data concerns in respect to managing inputs to risk-analytic models as well as the control of information internal to the organization
- Key issues surrounding the management of stakeholders within the ERM environment

Key Contents

- The motivation for ERM
 - Outside motivations
 - Basel II, Basel III Sarbanes-Oxley and IFRS compliance issues
 - Profitability and transparency benefits
 - Examples from the Basel III realm
 - Hurdles to ERM establishment and implementation
 - Senior-management buy-in
 - Merger problems/benefits
 - Technical difficulties
 - Getting model results for market, credit and operational risk to coincide
 - Difficulties with combining model inputs & outputs
- Corporate governance management
 - Establishing a risk-appetite, capital leverage and a desired credit rating
 - Determining the presence of internal risk management skills on-hand
 - Establishing an organisational structure
 - Overseeing risk assessment and auditing processes
 - Shaping the risk culture from the top
 - Providing organisational incentives for learning from mistakes
 - Risk-based pricing and line management
- Risk adjusted performance measurement (RAPM): a primer
 - Various RAPM measures compared Risk-adjusted Return On Capital (RaROC)
 - Risk-adjusted-Return On Risk-Adjusted Capital (RaROROC)
 - RAPM from an individual perspective
 - RAPM from a portfolio perspective
 - RAPM using capital allocations for market, credit and operational risks
- Credit risk assessment
 - Assigning ratings via scoring
 - Basel requirements for financial institutions
 - Quantitative approaches
 - Qualitative approaches
 - Probability of Default (PD) and Probability of Event (PE) assignment
 - Scoring facilities
 - Loss Given Default (LGD) and Exposure At Default (EAD) assessment
- Expected Loss (EL) and Unexpected Loss (UL) assessment
- Market risk assessment
 - Establishing and using market VaRs
 - Calculating VaR: brief expositions and examples

ENTERPRISE RISK

Key Contents

- Parametric methods
- Historical methods
- Monte Carlo methods
- Allocating capital in a market risk framework
- Individual exposures
- Portfolio-level exposures
- Examples in Excel
- Operational risk assessment
- Establishing and Operational VaR (OpVaR)
- Calculating the OpVaR
- Parametric approaches
- Loss distribution approaches
- Establishing EL and UL estimates
- Allocating provisions, insurance and capital and operational risk
- Risk transfer mechanisms
 - Traditional, financial derivatives
 - Credit derivatives and more exotic products
 - Securitisations and synthetic Collateralised Debt Obligations (CDOs)

LIQUIDITY RISK

Learning Outcome Statements

- The effects of liquidity risk on securities pricing and funding
- The challenges of building a successful framework for liquidity risk management
- The regulatory requirements for liquidity
- Effective liquidity stress testing and contingency planning
- The techniques for modeling liquidity risk within a treasury framework

Key Contents

- Understanding the Nature of Liquidity Risk
 - The universe of investable instruments
 - Pools of liquidity and benchmark securities, off the run and illiquids
 - Normal market sizes, bid-offer, block trades
 - Repo and the funding of illiquid instruments
 - Liquidation and "fire-sales"
 - Liquidity risk in banking, securities trading and insurance
- Securities Pricing in the Presence of Illiquidity
 - Random walks and the assumption of continuous trading
 - Gap risk
 - The effect of jumps on the pricing framework
 - Risk premiums and risk neutrality
 - Impact on derivatives pricing and mark to market
- Building a Framework for Liquidity Management
 - Mismatch approach
 - Foreign currency liquidity management
 - Internal controls for liquidity risk management
 - Double default and the analysis of collateralized transactions
 - Basel and liquidity risk
 - New stresses and rules post credit crunch
- Contingent Liquidity Risk
 - The need for contingency planning
 - Written contingency plans
 - Crisis management plans for assets
 - Crisis management plans for liabilities
 - Internal and external communications
 - Other crisis management issues
- Liquidity Stress Testing
 - Why stress test liquidity?
 - Empiricism versus rocket science
 - General considerations
 - Current stress test priorities
 - Assumption sensitivity
 - Additional considerations
- Liquidity Risk in the Treasury Framework
 - Metrics and measures of liquidity risk
 - Liquidity gap analysis and the bank's liquidity profile
 - Expected and unexpected loss analysis in the presence of illiquidity
 - Liquidity management policy
 - Regulatory requirements for liquidity management
 - The use of conduits
 - Contingent liquidity
- Measuring Market Risk: Liquidity-Adjusted Value-at-Risk
 - Definitions
 - Using liquidity-adjusted VAR to manage risk
 - Limitations of standard VAR measures to assess liquidity
- Systemic Changes in Liquidity and Volatility
 - Risk capital and illiquidity
 - The effect of VAR models on liquidity cycles
 - Liquidity and volatility
 - Predicting volatility changes: GARCH models
 - The perspective from implied volatility
 - Implied probability distribution and tail risk

CREDIT RISK

Learning Outcome Statements

- Have a better understanding of basic tools of risk analysis
- Understand Basel III accords and their implications
- Understand the importance of Objective Risk Management
- Understand how obligators are rated
- Become familiar with the process of moving from ratings to default probabilities
- Understand portfolio risk analysis
- Learn about the recent credit risk measurement techniques

Key Contents

- Elements of Credit Risk Measurement
 - Financial statement analysis
 - Rating models
 - Portfolio models
 - Mean –variance analysis
 - Efficient frontier analysis
- Multiple random variable measurement process
 - Covariance
 - Correlation coefficient
 - Correlation risk
 - Correlation matrix
 - Variance of two(multiple) risk factors
 - Individual risk and portfolio risk
 - Application of matrices to calculate variance of multiple risk factors
- Lending principles
 - 5 C’s of credit
 - Preliminary analysis
 - Sources of additional information
 - Credit policy
 - Credit procedures
- Basel III
 - BASEL III and its Risk Management Consequences
 - Key recommendations of BASEL III accord
 - Approaches to measure credit risk
 - Standardized Approach
- Internal Ratings Based (IRB) Approach
 - Foundation Methodology
 - Advanced Approach
 - Basel III - Implementation challenges
- Development of ratings models and their parameters
 - Mapping Ratings to default Probability
 - Altman Z Score
 - Principal Component Analysis
 - Credit Risk Exposures & Default probability models
 - Asset based models
 - Concept of distance to default
 - Credit ratings
 - Marginal and cumulative defaults
 - Transition probabilities
 - Recovery rates
 - Bond prices, spreads, liquidity & risk premiums
- Risk Based Pricing
 - Portfolio Analysis
 - Volatilities and Correlations
 - Systematic and Non-systematic risk
 - Stress Testing
 - Loss distribution
 - Expected & unexpected loss
 - Economic Capital & Regulatory Capital
 - Performance Attribution & Component loss analysis
 - Marginal Analysis

MARKET RISK

Learning Outcome Statements

- 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
 - 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
 - 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
- 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 options
 - Option hedging
 - Option Greeks & their role 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

OPERATIONAL RISK

Learning Outcome Statements

- Learn methods of identifying, measuring & controlling Operational risk
- Comprehend concepts of statistics & their application in modeling operational risk
- Gain an overview of Basel II & Basel III recommendation with respect to operational risk
- Learn to manage and control Operational risk in a competitive & volatile market environment
- Learn about the quantify & control common pitfalls which create operational risk
- Understand the step by step process to comply with Basel II & Basel III requirements

Key Contents

- Operational Risk Management
 - Broad landscape of Operational risk
 - Basel and Operational risk
 - Management of Operational risk
 - Quantification of Operational risk
- Basel Recommendation For Regulatory Treatment Of Operational Risk
 - Complicating factors in Operational Risk Management
 - Top down vs. Bottom up approaches to measurement
 - Overview of Statistical and actuarial approaches
 - Basel continuum concept
 - Process of capital calculation
 - Overall calibration process
 - Basel Indicator Approach
 - Standardized Approach
 - Advanced Measurement Approach
 - Key features of Operational risk - Basel II/Basel III
- Operational Risk Management
 - Key players & their roles
 - Back office
 - Front office
 - Middle office
 - IT staff
 - Accounting, planning & control
 - Senior management
 - Board of directors
 - Auditors
 - Regulatory role & disclosure of OR framework to shareholders
- Operational Risk Modelling & Associated Analytics
 - Risk assessment & management process
 - Identifying Operational risk
 - Modeling Operational risk
 - Loss Data and related issues
 - Quantifying Operational risk
 - Mapping Operational risk
 - Role of statistics in Operational risk
 - Normal distribution
 - Poisson distribution
 - Other important probability distributions for OR Management
 - Quantification methodologies: Loss Distribution Approach (LDA)
 - Advance Measurement Approach (AMA)– Challenges & benefits
- Modelling Techniques
 - Casual modeling
 - Score card approach
 - Extreme Value theory (EVT)
 - Neural Networks
 - Other techniques
 - Certification of financial models
 - Model validation process
 - Audit process
 - Risk & control

BUSINESS RISK

Learning Outcome Statements

- Appreciate the role and function of business risk management to business success
- Define an approach and rationale for adopting a business risk management process
- Define risk management requirements, responsibilities and accountabilities
- Appreciate how business risk decisions are made at board and other levels
- Implement measures to support and 'quality assure' risk management processes
- Construct risk profiles and business risk plans
- Develop an auditable approach to assist business risk management decision-making

Key Contents

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| <ul style="list-style-type: none"> ○ Evolution of risk management ○ The corporate, national & global scenes ○ Corporate governance ○ Impact on corporate business risk management in the private sector ○ Relevance to the public sector ○ Theory and principles of business risk management ○ Components of risk management ○ Concepts of upside and downside risk ○ The IRM, AIRMIC, ALARM Risk Management Standard ○ Risk perception, 'thinking outside the box' ○ Attitudes to risk ○ Issues in risk aversion and risk taking | <ul style="list-style-type: none"> ○ Principles, Tools and Techniques ○ Risk Identification ○ Risk Evaluation – multi-level assessment ○ Quality assurance ○ Risk Treatment strategies ○ Avoidance, transfer, retention, reduction Back office ○ Risk Financing ○ The role of Business Continuity and Emergency Planning ○ Organizing for effective Business Risk Communication ○ Managing specific business risks ○ Business Risk Management Structures |
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EARLY WARNING SIGNS AND CRISIS MANAGEMENT

Learning Outcome Statements

- Define an approach and rationale for adopting a business risk management process
- Define risk management requirements, responsibilities and accountabilities
- Appreciate how business risk decisions are made at board and other levels
- Implement measures to support and 'quality assure' risk management processes
- Construct risk profiles and business risk plans
- Develop an auditable approach to assist business risk management decision-making

Key Contents

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| <ul style="list-style-type: none"> ○ Symptoms of a deteriorating credit: financial, non-financial and market indicators ○ Credit migration and its impact on pricing and market access during turbulent times ○ Application of the four-step approach to credit: exposing credits susceptible to deterioration (purpose, payback, risks and structure) ○ Risks to repayment: current market conditions and their impact on risk assessment ○ Identify the purpose of borrowing and expected source of repayment in order to anticipate the key risks to repayment. | <ul style="list-style-type: none"> ○ Recourse actions ○ Economic cyclicality ○ Market factor volatility and its impact ○ Balance sheet and ratios ○ Leverage ○ Refinancing risk ○ Loan structure and choice of financial instruments ○ Corporate governance ○ Distress triggers and actions ○ Covenant breaches |
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