Modelling Market Risk for Financial Institutions

A 2-Day Training Event
Course Description

This course reviews the current state of market risk and considers the different approaches that are likely to be suitable for modelling market risk approaches. Looking at the Basel requirements it takes into account the current market volatility to address current modelling concerns.

Learning Objectives

Delegates attending this course will gain an understanding of the nature of the problems associated with market risk modelling and the solutions that are available. The difficulties posed by the Basel Accord and the weaknesses of current models will be considered together with stress testing and scenario modelling.

Methodology & Training Materials

Classroom style seminar including up to date and insightful case studies.

Who Should Attend

Any staff involved with market risk and market risk modelling within a financial institution.

Knowledge pre-requisites

Some knowledge of financial instruments will be required since this is assumed within the course. An understanding of mathematical modelling principles would also be an advantage.
Course Outline

Session 1: Introduction
• The different constituents of market risk
• Identifying main techniques for measuring risk
• Managing market risk
• Market risk regulations and Basel 2
  - Basel II Minimum Requirements – Internal Models Approach (IMA)
• The difference between the approach in the trading and banking books
• The issues with the Basel VAR requirements

Session 2: Basic Measures of Risk
• Market risk basics
• Yield curves
• The problems caused by correlation and convexity
• Sensitivity-based risk measures:
  - Zero coupon curves
  - Calculating present values
• Key instruments and approaches
• Risk factors and sensitivities in options portfolios: the Greeks
• The problem of non-normality
• Downside risk, regret and maximum loss
• Coherent risk measures and conditional VaR; Extreme Value Theory

Session 3: Statistical methods for estimating and forecasting volatility and correlation
• Uses and abuses of equally weighted moving averages
• Advantages and limitations of exponentially weighted moving averages
• GARCH models
• Volatility forecasts
• Statistical vs operational methods
• Covariance matrices
• Factor Models

Case Study: Meeting the challenge of designing and implementing a regulatory compliant Value-at-Risk back testing framework
Session 4: Value-At-Risk models: from basics to latest developments
• What can VaR provide; limitations of VaR
• Application to liquid equities and foreign exchange
• Challenges in Value at Risk in fixed income
• Applications to derivatives
• Why do different VaR models give such diverse results?
• Historical VaR and VCV methods
• The key problems with VaR
• The alternatives to VaR

Case study: Practical back-testing case study
Case Study: Key market risk indicators and their impact on assumptions

Session 5: Monte Carlo Simulation methods
• Sensitivity analysis
• Stress testing market risk
• Scenario modelling market risk
• Strategic and tactical risk management
• New measures in Basel 3

Case Study: What goes wrong in practice?
Faculty

Dennis W Cox

Dennis is a dynamic, engaging and thought-provoking financial services risk and internal audit specialist serving banks, regulators and financial institutions globally for over 30 years, based in Canary Wharf, London.

He has held senior management positions within the banking and accountancy profession as Director, Risk Management at HSBC Insurance Brokers Limited and Director, Risk Management, Prudential Portfolio Managers, and Senior Audit Manager (Compliance) at HSBC Holdings PLC and Senior Manager (Banking and Finance) at both BDO Binder Hamlyn and Arthur Young.

Dennis is passionate about risk management as a driver for organisational change in banking, and risk-based bank internal audit and accountancy issues related to the Basel Accord and the dynamics of changing regulation and business banking competitiveness.

He holds a BSc Honours degree in Mathematics from London University (1981) and is widely published on risk, banking, internal audit and accountancy topics and more recently on financial crime deterrence regulation and practise worldwide.
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