

# IFF

## A 5-DAY MASTERCLASS IN **RISK MANAGEMENT**

Learn what risk really is and how to manage it to  
provide a stable and reliable business process

**Contact:**

[www.iff-training.com](http://www.iff-training.com)  
+44 (0)20 7017 7190  
[cs@iff-training.com](mailto:cs@iff-training.com)



Learning partner of

# RiskMinds

## WHAT YOU WILL LEARN

You will study the holy trinity of the risk management framework, the identification of risk, the quantification of risk and finally the management of risk within risk appetite and market constraint.

The course begins with an overview of risk and return in banking and finance and how these are intimately linked with the economy and monetary policy. You'll look at regulation with case studies and examples of Basel III / IV regulatory calculations, then focus on the specifics of market risk across assets classes, stressing the intimate relation with liquidity risk and its constraints. Hedging and risk control tools are extensively discussed, including securitisation techniques for balance sheet management and ALM.

You'll study credit risk, credit evaluation and the impact of default correlation as a major risk factor for tail risk. You'll move onto operational risk and its overlap with all other risk areas and tackle liquidity risk.

You'll appreciate the concept of "whole entity" risk management. Integration of risk as a core process within all spheres of activity is vital – you'll examine issues of governance, organisational structure, IT platforms, staffing, training and compensation.

Delegates are encouraged to ask questions and bring along examples of their own risk situations for discussion.

### As a result, you'll be able to:

- ★ Use your new understanding of risk and reward to make positive changes to your company's governance, structure, processes, limits, training, recruitment and staff retention
- ★ Perform calculations of risk measures such as BP01, delta, CVaR and evaluate the risk models used in your firm
- ★ Engage with other stakeholders of the firm, including regulators and shareholders on the issues of risk and risk management
- ★ Make considered decisions on appropriate risk limits factoring in external constraints such as market structure, access, liquidity, central bank activity and political environment

## COURSE PROGRAMME AT A GLANCE

### DAY ONE

- ★ Introduction to the types of financial risk
- ★ Introduction to the quantitative risk management
- ★ The importance of regulation
- ★ The evolution of the international 'rules' for bank capital adequacy assessment

### DAY TWO

- ★ Factor sensitivity analysis for measuring market risk
- ★ Monte Carlo simulation
- ★ Market value-at-risk
- ★ VaR estimation for a simple portfolio
- ★ Additional risk measurement methods
- ★ Economic and regulatory capital for market risk
- ★ Managing market risk

### DAY THREE

- ★ Introduction to credit risk
- ★ Default risk from a historical/actuarial perspective
- ★ Default risk from market prices of securities
- ★ Credit risk exposure
- ★ Credit derivatives

### DAY FOUR

- ★ Credit risk management
- ★ Risk, capital and management
- ★ Management perspectives on capital allocation and types
- ★ Other risk types

### DAY FIVE

- ★ Operational risk
- ★ Asset and liability valuation
- ★ Liquidity risk
- ★ The future of risk

## COURSE LEADER

### DR ANDREW STREET



**Dr Andrew Street** began his finance career as a fixed income quantitative analyst and structured products specialist at Barings. He also traded FX, Equities, Fixed Income and Commodities at banks in the UK, US and Japan, rising to be Executive Director of Mitsubishi Finance in London. In addition to his extensive market practitioner experience as a derivatives trader and risk manager, Andrew has been a senior financial regulator including being Head of Traded Risk at the Financial Services Authority (FSA) and Assistant Director - Head of Market Risk at the Securities and Futures Authority (SFA). This has provided him with a unique insight into the control, regulation and modelling of financial risk across the whole spectrum of financial institutions. He holds advanced degrees in Theoretical Physics and is a lecturer on the Cambridge University Judge Institute's Masters In Finance degree course.

## DATES & PRICE

Please contact a member of our team for more details

## CONTACT US

Tel: +44 (0)20 7017 7190  
Email: [cs@iff-training.com](mailto:cs@iff-training.com)  
Web: [www.iff-training.com](http://www.iff-training.com)

## ABOUT IFF

IFF has been the chosen training provider of the world's best finance and energy professionals since 1991. We are part of Informa PLC and the learning partner of the RiskMinds series of events.

- We continually develop and improve our training to make it more effective for you
- You'll learn from practising, highly-experienced financial experts
- You'll experience interactive and practical training - implement what you learn straight away
- We limit class sizes so the trainer can adapt the content to suit you

## IN-COMPANY TRAINING

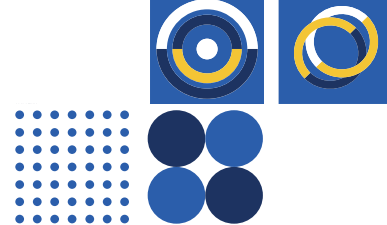
IFF's bespoke training solutions will help you address your specific key business challenges. The programme is designed for you, with content focusing on the issues you and your teams are facing. The course can then be delivered at your choice of location face-to-face, digitally or a combination of the two.

- ★ Tailored content - 100% targeted to cover your needs
- ★ No travel or time out of the office – we will come to you
- ★ Value for money – train teams of staff at the same time
- ★ Risk free – we've been doing this for over 30 years

For more information please contact Leigh Kendall on +44 (0)20 7017 7190 or email: [Leigh.Kendall@informa.com](mailto:Leigh.Kendall@informa.com)



# COURSE AGENDA



## DAY 1 INTRODUCTION

Despite the increased capital and liquidity buffers delivered under the Basel Capital Accord since the sub-prime crisis of 2007-09, the greater resilience of international banks (as revealed by toughened stress tests in many countries) and the rolling-back of the implicit subsidies enjoyed by "Too-Big-To-Fail" institutions, regulators need to remain vigilant in the face of the re-emergence of asset bubbles and the continued popularity of debt finance.

For banks and other financial institutions, the need for sound risk management and optimal capital allocation remain as important as ever for their continued survival and prosperity in an increasingly competitive and innovative market place.

- What is risk and why do we need to manage it?
- How do we manage or control risk?
- How do we make money taking risk?
- How do we avoid losing money when we take risk?

### Introduction to the Types of Financial Risk and their Importance in Banking and Finance

- Credit risk
- Market risk
- Operational risk
- Liquidity risk
- Systemic risk
- Other types of risk

### Introduction to the Quantitative Risk Management

How do we put a "number" on risk?

- Duration measures and sensitivities
- PV01/ DV01/BPV
- The "Greeks"
- Statistics for risk management
- The significance of Value-at-Risk (VaR) and Expected-Shortfall
- Risk and return in banking and finance

### The Importance of Regulation

Why does regulation dominate the Banking industry? How does capital provide a "buffer" for systemic risk?

- The evolution of Basel "rules", from Basel Accord to FRTB
- Regulation by/within the EU, CRD IV and onwards

## REGULATION

- "What is the relationship between risk, capital and profitability?"
- "How does regulation affect this?"

### The Evolution of the International 'Rules' for Bank Capital Adequacy Assessment

- The background to Basel I
- The Basel I rules for credit risk and market risk
- The problems with Basel I
- The aims and objectives of Basel II: The 3 'Pillars'
- The evolution of the Basel II [Pillar 1] rules for credit, market and operational risk
- The problems with Basel II
- The alternatives to Basel II
- The proposed changes to Basel II in the light of the global banking crisis and credit crunch
- Basel 2.5

- Basel III and beyond including FRTB and MiFid II
- Where are we now?



#### PRACTICAL WORKSHOP

Covering market risk-based capital requirements under the standardised measurement methods

- The implementation of Basel I's market risk rules
- Differences between EU and Basel Committee approaches
- The implementation of Basel II and III
- The reforms after the "Credit Crunch" Basel 2.5
- The impact of Basel III and further capital requirements



#### PRACTICAL WORKSHOP

The application of the Basel 1 rules for market risk assessment

## DAY 2 MARKET RISK – AN OVERVIEW

- **Market factors:** The main source of market risk, price variability/volatility, trends, gains and losses. Characteristics of markets and dynamics.
- **Dispersion, skew and tail risks**
- **Principal Component Analysis (PCA)**
- **Market participants, speculators, hedgers and arbitrageurs.**
- **Marking to market with pricing models, dealing with illiquidity, position size and concentration. Valuation and transparency issues.**

### Factor Sensitivity Analysis for Measuring Market Risk

- Calculating factor sensitivities for
  - foreign exchange (FX or FOREX)
  - equities
  - bonds
  - swaps
  - options and other non-linear derivatives



#### PRACTICAL WORKSHOP

Calculation of factor sensitivities. Example of managing a swap portfolio using factor sensitivity, duration and DV01 matching

### Monte Carlo Simulation

- Overview of the Monte Carlo simulation techniques
- Cholesky decomposition, covariance matrices and factorisation



#### PRACTICAL WORKSHOP

Performing Cholesky decomposition on covariance matrix and using it for MC risk simulation of a derivatives portfolio

### Market Value-at-Risk

- Factor sensitivity limits of the approach
- VaR using variance/covariance method
- VaR using historic simulation
- VaR using Monte Carlo simulation

### Value-at-Risk Estimation for a Simple Portfolio

- Value-at-Risk limits
- Specific risk for equity and debt instruments

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## Additional Risk Measurement Methods

- Extreme Value Theory (EVT)
- Conditional VaR (CVAR or Expected Shortfall)
- Risks Not in VaR
- Which risks are modelable and which are not?



### PRACTICAL WORKSHOP

Conditional VaR (Expected Shortfall) estimation



### PRACTICAL WORKSHOP

Component VaR  
Stress Testing

## Economic and Regulatory Capital for Market Risk

- Capital based on VaR and ES methodologies and the relationship to Basel Standard Rules
- Back-testing under Basel
- Basel III proposals, changes in FRTB

## Managing Market Risk

- Challenging VaR and ES
- Linear hedges
- Nonlinear hedges

## DAY 3

Credit risk is at the heart of all lending and past catastrophic events in financial markets highlighted the problems of a massively dislocated credit market. Credit "bubbles" often lead to financial melt downs.

In this section, we will examine the role of lending and securitisation of that lending in the so called "Credit Crunch" or "Global Financial Crisis" which has its origins in the sub-prime lending markets of the USA and the subsequent securitisation process into the so called "toxic waste" of the CDOs.

## Introduction to Credit Risk

- How do banks make and lose money lending?
- How can we do it better?
- Basic concepts of default on payments
- Settlement risk and pre-settlement risk
- The market drivers of credit risk
- Measurement of credit risk
- Comparing credit with market risk
- Concepts of joint default probability, loss given default and recovery rate
- Diversification and portfolio effects
- Distinguishing between Credit Risk, Counterparty Risk and Specific Risk
- Understanding Credit Valuation Adjustment (CVA) and the other "X"VAs such as DVA and FVA

## Default Risk from a Historical/Actuarial Perspective

- Definition of credit events
- Credit ratings
- Basel II/III internal ratings based methods (AIRB)

- Historical default rates
- Marginal and cumulative defaults
- Transition probabilities
- Recovery rates
- Sovereign vs. corporate debt vs. consumer debt

## Default Risk from Market Prices of Securities

- Bond prices, spreads, liquidity and risk premium
- Equity prices
- Merton's model (KMV development)

## Credit Risk Exposure

- Exposure by risk type, expected loss, worse loss
- Interest rate swaps, options
- Effects of margining and marking to market
- Limits and risk monitoring
- Use of Central Clearing Counterparty (CCP) and collateral
- Waterfall structures in CCPs and CDOs

## Credit Derivatives

- Fundamental drivers behind the products
- Credit default swaps
- Credit linked notes
- Documentation issues (ISDA)
- Pricing and hedging examples



### CASE STUDY

What caused the credit crunch? Could it happen again?

## DAY 4 CREDIT RISK

### Credit Risk Management

- Estimating the distribution of credit losses
- Expected loss and unexpected loss, relationship with economic and regulatory capital
- Basel III credit risk capital
- Time and mis-match effects
- Estimating the credit Value-at-Risk
- Introduction to portfolio credit models
- Management of credit risk
- Use of securitisation to create CDOs



### PRACTICAL WORKSHOP

Hands-on calculation of sample credit risk exposures and the theoretical pricing of a credit linked note

## LOOKING BEYOND CREDIT AND MARKET RISK

### Risk, Capital and Management

- What is all this measurement of risk for?
- Risk measurement vs. risk management – identify, quantify, constrain to risk appetite
- The other uses of risk data
  - performance measurement and optimisation
  - Risk Adjusted Return on Capital (RAROC)
  - risk reconciliation – forecast vs. actual P&L, ex-ante and post P&Ls

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# COURSE AGENDA



## Management perspectives on capital allocation and types

- Capital, its uses and alternatives
  - hybrids, CoCos, hedging and insurance
  - Basel defined capital tiers 1, 2 and 3 and the changes under Basel III

## Other Risk Types

- Basel and the evolution of risk assessment (Pillar 2 and the ICAAP)
- Basel definitions of risk types and classifications
  - operational risk
  - liquidity risk
  - reputational, strategic and other risks
- Importance of operational risk
  - examples of OR events
  - Basel principles and definitions
  - menu approach for measurement
- basic indicator
- standardised approach
- Advanced Measurement Approach (AMA)
  - the difficulties of quantifying operational risk

## DAY 5

### OPERATIONAL RISK

- Review of basic quantification methodologies
  - scorecards
  - loss distributions
  - internal model
  - internal and external loss databases
  - scenarios
  - frequency vs. severity
  - Key Risk Indicators (KRIs)
  - Key Performance Indicators (KPIs)
- The problems of tail estimation with poor data
  - the uses of EVT for tail estimation
  - can OR really be modelled?
- Basel principles and OR management – how does your structure and process compare?
- Practical management of OR
  - process analysis and re-engineering
- Basel criteria and minima for OR capital



#### CASE STUDY

Operational Risk events and classifications Frequency vs Severity

## Asset and Liability Valuation

- The central role of valuation
- The impact of model values on risk assessment
- FAS 157 and its classification of valuation types based on transparency and liquidity
- How models can mislead
- What is model risk?

## Liquidity Risk

- Why is liquidity risk so pervasive?
- The role of LR in the credit crunch
- Solvency vs. liquidity
- Funding liquidity vs. asset liquidity
- The bank balance sheet
- Funding profiles
- Liquidity gap analysis
- Measuring liquidity risk
  - liquidity adjusted risk measurement, liquidity adjusted VaR and ES
- What is Basel doing about LR? Stress testing and the LCR and the NSFR
- The role of central banks as providers of liquidity



#### CASE STUDY

Liquidity Risk and the credit crunch – how did Lehman fail?

## The Future of Risk

- What lessons have we learnt about risk in the last twenty years?
- What will the future Basel Accords look like?
- The Fundamental Review of The Trading Book (FRTB) what does it bring to the party?
- A look at some of the impact of current changes including leverage limits, stressed VaR, stressed ES and incremental risk as they are phased in
- Summary and final Q&A

## BENEFIT FROM STATE OF THE ART IN-COMPANY TRAINING

IFF are also the world's leading provider of in-company highly-customised management training programmes. Not only is in-company training highly cost effective, it also allows organisations to focus on the topics and issues most important to their staff. Our in-company training programmes have been utilised in almost every continent around the world. Here are just some of the organisations already benefiting from IFF in -company management programmes:

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| • RBS           | • Nomura                  | • Standard Chartered        | • Swiss Re                       |
| • Santander     | • European Central Bank   | • Riyad Bank                | • Euroclear                      |
| • BNP Paribas   | • Central Bank of Ireland | • ING                       | • European Investment Bank       |
| • Goldman Sachs | • Banque Saudi Fransi     | • European Commission       | • Abu Dhabi Investment Authority |
| • Emirates NBD  | • OFID                    | • Credit Agricole           |                                  |
| • KPMG          | • ECGD                    | • Bank of Tokyo Mitsubishi  |                                  |

Our in-company training specialists are available now to discuss your potential needs.  
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#### CPD Certified:

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## COURSES IN THE IFF RISK MANAGEMENT PORTFOLIO



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