

# Using Derivatives, (Two Days)

The purpose of the course is to improve understanding in order to facilitate derivative hedging solutions for customers. Case studies will be used to explain how foreign exchange and interest rate risk can be identified, quantified and hedged. The course will cover the following:

- Yield curve construction & zero coupon discount factors
- The acceptability of risk and appropriateness of hedging
- How discount factors are used to price transactions
- Using swaps to hedge both assets & liabilities
- Valuation techniques & cancellations
- Market risk measures, what they are, how they work, their strengths & weaknesses
- Currency swaps and their use
- Interest rate options, pricing and the "Greeks"
- Collateral management, why it is increasingly important for over-the-counter derivatives

Below is a summary of the workshop. The content has been placed in a logical sequence and addresses the products, mechanics, methodologies, practical uses and risks. Time has been allotted for the appropriate discussion. The recommended maximum number for this workshop is 10.

## Day One

### **Basic financial mathematics**

- Discount factors, present / future value
- Construction of the zero coupon model
- Case study

### **Hedging**

- Identifying risk
- Quantifying risk
- Appropriateness of hedging

### **Generic interest rate swaps**

- Spot starts
- Interest payments Annual/SA/Q/M
- Forward starts
- Amortising/accreting/rollercoaster structures
- Case study

### **Liability swaps**

- Hedging floating rate debt
- New issues, (overview)
- Case study

### **Asset swaps**

- Selecting bonds
- Calculating margins
- Premium / discount structures
- Case study

### **Swap valuation**

- Mark-to-market
- Assignment & novation
- Basis point value
- Case study

### **Market risk measures**

- Duration
- Basis point value, (DV01)
- Hedge ratios & trades

## Day Two

### **Market risk measures cont.**

- Convexity
- Value at risk
- Case study

### **Futures & FRAs**

- Use in hedging
- Case study

### **Currency swap structures**

- Fixed / fixed
- Fixed / floating
- Basis swaps
- Using currency swaps
- Credit usage
- Case study: private placement/balance sheet hedging

### **Interest rate options**

- The models used for pricing
- What effects price
- The Greeks, delta, gamma, theta, vega
- Delta hedging and the problems

### **Structured interest rate hedging**

- Step-up swaps
- Step-up collars
- Swaptions/Bermudans
- Callable swaps
- Extendable swaps
- Knock in structures
- Case study: Selected examples

### **Collateral & swaps**

- How & why credit risk occurs with swaps
- Risk mitigation techniques
- The advantages of collateral support agreements

### **End of workshop & review**