CONCEPT

Interest Rate Swaps and Derivatives: Curve Building, Valuation and Hedging

1 – 12 March 2027
London - Central London four-star



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Introduction:

Interest rate swaps and related derivatives protect borrowers, lenders and investors from rate moves, yet many organisations sign swaps, caps and collars without checking the curve behind the price, the DV01 they carry, the collateral terms they accept or the accounting result they will report. This Core Concept course takes treasury, trading, risk, ALM and corporate finance staff from money market conventions, FRAs and futures through curve bootstrapping, swap valuation and option pricing to ISDA documentation, clearing, XVA and IFRS 9 hedge accounting. Participants build a Hedge Strategy and Valuation Pack for a case borrower.

Course Objectives:

- Build forecasting and discounting curves from deposits, FRAs, futures and par swap quotes and test them for repricing accuracy
- Value vanilla, amortising, basis and overnight index swaps at inception and mid-life and reconcile the result to a dealer quote
- Quantify swap book sensitivity with DV01, PV01 and key-rate ladders and size offsetting hedges
- Price caps, floors, collars and swaptions with Black and normal volatility inputs and compare their cost against swap alternatives
- Review ISDA, Credit Support Annex and clearing terms and estimate collateral, margin and XVA effects on hedge cost
- Recommend a borrower hedge strategy with IFRS 9 designation documentation and present it as a Hedge Strategy and Valuation Pack

Target Audience:

- Treasury staff who raise floating rate debt and execute rate hedges for their organisation
- Trading and sales staff who quote swaps, FRAs, caps and swaptions to clients
- Market risk and valuation control staff who independently price derivatives and monitor sensitivity limits
- ALM staff who use swaps to adjust the rate profile of a balance sheet
- Corporate finance and project finance staff who structure hedging for loans and acquisition financing
- Financial reporting staff who document and account for hedge relationships

Course Outline:

Day 1: Money Market Instruments, Rate Conventions and Short-Dated Rate Contracts

- Deposits, Commercial Paper and Repo: Simple Interest and Discount Yield Quotation
- Business Day Adjustment Rules and Money Market Day Count Bases
- Forward Rate Agreement Terms: Contract Period, Settlement Sum and Discounted Settlement
- Interest Rate Futures: Price Quotation, Tick Value and Strip Hedging of a Floating Loan
- Futures Convexity Adjustment and Futures-Implied Forward Rate Comparison

Day 2: Curve Construction, Bootstrapping and Multi-Curve Discounting

- Curve Instrument Selection: Deposits, FRAs, Futures and Par Swap Quotes
- Sequential Bootstrapping of Discount Factors from Par Swap Rates
- Interpolation Choices: Linear Zero Rates, Log-Linear Discount Factors and Monotone Convex
- Single-Curve Versus Multi-Curve Framework: Forecasting Curves and Collateral Discounting Curve
- Curve Diagnostics: Forward Curve Smoothness, Repricing Check and Instrument Jacobian

Day 3: Vanilla Interest Rate Swap Mechanics, Pricing and Mark-to-Market

- Fixed and Floating Leg Schedules: Notional, Reset Dates, Payment Dates and Stub Periods
- Par Swap Rate Derivation from Discount Factors and the Annuity Factor
- Off-Market Swaps, Upfront Payments and Mid-Life Mark-to-Market Revaluation
- Amortising, Accreting and Forward-Starting Swap Structures
- Swap Spread Against the Government Curve and Asset Swap Package Pricing

Day 4: Swap Risk Measures, Basis Swaps and Overnight Index Swaps

- DV01 and PV01 by Bump-and-Revalue on a Swap Book
- Bucketed Delta and Key-Rate Risk Ladder Across Curve Tenors
- Swap Gamma, Hedge Slippage and Rebalancing Rules for a Swap Portfolio
- Tenor Basis Swaps: Float-Versus-Float Legs and Spread Adjustment
- Overnight Index Swap Mechanics: Daily Compounding, Payment Lag and Lookback Conventions

Day 5: Benchmark Reform, Cross-Currency Swaps and Week-One Valuation Case

- Transition from Term Interbank Offered Rates to Overnight Risk-Free Rates
- Fallback Spread Adjustment and Legacy Contract Remediation Checklist
- Cross-Currency Swap Legs, Notional Exchange and Mark-to-Market Resets at Overview
- Guided Case: Curve Build and Swap Revaluation for a Multi-Instrument Book
- Model Price Versus Dealer Quote Reconciliation Exercise

Day 6: Caps, Floors, Collars and Swaptions

- Caplet and Floorlet Decomposition of a Cap or Floor Strip
- Black Model Intuition: Forward Rate, Strike, Implied Volatility and Discount Factor
- Normal Bachelier Volatility Quoting for Low and Negative Rate Environments
- Zero-Cost Collars and Participating Caps for Floating Rate Borrowers
- Payer and Receiver Swaptions: European and Bermudan Exercise and Cancellable Swaps

Day 7: ISDA Documentation, Collateral, Clearing and Counterparty Exposure

- ISDA Master Agreement, Schedule and Confirmation: Events of Default and Close-Out Netting
- Credit Support Annex Terms: Threshold, Minimum Transfer Amount, Eligible Collateral and Haircuts
- Central Clearing Workflow: Initial Margin, Variation Margin and Default Fund
- Counterparty Exposure Profiles: Expected Exposure and Potential Future Exposure
- XVA Overview: CVA, DVA, FVA and Margin Valuation Adjustment Charges

Day 8: Hedge Strategy Design for Corporate Borrowers and Bank Balance Sheets

- Borrower Rate Exposure Diagnostic: Floating Debt Profile, Covenant Headroom and Cash Flow at Risk
- Fixed-Floating Mix Policy and Hedge Ratio Targets by Tenor
- Instrument Selection Matrix: Payer Swap, Cap, Collar or Swaption
- Balance Sheet Hedging with Receiver and Payer Swaps at Overview
- Hedge Proposal Briefing Paper for Board, Lenders and Treasury Committee

Day 9: IFRS 9 Hedge Accounting and Hedge Programme Measurement

- IFRS 9 Hedge Accounting Models: Fair Value Hedge and Cash Flow Hedge
- Hedge Designation Documentation: Hedged Item, Hedging Instrument and Risk Management Objective
- Economic Relationship Test, Hedge Ratio and Sources of Ineffectiveness
- Hypothetical Derivative Method and Cash Flow Hedge Reserve Journal Entries
- Hedge Programme KPIs: All-In Funding Cost, Hedge Cover Ratio and Mark-to-Market Volatility

Day 10: Capstone: Hedge Strategy and Valuation Pack for a Case Borrower

- Case Borrower Data Pack: Term Loan Schedule, Rate Curves and Hedge Policy Limits
- Valuation Workbook: Swap, Cap and Collar Pricing with a DV01 Ladder
- Scenario Test of Hedge Alternatives Under Parallel and Twist Curve Shocks
- Hedge Designation Memo and Collateral Liquidity Estimate
- Hedge Strategy and Valuation Pack Presentation and Peer Challenge

Skills You Will Gain:

- Multi-Curve Bootstrapping
- Swap Mark-to-Market Valuation
- Key-Rate Sensitivity Analysis
- Interest Rate Option Pricing
- Derivatives Documentation Review
- Collateral and Margin Estimation
- Hedge Instrument Selection
- Hedge Designation Documentation

Why Attend This Course:

- Return with a Hedge Strategy and Valuation Pack built on a case borrower and challenged by peers
- Check the curves, swap rates and option premiums banks quote before a hedge is signed
- Explain to a board or lender why a swap, cap, collar or swaption fits a given debt profile, with cost and protection side by side
- Compare interest rate hedging practice with peers from banks, corporates, project companies and investment firms

Conclusion:

Interest rate derivatives only reduce risk when their price, sensitivity, documentation and accounting are understood before the trade. Week one moves from money market conventions, FRAs and futures through curve bootstrapping, swap pricing, DV01 ladders, basis and overnight index swaps, benchmark reform and cross-currency swaps. Week two adds caps, floors, collars and swaptions, ISDA and collateral terms, clearing, XVA, hedge strategy design and IFRS 9 hedge accounting. The final day produces a Hedge Strategy and Valuation Pack ready for treasury committee review.