Fixed Income Analysis: Bond Valuation, Yield Curves, Duration and Convexity

12 – 16 April 2027
Paris - Right Bank business hotel

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Introduction:

Fixed income analysis breaks down when bonds and sukuk are priced from a single quoted yield, rate exposure is reported as one duration figure and credit spread moves are noticed only after the month-end valuation. This Core Concept course gives treasury, investment, bank ALM and asset management staff a working method to price fixed-rate and floating instruments, derive spot and forward curves, measure duration, DV01 and convexity, match holdings to liabilities and read credit spreads. Participants build a Bond Portfolio Pricing and Rate Sensitivity Workbook in Excel.

Course Objectives:

- Construct cash flow schedules and calculate clean price, dirty price and accrued interest for fixed-rate bonds and sukuk under standard day count conventions
- Calculate current yield, yield to maturity and yield to call, and bootstrap spot and implied forward rates from market prices
- Measure the rate sensitivity of single holdings and portfolios with Macaulay, modified, effective and key rate duration, DV01 and convexity
- Interpret credit ratings and credit spread measures to compare issuers and identify relative value
- Design immunised, laddered, barbell and bullet structures that align holdings with liability cash flows
- Size swap and bond futures hedges at overview and record the recommendation in a Bond Portfolio Pricing and Rate Sensitivity Workbook

Target Audience:

- Treasury staff who invest surplus cash and reserves in bonds, sukuk and money market instruments
- Investment analysts who price, compare and recommend fixed income holdings
- Bank asset and liability management staff who measure balance sheet sensitivity to interest rate moves
- Asset management and fund operations staff who value bond and sukuk portfolios
- Middle-office and risk reporting staff who produce duration, spread and valuation reports

Course Outline:

Day 1: Bond and Sukuk Instruments, Cash Flows and Market Conventions

- Bond Terms: Coupon, Face Value, Maturity and Redemption Features
- Sukuk Cash Flow Profiles: Ijara Rental and Murabaha Deferred-Price Payments
- Day Count Conventions: Actual/Actual, 30/360 and Actual/365
- Clean Price, Dirty Price and Accrued Interest Calculation
- Excel Cash Flow Schedule Builder with Payment Dates and Amounts

Day 2: Pricing, Yield Measures and Yield Curve Construction

- Discounted Cash Flow Bond Pricing with Excel PRICE and PV Functions
- Yield Measures: Current Yield, Yield to Maturity and Yield to Call
- Bootstrapping Zero-Coupon Spot Rates from Par Bond Prices
- Implied Forward Rate Derivation and Forward Curve Plot
- Nelson-Siegel-Svensson Curve Fitting and Term Structure Theories

Day 3: Duration, Convexity and Price Sensitivity

- Macaulay and Modified Duration Calculation in Excel
- DV01 and Price Value of a Basis Point for Position Sizing
- Convexity Adjustment and Duration-Convexity Price Approximation
- Key Rate Duration Profile for Non-Parallel Curve Shifts
- Effective Duration for Callable Bonds and Floating-Rate Note Reset Behaviour at Overview

Day 4: Credit Spreads, Liability Matching, Portfolio Strategies and Hedging

- Credit Ratings and Spread Measures: G-Spread, I-Spread and Z-Spread
- Redington Immunisation and Cash Flow Dedication for Liability Matching
- Laddered, Barbell and Bullet Portfolio Structures Compared
- Riding the Yield Curve and Rolldown Return Estimation
- Interest Rate Swap and Bond Futures Hedge Ratio Sizing at Overview

Day 5: Modelling Build: Bond Portfolio Pricing and Rate Sensitivity Workbook

- Case Data Pack: Government, Corporate and Sukuk Holdings with a Liability Schedule
- Portfolio Revaluation Under Parallel, Steepening and Flattening Curve Scenarios
- Duration Gap Analysis Between Holdings and Liability Cash Flows
- Rebalancing and Hedge Recommendation Memo Drafting
- Workbook Presentation and Asset-Liability Committee Challenge Session

Skills You Will Gain:

- Bond and Sukuk Pricing
- Yield Curve Bootstrapping
- Forward Rate Derivation
- Key Rate Sensitivity Analysis
- Credit Spread Analysis
- Liability-Driven Immunisation
- Fixed Income Portfolio Structuring
- Rate Hedge Sizing

Why Attend This Course:

- Leave with a Bond Portfolio Pricing and Rate Sensitivity Workbook in Excel, tested on a mixed government, corporate and sukuk case
- Explain to committees how much a holding or portfolio gains or loses for each basis point move in rates
- Check dealer and custodian valuations and spread quotes against your own calculations
- Compare fixed income practice with peers from banks, insurers, corporate treasuries and fund managers

Conclusion:

Bond and sukuk holdings carry more rate and credit exposure than a single yield figure shows. Across five days participants move from instrument terms, cash flows and day counts, through pricing, yield measures and curve bootstrapping, to duration, DV01, convexity and key rate sensitivity, then credit spreads, immunisation, portfolio structures and hedging at overview. The final day brings these methods together in a Bond Portfolio Pricing and Rate Sensitivity Workbook that participants can load with their own holdings and liabilities.