Bond Options

Overview

In recent years, bond markets have grown significantly in size and complexity as new fixed income products and derivatives products are introduced. As such, the skills needed to evaluate bond pricing and trading opportunities have evolved and new techniques must be considered. Derivative interest rate markets and trading often determine pricing in physical bond markets, a new phenomenon requiring new skills needed to assess trading and hedging opportunities.

This course provides a systematic, integrated training on all bond and bond related products available in the market today.

Learning Outcome Statements

- Acquire the foundation knowledge necessary to price and value bonds and fixed income derivate products such as swaps, futures, options, structured notes
- Evaluate the risk and profitable investment opportunities associated fixed income holdings and portfolios
- Position your bond/market skills to take advantage of opportunities

Key Contents

- Review of the basics
- Key features and conventions
    - Bond specification
    - Bond types
- Bond market conventions
    - Yield quotations
    - Price quotations
- Review of fixed income mathematics
    - Present value, future value and rates of interest
    - Discount factors
    - Capital sums
    - Valuation of annuities
- Fixed rate bonds
    - Pricing fixed coupon bonds
    - Price vs. Yield quotations
    - American (and other) price markets

- Implied yield
- Floating rate bonds
  - Pricing floating rate bonds
  - Treatment of floating rate margins
  - Fixed vs. Floating rate bonds
- Zero coupon pricing methodology
  - Representing bonds as portfolios of zero coupon bonds
  - Additive valuation of cash flows using zero coupon bonds
  - Determining price and yield of coupon bonds using zero coupon yields
- Zero coupon yield curve construction
  - Par rates to zero coupon rates
  - Cheap/dear analysis
  - Credit spread term structure
- Bond yield curves
  - Term structure of interest rates
  - Monetary policy, interest rates and central banks
  - Inflation and yields
  - Fluctuation of the yield curve
  - Modeling yield curves
- Alternative measures of return
  - Current yield
  - Yield to maturity
  - Total return
  - Scenario analysis
  - Comparison of bonds using total return analysis
- Bond price sensitivity
  - Price risk
  - Duration
  - Dollar sensitivity
  - Basis point value
- Managing portfolio risk
- Convexity
  - Convexity defined
  - Source of convexity
  - Is convexity good?
- Bond portfolio management models
  - Bond portfolio characteristics
  - Constructing targeted portfolios
- Bond trading and portfolio management
  - Interest rate expectations
  - Relative value trading: Curve plays
  - Flattering/steepening trades
  - Butterfly trades
  - Economic and technical analysis of yield curve trades
  - Bond portfolio management strategies
- Foreign denominated bonds
  - The foreign bond market
  - FX market operations and conventions
  - FX vs. Yield risk
- Option embedded bonds
  - Characteristics of callable bonds
  - Valuation of callable bonds
  - Yield to call (put) vs. Yield to maturity
  - Price sensitivity characteristics of callable bonds

- Convertible notes
- Spot-forward interest rate relationship
  - Spot to forward
  - Forward to spot
  - Yield curve from futures prices
- Interest rate swaps
  - Swap market background
  - Rationale for swap transactions
  - Basic features
  - Computing the fair swap fixed rate
  - The swap fixed rate as the equaliser of value
  - A swap as two bond transactions
  - Value of an open swap
  - Credit risk and swap pricing
  - Swap variations
- Fixed interest futures markets
  - Forward yields and futures prices
  - Speculating using interest rate futures
  - Hedging using interest rate futures
  - BPV values and hedging
  - Covariance approach
  - Historical simulation
  - Monte Carlo simulation
- Interest rate options
  - Rates vs. Prices
  - Bond options
  - Eurodollar futures options
- Caps, floors and collars
  - Option value inequalities
  - Pricing floors and floorlets
  - Collars