Bonds

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
  - Portfolio risk indicators
- Convexity
  - Convexity defined
  - Source of convexity
  - Is convexity good?
- Bond portfolio management models
  - Bond portfolio characteristics
  - Constructing targeted portfolios
- Holding period yield immunisation
  - A coupon bond's zero coupon, equivalent
  - Using duration to reduce holding period yield volatility.
- Bond trading and portfolio management
  - Interest rate expectations
  - Relative value trading: Curve plays
  - 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
- Accreting, amortising and power swap
- Off market and forward swap
- Swaption, set in arrears swap, yield curve swaps
- CMT swaps

- Fixed interest futures markets
  - Forward yields and futures prices
  - Speculating using interest rate futures
  - Hedging using interest rate futures
  - BPV values
  - BPV hedging
- VaR for bond portfolios
  - 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
- Financial engineering – analysis of structured products
  - Structured notes
  - The rationale for structured products