Fixed Income

Module 1: Features of Debt Securities

1 Learning how to explain the purposes of a bond's indenture and describe affirmative and negative covenants.

2 Learning how to describe the basic features of a bond, the various coupon rate structures and the structure of floating-rate securities.

3 Learning how to define accrued interest, full price and clean price.

4 Learning how to explain the provisions for redemption and retirement of bonds.

5 Learning how to identify the common options embedded in a bond issue, explain the importance of embedded options and state whether such options benefit the issuer or the bondholder.

6 Learning how to describe methods used by institutional investors in the bond market of a security (i.e. margin buying and repurchase agreements).

Module 2: Risks Associated with Investing in Bonds

1 Learning how to explain the risks associated with investing in bonds.

2 Learning how to identify the relations among a bond's coupon rate, the yield required by the market, and the bond's price relative to par value (i.e. discount, premium, or equal to par).

3 Learning how to explain how features of a bond (e.g., maturity, coupon and embedded options) and the level of a bond's yield affect the bond's interest rate risk.

4 Learning how to identify the relationship among the price of a callable bond, the price of an option-free bond and the price of the embedded call option.

5 Learning how to explain the interest rate risk of a floating-rate security and why such a security's price may differ from par value.

6 Learning how to compute and interpret the duration and dollar duration of a bond.

7 Learning how to describe yield curve risk and explain why duration does not account for yield curve risk for a portfolio of bonds.

8 Learning how to explain the disadvantages of a callable or pre-payable security to an investor.

9 Learning how to identify the factors that affect the reinvestment risk of a security and explain why pre-payable amortizing securities expose investors to greater reinvestment risk than non amortizing securities.

10 Learning how to describe the various forms of credit risk and the meaning and role of credit ratings and explain sovereign risk.

11 Learning how to explain liquidity risk and why it might be important to investors even if they expect to hold a security to the maturity date.

12 Learning how to describe the exchange rate risk an investor faces when a bond makes payments in a foreign currency.

13 Learning how to explain inflation risk.

14 Learning how to explain how yield volatility affects the price of a bond with an embedded option and how changes in volatility affect the value of a callable bond and a put-able bond.

15 Learning how to describe the various forms of event risk.

Module 3: Overview of Bond Sectors and Instruments

1 Learning how to describe the features, credit risk characteristics and distribution methods for government securities.

2 Learning how to describe the types of securities issued by the U.S. Department of the Treasury (e.g. bills, notes, bonds and inflation protection securities) and differentiate between on-the-run and off-the-run Treasury securities.

3 Learning how to describe how stripped Treasury securities are created and distinguish between coupon strips and principal strips.

4 Learning how to describe the types and characteristics of securities issued by U.S. federal agencies.

5 Learning how to describe the types and characteristics of mortgage-backed securities and explain the cash flow, prepayments and prepayment risk for each type.

6 Learning how to state the motivation for creating a collateralized mortgage obligation.

7 Learning how to describe the types of securities issued by municipalities in the United States, and distinguish between tax-backed debt and revenue bonds.

8 Learning how to describe the characteristics and motivation for the various types of debt issued by corporations (including corporate bonds, medium-term notes, structured notes, commercial paper, negotiable CDs and bankers' acceptances).

9 Learning how to define an asset-backed security, describe the role of a special purpose vehicle in an asset-backed security's transaction, state the motivation for a corporation to issue an asset-backed security and describe the types of external credit enhancements for asset-backed securities.

10 Learning how to describe collateralized debt obligations.

11 Learning how to describe the mechanisms available for placing bonds in the primary market and differentiate the primary and secondary markets in bonds.

Module 4: Understanding Yield Spreads

1 Learning how to identify the interest rate policy tools available to a central bank (e.g., the U.S. Federal Reserve).

2 Learning how to describe a yield curve and the various shapes of the yield curve.

3 Learning how to explain the basic theories of the term structure of interest rates and describe the implications of each theory for the shape of the yield curve.

4 Learning how to define a spot rate.

5 Learning how to compute, compare, and contrast the various yield spread measures.

6 Learning how to describe a credit spread and discuss the suggested relation between credit spreads and the well-being of the economy.

7 Learning how to identify how embedded options affect yield spreads.

8 Learning how to explain how the liquidity or issue-size of a bond affects its yield spread relative to risk-free securities and relative to other securities.

9 Learning how to compute the after-tax yield of a taxable security and the tax-equivalent yield of a tax-exempt security.

10 Learning how to define LIBOR and explain its importance to funded investors who borrow short term.

Module 5: Introduction to the Valuation of Debt Securities

1 Introduction to valuation of debt securities.

2 Learning to identify the types of bonds for which estimating the expected cash flows is difficult and explain the problems encountered when estimating the cash flows for these bonds.

3 Learning how to compute the value of a bond and a change in value that is attributable to a change in the discount rate.

4 Learning how to explain how the price of a bond changes as the bond approaches its maturity date and compute the change in value that is attributable to the passage of time.

5 Learning how to compute the value of a zero-coupon bond.

6 Learning how to explain the arbitrage-free valuation approach and the market process that forces the price of a bond toward its arbitrage-free value and explain how a dealer can generate an arbitrage profit if a bond is mispriced.

Module 6: Yield Measures, Spot Rates, and Forward Rates

1 Learning how to explain the sources of return from investing in a bond.

2 Learning how to compute and interpret the traditional yield measures for fixed-rate bonds and explain their limitations and assumptions.

3 Learning how to explain the importance of reinvestment income in generating the yield computed at the time of purchase, calculate the amount of income required to generate that yield, and discuss the factors that affect reinvestment risk.

4 Learning how to compute and interpret the bond equivalent yield of an annual-pay bond, and the annual-pay yield of a semi-annual-pay bond.

5 Learning how to describe the methodology for computing the theoretical Treasury spot rate curve and to compute the values of a bond using spot rates.

6 Learning how to differentiate between the nominal spread, the zero-volatility spread and the option-adjusted spread.

7 Learning how to describe how the option-adjusted spread accounts for the option cost in a bond with an embedded option.

8 Learning how to explain a forward rate and compute spot rates from forward rates, forward rates from spot rates and the value of a bond using forward rates.

Module 7: Introduction to the Measurement of Interest Rate Risk

1 Learning how to distinguish from the full valuation approach (the scenario analysis approach) and the duration/convexity approach for measuring interest rate risk, and explaining the advantage of using the full valuation approach.

2 Learning how to demonstrate the price volatility characteristics for option-free, callable, pre-payable and putable bonds when interest rates change.

3 Learning how to describe positive convexity, negative convexity and their relation to bond price and yield.

4 Learning how to compute and interpret the effective duration of a bond, given information about the bond's price will increase and decrease for given changes in interest rates and compute the approximate percentage price change for a bond, given the bond's effective duration and a specified change in yield.

5 Learning how to distinguish among the alternative definitions of duration and explaining why effective duration is the most appropriate measure of interest rate risk for bonds with embedded options.

6 Learning how to compute the duration of a portfolio, giving the duration of the bonds comprising the portfolio, and explaining the limitations of portfolio duration.

7 Learning how to describe the convexity measure of a bond and estimate a bond's percentage price change, given the bond's duration and convexity and a specified change in interest rate.

8 Learning how to differentiate between modified convexity and effective convexity.

9 Learning how to compute the price value of a basis point (PVBP) and explaining its relationship to duration.