Level I of the CFA® 2025 Exam

Study Notes - Fixed Income

Offered by AnalystPrep

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Learning Module 1: Fixed Income Instrument Features

LOS 1a: describe the features of a fixed-income security

Fixed-income securities encompass bonds and loans, serving as crucial avenues of debt financing for corporations and governments. These are formed under standardized agreements, where issuers obtain funds for operational or capital needs, and investors, in turn, lend their capital, expecting interest payments and the eventual return of the principal. These securities are part of a broader spectrum of corporate liabilities, with each debt type possessing unique features such as varying maturities, seniority levels, and currencies.

Importantly, fixed-income securities are distinctive from other liabilities as they involve cash-settled agreements with investors or banks. Governments typically use bond issuance as their primary financing strategy, though some also secure loans from international bodies like the IMF. A distinguishing characteristic of fixed-income securities from equities is their guaranteed periodic cash flows, offering investors regular income and capital return upon maturity.

Key Characteristics of Fixed-Income Securities

Issuer

A bond's issuer, whether it's a national government, a local body, or a private corporation, is responsible for making all interest and principal payments. Sovereign bonds usually carry the least risk due to governmental backing.

Maturity

This signifies the end date when the issuer completes its payments to bondholders. Securities with a maturity period of one year or less are considered money market securities, while those extending beyond a year are capital market securities. Perpetual bonds, which do not have a definite maturity, are also a unique class of bonds.

Principal

This is the amount that the issuer agrees to repay to investors at the end of the bond's lifespan. Some securities may distribute principal repayment over time rather than in one lump sum at maturity.

Coupon Rate and Frequency

Bond interest can be classified as fixed, variable, or part of a single payment at maturity. Fixed-coupon bonds involve regular payments at specific intervals (monthly, quarterly, semi-annual, or annual), with corporate bonds typically paying semiannually. Floating-rate notes (FRNs) have variable interest determined by combining a market reference rate (MRR) and a credit spread. Zero-coupon bonds, on the other hand, do not pay periodic interest; instead, they pay interest along with the principal at maturity and are usually issued at a discount to par value.

$$\text{Interest expense} = \frac{\text{Par Value of the bond} \times \text{Coupon rate}}{\text{Frequency of payments}}$$

Seniority:

In terms of repayment during liquidation or bankruptcy, senior debt takes precedence over other forms of debt. Junior or subordinated debts are repaid only after senior debts are settled.

Contingency Provisions

Bonds may include clauses for actions under certain circumstances. A contingency provision in bonds includes embedded options like call, put, and conversion to equity. These options cannot be traded separately from the bond but can be valued by comparing it with a similar bond without such provisions.

Yield Measures

The bond's expected cash flows and its price can be used to determine yield measures like current yield and yield-to-maturity.

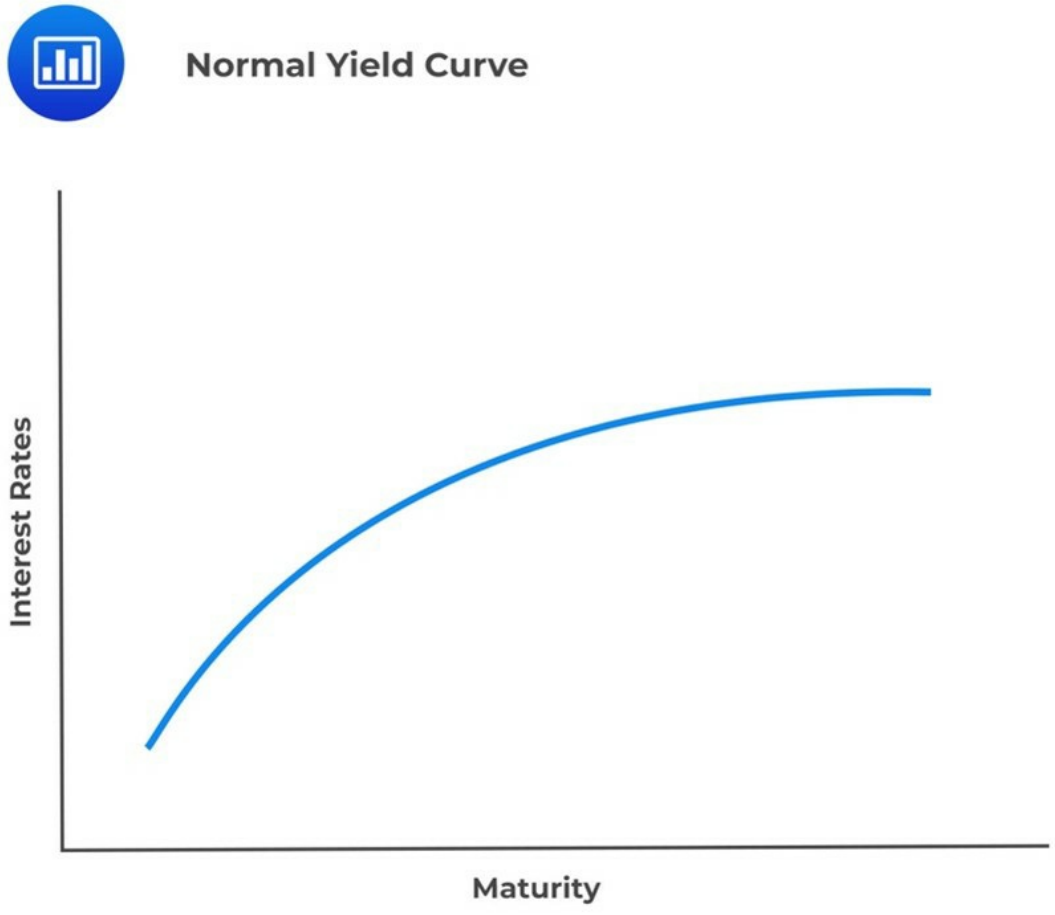
$$\text{Current yield} = \frac{\text{Annual coupon}}{\text{Bond price}} \times 100\%$$

Yield-to-maturity (YTM) is a more complex measure, calculated as the internal rate of return using the bond's price and its coupon payments until maturity. It is normally expressed as an annual rate. If all assumptions hold (no default, holding until maturity, reinvesting at YTM), the investor's rate of return will equal the bond's YTM at the time of purchase.

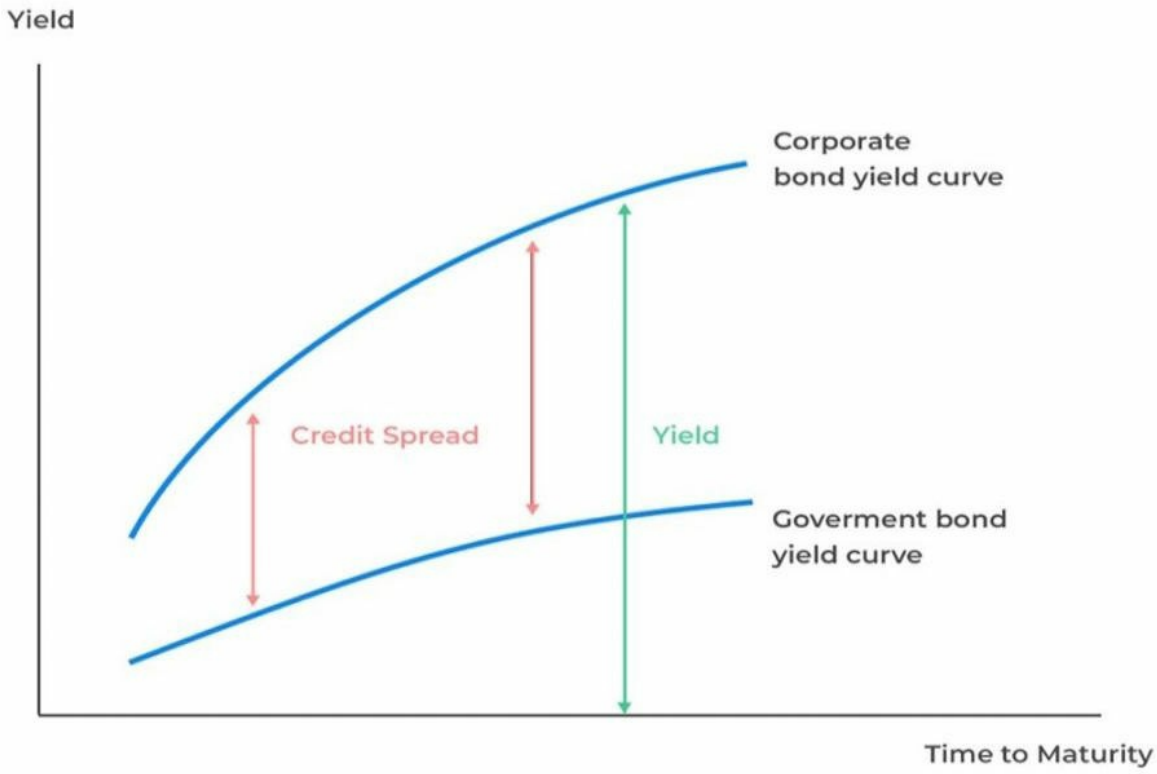
Yield Curves

Plotting an issuer's bonds against their yield-to-maturity and time-to-maturity gives us a yield curve. It is a useful tool for comparing the expected returns on different bonds issued by the same entity. Comparing this with the yield curve of a risk-free bond, like a sovereign bond, gives a measure of the credit risk of the bond.

This is demonstrated in the charts that follow.



Credit Spread increasing with Longer Time to Maturity



Question 1

The coupon payment on a 3% coupon bond with a par value of $200,000 and a quarterly payment frequency is *closest to*:

A. $666.67

B. $1500.00

C. $24000.00

Solution

The correct answer is **B.**

$$\text{Coupon payment} = \frac{\text{Par Value of the bond} \times \text{Coupon rate}}{\text{Frequency of payments}}$$

$$\text{Coupon payment} = \frac{\$200,000 \times 3\%}{4} = \$1,500$$

Question 2

Calculate the annual interest payable for a USD 5 million FRN issued by a U.S. corporation, which pays quarterly interest equal to the three-month MRR plus 200 bps. If the three-month MRR is 1.75%, what is the corporation's quarterly FRN coupon interest payable for the period?

A. $46,875

B. $87,500

C. $187,500

Solution

The correct answer is **C.**

The FRN coupon consists of the MRR plus the issuer-specific spread.

$$\text{FRN coupon} = \text{MRR} + \text{Spread}.$$
$$\text{FRN coupon} = 1.75\% + 2.00\%.$$
$$\text{FRN coupon} = 3.75\%.$$

$$\text{Quarterly interest} = \$5,000,000 \times 3.75\% = \$187,500$$

LOS 1b: describe the contents of a bond indenture and contrast affirmative and negative covenants

Bond Indentures

A bond indenture is a legal contract that outlines the obligations of the bond issuer and the rights of the bondholders. It is also known as a trust deed, and in regions like the United States and Canada, it's often referred to as the bond indenture. This contract lays the groundwork for all subsequent transactions between the bondholder and the issuer. Beyond defining the issuer's obligations and restrictions, the bond indenture also details the bond's features. It pinpoints the issuer's sources of repayment, commitments made to bondholders, and provisions that enhance the issuer's capacity to fulfill its debt obligations in full.

Sources of Repayment

Repayment sources for bonds differ based on the issuer. National governments often leverage their sovereign right to tax economic activities. In contrast, local or regional governments might derive repayment funds from taxation or fees associated with infrastructure projects. Corporate bond investors predominantly depend on the firm's operating cash flows. Meanwhile, Asset-backed securities (ABS) are anchored in the cash flows generated from a collection of loans or receivables held by a designated special-purpose issuer.

Bond Covenants

Covenants are provisions in the bond indenture. They are legally enforceable rules that borrowers and lenders agree upon when a bond is issued.

Negative Covenants (Restrictions)

Negative covenants, often termed as restrictions, primarily aim to safeguard the interests of bondholders. They act as preventive measures, ensuring that the issuing firm refrains from actions that could escalate the risk of default. Examples of such covenants include restrictions on

asset sales, negative pledges of collateral, limitations on further borrowings, and constraints on investments, disposal of assets, or the issuance of debt that is senior to existing obligations.

Affirmative Covenants (Promises)

Affirmative covenants, also known as promises, are actions that the borrower commits to undertake. Unlike negative covenants, they do not typically curtail the operational decisions of the issuer. Examples include making punctual interest and principal payments to bondholders, ensuring and upkeeping assets, adhering to relevant laws and regulations, utilizing the proceeds from the bond issue appropriately, providing financial reports in a timely manner, allowing bondholders the option to redeem their bonds at a premium if the issuer undergoes acquisition, and clauses like the pari passu, which guarantees equal treatment of debt obligations. Another notable affirmative covenant is the cross-default clause, which signifies a default if the issuer defaults on any other debt obligation.

Contrasting Affirmative and Negative Covenants

Affirmative Covenants are actions that the borrower promises to perform. They are typically administrative in nature and do not usually impose additional costs on an issuer nor materially constrain the issuer's discretion in operating its business. On the other hand, negative covenants are prohibitions on the borrower. They are designed to protect bondholders by preventing the issuer from taking certain actions that might increase the risk of default. However, they should not be so restrictive that they hinder the issuer from capitalizing on opportunities or adapting to changing business circumstances.

Question #1

What is the primary purpose of a bond indenture?

A. To specify the bond's features and identify the issuer's sources of repayment.
B. To provide a detailed history of the issuer's past financial performance.
C. To outline the voting rights of bondholders in the issuer's annual general meeting.

Solution

The correct answer is **A.**

A bond indenture is a legal contract that outlines the obligations of the bond issuer and the rights of the bondholders. It specifies the bond's features, the issuer's sources of repayment, and other commitments and provisions.

B is incorrect: The bond indenture does not provide a detailed history of the issuer's past financial performance; it focuses on the terms and conditions of the bond.

C is incorrect: Bondholders typically do not have voting rights in the issuer's annual general meeting; that privilege is reserved for equity shareholders.

Question #2

Which of the following is *least likely* a source of bond repayment?

A. Operating cash flows of the firm for corporate bonds.
B. Fees from infrastructure projects for local governments.
C. Dividends from equity shares.

The correct answer is C: Dividends from equity shares are returns to equity shareholders and are not a source of bond repayment.

A is incorrect: Investors in corporate bonds rely on the operating cash flows of the

firm as their primary source for interest and principal payments.

B is incorrect: Local or regional governments may use fees from infrastructure projects as a source of bond repayment.

Question #3

Which of the following is *most likely* the primary role of negative covenants in a bond indenture?

A. To specify actions that the borrower promises to perform.
B. To ensure that an issuer maintains the ability to make interest and principal payments.
C. To provide bondholders with voting rights in the issuer's decisions.

Solution

The correct answer is **B.**

Negative covenants are prohibitions on the borrower. They are designed to protect bondholders by preventing the issuer from taking certain actions that might increase the risk of default.

A is incorrect: This describes affirmative covenants, which specify actions the borrower promises to perform.

C is incorrect: Bondholders typically do not have voting rights in the issuer's decisions; that privilege is reserved for equity shareholders.