FRM Part 1

Book 3 - Financial Markets and Products

CORPORATE BONDS

Learning Objectives

After completing this reading you should be able to:

- ✓ Describe a **bond indenture** and explain the role of the corporate trustee in a bond indenture.
- ✓ Explain a **bond's maturity date** and how it impacts bond retirements.
- ✓ Describe the main types of **interest payment classifications**.
- ✓ Describe **zero-coupon bonds** and explain the relationship between original-issue discount and reinvestment risk.
- ✓ Distinguish among the following **security types relevant for corporate bonds**: mortgage bonds, collateral trust bonds, equipment trust certificates, subordinated and convertible debenture bonds, and guaranteed bonds.
- ✓ Describe the **mechanisms** by which corporate bonds can be **retired before maturity**.
- ✓ Differentiate between **credit default risk** and **credit spread risk**.
- ✓ Describe **event risk** and explain what may cause it in corporate bonds.
- ✓ Define **high-yield bonds**, and describe types of high-yield bond issuers and some of the payment features unique to high yield bonds.
- ✓ Define and differentiate between an **issuer default rate** and a **dollar default rate**.
- ✓ Define **recovery rates** and describe the relationship between recovery rates and seniority.

Bond Indenture

- The bond indenture refers to the official document that outlines the **terms of the contract**, including the obligations of the issuer and the rights of bondholders.
- It's usually in the best interests of the **bondholder** to seek the services of a corporate trustee to **interpret the language therein**.

- **A corporate trustee**'s role is to act in the **best interests of investors** by being an independent supervisor of the security.
  - All bond issues over $5 million must have a corporate trustee.
  - All trustees are required to be professionally competent with **no competing interests** with their client.

- A bond's indenture may allow for **early retirement** of a bond.

Types of Interest Payment Classifications

1. Straight-coupon bonds

- Straight coupon bonds pay a **fixed interest rate** for the entire life of the issue.
  - In the U.S., bonds typically pay interest twice a year.
  - In Europe, most straight-coupon bonds pay interest annually.
- **At maturity**, the amount paid consists of the **interest earned** in the final period **plus principal**.

2. Floating-rate bonds

- Just like straight-coupon bonds, floating-rate bonds **pay interest** but based on a **non-constant rate**.
  - For example, the interest payment at each payment date may **be tied to the LIBOR** rate on that date.

Types of Interest Payment Classifications

3. Participating bonds

- Have a **minimum interest rate** but may **pay more** if the **issuer's profits increase**.

4. Income bonds

- Pay **at most the specified interest** rate but may **pay less** if the issuer's **profits decline**.

5. Zero-coupon bonds:

- Zero coupon bonds **do not pay any interest** and have **no reinvestment risk**.
- At maturity, the issuer pays the **par value of the bond**.
- Bondholders earn a capital gain by **purchasing the bond at a discount** to the face value.

Bond Types

1. Mortgage bonds

- Mortgage bonds have a security, such as **real property**, **underlying the issue**.
- The bondholders have the **first-mortgage lien** on the properties of the issuer.
- As secured bonds, the rate of interest payable may be less than that payable on unsecured bonds.

2. Collateral trust bonds

- Collateral trust bonds are **secured by a range of financial assets** including stocks, notes, bonds, or similarly ranked securities owned by the issuer.
- The issuer is usually a holding company, and the **collateral** consists of **claims on their subsidiaries**.

Bond Types

3. Equipment trust certificates (ETCs)

- Equipment trust certificates (ETCs) are debt instruments that allow the borrower **to take possession of an asset** and put it to use **while paying for it over time**.
- The **trustee purchases** the asset/equipment and **leases it to the borrower** who pays rent on the equipment.
- The rent is then passed on to the holder of the ETC.

4. Debentures

- Debentures are **unsecured bonds** only issued by highly rated institutions.
  - The interest rate payable is usually higher than that in secured bonds.
- If the issuer has no outstanding secured bonds, debentures have a **claim on all of the issuer's assets** along with those of guarantors.
  - If the issuer has secured debt, the debenture holder has a claim on all assets not backing the secured debt.

Bond Types

5. Subordinated debenture bonds

- Subordinated debenture bonds are bonds that rank the lowest on the list of creditors in the event of a winding up.
  - They rank below debentures and unsecured debt, so the issuer has to pay a higher interest rate.

6. Convertible debentures

- Convertible debentures are unsecured bonds that give the holder the **right to convert the bond into common stock**.
  - This right to convert is a **benefit to the holder** and therefore **reduces the interest rate paid**.

7. Guarantee bonds

- Guarantee bonds are bonds **issued by one company** but **guaranteed by another company**.

Mechanisms by Which Corporate Bonds Can Be Retired before Maturity

Some of the reasons why an issuer might decide to retire a bond early include:

- To take advantage of **lower interest rates**:
  - If the current borrowing cost is significantly lower than the rate agreed in the contract, the issuer might retire the bond and **replace it with a cheaper bond**.
- To get rid of restrictive terms/conditions
- To increase shareholder value
- To alter the firm's capital structure

Corporate bonds can be retired in two main ways, namely:

- Mechanisms **included** in the bond's indenture
- Mechanisms **not included** in the bond's indenture

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Mechanisms Included in the Bond's Indenture

Call Provisions

- Call provisions are basically call options on the bond.
  - There are two types of call provisions:

1. Fixed-price call

- In a fixed-price call, the issuer can call back the bond at **various points in time**, but the **price** paid at each point is **specified** in the indenture.
  - Normally, the price gradually declines as the bond's maturity nears.

2. Make-whole call

- Make-whole call provisions use the **prevailing market price** as the call price subject to a floor price equivalent to the bond's par value.
  - All **futures cash flows are discounted** based on the current yield of comparable-maturity Treasury securities plus a premium

Mechanisms Included in the Bond's Indenture

Sinking fund provision

- A sinking fund provision **retires a bond periodically/systematically**, rather than retiring the entire issue at once.
- The terms of the provision are **clearly outlined in the indenture**.
  - Example: If a bond has a principal of **$60 million** and **20 years** to maturity, a sinking fund provision may seek to retire the bond in chunks of **$15 million** at **5-year intervals**.

Maintenance and replacement fund

- This mechanism is used by electric utility companies that retire their bonds for the **maintenance and repair of the pledged collateral**.

Redemption through the Sale of Assets

- Release-of-property and substitution-of-property clauses are found in most secured bond indentures because bondholders want the integrity of the **collateral to be maintained**.

Mechanisms Excluded from the Bond’s Indenture

Tender offers

- In this method, the issuer sends a tender offer **declaring its intention to buy back its debt issue**.
    - **A circular is sent out to all bondholders** outlining the finer details of the offer, **including the price** at which the issuer is willing to execute the offer.

Credit Default Risk vs. Credit Spread Risk

Credit default risk

- Risk that the bond issuer will **not make timely payments** of interest and principal
- Usually evaluated using credit ratings issued by **rating agencies**

Credit spread risk

- Difference between a **bond's yield** and the **yield of a Treasury security** with a comparable maturity
- Determined by **macroeconomic** as well as **issuer-specific factors**

➢ A measure commonly used to assess credit spread risk is **spread duration** – the change in the value of a bond for a 1% (100 basis points) change in credit spread, assuming the yield of the underlying treasury security is constant.

Event Risk

- Event risk refers to the risk that an **unexpected event will negatively impact** a company’s financial position.
  - An unexpected event could take the form of a natural disaster, hostile takeover, restructuring, recapitalization, or even a large-scale share repurchase program.
- To protect bondholders from such eventualities, a firm may include a **poison put in the indenture**.
  - A poison put gives bondholders the right to redeem a bond before maturity, at or above par value, in the event that the firm **suffers a hostile takeover**.
  - The poison put may also **cover the other unexpected events listed above**.

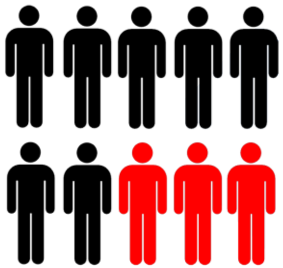
High-yield Bonds

- High-yield bonds are bonds rated below investment-grade by rating agencies – a **rating below "BBB"** from S&P, and **below "Baa"** from Moody's.
- Since they carry **more default risk**, they must pay a **higher yield** than investment-grade bonds.
- "Junk" bonds – as they are often called – can offer excellent returns to investors. In most cases, junk bonds do not fail.

- There are several types of high-yield bonds:
  - **Story bonds** – issued to fund a specified venture project
  - **Fallen angels** – bonds that were once investment-grade but which have **since been downgraded** following negative impact events.

Issuer Default Rate vs. Dollar Default Rate

- There are two ways in which default can be measured:



Issuer default rate

- $\dfrac{\textit{Number of issuers that defaulted}}{\textit{Number of issues over a year}}$

Dollar default rate

- $\dfrac{\textit{Par value of all bonds that defaulted}}{\textit{Par value of all bonds oustanding during the year}}$

Recovery Rates

- The **recovery rate** refers to the percentage amount **recovered by a bondholder following a default event**.
- The **loss given default**, LGD, is the amount that a bondholder stands to **lose in the event of default**.
- It's given by:

$$LGD = 1 - Recovery\ rate$$

Example

- If the recovery rate on an issue is 60%, the loss given default is 40% .
  - On a $100 million debt instrument, the estimated loss following a default event would be *$40 million*.

Bonds with higher seniority have higher recovery rates because they take precedence in the event of a winding up.

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