CHAPTER 6:
FIXED-INCOME SECURITIES: FEATURES AND TYPES

Topic One: The Fixed-Income Marketplace

1. **Overview.**
   A. Investing in a fixed-income security is like holding an IOU. An investor (lender) loans a borrower (the issuer) a sum, called the principal. In return, the issuer promises to repay the principal to the investor on a maturity date, and to pay interest at set amounts and on specific dates.

   B. Fixed-income securities thus represent debt. The major categories include:
      (1) Bonds.
      (2) Debentures.
      (3) Money-market funds.
      (4) Mortgages.
      (5) Preferred shares.

2. **Reasons to Issue Fixed-Income Securities.**
   A. There are two main reasons for a company to issue a fixed-income security:
      (1) To expand operations.
         (a) When bonds are issued for "general corporate purposes," it is an indication the company plans to invest in its current operations.
         (b) Growth can take the form of expanding current operations or buying other companies.

      (2) For financial leverage (also called operating leverage).
         (a) Financial leverage occurs when there is an expectation that the money borrowed will generate profits greater than its cost (e.g., cost is 5%, profits generated will be 7%).

   B. Governments borrow to finance their deficits by issuing fixed-income securities.

3. **Size of the Fixed-income Market.**
   A. The fixed-income market is larger than Canada's equity trading market.

Topic Two: Fixed-Income Terminology and Features

1. **Definitions.**
   A. A bond pays interest on a regular basis and returns the principal amount that was invested on its maturity date.
      (1) A trust deed outlines the obligations of the issuer (borrower). If the issuer defaults, provisions in the trust deed allow physical assets of the issuer (such as a building) to be seized in lieu of payment.

   B. A debenture is a type of bond that is secured by a non-physical asset (e.g., the issuer's credit rating).

   C. In practice, both are referred to as bonds, except where the distinction is important.

2. **Interest on Bonds.**
   A. The fixed or variable interest rate for the bond is called the coupon rate. The coupon rate is also known as the bond's interest income, bond income, or coupon income.
      (1) Bonds with variable rates are referred to as floating-rate securities.
      (2) Bonds that pay a return based on the performance of an equity index, such as the TSX, are called index-linked notes. They do not pay interest.

   B. The coupon rate, divided by the number of payments per year, equals the interest at each payment date.
      (1) Interest is typically paid twice annually at six-month intervals.

   C. Interest payments for bonds:
      (1) May change over the term of the bond, according to a schedule (e.g., step-up bonds, most savings bonds)
      (2) May compound over the life of the bond and be paid at maturity (e.g., zero-coupon bonds, strip coupons, and residuals).

3. **Face Value and Denominations.**
   A. The maturity value of the bond is called the **face value** or **par value**.

B. Denominations of bonds align with their intended market.
   (1) Small investors are offered denominations in the thousands of dollars.
      (a) Canada Savings Bonds issue denominations as small as $100.
      (b) Corporate bond minimum denominations are $1,000.
   (2) Institutional investors see denominations in the millions of dollars.

4. Price and Yield.

A. There are two factors that determine the value of a bond trading in the secondary market:
   (1) Price.
      (a) Bond prices are quoted using an index with a base of 100.
         i. A bond trading at par, or face value, is trading at 100 for every $100 of bond principal
         ii. A bond trading at a discount is trading below 100.
         iii. A bond trading at a premium is trading above 100.
   (2) Yield.
      (a) The yield of a bond can be determined using the bond's price. The yield is the expected annual return for the bond.
      (b) The yield is not the coupon rate.
      (c) There is a relationship between the yield of a bond and a bond's coupon rate.
         i. If the yield is greater than the coupon rate, the bond is trading at a discount.
         ii. If the yield and coupon rate are the same, the bond is trading at par.
         iii. If the yield is less than the coupon rate, the bond is trading at a premium.

5. Term to Maturity.

A. The maturity date of a bond is the date at which the amount borrowed must be repaid.

B. The term to maturity is the amount of time left before a bond's maturity date.

C. Bonds are categorized by their term to maturity:
   (1) Money-market bonds have a term of one year or less.

(a) Money-market securities include short-term bonds, Treasury bills, bankers' acceptances, and commercial paper.

(2) Short-term bonds have a term of five years or less until maturity.

(3) Medium-term bonds have a term of five to ten years until maturity.

(4) Long-term bonds have a term of ten years or more until maturity.

6. Liquid Bonds, Negotiable Bonds, and Marketable Bonds.

A. Liquid bonds are so called because of their liquidity. This means they are:

(1) Easily bought or sold.

(2) Quickly traded in medium and large volumes with little price sacrifice.

B. Negotiable bonds are in a form suitable for transfer from one person to another.

(1) If a certificate exists, it must be in good condition (e.g., not torn). Most bonds today are book-based with no certificate issued, thus physical condition does not hinder transfer.

C. Marketable bonds can be easily sold due to their attractive prices and features (e.g., private placements).

7. Callable Bonds.

A. Callable bonds give the issuer the right to pay off the bond before the maturity date, usually with 10 to 30 days' notice. This is the "call," or redemption, feature.

B. A callable bond permits the issuer to refinance or re-issue the bond. This is an advantage to the issuer when current interest rates are lower than the interest rate of the original bond.

C. Government of Canada bonds and municipal debentures are usually non-callable, but most provincial and corporate bonds have call features.

(1) Provincial bonds are usually callable at par, plus accrued interest.

(a) Accrued interest is the interest that has accumulated since the last interest payment date. It belongs to the bondholder.

D. Standard call features specify the price, date, and intervals at which the bond can be called.

(1) A call protection period is the time before the first possible call date.

(2) The redemption price of a callable bond is usually higher than the par value of the bond. Therefore, if the bond is called, the holder receives a premium. This premium diminishes the closer the bond is to maturity.

E. A Canada yield call is associated with corporate bonds.

(1) The issuer can call the bond at the greater of par, or a price based on the yield of an equivalent-term Government of Canada bond, plus a yield spread.

(a) A yield spread is an additional yield.

8. Sinking Funds and Purchase Funds.

A. A sinking-fund obligation means the issuer must repay all or part of a bond before its maturity, according to a fixed schedule.

B. A purchase fund repays debt before maturity by purchasing the debt in the open market when the price reaches a certain price.

C. An issue can have both a sinking and a purchase fund, but this is rare.

9. Extendible and Retractable Bonds.

A. Extendible bonds and debentures are short term, but the investor has the option to extend the debt (by the extension date) to a longer term, in return for the same (or slightly higher) rate of interest.

(1) Bonds with an extendible feature change from short-term bonds to long-term bonds.

B. A retractable bond is issued as a long-term bond in which the debt can be retracted to an earlier date, called the retraction date.

(1) Thus, a retractable bond is a long-term bond that can be made into a short-term bond.

C. The holder of the bond must inform the issuer during the election period if the bond is to be extended or retracted.

(1) If the holder does not take any action during the election period, extendibles mature on their earlier date and retractables do not mature until their later maturity date.

10. Convertible Bonds and Debentures.

A. A convertible bond can be exchanged for common shares of the issuer. This is called the conversion privilege.

(1) Conversion can occur until the conversion privilege ends.

(2) Investors accept a slightly lower yield in exchange for the conversion feature.

(3) In case of a stock split, the conversion privilege is adjusted to reflect the effects of the split.

B. The conversion price is the value of the bond divided by the number of the shares to which the bond can be converted (e.g., a bond valued at $1,050 with conversion to 50 shares will have a conversion price of $21).

(1) To encourage early conversion, the conversion price is gradually raised over time; this yields a lower number of shares to the investor.

(2) When the common shares trade below the conversion price, the price of the bond is consistent with comparable bonds.

(3) When the common shares trade above the conversion price, the price of the bond increases.

C. The conversion feature benefits issuers and investors.

(1) Issuers:

(a) Can borrow at a lower cost and issue equity on better terms than by selling common shares.

(b) Do not necessarily have to pay interest that has accrued since the last interest payment date. Instead, on conversion, the holder receives dividends declared and paid after the conversion date.

(c) Can call the issue, since most convertibles are callable.

(2) Investors:

(a) Have the safety and income of a bond.

(b) Have the option to convert into common shares, with a potential increase in their value. For this reason, convertible debentures are known as two-way securities.

D. Some convertible bonds allow the issuer to force the convertible security holder to exchange the security for stock (forced conversion) by calling the security once the common stock trades at or above a specified price.

   (1) If the holder of a convertible bond or debenture waits for the forced conversion, it is probable that fewer shares will be received.

   (2) Forced conversion is advantageous to the issuer, because it improves the debt-equity ratio and allows for new debt financing.

11. Protective Provisions of Corporate Bonds.

A. The following common protective provisions in the general covenants of a bond ensure the bondholder receives what he or she is owed:

   (1) Security clause: details of the mortgage, asset, or security backing the debt.

   (2) Negative pledge clause: the issuer will not dilute assets pledged as security for the investor.

   (3) Limitation on sale and leaseback transactions clause: protects the investor against the firm selling and leasing back assets that securitize the debt.

   (4) Sale of assets or merger clause: protects the investor if the issuing company sells all its assets or is sold.

   (5) Dividend test clause: defines acceptable limits of dividend payments.

   (6) Debt test clause: establishes a maximum debt-to-asset ratio to limit the amount of additional debt that may be issued.

   (7) Additional bond provisions: the conditions under which more bonds may be issued.

   (8) Sinking or purchase fund and call provisions: describes each fund and conditions under which the debt can be called.

Topic Three: Government of Canada Securities

1. Marketable Bonds.

A. Marketable bonds have a specified maturity date and interest rate, and are transferable.

   (1) Marketable bonds can be traded in the market.

   (2) The Government of Canada (GOC) issues marketable bonds in its name and in the name of Crown corporations.

      (a) All GOC bonds are non-callable.

B. Among all Canadian bond issuers, the highest quality is assigned to federal government bonds.

C. Foreign investors compare the quality of Canadian issues to the issues of other governments; yields of the bonds reflect political and economic risk.

2. Treasury Bills (T-bills).

A. T-bills are short-term obligations offered in $1,000 denominations up to $1 million.

B. T-bills are sold at auction through the Bank of Canada every two weeks. They mature at 91 days, 182 days, and 364 days.

C. Instead of paying interest, T-bills:
   (1) Are sold at a discount,
   (2) Mature at par (i.e., $100)
   (3) Provide a return that is the difference between the issue price and par.
      (a) Their return is taxable as income.

3. Canada Savings Bonds (CSBs).

A. A new issue of CSBs is offered each year from October to April.
   (1) There are limits as to how many CSBs can be bought from each series.

B. CBSs are a highly liquid investment because, after an initial three months during which no interest is earned, they can be cashed at any bank at any time at their full value plus accrued interest.

C. To protect against theft, loss, and destruction, CSBs must be registered to:

   (1) An individual (including minors).

      (a) CSB purchasers must be Canadian residents with a Canadian address.

      (b) CSBs are available through many organizations and companies in Canada for purchase by payroll deduction.

   (2) A deceased's estate.

   (3) An individual trust.

D. Although they cannot be transferred or assigned, CSBs can be used as collateral for loans.

E. CSBs pay interest on either a regular or a compound basis.

   (1) Regular-interest CSBs.

      (a) Regular-interest bonds earn simple interest on November 1 each year until maturity or redemption.

         i. If regular-interest bonds are redeemed during the eleventh and twelfth months following the issue and anniversary dates, the amount of any unearned interest for those months will be deducted from the proceeds of redemption, and that amount will be included in the owner's annual interest payment.

      (b) Issued in denominations of $300, $500, $1,000, $5,000, and $10,000.

      (c) Regular-interest CSBs can be exchanged for compound-interest CSBs of the series and same denomination within 10 months of issue.

   (2) Compound-interest CSBs.

      (a) Compound-interest CSBs allow the bondholder the option of relinquishing annual interest payments in order to compound accumulated unpaid interest.

      (b) When the CSB is redeemed, the holder receives the face value of the bond and the total compounded interest.

i. Compound interest must be reported as taxable income in the year in which it was earned rather than in the year in which it was received; therefore, the holder must pay tax on the income before it is actually received.

(c) The minimum denomination for compound-interest CSBs is $100.

F. Canada Premium Bonds (CPBs)

(1) CPBs offer higher regular or compound interest rates when issued than other CSBs on sale at the same time.

(2) CPBs can be redeemed without penalty only once a year, and redemption must be on or 30 days after the anniversary date of issue.

G. Real Return Bonds (RBBs)

(1) Pay interest and repay principal like conventional bonds, but adjust both payments for inflation; this is called the inflation compensation component.

(a) The coupon rate is the real rate (not nominal rate) and thus takes inflation into consideration.

(b) A coupon payment is the coupon rate times the face value of the bond adjusted for inflation.

(c) The maturity payment multiplies the face value of the bond by inflation since the date of issue.

(d) For example, an RBB with a coupon of 4% and priced at 100 will provide a real yield of 4% until maturity. Alice bought $1,000 of this bond. After the first six-month period inflation as measured by CPI was 1%. The principal would be $1,010 ($1,000 x 1.01%). The coupon payment at the end of six months would be $40.40 ($1,010 x 4%). Alice held the bond for ten years and then cashed it in. Over that ten-year period, inflation had been 21.9% (the equivalent of an annual inflation rate of 2%).

The principal would be valued at $1,219 ($1,000 x 1.219) and the final payment of principal and interest would be $1,267.76 ($1,219 x 4%).

Topic Four: Provincial and Municipal Government Securities

1. **Overview.**
    A. Bonds are issued by provincial governments inside and outside of Canada to fund deficits and to finance spending.

    B. Like government bonds, provincial bonds are actually debentures, since no provincial assets are pledged as collateral. Their value depends on the province's ability to pay.

    C. Provincial bonds are second in credit quality to GOC direct and guaranteed bonds, however, differences exist between provincial issues due to credit and market conditions.
        (1) The creditworthiness of a province is determined by its:
            (a) Per capita debt.
            (b) Federal transfer payments.
            (c) Political direction and stability.
            (d) Wealth and diversification of assets.

2. **Guaranteed Bonds.**
    A. Most provinces guarantee the bonds issued by their agencies and commissions (e.g., the Province of Ontario guarantees Ontario Hydro bonds), and might guarantee municipal loans and school-board issues, as well as industrial concerns.

    B. Many provinces also issue T-bills that investment dealers and banks purchase or resell.

    C. Provincial securities are most often issued in the amounts of $500, $1,000, $5,000, $10,000, and $25,000.

    D. The terms of provincial bonds vary, depending on availability of investment funds and how proceeds are used.

    E. Provinces often issue bonds in foreign markets, where they benefit from lower borrowing costs.

F. Provincial governments may also issue bonds in foreign denominations if the money will be used in that country (e.g., issued in a US denomination for funds that will be used in the United States).

G. Global bond offerings are issues distributed at the same time in Canadian and foreign markets.

3. Provincial Securities.

A. Most provinces issue savings bonds that are:
   (1) Available only to residents of the issuing province.
   (2) Available for purchase only at certain times.
   (3) Redeemable every six months in all provinces, except in Quebec, where they can be redeemed at any time.

B. Provincial savings bonds come in different types. Ontario Savings Bonds for example are either:
   (1) Step-up bonds.
   (2) Variable-rate bonds.
   (3) Fixed-rate bonds.

C. Provincial savings bonds are eligible for RRSPs and are available in small denominations (e.g., $100).

4. Municipal Securities.

A. Instalment debentures or serial bonds are used by municipalities to raise capital.
   (1) These bonds typically mature in annual instalments.

B. Most instalment debentures are non-callable.

C. Not all credit ratings of municipalities rank below provincial borrowers.
   (1) Many factors affect the credit ratings of municipalities; the most significant is the municipality’s ability to tax.

(2) Credit quality is also the result of a diverse industrial base, a good record of repayment on previous issues, debt per capita, and other factors.

Topic Five: Corporate Bonds

1. **Mortgage Bonds.**
   - A. A mortgage pledges land, buildings, or equipment as collateral for a loan. The lender can take ownership of the property if the borrower does not pay interest or repay principal when due.
   - B. A mortgage bond pledges such property to many lenders; each investor's bond represents his or her proportion of the full loan to the company.
     - (1) Denominations of the bond are usually $1,000 or multiples of $1,000.
   - C. First-mortgage bonds are a first charge on a company's assets and rank before unsecured current liabilities.
   - D. The ***after-acquired clause*** (a protective provision of corporate bonds) is typical with first-mortgage bonds and states that all assets, including those acquired after the bonds were issued, can be used to secure the bond.

2. **Collateral Trust Bonds.**
   - A. When securities are pledged as collateral instead of property, a collateral trust bond is created.
   - B. Companies without sufficient fixed assets to issue a mortgage or mortgage bond issue collateral trust bonds.

3. **Equipment Trust Certificates.**
   - A. When equipment (e.g., a construction company's machinery) is pledged as collateral instead of property, an equipment trust certificate is created.
   - B. Usually issued in ***serial form*** with a set amount that matures each year.

4. **Subordinated Debentures.**
   - A. Junior to a company's other securities and debts. Details will be in the issue's prospectus.

5. **Floating-Rate Securities (Variable-Rate Securities).**

   A. Floating-rate securities adjust to changing interest rates. Since they stay in lock-step with interest rates, they are less risky for investors in the long term than conventional debentures.

   B. The rate changes every specified period (e.g., six months).

   C. As interest rates rise, the yield improves. However, in periods of falling rates, the opposite occurs.

   D. They can be subject to a minimum rate to provide protection against falling rates, but these minimum rates are usually low.

6. **Corporate Notes.**

   A. A corporate note is an unsecured pledge to repay a loan with interest.

   B. They rank behind all other fixed-interest securities if there is a corporate liquidation.

   C. A secured note or collateral trust note is used by finance companies. For example, when buying a car using a credit plan, the buyer of the car promises to pay certain amounts at future dates. The finance company uses these secured notes as collateral for issuing their own collateral trust notes.

   D. A secured term note is signed by people who buy cars or appliances on an instalment plan.

7. Strip Bonds (Zero-Coupon Bonds).

A. Strip bonds are the bonds that remain after investment dealers have removed the coupons from a bond.

(1) The coupons (bearer coupons) and bonds (bond residue) are sold separately.

B. Each strip coupon is equal to an interest payment on the original bond.

C. Holders of strip bonds do not receive interest payments (since coupons are absent). Instead, they buy the bonds at a deep discount to par value and receive a compounded rate of return upon maturity. This return is taxed as interest, not as a capital gain.

8. Domestic, Foreign and Eurobonds.

A. **Domestic bonds** are issued in the currency and country of the issuer.

B. **Foreign bonds** are issued in a particular currency and country other than that of the issuer.

(1) Foreign bonds give issuers access to capital in other countries.

(2) Foreign-pay bonds offer investors a choice of receiving interest payments in the “home” currency or foreign currency or receiving the principal in one currency and interest in another.

C. A **Eurobond** is issued in markets outside the domestic market of the issuer in a different currency than that of the issuer and possibly in a different currency than that of the country in which they are issued.

(1) **EuroCanadian bonds** are Canadian-dollar-denominated Eurobonds.

(2) A Eurobond issued in US dollars is a **Eurodollar bond.**

Types of Bonds

Bond	Issuer	Denomination	Market
Domestic	Canada	Canadian dollars	Canada
Foreign	Canada	U.S. dollars	U.S.
Eurobond	Canada	Euros	Brazil
Eurodollar bond	Canada	U.S. dollars	U.K.
EuroCanadian bond	Canada	Canadian dollars	Germany

9. Preferred Securities.

A. Preferred securities are long-term debentures that mature at between 25 and 99 years.

B. They are subordinate to other debentures, but rank ahead of preferred shares in the case of a corporate liquidation.

C. The issuer can defer paying interest for up to five years, and the holder will be taxed each year on this accrued-but-unpaid income.

D. Preferred securities are often exchange-traded.

E. They have better yields than standard debentures, due to their lower credit ranking and the fact that they have better protection of principal than preferred shares.

Topic Six: Other Fixed-Income Securities

1. Bankers' Acceptances.

A. A BA is created when a borrower issues a bank draft, instructing payment to be made on a maturity date.

(1) Before maturity, the BA can be sold at market rates.

(2) At maturity, the investor receives the difference between the purchase price and the face value. Thus, the return is like a T-bill, but yields on BAs are higher.

B. Issued in multiples of $1,000, with a minimum investment of $25,000.

C. Term-to-maturity is generally 30 to 90 days, though may be up to 365 days.

2. Commercial Paper.

A. Commercial paper is issued by large corporations as unsecured promissory notes, or as securities backed by financial assets (asset-backed commercial paper).

B. Issued in $1,000 multiples with a minimum investment of $25,000.

C. The return is the difference between purchase price and the face value.

D. Term-to-maturity ranges from less than three months to one year.

E. Can be traded in the secondary market.

3. Term Deposits.

A. Term deposits are short-term deposits with a guaranteed interest rate.

(1) Early withdrawals may be penalized.

4. Guaranteed Investment Certificates (GICs).

A. GICs offer a fixed rate of return for a specific term, which is typically longer than a term deposit (e.g., up to 10 years).

B. Principal and interest (whether simple or compound) are guaranteed.

C. GICs can be customized; banks offer options for length of term, interest-payment frequency, and other features.

D. GICs are:

(1) Redeemable (i.e., can be cashed out before maturity) or non-redeemable (i.e., cannot be cashed before maturity, except under extreme circumstances).
(2) Covered by CDIC if the term is less than five years.
(3) Collateral for a loan.
(4) Automatically renewed at maturity.
(5) Sold either privately or through an intermediary.

E. Not all GICs are RRSP-eligible.

F. Some GICs and their special features are:

   (1) Escalating Rate GIC: interest rate increases over the term.
   (2) Laddered GIC: the principal is split in equal portions, with each portion earning a rate of interest and maturing at a different time. As a portion matures, it may be reinvested or redeemed.
   (3) Instalment GIC: an initial contribution, followed by regular additional contributions.
   (4) Index-Linked GIC: the return on the initial investment is guaranteed, with a portion of the return linked to a stock-market index. These GICs are CDIC-insured.
   (5) Interest-Rate-Linked GIC: the interest rate is linked to changes in the prime rate or money-market rates.

Topic Seven: Bond Quotes and Ratings

1. Quotes.

A. According to the following newspaper quote, an EDG Inc. bond with a 9.75% coupon rate that matures on May 1, 2012, could be sold for $99.15 and bought for $99.70 for every $100 of bond principal.

Issue	**Coupon**	**Maturity Date**	**Bid**	**Ask**	**Yield**
EDG Inc.	9.75%	1 May/12	99.15	99.70	9.95%

B. A $10,000 bond would cost $10,000 x .9970 or $9,970. A buyer (e.g., a bond dealer) is willing to pay only 99.15 or $9.915. If the bond were held to maturity, it would yield 9.95%, $9,950.

   (1) The difference between the bid and the ask price is the bond price spread. This is what a bond dealer is paid.
   (2) If only one price is published, it could be the bid price, the midpoint between the bid and ask prices, or an estimated price based on the current interest rate.

C. Convertible bonds are usually separately listed in the financial press.

D. In Canada, bonds are rated by Standard & Poor's Bond Rating Service (S&P), Moody's Canada, and the Dominion Bond Rating Service (DBRS).

(1) Independent bond-rating services provide an objective assessment of the investment grade of bonds and debentures. The rating is important to investors, because it indicates the probability of interest payments being uninterrupted and principal being repaid.

(2) Securities are classified from investment grade to speculative.

Credit Ratings of Bonds (S&P)

	Rating	**Quality**
	AAA	highest
investment grade	AA	superior
	A	satisfactory
	BBB	adequate
	BB	speculative
high-yield or junk	B	highly speculative
	CCC/CC/C	very highly speculative
	D	in default
	Suspended	Rating suspended