Chapter 2

Asset Classes and Financial Instruments

Major Classes of Financial Assets or Securities

- Debt

  - *Money Market Instruments:* very short-term debt securities that usually are highly marketable.

  - *Bonds:* Fixed income security – longer term borrowing instruments

- Common Stock: also known as equities, represent ownership shares in a corporation. Each share of common stock entitles its owner to one vote on any matters of corporate governance that are put to a vote at the corporation's annual meeting and to a share in the financial benefits of ownership.

- Preferred Stock: Dividends are paid to preferred stock holders before common stock holders but preferred stockholders do not have voting right.

- Derivative Securities: Values derived from underlying securities, e.g., Options and Futures

Markets and Instruments

- Money Market
  - Short term Debt Instruments
  - Derivatives on short term debt instruments
- Capital Market
  - Bonds
  - Equity
  - Derivatives on bonds and equities

Money Market Instruments

- **Treasury bills:** The most marketable of all money market instruments. Govt. raises money by selling bills to the public. Investors buy the bills at a discount from the stated maturity value. The difference between the purchase price and ultimate maturity value constitutes the investor's earnings. T-bills are issued with initial maturities of 4, 13, 26 or 52 weeks.
- **Certificates of deposit:** CD is a time deposit with a bank. Time deposits may not be withdrawn on demand. The bank pays interest and principal to the depositor only at the end of the fixed term of the CD.
- **Commercial Paper:** Large, well-known companies often issue their own short-term unsecured debt notes rather than borrow directly from banks. These notes are called commercial paper. These are often backed up by a bank line of credit. Maturities range up to 270 days, most often less than one or two months.
- **Bankers Acceptances:** It starts as an order to a bank by a bank's customer to pay a sum of money at a future date, typically within six months. It is then similar to a post dated check. Once the bank endorses the order for payment as 'accepted', it assumes responsibility for ultimate payment to the holder of the acceptance. The acceptance may be traded in secondary markets. Very safe assets because traders can substitute the bank's credit standing for their own.

Money Market Instruments

- **Eurodollars:** Dollar-denominated deposits outside of the U.S. at foreign banks or foreign branches of American banks. Despite the tag 'Euro', these accounts need not be in European banks, although that is where the practice of accepting dollar-denominated deposits outside the U.S. began.

- **Repurchase Agreements (RPs) and Reverse RPs:** Dealers in govt. securities use RPs, also called 'repos' as a form of short-term, usually overnight, borrowing. The dealer sells govt. securities to an investor on an overnight basis, with an agreement to buy back those securities the next day at a slightly higher price. A reverse repo is the mirror image of a repo where the dealer finds an investor holding govt. securities and buys them, agreeing to sell them back at a specified higher price on a future date

- **Federal Funds:** Banks maintain deposits of their own at a federal reserve bank. Each member bank of the Fed is required to maintain a minimum balance in a reserve account with the Fed. The required balance depends on the total deposits of the bank's customers. Funds in the bank's reserve account are called federal funds or fed funds. Commercial banks in the U.S. can borrow from each other at the Federal Funds rate.

Money Market Instrument Yields

- **Effective Annual Rate (EAR):** Consider a $10,000 par value T-bill sold at $9,600 with a maturity of a half year or 182 days. The rate of return:

$$r = (10{,}000 - 9{,}600)/9600 = 0.0417 \text{ semi annually.}$$

- It means invested funds over the 6 month period increase by a factor 1.0417. If one continues to earn this rate of return over an entire year, invested funds grow by a factor of 1.0417 in each 6 month period; by the year end, each dollar invested grows with compound interest to:

$$\$1 \times 1.0417 \times 1.0417 = \$1 \times (1.0417)^2 = \$1.0851$$

Therefore, we say the EAR on the bill is 8.51%.

EAR can also be computed using the following formula:

$$\boldsymbol{EAR = (1 + r)^2 - 1 = (1 + 0.0417)^2 - 1 = 0.0851 = 8.51\%}$$

Bank Discount Rate (T-Bills)

- Often, T-bill yields in the financial pages are quoted using the Bank Discount method

$$r_{bd} = \frac{10,000 - P}{10,000} \times \frac{360}{n}$$

$$Example: 182 days: P = 9,600$$

$$r_{bd} = \frac{10,000 - 9,600}{10,000} \times \frac{360}{182} = 7.912\%$$

r_{bd} = bank discount rate

P = market price of the bill

n = number of days to maturity

Problems with Bank Discount Rate

- 3 problems with this technique and they all combine to reduce the bank discount yield compared with the effective annual rate:

1. The bank discount yield is annualized using a 360-day year rather than a 365-day year

2. The annualization technique uses simple interest rather than compound interest

3. The denominator used is par value rather than the purchase price of the bill

Bond Equivalent Yield of T-Bill

- Bond Equivalent Yield is the bill's yield over its life, assuming that it is purchased for the asked price.

$$r_{BEY} = \frac{10,000 - P}{P} \times \frac{365}{n}$$

$$Sample: T - Bill$$

$$r_{BEY} = \frac{10,000 - 9,600}{9,600} \times \frac{365}{182} = 0.0836$$

$$r_{BEY} = 8.36\%$$

Bid vs. Ask price

- Bid price is the dealer's buying price. This is the price at which the customer can sell the security to a dealer.

- Ask price is the dealer's selling price. This is the price at which the customer can buy the security from the dealer.

- The difference in bid and ask prices is a source of profit to the dealer. The difference is known as 'The Bid-Ask Spread'.

Capital Market - Fixed Income Instruments

Publicly Issued Instruments

- *US Treasury Bonds* (maturity ranges from 10 to 30 years) and *Notes* (maturity up to 10 years)
- *Federal Agency Debt* (Fed. Gov.)
- *Municipal Bonds* (State and Local Gov.)

Privately Issued Instruments

- *Corporate Bonds:* secured by specific collateral; unsecured corporate bonds are called *debentures*.
- *Mortgage-Backed Securities:* Mortgage lenders originate loans and then sell packages of these loans in the secondary market. They sell their claim to the cash inflows from the mortgages as those loans are paid off .

Capital Market - Equity

❑ Common stock

- *Residual claim:* Stockholders are the last in line of all those who have a claim on the assets and income of the corporation in case of bankruptcy.
- *Limited liability:* The most shareholders can lose in the event of failure of the corporation is their original investment. In the case of owners of unincorporated businesses, creditors can lay claim to the personal assets of the owner (house, car, furniture). Corporate shareholders may at worst have worthless stock.

❑ Preferred stock

- Have features similar to both equity and bond
- Like a bond, it promises to pay its holder a fixed amount of income each year (if the company makes enough profit). Fixed dividends – limited
- No voting power
- But it is an equity investment. The firm does not have any contractual obligation to pay the dividends. The firm does have a contractual obligation to make the interest payments on the debt
- Priority over common stockholders in case of bankruptcy

Stock Indexes

- Uses
  - Measure the performance of the entire financial sector
  - Leading indicator of economic performance
  - Can be used to measure performance of managers

- Factors in constructing or using an Index
  - Representative?
  - Broad or narrow?
  - How is it constructed?

Examples of Indexes – U.S.

- **Dow Jones Industrial Average (30 Stocks):** Price Weighted
- **Standard & Poor's 500 Composite:** Market-Value-Weighted
- **NASDAQ Composite:** an index of more than 3000 over the counter (OTC) firms traded on the National Association of Securities Dealers Automatic Quotations market
- **NYSE Composite:** Market-Value-Weighted
- **Wilshire 5000:** The broadest index of all. Incorporates market value of all NYSE and American Stock Exchange (ASE) stocks plus actively traded NASDAQ stocks. Despite its name, the index actually includes more than 5000 stocks.
- **Value Line Index:** Stock index produced by a well respected research firm containing approximately 1,675 companies from the NYSE, American Stock Exchange, Nasdaq and over-the-counter market.

Examples of Indexes – NON U.S.

- **Nikkei 225** (Price Weighted) & **Nikkei 300** (Value Weighted): Japan
- **FTSE** (Financial Times of London) – Pronounced 'Footsie': Value-Weighted index of 100 stocks
- **DAX:** Premier German stock index
- **Hang Seng:** Hong Kong
- **TSX** (Toronto Stock Exchange): Canadian Stock Exchange
- **The DSE Broad Index** (Dhaka Stock Exchange: Total company listing – 548) and **DSE 30 Index**
- **CSE** (Chittagong Stock Exchange): Total company listing - 245

List Of Constituents of DSE 30 (DS30) Index

BANKS

- BRAC Bank Ltd.
- Islami Bank Bd Ltd
- NBL
- Pubali Bank
- UCBL

FINANCIAL INSTITUTIONS

- IDLC Finance Limited
- LankaBangla Finance Ltd.

ENGINEERING

- Aftab Automobiles
- BSRM Steels Limited

FOOD & ALLIED PRODUCT

- British American Tobacco Bangladesh Ltd.
- Olympic Industries Limited

FUEL & POWER

- Titas Gas Trans. & Dist. Co. Ltd.
- Jamuna Oil Com. Ltd.
- Meghna Petroleum Ltd.
- Padma Oil Co.
- Summit Power Ltd.

TEXTILE

- Square Textile Limited

PHARMACEUTICALS & CHEMICALS

- Square Pharmaceuticals Limited
- ACI Limited
- Beximco Pharma
- Keya Cosmetics
- Renata Ltd.

CEMENT

- Heidelberg Cement Bangladesh Ltd.
- Lafarge Surma Cement Ltd.

INSURANCE

- Delta Life Insurance

TELECOMMUNICATION

- Grameenphone Ltd.
- Bangladesh Submarine Cable Co. Ltd.

TRAVEL AND LEISURE

- United Airways (BD) Ltd.
- Unique Hotel & Resorts Ltd.

MISCELLANEOUS

- BEXIMCO Ltd.

Bond Indexes

- Merrill Lynch
- Barclays (formerly, the Lehman Brothers Index)
- Salomon Smith Barney (now part of Citigroup)

Construction of Indexes

- How are stocks weighted?
  - Price weighted (DJIA)
  - Market-value weighted (S&P500, NASDAQ)
  - Equally weighted (Value Line Geometric Composite Index)
- How returns are averaged?
  - Arithmetic (DJIA and S&P500)
  - Geometric (Value Line Geometric Composite Index)

Averaging Methods

Component Return

A=10% B= (-5%) C = 20%

Arithmetic Average:

$$\frac{[0.10+(-0.05)+0.2]}{3} = 0.0833 = 8.33\%$$

Geometric Average:

$$[(1.1)(.95)(1.2)]^{\frac{1}{3}} - 1 \ = 0.0784 = 7.84\%$$

Price weighted, Value weighted and Equally Weighted Indexes

- Page 55, Problem no – 11 (a), 12(a), (b)

Derivatives Securities

Options

- Call (Buy): The right to buy an asset for a specified price, called exercise or strike price, on or before a specified expiration date
- Put (Sell): The right to sell an asset for a specified price on or before a specified expiration date
- The purchase price of option – 'Premium'
- An American option allows its holder to exercise the right to purchase (if a call) or sell (if a put) the underlying asset on or before the expiration date.
- European options allow for exercise of the option only on the expiration date.
- American options more valuable than European options
- The buyer of the option may or may not exercise the option
- The writer of the option (seller of the option) is obliged to buy (put) or sell (call) if the option buyer chooses to exercise the option

Futures

- A futures contract calls for delivery of an asset at a specified delivery date for an agreed-upon price, called the futures price, to be paid at contract maturity.
- Basic Positions
  - Long (Buy): Long position is held by the trader who commits to purchase the asset on the delivery date at the specified price.
  - Short (Sell): The trader who takes the short position commits to sell the asset on the delivery date at the specified price..

Practice Problems

- Chapter 2: 7, 10, 11 (a), 12, 16, 18, 20