

Basic Finance

Unit 1: Introduction

Finance may be defined as the art and science of managing money. It includes financial service and financial instruments. Finance is also referred as the provision of money at the time when it is needed. It is the procurement of funds and their effective utilization in business concerns.

The basic finance can be defined as the art and science of managing the financial resources which involves procurement of funds at reasonable cost, efficient utilization of funds, proper management of assets, and allocation of profit in order to maximize the market value of shareholders wealth. Traditionally, the basic finance was taken as an activity of collecting funds to support the investment of the firm. But nowadays, the basic finance is not only the activity of raising funds, but also the activities of planning, forecasting, controlling, administrating and decision making of firm's financial resources. Hence, it may be concluded that the basic finance is concerned with investment, financing, assets management and dividend decisions in order to achieve the organization goal.

Investment Decision:

Investment decisions most commonly known as capital budgeting decision or long term assets mix decisions. Capital investment is the allocation of capital to investment proposal whose benefits are to be realized in future. The investment decision determines the total amount of assets held by the firm, the composition of these assets, and the business risk complexion of the firm as perceived by the supplier of capital. The essence of investment decisions is that return from the investment in proposals would exceed the firms required rate of return on capital.

Financing Decision:

Financing decision is concerned with the mix or composition of the sources of raising the funds at reasonable cost to support the investment required by the firm (assets of the firm). Generally, current assets are financed with short term sources and fixed assets are financed with long term sources. Therefore, the financing decision is related to both the short term and long term financing.

The Roles and Responsibilities of Financial Manager:

The financial manager is the person who actively manages the financial resources within the organization. The term financial manager refers to the chief finance executive, the treasurer and the controller as well as other managers working under them. The main roles of financial manager are investment decision, financing decision, dividend decision and assets management decision. Besides these, the other role and responsibility of financial manager are:

1. Forecasting and planning.
2. Major investment and financing decision.
3. Co-ordination and control
4. Dealing with financial markets.
5. Risk management.
6. Financial analysis etc.

Goal of the Corporation/Firm

a. Profit Maximization:

Profit maximization means maximizing the rupee income of a firm by generating excess revenue over cost. The financial manager would select those investment projects that are expected to contribute to the firm's overall profit. Profit can be maximized in many ways for instance, increasing revenues, reducing cost, increasing marginal revenue over marginal cost etc. From the traditional point of view a business is considered as an economic institution and hence it is established with a view to earn as much profit as possible. So, a business firm should earn profit to: Distribute higher dividend, Meet competition, Expand the business site, providing government taxes, Better incentive to workers and employees, maximization of socio economic welfare. Above all reasons make clear that profit is considered the most appropriate measure of firm's performance. Hence, business firm's main objective is to maximize the profit.

The weakness of the profit maximization is: It is vague and ambiguous, it ignores the time value of money, it ignores risk or uncertainty etc.

b. Wealth Maximization:

and creditors is called Agency problem.

The rational goal of financial management is to maximize the value of the firm. Wealth maximization is superior to profit maximization objectives in many grounds, as there are a lot of weaknesses associated to the profit maximization goal. The shareholders' wealth maximization means the maximization of the net present value of a course of action to shareholders. The net present value of a course of action is the difference between the present value of its benefits and the present value of its costs. A financial action that has a positive net present value creates wealth for shareholders' and project with negative net present value should be rejected because it would destroy shareholders' wealth and wealth is reflected in the market price of the share. This goal leads to efficient allocation of resources, satisfies the interest of all stakeholders, considers the timing and riskiness associated to cash flow streams and so on.

Agency Relationship: Relationship between agent and principle is known as Agency relation.

The agency relationship is the contractual relationship between two or more parties to discharge certain responsibilities by one on behalf of other in consideration of certain monetary compensation. A corporate firm is viewed as the agency relationship between shareholders and managers and the shareholders and creditors. Such agency relationship results into certain degree of conflict that is called the agency problem, which would otherwise not exist if there were no agency relationship.

a. Shareholders and managers:

A potential agency problem arises whenever the owner and manager represent different existence and the manager of a firm owns less than hundred percent of the firm's common stock. The manager wants to take high salary or enjoy more perquisites and not work hard to maximize shareholder wealth because part of those costs will fall to the outside shareholders and less of this wealth get to him or her. This potential conflict of interest exists between two parties the outside shareholder and the manager. Applying following ways can solve such type of agency problem:

1. Provision of cash kind incentives to managers. 2. Provision of stock option and stock bonus.

3. Limitation of managerial autonomy. 4. Setting up a monitoring unit.

5. Reorganization of the managerial structure.

Several mechanisms are used to motivate managers to act in the shareholder's best interest. This includes:

1. Managerial compensation plans, 2. Direct intervention by shareholders

3. The threat of firing. 4. The threat of takeover

b. Shareholders and creditors: (अंतर्गत रिश्ता)

A second agency problem involves conflicts between shareholder and creditors. Creditors do not want to take high risk because they do not receive additional return for taking high risk. On the other side, shareholders emphasize maximizing the value of their investment by taking high risk. Such types of agency problem can be solved by providing higher risk premium to creditors for higher level of risk. Developing understanding between two parties can solve such type agency problem.

Corporate Governance:

It is the system by which companies are directed and controlled. It is the framework by which the various stakeholder interests are balanced or the relationships among the management, Board of Directors, controlling shareholders, minority shareholders and other stakeholders. Corporate governance involves a set of relationships between company's management, its board, its shareholders and other stakeholders. Corporate governance also provides the structure through which the objectives of the company are set, and the means of attaining those objectives and monitoring performance are determined.

The corporate financial manager should also work for good governance system to comply with the rules and regulations of the regulatory body and thus increase the reputation of the company. So, developing a corporate governance structure to encourage ethical behavior and actions that serve the best interests of its stockholders and society as well is also one of the major functions of financial management manager.

Time value of money

The time value of money deals with the fact that a sum of rupee in hand today is worth more than the sum of rupee received in future because we can invest the present sum of money and earned interest. Therefore, future rupee value of the investment must be greater than present value because future value includes both principal as well as interest. The present worth of a rupee received after some time will be less than a rupee received today. Since a rupee received today has more value, a rational investor would prefer current receipt to future receipts. The time value of money can also be referred to as time preference for money. Interest rate, inflation rate and time are major determinants of time value of money. Time value of money considers compound (reinvestment) effect. The financial manager should have a clear vision about the concept of time value of money to make investment decision, financing decision, working capital decision and assets valuation.

Cash flow time line

The cash flow time line is the graphic representation of relationship among cash flow (cash inflow and cash outflow), time and interest rate, which helps us to understand and solve the complex problems. In other words, it is the straight line which shows the timing of cash flows. It is an important and essential tool for better understanding of the concept of time value of money.

Future value and compounding

Future value is the compounded value to a certain amount today, at certain interest rate up to a certain period of time. On the other hand, the process of finding future value of a cash flow or series of cash flow is called compounding.

Present value and discounting

The present value is the current value of future amount. In another word, it is the conversion of future cash flows or series of cash flows into present period. The process of finding the present value of a future cash flows or series of cash flows is called discounting.

Perpetuity (Perpetual cash flow)

Perpetuity can be defined as series of equal cash flows (payment) at fixed interval of time for infinite period. In other word, it is a system of equal payments expected to continue forever. Therefore, perpetuity has no future value.

Annuity (Even cash flow)

An annuity means series of equal payment at fixed intervals for a specified number of periods. Each annuity payments is called PMT. Common examples of annuities are regular deposits to a saving account, monthly home mortgage payments, monthly insurance payments and pension payments. If payments are made at the end of each period, the annuity is an ordinary annuity and if payments are made at the beginning of each period, the annuity is an annuity due.

Uneven cash flow stream

If the cash flows are not equal in every year or every point of time, then it is called uneven cash flows or multiple cash flows. Under uneven cash flow stream, the cash flow varies from one period to another period.

Semi-annual and other compounding period

The time value of money always considers reinvestment (compound) effect. Therefore, present value and future both are affected by compounding period. Number of frequency of interest payment within a year is called compounding period and denoted by m .

Different interest rates

1. Simple (Quoted or Nominal) interest rate

The rate of interest, which is quoted by borrowers and lenders, is known as simple interest rate. Simple interest rate does not consider compound effect (reinvestment effect). The simple interest rate is also known as nominal or stated or quoted or annual percentage rate and denoted by either k or i .

2. Periodic interest rate

The rate of interest charged by lender or paid by borrower at each interest periods (such as monthly, quarterly, semi-annually etc) is known as periodic rate of interest.

3. Effective annual interest rate (EAR)

Effective annual interest rate is the rate if interest actually paid or earned. It is the annual equivalent interest rate of a given periodic rate. It is the actual rate of return under different compounding situations. If the compounding is annual then the effective rate is also same as simple annual rate but in other situations the effective rate will be different than the simple rate. Effective rate consider the compound effect but annual percentage rate does not consider the compounding effect.

Amortization of loan

The loan which is repaid by the borrower to the lender in equal installments including interest and principal each period within specific time period is called amortized loan or installment loan or term loan.

The installment of loan is constant in each period; therefore, it is also called payment (PMT). The installment consist both repayment of principal and interest. The concepts of present value and compound interest rate are used to amortize a loan over the time in equal installments. The schedule showing installment, interest, repayment of principal and ending balance of each period is called amortization schedule.

Free Cash Value Price of stock (including capital in company) is determined based on
holder's interest & shareholder's dividend & growth rate. Free cash flow is the
amount of cash flow after paying taxes.

Unit 6: Bond and Stock Valuation

Bond

A bond is a long-term security or promissory note issued by the government or company to meet their financing needs or budget deficit. The issuer (borrower) promises to make a series of interest payment periodically up to maturity and principal (par value) at the end of maturity. Bond has long-term maturity period like 5 years, 10 years, 20 years etc. Normally bond has Rs.1000 par value with fixed coupon interest rate. Terms and conditions of bond are mentioned in the bond indentures. Indenture is a legal document that provides the specific terms of the loan agreement. It includes a description of the bonds, rights of the bondholders, the right of the issuing firm, the responsibilities of the trustee etc. A trustee (usually commercial bank or finance company) is appointed by the bond issuer when the bond is issued. The main function of the trustee is to represent and protect the collective interest of the bondholders. Some of the examples of the bonds are corporate bond, government bond, Euro bond, Municipal bond, foreign bond etc.

Key Features of Bonds

Par value:-The par value is the stated or faces value of the bond which is refunded by the issuer to the bondholder at the end of maturity. Therefore, the par value is also known as maturity value or principal of the bond. The par value of a corporate bond is normally fixed at Rs.1000.

Coupon interest rate: - The bond requires the issuer to pay a fixed amount of interest at the end of each period (year or six month). This amount is called coupon payment and the rate is called coupon interest rate. It is nominal (simple) annual rate of interest which is set when the bond is issued. Generally, it is fixed throughout the life of a bond.

Maturity date: - The specified date on which the principal amount (par value) is repaid to bondholder is called maturity date. The year until the bond must be repaid from the date of bond issue is called original maturity whereas the remaining life after the date of issue is called the term to maturity.

Call provision: - A provision specified in the indenture, which gives the issuer the right to call the bonds prior to maturity, is known as call provision. Generally company pays the bondholders an amount greater than the par value if they are called before maturity. The amount that is paid to the bondholder is called call price and excess amount over par value is called call premium.

- **Indenture:** - It is legal agreement between the issuer (corporation) and the bondholders which includes the term of bond issue and the name of trustee. The indenture is also called deed of trust.
- **Sinking fund:** - Sinking fund provision is a special provision in a bond contract that facilitates the orderly retirement of the bond. In some cases, the firm may be required to deposit money with trustee, which invests the funds and then uses the accumulated sum to redeem the bond at maturity.

Bond Valuation

The fundamental principle of bond valuation is that the bond's value is equal to the present value of its expected (future) cash flows. The value of a bond is the present value of the cash flows on the bond that is expected to generate until the bond matures.

- Financial assets की मूल्य का निर्धारण है। मूल्य-प्रतिक्रिया, डिमांड सप्लाय की मूल्य निर्धारण सिद्ध है।
- Financial assets की मूल्य का निर्धारण है। Cash inflow की present value की intrinsic value

Value of a bond is the function of risk, return and term to maturity. If coupon interest rate is higher, value of bond also will be higher. But if risk is higher the required return on the bond will also be higher and the value of bond will be lower. Term to maturity may be positively or negatively correlated to the value of bond it depends on expected return and required return. If expected return is higher than required return the value of bond increases with the increase in term to maturity (n) at maturity. Basic bond valuation model: Intrinsic value of bond = PV of coupon interest + PV of maturity value.

Valuation of Perpetual Bond (Consol Bond or Irredeemable Bond)

A bond, which is issued without a finite maturity period is called perpetual bond. Perpetual bond has infinite life. Therefore, the issuer of the perpetual bond does not refund the face value to the bondholder but it pays interest forever. The intrinsic value of a perpetual bond would simply be equal to the present value of an infinite stream of interest payment, I , which is discounted at investor's required rate of return (kd).

Valuation of Redeemable Bond (General Bond or Coupon Bond with a Finite Maturity)

A redeemable is a bond with a finite term to maturity. The redeemable bond pays specified amount of interest every year at fixed period and return the principal at the end of maturity period. The value of such bond is calculated adding present value of periodic coupon interest and present value of principal.

Valuation of Zero Coupon Bond (Pure Discount Bond)

A bond without coupon interest and sold at a discount from its face value is called zero coupon bond. It has a certain maturity period but does not pay any coupon interest during its maturity after the issuance, but it is issued on discount (less than par value) and repaid a face value at its maturity. The difference between a face value and an initial selling price becomes the return to the investor. Therefore the value of zero coupon bonds includes only the present value of its face value.

Valuation of Callable Bond

The bond which provides the call provision to the issuer is called callable bond i.e. the bond issuer can call the bond before maturity by paying the call price is known as callable bond. The amount paid at the time of early retirement of bond is known as call price. Commonly, the call price should exceed the par and the amount paid in excess of par or maturity value is known as call premium. Therefore, the value of this bond is present value of coupon interest amounts over call period and call price.

Bond Valuation with Semiannual Interest

Bonds usually pay interest semiannually and these bonds some cases are also known as semiannual coupon bonds. To determine the value of such bonds, we have to divide one year period into semiannual period. That means the no of coupon payment and compounding period will be double and the discounting rate or yield to maturity will be half. Coupon interest is divided by 2 to compute semiannual interest payment, discounting rate is also divided by 2 to compute semiannual discount rate and no of years is multiplied by 2 to determine no of periods.

Discount and Premium Bond

A bond is said to be a discount bond if it is currently selling at a price below par value. In such a bond market value is less than par value. If the bond reaches near the maturity period, the value of bond increases, at last the price of bond is equal to its par value.

A bond is said to be a premium bond if it is currently selling at a price above par value. In such a bond market value is greater than its par value. If the bond reaches near the maturity period the value of bond decreases, at last the price of bond is equal to its par value.

Rule of Bond Valuation

1. The price and yield move inversely i.e. price of bond goes up if the yield goes down and vice-versa.
2. The price of bond is equal to the par value, if its yield to maturity equal to the coupon rate.
3. The price of the bond will be greater than par value, if its yield is less than coupon rate.
4. The price of bond falls below the par value, if its yield will go above the coupon rate.
5. The price of bond approaches to par value, if the bond is approached to maturity i.e. the premium bond is decreases gradually to par value and the discount bond increases gradually to the par value, if they approach to the maturity.
6. The price of longer term bond fluctuates more in comparison to shorter term bond, if the yield on bond changed due to reinvestment and interest rate (price) risk.

Bond Yields

The investment is made with the motive of realizing something return above the required rate of return. Thus, the return realized from the investment on bonds is known as bond yields. Generally, the bond yields can be measured as current yield, capital gain yield, yield to maturity and yield to call.

1. **Current Yield**:-The annual rupee of coupon payments made by a bond expressed as a percentage of bond's current market price is known as current yield. It is calculated divided annual coupon interest by current market price of bond. Current yield relate the coupon interest rate, which does not consider the capital gain or loss and it also ignores the time value of money. Hence it is a partial measure of return.
2. **Yield to Maturity (YTM)**:-The yield to maturity of a bond is the rate of interest that makes the present value of the future cash flows (total annual coupon interest during maturity period plus principal in the maturity date) of the bond equal to the current price of the bond. In other words, the YTM of a bond represents the rate of return investor earn if they buy the bond at a specific price and hold it until maturity. The YTM is computed under the following assumptions:
 - The bond will be held to maturity.
 - Coupon interest and principal will occur as mentioned in the indenture.
 - Bond will not be called before maturity.
 - Coupon receipts will be re-invested at a rate of return equal to the yield to maturity.
3. **Capital gain and loss yield**:-The capital gain yield is percentage change in bond price. It may be negative which is called capital loss. The capital gain exists due to value appreciation while capital loss exists due to decrease in the value of bond.

4. **Yield to Call (YTC):**-Yield to call is the rate of return earned on a bond if it is called before its maturity date. It is that discount rate which equates the current market price and actual value of callable bond. YTC is computed under the following assumptions:
- The bond will be held to the call period.
 - Coupons are reinvested at the yield to call rate.
 - The issuer calls the bond on the call date.
5. **Holding Period Rate of Return (HPR):**-The period during which an investor owns an investment is called its holding period, and the return for that period is the holding period return. HPR includes the return in the form of appreciation in the value (capital gain or loss) and current income (interest) of the bond.

Preferred Stock

The preferred stock is a fixed income security which pays fixed dividend to the investor like interest to the bondholder. The preference dividend must be paid from income after interest to bondholder and tax to government but before the common stockholder's dividend. Preferred stock is a hybrid form of financing with combined features of both debt (bond) and common stock. The preferred stock is more risky than bond but less risky than common stock. It has no voting right and cannot participate on the management.

Features of Preferred Stock

Par Value:-Par value is the stated price attached in the certificate of preferred stock. Preferred dividend is expressed as the fixed percentage of par value.

Fixed Dividend:-Preferred stock has a fixed rate of dividend which is specified as a percentage of the par value. Also, preference dividends must be paid before ordinary dividends.

Cumulative Dividend:-Most preferred stocks are cumulative. If the company fails to pay dividends due each year, the unpaid dividends will be accumulated and shall be paid in a future period.

Claim on Asset (Asset Preference):-Preferred stocks are less risky than common stocks in case of bankruptcy or liquidation, the preferred stockholders are paid before the common stockholders.

Convertibility (Conversion Features):-Some preferred stocks are convertible giving the holder the option to convert the shares into a certain number of common stocks on a specific date.

Call provision:-The preferred stock may have call provision which gives the issuing corporation the right to call the preferred stock with call premium. It is the provision to return the amount of preferred stock before maturity date.

Maturity Date:-The preferred stock may or may not have fixed maturity period. The preferred stocks which have no maturity are called perpetual preferred stock. The preferred stocks which have maturity are called redeemable preferred stock.

Valuation of Preferred Stock

The valuation of preferred stock is same as the valuation of fixed income security such as bond valuation. The intrinsic value of preferred stock is total present value of expected future cash flow (future dividend

and maturity value of such stock). For valuation purpose, preferred stock can be classified into two types: Perpetual preferred stock and Redeemable preferred stock.

1. **Perpetual Preferred Stock (Irredeemable Preferred Stock):**-The preferred stock, which has no finite life but a fixed dividend is paid forever is known as perpetual preferred stock. In other words, amount invested in preferred stock is not returned to preferred stockholders until the company is dissolved or liquidated. The intrinsic value of perpetual preferred stock is the total present value of future dividends.
2. **Redeemable Preferred stock:**-The preferred stock which has fixed maturity date after which the amount invested in preferred stock (generally par value) is returned to stockholders is known as redeemable preferred stock. The intrinsic value of redeemable preferred stock is the present value of dividends per period throughout the maturity period plus present value of maturity value of stock that is received at maturity date.

Common Stock

Common stock is the source of long-term fund. It is also known as ordinary Share or equity share. Buyer of a common stock becomes owner of the company, depending up on his/her investment. It represents the equity or ownership position in a corporation. It has a residual claim against both assets and earnings of the corporation. Common stock does not get any special right but the common stockholders have voting, controlling and managing right of the company. They bear the greatest risk, but also enjoy corporate success in the form of higher dividend and capital gain. Common stock dividend is paid after payment of interest to the creditors, tax to the government, preferred dividend to the preferred stockholders. They have limited liability towards the company. Common stock is a variable income security. It has no maturity period and there is no need to pay any fixed charges.

Features of Common Stock

Common stocks are the most common form of stocks an investor will encounter in the financial market. It represents a certificate of ownership of a company. Following are the most important features associated with common stocks:

Limited Liability:-Common stockholder have limited liability, in other words, their liability is limited to these stocks. They cannot be forced to pay anything out of their own money in the event of bankruptcy. They are fully protected against any financial obligations incurred by the organizations.

Liquidation Rights:-If a company goes bankrupt and liquidates all its assets, the common stockholders have the right to receive their share of sale proceeds. However they are the last to receive money after the creditors, bondholders and preferred stockholders are paid.

Preemptive rights:- If a company plans to issue new stocks, existing stockholders have the rights to subscribe to new stocks, often at lower prices, before they are issued to the public.

Voting Rights:-Common stockholders have the rights to vote in general meeting of the company. Each stock carries the right to one vote. Stockholders can exercise control by electing the board members, who will oversee the major decisions and policies implemented y the management.

Dividend Payments:-Common stockholders are entitled to a share of profit in the form of dividend. However the amount of dividend payments is not based on a fixed percentage rate. It is recommended and decided by the board of directors.

Par Value:-The par value is nominal or face value of a stock indicated in common stock certificate and in the company's charter. According to company Act 2053, par value of a share of common stock must be Rs.100 for Nepalese company. In Nepal the company cannot issue common stock at a price less than par value (i.e.at discount).

Maturity:-The common stock has no maturity date. It is not returned to stockholders until the company is dissolved. It exists as long as a firm does. So, the capital raised by the sell of common stock is also called the permanent capital of the company.

Common Stock Valuation

The process of determining the intrinsic value of common stock is known as common stock valuation. The value of common stock depend the expected future cash flows (Dividends) and require rate of return. Dividend has positive relation to present value of common stock. If dividend is higher the value of stock also would be higher and vice versa. But the value of stock has negative correlation with required rate of return. If risk is higher the required rate of return would be higher and value of stock would be lower. But the common stock valuation is more difficult than other financial assets because the expected future cash flows from common stock are uncertain.

Valuation Based On Finite Holding Period (Stock Valuation for Definite Holding Period)

Common stock has no fixed maturity date. Therefore, cash flows from common stock are expected to receive infinite period. However, the investor may sell the common stock after holding some years. In this case, investors receive the dividend up to the holding periods and selling price of stock at the end of holding period. So the intrinsic value of stock is the sum of present value of expected dividend up to the holding period and present value of selling price of stock at the end of holding period.

Valuation of Stock for Indefinite Holding Period

If holding period is indefinite, zero growth, normal growth and super normal growth model of dividend discount model (DDM) are used for valuation of common stock. According to DDM, intrinsic value of common stock is the total present value of expected future cash flows discounted at appropriate required rate of return.

1. **Zero (No) Growth Model:**-The stock of the firm which has constant earning and dividend forever is known as zero growth stock. Dividend of zero growth stock is the same in each year i.e. $D_0=D_1=D_2=.....D_{\infty}$
2. **Constant (Normal) Growth Model:**-The constant growth stock is the stock of the company whose earnings, dividend and the price of the stock grow with a single and constant rate forever and it is less than required return. Dividend is increased in each year by the same rate i.e. $D_1 < D_2 < < D_{\infty}$
3. **Supernormal Growth Model:**-The supernormal growth stock is the stock of the firm whose earnings and dividend will growth by higher rate than economy as a whole for certain period

after which growth rates decline to normal rate and remain at certain growth rate indefinitely. The period in which the growth rate fluctuates is called terminal date or horizon date. In other words, the terminal date is the ending date of supernormal growth period.

Free Cash Flow Approach

This approach starts with an estimate of the value of a firm as a whole and derives the value of equity by subtracting the market value of all non equity claims i.e. debt obligations. The value of the firm is the present value of all the expected future free cash flows. The estimate of the value of the firm is found as the present value of cash flows, assuming all-equity financing plus the net present value of tax shields created by using debt. The free cash flow represents the cash generated in a given year minus the cash needed to finance the capital expenditures and working capital needed to support future growth.

Dividend Discount Model (DDM) and Expected Return

1. **Expected Dividend Yield:** - The ratio between expected dividend and current market price of stock is called expected dividend yield. Expected dividend yield is calculated dividing the expected dividend by current market price of stock.
2. **Capital Gain Yield:**-Capital gain or loss yield is the returns created due to the change in price of stock.
3. **Expected Rate of Return or Total Rate of Return:**-The sum of expected dividend yield and capital gain yield is called expected rate of return or total return.

Unit 7: Cost of Capital

Cost of capital is the cost of raising and using funds from long-term sources of financing. It is the minimum required rate of return that the firm must earn to satisfy all the investor's required rate of return. Cost of capital is an important concept in financial decision making. It is used as standard for evaluating investment projects, designing capital structure and determining appropriate dividend policy. A firm's cost of capital is affected by various controllable and non-controllable factors like interest rate, tax rate, capital structure policy, dividend policy, investment policy etc.

Component Cost of Capital (Cost of Specific Sources of Capital)

The component cost of capital is a separate cost of all components of the firm's capital structure which is considered to rise from investors to finance the new assets of the firm. To calculate the overall cost of capital, it is necessary to determine the cost of each component and their weights in the capital structure. Following are the components cost of capital.

1. **Cost of Debt**
2. **Cost of Preferred Stock**
3. **Cost of Common Stock**

Cost of Debt Capital:-The debt capital refers to that portion of capital structure which is borrowed by the firm from the bank and financial institutions as loan or debt holders by issuing either bond or debenture. Cost of debt is the rate that has to be received from an investment made in order to achieve the required rate of return for the debt holders (creditors).

Cost of Preferred Stock:-Cost of preferred stock is the rate of return expected by preference shareholder on their investment. In other words, it is the minimum rate of return that must be earned on the preferred stockholder's investment to satisfy their required rate of return. It is the function of preferred dividend, market price and flotation cost.

Cost of Common Stock (Cost of Equity):-cost of common stock may be defined as the minimum rate of return that a company must earn on the equity financed portion of an investment project. The firm may raise equity capital internally by using retained earnings and externally by issuing new common stock. The both sources of equity are not free of costs.

- I. **Cost of Retained Earnings/Cost of Internal Equity (Ks):**-The retained earnings are internal sources of equity fund which is retained by a firm from net income available to common stockholders. Therefore, the retained earnings belong to common stockholders because it is retained by a firm instead of paying it as dividend to the shareholders. The cost of retained earnings is the rate of return stockholders require on equity capital the firm obtains by retaining earnings. It is based on the opportunity cost principle.
- II. **Cost of New Common Stock/Cost of External Equity (Ke):**-The new common stock is external sources of equity fund which is raised by a firm from sale of new common stocks. Therefore, it is also called external equity. Cost of new common stock is the rates of return common stockholders require on equity capital that the firms obtain by selling new common stock. Cost of new common stock is greater than cost of internal equity because of flotation costs involved in issuing new common stock.

Weighted Average Cost of Capital (WACC) or Overall Cost of Capital:-The combined cost of all sources of capital is called overall cost of capital. The WACC is the sum of weighted cost of each capital components which are qualified for long term target capital structure. The weight is proportion of each component in target capital structure, which is calculated as rupees amount of individual components divided by total rupees amount of the capital structure. The WACC is computed by using either book value or market value weights. The use of market value weights for calculating cost of capital is more appealing than the use of book value weights because market value of securities closely approximate the actual amount to be received from their sale and component cost of capital are calculated using the market price.

Marginal Cost of capital (MCC)

The MCC in finance refers to the cost incurred in raising the incremental funds. The WACC of new or incremental capital is known as the marginal cost of capital. A graph that shows how the WACC changes as more and more new capital is raised by the firm is called the marginal cost of capital schedule. MCC schedule shows the relationship between net capital raised and cost of capital. There is a break in MCC schedule each time when one of cost of capital component increases. Break point is the rupee volume of new capital that can be raised before an increase in the firm's weighted marginal cost of capital. (Break points are defined as the total financing that can be done before the firm is forced to sell new debt or equity capital).

Unit 5: Risk and Return

The risk and return theory provides fundamental ideas about making optimal investment decision under the environment of uncertainty to maximize the value of an investment. Therefore, it is important to understand the nature of risk and return. Normally, the relationship between the risk and return is positive.

Return: - The return is total gain or loss on an investment over a given period of time. In other words, the return is the difference between terminal (ending) value and initial (beginning) value plus cash received during the given period. The return can be measured in rupee or in percentage. The rupees return on an investment is called absolute return while percentage returned on an investment is called the rate of return or relative return. The total return includes both capital gain (loss) and cash gain. The capital gain is the difference between terminal value and investment amount. On the other hands, the cash gain is rupees received during investment horizon.

Expected return:-The expected return is also called mean or average rate of return. It is the estimated future rate of return which is based on either historical return or possible future returns. The expected return is weighted average rate of return when probability distribution of possible future return is given. The weight being the probability of possible future returns and its sum is always equal to one. The expected return is arithmetic mean when it is based on historical data. It is calculated as the sum of returns divided by the no of return.

Risk:-The risk can be defined as the chances of happening unfavorable event i.e. actual outcomes differ from the expected ones. Risk is defined as the deviation between the actual return and expected return. Thus, risk in financial analysis is the variability of return. The higher the deviation between actual return and expected return, the higher will be the risk and vice versa. The risk can be measured by standard deviation, variance of return and coefficient of variation.

Portfolio: - An investor may invest fund in one or more than one asset at the same time. When investor invests in more than one asset, the combination of those assets is known as a portfolio. In other words, portfolio refers simply to the collection of securities. The investor invests in a portfolio of assets in order to reduce the risk of investment keeping the rate of return of the portfolio relatively higher. Risk of a portfolio is reduced when all or part of the losses of one asset is compensated by other asset/s.

Expected return of portfolio:-The expected rate of return of a portfolio is simply the weighted average of expected return of the individual assets included in the portfolio. The weights are the proportion for investment wealth investment in each asset.

Portfolio risk:-The portfolio risk is the function of standard deviation (risk) of individual assets, which are involved in the portfolio, relative weight of individual asset and covariance or correlation co-efficient between return of individual assets of the portfolio. The (total) risk of a portfolio is measured by either variance or standard deviation or co-efficient of variation of the portfolio.

Co-variance:-The covariance is a statistical measure of how the returns of two assets move together. A positive covariance indicates that the return of two assets move in the same direction where as a negative covariance indicates that the return of two assets move in opposite direction. If covariance is zero, it means the rates of return on assets are independent.

Correlation co-efficient:-The correlation co-efficient is a statistical measure that shows the degree of relationship between the return of two assets. It lies between +1 to -1. Perfect positive correlation (i.e. +1) indicates that the return of two assets move together to the same direction by the same amount. The perfect negative correlation (i.e. -1) indicates that the return of two assets move inversely by the same amount. No correlation (close to zero) indicates that the return of two assets move independently of one another (there is no relationship between the return of two assets).

Beta Co-efficient:-Total risk or total variability of returns of an asset or portfolio is measured in terms of variance or standard deviation. The total risk can be separated into two parts; diversifiable and undiversifiable risk.

Systematic
20/11/21
Diversifiable risk arises from uncertainties and it is related only to the individual firm. Diversifiable risk can be totally eliminated by large number of securities are being combined to form well diversified portfolios. It is also called unsystematic or unique risk. Diversifiable risk occurs through the events like; labour strikes, management errors, inventions, advertising campaigns, availability of raw materials etc.

Systematic
20/11/21
Undiversifiable risk arises due to economy-wide uncertainties and the tendency of individual securities to move together with changes in the market. Undiversifiable risk cannot be reduced by diversification. It is also called systematic or market risk. Undiversifiable risk occurs due to the changes in the macro-economic factors like: interest rate, inflation, GDP, Government policy etc.

The beta coefficient is an index of undiversifiable (systematic) risk. If an asset has a beta greater than the market (i.e.1) it will be classified as an aggressive asset. If an asset has a beta is less than the market then it is known as a defensive asset. If an asset has a beta equal to market then it is known as an average asset.

Security Market Line (SML):-Security market line is graphical representation of the linear relationship between systematic risk (Beta risk) and required rate of return of a particular security or a particular portfolio in financial market. The SML is an upward sloping straight line with an intercept at the risk free return securities and passes through the market portfolio. The upward sloped of the line indicates that greater expected returns accompany higher levels of beta (systematic risk).

Unit 3: Financial Statements and Their Analysis

Financial Statement:-Financial statement is the statement which provides information about an enterprise's revenues, expenses, assets, liabilities and capital. Financial statements are written reports of financial activities of a company, which report and communicate the results of business operations for a particular period of time and its financial position at the end of that period. A firm communicates financial information to the various users like owners, creditors, managers, employees, customers, government and society. The financial statement generally includes Balance Sheet, Income Statement, and Cash Flow Statement.

Role of Financial Statements: - Financial statements are important for analyzing and understanding the financial performance of a firm. They present the detailed information about assets, liability, incomes and expenses and play an important role in decision-making process of the firm. The main role of the financial statement is mentioned below:

- It provides reliable financial information about economic resource and liabilities of the firm, which is helpful for decision making.
- Financial statements provide reliable information about changes in net resources or net worth of the business firm.
- It provides financial information that assists in estimating future financial activities and preparing future financial plans and policy.
- It shows the financial performance of the firm and efficiency of the management. Therefore, shareholders, creditors and other stakeholders can evaluate the firm and can make an idea about the firm.

Balance Sheet:-The Balance sheet is the statement of the firm's assets or resources and owner's equity and liabilities or debt. It is also called the statement of the financial position because it shows the financial position of the firm on a certain date. The balance sheet communicates information about the assets, liabilities and owner's equity for a business firm as on a specific date.

Income Statement:-A statement which finally provides net income after deducting all costs from sales revenue is called income statement. All the expenses and incomes of an accounting period are covered by the income statement. It serves as the measure of the earning capacity, potential of the firm and the firm's profitability.

Cash Flow Statement:-The cash flow statement is a statement prepared to show the sources and uses of cash and equivalent on the basis of balance sheet information of two periods and income statement of current period. In other words cash flow statement is the statement of the cash inflow and outflow, which shows the ability to generate cash. It assists the users of financial statement in making judgment on the amount, timing and degree of certainty of the future cash flows. It gives an indication of the relationship between profitability and cash-generating ability and the quality of the profit earned.

Modifying financial data for managerial decision (Further adjustment of accounting information or some changes in balance sheet and income statement data for managerial decision):

Some changes on the data of financial statement prepared by the accountant seems better for managerial prospective to take correct and efficient decision in the company. Managers like to know the position of

cash flows, free cash flows, operating cash flows which are not provided by the financial statements. So, some changes or modifications are needed on the data of financial statements. Some changes on the income statement data are as follows:

Net cash flow:-Net cash flow refers to the difference between a company's cash inflows and outflows in a given period. It is also known as the change in cash and cash equivalents. It is the sum of cash flow from operating, investing and financing activities. It is the fuel that helps companies expand, develop new products, buy back stock, pay dividend or reduce debt. The value of the firm or the value of the common stock or assets of the firm depend on the cash flow generated by the use of the firm's assets. Net cash flow = Net income - Non cash revenues + Non cash expenses or Net cash flow = Net income + Depreciation and amortization.

Operating Assets:-The total assets can be divided into operating assets and non operating assets. Operating assets are those assets which are used for day to day operation of the business. Operating assets includes cash, marketable securities, receivable, inventories and fixed assets necessary to operate the business. Non operating assets are those assets which are not used for day to day operation of the business. Non operating assets include cash and marketable securities above the level required for normal operations, investments in subsidiaries, land held for future use.

Operating working capital and net operating working capital: - Generally, operating working capital considers value of current assets while net operating working capital considers difference between operating current assets and operating current liabilities. Operating assets are further divided into working capital and fixed assets such as plant and equipment. Those current assets used in operation are called operating working capital and operating working capital less accounts payable and accruals is called net operating working capital. Net operating working capital is the working capital acquired with investor supplied funds. Total operating capital is the sum of net operating working capital and net fixed assets. Operating working capital = Value of current assets (i.e. cash and marketable securities+ receivable inventories). Net operating working capital = operating current assets - Noninterest bearing current liabilities (i.e. account payable+ accruals).

Total operating capital: - Total operating capital is the sum of net operating capital and net fixed assets. Total operating capital = Net operating working capital + Net fixed capital.

Net Operating Profit after Tax (NOPAT):- The profit generated by a firm without the use of debt and without holding non-operating assets is called net operating profit after tax. Net income does not always reflect the true performance of a company's operations or the effectiveness of its managers and employees. A better measurement for comparing manager's performance is net operating profit after taxes, which is the amount of profit a company would generate if it had no debt and held no non-operating assets. NOPAT = EBIT (1-T).

Free Cash Flow (FCF):- Free cash flow is residual cash after paying for working capital, fixed assets and operating expenses. It is available cash to pay for creditors, lenders and shareholders. FCF is used to pay dividend, interest, to repurchase the stock etc. FCF = NOPAT - Net investment in operating capital. Net investment in operating capital = Ending operating capital - Beginning operating capital.

Market Value Added (MVA):- Market value added to equity is the difference between market value of equity and book value of equity. MVA represents that it is the value added on shareholders equity in the market due to the managerial efficiency. $MVA = \text{Market value of common stock (i.e. No of shares} \times \text{MPS)} - \text{Shareholder's equity.}$

Economic Value Added (EVA):- Economic value added is increased in value of equity due to the increase in profitability of the company. Economic value represents the working efficiency of the management during the specified period of time. It is the difference between net operating profit after tax and after tax cost of operating capital in amount. $EVA = \text{Net operating profit after tax (NOPAT)} - \text{Rupees after tax cost of operating capital (i.e. Total operating capital} \times \text{after tax cost of capital).}$

Financial Analysis: - Financial analysis is the process of analyzing various items of financial statement of a firm to ensure its comparative strengths and weaknesses. Financial analysis refers to assessment or evaluation of financial activities and mapping the results to point out basic strength and weakness of a firm. Every enterprise makes effective planning and establishes control mechanisms for financial activities. The tools like common size statement and ratio analysis help to explain the current or existing strength and weakness of a firm. The strength must be understood if it is to be used to some advantage and the weakness must be understood if a corrective action is to be taken. Internally, the financial managers use the information provided by financial analysis to help to take financing and investment decisions. Externally the shareholders and the creditors use financial analysis to evaluate the attractiveness of the firm.

Ratio Analysis: - The relationship between two accounting figures expressed mathematically is known as ratio. Analysis of the relationship between various items of financial statements is called financial ratio analysis which helps to summarize the large quantity of financial data and to make qualitative judgments about the firm's financial performance. It reflects the quantitative relationship and helps the manager for qualitative judgments.

Types of Ratios

1. Liquidity Ratios: - Liquidity ratio measures the firm's ability to meet its short-term obligation when they become due. It tests the short-term solvency positions for the payment of short-term liabilities. The commonly used liquidity ratios are current ratio, quick ratio and cash ratio etc.

2. Assets Management Ratios: - Assets management ratios are employed to evaluate the efficiency with which the firm manages and utilizes its assets. These ratios are also known as turnover ratios or activity ratios or management efficiency ratios or performance ratios because they indicate the speed with which assets are being converted or turned over into sales or how efficiently the firm's assets are being utilized. The commonly used assets management ratios are inventory turnover ratio, receivable turnover ratio, average collection period, fixed assets turnover ratio, total assets turnover ratio etc.

3. Debt Management Ratios: - Debt management ratio measures the extent to which the firm is using debt financing or financing leverage and the degree of safety afforded to creditors. It also measures the long term solvency position of the firm. These ratios indicate the funds provided by owners (shareholders) and creditors to finance the firm assets and how far the firm is able to satisfy shareholders and creditors.

The commonly used debt management ratios are debt ratio, debt-equity ratio, total debt to total capital ratio, time interest earned ratio, fixed charge coverage ratio, equity multiplier etc.

4. Profitability Ratios: - profitability ratios are measurement of earning in relation to sales, assets and capital used. It indicates overall performance of the firm. These ratios are important measurement for management prospective, shareholders, creditors and other stakeholders. These ratios are outcome of assets management, debt management and managerial efficiencies. So, these ratios are final measurement of business performance. The commonly used profitability ratios are net profit margin, gross profit margin, operating profit margin, basic earning power ratio, return on assets, return on equity etc.

5. Market Value Ratios:-The market value ratio represents a group of ratios that relates the firm's stock price to its earning and book value. This ratio also gives the management an indication of what investors think about the firm's past performance and future prospects. If other ratios indicate a favorable condition, then its market value ratio will be high and its stock price also will be high. The commonly used market value ratios are price-earnings ratio, market to book value ratio etc.

Du Pont Identity (Du Pont System or Du Pont Chart or Du Pont Equation):-The Du Pont chart is developed by managers of Du Pont Corporation of USA to shows the relation among the various ratios. The Du Pont chart represents the summary of ratios. It is used to show the effect on return on equity (ROE) if the firm change its any account of balance sheet as well as items of income statement. It is designed to show how the profit margin on sales, the assets turnover ratio, and the use of debt interact to determine the rate of return on equity. The firm's management can use the Du Pont system to analyze ways of improving performance. $ROA = \text{Net profit margin} \times \text{Total assets turnover ratio}$. $ROE = ROA \times \text{Equity multiplier}$ or $ROE = \text{Net profit margin} \times \text{Total assets turnover} \times \text{Equity multiplier}$.

Use of Financial Ratios:-The financial ratios show performance of company in different periods. These ratios provide strength and weakness of firm in relation to short term solvency, assets management, debt management and profitability. It is helpful for company, shareholders, bondholders and other stakeholders for knowing performance of the company.

Financial ratios are important to company for doing financial planning and controlling process. The analysis is useful to shareholders to know earning and wealth position of company. Bondholders and creditors are also interested to know interest and loan payment capacity of the firm with the help of financial analysis. Government is also interested for financial analysis of different companies because the success or failure of any organization affects several public or parties. Financial analysis is important for vertical and horizontal analysis. Vertical analysis is evaluation of performance periods to periods. The financial analysis is also useful to evaluate performance of single company and also useful to evaluate performance of single company with industry. For example, we can make comparison between particular bank and banking industry. So, it is useful in many aspects and parties.

Limitation of Ratio Analysis: - Ratio analysis is a widely used technique to evaluate the financial position and performance of the business firm. But there are certain problems in using ratio analysis. The analyst should be aware of these problems. The following are the limitations of ratio analysis:

1. Lack of comparison standard: - The ratio analysis has not perfect standard in many ratios to make comparison. In this way it is difficult to whether the ratio is strong or weak. For example, if debt ratio 45 percent we cannot say it is better or worse because the level of debt is determined according to nature and business of a company.

2. Variation in interpretation (Depends upon personal attitude):- it is difficult to generalize about whether a particular ratio is good or bad. For example a high current ratio may indicate a strong liquidity position, which is good or excessive cash, which is bad.

3. Change in Price Level: - Ratios are calculated from the information given in the financial statements. While calculating ratios, making comparison, price level change in market is not considered. The book value of assets and liabilities shown in the financial statement may be more or less than the market price. Such factors affect the usefulness of the ratios.

4. Change in Technology:-Ratio analysis does not consider the impact of technological changes. Technological changes keeps value for change-in-performance of company. In the case of two companies doing same business also has different performance. So, we cannot make comparison on the basis of ratio analysis.

5. Not Indicator of Future (Lack of Future Information):-Ratio analysis is done on the basis of past data's and planning is done according to past performance but in real future may differ from our prediction.

6. Seasonal Change:-If ratio analysis is done on the basis of higher selling season, financial statements it will produce better performance and if it is done on lower selling season financial statement it will produce poor performance. So, it does not provide clear picture of performance any time.

7. Situation of the Firms

8. Window Dressing

9. Conceptual Diversity

10. Ignores Qualitative Aspects

11. Based on Historical Information

Common Size Statements:-A simple method of comparing the financial performance of a firm with other firms is a common size statement. The size of investment and transactions may be different in different firm, so the size of financial statements will be different or incomparable. Similarly, the size of the transactions of the same firm may be different over different periods, so the financial statement will be incomparable. To make a financial statement comparable, different size financial statement is brought to the common size.

Common size financial statement is the financial statement in which the financial items are presented in percentages. In common size statement balance sheet accounts and income statement items are expressed in percentage. All balance sheet accounts are presented as a percentage of total assets and all income statement items are presented as a percentage of sales. Sales is assumed to be common base equal to 100.

for income statement and total assets is assumed to be common base equal to 100. Common size financial statement helps to highlight the significant facts and points the items which need future analysis.

Percentage of Income statement items (individually) = Individual item of income statement / Total Sales

Percentage of Balance sheet items (individually) = Individual amount of balance sheet / Total assets

Unit 2. Financial Environment: Markets, Institutions, Interest Rates and Taxes

Financial market:-Financial environment consists of financial markets, financial institutions, financial instruments and financial services. Financial market is the market where financial securities like stocks and bonds and commodities like valuable metals are exchanged at efficient market prices. The trading of stocks and bonds in the financial market can take place directly between buyers and sellers or by the medium of stock exchange. Financial markets can be domestic or international. Financial markets exist in order to bring buyer and seller of securities and financial services together.

Financial market performs two important functions. First, they are the channels through which flows of savings are allocated to investment. They provide a variety of financial assets for those who wish to save for those who wish to raise funds for investments they provide a variety of forms in which to raise those funds. Second, financial markets establish a pricing mechanism for financial assets and this pricing mechanism plays a most important role in allocating saving to investment.

In short, markets where short-term and long-term transactions of capital are done known as financial markets. In such a market shares, bond and debentures, negotiable instruments, promissory notes are traded. It is the market where borrowers and lenders meet and fulfill their requirements.

Functions of Financial Markets:

1. To promote economic growth and development
2. Mobilization of saving
3. Financial intermediates
4. To provide liquidity to the financial instruments
5. To provide financial assistance
6. To develop security market
7. Employment creation

Types of Financial Market:

There are many ways to classify financial markets. One way is the types of maturity period such as money and capital market. Another way is the types of security traded and financial claim such as primary market and secondary market. The main financial market can be classified as follows:

1. Primary market:-Primary market is the market in which corporation raise new capital by issuing new securities. All proceeds from the issue in this market go to issuing corporation. The corporation could take the services of investment bankers and securities dealers. They assist issuing corporations selling securities in the market. The main function of the primary market is to make the financial capital to make new investments in building, equipment and stock of necessary goods.

2. Secondary Market: - Markets in which existing and already outstanding securities are traded among investor are called secondary market. Securities once purchased through primary market are traded in secondary market. Secondary market is the base for primary market. The original issuer has no role in secondary markets, and the proceeds from securities transactions do not go to the issuer. Its main function is to provide liquidity to the purchasers of securities. Nepal Stock Exchange (NEPSE) is an example of secondary market in Nepal.

3. Money Market:-Money market is a financial market in which financial assets with term to maturity of less than one year is traded. It means the short-term financial assets are issued to raise the short-term funds to run the business. In other words, money market is the types of market, which include the short-term, high liquid and low-risk securities. Treasury bills, commercial paper and certificate of deposit etc. are the instruments of money market. These money market instruments are actively traded in primary as well as secondary market. The main function of the money market is to provide short-term loans to the business, to the government and loan to households.

4. Capital Market:-Financial market in which financial assets with a term to maturity of more than one year are traded is known as capital market. It is the types of market, which facilities transaction of long-term, low liquid and high risk securities. All long-term securities issued by corporation and government such as common stock, preferred stock, corporate bonds, government bonds, are the instruments of capital market. These capital market instruments are also traded in both primary as well as secondary market. Capital market instruments are not as liquid as money market instruments because of longer maturity. However, the existence of secondary market adds to the liquidity of these instruments.

Organized Stock Exchanges:-Organized stock exchanges are the physical locations where the securities are traded under some established rules and regulation. It is one of the important secondary markets where the investors buy and sell the securities between themselves. Organized stock exchanges facilitate the trading of securities, which are listed in it. Nepal Stock Exchange (NEPSE), New York Stock Exchange, Tokyo Stock Exchange, London Stock Exchange etc. are the organized stock market. The organized stock market of Nepal is Nepal Stock Exchange (NEPSE).

Over the Counter Market (OTC Market):-The market where the securities of companies not listed in the organized stock exchange are traded is called over the counter market. Since transactions are made informally, these markets are also known as impersonal or curb market. The transaction of such securities is made by intermediaries and authorized dealers. The customers may order the intermediary and authorized dealer to buy and sell the securities by means of telephone or fax. They set up the price of securities. National Association of Security Dealer (NASD) and the Over the Counter Exchange India (OTCEI) are the examples of OTC market.

Level of Interest Rate: - Interest is the prices paid to the obtained borrowed capital. Interest is the cost incurred by demanders (users) of funds when they used debt capital. From the view point of suppliers, interest is the revenues when money is loaned to users. Therefore, interest is both a cost and revenue- it just depends on whether we are a user or a supplier of funds. Loan provider expects higher interest where as loan taker expects lower interest. In free market condition, levels of interest rates are regulated by the interaction between demand for and supply of funds. Interest rate changes over time due to the supply and demand of funds, inflation rate, business cycle, trade deficit, budget deficit, monetary policy and various risks.

against themselves for cash and use the proceeds from this issuance to purchase primarily the financial assets of others. They help in generating the saving from people, business and government which is supplied to the user of funds. They also work as the intermediaries between issuer of securities and the investing public.

Types of Financial Intermediaries: - There are many types of financial intermediaries or institutions. Some involve in depository type of transaction whereas other involve in forming a public investment portfolio. Some major types of financial intermediaries or institutions are as follows:

- a. **Depository Institutions:** - Depository institutions are financial intermediaries that accept the deposit from individual and other institutions and make the loans to meet the credit needs of the different types of users or purchasing other debt instrument such as Treasury bills. The major types of depository institutions are Commercial banks, Development banks, saving and loan associations, saving and credit co-operatives and finance companies.
- b. **Non Depository Institutions:** - Non depository institutions are an intermediary who does not accept the deposits directly from the customers. But they raise funds by some what other different ways. Insurance company, mutual funds, pension funds and provident fund, security brokers, security dealers, investment bankers etc. are the form of non deposit institutions.

Taxes:

Total Tax
Corporate Tax: - A tax that must be paid by a corporation based on the amount of profit generated is called corporate tax. A levy paced on the profit of a firm, with different rates used for different level of profit. It is tax against profit earned by businesses during a given taxable period.

Marginal Tax: - The amount of tax paid on an additional rupee of income is called marginal tax. The marginal tax rate for an individual will increase as income rises. This method of taxation aims to fairly tax individuals based upon their earnings. With low income earners being taxed at a lower rate than higher income earners.

Average Tax: - The total amount of taxes paid by an individual of business divided by taxable income is called average tax rate. This rate will vary based on the amount of income received during the taxable period.
$$\text{Average Tax Rate} = \frac{\text{Total Tax}}{\text{Total Taxable Income}}$$

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✓ **Determinants of Market Interest Rate:** - The quoted or nominal interest rate on debt security (K) is composed of a real risk free rate of interest (K*) plus several premiums that reflect inflation, the riskiness of security and the security's marketability or liquidity. This relationship can be given by following equations: Simple or Nominal or quoted interest rate (K) = $K^* + IP + DRP + LRP + MRP$.

The real risk free rate of interest (K*):-The real risk free rate of interest is defined as an equilibrium rate that exists in a world with no inflation on a riskless security, which is simply the function of aggregate supply of and demand for capital.

Nominal risk free rate of interest (K_{RF}):- The nominal risk free rate of interest is the actual rate of interest charged by the supplier of funds and paid by the users of funds. It is the real rate of interest adjusted for expected average inflation over the life of security. The nominal rate of interest (K_{RF}) is simply equal with real rate of interest (K*) plus expected average premium for inflation (IP). $K_{RF} = K^* + IP$

Inflation Premium (IP):- Inflation premium is a premium for expected inflation that investors add to the real risk free rate of return. Inflation reduces the purchasing power of money and the real rate of return of investment. Therefore, investors require more return (or high interest) if there is possibility of greater inflation. $Inflation\ Premium\ (IP) = I_1 + I_2 + \dots + I_n/n$

I_1 = inflation rate in year 1

I_2 = inflation rate in year 2

n = Time period

Default Risk Premium (DRP):- Default risk means possibility of not to pay interest or principal by borrower. It is a kind of uncertainty. So, higher the default risks higher the interest. Default risk premium is the difference between quoted interest rate on a T- bond and corporate bond with similar maturity, liquidity and other features. The DRP compensates investors for the risk that borrower will default and hence not pay the interest or principal on a loan. Treasury securities have no default risk.

Liquidity Risk Premium (LRP):- Liquidity risk premium is the premium added to the rate on a security if the security cannot be converted into cash at close to the original cost on short time period. Consequently, short term financial assets generally are more liquid than long term financial assets. Lower the marketability (liquidity) of securities, the investors expect greater premium for liquidity so that market interest rate increases.

Maturity Risk Premium (MRP):- Maturity risk premium is a premium that reflects interest rate risk; securities with longer maturities have greater interest rate risk. Long term securities are more sensitive to interest rate changes than the short term securities. Therefore, a maturity risk premium is added to longer-term securities to compensate investors for interest rate risk.

Financial Institution or Intermediaries: - Financial intermediaries are the specialized financial firm that facilitates the transfer of funds from savers to demanders. Financial intermediaries are middleman who stands between the borrower and lender. The role of financial intermediaries is to collect fund from various savers or by selling financial instruments and lend those funds to borrowers or to buy the securities of their business firms. Financial intermediaries are organizations that issue financial claims