UNIT – 3

Valuation of Securities and Fundamental Analysis

Objectives

The objectives of this unit are to

● understand basics of valuation of bonds.

● explain the valuation model of equity shares, preference shares, future and option

● Describe the fundamental analysis i.e. economic, industry and company.

Introduction:

Securities valuation means determining fair value of financial instruments by investors/traders before buy or sell viz. equity shares, preference shares, debentures, bonds, future and option of corporate organizations, government and semi government undertakings and financial institutions. Security valuation is important to decide the portfolio of an investor. All investment decisions are to be made on a scientific analysis of the right price of a security. For this purpose, he/she creates a portfolio consisting of fixed income (risk free and less risky) bearing securities and risky securities. Hence the portfolio may consist of bonds/debentures, preference shares, equity shares, options, futures etc. This is why knowledge of the valuing the specific types of securities are required. As a standard rule investors should buy underpriced securities and sell overpriced securities. Hence, fair pricing of securities is an important aspect of trading. Generally, four types of valuation models of securities are used by analysts namely (i) Book value(ii) Liquidating value (iii) Intrinsic value (iv) Replacement value as compared to market price.

3.1. Valuation of Bonds and Debentures

A bond/debenture is issued by business house or government providing a fixed income of money in the form of interest to the holder on a specified date till its maturity. A bond is a bearer instrument so can be transferred without any transfer deed. Bonds issued by government or semi government bodies are called government or gilt edge securities. These are risk free assets. The debentures and bonds are almost similar. The difference among the two is of non financial nature. As per companies act, "Debenture is a written instrument acknowledging a debt to the company. It includes debenture stock, bonds and any other securities of a company whether constituting a charge on the assets of a company or not."

3.2. Terminology in Bonds Valuation:

Par Value: The face value of the bond/debenture is called its par value. Par value is the amount at which firm sold the bond to investors and repay the same on the date of maturity. The par value of bond

may be Rs. 100, 1000, 5000, 10000 and so on. If the bond/debenture is sold less than its par value, it is known discount and above par value it is called premium.

Coupon Rate: The rate at which interest is computed on the par value of bond/debenture and payable annually/semi-annually or as per the terms and conditions mentioned in the instrument to the holder.

Maturity Period: It indicates the date or period at the end of which the principal will be repaid to holder. The maturity can be for long period or short period. The maturity period may range from one year to 10 years.

Current Yield: It is the annual earning/income which may be in the form of dividend on shares or interest on debt securities, expressed in percentage on the current market price of share or bond.

Yield to Maturity: Yield to maturity is a discount rate by which future cash flows from a bond are discounted to find their present value which is equal to the current price of the bond. It is the rate of return that investors expect to earn if the bond is kept till maturity. YTM is based on the three assumptions:

- Investor is holding the bond till maturity.

- The interim coupon rate is reinvested at the YTM rate.

- No default in payment of coupon or maturity value.

Yield to maturity depends upon time value of money that means a rupee received today is more valuable than a rupee received tomorrow. It depends on the discounting principle. The future value and present value are as follows:

Future value= Present value $(1+ \text{interest rate})^t$

t represents the number of years for which the money is invested.

If hundred rupees are put in saving bank account at 12% for one year, the future value of money will be:

Future Value= Rs.100 (1+.12)

$\qquad$ =100*1.12=112

Present Value of money can be calculated by reversing the formula.

Present value*$(1+\text{interest rate})^t$= Future value

Present value= future value/$(1+ \text{interest rate})^t$

Today's worth of Rs 1000 to be received after a year at the 10 percent interest will be

Present value= Rs.1000/(1+.1)

$\qquad$ =Rs. 1000/1.1

$\qquad$ = Rs. 909.09

3.3. Key Points to Understand Bond Value Behavior

a) Required Rate of Return and Bond Value

i) When interest rate is equal to required rate of return, then value of bond is equal to par value. ii) When interest rate is higher than required rate of return, then value of bond would be more than par value.iii) When interest rate is lower than required rate of return, then value of bond will be less than par value.

b)Time to Maturity and Bond Value: i) When interest rate is equal to required rate of return and change in time period (whatever may be maturity period) value of bond is equal to par value. ii) When interest rate is higher than required rate of return the value of bond increases when time period to maturity increases. iii) When interest rate is lower than required rate of return value of bond decreases when time to maturity increases and vice-versa.

3.4. Valuation Models

Bonds are classified into two categories namely irredeemable/perpetual and redeemable. The value of depends upon three factors i.e coupon rate, year to maturity and the expected yield to maturity/required rate of return**.**

a) Valuation of Redeemable Bonds: These bonds are repayable by issuer after a fixed period of time. The value of these bonds is the present value of future cash inflows (periodical interest payments and par value at maturity) paid by issuer till their maturity. The following formula is used to determine the value of bond:

$$V_d = R_1(1+K_d)^{-1} + R_2(1+K_d)^{-2} + R_3(1+K_d)^{-3} \ldots\ldots\ldots + R_n(1+K_d)^{-n} + M_n(1+K_d)^{-n}$$

$$= \sum R_t(1+K_d)^{-t} + M_n(1+K_d)^{-n}$$

V_d = Value of bond or debt

$R_1, R_2\ldots$ = Annual interest in period 1,2,3……so on

K_d = Required rate of return

M= Maturity value of bond

n= Number of years to maturity

As the n goes larger, it becomes difficult to calculate through time value of money formula. To compute the value we take the help of Present Value Interest Factor Annuity table. Mathematically:

V_d = (I x PVIFA kd,n + (M x PVIF kd,n)

PVIFA = Present value interest factor annuity,

PVIF = Present value interest factor

 kd= Required rate of return n= Number of years to maturity M= Maturity value of bond

Example Dinesh want to buy 7% Rs. 100 bond redeemable at par after 5 years. The cost of bond for Dinesh is 10%. Suggest him to buy or not that bond.

Solution:

$V_d = R_1(1+K_d)^{-1} + R_2(1+K_d)^{-2} + R_3(1+K_d)^{-3} \ldots\ldots\ldots + R_n(1+K_d)^{-n} + M_n(1+K_d)^{-n}$

$\qquad = 7(1.1)^{-1} + 7(1.1)^{-2} + 7(1.1)^{-3} + 7(1.1)^{-4} + 7(1.1)^{-5} + 100(1.1)^{-5}$

$\qquad = 6.363 + 5.782 + 5.257 + 4.781 + 4.347 + 62.1$

$\qquad = 88.63$ .He should be pay Rs. 88.63 the fair value of the bond.

b) Valuation of Irredeemable Bonds: These are the bonds without maturity period and are not repaid till closing of the firm.. Formula to value these bonds is:.

$\qquad\qquad V_d = I/K_d$

Where, $V_d =$ Value of bond or debt

$\qquad\qquad K_d =$ Required rate of return.

$\qquad\qquad I =$ Annual interest

ILLUSTRATION 2: XYZ has issued 14% perpetual bonds of Rs 1000 each. Determine the value of bond if cost of debt is 15%.

Solution:

$\qquad V_d = R/K_d$

$\qquad\quad = 140/0.15$

$\qquad\quad = Rs. 933$

c) Bond Value with Semi Annual Interest Rates: If interest on bond/ debenture is paid semi annually, the bond valuation is little bit modified:

- Yearly interest is divided by 2 to get half yearly interest.

- Maturity period is multiplied by 2 to know number of half yearly periods.

- The required rate of return is divided by 2 to know discount rate applied to half yearly periods.

d) Valuation of Zero Coupon/ Deep Discount Bonds: Zero Coupon or deep discount bonds does not carry any interest but is sold to the investor at heavy discount from its maturity value. IDBI issued such bonds in the Indian market for the first time. The valuation of deep discount bond can be made in the same manner as that of the ordinary bond. Remember that there shall be only one cash flow at the time of maturity. Thus the value of DDB may be taken as present value of the future cashflow discounted at required rate of return.

Mathematically $V_{ddb} = FV/(1+r)^n$

Where, V_{ddb} = Value of deep discount bond

　　　FV = Face value of bond at the time of maturity

　　　r = Required rate of return

　　　n = Number of years to maturity

Example: Seena Vora Ltd. issued Zero coupon bonds for a period of 20 years with maturity value of Rs. One lakh. If the required rate of return is 10% , determine its value.

$V_{ddb} = FV/(1+r)^n$

　　　　　$= 100000/(1+.10)^{20}$

　　　　　$= 100000(0.14864)$

　　　　　$= Rs. 14864$

3.5.　Valuation of Preference Share

Once features of bonds and equities are combined it become hybrid security and called preference shares. The holders of these shares have two priority rights over equity shareholders in receiving dividends at fixed rate and repayment of their capital in case company is being liquidated. Risk in preference share is more than debt but less than equity shares. The return on preference shares is greater than the bonds.

a) Value of Redeemable Preference: These preference shares are issued with a fixed period of time and repayment is made by the issuer company on their maturity. Formula to find out their value is:

　　　$V_p = d(1+k_p)^{-1} + d(1+k_p)^{-2}+.....+ d(1+k_p)^{-n} + P_n(1+k_p)^{-n}$

Where, V_p = Value of preference share

　　　　　d = Annual dividend per preference share

　　　　　P_n = Maturity or redemption price of preference share

　　　　　k_p = Required rate of return/cost of preference share

Alternatively Short Formula

V_p= (P0 **x** PVIFA kp.n + (M **x** PVIF kp,n)

PVIFA = Present value interest factor annuity,

PVIF = Present value interest factor

P0= Dividend on preference share

kp= Required rate of return/cost of preference share

n= Number of years to maturity ₘ= Maturity value of preference share

Example: XY Ltd.issued,7% preference share of Rs. 10,000 at face value repayable after 5 years from the date of issue. Determine the value of share if 8% is the minimum required rate of return on it.

Solution: $V_p = d(1+k_p)^{-1} + d(1+k_p)^{-2}+.....+ d(1+k_p)^{-n} + P_n(1+k_p)^{-n}$

$\quad = 700/(1.08)^{-1} + 700/(1.08)^{-2} + 700/(1.08)^{-3} + 700/(1.08)^{-4} + 700/(1.08)^{-5} + 10000/(1.08)^{-5}$

$\quad = 700(.926) + 700(0.857) + 700(.794) + 700(.735) + 700(.681) + 10000(.681)$

$\quad = 648.2 + 599.9 + 555.8 + 514.5 + 476.7 + 6810 = 9605.1$

Total present value of cash flow or value of preference share Rs.9605.1

b) Value Of Irredeemable Preference Share: .: These preference shares are without maturity period and are not repaid till closing of the firm.. Formula to value these bonds is:.

$$V_p = D/K_p$$

Where, V_d = Value of preference share

$\qquad\qquad K_p$ = Required rate of return.

$\qquad\qquad$ D= Annual dividend per share

Example: Reena wants to invest in perpetual, 9% Preference Share of Rs. 5,000 of X Ltd. Find the value of share if required rate of return is 10%.

Solution: $V_p = D/K_p$

$\qquad\qquad = 450/(0.10) = $ Rs. 4500.

3.6.   Equity Share Valuation

People invest in equity shares in the expectations of dividend and increase in share price/capital gain. Determining equity value is different from bonds and preference stock as cash flow from them is known in the form of fixed interest and dividends respectively. However, dividends on equity shares/cash flows are uncertain but holders of equity shares expect growth in earnings/dividends till they hold. This is why equity shares valuation approaches follow capitalization of dividend and capitalization of earnings methods.

I) Dividend Capitalization Approach: The value of equity share is determined by the cash flows expected by investors and the risk associated with such cash flows. The investor expects dividends during holding period and capital gain on sale of shares. Thus the value of equity stock is the present value of a streams of dividends expected during holding period. The different valuation models are as follows:

a) Single Period Valuation: The model is based on the assumption the investors buy and hold equity shares only for one year. In this case the value of share will be the present value of dividend expected after one year and the present value of expected sale price. Symbolically,

$$P_0 = \{D_1/(1+K_e) + P_1(1+K_e)\}$$

Where, P_0 = Current value of the share

D_1 = Expected dividend at the end of year 1.

P_1 = Expected sale price of share at the end of year 1.

K_e = Required rate of return on equity.

b) N-Period Valuation : Here the assumption is that investors buy and hold shares for n number of year. In such a case the value of share will be computed by following formula:

$$P_0 = D_1/(1+K_e) + D_2/(1+K_e)^2 + \ldots\ldots\ldots + D_n/(1+K_e)^n + P_n(1+K_e)^n$$

P_0 = Current value of equity share

$D_{1, D2, Dn}$ = Expected dividend at the end of n number of years .

P_n = Expected selling price at end of n years.

K_e = Required rate of return on equity

If the expected dividend in different periods is **constant**, the value of shares can be calculated using compound interest and annuity table.

$$P_0 = D(PVIFA_{i,n}) + P_n(PVIF_{i,n})$$

D = Dividend at the end of year/annual dividend

PVIFA=Present value interest factor of Annuity,

PVIF= present value interest factor

Y is interested to buy and hold a share for ten years. He is expecting a dividend of Rs. 10 yearly for holding period and sell it at Rs. 110 after 10 years. If the cost of equity is 12% compute the value of share.

$$P_0 = D(ADF_{i,n}) + P_n(DF_{i,n})$$

$$= 10(ADF_{12,10}) + 110(DF_{12,10})$$

$$= 10(5.650) + 110(0.322)$$

$$= 56.50 + 35.42 = \text{Rs. } 91.92$$

II) Dividend Valuation Model: The assumption of this basic model is that investors buy equity shares with the intention of holding them forever. The value of equity stock is the present value of a stream of dividends expected over an infinite period.

$$P_0 = \sum\{D_t/(1+k_e)^t\}$$

Where, P_0 = price of the share

D_t = dividend to be received in the years

K_e = Required rate of return

t= time period

Some variation in the Dividend Valuation Model

a) No/Zero Growth Model: It is based on the assumption that dividends are not expected to grow or will remain constant. The value of the share is the present value of perpetuity of dividends. Formula to determine the value of share is

$P_0 = D/K_e$ Where

D= Dividend per Share,   Ke = Cost of Equity/required rate of return

b) Constant Growth Model: This model assumes that dividends would grow at a constant rate but growth rate is always less than cost of equity/required rate of return.

$$P_0 = D_1 \div (K_e - g)$$
$$= D_0(1+g) \div (K_e - g)$$

Where, D_0= current dividend

D_1 = dividend at the end of year

K_e = required rate of return

g= Expected percent growth in dividend

Example: Ria & Co. paid a dividend of Rs. 3 as last year's dividend and is expected to grow at 5% forever. Compute the value of stock assuming required rate of return is 16%.

$P_0 = D_1/(K_e - g)$

$$= 3(1+.05) \div (0.16-0.05)$$
$$= 3.15 \div 0.11 \text{ or }\quad \text{Rs. } 28.63$$

c) Variable Growth Model: The assumptions of zero and constant growth model in previous paragraphs seem untrue for fast growing firms. Further growth of the firm is different in different phases of economy. Hence, variable growth model of dividend is appropriate to value equity share. It requires four steps to be followed to arrive the value of equity stock. These are:

1. Compute the present value of expected dividends at the end of each year during the supernormal growth period.

2. Compute the present value of dividends expected during the initial growth period.

3. Determine the present value of equity share at the end of the initial growth period.

4. Add the present value computed in step 2 and 3 to arrive value of equity stock.

Example "XYZ company declared a dividend of Rs. 2 per share. Company expects that the dividend will grow at a 12% growth rate (g1) for the next four years. At the end of 4 years the dividends growth rate shows declining trend at 6% (g2) for the foreseeable future. Determine value of stock assuming 16% as required rate of return".

Step1.Calculation of cash value of dividend at the end of each year

Year	D0(Rs)	FVIF@12%	D1 (Rs)
1	4	1.120	4.48
2	4	1.254	5.016
3	4	1.405	5.620
4	4	1.574	6.296

Step 2.

Year	D1	PVIF@16%	Present Value
1	4.48	.862	3.862
2	5.016	.743	3.727
3	5.620	.641	3.602
4	6.296	.552	3.475

Step 3. Value of stock at the end of initial growth period i.e. 4 year. Before applying formula we need to find expected dividend for the 5th year with normal growth rate (g2) D5 =D4 **x**(1+g2) or D5 = 6.296 **x** (1.06) **or   6.673**

Now P4 = D5 ÷ (Ke-g2) OR   = 6.673÷ 0.16-0.06 = Rs. 66.73. Now Rs. **66.73** needs to be converted into present value

=P4 **x** PVIF Ke. 4 years = 66.73 x PVIF 16%, 4years = 66.73 x 0.552 =Rs.**36.83**

Step 4. Add Present values found in step 2 and 3

P0= 14.66 + 36.83 Rs**. 51.50"**

III) Earnings Capitalization Model: According to this model price of share is dependent on the dividend payout ratio. Market value of the share is equal to the present value of infinite stream of dividends.

P = E (1–b) ÷ k-b.r **or** 'g'

Where,   P= Price of shares

                E= Earnings per share

b= Retention ratio

k = Cost of equity capital

b.r = Growth rate × rate of return on investment of an all-equity firm..

Example: From the following information compute the market price of share

Required rate of return Ke = 15%

EPS = Rs. 10

Return on investment 'r' = 14%

Retention ratio: Case A= 40%

Case A P = E (1–b) ÷ k-b.r = 10(1-.40) ÷.15-.40 ×.14 = Rs. 39.94

3.7.   Option: Of several variants in derivatives option is being preferred by investors for investment, hedging and speculative purposes. A option contract gives the buyer of the option(option holder) the right to buy or sell specified quantity of a security at a pre-determined price and on predetermined date after paying a amount called premium to option writer, where as the seller of the option(option writer) has the obligation to sell or buy specified quantity of a security at a pre-determined price and on predetermined date if the option holder exercise his/her right. Option is the type of derivative used by investor to protect the investment from risk. Option is a type of derivative where the loss of option holder is limited whereas the potential for profits are unlimited where as profit of the option writer is limited to the amount of premium received whereas his losses are unlimited.

Black and Schole Option Pricing Model (BSOPM):   The option price is the upfront fee (option premium) paid by the option buyer (option holder) to option seller(writer)**.** Finding the price of option is called option valuation. Black and Schole Option Pricing Model (BSOPM) is a mathematical model for pricing the option and most suitable to the modern capital markets. The factors affecting the price of the option as per (BSOPM) are spot price of the underlying assets, the exercise price, volatility of the underlying asset, risk free interest rate and time to maturity. The model is used to determine the price of European call option which means that option can be exercised on the expiration date.

    The model is based on the following assumption**s:**

    i) The option is European i.e. it can be exercised at maturity

    ii) There are continuous changes in the prices of option

    iii) There are no transaction costs and taxes

    iv) The model is based on the normal distribution in the long term

    v) No dividend will be paid during to contract period.

    vi) There will be no restriction on short selling.

     vii)The investor can borrow or lend at the risk free rate of return.

The formula for computing option pricing under BSM model is:

Call option premium C= S.N(d₁) $-$ Ke^{-rt}N(d₂)

Put option premium   P= K/e ^{rt} + Value of Call-Spot price

Where

$d_1 = \underline{\ln(S/K) + (r +.5\sigma^2)\,t}\; \div \sigma \sqrt{t}$

$d_2 = d_1 - \sigma \sqrt{t}$ Where,

C = Price of the call option

P= Price of put option

S= Spot price of the underlying asset

K= exercise price of underlying asset

r= rate of interest

t= time to expiration

σ= volatility of underlying

N(d₁)= Normal distribution function of

 ln= Natural log i.e. log to the base e

Example: Following information is related to ABC Ltd. shares and call option is available on them: Current share price is Rs. 415, Option exercise price is Rs. 400, Risk free rate 5%, p.a. Time to option expiry 03 months and standard deviation of share price is 22%. Is the call option worth buying for Rs. 25?

$d_1 = \underline{\ln(S/K) + (r +.5\sigma^2)\,t}\; \div \sigma \sqrt{t}$

$= \underline{\ln(415/400)+\{.05+.5(.22)^2\}.25} \div .22\sqrt{.25}$

=.036814+.01855 ÷ .11	OR= .5033
$d_{2 = }d_1 - \sigma \sqrt{t}$ = .5033-.22√.25	OR= .3933
Nd₁ = N(.5033) =1-.3072 =.	OR= .6927
Nd₂ = N(.3933) = 1-.3471	OR= .6529

C= S.N(d₁) $-$ Ke^{-rt}N(d₂)

= 415(.6927)-400e$^{-(.05)(.25)}$ (.6529)

= 287.47-400 x.9876(.6529)

= 287.47-257.915

=Rs.29.55 Since market price Rs. 25 is less than Rs. 29.55, it means option is under priced, hence it is worth buying.

3.8.   Valuation of Future

Futures are derivatives wherein all terms and conditions are standardized and are traded at exchanges. Futures may be defined as standardized forwards being traded at exchanges. Future is being traded for hedging as well as speculation. The pricing of futures contract depends on the following variables:

i) Price of underlying asset in the cash market

ii) Rate of return expected from investment in the asset

iii) Risk free rate of interest

iv) time to maturity of future contract.

The following formula named as **cost of carry model** is used to price the future contract:

$Fo = S0 (1+r-Y)$

Where $S0$ = Current spot price of the asset, Fo = Future price r = % financing cost per future period, Y = % Yield on investment per future period

Example: The underlying share of Reliance Energy is currently traded in the market at Rs.1000. The expected return from share is 3% per quarter. The risk free rate of borrowing and lending is 2% per quarter. The future contract period is also a quarter. What should be the price of future?

$Fo = S0 (1+r-Y) = 1000(1+.02-.03)$ **Or** Rs. 990

3.9.   Fundamental Analysis

Fundamental analysis is the analysis of critical factors that affect the value of stock. Profitability, growth rate and exposure of risk etc. have direct bearing on the market price of company's share. Further profitability, growth in sales etc. of a firm in turn are affected by many other factors like the economic environment in which firm operates, the industry it belongs to and company's own performance. Analysis of economy, industry and company are the components of fundamental analysis. The basic objective of fundamental analysis is to know the true /intrinsic value of stock. If the analysts commence his study from economy then industry and lastly company it is named as 'top-down approach' of fundamental analysis.

3.9.1 ECONOMY ANALYSIS:

Economic analysis is done to know direction of economy as whole and stock market, as stock market indices are the barometer of an economy. Economic analysis is a study of general macroeconomic factors like GDP/Level of National Income, inflation, interest rates, budget and fiscal deficit, tax structure, balance of payment position, foreign investment, business cycles, infrastructure facilities, status of agriculture etc. to evaluate the security price. Investors are concerned with those variables in the economy which affect the performance of the company in which they tend to invest. Analysis of above macro economic variables would provide information about future earnings of company and pay

out of dividends/interest to investors. The following brief discussion of major factors indicates the trends in macroeconomic changes that effect the risk and return on investments:

1) **GDP:** GDP stands for total monetary value of the goods and services created in the country during a specified period. The growing GDP of a country indicates the prospects for the industrial sector and investors will be optimistic about his return whereas falling GDP signals a potential slowdown in economy and investors sentiments are negative about his return on his/her investment.

2) **Inflation:** The performance of companies is affected by Inflation. Higher rate of inflation is not favorable to business activities. Reduction in purchasing power of consumers reduces the demand of product/services resulting less production. Low rate of inflation helps to prosper business.

3) **Interest Rates:** Low rate of Interest in an economy rates encourages investment for productive activities. Contrary high rate of interest increase cost of production resulting lower profitability for business.

4) **Budget and Fiscal Deficits:** A budget provides information about government revenue and expenditure for a specified future period. A deficit budget indicates a high rate of inflation which means adverse affect on the cost of production whereas surplus budget may cause deflation. A balanced budget is highly favorable to get a good return on investment..

5) **Balance of Payment/Exchange rates**: The strength of a currency on external account can be judged by a country's balance of payment. Deficit increase on external account causes domestic currency to depreciate against major currencies resulting costly import. Business of export-import are affected by changes in the foreign exchange rate. A favorable balance of payment and stability in exchange rate increase the confidence of investors and vice-versa.

6) **Monsoon**: The economies based on agricultural activities like India having both forward and backward linkages between agriculture and industry. Prospects of many firms and industrial activities depend on performance of agriculture sector. Further prosperity of agricultural sector push up the demand for industrial goods/services creating opportunity industrial development.

7) **Foreign Investment:** Inflow of foreign capital helps the economy to grow and has a positive impact on the stock market whereas outflow of foreign capital discourage the sentiments of domestic investors, market and economy**.**

8) **Economic and political stability**: Political stability is essential for steady economic growth of a country. No economic growth is expected in a country with political turmoil. The economic policies framed to create conducive environment for trade and industry by stable government with clear vision attracts both domestic and overseas investors.

3.9.2 Industry Analysis

Industry analysis means a detailed and in depth investigation to extract information regarding problems and prospects of an industry for investment decisions. It is required as the return and risk of one industry differ from other. Further a particular industry's performance to certain extent reflects the firm's

performance. Essentially on the part of an analyst to pinpoint growth industry, which has investment prospects. The following factors are to be taken care for industry analysis:

Industry Life Cycle: An investor before making investment he is advised to look into the phase of life cycle of industry as in case of product life cycle. This is why industry life cycle is significant to an industry analyst. The following are the different phases of industry life cycle:

1. Pioneering Stage: At this stage being a relatively new product with promising demand attracts many firms to produce that lead to severe competition. Further firms make efforts to create brand name for their product. The brutal rivalry among firms changes their position in terms of sales, profit and market share. At this stage it is not easy to select firm for investment.

2. Rapid Growth Stage: The firms that thrash the competition in pioneering stage grow robustly in terms of sales, profits and market share. Technology based production process leads to quality product with low cost. Firms with high growth declare dividends during this phase. Investors are suggested to invest in this stage.

3. Maturity and Stabilization Stage. In this phase indications of technology obsolescence may emerge. Constantly technological innovation is introduced to refine production process. A close watch at industries events is required. An investor is advised to follow wait and watch principle.

4. Decline Stage. In this phase the earnings of the industry start falling and growth of industry is low even in boom period and decline at a higher rate during recession. Investors must not invest in such industry.

CLASSIFICATION OF INDUSTRY

For industry analysis an investor can classify Industry on the basis of business cycle in the following four categories::

1. Growth Industries: These industries show growing trend independent of the business cycle. The credit of growth and expansion of the industry goes to mainly innovations and new technology to do or sell something. IT, electronics, cellular phones, petro-chemicals, energy etc. falls in the category of growth industry.

2. Cyclical Industries: The profitability and growth of this type of industry are tandem with business cycle. These industries are best performer in boom phase and most suffer in recession. Fast Moving Consumer Goods (FMCG) industry shows exceptional growth in boom period but sharply decline during recession.

3. Defensive Industries: The industry which produces and sells necessities of life withstands recession and depression is named defensive industries. Investors can always buy and hold shares of defensive industries for generating income. For example food processing industry has shown stability in growth and suffer least during economic slow down

4. Cyclical-growth Industries: It is hybrid of cyclical and growth industry, i.e. cyclical and at the same time growing. "For example, the automobile industry experiences period of stagnation and decline but also grow tremendously. Technological changes and introduction of new models help the automobile industry to resume their growing path."

Porter's Five Force: Michael Porter developed a model to analyze the competitive structure of an industry. According to him five competitive forces are determinants of charisma and prosperity of an industry. These are discussed in the following lines

1. Entry of New Competitors: The entry of new firms increases the competition and reduces profitability. Accordingly if an industry faces threat of new competitors and barriers of new entry are not effective, its profit potential would be limited.

2. Rivalry Among Existing Firms: In an industry firms try to improve their market share and keep their existing share intact by competing with each other on the basis of price, quality, after sales services, warranties, promotion etc. Tough rivalry among the firms in a industry, moves and countermoves actions of firm diminish average profitability of the industry.

3. Threats of Substitutes: Availability of alternatives products reduces the average sale of industry and in turn the profitability. The substitute goods limit the profit potential of the industry.

4. Bargaining Power of Buyers: Customers/buyers bargain for high quality product/service at lower price induce competition among firms. If their position is strong, they reduce average profitability of industry.

5. Bargaining Power of Suppliers: Every industry requires supply of inputs for its production. Suppliers of input exert pressure on buying firms to raise prices of inputs, lower quality of inputs and curtail range of free services they used to offer. Powerful position of suppliers reduces the profitability of buyer industry.

3.9.3 Company Analysis

After selecting the industry for investment an investor make efforts to choose the best performing company. For example if he/she selects the IT industry then he has to select among companies such as Infosys, Tech Mahindra, Cognizant Wipro, TCS etc. For finding the best performer company among them he has to comprehend several bits of information related to the company to evaluate the current value of share. Evaluating the performance of a company on the basis of qualitative and quantitative factors is called company analysis

Qualitative Factors: Qualitative factors are non-quantifiable factors that represent certain aspects of a company's business like business model, management, corporate governance and corporate culture having a strong bearing on the value of shares.

1. Business Model: The business model provides a description of the company's operation and mode of revenue generation, nature of expenses, organized structure and its sales and marketing efforts. A review of business model reveals the possible success level of the company.

2. Management: The basic objective of management is to accomplish the objectives of the company in the interest of equity shareholders, creditors, employees, Govt and public at large. Efficient management team generates profit for the investors. An investor must see the profile of each executive of management team in terms of his employment history, ethical standards, educational background, professional experience, achievements and awards.

3. Corporate Governance: Corporate governance is a set of systems and practices put in place by a company to ensure accountability, transparency and fairness in dealings to safeguard the interests of the stakeholders. The systems and practices are defined and determined in the company's charter and by-laws as well as in corporate laws and regulations. Corporate governance includes the structure of the board of directors, financial and information transparency, stakeholders' right and corporate culture. An investor must look into the corporate governance principles are put in practice by a company or not.

4. Corporate culture: Corporate culture refers to the collective trust, value systems and processes of a company. Each company has a set of values and goals that helps to define what the business is all about. It is reflected by its employees and managers in the implementation of policies and procedures of company. A corporate culture that values employee's customers and owners and encourages leadership from everyone in the company is bound to perform well.

Quantitative Factors: The quantitative side engrosses gazing at factors that can be expressed numerically, such as company's earnings, financial leverages, operating leverages, competitive edge and production efficiency etc.

1) Earnings: A company generates income through its core operating activities and non-core activities.. Market price of share depends on the earnings of a company. Further dividend payout is based on earnings. Profit growth push up stock price but many a time the price of stock may be very high but not the earnings. The investor should try to find out the factors which bring change in the earning/income of a particular chosen company for analysis.

2) Financial Leverage: Financial leverage is the use of of long term debt with equity capital to maximize the value of the firm. A high degree of financial leverage i.e. more use of debt capital results more interest payments and ultimately it will affect the earning per share negatively. An investor must consider the capital structure of a company before investment decision

3. Operating Leverage: Total costs of a company have two components namely fixed cost and variable costs. If a firm's fixed costs are a major portion of total costs the firm is said to have a high degree of operating leverage, it means a relatively small change in sales results in a large change in returns on equity. Hence the investor should always keep in mind the operating leverage of the company in which he/she wants to invest as the firm with high degree of operating leverage is affected significantly by the cyclical decline.

4 Competitive Edge: A firm's market share, growth and stability in its annual sales are the parameters of competitive edge. Some companies of industry thrive in competition and rise to the position of

dominance. Such companies have a sizable share in the market. The competitiveness of the company can be studied with the help of:

5. Operating/Production Efficiency: Efficiency of the inputs is measured in terms of their productivity and productivity is the relationship between inputs and output of a company. A firm with stable operating ratio, also have stable revenues. Efficient use of physical resources, labor and management lead to more income from sales and in turn resulting internal fund generation

6) Analysis of Financial Statement: Financial Statements of a company comprises Income Statement, Position Statement and Fund flow/Cash flow statement. Financial statements provide the historical and current information for evaluating a company's stock. Position Statement provide an accounts of the capital structure of the company and how its long and short term assets are being financed. Income Statement reveals how the flow of funds from business operations took place between two points of time. A wise investor must scrutinize the financial statements to find out the manipulations if any through window dressing. The main techniques of financial analysis are:

1) **Comparative Financial Statements**: Comparative financial statement helps the investors to comprehend the nature and quantum of change in different items to estimate future trends of business.

2) Trend Analysis: Trend analysis is useful to forecast of various items on the basis previous years data. For example the sales of a company showing an increasing trend but profits are stagnant. In such a case the investor has to look into the cost and management efficiency of the company.

3) Fund Flow Statement: The amount of change in the funds of a company between two dates and causes thereof can be established by fund flow statement. The financial position of the company is truly known by this statement.

5) Cash Flow Statement: This statement help the investor to understand the cash inflow and outflow and reasons thereof between two dates of a company. Investors by analyzing the cash movement can reveal the factors causes reduction of cash balances in spite of increase in profits.

6) Ratio Analysis: Quantitative relationship between two variables of financial statements for the purpose of comparison is called ratio analysis. How the company has performed in past and what will be its prospects can be judged by investors by using different ratios like profitability ratios, return on investment ratios, valuation ratios, liquidity ratios, turnover ratios, leverages ratios etc.

3.10.   Estimation of Intrinsic Value

"The concept of "Intrinsic Value" is the cornerstone of Fundamental Analysis. Intrinsic value is a measure of what an asset is worth. This measure is arrived at by means of an objective calculation or complex financial model, rather than using the currently trading market price of that asset. To a fundamental analyst, the market price of a stock tends to move towards its intrinsic value. If the intrinsic value of a stock were above the current market price, the investor would purchase the stock. However, if

the investor found, through analysis that the intrinsic value of a stock was below the market price for the stock, the investor would sell the stock from their portfolio or take a short position in the stock.

All securities can be valued by calculating the present value of their future cash flows. The information needed to value a company is clearly stated in its financial statements. The Balance Sheet totals up the value of the Total Assets of a company and equates this to the value of the Total Liabilities plus the "Owner's Equity". Some simple algebra establishes that, at any point of time, the value of the "Owners' Equity" of a company equals the value of its Total Assets minus its Total Liabilities. When you divide this value by the number of common shares, you get the "Intrinsic Share Value" on a per share basis. An investor should use fundamental analysis to determine if a stock is undervalued, overvalued, or trading at fair market value.

If the investor examines all the available information about a corporation's future anticipated growth, sales figures, cost of operations and industry structure, that analysis will provide the intrinsic value of the stock. Investment analysts are the ones typically charged with trying to determine the "intrinsic value" of a stock. They want to figure out what it is really worth to investors, because its historical cost seldom reflects its actual value or its market valuation.

The two most commonly used methods for determining the intrinsic value of a firm are the "Dividend Discount Model", often called the Gordon Growth Model after the Canadian professor who developed it, and the Price/Earnings or PE model. If employed properly, both methods should produce similar intrinsic values." The techniques used to value equity shares in the previous paragraphs reflect intrinsic value only. In the same way bonds/debentures or preference shares are valued to find their intrinsic value.

https://www.investopedia.com/terms/i/intrinsicvalue.asp https://www.finpipe.com/fundamental-analysis-equity-value/

Self Assessment Questions

1. How will you assess the present value of a bond?

2. Explain the various bond valuation theorems with example.

3. Determine the price of R. 2000 zero coupon bond with an YTM of 15% and 10 years to maturity.

4. Find out the yield to maturity on 8% five year bond selling at Rs. 105.

5. Comment the significance of earnings dividend payout and required rate of return in estimating the theoretical value of share.

6. The current price of a share is Rs. 100, the required rate of return is 20% and the dividend paid on a share is Rs. 3. If the face value of share is Rs. 10, what will be the expected growth?

7. Discuss the qualitative factors that affect a company's performance.

8. Describe the factors considered to measure the health of an econmy.

9. Why industry analysis is significant for an investor?

Suggested Book Readings:

1**.** Security Analysis and Portfolio Management:- By Punithavathy Pandian. Vikas Publishing House PVT. LTD.

2. Security Analysis and Portfolio Management:- By S Sasidharan and Alex K Mathews. Tata McGraw Hill Education Private Limited.

3. Security Analysis and Portfolio Management:- By S Kelvin. PHI Learning Private Limited.

4. Security Analysis and Portfolio Management:- By Donald E Fisher, Ronlad J Jordon and A K Pradhan. Pearson IN.