

# *Big Investment Consultants*

**Quantitative  
Analysis of Company**





# Company Analysis

## Quantitative Dimensions

- ✱ Business History / Future of Business
- ✱ P&L Account Summary
- ✱ Balance Sheet Summary
- ✱ Cash Flow Basics
- ✱ Director's Report
- ✱ Auditor's Report
- ✱ Schedules and Notes to the Accounts
- ✱ Contingent Liabilities



# Company Analysis

## Quantitative Dimensions

- ✱ Taxations affecting to Companies
- ✱ Financial Statements and Forensic Accounting
- ✱ Key points while checking Financials
- ✱ Future Forecasting
- ✱ Comparing Peers
- ✱ History of Earnings and Dividend
- ✱ Corporate Actions History
- ✱ Equity Expansion History
- ✱ Insider Trading History



# History of Business vs. Future of Business

- ✿ The Historical Performance of a Company is the initial parameter used to select Companies for Research and Analysis in Industries seen as favourable for Investment.
- ✿ Evaluating each Company in the Industry may not be practical.
- ✿ Therefore, best way is to look at their History and then select few Businesses to work on.



# Company Analysis

## History of Business vs. Future of Business

- ✿ The History of a Company is best illustrated by its Financial Performance.
- ✿ Typically a review of the Previous Five Years will give a snapshot of the Business and the Consistency in Performance.
- ✿ If Financials are good, they would give a Sense of Quality of Business being good and if they are bad, for sure, we need to just drop the business.



# Company Analysis

## History of Business vs. Future of Business

- ✱ However, good financials do not essentially mean that business is great as quality of those financials can always be a question mark.
- ✱ Once companies have been selected on the basis of their historical performance, the next step is to see how the Business Environment in the Future is likely to affect their performance.



# Company Analysis

## History of Business vs. Future of Business

- ✿ **For Example**, consumer electronics firms such as **Mirc Electronics (Onida) and Videocon**, did well in a scenario where there was less competition and not much of product innovation required.
- ✿ Once the market opened out to international companies such as **Sony, Samsung, LG and others**, who brought the latest technologies into India, these companies started losing market share since they were unable to compete on the technological front.



# Company Analysis

## History of Business vs. Future of Business

- ✱ A strong past performance need not necessarily indicate continued strength. This will depend upon the company's ability to adapt and respond to changing circumstances in the industry.
- ✱ There are some sectors like Pharma and FMCG, known as defensive sectors that continue to grow at more or less a steady pace. Talcum powders would sell more in Summers and body Lotions in Winters.



# Company Analysis

## History of Business vs. Future of Business

- ✿ Usage of products from these companies is fairly constant and well known.
- ✿ New products or innovations from one company is quickly and easily replicated by others in the industry. Hence, in such cases using history to extrapolate future may be relatively easier, however, the same must be done with substantial caution.



# Company Analysis

## History of Business vs. Future of Business

- ✿ On the other hand, Past Financial Performance may not be good indicator for companies in the Cyclical Industries.
- ✿ **For Example**, Sectors such as **Banking and Capital Goods**, among others, are **Sensitive to the Interest Rate** levels in the economy.
- ✿ In periods of High Interest Rates, their Financial Performance is unlikely to be impressive.



# Company Analysis

## History of Business vs. Future of Business

- ✱ However, to ignore these companies based on their performance in high interest rate period would mean missing a good opportunity when Interest Rates start falling.
- ✱ Similarly, companies in Sunrise Industries will exhibit tremendous growth rates in the initial years.



# Company Analysis

## History of Business vs. Future of Business

- ✱ Using these growth rates as the base for projections for future may prove to be misleading as Terminal Growth rates would taper off as more companies enter this Space and Revenues & Profitability moderate.
- ✱ Software industry in the mid-90s is a classic Example of this phenomenon.
- ✱ Hence, while it is useful to look at history, in almost all cases, there will be a **different view point required and no generalizations can be made.**



# Company Analysis

## Accounting Mechanics

- ✱ Accounting Equation Approach
- ✱ Traditional Approach



# Company Analysis

## Accounting Equation Approach

Owners Equities + Liabilities = Assets

Debit	Credit		Debit	Credit		Debit	Credit
+	-		+	-		+	-

- ✱ Debits are always equal to Credits
- ✱ Assets are always equal to Equity and Liabilities



# Company Analysis

## Traditional Approach

- ✿ Traditionally Accounts are divided as following:
  - ❖ Personal Accounts
  - ❖ Real Accounts
  - ❖ Nominal Accounts
- ✿ **Personal Accounts:** Transactions with a Person or Group of Persons are called Personal Accounts. It include:
  - ❖ Natural Person Accounts such as Ram Account, Umesh Account, Sunita Account, etc.



# Company Analysis

## Traditional Approach

### ✿ Personal Accounts:

- ❖ **Artificial or Legal person** account such as Zee Telefilms Ltd Account, Syndicate Bank account, etc.
- ❖ **Group Account** such as Debtors Account, Creditors Account, Share Capital Account, etc.
- ❖ **Representative Personal Accounts** such as Commission Outstanding Account, Salaries Outstanding Account. These represent the person to whom the commission or salary is payable.



# Company Analysis

## Traditional Approach

- ✿ **Real Accounts:** Real Accounts relate to Properties of a Business enterprise. Such Properties can be tangible or intangible.
  - ❖ **Tangible Real Accounts:** Accounts of Properties having physical existence such as Cash, Stock of Goods, Land and Buildings, etc.
  - ❖ **Intangible Real Accounts:** Accounts of properties which are not having physical existence but are capable of Monitory measurement. Patent Rights, Copy Rights, Trade Marks are some of the Examples.



# Company Analysis

## Traditional Approach

- ✿ **Nominal Accounts:** Accounts relating to Income, Revenue, Gain, Expenses and Losses are termed s Nominal Accounts.
  - ❖ Salaries, Commission, Rent, Interest paid, Interest Received, etc. are examples of Nominal Accounts.



# Company Analysis

## Traditional Approach

Rules for recording changes in Personal, Real and Nominal Accounts.

✿ Accounting rule for Personal Accounts:

❖ “Debit the Receiver and Credit the Giver”

✿ Accounting rule for Real Accounts:

❖ “Debit what Comes in and Credit what goes out”

✿ Accounting rule for Nominal Accounts:

❖ “Debit Expenses & Losses and Credit all Revenues, Gains and Incomes.”



# Basics of Profit and Loss Account (P/L)

- ✿ Profit and Loss statement (P/L) statement is a document which contains information on the Revenues, Costs and Profitability of a firm for any given period.
- ✿ Financial results are published each quarter by companies and hence we get quarterly P/L statements as well the Final Audited P/L statement with the Annual Report.



# Basics of Profit and Loss Account (P/L)

(1)	Net Sales	1000
(2)	Direct Costs	200
(3)	<b>EBITDA</b> (Earnings Before Interest, Tax, Depreciation and Amortization) = (1) – (2)	<b>800</b>
(4)	EBITDA Margin = (3)/ (1)	80%
(5)	Depreciation/ Amortization	200
	<b>EBIT</b>	<b>600</b>
(6)	Interest	200
(7)	Other Income	50
(8)	<b>Profit Before Tax (PBT)</b> = (3) – (5) – (6) + (7)	<b>450</b>
(9)	Tax [@ 30%] = (8) * 30%	135
(10)	<b>Profit After Tax (PAT)</b> = (8) – (9)	<b>315</b>
(11)	PAT Margin = (10)/ (1)	31.5%



# Basics of Profit and Loss Account (P/L)

## Net Sales:

- ✿ This is the income which the company generates by selling its goods and services.
- ✿ All Indirect Taxes such as Excise Duty, Value Added Tax (VAT), Service Tax etc. have to be deducted from the Gross Sales to get the Net Sales figure as these taxes are collected by the business for the government and don't belong to the business.



# Basics of Profit and Loss Account (P/L)

## Net Sales:

- ✿ From an analysis perspective, it is important to understand the contribution made by different Segments and Markets, the Cyclicality of the sales revenues, and the Management's Strategy to manage any risks to sales growth, such as New Products, Diversification into new Markets, etc.
- ✿ **Growth in sales must be analyzed** to determine the contribution of increase in Volume and/or increase in Price.
- ✿ In the above example, we have Net Sales of Rs. 1000.



# Basics of Profit and Loss Account (P/L)

## Direct Costs:

- ✿ These are costs which can be attributed directly to business.
- ✿ **Examples** of these types of costs are Raw Material, Salary, Electrical Costs, and others. Reducing Operating Costs will translate into higher Profitability.
- ✿ Lower the Direct Costs, higher the Operating Efficiency of the firm.



# Basics of Profit and Loss Account (P/L)

## Direct Costs:

- ✿ Costs may be **Variable**, such as Raw Materials, **Semi-variable**, such as Employee Costs or **Fixed**, such as Plant and Machinery.
- ✿ Companies with high Fixed Costs can benefit from Operating Leverage. This is because an increase in Sales can be made without taking on additional costs.
- ✿ In periods of growing sales such companies benefit from better profit margins.



# Basics of Profit and Loss Account (P/L)

## Direct Costs:

- ✱ The cost structure of the companies also exposes them to risks when business slows down.
- ✱ In the above example, we have Direct Costs of Rs. 200.



# Basics of Profit and Loss Account (P/L)

## Earnings Before Interest Tax Depreciation and Amortization (EBITDA):

- ✱ This is the difference between Net Sales and Direct Costs.
- ✱ EBITDA (Gross Profit) is a measure of the Operating Efficiency of the company.
- ✱ It **enables comparison between companies** that may have different Capital Structures, Depreciation Policies and Tax Rates.



# Basics of Profit and Loss Account (P/L)

Earnings Before Interest Tax Depreciation and Amortization (EBITDA):

- ✱ Higher the EBITDA, better the firm.
- ✱ In the above example, EBITDA is Rs. 800, calculated as 1000 (Net Sales) – 200 (Direct Costs).



# Basics of Profit and Loss Account (P/L)

## EBITDA Margin:

- ✱ This is a ratio which calculates the EBITDA as a percentage of Net Sales.
- ✱ Absolute numbers make it impossible to compare two firms, however, when converted into percent, comparison can be done easily. **Higher the EBITDA Margin, better the firm.**
- ✱ In the above example, EBITDA Margin is 80%  $[(EBITDA) * 100 / (\text{Net Sales})]$ .



# Basics of Profit and Loss Account (P/L)

## Depreciation/ Amortization:

- ✿ Whenever a company purchases an asset, it is used for a long period of time and hence, it does not make sense to show entire expenditure at once in the P/L statement.
- ✿ In the above example, to sell goods worth Rs. 1000, the company needs a machine which is worth Rs. 1000.
- ✿ Now, if the company were to take a loan of Rs. 1000 and purchase the machine and show it as expense in the first year itself, three problems arise:



# Basics of Profit and Loss Account (P/L)

## Depreciation/ Amortization:

1. The company immediately goes into loss as income is Rs. 1000 and expenditure would overshoot it.
2. The machine would still be available for the company to use for future years but it cannot be shown as an asset.
3. As the company would go into losses, it would not pay tax and that would result into loss of tax revenue for the Government.



# Basics of Profit and Loss Account (P/L)

## Depreciation/ Amortization:

- ✿ In order to prevent these anomalies, the expense of buying machine is divided into the estimated life of the asset and each year a part of the expense is shown in the P/L statement and remaining amount is kept with the company as an asset and is shown in the Asset portion of the Balance Sheet.
- ✿ In our example, each year the company would show Rs. 200 as expense and correspondingly reduce the Asset by that much amount, so that in 5 years the entire machine would be 'consumed'.



# Basics of Profit and Loss Account (P/L)

## Depreciation/ Amortization:

- ✱ Amortization is the term used for **Depreciation of Intangible Assets** such as Copyrights and Brands.
- ✱ While Depreciation or Amortization is shown as an expense in the P/L account, there is no actual cash outflow on account of this expense each year.
- ✱ The expense has been met upfront when the asset is bought.



# Basics of Profit and Loss Account (P/L)

## Depreciation/ Amortization:

- ✱ Deducting Depreciation/ Amortization from EBITDA gives us EBIT.
- ✱ In the above example, Depreciation/Amortization is Rs. 200.
- ✱ In the above example, EBIT is Rs. 600 which is calculated as Rs. 800 (EBITDA) – Rs. 200 (Depreciation/ Amortization)



# Basics of Profit and Loss Account (P/L)

## Interest:

- ☼ Interest is an expense incurred on loans taken by the business.
- ☼ A **change in the Interest Costs** of the company can be attributed to an increase or decrease in the Debt outstanding, change in Interest Rates or Currency fluctuations in the case of Foreign Currency loans.
- ☼ In the above example, the company is paying Rs. 200 as interest.
- ☼ Many of the best companies in India as well as in the world have extremely low or even no debt.



# Basics of Profit and Loss Account (P/L)

## Interest:

- ✿ Warren Buffet's view on debt would help us understand with more clarity, the dangers of high debt:
- ✿ *“Good Business or Investment decisions will eventually produce quite satisfactory economic results, with no aid from leverage.* It seems to us both foolish and improper to risk what is important (including, necessarily, the welfare of innocent bystanders such as policyholders and employees) for some extra returns that are relatively unimportant.”



# Basics of Profit and Loss Account (P/L)

## Other Income:

- ✿ This is recurring income from **other sources** such as Rent, Interest, Dividend, Commission etc.
- ✿ It should at best be small portion of the Net revenues of the company.
- ✿ If this income is quite high in comparison to sales, it warrants analysis of the business model of the company.



# Basics of Profit and Loss Account (P/L)

## Other Income:

- ✿ It is best to compare other income of the business over last several years and also find if there were specific triggers for high other income in some types of businesses.
- ✿ **For Example:** In Banking, there are times when interest rates are high and due to which, while on one hand banks keep receiving deposits, on the other hand, loan off take is relatively slow.



# Basics of Profit and Loss Account (P/L)

Other Income:

Example Continued:

- ✿ In such cases, banks invest in long term G-Secs and benefit from the rise in their prices when subsequently interest rates fall.
- ✿ In such years, other income accounts for a huge component of the total income.
- ✿ In our example, other income is Rs. 50.



# Basics of Profit and Loss Account (P/L)

## Profit Before Tax (PBT):

- ✱ Deducting Interest and Depreciation/Amortization from EBITDA and then adding other income to it gives us the total profit of the company for the period after meeting all the Expenses.
- ✱ Taxes need to be paid on this Profit and hence it is known as PBT.
- ✱ In the above Example, PBT is Rs. 450.



# Basics of Profit and Loss Account (P/L)

## Tax :

- ✿ This is the money which goes to the Government.
- ✿ At present, Corporate Tax Rate in India is 30%.



# Basics of Profit and Loss Account (P/L)

## Profit After Tax (PAT): :

- ✿ This is the Final residual amount which remains with the company after paying all its stakeholders other than Shareholders.
- ✿ This is the Shareholder's money and may be paid out as Dividend or may be retained in the company partially or fully for further expansion.
- ✿ In the above Example, this figure comes at Rs. 315.



# Basics of Balance Sheet (B/S)

- ✿ A Balance Sheet contains the **sources of funds** for a company and **application of those funds** at any point of time.
- ✿ As is logical, Sources of Funds and their Application must match at aggregate level, hence, both the sides of the Balance Sheet must match at all times (as also the name suggests).



# Basics of Balance Sheet (B/S)

Sources (Liabilities)		Application (Assets)	
Equity (a)	1000	Fixed Assets (f)	2000
Reserves & Surplus (b)	280	Current Assets (g)	500
<b>Net-worth (c) = (a) + (b)</b>	<b>1280</b>		
Long Term Debt (d)	1000		
Current Liabilities (e)	220		
<b>Total (c) + (d) + (e)</b>	<b>2500</b>	<b>Total (f) + (g)</b>	<b>2500</b>



# Basics of Balance Sheet (B/S)

## Sources of Funds:

✱ A company has **two Primary Sources** of Funds, Owners' Funds or Equity Capital and Borrowed Funds or Debt Capital.

- a) Equity
- b) Reserves & Surplus
- c) Long Term Debt
- d) Current Liabilities



# Basics of Balance Sheet (B/S)

## Equity:

- ✿ This is the Money which the Promoters bring into the business when it is launched, and subsequently by additional Shareholders as and when required, who also become owners of the company to the extent of their shareholding.
- ✿ This is the Owners' Investment in the Business.



# Basics of Balance Sheet (B/S)

## Equity:

- ✿ An increase in the Equity Capital may dilute the proportionate holding of existing shareholders and therefore their participation in the Profits of the company.
- ✿ A **Dilution** may occur because of additional share capital being raised or a conversion of Debt into equity.
- ✿ In the above example, we have Equity as Rs. 1000.



# Basics of Balance Sheet (B/S)

## Reserves & Surplus:

- ✿ As the company makes profits, they are moved each year from the P/L statement into the Balance Sheet under the head 'Reserves & Surplus'.
- ✿ Thus, this is also Shareholder's money, which they chose to keep in the company and reinvest in the business.
- ✿ While **Equity** may be called Contributed Capital, **Reserves and Surplus** is called Retained Capital.



# Basics of Balance Sheet (B/S)

## Reserves & Surplus:

- ✿ Apart from the Reserves created out of Retained Profits, the Balance Sheet may show **other Reserves** such as Share Premium Reserve (collected when shares are issued as premium to Face Value) or a Revaluation Reserve, which are **not created out of the profits earned**.
- ✿ In the above example, we have  $R\&S = \text{Rs. } 280$ .



# Basics of Balance Sheet (B/S)

## Net-worth:

- ✿ Equity Capital and Reserves & Surplus together represent Shareholder's Funds also **known as Net-worth or Owners' Capital.**
- ✿ In the above example, adding Equity Capital of Rs. 1000 and R&S of Rs. 280, we get Net-worth (**Shareholder's Funds**) as Rs. 1280.



# Basics of Balance Sheet (B/S)

## Long Term Debt:

- ✿ Any debt taken for a period of more than 1 year is considered to be Non-current Liability or a Long Term Loan.
- ✿ This may be in the form of Term Loans taken from Financial Institutions or Debt securities issued such as Debentures. Investors prefer companies with low Liabilities.



# Basics of Balance Sheet (B/S)

## Long Term Debt:

- ✿ However, the nature of the Business and the lifecycle of the company may dictate the level of debt in the Balance Sheet.
- ✿ Industries such as **IT, Education, Business Process Outsourcing (BPO)** etc. do not require huge investments either in Capital Assets or for procuring raw materials and other expenses.



# Basics of Balance Sheet (B/S)

## Long Term Debt:

Hence, such sectors generally exhibit a Balance Sheet which has very low Long Term Debt. In case a company has high Debt in this sector, it would generally be temporary for expansion purpose when the company is in the Growth Stage.

✿ Companies in the **Banking and Non-banking space** cannot be analyzed on this parameter as their business requires them to garner Long Term Deposits, which are then disbursed as Loans.



# Basics of Balance Sheet (B/S)

## Long Term Debt:

- ✿ Heavy capital goods based Manufacturing Companies need to have a judicious mix of Debt and Equity, depending upon project at hand, type of Industry, Interest Rates, etc.
- ✿ Classic **Examples** of companies losing Investors' interest due to high Debt are Suzlon, Bhushan Steel, HCC and Kingfisher. Wockhardt is an example of a company which was heavily under debt but managed a turnaround.
- ✿ In the above example, Long Term Debt is Rs. 1000.



# Basics of Balance Sheet (B/S)

## Current Liabilities:

- ✱ These are Liabilities or Payments, which have to be made within a year.
- ✱ Salaries, Utility Payments, Trade Payables, Working Capital loans, Short-term debt raised through the issue of commercial papers, Unclaimed Dividends, Maturing Long Term Debt and others are typical examples of Current Liabilities.



# Basics of Balance Sheet (B/S)

## Current Liabilities:

- ✿ Current Liabilities are analyzed to determine the Efficiency with which the Working Capital is managed.
- ✿ **For Example**, the Trade payables days calculated as  $\text{trade payables} / \text{Cost of sales} \times 365 \text{ days}$ , is the time taken to pay the suppliers.
- ✿ A high number indicates that the company is in a strong position and is able to get credit from its suppliers without tying up its cash.



# Basics of Balance Sheet (B/S)

## Current Liabilities:

- ✱ But very high trade payable days should be investigated to see if the company is facing a fund crunch or even insolvency.
- ✱ In the above example, Current Liabilities stand at Rs. 220.



# Basics of Balance Sheet (B/S)

## Application of Funds:

- ✱ This is the right side of the Balance Sheet, where details of Assets are given.
- ✱ A company can have Fixed Long term Assets like Plant and Machinery or Short Term Assets like Investments in Liquid Funds or Inventory.
  - a) Fixed Assets
  - b) Current Assets



# Basics of Balance Sheet (B/S)

## Fixed Assets:

- ✿ These are assets which a company builds to produce goods and services.
- ✿ A **Manufacturing Plant** would need Heavy Machines, a **Software Company** would need computers, a **Real Estate Company** would need Land, etc. these are all Assets from which the company would generate Revenues.
- ✿ Furniture and Vehicles are assets which are required by all companies.



# Basics of Balance Sheet (B/S)

## Fixed Assets:

- ✿ Although these Assets do not generate Revenue, they are essential part of Business.
- ✿ Along with **Tangible Assets** such as Plant, Machines, Cars, Furniture, Computers etc., some Balance Sheets may also possess **Intangible assets** such as Patents, Licenses, Brand Value and others.



# Basics of Balance Sheet (B/S)

## Fixed Assets:

- ✱ The Asset Turnover Ratio, calculated as Sales/Fixed Assets, indicates the Efficiency of the Assets created by the company in generating revenues.
- ✱ In the above Example, Fixed Assets are at Rs. 2000.



# Basics of Balance Sheet (B/S)

## Current Assets:

- ✿ Current Assets are those which can be converted into cash within a year.
- ✿ Inventory, Trade Receivables, Investments, Short Term Loans and Advances and Cash are all examples of current assets.
- ✿ Current Assets analysis is **important to understand the working capital situation** of the company.



# Basics of Balance Sheet (B/S)

## Current Assets:

- ✿ A large level of Inventory or Trade Receivables may mean capital tied up and the company may be paying a high cost for debt.
- ✿ Analyzing the Current Assets relative to past trends and peer group companies will give insights into the working capital management of the company.
- ✿ Lower Inventory days and Trade Receivables days augur (foretell) well for the company.
- ✿ In the above example, Current Assets are Rs. 500.



# Basics of Cash Flows

- ✿ Generating cash is critical for a firm's long term survival. P/L statement and Balance Sheet do not focus on cash flows since accounting is on accrual basis and not cash basis.
- ✿ Accrual basis of accounting means that Sales are booked at the time of delivery irrespective of whether payment from the customer is received or not.



# Basics of Cash Flows

- ✱ Similarly, purchase is booked at the time of receipt of goods irrespective of whether payment to the supplier is made or not.
- ✱ This creates difference between the profits shows in the business and the actual cash with the business.



# Basics of Cash Flows

- ✿ **Example:** If a business does all cash purchase of say Rs. 80,000 and cash sales of Rs. 100,000, there would be profit of Rs. 20,000 and business would be able to touch that cash as money has already come in.
- ✿ However, think of this business where purchase is done on cash and sales is done on credit; the P/L statement would show a profit of Rs. 20,000 but the fact is that there is no money.



# Basics of Cash Flows

- ✿ **Example**(continued):
- ✿ Indeed, if the business is not able to collect the dues from its customers, there will be no profits and even the capital of the company, Rs. 80,000 is likely to be lost.
- ✿ Therefore, along with the P/L statement and Balance Sheet, the cash flows generated by a business also needs to be assessed. **In absence of cash, while there may be profits, they would be more paper profits and not the real profits.**



# Basics of Cash Flows

✱ To understand the concept further, there are Cash Inflows and Cash Outflows in every business as money comes in and money goes out. For simplicity and understanding purpose, cash flows are broadly divided into following three categories:

- a) Operating Cash Flows
- b) Investing Cash Flows
- c) Financing Cash Flows



# Basics of Cash Flows

- ✱ **Operating Cash Flows – Cash Flows from business Operations** (P/L items). Incoming Cash is Positive and outgoing Cash is Negative.
- ✱ The Net Profit of a company can be **converted into the Operating Cash Flow Number** by adding back Non-cash Expenditures such as Depreciation and Amortization and changes in Account Receivables and Payables.



# Basics of Cash Flows

- ✱ **Investing Cash Flows** - Cash flows on account of **Assets** (B/S items). Buying Assets is Negative Cash Flow and selling Assets is Positive Cash Flow.
- ✱ **Financing Cash Flows** – Cash Flows on account of **Liabilities** (B/S items). Borrowing money or Issuing/Expanding Equity is Positive Cash Flow and redeeming Debt and/or Equity is Negative Cash Flow.



# Basics of Cash Flows

## “Natural” Cash Flow

**Sell Equity**  
**Issue Debt**

- **Buy Assets**
- **Buy Inventory**

- Make Sales**
- **Pay Costs**
  - **Pay Taxes**

- **Pay Dividend**
- **Pay Interest**

## Cash Flow Statement Classification

**Sell Equity**  
**Issue Debt**  
- **Pay Dividend**

**Financing**  
**(CFF)**

- **Buy Assets**

**Investing**  
**(CFI)**

- Make Sales**
- **Buy Inventory**
  - **Pay Costs**
  - **Pay Taxes**
  - **Pay Interest**

**Operating**  
**(CFO)**

**=NET CASH FLOW**



# Basics of Cash Flows

- ✱ If a Business is continuously running **Negative Operating cash flows** for several years, there is an Alarming Signal of Risk.
- ✱ A Business, which is continuously running Negative Operating cash flows would need continuous doses of stimulus in terms of Cash (Borrowing or Equity Expansion) to keep going.



# Basics of Cash Flows

- ☀ Needless to state that over a period of time, either it will turn into a Positive Operating Cash flow Business or die down in the absence of Cash Stimulus (when Investors and/or Lenders refuse to pump in further Cash).
- ☀ **Kingfisher Airlines** had Negative Operating Cash Flows for years.



# Basics of Cash Flows

✿ Here are the financials of Kingfisher Airlines taken from Screener.in:

Cash Flows in Rs. (Crore)	Mar 2006	Mar 2007	Mar 2008	Mar 2009	Mar 2010	Mar 2011	Mar 2012	Mar 2013
Profit Before Tax	-337	-416	-683	-2,155	- 2418	-1521	-3446	-4301

	Jun 2006	Jun 2007	Mar 2008	Mar 2009	Mar 2010	Mar 2011	Mar 2012	Mar 2013
Cash from Operating Activity	-180	-553	-520	-646	-1,665	2	-886	-1,391
Cash from Investing Activity	-346	119	14	207	235	-38	-388	-70
Cash from Financing Activity	699	994	-31	290	1,465	82	1,203	1,297
Net Cash Flow	174	561	-537	-149	35	46	-70	-163



# Basics of Cash Flows

- ✱ The Airline was borrowing money to pay interest as **EBIT was much lower than interest obligations** for several years in the past.
- ✱ At a point in time, it stopped as Lenders refused to pump in further Cash and the business did not turn Positive Operating Cash Flow even after infusion of capital.
- ✱ It should be clear that no Business can run on continuous Expansion of Borrowed Money.



# Basics of Cash Flows

- ✿ Whenever a Business is expanding, it would need cash.
- ✿ Negative Investing Cash Flows are Financed through either positive Operating Cash Flows or accumulated positive Operation Cash Flows (Bank Balance) or positive Financing Cash Flows (Borrowing and Issuance of Equity).
- ✿ **Businesses that depend excessively on Borrowed funds for Expansion have to be seen with caution.**
- ✿ The assets that appear in the Balance Sheet may realize lower than their Book Value as shown in the B/S but the Liabilities have to be met in total.



# Basics of Cash Flows

Points to be kept in mind in case of Cash Flows are:

- ✱ Looking at only Net Cash Flows could be deceptive.
- ✱ Each of the Cash Flow streams Operating, Investing and Financing have to be analyzed independently.
- ✱ **The objective** of Cash Flow analysis has to be **to focus on Sustainable and Recurring Cash Flows**.
- ✱ Non-recurring / extraordinary items that impact the Cash flows should be recognized and adjusted.



# The Director's Report

- ✱ The Director's Report is a **report submitted by the Directors of a Company to Shareholders, informing them about the performance of the company, under their stewardship:**
- ❖ It enunciates the opinion of the Directors on the State of the Economy and the Political Situation vis-à-vis the Company.



# The Director's Report

- ❖ **Explains the Performance and the Financial results** of the company in the period under review. This is an extremely important part. The results and operations of the various separate divisions are usually detailed and investors can determine the reasons for their Good or Bad Performance.
- ❖ The Director's Report **details the Company's Plans for Modernization, Expansion and Diversification.** Without these, a company will remain static and eventually decline.



# The Director's Report

- ❖ Discusses the Profits earned in the period under review and the Dividend recommended by the Directors. This paragraph should normally be read with sane skepticism as the Directors will always argue that the performance was satisfactory. If profits have improved the reasons stated would invariably be Superior Technology adopted, Intense Marketing and Hard Work in the face of Severe Competition etc.
- ❖ If Profits are Low, adverse Economic Conditions are usually blamed for the same.



# **The Director's Report**

- ❖ **Elaborates on the Directors' views of the Company's Prospects for the Future.**
- ❖ **Discusses plans for new Acquisitions and Investments.**



# The Director's Report

- ✿ An investor must intelligently evaluate the issues raised in a Director's Report.
- ✿ If the report **talks about Diversification**, one must the question that though diversification is a good strategy, does it make sense for the company?
- ✿ **Industry conditions, the management's knowledge of the new business must be considered.** Although companies must diversify in order to spread the risks of Economic Slumps, every diversification may not suit a company.



# The Director's Report

- ✿ Similarly, all other issues raised in the Director's Report should be analyzed.
- ✿ Did the company perform as well as others in the same Industry?
- ✿ Is the Finance being raised the most Logical and beneficial to the Company?
- ✿ It is imperative that the investor read between the lines of the Director's Report and find the answers to these and many other questions.



# The Director's Report

- ✱ In short, a Director's Report is valuable and if read intelligently can give the Investor a good grasp of the workings of a company, the problems it faces, the direction it intends taking and its future prospects.



# The Auditor's Report

- ✿ The Auditor represents the shareholders and it is the Auditor's duty to report to the shareholders and the general public on the stewardship of the company by its directors.
- ✿ Auditors are required to report whether the financial statements presented do in fact present a true and fair view of the state of the company.
- ✿ Investors must remember that the Auditors are required by law to point out if the financial statements are True and Fair.



# **The Auditor's Report**

- ✿ They are also required to report any change, such as a change in Accounting Principles or the Non-provision of Charges that result in an increase or decrease in Profits.
- ✿ It is really the only impartial Report that a shareholder or Investor receives and this alone should spur one to scrutinize the Auditor's Report minutely. Unfortunately, more often than not it is not read. There can be interesting contradictions.



# The Auditor's Report

- ✿ It was stated in the **Auditor's Report of ABC Co. Ltd.** for the year 1999-2000 that,
  - ❖ “As at the year-end 31st March 2000 the **Accumulated Losses exceed the Net Worth of the Company** and the Company has suffered cash losses in the financial year ended 31st March 2000 as well as in the immediately preceding financial year.
  - ❖ In our opinion, therefore, the Company is a sick industrial company within the meaning of clause (O) of Section 3(1) of the Sick Industrial Companies (Special Provisions) Act 1985”.



# The Auditor's Report

- ✿ The **Director's** report however stated,
  - ❖ “The financial year under review has not been a favourable year for the Company as the Computer Industry in general continued to be in the grip of recession.
  - ❖ High input costs as well as resource constraints hampered operations.
  - ❖ The Performance of your Company must be assessed in the light of these factors.



# The Auditor's Report

- ❖ During the year Manufacturing Operations were curtailed to achieve Cost Effectiveness.
- ❖ Your Directors are confident that the efforts for increased Business Volumes and Cost Control will yield better results in the Current Year".
- ✱ The **Auditors were of the opinion that the company was Sick** whereas the Directors spoke optimistically of their hope that the Future would be better! They could not, being Directors, state otherwise.



# The Auditor's Report

- ✿ At times, accounting principles are changed or creative and innovative accounting practices resorted to by some companies in order to show a better result. The effect of these changes is at times not detailed in the notes to the accounts.
- ✿ The Auditor's Report will always draw the attention of the reader to these changes and the effect that these have on the Financial Statements. It is for this reason that a careful reading of the Auditor's Report is not only necessary but mandatory for an Investor.



# Schedules and Notes to the Accounts

- ✿ The schedules and notes to the accounts are an integral part of the financial statements of a company and it is **important that they be read along with the Financial Statements.**
- ✿ In accounting, a **Schedule** is defined as the supporting report or document which constitutes detailed information, explaining the elements of the chief financial report.
- ✿ It serves as a kind of proof to all the data that is presented in the financial report, with answers to all the numbers mentioned in the report.



# Schedules and Notes to the Accounts

- ✿ In other words, Accounting Schedules provide all the Financial Accounting in detail which cannot be illustrated within the chief report. **For Example**, if we talk about the Schedule of the Balance Sheet, not only the Liabilities, Assets, and Equities of a company will be presented, but a breakdown of each category will be shared as a sub-category or a sub-schedule.

## ✿ Types of Accounting Schedules

- ❖ Accounts Receivable Schedule
- ❖ Accounts Payable Schedule
- ❖ Inventory Schedule
- ❖ Fixed Asset Schedule



# Schedules

- ✱ The schedules detail pertinent information about the items of Balance Sheet and Profit & Loss Account.
- ✱ It also **details information about Sales, Manufacturing Costs, Administration Costs, Interest, and Other Income and Expenses.**
- ✱ This information is vital for the analysis of Financial Statements.
- ✱ The Schedules **enable an Investor to determine which Expenses Increased and seek the Reasons for this.**



# Schedules

- ✱ Similarly, **Investors** would be able to find out the **Reasons for the Increase or Decrease in Sales** and the products that are Sales Leaders.
- ✱ The Schedules even **give details of stocks and sales, particulars of capacity and productions**, and much other useful information.



# Notes

- ✱ The Notes to the Accounts are even more important than the Schedules because it is here that very **important information relating to the company is stated.**
- ✱ Notes can effectively be **divided into:**
  - ❖ Accounting Policies
  - ❖ Contingent Liabilities
  - ❖ Off Balance Sheet Items



# Accounting Policies

- ✱ There are multiple ways to account for an item and it is critical for an analyst to know what methodology company has adopted to account for an item.
- ✱ **For instance:** for Depreciation, Companies may choose between **Straight Line Method of Depreciation (SLM)** or the **Reducing Balance Method (RBM)** of Depreciation.
- ✱ Accounting policies of the company, as defined in the Annual Report, would define how that item is treated by the company.



# Accounting Policies

- ✿ In other words, accounting policies are the way a company accounts for various items in P/L statement and Balance Sheet.
- ✿ Accounting policies are important for an analyst to understand as there are different ways of accounting for a single item and analysts should know how a particular business is treating that item.
- ✿ Companies are also required to mention clearly if there is any change in the accounting policy in comparison to previous year.



# Accounting Policies

- ✿ If a company is continuously changing its accounting policies, may be company is trying to manipulate the Financials.
- ✿ The Accounting Policies normally detailed in the notes relate to:
  - ❖ How Sales are accounted for?
  - ❖ What the Research and Development Costs are?
  - ❖ How the Gratuity Liability is expensed?



# Accounting Policies

- ❖ How Fixed Assets are valued?
- ❖ How Depreciation is calculated?
- ❖ How stock, including Finished Goods, Work in Progress, Raw Materials and Consumable Goods are valued?
- ❖ How Investments are stated in the Balance Sheet?
- ❖ How has the Foreign Exchange translated?



# Contingent Liabilities

- ✱ Contingent Liabilities are liabilities that may be incurred by an entity depending on the outcome of an uncertain future event.
- ✱ **For Example:** A company may be fighting a court case, which may result into substantial loss for the company, if the case is lost.
- ✱ These liabilities are not recorded in a company's accounts and generally recorded in the notes to accounts.



# Contingent Liabilities

- ✿ Prominent **Examples of Contingent Liabilities** are:
- a) Outstanding Guarantees.
  - b) Outstanding Letters of Credit.
  - c) Outstanding Bills Discounted.
  - d) Claims against the company not acknowledged as Debts.
  - e) Claim for Taxes.
  - f) Cheques Discounted.
  - g) Uncalled Liability on partly paid Shares and Debentures.



# Off-Balance Sheet Items

- ✱ Simply stating, any Asset or Liability that does not appear on a company's Balance Sheet is an Off-balance Sheet item.
- ✱ **For Example:** Loans taken are part of Liability in the books of the company, **Operating Lease**, which is an alternative way of financing an Asset is an Off-balance Sheet item.
- ✱ Contingent Liabilities, as defined above, are also Off-balance Sheet items.



# Off-Balance Sheet Items

- ✱ Similarly, if a company has entered into a **Derivative contract to trade or Hedge its position** that will not appear on the Balance Sheet and would be covered as a note to accounts in the Annual Report.
- ✱ Given that existence of so many businesses worldwide has been threatened by the **Derivative transactions**, it is critical for an analyst to analyze all the off-balance sheet items in great details.
- ✱ While Positive surprises in terms of Off-balance Sheet items are fine, Negative ones are the risks and should be dealt with in a great details by the analysts.



# Off-Balance Sheet Items

- ✱ The more common notes comes across are:
- ❖ Whether provisions for known or likely losses have been made.
- ❖ Estimated value of Contracts Outstanding.
- ❖ Interest not provided for.
- ❖ Arrangements agreed by the company with third parties.
- ❖ Agreement with Labour.

The importance of these notes cannot be overstressed. It is imperative that investors read these carefully.



# Taxation Affecting To Companies

- ✱ Companies incorporated in India or wholly managed and controlled in India are taxed on the basis of income earned by them world-wide.
- ✱ Companies that are not resident in India, as defined above, are taxed only for the India-specific income.
- ✱ Corporate Profits, computed after deducting Business Expenses and other specified items, are taxed at the applicable rate.
- ✱ The current Rate of Tax is 30% for Indian Companies and 40% for Foreign Companies.



# Taxation Affecting To Companies

- ✱ A Surcharge of 10% and Education Cess of 3% is also applicable.
- ✱ A Surcharge of 5% applies if the Income exceeds Rs. 10 Million and 10% if it exceeds Rs. 100 Million.
- ✱ A **Minimum Alternative Tax (MAT)** is applicable at **18.5%** (plus Surcharge and Cess) if a company's tax liability is less than 18.5% of the Book Profit.
- ✱ Dividends paid by a company are not subject to **Dividend Distribution Tax now**, earlier were taxed at **15%**.



# Taxation Affecting To Companies

- ✿ The government may provide Fiscal Incentives to boost Economic Growth through Lower Tax Rates or Tax Holidays or other similar incentives.
- ✿ **For Example:** The deductions available on Taxable Income for:
  - ❖ Expenses incurred for **Skill Development Project or Agricultural Extension Project.**
  - ❖ Installing **Plant and Machinery over Rs. 1 Billion.**
  - ❖ Capital Expenditure for **setting up Cold Storage Facilities for Agricultural Produce.**



# Taxation Affecting To Companies

- ❖ Developing Affordable Housing Projects
- ❖ Expenses for Scientific Research and others.
- ✿ Sometimes, differentiation in the tax policies such as taxation rate in a Special Economic Zone (SEZ) v/s. what a business pays outside the SEZ could create lots of differentiation among businesses.
- ✿ Analysts should understand the basic tax structures and how taxation can affect the businesses at a broad level.



# Points to Keep In Mind While Looking At Financials

- ✱ Financial statement analysis can be intimidating if the terminologies are not known, however, the same numbers become addictive if the language is understood.
- ✱ Numbers can be made to look good by making assumptions or by Creative Accounting.
- ✱ Qualifications of Auditors in notes to Accounts (the Fine Print) are a very useful part of the Annual Report.
- ✱ Change in Accounting Period can lead to confusion while comparing previous years' numbers.



# Points to Keep In Mind While Looking At Financials

- ✱ Similarly One Off items can increase or decrease profits and if these are not studied properly, the entire analysis can change.
- ✱ Consistent Performance year after year is what is best for the Investors.



# Points to Keep In Mind While Looking At Financials

**A company will create Value over the Long Term which continues to:**

- ✱ Growth in Sales
- ✱ Increasing Profits
- ✱ Increase in Net-worth
- ✱ Reducing Debt
- ✱ Improving Margins
- ✱ Improving Return on Net-worth or ROE for the Investors



# Financial Statements and Forensic Accounting

- ✿ A comprehensive Financial Statement Analysis provides insights into a firm's performance and/or standing in the areas of **Liquidity, Leverage, Operating Efficiency and Profitability**. A complete analysis involves both Time Series and Cross-sectional perspectives.
- ✿ **Time Series Analysis** examines trends using the firm's Own Performance as a Benchmark.
- ✿ **Cross Sectional Analysis** augments the process by using External Performance Benchmarks (Industry or Peers) for comparison purposes.



# Financial Statements and Forensic Accounting

- ✿ **Forensic Accounting** utilizes Accounting, Auditing, and Investigative skills to conduct an examination into the Finances of an Individual or Business.
- ✿ Forensic Accounting provides an Accounting Analysis suitable to be used in Legal Proceedings.
- ✿ Forensic Accountants are trained to look beyond the numbers and deal with the Business reality of a situation.
- ✿ Forensic Accounting is frequently used in Fraud and Embezzlement (misuse) cases to explain the nature of a Financial crime in court.



# Financial Statements and Forensic Accounting

- ✿ One of the **Key Functions** of Forensic Accounting is to explain the nature of a Financial crime to the courts.
- ✿ Forensic Accounting entails the use of Tracing Funds, Asset Identification, Asset Recovery, and Due Diligence reviews.
- ✿ Forensic Accounting is used by the Insurance Industry to establish damages from claims.
- ✿ They may be employed by Insurance Companies, Banks, Police Forces, Government Agencies, or Public Accounting Firms.



# Financial Statements and Forensic Accounting

## ✿ Key Functions of Forensic Accounting:





# Financial Statements and Forensic Accounting

## ✿ Difference between Forensic Accounting and Auditing:

Items for analysis	Forensic Accounting	Auditing
<b>Why, When and Where the services take place</b>	Serve as a backing to prove a fraud in the business in an apparent risk prone environment.	Continuous to certify the state of the art of a business and comply with an efficient market theory
<b>Scope of the job</b>	Present analytical accounting and financial information to support legal and administrative decisions	Opine on the accounting statements of business entities considering all criteria used in its preparation
<b>Details of tasks performed</b>	Detailed planning of tasks aimed at documenting deterministic and calculative analysis.	Sampled and/or probabilistic procedures to serve as a base of concluding the financial statement.
<b>Periodicity</b>	When necessary and particularly according to the periods stipulated by the Judge or client.	Covering the fiscal year to substantiate the activities of the accounting period.
<b>Reporting</b>	Investigative or expert reports	Financial statements, management letters or auditors' report.



# Ratio Analysis

- ✿ Ratios express Mathematical relationship between Performance Figures and / or Assets / Liabilities in a form that can be easily understood and interpreted.
- ✿ The Financial Performance Numbers of a company, as presented in the Financial Statements, can be used to calculate Ratios that give a snapshot view of the company's performance.
- ✿ The ratios of a company have **to be seen in conjunction with Industry Trends and Historical Averages**.



# Ratio Analysis

## Categories:

- ✱ Liquidity Ratios
- ✱ Efficiency Ratios (Activity / Turnover Ratios)
- ✱ Leverage Ratio (Coverage / Solvency Ratios)
- ✱ Profitability Ratios (Based on Sales)
- ✱ Profitability Ratios (Owner's Point of View)



# Liquidity Ratios

- ✱ It is important to see whether a Business is able to honour its obligations as and when they arise.
- ✱ Two simple measures for the same are
  - ❖ Current Ratio
  - ❖ Quick Ratio



# Liquidity Ratios

## Current Ratio:

- ✱ This ratio measures the company's liquidity situation by comparing its Current Assets with its Current Liabilities.
- ✱ This ratio is also known as **Working Capital Ratio**.
- ✱ **Calculation:**

$$\text{Current Ratio} = \frac{\text{Current Assests}}{\text{Current Liabilities}}$$



# Liquidity Ratios

## Current Ratio:

### ✿ Conclusion:

- ❖ A ratio of more than 1 means that the company has Current Assets more than its Current Liabilities.
- ❖ This ratio measures the ability of the company to meet its Short-term Liabilities. The elements that constitute the Working Capital of the company, Trade Receivables, Inventory, Trade Payables form an important component of this ratio.



# Liquidity Ratios

## Current Ratio:

- ❖ A high Inventory of Finished Goods may mean that the Sales are Slowing Down.
- ❖ High Raw Material Inventory may mean Poor Production Planning.
- ❖ High Trade Receivables will indicate that the company is selling on credit and not able to realize cash from its Debtors.
- ❖ On the other hand, high Trade Payables may indicate the Strength of the Company in getting best Credit Terms from its Suppliers.



# Liquidity Ratios

## Current Ratio:

- ❖ There are companies which take cash on Sales and make Payments on Credit. Such a situation will result into a current ratio less than 1, however, this is not a red flag. In fact, it is a very good situation in which the company's working is funded by the customers.
- ❖ A high ratio may indicate poor use of Working Capital while a very low ratio may point towards deeper analysis.
- ❖ In our example, the Current Ratio =  $500 / 220 = 2.27$ .



# Liquidity Ratios

## Quick Ratio:

- ✱ This is a more stringent version of the Liquidity Ratio as it does not consider assets, which although current in nature, but cannot be converted into Cash immediately.
- ✱ Prominent example of such Current Assets is Inventories.
- ✱ Calculation :

$$\text{Quick Ratio} = \frac{\text{Current Assests} - \text{Invetories}}{\text{Current Liabilities}}$$



# Liquidity Ratios

## Quick Ratio:

### ✱ Conclusion:

- ✦ Accounts Receivable, Cash, Investments in Liquid Funds, are all included in calculating Quick Ratio.
- ✦ Higher the ratio better the Liquidity, but lesser will be the returns as cash is not a great source of generating returns.



# Efficiency Ratios

- ✿ It is important to see whether a **Business is efficient in its operations.**
- ✿ Efficiency would also help Business improve its Capital Allocation and so the Profitability and Return Ratios.
- ✿ Efficiency in a Business are defined below:
  - ❖ Accounts Receivable Turnover
  - ❖ Accounts Payable Turnover
  - ❖ Asset Turnover
  - ❖ Inventory Turnover



# Efficiency Ratios

## Accounts Receivable Turnover:

✱ This ratio indicates how fast company converts its Sale in to Cash.

✱ **Calculation :**

$$\text{Accounts Receivable Turnover} = \frac{\text{Revenue}}{\text{Accounts Receivable}}$$



# Efficiency Ratios

## Accounts Receivable Turnover:

### ✿ Conclusion:

- ❖ Higher the ratio, better the firm, as it means that very small portion of its revenues are in the form of credit.
- ❖ On the other hand, if the ratio is Low, it means that the company is giving too easy credit or may be even facing difficulties in recovering money from its Distributors/Clients.



# Efficiency Ratios

## Accounts Payable Turnover:

✱ This ratio indicates how much of a company's purchases are on credit.

✱ Calculation:

$$\text{Accounts Payable Turnover} = \frac{\text{Purchases}}{\text{Accounts Payable}}$$



# Efficiency Ratios

## Accounts Payable Turnover:

### ✿ Conclusion:

- ❖ As can be seen from the formula, if the payable is high (denominator), the ratio will be low. This means that the company is running long credit periods with its suppliers.
- ❖ It is difficult to conclude anything just looking at this number because long credit periods with its suppliers could be because it has good bargaining power with its suppliers or it does not have the money to pay to them.



# Efficiency Ratios

## Accounts Payable Turnover:

### ✿ Conclusion:

- ✿ While bargaining power of company may let it take long credits from its suppliers, in long run, it may not be good as suppliers would not like the situation.
- ✿ Indeed, good companies generally focus on paying on timely basis as much as they focus on receiving money on timely basis.



# Efficiency Ratios

## Asset Turnover Ratio:

- ✱ This ratio indicates how many times Assets of the Business are churned/put to use to generate Revenues for the Business.
- ✱ If assets are lying idle, that is not good for the Business as Capital is deployed but it is not generating Revenue.
- ✱ On the other hand, if Asset is continuously churned/put to use to produce goods and services, it would improve the Revenues and the Profits. Therefore, higher the ratio, better the firm.



# Efficiency Ratios

## Asset Turnover Ratio:

### ✿ Calculation:

$$\text{Asset Turnover} = \frac{\text{Net Sales}}{\text{Total Assets}}$$

- ✿ This ratio is also used in Du Pont Analysis, which is used to decompose the ROE to get even better understanding of the company's drivers.



# Efficiency Ratios

## Inventory Turnover Ratio:

- ✱ This ratio gives the number of times inventory is rolled over by a company, hence obviously, higher the ratio, better is the business.
- ✱ Inventory, if not converted into sales fast, would mean money is locked in the business.
- ✱ Also, perishable goods may start deteriorating if inventory is not turned into sales fast.



# Efficiency Ratios

## Inventory Turnover Ratio:

✱ This ratio would be High for FMCG companies whereas Low for Capital Goods companies.

✱ Calculation:

$$\text{Inventory Turnover} = \frac{\text{Net Sales}}{\text{Inventory}}$$



# Leverage Ratios

- ✱ A high level of debt used in funding the operations can be risky for the business, especially in an economic downturn when Revenues and Profitability reduce.
- ✱ Leverage Ratios can be used to analyze the extent of Leverage used by a business and its ability to meet the obligations arising from them.
- ✱ Two important parameters here are
  - ❖ Debt / Equity ratio
  - ❖ Interest coverage ratio



# Leverage Ratios

## Debt/ Equity (D/E) Ratio:

- ✱ High levels of debt in a business can prove to be detrimental for a company.
- ✱ In absence of its ability to pay to the Lenders, business may have to face Bankruptcy.
- ✱ When businesses create assets aggressively out of borrowed money, it could be quite dangerous if the Assets are unable to generate the expected Revenues and Profitability. The Liability will still have to be met.



# Leverage Ratios

## Debt/ Equity (D/E) Ratio:

### ✱ Calculation:

$$\text{D/E Ratio} = \frac{\text{Long Term Debt}}{\text{Net Worth}}$$

### ✱ Conclusion:

- ❖ On a most conservative basis, a D/E of 1 or less should be considered as the benchmark.



# Leverage Ratios

## Debt/ Equity (D/E) Ratio:

- ❖ Depending upon the Industry, track record of the company, Capital required, Project details, should a decision be taken.
- ❖ It would be prudent for investors to avoid companies with extremely high levels of debt.
- ✿ In our example, the D/ E Ratio would be  $1000 / 1280 = 0.78x$ .



# Leverage Ratios

## Interest Coverage Ratio:

- ✿ Companies having high debt need to pay high interest as well.
- ✿ Whether a company is headed for a trouble can be simply seen by comparing its earnings with the interest (we are not talking about principal repayment yet).
- ✿ This ratio, popularly known as Interest Coverage Ratio, tells us how many times the earnings of the business is vis a vis its Interest obligation.



# Leverage Ratios

## Interest Coverage Ratio:

### ✿ Calculation:

$$\text{Interest Coverage Ratio} = \frac{\text{EBIT}}{\text{Interest Expense}}$$

### ✿ Conclusion:

- ❖ If this ratio is High, clearly, business is in comfortable zone.



# Leverage Ratios

## Interest Coverage Ratio:

- ❖ The ratio will be less than one or negative in some businesses, which means that earnings are less than Interest or Earnings are negative and Interest obligations exist.
- ✿ As these businesses would be either borrowing money or infusing equity to run the show, these businesses may come into significant problems if they don't turn around soon. Kingfisher Airlines is one such example.



# Leverage Ratios

## Debt to Assets Ratio:

- ✿ High levels of debt in a business can prove to be detrimental for a company.
- ✿ In absence of its ability to pay to the Lenders, business may have to face Bankruptcy.
- ✿ **Calculation:**

$$\text{Debt to Assets Ratio} = \frac{\text{Long Term Debt}}{\text{Total Assets}}$$



# Leverage Ratios

## Debt to Assets Ratio:

### ✿ Conclusion:

- ❖ On a most conservative basis, a D/A Ratio of 1 or less should be considered as the benchmark.
- ❖ When businesses create assets aggressively out of borrowed money, it could be quite dangerous if the assets are unable to generate the expected Revenues and Profitability.



# Profitability Ratios

- ✿ Profitability ratios define how Profitable the operations of the company are on per Rupee of Sales basis.
- ✿ It is evident that if the Industry is very competitive and there are pricing pressures on the business, Profitability will suffer.
- ✿ However, if the Business is unique with significant Entry Barriers, or if it is an Initial Entrant in a Sunrise Industry Profitability would be High.



# Profitability Ratios

- ✿ A very high level of Profitability will not sustain over a long period. With new Entrants and Competition, Revenues and Profits will moderate.
- ✿ The Profitability of a company can be evaluated at each level of P/L statement.
- ✿ The two main (**Sales Base**) parameters of profitability are:
  - ❖ **EBITDA Margin** (Gross Profit Margin)
  - ❖ **Net Profit Margin (NPM)** or Profit After Tax margin (PAT margin).



# Profitability Ratios

## EBITDA Margin:

- ✱ This ratio is useful in finding out the Profitability of the company purely based upon its Operations and Direct Costs.

- ✱ Calculation:

$$\text{EBITDA Margin} = \frac{\text{EBITDA}}{\text{Net Sales}}$$



# Profitability Ratios

## EBITDA Margin:

### ✿ Conclusion:

- ❖ A firm with a higher EBITDA margin, indicates that it is able to operate with greater efficiency than other peer group companies.
- ❖ The EBITDA margins are useful in identifying profitability trends in an Industry since it is not affected by the Depreciation Policies, Funding Decisions and Taxation Rates of the companies.
- ✿ In our example EBITDA Margin is 80% (800/ 1000).



# Profitability Ratios

## PAT Margin:

- ✿ Shareholders of a Business get their dues only at the end, i.e. after paying all Stakeholders, including the Government.
- ✿ Hence, they would like to know how much of the Business generated by the company actually comes their way.

## ✿ Calculation:

$$\text{PAT Margin} = \frac{\text{PAT}}{\text{Net Sales}}$$



# Profitability Ratios

## PAT Margin:

### ✿ Conclusion:

- ❖ A firm with a Higher Ratio is seen as more efficient in managing costs and earning profits.
- ❖ A trend of increasing Margins means improving Profitability.
- ✿ In our Example, PAT Margin is 31.5% ( $315 / 1000$ )



# Profitability Ratios (Owner's View)

- ✿ While Profitability ratios give a sense of Profitability per Rupee of Sales by the Business, they do not communicate anything on the Productivity of each Rupee invested in the Business.
- ✿ This part of Allocation of Capital and its Productivity is captured through **comparing Profits with the Capital Employed** in the business.



# Profitability Ratios

- ✦ Important ratios **Based on Owner's Point of view** are:
  - ❖ ROE or RoNW (also with Du Pont Analysis)
  - ❖ ROCE / ROI
  - ❖ ROA
  - ❖ EPS
  - ❖ DPS
  - ❖ Dividend Yield
  - ❖ PE Ratio
  - ❖ Book Value per Share



# Profitability Ratios

## Return on Equity (ROE):

- ✱ This is the single most important parameter for an investor to start digging for more information about a company.
- ✱ ROE communicates how a Business allocates its capital and generates return.
- ✱ An efficient allocator of capital would have high ROE and a poor quality of Business would have low ROE.



# Profitability Ratios

## Return on Equity (ROE):

✱ ROE, sometimes also known as **Return on Net-worth (RoNW)**.

✱ **Calculation:**

$$\text{ROE} = \frac{\text{PAT}}{\text{Net Worth}}$$

**Net-worth** = Equity Capital + Reserves & Surplus



# Profitability Ratios

## Return on Equity (ROE):

### ✿ Conclusion:

- ❖ Higher the ROE, better the Firm.
- ❖ **High ROE** indicates efficient allocation of Capital.
- ❖ **Low ROE** indicates inefficient allocation of Capital.



# Profitability Ratios

## Return on Equity (ROE):

- ✱ ROE is further decomposed into 3 steps, known as **Du Pont Analysis**:

$$\text{PAT/ Net-worth} = \frac{\text{PAT}}{\text{Net Sales}} \times \frac{\text{Net Sales}}{\text{Fixed Assets}} \times \frac{\text{Fixed Assets}}{\text{Net Worth}}$$

- ✱ **ROE = Net Profit Margin x Asset Turnover x Financial Leverage**



# Profitability Ratios

## Return on Equity (ROE):

✿ In other words, ROE considers:

- ❖ The Operating Efficiency of the firm,
- ❖ The efficiency with which the Assets are used by business to generate Revenues and
- ❖ The Financial Leverage used by the business.

✿ In our Example,

$$\text{ROE} = \frac{315 \text{ (PAT)}}{1280 \text{ (Net Worth)}} = 24.61\%.$$



# Profitability Ratios

## Return on Equity (ROE):

- ✿ ROE using (Du Pont Analysis)

- ✿  $24.61\% = (315/1000) \times (1000/2000) \times (2000/1280)$   
 $= 31.5\% \times 0.5 \times 1.5625$

- ✿ In this analysis, we can see that the Asset Turnover for this company is slightly low and ROE is mostly being generated by high profit margins and by using debt funding.



# Profitability Ratios

## Return on Equity (ROE)/ DuPont Analysis Example:

- Let's analyze the Return on Equity of Companies- A and B. Both the companies are into the Electronics Industry and have the same ROE of 45%.
- The ratios of the two companies are as follows-

Ratio	Company A	Company B
Profit Margin	30%	15%
Asset Turnover	0.5	6
Financial Leverage	3	0.5



# Profitability Ratios

## Return on Equity (ROE)/ DuPont Analysis Example:

### Conclusion:

- ✿ Even though both companies have the same ROE, however, the **operations of the companies are totally different.**
- ✿ Company A is able to generate higher Sales while maintaining a lower Cost of Goods which can be seen from its **High-profit Margin.**



# Profitability Ratios

## Return on Equity (ROE)/ DuPont Analysis Example:

### Conclusion:

- ✿ On the other hand, company B is selling its products at a **Lower Margin** but having very high Asset Turnover Ratio indicating that the company is making a large number of sales. Moreover, company **B seems less risky since its Financial Leverage is very low.**
- ✿ Thus DuPont Analysis helps compare similar companies with similar ratios. It will help investors to measure the risk associated with the business model of each company.



# Profitability Ratios

## Return on Equity (ROE)/ DuPont Analysis Example2:

	SuperCo		GearInc	
	Year 1	Year 2	Year 1	Year 2
Net Income	\$1,000.00	\$1,200.00	\$2,100.00	\$2,100.00
Revenue	\$10,000.00	\$10,000.00	\$17,500.00	\$17,500.00
<b>Profit Margin</b>	<b>0.1</b>	<b>0.12</b>	<b>0.12</b>	<b>0.12</b>
Revenue	\$10,000.00	\$10,000.00	\$17,500.00	\$17,500.00
Ave. Assets	\$5,000.00	\$4,800.00	\$8,750.00	\$8,750.00
<b>Asset Turnover</b>	<b>2</b>	<b>2.08</b>	<b>2</b>	<b>2</b>
Ave. Assets	\$5,000.00	\$4,800.00	\$8,750.00	\$8,750.00
Ave. Equity	\$2,000.00	\$2,000.00	\$5,000.00	\$3,500.00
<b>Financial Leverage</b>	<b>2.5</b>	<b>2.4</b>	<b>1.75</b>	<b>2.5</b>
<b>ROE</b>	<b>50%</b>	<b>60%</b>	<b>42%</b>	<b>60%</b>



# Profitability Ratios

## DuPont Analysis Bottom line:

- ✱ DuPont Analysis is very important for an investor as it answers the question what is actually causing the ROE to be what it is.
- ✱ If there is an increase in the Net Profit Margin without a change in the Financial Leverage, it shows that the company is able to increase its Profitability.



# Profitability Ratios

## DuPont Analysis Bottomline:

- ✿ But if the company is able to increase its ROE only due to increase in Financial Leverage, **it's risky** since the company is able to increase its Assets by taking Debt.
- ✿ Thus we **need to check** whether the increase in company's ROE is due to increase in Net Profit Margin or Asset Turnover Ratio (which is a good sign) or only due to Leverage (which is an alarming signal).



# Profitability Ratios

## Return on Capital Employed (ROCE):

✱ This ratio uses EBIT and calculates it as a percentage of the money employed in the firm by way of both equity and debt.

✱ **Calculation:**

$$\text{ROCE} = \frac{\text{EBIT}}{\text{Capital Employed}}$$

✱ Capital Employed = Total Assets – Current Liabilities  
or Total Equity + Total Debt



# Profitability Ratios

Return on Capital Employed (ROCE):

**Conclusion:**

- ✿ Higher the ratio, better the firm since it is generating higher returns for every rupee of capital employed.
- ✿ Investors can use this to analyze the returns of companies with different sizes in the same industry.
- ✿ In our example, we have ROCE of  $600 / (2500 - 220) = 26.32\%$



# Profitability Ratios

✱ Return on Assets (ROA) =  $\frac{\text{PAT}}{\text{Total Assets}}$

✱ Earning Per Share =  $\frac{\text{PAT}}{\text{Outstanding Equity Shares}}$

✱ Dividend Per Share =  $\frac{\text{Diclared Dividend}}{\text{Outstanding Equity Shares}}$

✱ Dividend Yield =  $\frac{\text{DPS}}{\text{Market Price of Share}}$



# Profitability Ratios

✱  $\text{PE Ratio (PE)} = \frac{\text{Market Price of Share (Mcap)}}{\text{EPS (PAT)}}$

✱  $\text{Book Value Per Share (BPS)} = \frac{\text{Net Worth}}{\text{Outstanding Equity Shares}}$



# Ratio Analysis

**Broad Categories based on Statements and Market Price:**

- ✱ Profit and Loss Ratios
- ✱ Balance Sheet Ratios
- ✱ Balance Sheet and Profit and Loss Ratios
- ✱ Financial Statements and Market Ratios



# Ratio Analysis

## Profit and Loss Ratios:

- ✱ Sales to Cost of Goods Sold
- ✱ Selling Expenses to Sales
- ✱ Net Profit to Sales
- ✱ Gross Profit to Sales



# Ratio Analysis

## Balance Sheet Ratios:

- ✱ Shareholders' Equity to Borrowed Funds
- ✱ Current Assets to Current Liabilities
- ✱ Liabilities to Net Worth
- ✱ Debt to Assets
- ✱ Liabilities to Assets



# Ratio Analysis

## Balance Sheet and Profit and Loss Ratios:

- ✱ Earnings to Shareholders Funds (ROE)
- ✱ Net Income to Assets Employed (ROA)
- ✱ Net Income to Capital Employed
- ✱ Sales to Stock
- ✱ Sales to Debtors
- ✱ Cost of Goods Sold to Creditors



# Ratio Analysis

## Financial Statements and Market Ratios:

- ✱ Market Value to Earnings (PE)
- ✱ Market Value to Book Value (PB)
- ✱ Price to Sales
- ✱ Price to Cash Flow
- ✱ Price to Free Cash Flow



# Peeping in to future with caution

- ✿ Looking into historical financials and understanding the ratios defined above would give us a great sense on how is the business organized and what are the drivers of the business.
- ✿ Analysts use the historical relationship between financial parameters to project financials for the businesses. Many a times, these projections are reduced to simple extrapolation of historical financials without enough ground work.



# Peeping in to future with caution

- ✿ Analysts must appreciate that future of the businesses could be significantly different from their past.
- ✿ **For Example:** Suzlon faced tremendous competition from both domestic and offshore competitors starting middle of 2000 while it was the only wind turbine manufacturer before that and had great pricing power. Projecting financials of Suzlon in the middle of 2000 purely based on its historical exploration would have been a blunder.



# Peeping in to future with caution

- ✿ Analysts must spend time thinking and analyzing how the future of business is going to be different from its past in view of changing dimensions of the business. Then, based on assumptions, projections may be drawn.
- ✿ While on this topic of projections, it may be interesting to quote some great minds – Warren Buffett, Charlie Munger and Graham and Dodd on the subject.



# Peeping in to future with caution

- ✿ “I have no use whatsoever for projections or forecasts. They create an illusion of apparent precision. The more meticulous they are, the more concerned you should be. We never look at projections but we care very much about, and look very deeply, at track records. If a company has a lousy track record but a very bright future, we will miss the opportunity.” - **Warren Buffett**



# Peeping in to future with caution

- ✿ “In my opinion, projections do more harm than good. They are put together by people who have an interest in a particular outcome, have a subconscious bias, and its apparent precision makes it fallacious. They remind me of Mark Twain's saying, ‘A mine is a hole in the ground owned by a liar.’ - **Charlie Munger**
- ✿ "While a trend shown in the past is a fact, a 'future trend' is only an assumption. The past, or even careful projections, can be seen as only a 'rough index' to the future." - **Graham and Dodd**



# Peer Comparison

- ✿ Looking into a Company's Financials helps to understand the past performance of the Company.
- ✿ It may also be interesting to see a Company's Performance vis à vis other Participants/Peers in the industry to understand its Competitive Position.
- ✿ All the Ratios as defined above and in other units on Valuation, when compared across companies of the same sector, can give a good idea of where the Company stands vis-à-vis its peers.



# Peer Comparison

- ✱ Various databases provide us a quick snapshot of all these numbers of a Company vis a vis its Peers. Peer comparison is critical for analysts to look into while making any research report.



# History of Equity Expansion

- ✿ Equity dilution is an outcome of the issue of additional shares by a company.
- ✿ This increase in the number of shares outstanding can result from a primary market offering (including an initial public offering or Follow on Offering or Rights issue), employees exercising stock options, or by conversion of convertible bonds, preferred shares or warrants into stock. Equity dilution has an impact on the existing shareholders' percentage holding in the company, which in turn affects the profits that accrues to them.



# History of Equity Expansion

- ✿ As rights issue offer equal chance to the existing shareholders to maintain their holding percentage, rights may not be that big a concern for the investors from dilution point of view. Similarly, bonus issues should not worry investors at all as money from one head “Reserves and Surplus” is moved to another head “Equity Capital” without any economic impact on the existing shareholders. Much more to this subject is covered in the dedicated unit dealing with corporate actions.



# History of Equity Expansion

- ✱ Companies financing their growth with strong internal accruals are anytime better and safer bets than those raising money regularly from outsiders. Analysts should analyze the details of capital expansion over last several years and their impact on the value for shareholders.



# Dividend and Earnings History

- ✱ Dividends and earnings track record of a business is a critical aspect for analysts to analyze. Generally, companies maintain their dividend levels until something drastically different happens with the businesses.



# History of Corporate Actions

- ✱ Corporate actions such as Dividends, Bonuses, Splits and Rights Issues affect the company's share price in various ways.



# Insider Trading in Past

- ✿ Owners, being closest to the business, have most information about the nuances of the business.
- ✿ They are better informed of the performance of the company. They also act in the market (buy/sell shares of the company) under the defined guidelines of SEBI.
- ✿ While analyzing a business, analysts may get good insight by looking at the actions of the promoters/insiders in the market.



# Insider Trading in Past

- ✿ It is interesting to quote Peter Lynch on the subject – “Insiders can sell for a variety of reasons and it not necessarily ring alarm bells, but if insiders are buying, then there can be only one reason that the company is likely to make huge profits in future”.



# CORPORATE ACTIONS

## Philosophy of Corporate Actions

- ✿ A **Company initiates several actions**, apart from those related to its Business, that have a direct implications for its stakeholders.
- ✿ These include sharing of surplus with the shareholders in the form of Dividend, Changes in the Capital Structure through the further Issue of Shares, Buy Backs, Mergers and Acquisitions and Delisting, Raising Debt and others.
- ✿ In a company that has made a Public Issue of Shares, the Interest of the Minority Investors has to be protected.



# CORPORATE ACTIONS

## Philosophy of Corporate Actions

- ✿ Corporate actions are regulated by provisions of the following:
  - ❖ Provisions of the Companies Act, 2013,
  - ❖ Relevant regulations of SEBI, and
  - ❖ Terms of the listing agreement entered into with the stock exchange.



# CORPORATE ACTIONS

## Philosophy of Corporate Actions

- ✿ Corporate benefits and actions, as defined above, apply to all Investors who appear in the register of members, if the shares are held in physical form or Investors whose names appear in the register of beneficial owners maintained by the depository, in case of dematerialized shares.



# CORPORATE ACTIONS

## Philosophy of Corporate Actions

- ✱ In order to determine Ownership, the **Company announces a Record Date or Book Closure period** and Investors whose names appear on the records on this date become eligible shareholders to receive notice of the relevant corporate action and benefit.



# CORPORATE ACTIONS

## Dividend

- ✿ Post-tax Profits in a business belong to the shareholders and a company can broadly do two things with those profits – Retain them for Investment in the Business, or Return to the Shareholders.
- ✿ If a Company choses to Return Money to all Shareholders in equal proposition, it is said to have 'Declared a Dividend'.
- ✿ In practice, Companies distribute part of the Profits and retain part of the Profits in the Business



# CORPORATE ACTIONS

## Dividend

- ✿ The proportion of Distribution and Retention of profits will depend upon
  - ❖ The Opportunities available for Ploughing back the Profits into the Business,
  - ❖ Nature of Management,
  - ❖ Expectation of Shareholders and
  - ❖ Ultimately the Availability of cash in the Business to distribute to the Shareholders.



# CORPORATE ACTIONS

## Dividend

- ✿ A company may declare '**Interim Dividends**' during the financial year and a '**Final Dividend**' at the end of the year.
- ✿ A company has to pay dividends within 30 days of its declaration.
- ✿ SEBI has mandated that listed companies shall declare dividends in Rupees Terms on Per Share Basis as against the earlier practice of declaring dividends as a percentage of the face value. This is to avoid confusion among investors while comparing dividend on various shares of different face values.



# CORPORATE ACTIONS

## Dividend

- ✿ **For Example:** If 50% Dividend is declared by two companies 'A' and 'B' with different Face Values of Rs. 2 and Rs. 10 respectively, an Investor in Company 'A' will receive Re. 1 as Dividend as against Rs. 5 in the case of Company 'B'.
- ✿ Dividends received by the Investors in two Companies are different even though the percentage is the same because the Face Value of the shares is different. In the interest of the Investors, company 'A' is now required to declare the Dividend as Re. 1 per share while Company 'B' will declare the Dividend payable as Rs. 5 per share.



# CORPORATE ACTIONS

## Dividend

- ✿ Historical Dividend track record of a company may be seen from Payout ratio, which is calculated by dividing the company's dividend per share by earnings per share.
- ✿ In India, companies declaring or distributing dividend, are required to pay Dividend Distribution Tax in addition to the tax levied on their income.
- ✿ Dividend received is exempt in the hands of the shareholder's, in respect of which Dividend Distribution Tax has already been paid by the company.



# CORPORATE ACTIONS

## Rights Issue

- ✿ When a company needs additional Equity Capital, it has two choices –
  - ❖ Ask more Money from Existing Shareholders or
  - ❖ Go for Fresh set of Investors.
- ✿ If Company chooses latter i.e. Issues Shares to fresh set of Investors, Proportionate holding of existing Shareholders gets Diluted.



# CORPORATE ACTIONS

## Rights Issue

- ✿ **For Example**, a Company may have 10 lakhs shares of Rs.10 each, amounting to an issued and paid-up capital of Rs. 1 crore. If it issues another 10 lakhs shares to fresh set of investors, to increase its Capital, the proportion held by existing Shareholders will come down by half, as the issued and paid up Capital has doubled.
- ✿ This is called as **Dilution of Holdings**.



# CORPORATE ACTIONS

## Rights Issue

- ✱ To prevent this, Companies Act requires that a Company which wants to raise more Capital through an Issue of Shares must first offer them to the existing Shareholders and such an offer of shares is called a Rights Issue.
- ✱ **Subscribing to the Rights Issue is Choice and not Compulsion for Investors.**



# CORPORATE ACTIONS

## Rights Issue

- ✿ They may buy shares offered to them under rights issue or let the choice expire without any action or may choose to transfer their Rights/Entitlement to another person for consideration (sell) or without consideration (under love and affection). This is called **Renunciation of Rights**. Rights entitlements also get traded on the Stock Exchange for a defined period.



# CORPORATE ACTIONS

## Rights Issue

- ✿ Shares under rights issues are generally offered at a discount to the prevailing market prices (Logically also, if price under a rights issue is higher than market price of stock, investors would be better off buying shares from the market without subscribing to the issue).
- ✿ **For Example:** If the Company issues 1-for-2 Rights Issue at Rs. 70 per share, shareholder 'A' will have right to buy one share for every two shares held by him at Rs. 70. As 'A' has 10 shares, he can buy 5 more shares at Rs. 70.



# CORPORATE ACTIONS

## Rights Issue

- ✿ In practice, Companies allow Shareholders to apply for additional shares beyond their entitlement because some shareholders may neither apply for shares under their entitlement nor transfer their rights to others and those shares may be available for issuance to these shareholders who desire additional shares.
- ✿ A Rights Issue of shares must follow all SEBI's regulation on issue of shares. A listed company making a rights issue shall fix a Record Date to determine the eligibility to the rights.



# CORPORATE ACTIONS

## Rights Issue

- ✿ The Company must issue a letter of offer giving details of the issue including the purpose for which funds are being raised. The draft letter of offer must be filed with SEBI.
- ✿ An abridged letter of offer must be dispatched to all investors at least three days before the issue opens. Investors can also apply on a plain paper if they do not receive the application form.



# CORPORATE ACTIONS

## Rights Issue

- ✿ A rights issue is open for subscription for a minimum period of 15 days and a maximum period of 30 days.
- ✿ As a result of rights issue, total number of outstanding shares go up with a corresponding increase in the cash in the asset side of the balance sheet. If all shareholders subscribe to their full entitlements/rights, their proportionate ownership remains unchanged and the number of shares held by them goes up.



# CORPORATE ACTIONS

## Bonus Issue

- ✿ A Bonus Issue, also known as Equity Dividend, is an alternative to Cash Dividend. Bonus Shares are issued to the existing Shareholders by the Company without any consideration from them. The reserves lying in the books of the company (shareholders' money) gets transferred to another head i.e. paid-up/subscribed capital.
- ✿ The shareholders do not pay anything for these shares and there is no change in the value of their holdings in the pre and post-bonus stages.



# CORPORATE ACTIONS

## Bonus Issue

- ✿ The issuance of bonus shares is more to influence the psychology of investors without any economic impact.
- ✿ The entitlement to the bonus shares depends upon the existing shareholding of the investors. A bonus issue in the ratio of 1:3 entitles a shareholder for 1 bonus share for every 3 shares held by them. The company makes the bonus issue out of its free reserves built from genuine profits.



# CORPORATE ACTIONS

## Bonus Issue

- ✿ Reserves built from revaluation of assets are not allowed to be considered for making a bonus issue. A company cannot make Bonus issue if it has defaulted on payment of interest and/or principal on any debt security issued or any fixed deposit raised.
- ✿ Issuance of Bonus Shares is termed as Capitalization of Reserves.



# CORPORATE ACTIONS

## Bonus Issue

- ✿ As total number of shares go up without any economic change in the profit and loss statement or balance sheet, per share data (earning per share, book value per share, market price per share etc.) witnesses immediate deterioration. However, as shareholders' proportionate ownership remains unchanged and the number of shares held by them go up, at overall ownership level, there is no negative impact to the shareholders.



# CORPORATE ACTIONS

## Bonus Issue

- ✦ **For Example:** If shares of a company were trading at a price of Rs. 1000 per share prior to bonus, post bonus on 1:1 basis, fair price of share is likely to come down to Rs. 500 per share to maintain Post Bonus Market Value of a holding equivalent to its pre Bonus Market Value.
- ❖ Therefore, mathematically, the value of the investor's holding pre Bonus at Rs. 1, 00,000 (100 shares x Rs. 1000) remains the same Rs. 1, 00,000 (200 shares x Rs. 500) post bonus.



# CORPORATE ACTIONS

## Bonus Issue

- ❖ Actual market price of share post bonus will be around Rs. 500 (not exactly at of Rs. 500) as it will depend on market factors of demand and supply.



# CORPORATE ACTIONS

## Stock Split

- ✱ A Stock Split is a Corporate Action where the Face Value of the existing Shares is reduced in a Defined Ratio.
- ✱ A Stock Split of 1:5 means Split of an existing share into 5 shares.
- ✱ Accordingly, face value of shares will go down to 1/5th of the original face value.



# CORPORATE ACTIONS

## Stock Split

**For Example:** If an investor holds 100 shares of a company with a face value of Rs. 10 each, a stock split in the ratio of 1:5 will increase the number of shares held by him to 500 but the face value of each share will go down to Rs. 2.

- ❖ From the company's perspective, there is no change in its share capital since an increase in the number of shares is offset by a fall in the face value and resultant multiplier of face value and outstanding no. of shares remains the same.



# CORPORATE ACTIONS

## Stock Split

- ✱ Companies consider splitting their shares if prices of their shares in the **Secondary Market are seen to be very high restricting the participation by Investors**. As price per share comes down post-split, Share Split leads to greater Liquidity in the Market.
- ✱ Similar to bonus, split is also a Book Entry resulting in increased number of outstanding shares in the books of company with reduced face value without any economic benefit whatsoever to the shareholders.



# CORPORATE ACTIONS

## Stock Split

- ✿ We may say that share split is also to influence the psychology of investors (of reduced market price per share) and to impact liquidity in the market place without any economic benefit to the shareholders.
- ✿ As the total number of shares go up without any economic change in the Profit and Loss statement or Balance Sheet, per share data (earning per share, book value per share, market price per share etc.) witnesses immediate deterioration.



# CORPORATE ACTIONS

## Stock Split

- ✿ However, as shareholders' proportionate ownership remains unchanged and number of shares held by them go up, at overall ownership level, there is no negative impact to the shareholders.

**For Example:** SBI initiated a Stock Split of its Equity shares from a face value of Rs. 10 to Re 1.

- ❖ A shareholder holding 1 share of a face value of Rs. 10 will now hold 10 shares each with a face value of Re. 1.



# CORPORATE ACTIONS

## Stock Split

- ❖ The stock that was trading in the markets at over Rs. 2700 at the time of the announcement traded post-split at around Rs. 295.
- ❖ The value of the shareholder's holding was around Rs. 2700 (1 share x Rs. 2700) prior to the stock split.
- ❖ Post the split, the value of the holding is Rs. 2950 (10 shares x Rs. 295).
- ❖ The market price after the split will depend upon the market forces of demand and supply.



# CORPORATE ACTIONS

## Share Consolidation

- ✿ Share Consolidation is the reverse of Stock Split.
- ✿ In a Share Consolidation, the Company changes the structure of its Share Capital by increasing the Par Value of its Shares in a defined ratio and correspondingly reducing the number of shares outstanding to maintain the paid up/subscribed capital.
- ✿ A stock consolidation of 5:1 means consolidation of 5 existing share into 1 share.



# CORPORATE ACTIONS

## Share Consolidation

- ✿ Accordingly, Face Value of shares will go up 5 times of the original Face Value and no. of outstanding shares will become one Fifth the original number.
- ✿ **For Example:** If an investor holds 500 shares of a company with face value of Rs. 2 each, a stock consolidation in the ratio of 5:1 will reduce the number of shares held by him to 100 but the face value of each share will go up to Rs. 10.



# CORPORATE ACTIONS

## Share Consolidation

- ✿ From the company's perspective, there is no change in its share capital since decrease in the number of shares is offset by corresponding increase in the face value.
- ✿ Companies consider consolidating their shares if prices of their shares in the secondary market are seen to be very low affecting the perception of investors. An **increase in the price per share post- consolidation, leads to better perception among the market participants** about the company's prospects.



# CORPORATE ACTIONS

## Share Consolidation

- ✱ Similar to bonus and split, Share Consolidation is also a Book Entry resulting in reduced number of outstanding shares in the books of Company with increased Face Value without any Economic benefit whatsoever to the shareholders.
- ✱ We may say that share consolidation is also to influence the psychology of investors without any economic benefit to the shareholders.



# CORPORATE ACTIONS

## Share Consolidation

- ✿ As total no. of shares go down without any economic change in the Profit and Loss account or Balance Sheet, per share data (earning per share, book value per share, market price per share etc.) witnesses immediate improvement.
- ✿ However, as shareholders' proportionate ownership remains unchanged and no. of shares held by them go down, at overall ownership level, there is no positive impact to the shareholders.



# CORPORATE ACTIONS

## Share Consolidation

- ✱ **For Example:** If shares of a company were trading at a price of Rs. 5 per share prior to consolidation, post-consolidation on 5:1 basis, fair price of share is likely to become Rs. 25 per share to maintain post-consolidation market value of a holding equivalent to its pre-consolidation market value.



# CORPORATE ACTIONS

## Share Consolidation

- ❖ Therefore, mathematically, value of the investor's holding preconsolidation Rs. 2,500 (500 shares x Rs. 5) remains the same at Rs. 2,500 (100 shares x Rs. 25) post-consolidation.
- ❖ Actual market price of share post- consolidation will be around Rs. 25 (not exactly at Rs. 25) as it will depend on market factors of demand and supply.



# CORPORATE ACTIONS

## Merger and Acquisition

- ✱ Mergers, acquisitions and consolidations are corporate actions which result in a change in the ownership structure of the companies involved.
- ✱ In a **Merger**, the Acquirer Buys up the Shares of the Target Company and it is **absorbed into the Acquiring Company and ceases to exist**. The Assets and Liabilities of the target company are taken over by the Acquirer.



# CORPORATE ACTIONS

## Merger and Acquisition

- ✱ In an **Acquisition** or **Takeover**, the Acquiring Company acquires all or a Substantial Portion of the stock of the Target Company (Becomes Subsidiary). **Both entities typically continue to exist** after the acquisition.
- ✱ In a **Consolidation**, Companies combine together to form a New Company and the **merged Companies cease to exist.**



# CORPORATE ACTIONS

## Merger and Acquisition

### ✿ Motives behind M&A activities:

- ❖ **Synergy:** Each company may have distinct efficiencies that when combined together may result in greater economic benefits. The combined entity can benefit from economies of scale, forward and backward integration and expanding the market for their products and services.
- ❖ **Increased Revenue and Market Share:** If two competitors go through M&A, it would result in increased revenue and market share for the acquiring entity.



# CORPORATE ACTIONS

## Merger and Acquisition

### ✿ Motives behind M&A activities:

- ❖ **Geographical or other Diversification:** Acquiring Company (ies) in different geography or complimentary business space may offer significant competitive advantage to the acquirer.
- ❖ **Taxation:** A profitable company can buy a loss making company to enjoy tax shield against the losses of the target company.



# CORPORATE ACTIONS

## Merger and Acquisition

- ✿ The shareholding pattern of a listed company may change due to a substantial acquisition of shares and voting rights by an acquirer and persons acting in concert with the acquirer.
- ✿ SEBI (Substantial Acquisition of Shares and Takeover) Regulations, 1997, provide relevant triggers and requirements for an acquirer and offer an opportunity to public shareholders to exit from the company in such situations, if they choose to do so.



# CORPORATE ACTIONS

## Loan Restructuring

- ✿ Loan or Debt Restructuring is a mechanism available to companies in Financial Distress who are unable to meet their obligations to their Lenders to Restructure their Debt by modifying one or more of the Terms of the Loans.
- ✿ This may include the Amount of Loan, Rate of Interest, the Mode of Repayment: Funds and/or Equity in the Company, and the Term of the Loan and so that the Repayment Obligation is within the Payment Capacity of the Borrower.



# CORPORATE ACTIONS

## Loan Restructuring

- ✿ A Restructuring Exercise is to the advantage of the Borrower and the Lender.
- ✿ The Borrower is given a way to repay the loan that is feasible given the current state of the Business and not be declared a Defaulter.
- ✿ The Company is now able to focus on building back its Business and repairing the Balance Sheet.
- ✿ The Lender can expect some repayment from a Loan that would otherwise have to be written off as a Bad Debt.



# CORPORATE ACTIONS

## Loan Restructuring

- ✱ The process of debt restructuring involves analyzing the debt position of the company, meeting with the lenders, providing information on the current and future financial position of the company and coming up with a workable repayment plan.
- ✱ The lenders have to be provided a concrete business plan on how the company plans to generate the revenues required to meet its obligations under the new terms as well as meet the financial needs of the business.



# CORPORATE ACTIONS

## Buy Back of Shares

- ✿ A Company may deploy excess cash on the Balance Sheet in various ways.
- ✿ **Company may use excess cash:**
  - ❖ To expand Business and grow or
  - ❖ Reduce its Liability by paying Back/Reducing its Borrowings , and/or
  - ❖ To Distribute to the shareholders.



# CORPORATE ACTIONS

## Buy Back of Shares

- ✿ If it chooses the third option, Management needs to choose between Homogenous Distribution of this money among all shareholders through Dividend or it would offer a choice to the Shareholders to have the money through selling their shares back to the Business or in kind in terms of enhanced value of each share in terms of Earning Per Share (EPS) and Book Value Per Share (BV).



# CORPORATE ACTIONS

## Buy Back of Shares

- ✿ Motives of Buy Back of Shares could be multiple as follows:
  - ❖ To give a value boost to the stock if it is seen as undervalued.
  - ❖ Excess cash and lack of profitable investment opportunities.
  - ❖ Buyback as a confidence building measure.



# CORPORATE ACTIONS

## Buy Back of Shares

- ❖ Buyback as a defensive strategy against a potential takeover.
- ❖ Buyback to reduce equity and resultantly increase the leverage in the company.
- ❖ Buyback to diffuse the impact of dilution in promoters' holding on account of say Employee Stock Option Plans (ESOPs).



# CORPORATE ACTIONS

## Buy Back of Shares

- ✿ While every management talks about the positive impact of buyback on minority shareholders, it is very difficult to ascertain management intention on buyback of shares.
- ✿ Buyback of shares can be done only out of the reserves and surplus available with the company.
- ✿ The shares bought back are extinguished by the company within stipulated time frame and that leads to a reduction in its share capital.



# CORPORATE ACTIONS

## Buy Back of Shares

- ✿ To be eligible for a share Buyback, a Company should not have defaulted on its payment of Interest or Principal on Debentures/Fixed deposits/any other Borrowings, Redemption of Preference Shares or Payment of Dividend declared.
- ✿ **The Shares can be Bought Back using**
  - ❖ The Tender Method by making an offer to existing shareholders on a proportionate basis or



# CORPORATE ACTIONS

## Buy Back of Shares

- ❖ from the Open Market through a Book Building Process or
- ❖ through the Stock Exchange or
- ❖ from Odd Lot Holders.
- ✿ The company needs to pass a special resolution specifying the timeframe for buy back and maximum price at which the buyback will be made.
- ✿ As Buyback of shares results in the reduction of outstanding shares.



# CORPORATE ACTIONS

## Buy Back of Shares

- ✱ Even if there is no change in the P/L, it would result in increased EPS for post buy back shareholders.
- ✱ These shareholders may also enjoy higher dividend on each of their shares.
- ✱ Assuming the Market Value of Shares based on Earnings remains same pre and post Buyback, as it is to be spread over smaller lot now, Market Value per share goes up.



# CORPORATE ACTIONS

## Delisting of Shares

- ✿ Delisting of shares refers to the Permanent Removal of the Shares of a Company from being Listed on a Stock Exchange.
- ✿ Delisting may be Compulsory or Voluntary.
- ✿ In a compulsory delisting, the shares are delisted on account of non-compliance to regulations and the clauses of the listing agreement by the company.
- ✿ In a Voluntary Delisting, the company chooses to get the shares delisted and go private.



# CORPORATE ACTIONS

## Delisting of Shares

- ✿ The motives may range from regulatory reporting complexities and compliance overhead to mergers and acquisitions and sometimes to have freedom to execute a changed strategy.
- ✿ Any voluntary delisting has to happen as defined in the regulations by SEBI.
- ✿ No minority shareholder can be forced to exit at the time of delisting of shares from the stock exchanges. Post delisting, any such shareholder would continue to be a shareholder in an unlisted business.



# CORPORATE ACTIONS

## Share Swap

- ✱ Swap, simply means, exchange of something. Accordingly, share swap means exchanging one set of shares with another set of shares.
- ✱ Term share swap is **often used during a merger or acquisition of a company** when acquiring company uses its own stock as cash to purchase the business.



# CORPORATE ACTIONS

## Share Swap

- ✱ Each shareholder of the acquired company receives a pre-determined amount of shares from the acquiring company.
- ✱ Before the swap occurs each party must accurately value its company so that a fair swap ratio can be calculated.



# VALUATION PRINCIPLES

## Difference Between Price and Value

- ✿ **Mr. Seth Klarman**, a known value investor stated “In capital markets, price is set by the most panicked seller; value, which is determined by cash flows and assets, is not. This is both the challenge and the opportunity of investing: to carefully sift through the markets to find the greatest divergence between price and value, and to concurrently avoid the extreme emotions of the crowd and, indeed, to take a stand against them.”



# VALUATION PRINCIPLES

## Difference Between Price and Value

- ✿ **Warren Buffett** is also known to state frequently “Price is what you pay and Value is what you get.”
- ✿ Price and value are two different concepts in investing. While **price is available from the stock market** and known to all, **value is based on the evaluation and analysis** of the valuer at a point in time.
- ✿ There is no formula or method to put to throw a precise number on valuation of an asset.



# VALUATION PRINCIPLES

## Difference Between Price and Value

- ✱ There are uncertainties associated with the inputs that go into the valuation process. As a result, the final output can at best be considered an educated estimate, provided adequate due diligence associated with valuing the asset has been complied with.
- ✱ That is the reason, valuation is often considered an art as well as a science. It requires the combination of knowledge, experience and professional judgment in arriving at a fair valuation of any asset.



# VALUATION PRINCIPLES

## Why Valuations are required?

- ✿ While purpose of carrying out valuation could vary from person to person, some of the reasons for carrying out Valuations of Assets/Businesses/Liabilities are as follows:
  - ❖ Buying a Business as part of Investment Exercise.
  - ❖ Selling a Business as part of Investment Exercise.
  - ❖ Mergers and Acquisitions.



# VALUATION PRINCIPLES

## Why Valuations are required?

- ❖ General sense of Value of Business to Owners.
- ❖ Fair treatment to different set of stake holders in case of Equity Swap.
- ❖ Accounting, Taxation and other Regulatory and Legal Requirements.



# VALUATION PRINCIPLES

## Why Valuations are required?

- ✿ Purpose of Valuation is to relate Price to Value and estimate if it is
  - ❖ Fairly Priced
  - ❖ Over-priced or
  - ❖ Under-priced
- ✿ Given the limitations in the valuation process, valuers typically present multiple scenarios that reflect the effect of a change in the primary variables on the output value.



# VALUATION PRINCIPLES

## Sources of Value in a Business – Earnings and Assets

- ✿ **Warren Buffett** stated “There are only two sources of value in a business - **Earnings and Assets.**”
- ✿ Any asset, whether a Financial Asset such as a Stock or a Bond, or a Real Asset generates **Two Streams of Cash Flows** - Periodic Earnings and a Final Inflow on Sale of the Asset.
- ✿ In case of **Bonds**, Coupons produce Earnings and Redemption/Sale of Bond in the Market produces One-time Cash Flow.



# VALUATION PRINCIPLES

## Sources of Value in a Business – Earnings and Assets

- ✿ **Equities** also produce Earnings in the form of Dividends and then One time Cash Flows on Sale.
- ✿ **Real Estate** provide Rental Income and an Appreciated Capital Value on Sale.
- ✿ **Businesses** are established for the same reason: To Generate Cash Flows in the form of Earnings and the potential to realize Cash Flows from the Sale of Tangible and Intangible Assets if earnings are not sufficient, or they die down and owners proceed to collect their money from Liquidation of Business/Assets.



# VALUATION PRINCIPLES

## Sources of Value in a Business – Earnings and Assets

- ✱ Interestingly, **Lenders** also think the same way. Lender will first ensure that the Business will be able to generate the Cash Flows to meet its Obligation before lending.
- ✱ The Collateral offered is not the Primary Consideration in their Decision-making and it is only a fall back mechanism to recover their Money if their Cash Flow estimates prove wrong.



# VALUATION PRINCIPLES

## Sources of Value in a Business – Earnings and Assets

- ✿ They want Borrowers to pay from their cash inflow streams.
- ✿ It is also important to note that the capability of the Business Assets to pay up all Liabilities and settle the Equity Holders, is **always doubtful**.
- ✿ Assets may be worth a lot less than what they appear for in the Balance Sheet. But, the outstanding Liabilities have to be settled in full.



# VALUATION PRINCIPLES

## Dividend Discount Model

- ✿ It is a way of valuing a company based on the theory that a stock is worth the discounted sum of all of its Future Dividend payments. In other words, it is used to evaluate stocks based on the net present value of future dividends.
- ✿ Financial theory states that the value of a stock is the worth all of the future cash flows expected to be generated by the firm discounted by an appropriate risk-adjusted rate. We can use dividends as a measure of the cash flows returned to the shareholder.



# VALUATION PRINCIPLES

## Dividend Discount Model

- ✿ Some examples of regular Dividend-paying companies are Coal India, IOC, Vedanta, Oil India, Power Finance, HPCL, REC.

## Dividend Discount Model covers the following:

- ❖ Dividend Discount Model – Foundation
- ❖ Types of Dividend Discount Model
- ❖ DDM Model #1 – Zero Growth Model



# VALUATION PRINCIPLES

**Dividend Discount Model covers the following:**

- ❖ DDM Model #2 – Constant Growth Rate DDM (Gordon Growth Model)
- ❖ DDM Model #3 – Variable Growth Rate DDM (Multi-stage DDM Model)
  - Two Stage DDM Model
  - Three Stage DDM Model
- ❖ Dividend Discount Model – Advantages
- ❖ Dividend Discount Model – Limitations



# VALUATION PRINCIPLES

## Dividend Discount Model

- ✿ Intrinsic value of the stock is the present value all the future cash flow generated by the stock.
- ✿ **For Example**, if we buy a stock and never intend to sell this stock (infinite time period). What is the future cash flows that you will receive from this stock. Dividends, right?
- ✿ **Intrinsic Value** (Present Value) =  $\frac{\text{CF or FV}}{(1+r)^t}$
- ✿ CF = Cash Flow, FV= Future Value, r = Discount Factor or Growth Rate



# VALUATION PRINCIPLES

## Dividend Discount Model

- ✱ Dividend Discount Model prices a stock by adding its Future Cash Flows Discounted by the Required Rate of Return that an Investor Demands for the Risk of owning the Stock.
- ✱ However, this situation is a bit theoretical, as investors normally invest in stocks for Dividends as well as Capital Appreciation.



# VALUATION PRINCIPLES

## Dividend Discount Model

- ✱ Capital appreciation is when we sell the stock at a higher price than we buy for. In such a case, there are two cash flows –
- ✱ Future Dividend Payments
- ✱ Future Selling Price



# VALUATION PRINCIPLES

# Dividend Discount Model

## Calculation:

## Dividend Discount Model = Intrinsic Value

**Intrinsic Value =** Sum of Present Value of Dividends  
+ Present Value of Stock Sale Price

- ✿ This Dividend Discount Model or DDM Model price is the Intrinsic Value of the stock.
- ✿ If the stock pays no dividend, then the expected Future Cash Flow will be the sale price of the stock.



# VALUATION PRINCIPLES

## Intrinsic Value

- ✿ Fundamental Analysis propounds that the Intrinsic Value is based on the Benefits that accrue to Investors in the Share.
- ✿ As the Return to Shareholders is in the form of Dividends, under strict Fundamental analysis, the Present Value of the Dividends Discounted on the basis of its perceived Safety or Risk is its Intrinsic Value.
- ✿ The Intrinsic Value is based on the Dividend because that is what a Shareholder or Investor receives from a company, and not on the Earnings Per Share of the Company.



# VALUATION PRINCIPLES

## Dividend Discount Model Example:

- ✱ Assume that we are considering the purchase of a stock which will pay dividends of Rs. 20 (Div1) next year, and Rs. 21.6 (Div2) the following year. After receiving the second dividend, we plan on selling the stock for Rs. 333.30. What is the Intrinsic Value of this stock if our Required Return is 15%?
- ✱ This Dividend Discount Model example can be solved in 3 steps:



# VALUATION PRINCIPLES

## Dividend Discount Model Example:

- ✿ Step 1 – Find the Present Value of Dividends for Year 1 and Year 2.

$$PV(\text{year 1}) = 20 / ((1.15)^1) = 17.40 = PV \text{ of Div1}$$

$$PV(\text{year 2}) = 20 / ((1.15)^2) = 16.30 = PV \text{ of Div2}$$

- ✿ Step 2 – Find the Present value of Future Selling price after two years.

$$PV(\text{Selling Price}) = 333.30 / (1.15^2) = 252$$



# VALUATION PRINCIPLES

## Dividend Discount Model Example:

✱ Step 3 – Add the Present Value of Dividends and present value of Selling Price

✱  $17.4 + 16.3 + 252.0 = \text{Rs. } 285.80$

✱ Alternatively: 
$$\begin{aligned} &= \frac{20}{(1+0.15)^1} + \frac{21.6}{(1+0.15)^2} + \frac{333.3}{(1+0.15)^2} \\ &= \frac{20}{(1.15)^1} + \frac{21.6}{(1.15)^2} + \frac{333.3}{(1.15)^2} \\ &= 17.4 + 16.3 + 252.0 = \text{Rs. } 285.80 \end{aligned}$$



# VALUATION PRINCIPLES

## Dividend Discount Model Example:

	Year 0	Year 1	Year 2
<b>Dividend Payments</b>		20	21.6
<b>PV (Dividends) @15%</b>		17.4	16.3
<b>Stock Price</b>			333.3
<b>PV (Stock) @ 15%</b>			252.0
<b>Intrinsic Value</b>	0	17.4	268.4
<b>Total Intrinsic Value</b>	285.8		



# VALUATION PRINCIPLES

## Types of Dividend Discount Models

- ✿ **Zero Growth Dividend Discount Model** – This model assumes that all the dividends that are paid by the stock remain one and same forever until infinite.
- ✿ **Constant Growth Dividend Discount Model** – This dividend discount model assumes that dividends grow at a fixed percentage annually.
- ✿ **Variable Growth Dividend Discount Model or Non Constant Growth** – This model may divide the growth into two or three phases. The first one will be a fast initial phase, then a slower transition phase and then ultimately ends with a lower rate for the infinite period.



# VALUATION PRINCIPLES

## Zero-growth Dividend Discount Model

✱ Zero-growth model assumes that the dividend always stays the same i.e. there is no growth in dividends. Therefore, the stock price would be equal to the annual dividends divided by the required rate of return.

✱ **Calculation:**

$$\text{Stock's Intrinsic Value} = \frac{\text{Annual Dividends}}{\text{Required Rate of Return}}$$



# VALUATION PRINCIPLES

## Zero-growth Dividend Discount Model

- ✱ This is basically the same formula used to calculate the Present Value of Perpetuity, and can be used to price preferred stock, which pays a dividend that is a specified percentage of its par value.
- ✱ A stock based on the zero-growth model can still change in price if the required rate changes when perceived risk changes, for instance.



# VALUATION PRINCIPLES

## Zero-growth Dividend Discount Model Example:

- ✱ If a Preferred share of stock pays dividends of Rs. 1.80 per year, and the required Rate of Return for the stock is 8%, then what is its Intrinsic Value?

$$\text{Stock's Intrinsic Value} = \frac{\text{Annual Dividends}}{\text{Required Rate of Return}}$$

$$\text{Intrinsic Value} = 1.80/0.08 = \text{Rs. } 22.50.$$

- ✱ The shortcoming of the model above is that need to expect most companies to grow over time.



# VALUATION PRINCIPLES

## Constant-Growth Rate DDM Model

- ✱ The constant-growth Dividend Discount Model or the **Gordon Growth Model** assumes that **Dividends grow by a specific percentage each year**. The model is called after American economist **Myron J. Gordon**, who proposed the variation.
- ✱ Constant growth models can be used to value companies that are mature whose dividends increase steadily over the years.



# VALUATION PRINCIPLES

## Constant-Growth Rate DDM Model

- ✿ Note that in constant-growth Dividend Discount Model, we do assume that the Growth Rate in Dividends is constant, however, the Actual Dividends outgo increases each year.
- ✿ Growth Rates in dividends is generally denoted as “ $g$ ”, and the Required Rate (Cost of Equity) is denoted by “ $K_e$ ”.
- ✿ Another important assumption that we should note is the Required Rate or  $K_e$  also remains constant every year.



# VALUATION PRINCIPLES

## Constant-Growth Rate DDM Model

✱ Constant growth Dividend Discount Model or DDM Model gives us the Present Value of an infinite stream of Dividends that are growing at a Constant Rate.

### ✱ Calculation:

$$\text{Intrinsic Value} = \frac{D_0(1+g)}{(K_e - g)} = \frac{D_1}{(K_e - g)}$$

Where       $D_1$  = Value of dividend to be received next year

$D_0$  = Value of dividend received this year

$g$  = Growth rate of dividend

$K_e$  = Discount rate



# VALUATION PRINCIPLES

## Constant-Growth Rate DDM Model Example 1:

✱ If a stock pays a Rs. 4 dividend this year, and the dividend has been growing 6% annually, then what will be the intrinsic value of the stock , assuming a required Rate of Return of 12%?

✱ **Calculation:** 
$$\text{Intrinsic Value} = \frac{D_0(1+g)}{(K_e - g)} = \frac{D_1}{(K_e - g)}$$

$$D_1 = 4 \times 1.06 = \text{Rs. } 4.24 \quad K_e = 12\% \quad \text{Growth rate or } g = 6\%$$

$$\begin{aligned} \text{Intrinsic stock price} &= 4.24 / (0.12 - 0.06) \\ &= 4.24 / 0.06 \\ &= \text{Rs. } 70.66 \end{aligned}$$



# VALUATION PRINCIPLES

## Constant-Growth Rate DDM Model Example 2:

✿ If a stock is selling at Rs. 315 and the current dividends is Rs. 20. What might the market assuming the growth rate of dividends for this stock if the rate of required return is 15%?

✿ **Calculation:**

In this we will assume that Intrinsic Value = Rs. 315

This implies,  $315 = 20 \times (1+g) / (0.15 - g)$

✿ If we solve the above equation for  $g$ , we get the implied growth rate as 8.13%?



# VALUATION PRINCIPLES

## Variable-Growth Rate DDM Model (Multi-stage Dividend Discount Model)

- ✱ Variable Growth rate Dividend Discount Model or DDM Model is much closer to reality as compared to the other two types of dividend discount model.
- ✱ This model solves the problems related to unsteady dividends by assuming that the company will experience different growth phases.
- ✱ Variable growth rates can take different forms, we can even assume that the growth rates are different for each year.



# VALUATION PRINCIPLES

## Variable-Growth Rate DDM Model

However, the most common form is one that assumes 3 different rates of growth:

1. An Initial High Rate of Growth,
2. A Transition to Slower Growth,
3. A Sustainable, Steady Rate of Growth.



# VALUATION PRINCIPLES

## Variable-Growth Rate DDM Model

- ✱ Primarily, the constant-growth rate model is extended, with each phase of growth calculated using the constant-growth method, but using different growth rates for the different phases.
- ✱ The present values of each stage are added together to derive the intrinsic value of the stock.



# VALUATION PRINCIPLES

## Two stage Dividend Discount Model DDM

- ✱ This model is designed to value the equity in a firm, with two stages of growth, **an initial period of higher growth and a subsequent period of stable growth.**
- ✱ Two-stage Dividend Discount Model; **best suited for firms paying residual cash in dividends while having moderate growth.** For instance, it is more reasonable to assume that a firm growing at 12% in the high growth period will see its growth rate drops to 6% afterwards.



# VALUATION PRINCIPLES

## Two stage Dividend Discount Model DDM

### Assumptions

- ✱ Higher Growth Rate is expected the first period.
- ✱ This Higher Growth Rate will drop at the end of the first period to a Stable Growth Rate.
- ✱ The Dividend Payout Ratio is consistent with the Expected Growth Rate.



# VALUATION PRINCIPLES

## Example: Two-stage DDM Model

- ☼ Checkmate forecasts that its dividend will grow at 20% per year for the next four years before settling down at a constant 8% forever. Dividend (current year, 2019) = Rs.12; Expected Rate of Return = 15%. What is the value of the stock now?

**Step 1 :** Calculate the dividends for each year till stable growth rate is reached.



# VALUATION PRINCIPLES

## Two-stage DDM Model – Example

- ✿ The first component of value is the present value of the expected dividends during the high growth period. Based upon the current dividends (Rs.12), the expected growth rate (15%) value of dividends ( $D_1, D_2, D_3$ ), can be computed for each year in the high growth period.
- ✿ Stable growth rate is achieved after 4 years. Hence, we calculate the Dividend profile until 2023.



# VALUATION PRINCIPLES

## Two-stage DDM Model – Example

**Step 1:** Calculate the dividends for each year till stable growth rate is reached.

	2019	2020	2021	2022	2023
<b>Dividend</b>	12	14.40	17.30	20.70	24.90
<b>Growth Rate in Dividends</b>		20	20	20	20
<b>Total Intrinsic Value</b>					0



# VALUATION PRINCIPLES

## Two-stage DDM Model – Example

**Step 2:** Apply Dividend Discount Model to calculate the Terminal Value (Price at the end of high growth phase)

- ✱ We can use the Dividend Discount Model at any point in time. Here, in this example the dividend growth is constant for first four years and then it decreases, so we can calculate the price that a stock should sell for in four years i.e. the terminal value at the end of the high growth phase (2023).



# VALUATION PRINCIPLES

## Two-stage DDM Model – Example

**Step 2:** Apply Dividend Discount Model to calculate the Terminal Value (Price at the end of high growth phase)

✱ This can be estimated using the Constant Growth Dividend Discount Model Formula –

✱ **Intrinsic Value** =  $\frac{D_n(1+g)}{(K_e - g)} = \frac{D_{n+1}}{(K_e - g)}$



# VALUATION PRINCIPLES

## Two-stage DDM Model – Example

**Step 2:** Apply Dividend Discount Model to calculate the Terminal Value (Price at the end of high growth phase)

✿ TV or Terminal value at the end of year 2023 is 383.91.

	2019	2020	2021	2022	2023	2024
<b>Dividend</b>	12	14.40	17.30	20.70	24.90	26.87
<b>Growth Rate in Dividends</b>		20%	20%	20%	20%	8%
<b>Terminal Value</b>			TV at	2023	=26.87/0.07	383.91



# VALUATION PRINCIPLES

## Two-stage DDM Model – Example

**Step 3:** Find the present value of all the projected dividends

- ✱ Present value of Dividends during the High Growth period (2020-2023) is given below. Please note that in this example, required Rate of Return is 15%



# VALUATION PRINCIPLES

## Two-stage DDM Model – Example

**Step 3:** Find the present value of all the projected dividends

	2019	2020	2021	2022	2023	2024
<b>Dividend</b>	12	14.40	17.30	20.70	24.90	26.87
<b>Growth Rate in Dividends</b>		20%	20%	20%	20%	8%
<b>Terminal Value</b>			TV at	2023	=26.87/0.07	383.91
<b>PV of Cash Flows</b>	=14.4/(1+0.15)	12.52	13.07	13.63	14.23	
<b>PV of Terminal Value</b>						
<b>Sum</b>						
<b>Ke</b>	15%					



# VALUATION PRINCIPLES

## Two-stage DDM Model – Example

✿ **Step 4:** Find the present value of Terminal Value i.e 219.5

	2019	2020	2021	2022	2023	2024
Dividend	12	14.40	17.30	20.70	24.90	26.87
Growth Rate in Dividends		20%	20%	20%	20%	8%
Terminal Value			TV at 2023		=26.87/0.07=383.91	
PV of Cash Flows	=14.4/(1+0.15)	12.52	13.07	13.63	14.23	
PV of Terminal Value					=383.91 / (1+0.15)^4	219.5
Sum						
Ke	15%					



# VALUATION PRINCIPLES

## Two-stage DDM Model – Example

**Step 5 :** Find the Fair Value – the PV of Projected Dividends and the PV of Terminal Value

- ✱ As we already know that Intrinsic value of the stock is the present value of its future cash flows. Since we have calculated the Present value of Dividends and Present value of Terminal Value, the sum total of both will reflect the Fair Value of the Stock.



# VALUATION PRINCIPLES

## Two-stage DDM Model – Example

### Step 5 : Find the Fair Value

	2019	2020	2021	2022	2023	2024
Dividend	12	14.40	17.30	20.70	24.90	26.87
Growth Rate in Dividends		20%	20%	20%	20%	8%
Terminal Value			TV at	2023	=26.87/0.07 =383.91	
PV of Cash Flows	=14.4/(1+0.15)	12.52	13.07	13.63	14.23	
PV of Terminal Value					=383.91 / (1+0.15)^4	219.5
Sum	=12.52+13.07+13.63+14.23+219.5= Rs. 272.95					
Ke	15%					



# VALUATION PRINCIPLES

## Two-stage DDM Model – Example

- ✱ We can also find out the effect of changes in expected rate of return to the Fair Price of the stock.
- ✱ As we note from the graph below that the expected rate of return is extremely sensitive to the required rate of return.
- ✱ Due care should be taken to calculate the required rate of return. Required rate of return is professionally calculated using the CAPM Model.



# VALUATION PRINCIPLES

## Two-stage DDM Model

### ✿ Stock Price as a Function of Expected Return





# VALUATION PRINCIPLES

## Three stage Dividend Discount Model DDM

- ✱ One improvement that we can make to the two-stage DDM Model is to allow the growth rate to change slowly rather than instantaneously.
- ✱ The three-stage Dividend Discount Model or DDM Model is given by:
- ✱ **First phase:** there is a constant dividend growth ( $g_1$ ) or with no dividend



# VALUATION PRINCIPLES

## Three stage Dividend Discount Model DDM

- ✱ **Second phase:** There is a gradual dividend decline to the final level
- ✱ **Third phase:** There is a constant dividend growth again ( $g_3$ ), i.e. the growth company opportunities are over.
- ✱ The logic that we applied to two-stage model can be applied to three-stage model in a similar fashion. Below is the dividend discount model formula for applying three stage.



# VALUATION PRINCIPLES

## Three stage Dividend Discount Model DDM

✿ Model formula for applying three stage.

$$V_0 = \frac{D_1}{(1+r)^1} + \frac{D_2}{(1+r)^2} + \dots + \frac{D_n}{(1+r)^n} + \frac{P_n}{(1+r)^n}$$

Where:  $V_0$  – the current fair value of a stock

$D_1$  – the dividend payment in one period from now

$P_1$  – the stock price in one period from now

$r$  – the estimated cost of equity capital



# VALUATION PRINCIPLES

## Advantages of Dividend Discount Model

- ✱ **Sound Logic** – The Dividend Discount Model tries to value of the stock based on all the Future Cash Flow profile. Here the Future Cash Flows is nothing but the Dividends.
- ✱ In addition, there is very less subjectivity in the Mathematical Model, and hence, many analyst show faith in this model.



# VALUATION PRINCIPLES

## Advantages of Dividend Discount Model

- ✿ **Mature Business** – The regular payment of Dividends does imply that the company has matured and there may not be much volatility associated with the Growth Rates and Earnings. This is important for investors who prefer to invest in stocks that pay regular dividends.
- ✿ **Consistency** – Since Dividends in most cases is paid by cash, companies tend to keep their Dividend payments in sync with the Business Fundamentals. This implies that companies may not want to manipulate Dividend payments as they can directly lead to stock Price Volatility.



# VALUATION PRINCIPLES

## Limitations of Dividend Discount Model

- ✿ **Warren Buffett** mentions that dividends are almost a last resort for corporate management, suggesting companies should prefer to reinvest in their businesses and seek “Projects to become more efficient, expand territorially, extend and improve product lines, or to otherwise widen the economic moat separating the company from its competitors.” By holding onto every dollar of cash possible, Berkshire has been able to reinvest it at better returns than most shareholders would have earned on their own.



# VALUATION PRINCIPLES

## Limitations of Dividend Discount Model

- ✿ **Can only be used to value Mature Companies** – This model is efficient in valuing companies that are mature and cannot value high growth companies like Facebook, Twitter, Amazon and others.
- ✿ **The sensitivity of Assumptions** – As we saw earlier, fair price is highly sensitive to Growth Rates and required Rate of Return. 1 percent change in these two can affect the valuation of the company by as much as 10-20%.



# VALUATION PRINCIPLES

## Limitations of Dividend Discount Model

- ✱ **May not be related to Earnings** – In theory, Dividends should be correlated to the Earnings of the company. On the contrary, companies, however, try to maintain a stable Dividend Payout instead of the variable payout based on earnings. In many cases companies have even borrowed cash to pay Dividends.



# VALUATION PRINCIPLES

## The Capital Asset Pricing Model (CAPM)

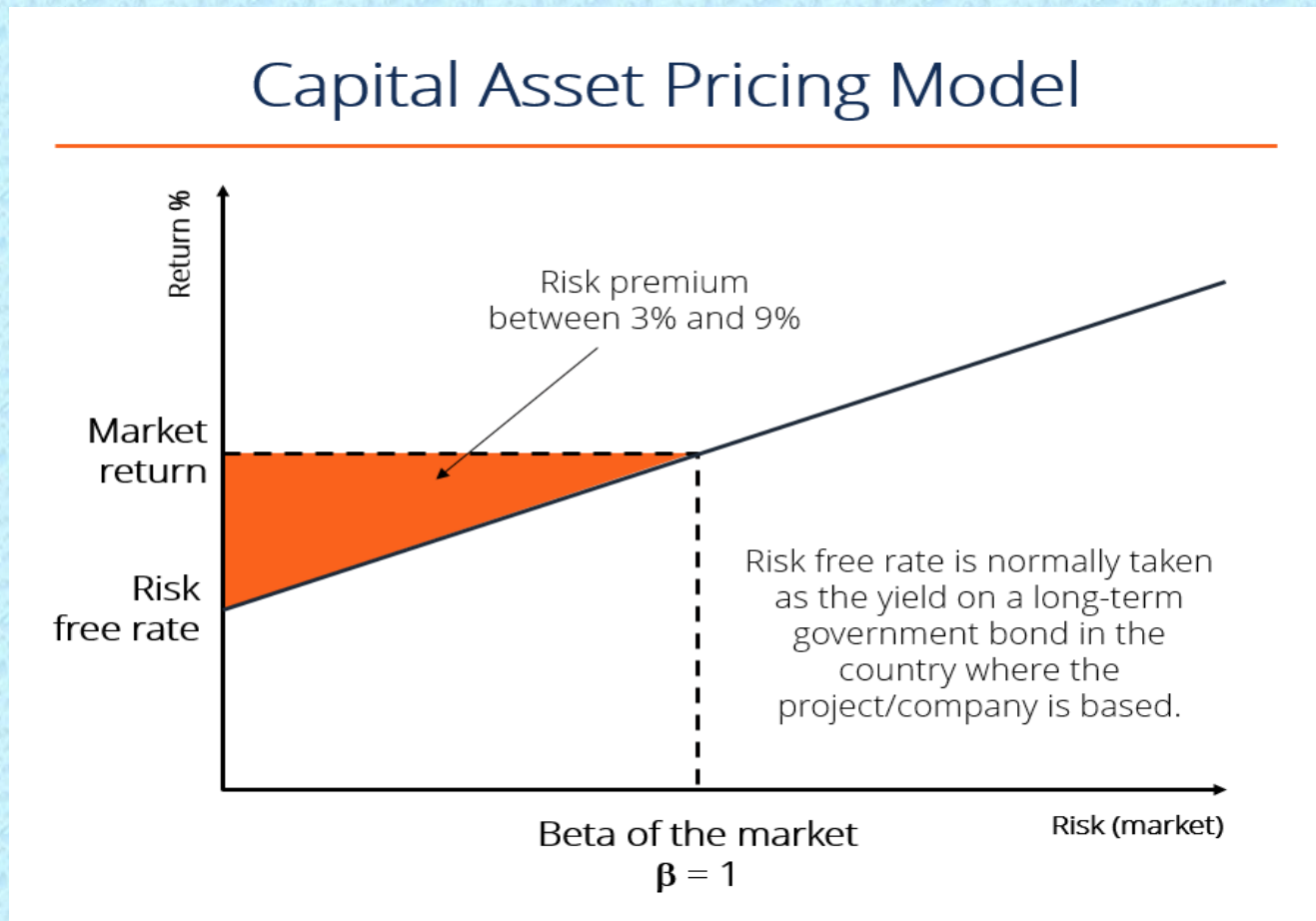
- ✿ The Capital Asset Pricing Model (CAPM) is a model that describes the relationship between the Expected Return and Risk of Investing in a security.
- ✿ It shows that the expected return on a security is equal to the Risk-free Return plus a Risk Premium, which is based on the Beta of that Security.



# VALUATION PRINCIPLES

## The Capital Asset Pricing Model (CAPM)

✿ Below is an illustration of the CAPM concept.





# VALUATION PRINCIPLES

## The Capital Asset Pricing Model (CAPM)

### ✳ Calculation:

$$K_e = R_f + \beta * (R_m - R_f)$$

Where:

$R_f$  = Risk Free Rate,

$R_m$  = Return from Market Investment (Index)

$\beta$  = Beta of Investment

$(R_m - R_f)$  = Market Risk Premium (MRP)



# VALUATION PRINCIPLES

## The Capital Asset Pricing Model (CAPM)

### Expected Return

- ✱ “Expected Return” is a Long-term assumption about how an investment will play out over its entire life.



# VALUATION PRINCIPLES

## The Capital Asset Pricing Model (CAPM)

### Risk-Free Rate

- ✿ “**R<sub>f</sub>**” notation is for the Risk-free Rate, which is typically equal to the **Yield on a 10-year Indian government Bond**.
- ✿ The Risk-free rate should correspond to the country where the investment is being made, and the maturity of the bond should match the time horizon of the investment.
- ✿ Professional convention, however, is to typically use the 10-year Rate no matter what, because it's the most heavily quoted and most Liquid Bond.



# VALUATION PRINCIPLES

## The Capital Asset Pricing Model (CAPM)

**Beta** : The BETA is a measure of a stock's risk (volatility of returns) reflected by measuring the fluctuation of its price changes relative to the overall market.

- ✿ In other words, it is the stock's sensitivity to market risk.
- ✿ For instance, if a company's beta is equal to 1.5 the security has 150% of the volatility of the market average. However, if the beta is equal to 1, the expected return on a security is equal to the average market return.
- ✿ A BETA of -1 means security has a perfect negative correlation with the market.



# VALUATION PRINCIPLES

## The Capital Asset Pricing Model (CAPM)

### Market Risk Premium

- ✱ The market risk premium represents the additional return over and above the risk-free rate, which is required to compensate investors for investing in a riskier asset class.
- ✱ Put another way, the more volatile a market or an asset class is, the higher the market risk premium will be.



# VALUATION PRINCIPLES

## The Capital Asset Pricing Model (CAPM)

- ✱ Investors expect to be compensated for risk and the time value of money.
- ✱ The beta of a potential investment is a measure of how much risk the investment will add to a portfolio that looks like the market. If a stock is riskier than the market, it will have a beta greater than one. If a stock has a beta of less than one, the formula assumes it will reduce the risk of a portfolio.



# VALUATION PRINCIPLES

## The Capital Asset Pricing Model (CAPM)

- ✿ **The goal** of the CAPM formula is to evaluate whether a stock is fairly valued when its Risk and the Time Value of Money are compared to its Expected Return.
- ✿ **Example** – Calculation of Expected Return
  - ❖ Stock trades on the NSE and its operations are based in the India
  - ❖ Current yield on a 10-year Government Bond is 7.25%



# VALUATION PRINCIPLES

## The Capital Asset Pricing Model (CAPM)

### ✿ Example – Calculation of Expected Return

- ❖ The average excess Historical Annual Return for Indian stocks is 10%
- ❖ The Beta of the stock is 1.25 (meaning it's average Weekly Return is 1.25x as volatile as the Nifty over the last 2 years)
- ❖ What is the expected return of the security using the CAPM formula?



# VALUATION PRINCIPLES

## The Capital Asset Pricing Model (CAPM)

### ✿ Example – Calculation of Expected Return

Expected return = Risk Free Rate + [Beta x Market  
Return Premium]

Expected return = 7.25% + [1.25 x 10%]

Expected return = 19.75%



# VALUATION PRINCIPLES

## Weighted Average Cost of Capital (WACC)

- ✿ The Weighted Average Cost of Capital (WACC) is a calculation of a firm's cost of capital in which each category of capital is proportionately weighted.
- ✿ All sources of capital, including common Stock, Preferred stock, Bonds, and any other Long-term Debt, are included in a WACC calculation.
- ✿ A firm's WACC increases as the Beta and Rate of Return on Equity increase because an Increase in WACC denotes a Decrease in Valuation and an Increase in Risk.



# VALUATION PRINCIPLES

## Weighted Average Cost of Capital (WACC)

✱ Calculation:

$$\begin{aligned} \text{WACC} &= [\text{Ke} * \text{Equity} / (\text{Equity} + \text{Debt})] + [\text{Kd} * \text{Debt} / \\ &\quad (\text{Equity} + \text{Debt}) * (1 - \text{Tax})] \\ &= [\text{Ke} * \text{We}] + [\text{Kd} * \text{Wd} * (1 - \text{Tax})] \end{aligned}$$

Where

**Kd** = Cost of Debt, **Wd** = Weight of Debt, **Ke** = Cost of Equity, **We** = Weight of Equity

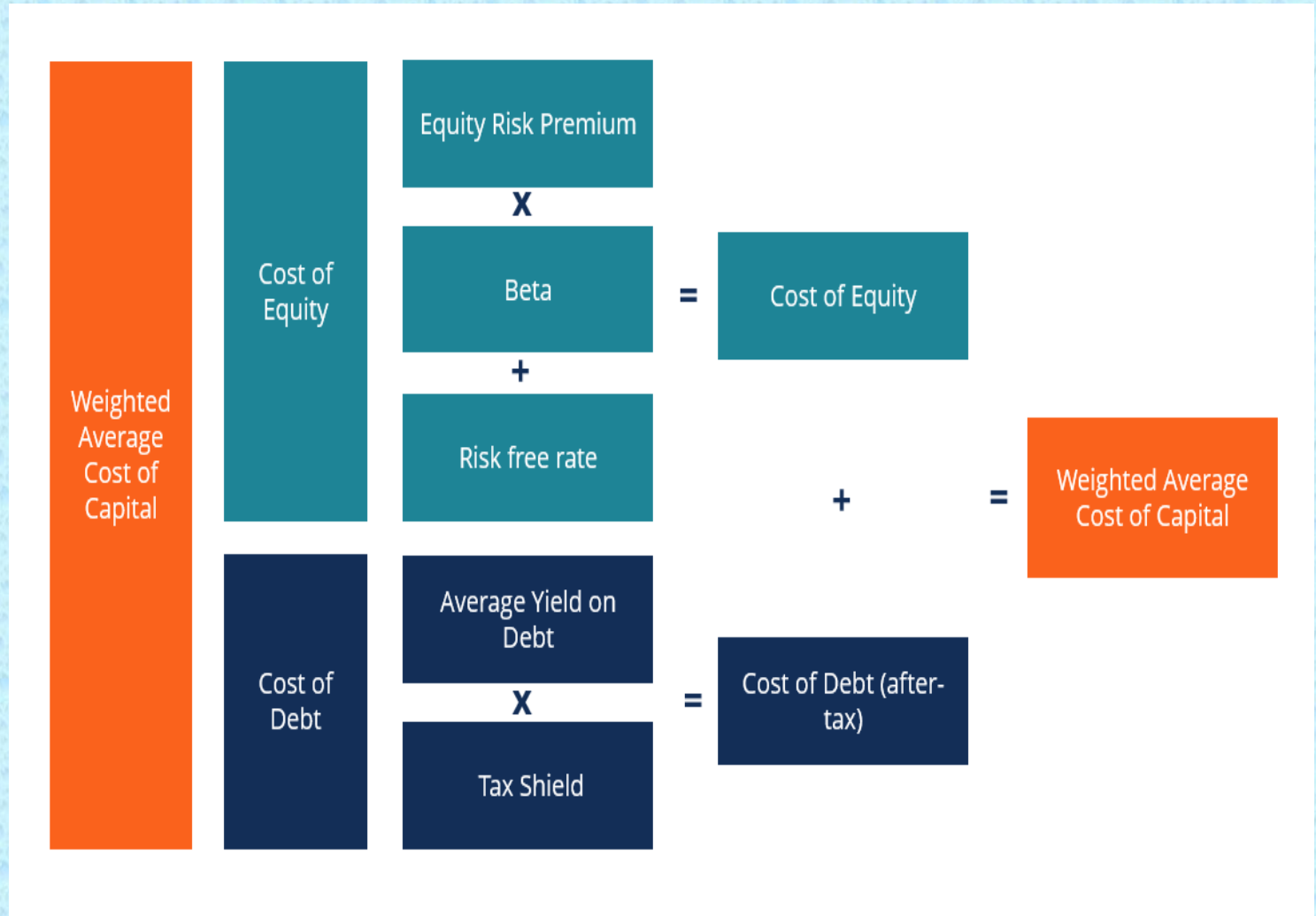
Or **WACC** = Cost of Equity x %Equity + Cost of Debt x %Debt x (1-Tax)



# VALUATION PRINCIPLES

## Weighted Average Cost of Capital (WACC)

### ✳ Calculation:



Source: <https://corporatefinanceinstitute.com/resources/knowledge/finance/what-is-wacc-formula/>



# VALUATION PRINCIPLES

## Weighted Average Cost of Capital (WACC)

- ✿ Suppose a **Company Yields Returns of 20%** and has a **WACC of 11%**. This means the company is yielding 9% returns on every Rupee the company invests. In other words, for each Rupee spent, the company is creating Nine Paise of value.
- ✿ On the other hand, if the company's return is less than WACC, the company is losing Value.



# VALUATION PRINCIPLES

## Weighted Average Cost of Capital (WACC)

- ✱ If a company has Returns of 11% and a WACC of 17%, the company is losing Six Paise for every Rupee spent, indicating that potential investors would be best off putting their money elsewhere.



# VALUATION PRINCIPLES

## Weighted Average Cost of Capital (WACC) Example:

- ✿ Consider Walmart (NYSE: WMT). The WACC of Walmart is 4.2%. That number is found by doing a number of calculations. First, we must find the Financing Structure of Walmart to calculate Weight ( $E+D$ ), which is the total market value of the company's financing.
- ✿ For Walmart, to find the market value of its debt we use the book value, which includes the Long-term Debt and Long-term Lease and Financial obligations.



# VALUATION PRINCIPLES

## Weighted Average Cost of Capital (WACC) Example:

- ✿ As of the end of its most recent quarter (Oct. 31, 2018), its Book Value of Debt was \$50 billion.
- ✿ As of Feb. 5, 2019, its Market Cap (or Equity Value) is \$276.7 billion. Thus, E+D is \$326.7 billion, or \$50 billion + \$276.7 billion. Walmart finances operations with 85% Equity ( $E / V$ , or \$276.7 billion / \$326.7 billion) and 15% debt ( $D / V$ , or \$50 billion / \$326.7 billion).



# VALUATION PRINCIPLES

## Weighted Average Cost of Capital (WACC) Example:

- ✿ To find the Cost of Equity ( $R_e$ ) one can use the capital asset pricing model (CAPM). The 10-year Treasury Rate can be used as the Risk-free Rate and the Expected Market Return is generally estimated to be 7%.
- ✿ Thus, Walmart's Cost of Equity is  $2.7\% + 0.37 * (7\% - 2.7\%)$ , or 4.3%.
- ✿ The Cost of Debt is calculated by dividing the company's Interest Expense by its debt load.



# VALUATION PRINCIPLES

## Weighted Average Cost of Capital (WACC) Example:

✿ In Walmart's case, its recent Fiscal Year Interest Expense is \$2.33 billion. Thus, its Cost of Debt is 4.7%, or \$2.33 billion / \$50 billion. The tax rate can be calculated by dividing the income tax expense by income before taxes. In Walmart's case, it lays out the company's tax rate in the annual report, said to be 30% for the last fiscal year.

$$\begin{aligned}\text{✿ WACC} &= 4.3\% * 85\% + 4.7\% * 15\% * (1 - 30\%) \\ &= 3.655 + 0.705 (0.70) \\ &= 3.655 + 0.4935 \quad = 4.15\%\end{aligned}$$



# VALUATION PRINCIPLES

## Discounted Cash Flows Model for Business Valuation

- ✿ Discounted Cash Flow (DCF) is a valuation method used to estimate the value of an investment based on its Future Cash Flows.
- ✿ DCF analysis finds the Present Value of Expected Future Cash Flows using a Discount Rate. A Present Value estimate is then used to evaluate a potential investment.
- ✿ If the value calculated through
  - ❖ DCF is Higher than the Current Cost = Good Investment
  - ❖ DCF is Lower than the Current Cost = Bad Investment



# VALUATION PRINCIPLES

## Discounted Cash Flows Model for Business Valuation

✱ Calculation:

$$\text{DCF} = \frac{CF_1}{(1+r)^1} + \frac{CF_2}{(1+r)^2} + \dots + \frac{D_n}{(1+r)^n}$$

Where:

**CF** – Cash Flow

**r** – Discount Rate (WACC or CAPM)



# VALUATION PRINCIPLES

## Discounted Cash Flows Model for Business Valuation

- ✿ Consider a Bond on offering which generates 9% as interest per annum and gets redeemed at the end of 10th year on its face value of Rs. 100,000.
- ✿ Current prevailing Interest Rates (or expected return by investors) in the economy are also 9% for this maturity and credit quality. What would be the value of this bond today?



# VALUATION PRINCIPLES

## Discounted Cash Flows Model for Business Valuation

- ✿ The value of the bond is the present value of all the future cash flows discounted at prevailing interest rates of 9%.
- ✿ As both Coupon and Expected Rate (Discount Rate) are same, it would turn out to be Face Value viz Rs. 100,000.
- ✿ If Expected Rate of Return by Investors is higher (lower) than 9%, then Bond would have value less (more) than Rs. 100,000. It is simple mathematics based on Present and Future Value computations\*.



# VALUATION PRINCIPLES

## Discounted Cash Flows Model for Business Valuation

- ✿ This is an Example of Discounted Cash Flows Model for Bond Valuation. Actually, every asset or liability is priced the same way.
- ✿ Assets are acquired at a cost and the expectation is for these assets to generate a combination of Earnings and/or Capital Gains (on Sale of Assets).
- ✿ If the Bond is replaced with Equity, the Coupons will be replaced with Dividends and Redemption Value by Expected Sales Proceeds from Sale of Equity.



# VALUATION PRINCIPLES

## Discounted Cash Flows Model for Business Valuation

- ✿ However, in case of Bonds, both quantum of cash flows and their timings were known with certainty, in case of Equity quantum of Cash Flows (Dividends or Sales Price) and their Timings are unknown and uncertain.
- ✿ The concept of valuing an asset based on its cash flows can be extended to value businesses based on their Earnings (profits or to be more precise cash flows) and Terminal Value (one time Sales Proceeds from Assets).



# VALUATION PRINCIPLES

## Discounted Cash Flows Model for Business Valuation

- ✱ While, the Discounted Cash Flows Models are used to value Businesses, these valuations come with significant error of judgment because of the inability to measure Quantum and Timings of Future Cash Flows with certainty. These models could also be very sensitive to some input factors.



# VALUATION PRINCIPLES

## Discounted Cash Flows Model for Business Valuation

- ✱ Conceptually, Discounted Cash Flow (DCF) Approach to Valuation is the most appropriate approach for valuations when three things are known with certainty:
  - ❖ Stream of Future Cash Flows
  - ❖ Timings of these Cash Flows, and
  - ❖ Expected Rate of Return by the Investors (called Discount Rate).



# VALUATION PRINCIPLES

## Discounted Cash Flows Model for Business Valuation

- ✿ Once these three pieces of information are available, it is simple mathematics to find the present value of these cash flows which a potential investor in that instrument would be willing to pay today to receive the expected cash flow stream over a period of time.
- ✿ In valuing a business, the Cash Flows (Outflows and Inflows) at various stages over its expected life is considered.



# VALUATION PRINCIPLES

## Discounted Cash Flows Model for Business Valuation

### How to FIND Stream of Future Cash Flows?

- ✱ A rational way to find the value of a business may be to first find the Inflows over Outflows (called Free Cash Flows – FCFs) at different points in time and then bringing them to today (find present Value – PV) at an appropriate Rate of Return (Discount Rate -  $r$ ).
- ✱ **FCF** can be divided into:
  - ❖ **FCFF** – Free Cash Flow to Firm
  - ❖ **FCFE** – Free Cash Flow to Equity



# VALUATION PRINCIPLES

## Discounted Cash Flows Model for Business Valuation

- ✦ **Discount Rate** that accounts for the time value of money:
  - ❖ Alternative Investments
  - ❖ CAPM (For Equity or FCFE)
  - ❖ WACC (For FCFF)



# VALUATION PRINCIPLES

## Discounted Cash Flows Model for Business Valuation

### Alternative Investments

- ✿ An investor could set their DCF Discount Rate equal to the Return they expect from an Alternative Investment of similar Risk.
- ✿ **For Example**, Mr. X could invest Rs. 20,00,000 in a new home that he expects to be able to sell in 10 years for Rs. 30,00,000. Alternatively, he could invest her Rs. 20,00,000 in a Real Estate Investment Trust (REIT) that is expected to return 10% per year for the next 10 years.



# VALUATION PRINCIPLES

## Discounted Cash Flows Model for Business Valuation

### Alternative Investments

- ✿ To simplify the example, we will assume Mr. X is not accounting for the substitution costs of rent or tax effects between the two investments.
- ✿ All he needs for her DCF analysis is the **Discount Rate (10%)** and the **Future Cash Flow (Rs. 30,00,000)** from the Future Sale of his home. This DCF analysis only has one cash flow so the calculation will be easy.



# VALUATION PRINCIPLES

## Discounted Cash Flows Model for Business Valuation

### Alternative Investments

#### Calculation:

✱  $DCF = \frac{CF_1}{(1+r)^1} + \dots + \frac{3000000}{(1+0.10)^{10}} = 11,56,629.87$

✱ In this example, Mr. X should not invest in the home because his DCF analysis shows that its Future Cash Flows are only worth Rs. 11,56,630 today. Once tax effects, rent, and other factors are included, he may find that the DCF is a little closer to the current value of the home.



# VALUATION PRINCIPLES

## Discounted Cash Flows Model for Business Valuation

- ✿ There are two ways to look at the cash flows from a business.
- 1. The Free Cash Flows to the Firm (FCFF), where the Cash Flows before any payments are made on the debt outstanding are taken into consideration. This is the cash flow available to all capital contributors-both equity and debt.
- 2. To estimate the Cash Flows that accrue to the Equity Investors alone.



# VALUATION PRINCIPLES

## Discounted Cash Flows Model for Business Valuation

- ✿ Interest Payments on Debt is deducted from the FCFF and Net Borrowings added to it to arrive at the free cash flows for equity (FCFE). It is to be noted that the cash flows to the Equity investors is not taken to be the Dividends alone.
- ✿ It is extended to include the residual cash flows after meeting the obligations to the debt holders and dividends to preference shareholders.



# VALUATION PRINCIPLES

## Discounted Cash Flows Model for Business Valuation

- ✱ FCFF may be used for valuation if FCFE is likely to be negative or if the capital structure of the firm is likely to change significantly in the future.



# VALUATION PRINCIPLES

## Discounted Cash Flows Model for Business Valuation

✱ Formula:

✱ **FCFF** =        Earnings Before Interest & Tax (**EBIT**)

- Tax
- + Depreciation & Non-cash charges
- Increase (Decrease) in working capital
- Capital Expenditure Incurred (Sale of assets)



# VALUATION PRINCIPLES

## Discounted Cash Flows Model for Business Valuation

✱ Formula:

✱ 
$$\text{FCFE} = \text{FCFF} - \text{Interest} + \text{Net Borrowing}$$



# VALUATION PRINCIPLES

## Discounted Cash Flows Model

- ✱ **Constant Growth:**

- ✱ **Value of the Firm =**  $\frac{FCFF_1}{K_e - g}$

- ✱ **Where:**

FCFF1 = Operating Free Cash Flow

ke = Discount Rate, in this case WACC

g = Expected Growth Rate in OFCF



# VALUATION PRINCIPLES

## Example: Discounted Cash Flows Model

### Multi-Growth Periods of Operating Free Cash Flow (In Crore:

- ✱ Assume a firm has operating free cash flows of Rs. 200 Crore, which is expected to grow at 12% for four years. After four years, it will return to a normal growth rate of 5%. We will assume that the weighted average cost of capital is 10%.



# VALUATION PRINCIPLES

## Example: Discounted Cash Flows Model

### Multi-Growth Periods of Operating Free Cash Flow (In Crore:

Period	FCFF	Calculation	Amount
1	$200 \times (1.12)^1$	224.00	203.64
2	$200 \times (1.12)^2$	250.88	207.34
3	$200 \times (1.12)^3$	280.99	211.11
4	$200 \times (1.12)^4$	314.7	214.95
5	$200 \times (1.05)$	330.44	
	$330.44 / (0.10 - .05)$	6608.78	
	$6608.78 / (1.10)^5$		<b>4103.05</b>
		<b>NPV</b>	<b>4940.09</b>



# VALUATION PRINCIPLES

## Discounted Cash Flows Model for Business Valuation

- ✱ Valuation requires a forecast of the Cash Flows expected in the Future.
- ✱ Forecast can be done by applying
  - ❖ The **Historical Growth Rate** exhibited by company or
  - ❖ a **Rate Estimated by the Analysts** based on their information and analysis.



# VALUATION PRINCIPLES

## Discounted Cash Flows Model for Business Valuation

- ✿ A more robust way is to look at the internal determinants of growth, namely, the **proportion of earnings ploughed back into the business** and the Return on Equity that it is Expected to Earn.
- ✿ The Growth Rate can be calculated as the **product of the Retention Rate and the Return on Equity**. A firm may have a period of high growth in revenues, profitability, capex and other performance parameters and then stabilize to a steady growth.



# VALUATION PRINCIPLES

## Discounted Cash Flows Model for Business Valuation

- ✱ Since equity is for perpetuity and it is not possible to forecast the cash flows forever, the practice is to calculate a terminal value for the firm once the high growth period is over.
- ✱ The terminal value may be calculated using the perpetuity growth method where the cash flow is expected to grow forever at a steady though modest rate once the high growth period is over. The average long term GDP Growth Rate or Inflation Rate is a good proxy for this rate.



# VALUATION PRINCIPLES

## Discounted Cash Flows Model for Business Valuation

- ✿ The terminal value is calculated by multiplying the cash flow for the last year of the high growth period by  $(1 + \text{Growth rate})$  and dividing the resultant value by  $(\text{Discounting rate} - \text{Growth rate})$ . The other method is to calculate the terminal value by applying a multiple to a parameter such as the EBITDA at the end of the high growth period.
- ✿ The multiple is decided based on that of comparable firms. The terminal value is added to the cash flows for the growth or projection period, and then discounted to the present value.



# VALUATION PRINCIPLES

## Discounted Cash Flows Model for Business Valuation

- ✱ The free cash flows are then discounted at the appropriate discount rate to arrive at the Enterprise Value (EV) of the firm or the value of equity, as the case may be.
- ✱ DCF valuations may result in erroneous output if sufficient rigor does not go into estimating the cash flows and discount rate.



# VALUATION PRINCIPLES

## Absolute Valuations vs. Price-Value Sense

- ✿ Valuation exercise is undertaken to compare the price with value to arrive at whether a Business is Overpriced, Under-priced or Fairly priced by the market.
- ✿ This helps Analysts to make recommendation – **Buy, Sell or Hold.**
- ✿ Instead of finding Absolute Valuation of Business, we may like to compare **‘What We Get’** with **‘What We Pay’** to arrive at Sense of Valuation.



# VALUATION PRINCIPLES

## Absolute Valuations vs. Price-Value Sense

- ✱ What We Pay is the Price and What We Get is the Earnings and Assets of the Business.
- ✱ Therefore, if we can compare Price with Earnings and Assets, we can get a Sense of Valuation – not the Absolute Valuation but whether something is Cheap or Expensive.



# VALUATION PRINCIPLES

## Earnings based Valuation Matrices

- ✱ Dividend Yield – Price to Dividend Ratio
- ✱ Earning Yield – Price to Earnings Ratio
- ✱ Growth Adjusted Price to Earnings Ratio
- ✱ Enterprise Value to EBITDA Ratio
- ✱ Enterprise Value to Sales Ratio



# VALUATION PRINCIPLES

## Asset based Valuation Matrices

- ✱ ROE
- ✱ ROCE
- ✱ Net Asset Value Approach (DDM-DCF)



# Earnings based Valuation Matrices

## Dividend Yield – Price to Dividend Ratio

- ✱ Dividends are the profits that the company pays out to its equity holders.
- ✱ Well managed companies maintain a stable dividend payout to its investors even while ensuring that the growth prospects of the company are adequately funded, by Ploughing back a portion of the profits.
- ✱ Dividends can be compared with the Share Price for a sense on cheapness or expensiveness of equities.



# Earnings based Valuation Matrices

## Dividend Yield – Price to Dividend Ratio

- ✱ Popularly known term on this subject is Dividend Yield and Price to Dividend are defined as:

$$\text{Dividend Yield} = \frac{\text{Dividend Per Share (DPS)}}{\text{Current Price of Stock (CMP)}}$$

$$\text{Price to Dividend} = \frac{\text{Current Price of Stock (CMP)}}{\text{Dividend Per Share (DPS)}}$$



# Earnings based Valuation Matrices

## Dividend Yield – Price to Dividend Ratio

- ✿ **Example:** Consider a company with history of paying Dividend of Rs. 5 or more over last 5 years including the last dividend.
- ✿ At different price points the dividend received translates into the following multiples: We may look at this business at different price points ranging from Rs. 50 to Rs. 200. When we compare what we get against what we pay at different price points, results are as follows:



# Earnings based Valuation Matrices

## Dividend Yield – Price to Dividend Ratio

- ✿ It is quite apparent from the above table that at Rs. 50, the business is available at 10% Dividend Yield and a Price to Dividend Ratio of 10 times.

Price	Dividend	Div. Yield	Price/Div.
50	5	10.00%	10
100	5	5.00%	20
150	5	3.33%	30
200	5	2.50%	40



# Earnings based Valuation Matrices

## Dividend Yield – Price to Dividend Ratio

- ✱ The Price to Dividend ratio is a measure of what the market is willing to pay for a rupee of dividend.
- ✱ If the Dividend Yield is compared with the corresponding Bond Yield, it looks pretty interesting on post tax return on investment basis.
- ✱ If Bonds are offering 10% coupon, on post tax basis with 30% tax rate, post-tax return on bonds would be say 7%.



# Earnings based Valuation Matrices

## Dividend Yield – Price to Dividend Ratio

- ✿ Here, Equity is offering 10% post-tax return (dividends being tax free in the hands of investors). Also, there is a potential for upside in Equity if Earnings go up. This upside may not be available in debt as debt papers would generally get redeemed at their redemption value.
- ✿ At a Market Price of Rs. 200, the Dividend Yield is 2.5%. Clearly it is inferior to the bond yield. Also, the Price to Dividend Ratio for Rs. 200 is quite high at 40 times.



# Earnings based Valuation Matrices

## Dividend Yield – Price to Dividend Ratio

- ✿ If Equity Yields are in general higher than Bond Yields, clearly Equity is available cheap. This is typically true when **Markets are Down**.
- ✿ On the other hand, during **Bull Markets**, Equity Yields are quite lower than the Bond Yields.
- ✿ A stock available at Dividend Yields higher than those of comparative stocks and the Market Dividend Yield may be seen as a value pick. It may not necessarily be so.



# Earnings based Valuation Matrices

## Dividend Yield – Price to Dividend Ratio

- ✱ A High Dividend Payout may indicate Limited Avenues for Expansion and Investment, which in turn may limit Capital Appreciation.



# Earnings based Valuation Matrices

## Earning Yield - Price to Earnings Ratio:

- ✱ When Dividend Yields are quite low, Market Analysts move to Earning Yields, a step higher to consider the investment potential in a stock. Earning yield may be defined as:

$$\text{Earning Yield} = \frac{\text{Earnings Per Share (EPS)}}{\text{Current Price of Stock (CMP)}}$$

$$\text{Price to Earnings Ratio} = \frac{\text{Current price of stock}}{\text{Earnings Per Share (EPS)}}$$



# Earnings based Valuation Matrices

## Earning Yield - Price to Earnings Ratio:

- ✱ The Earnings Per Share (**EPS**) is the true Earning for an **Equity Holder**. Generally, only a part of the EPS is distributed as Dividend and part is retained by the Company for Future Expansion.
- ✱ The PE ratio represents the Value placed by the Market on Each Rupee of Earnings of the company.
- ✱ It is calculated using the current market price and the historical EPS, or forward PE by using the forecasted EPS.



# Earnings based Valuation Matrices

## Earning Yield - Price to Earnings Ratio:

- ✱ Investors may be willing to pay a higher price for the earnings if they expect above average growth in the future, or the company is expected to make a turnaround in its performance.
- ✱ A high PE stock relative to the peer group numbers and the market PE, is **seen as an Expensive stock**.
- ✱ A stock that seems expensive on the basis of PE multiple calculated on the basis of historic earnings may **seem less so on the basis of forward earnings**.



# Earnings based Valuation Matrices

## Earning Yield - Price to Earnings Ratio:

- ✿ Forward PE must be used with caution since a wrong estimation of the earnings may result in a faulty conclusion on the value of the stock.
- ✿ A stock with a relatively **low PE multiple** may be seen **as an undervalued stock**. It is also important to analyze if the market has priced the stock lower due to poor quality of earnings.
- ✿ PE ratios of all stocks tend to be High in a Bull Market and tend to be Low in a Bear Market.



# Earnings based Valuation Matrices

## Earning Yield - Price to Earnings Ratio:

- ✿ **Example:** The EPS for the Business was Rs. 10 as per the last financials. The multiples at different price points ranging from Rs. 50 to Rs. 200 are as follows:

Price	EPS	Earning Yield	Price/Earning
50	10	20.00%	5
100	10	10.00%	10
150	10	6.67%	15
200	10	5.00%	20



# Earnings based Valuation Matrices

## Earning Yield - Price to Earnings Ratio:

- ❖ It is quite apparent from the above table that at Rs. 50, the Business is available at 20% earning yield and Price to Earnings ratio of 5 times.
- ❖ If this is compared with the corresponding Bond Yield or bond's Price to Earnings ratio (reverse of Bond Yield), it looks pretty interesting on post tax return on investment basis.



# Earnings based Valuation Matrices

## Earning Yield - Price to Earnings Ratio:

- ✿ If Bonds are offering 10% Yield or are trading at 10 times on Price to Earnings ratio, Equity at 5 times price to Earnings ratio is clearly an attractive proposition.
- ✿ Also, never forget the potential upside which may further exist in equity if earnings go up. This upside may not be available in Debt as debt papers would generally get redeemed at their Redemption Value (this may not be true if Interest Rates move southward and Bonds generate Capital Gain for the Investors).



# Earnings based Valuation Matrices

## Earning Yield - Price to Earnings Ratio:

- ✿ Same Business at Rs. 200, means, 5% Earning Yield and 20 times price to Earnings Ratio. Clearly, it is inferior to the Bond Yield and Bond's Price to Earnings Ratio.
- ✿ It can also be stated that when we compare earning yields with the Bond Yields, if Equity Yields are in general higher than Bond Yields, clearly equity is available cheap. This is typically true when markets are down. At that time, newspapers would be filled with stock recommendations based on Earning Yields.



# Earnings based Valuation Matrices

## Earning Yield - Price to Earnings Ratio:

- ✱ On the other hand, **during Bull Markets**, Equity Yields are quite Lower than the Bond Yields. Alternative way to state would be that during Bull Markets Price to Earnings ratios of Equity would be Quite High.
- ✱ One question that may be asked here is **which Earnings to use to compute the ratio** – Historical, Trailing (rolling 12 months) or Forward. It is believed that Trailing Earnings are the most sensible piece to use here.



# Earnings based Valuation Matrices

## Earning Yield - Price to Earnings Ratio:

- ✱ In practice, when markets are in Bull Phase and are continuously going up, **P/E ratios on historical or trailing earnings basis may give sense of Businesses being Expensive.**
- ✱ Market participants start **justifying the cheapness of valuations based on forward earnings sometimes 2 or 3 years forward earning, which could be quite speculative.**



# Earnings based Valuation Matrices

## Growth Adjusted Price to Earnings Ratio (PEG Ratio)

- ✱ When Earning Yields are quite low or Price to Earnings ratios are quite High, Analysts move to Growth adjusted Earning Yields or Growth adjusted Price to Earnings Ratio as a step higher to make investment potential look good.
- ✱ The PE ratio has limitations in identifying an Overvalued stock from a company in a High Growth Phase and an Undervalued stock from a Fundamentally Poor Stock.



# Earnings based Valuation Matrices

## Growth Adjusted Price to Earnings Ratio (PEG Ratio)

- ✿ Over a period of time, Investors realized that PE ratio alone does not give a totally correct picture of stock valuation.
- ✿ General concept is, a stock which is trading at PE ratio of 15 is better priced than a stock with PE ratio of 20.
- ✿ This is not always right. It is possible that a stock having higher PE ratio be better valued than a stock having lower PE ratio. How?
- ✿ This is where the utility of PEG ratio comes into picture.



# Earnings based Valuation Matrices

## Growth Adjusted Price to Earnings Ratio (PEG Ratio)

- ✱ These days, experts use a combination of PE and PEG ratio to estimate price valuation of stocks. This combination is more reliable than use of PE alone.
- ✱ Though PEG ratio cannot estimate the Intrinsic Value of stocks, but at least it gives a fair idea.
- ✱ PEG ratio gives an idea that if the stock is trading at overvalued or undervalued price levels.



# Earnings based Valuation Matrices

## Growth Adjusted Price to Earnings Ratio (PEG Ratio)

- ✱ To know the intrinsic value of stock, one need to do a detailed fundamental analysis of the stock. But if somebody does not have so much time, use of PEG ratio is highly recommended.
- ✱ Even in the detailed Fundamental Analysis of a stock, which eventually estimates its true value, **EPS growth rate is an important indicator**. But when we use PE ratio to value stock price, EPS growth rate is not utilized.



# Earnings based Valuation Matrices

## Growth Adjusted Price to Earnings Ratio (PEG Ratio)

✱ But we use EPS growth rate in calculation of PEG. So, indirectly PEG gives a very confident hint about stock's true value.

✱ The PEG ratio is defined as:

$$\text{PEG Ratio} = \frac{\text{Price to Earnings Ratio}}{\text{EPS Growth Rate}}$$



# Earnings based Valuation Matrices

## Growth Adjusted Price to Earnings Ratio (PEG Ratio)

### Peter Lynch and PEG ratio

- ✿ It is widely believed that high PE ratio represents overvalued stocks. Rule of thumb says that PE above 15 represents overvalued stocks.
- ✿ Benjamin Graham who is known as father of value investing liked stocks with  $P/E < 15$ . This concept of  $PE < 15$  was successfully used by many investors for decades.



# Earnings based Valuation Matrices

## Growth Adjusted Price to Earnings Ratio (PEG Ratio)

### Peter Lynch and PEG ratio

- ✿ PEG Ratio was the term coined by **Peter Lynch**, a savvy investor and fund manager. Theory of Peter Lynch made the use of standalone use of PE obsolete.
- ✿ He believed that sometimes a high price to earnings ratios could be justified on the foundation of high growth potential in the business.



# Earnings based Valuation Matrices

## Growth Adjusted Price to Earnings Ratio (PEG Ratio)

### Peter Lynch and PEG ratio

- ✿ However, he also warned that high growth regime may not continue for very long time and investors should be cautious of this fact.
- ✿ He stated that as long as PEG ratio is less than 1, business may be treated as undervalued. A stock with a PE ratio is seen as overvalued.



# Earnings based Valuation Matrices

## Growth Adjusted Price to Earnings Ratio (PEG Ratio)

### Peter Lynch and PEG ratio

- ✱ These days investors look at PE & PEG ratio together.
- ✱ With use of real life example, we will see the utility of PEG ratio.
- ✱ Even if a stock's PE ratio is low but if its PEG ratio is high, it is overvalued and even if a stock's PE ratio is high but if its PEG ratio is low, it can be deemed as undervalued.



# Earnings based Valuation Matrices

## Growth Adjusted Price to Earnings Ratio (PEG Ratio)

### PEG Ratio and Intrinsic Value of Stocks

- ✱ Stocks are valued in comparison to its intrinsic value. Stock's intrinsic value is estimated based on its potential to generate future free cash flows.
- ✱ It is not possible to predict future. But looking at the past, investors can approximately estimate the pattern of future growth.



# Earnings based Valuation Matrices

## Growth Adjusted Price to Earnings Ratio (PEG Ratio)

### PEG Ratio and Intrinsic Value of Stocks

- ✿ A company which has shown stable growth in sales, net profit and net worth, their future free cash flow estimation is comparatively easier.
- ✿ In the process of stock price valuation, net profit of a company is expressed as EPS. The pattern of historical EPS movements of a stock has big influence on its intrinsic value calculation.



# Earnings based Valuation Matrices

## Growth Adjusted Price to Earnings Ratio (PEG Ratio)

### PEG Ratio and Intrinsic Value of Stocks

- ✿ We are aware that stock's EPS directly influences its market price. When EPS is growing at fast rate, its market price will also appreciate in same proportion.
- ✿ Consistent EPS growth rate can take PE ratio of stocks to sky high levels.



# Earnings based Valuation Matrices

## Growth Adjusted Price to Earnings Ratio (PEG Ratio)

### PE Ratio Vs. PEG Ratio

- ✿ Benjamin Graham liked stocks which had  $PE < 15$ . But does it mean that all stocks having  $PE > 15$  are bad? This is where Peter Lynch's theory of PEG becomes handy.
- ✿ According to Peter Lynch, even when PE ratio is very high, still that stock can be undervalued. Let's take an example. A stock PE ratio is 28 and its EPS growth is 31.



# Earnings based Valuation Matrices

## Growth Adjusted Price to Earnings Ratio (PEG Ratio)

### PE Ratio Vs. PEG Ratio

- ✱ It means PE is lower than EPS growth. In this case PEG will be less than one (0.9).
- ✱ If PE is less than EPS growth rate ( $PEG < 1$ ), it means the stock is undervalued. Why?
- ✱ Stocks having  $PEG < 1$  has higher potential to increase its EPS (and hence its market price) in time to come.



# Earnings based Valuation Matrices

## Growth Adjusted Price to Earnings Ratio (PEG Ratio)

### PE Ratio Vs. PEG Ratio

- ✿ Suppose a stock X has PE ratio of 20. Another stock Y has PE ratio of 15. Does it mean that Y is better prices as compared to X?
- ✿ To understand this, lets take a hypothetical example of the two, most traded stocks of Indian stocks market: NTPC and ITC.



# Earnings based Valuation Matrices

## Growth Adjusted Price to Earnings Ratio (PEG Ratio)

### PE Ratio Vs. PEG Ratio

Particulars	NTPC	ITC
Market Price (Rs.)	181	258
EPS-TTM (Rs.)	10.78	8.63
P/E Ratio	16.91	29.91
EPS Growth Expected for Next 5 Years (%)	7	28



# Earnings based Valuation Matrices

## Growth Adjusted Price to Earnings Ratio (PEG Ratio)

### PE Ratio Vs. PEG Ratio

- ✿ As per the general understanding ITC will be considered overvalued because of its PE ratio is higher. PE ratio of ITC is 29.91 compared to 16.91 of NTPC.
- ✿ Fundamentally both NTPC and ITC are exceptional companies. So if one decides to buy stocks just on basis of PE ratio then they will select NTPC.



# Earnings based Valuation Matrices

## Growth Adjusted Price to Earnings Ratio (PEG Ratio)

### PE Ratio Vs. PEG Ratio

- ✱ But we know that PE ratio alone is not the best yardstick to select stocks. Lets use the PEG ratio factor to understand a more realistic price valuation of NTPC and PE ratio.
- ✱ Though ITC has higher PE ratio but still it is a better buy. How?



# Earnings based Valuation Matrices

## Growth Adjusted Price to Earnings Ratio (PEG Ratio)

### PE Ratio Vs. PEG Ratio

- ✿ To understand this, we have to analyze stocks using the concept of PEG ratio. ITC has very high PE ratio compared to NTPC, but this high PE ratio is still justified.
- ✿ A growth stock can afford to have a higher PE ratio, but still be undervalued.
- ✿ A stock which has faster EPS growth rate can enjoy the luxury of high PE ratio. Consider the case of ITC. It's PE ratio is massive at 31.22.



# Earnings based Valuation Matrices

## Growth Adjusted Price to Earnings Ratio (PEG Ratio)

### PE Ratio Vs. PEG Ratio

- ✱ Some might ask that why ITC's PE ratio is so high? By investors are buying ITC stocks at such exorbitant PE levels?
- ✱ The answer is hidden in possibility of future EPS growth.



# Earnings based Valuation Matrices

## Growth Adjusted Price to Earnings Ratio (PEG Ratio)

### PE Ratio Vs. PEG Ratio

- ✿ This makes PEG ratio of ITC 1.06 and that of NTPC is 2.41.
- ✿ Even though NTPC shows lower PE ratio, but still ITC is better valued.

Particulars	NTPC	ITC
P/E Ratio	16.91	29.91
EPS Growth Expected for Next 5 Years (%)	7	28
PEG Ratio	2.41	1.06



# Earnings based Valuation Matrices

## Growth Adjusted Price to Earnings Ratio (PEG Ratio)

### PE Ratio Vs. PEG Ratio

- ✱ The lower is the PEG ratio the better the stock is valued.
- ✱ A PEG ratio of less than 1 (one) means there is a reasonable chance that the market price of stock will appreciate considerably in future.



# Earnings based Valuation Matrices

## Growth Adjusted Price to Earnings Ratio (PEG Ratio)

### Understanding PEG numbers

- ✱ What does PEG Ratio of  $< 1$  means?
  - The stock is undervalued
  - We can expect future growth in market price of stock as its EPS will probably increase in times to come.



# Earnings based Valuation Matrices

## Growth Adjusted Price to Earnings Ratio (PEG Ratio)

### Understanding PEG numbers

- ✱ What does PEG Ratio of  $> 1$  means?
  - The stock is overvalued
  - We cannot expect future growth in market price of stock as its EPS will probably decrease in time to come.



# Earnings based Valuation Matrices

## Growth Adjusted Price to Earnings Ratio (PEG Ratio)

### Understanding PEG numbers

✱ Examples:

PEG RATIO	CALCULATION
PEG = 1.00	PE (15) / EPSG (15%)
PEG = 0.88	PE (16) / EPSG (18%)
PEG = 1.00	PE (20) / EPSG (20%)
PEG = 0.84	PE (22) / EPSG (26%)



# Earnings based Valuation Matrices

## Growth Adjusted Price to Earnings Ratio (PEG Ratio)

### Limitations of PEG Ratio

- ✱ PEG may not be suitable for large companies.
- ✱ Large and established companies, which has reached a point of saturation exhibits lower EPS growth rate.
- ✱ For such companies PEG ratio will generally be high (above one). Does it mean that such companies are bad investment?



# Earnings based Valuation Matrices

## Growth Adjusted Price to Earnings Ratio (PEG Ratio)

### Limitations of PEG Ratio

- ✿ Such large established companies provide decent dividends. They may not ensure a good capital appreciation, but high Dividend Yield is what makes them a good-buy.
- ✿ This is one reason why, an investor must look at the size of the company first (net worth or market cap). If the company has large market cap and also exhibit low PEG, this makes it very inviting.



# Earnings based Valuation Matrices

## Growth Adjusted Price to Earnings Ratio (PEG Ratio)

### Limitations of PEG Ratio

- ✿ If large market cap company is showing PEG above 1, but has paid decent dividend in past, still makes it interesting for investors.
- ✿ Watching PEG ratio in parallel to dividend payment consistency and dividend yield is essential.
- ✿ This is one limitation of PEG, that it talks nothing about the dividend portion of the stock.



# Earnings based Valuation Matrices

## Growth Adjusted Price to Earnings Ratio (PEG Ratio)

### Limitations of PEG Ratio

- ✱ Low EPS growth does not always mean the business is bad.
- ✱ There can be condition where due to external factors, EPS growth rate of company may be low.
- ✱ Low EPS growth rate may result in higher PEG ratio. Like, it is recently happening with real estate and pharma sector in India.



# Earnings based Valuation Matrices

## Growth Adjusted Price to Earnings Ratio (PEG Ratio)

### Limitations of PEG Ratio

- ✿ Recent quarter EPS growth rates of quality Pharma stocks like Ajanta Pharma, Lupin etc are in negative. Does this make them a bad stock to invest?
- ✿ May be in short term Pharma stocks will not provide good returns, but in long run returns will be good.
- ✿ Here, relying only on PEG ratio is not advisable. Looking at the over all business prospects of a company is necessary.



# Earnings based Valuation Matrices

## Growth Adjusted Price to Earnings Ratio (PEG Ratio)

### Limitations of PEG Ratio

- ✱ This is a reason why a detailed stock analysis is necessary. Relying only on few ratios may lead to errors in estimation.
- ✱ Suppose a company which is fundamentally very sound but due to temporary problem (like government policy) the sector is performing badly.



# Earnings based Valuation Matrices

## Growth Adjusted Price to Earnings Ratio (PEG Ratio)

### Limitations of PEG Ratio

- ✱ As because company is fundamentally strong, it is bound to bounce back in times to come.
- ✱ Even Indian government cannot afford to maintain bad policies for too long.
- ✱ Recently, Indian government has passed a bill allowing REITs in India. These kind of policy decisions will help the ailing real estate stocks.



# Earnings based Valuation Matrices

## Growth Adjusted Price to Earnings Ratio (PEG Ratio)

### Limitations of PEG Ratio

- ✱ All real estate companies stocks are showing negative or high PEG ratio. But with implementation of REITs, this situation can dramatically improve.



# Earnings based Valuation Matrices

## Growth Adjusted Price to Earnings Ratio (PEG Ratio)

### Conclusion

- ✿ Investors must question why a particular stock is having high PE ratio.
- ✿ Higher PE ratio on its own shows incomplete picture. Investors must also look at fundamentals of company along with PE ratio.
- ✿ EPS growth rate is that fundamental that helps to estimate true value of stocks.



# Earnings based Valuation Matrices

## Growth Adjusted Price to Earnings Ratio (PEG Ratio)

### Conclusion

- ✱ If a company is able to grow its earnings at a fast pace, then investors will be willing to pay a high price to grab such stocks. This is the logic why even high PE ratio is acceptable at times.
- ✱ Readers are suggested to look at PE and PEG ratio all together.



# Earnings based Valuation Matrices

## Growth Adjusted Price to Earnings Ratio (PEG Ratio)

### Conclusion

- ✱ In our example we compared NTPC and ITC. Both has two different line of business, but PEG ratio allowed us to compare two companies of completely different sector.



# Earnings based Valuation Matrices

## Enterprise Value to EBDITA Ratio

- ✿ All of the above measures - Dividend Yield, Earnings Yield, P/E Ratio and PEG Ratio. The focus has been on the valuations relevant to equity holders.
- ✿ Only equity is taken into consideration vis a vis return on that. However, businesses have two sources of capital – Equity and Debt. Sometimes, businesses could be very heavily leveraged and in those cases, their PE or PEG ratios could be absolutely distorted as a measure of cheapness.



# Earnings based Valuation Matrices

## Enterprise Value to EBDITA Ratio

- ✿ Let's think on the subject. If an investor buy all the equity in a business, he would have to implicitly assume the liability of the business.
- ✿ Therefore, for a buyer of the entire business, what matters is the value of the entire firm or what he would have to pay to take over the entire business including value of equity and value of debt. This is called Enterprise Value (EV) and it considers the value of the equity and the debt as debt becomes the liability of the acquirer on acquisition of 100% equity.



# Earnings based Valuation Matrices

## Enterprise Value to EBDITA Ratio

✿ It is calculated as:

**Enterprise value = Market value of equity (Market capitalization) + Market value of debt – cash and cash equivalents**

✿ Market Capitalization is simply arrived at by multiplying the market price with the number of outstanding equity shares. Market value of debt is generally taken as outstanding debt on the balance sheet of the company.



# Earnings based Valuation Matrices

## Enterprise Value to EBDITA Ratio

- ✱ This cost is reduced by any cash or cash equivalents on the balance sheet as we can use that amount to pay out debts of business. This is the price of the entire firm to a buyer.
- ✱ The EV can be compared with Earnings available to the entire capital (equity and debt holders) - Earnings before Interest and taxes called EBIT.



# Earnings based Valuation Matrices

## Enterprise Value to EBDITA Ratio

- ✱ Lower the EV to EBIT ratio, better it is for the acquirer. It is useful to compare firms that have different capital structures, since the earnings are taken before the interest payout.
- ✱ Consider an example. If market capitalization of a company is Rs. 100,000, debt on balance sheet is Rs. 50,000 and cash and cash equivalents are Rs. 10,000. EV of the firm is Rs. 140,000.



# Earnings based Valuation Matrices

## Enterprise Value to EBDITA Ratio

- ❖ If its EBIT is Rs. 10,000, EV to EBIT ratio would be 14 ( $140,000/10,000$ ). If its EBIT is 40,000, EV to EBIT ratio would be 3.5 ( $140,000/40,000$ ). Clearly, ratio of 14 looks like an expensive price to pay and 3.5 looks like value for money.



# Earnings based Valuation Matrices

## Enterprise Value to EBDITA Ratio

- ✿ Sometimes market participants use EBDITA instead of EBIT as a measure of return on applied capital given that Depreciation/Amortization is a non-cash expense.
- ✿ In that case, they talk about EV as EBDITA multiple as a measure of cheapness or expensiveness of businesses.
- ✿ Higher this ratio, more expensive the business. And, lower this ratio, cheaper the business.



# Earnings based Valuation Matrices

## Enterprise Value (EV) to Sales Ratio

- ✱ When EV to EBIT or EV to EBDITA ratios start showing signs of expensiveness, then market participants, to justify cheapness of businesses, move to measures such as EV to Sales Ratio.
- ✱ It is used as a comparative metric when the firm makes no operating profits. If a business is making sales but losing money continuously even at the operating level, it may be a candidate for restructuring.



# Assets based Valuation Matrices

- ✱ ROE and ROCE indicate how well a business allocates its capital and what are the returns on the book values of equity and equity along with debt respectively.
- ✱ However, you and me as investors are looking at return on our invested capital today and not essentially return on book values (business is not available at book value today). Therefore, our concern is Return on our Invested Capital, which is defined as:



# Assets based Valuation Matrices

- ✱ ROE and ROCE indicate how well a business allocates its capital and what are the returns on the book values of equity and equity along with debt respectively.
- ✱ However, you and me as investors are looking at return on our invested capital today and not essentially return on book values (business is not available at book value today). Therefore, our concern is Return on our Invested Capital, which is defined as:

**Return on Invested Capital – Earnings / Invested Capital**



# Assets based Valuation Matrices

## Return on Equity (ROE) Based Valuation – Price to Book Value Ratio

- ✱ On left hand side of a balance sheet, there are primarily two things – Equity and Debt. If we buy entire equity of a business, we assume the responsibility of the debt and simultaneously own the assets.
- ✱ In practice, it is next to impossible to know the market value of the assets in the Balance Sheet.



# Assets based Valuation Matrices

## Return on Equity (ROE) Based Valuation – Price to Book Value Ratio

- ✱ In absence of this information, if we assume that each asset on the Balance Sheet may be converted into cash at its book value, we would be able to honour business liability fully and be left with cash equivalent to net-worth (Equity plus reserves).
- ✱ It is mentioned here that, in reality during liquidations, this does not happen and assets are rarely able to cover the liability forget any payout to the equity owners.



# Assets based Valuation Matrices

## Return on Equity (ROE) Based Valuation – Price to Book Value Ratio

- ✱ Now, if we were to buy entire equity, we would pay market capitalization of the company. Against that we would get book value of the company. Price to book value ratio looks at the price as a multiple of the book value of the assets. The book value is the accounting value of the assets and not the realizable value.



# Assets based Valuation Matrices

## Return on Equity (ROE) Based Valuation – Price to Book Value Ratio

✿ It is calculated as

$$\text{Price to Book Value ratio} = \frac{\text{Market Price Per Share}}{\text{Book Value Per Share}}$$

Or

$$\text{Price to Book Value ratio} = \frac{\text{Market Capitalization}}{\text{Net-Worth}}$$

✿ This ratio indicates, how much we are paying to buy each Rs. of book value of equity.



# Assets based Valuation Matrices

## Return on Equity (ROE) Based Valuation – Price to Book Value Ratio

- ✱ It is clear that lower this number, assets are available cheap and higher this number, assets are expensive.
- ✱ Interestingly, we can combine this price to book value ratio with RoE ratio to assess the adequacy of the return on invested capital to facilitate investment decision making.



# Assets based Valuation Matrices

## Return on Equity (ROE) Based Valuation – Price to Book Value Ratio

- ✱ Consider a Business with a net-worth of Rs. 100,000 and Market capitalization is Rs. 500,000 and RoE of 45%. Given these numbers, the PBV ratio is 5. If the RoE is 45% and the investor is paying 5 times of the book (Price to Book Value is 5) to buy equity, the money would generate only one fifth of this ROE i.e. 9%.



# Assets based Valuation Matrices

## Return on Equity (ROE) Based Valuation – Price to Book Value Ratio

- ✱ This number has to be at least equal to the targeted return on capital required by the investor to make the investment worthwhile.
- ✱ **For Example:** if the investor wants 15% minimum return on capital invested, the investor would not be willing to pay more than 3 times viz Rs. 300,000 to buy equity because 45% on Rs. 100,000 would translate to 15% on Rs. 300,000.



# Assets based Valuation Matrices

## Return on Capital Employed (ROCE) based valuation – Enterprise Value (EV) to Capital Employed Ratio

- ✱ Enterprise value includes the value of equity and debt of a firm and is defined as:
- ✱  $EV = \text{Value of Equity} + \text{Value of Debt} - \text{cash and cash equivalents}$
- ✱ EV to Capital Employed ratio is defined as:

$EV \text{ to Capital Employed ratio} = \text{Enterprise Value} / \text{Capital Employed (Total Equity + Total Debt)}$



# Assets based Valuation Matrices

## Return on Capital Employed (ROCE) based valuation – Enterprise Value (EV) to Capital Employed Ratio

- ✿ EV to Capital Employed ratio along with Return on Capital Employed ratio can be used in combination to have a sense on return on our invested capital to facilitate investment decision making.
- ✿ Consider a business with net-worth is Rs. 100,000, debt on the Balance Sheet is Rs. 100,000, Market capitalization is Rs. 500,000, cash and cash equivalents on the balance sheet are nil and ROCE (EBIT/Capital Employed) is 45% per annum.



# Assets based Valuation Matrices

## Return on Capital Employed (ROCE) based valuation – Enterprise Value (EV) to Capital Employed Ratio

- ✱ Capital Employed =  $100,000 + 100,000 = 200,000$
- ✱ EV =  $500,000 + 100,000 = 600,000$
- ✱ EV to Capital Employed Ratio =  $600,000/200,000 = 3$
- ✱ If ROCE is 45% and the investor is paying EV which is 3 times of capital employed, the money would generate only one third of this ROCE i.e. 15% (45% on 200,000 would amount to 15% on 600,000).



# Assets based Valuation Matrices

## Return on Capital Employed (ROCE) based valuation – Enterprise Value (EV) to Capital Employed Ratio

- ✱ The investment decision will depend upon whether this is an adequate return on capital invested.
- ✱ **For Example:** If the investor wants a 20% minimum return on capital, in this example, the investor would not be willing to pay EV of more than 2.25 times ( $45/20$ ) of employed capital in the business viz. Rs. 450,000.



# Net Asset Value Approach

- ✱ Net asset value (NAV) of equity is the market value of an entity's assets minus the value of its liabilities.
- ✱ This is different from the book value or net-worth of equity as one is using the market value of asset (not book value of assets) to arrive at the NAV.
- ✱ Net asset value may represent the current value of the total equity, or it may be divided by the number of outstanding shares to compute net asset value per share.



# Net Asset Value Approach

- ✱ This valuation methodology is used in some businesses which are extremely assets oriented such as Real Estate, Shipping, Aviation etc.



# Relative Valuations

## Trading and Transaction Multiples

- ✿ Relative valuation is basically intuitive. We do this all the time in our personal lives. Here, we try to value an asset looking at how the market prices similar/comparable assets.
- ✿ Best example of this is pricing real estate. If you are looking to buy an apartment, you always find the price of comparative apartments in that locality which kind of becomes your indicative value for negotiation purpose.



# Relative Valuations

## Trading and Transaction Multiples

- ✿ This is highly useful and quick estimate of value with limited computations and assumptions. However, it reflects current market mood, which may be quite optimistic or pessimistic. Therefore, it is always good to use parameters like maximum, minimum, average etc. while using relative valuations.
- ✿ Practically, all the earnings and assets based valuation parameters defined above can be looked at for each business historically for several years.



# Relative Valuations

## Trading and Transaction Multiples

- ✱ One can also look at these parameters as comparison across the peers and/or industry ratios to build a sense whether something looks cheap or expensive. These comparables may be coming from the Stock market (called Trading Multiples) or from the other similar transactions (called Transaction Multiples).



# Sum-Of-The-Parts (SOTP) Valuation

- ✿ The sum-of-the-parts valuation (SOTP) is a process of valuing a company by determining what its aggregate divisions would be worth if they were spun off or acquired by another company.
- ✿ The valuation provides a range of values for a company's equity by aggregating the standalone value of each of its business units and arriving at a single Total Enterprise Value (TEV).
- ✿ The equity value is then derived by adjusting the company's Net Debt and other Non-operating Assets and Expenses.



# Sum-Of-The-Parts (SOTP) Valuation

- ✱ **For Example**, ITC, L&T and other corporations have different business under one umbrella.
- ✱ Best way to value these businesses is to value each business separately and then do the sum of those valuations.
- ✱ This method of valuing a company by parts and then adding them up is known as Sum-Of-Parts (SOP) valuation.



# Sum-Of-The-Parts (SOTP) Valuation

✱ Formula:

$$\begin{aligned}\text{✱ SOTP} = & \text{Valuation of Segment 1} \\ & + \text{Valuation of Segment N..} \\ & + \text{ND} - \text{NL} + \text{NA}\end{aligned}$$

Where:

ND = Net Debt

NL = Nonoperating Liabilities

NA = Nonoperating Assets



# Sum-Of-The-Parts (SOTP) Valuation

## How to Calculate Sum-of-the-Parts Valuation – SOTP

- ✱ The value of each business unit or segment is derived separately and can be determined by any number of analysis methods.
- ✱ For example, Discounted Cash Flow (DCF) Valuations, Asset-based Valuations and Multiples Valuations using Revenue, Operating profit or Profit margins are methods utilized to value a Business Segment.



# Sum-Of-The-Parts (SOTP) Valuation

## Importance of Sum-of-the-Parts Valuation – SOTP

- ✿ Sum-of-parts valuation, also known as Breakup Value analysis, helps a company understand its true value.
- ✿ **For example**, we might hear that a young technology company is "worth more than the sum of its parts," meaning the value of the company's divisions could be worth more if they were sold to other companies.



# Sum-Of-The-Parts (SOTP) Valuation

## Importance of Sum-of-the-Parts Valuation – SOTP

- ✱ In situations such as this one, larger companies have the ability to take advantage of synergies and economies of scale unavailable to smaller companies, enabling them to maximize a division's profitability and unlock unrealized value.
- ✱ The SOTP valuation is most commonly used to value a company comprised of business units in different industries since valuation methods differ across industries depending on the nature of revenue.



# Sum-Of-The-Parts (SOTP) Valuation

## Importance of Sum-of-the-Parts Valuation – SOTP

- ✿ It is possible to use this valuation to defend against a hostile takeover by proving the company is worth more as a sum of its parts. It is also possible to use this valuation in situations where a company is being revalued after a restructuring.



# Sum-Of-The-Parts (SOTP) Valuation

## Example of Sum-of-the-Parts Valuation – SOTP

- ✿ Consider ABC company, which said it will break the company into three units in late 2018—an Aerospace, Elevator and Building Systems Company.
- ✿ Using the 10-year median enterprise value-to-EBIT (EV/EBIT) multiple for peers and 2019 operating profit projections, the aerospace business is valued at Rs. 10700 Crore, the Elevator Business at Rs. 3600 Crore and Building Systems Business Rs. 5200 Crore.



# Sum-Of-The-Parts (SOTP) Valuation

## Example of Sum-of-the-Parts Valuation – SOTP

- ✱ Thus, the total value is Rs. 19400 Crore. Lessing out Net Debt and other items of Rs. 3900 Crore, the sum-of-the-parts valuation is Rs. 15500 Crore.



# Sum-Of-The-Parts (SOTP) Valuation

## The Difference Between the SOTP and Discounted Cash Flow – DCF

- ✿ While both are valuation tools, the SOTP valuation can incorporate a discounted cash flow (DCF) valuation.
- ✿ That is, valuing a segment of a company may be done with a DCF analysis. Meanwhile, the DCF uses discounted future cash flows to value a business, project or segment.
- ✿ The present value of expected future cash flows is discounted using a discount rate.



# Sum-Of-The-Parts (SOTP) Valuation

## Limitations of Using Sum-of-the-Parts Valuation – SOTP

- ✱ The sum-of-the-parts (SOTP) valuation involves valuing various business segments, and more valuations come with more inputs.
- ✱ As well, SOTP valuations do not take into account tax implications, notably the implications involved in a spinoff.



# Objectivity of Valuations

- ✱ So many computations for valuation result in to a question “Is Valuation objective?” This may appear so but it is a very subjective exercise as inputs required in various methods, as defined above, are quite subjective without any generally accepted standards. Further, Valuation is not timeless and it can change dramatically if circumstances of business change. To conclude, there is no precise estimate of value and complicated quantitative models need not mean the valuation is precise; it only means a false impression of preciseness.



# Important Considerations

- ✿ If earning power of a business is high, book value (BV) of shares could be less important. But,
- ✿ if earning power of business is low, BV becomes very important.
- ✿ As equity/share reflects part ownership in a business, to value share, we need to value entire business.
- ✿ EV and not the market capitalization is the true value of the firm for private owner.



# Important Considerations

- ✿ PE for a leveraged firm may be deceptive – look at debt levels in the business.
- ✿ Look at the consolidate numbers and not just the standalone numbers.
- ✿ Focus on ROE and not EPS – EPS does not account for retained earnings.
- ✿ Leverage improves ROE but excessive leverage is risky.



# Important Considerations

- ✱ Differentiate between ROCE and ROE – ROCE reflects the true return on capital. ROE could be manipulated by high leverage.
- ✱ ROCE and ROE should be closely knit. Any wide variation should trigger investigations.



# Quick Formula 1

- ✿ Can be found in **Book** written by **Prasenjit Paul** heading “How to Avoid Loss and Earn Consistently in the Stock Market”
- ✿ “Quick Formula” divided into two steps –

## First Step - Ratios to be Checked

- ❖ Last three years average Return on Equity (**ROE**) and Return on Capital Employed (**ROCE**) both are **greater than 20%**.



# Quick Formula 1

- ❖ Debt to Equity Ratio (**DE**) is less than 1. (or heavily reducing for the last few years)
- ❖ Promoters pledge less than 10% of their total shareholdings, or there is a clear indication that it will fall below 10% soon. (better if it is NIL)
- ❖ Last three year CAGR sales growth rate is more than 10%.
- ❖ Last three year CAGR profit growth rate is more than 12%.



# Quick Formula 1

## Second Step – Valuation and Market Price Movement

✱ This step is time - consuming as it requires manual intervention. One can complete the first stage with the help of screeners, but the problem is numbers can't tell the full story. There are many hidden facts behind those figures.

❖ **Valuation**

❖ **Stock price Movement**



# Quick Formula 1

## Second Step – Valuation and Market Price Movement

### ❖ Valuation

- ✿ “If the stock under consideration has **P.E ratio of more than two times of last three years average EPS growth** then avoid the same.”

### ❖ Stock price Movement

- ✿ In Final stage, conduct price movement test. In spite of having all the positive numbers if it is found that the stock is generating a negative return over the last three years then avoid it.



# Quick Formula 1

## Second Step – Valuation and Market Price Movement

- ☀ Check out annualized return over the last one year and three years and consider following situations -
  - ❖ If last three years annualized return is less than 10% and last one year's return is negative then mark as “**Avoid**”.
  - ❖ If last three years annualized return and last one year's return both are **negative** then **avoid the stock**.
  - ❖ Only consider stocks for investment having last three years annualized return is more than 10% with last one year's return is positive.



# Global Environment and Events

- ✱ OPEC Meeting
- ✱ Federal Reserve Policy
- ✱ RBI Policy
- ✱ Rating Agencies
- ✱ War or Terrorist Attack

## OTHER EVENTS

- ✱ India VIX
- ✱ Scandals



# ECONOMIC DATA ANALYSIS

- ✱ ADP Non Farm employment
- ✱ Building Permits
- ✱ Consumer Confidence
- ✱ Core durable Goods Order
- ✱ CPI - Consumer Price Index
- ✱ Crude Oil Inventory
- ✱ GDP Gross Domestic Production
- ✱ Industrial Production
- ✱ Inventory



# ECONOMIC DATA ANALYSIS

- ✿ New Homes Sales
- ✿ Non Farm Employment
- ✿ Manufacturing PMI
- ✿ Services PMI
- ✿ PPI - Producer Price Index
- ✿ Retail Sales
- ✿ Trade Balance
- ✿ Monsoon Effect
- ✿ Unemployment Claims



# Famous Formulas of Stock Picking

- ✱ Value Investing
- ✱ Growth Investing
- ✱ Income Investing
- ✱ GARP Investing
- ✱ CANSLIM
- ✱ EPR-PPD-TPF
- ✱ Magic Formula
- ✱ Piotroski Scan



# Growth and Value Investing

- ✿ Investment approaches can be broadly classified into Growth based and Value Based. While Growth investing refers to investing in fast growing companies, Value investing approach is based upon the premise that a stock/ sector is currently undervalued and the market will eventually realize its true value. So, a value investor will buy such a stock/ sector today and wait for the price to move up. When that happens, the Value investor will exit and search for another undervalued opportunity.



# Growth and Value Investing

- ✿ Hence in Growth investing, it is the growth momentum that the investor looks for, whereas in Value investing, the investor looks for the mismatch between the current market price and the true value of the investment.
- ✿ Contra Funds can be said to be following a Value investing approach.
- ✿ For example, when interest rates rise, people defer their purchases as the cost of borrowing increases. This affects banks, housing and auto sectors and the stocks of these companies come down.



# Growth and Value Investing

- ✿ A Value fund manager will opine that as and when interest rates come down these stocks will go up again; hence he will buy these stocks today, when nobody wants to own them. Thus he will be taking a contrarian call.
- ✿ The risk in Growth investing is that if growth momentum of the company goes down slightly, then the stock's price can go down rather fast, while in Value investing, the risk is that the investor may have to wait for a really long time before the market values the investment correctly.



# Basic Concepts

- ✿ Time Value of Money
- ✿ Top Down Approach
- ✿ Bottom Up Approach
- ✿ Absolute Valuation
- ✿ Relative Valuation
- ✿ Macro and Micro Economic Factors
- ✿ Quantitative and Qualitative Analysis
- ✿ Sharpe Ratio
- ✿ Traynor Ratio



# Basic Concepts

- ✿ Risk in Investments
- ✿ The Beta
- ✿ Concept of Margin of Safety
- ✿ Some Best Quotes from Investment Masters



# Thank You!