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Project Report

RATIO ANALYSIS

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RATIO ANALYSIS

❖ RATIO ANALYSIS

Ratio Analysis enables the business owner/manager to spot trends in a business and to compare its performance and condition with the average performance of similar businesses in the same industry. To do this compare your ratios with the average of businesses similar to yours and compare your own ratios for several successive years, watching especially for any unfavorable trends that may be starting. Ratio analysis may provide the all-important early warning indications that allow you to solve your business problems before your business is destroyed by them.

The Balance Sheet and the Statement of Income are essential, but they are only the starting point for successful financial management. Apply Ratio Analysis to Financial Statements to analyze the success, failure, and progress of your business.

Importance of financial statement analysis in an organization.

In our money-oriented economy, Finance may be defined as provision of money at the time it is needed. To everyone responsible for provision of funds, it is problem of securing importance to so adjust his resources as to provide for a regular outflow of expenditure in face of an irregular inflow of income.

1. The profit and loss account (Income Statement).
2. The balance sheet

In companies, these are the two statements that have been prescribed and their contents have been also been laid down by law in most countries including India.

There has been increasing emphasis on

- (a) Giving information to the shareholder in such a manner as to enable them grasp it easily.

(b) Giving much more information e.g. funds flow statement, again with a view to facilitating easy understanding and to place a year results in perspective through comparison with post year results.

(c) The directors report being quite comprehensive to cover the factors that have been operating and are likely to operate in the near future as regards to the various functions of production, marketing, finance, labour, government policies, environment in general.

Financial statements are being made use of increasingly by parties like Bank, Governments, Institutions, and Financial Analysis etc. The statement should be sufficiently informative so as to serve as wide a curia as possible.

The financial statement is prepared by accounts based on the activities that take place in production and non-production wings in a factory. The accounts convert activities in monetary terms to the help know the position.

➤ Uses of Financial Statement Analysis.

The main uses of accounting statements for; -

Executives : - To formulate policies.

Bankers : - To establish basis for Granting Loans.

Institutions \ Auditors : - To extend Credit facility to business.

Investors : - To assess the prospects of the business and to know whether they can get a good return on their investment.

Accountants : - To study the statement for comparative purposes.

Government Agencies: - To study from an angle of tax collection duty levee etc.

TYPES OF RATIOS

❖ TYPES OF RATIOS

- **Liquidity ratios**
- **Turnover Ratios**
- **Leverage Ratios**
- **Profitability Ratios**

1. Liquidity ratios:-

Liquidity refers of the ability of a firm to meet its obligation in the short run, usually one year or when they become duration for payment.

A proper balance between liquidity and profitability is required for efficient Financial Management.

Liquidity ratios are based on the relationship between current assets the sources for meeting short-term obligation and current liabilities.

The ratios, which indicate the liquidity of a firm, are: -

A. Current Ratio.

B. Acid test Ratio.

C. Net working capital.

A. Current Ratio.

The current Ratio is the ratio of current liabilities it is calculated as: -

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current Liabilities}}$$

The current assets include cash and Bank Balance, Marketable securities, Bills, Receivable, Inventories, Loans and advances, Advances Payment and prepaid expenses.

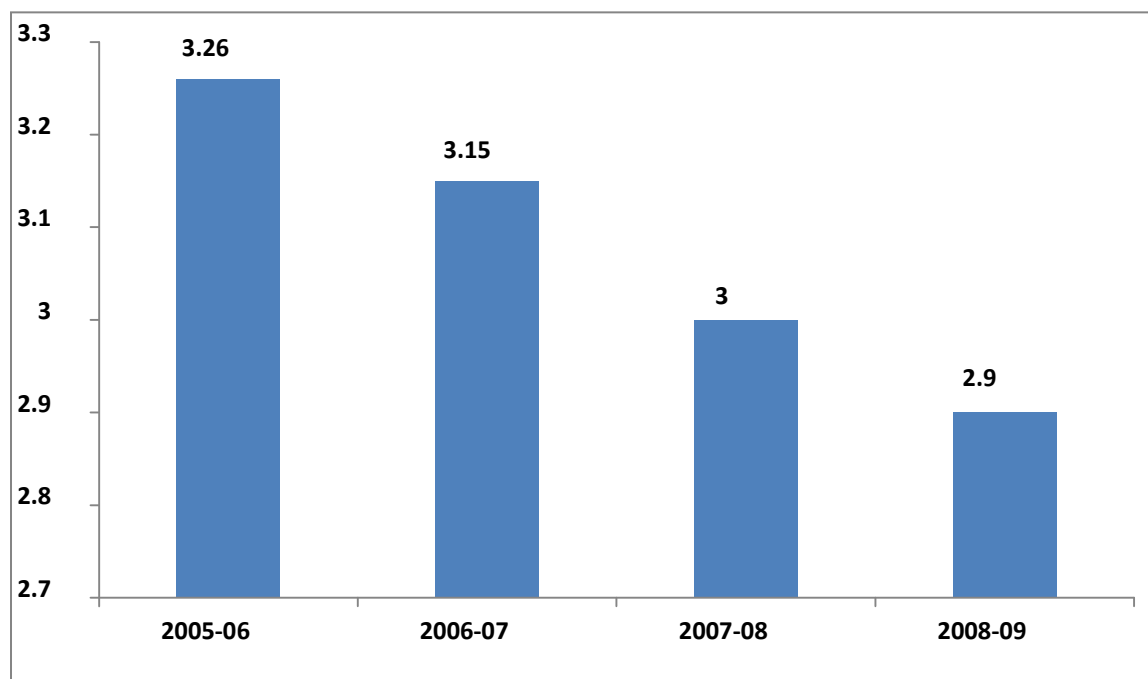
The current liabilities include creditors, bills payable bank overdraft short-term loans, outstanding expense & income tax payable, unclaimed dividend and proposed dividend.

Te current ratio measures the ability of the firm to meet its current liabilities. The current assets get converted into cash into the operational cycle of the firm and provide the fund needed to pay current liabilities. The higher the ratio, to ward off.

❖ **Calculation of current ratio with diagram**

Particulars	2005-06	2006-07	2007-08	2008-09
Current assets	1626.27	1426.32	2112.05	2257.21
Current liabilities	498.70	453.38	700.37	773.48
Current ratio	3.26	3.15	3.0	2.9

❖ **Diagram**



B.QUICK RATIO

The Quick Ratio is sometimes called the "acid-test" ratio and is one of the best measures of liquidity. It is figured as shown below:

$$\text{QUICK RATIO} = \frac{\text{current assets} - \text{inventories}}{\text{Current liabilities} - \text{bank over draft}}$$

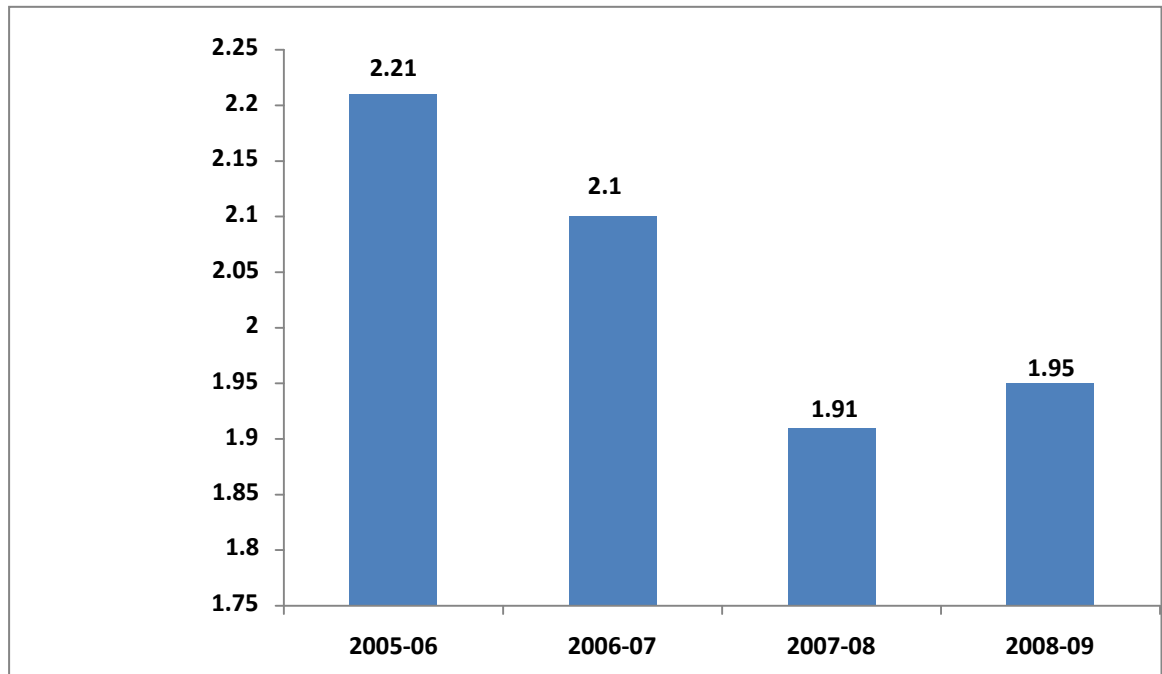
The Quick Ratio is a much more exacting measure than the Current Ratio. By excluding inventories, it concentrates on the really liquid assets, with value that is fairly certain. It helps answer the question: "If all sales revenues should disappear, could my business meet its current obligations with the readily convertible 'quick' funds on hand?"

An acid-test of 1:1 is considered satisfactory unless the majority of your "quick assets" are in accounts receivable, and the pattern of accounts receivable collection lags behind the schedule for paying current liabilities.

❖ **Calculation of quick ratio with diagram**

Particulars	2005-06	2006-07	2007-08	2008-09
Liquid assets	1099.94	951.06	1335.45	1509.61
liquid liabilities	498.70	453.38	700.37	773.48
Current ratio	2.21	2.10	1.91	1.95

- **Diagram**



C. Working capital turnover ratio

Working capital refers to the investment by the company in short terms assets such as cash, marketable securities. Net current assets or net working capital refers to the current assets less current liabilities.

Symbolically, it means,

Net Current Assets = Current Assets - Current Liabilities.

Definitions of Working Capital:

The following are the most important definitions of Working capital:

1) Working capital is the difference between the inflow and outflow of funds. In other words it is the net cash inflow.

2) Working capital represents the total of all current assets. In other words it is the Gross working capital, it is also known as Circulating capital or

Current capital for current assets is rotating in their nature.

3) Working capital is defined as the excess of current assets over current liabilities and provisions . In other words it is the Net Current Assets or Net Working Capital

It is calculated as,

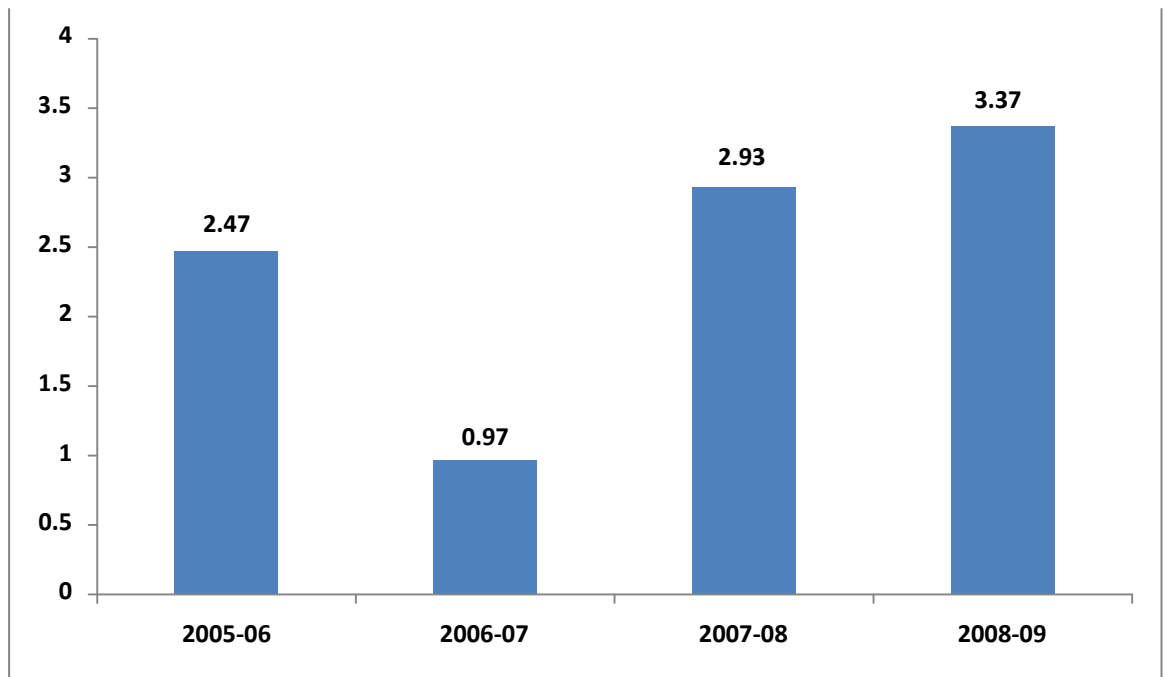
Working capital turnover ratio = $\text{Sales} / \text{Working capital}$

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❖ **CALCULATION OF WORKING CAPITAL TURN OVER RATIO WITH DIAGRAM**

Particulars	2005-06	2006-07	2007-08	2008-09
sales	2786.39	3577.9	4137.52	5001.04
Working capital	1127.57	3672.94	1411.68	1483.73
W.C.T. O. ratio	2.47	0.97	2.93	3.37

- **Diagram**



2. TURN OVER RATIOS

Turnover Ratios are also referred to as Activity ratio or Assets Management ratios. This ratio establishes relationship between the level of activity represented by sales or cost of goods sold and levels of various assets.

A. INVENTORY TURN OVER RATIO

This Ratio is computed by dividing net sales by inventory

Thus,

$$\text{Inventory Turnover ratio} = \frac{\text{Net sales}}{\text{Average Inventory}}$$

The numerator of this ratio is the net sales for the year and the denominator is the Inventory balance at the end of the year.

This ratio is deemed to reflect the efficient the management of inventories and vice versa.

This statement need not be always true. A low level of inventory may cause a higher inventory turnover ratio.

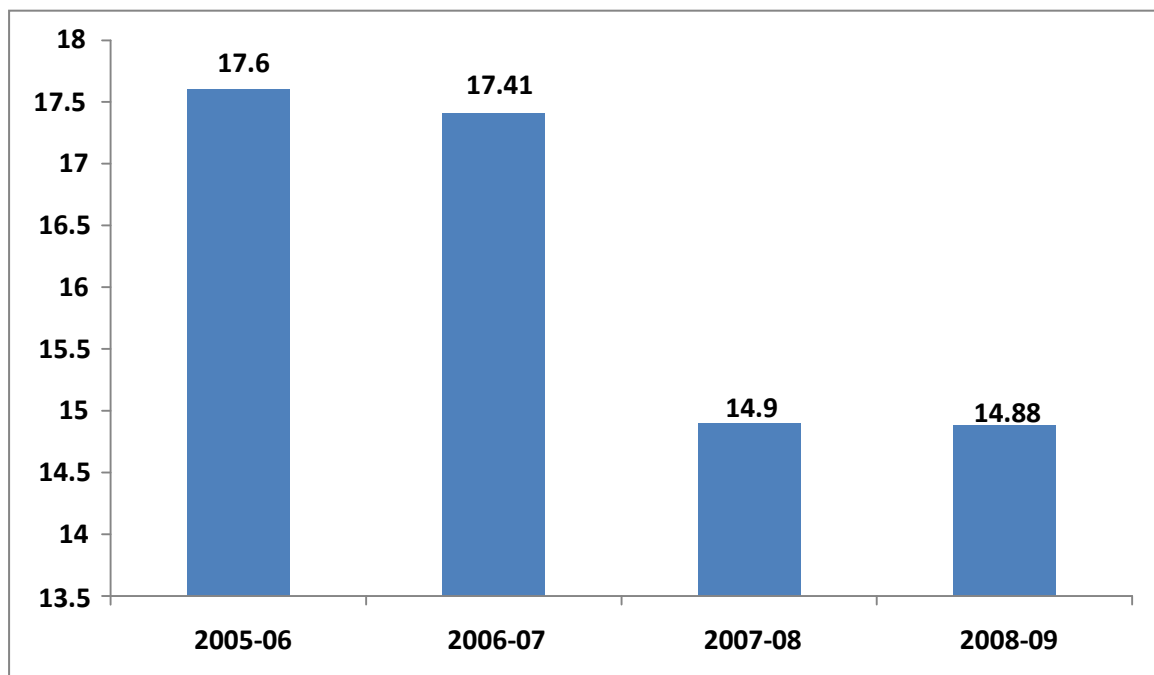
It might be argued that the inventory turnover ratio may be

$$\text{Inventory Turnover ratio} = \frac{\text{Cost of goods sold}}{\text{--- Average Inventory}}$$

❖ **Calculation of inventory turnover ratio with diagram**

Particulars	2005-06	2006-07	2007-08	2008-09
Sales	2786.39	3577.89	4137.52	5001.04
Average inventory	158.37	205.45	277.61	336.12
Inventory T.O. ratio	17.6	17.41	14.90	14.88

● **Diagram**



B. DEBTORS TURNOVER RATIO

The debtors turnover ratio is determined by dividing the net credit sales by average debtors outstanding during the year.

Therefore

$$\text{Debtors turnover ratio} = \frac{\text{Net credit sales}}{\text{Average debtors}}$$

NOTE;- Here there is no specification about net credit purchase and average debtors

So, assume that (net credit sales = net sales) (Average debtors = debtors)

The main function of this ratio is to measure how rapidly debts are collected.

A high ratio is indicative of shorter time lag between credit sales and cash collection/ A low ratio indicates that debts are not being collected rapidly.

❖ Calculation of debtors turnover ratio with diagram

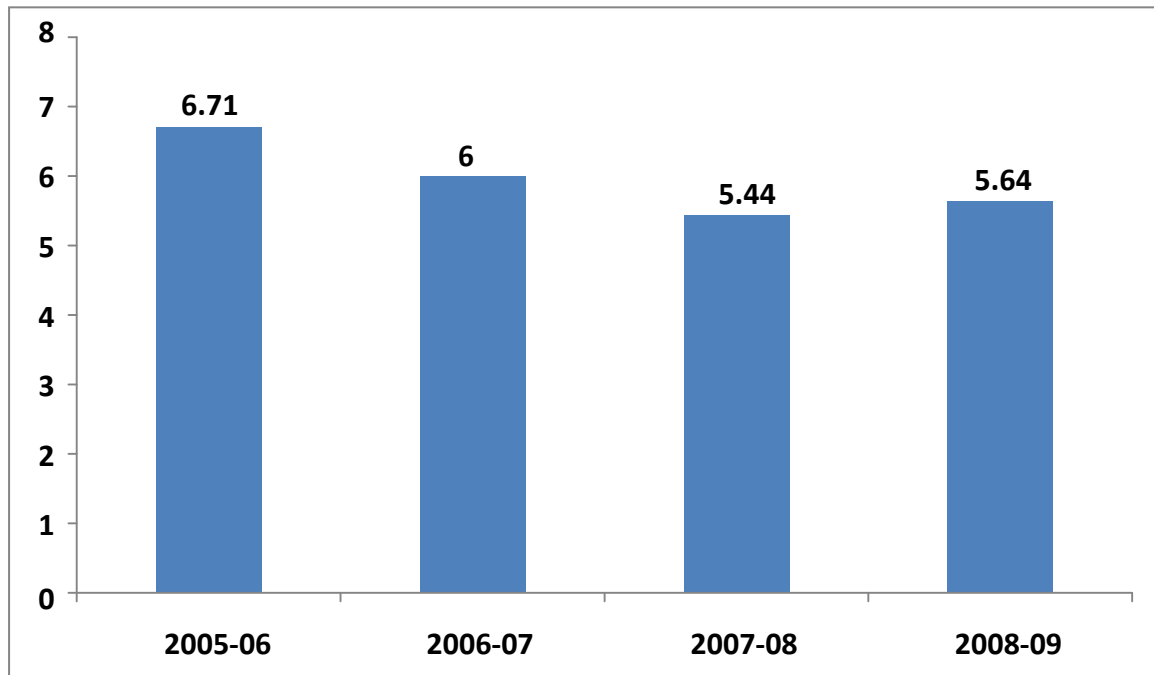
Particulars	2005-06	2006-07	2007-08	2008-09
Net sales	2786.39	3577.89	4137.52	5001.04
Debtors	415.44	595.99	760.98	887.23

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Debtors				
T.O. ratio	6.71	6	5.44	5.64

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❖ **Diagram**



C.CREDITORS TURN OVER RATIO

Creditor's turnover ratio is a rate between net purchase and average amount of creditor Outstanding during the year.

$$\text{Creditors turnover ratio} = \frac{\text{Net credit purchases}}{\text{Average of creditors}}$$

Average creditors = Average of creditors outstanding at the Beginning and at the end of the year.

A low turnover ratio reflects liberal terms granted by suppliers, while a high turnover ratio shown that accounts are settled rapidly.

The creditor's turnover ratio is an important tool as a firm can reduce its requirement of current assets by relying on suppliers creditors.

The intent to which trade creditors are willing to wait for payment can be approximated by the creditors turnover ratio.

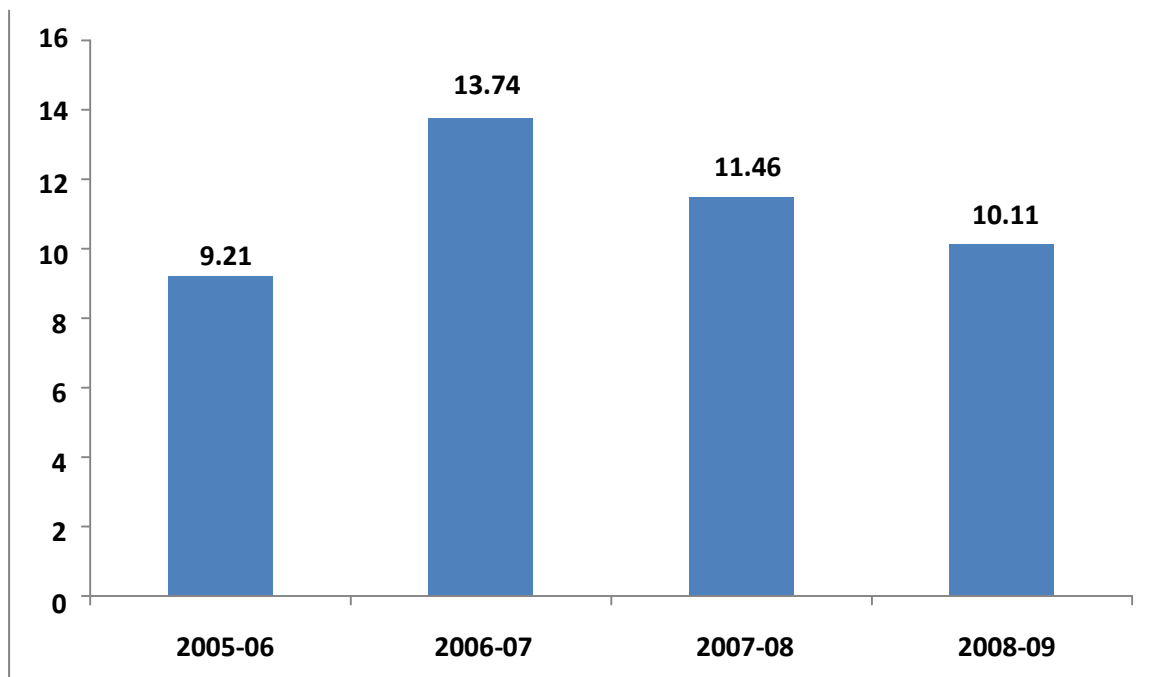
NOTE;- Here, there is no specification about net credit purchase and average of creditors, So, let assume that, (net credit purchase = Net Purchase)

(Average of creditors = creditors)

❖ **Calculation of creditors turnover ratio with diagram**

Particulars	2005-06	2006-07	2007-08	2008-09
Net Purchase	2447.75	3190.45	3781.72	4690.67
Creditors	265.88	232.19	330.01	463.94
Creditors T.O. ratio	9.21	13.74	11.46	10.11

• **Diagram**



3. LEVERAGE or CAPITAL STRUCTURE RATIO

These ratios refer to the use of debt finance long term solvency of the firm can be examined by using leverage or capital ratios.

The leverage ratio or capital structure ratio can be defined as the financial ratios which throw light on the long term solvency of a firm reflected in its ability to assure the long term creditors with regards to.

- 1. Periodic payment of interest during the period of loan.**
- 2. Repayment of Principle on maturity or in predetermined instalments at due dates.**

A. DEBT-EQUITY RATIO

This ratio reflects the relative claims of creditors and share holders against the assets of the firm, debt equity ratios establishment relationship between borrowed funds and owner capital to measure the long term financial solvency of the firm. The ratio indicates the relative proportions of debt and equity in financing the assets of the firm.

It is calculated as follows

Debt equity ratio = Debt / Equity

The debts side consist of all liabilities (that include short term and long term liabilities) of the firm. The equity side consists of new worth (plus) preference capital.

The lower the debt equity ratio the higher in the degree of protection enjoyed by the creditors.

The debt equity ratio defined by the controller of capital issue, debt is defined as long term debt plus preference capital which is redeemable before 12 years and equity is defined as paid up equity capital plus preference capital which is redeemable after 12 years.

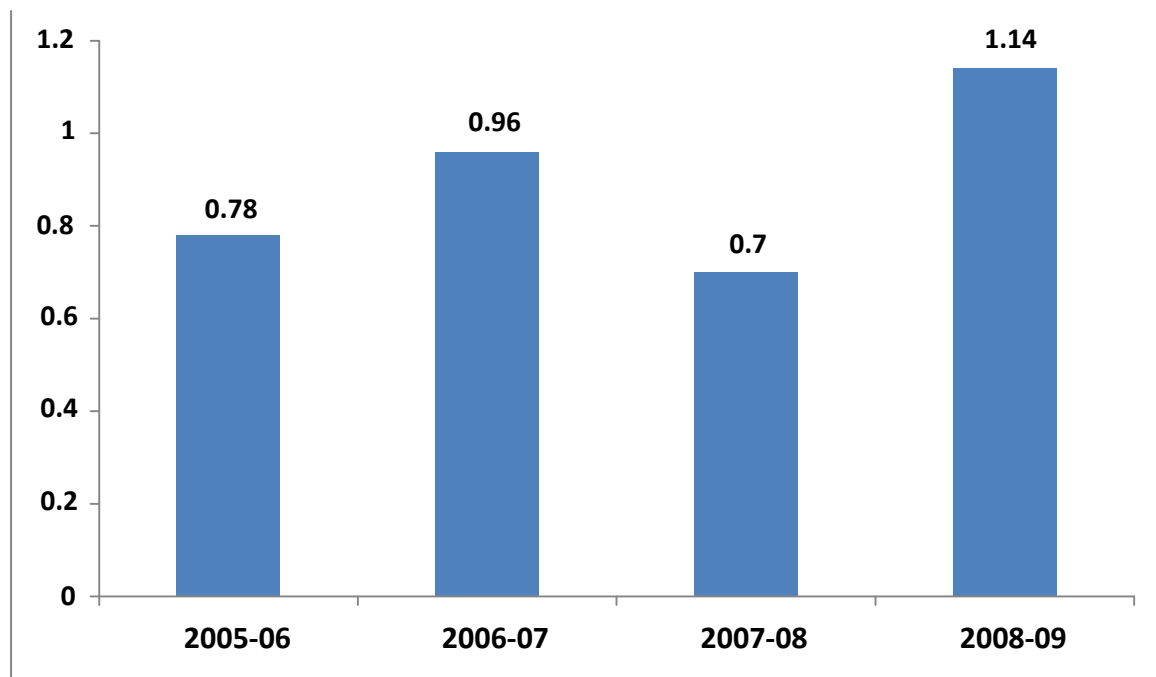
The general norm for this ratio is 2:1. on case of capital intensive industries as norms of 4:1 is used for fertilizer and cement industry and a norms of 6:1 is used for shipping units.

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❖ **Calculation of debt-equity ratio with diagram**

Particulars	2005-06	2006-07	2007-08	2008-09
Debt	1731.27	3005.91	2943.73	4679.45
Equity	2207.61	3124.55	4023.74	4121.66
Debt-equity ratio	0.78	0.96	0.7	1.14

- **Diagram**



B. DEBT – ASSET RATIO

The debt asset ratio establishes a relationship between borrowed funds and the assets of firm. It is calculated as:

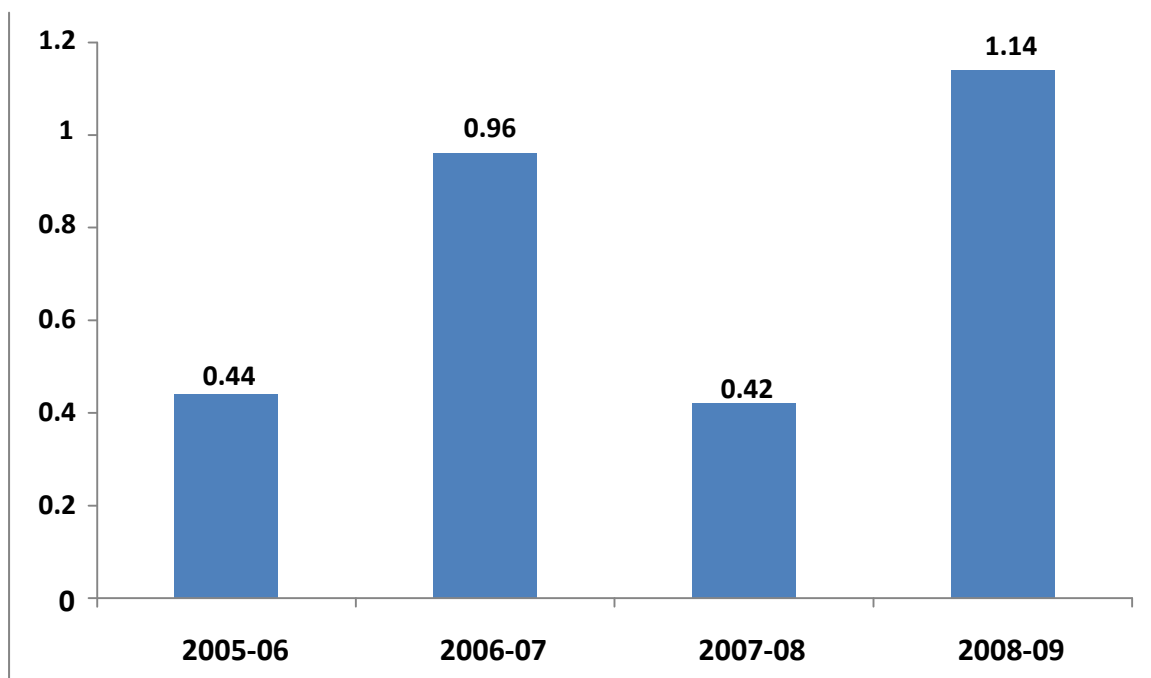
$$\text{Debt Asset Ratio} = \frac{\text{Debt}}{\text{Asset}}$$

Debt includes all liabilities. Short term as well as long term and the assets include the total of all the assets (the balance sheet total)

❖ **Calculation Of Debt – Asset Ratio With Diagram**

Particulars	2005-06	2006-07	2007-08	2008-09
Debt	1731.27	3005.91	2943.73	4679.45
Asset	3938.88	6130.46	6967.47	4121.66
Debt- asset ratio	0.44	0.96	0.42	1.14

• **Diagram**



C.INTERES COVERAG RATO

This ratio is also known as Time interested Earned ratio This ratio measures the debt servicing of capacity of a firm in so far as fixed interest on long term loan is concerned. Interest coverage ratio determined by dividing the operating profits or earnings before interest and taxes by fixed interest charges on loans.

**It is calculated
as**

$$\text{Interest coverage Ratio} = \frac{\text{Earning Before Interest \& Taxes (EBIT)}}{\text{Debt Interest}}$$

The EBIT is used in the numerator of this ratio because the ability of a firm to pay interest is not affected by tax payment as interest on debt fund in a tax deductible expenses.

The ratio apparently measure the margin of safety the firm enjoys with the respect to its interest burden.

A high interest coverage ratio implies that the firm can easily meet its interest burden even if

EBIT decline.

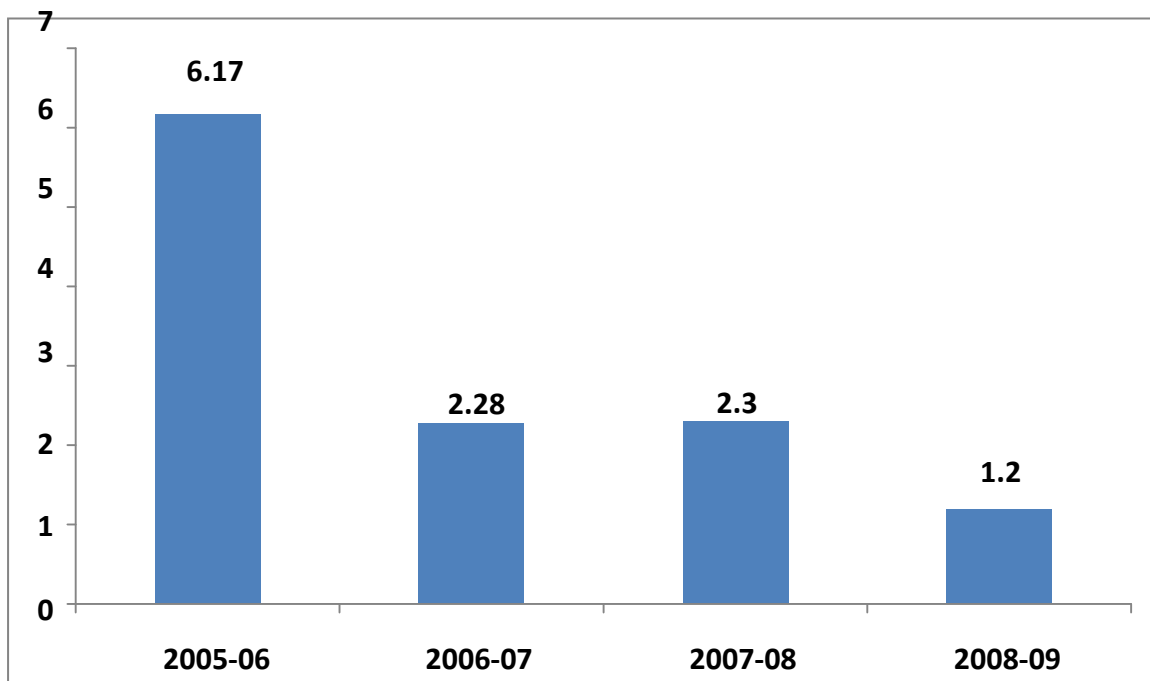
A low interest coverage ratio results in financial embarrassment when EBIT declines.

This ratio is not appropriate measures of interest coverage because the source of interest payment is cash flow before interest and taxes, not EBIT.

❖ **calculation of interest coverage ratio with diagram**

Particulars	2005-06	2006-07	2007-08	2008-09
EBIT	387.60	432.63	454.93	328.26
Debt interest	62.78	189.83	197.72	274.43
Interest coverage ratio	6.17	2.28	2.3	1.20

• **Diagram**



4. PROFITABILITY RATIO

A class of financial metrics that are used to assess a business's ability to generate earnings as compared to its expenses and other relevant costs incurred during a specific period of time. For most of these ratios, having a higher value relative to a competitor's ratio or the same ratio from a previous period is indicative that the company is doing well.

Some examples of profitability ratios are profit margin, return on assets and return on equity. It is important to note that a little bit of background knowledge is necessary in order to make relevant comparisons when analyzing these ratios.

For instances, some industries experience seasonality in their operations. The retail industry, for example, typically experiences higher revenues and earnings for the Christmas season. Therefore, it would not be too useful to compare a retailer's fourth-quarter profit margin with its first-quarter profit margin. On the other hand, comparing a retailer's fourth- quarter profit margin with the profit margin from the same period a year before would be far more informative.

A. OPERATING MARGIN

A ratio used to measure a company's pricing strategy and operating efficiency. Operating margin is a measurement of what proportion of a company's revenue is left over after paying for variable costs of production such as wages, raw materials, etc. A healthy operating margin is required for a company to be able to pay for its fixed costs, such as interest on debt. It Is Also known as "operating profit margin."

Calculated as:

$$\text{Operating Margin} = \frac{\text{Operating Income}}{\text{Net Sales}}$$

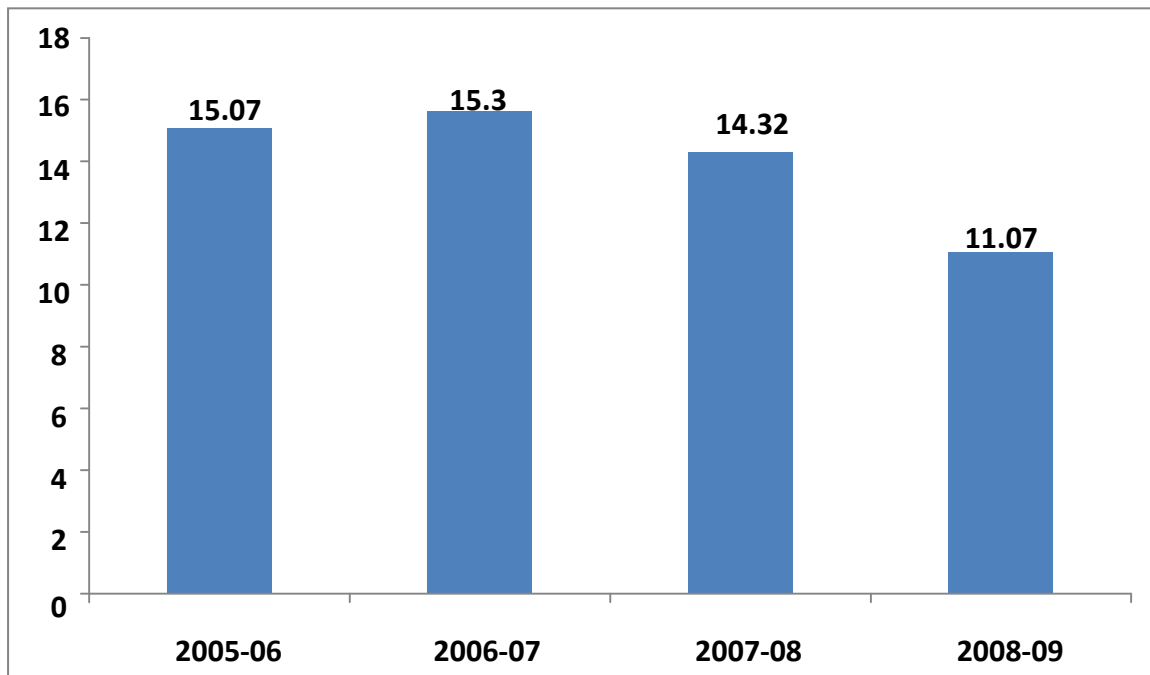
Operating margin gives analysts an idea of how much a company makes (before interest and taxes) on each dollar of sales. When looking at operating margin to determine the quality of a company, it is best to look at the change in operating margin over time and to compare the company's yearly or quarterly figures to those of its competitors. If a company's margin is increasing, it is earning more per dollar of sales. The higher the margin, the better.

For example, if a company has an operating margin of 12%, this means that it makes \$0.12 (before interest and taxes) for every dollar of sales. Often, nonrecurring cash flows, such as cash paid out in a lawsuit settlement, are excluded from the operating margin calculation because they don't represent a company's true operating performance.

❖ Calculation Of Operating Margin With Diagram

Particulars	2005-06	2006-07	2007-08	2008-09
Opearting income	420.01	559.3	592.3	553.7
Net sales	2786.39	3577.9	4137.52	5001.04
Ratios	15.07%	15.63%	14.32%	11.07%

❖ **Diagram**



B. GROSS PROFIT MARGIN

Gross profit can be defined as the difference between net sales and cost of goods sold. Gross margin profit ratio is also known as gross margin gross profit margin ratio is calculated by dividing gross profit by sales.

Gross profit margin ratio = gross profit/Net sales

Net sales-cost of goods sold.

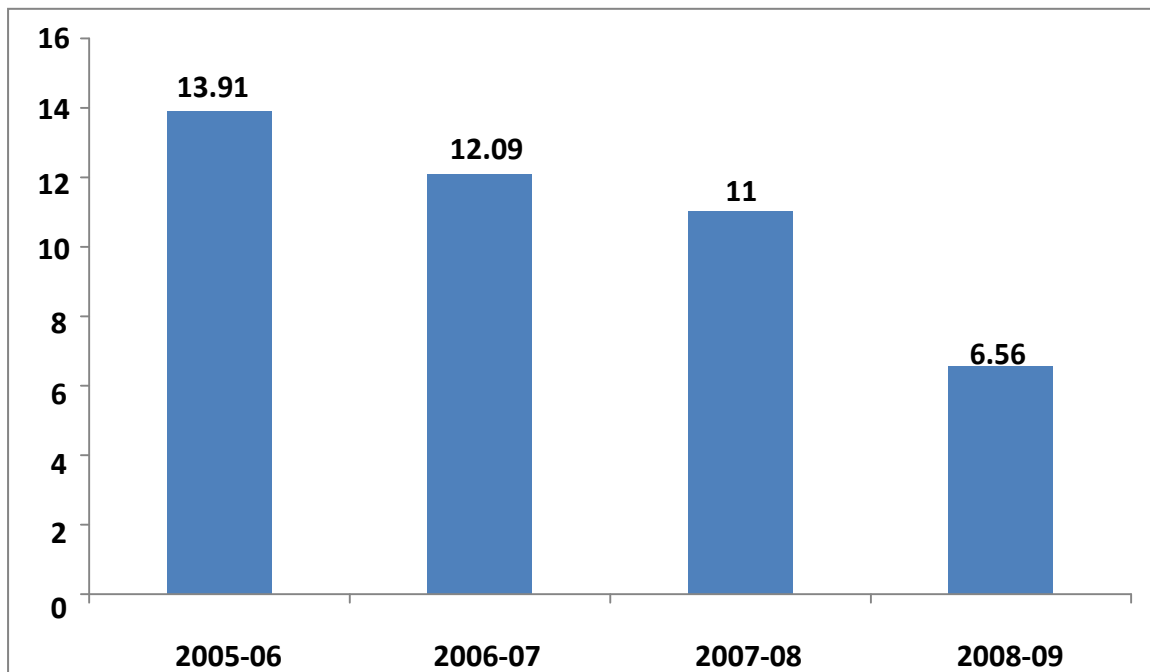
The gross profit margin ration shows the margin left after meeting manufacturing cost. The ratio also measures.

The efficiency of production as well as pricing. The Gross profit to sales is a sign of good management s as it implies that the cost of production of the firm is relatively low. A high ratio may also imply of a higher sales rise without a corresponding increase in the cost of goods sold.

❖ **Calculation of gross profit margin with diagram**

Particulars	2005-06	2006-07	2007-08	2008-09
Gross profit	387.60	432.6	454.93	328.26
Net sales	2786.39	3577.9	4137.52	5001.04
Ratios	13.91%	12.09%	11%	6.56%

❖ **Diagram**



C. NET PROFIT MARGIN

The Net Profit Margin Ratio determines the between Net profit and sales of business firm. This relationship is also known as net margin. This ratio shows the earning left for shareholder (both equity and preference) as percentage of Net sales.

Net Margin Ratio measures the overall efficiency of production, Administration selling, Financing, pricing and Tase Management.

Thus,

Net profit Margin Ratio: Net Profit/Net Sales

A high Net profit Margin indicates adequate return to the owners as well as enable a firm to withstand adverse economic conditions when selling price is decanting, cost of production is rising and demand for product is falling.

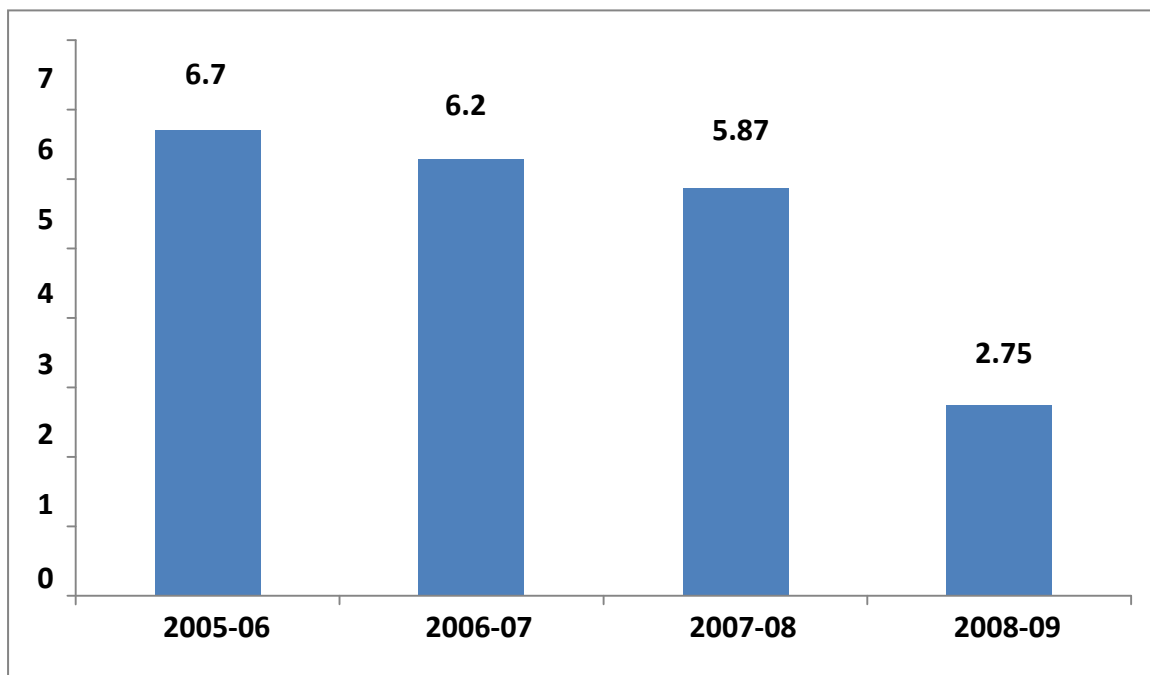
A low Net Profit Margin has opposite implications. A firm with low net profit margin can earn a high rate of return on investment it has a higher inventory turnover.

Jointly considering gross and net profit margin provides a valuable understanding of the cost and profit structure of the firm and enables the analyst to identity the source of business efficiency of inefficiency.

❖ **Calculation of net profit margin with diagram**

Particulars	2005-06	2006-07	2007-08	2008-09
Net profit	186.93	225	243.07	137.43
Net sales	2786.39	3577.9	4137.52	5001.04
Ratios	6.71%	6.29%	5.87%	2.75%

❖ **Diagram**



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D. EARNING PER SHARE

The portion of a company's profit allocated to each outstanding share of common stock. Earnings per share serve as an indicator of a company's profitability.

Calculated

as:

$$\text{EPS} = \frac{\text{Net Profit Available To Equity-Holders}}{\text{Number Of Ordinary Shares Outstanding}}$$

When calculating, it is more accurate to use a weighted average number of shares outstanding over the reporting term, because the number of shares outstanding can change over time. However, data sources sometimes simplify the calculation by using the number of shares outstanding at the end of the period.

Diluted EPS expands on basic EPS by including the shares of convertibles or warrants outstanding in the outstanding shares number.

Earnings per share are generally considered to be the single most important variable in determining a share's price. It is also a major component used to calculate the price-to-earnings valuation ratio.

For example, assume that a company has a net income of \$25 million. If the company pays out \$1 million in preferred dividends and has 10 million shares for half of the year and

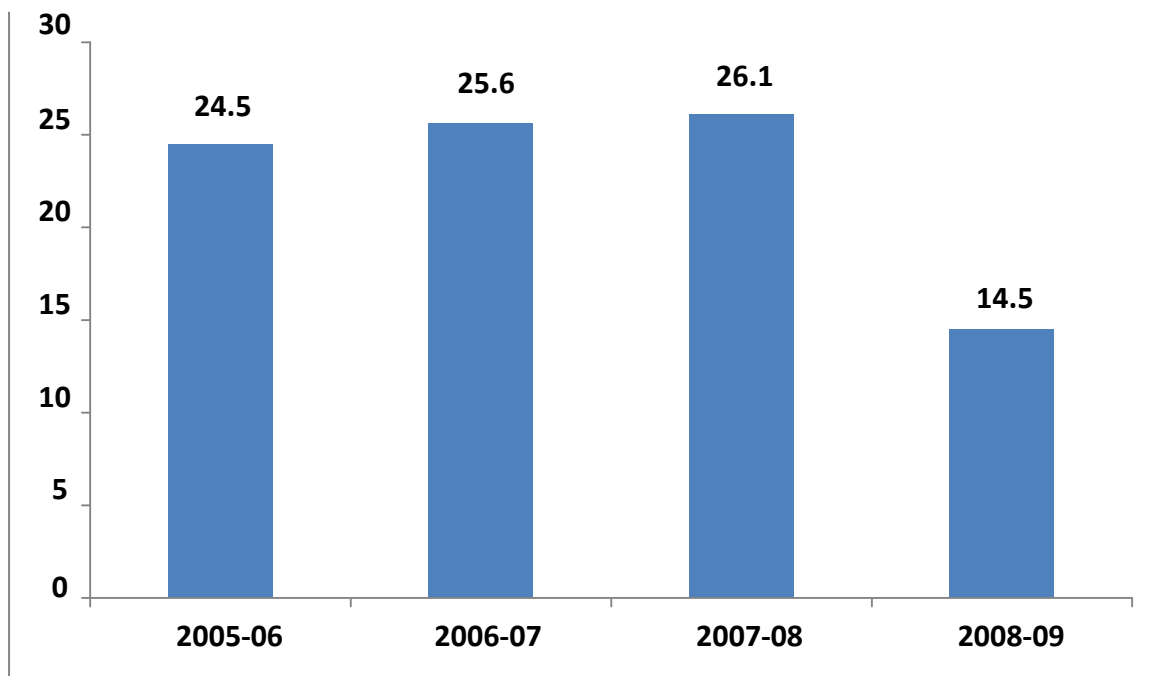
15 million shares for the other half, the EPS would be \$1.92 (24/12.5). First, the \$1 million is deducted from the net income to get \$24 million, and then a weighted average is taken to find the number of shares outstanding (0.5x 10M+ 0.5 x 15M = 12.5M).

An important aspect of EPS that's often ignored is the capital that is required to generate the earnings (net income) in the calculation. Two companies could generate the same EPS number, but one could do so with less equity (investment) - that company would be more efficient at using its capital to generate income and, all other things being equal, would be a "better" company. Investors also need to be aware of earnings manipulation that will affect the quality of the earnings number. It is important not to rely on any one financial measure, but to use it in conjunction with statement analysis and other measures.

❖ **Calculation of EPS with diagram**

Particulars	2005-06	2006-07	2007-08	2008-09
EPS	24.5	25.6	26.1	14.5

❖ **Diagram**



E. PRICE EARNINGS RATIO

PE ratio is closely related to the earnings yield/earnings price ratio. It is actually the reciprocal of the latter. This ratio is computed dividing the market price of the shares by the EPS. Thus,

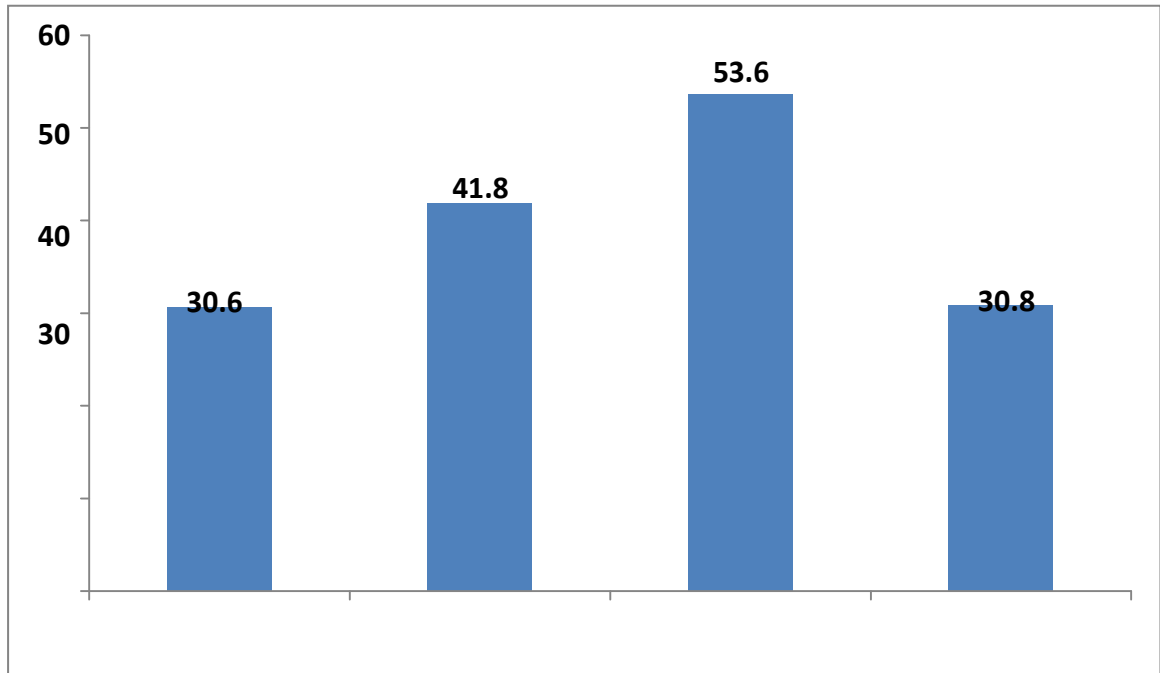
$$\text{PE ratio} = \frac{\text{Market Price of Share}}{\text{EPS}}$$

The PE ratio reflects the price currently being paid by the market for each rupee of currently reported EPS. In other words, the P/E ratio measures investors' expectations and the market appraisal of the performance of a firm. In estimating the earnings, therefore, only normally sustainable earnings associated with the assets are taken into account. That is, the earnings are adjusted for income from, say, discontinued operations and extraordinary items as well as many other items not expected to occur. This ratio is popularly used by security analysts to assess a firm's performance as expected by the investors.

❖ Calculation of PE ratio with diagram

Particulars	2005-06	2006-07	2007-08	2008-09
Ratios	30.6	41.8	53.6	30.8

❖ **Diagram**



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