

FREQUENTLY ASKED QUESTIONS: FINANCIAL STATEMENT ANALYSIS

What is meant by Financial Statement Analysis?

Analysis of financial statements refers to analysis and interpretation of information available from the Financial Statements.

What is meant by trend analysis?

Trend analysis is the analysis which is carried out by calculating trend percentages of relevant financial metrics over multiple periods. It analyses financial information to evaluate the changes in financial & operating data between specific periods.

What is meant by comparative statements?

Comparative statements are usually prepared to show the financial data for two consecutive periods, revealing any difference between them and its percentage with a view to evaluate performance trends.

When the financial statements of current year and previous year are recast for comparison of all the elements of financial statements and the comparison is in absolute numbers as well as in percentages, it is called comparative financial statement.

The statement is constructed by

- using absolute numbers represented by monetary values in the years/periods under consideration and
- calculating the increase or decrease in monetary values in absolute numbers
- calculating percentage increase of the monetary values by using the following formula:

$$\frac{(\text{Current period figures} - \text{Previous period figures})}{\text{Previous period figures}} \times 100$$

- the results of the aforesaid comparison are then analyzed and interpreted

What are common-size statements?

The statements which report financial information as a percentage of some common bases are called common size statements.

Common size financial statements are restated financial statement showing percentage of total items with common base for comparison. They make comparison easy and meaningful

The steps followed are as under:

Assets	<ol style="list-style-type: none">Assets side is classified in fixed assets, investments, current assets (CA), fictitious assets showing individually and its total.Then total assets are taken as common base of 100 and the calculation is made as shown below:<ul style="list-style-type: none">- Tangible assets/Total assets x 100- Investments/Total assets X 100- Fictitious assets/Total assets x 100 etc
Liabilities	<ol style="list-style-type: none">Similarly, liabilities side of the Balance Sheet is classified into owners' equity,

	<p>long term borrowings, current liabilities showing individually and its total.</p> <p>d) The total liabilities are taken as common base of 100 and the calculation is made as shown below:</p> <ul style="list-style-type: none"> - Owners' equity/Total Liabilities x 100 - Long term borrowings/Total liabilities x 100
Income statement	<p>e) Income statement is classified in sales, cost of goods sold, operating expenses, net profit, interest, tax, earnings after tax etc. Percentage of each element to sales is calculated.</p>

What is meant by budgeting?

Budgeting is a process by which a company, department, or business section forecasts its revenues and expenses.

What is meant by Flexible budget?

Flexible budget is one where you develop several versions of budgets, based on various assumptions about inputs and outputs to determine which version best matches the reality of the actual financial performance.

What is meant by Master budget?

Master budget represents the organization's overall goals in terms of expectations and forecasting of those goals into monetary terms. The master budget then cascades down through the organization into departmental budgets, capital budgets, sales budgets, etc.

What is meant by financial modeling?

Financial modeling is the development of forecasting, budgeting, or other financial models. These are often developed in Excel, or they pass through Excel for data transformation to get loaded back into financial software.

What is meant by Gross Margin?

Gross margin represents the difference between total revenue minus cost of goods sold. The gross margin is the money that is used to cover operating expenses, income taxes, and interest.

What is Gross profit margin ratio?

Gross profit margin ratio is a metric that show the ratio of gross profit to revenue. This number represents every dollar of revenue that will cover operating expenses, interest, taxes, depreciation, and amortization.

What is meant by Headcount?

Headcount is the total number of employees you have as well as projected headcount in a budget. This can also include contractors for budget line items that use contractors.

What are historical averages?

Historical averages is a method to look at averages to establish a budget forecast for a line item. Horizontal analysis is a methodology of seeing how different accounts on different financial statements changed over time.

What is meant by Static budget?

Static budget is a budget that only has one version based on the best assumptions and modeling available to the company.

What is meant by system access controls?

System access controls is an internal control that assesses who needs access to what systems and functions within a company.

How do we define Trend Ratios? What are merits and demerits of Trend Ratios?

Trend ratios are calculated in the form of index no. of each financial item in the financial statement of different periods. The method presupposes percentage relation of items with the similar item in the base year. The formula is as under:

$$\text{Trend ratio} = \frac{\text{Value of each item in financial statement of any period}}{\text{Value of same item in financial statement of base period}} \times 100$$

To ensure that trend ratios are meaningful following care needs to be taken:

- a) There must be uniform accounting policies followed year on year to make this analysis meaningful
- b) Consistency convention is a pre-requisite for this type of analysis
- c) Trend percentages need to be calculated only for items having logical relationship with one another
- d) Care should be taken to select the base year. This must be a normal year and be adequately representative of the performance trend
- e) Trend percentages should be studied after considering the absolute numbers on which they are based, otherwise they may give misleading and skewed results.
- f) The figures of the current year should be adjusted in the light of price level changes as compared to the base year before calculating the trend analysis, otherwise comparison may not be meaningful.

Merits

- a) It depicts trend of items with passage of time
- b) It shows the manner and rate of improvement or decline of various financial parameters
- c) Keeping everything constant, it estimates and predicts the financial parameters of the foreseeable future
- d) It also shows horizontal and vertical analysis to reflect behavior of various financial items with the passage of time.

Demerits

- a) Without uniform accounting policies this analysis is meaningless
- b) This analysis does not consider inflation accounting. So, in case of inflation figures of base year may be widely differing from the figures of the current year.
- c) In today's dynamic business environment where things change very quickly, it would be difficult to use the premise that everything will continue to remain the same going forward in the foreseeable future
- d) Trend ratios must be read based on absolute data; otherwise, the analysis and conclusion may not be practical in approach.

How do we handle forecasting technique?

Forecasting is a prediction about a condition or situation at some future time. Business decisions and especially financially related business decisions depend heavily on forecasts of future events. Decisions related to future investments, borrowing and lending funds depend heavily on forecasts of future business events. Even valuation of enterprise or business verticals or projects also heavily depends on future forecast.

Most enterprises use significant senior management time and sophisticated forecasting tools to map the uncertain future events. Budgeting and forecasting is used to do the following:

- a) Build yardsticks and benchmarks for future performance
- b) Monitor actual performance and compare with budget and forecasts

- c) Handle uncertainty of the future

Three critical questions need to be answered in carrying forecasting technique. These are:

- a) estimate the future forecast with accuracy as much as possible
- b) the cost benefit trade-off and what efforts need to be put in to generate reasonably accurate forecast
- c) Meet the criteria for timeliness. Annual forecast must be before the commencement of the financial year. Monthly or quarterly forecasts must be before the commencement of the respective periods.

What are the essential attributes of a meaningful forecast?

The essential attributes of a meaningful forecast are as follows:

- a) Strong and robust assumptions of the internal factors driving the business and external macro-economic factors- like CPI and WPI for forecasting inflation, market size of the product/services
- b) Identification of variables which can swing results of forecasts e.g. prediction of sales prices, raw material costs, exchange rates for imports etc.
- c) sensitivity analysis, where results of assumptions are adjusted linking possible changes in key variables driving the business.

How does a forecasting template look like?

A specimen template of a forecast would be as follows:

Cash flow statement								
Item	October	November	December	January	February	March	YTD	Remarks
Inflows								
Receipt from customers								
Commission								
Trading								
Project								
Loan received								
Total	0	0	0	0	0	0	0	
Outflows								
Vendor payment								
Salaries & wages								
Staff welfare expenses								
Utilities expense								
Rent, rates and taxes								
Repairs & maintenance								
Tours & travels								
Loan repayment								
Interest pay-out								
Other charges								
Total	0	0	0	0	0	0	0	
Net cash flows								
Add: Opening balance								
Closing balance								

This forecasting model considers week/month wise revenue and expenses of foreseeable future and predicts possible surplus or shortfall if any. If it shows a shortfall, then the organization needs to plan action to either introduce more revenue or cut costs in order to ensure that there is no deficit as at the end of the financial year.

What does ratio analysis signify?

Ratio analysis is a tool of management for measuring efficiency and guiding business policies. Ratio analysis is a technique of analysis and interpretation of financial statements. It is the process of determination and interpretation of various ratios for helping in decision making.

The major accounting ratios are categorized as under:

- **Liquidity ratios**
- **Capital structure ratios**
- **Coverage ratios**
- **Profitability ratios**
- **Expenses ratios**
- **Activity ratios**
- **Asset turnover ratios**
- **Return on investments**
- **Shareholders ratios**

What is meant by Profitability ratio?

Profitability ratio measures the profit in relation to sales. This ratio is measured with the benchmark ratio prevalent in the industry for inter-firm comparison purposes.

The following ratios generally come under profitability ratios:

Ratio	Rationale
<p>Gross profit margin $\frac{\text{Gross Profit} \times 100}{\text{Sales}}$</p>	<p>This ratio measures the profit in relation to sales. This ratio is measured with the benchmark ratio prevalent in the industry for inter-firm comparison purposes.</p>
<p>EBITDA margin $\frac{\text{Earnings before Interest depreciation, amortization and tax} \times 100}{\text{Sales}}$</p>	<p>This is a very critical ratio which is looked at by the outside world including bankers to measure the profitability of the enterprise in the short term and also used as a benchmark for valuation for the medium to long term.</p>
<p>Net Profit margin $\frac{\text{Net Profit after interest and tax} \times 100}{\text{Sales}}$ Or, $\frac{\text{Net Profit after tax before interest} \times 100}{\text{Sales}}$</p>	<p>This ratio measures the net profit of the enterprise with respect to sale.</p> <p>Both these ratios are used to compare with benchmark industry average to evaluate the profitability of the enterprise.</p>

Both these ratios are used to compare with benchmark industry average to evaluate the profitability of the enterprise.

What is meant by Quick ratio?

Quick ratio is a metric that assesses how well a company can pay its bills in the short-term. However, this is different from the Current Ratio because it takes out the effect of the inventory balance.

What is meant by liquidity ratio?

This ratio measures the liquidity of the organization. The following ratios generally come under liquidity ratio:

Ratio	Rationale
Net working capital: Gross Current assets less Current liabilities	It measures the liquidity of an enterprise. It reflects the short-term liquidity position of the enterprise. In general ratio of 2:1 is considered adequate. If it is lower, then it depicts tightness in liquidity. If it is higher, then there is adequate liquidity, but it may also be possible that funds are tied up in obsolete/slow moving inventories and overdue debts. Quick assets are current assets less inventories, and this ratio is a measure of the liquidity position of the enterprise. In general, a ratio of 1: 1 would be considered adequate, as it would signify that the enterprise has enough cash to pay off all its current liabilities
Current ratio: Current assets = ----- Current liabilities	
Liquid ratio/Acid test ratio: Quick assets = ----- Current liabilities	

What is meant by solvency ratio?

Solvency ratio evaluates the long-term solvency of the organization and specially its capacity to service its debt. The ratios are highlighted below.

Ratio	Rationale
Debt equity ratio Long term debt = ----- Shareholders' equity	This is a very important ratio which depicts the relative proportion of debt and equity in financing the assets of an enterprise. A ratio of 1:1 is considered adequate. If the debt content is higher the enterprise is considered highly geared and if the equity content is higher, then the enterprise is considered low geared.
Debt to total capital ratio Long term debt = ----- Permanent capital Or Total debt = ----- Permanent capital + Current liabilities Or Total Shareholders' equity = -----	
	This ratio is also a determinant based on which weighted average cost of capital is calculated. (WACC). This ratio indicates what proportion of the permanent capital of the enterprise is funded out of long-term debt.

Ratio	Rationale
Total assets	A ratio of 1:2 is considered adequate. It measures the proportion of total assets financed by outside funds. A low ratio is low risk specially for outsiders like creditors. It depicts the proportion of total assets funded by owners' equity.

What is meant by coverage ratio?

This is a ratio used to ascertain how easily an enterprise can pay its outstanding dues.

Ratio	Rationale
Interest coverage $\frac{\text{Earnings before interest and tax}}{\text{Interest}}$	This is a ratio used to ascertain how easily an enterprise can pay its outstanding dues. A ratio of 1:5 is considered satisfactory. This ratio measures the ability of the enterprise to pay dividend on preference shares. A high ratio indicates better ability. It shows the overall ability of the enterprise to fulfil the liabilities. A high ratio is better for creditors.
Dividend coverage $\frac{\text{Earnings after tax}}{\text{Preference dividend}}$	
Total coverage $\frac{\text{Earnings before interest and tax}}{\text{Total fixed charges}}$	

What do expenses ratio signify?

This ratio is an effective measure to depict the operational efficiency of the business.

The ratios are as follows:

Ratio	Rationale
Operating ratio $\frac{\text{Cost of goods sold + other expenses}}{\text{Sales}}$	This ratio is an effective measure to depict the operational efficiency of the business. Lower operating ratio would depict higher profitability and higher operating ratio would signify lower profitability. It measures the cost of goods sold per sale. It measures specific expenses per sale.
Cost of goods sold ratio $\frac{\text{Cost of goods sold}}{\text{Sales}}$	
Specific expenses ratio $\frac{\text{Specific expenses}}{\text{Sales}}$	

Net current assets are defined as Current Assets less Current liabilities.

What does Return on Asset ratio signify?

This ratio is a measure of return on the funds invested in the total assets of the enterprise. The higher the ratio, it signifies more efficient use of the total assets.

Return on Assets (ROA)

$$= \frac{(\text{Net Profit after tax}) \times 100}{\text{Total assets}}$$

Or,

$$= \frac{(\text{Net Profit after tax} + \text{Interest}) \times 100}{\text{Tangible assets}}$$

Or,

$$= \frac{(\text{Net Profit after tax} + \text{Interest}) \times 100}{\text{Fixed assets}}$$

What does Return on Capital Employed ratio signify?

This ratio is a measure of return on the funds invested in the capital employed of the enterprise. The higher the ratio, it signifies more efficient use of the total capital employed.

Return on capital employed (ROCE)

$$= \frac{(\text{Net Profit after tax}) \times 100}{\text{Total capital employed}}$$

Or,

$$= \frac{(\text{Net Profit after tax} + \text{Interest}) \times 100}{\text{Total capital employed}}$$

Or,

$$= \frac{(\text{Net Profit after tax} + \text{Interest}) \times 100}{\text{Total capital employed} - \text{intangible assets}}$$

What does the ratio Return on total shareholders' equity signify?

This ratio depicts the return on total shareholders' fund deployed in the enterprise. Higher the return, it would signify better return on total shareholders' fund.

Return on total shareholders' Equity

$$= \frac{(\text{Net Profit after tax}) \times 100}{\text{Total shareholders' equity}}$$

What does the ratio Return on ordinary shareholders equity signify?

This ratio depicts the return on ordinary shareholders' fund deployed in the enterprise. Higher the return, it would signify better return on equity from ordinary shareholders.

Return on total ordinary shareholders' Equity

$$\frac{\text{(Net Profit after tax and preference dividend)} \times 100}{\text{Ordinary shareholders' Equity}}$$

What is meant by Earnings per share (EPS)?

The ratio measures the profit available to the equity holders on a per share basis.

Earnings per share (EPS)

$$\frac{\text{Net Profit of equity holders}}{\text{Number of Ordinary shares}}$$

What is meant by Dividends per share (DPS)?

The ratio measures the profit distributed as dividend to the equity holders on a per share basis.

Dividend per share (DPS)

$$\frac{\text{Net Profit after interest and preference dividend paid to ordinary shareholders}}{\text{Number of Ordinary Share outstanding}}$$

What is meant by Dividend payout ratio (D/P)

This ratio is a measure of percentage share of net profit paid out as dividend to equity shareholders. The higher the D/P ratio, more attractive it is for the investor.

Dividend pay-out ratio (D/P)

$$\frac{\text{Total dividend to equity holders}}{\text{Total net profit of equity Holders}}$$

Or,

$$\frac{\text{Dividend per ordinary share}}{\text{Earnings per share}}$$

What do we mean by Earnings yield?

This ratio is a measure of percentage of each rupee invested in the stock that has been earned by the enterprise.

Earnings yield

$$= \frac{\text{Earnings per share}}{\text{Market value per share}}$$

What do we mean by Dividend yield?

This ratio is a measure of percentage dividend paid out by the enterprise each year in relation to its share price.

Dividend yield

$$= \frac{\text{Dividend per share}}{\text{Market value per share}}$$

What is meant by Price Earnings ratio?

This ratio is a measure which signifies the price currently paid by the investor for each rupee of EPS. Higher the ratio more expensive is the stock price and more market capitalization for the owners.

Price earnings ratio (P/E)

$$= \frac{\text{Market value per share}}{\text{Earnings per share}}$$

What do we mean by Earnings power?

The ratio is a measure of the earning power of the enterprise as it depicts overall profitability and operational efficiency of an enterprise.

Earning power

$$= \frac{\text{Net profit after tax}}{\text{Total assets}}$$

What is meant by Accounts payable turnover ratio?

Accounts payable turnover ratio is a ratio that can be calculated and tells you how often you are paying off the accounts payable balance within a year (a use of cash).

What is meant by Accounts receivable turnover ratio?

Accounts receivable turnover ratio is a ratio that can be calculated and tells you how often the accounts receivable balance turns into cash (a generation of cash).

What are activity ratios?

Activity ratios are the ratios that track the working capital management performance of the company. Activity ratios include ratios of accounts receivable, accounts payable, and inventory.

What is meant by Days sales in Inventory?

Days sales in inventory is a metric that turns the inventory turnover rate into how many days it takes to turn inventory into cash. This is a metric that then can be used in calculating the cash conversion cycle.

What is meant by Creditors days outstanding?

Creditors days outstanding is a metric that turns the accounts payable turnover rate into how many days it takes to hold on to cash in the accounts payable balance. This is a metric that then can be used in calculating the cash conversion cycle.

What is Inventory turnover ratio?

Inventory turnover ratio is a metric that determines how many times in a year the company is turning its inventory balance into cash.

How do we define Return on Equity?

Here we revisit the definition of Return on Equity (ROE)

Return on Equity (ROE) is calculated as under:

$$\text{Return on Equity (ROE)} = \frac{\text{Comprehensive Income}}{\text{Average Shareholders' Equity (SE)}}$$

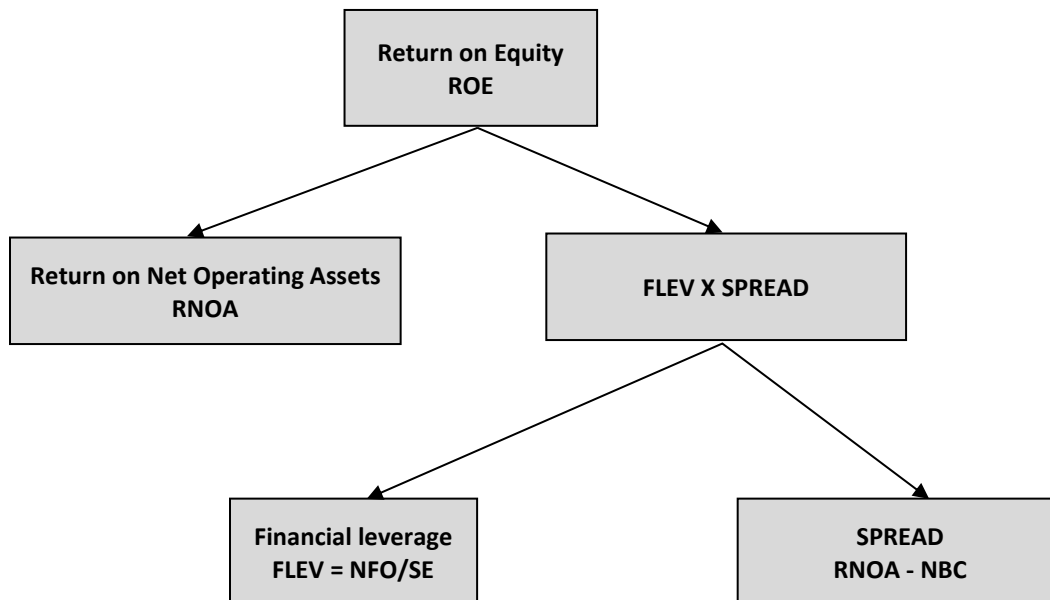
What are the drivers of Return on Equity?

Return on Equity is cascaded into three levels of drivers. These are:

- (a) Level 1 identifies the effect of financing and operating liability leverage.
- (b) Level 2 identifies effect of profit margins and asset turnovers on operative profitability, and
- (c) Level 3 identifies the drivers of profit margins, asset turnovers and the borrowing cost.

How is level 1 drill down explained?

Level 1 drill down is determined by operating profitability, financial leverage and the operating spread. Hence, first level drivers of ROE are:



What is meant by financial leverage?

Financial leverage is the degree to which net operating assets are financed by borrowing with net financial obligations (NFO) or by equity. The measure FLEV = NFO/SE captures financial leverage. To the extent that net operating assets are financed by net financial obligations rather than equity, the return on equity is affected. A typical FLEV is around 0.4, but there would be considerable variation between industries and enterprises at large.

How do we define Operating Spread?

Operating Spread is the difference between the return on net operating assets and the net borrowing cost and is represented as:

$$\text{SPREAD} = \frac{\text{Return on Net Operating Assets (RNOA)} - \text{Net Borrowing Cost (NBC)}}{\text{Net Borrowing Cost (NBC)}}$$

This formula says that the ROE is levered up over the return from operations if the enterprise has financial leverage and the return from operations is greater than the borrowing cost. The enterprise earns more on its equity if the net operating assets are financed by net debt, provided those assets earn more than the cost of debt.

How do we define Net borrowing cost?

The net borrowing cost (NBC) is a weighted average of the cost for the different sources of net financing. It can be calculated as under:

$$\text{NBC} = \frac{\text{NFE}}{\text{NFO}}$$

Where, NFE = Net Financial Expenses

NFO = Net Financial Obligations

The drivers of Net Borrowing cost are:

$$\text{NBC} = \frac{\text{FO}}{\text{NFO}} \times \frac{\text{After tax interest on financial obligations (FO)}}{\text{FO}}$$

Minus

$$\frac{\text{FO}}{\text{NFO}} \times \frac{\text{After tax interest on financial assets (FA)}}{\text{FO}}$$

Minus

$$\frac{\text{FA}}{\text{NFO}} \times \frac{\text{Unrealised gains on financial assets (FA)}}{\text{FA}}$$

Plus

$$\frac{\text{Preference shares}}{\text{NFO}} \times \frac{\text{Preference dividend}}{\text{Preference shares}}$$

Where,

FO = Financial obligations

NFO = Net Financial Obligations

FA = Financial Assets

Hence, from the above, the drivers of Net Borrowing Cost (NBC) are:

- (a) After tax interest on financial obligations
- (b) After tax interest on financial assets
- (c) Unrealised gains on financial assets
- (d) Preference dividend

What is meant by Operating Liability Leverage?

Similar to financial leverage, just as financial liabilities can lever up the ROE, so can operating liabilities lever up the return on net operating assets. Operating liabilities are obligations incurred during operations and are distinct from financial obligations incurred to finance the operations.

The operating liability leverage is expressed as under:

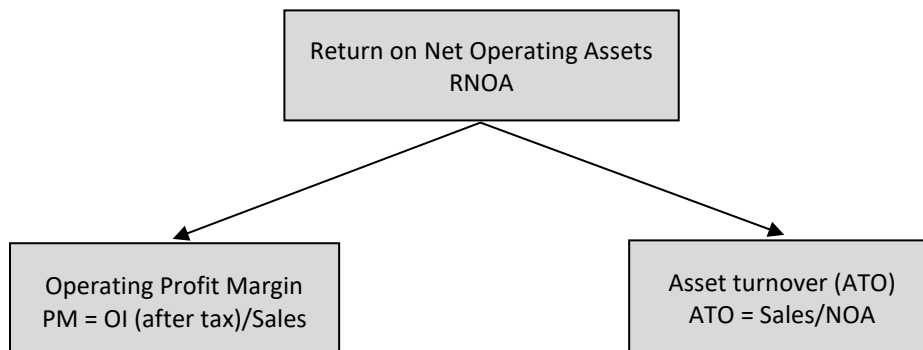
$$\text{Operating liabilities leverage (OLLEV)} = \frac{\text{OI}}{\text{NOA}}$$

The typical OLLEV is about 0.4. We know, operating liabilities reduce the net operating assets that are employed and so lever the return on net operating assets. To the extent a firm can get credit in its operations with no explicit interest, it reduces its investment in net operating assets and levers its RNOA. On the other hand vendors who provide credit without interest also charge higher prices for the goods and services they supply than would be the case if the firm paid cash. Hence, operating leverage, like financial leverage, can be unfavourable as well as favourable.

What is the level II driver of Return on Equity?

The level II driver of Return on Equity (ROE) is shown below.

The two drivers of RNOA are:



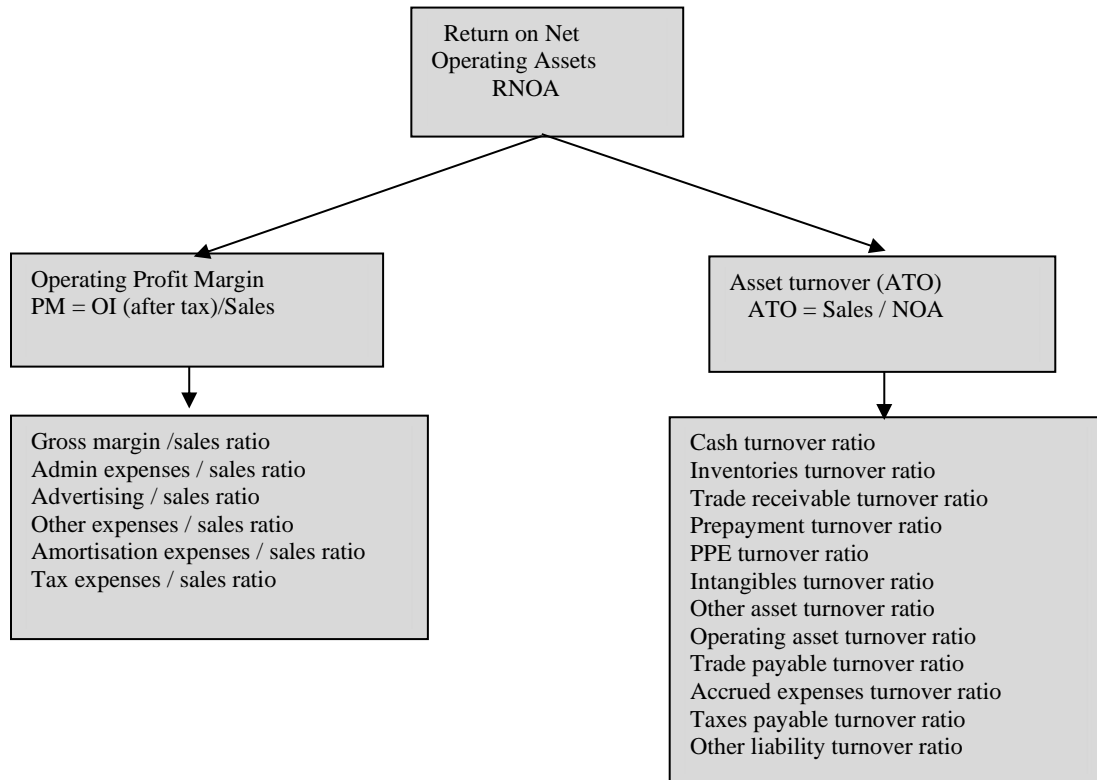
Operating Profit Margin depicts profitability of the entity towards each rupee of sales.

Asset Turnover ratio depicts the sales revenue per rupee of net operating assets. It measures the ability of the NOA to generate sales and to what degree.

How is Return on Net Operating Assets calculated?

This is the level III driver of Return on Equity (ROE).

Return on Net Operating Assets is calculated as per chart below. This is also called DuPont financial analysis.



What are Operating Profit margin drivers?

Operating profit margin drivers are as follows:

Items	Ratios
Gross margin/sales ratio	Gross margin = ----- Sales
Admin expenses/sales ratio	Administration expenses = ----- Sales
Advertising/sales ratio	Advertising expenses = ----- Sales
Other expenses/sales ratio	Other expenses

Items	Ratios
	$= \frac{\text{Sales}}{\text{Sales}}$
Amortisation expenses/sales ratio	$= \frac{\text{Amortisation expenses}}{\text{Sales}}$
Tax expenses/sales ratio	$= \frac{\text{Tax expenses}}{\text{Sales}}$
Net margin/sales ratio (resultant of all of above)	$= \frac{\text{Net margin}}{\text{Sales}}$

What are the Turnover drivers?

Items	Ratios
Cash turnover ratio	$= \frac{\text{Sales}}{\text{Cash}}$
Inventories turnover ratio Inventories days sales (IDS)	$= \frac{\text{Cost of goods sold}}{\text{Inventory}}$ $= \frac{365}{\text{Inventory turnover}}$
Trade receivable turnover ratio Days sales Outstanding (DSO)	$= \frac{\text{Sales}}{\text{Trade Receivable}}$ $= \frac{365}{\text{Trade receivable turnover}}$
Trade payable turnover ratio	$= \frac{\text{Purchases}}{\text{Trade Payable}}$ $= \frac{365}{\text{Trade payable turnover}}$
PPE turnover ratio	$= \frac{\text{Sales}}{\text{Property, Plant \& Equipment}}$
Intangibles turnover ratio	$= \frac{\text{Sales}}{\text{Intangible properties}}$
Prepayment turnover ratio	$= \frac{\text{Sales}}{\text{Prepayments}}$

Items	Ratios
Accrued expenses turnover ratio	$\frac{\text{Cost of goods sold}}{\text{Accrued expenses}}$
Other liabilities turnover ratio	$\frac{\text{Cost of goods sold}}{\text{Other liabilities}}$
Tax payable turnover ratio	$\frac{\text{Sales}}{\text{Tax payable}}$

What is meant by DuPont Financial Analysis?

In DuPont Financial Analysis, the following matrix will be considered:

Return on Assets (ROA)

This is expressed as under:

$$\text{ROA} = \frac{\text{Net Income}}{\text{Total Assets}} \times 100$$

This ratio is then broken into:

$$\text{ROA} = \text{Net profit margin} \times \text{Asset turnover ratio}$$

$$= \frac{\text{Net profit margin}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Total Assets}}$$

From the above it is evident that the drivers of ROA are:

- a) Profit margin and
- b) Asset turnover ratio

These ratios can be further cascaded down to elements in both the streams under profit margin as well as turnover ratios similar to the ratios highlighted above.

Return on Equity (ROE)

This is expressed as under:

$$\text{ROE} = \frac{\text{Net Income}}{\text{Owners' equity}} \times 100$$

This ratio is then sub-divided into:

$$\text{ROE} = \text{Net Income} \times \text{Asset turnover ratio}$$

$$= \frac{\text{Net Income}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Owners' Equity}}$$

From the above it is evident that the drivers of ROA are:

- a) Profit margin and
- b) Asset turnover ratio

Please show an illustration of DuPont financial analysis.

Calculate ratios in line with DuPont analysis based on the following numbers:

(Rs Million)

Item	2023	2022	2021	2020
Net Income	6068	6945	5157	3566
Revenue	26273	25070	20847	16202
Assets	31471	28880	23735	17504
Owners' equity	23377	19295	16872	12140

Also provide your observations on the health of the enterprise based on the analysis.

Solution

The ratios based on DuPont analysis are as under:

Item	2023	2022	2021	2020	Remarks
Net Income	6068	6945	5157	3566	
Revenue	26273	25070	20847	16202	
Assets	31471	28880	23735	17504	
Owners' equity	23377	19295	16872	12140	
Ratios					
Profit margin (net income /sales %)	23.1%	27.7%	24.7%	22.0%	Profitability is dropping in 2023
Asset turnover ratio (Assets/Sales)	0.835	0.868	0.878	0.926	Similarly, there appears to be lower efficiency in utilization of assets
Return on assets % Profit margin x asset turnover	19.3%	24%	21.7%	20.4%	Has resulted in drop in Return on Assets
Equity multiplier (Sales/Equity)	1.35	1.50	1.41	1.44	Decrease in leverage in 2023
Return on Equity % (ROA X Equity multiplier)	26.0	36.0	30.6	29.4	There is sharp decline in ROE in 2023, lowest in the last four years.

On an overall analysis it shows that there is a significant negative trend on profitability margin as well as return on assets and return on equity in 2021 and this is wake-up call of the management of the enterprise to take note of this, analyze the reasons of this decline and take remedial measures.

Please show a specimen format of Ratio analysis along with trend?

A specimen format of Ration analysis along with trend for multiple years would be as follows:

Ratio Analysis: (Specimen format) in Rs Million						
Sl no.	Particulars		As at 31.03.24	As at 31.03.23	As at 31.03.22	Remarks
1	Net working capital					

Ratio Analysis: (Specimen format) in Rs Million						
	(Current Asset - Current liabilities)					
2	Current ratio					
	(Current Asset/Current liabilities)					
3	Quick ratio/Acid test ratio					
	(Quick Asset/Current liabilities)					
4	Debt - Equity ratio					
	(Long term debt/Shareholders' equity)					
5	Interest coverage ratio					
	(Operating profit/Interest)					
6	Operating Profit margin					
	(Operating profit x 100)/Sales					
7	Gross Profit margin					
	(Gross profit x 100)/Sales					
8	Net Profit margin					
	(Net profit x 100)/Sales					
9	Return on Assets					
	(Operating profit/Average assets)					
10	Return on investments					
	(Net profit before tax x 100)/Net worth					
11	Return on net worth					
	(Net profit x 100)/Average Net worth					
12	Return on capital employed					
	(Net profit after tax x 100)/Total capital employed)					
13	Cost of goods sold ratio					
	(Cost of goods sold/Sales)					

Ratio Analysis: (Specimen format) in Rs Million						
14	Operating ratio					
	(Cost of goods sold + other expenses/Sales)					
15	Fixed Assets turnover					
	(Sales/Fixed assets)					

Please show an illustration of Financial Statement Analysis on trend basis?

a) Key Financials

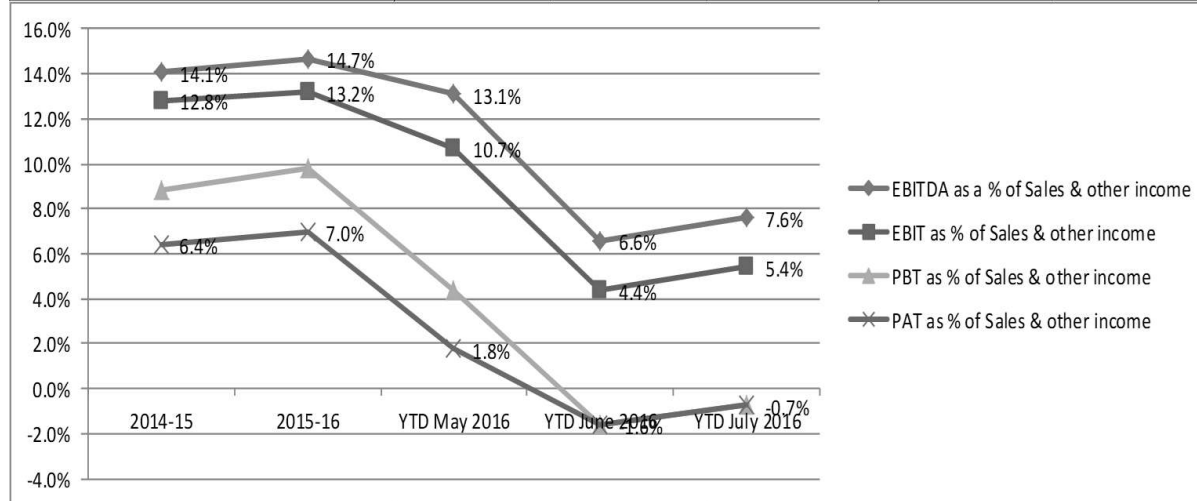
This is a comparative financial summary for multiple years and assists us in understanding the financial trend of the organization under review.

Year	2014-15	%	2015-16	%	YTD July 2016	%
Sales	13,637.2		15,264.0		3,576.7	
Other income	96.3		65.8		18.6	
Sales and other income	13,733.5		15329.83		3595.34	
Raw material consumed / Traded goods	3,980.7	29.0%	4,590.4	29.9%	1,172.6	32.6%
Purchase of carpets	2,226.6	16.2%	1,800.2	11.7%	354.0	9.8%
Materials purchased for resale	159.1	1.2%	34.6	0.2%	11.9	0.3%
Changes in inventories	(648.3)	-4.7%	(536.7)	-3.5%	(381.3)	-10.6%
Manufacturing and other direct expenses	4,078.3	29.7%	4,870.5	31.8%	1,341.9	37.3%
Contribution	3937.1	28.7%	4570.9	29.8%	1096.2	30.5%
Employee benefit expenses	582.6	4.2%	723.1	4.7%	321.8	9.0%
Other Expenses (Admin and selling)	1,409.7	10.3%	1,581.1	10.3%	494.7	13.8%
CSR Expenses	11.5	0.1%	16.5	0.1%	5.5	0.2%
Other Expenses	2003.9	14.6%	2320.7	15.1%	822.0	22.9%
Operating Profit (EBIDTA)	1933.2	14.1%	2250.2	14.7%	274.3	7.6%
EBITDA / Sales %	14.1%		14.7%		7.6%	
Depreciation	171.1	1.2%	226.4	1.5%	80.0	2.2%
EBIT	1762.2	12.8%	2023.82	13.2%	194.25	5.4%
EBIT / Sales %	12.8%		13.2%		5.4%	
Finance cost	550.7	4.0%	518.1	3.4%	221.1	6.2%
Prior period charges	-		-		-	
PBT	1211.4	8.8%	1505.8	9.8%	-26.9	-0.7%
Tax	326.7	2.4%	435.1	2.8%	-	0.0%
Net Profit (PAT)	884.8	6.4%	1070.7	7.0%	-26.9	-0.7%
Net Profit /Sales %	6.4%		7.0%		-0.7%	
Cash Accrual (NP+ DEP)	1055.8		1297.1		53.1	

b) Profitability Analysis

This chart shows a comparative summary of margins for multiple years and assists us in understanding the profitability trend of the organization under review.

Year	2014-15	2015-16	YTD May 2016	YTD June 2016	YTD July 2016
EBITDA as a % of Sales & other income	14.1%	14.7%	13.1%	6.6%	7.6%
EBIT as % of Sales & other income	12.8%	13.2%	10.7%	4.4%	5.4%
PBT as % of Sales & other income	8.8%	9.8%	4.4%	-1.6%	-0.7%
PAT as % of Sales & other income	6.4%	7.0%	1.8%	-1.6%	-0.7%



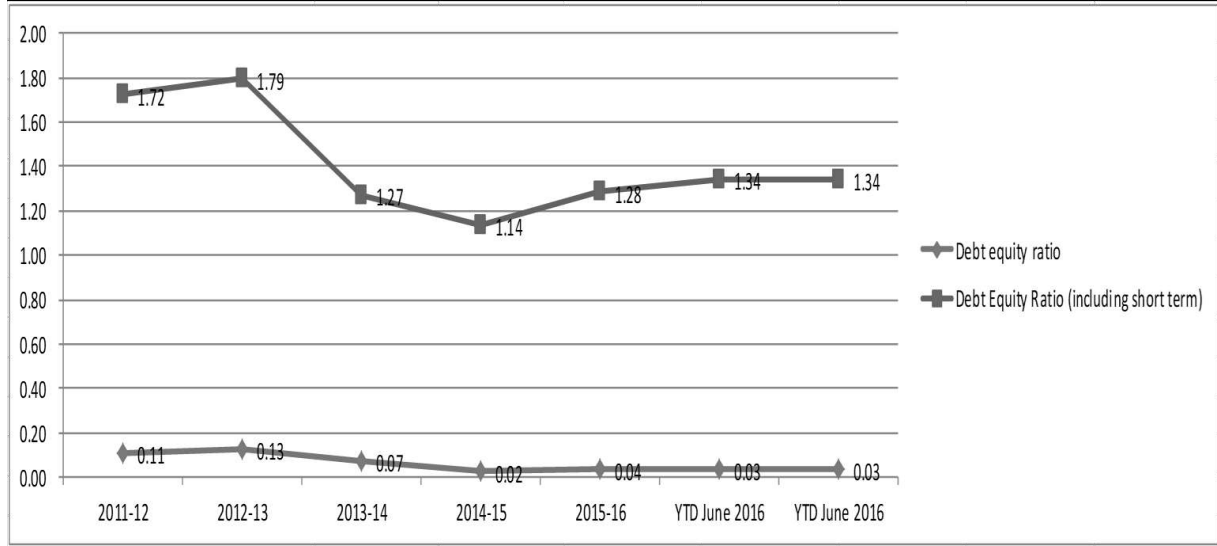
c) Solvency Analysis

Capital Employed - Source					Rs lakhs
Year	2013-14	2014-15	2015-16	YTD Jun 2016	YTD July 2016
Shareholders funds	2930	3806	4876	4833	4849
Long term borrowings	212	94	173	159	159
Deferred tax Liabilities	0	5	40	40	40
Other long term liabilities	57	57	10	10	10
Long term provisions	21	29	38	38	38
Short term borrowings	3513	4231	6086	6331	6332
Capital employed	6733	8222	11222	11411	11427

Capital Employed - Application					Rs lakhs
Year	2013-14	2014-15	2015-16	YTD Jun 2016	YTD July 2016
Net tangible assets	1,036	1,347	3,291	3,329	3,381
Intangible assets	42	28	9	10	10
Capital work-in-progress	25	625	190	255	364
Deferred tax assets	1	0	0	0	0
Non-current investments	86	91	81	81	81
Long term loans and advance	32	93	41	136	71
Net current assets	5,511	6,037	7,610	7,600	7,520
Capital employed	6,733	8,222	11,222	11,411	11,427

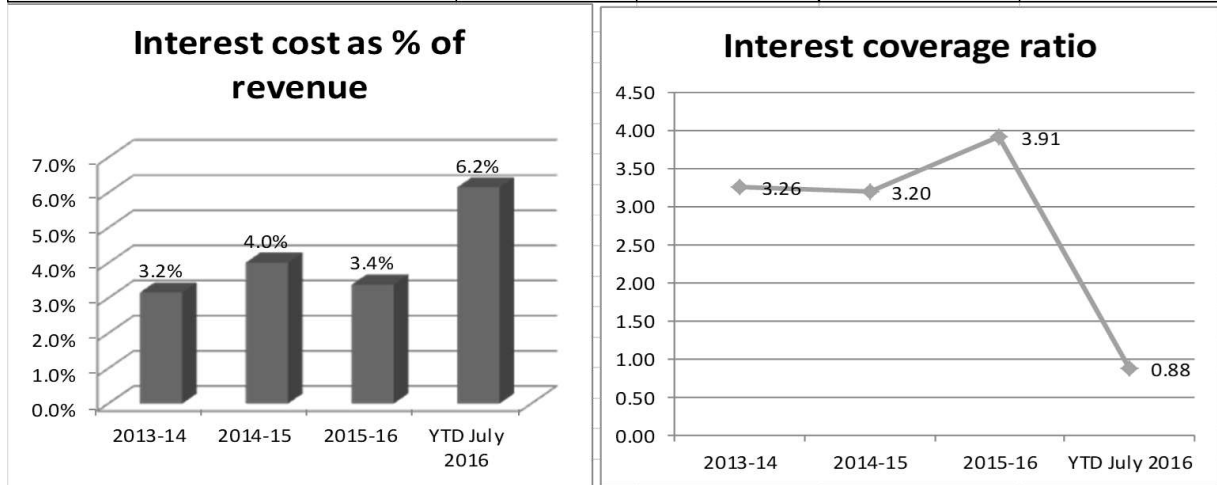
The above table is supported by an analysis of debt equity ratio as shown below.

Year	2011-12	2012-13	2013-14	2014-15	2015-16	YTD June 2016	YTD June 2016
Debt equity ratio	0.11	0.13	0.07	0.02	0.04	0.03	0.03
Debt Equity Ratio (including short term)	1.72	1.79	1.27	1.14	1.28	1.34	1.34



Apart from Debt Equity ratio it shows finance cost trend as illustrated below.

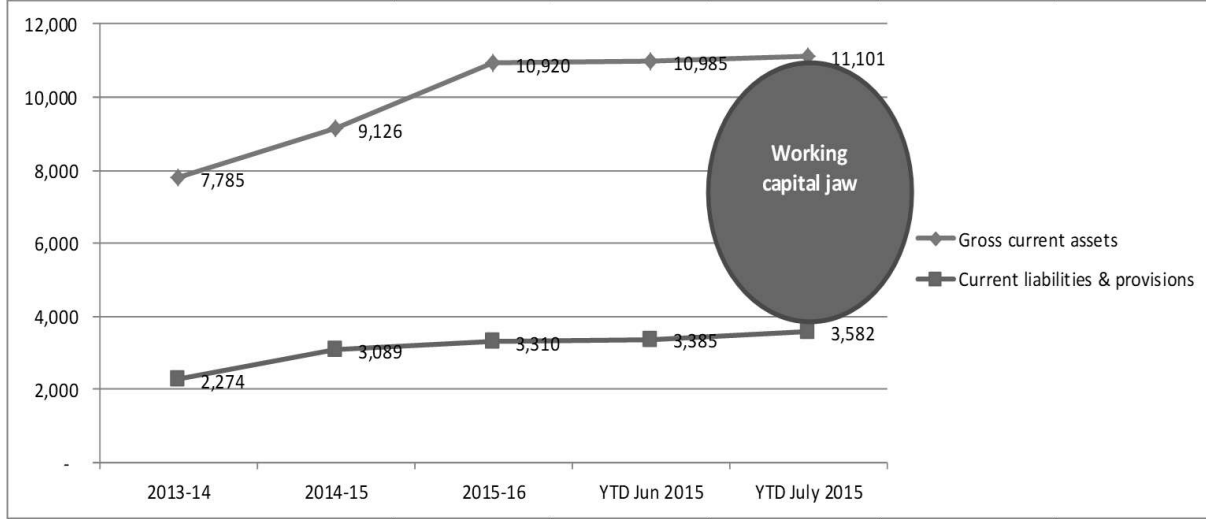
Year	2013-14	2014-15	2015-16	YTD July 2016
Interest cost	384	551	518	221
Interest cost as % of revenue	3.2%	4.0%	3.4%	6.2%
Interest coverage ratio	3.26	3.20	3.91	0.88



d) Liquidity Analysis

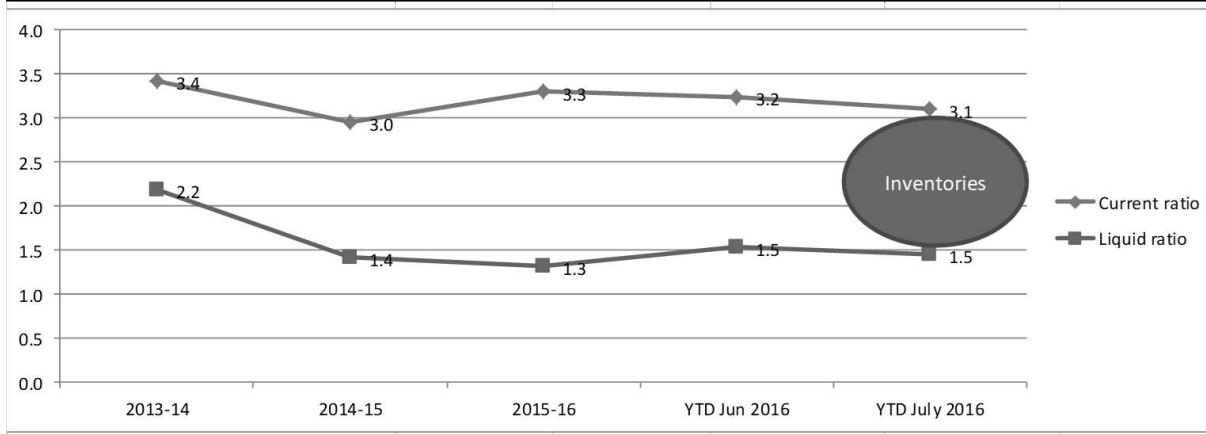
The chart below shows a comparative analysis of gross current assets and current liabilities and the working capital jaw.

Year	2013-14	2014-15	2015-16	YTD Jun 2015	YTD July 2015
Gross current assets	7,785	9,126	10,920	10,985	11,101
Current liabilities & provisions	2,274	3,089	3,310	3,385	3,582
Working capital	5,511	6,037	7,610	7,600	7,520



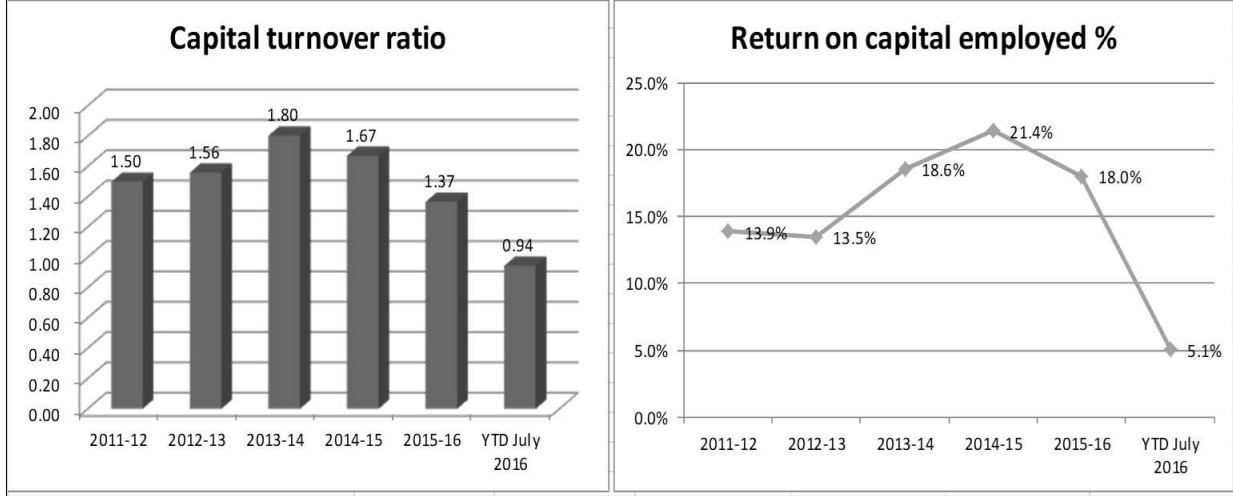
The above is illustrated further by Current ratio chart shown below.

Year	2013-14	2014-15	2015-16	YTD Jun 2016	YTD July 2016
Current ratio	3.4	3.0	3.3	3.2	3.1
Liquid ratio	2.2	1.4	1.3	1.5	1.5

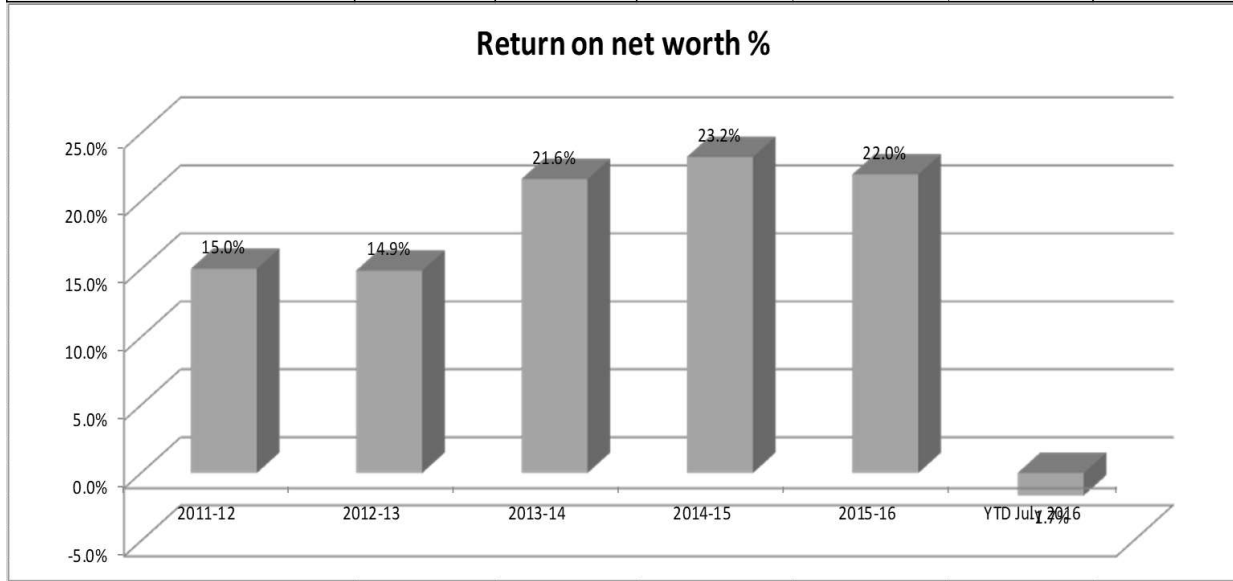


e) Return on Investment

Year	2011-12	2012-13	2013-14	2014-15	2015-16	YTD July 2016
EBIT / Sales %	9.3%	8.7%	10.3%	12.8%	13.2%	5.4%
Capital turnover ratio	1.50	1.56	1.80	1.67	1.37	0.94
Return on capital employed %	13.9%	13.5%	18.6%	21.4%	18.0%	5.1%



Year	2011-12	2012-13	2013-14	2014-15	2015-16	YTD July 2016
Return on net worth %	15.0%	14.9%	21.6%	23.2%	22.0%	-1.7%



Please show some metrics related to Sales Analysis?

Some representative metrics related to Sales Analysis are:

<p>Sales and Product/service profitability:</p>	<p>Product/Service Profitability (for key products/services only)</p> <ul style="list-style-type: none"> ● Product volume trend ● Sales price trend of products and services ● Sales value trend ● Turnover, % to Total, ● Capital Employed, % to Total CE, ● Gross Margin, % to Total, ● Gross Margin as % of Turnover, ● Gross Margin as % of Capital Employed, ● Net Margin, % to Total Net Margin, ● Net Margin as % to Turnover, ● Net Margin as % to Capital Employed,
<p>Market/customer profitability:</p>	<p>Market/Customer Profitability – similar analysis as above</p> <ul style="list-style-type: none"> ● Market Distribution – Indigenous vs. Overseas broken into smaller geographical divisions/segments ● Segment wise profitability analysis ● Customer Distribution – in order of percentage share in each product/activity and in each product/activity group ● Distribution channel wise profitability analysis ● Indicate cost of servicing each market/customer and its efficiency in terms of business, contributions, gross/net margins, scope of sustainability, etc. ● Indicate cost of each supply chain vs. benefits ● Indicate impact of FTAs and Dumping on each product, product-group or each market/customer.

Please show some metrics related to Performance Analysis?

<p>Capacity utilization analysis:</p>	<p>Capacity Utilization Analysis (Product-wise, Product Group-wise and Unit-wise)</p> <ul style="list-style-type: none"> ● Under-utilization of Capacities ● Idle Capacities ● Non-Productive Assets ● Trend Analysis ● opportunity Analysis ● Outsourcing/Sub-Contracting Vs. Internal Capacities ● Plant Break-down hours with impact on productivity, costs, and profitability ● Scope of Expansion and likely cost-benefit analysis
<p>Productivity analysis:</p>	<p>Productivity Analysis along with estimated impact on costs and profitability (Product-wise, Product Group-wise and Unit-wise)</p> <ul style="list-style-type: none"> ● Production/Operations/Process Cycle Time and Productivity ● Input-Output Analysis compared with Budgets or Standards or Industry Norms ● Conversion Efficiency Analysis ● Cost of wastages in operations
<p>Utilities/energy efficiency analysis:</p>	<p>Utilities/Energy Efficiency Analysis (Utility-wise, Unit-wise, Product-wise, and Product Group-wise)</p> <ul style="list-style-type: none"> ● Utility Productivity compared with Budgets or Standards or Industry Norms ● Input-Output Efficiency – impact on costs and profitability ● Energy Conversion Ratio highlighting wastage & inefficiency ● Energy Consumption Ratio for each product/operation and each product/activity group compared with Budgets or Standards or Industry

	Norms
Manpower Analysis	<p>Manpower Analysis (Function-wise, Unit-wise, Product-wise, and Product Group-wise)</p> <ul style="list-style-type: none"> ● Manpower Productivity vs. Returns compared with Budgets or Standards or Industry Norms ● Manpower Pyramid – Ratio of Top Management to Middle Management to Officers to Workmen to Contract Labour ● Idle Man-hours to Total Man-hours with reason-wise analysis and impact on productivity, costs and profitability ● Manpower Absenteeism Vs. Total paid Man-days ● Cost of Manpower Pyramid Analysis – broken into broad categories (including contract labour) ● Cost of Training to Total Employee Cost

Please show some representative metrics related to cost and contribution analysis?

Cost and Contribution analysis:	<p>Key-Expense Ratios vs. Cost of Production/Cost of Sales</p> <ul style="list-style-type: none"> ● Abnormal & Non-Recurring Costs – impact on profitability ● Key Costs Trend Analysis indicating estimated impact on future profitability ● Cost-effectiveness Analysis: Cost of Operation/Process vs. Benefits ● Cost of Management vs. Net Turnover or Gross Margin or Net Margin ● Cost Variance Analysis vs. Standards or Budgets – impact on profitability ● Product cost trend ● Cost by facilities ● Cost by job/activity ● Cost by hospital bed in Health care ● Cost by shelf space in retail ● Volume Variance Analysis vs. Standards or Budgets – impact on profitability ● Marginal Cost and Contribution Analysis for each product/activity, each product/activity group, each market segment, each customer segment, etc. ● Service Department-wise cost trends (elementwise)
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Please show some representative metrics related to working capital analysis?

Working capital analysis:	<p>Movement of Debtors vs. Credit Sales</p> <ul style="list-style-type: none"> ● Days Debtors Analysis – impact on cash flow and profitability ● Overseas Debtors – impact of likely FE Variations ● Movement of Creditors vs. Credit Purchases ● Days Creditors Analysis – impact on supplies and product-line ● Inventory Turnover ● Cash Flow Turnover – impact on profitability
Inventory analysis:	<p>Inventory Analysis - Basis of valuation & Consistency</p> <ul style="list-style-type: none"> ● Turnover efficiency: Cost of Goods Sold/Average Inventory ● Return on Inventory: GM/Average Inventory, NM/Average Inventory ● Slow-moving or dead inventory ● ABC analysis; Period holding analysis ● Policy for Insurance Spares; Inventory Holding due to changes in technology, changes in production process, obsolescence, etc.