

Ratio Analysis

The company's financial statements provide information in Balance Sheet & Income Statement which contains absolute figures which sometimes are not connected with one another. The relationship of two figures expressed mathematically is called **Ratio**. The Ratio Analysis is an instrument for diagnosis of the financial health of an enterprise.

A ratio is only a comparison of the numerator and denominator. The term ratio refers to the numerical or qualitative relationship between two figures. Ratio is obtained by dividing numerator by the denominator. Ratios are designed to show how one number is related to another.

Whereas ratio analysis is an important and age-old technique of financial analysis, ratios are a relative form of financial data & very useful technique used to check upon the profitability and efficiency of a firm.

Ratios considered indicate the trend, progress, or downfall of the firm. Ratios are expressed in the following ways:

1. **Simple Figure / Pure Ratio / Proportion:** It is arrived by the simple division of one number by another. For example, current ratio is current assets to current liabilities is 3:1.
2. **Percentage:** It is arrived at by the special type of ratio expressing the relationship in hundred. It is arrived at by multiplying the quotient by 100. For example, Gross Profit Ratio, gross profit is 30% of sales.
3. **Rate / Times:** It is the ratio between the two numerical facts over a period of time. For example, stock turnover ratio says stock turnover is three times in a year.

Methods of Interpretation through Ratio

1. Comparison with ideal ratio
2. Comparison with past ratio
3. Comparison with some related ratio
4. Comparison with ratios of other firms.

Utility of Ratio Analysis (Importance / Uses)

1. **Profitability:** Useful information about the trend of profitability is available from profitability ratio.
2. **Liquidity:** The ratios are used to ascertain the liquidity of business.
3. **Efficiency:** The turnover ratios guide to measure the efficiency of managers.
4. **Inter Firm Comparison:** The absolute ratios are useful when they are compared with similar ratios of other firms belonging to same industry.
5. **Indicate Trend:** The ratios of the last three to five years will indicate the trend in the respective fields.
6. **Budgetary Control:** Regular budgetary reports are prepared in a business where the system of budgetary control is in use.
7. **Decision Making:** Ratios guide the management in making some of the important decisions.

Importance:

1. Aid to measure general efficiency.
2. Aid to measure financial solvency.
3. Aid in forecasting and planning.
4. Facilitate decision making.
5. Aid in corrective action.
6. Aid in inter firm comparison.
7. Act as a good communication.
8. Evaluation of efficiency.
9. Effective tool.
10. Act as Barometer.

Limitation of Ratio Analysis

1. **Difference in Definitions:** Comparisons are made difficult due to differences in definitions of various financial terms. Lack of standard formula for working out ratios makes it difficult to compare them.
2. **Limitation of Accounting Records:** Financial statements suffer certain limitations. Hence, ratios calculated on the figures given in the financial statements also suffer from similar limitations.
3. **Lack of Proper Standards:** It is very difficult to ascertain the standard ratio in order to make proper comparison. Because it differs from firm to firm, industry to industry.
4. **No Allowances for Price Level Changes:** Due to changes in price level of various years, comparison of ratios of such years cannot give correct conclusions.
5. **Change in Accounting Procedure:** Comparison between two variables prove worth provided their basis of valuation is identical. But in reality, it is not possible. If different methods are followed by different firms for valuation, the comparison will be practically of no use.
6. **Qualitative Factors are Ignored:** Ratios are tools of quantitative analysis only and normally qualitative factors which may generally influence the conclusions derived are ignored while compiling ratios. Hence, it is very difficult to generate whether a particular ratio is good or bad.
7. **Limited Use of Single Ratio:** A single ratio would not be able to convey anything. Ratios are useful when computed on a sufficient large number. If too many ratios are calculated, they confuse instead of giving meaningful conclusions.
8. **Background is Overlooked:** When inter-firm comparison is made, factors like age, size, nature of product, etc., are not considered. Hence ratio analysis cannot give satisfactory result.
9. **Limited Use:** Conclusions drawn from the ratio analysis are not sure indicators of good or bad management. They merely convey certain observations which need further investigation before conclusions are drawn.
10. **Personal Bias:** Ratios are interpreted by different persons in different ways. Ratio analysis is only a tool & personal judgment of analyst is more important.

11. **Arithmetical Window Dressing:** Window dressing means manipulation of accounts in such a way to show better position than what actually is. Hence, ratios based on such figures are not reliable.
12. **Changing Policies:** Ratios are based on past and are not indicators of future.
13. **Expensive:** Installation of RA is expensive and lengthy process hence not installed by small firms.

CLASSIFICATION OF RATIO ANALYSIS

A. Traditional Classification

- **Revenue Statement Ratio**
- **Balance Sheet Ratio**
- **Composite Ratio**

B. Functional Classification

Profitability Ratio

I. Based on Sales

1. Gross Profit Ratio
2. Operating Ratio
3. Expense Ratio
4. Net Profit Ratio

II. Based on Investment

1. Return on Investment
 - a) Return on Capital Employed
 - b) Return on Shareholders Fund
2. Return on Equity Share Fund
3. Earnings Per Share

Liquidity Ratio

1. Current Ratio
2. Liquid Ratio
3. Acid Test / Quick Ratio

Leverage Ratio

1. Proprietary Ratio
2. Debt Equity Ratio
3. Capital Gearing Ratio
4. Long Term Funds to Fixed Assets

5. Coverage Ratio
 - a) Interest Coverage Ratio
 - b) Total Coverage Ratio

Activity / Efficiency Ratio

1. Stock Turnover Ratio
2. Debtors Velocity
3. Creditors Velocity
4. Fixed Assets Turnover
5. Total Assets Turnover

Formula:

<u>1. Profitability Ratio</u>		
<u>A. Based on Sales</u>		
1.	Gross Profit Ratio	$\frac{\text{Gross Profit}}{\text{Net Sales}} * 100$
	Gross profit	Net Sales – COGS
	Net Sales	Gross Sales – Sales Return
	COGS (Cost of Goods Sold)	Opening Stock + Purchases – Closing Stock
2.	Net Profit Ratio	$\frac{\text{NPAI\&T}}{\text{Net Sales}} * 100$
		NPAI&T (Net Profit after Interest & Tax)
3.	Operating Ratio	$\frac{\text{COGS} + \text{Operating Expenses}}{\text{Net Sales}} * 100$
	Operating Expenses	Factory Expenses + Administration Expense + Selling & Distribution Expenses Or Gross Profit – Net Profit
4.	Operating Profit Ratio	$\frac{\text{Operating Net Profit}}{\text{Net Sales}} * 100$
	Operating Net Profit	NPAI&T + Non-operating Expenses – Non-operating Incomes
<u>B. Based on Investment</u>		
1.	Return On Capital Employed	$\frac{\text{Net Profit Before Interest \& Tax}}{\text{Capital Employed}} * 100$
	Capital Employed	Equity Share Capital + Preference Share Capital + Reserves & Surplus + Long Term Liabilities - Fictitious Assets
2.	Return on Shareholders Fund	$\frac{\text{NPAI\&T}}{\text{Shareholders Fund}} * 100$
	Shareholders Fund	Equity Share Capital + Preference Share Capital + Reserves & Surplus – Fictitious Assets
3.	Return on Equity Shareholders Fund	$\frac{\text{NPAI\&T} - \text{Preference Share Dividend}}{\text{Equity Shareholders Fund}} * 100$
	Equity Shareholders Fund	Equity Share Capital + Reserves & Surplus – Fictitious Assets

4.	Return on Equity Share Capital	$\frac{NPAIT - Preference\ Share\ Dividend}{Paidup\ Equity\ Capital} * 100$
2. LIQUIDITY RATIO		
1.	Current Ratio (Working Capital Ratio)	$\frac{Current\ Assets}{Current\ Liabilities}$
	Current Assets	Short term investments + Cash balance + Bank balance + Inventory + Debtors + Bills Receivable + Short Term Loans & Advances + Pre-paid expenses + Income accrued but not received
	Current Liabilities	Short term loan + Creditors + Bills Payable + Bank Overdraft + Outstanding Expenses + Pre-received Income + Proposed Dividend + Unclaimed Dividend + Provision for Taxation
	Working Capital	Current Assets – Current Liabilities
2.	Liquid Ratio	$\frac{Liquid\ Assets}{Liquid\ Liabilities}$
	Liquid Assets	Current Assets – Inventory (All current assets except inventory)
	Liquid Liabilities	Current Liabilities – Bank Overdraft (All current liabilities except bank overdraft)
3.	Acid Test Ratio	$\frac{Quick\ Assets}{Liquid\ Liabilities}$
	Quick Assets	Cash balance + Bank balance + Readily marketable Investment
3. Leverage Ratio		
1.	Proprietary Ratio	$\frac{Shareholders\ Fund}{Total\ Assets}$
2.	Debt-equity Ratio	$\frac{Long\ Term\ Liabilities}{Shareholders\ Fund}$
	Long term liabilities	Debentures + Long Term Loan (Loan for more than 12 months)
4. Activity Ratio (Efficiency Ratio)		
1.	Stock Turnover Ratio	$\frac{COGS}{Average\ Stock}$
	Average Stock	$\frac{Opening\ Stock + Closing\ Stock}{2}$
	If any information is not available then following formula is used	
		$\frac{Net\ Sales}{Closing\ Stock}$
2.	Debtors Ratio	$\frac{Debtors + Bills\ Receivable}{Credit\ Sales} * Number\ of\ days\ in\ a\ year$

3.	Creditors Ratio	$\frac{\text{Creditors+Bills Payable}}{\text{Credit Purchases}} * \text{Number of days in a year}$
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