INTEGRATING PROFITABILITY ANALYSIS WITH FINANCIAL FORECASTING: ENHANCING ACCURACY IN BUSINESS PROJECTIONS WITH REFERENCE TO NAGARJUNA CEMENT

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ABSTRACT

Analysing a company's profitability involves comparing its revenue, operational expenses, assets, and equity over a period of time. This helps in determining the company's potential to make profits. By analysing important profitability measures such Return on Assets (ROA), Return on Equity (ROE), Net Profit Margin, Operating Profit Margin, and Gross Profit Margin, this research seeks to assess the financial well-being and performance efficiency of a company.

In order to ascertain the longevity and power of profit generating, the study examines patterns in revenue and expenditures using financial data from chosen businesses or industries. Market rivalry, cost-control techniques, pricing tactics, and economic circumstances are some of the external and internal elements examined as they relate to profitability.

Results show that stable and high profits are a sign of well-run company, solid market positioning, and competent leadership. In order to make educated judgements about investments, growth plans, and resource allocation, the research found that profitability analysis is crucial for stakeholders, such as creditors, managers, and investors.

I. INTRODUCTION

Every firm is most concerned with its profitability. One of the most frequently used tools of financial ratio analysis is profitability ratios which are used to determine the company's bottom line and its return to its investors. Profitability measures are important to company managers and owners alike. If a small business has outside investors who have put their own money into the company, the primary owner certainly has to show profitability to those equity investors.

Profitability ratios show a company's overall efficiency and performance. We can divide profitability ratios into two types: margins and returns. Ratios that show margins represent the firm's ability to translate sales dollars into profits at various stages of measurement. Ratios that show returns represent the firm's ability to measure the overall efficiency of the firm in generating returns for its shareholders.

Profitability ratios measure a company's ability to generate earnings relative to sales, assets and equity. These ratios assess the ability of a company to generate earnings, profits and cash flows relative to relative to some metric, often the amount of money invested. They highlight how effectively the profitability of a company is being managed.

Common examples of profitability ratios include return on sales, return on investment, return on equity, return on capital employed (ROCE), cash return on capital invested (CROCI), gross profit margin and net profit margin. All of these ratios indicate how well a company is performing at generating profits or revenues relative to a certain metric.

Different profitability ratios provide different useful insights into the financial health and performance of a company. For example, gross profit and net profit ratios tell how well the company is managing its expenses. Return on capital employed (ROCE) tells how well the company is using capital employed to generate returns. Return on investment tells whether the company is generating enough profits for its shareholders.

For most of these ratios, a higher value is desirable. A higher value means that the company is doing well and it is good at generating profits, revenues and cash flows. Profitability ratios are of little value in isolation. They give meaningful information only when they are analyzed in comparison to competitors or compared to the ratios in previous periods. Therefore, trend analysis and industry analysis is required to draw meaningful conclusions about the profitability of a company.

Some background knowledge of the nature of business of a company is necessary when analyzing profitability ratios. For example sales of some businesses are seasonal and they experience seasonality in their operations. The retail industry is example of such businesses. The revenues of retail industry are usually very high in the fourth quarter due to Christmas. Therefore, it will not be useful to compare the profitability ratios of this quarter with the profitability ratios of earlier quarters. For meaningful conclusions, the profitability ratios of this quarter should be compared to the profitability ratios of similar quarters in the previous years.

Financial statements are prepared primarily for decision-making. They play a prominent role in setting the framework of managerial decisions. But the information provided in the financial statements is not an end in itself as no meaningful conclusions can be drawn from these statements alone. However, the information provided in financial statements is of immense use in making decisions through analysis and interpretation of financial statements.

Ratio analysis is used to evaluate relationships among financial statement items. The ratios are used to identify trends over time for one company or to compare two or more companies at one point in time. Financial statement ratio analysis focuses on three key aspects of a business: liquidity, profitability, and solvency.

NEED FOR THE STUDY

The problems, which are common to most of the public sectors under taking, are materials scarcity. Capacity utilization and mainly Profitability requirements and **Nagarjuna Cement Limited**. Are no exception. Thus the importance of the study reveals as to how efficiently the working capital has been used so far in the organization.

Profitability Analysis is one of the key areas of financial decision-making. It is significant because, the management must see that an excessive investment in current assets should protect the company from the problems of stock-out. Current assets will also determine the liquidity position of the firm.

The goal of **Profitability Analysis** is to manage the firm current assets and current liabilities in such a way that a satisfactory level of working capital is maintained. If the firm cannot maintain a satisfactory level of capital, it is likely to become insolvent and may be even forced into bankruptcy.

OBJECTIVES OF THE STUDY

- ❖ To examine the **Profitability Analysis** of the **Nagarjuna Cement Limited** for the period of 2020 to 2024.
- ❖ To analyses interpret and to suggest the **Profitability** efficiency of the **Nagarjuna Cement Limited** by comparing the balance sheet & profit & loss A/c.
- ❖ To critically analyses the financial performance of the **Nagarjuna Cement Limited**. With the help of ratios.
- ❖ To assess the capital employed by the **Nagarjuna Cement Limited**.
- ❖ To examine feasibility of present system of managing capital.
- ❖ To understand how the company finances its **Profitability**.
- ❖ To analyze the financial performance of the company with reference to **Profitability**.
- ❖ To give some suggestions to the management based on the information studied.

RESEARCH METHODOLOGY

Use and Significance of *Profitability* Analysis

The **Profitability** is one of the most powerful tools of financial analysis. It is used as a device to analyze and interpret the financial health of enterprise. Thus ratios have wide applications and are of immense use today.

Managerial uses of ratio analysis

Helps in decision making

Financial statements are prepared primarily for decision-making. **Profitability** analysis helps in making decision from the, information provided in these Financial Statements.

a. **Helps in financial forecasting and planning**

Profitability analysis is of much help in financial forecasting and planning. Planning is looking ahead and the ratios calculated for a number of years a work as a guide for the future. Thus, ratio analysis helps in forecasting and planning.

b. **Helps in communicating**

The financial strength and weakness of a firm are communicated in a more easy and understandable manner by the use of a ratio. Thus, ratios help in communication and enhance the value of the financial statements.

c. **Helps in co-ordination**

Profitability even help in co-ordination, which is of at most importance in effective business management. Better communication of efficiency and weakness of an enterprise result in better co-ordination in the enterprise.

Data sources

The study is based on secondary data. However the primary data is also collected to fill the gap in the information.

- ❖ Primary data will be through regular interaction with the officials of **Nagarjuna Cement Limited**.
- ❖ Secondary data collected from annual reports and also existing manuals and like company records balance sheet and necessary records.

SCOPE OF THE STUDY

The scope of the study is limited to collecting financial data published in the annual reports of the company every year. The analysis is done to suggest the possible solutions. The study is carried out for 5 years (2020-24).

A study of the **Profitability Analysis** involves an examination of long term as well as short term sources that a company taps in order to meet its requirements of finance. The scope of the study is confined to the sources that **Nagarjuna Cement Limited** tapped over the years under study i.e. 2020-24.

LIMITATIONS

- The study is based on only secondary data.
- The period of study was 2020-24 financial years only.
- Another limitation is that of standard ratio with which the actual ratios may be compared generally there is no such ratio, which may be treated as standard for the purpose of comparison because conditions of one concern differ significantly from those of another concern.
- The accuracy and correctness of ratios are totally dependent upon the reliability of the data contained in financial statements on the basis of which ratios are calculated.

II. REVIEW OF LITRETURE

Understanding Profitability

Profitability is the primary goal of all business ventures. Without profitability the business will not survive in the long run. So measuring current and past profitability and projecting future profitability is very important.

Profitability is measured with income and expenses. Income is money generated from the activities of the business. For example, if crops and livestock are produced and sold, income is generated. However, money coming into the business from activities like borrowing money do not create income. This is simply a cash transaction between the business and the lender to generate cash for operating the business or buying assets.

Expenses are the cost of resources used up or consumed by the activities of the business. For example, seed corn is an expense of a farm business because it is used up in the production process. Resources such as a machine whose useful life is more than one year is used up over a period of years. Repayment of a loan is not an expense, it is merely a cash transfer between the business and the lender.

Reasons for Computing Profitability

Whether you are recording profitability for the past period or projecting profitability for the coming period, measuring profitability is the most important measure of the success of the business. A business that is not profitable cannot survive. Conversely, a business that is highly profitable has the ability to reward its owners with a large return on their investment.

Increasing profitability is one of the most important tasks of the business managers. Managers constantly look for ways to change the business to improve profitability. These potential changes can be analyzed with a pro forma income statement or a Partial Budget. Partial budgeting allows you to assess the impact on profitability of a small or incremental change in the business before it is implemented.

A variety of Profitability Ratios (Decision Tool) can be used to assess the financial health of a business. These ratios, created from the income statement, can be compared with industry benchmarks. Also, Income Statement Trends (Decision Tool) can be tracked over a period of years to identify emerging problems.

Accounting Methods

Cash Method of Accounting

Traditionally farmers have used the "cash method" of accounting where income and expenses are reported on the income statement when products are sold or inputs are paid for. The cash method of accounting, used by most farmers, counts an item as an expense when it is purchased, not when it is used in the business. This has been used as a method of managing tax liability from year to year. However, many non-farm business accounting systems count an item as an expense only when it is actually used in the business activities.

Cash accounting formula
\+ Income (when farm products are sold)
\- Expenses (when production inputs are purchased)
= Net Income (difference between sales of products and purchases of inputs)

However, net income can be distorted with the cash method of accounting by selling more than two years crops in one year, selling feeder livestock purchased in a previous year, and purchasing production inputs in the year before they are needed.

Defining Profitability

Profitability can be defined as either accounting profits or economic profits.

Accounting Profits (Net Income)

Traditionally, farm profits have been computed by using "accounting profits". To understand accounting profits, think of your income tax return. Your Schedule F provides a listing of your taxable income and deductible expenses. These are the same items used in calculating accounting profits. However, your tax statement may not give you an accurate picture of profitability due to IRS rapid depreciation and other factors. To compute an accurate picture of profitability you may want to use a more accurate measure of depreciation.

Accounting profits provide you with an intermediate view of the viability of your business. Although one year of losses may not permanently harm your business, consecutive years of losses (or net income insufficient to cover living expenditures) may jeopardize the viability of your business.

Economic Profits

In addition to deducting business expenses, opportunity costs are also deducted when computing "economic profits". Opportunity costs relate to your money (net worth), your labor and your management ability. If you were not farming, you would have your money invested elsewhere and be employed in a different career. Opportunity cost is the investment returns given up by not having your money invested elsewhere and wages given up by not working elsewhere. These are deduced, along with ordinary business expenses, in calculating economic profit.

Economic profits provide you with a long-term perspective of your business. If you can consistently generate a higher level of personal income by using your money and labor elsewhere, you may want to examine whether you want to continue farming.

Profitability is not Cash Flow

People often mistakenly believe that a profitable business will not encounter cash flow problems. Although closely related, profitability and cash flow are different. An income statement lists income and expenses while the cash flow statement lists cash inflows and cash outflows. An income statement shows *profitability* while a cash flow statement shows *liquidity*.

Many income items are also cash inflows. The sale of crops and livestock are usually both income and cash inflows. The timing is also usually the same (cash method of accounting) as long as a check is received and deposited in your account at the time of the sale. Many expense items are also cash outflow items. The purchase of livestock feed is both an expense and a cash outflow item. The timing is also the same (cash method of accounting) if a check is written at the time of purchase.

Other Financial Statements

An income statement is only one of several financial statements that can be used to measure the financial strength of a business. Other common statements include the balance sheet or net worth statement and the cash flow statement, although there are several other statements that may be included.

These statements fit together to form a comprehensive financial picture of the business. The balance sheet or Net Worth Statement shows the solvency of the business at a specific point in time. Statements are often prepared at the beginning and ending of the accounting period (i.e. January 1). The statement records the assets of the business and their value and the liabilities or financial claims against the business (i.e. debts). The amount by which assets exceed liabilities is the net worth of the business. The net worth reflects the amount of ownership of the business by the owners.

Margin Ratios

Gross Profit Margin

The gross profit margin looks at cost of goods sold as a percentage of sales. This ratio looks at how well a company controls the cost of its inventory and the manufacturing of its products and subsequently pass on the costs to its customers. The larger the gross profit margin, the better for the company. The calculation is: **Gross Profit/Net Sales = ____%**. Both terms of the equation come from the company's income statement.

Operating Profit Margin

Operating profit is also known as EBIT and is found on the company's income statement. EBIT is earnings before interest and taxes. The operating profit margin looks at EBIT as a percentage of sales. The operating profit margin ratio is a measure of overall operating efficiency, incorporating all of the expenses of ordinary, daily business activity. The calculation is: **EBIT/Net Sales = _____%**. Both terms of the equation come from the company's income statement.

Net Profit Margin

When doing a simple profitability ratio analysis, net profit margin is the most often margin ratio used. The net profit margin shows how much of each sales dollar shows up as net income after all expenses are paid. For example, if the net profit margin is 5%, that means that 5 cents of every dollar is profit.

The net profit margin measures profitability after consideration of all expenses including taxes, interest, and depreciation. The calculation is: **Net Income/Net Sales = _____%**. Both terms of the equation come from the income statement.

Cash Flow Margin

The Cash Flow Margin ratio is an important ratio as it expresses the relationship between cash generated from operations and sales. The company needs cash to pay dividends, suppliers, service debt, and invest in new capital assets, so cash is just as important as profit to a business firm.

The Cash Flow Margin ratio measures the ability of a firm to translate sales into cash. The calculation is: **Cash flow from operating cash flows/Net sales = _____%**. The numerator of the equation comes from the firm's Statement of Cash Flows. The denominator comes from the Income Statement. The larger the percentage, the better.

Returns Ratios

Return on Assets (also called Return on Investment)

The Return on Assets ratio is an important profitability ratio because it measures the efficiency with which the company is managing its investment in assets and using them to generate profit. It measures the amount of profit earned relative to the firm's level of investment in total assets. The return on assets ratio is related to the asset management category of financial ratios.

The calculation for the return on assets ratio is: **Net Income/Total Assets** = _____%. Net Income is taken from the income statement and total assets is taken from the balance sheet. The higher the percentage, the better, because that means the company is doing a good job using its assets to generate sales.

Return on Equity

The Return on Equity ratio is perhaps the most important of all the financial ratios to investors in the company. It measures the return on the money the investors have put into the company. This is the ratio potential investors look at when deciding whether or not to invest in the company. The calculation is: **Net Income/Stockholder's Equity** = _____%. Net income comes from the income statement and stockholder's equity comes from the balance sheet. In general, the higher the percentage, the better, with some exceptions, as it shows that the company is doing a good job using the investors' money.

Cash Return on Assets

The cash return on assets ratio is generally used only in more advanced profitability ratio analysis. It is used as a comparison to return on assets since it is a cash comparison to this ratio as return on assets is stated on an accrual basis. Cash is required for future investments. The calculation is: **Cash flow from operating activities/Total Assets = _____%.** The numerator is taken from the Statement of Cash Flows and the denominator from the balance sheet. The higher the percentage, the better.

Comparative Data

Financial ratio analysis is only a good method of financial analysis if there is comparative data available. The ratios should be compared to both historical data for the company and industry data.

Tying it all Together - The DuPont Model

There are so many financial ratios - liquidity ratios, debt or financial leverage ratios, efficiency or asset management ratios, and profitability ratios - that it is often hard to see the big picture. You can get bogged down in the detail. One method that business owners can use to summarize all of the ratios is to use the Dupont Model.

ADVANTAGES OF RATIO ANALYSIS

- Ratio analysis simplifies the comprehension of financial statement.
- Ratio analysis provides data for inter firm comparison
- Ratio analysis helps in planning forecasting trends in cost, sales, profit and other related facts are revealed by the past ratios and future events can be forecast on the basis of such trends.
- Ratio may be used as an instrument of management control particularly in the area of sales cost.
- A ratio helps in investment decision to make profitable investment.
- Ratios also facilitate the function of communication. It can be easily conveyed through the ratio as what as

happened during the two intervening periods.

- ❖ Ratios may also be used as a measure of efficiency.

LIMITATIONS OF RATIO ANALYSIS

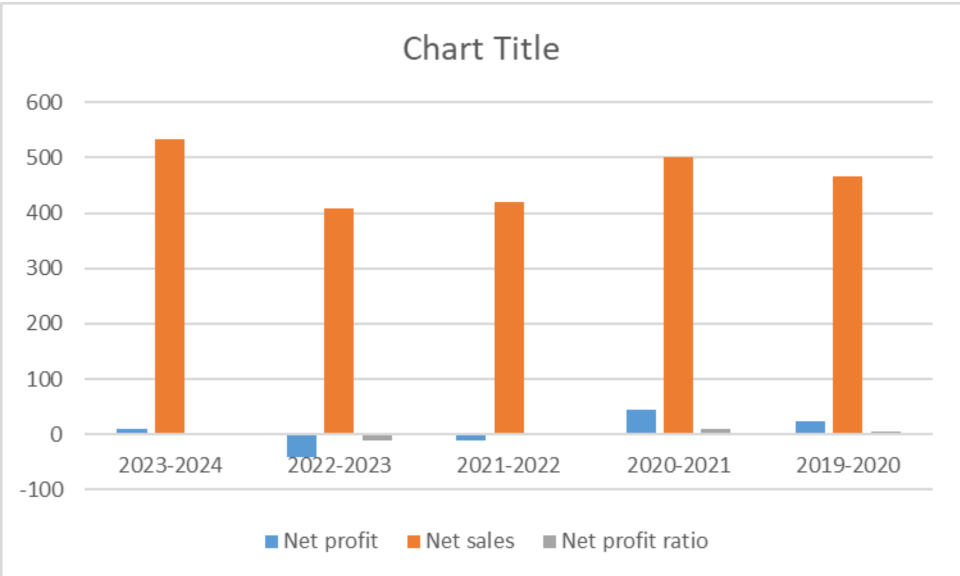
1. The analyst or the user must have comprehensive knowledge and experience about the concern whose statements have been used for calculating these ratios only the dependable conclusions may drawn thus ratios are signified tools only in the hands of experts in the hands of quacks for whom they may prove dangerous tools.
2. Ratios are not an end in themselves but they are a means to achieve a particular end. Hence it totally depends upon user or analyst as what conclusions is drawn on the basis of ratios calculated.
3. A single ratio in itself is not imported or as limited value because trends are more significant in the analysis.
4. Another limitation is that of standard ratio with which the actual ratios may be compared generally there is no such ratio, which may be treated as standard for the purpose of comparison because conditions of one concern differ significantly from those of another concern.
5. The accuracy and correctness of ratios are totally dependent upon the reliability of the data contained in financial statements on the basis of which ratios are calculated.

III. DATA ANALYSIS & INTERPRETATION

Net profit ratio:

Net profit \net sales

Year	Net profit	Net sales	Net profit ratio
2023-2024	8.90	533.91	1.6669476
2022-2023	-40.80	408.73	-9.98213970
2021-2022	-11.54	421.07	-2.74063695
2020-2021	44.25	500.07	8.848761173
2019-2020	23.41	465.61	5.027812977

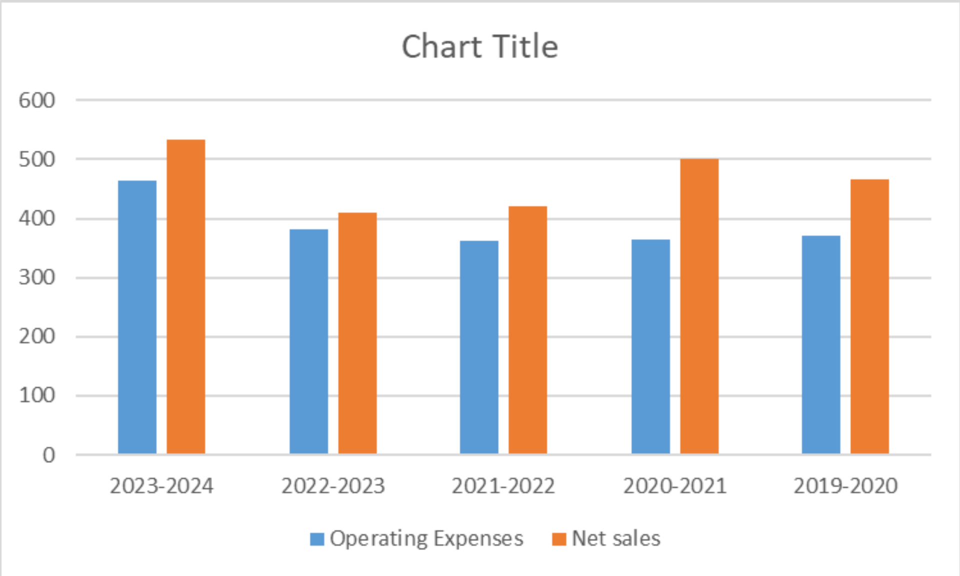


Interpretation:

The net profit of the company is in the increasing position because of the expenses in the industry are increased the net profit will be in decreasing position in the yare 2023-2024.

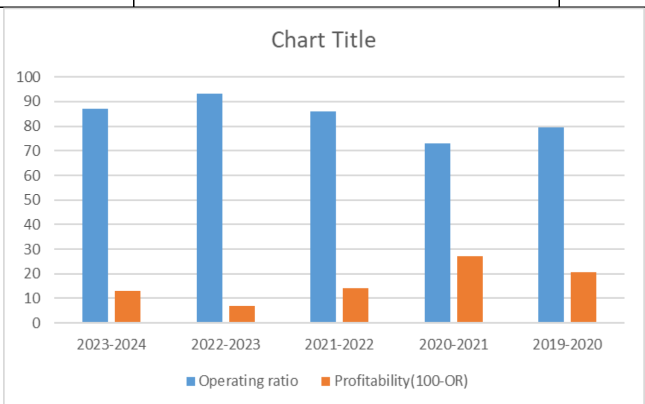
Operating ratio:
Operating expenses\Net sales

Year	Operating Expenses	Net sales	Operating ratio
2023-2024	464.92	533.91	87.0783465
2022-2023	380.91	408.73	93.19355074
2021-2022	361.67	421.07	85.89308191
2020-2021	365.26	500.07	73.04177415
2019-2020	370.03	465.61	79.47209038



Interpretation:
The **operating ratio** is a financial term defined as a company's operating expenses as a percentage of revenue. This financial ratio is most commonly used for industries which require a large percentage of revenues to maintain operations in the year 2020-2024.
Profitability = (100-Operating ratio %)

Year	Operating ratio	Profitability(100-OR)
2023-2024	87.0783465	12.9216535
2022-2023	93.19355074	6.81254879
2021-2022	85.89308191	14.1069181
2020-2021	73.04177415	26.9582259
2019-2020	79.47209038	20.5279096



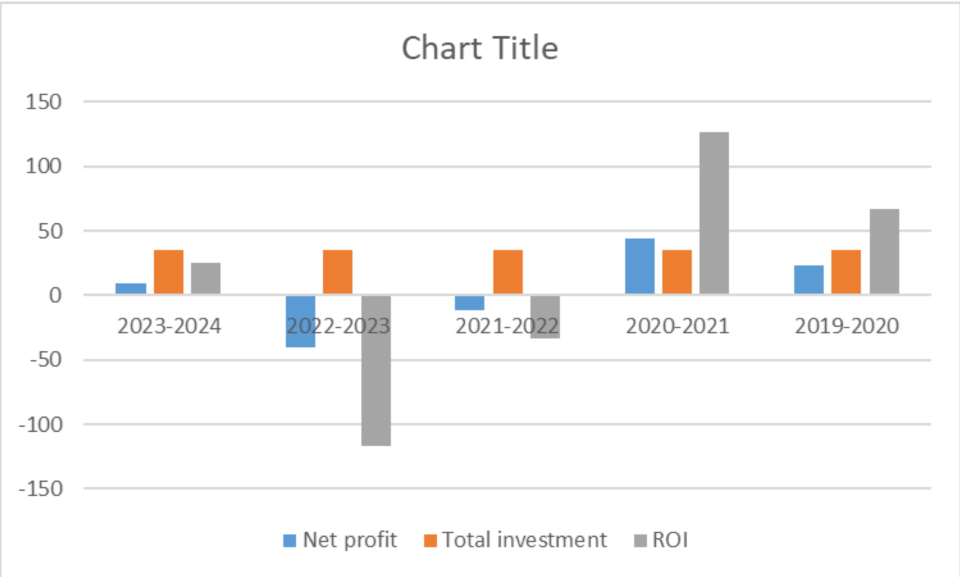
Interpretation:

Profitability is the primary goal of all business ventures. Without profitability the business will not survive in the long run. So measuring current and past profitability and projecting future profitability is very important and it is high in **NC Limited**.

Return on investment:

Net profit/Total investment

Year	Net profit	Total investment	ROI
2023-2024	8.90	34.94	25.4722381
2022-2023	-40.80	34.94	-116.7716084
2021-2022	-11.54	34.94	-33.0280481
2020-2021	44.25	34.94	126.6456783
2019-2020	23.41	34.94	67.00057241



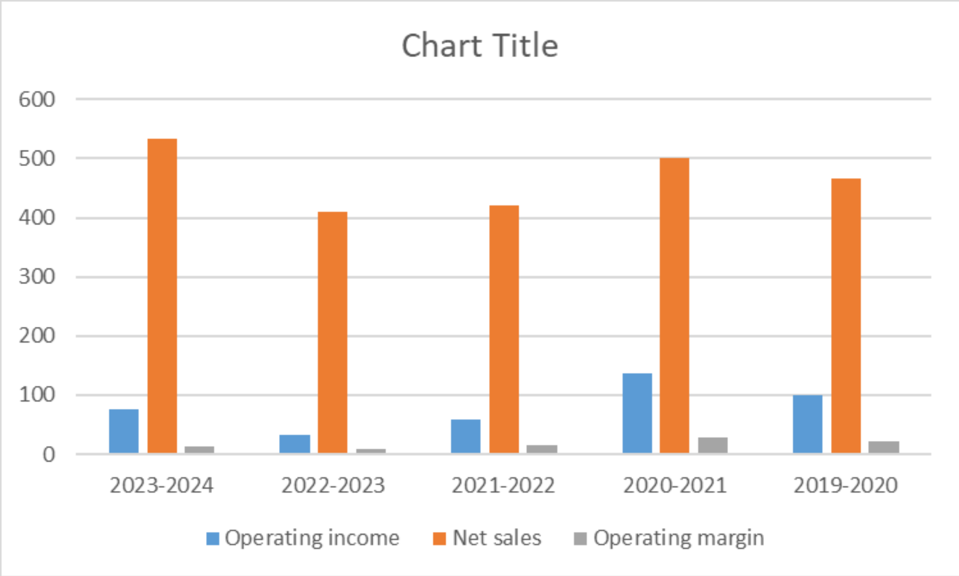
Interpretation:

A performance measure used to evaluate the efficiency of an investment or to compare the efficiency of a number of different investments. To calculate ROI, the benefit (return) of an investment is divided by the cost of the investment has been decreased in 2023-2024.

Operating margin:

Operating income\Net sales

Year	Operating income	Net sales	Operating margin
2023-2024	75.01	533.91	14.0491843
2022-2023	33.12	408.73	08.1031487
2021-2022	59.58	421.07	14.14966633
2020-2021	136.86	500.07	27.36816846
2019-2020	100.55	465.61	21.59532656



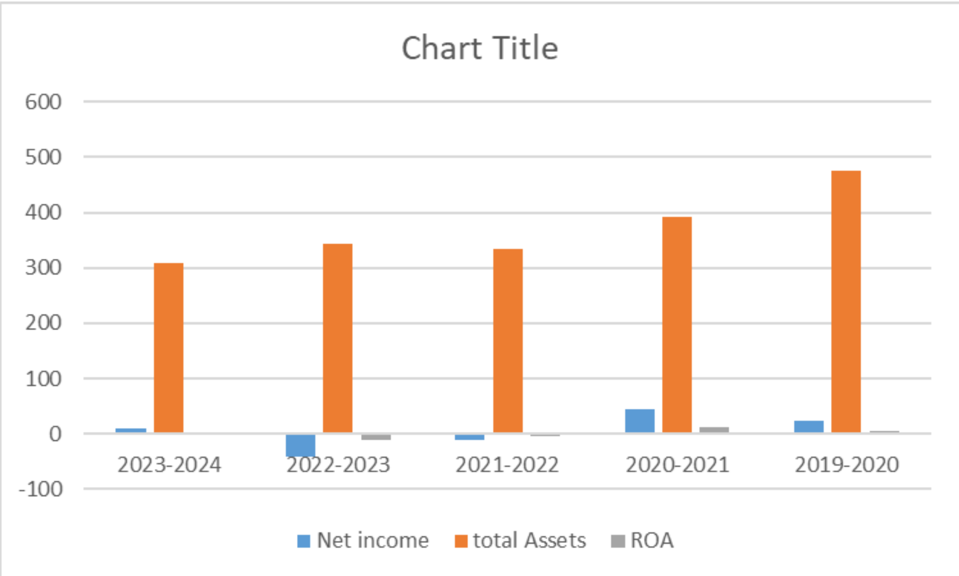
Interpretation:

The two basic components for the calculation of **operating ratio** are operating cost (cost of goods sold plus operating expenses) and net sales. Operating expenses normally include (a) administrative and office expenses and (b) selling and distribution expenses. in the year 2024 the net sales has been decreased.

Return on Assets:

Net income\Average total Assets

Year	Net income	total Assets	ROA
2023-2024	8.90	308.13	2.8883912
2022-2023	-40.80	344.06	-11.8583967
2021-2022	-11.54	333.59	-3.45933631
2020-2021	44.25	392.05	11.28682566
2019-2020	23.41	475.14	4.926968893



Interpretation:

An indicator of how profitable a company is relative to its total assets. ROA gives an idea as to how efficient management is at using its assets to generate earnings. Calculated by dividing a company's annual earnings by its total assets, ROA is displayed as a percentage and it was not improved in the year 2024.

FINDINGS

1. The **Nagarjuna Cement Limited** net capital is not satisfactory between the years 2023-24 since it shows decreasing trend; because of the declining position and investment diversification.
2. The current ratio of **Nagarjuna Cement Limited** is satisfactory during the period of study 2019-20 to 2023-24 . It is increased but after that it is declining.
3. The average quick ratio of **Nagarjuna Cement Limited** is not good though the quick ratio is showing maximum value of 1.24 in the year 2023-24 and then it is inclining to be deal.
4. Assets turnover ratio of **Nagarjuna Cement Limited** increased. The company has to maintain this.
5. Turnover ratio of **Nagarjuna Cement Limited** is also increased gradually, without any fit falls up to 2019-20. But in the year 2021-22 it is declined, and again it has increased in the year 2023-24. Good inventory management is good sign for efficient management
6. Total Assets turnover ratio of **Nagarjuna Cement Limited** is not satisfactory because it is always below one, except in the year 2023-24 having a value of 03.57.
7. Return on investment is not satisfactory. This indicates that the company's funds are not being utilized in a better way.

CONCLUSIONS

1. By 2020–24, Nagarjuna Cement Limited's net profit ratio will have become a loss. Being in the declining stage of the Net Profit Ratio for the last two years, this occurrence was predicted.
2. Nagarjuna Cement Limited's Gross Profit Margin goes up as sales go down.
3. Due to the rise in copper prices, Nagarjuna Cement Limited is seeing a decline in their profit margin and even a negative profit.
4. The net profitability ratio of Nagarjuna Cement Limited is good.
5. In the 2020–24 fiscal year, Nagarjuna Cement Limited's return on total assets ratio is negative.
6. In 2019–20, Nagarjuna Cement Limited's operating ratio increased, and by 2020–24, it had reached Thus, it is imperative that the business cut operational expenses.
7. Nagarjuna Cement Limited has an acceptable operating ratio. 15. This ratio is going down since manufacturing costs are going up. To save money, the needs to cut down on its office administration.

SUGGESTIONS

1. Improve position funds should be utilized properly.
2. Better Awareness to increase the sales is suggested.
3. Cost cut down mechanics can be employed.
4. Better production technique can be employed.
5. The investment on raw material should be made as per the requirement. Unnecessary investment may block up the funds.
6. Neither too high nor too low inventory turnover ratios may reduce profit and liquidity position of the industry. So, proper balance should be made to increase profits and to ensure liquidity.
7. The raw material should be acquired from the right source at right quality and at right cost.
8. The process that was being used by **Nagarjuna Cement Limited** with the purchasing department should undergo changes; so that, it seeks enhance the

celerity of the delivery of a product without compromising its quality by improving the utilization of materials, labor and equipment.

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