

A Study On Break Even Analysis And Computation Of Ratio Analysis With Special Reference To Simta Machinery Manufacturing Private Limited

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Abstract- This study evaluates break-even analysis and ratio analysis within the framework of financial performance management at Simta Machinery Manufacturing Private Limited. The research investigates the organization's financial stability, profitability, and operational efficiency through these analytical tools, emphasizing their impact on strategic decision-making. Break-even analysis identifies the sales volume needed to cover fixed and variable costs, offering insights into cost control and pricing strategies. Meanwhile, ratio analysis, using metrics such as liquidity, solvency, and profitability ratios, examines the company's financial health and performance relative to industry benchmarks. Secondary data, including balance sheets and audit reports from the past three years, forms the research basis. The findings reveal a robust financial position, with Simta Machinery demonstrating strong liquidity levels and conservative debt management. The current ratio consistently exceeds the standard benchmark of 1.5, and the quick ratio shows a marked improvement over time, reaching 1.30 in the most recent fiscal year. Debt metrics, such as the debt-equity ratio and debt ratio, indicate minimal financial risk, reflecting a prudent financial strategy. Operational efficiency is evidenced by an improved inventory turnover ratio and a reduced break-even point, showcasing better inventory management and cost efficiency. Notably, profitability metrics such as the operating profit ratio and net profit ratio show significant recovery in the latest year, underscoring enhanced revenue generation and cost optimization. Despite these strengths, areas for improvement include receivables turnover ratio, which suggests scope for better credit and collection practices. The study's recommendations advocate for advanced inventory management techniques, streamlined credit policies, and sustained efforts to enhance profitability. Additionally, it highlights the importance of technology adoption to support data-driven decision-making and operational enhancements. By leveraging financial ratios and break-even analysis, this research contributes actionable insights into Simta Machinery's financial practices, aligning its strategies with goals of sustainable growth and resilience. These tools

collectively reinforce the company's ability to navigate competitive market dynamics and drive long-term success.

Keywords- Break-even Analysis, Ratio Analysis, Financial Stability, Operational Efficiency, Cost Management.

I. INTRODUCTION

Financial management is pivotal for the success and sustainability of any business, with break-even analysis and ratio analysis being two crucial tools in financial decision-making. Break-even analysis helps companies determine the point where total revenues equal total costs, meaning neither profit nor loss, providing a clear picture of the minimum sales required to cover all costs. This analysis is vital for making strategic decisions about pricing, cost management, and production levels. It is especially useful for startups and small businesses seeking financial stability or mature organizations evaluating new product introductions. The break-even point, variable costs, and sales revenue, allows businesses to set realistic financial goals and manage costs effectively. As fixed and variable costs, along with pricing strategies, affect the break-even point, continuous monitoring and adjustment are necessary to maintain financial health. On the other hand, ratio analysis evaluates a company's financial performance through various ratios derived from income statements, balance sheets, and cash flow statements. This method provides insights into liquidity, profitability, efficiency, solvency, and investment potential. Liquidity ratios, such as the current and quick ratios, measure a company's ability to meet short-term obligations, while profitability ratios, including gross profit margin and return on assets, assess the ability to generate profits. Efficiency ratios, like inventory turnover, evaluate resource utilization, and solvency ratios, such as debt-to-equity and interest coverage ratios, measure long-term financial stability. Ratio analysis offers a comprehensive view of financial health, allowing stakeholders to interpret data effectively and identify potential issues. Ratio analysis also facilitates the assessment of financial decisions' impact, such as taking on additional debt, by comparing key ratios before and after such decisions.

While break-even analysis focuses on cost-sales-profit relationships, ratio analysis provides a broader financial performance view, making them complementary tools. Break-even analysis establishes a baseline for financial planning, while ratio analysis assesses efficiency and effectiveness in achieving financial goals. Their integration offers a dynamic approach to financial management, allowing businesses to adapt to market changes and maintain competitiveness. Accurate and timely financial data is essential for both analyses, as outdated or incorrect data can lead to poor decision-making.

INDUSTRY PROFILE

Heavy industry involves large-scale, capital-intensive activities vital to economic growth and infrastructure. It encompasses sectors like steel, automotive, shipbuilding, aerospace, and energy, characterized by high resource and energy consumption. Production processes are complex, requiring substantial investments in machinery, technology, and skilled labor. For example, treadmill manufacturing exemplifies heavy industry through resource-intensive production and global logistics, integrating advanced technologies for improved efficiency. Environmental challenges and regulatory pressures drive sustainable practices like waste reduction and energy efficiency. As demand for innovation grows, heavy industries, including treadmill manufacturing, continue adapting to market trends and operational challenge.

COMPANY PROFILE

Simta Machinery Private Limited, established on January 7, 2002, is a leading entity in the forestry and logging sector. Registered with the Registrar of Companies (ROC), Coimbatore, it operates under CIN U02926TZ2002PTC010008 with an authorized share capital of Rs. 12 million and paid-up capital of Rs. 11.215 million. The company focuses on sustainable forestry, logging, and related services, supporting industries like construction, paper, and furniture manufacturing while contributing to resource management and environmental conservation. Its active status and compliance with regulatory standards, including the latest balance sheet filed on March 31, 2023, reflect financial stability and transparency. Led by Managing Director Senthil Kumar Swamynathan and experienced directors, Simta Machinery demonstrates strong leadership and strategic management. Operating from its headquarters in Coimbatore, the company efficiently manages day-to-day functions while maintaining stakeholder communication. By adhering to industry standards, enhancing financial practices, and driving sustainable forestry efforts, Simta Machinery continues to

thrive and uphold its significant role in Tamil Nadu's industrial landscape.

FUNCTIONAL AREAS OF THE COMPANY

SIMTA Machinery Manufacturing Company operates through integrated functional areas that drive efficiency, innovation, and market competitiveness. Key departments include Manufacturing and Production, which ensure high-quality standards and optimize processes; Engineering, focused on innovation and advanced technologies; Sales and Marketing, driving revenue and expanding the customer base; Supply Chain and Procurement, managing raw materials and logistics; Finance and Accounting, ensuring profitability and compliance; and Human Resources, fostering a skilled and motivated workforce. These departments collaboratively support SIMTA's growth, operational excellence, and financial stability in the machinery manufacturing sector

REVIEW OF LITERATURE

- **Uhammad Salah Uddin (2022)** "Financial Performance Evaluation Through Ratio Analysis" The study evaluates Rural Power Company Ltd.'s financial performance from 2018 to 2020 using secondary data. While key financial ratios are acceptable, the Return on Equity (ROE) needs improvement. The analysis highlights its utility in guiding economic and governmental policies.
- **Bharathi and Suresh Ramana Mayya (2022)** "Performance Evaluation of Dabur India Ltd through Profitability Ratio Analysis" The study evaluates Dabur India Ltd.'s performance through profitability ratios and CSR activities. Based on secondary data, it highlights growing consumer preference for ayurvedic products, improved revenue, and the impact of CSR on sales. The analysis covers profitability, CSR, and performance indicators.
- **S. Nasreen, Dr. D. Varalakshmi (2020)** "Study on Ratio Analysis" This study focuses on the importance of financial ratios in understanding financial statements and assessing business health. It provides practical insights for decision-making and control, analyzing corporate financial statements in various Indian sectors to aid learning and application.
- **Vikas Shrotriya (2019)** – "Break Even Analysis the Concept and It's Utility" Break-even analysis helps organizations identify the point at which profits begin by separating costs into fixed and variable categories. It guides decision-making by linking sales revenue to cost recovery, helping businesses strategize and avoid losses while maximizing profit potential.

- **Sweta Singh (2017)** “Ratio Analysis in Manufacturing Sector-A Study” The study emphasizes the importance of ratio analysis in managing and forecasting business finances, highlighting its role in maintaining liquidity and assessing performance. It aims to demonstrate how accurately ratio analysis can provide valuable insights into a company's financial health.
- **K. Kalpana and P. Saikrishna (2016)** “A Study on Ratio Analysis” Ratio analysis, rooted in bookkeeping, is a crucial financial tool for assessing investment value, tracking long-term performance, and identifying strengths and weaknesses. It aids in interpreting financial statements and uncovering cross-sectional and time-based relationships between various ratios.

STATEMENT OF THE PROBLEM

Many issues arise as challenges to Simta Machinery Manufacturing Company concerning the determination of the organization's financial position and prospects of attaining profitability in the tremendously competitive industrial market. Lack of depth knowledge of its break even point and other financial ratios may hamper cost control, decision making and financial viability. This research will assist to advance the knowledge of strategic management and perpetuate the financial progress of Simta Machinery in a competitive world. The studies will enable Simta Machinery to enhance the process of strategic planning for improved decision making and ensure improved financial stability in a volatile business environment.

OBJECTIVE OF THE STUDY PRIMARY OBJECTIVE:

- To evaluate break even analysis and computation of ratio analysis with special reference to SIMTA machinery manufacturing private limited company.

SECONDARY OBJECTIVES:

- To analyse the company's ability to meet its short-term financial obligations.
- To examine the relationship between the company's profits and its assets, equity, or sales.
- To evaluate the company's financial leverage by analyzing its debt-to-equity ratio.
- To compare the organization's asset turnover ratio with industry benchmarks.
- To analyse the relationship between costs, volume, and profits to identify the break- even point.

SCOPE OF THE STUDY

The study will analyse the break-even point to determine the sales volume required to cover all fixed and variable costs, providing insights into cost management and pricing strategies. It will also compute key financial ratios, such as liquidity, profitability, and solvency ratios, to evaluate the company's financial health. The analysis will be contextualized by comparing these metrics with industry benchmarks and historical performance. This scope aims to offer recommendations for enhancing financial management practices and improving decision-making based on the insights gained from break-even and ratio analyses.

LIMITATIONS OF THE STUDY

- Reliability of data the accuracy of financial ratios and break-even analysis depends on the reliability of the data provided. Any errors in the company's financial records can lead to inaccurate results.
- Since the study focuses specifically on SIMTA Machinery, the conclusions drawn may not be applicable to other companies in the industry or different sectors.
- Economic and market changes factors like inflation, market competition, and economic downturns are not always considered in break-even and ratio analysis, which may limit the study's real-world applicability.
- Limited forward-looking insights ratio analysis and break-even analysis primarily rely on historical data, which might not fully capture future risks or opportunities.

The study focuses heavily on quantitative data, Non-financial factors such as employee morale and market reputation, etc are not captured in ratio or break-even analysis.

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II. RESEARCH METHODOLOGY

RESEARCH DESIGN

The study was conducted via secondary data analysis. The company's three most recent balance sheets were examined, and the items on the balance sheet were assessed in order to do a ratio analysis. The company's audit reports gave readers a precise picture of its financial situation. The design of this study was derived from the computation of different ratios that may have an impact on the company's financial analysis.

TOOLS FOR DATA ANALYSIS

Data was collected through income statements, balance sheets and cash flow statements of the company for the required financial years. The data utilized was second hand data. Data was analysed by tools like Ratio analysis, which computes the financial capability of the firm.

RATIO ANALYSIS

Ratio analysis involves evaluating financial statements using various ratios to assess a company's performance and financial health. Key ratios include liquidity, profitability, and solvency measures. This technique helps in comparing financial metrics over time and against industry benchmarks, providing insights into operational efficiency and financial stability.

1. Liquidity Ratios:

A liquidity ratio is a type of financial ratio used to determine a company's ability to pay its short-term debt obligations.

- **Current Ratio** = Current Assets / Current Liabilities
- **Quick Ratio** = (Current Assets – Inventory) / (Current Liabilities – Bank Overdraft)
- **Acid Test Ratio** = (Current Assets – Inventory) / Current Liabilities

2. Solvency Ratios:

A solvency ratio is a type of financial ratio used to determine a company's ability to pay its long-term debt obligations.

- **Debt- Equity Ratio** = Total debt / Total Shareholder Equity.
- **Debt Ratio** = Total Debt / Total Assets

3. Efficiency Ratios:

An Efficiency ratio can calculate the turnover of receivables, the repayment of liabilities, the quantity and usage of equity, and the general use of inventory and machinery. This ratio can also be used to track and analyse the performance of commercial and investment banks.

- **Inventory Turnover Ratio** = Average Inventory / Cost of Goods Sold
- **Receivables Turnover Ratio** = Average Accounts Receivable / Net Credit Sales
- **Asset Turnover Ratio** = Average Total Assets / Net Sales

4. Profitability Ratios:

Profitability ratios help in determining the financial performance of business at the end of an accounting period. Profitability ratios show how well a company is able to make profits from its operations.

- **Gross Profit ratio** = Net Sales / Gross Profit × 100
- **Operating Profit ratio** = Net Sales / Operating Income × 100
- **Net Profit ratio** = Net Sales / Net Income × 100

BREAK EVEN ANALYSIS:

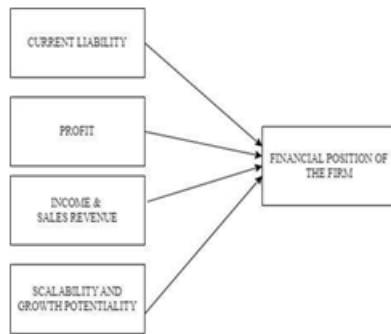
Break-even analysis is a financial assessment used to determine the level of sales needed to cover all fixed and variable costs, indicating the point at which a company's revenue equals its costs, resulting in neither profit nor loss.

Break-Even Point (Units) = Fixed Costs / Selling Price per Unit – Variable Cost per Unit.

2.2 RESEARCH MODEL

Independent variables: Current Liabilities, Net Profit and Sales, Total Share Holder's Equity, Total Average Asset, Sales Revenue.

Dependent variable: Financial Position of The Firm.



III. DATA ANALYSIS AND INTERPRETATION

3.1 LIQUIDITY RATIOS:

3.1.1 CURRENT RATIO:

TABLE: 3.1.1 SHOWS THE CALCULATION OF CURRENT RATIO

Current Ratio = Current Assets / Current Liabilities			
YEAR	CURRENT ASSET (in rupees)	CURRENT LIABILITY (in rupees)	CURRENT RATIO
2020 - 2021	72691333.84	40098885.22	1.81
2021 - 2022	117154000.47	75014207.82	1.56
2022 - 2023	134268224.03	77078260.00	1.74

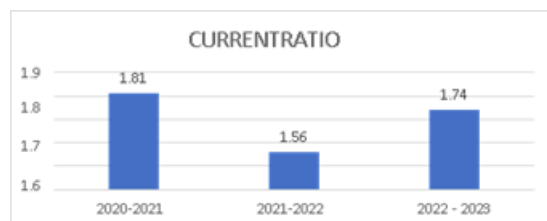


CHART: 3.1.1 THIS CHART SHOWS THE GRAPHICAL REPRESENTATION OF CURRENT RATIO

INFERENCE:

The current ratio shows fluctuation over the three-year period. It started at 1.81 in 2020 - 2021, decreased to 1.56 in 2021 - 2022, and then improved to 1.74 in 2022 - 2023. The ratio has consistently remained above the standard benchmark of 1.5, indicating good short-term liquidity position. While there was a slight decline in 2021 - 2022, the recovery in 2022 - 2023 suggests improved working capital management. The company maintains a healthy ability to meet its short-term

obligations, as it has more current assets than current liabilities throughout all three years.

3.1.2 QUICK RATIO:

TABLE: 3.1.2 SHOWS THE CALCULATION OF QUICK RATIO

YEAR	QUICK ASSET (in rupees)	CURRENT LIABILITY (in rupees)	QUICK RATIO In %
2020 - 2021	37406166.84	40098885.22	0.93
2021 - 2022	84455127.47	75014207.82	1.13
2022 - 2023	100549283.03	77078260.00	1.30

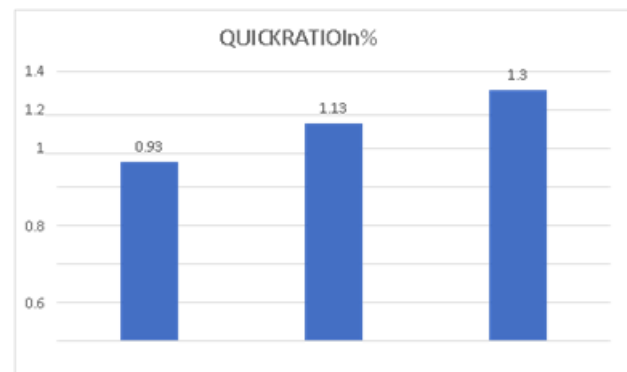


CHART: 3.1.2 THIS CHART SHOWS THE GRAPHICAL REPRESENTATION OF QUICK RATIO

INFERENCE:

The quick ratio of the company shows a consistent upward trend throughout the three-year period. The lowest ratio is 0.93 in 2020 - 2021, which then improved to 1.13 in 2021 - 2022, and reached its highest at 1.30 in 2022 - 2023. The ratio being above 1.0 in 2021 - 2022 and 2022 - 2023 indicates that the company has sufficient liquid assets to cover its current liabilities without relying on inventory sales.

3.2 SOLVENCY RATIOS:

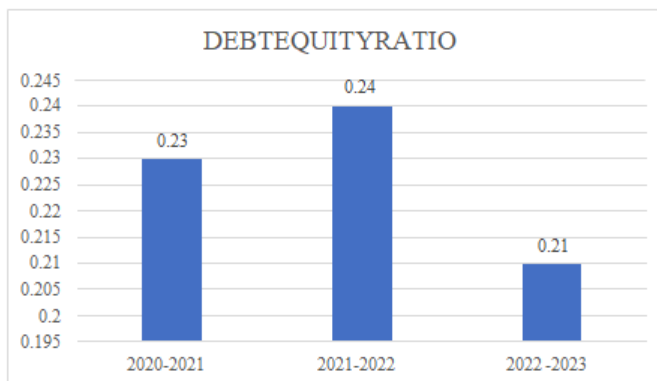
3.2.1 DEBT EQUITY RATIO:

TABLE: 3.2.1 SHOWS THE CALCULATION OF DEBT EQUITY RATIO

$$\text{Debt-Equity Ratio} = \frac{\text{Total debt}}{\text{Total Shareholder Equity}}$$

YEAR	TOTAL DEBT (in rupees)	SHAREHOLDER'S EQUITY (in rupees)	DEBT EQUITY RATIO
2020	-68436927.21	300081452.40	0.23
2021	-89814207.82	367240906.88	0.24
2022	-95078260.00	456368664.85	0.21
2023			

CHART: 3.2.1 THIS CHART SHOWS THE GRAPHICAL REPRESENTATION OF DEBT EQUITY RATIO



INFERENCE:

The debt equity ratio of the company remained relatively stable over the three-year period, showing slight fluctuations. It started at 0.23 in 2020 - 2021, marginally increased to 0.24 in 2021 - 2022, and then decreased to 0.21 in 2022 - 2023. These low ratios indicate that the company has been maintaining a conservative financing strategy with relatively low debt levels compared to equity. This suggests a strong financial position with lower financial risk, as the company is primarily financed through shareholders' equity rather than debt.

3.2.2 DEBT RATIO

TABLE: 3.2.2 SHOWS THE CALCULATION OF DEBT RATIO

$$\text{DebtRatio} = \text{TotalDebt} / \text{TotalAssets}$$

YEAR	TOTAL DEBT (in rupees)	TOTAL ASSETS (in rupees)	DEBT RATIO

2020	-68436927.21	1170433202.26	0.058
2021	-89814207.82	1331540000.47	0.067
2022	-95078260.00	1342682224.03	0.071
2023			

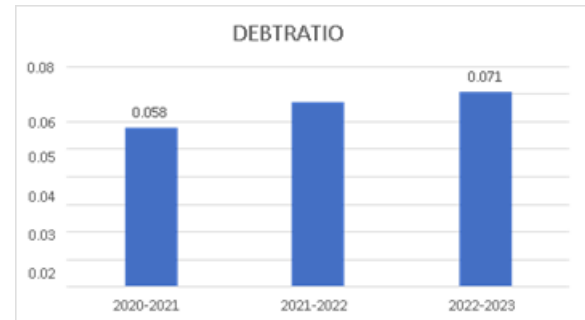


CHART: 3.2.2 THIS CHART SHOWS THE GRAPHICAL REPRESENTATION OF DEBT RATIO

INFERENCE:

The debt ratio shows a slight upward trend over the three-year period. Starting at 0.058 in 2020 - 2021, it increased to 0.067 in 2021 - 2022, and further rose to 0.071 in 2022 - 2023. The consistently low debt ratios (all below 0.1) indicate that the company is financing a very small portion of its assets through debt. This conservative approach to debt suggests strong financial health and minimal financial risk, as less than 8% of the company's assets are financed through debt in all three years.

3.3 EFFICIENCY RATIOS:

3.3.1 INVENTORY TURNOVER RATIO:

TABLE: 3.3.1 SHOWS THE CALCULATION OF INVENTORY TURNOVER RATIO

$$\text{InventoryTurnoverRatio} = \text{AverageInventory} / \text{CostofGoodsSold}$$

YEA R	COST OF GOODS SOLD (in rupees)	AVERAGE INVENTOR Y (in rupees)	INVENTOR Y TURNOVER RATIO
2020	-1055024442.3	282562079.50	3.73
2021	-1129868828.9	329920230.00	3.42
2022	-1496270037.3	332089070.00	4.51
2023			

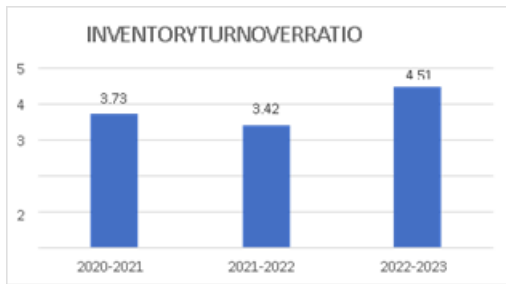


CHART: 3.3.1 THIS CHART SHOWS THE GRAPHICAL REPRESENTATION OF INVENTORY TURNOVER RATIO

INFERENCE:

The inventory turnover ratio shows fluctuation over the three-year period. It started at 3.73 times in 2020, decreased to 3.42 times in 2021, and then significantly increased to 4.51 times in 2022. The higher ratio in 2022 indicates improved efficiency in managing inventory, suggesting that the company was more effective at selling its inventory in that year. This improvement shows better inventory management and working capital utilization, as inventory is being converted into sales more frequently.

3.3.2 RECEIVABLES TURNOVER RATIO

TABLE: 3.3.2 SHOWS THE CALCULATION OF RECEIVABLES TURNOVER RATIO

$$\text{ReceivablesTurnoverRatio} = \frac{\text{AverageAccountsReceivable}}{\text{NetCreditSales}}$$

YEAR	NET CREDIT SALES (in rupees)	AVERAGE RECEIVABLES (in rupees)	RECEIVABLES TURNOVER RATIO
2020	1859779292.00	247231333.84	7.52
2021	1853327934.54	340857167.93	5.44
2022	2420970775.79	449385627.00	5.39

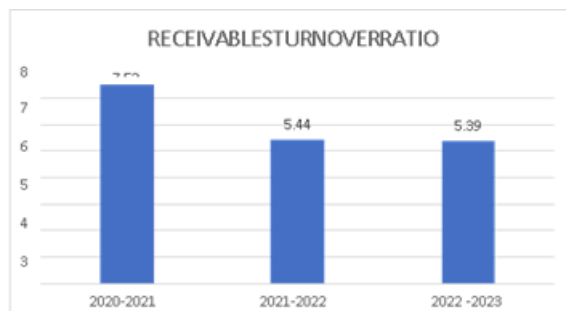


CHART: 3.3.2 THIS CHART SHOWS THE GRAPHICAL REPRESENTATION OF RECEIVABLES TURNOVER RATIO

INFERENCE:

The receivables turnover ratio shows a declining trend over the three-year period. Starting at a high of 7.52 times in 2020 - 2021, it decreased significantly to 5.44 times in 2021 - 2022, and slightly further to 5.39 times in 2022 - 2023. The declining ratio indicates that the company is taking longer to collect its receivables. While the company still maintains a reasonable collection efficiency, the downward trend suggests a need to review credit policies and collection procedures to improve the speed of converting receivables into cash.

3.3.3 TABLE: ASSET TURNOVER RATIO

3.3.3 SHOWS THE CALCULATION OF ASSET TURNOVER RATIO

$$\text{AssetTurnoverRatio} = \frac{\text{AverageTotalAssets}}{\text{NetSales}}$$

YEAR	NET SALES (in rupees)	AVERAGE TOTAL ASSETS (in rupees)	ASSET TURNOVER RATIO
2020	1859779292.00	1170433202.26	1.59
2021	1853327934.54	1331540000.47	1.39
2022	2420970775.79	1342682224.03	1.80

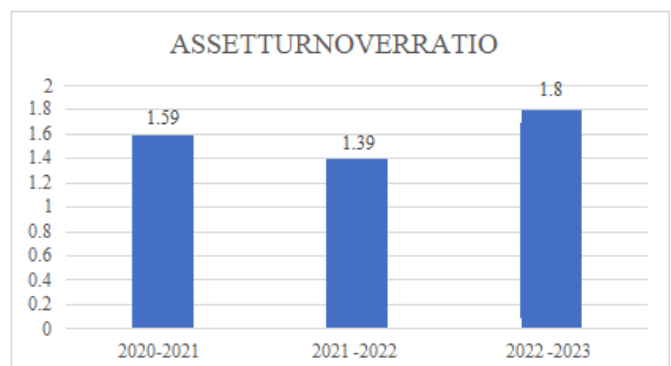


CHART: 3.3.3 THIS CHART SHOWS THE GRAPHICAL REPRESENTATION OF ASSET TURNOVER RATIO

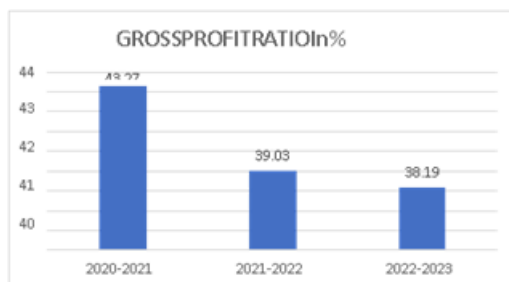
INFERENCE:

The asset turnover ratio shows fluctuation over the three-year period. It started at 1.59 in 2020- 2021, decreased to 1.39 in 2021 - 2022, and then increased significantly to 1.80 in 2022. The higher ratio in 2022 - 2023 indicates improved efficiency in using assets to generate sales. This improvement suggests that the company has become more effective at using its assets to generate revenue, with each rupee of assets generating 1.80 rupees in sales in 2022. The overall trend shows that the company has maintained good operational efficiency, particularly showing strong improvement in the most recent year.

3.4 PROFITABILITY RATIOS:**3.4.1 GROSS PROFIT RATIO:****TABLE: 3.4.1 SHOWS THE CALCULATION OF GROSS PROFIT RATIO**

$$\text{Gross Profit Ratio} = \frac{\text{Net Sales}}{\text{Gross Profit}} \times 100$$

YEAR	GROSS PROFIT (in rupees)	NET SALES (in rupees)	GROSS PROFIT RATIO In %
2020-2021	804754849.61	1859779292.00	43.27
2021-2022	723459105.63	1853327934.54	39.03
2022-2023	924700738.47	2420970775.79	38.19

**CHART: 3.4.1 THIS CHART SHOWS THE GRAPHICAL REPRESENTATION OF GROSS PROFIT RATIO****INFERENCE:**

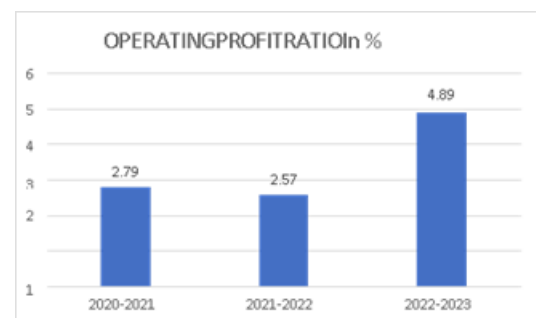
The gross profit ratio shows a gradual declining trend over the three-year period. Starting at 43.27% in 2020 - 2021,

it decreased to 39.03% in 2021 - 2022, and further declined slightly to 38.19% in 2022 - 2023. While the ratio remains healthy, the declining trend suggests increasing cost of goods sold relative to sales. Despite the decrease, maintaining a gross profit ratio above 38% indicates that the company still retains a significant portion of its sales revenue after accounting for direct costs, though there might be room for improving cost management or pricing strategies.

3.4.2 OPERATING PROFIT RATIO**TABLE: 3.4.2 SHOWS THE CALCULATION OF OPERATING PROFIT RATIO**

$$\text{Operating Profit Ratio} = \frac{\text{Net Sales}}{\text{Operating Income}} \times 100$$

YEAR	OPERATING PROFIT (in rupees)	NET SALES (in rupees)	OPERATING PROFIT RATIO In %
2020-2021	51818399.09	1859779292.00	2.79
2021-2022	47639230.00	1853327934.54	2.57
2022-2023	118412180.60	2420970775.79	4.89

**CHART: 3.4.2 THIS CHART SHOWS THE GRAPHICAL REPRESENTATION OF OPERATING PROFIT RATIO****INFERENCE:**

The operating profit ratio demonstrates significant improvement over the three-year period. Starting at 2.79% in 2020 - 2021, it slightly decreased to 2.57% in 2021 - 2022, but then showed a substantial increase to 4.89% in 2022 - 2023. This notable improvement in 2022 - 2023 indicates enhanced operational efficiency and better control over operating expenses. The sharp rise in the operating profit ratio suggests that the company has become more effective at generating

profit from its core business operations, nearly doubling its operating efficiency compared to previous years.

NET PROFIT RATIO

TABLE: 3.4.3 SHOWS THE CALCULATION OF NET PROFIT RATIO

$$\text{NetProfitRatio} = \text{NetSales} / \text{NetIncome} \times 100$$

YEAR	NET PROFIT (in rupees)	NET SALES (in rupees)	NET PROFIT RATIO In %
2020 - 2021	-49784647.56	1859779292.00	2.68
2021 - 2022	-3832383.60	1853327934.54	0.20
2022 - 2023	-92437574.74	2420970775.79	3.82

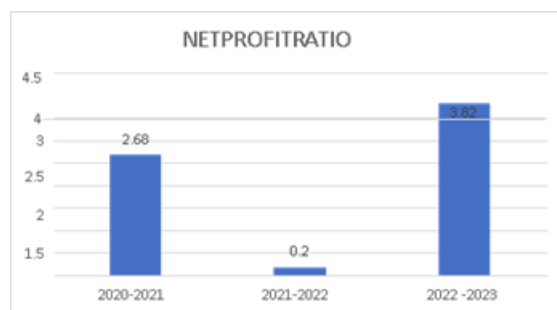


CHART: 3.4.3 THIS CHART SHOWS THE GRAPHICAL REPRESENTATION OF NET PROFIT RATIO

INFERENCE:

The net profit ratio shows significant fluctuation over the three-year period. Starting at 2.68% in 2020 - 2021, it dropped sharply to -0.21% in 2021 – 2022 indicating a loss, but then recovered remarkably to reach 3.82% in 2022 - 2023. The negative ratio in 2021 - 2022 suggests the company faced challenges that year, possibly due to increased expenses or market conditions. However, the strong recovery in 2022 – 2023 demonstrates the company's resilience and ability to improve profitability, achieving its highest net profit ratio of the three years. This improvement indicates better overall financial management and operational efficiency in the most recent year.

3.5 BREAK EVEN ANALYSIS:

TABLE: 3.5.1 SHOWS THE CALCULATION OF BREAK EVEN POINT

$$\text{Break-EvenPoint(Units)} = \text{FixedCosts} / \text{SellingPriceperUnit} - \text{VariableCostperUnit}$$

YEAR	FIXED COST (in rupees)	SELLING PRICE PER UNIT	VARIABLE COST PER UNIT	BREAK EVEN POINT (units)
2020 - 2021	728145481.99	185.98	105.50	9,060,831
2021 - 2022	803708253.29	185.33	112.99	11,108,473
2022 - 2023	814741486.11	242.10	149.63	8,812,471

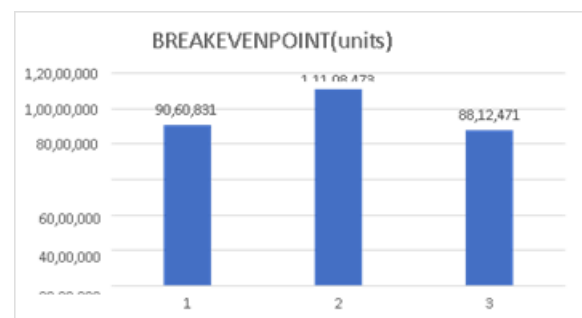


CHART: 3.5.1 THIS CHART SHOWS THE GRAPHICAL REPRESENTATION OF BREAK EVEN POINT

INFERENCE:

The break-even point analysis shows significant fluctuation over the three-year period. Starting at 9.06 million units in 2020 - 2021, it increased to 11.11 million units in 2021 - 2022, and then decreased to 8.81 million units in 2022 - 2023. The higher break-even point in 2021 – 2022 indicates that the company needed to sell more units to cover its costs during that year, suggesting increased fixed costs or reduced contribution margin. However, the reduction in break-even point in 2022 – 2023 shows improved efficiency, as fewer units needed to be sold to cover costs. This improvement can be attributed to better pricing strategies and cost management, making the company's operations more efficient in the most recent year.

IV. SUMMARY OF FINDINGS

FINDINGS OF RATIO ANALYSIS

- The current ratio fluctuated from 1.81 in 2020-21 to 1.56 in 2021-22, then rose to 1.74 in 2022-23, indicating strong liquidity and improved working capital management.

- The quick ratio rose from 0.93 in 2020-21 to 1.13 in 2021-22, reaching 1.30 in 2022-23, indicating sufficient liquid assets to cover liabilities without inventory reliance.
- The debt equity ratio remained stable, from 0.23 in 2020-21, slightly rising to 0.24 in 2021-22, then decreasing to 0.21 in 2022-23, indicating a conservative, low-risk financing strategy.
- The debt ratio increased slightly from 0.058 in 2020-21 to 0.067 in 2021-22 and 0.071 in 2022-23, indicating minimal financial risk as under 8% of assets are debt-financed.
- The inventory turnover ratio fluctuated, starting at 3.73 times in 2020, dropping to 3.42 in 2021, then rising to 4.51 in 2022. The increase in 2022 reflects improved inventory management and sales efficiency.
- The receivables turnover ratio declined from 7.52 times in 2020-21 to 5.44 in 2021-22, and then to 5.39 in 2022-23. This suggests slower receivables collection, highlighting a need to review credit policies.
- The asset turnover ratio fluctuated, rising to 1.80 in 2022-23, showing improved efficiency in asset utilization and strong revenue generation.
- The gross profit ratio declined from 43.27% in 2020-21 to 38.19% in 2021-22, indicating rising costs relative to sales. However, maintaining above 38% shows healthy profit retention despite cost pressures.
- The operating profit ratio improved from 2.79% in 2020-21 to 4.89% in 2021-22, reflecting enhanced operational efficiency and better control over operating expenses, nearly doubling profit generation from core operations.
- The net profit ratio fluctuated, from 2.68% in 2020-21 to -0.21% in 2021-22, then recovering to 3.82% in 2022-23, reflecting resilience and improved profitability through better financial management and efficiency.
- The break-even point fluctuated, rising from 9.06 million units in 2020-21 to 11.11 million in 2021-22, then dropping to 8.81 million in 2022-23, indicating improved efficiency and cost management in the latter year.
- Implement better inventory management practices to sustain or improve the inventory turnover ratio, ensuring efficient stock levels.
- Review and tighten credit policies to enhance the receivables turnover ratio, aiming for quicker collections.
- Continue efforts to improve asset utilization, targeting a consistent increase in the asset turnover ratio for better revenue generation.
- Analyze cost structures and pricing strategies to combat declining gross profit margins while maintaining competitiveness.
- Focus on operational efficiencies and cost control measures to sustain improvements in the operating profit ratio.

V. CONCLUSION

From the above analysis of the financial statements reveals a company demonstrating resilience and adaptability amidst fluctuating performance metrics. While liquidity ratios indicate strong management of short-term obligations, there is room for improvement in receivables collection and inventory turnover. The stable debt-to-equity and debt ratios reflect a conservative financing strategy, minimizing financial risk. However, the decline in gross profit margins necessitates a thorough review of cost structures and pricing strategies to maintain competitiveness. Enhanced operational efficiency is evident in the improved operating profit ratio, yet continuous efforts are required to stabilize net profit margins. By implementing strategic recommendations focused on liquidity management, cost control, and stakeholder engagement, the company can strengthen its financial position and ensure sustainable growth. Regular financial reviews and investment in technology will further optimize operations, ultimately positioning the company for long-term success in an evolving market landscape.

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SUGGESTIONS AND RECOMMENDATIONS

- Continue to maintain a current ratio above 1.5 to ensure adequate liquidity for short-term obligations.
- Focus on increasing the quick ratio further by optimizing cash reserves and reducing reliance on inventory.
- Keep the debt-to-equity ratio low to minimize financial risk and ensure stability in financing.
- Aim to keep the debt ratio below 0.08, ensuring that debt financing remains minimal relative to total assets.

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