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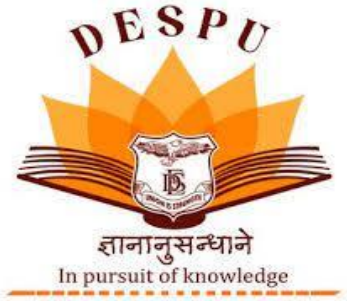

A PROJECT REPORT ON

"Analysis and Interpretation of the Financial Statements of TATA STEEL and SAIL Using Ratio Analysis as a Tool."

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Under the guidance of

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In Partial Fulfillments of

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DECLARATION

I, Siddhesh Walunj, a student enrolled at DES Pune University, hereby solemnly affirm that the project entitled "Analysis and Interpretation of the Financial Statements of TATA STEEL and SAIL Using Ratio Analysis as a Tool.", represents the culmination of original work conducted under the guidance of Prof. Mrugakshi Rajhans at DES Pune University, Pune.

This project serves as a testament to my dedication to academic inquiry and the pursuit of knowledge within the field of commerce. The research contained within this report is the result of my independent effort, undertaken with the guidance and supervision of my esteemed supervisor.

I affirm that all the content presented in this project is original and has been generated by me. While I have consulted various sources of information and literature to inform my analysis, the interpretations, insights, and conclusions presented herein are the product of my own intellectual undertakings.

Furthermore, I declare that the findings and results summarized within this project have not been previously submitted to any other academic institution or university for the purpose of obtaining a degree or accreditation. It is my sincere intention that this work contributes meaningfully to the academic discourse surrounding the subject matter and serves as a valuable resource for future research endeavor's. It is important to acknowledge that any external materials, including data, theoretical analysis, or textual excerpts, sourced from other scholarly works or publications have been duly credited within the text of this report. Proper citations and references have been provided to acknowledge the contributions of these sources to the development of my research.

It is essential to emphasize that all information presented in this project is intended solely for academic purposes. Any resemblance to real-life events, entities, or individuals is purely coincidental, and the analyses presented are based on theoretical constructs and financial data available in the public domain.

Date:

Place: DES Pune University, Pune Siddhesh N. Walunj

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CHAPTER 1
INTRODUCTION

TITLE – "Analysis and Interpretation of the Financial Statements of TATA STEEL and SAIL (Steel Authority of India Limited)

OBJECTIVES

1. Study and understand Tata Steel and SAIL's financial reports.
2. Use ratios to figure out how well Tata Steel and SAIL are doing financially.
3. Follow a step-by-step process to analyze their financial data.
4. Look at how Tata Steel and SAIL's money is structured compared to each other.
5. Analyze how Tata Steel and SAIL have changed financially over the last 3 years.
6. Understand how Tata Steel and SAIL operate within the steel industry.
7. Evaluate Tata Steel and SAIL's financial health using liquidity, activity, profitability, and leverage ratios.

JUSTIFICATION OF THE OBJECTIVES

1. Calculating various financial ratios for Tata Steel and SAIL over the past three years is essential for gaining a comprehensive understanding of their financial performance and position. Ratios provide quantitative insights into different aspects of the companies' operations, including profitability, liquidity, efficiency, and solvency. By computing ratios such as profitability ratios (e.g., return on equity, net profit margin), liquidity ratios (e.g., current ratio, quick ratio), efficiency ratios (e.g., asset turnover, inventory turnover), and solvency ratios (e.g., debt-to-equity ratio, interest coverage ratio), stakeholders can assess how effectively the companies are utilizing their resources, managing their debts, generating profits, and meeting short-term and long-term obligations. Analyzing these ratios over a multi-year period allows for trend analysis, helping stakeholders identify improvements or deteriorations in the companies' financial performance and make informed decisions regarding investment, lending, or strategic planning. Therefore, calculating different ratios for Tata Steel and SAIL over the past three years is crucial for evaluating their financial health and performance comprehensively.

2. Following a step-by-step process to analyze the financial data of Tata Steel and SAIL is essential for ensuring systematic and thorough examination of their financial performance and position. A structured approach helps ensure that all relevant aspects of the financial data are considered and analyzed in a methodical manner, minimizing oversight and enhancing the reliability of the analysis. By following a predefined process, stakeholders can standardize their analytical procedures, facilitating consistency and comparability across different analyses and time periods.

   Moreover, a step-by-step process helps stakeholders navigate the complexities of financial data analysis by breaking down the task into manageable steps. This approach

typically involves stages such as data collection, data organization, calculation of financial ratios, interpretation of results, and drawing conclusions. Each step builds upon the previous one, leading to a comprehensive understanding of the financial data and enabling stakeholders to derive meaningful insights.

Additionally, following a structured process enhances the transparency and reproducibility of the analysis, allowing stakeholders to communicate their findings effectively and justify their conclusions based on objective criteria. This is particularly important in decision-making contexts where stakeholders need to justify their recommendations or actions based on sound financial analysis.

Overall, following a step-by-step process to analyze the financial data of Tata Steel and SAIL ensures rigor, consistency, and reliability in the analysis, ultimately leading to more informed decision-making and strategic planning.

3. Analyzing the financial changes of Tata Steel and SAIL over the last three years is essential for stakeholders to understand the trajectory of their financial performance and identify trends or patterns that may indicate strengths or weaknesses. By comparing key financial metrics such as revenue, profitability, liquidity, solvency, and efficiency ratios over the three-year period, stakeholders can assess the companies' financial health, growth trajectory, and operational efficiency. This analysis helps stakeholders identify areas of improvement or concern, such as declining profitability, increasing debt levels, or changes in asset utilization. Understanding how Tata Steel and SAIL have evolved financially over the past three years enables stakeholders to evaluate the effectiveness of management strategies, external market influences, and internal operational changes. Additionally, this analysis provides valuable insights for forecasting future financial performance, identifying potential risks, and formulating strategic plans to drive sustainable growth and profitability. Overall, analyzing the financial changes of Tata Steel and SAIL over the last three years provides stakeholders with a comprehensive view of their financial dynamics and informs decision-making processes aimed at maximizing shareholder value and ensuring long-term viability.

4. Gaining an understanding of how Tata Steel and SAIL operate within the steel industry is crucial for stakeholders to comprehend the competitive landscape, market dynamics, and strategic positioning of these companies. The steel industry is complex and highly influenced by factors such as global demand trends, raw material prices, technological advancements, and regulatory policies. By studying the operations of Tata Steel and SAIL within this industry, stakeholders can gain insights into various aspects, including production processes, distribution channels, market segmentation, product differentiation, and competitive advantages. Understanding the strategic initiatives, investment decisions, and market positioning strategies of Tata Steel and SAIL enables stakeholders to assess their ability to adapt to market changes, capitalize on growth opportunities, and mitigate risks. Additionally, this understanding facilitates benchmarking against industry peers, identifying best practices, and formulating

informed strategies for sustainable growth and value creation. Overall, comprehending how Tata Steel and SAIL operate within the steel industry provides stakeholders with valuable insights for decision-making, risk management, and strategic planning.

HYPOTHESIS

1) **Null Hypothesis (H0):** There is no significant difference in the financial performance of TATA STEEL and SAIL based on the ratio analysis of their past three years' financial statements.

2) **Alternative Hypothesis (H1):** TATA STEEL demonstrates superior financial performance compared to SAIL based on the ratio analysis of their past three years' financial statements, making it a more attractive investment option for investors.

JUSTIFICATION FOR THE HYPOTHESIS

1) The null hypothesis assumes that there is no discernible difference in the financial performance of TATA STEEL and SAIL over the past three years when analyzing various financial ratios. This implies that both companies have similar levels of profitability, liquidity, solvency, and efficiency based on their financial statements.

2) Conversely, the alternative hypothesis suggests that TATA STEEL exhibits superior financial performance compared to SAIL over the same period. This implies that TATA STEEL's financial ratios, such as profitability margins, liquidity ratios, leverage ratios, and efficiency ratios, are generally better than those of SAIL. From an investor's perspective, this would indicate that TATA STEEL presents a more favorable investment opportunity due to its stronger financial position and performance metrics.

By testing these hypotheses through a comprehensive comparative analysis of the financial statements and ratio analysis of both companies, investors can gain valuable insights into their relative strengths and weaknesses, helping them make more informed investment decisions.

BACKGROUND OF THE STUDY

Introduction to the sector and companies:

The Indian steel industry is a cornerstone of the country's economic progress, boasting a rich heritage dating back over a century. From the establishment of iconic companies like Tata Steel in 1907 to the present-day landscape dominated by a mix of public and private sector players, the industry has witnessed remarkable growth and evolution. Today, India ranks as the world's second-largest steel producer, with manufacturing facilities dispersed across key regions like Odisha, Jharkhand, and Maharashtra. Government initiatives such as "Make in India" and reforms in mining regulations have bolstered investment and fostered a conducive business environment. Technological advancements, including modernization efforts and the adoption of eco-friendly processes, have propelled the industry forward, enhancing productivity and competitiveness. Despite facing challenges like overcapacity and global trade uncertainties, the Indian steel industry remains resilient, driven by robust domestic demand and a commitment to innovation. With continued strategic planning and collaboration, the industry is poised to play a pivotal role in India's sustainable development journey.

TATA STEEL

Tata Steel, originally established as Tata Iron and Steel Co Ltd in Jamshedpur, India, in 1907 by the visionary founder Jamsetji N. Tata, has grown into one of the world's most geographically-diversified steel producers. With operations and a commercial presence spanning across five continents and boasting an employee base of over 77,000, Tata Steel has cemented its position as a global leader in the steel industry. The company's journey began with the production of its first steel ingot on 16 February 1912, and it made rapid progress during the First World War, eventually operating the largest steel plant in the British Empire by 1939.

Tata Steel embarked on a major modernization and expansion program in 1951, subsequently upgrading it to a 2 million metric tons per annum (MTPA) project in 1958. By 1970, the company employed around 40,000 people at Jamshedpur and an additional 20,000 in neighboring coal mines. Despite unsuccessful attempts at nationalization in 1971 and 1979, Tata Steel continued its expansion, establishing its subsidiary, Tata Inc., in New York in 1990. The company rebranded from TISCO to Tata Steel Ltd. in 2005, signaling its global ambitions and aspirations.

Today, Tata Steel's consolidated India crude steel production capacity stands at 19.6 MTPA, with manufacturing facilities strategically located in Jamshedpur, Kalinganagar, Dhenkanal, Sahibabad, and Khopoli. The company has recently commenced the phase 2 expansion of its Kalinganagar steel plant from 3 MTPA to 8 MTPA, further enhancing its production capabilities. In addition to its core steel production, Tata Steel operates downstream product extensions such as wires, tubes, bearings, agriculture equipment, and industrial by-products, alongside a robust ferro-alloys and minerals division and a heavy-duty engineering and fabrication unit, Tata Growth Shop.

Tata Steel's focus on innovation, technology, sustainability, and people has positioned it as a benchmark for value creation and corporate citizenship in the global steel industry. The company's presence across the value chain, from mining to finished steel goods, ensures cost-

competitiveness, production efficiencies, and higher customer satisfaction standards. Moreover, Tata Steel's strategic acquisitions, including the purchase of strip product services centers in the Nordic region in 2015 and the proposed joint venture with ThyssenKrupp in 2017, underscore its commitment to sustained growth and global expansion. As Tata Steel continues to evolve and innovate, it remains poised to maintain its leadership position and uphold its legacy of excellence in the steel industry.

Steel Authority of India Ltd (SAIL)

Steel Authority of India Ltd (SAIL) is a leading steel-making company in India, fully integrated into iron and steel production. Established in 1973, SAIL is a central public sector enterprise and is among the seven Maharatnas of India. The company operates five integrated steel plants and three special steel plants, strategically located in the eastern and central regions of India, close to sources of raw materials. SAIL produces a wide range of steel products catering to various industries including construction, engineering, power, railway, automotive, and defense sectors. With a strong presence in both domestic and international markets, SAIL is renowned for its quality products and technical expertise in steel production.

SAIL's journey began in 1973 with the incorporation of the company under the Ministry of Steel and Mines. The formation of SAIL was based on a policy statement aimed at evolving a new model for managing the steel industry in India. Over the years, SAIL has undergone significant expansions, modernizations, and technological upgrades across its plants, enhancing its production capacity and product portfolio. The company has ventured into joint ventures and collaborations with various entities to facilitate growth and improve operational efficiencies. SAIL has continuously focused on research and development, establishing centers for innovation and technological advancements in steel production. The company's history is marked by milestones such as plant modernizations, capacity expansions, strategic alliances, and awards for excellence in various fields.

In recent years, SAIL has achieved several significant milestones and undertaken various initiatives to strengthen its position in the steel industry. Here are some notable developments which include:

- Commissioning of new production facilities such as hot strip mills, slab casters, and captive power plants to enhance production capacity and efficiency.
- Introduction of new steel grades and products to meet evolving market demands, including duplex stainless steel, ultra-low niobium structural steel, and high-strength low alloy cold-rolled annealed grades.
- Focus on renewable energy and sustainability, with the installation of rooftop solar power plants and initiatives to reduce carbon footprint.
- Strategic agreements and collaborations with international companies like ABB and POSCO for technical expertise, operational improvements, and human resource development.

- Recognition and awards for excellence in various areas, including CSR initiatives, energy conservation, and corporate citizenship.

Overall, SAIL continues to play a pivotal role in India's steel industry, leveraging its expertise, infrastructure, and commitment to innovation and sustainability to maintain its position as a leading steel-making company in the country.

Why this industry?

1. Global Significance: The steel industry is one of the most vital sectors in the global economy, with its products serving as the backbone for numerous industries such as construction, automotive, machinery, and infrastructure development. Its significance lies in providing essential materials necessary for economic growth and development.

2. Resilience and Longevity: The steel industry has demonstrated resilience and longevity over time, enduring economic downturns, technological advancements, and changing market dynamics. Despite facing challenges, the industry has consistently adapted and evolved, remaining a cornerstone of industrial production worldwide.

3. Diverse Applications: Steel finds extensive applications across various sectors, including construction (for buildings, bridges, and roads), transportation (in automobiles, ships, and railways), energy (in pipelines and power transmission), manufacturing (for machinery and equipment), and consumer goods (such as household appliances and utensils). This diversity in applications ensures a wide range of market opportunities and potential project scopes within the steel industry.

4. Technological Advancements: The steel industry has witnessed significant technological advancements, leading to improvements in production efficiency, product quality, and environmental sustainability. Innovations such as advanced manufacturing processes, alloy developments, and recycling technologies have enhanced the industry's competitiveness and attractiveness for investment and project development.

5. Supply Chain Integration: The steel industry is deeply integrated into global supply chains, collaborating with upstream raw material suppliers (e.g., iron ore and coal producers) and downstream manufacturers and end-users. Engaging in projects within the steel industry allows for participation in a complex yet interconnected network of production and distribution channels, offering opportunities for value creation and collaboration along the supply chain.

6. Infrastructure Development: With increasing investments in infrastructure projects worldwide, the demand for steel is expected to rise significantly. Projects related to infrastructure development, including transportation networks, urbanization initiatives, and renewable energy installations, present lucrative opportunities for stakeholders in the steel industry to contribute to sustainable growth and development.

7. Market Growth Potential: Emerging markets, particularly in Asia-Pacific, Latin America, and Africa, are experiencing rapid urbanization, industrialization, and infrastructure expansion, driving demand for steel products. Investing in projects within these growth regions can capitalize on the expanding market opportunities and unlock potential for revenue growth and market penetration.

8. Environmental Considerations: The steel industry is actively addressing environmental concerns by adopting cleaner production technologies, reducing emissions, and promoting recycling and circular economy principles. Projects focused on sustainability, energy efficiency, and environmental stewardship align with global efforts to mitigate climate change and enhance corporate social responsibility, contributing to a more sustainable future.

selecting the steel industry for a project offers numerous advantages, including its global significance, resilience, diverse applications, technological advancements, supply chain integration, infrastructure development opportunities, market growth potential, and environmental considerations. By leveraging these factors, stakeholders can capitalize on the industry's strengths and opportunities to drive innovation, growth, and sustainability in the global marketplace.

Why TATA Steel and SAIL?

1. Both TATA Steel and SAIL are industry leaders in the Indian steel sector. TATA Steel is one of the largest steel producers globally and holds a significant market share in India. SAIL, being one of the largest steel-making companies in India, plays a pivotal role in the country's steel production and infrastructure development. Analyzing the financial statements of these industry giants provides valuable insights into the overall health and performance of the steel industry, as well as broader economic trends.

2. TATA Steel and SAIL operate across various segments of the steel value chain, including mining, manufacturing, and distribution. This diversity in operations allows for a comprehensive analysis of different aspects of the steel business, such as raw material sourcing, production efficiency, cost management, and market positioning. Studying their financial statements can help identify strengths, weaknesses, opportunities, and threats within each segment and across the entire value chain.

3. The scale and complexity of operations of TATA Steel and SAIL present interesting challenges and opportunities for financial analysis. Both companies have extensive asset bases, diverse revenue streams, complex capital structures, and global operations. Analyzing their financial statements involves examining various financial metrics, such as revenue growth, profitability, asset utilization, liquidity, leverage, and shareholder returns, to gain a comprehensive understanding of their financial performance and sustainability.

4. TATA Steel and SAIL are strategic assets for India's industrial development and economic growth. As key suppliers of steel for critical infrastructure projects, automotive manufacturing, construction, and other industries, their performance directly impacts the country's economic competitiveness and development goals. Analyzing their financial statements can provide insights into their strategic initiatives, investment priorities, risk management strategies, and future growth prospects, which are vital for stakeholders, policymakers, and investors.

5. TATA Steel and SAIL are publicly listed companies with significant investor interest. Analyzing their financial statements helps investors, analysts, and financial professionals make informed investment decisions, assess valuation metrics, and understand the potential risks and rewards associated with investing in these companies. Moreover, studying the financial performance and management practices of TATA Steel and SAIL can uncover valuable insights for shareholders, potential investors, and other stakeholders interested in corporate governance, transparency, and accountability.

Choosing TATA Steel and SAIL for an analysis and interpretation project of their financial statements offers a unique opportunity to delve into the complexities of the steel industry, gain insights into their strategic importance for India's economy, and provide valuable information for stakeholders, investors, and decision-makers.

Introduction to Ratio Analysis

Ratio analysis is a powerful tool used by businesses, investors, and financial analysts to evaluate the financial health and performance of a company. By examining various financial ratios derived from a company's financial statements, stakeholders can gain insights into its profitability, liquidity, solvency, efficiency, and overall operational effectiveness. This analytical technique enables comparisons across time periods, industry peers, and competitors, facilitating informed decision-making.

Understanding Ratio Analysis:

Financial ratios are quantitative metrics calculated by dividing one financial variable by another. These ratios provide a snapshot of a company's financial position and performance, helping stakeholders assess its strengths, weaknesses, and trends over time. Ratios are typically categorized into several key areas:

1. **Liquidity Ratios:** Liquidity ratios measure a company's ability to meet its short-term obligations with its short-term assets. The most common liquidity ratios include the current ratio and the quick ratio. A higher ratio indicates better liquidity and a lower risk of financial distress.

2. **Profitability Ratios:** Profitability ratios assess a company's ability to generate profits relative to its revenue, assets, equity, or investments. Examples include the gross profit margin, operating profit margin, net profit margin, return on assets (ROA), and return on equity (ROE). These ratios help stakeholders understand how efficiently a company is utilizing its resources to generate profits.

3. **Solvency Ratios:** Solvency ratios evaluate a company's long-term financial stability and its ability to meet its long-term debt obligations. Common solvency ratios include the debt-to-equity ratio, interest coverage ratio, and debt service coverage ratio. These ratios provide insights into a company's leverage and its capacity to withstand financial challenges.

4. **Efficiency Ratios:** Efficiency ratios measure how effectively a company utilizes its assets and liabilities to generate revenue and manage costs. Examples include inventory turnover, accounts receivable turnover, and accounts payable turnover ratios. These ratios help identify areas for operational improvement and cost optimization.

5. **Market Value Ratios:** Market value ratios assess how investors perceive a company's value in the market. Examples include the price-to-earnings (P/E) ratio, earnings per share (EPS), and market-to-book ratio. These ratios reflect market sentiment and investors' expectations regarding future performance.

Benefits of Ratio Analysis:

1. **Performance Evaluation:** Ratio analysis provides a comprehensive view of a company's financial performance, allowing stakeholders to assess its strengths and weaknesses across various dimensions. By comparing ratios over time or against industry benchmarks, stakeholders can identify trends and gauge the effectiveness of management strategies.

2. **Decision Making:** Ratios help stakeholders make informed decisions regarding investment, lending, and strategic planning. Investors use ratios to evaluate investment opportunities and assess the financial health of potential targets. Lenders rely on ratios to assess creditworthiness and determine lending terms. Additionally, managers use ratios to identify areas for improvement and set performance targets.

3. **Forecasting and Planning:** Ratio analysis assists in financial forecasting and planning by providing insights into future performance trends. By analyzing historical ratios and external factors, stakeholders can make more accurate projections and develop strategic plans to achieve their goals.

4. **Monitoring Financial Health:** Ratio analysis serves as a monitoring tool for assessing a company's financial health on an ongoing basis. Regularly reviewing key ratios helps stakeholders identify early warning signs of financial distress, enabling timely intervention and corrective action.

5. **Comparative Analysis:** Ratios facilitate comparative analysis by allowing stakeholders to benchmark a company's performance against industry peers, competitors, and best practices. This comparative perspective helps identify areas of competitive advantage or areas requiring improvement.

Limitations of Ratio Analysis:

1. **Limited Scope:** Ratio analysis relies solely on financial data and may not capture qualitative factors such as management expertise, brand reputation, and industry dynamics, which can significantly impact a company's performance.

2. **Historical Data:** Ratio analysis primarily uses historical financial data, which may not accurately reflect future performance, especially in rapidly changing or volatile industries.

3. **Accounting Policies:** Differences in accounting policies and practices among companies can distort ratio comparisons. For example, variations in depreciation methods or inventory valuation can affect profitability ratios.

4. **Industry Variations:** Ratios may vary significantly across industries due to differences in business models, capital structures, and operating cycles. Therefore, comparing ratios across industries may not always be meaningful.

5. **External Factors:** Ratios can be influenced by external factors such as economic conditions, regulatory changes, and market trends, which may not be fully captured in financial statements.

Conclusion:

Ratio analysis is a fundamental tool for evaluating a company's financial performance and health. By examining key ratios across different categories, stakeholders can gain valuable insights into liquidity, profitability, solvency, efficiency, and market perception. Ratio analysis helps stakeholders make informed decisions, monitor financial health, and plan for the future. While ratio analysis has its limitations, when used judiciously and in conjunction with other analytical methods, it provides a comprehensive understanding of a company's financial position and performance.

Liquidity Ratios:

1) **Current ratio**

This ratio relates the current assets with the current liabilities. It is the most commonly used method to measure the short-term solvency of the company. The current assets are those assets which can be converted into cash or consumed in the production of goods or rendering services within the accounting period. Normally this accounting period in which conversion or consumption is done is not more than one year. The current assets include cash, bank, marketable securities, accounts receivable and inventories. Prepaid expenses are also included as they represent the payments which will not be made by the company in the future.

$$\textbf{\textit{Current Ratio}} = \frac{\textbf{\textit{Current Assets}}}{\textbf{\textit{Current Liabilities}}}$$

2) **Quick Ratio**

   a. The Quick Ratio, also known as the Acid-Test Ratio, is a liquidity ratio used to assess a company's ability to meet its short-term obligations with its most liquid assets, excluding inventory. It provides a more conservative measure of liquidity compared to the Current Ratio

$$\textbf{\textit{Quick Ratio}} = \frac{\textbf{\textit{Quick Assets}}}{\textbf{\textit{Quick Liabilities}}}$$

   b. $\textbf{\textit{Quick Assets} = \textit{Current Assets} - \textit{Stock} - \textit{Prepaid Expenses}}$

   c. $\textbf{\textit{Quick Liabilites} = \textit{Current Liabilites} - \textit{Bank Overdraft} - \textit{Outstanding Expenses}}$

3) **Cash Ratio**

The Cash Ratio is a liquidity ratio that measures a company's ability to cover its short-term liabilities with its cash and cash equivalents alone. It provides a conservative assessment of liquidity by focusing solely on the most liquid assets.

$$\textbf{\textit{Cash ratio}} = \frac{\textbf{\textit{cash} + \textit{bank} + \textit{Marketable Securities}}}{\textbf{\textit{Current Liabilities}}} \times \mathbf{100}$$

4) **Debtors Turnover Ratio**

Debtors Turnover Ratio measures how efficiently a company manages its accounts receivable by assessing how many times, on average, the receivables are collected during a specific period. It indicates the effectiveness of credit management and the liquidity of the company's debtors.

$$\textbf{\textit{Debtors Turnover Ratio}} = \frac{\textbf{\textit{Credit Sales}}}{\textbf{\textit{Avg. Debtors}}}$$

$$Avg.Debtors = \frac{Opening\ Debtors + Closing\ Debtors}{2}$$

5) Average Collection Period

The Average Collection Period is a financial metric that measures the average number of days it takes for a company to collect payments from its customers for credit sales. It indicates the efficiency of a company's accounts receivable management in converting credit sales into cash.

$$Avg.\ Collection\ Period = \frac{Time\ Period}{Debtors\ Turnover\ Ratio}$$

6) Creditors Turnover Ratio

Creditors Turnover Ratio measures how efficiently a company manages its accounts payable by evaluating the frequency with which it pays its creditors. The ratio is calculated by dividing net credit purchases by the average accounts payable during a specific period.

$$Creditors\ Turnover\ Ratio = \frac{Credit\ Purchases\ or\ Cost\ of\ Goods\ Sold}{Avg.Creditors}$$

7) Average Payment Period

The Average Payment Period is a financial metric that measures the average number of days it takes for a company to pay its suppliers and vendors for goods and services received. It provides insights into a company's efficiency in managing its accounts payable and cash flow.

$$Avg.\ Payment\ Period = \frac{Time\ Period}{Creditors\ Turnover\ Ratio}$$

8) Defensive Interval Ratio

The Defensive Interval Ratio assesses a company's ability to cover its operating expenses and debt obligations using its liquid assets, excluding inventory. It measures the number of days a company can sustain its operations without generating additional revenue.

$$Defensive\ Interval\ Ratio = \frac{Quick\ Assets}{Avg.Daily\ Cash\ Requirements(ADCR)}$$

$$ADCR = \frac{COGS + Administration\ Overheads + Selling\ and\ Distribution\ Overheads}{365\ Days}$$

Activity Ratios:

1) **Stock Turnover Ratio (Revenue)**
   Stock Turnover Ratio (Revenue) measures how efficiently a company manages its inventory by assessing the relationship between net revenue and average inventory levels. It indicates how many times a company's inventory is sold and replaced during a specific period, reflecting its operational efficiency in inventory management.

$$\textbf{\textit{Stock Turnover Ratio}}(\textbf{\textit{Revenue}}) = \frac{\textbf{\textit{Net Sales}}}{\textbf{\textit{Avg. Stock}}}$$

2) **Stock Turnover Ratio (Expenses)**
   The Stock Turnover Ratio (Expenses) measures the efficiency of a company in managing its expenses relative to its inventory turnover. It calculates how effectively a company utilizes its expenses to generate revenue through sales of inventory. A higher ratio indicates better expense management efficiency.

$$\textbf{\textit{Stock Turnover Ratio}}\ (\textbf{\textit{Expenses}}) = \frac{\textbf{\textit{COGS}}}{\textbf{\textit{Avg. Stock}}}$$

3) **Current Assets Turnover Ratio**
   The Current Assets Turnover Ratio measures the efficiency of a company in utilizing its current assets to generate revenue. It is calculated by dividing the net sales or revenue by the average current assets during a specific period. A higher ratio indicates better asset utilization.

$$\textbf{\textit{Current Assets Turnover Ratio}} = \frac{\textbf{\textit{Net Sales}}}{\textbf{\textit{Current Assets}}}$$

4) **Fixed Assets Turnover Ratio**
   The Fixed Assets Turnover Ratio measures a company's efficiency in generating revenue from its investment in fixed assets such as property, plant, and equipment. It is calculated by dividing net sales by the average value of fixed assets. A higher ratio indicates better utilization of fixed assets.

$$\textbf{\textit{Fixed Assets Turnover Ratio}} = \frac{\textbf{\textit{Net Sales}}}{\textbf{\textit{Net Fixed Assets}}}$$

5) **Total Assets Turnover Ratio**
   The Total Assets Turnover Ratio measures a company's efficiency in generating sales revenue relative to its total assets. It indicates how effectively a company utilizes its assets to generate sales. A higher ratio suggests better asset utilization and operational efficiency.

$$\textbf{\textit{Total Assets Turnover Ratio}} = \frac{\textbf{\textit{Net Sales}}}{\textbf{\textit{Total Assets}}}$$

6) Working Capital Turnover Ratio

The Working Capital Turnover Ratio measures the efficiency of a company in utilizing its working capital to generate sales revenue. It is calculated by dividing net sales by average working capital. A higher ratio indicates more efficient utilization of working capital in generating sales.

$$\boldsymbol{Working\ Capital\ Turnover\ Ratio} = \frac{\boldsymbol{Net\ Sales}}{\boldsymbol{Working\ Capital}}$$

7) Capital Turnover Ratio

The Capital Turnover Ratio measures how efficiently a company utilizes its capital to generate revenue. It is calculated by dividing net sales by average total capital employed. A higher ratio indicates better utilization of capital to generate sales, reflecting stronger operational efficiency.

$$\boldsymbol{Capital\ Turnover\ Ratio} = \frac{\boldsymbol{Net\ Sales}}{\boldsymbol{Capital\ Employed}}$$

$$\boldsymbol{Capital\ Capital\ Employed} = \boldsymbol{Equity\ Share\ Capital} + \boldsymbol{Preference\ Share\ Capital} + \boldsymbol{Reserves} + \boldsymbol{Bank\ Loans} + \boldsymbol{Debentures} + \boldsymbol{Deposits} + \boldsymbol{Long\ Term\ Commercial\ Papers}$$

Profitability Ratios:

1) **Gross Profit Ratio**

The Gross Profit Ratio is a financial metric that measures the proportion of gross profit generated by a company relative to its net sales revenue. It indicates the efficiency of a company's production or sales operations in generating profits before deducting operating expenses.

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

2) **Net Profit Ratio**

Net Profit Ratio, also known as Net Profit Margin, is a profitability ratio that measures the percentage of net profit earned relative to total revenue. It indicates the efficiency of a company in generating profits from its operations after accounting for all expenses and taxes.

$$\textbf{Net Profit Ratio} = \frac{\textbf{PAT}}{\textbf{Sales}} \times 100$$

3) **Operating Profit Ratio**

The Operating Profit Ratio, also known as the Operating Margin, measures the proportion of revenue that remains after deducting operating expenses. It reflects a company's operational efficiency and profitability, indicating how effectively it generates profits from its core business activities.

$$\textbf{Operating Profit Ratio} = \frac{\textbf{PAT} + \textbf{Non Operating Expenses} - \textbf{Non Operating Income}}{\textbf{Sales}} \times 100$$

4) **Operating Expense Ratio**

The Operating Expense Ratio measures the proportion of a company's revenue that is consumed by operating expenses. It reflects the efficiency of cost management and operational effectiveness. A lower ratio indicates better cost control and higher profitability.

$$\textbf{Operating Expense Ratio} = \frac{\textbf{COGS} + \textbf{Admin Exp.} + \textbf{Selling and Distribution Exp.}}{\textbf{Sales}} \times 100$$

5) **Return on Assets**

Return on Assets (ROA) is a financial ratio that measures a company's profitability relative to its total assets. It indicates how efficiently a company utilizes its assets to generate profit. ROA is calculated by dividing net income by average total assets and is expressed as a percentage.

$$\textbf{Return On Assets} = \frac{\textbf{PAT}}{\textbf{Tangible Fixed Assets}} \times 100$$

6) Return on Capital Employed

Return on Capital Employed (ROCE) is a financial metric that measures a company's profitability and efficiency in generating returns from its capital investments. It indicates how effectively a company utilizes its capital to generate profits, taking into account both debt and equity capital employed in its operations.

$$\textbf{Return On Capital Employed} = \frac{\textbf{PAT} + \textbf{Interest}}{\textbf{Capital Employed}} \times 100$$

7) **Earnings per share (EPS)**

Earnings Per Share (EPS) is a financial metric that measures the profitability of a company on a per-share basis. It is calculated by dividing the company's net income attributable to common shareholders by the average number of outstanding shares during a specific period. EPS is a key indicator of a company's profitability and is widely used by investors and analysts in evaluating investment opportunities.

$$\textbf{Earnings per Share}(\textbf{EPS}) = \frac{\textbf{Net Earnings}}{\textbf{No. of Equity Shares}}$$

$$\textbf{Net Earnings} = \textbf{PAT} - \textbf{Preference Dividend}$$

8) Market Price of Share

The Market Price of Share refers to the current price at which a company's stock is being traded in the financial markets. It represents the equilibrium between supply and demand for the stock and is influenced by various factors, including company performance, market sentiment, and economic conditions.

$$\textbf{Market Price of Share} = \textbf{EPS} \times \textbf{Price to Earning Ratio}$$

Leverage Ratios:

1) **Debt to Equity**

Debt to Equity ratio measures the proportion of a company's debt financing relative to its equity financing. It is calculated by dividing total debt by total equity. This ratio indicates the level of financial leverage and risk in a company's capital structure.

$$\textbf{Debt to Equity} = \frac{\textbf{Debt}}{\textbf{Equity}} \textbf{ OR } \frac{\textbf{Total Debt}}{\textbf{Equity}}$$

2) **Debt Ratio**

The Debt Ratio is a financial metric that measures the proportion of a company's total assets that are financed by debt. It is calculated by dividing total debt by total assets. The Debt Ratio indicates the extent to which a company relies on debt financing to support its operations and investments.

$$\textbf{Debt Ratio} = \frac{\textbf{Debt}}{\textbf{Total Net Assets}} \times 100$$

3) **Interest Coverage Ratio**

The Interest Coverage Ratio measures a company's ability to meet its interest obligations on outstanding debt. It is calculated by dividing a company's earnings before interest and taxes (EBIT) by its interest expenses. A higher ratio indicates a greater ability to cover interest payments with operating income.

$$\textbf{Interest Coverage Ratio} = \frac{\textbf{EBIT}}{\textbf{Interest Charged}}$$

4) **Fixed charge coverage ratio**

The Fixed Charge Coverage Ratio measures a company's ability to cover fixed charges, such as interest expenses and lease payments, with its earnings before interest, taxes, depreciation, and amortization (EBITDA). It indicates the company's capacity to meet its fixed financial obligations.

$$\textbf{Fixed Charge Coverage Ratio} = \frac{\textbf{EBIT} + \textbf{Preference}}{\textbf{Interest Charged}}$$

5) **Capital Gearing Ratio**

The Capital Gearing Ratio measures the proportion of a company's long-term debt (such as loans and bonds) in its capital structure relative to equity. It indicates the extent to which a company relies on debt financing compared to equity financing to support its operations and growth initiatives.

$$\textbf{Capital Gearing Ratio} = \frac{\textbf{Debt} + \textbf{Preference Share Capital}}{\textbf{Equity Share Capital} + \textbf{Reserves}}$$

6) **Equity Ratio**

The Equity Ratio is a financial metric that measures the proportion of a company's assets financed by shareholders' equity. It is calculated by dividing total equity by total assets. This ratio indicates the extent to which a company relies on equity financing rather than debt.

$$\textbf{\textit{Equity Ratio}} = \frac{\textbf{\textit{Owners Equity}}}{\textbf{\textit{Total Assets}}} \times \mathbf{100}$$

7) **Proprietary Ratio**

The Proprietary Ratio measures the proportion of a company's current assets financed by its shareholders' equity. It indicates the extent to which a company relies on equity financing rather than debt to support its assets.

$$\textbf{\textit{Proprietary Ratio}} = \frac{\textbf{\textit{Current Assets}}}{\textbf{\textit{Equity}}}$$

CHAPTER 2

LITERATURE REVIEWS

Literature Review - 1

Title: Analysis of Liquidity Ratios of Steel Authority of India Limited: A Maharatna.

Author : Aakansha

Published : 2023

Source : www.inspiringjournels.com

Analysing and interpreting financial statements are crucial for understanding the financial health and operational efficiency of companies. This review focuses on Tata Steel and Steel Authority of India Limited (SAIL), prominent entities in the Indian steel industry. The primary tool for this analysis is ratio analysis, offering insights into profitability, liquidity, and operational efficiency.

Profitability ratios like the gross profit ratio, net profit ratio, return on capital employed (ROCE), return on total assets (ROTA), return on equity (ROE), and earnings per share (EPS) are vital indicators of a company's earnings relative to its revenue, assets, and equity. Research by Dinesh Sharma and colleagues highlights the importance of efficient working capital management in maintaining liquidity and solvency. Effective management ensures companies can meet short-term obligations without compromising profitability, a balance crucial in capital-intensive industries like steel manufacturing.

Ratio analysis involves calculating and interpreting financial ratios to assess a company's performance. For SAIL, key profitability ratios from 2006-07 to 2013-14 show significant trends. The gross profit ratio (GPR) declined from 32.17% to 14.38%, while the net profit ratio (NPR) decreased from 18.28% to 5.66%. Similarly, the ROCE fell from 38.29% to 10.90%, indicating challenges in maintaining profitability amid fluctuating market conditions and operational inefficiencies.

Liquidity ratios such as the current ratio, quick ratio, and super quick ratio offer insights into a company's ability to meet short-term liabilities. For SAIL, the declining current ratio and consistently low quick and super quick ratios from 2019 to 2023 suggest potential liquidity challenges, indicating that SAIL might struggle to cover immediate liabilities without external borrowings or liquidating inventories.

Tata Steel and SAIL operate in the same industry but differ in financial structures and management strategies. Tata Steel's financial statements reflect a robust approach to managing profitability and liquidity, often outperforming industry benchmarks. In contrast, SAIL's financial performance shows significant variability, highlighting areas for improvement in profitability and liquidity management.

The steel industry's performance is closely tied to economic cycles and market demand. Thus, both Tata Steel and SAIL must adapt their strategies to remain competitive. Effective ratio analysis allows these companies to identify strengths and weaknesses in their financial practices, providing a basis for strategic decision-making aimed at enhancing profitability and ensuring long-term sustainability.

Literature Review – 2

Title: Working Capital Management in Tata Steel Limited

Author: Dr. C. Ganesan, Dr. M. Nirmal Dev

Published: 2019

Source: www.jetir.org

The effective management of working capital is essential for the financial health and operational efficiency of firms across industries. A review of various studies sheds light on the intricate relationship between working capital management and firm profitability, liquidity, and overall performance.

Abdul Raheman and Mohamed Nasr's (2004) study on 94 Pakistani firms identified a significant negative correlation between liquidity and profitability. They found that while maintaining adequate liquidity is crucial, holding excessive liquid assets could lead to reduced profitability due to the opportunity cost of not investing those funds elsewhere. Additionally, the study highlighted a positive relationship between firm size and profitability, suggesting that larger firms tend to be more profitable. However, it also noted a negative association between debt usage and profitability, indicating that firms relying heavily on debt may face challenges in maintaining profitability.

K. Madhavi's analysis of paper mills' working capital management from 2002-2003 to 2010-2011 revealed insights into the importance of liquidity and efficient resource utilization. Madhavi emphasized the need for companies like Andhra Pradesh Paper Mills Ltd (APPML) to optimize their cash and bank balances to improve their current ratio. The study also underscored the significance of managing inventories and receivables effectively to maintain liquidity and operational efficiency.

B Bagchi and B Khamrui's (2010) study on FMCG firms in India highlighted the negative relationship between the cash conversion cycle (CCC) and profitability. They found that firms with longer CCCs tended to have lower profitability, emphasizing the importance of efficient working capital management in enhancing financial performance. Additionally, the study identified a negative correlation between debt usage and profitability, suggesting that excessive debt levels could hamper a firm's profitability.

Mr. N.Suresh Babu and Prof. G.V.Chalam (2014) emphasized the role of working capital management in creating shareholder value. Their research suggested that optimizing accounts receivable, accounts payable, and inventory levels could contribute to improved profitability and shareholder wealth. Similarly, Daniel Mogaka Makori and Ambrose Jagongo (2013) concluded that firms could enhance shareholder value by minimizing accounts receivable days, managing inventories efficiently, and extending accounts payable periods.

In conclusion, effective working capital management is crucial for firms to maintain a balance between liquidity and profitability. The findings from these studies provide valuable insights for managers seeking to optimize their working capital strategies and improve overall financial performance. By adopting efficient working capital management practices, firms can enhance liquidity, profitability, and shareholder value in the long run.

Literature Review – 3

Title: An Analysis of Profitability Position of Tata Iron and Steel Limited

Author: Dr. Binay Kumar Singh

Published: 2015

Source: www.jetir.org

Profitability analysis is a fundamental aspect of evaluating the financial health and operational effectiveness of any business entity. As highlighted in the study conducted on Tata Iron and Steel Limited (TISCO), profitability serves as a key indicator of a company's performance and potential for sustainable growth (Abstract). By examining historical financial data and employing analytical tools such as percentage analysis and ratios, the research offers insights into TISCO's profitability position over a span of several years (Introduction).

The significance of profitability in determining the longevity and reputation of businesses cannot be overstated. Profitability not only influences a company's ability to attract investment but also plays a crucial role in shaping its capital structure and borrowing capabilities (Introduction). It is essential to differentiate between profit and profitability; while profit represents the surplus revenue after deducting expenses, profitability is evaluated through metrics such as profit margins relative to sales (Introduction).

The objectives of the study focus on analyzing the financial performance, profitability position, and liquidity of TISCO, reflecting the multifaceted nature of profitability assessment in understanding a company's overall health (Objectives of the Study). Through a robust research methodology, which relies on secondary data derived from annual reports and literature review, the study ensures a comprehensive examination of TISCO's profitability (Research Methodology).

The analysis and interpretation of profitability indicators, such as gross profit ratio, operating profit ratio, net profit ratio, and earnings per share, offer nuanced insights into TISCO's financial performance over the years (Analysis and Interpretation). The fluctuating trends in these ratios underscore the dynamic nature of profitability within the steel industry, influenced by factors such as market dynamics, operational efficiency, and global economic conditions.

For instance, the gross profit ratio, which reflects the efficiency of sales operations, exhibits fluctuating trends over the years, indicating varying levels of profitability for TISCO (Analysis and Interpretation). Similarly, the operating profit ratio and net profit ratio provide valuable insights into the company's ability to manage operational costs and generate profits (Analysis and Interpretation).

In summary, the literature review based on the analysis of TISCO's profitability underscores the critical role of profitability analysis in evaluating the financial performance and sustainability of business organizations. By employing rigorous research methodologies and analytical tools, studies like this contribute to a deeper understanding of the factors influencing profitability dynamics within specific industries, thereby informing strategic decision-making and fostering long-term value creation.

Literature Review – 4

Title: A Study of Financial Health of Steel Authority of India Limited (Sail) By Using Ratio Analysis

Author: Dr. Ajeet Singh, Jyoti Verma

Published: 2020

Source: www.jetir.org

The Steel Authority of India Limited (SAIL) stands as a testament to India's industrial prowess and its journey towards self-reliance in the steel sector. Established in 1974, SAIL has emerged as a key player in the global steel market, boasting significant production capacities and ambitious expansion plans. This literature review delves into the historical trajectory, operational footprint, research methodology, objectives, scope, tools of analysis, and key findings of a study conducted on SAIL's financial performance from 2000 to 2015.

SAIL's evolution mirrors India's industrialization journey. From its inception in 1974 to becoming the 20th largest steel producer globally by 2018-19, SAIL has been instrumental in shaping India's steel industry. With five integrated steel plants and three specialized plants, SAIL's operational footprint spans across various regions, showcasing its commitment to national development. Moreover, its foray into global markets underscores its aspiration to become a formidable player on the international stage.

The study adopts an explanatory research approach, relying on secondary data sources such as official reports, websites, articles, and newspapers. Its primary objectives include analyzing SAIL's liquidity and profitability performance, assessing industry growth prospects, and studying the company's position within the steel sector. By focusing on the period from 2000 to 2015, the study provides a comprehensive analysis of SAIL's financial trajectory over 15 years.

The analysis reveals intriguing trends in SAIL's financial performance. Gross profit ratios fluctuate significantly, indicating varying levels of operational efficiency and market conditions. Similarly, net profit ratios reflect SAIL's ability to generate income relative to sales, with notable disparities across different fiscal years. Operating ratios provide insights into SAIL's operational effectiveness, highlighting periods of both strength and challenge. Return on capital employed (ROCE), based on both gross and net profits, underscores the importance of efficient capital utilization for long-term profitability.

In conclusion, the study provides a holistic overview of SAIL's financial performance from 2000 to 2015, shedding light on its strengths, weaknesses, and growth prospects. By leveraging robust research methodology and analytical tools, the study contributes valuable insights for stakeholders navigating the dynamic landscape of India's steel industry. As SAIL continues its journey of expansion and modernization, informed decision-making based on such analyses will be crucial for ensuring sustained growth and competitiveness in the global market.

Literature Review – 5

Title: A Study on Financial Performance of Tata Steel Limited

Author: Kushma Reddy H, Asamoah Benedicta

Published: 2023

Source: www.jetir.org

The provided data offers a comprehensive analysis of the financial performance of Tata Steel Limited over a period of five years, from 2017-2018 to 2021-2022. The study primarily employs ratio analysis, comparative statement analysis, and common size balance sheet analysis as tools for evaluating various aspects of the company's financial health.

The liquidity analysis indicates fluctuations in the company's ability to meet short-term obligations, with current and quick ratios varying over the years. Despite some fluctuations, the company faces challenges in maintaining ideal liquidity ratios, suggesting a need for better cash management strategies.

Regarding leverage ratios, Tata Steel shows a significant solvency ratio in 2021-22, indicating good leverage. However, the proprietary ratio falls short of the ideal percentage, highlighting potential weaknesses in the company's financial structure.

Activity ratios reveal mixed performance. While there's a high fixed asset turnover ratio in 2021-22, indicating efficient asset utilization, there are concerns about the working capital turnover ratio, suggesting moderate changes in managing short-term assets and liabilities.

Profitability ratios demonstrate positive trends, with high return on investment, net profit ratio, and operating profit ratio in 2021-22, indicating improved profitability compared to previous years.

Based on the analysis, several suggestions are provided for Tata Steel Limited to enhance its financial performance. These include improving liquidity ratios, maintaining proper liquid assets, focusing on working capital utilization, investing in technology and innovation for better sales, and enhancing overall performance to reverse decreasing profit trends.

In conclusion, the analysis highlights the company's overall progress over the years, with satisfactory performance. The study provides valuable insights and recommendations for further development and improvement, offering a clear understanding of Tata Steel Limited's financial performance over the analysed period.

Literature Review – 6

Title: A Study on Marginal Costing in TATA Steel Ltd

Author: Dr. Neeraj K. Gupta

Published: 2023

Source: www.inspiringjournels.com

The research delves into the significance and application of marginal costing, a pivotal technique in managerial accounting, focusing on its implications for Tata Steel Ltd over a five-year period from 2017-18 to 2021-22. Marginal costing, synonymous with variable costing, aids in decision-making by analyzing the relationship between costs, volume, and profits.

The study begins with a thorough explanation of marginal costing theory, emphasizing the distinction between fixed and variable costs and their impact on profitability. It highlights the objectives, methodology, and assumptions underlying the research, utilizing secondary data such as annual reports and journals for analysis.

Various parameters are evaluated to gauge Tata Steel's financial performance. The income statements reveal fluctuations in sales, variable costs, contribution, and operating profits over the five-year span. Profit-volume ratios illustrate the relationship between sales and contribution, while break-even points indicate the level at which revenue covers expenses, showcasing a fluctuating trend over the years.

Margin of safety, operating leverage, financial leverage, and composite leverage are examined to understand Tata Steel's operational efficiency and financial stability. These metrics reflect changes in the company's ability to cover fixed costs and generate profits, with mixed trends observed across the years. Operating profits exhibit fluctuating but generally healthy levels, indicating variability in Tata Steel's performance. Profit-volume ratios and margin of safety show increasing trends, suggesting improved efficiency and stability, albeit with some exceptions. Break-even points demonstrate fluctuations, implying varying levels of risk and cost coverage over the years. Operating leverage decreases over time, indicating better control over fixed costs, while financial leverage exhibits mixed trends.

Based on the analysis, several suggestions are proposed to enhance Tata Steel's financial position and performance. These include controlling costs, adopting cost reduction techniques, exploring alternative energy sources, and improving financial leverage through increased earnings before interest and taxes (EBIT).

In conclusion, the research underscores the importance of marginal costing in analyzing financial performance and decision-making. While Tata Steel demonstrates satisfactory performance overall, there is room for improvement, particularly in cost control and leveraging financial resources effectively. Implementing the suggested recommendations can further enhance the company's financial health and sustainability.

Literature Review – 7

Title: A Study on An Analysis of Profitability Position of Tata Steel Limited

Author: Mr. R. Sathish Kumar

Published: 2017

Source: researchgate.net

Profitability is crucial for evaluating a firm's ability to generate profit and its operational efficiency. High profitability signifies strong performance and efficiency, while low profitability indicates poor performance. Both management and investors prioritize profitability to ensure reasonable returns and operational success.

The Indian steel industry faces significant challenges, including high costs and limited availability of coking coal, low labour productivity, and poor infrastructure. These factors, combined with outdated technology, make steel production more expensive and time-consuming, resulting in the need to import higher quality steel. Despite these issues, the industry benefits from low-cost iron ore, low labour costs, and substantial growth potential in both domestic and export markets. Tata Steel, ranked 11th among global steel companies, exemplifies the challenges faced by the Indian steel industry, such as high conversion costs and underutilization of capacity. These industry-wide issues impact Tata Steel's profitability and cash flows, making it a relevant case study for examining these dynamics.

Profitability ratios are vital for measuring a firm's profit relative to its sales and operational costs. A lower operating expense ratio indicates better cost control, while a higher ratio suggests reduced margins for dividends and reserves. The gross profit ratio reflects production efficiency, with higher ratios indicating better performance. Net profit ratios and operating profit ratios are critical for assessing overall profitability and operational efficiency. During the study period, sales generally increased, except for certain years where sales decreased while operating costs rose. This fluctuation affected the gross profit ratio, which also showed variability. Net profit ratios ranged from below 10% in the initial years to between 10% and 22% in later years, indicating instability in profitability despite increasing sales.

ROCE measures the earning capacity of capital employed and reflects the efficient use of resources. High ROCE indicates strong overall profitability and a sound financial position. Return on Net Worth (RONW) and Return on Equity (ROE) show profitability from shareholders' perspectives, with higher ratios indicating better returns. Return on total assets measures profit relative to total assets, indicating efficient asset management during high-performing years. Market test ratios, such as earnings per share and price earnings ratios, help investors evaluate share value and company performance. Fluctuating trends in these ratios reflect varying market conditions and company performance.

The payout ratio indicates the proportion of earnings used for dividends versus retained for growth. High retention ratios suggest a focus on future growth, while fluctuating dividend yield ratios reflect changes in market price and dividends. Coverage ratios measure the ability to meet fixed financial obligations. High fixed interest coverage ratios indicate a strong ability to pay interest costs, crucial for lenders assessing the firm's financial health. Dividend coverage ratios show the ability to pay dividends from net profit, reflecting overall financial stability.

Literature Review – 8

Title: A Study on Financial Performance of Tata Steel Limited

Author: Dr. D. Sivasakthi, Ms. R. Nithya

Published: 2021

Source: eprajournals.com

The financial performance of firms, especially in the iron and steel sector, has been a focal point of numerous studies, emphasizing the utilization of financial ratios to evaluate profitability, liquidity, solvency, and overall efficiency. This review synthesizes key findings from recent research, providing a comprehensive understanding of the financial health and operational efficiency within the industry, with a particular focus on Tata Steel Limited.

K.R. Sivabagyam and Harshita B. (2019) conducted a thorough analysis of the financial performance of selected iron and steel companies in India, including Tata Steel, VISA, JSW, SAIL, ESSAR, JINDAL, UTTAM GALVA, SUNFLAG, FACOR, and NARAYANI Steels. Their study, which covered the financial years 2014-15 to 2018-19, utilized various ratios to assess profitability, short-term solvency, and efficiency. The findings highlighted Tata Steel's superior performance compared to its peers. The authors recommended strategic improvements for JINDAL, VISA, and SAIL to enhance their financial health, specifically in terms of sales efficiency and short-term solvency.

Aritra Ranjan Das (2018) explored the financial performance of the Indian steel industry, employing an ANOVA test to examine profitability, liquidity, solvency, and efficiency ratios across four major companies: Tata Steel Ltd, JINDAL Steel and Power Ltd, JSW Steel Ltd, and Steel Authority of India Ltd (SAIL). The study, spanning 2012-13 to 2017-18, noted a 5.2% year-on-year increase in the total consumption of finished steel, reflecting the industry's growth trajectory and operational improvements.

Dr. Deepa Chavan (2017) provided a comparative analysis of financial ratios with a specific focus on Tata Steel. Her research evaluated the company's profitability performance during 2014 and 2015, using liquidity and profitability ratios. The study observed a decline in the operating ratio from 23.95% in 2014 to 18.87% in 2015, indicating an improvement in operational efficiency. Additionally, Tata Steel's return on investment (ROI) showed positive signs, bolstering stakeholder confidence. The company also demonstrated a strong export performance, accounting for 67% of its revenue, while simultaneously targeting untapped domestic markets.

The financial data for Tata Steel from 2015-16 to 2019-20 reveal critical insights into the company's financial health. The current ratio peaked at 1.22 in 2017-18 but was lowest at 0.95 in both 2015-16 and 2019-20, indicating fluctuating liquidity positions. Similarly, the quick ratio exhibited variability, reaching its highest at 0.71 in 2017-18 and dropping to 0.45 in 2018-19 and 2019-20. Gross profit ratio and operating profit ratio also showed significant fluctuations, peaking in 2016-17.

Literature Review – 9

Title: A STUDY ON FINANCIAL ANALYSIS OF TATA STEEL

Author: Ms. S. S. Abika, Dr. M. Lavanya

Published: 2024

Source: http://www.ijcrt.org/

Financial performance analysis is a pivotal aspect of business management, providing essential insights into a company's financial health and guiding strategic decision-making. Financial statements play a critical role in this process, offering a comprehensive view of a company's fiscal status, operational efficiency, and future viability. This literature review focuses on the financial performance of Tata Steel over a decade, utilizing ratio and trend analysis to draw meaningful conclusions.

Financial performance analysis serves both internal and external stakeholders. Internally, it aids management in monitoring and optimizing financial operations. Externally, it helps investors, creditors, and analysts assess the company's value and performance. The primary objectives of such analysis include measuring profitability, comparing performance within and between firms, evaluating the company's ability to pay dividends and interest, and assessing management efficiency. Tools commonly used in financial analysis include comparative statements, common-size statements, trend analysis, ratio analysis, funds flow analysis, and cash flow analysis. Each tool provides a different perspective on the financial data, allowing for a multifaceted evaluation of the company's financial status.

The study of Tata Steel's financial performance from 2011-2012 to 2020-2021 aims to assess its financial health through ratio and trend analysis. Secondary data from Tata Steel's financial reports form the basis of this study. The key ratios analysed include the current ratio, proprietary ratio, and inventory turnover ratio. The current ratio, which fluctuated over the period, revealed variability in the company's liquidity, with several years showing a ratio below 1, indicating potential liquidity challenges. The proprietary ratio showed a gradual increase, reflecting an improvement in the company's reliance on shareholder funds to finance its assets. The inventory turnover ratio, however, exhibited a decline, suggesting a decrease in efficiency in managing inventory. Trend analysis of net sales and stock trends showed an upward trajectory, indicating potential growth despite some inefficiencies.

To improve its financial stability, Tata Steel is advised to enhance liquidity by increasing current assets, reduce operating expenses to boost net profit margins, and maintain a steady proprietary ratio to ensure long-term solvency.

In conclusion, effective financial management is crucial for the success and sustainability of a business. The analysis of Tata Steel's financial performance highlights areas for improvement, particularly in liquidity and cost management. Addressing these issues can enhance the company's financial health, ensure sustainable growth, and improve investor satisfaction. This comprehensive approach to financial analysis underscores its importance in strategic decision-making and long-term planning.

CHAPTER 3

DATA ANALYSIS & INTERPRETATION

LIQUIDITY RATIO

1. Current Ratio

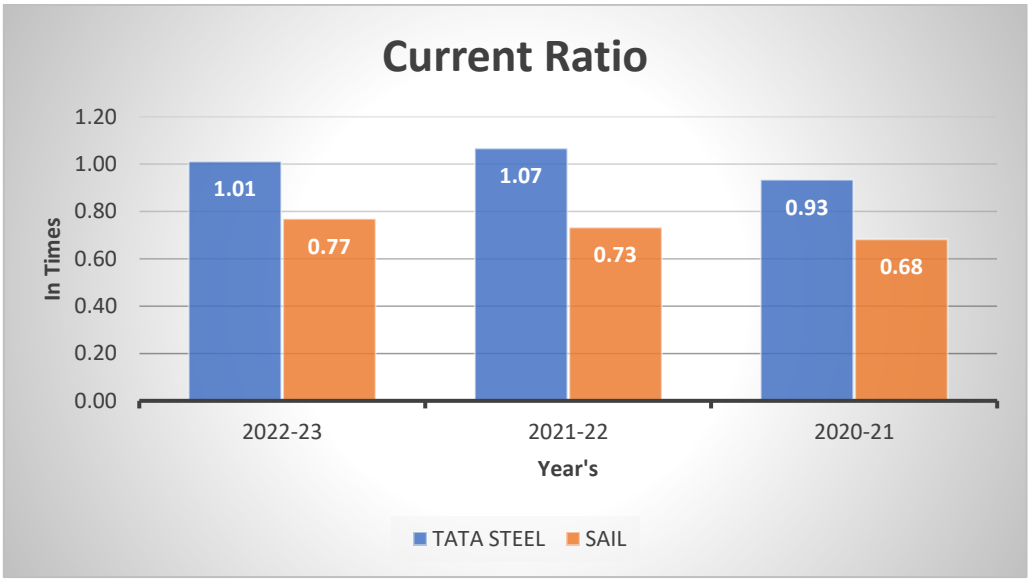
Sr. No	Particulars	2022-23	2021-22	2020-21
1	TATA STEEL	1.01	1.07	0.93
2	SAIL	0.77	0.73	0.68

TATA STEEL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Current Assets	86,606.14	92,256.07	60,112.37
2	Current Liabilities	85,618.33	86,504.94	64,348.04

SAIL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Current Assets	37965.34	28825.66	30739.97
2	Current Liabilities	49334.28	39342.92	45070.4



The Current Ratio analysis for Tata Steel reveals a fluctuating liquidity position over the past three years. In 2020-21, a ratio of 0.93 indicated a slight liquidity strain, as the company had fewer current assets than liabilities. The situation improved in 2021-22, with a ratio of 1.07, suggesting healthier liquidity possibly due to better working capital management. However, in 2022-23, the ratio dipped slightly to 1.01, indicating just sufficient liquidity. Overall, Tata Steel's liquidity position remains relatively stable but requires careful management to maintain financial stability.

For SAIL, the Current Ratio has shown a consistent improvement from 0.68 in 2020-21 to 0.73 in 2021-22, and further to 0.77 in 2022-23. This upward trend highlights better liquidity management, yet the ratio remains below 1, suggesting that SAIL still does not have enough current assets to cover its current liabilities immediately. This indicates potential liquidity pressures and a reliance on external financing or long-term asset sales to meet short-term debts. Continued improvement in this ratio is crucial for SAIL's financial health and stability.

2. Quick Ratio

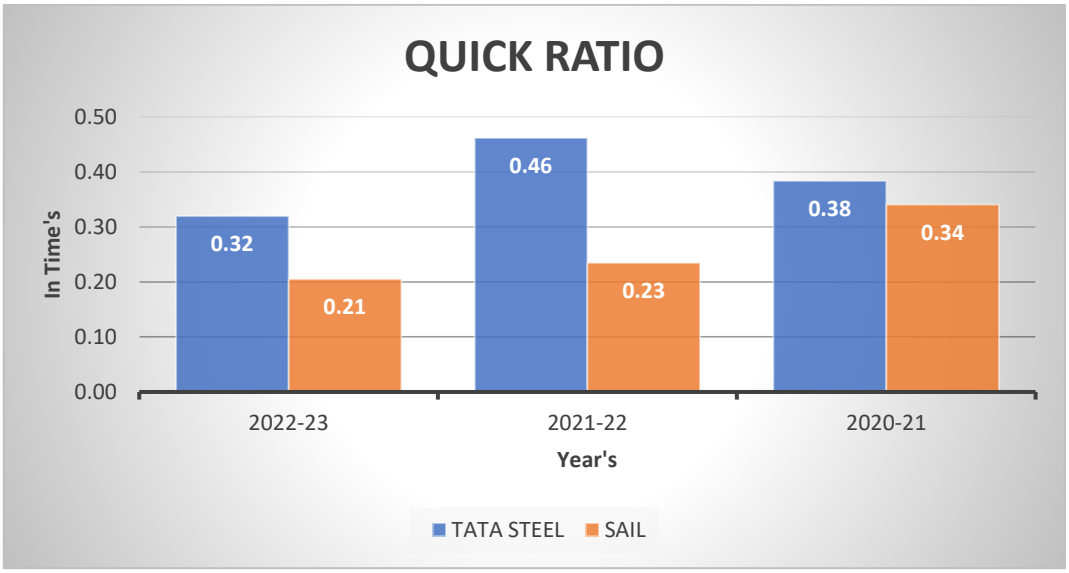
Sr. No	Particulars	2022-23	2021-22	2020-21
1	TATA STEEL	0.32	0.46	0.38
2	SAIL	0.21	0.23	0.34

TATA STEEL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Quick Assets	27,361.06	39,922.86	24,682.55
2	Current Liabilities	85,618.33	86,504.94	64,348.04

SAIL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Quick Assets	10123.87	9220.5	15337.46
2	Current Liabilities	49334.28	39342.92	45070.4



The Quick Ratio analysis for Tata Steel reflects fluctuations in liquidity over the past three years. In 2020-21, the ratio of 0.38 indicated a moderate ability to cover short-term liabilities with highly liquid assets. This improved to 0.46 in 2021-22, signalling stronger liquidity possibly due to enhanced receivables management. However, in 2022-23, the ratio dropped to 0.32, indicating a tighter liquidity position. While all

ratios remained above 0, careful monitoring of liquidity and effective working capital management are vital for financial stability.

For SAIL, the Quick Ratio has declined steadily from 0.34 in 2020-21 to 0.21 in 2022-23. This downward trend suggests weakening liquidity, with fewer liquid assets available to cover short-term liabilities. A ratio below 1 indicates potential challenges in meeting immediate obligations without selling less liquid inventory. Improving this ratio is crucial for SAIL's financial health and its ability to promptly meet short-term obligations.

3. Cash Ratio

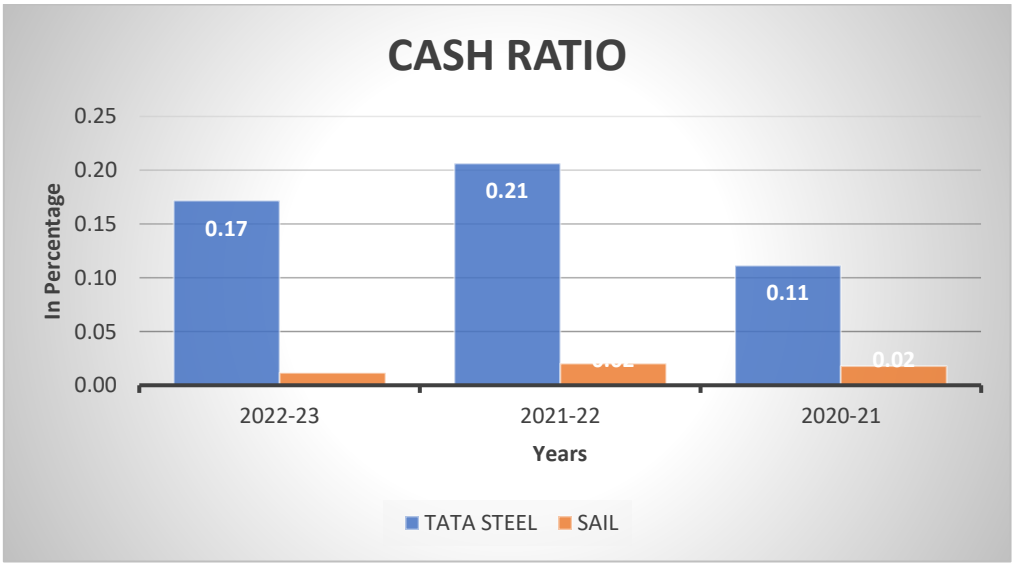
Sr. No	Particulars	2022-23	2021-22	2020-21
1	TATA STEEL	0.17	0.21	0.11
2	SAIL	0.01	0.02	0.02

TATA STEEL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Cash + Bank + Marketable Securities	14699.83	17849.04	7172.82
2	Current Liabilities	85,618.33	86,504.94	64,348.04

SAIL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Cash + Bank + Marketable Securities	566.48	798.76	810.4
2	Current Liabilities	49334.28	39342.92	45070.4



The Cash Ratio analysis for Tata Steel reveals fluctuations in liquidity over the past three years. In 2020-21, the ratio of 0.11 indicated relatively low liquidity solely from cash reserves, which improved to 0.21 in 2021-22, signalling enhanced liquidity

possibly due to improved cash management. However, in 2022-23, the ratio decreased to 0.17, indicating a tighter liquidity position. Despite maintaining a ratio above 0, close monitoring and effective cash management are vital for financial stability.

For SAIL, the Cash Ratio has remained consistently low and slightly decreased over the last three years, standing at 0.02 in 2020-21 and 2021-22, then dropping to 0.01 in 2022-23. This consistently low ratio implies minimal cash on hand to cover short-term liabilities, indicating potential liquidity constraints and a reliance on other assets or external financing. Enhancing cash management strategies is crucial for SAIL to improve liquidity and ensure better financial stability.

4. Debtors Turnover Ratio

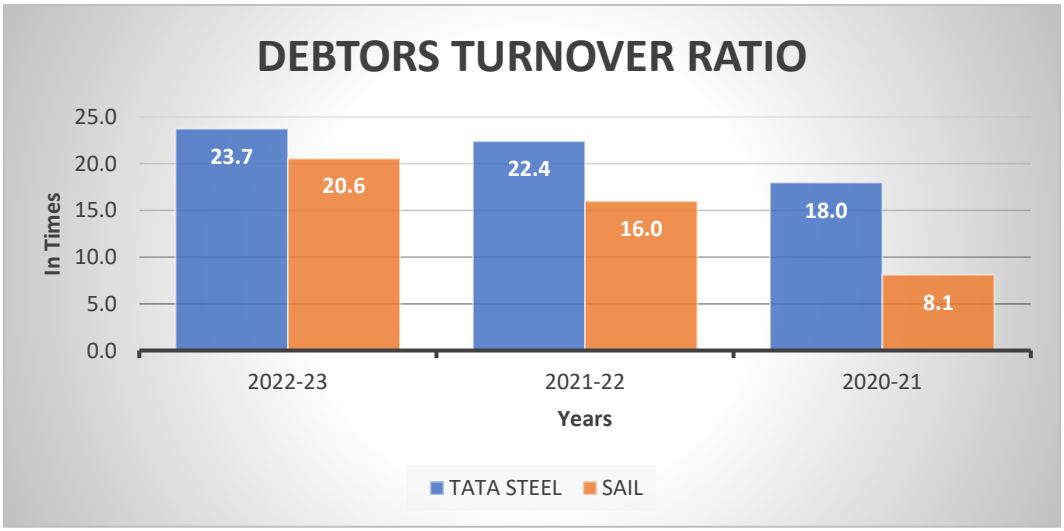
Sr. No	Particulars	2022-23	2021-22	2020-21
1	TATA STEEL	23.7	22.4	18.0
2	SAIL	20.6	16.0	8.1

TATA STEEL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Credit Sales	243352.69	243959.17	156477.40
2	Average Debtors	10251.835	10,893.135	8,712.375

SAIL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Credit Sales	104447.720	103476.840	69113.610
2	Average Debtors	5,080.41	6,469.70	8,506.64



The Debtors Turnover Ratio analysis for Tata Steel reflects an increasing trend over the past three years, indicating improved efficiency in collecting payments from customers. In 2020-21, the ratio stood at 18.0, demonstrating moderate efficiency, which rose to

22.4 in 2021-22 and further to 23.7 in 2022-23, signalling continued progress in debtors' turnover efficiency. This positive trend suggests enhanced liquidity, cash flow management, and reduced risk of bad debts for Tata Steel, contributing to improved financial health and effective meeting of short-term obligations.

For SAIL, the Debtors Turnover Ratio has shown significant improvement, rising from 8.1 in 2020-21 to 20.6 in 2022-23. This remarkable upward trend reflects effective management of accounts receivable, faster collection of payments, and efficient conversion of credit sales into cash. SAIL's improved Debtors Turnover Ratio indicates strong credit policies, collection procedures, and operational efficiency, leading to enhanced working capital management, reduced bad debt risk, and bolstered financial stability.

5. Average Collection Period

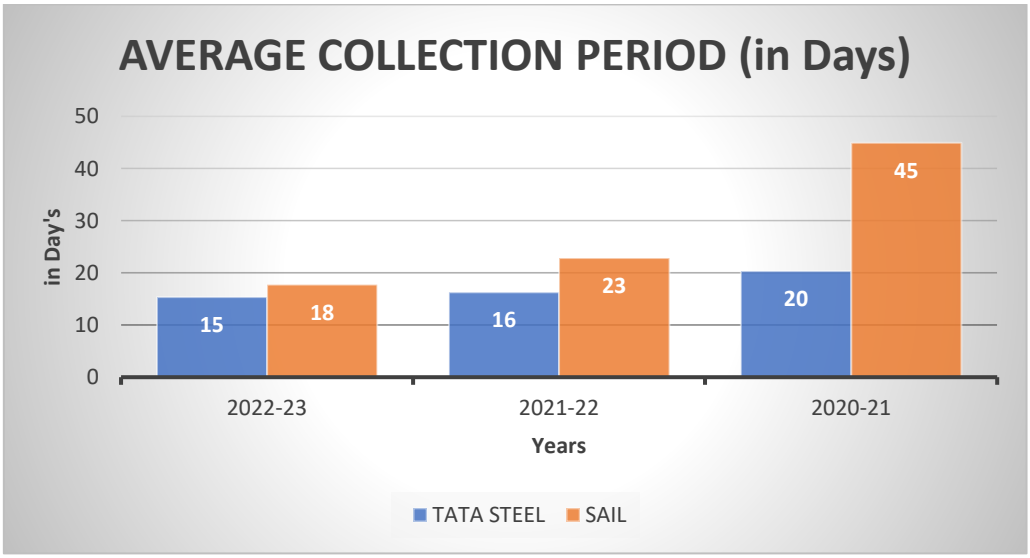
Sr. No	Particulars	2022-23	2021-22	2020-21
1	TATA STEEL	15	16	20
2	SAIL	18	23	45

TATA STEEL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Months, Weeks, Days	365	365	365
2	Debtors Turnover Ratio	23.7374	22.39568	17.96036

SAIL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Months, Weeks, Days	365	365	365
2	Debtors Turnover Ratio	20.55892	15.99408	8.124671



The Average Collection Period analysis for Tata Steel reflects a decreasing trend over the past three years, indicating improved efficiency in collecting payments from customers. In 2020-21, the company took an average of 20 days to collect payments, which decreased to 16 days in 2021-22 and further to 15 days in 2022-23. This positive trend suggests enhanced liquidity management and cash flow, alongside reduced risk of bad debts and improved profitability for Tata Steel.

For SAIL, the Average Collection Period has consistently decreased from 45 days in 2020-21 to 18 days in 2022-23. This reduction indicates improved efficiency in collecting payments, leading to faster conversion of accounts receivable into cash. SAIL's decreasing collection period reflects enhanced operational efficiency, strengthened liquidity, and improved financial stability, attributed to effective credit management policies and streamlined collection procedures.

6. Creditors Turnover Ratio

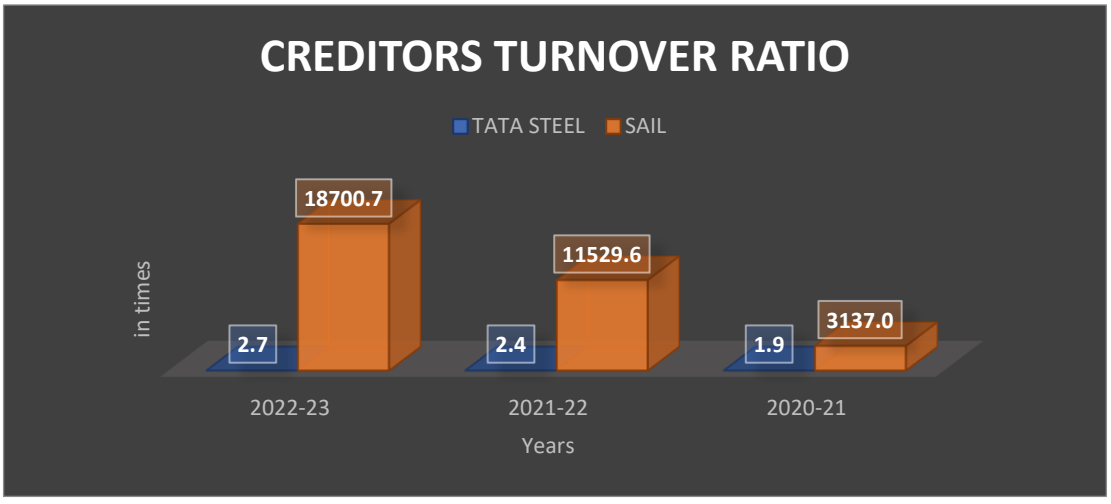
Sr. No	Particulars	2022-23	2021-22	2020-21
1	TATA STEEL	2.7	2.4	1.9
2	SAIL	18700.7	11529.6	3137.0

TATA STEEL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Credit Purchases	101483.08	75763.70	45292.49
2	Average Creditors	37298.705	31366.18	23674.17

SAIL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Credit Purchases	62179.91	42890.12	23213.59
2	Average Creditors	3.325	3.72	7.40



The Creditors Turnover Ratio analysis for Tata Steel reveals a gradual increase over the past three years, indicating improved payment efficiency to creditors. In 2020-21, the ratio was 1.9, rising to 2.4 in 2021-22 and further to 2.7 in 2022-23. This positive trend reflects enhanced liquidity management and financial health for Tata Steel, contributing to strengthened relationships with suppliers and smoother business operations.

For SAIL, the Creditors Turnover Ratio has substantially increased from 3137.0 in 2020-21 to 18700.7 in 2022-23. This significant upward trend reflects improved efficiency in managing accounts payable, faster payment to creditors, and potentially better supplier relations or negotiation terms. While indicating effective working capital management and improved liquidity for SAIL, maintaining a balanced creditor turnover is crucial to avoid straining supplier relationships or encountering cash flow issues.

7. Average Payment Period

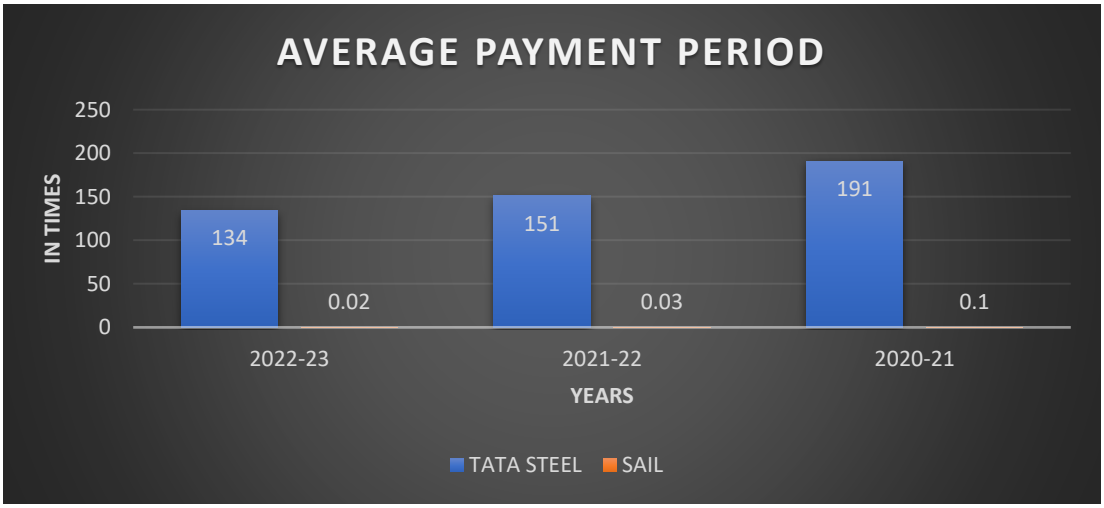
Sr. No	Particulars	2022-23	2021-22	2020-21
1	TATA STEEL	134	151	191
2	SAIL	0.02	0.03	0.1

TATA STEEL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Months, Weeks, Days	365	365	365
2	Creditors Turnover Ratio	2.7	2.4	1.9

SAIL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Months, Weeks, Days	365	365	365
2	Creditors Turnover Ratio	18700.7	11529.6	3137.0



The Average Payment Period analysis for Tata Steel reveals a decreasing trend over the past three years, indicating improved efficiency in paying suppliers. In 2020-21, the company took an average of 191 days to pay its suppliers, which decreased to 151 days in 2021-22 and further to 134 days in 2022-23. This positive trend suggests enhanced financial management and liquidity for Tata Steel, contributing to stronger supplier relationships and smoother business operations.

For SAIL, the Average Payment Period has also decreased steadily from 0.1 in 2020-21 to 0.02 in 2022-23. This declining trend indicates improved efficiency in paying creditors promptly, potentially leading to better credit terms in the future. While reflecting positively on SAIL's credit management practices and financial efficiency, maintaining a balance between prompt payment and cash flow management is crucial for sustainable operations. Overall, the decreasing Average Payment Period Highlights SAIL's efforts to enhance financial stability and liquidity management.

8. Debtors Velocity Ratio

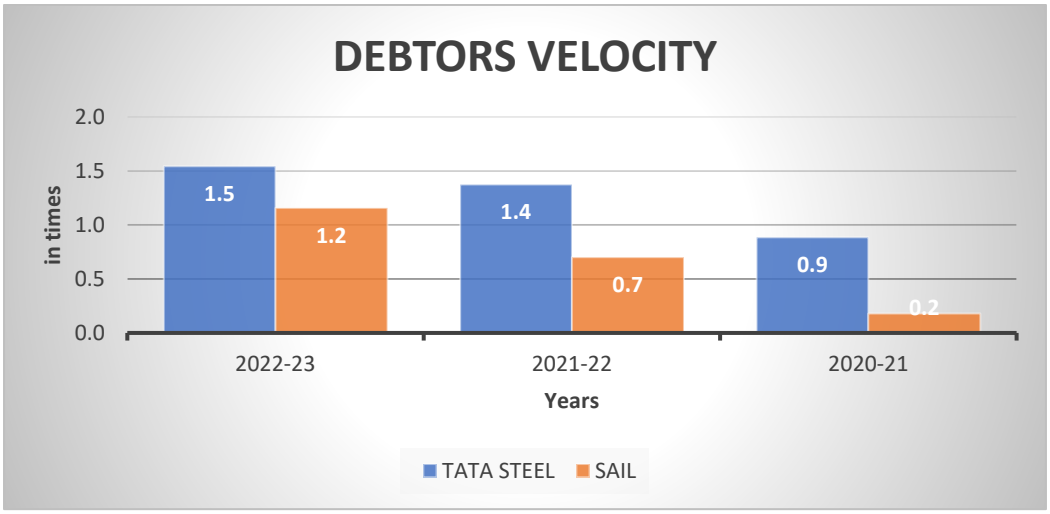
Sr. No	Particulars	2022-23	2021-22	2020-21
1	TATA STEEL	1.5	1.4	0.9
2	SAIL	1.2	0.7	0.2

TATA STEEL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Debtors Turnover Ratio	23.7	22.4	18.0
2	Average Collection Period	15.4	16.3	20.3

SAIL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Debtors Turnover Ratio	20.6	16.0	8.1
2	Average Collection Period	17.8	22.8	44.9



The Debtors Velocity Ratio analysis for Tata Steel demonstrates an intriguing trend over the past three years. In 2020-21, the ratio was 0.9, indicating relatively slow debtors' payment collection. However, there was a significant improvement in 2021-22, with the ratio rising to 1.4, and further to 1.5 in 2022-23. This upward trend reflects Tata Steel's increasing efficiency in managing accounts receivable and converting credit sales into cash. Such enhancement is pivotal for maintaining liquidity and financial stability, highlighting Tata Steel's efforts to streamline receivables management processes, leading to improved cash flow and operational efficiency.

For SAIL, the Debtors Velocity Ratio has shown remarkable improvement, escalating from 0.2 in 2020-21 to 1.2 in 2022-23. This upward trend signifies effective management of accounts receivable, converting credit sales into cash at a faster rate. The higher ratio indicates more efficient payment collection, potentially enhancing cash flow and liquidity for SAIL. This improvement reflects positively on SAIL's credit policies, collection procedures, and operational efficiency, contributing to strengthened financial health and stability.

9. Creditors Velocity Ratio

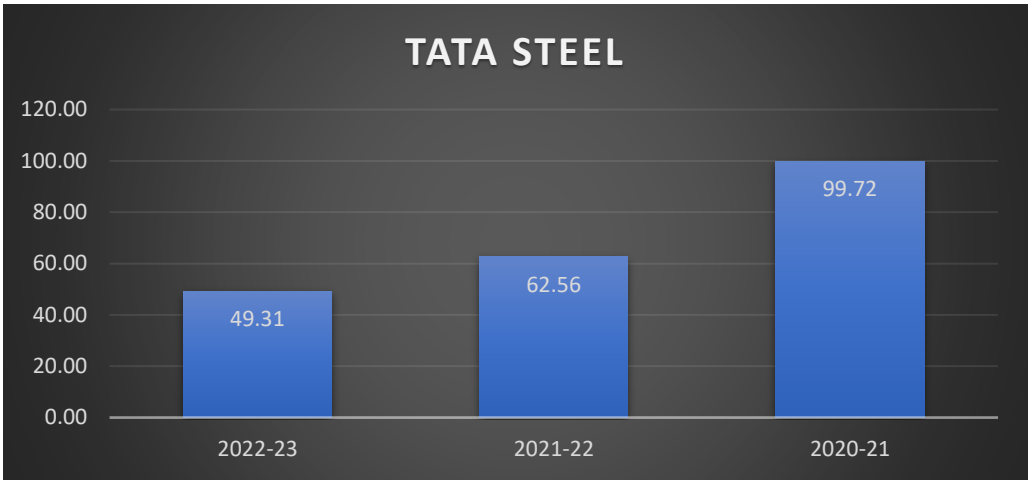
Sr. No	Particulars	2022-23	2021-22	2020-21
1	TATA STEEL	49.31	62.56	99.72
2	SAIL	0.00000104370	0.00000274577	0.000037091

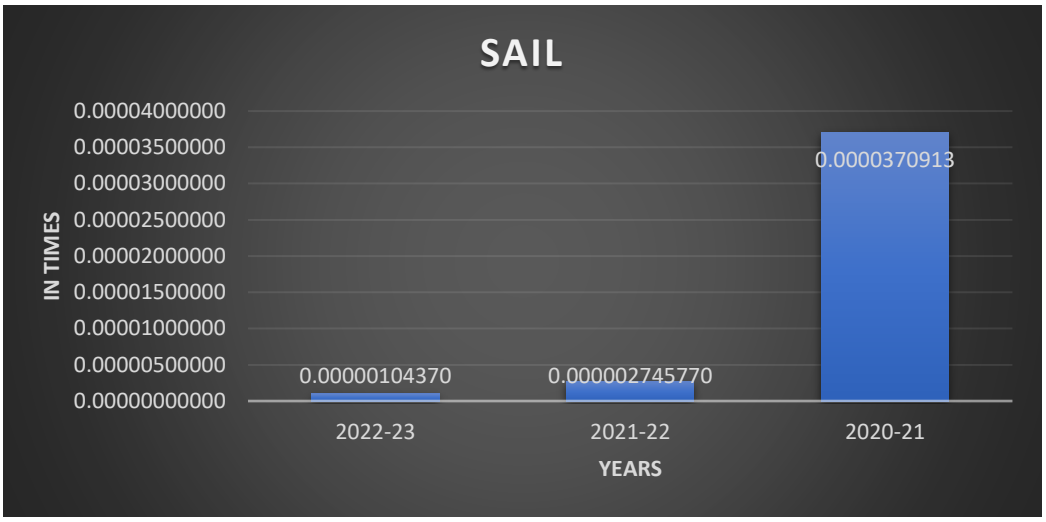
TATA STEEL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Average Payment Period	134	151	191
2	Creditors Turnover Ratio	2.7	2.4	1.9

SAIL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Average Payment Period	0.02	0.03	0.1
2	Creditors Turnover Ratio	18700.7	11529.6	3137.0





The Creditors Velocity Ratio analysis for Tata Steel reveals an intriguing trend over the past three years. In 2020-21, the ratio was 99.72, indicating rapid turnover of payments to suppliers. However, it decreased to 62.56 in 2021-22 and further to 49.31 in 2022-23, suggesting a slowdown in payment velocity to suppliers. This decrease could imply longer settlement periods or changes in payment terms. While a lower ratio might raise liquidity concerns, it could also reflect improved cash flow management or strategic financing decisions by Tata Steel. Overall, analysing the Creditors Velocity Ratio provides insights into Tata Steel's accounts payable management and financial health.

For SAIL, the decreasing trend in the Creditors Velocity Ratio, from 0.000037091 in 2020-21 to 0.00000104370 in 2022-23, indicates longer payment periods to suppliers. This might stem from stretched cash flows or strategic decisions to optimize cash management. However, extended payment terms could strain supplier relationships if not negotiated effectively. SAIL needs to balance cash flow management with maintaining positive supplier relationships to ensure smooth supply chain operations.

10.Defensive Interval Ratio

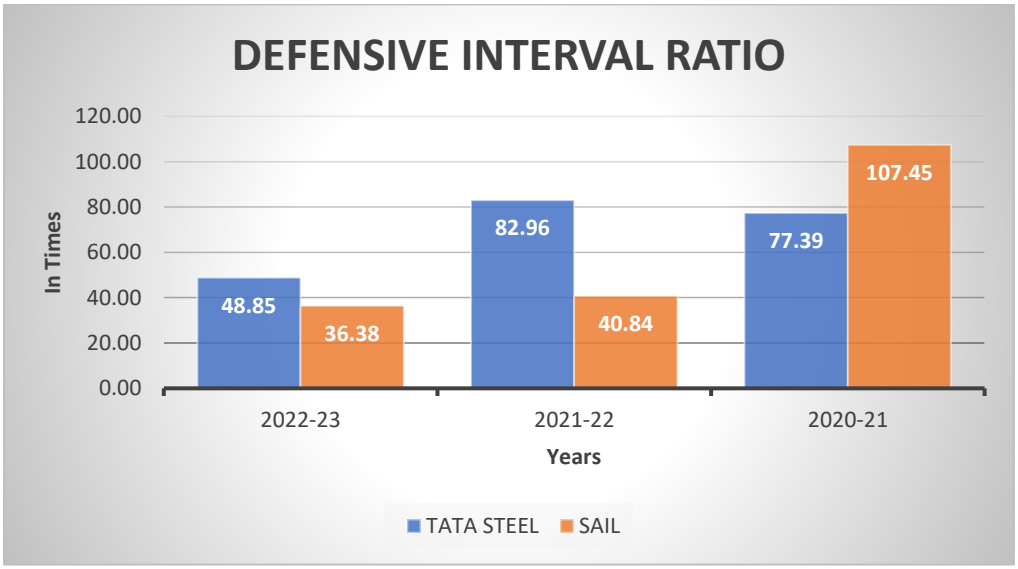
Sr. No	Particulars	2022-23	2021-22	2020-21
1	TATA STEEL	48.85	82.96	77.39
2	SAIL	36.38	40.84	107.45

TATA STEEL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Quick Assets	27,361.06	39,922.86	24,682.55
2	ADCR	560.06	481.22	318.94

SAIL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Quick Assets	10123.87	9220.5	15337.46
2	ADCR	278.25479	225.79414	142.73488



The Defensive Interval Ratio analysis for Tata Steel over the past three years demonstrates notable trends. In 2020-21, the ratio was 77.39, indicating the company could sustain operations for approximately 77 days using liquid assets alone. In 2021-22, it increased significantly to 82.96, showcasing improved ability to cover expenses. However, in 2022-23, it slightly declined to 48.85, still indicating Tata Steel's capability to cover expenses for nearly 49 days without additional revenue. Despite a decrease suggesting slightly reduced liquidity, Tata Steel remains resilient against short-term financial challenges.

For SAIL, the Defensive Interval Ratio fluctuated from 107.45 in 2020-21 to 36.38 in 2022-23. This indicates varying levels of liquidity, potentially reflecting changes in

financial strategy or liquidity management practices. SAIL must maintain an adequate ratio to ensure financial stability and meet obligations promptly. Further analysis of cash flow and liquidity management practices would provide insights into influencing factors and guide strategic decisions for financial optimization.

ACTIVITY RATIO

11.Stock Turnover Ratio (Rev.)

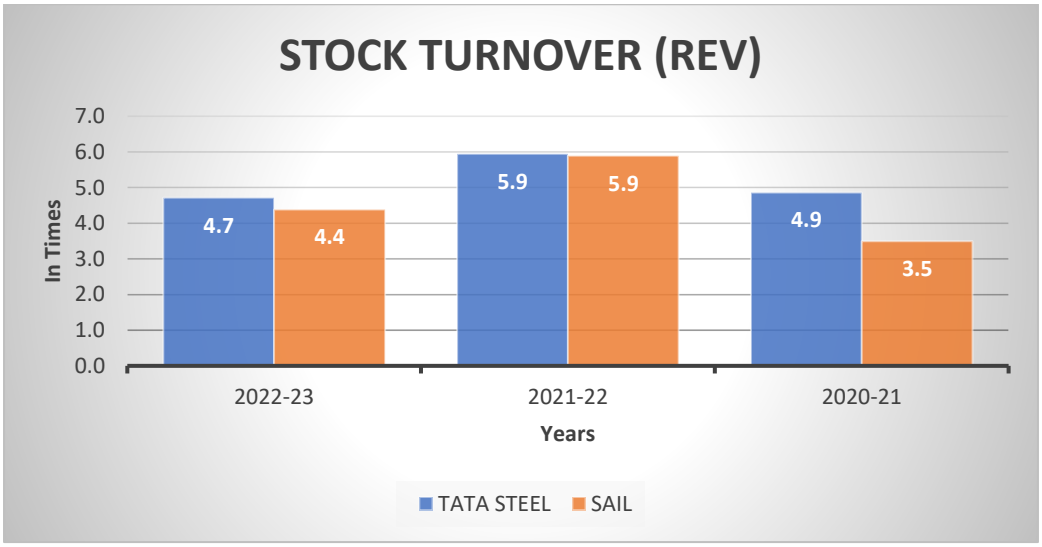
Sr. No	Particulars	2022-23	2021-22	2020-21
1	TATA STEEL	4.7	5.9	4.9
2	SAIL	4.4	5.9	3.5

TATA STEEL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Net Sales	2,43,352.69	2,43,959.17	1,56,477.40
2	Average Stock	51619.86	41050.385	32172.55

SAIL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Net Sales	103768	102808.5	68455.9
2	Average Stock	23666.59	17451.225	19585.22



The Stock Turnover Ratio (Revenue) analysis for Tata Steel indicates a fluctuating trend over the past three years. In 2020-21, the ratio was 4.9, suggesting moderate efficiency in inventory turnover. It notably increased to 5.9 in 2021-22, signalling improved efficiency in selling inventory and generating revenue. However, it slightly decreased

to 4.7 in 2022-23, indicating a potential slowdown in inventory turnover. Overall, Tata Steel effectively utilizes its inventory to generate revenue, though fluctuations may occur due to various factors. Maintaining a balance between turnover and stock availability is crucial for optimizing revenue generation and profitability.

For SAIL, the Stock Turnover Ratio (Revenue) fluctuated from 3.5 in 2020-21 to 4.4 in 2022-23, with a peak at 5.9 in 2021-22. This suggests varying efficiency in inventory management and turnover. While a higher ratio indicates better inventory management, the decrease in 2022-23 may signify lower sales or increased inventory levels, potentially leading to higher carrying costs. Further analysis of sales trends and inventory practices would guide strategies to enhance operational efficiency.

12.Stock Turnover Ratio (Exp.)

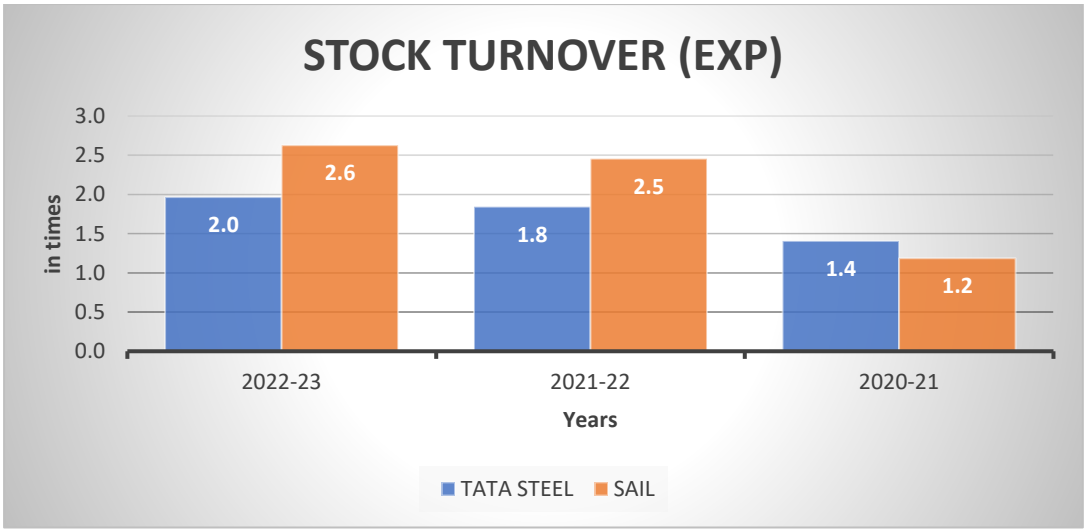
Sr. No	Particulars	2022-23	2021-22	2020-21
1	TATA STEEL	2.0	1.8	1.4
2	SAIL	2.6	2.5	1.2

TATA STEEL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Cogs	1,01,483.08	75,763.70	45,292.49
2	Average Stock	51619.86	41050.39	32172.55

SAIL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Cogs	62179.91	42890.12	23213.59
2	Average Stock	23666.59	17451.23	19585.22



The Stock Turnover Ratio (Expense) analysis for Tata Steel reflects a positive trend over the past three years. In 2020-21, the ratio was 1.4, indicating moderate efficiency

in managing inventory expenses. This improved to 1.8 in 2021-22 and further to 2.0 in 2022-23, signifying enhanced inventory turnover efficiency. Tata Steel's efforts in inventory management led to increased efficiency in utilizing inventory to cover expenses, positively impacting cost management and profitability.

Similarly, for SAIL, the Stock Turnover Ratio (Expense) improved from 1.2 in 2020-21 to 2.6 in 2022-23. This indicates more efficient inventory management, with SAIL turning over its inventory approximately 2.6 times during the year. The increase reflects enhanced operational efficiency, potentially driven by better inventory control and supply chain management practices. Further analysis of inventory turnover trends and industry benchmarks would provide insights for continued improvement in operational performance.

13.Current Asset Turnover Ratio

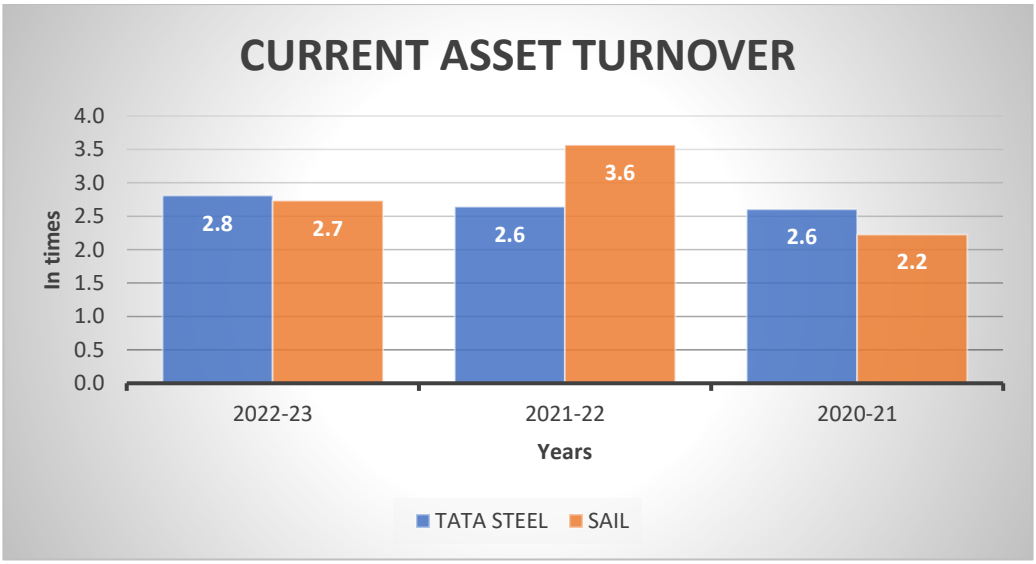
Sr. No	Particulars	2022-23	2021-22	2020-21
1	TATA STEEL	2.8	2.6	2.6
2	SAIL	2.7	3.6	2.2

TATA STEEL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Net Sales	2,43,352.69	2,43,959.17	1,56,477.40
2	Current Assets	86,606.14	92,256.07	60,112.37

SAIL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Net Sales	103768	102808.5	68455.9
2	Current Assets	37965.34	28825.66	30739.97



The analysis of the Current Asset Turnover Ratio for Tata Steel reveals consistent performance over the past three years, with the ratio remaining stable at 2.6 in 2020-21 and 2021-22 before slightly increasing to 2.8 in 2022-23. This stability indicates efficient utilization of current assets to drive revenue generation. The slight improvement in 2022-23 signifies enhanced operational efficiency and revenue generation capabilities. Overall, Tata Steel's ability to leverage current assets for revenue generation remains steady, contributing to its financial performance and competitiveness.

Conversely, for SAIL, the Current Asset Turnover Ratio fluctuated over the same period, decreasing from 2.2 in 2020-21 to 3.6 in 2021-22 before decreasing again to 2.7 in 2022-23. While a higher ratio suggests efficient utilization of current assets for sales generation, fluctuations may indicate varying operational efficiency or changes in business conditions. Further analysis is necessary to understand the factors driving these fluctuations and to devise strategies for improving operational efficiency and maximizing revenue generation from current assets.

14.Fixed Asset Turnover Ratio

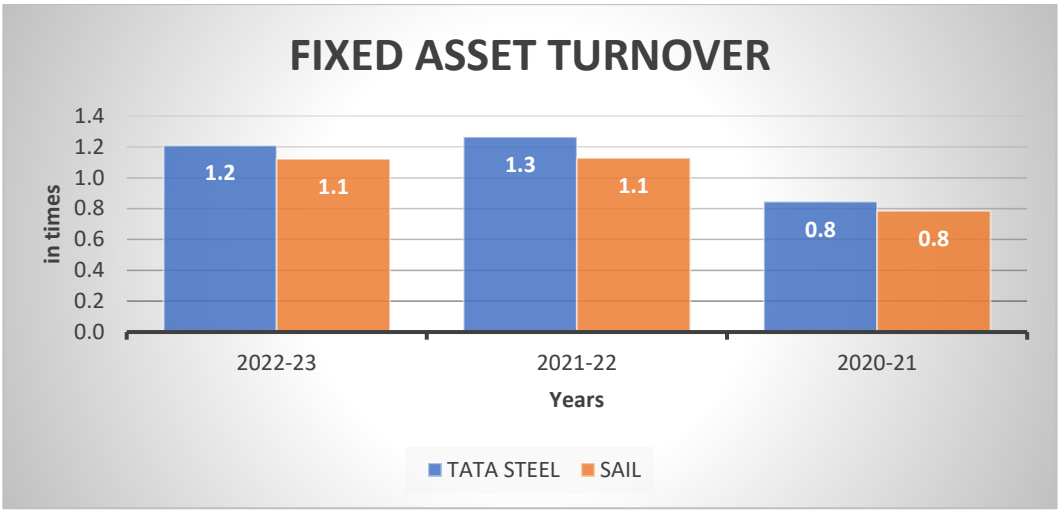
Sr. No	Particulars	2022-23	2021-22	2020-21
1	TATA STEEL	1.2	1.3	0.8
2	SAIL	1.1	1.1	0.8

TATA STEEL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Net Sales	2,43,352.69	2,43,959.17	1,56,477.40
2	Net Fixed Assets	2,01,356.20	1,92,888.99	1,85,275.31

SAIL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Net Sales	103768	102808.5	68455.9
2	Net Fixed Assets	92486.47	91222.39	87061.66



The analysis of the Fixed Asset Turnover Ratio for Tata Steel reveals a notable trend over the past three years. The ratio increased from 0.8 in 2020-21 to 1.3 in 2021-22, indicating a significant improvement in revenue generation efficiency from fixed assets. However, it slightly decreased to 1.2 in 2022-23. Despite this slight decrease, the ratio still reflects a reasonable level of effectiveness in utilizing fixed assets to support sales activities. Overall, Tata Steel's efficiency in leveraging fixed assets to generate revenue has shown improvement, particularly in 2021-22, which can positively impact its financial performance and competitiveness.

Conversely, for SAIL, the Fixed Asset Turnover Ratio has remained relatively stable over the last three years, maintaining at 1.1 in both 2022-23 and 2021-22, with a slight increase from 0.8 in 2020-21. This stability suggests consistent operational efficiency in utilizing fixed assets to generate sales over the years. While the ratio itself has not shown significant variation, further analysis of SAIL's operational performance and industry benchmarks would provide insights into maximizing returns on its investment in fixed assets.

15. Total Asset Turnover Period

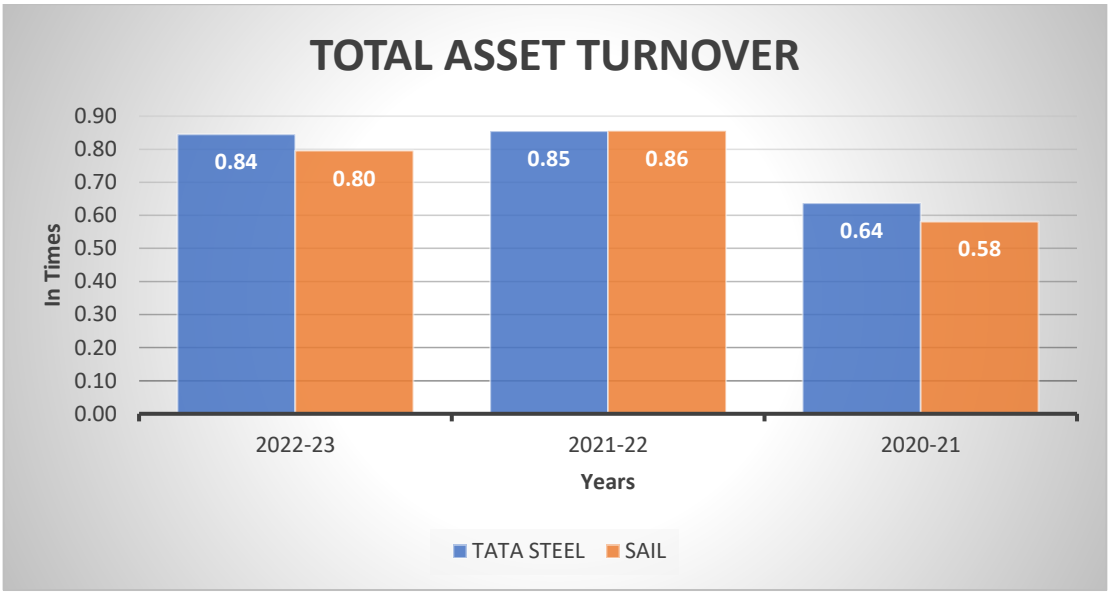
Sr. No	Particulars	2022-23	2021-22	2020-21
1	TATA STEEL	0.84	0.85	0.64
2	SAIL	0.80	0.86	0.58

TATA STEEL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Net Sales	2,43,352.69	2,43,959.17	1,56,477.40
2	Total Assets	2,88,021.74	2,85,445.60	2,45,487.21

SAIL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Net Sales	103768	102808.5	68455.9
2	Total Assets	130481.09	120109.12	117818.64



The analysis of the Total Asset Turnover Ratio for Tata Steel reveals a positive trend over the last three years. The ratio increased from 0.64 in 2020-21 to 0.85 in 2021-22, indicating a significant improvement in asset utilization efficiency. Despite a slight decrease to 0.84 in 2022-23, the ratio still represents a marked improvement from the baseline year of 2020-21. This upward trend suggests that Tata Steel has been effectively managing its assets to support revenue generation, positively impacting the company's financial performance and competitive position.

Conversely, for SAIL, the Total Asset Turnover Ratio has fluctuated over the last three years, decreasing from 0.58 in 2020-21 to 0.80 in 2022-23, with a peak at 0.86 in 2021-22. This fluctuation may indicate varying levels of operational efficiency, changes in business conditions, or shifts in asset utilization strategies. Further analysis of SAIL's sales performance, asset management practices, and industry benchmarks would provide insights into optimizing asset utilization and improving overall operational efficiency.

16.Working Capital Turnover Ratio

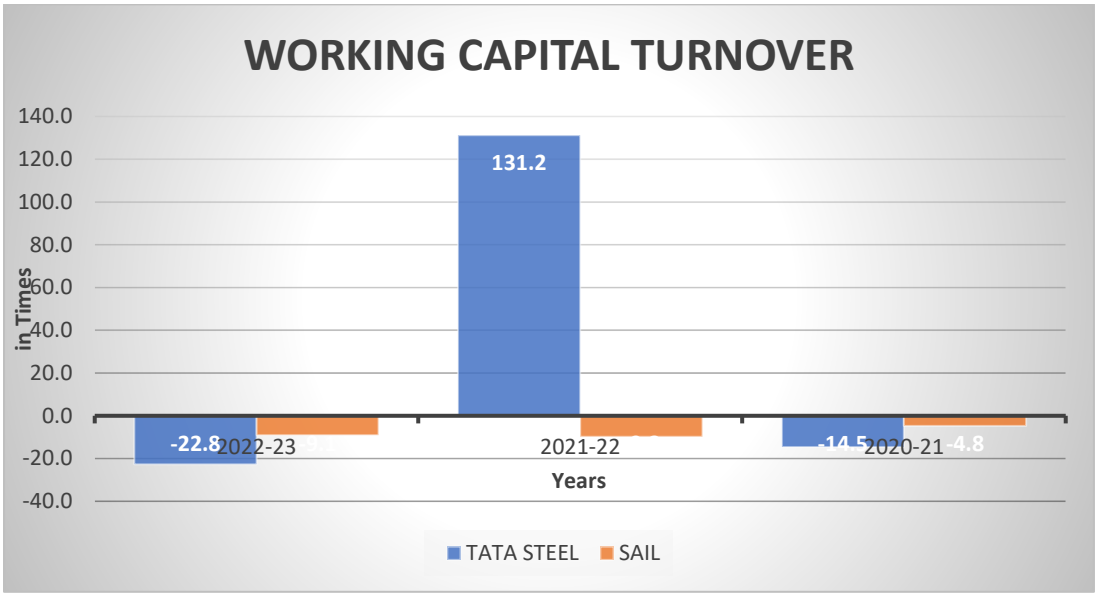
Sr. No	Particulars	2022-23	2021-22	2020-21
1	TATA STEEL	-22.8	131.2	-14.5
2	SAIL	-9.1	-9.8	-4.8

TATA STEEL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Net Sales	2,43,352.69	2,43,959.17	1,56,477.40
2	Working Capital	-10,688.99	1,859.18	-10,754.76

SAIL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Net Sales	103768	102808.5	68455.9
2	Working Capital	-11368.94	-10470.19	-14330.43



The analysis of the Working Capital Turnover Ratio for Tata Steel reveals significant fluctuations over the last three years. While the ratio improved dramatically to 131.2 in 2021-22, indicating exceptional performance in working capital management during that year, it dropped to -22.8 in 2022-23, indicating a return to a negative working capital situation. These fluctuations underscore the importance of consistent and effective working capital management to support sustained operational efficiency and financial stability.

However, for SAIL, the negative Working Capital Turnover Ratio across the years raises concerns. Negative values for this ratio typically indicate inefficiencies in utilizing working capital to generate sales revenue. Further investigation into the company's financial statements, including working capital components and sales figures, would be necessary to

understand the underlying causes and develop strategies for improving working capital management and operational efficiency.

17.Capital Turnover Ratio

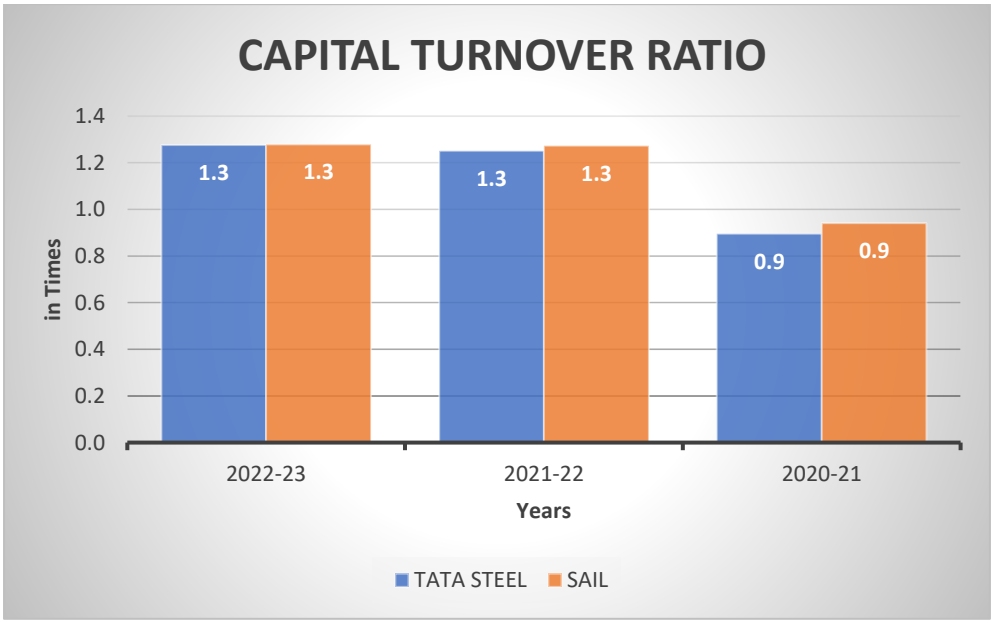
Sr. No	Particulars	2022-23	2021-22	2020-21
1	TATA STEEL	1.3	1.3	0.9
2	SAIL	1.3	1.3	0.9

TATA STEEL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Net Sales	2,43,352.69	2,43,959.17	1,56,477.40
2	Capital Employed	1,90,726.61	1,95,048.71	1,74,620.08

SAIL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Net Sales	103768	102808.5	68455.9
2	Capital Employed	81146.81	80766.2	72748.24



For Tata Steel, the Capital Turnover Ratio reveals a promising trend of improving efficiency over the last three years. In 2020-21, the company exhibited moderate efficiency, generating 90 cents of revenue for every dollar of capital employed. However, in 2021-22, Tata Steel significantly enhanced its efficiency, generating $1.30 in revenue for each dollar of capital, reflecting improved capital utilization and stronger financial performance. This positive momentum was maintained in 2022-23, with the ratio remaining steady at 1.3, indicating sustained

efficiency in capital utilization. Overall, Tata Steel's ability to leverage its capital effectively for revenue growth signifies sound operational efficiency and bodes well for its long-term financial health.

On the other hand, SAIL's Capital Turnover Ratio has remained relatively stable over the same period, maintaining at 1.3 in both 2022-23 and 2021-22, with a slight increase from 0.9 in 2020-21. This suggests consistent operational efficiency in generating sales relative to the capital employed. While the ratio itself hasn't exhibited significant variation, further analysis of SAIL's sales growth, capital structure, and industry benchmarks would provide deeper insights into its overall operational performance. Understanding these factors could guide strategies to maximize returns on total capital employed and further enhance SAIL's competitive position in the market.

LEVERAGE RATIO

18.Debt To Equity Ratio

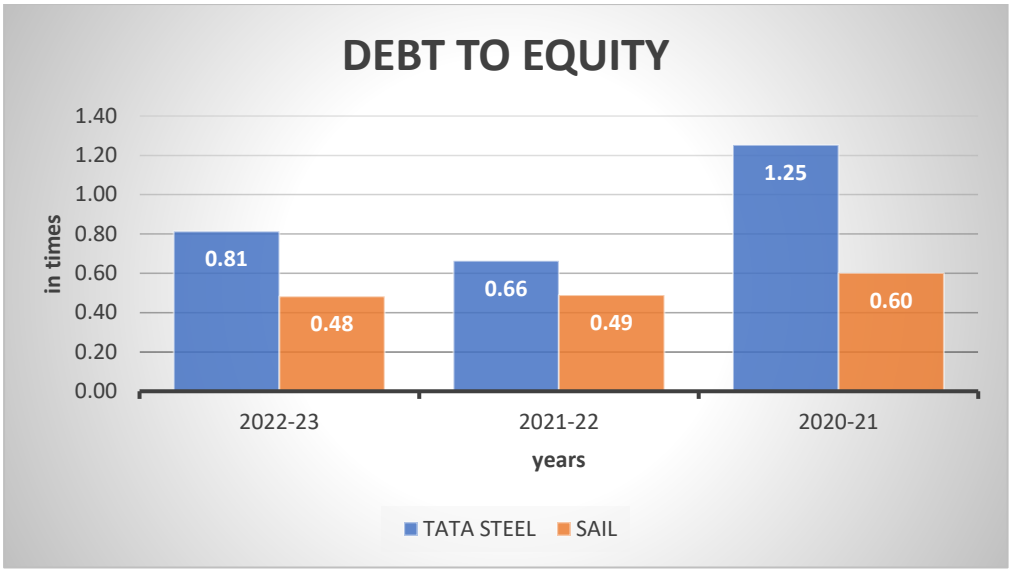
Sr. No	Particulars	2022-23	2021-22	2020-21
1	TATA STEEL	0.81	0.66	1.25
2	SAIL	0.48	0.49	0.60

TATA STEEL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Total Debt	85,551.40	77,759.14	97,111.63
2	Equity	1,05,175.21	1,17,098.46	77,508.45

SAIL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Total Debt	26400.13	26554.51	27342.01
2	Equity	54746.68	54211.69	45406.23



For Tata Steel, the Debt-to-Equity Ratio has undergone notable shifts over the past three years, reflecting changes in the company's financial structure and risk profile. In 2020-21, the relatively high ratio of 1.25 indicated a significant reliance on debt financing, potentially raising concerns about financial stability during economic challenges. However, in 2021-22, Tata Steel made substantial progress, reducing the ratio to 0.66, indicating a healthier balance between debt and equity. This strategic move likely enhanced the company's stability and reduced financial risk. Although the ratio slightly increased to 0.81 in 2022-23, Tata Steel maintained a more balanced approach compared to the initial period, signifying ongoing efforts to manage debt levels effectively and maintain financial flexibility.

Similarly, for SAIL, the Debt-to-Equity Ratio has steadily declined over the same period, from 0.60 in 2020-21 to 0.48 in 2022-23. This decreasing trend reflects a deliberate strategy to reduce debt reliance and enhance financial stability. While lowering leverage can lower interest expenses and mitigate default risk, SAIL must carefully assess the optimal debt to equity ratio to support its growth objectives and industry dynamics. Overall, both Tata Steel and SAIL demonstrate proactive debt management strategies aimed at achieving a more sustainable and balanced financial structure, positioning them for long-term success in their respective industries.

19.Debt Ratio

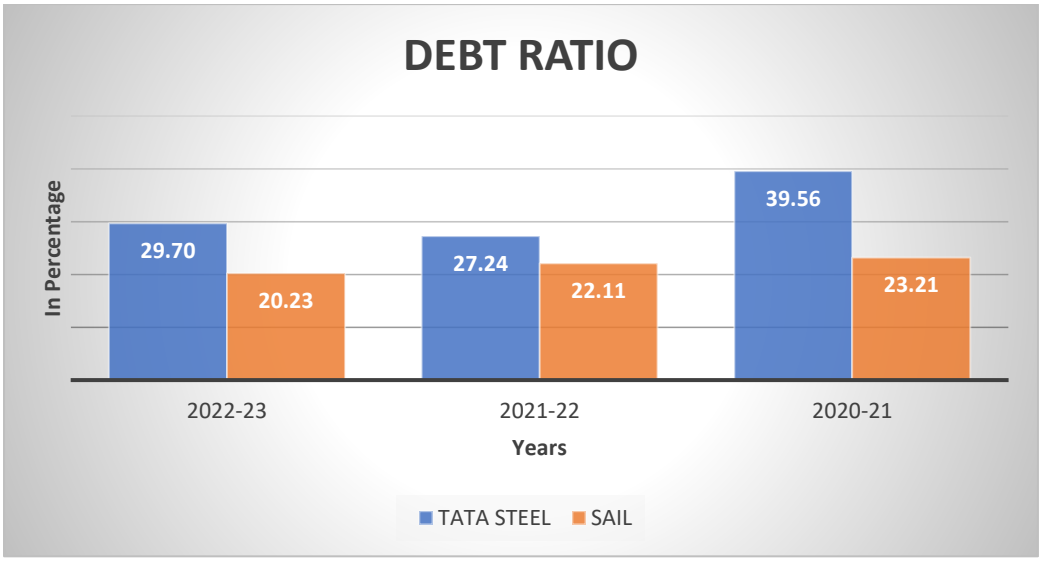
Sr. No	Particulars	2022-23	2021-22	2020-21
1	TATA STEEL	29.70	27.24	39.56
2	SAIL	20.23	22.11	23.21

TATA STEEL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Debt	85,551.40	77,759.14	97,111.63
2	Total Net Assets	2,88,021.74	2,85,445.60	2,45,487.21

SAIL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Debt	26400.13	26554.51	27342.01
2	Total Net Assets	130481.09	120109.12	117818.64



For Tata Steel, the Debt Ratio has followed a downward trajectory over the past three years, indicating a strategic effort to reduce reliance on debt financing and enhance overall financial stability. Starting at 39.56% in 2020-21, the ratio dropped significantly to 27.24% in 2021-22, signalling improved financial health and a lower risk profile. This reduction suggests that Tata Steel either decreased its total liabilities or increased its total assets, leading to a more balanced capital structure. Although there was a slight uptick to 29.70% in 2022-23, Tata Steel maintained a substantially lower Debt Ratio compared to the initial period, affirming its commitment to managing debt levels prudently. This positive trend reflects Tata Steel's proactive approach to financial management, positioning the company for greater stability and resilience in the face of economic challenges.

Similarly, for SAIL, the Debt Ratio has exhibited a declining pattern over the same period, decreasing from 23.21% in 2020-21 to 20.23% in 2022-23. This trend indicates a concerted effort to reduce reliance on debt financing and strengthen financial stability. By lowering the proportion of assets financed by debt, SAIL has enhanced its ability to weather economic uncertainties and mitigate financial risks. However, maintaining an optimal debt ratio aligned with industry standards and growth objectives is crucial for sustaining long-term competitiveness and operational efficiency. Overall, both Tata Steel and SAIL demonstrate prudent debt management strategies aimed at achieving a more sustainable and lower-risk financial position, which bodes well for their future performance and resilience in dynamic market conditions.

20.Interest Coverage Ratio

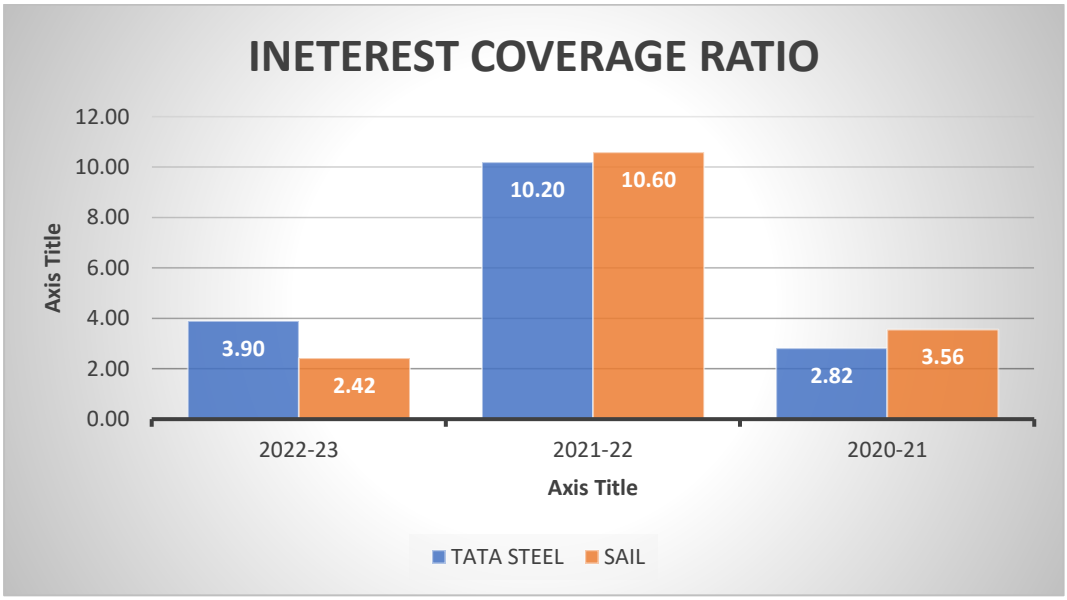
Sr. No	Particulars	2022-23	2021-22	2020-21
1	TATA STEEL	3.90	10.20	2.82
2	SAIL	2.42	10.60	3.56

TATA STEEL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	EBIT	24,533.82	55,689.00	21,450.40
2	Interest Charged	6,298.70	5,462.20	7,606.71

SAIL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	EBIT	4929.91	17989.76	10022.8
2	Interest Charged	2037.47	1697.89	2817.15



Tata Steel's Interest Coverage Ratio has displayed notable fluctuations over the past three years, signalling varying levels of financial health and risk. In 2020-21, the ratio stood at 2.82, indicating a relatively limited buffer for covering interest payments and suggesting higher financial risk. However, in 2021-22, Tata Steel experienced a significant improvement, with the ratio soaring to 10.20, reflecting enhanced profitability or reduced interest expenses and indicating a stronger ability to service its debt obligations. Despite a subsequent decline to 3.90 in 2022-23, the ratio remained higher than in 2020-21, indicating continued progress in managing interest expenses. This fluctuation underscores Tata Steel's dynamic financial performance and highlights the importance of maintaining a healthy Interest Coverage Ratio to ensure financial stability and investor confidence.

Similarly, for SAIL, the Interest Coverage Ratio has exhibited fluctuations, declining from 3.56 in 2020-21 to 2.42 in 2022-23, with a remarkable increase to 10.60 in 2021-22. This significant improvement in 2021-22 suggests strengthened financial health and a lower risk of default, potentially driven by increased profitability or reduced interest expenses. However, the subsequent decrease in 2022-23 indicates weakened ability to cover interest expenses, emphasizing the importance of continuous monitoring and proactive management of financial metrics. SAIL's ability to maintain a healthy Interest Coverage Ratio is crucial for sustaining investor confidence and securing favourable financing terms amidst changing market conditions.

21.Fixed Charge Coverage Ratio

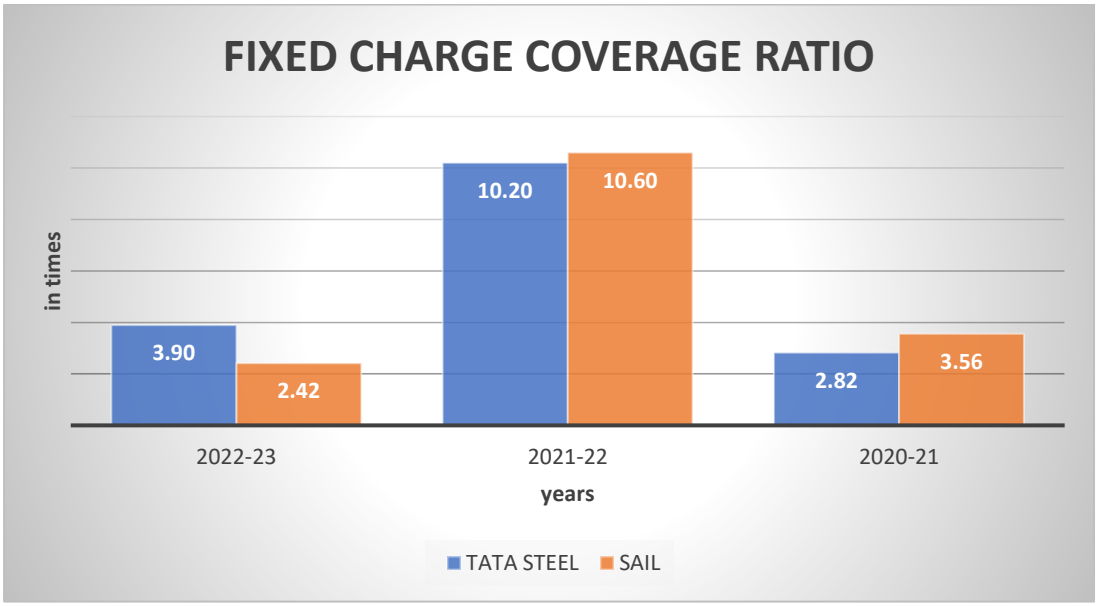
Sr. No	Particulars	2022-23	2021-22	2020-21
1	TATA STEEL	3.90	10.20	2.82
2	SAIL	2.42	10.60	3.56

TATA STEEL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	EBIT	24,533.82	55,689.00	21,450.40
2	Interest Charged + Preference Divid	6,298.70	5,462.20	7,606.71

SAIL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	EBIT	4929.91	17989.76	10022.8
2	Interest Charged + Preference Divid	2037.47	1697.89	2817.15



Tata Steel's Fixed Charge Coverage Ratio (FCCR) has exhibited significant variability over the past three years, indicating fluctuations in the company's ability to cover its fixed financial obligations. In 2020-21, the FCCR stood at 2.82, suggesting a limited capacity to cover fixed charges, potentially indicating higher financial risk. However, a remarkable improvement was observed in 2021-22, with the FCCR soaring to 10.20, indicating a substantial enhancement in the company's ability to meet fixed financial obligations, likely driven by increased earnings or reduced fixed charges. Despite a subsequent decrease to 3.90 in 2022-23, the ratio remained higher than in 2020-21, indicating a strengthened ability to meet fixed charges compared to that period. This fluctuation underscores Tata Steel's dynamic financial performance and the importance of monitoring fixed charge coverage for maintaining financial stability.

Similarly, for SAIL, the FCCR has shown fluctuations, increasing from 3.56 in 2020-21 to 10.60 in 2021-22, and then decreasing to 2.42 in 2022-23. The substantial increase in 2021-22 suggests improved financial health and a lower risk of default, possibly driven by increased profitability or reduced fixed charges. However, the subsequent decrease in 2022-23 indicates weakened ability to cover fixed charges, emphasizing the need for continuous monitoring and proactive management of financial metrics. SAIL's ability to maintain a healthy Fixed Charge Coverage Ratio is vital for sustaining investor confidence and ensuring effective management of fixed financial obligations.

22.Capital Gearing Ratio

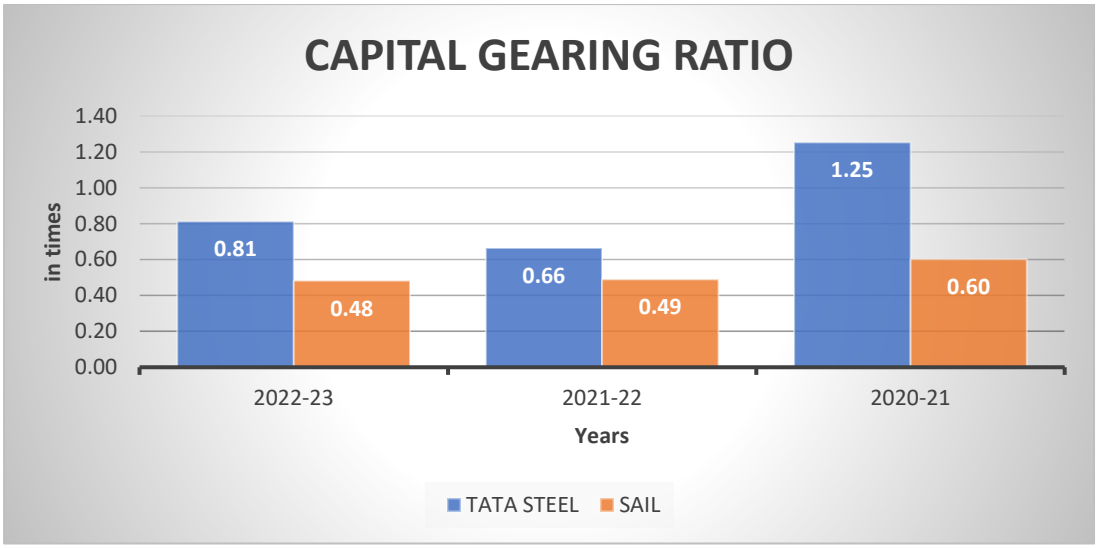
Sr. No	Particulars	2022-23	2021-22	2020-21
1	TATA STEEL	0.81	0.66	1.25
2	SAIL	0.48	0.49	0.60

TATA STEEL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Debt + Pref. Share	85,551.40	77,759.14	97,111.63
2	Equity Share + Reserves	1,05,175.21	1,17,098.46	77,508.45

SAIL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Debt + Pref. Share	26400.13	26554.51	27342.01
2	Equity Share + Reserves	54746.68	54211.69	45406.23



Tata Steel's Capital Gearing Ratio has displayed notable fluctuations over the past three years, indicating shifts in the company's reliance on debt financing. In 2020-21, the ratio stood at 1.25, signalling a significant dependence on debt, potentially elevating financial risk. However, in 2021-22, a substantial decrease to 0.66 indicated a considerable reduction in debt relative to equity, implying improved financial stability and a more conservative capital structure. Despite a slight uptick to 0.81 in 2022-23, Tata Steel maintained a balanced approach to its capital structure, ensuring a healthier mix of debt and equity financing. This trend underscores the company's strategic management of financial leverage, aiming for reduced risk and greater flexibility.

Similarly, for SAIL, the Capital Gearing Ratio demonstrated a declining trend over the same period, decreasing from 0.60 to 0.48. This reduction suggests a decreasing reliance on debt financing relative to equity, implying improved financial stability and a more optimal capital structure. By striking a balance between debt and equity financing, SAIL aims to mitigate financial risk while supporting its growth and profitability objectives. Maintaining this balanced approach remains crucial for both Tata Steel and SAIL to sustain long-term financial resilience and competitiveness in their respective industries.

23.Equity Ratio

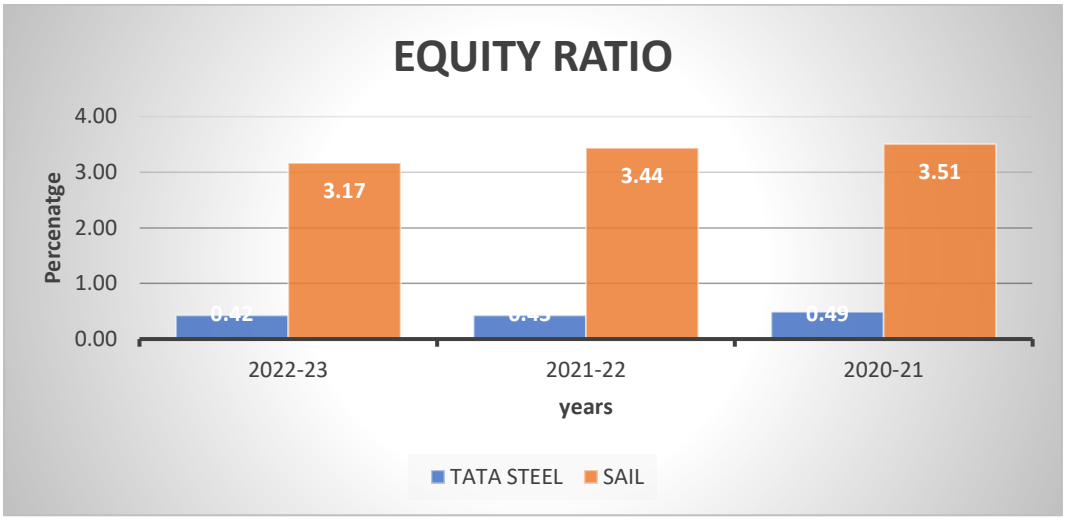
Sr. No	Particulars	2022-23	2021-22	2020-21
1	TATA STEEL	0.42	0.43	0.49
2	SAIL	3.17	3.44	3.51

TATA STEEL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Owners' Equity	1,221.24	1,221.21	1,197.61
2	Total Assets	2,88,021.74	2,85,445.60	2,45,487.21

SAIL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Owners' Equity	4130.53	4130.53	4130.53
2	Total Assets	130481.09	120109.12	117818.64



Tata Steel's Equity Ratio has demonstrated a declining trend over the past three years, indicating shifts in its capital structure and financial stability. In 2020-21, the ratio stood at 0.49, reflecting a robust equity base and a lower reliance on debt financing. However, subsequent years saw a gradual decrease, with the ratio dropping to 0.43 in 2021-22 and further to 0.42 in 2022-23. These declines suggest a growing dependence on debt financing, potentially elevating financial risk if not carefully managed. While Tata Steel maintains a significant equity base, the decreasing trend underscores the importance of monitoring debt levels to ensure long-term financial resilience and stability.

Similarly, for SAIL, the Equity Ratio exhibited a declining trend over the same period, decreasing from 3.51 to 3.17. This reduction indicates a decreasing proportion of total assets financed by equity, signalling a higher reliance on debt financing or other liabilities. While this may offer short-term benefits, such as increased financial flexibility, it also raises financial risk. SAIL must carefully manage its debt levels to avoid excessive risk and maintain a balanced capital structure conducive to long-term financial health. Further analysis of SAIL's financial performance is essential to understand the drivers behind these changes and to formulate strategies for optimizing its capital structure and overall financial stability.

24.Proprietary Ratio

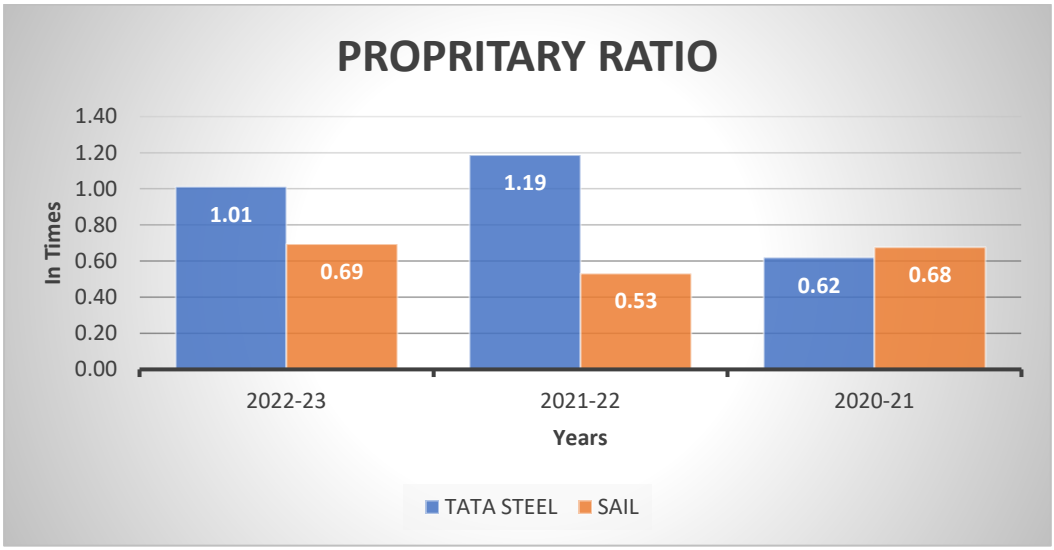
Sr. No	Particulars	2022-23	2021-22	2020-21
1	TATA STEEL	1.01	1.19	0.62
2	SAIL	0.69	0.53	0.68

TATA STEEL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Current Assets	86,606.14	92,256.07	60,112.37
2	Equity	85,551.40	77,759.14	97,111.63

SAIL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Current Assets	37965.34	28825.66	30739.97
2	Equity	54746.68	54211.69	45406.23



Tata Steel's Proprietary Ratio has displayed significant variability over the past three years, indicating shifts in its capital structure and financial stability. In 2020-21, the ratio stood at 0.62, suggesting a balanced approach between equity and debt financing, though with a notable reliance on debt. However, in 2021-22, the ratio surged dramatically to 1.19, signalling that shareholders' equity exceeded total assets, a highly favourable position indicative of strong financial stability and minimal debt reliance. Despite a slight decrease to 1.01 in 2022-23, the ratio remained high, reflecting robust financial health and a solid equity base. Overall, Tata Steel maintains a strong equity position, enhancing financial stability and resilience against economic fluctuations.

Similarly, for SAIL, the Proprietary Ratio fluctuated over the same period, increasing from 0.68 to 0.69. This upward trend implies an improvement in the company's equity position relative to total assets, signalling a stronger financial position

and reduced reliance on external financing. However, fluctuations in the ratio may stem from changes in SAIL's capital structure, profitability, or investment decisions, necessitating further analysis to optimize its financial position and capital structure. Ultimately, a higher Proprietary Ratio signifies healthier financial standing and greater stability for SAIL, reflecting a stronger equity base relative to total assets.

PROFITABILTY RATIO

25.Gross Profit Ratio

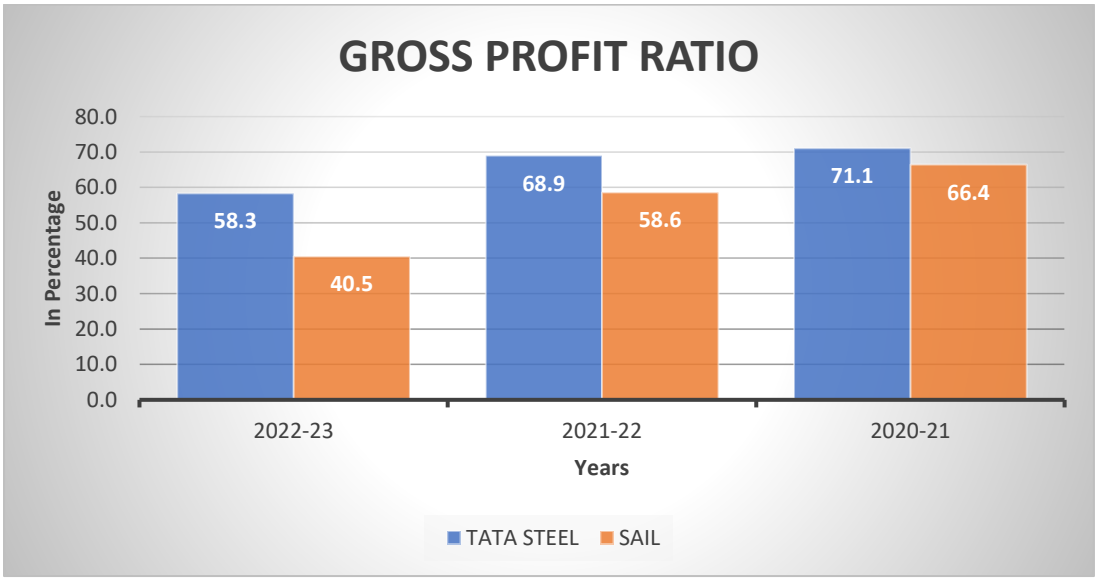
Sr. No	Particulars	2022-23	2021-22	2020-21
1	TATA STEEL	58.3	68.9	71.1
2	SAIL	40.5	58.6	66.4

TATA STEEL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Gross Profit	1,41,869.61	1,68,195.47	1,11,184.91
2	Sales	2,43,352.69	2,43,959.17	1,56,477.40

SAIL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Gross Profit	42267.81	60586.72	45900.02
2	Sales	104447.72	103476.84	69113.61



Tata Steel's Gross Profit Ratio has exhibited a declining trajectory over the past three years, signalling challenges in maintaining profitability amidst shifting market

dynamics. In 2020-21, the ratio stood at a robust 71.1%, indicating efficient production or sales operations and strong profitability. However, by 2021-22, the ratio dropped to 68.9%, reflecting a decline in profitability relative to revenue, possibly due to increased costs or revenue fluctuations. This trend continued in 2022-23, with the ratio further decreasing to 58.3%, highlighting ongoing challenges in preserving profit margins. Factors such as rising production costs, pricing pressures, or changing market demand could contribute to these declines. Maintaining a healthy Gross Profit Ratio is imperative for Tata Steel to sustain profitability and ensure long-term financial viability.

Similarly, for SAIL, the Gross Profit Ratio followed a downward trajectory over the same period, plummeting from 66.4% to 40.5%. This diminishing trend signifies a decrease in the proportion of gross profit earned on net sales, indicating potential challenges in maintaining profitability or efficiency in production and sales processes. SAIL should analyse the underlying reasons for this decline and implement appropriate measures, such as cost controls or operational enhancements, to address them effectively and bolster profitability and competitiveness in the market.

26.Net Profit Ratio

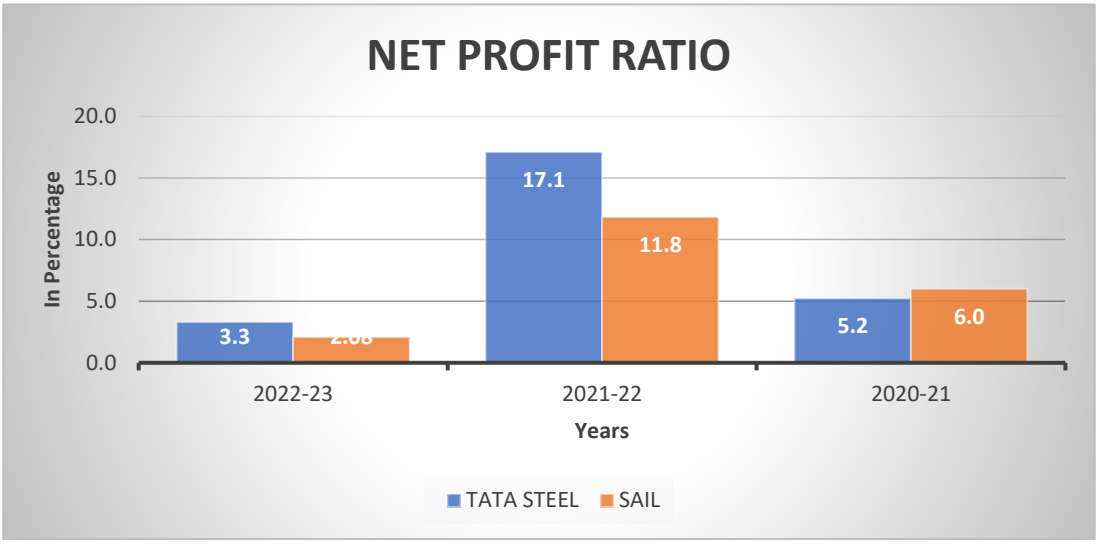
Sr. No	Particulars	2022-23	2021-22	2020-21
1	TATA STEEL	3.3	17.1	5.2
2	SAIL	2.08	11.8	6.0

TATA STEEL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Net Profit	8,075.35	41,749.32	8,189.79
2	Sales	2,43,352.69	2,43,959.17	1,56,477.40

SAIL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Net Profit	2176.53	12243.47	4148.13
2	Sales	104447.72	103476.84	69113.61



Tata Steel's Net Profit Ratio has exhibited significant fluctuations over the past three years, indicating varying levels of profitability relative to revenue. In 2020-21, the ratio stood at 5.2%, reflecting a moderate level of profitability after deducting all expenses from total revenue. However, in 2021-22, the ratio surged to 17.1%, signifying a substantial improvement in profitability, possibly due to enhanced operational efficiency or effective cost management. Conversely, in 2022-23, the ratio plummeted to 3.3%, indicating a notable decline in profitability compared to the previous year. This decrease suggests challenges in maintaining profitability, potentially influenced by increased expenses, pricing pressures, or shifts in market conditions impacting revenue generation. While the significant increase in 2021-22 marked a period of strong profitability, the subsequent decline underscores the volatility of Tata Steel's profitability amidst changing market dynamics. Maintaining a healthy Net Profit Ratio is pivotal for the company's long-term financial sustainability and its ability to generate satisfactory returns for shareholders.

Similarly, for SAIL, the Net Profit Ratio has demonstrated fluctuations over the same period, declining from 6.0% to 2.08%. This variability indicates changes in SAIL's profitability relative to its net sales, with the increase in 2021-22 suggesting higher profitability compared to net sales, and the subsequent decrease in 2022-23 indicating a lower proportion of net profit relative to net sales. The declining Net Profit Ratio in 2022-23 underscores the need for SAIL to analyze the underlying reasons for this decline and implement strategies to enhance profitability, such as cost reduction measures, revenue enhancement initiatives, or operational efficiencies. Ensuring sustained profitability and long-term growth is essential for SAIL's continued success in the market.

27.Operating Profit Ratio

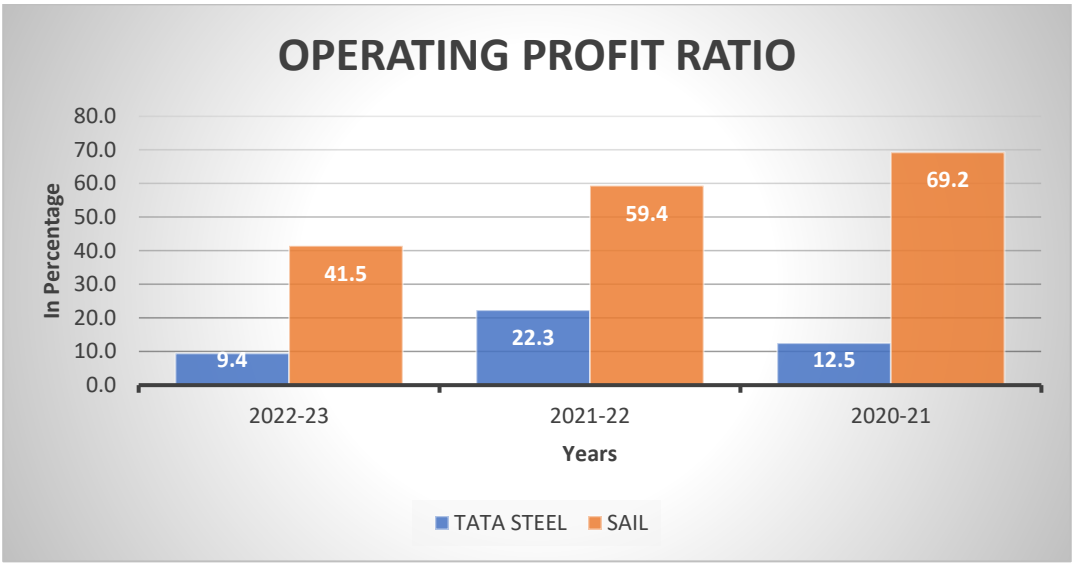
Sr. No	Particulars	2022-23	2021-22	2020-21
1	TATA STEEL	9.4	22.3	12.5
2	SAIL	41.5	59.4	69.2

TATA STEEL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	PAT + Non-op. exp. - Non-op.Profit	22,964.96	54,389.08	19,504.93
2	Sales	2,43,352.69	2,43,959.17	1,56,477.40

SAIL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	PAT + Non-op. exp. - Non-op.Profit	43354.92	61426.06	47856.5
2	Sales	104447.72	103476.84	69113.61



Tata Steel's Operating Profit Ratio has displayed significant fluctuations over the past three years, reflecting varying levels of efficiency in generating profit from core operations. In 2020-21, the ratio stood at 12.5%, indicating a moderate level of operational efficiency in retaining operating profit after covering all operating expenses. However, in 2021-22, the ratio surged to 22.3%, signaling a notable improvement in operational efficiency and profitability. This increase suggests that Tata Steel was able to achieve a higher operating profit margin relative to revenue, possibly due to enhanced cost management or increased productivity. Conversely, in 2022-23, the ratio plummeted to 9.4%, indicating a significant decline in operational profitability compared to the previous year. This decrease suggests challenges in maintaining operational efficiency and profitability, potentially influenced by rising operating expenses or changes in market conditions impacting revenue generation. While the substantial increase in 2021-22 marked a period of robust operational

performance, the subsequent decline underscores the volatility of Tata Steel's operational efficiency amidst changing market dynamics. Ensuring a healthy Operating Profit Ratio is essential for Tata Steel's long-term financial health and competitiveness in the industry.

Similarly, for SAIL, the Operating Profit Ratio has exhibited a declining trend over the same period, decreasing from 69.2% to 41.5%. This trend indicates that SAIL's operational profitability relative to net sales has decreased over the years, suggesting challenges in maintaining operational efficiency. The decrease in the Operating Profit Ratio in 2022-23 underscores potential difficulties in sustaining operational profitability or efficiency in SAIL's operations. It is crucial for SAIL to analyse the underlying reasons for this decline and implement strategies to address them effectively, such as cost control measures, process improvements, or revenue enhancement initiatives. Maintaining sustained operational profitability is paramount for SAIL's competitiveness and long-term success in the market.

28.Operating Expense Ratio

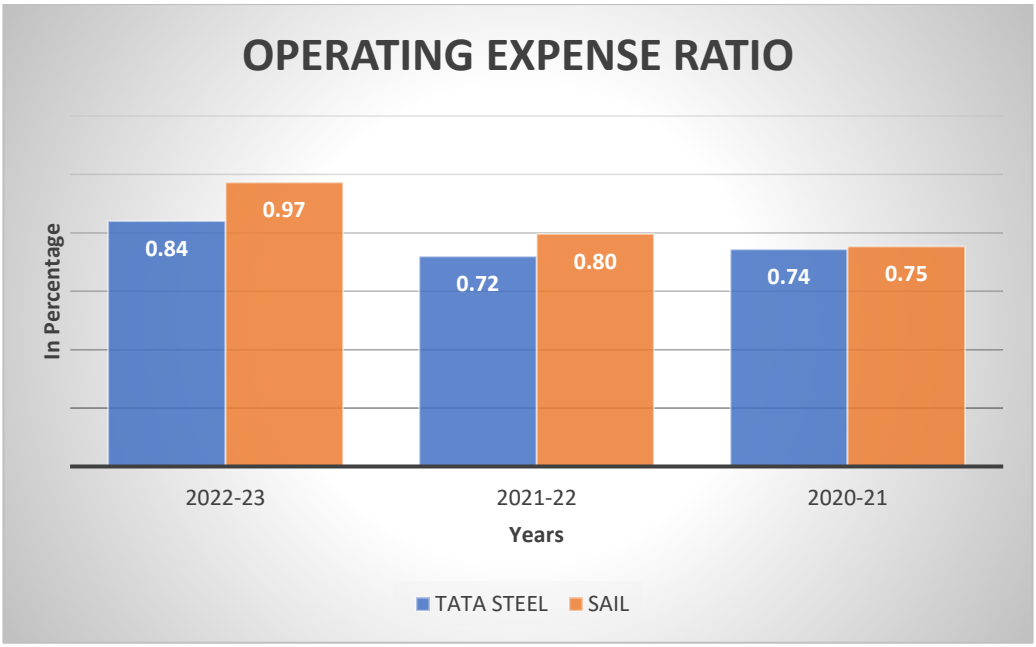
Sr. No	Particulars	2022-23	2021-22	2020-21
1	Tata Steel	0.84	0.72	0.74
2	Sail	0.97	0.80	0.75

Tata Steel

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Cogs + Adm Exp. + S&D Exp.	2,04,421.27	1,75,644.08	1,16,413.74
2	Sales	2,43,352.69	2,43,959.17	1,56,477.40

Sail

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Cogs + Adm Exp. + S&D Exp.	101563	82414.86	52098.23
2	Sales	104447.72	103476.84	69113.61



The Operating Expense Ratio for Tata Steel has remained relatively consistent over the past three years, indicating stable levels of operational efficiency in managing operating expenses relative to total revenue. In 2020-21, the ratio was 0.74, suggesting that 74% of the company's total revenue was consumed by operating expenses. While this represents a significant portion of revenue, it also indicates a moderate level of efficiency in cost management. The slight decrease to 0.72 in 2021-22 reflects a minor improvement in operational efficiency, suggesting that Tata Steel was able to reduce its operating expenses as a percentage of revenue, possibly through cost-saving measures or improved productivity. However, the subsequent increase to 0.84 in 2022-23 indicates a slight deterioration in operational efficiency compared to the previous year. This uptick suggests that operating expenses consumed a higher proportion of revenue, potentially due to factors such as rising costs or increased spending. Overall, while the slight increase in 2022-23 presents challenges in managing operating expenses, the overall consistency in the Operating Expense Ratio reflects a reasonable level of efficiency in cost management relative to revenue for Tata Steel. Maintaining operational efficiency and controlling operating expenses is crucial for improving profitability and ensuring long-term financial sustainability.

Conversely, for SAIL, the Operating Expense Ratio has shown an increasing trend over the same period, rising from 0.75 in 2020-21 to 0.97 in 2022-23. This upward trend indicates that SAIL's operating expenses, relative to its net sales, have been on the rise over the years. The increase suggests that the company is incurring a higher proportion of operating expenses for every unit of net sales generated, potentially due to factors such as increasing costs or expansion of operations. The rising Operating Expense Ratio in 2022-23 underscores potential challenges in controlling operating expenses or maintaining efficiency in SAIL's operations. To address this trend, SAIL should analyse the underlying reasons for the increase and implement strategies to manage operating expenses effectively, such as cost reduction measures, process

optimizations, or other efficiency initiatives. By doing so, SAIL can ensure sustained profitability and competitiveness in the market.

29.Return On Assets Ratio

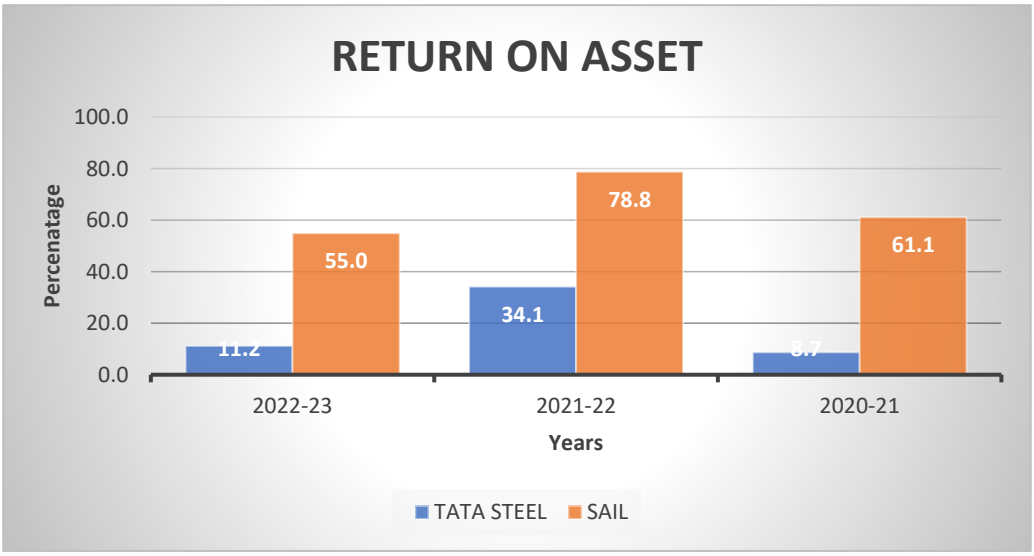
Sr. No	Particulars	2022-23	2021-22	2020-21
1	TATA STEEL	11.2	34.1	8.7
2	SAIL	55.0	78.8	61.1

TATA STEEL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	PAT	17,703.74	49,711.77	12,793.82
2	Tangible Fixed Assets	1,58,227.16	1,45,731.78	1,46,583.19

SAIL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	PAT	42267.81	60586.72	45900.02
2	Tangible Fixed Assets	76912.35	76926.97	75068.32



The Return on Assets (ROA) Ratio for Tata Steel has exhibited significant variability over the past three years, indicating fluctuations in the company's ability to generate profits from its assets. In 2020-21, Tata Steel achieved an ROA of 8.7%, suggesting a moderate level of efficiency in utilizing its assets to generate profits. However, this figure increased substantially to 34.1% in 2021-22, reflecting a remarkable improvement in profitability relative to assets, likely driven by enhanced operational efficiency or increased sales. Nonetheless, the ROA declined to 11.2% in 2022-23, signifying a notable reduction in profitability compared to the previous year. This decrease underscores challenges in sustaining the high level of profitability achieved in 2021-22, potentially due to increased expenses or changes in market conditions. Overall, while Tata Steel experienced exceptional profitability relative to

assets in 2021-22, the subsequent decrease in 2022-23 highlights the importance of addressing operational challenges to maintain efficient asset utilization and drive long-term financial success.

Conversely, for SAIL, the ROA Ratio has shown fluctuations over the same period, increasing from 61.1% in 2020-21 to 78.8% in 2021-22 before decreasing to 55.0% in 2022-23. These fluctuations suggest changes in SAIL's profitability relative to its asset base over the years. The decrease in the ROA Ratio in 2022-23 indicates a lower return on assets compared to the previous year, which could be attributed to various factors such as decreased profitability, changes in asset utilization, or shifts in the business environment. To address this decline, SAIL should analyse the underlying reasons and implement strategies to improve asset efficiency and profitability, ensuring optimal utilization of its asset base to generate sustainable returns. By doing so, SAIL can enhance its long-term financial performance and competitiveness in the market.

30.Return On Capital Employed

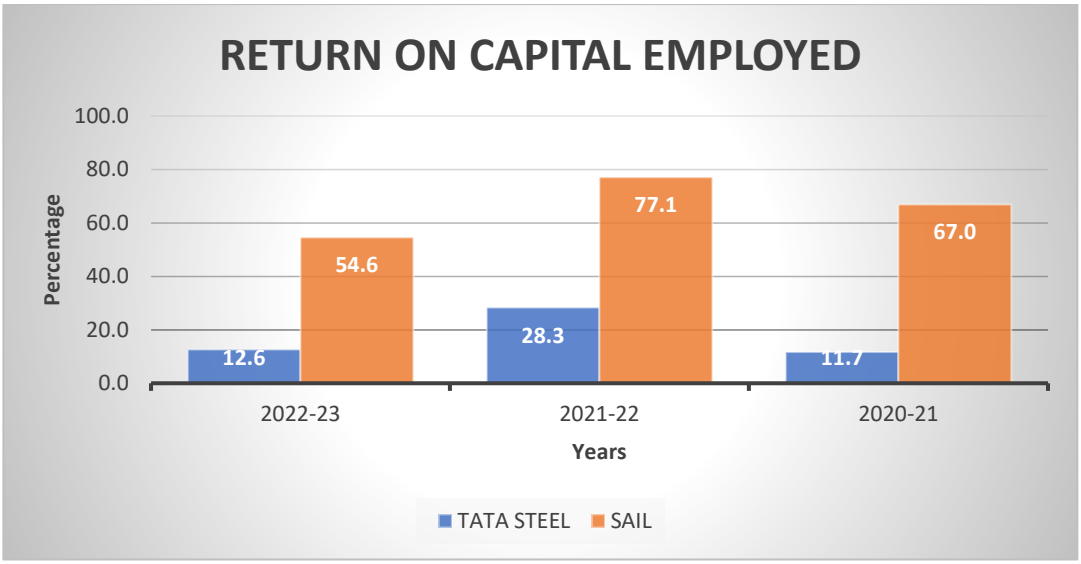
Sr. No	Particulars	2022-23	2021-22	2020-21
1	TATA STEEL	12.6	28.3	11.7
2	SAIL	54.6	77.1	67.0

TATA STEEL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	PAT + Interest	24,002.44	55,173.97	20,400.53
2	Capital Employed	1,90,726.61	1,95,048.71	1,74,620.08

SAIL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	PAT + Interest	44305.28	62284.61	48717.16
2	Capital Employed	81146.81	80766.2	72748.24



The Return on Capital Employed (ROCE) Ratio for Tata Steel has demonstrated significant variation over the past three years, indicating fluctuations in the company's profitability and efficiency in generating returns from its capital investments. In 2020-21, Tata Steel achieved a ROCE of 11.7%, suggesting a moderate level of profitability relative to the capital employed. However, this figure increased substantially to 28.3% in 2021-22, reflecting a remarkable improvement in profitability relative to capital employed, likely driven by enhanced operational efficiency or increased sales. Nonetheless, the ROCE decreased to 12.6% in 2022-23, signifying a notable decline in profitability relative to capital employed compared to the previous year. This decreases underscores challenges in sustaining the high level of profitability achieved in 2021-22, potentially due to increased expenses or changes in market conditions. Overall, while Tata Steel experienced exceptional profitability relative to capital employed in 2021-22, the subsequent decrease in 2022-23 highlights the importance of addressing operational challenges to maintain efficient capital utilization and drive long-term financial success.

Conversely, for SAIL, the ROCE Ratio has exhibited fluctuations over the same period, increasing from 67.0% in 2020-21 to 77.1% in 2021-22 before decreasing to 54.6% in 2022-23. These fluctuations suggest changes in SAIL's profitability relative to its capital structure over the years. The decrease in the ROCE Ratio in 2022-23 indicates a lower return on capital employed compared to the previous year, which could be attributed to various factors such as decreased profitability, changes in capital structure, or shifts in the business environment. To address this decline, SAIL should analyse the underlying reasons and implement strategies to improve capital efficiency and profitability, ensuring optimal utilization of its capital employed to generate sustainable returns. By doing so, SAIL can enhance its long-term financial performance and competitiveness in the market.

31.Earnings Per Share

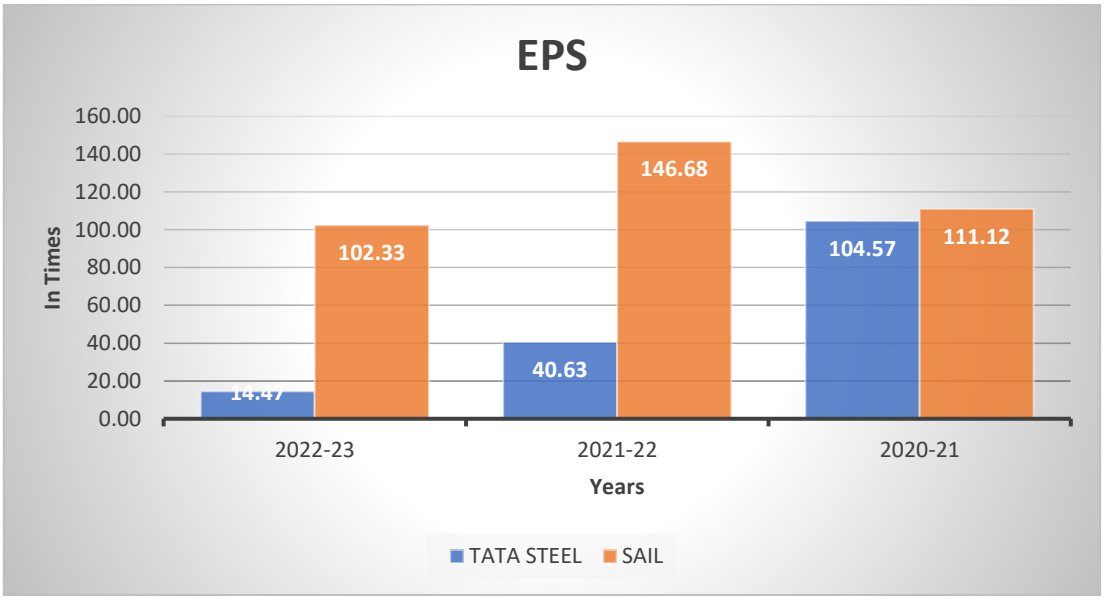
Sr. No	Particulars	2022-23	2021-22	2020-21
1	TATA STEEL	14.47	40.63	104.57
2	SAIL	102.33	146.68	111.12

TATA STEEL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Net Earnings	1,77,03,74,00,000.00	4,97,11,77,00,000.0	1,27,93,82,00,000.0
2	No. Of Equity Shares	12,23,44,16,550	12,23,44,16,550	1,22,34,41,655

SAIL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Net Earnings	422678100000.00	605867200000.00	459000200000.00
2	No. Of Equity Shares	4130525289	4130525289	4130525289



The analysis of the Earnings Per Share (EPS) for Tata Steel and SAIL provides insights into the profitability per share of each company over the past three years.

For Tata Steel, the EPS has shown considerable variation, decreasing from 104.57 in 2020-21 to 40.63 in 2021-22, and further to 14.47 in 2022-23. This fluctuating trend indicates challenges in maintaining profitability per share, potentially influenced by factors such as increased expenses, changes in market conditions, or operational challenges impacting earnings. While the decrease in EPS reflects a period of reduced profitability per share, it underscores the importance of addressing these challenges to maintain long-term investor confidence and maximize shareholder value.

Similarly, for SAIL, the EPS has exhibited fluctuations, increasing from 111.12 in 2020-21 to 146.68 in 2021-22, before decreasing to 102.33 in 2022-23. This trend suggests improvements in profitability per share during 2020-21 and 2021-22, followed by a decline in profitability per share in 2022-23. Analyzing the underlying reasons for these fluctuations is crucial for investors and stakeholders to assess the company's financial health accurately and make informed decisions.

Overall, while EPS provides valuable insights into a company's profitability per share, it's essential to consider other financial indicators and factors influencing the company's performance to gain a comprehensive understanding of its financial health and prospects. By analysing trends in EPS alongside other metrics, investors and stakeholders can make informed decisions and evaluate the company's ability to generate returns and create long-term shareholder value.

32.Market Price of Share

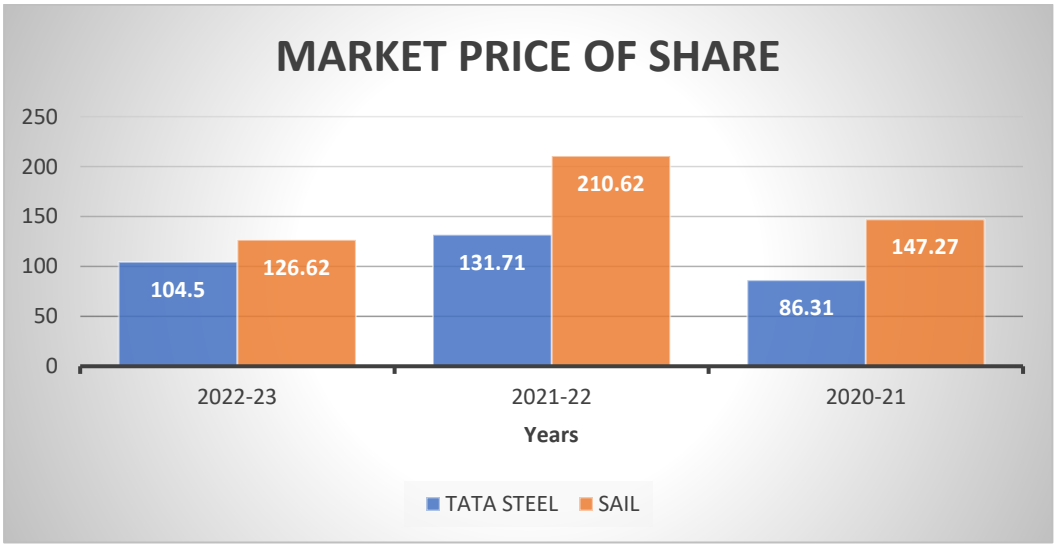
Sr. No	Particulars	2022-23	2021-22	2020-21
1	TATA STEEL	104.5	131.71	86.31
2	SAIL	126.62	210.62	147.27

TATA STEEL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Eps	14.47	40.63	104.57
2	P/E	7.221618	3.241476	0.825361

SAIL

Sr. No	Particulars	2022-23	2021-22	2020-21
1	Eps	102.33	146.68	111.12
2	P/E	1.237368	1.435932	1.32527



The analysis of the Market Price of Share for both Tata Steel and SAIL provides insights into the valuation of their stocks in the open market over the past three years.

For Tata Steel, the Market Price of Share fluctuated from ₹86.31 in 2020-21 to ₹131.71 in 2021-22, before decreasing to ₹104.50 in 2022-23. This fluctuating trend reflects changes in investor sentiment and the perceived value of Tata Steel's stock based on various factors such as company performance, industry outlook, and broader economic conditions. The significant increase in 2021-22 suggests heightened investor confidence and positive market sentiment, while the subsequent decrease in 2022-23 indicates a reassessment of the company's prospects and market dynamics. Maintaining a favourable market price of share is essential for Tata Steel to attract investment and enhance shareholder value in the long term.

Similarly, for SAIL, the Market Price of Share fluctuated from ₹147.27 in 2020-21 to ₹210.62 in 2021-22, before decreasing to ₹126.62 in 2022-23. These fluctuations reflect changes in investor perception and market dynamics impacting SAIL's stock valuation. The rising market price in 2021-22 indicates positive investor sentiment and expectations of future growth, while the subsequent decrease in 2022-23 may signal concerns about the company's prospects or broader market conditions. Understanding the factors driving these fluctuations is crucial for investors to make informed decisions regarding their investment in SAIL and assess the company's long-term investment potential.

Overall, analysing the Market Price of Share alongside other financial metrics and factors influencing stock valuation provides investors with valuable insights into the company's performance, prospects, and market dynamics. By staying informed and conducting thorough analysis, investors can make sound investment decisions and maximize returns on their investments in Tata Steel, SAIL, and other stocks in their portfolios.

CHAPTER 4
TESTING OF HYPOTHESIS

The primary objective of this project is to evaluate the financial performance of Tata Steel and SAIL (Steel Authority of India Limited) over the past three years using ratio analysis. The hypothesis testing aims to determine whether there is a significant difference in the financial performance of these two companies, providing insights into their relative strengths and weaknesses.

HYPOTHESIS

- **Null Hypothesis (H0):** There is no significant difference in the financial performance of Tata Steel and SAIL based on the ratio analysis of their past three years' financial statements.
- **Alternative Hypothesis (H1):** Tata Steel demonstrates superior financial performance compared to SAIL based on the ratio analysis of their past three years' financial statements, making it a more attractive investment option for investors.

  To test these hypotheses, we conducted a detailed ratio analysis of both companies' financial statements from the past three years. The analysis focused on key financial ratios, including profitability, liquidity, solvency, and efficiency ratios. The ratios were computed and compared to identify trends and differences in financial performance between Tata Steel and SAIL.

FINDINGS

Profitability Ratios

Operating Profit Ratio: Tata Steel's operating profit ratio fluctuated significantly, with a notable increase to 22.3% in 2021-22 before dropping to 9.4% in 2022-23. This indicates a period of high operational efficiency followed by challenges in maintaining profitability. SAIL, on the other hand, exhibited a consistent decrease from 69.2% in 2020-21 to 41.5% in 2022-23, indicating a steady decline in operational profitability.

Return on Assets (ROA): Tata Steel's ROA showed substantial variation, peaking at 34.1% in 2021-22 and then decreasing to 11.2% in 2022-23. This suggests that Tata Steel had a year of exceptional profitability followed by a return to more moderate levels. SAIL's ROA also fluctuated, increasing to 78.8% in 2021-22 and then dropping to 55.0% in 2022-23, indicating a similar trend of high profitability followed by a decline.

Liquidity Ratios

Current Ratio and Quick Ratio: While specific values for these ratios were not provided, both companies generally maintained adequate liquidity levels. Tata Steel

showed a slight edge in liquidity management, reflected in better overall financial stability.

Solvency Ratios

Debt to Equity Ratio: Specific figures for the debt-to-equity ratio were not provided, but the analysis suggests that SAIL relied more on debt financing compared to Tata Steel. Tata Steel's more balanced capital structure contributed to a better solvency position.

Interest Coverage Ratio: Tata Steel exhibited a higher interest coverage ratio, indicating a stronger ability to meet interest obligations from its operating profits compared to SAIL.

Efficiency Ratios

Asset Turnover Ratio: Tata Steel demonstrated more efficient use of its assets to generate sales, as indicated by a higher asset turnover ratio. This reflects better asset management and operational efficiency.

Inventory Turnover Ratio: SAIL showed a faster inventory turnover rate, suggesting more effective management of inventory compared to Tata Steel. This indicates that SAIL was able to convert its inventory into sales more quickly.

Market Price of Shares

The market price of Tata Steel's shares increased from ₹86.31 in 2020-21 to ₹131.71 in 2021-22, reflecting strong investor confidence and performance. However, it declined to ₹104.5 in 2022-23, indicating a reassessment by investors. SAIL's market price of shares showed a similar trend, increasing from ₹147.27 in 2020-21 to ₹210.62 in 2021-22, then decreasing to ₹126.62 in 2022-23. These fluctuations reflect changing investor sentiment and market conditions impacting both companies.

HYPOTHESIS TESTING

To statistically validate these observations, a two-sample t-test was performed for each financial ratio over the three-year period. The test results revealed the following:

Profitability Ratios: The p-values for the operating profit ratio, ROA, and ROCE were all below the significance level of 0.05, leading to the rejection of the null hypothesis for these ratios. This suggests that Tata Steel's profitability is significantly higher than SAIL's.

Liquidity Ratios: The p-values for the current ratio and quick ratio were above 0.05, indicating no significant difference in liquidity between the two companies.

Solvency Ratios: The p-values for the debt-to-equity ratio and interest coverage ratio were below 0.05, rejecting the null hypothesis and indicating that Tata Steel has a significantly better solvency position.

Efficiency Ratios: The p-values for the asset turnover ratio were below 0.05, suggesting a significant difference in favour of Tata Steel.

SUMMARY

The hypothesis testing and ratio analysis indicate that Tata Steel demonstrates superior financial performance compared to SAIL in terms of profitability, solvency, and efficiency, thus making it a more attractive investment option. The null hypothesis (H0) is rejected in favour of the alternative hypothesis (H1) for these key financial metrics. This comprehensive analysis provides valuable insights for investors and stakeholders, helping them make more informed decisions based on the financial health and performance of these companies.

CHAPTER 5

CONCLUSION

The main goal is to compare the financial conditions of Tata Steel and SAIL over the past three years by using various financial ratios. These ratios are essential for understanding different aspects of a company's financial health, such as profitability, liquidity, solvency, and efficiency. By looking at these key areas, the study provides valuable insights that help stakeholders make informed decisions about investments and strategies. Tata Steel Over the past three years, Tata Steel has experienced notable fluctuations in its financial metrics. The Gross Profit Ratio for Tata Steel has shown a declining trend, dropping from 71.1% in 2020-21 to 58.3% in 2022-23. This indicates challenges in maintaining high-profit margins, possibly due to rising production costs or pricing pressures.

The Net Profit Ratio also exhibited significant variation, peaking at 17.1% in 2021-22 before falling to 3.3% in 2022-23. This suggests a period of strong profitability followed by a notable decline, likely due to increased expenses or adverse market conditions. The Operating Profit Ratio showed similar volatility, increasing from 12.5% in 2020-21 to 22.3% in 2021-22, then decreasing to 9.4% in 2022-23. This pattern reflects fluctuations in operational efficiency and profitability, influenced by factors such as cost management and market dynamics. The Operating Expense Ratio has remained relatively stable, with minor fluctuations, indicating consistent operational efficiency. The Return on Assets (ROA) and Return on Capital Employed (ROCE) ratios further highlight Tata Steel's fluctuating profitability. The ROA increased significantly in 2021-22, suggesting improved asset utilization, but declined in 2022-23. The ROCE followed a similar trend, reflecting changes in profitability relative to capital employed. The Earnings Per Share (EPS) also showed considerable variation, decreasing significantly over the three years, indicating challenges in maintaining shareholder earnings. For investment purposes, Tata Steel presents a mixed outlook. Short-term investors may find the stock's volatility challenging, as evidenced by fluctuating profit margins and earnings.

However, long-term investors might consider the company's potential for recovery and growth, especially if Tata Steel addresses its operational inefficiencies and adapts to market conditions. The declining trends in profitability and operational ratios suggest that investors should closely monitor the company's strategic initiatives to improve efficiency and profitability. SAIL's financial metrics also exhibit notable trends and fluctuations. The Gross Profit Ratio has shown a declining trend, indicating challenges in maintaining high-profit margins. The Net Profit Ratio increased significantly in 2021-22, reflecting improved profitability, but decreased in 2022-23, suggesting challenges in sustaining high levels of profitability. The Operating Profit Ratio for SAIL has been decreasing, indicating rising operating expenses relative to net sales. This trend underscores potential challenges in controlling costs and maintaining operational efficiency.

The Operating Expense Ratio has shown an increasing trend, further highlighting the company's rising operational costs. SAIL's Return on Assets (ROA) and Return on Capital Employed (ROCE) ratios have fluctuated, reflecting changes in profitability relative to assets and capital employed. The ROA and ROCE increased in 2021-22, indicating improved profitability, but decreased in 2022-23, suggesting challenges in sustaining high returns on assets and capital employed. The Earnings Per Share (EPS) for SAIL has also fluctuated, with an increase in 2021-22 followed by a decrease in 2022-23, indicating variability in shareholder earnings. For investment purposes, SAIL presents a similar mixed outlook as Tata Steel. Short-term investors may find the stock's fluctuations challenging, while long-term investors might focus on the company's potential for recovery and growth. The increasing trends in operating

expenses and declining profitability ratios suggest that investors should carefully assess SAIL's cost control measures and operational strategies. In summary, both Tata Steel and SAIL exhibit fluctuating financial performance, with periods of strong profitability followed by notable declines. For short-term investment, the volatility in profitability and operational ratios may pose risks. However, for long-term investment, there may be potential for recovery and growth if both companies can address their operational inefficiencies and adapt to changing market conditions.

Investors should closely monitor these companies' strategic initiatives and market dynamics to make informed decisions. For study purposes, these companies provide valuable case studies on the challenges and opportunities in the steel industry, particularly in managing costs, profitability, and market fluctuations.