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# Technological Disruption and Financial Risk: A Study in the Manufacturing Sector

Mr. N. Chandru, Mr. G. Aravinth
[1]Assistant Professor (Department Of Commerce), Dr .N.G.P. Arts and Science College, Coimbatore, Tamil Nadu -641048
[2]Student of M. Com. (Department Of Commerce), Dr .N.G.P. Arts and Science College, Coimbatore, Tamil Nadu -641048

***Abstract:** This study investigates the impact of technological disruption on financial risk within the manufacturing sector, with a concentrated analysis of* **Precot Limited***, a textile and cotton-based manufacturing firm. The research explores the influence of emerging technologies specifically Artificial Intelligence (AI), the Internet of Things (IoT), and industrial automation on investment behavior, cost structures, operational efficiency, and long-term financial sustainability. By employing quantitative research methods, including trend and ratio analysis of financial statements from FY 2019 to FY 2024, the study evaluates critical financial indicators:* liquidity *(e.g., current ratio, quick ratio),* profitability *(e.g., net profit margin, ROCE), and* solvency *(e.g., debt-to-equity ratio). The findings show that while Precot Limited experienced periods of financial strain and volatility, particularly during the pandemic years and early digital transition, recent financial data suggest gradual improvements in liquidity and profitability metrics—signalling an adaptive response to technological integration. Key financial and operational risks identified include increased exposure to* cyber security threats*,* capital expenditure pressures *due to digital infrastructure investments, and* heightened competition *from tech-optimized global manufacturers. Through quantitative analysis of five years' financial data (2019–2024), the study assesses the company's liquidity, profitability, and capital structure using key financial ratios. Despite showing improvement in operating efficiency and net profit margins, Precot faces liquidity constraints and high capital expenditure challenges due to technology upgrades. The study also observes internal challenges such as workforce reskilling needs and supply chain recalibration. The research concludes by offering strategic recommendations, including phased digital adoption, investment in cyber security frameworks, financial planning for tech upgrades, and policy support for innovation-led growth. These findings contribute to broader discussions on financial risk management and sustainable technological transformation in traditional manufacturing environments, and can inform both managerial strategies and policymaking in similar industrial contexts.*
***Keywords:** Technological Disruption, Financial Risk, Manufacturing Sector, Precot Limited, Artificial Intelligence (AI), Industry, Liquidity and Profitability Ratios, Cybersecurity, Automation, Risk Mitigation Strategies.*

## I. INTRODUCTION

The manufacturing sector is undergoing a significant transformation due to technological disruption, which is redefining the way companies operate, compete, and innovate. The rapid pace of technological change, driven by advancements in artificial intelligence, robotics, and the Internet of Things (IoT), is creating new opportunities and challenges for manufacturing companies. Precot Limited Company, a leading manufacturer in the industry, is no exception. Technological disruption can bring about significant financial risks, including obsolescence of existing assets, disruption of supply chains, and increased competition from new entrants. Moreover, the COVID-19 pandemic has accelerated the adoption of digital technologies, further exacerbating the financial risks associated with technological disruption. Technological disruption has become a defining factor in the evolution of industries worldwide, particularly in the manufacturing sector. Rapid advancements in automation, artificial intelligence (AI), the Internet of Things (IoT), and digitalization are transforming traditional production processes, supply chains, and business models. While these innovations offer significant benefits, including increased efficiency, cost savings, and improved product quality, they also introduce substantial financial risks for manufacturers. This study explores the relationship between technological disruption and financial risk in the manufacturing sector. Specifically, it examines how new technologies impact companies' financial stability, investment decisions, and risk exposure. Key concerns include capital expenditure on new technology, potential job displacement, cyber security threats, market competitiveness, and the risk of obsolescence. The introduction of disruptive technologies often requires large upfront investments, which can strain financial resources, particularly for small and medium-sized enterprises (SMEs).

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Moreover, firms that fail to adopt emerging technologies risk losing their competitive edge, leading to declining revenues and financial instability. Additionally, the increasing reliance on digital systems makes manufacturers more vulnerable to cyber-attacks, potentially resulting in data breaches, operational disruptions, and financial losses.

### A. Objectives Of The Study

1) To analyse the impact of technological disruption
2) To understand employee adaptability and skill requirements
3) To study market competitiveness due to technological advancements

### B. Statement Of The Problem

The manufacturing sector is undergoing a significant transformation due to technological disruption, which is redefining the way companies operate, compete, and innovate. Precot Limited Company, a leading manufacturer in the industry, is facing challenges in navigating this technological disruption, which is impacting its financial performance. The rapid pace of technological change, driven by advancements in artificial intelligence, robotics, and the Internet of Things (IoT), is creating new opportunities and challenges for manufacturing companies. Pre cot Limited Company is struggling to adapt to these changes, which are impacting its financial performance.

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### C. Scope Of The Study

The scope of this study is to investigate the financial risks associated with technological disruption in the manufacturing sector, specifically in Pre cot Limited Company. The study will focus on the following aspects are Artificial intelligence (AI), Robotics, Internet of Things (IoT), Cloud computing, Cyber-physical systems. By exploring the financial risks associated with technological disruption in the manufacturing sector, specifically in Precot Limited Company, this study aims to provide valuable insights for practitioners, policymakers, and researchers.

### D. Limitation Of The Study

1) The study focuses only on Pre cot Limited and may not apply to other manufacturing companies
2) Access to detailed financial and operational data may be limited due to confidentiality
3) Rapid changes in technology make it difficult to capture long-term effects
4) The project duration may not allow for a deep analysis of all risks and impacts
5) Limited access to industry-wide data makes it hard to compare findings with other companies
6) The study is based on current trends and may not predict future disruptions accurately.

## II. REVIEW OF LITERATURE

Gartner (2020) report on the increasing number of cyber-attacks targeting the manufacturing industry, particularly as the sector becomes more reliant on digital technologies.

This introduces a major financial risk, as breaches can result in both direct financial losses and reputational damage, undermining consumer trust.

Saks (2020) highlights how automation in automotive manufacturing, particularly through the use of AI-powered robots, led to improvements in production speed and quality. However, these innovations also led to high initial investment costs, and companies faced financial strain during the transition period.

Harrison & O'Neill (2019) emphasize the importance of financial forecasting in the context of technological change. Manufacturers can use advanced financial models to simulate the impact of adopting new technologies and assess their financial feasibility before committing significant resources.

Kshetri (2017) examines how cyber security risks are particularly pronounced in the context of the Internet of Things (Io) and smart manufacturing systems, suggesting that manufacturers must invest in robust cyber security frameworks to mitigate these risks and avoid financial disruptions.

Liao et al. (2017) discuss the impact of Industry 4.0 on the automotive sector, noting that manufacturers must address the financial risks of integrating automation and AI while dealing with market uncertainty.

## III. RESEARCH METHODOLOGY

This study aims to investigate the impact of financial management practices on the financial performance of Precot Limited Company. A quantitative research approach will be employed, using a descriptive research design. The study will utilize secondary data obtained from the company's financial statements, annual reports, and other relevant documents. A sample of 5 years' financial data will be selected, covering the period from 2018 to 2022. The data will be analysed using financial ratios, including liquidity, profitability, efficiency, and solvency ratios. Correlation and regression analysis will also be performed to examine the relationship between financial management practices and financial performance. The study will use SPSS software for data analysis.

### *A. Collection Of The Data*

Data for the study was collected from primary as well as secondary source.

### *B. Secondary Sources of Data Collection*

Secondary sources of data mean the data that is already available on various platforms. Secondary data can be obtained by various publications by the central or the state government or by any organizations, journals, books, magazines, and even newspapers, reports published by various organizations, schools, universities etc. This type of data collection is used to gain more knowledge of the topic of our research by collecting articled by authors who have previously researched on the topic that we have selected. In this study secondary data was collected through various websites, online journals, which helped in completing the review of literature. Secondary source of data collection was useful to understand the research topic more accurately.

## IV. DATA ANALYSIS AND INTERPRETATION

### *A. Liquidity Ratio*

#### *1) Current Ratio*

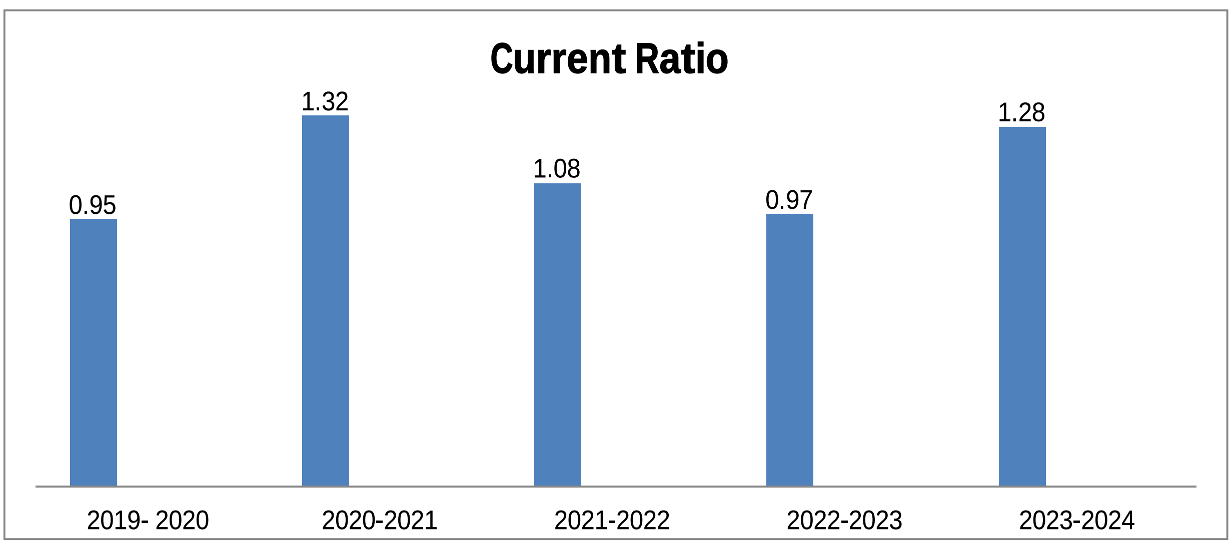
Current ratio: Current Assets/Current Liabilities (Rupees in crores)

Table.no.1: Current Ratio

| Year | Current Assets | Current Liabilities | Current Ratio |
|---|---|---|---|
| 2019- 2020 | 3790.63 | 3950.08 | 0.95 |
| 2020-2021 | 5044.35 | 3815.73 | 1.32 |
| 2021-2022 | 4688.67 | 4324.42 | 1.08 |
| 2022-2023 | 5562.98 | 5718.55 | 0.97 |
| 2023-2024 | 6338.42 | 4934.41 | 1.28 |

Source of data: Company Annual Report 2019-20 to 2023-24

Chart.no. 1 Current Ratio



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- Interpretation: From 2019-2020 to 2023-2024, the Quick Ratio shows an upward trend, improving from 0.41 to 0.96, indicating a steady enhancement in liquidity. The lowest ratio (0.41 in 2019-2020) suggests a liquidity challenge, while the highest (0.96 in 2023-2024) shows that the company is nearing an ideal liquidity position. The fluctuations in the ratio, particularly the dip in 20212022 (0.67), suggest that the company faced liquidity pressures that improved in later years. Overall, the company has strengthened its liquidity position over the years, making it more capable of meeting short-term obligations.

*2) Quick Ratio*

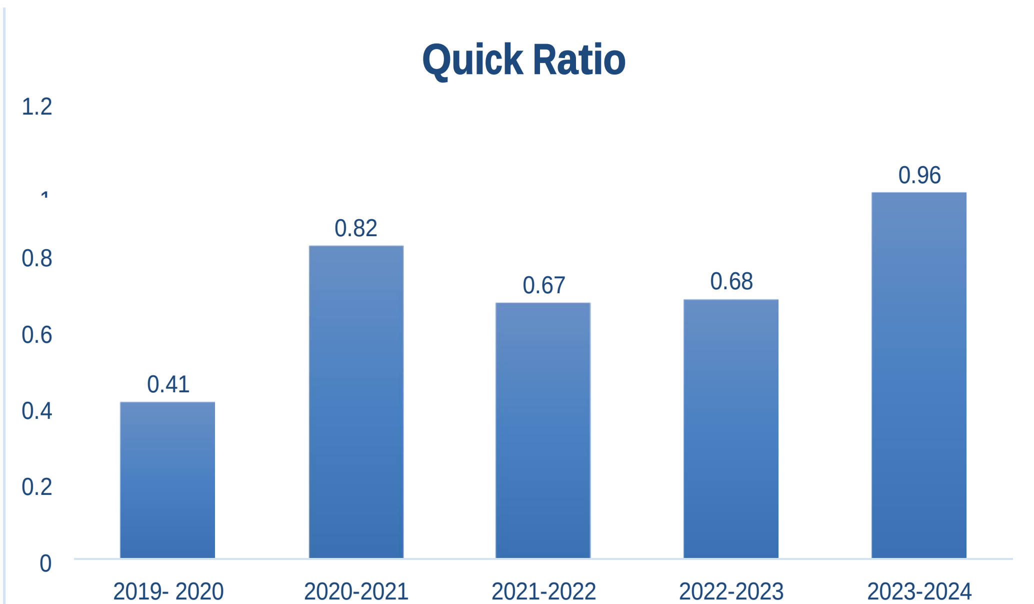
Current ratio: Liquid Assets/Current Liabilities (Rupees in crores)

Table.no. 2: Quick Ratio

| Year | Liquid Assets | Current Liabilities | Quick Ratio |
|---|---|---|---|
| 2019- 2020 | 1,621.06 | 3950.08 | 0.41 |
| 2020-2021 | 3,135.67 | 3815.73 | 0.82 |
| 2021-2022 | 2,905.89 | 4324.42 | 0.67 |
| 2022-2023 | 3,940.5 | 5718.55 | 0.68 |
| 2023-2024 | 4,761.13 | 4934.41 | 0.96 |

Source of data: Company Annual Report 2019-20 to 2023-24

Chart.no. 2 Quick Ratio




- Interpretation: The financial performance of Precot limited, as indicated by the current ratio, shows fluctuations over the years. In 2019-2020 and 2022-2023, the ratio was below 1 (0.95 and 0.97, respectively), suggesting liquidity concerns where current liabilities exceeded current assets. However, in 2020-2021 and 2023-2024, the ratio improved to 1.32 and 1.28, indicating better short-term financial stability. The year 2021-2022 saw a decline to 1.08, reflecting a moderate liquidity position. Overall, while the company's liquidity position has varied, it has shown improvement in recent years, highlighting a stronger ability to meet short-term obligations.

*3) Cash Ratio*

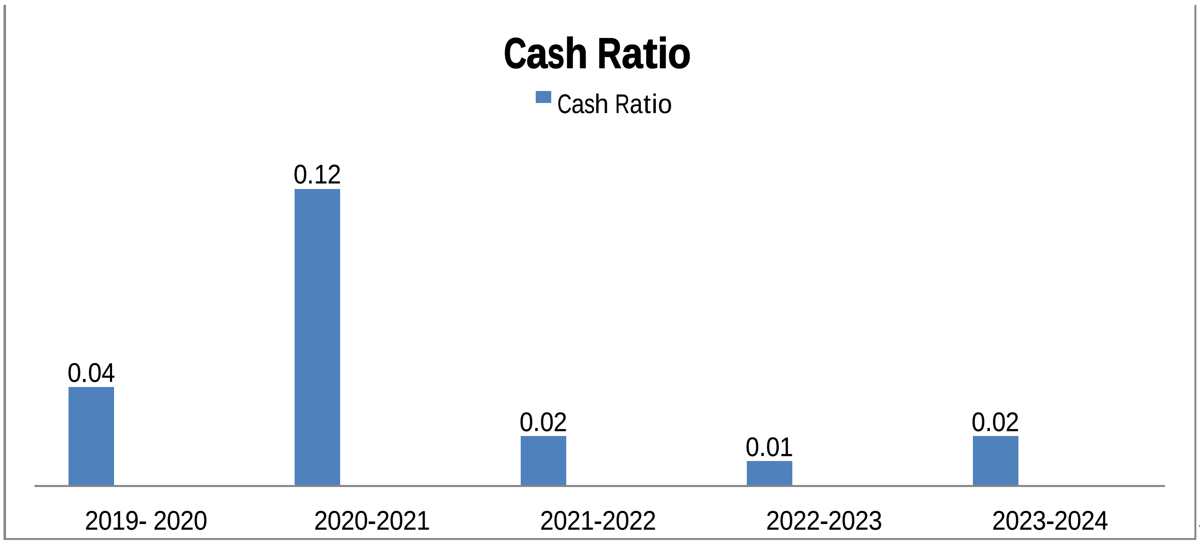
Cash ratio: Cash and Cash Equivalent/Current Liabilities (Rupees in crores)

Table.no. 3: Cash Ratio

| Year | Cash and cash equivalent | Current Liabilities | Cash Ratio |
|---|---|---|---|
| 2019- 2020 | 172.29 | 3950.08 | 0.04 |
| 2020-2021 | 471.47 | 3815.73 | 0.12 |
| 2021-2022 | 96.11 | 4324.42 | 0.02 |
| 2022-2023 | 86.60 | 5718.55 | 0.01 |
| 2023-2024 | 100.00 | 4934.41 | 0.02 |

Source of data: Company Annual Report 2019-20 to 2023-24

Chart.no. 3 Cash Ratio




Interpretation: The cash ratio of Precot limited indicates a weak liquidity position over the years, with values consistently below 0.12. The highest ratio of 0.12 in 2020-2021 suggests a relatively better cash reserve to cover short-term liabilities, but it declined sharply in subsequent years, reaching a low of 0.01 in 2022-2023. The ratio slightly improved to 0.02 in 2023-2024, but overall, the company has limited cash and cash equivalents to cover immediate liabilities. This suggests a reliance on other current assets or short-term financing to meet obligations, posing potential liquidity risks.

*B. Profitability Ratio*

*1) Gross Profit Ratio*

Gross profit ratio: Gross profit/Net sales*100 (Rupees in crores)

Table.no. 4Gross profit Ratio

| Year | Gross profit | Net sales | Gross profit Ratio |
|---|---|---|---|
| 2019- 2020 | 442.21 | 4933.73 | 8.96 |
| 2020-2021 | 206.22 | 6587.35 | 3.13 |
| 2021-2022 | 364.36 | 7699.47 | 4.73 |
| 2022-2023 | 231.16 | 9994.23 | 2.31 |
| 2023-2024 | 232.96 | 11088.78 | 2.1 |

Source of data: Company Annual Report 2019-20 to 2023-24

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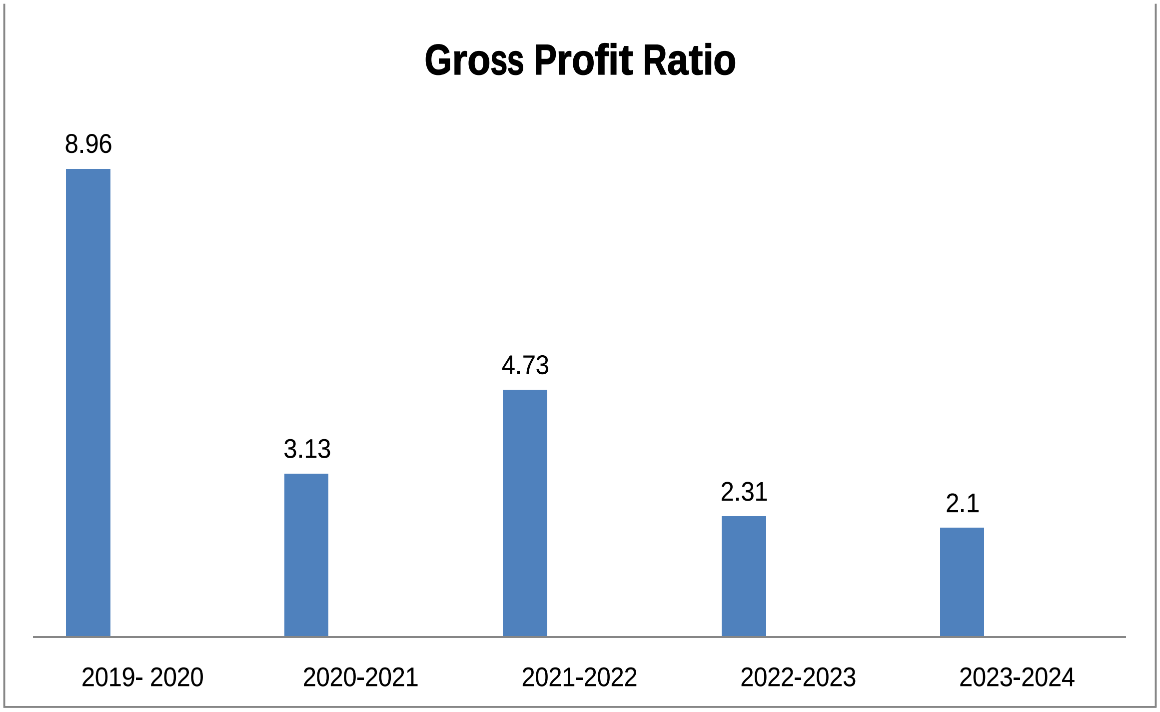
Chart.no. 4 Gross Profit Ratio




- Interpretation: The gross profit ratio of Precot limited has shown a declining trend over the years, indicating a reduction in profitability. In 2019-2020, the ratio was 8.96%, but it dropped significantly to 3.13% in 2020-2021. Although there was a slight recovery to 4.73% in 2021-2022, the ratio again declined to 2.31% in 2022-2023 and further to 2.1% in 2023-2024. This suggests rising production costs, increased competition, or pricing pressures, leading to lower profitability despite growing sales. The company may need to focus on cost control and operational efficiency to improve its profit margins.

*2) Operating Profit Ratio*

Operating profit ratio: Earnings before interest and tax/Net sales*100 (Rupees in crores)

Table.no. 5: Operating profit Ratio

| Year | Earnings before interest and tax | Net sales | Operating profit Ratio |
|---|---|---|---|
| 2019- 2020 | 76.71 | 4933.73 | 1.55 |
| 2020-2021 | 219.35 | 6587.35 | 3.32 |
| 2021-2022 | 208.62 | 7699.47 | 2.7 |
| 2022-2023 | 355.72 | 9994.23 | 3.55 |
| 2023-2024 | 555.61 | 11088.78 | 5.01 |

Source of data: Company Annual Report 2019-20 to 2023-24

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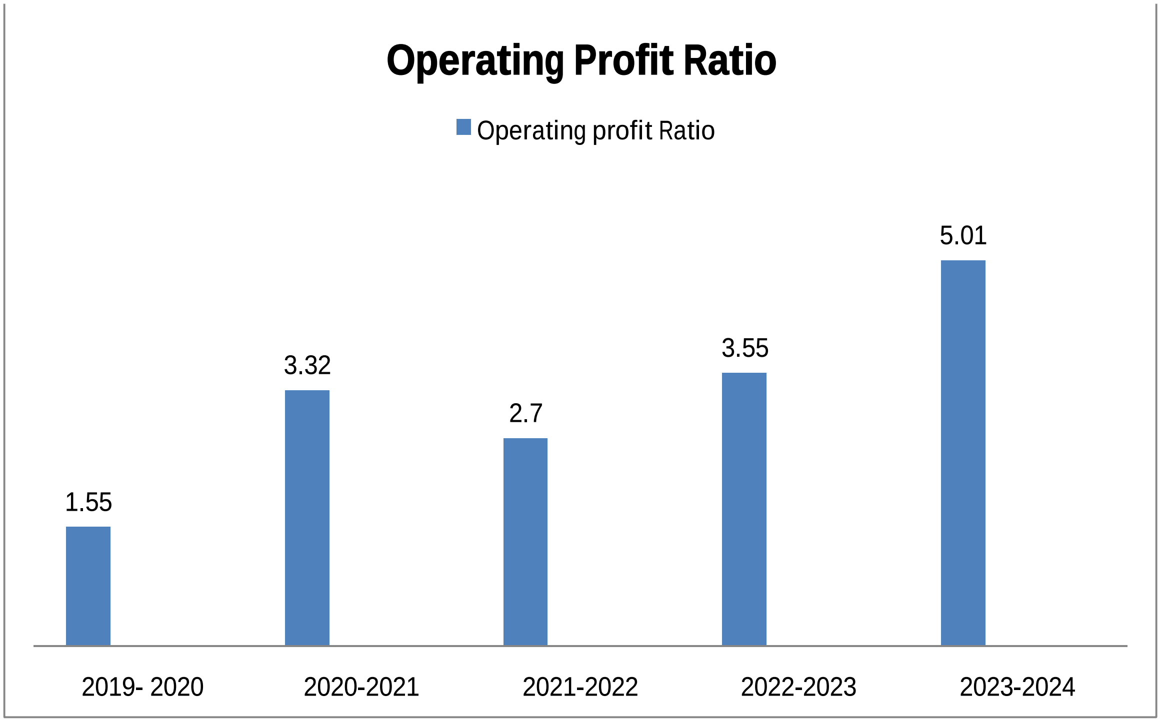
Chart.no. 5 Operating Profit Ratio




- Interpretation: The operating profit ratio of Precot limited has shown an improving trend over the years, indicating better operational efficiency. In 2019-2020, the ratio was at a low of 1.55%, but it increased to 3.32% in 2020-2021. Although there was a slight dip to 2.7% in 2021-2022, the ratio improved significantly to 3.55% in 2022-2023 and further to 5.01% in 2023-2024. This suggests that the company has been able to enhance its profitability through better cost management or increased operational efficiency despite fluctuating gross profit margins. The steady rise in operating profit indicates stronger business performance and financial stability.

*3) Netprofit Ratio*

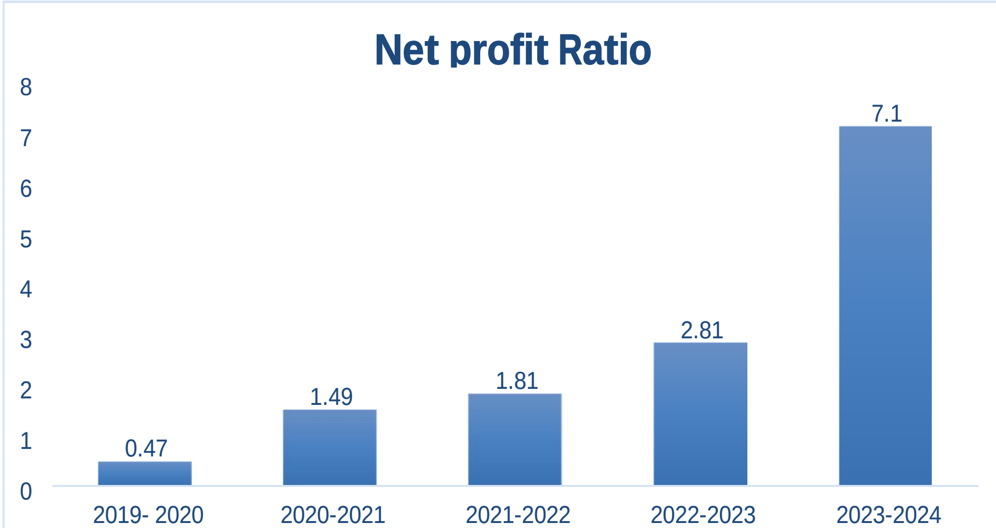
Net profit ratio: Net Profit / Total Revenue*100 (Rupees in crores)

Table.no. 6: Net profit Ratio

| Year | Net Profit | Total Revenue | Net profit Ratio |
|---|---|---|---|
| 2019- 2020 | 54.08 | 11321.74 | 0.47 |
| 2020-2021 | 152.39 | 10225.39 | 1.49 |
| 2021-2022 | 146.30 | 8063.83 | 1.81 |
| 2022-2023 | 191.17 | 6793.57 | 2.81 |
| 2023-2024 | 363.45 | 5116.81 | 7.10 |

Source of data: Company Annual Report 2019-20 to 2023-24

Chart.no. 6: Net Profit Ratio




- Interpretation: From 2019-2020 to 2023-2024, the Net Profit Ratio has shown a significant upward trend, rising from 0.47% to 7.10%. Despite a decline in total revenue, net profit has consistently increased, indicating better cost management and operational efficiency. The highest jump occurred in 2023-2024 (7.10%), suggesting a strong profitability boost. The data implies that the company has improved its profit margins over time, likely through enhanced efficiency, cost control, or higher-margin revenue streams.

TABLE SHOWING COMPARATIVE BALANCE SHEET ACCOUNT FOR 2019-20 &2020-21. (Rupees in crores)

| PARTICULARS | 21-Mar | 20-Mar | Change | Change % |
|---|---|---|---|---|
| EQUITY AND LIABILITIES | | | | |
| Shareholders' funds | | | | |
| Share capital | 1276.25 | 776.25 | 500 | 64.41 |
| Reserves and surplus | 1970.51 | 1818.12 | 152.39 | 8.38 |
| Non-current liabilities | | | 0 | |
| Long-term borrowings | 1159.22 | 288.84 | 870.38 | 301.33 |
| Long-term provisions | 67.57 | 55.75 | 11.82 | 21.2 |
| Current liabilities | | | 0 | |
| Short-term borrowings | 1279.50 | 2215.20 | -935.7 | -42.23 |
| -Dues to others | 1714.25 | 1350.34 | 363.91 | 26.94 |
| Other current liabilities | 741.22 | 367.03 | 374.19 | 101.95 |
| Short-term provisions | 80.76 | 17.51 | 63.25 | 361.22 |
| Total equity and shareholder's funds | 8289.29 | 6889.08 | 1400.21 | 20.32 |
| ASSETS | | | 0 | |

| | | | | |
|---|---|---|---|---|
| Fixed assets | | | 0 | |
| -Property, Plant & Equipment | 1982.30 | 1824.90 | 157.4 | 8.62 |
| -Intangible assets | 6.86 | 6.65 | 0.21 | 3.15 |
| Deferred tax asset | 67.73 | 58.20 | 9.53 | 16.37 |
| Noncurrent investments | 1065.92 | 1065.92 | 0 | 0 |
| Long term loans and advances | 122.06 | 142.74 | -20.68 | -14.48 |
| Other current assets | 14.43 | - | | |
| CURRENT ASSETS | | | | |
| Inventories | 1622.48 | 1577.29 | 45.19 | 2.86 |
| Trade Receivables | 2378.79 | 1580.24 | 798.55 | 50.53 |
| Cash and cash equivalents | 471.47 | 172.29 | 299.18 | 173.64 |
| Short-term loans and advances | 555.53 | 448.90 | 106.63 | 23.75 |
| Other current assets | 16.08 | 11.91 | 4.17 | 35.01 |
| Total Assets | 8289.29 | 6889.08 | 1400.21 | 20.32 |

The Comparative Balance Sheet Analysis for March 2021 vs. March 2020 reflects significant financial growth and structural improvements at Sankar Sealings and Systems. Shareholders' funds increased by 20.32%, driven by a 64.41% rise in share capital and an 8.38% increase in reserves and surplus, indicating strengthened equity. Long-term borrowings surged by 301.33%, suggesting increased investment in long-term assets, while short-term borrowings declined by 42.23%, improving liquidity. Notably, trade payables and other current liabilities rose by 26.94% and 101.95%, respectively, indicating expanded operations. On the assets side, fixed assets grew by 8.62%, reflecting capital investment, while trade receivables increased by 50.53%, aligning with higher sales. Cash and cash equivalents surged by 173.64%, improving liquidity. The rise in short-term loans and advances (23.75%) and other current assets (35.01%) suggests better financial flexibility. Overall, the company's total assets and equity base expanded by 20.32%, showcasing growth, financial stability, and improved liquidity management.

## V. FINDINGS

1) Net profit margin improved over five years, reflecting better cost control and increased earnings
2) Fixed assets maintained a significant portion of total assets, showing long-term investments in infrastructure.
3) Revenue from operations increased consistently, peaking at ₹11,088.78 crores in 202324, showing strong business expansion.
4) Raw material costs increased significantly but at a slower rate compared to revenue, indicating better cost efficiency.
5) Net profit increased significantly (₹191.17 crores in 2022-23 to ₹363.45 crores in 202324), indicating enhanced profitability.
6) The company's total assets and equity base expanded by 20.32%, during the year 2020 – 2021 showcasing growth, financial stability, and improved liquidity management.
7) The company exhibited stable growth, though the decline in fixed assets and cash reserves during the year 2021 - 2022 warrants careful monitoring.
8) The company's growing reserves and cash position are positive signs during the year 2023 - 2024, but higher borrowings must be managed carefully to avoid financial strain. Effective working capital management will be essential to sustain growth and improve financial stability.

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## VI. SUGGESTIONS

The company should focus on maintaining a stable current ratio above 1.2 to ensure it can meet short-term obligations without strain. Managing short-term borrowings efficiently and optimizing cash reserves will help sustain liquidity. With a low cash ratio, the company faces liquidity risks. It should work on improving cash flow by accelerating receivables collection and optimizing operational costs to build a stronger cash reserve. The high debt-to-equity ratio (8.76 in 2023-2024) indicates high financial leverage. The company should consider reducing dependency on debt by improving retained earnings and exploring alternative financing options like equity infusion. The fixed asset turnover ratio has fluctuated, reflecting inconsistent asset utilization. Optimizing asset usage and investing in technology-driven operational efficiencies will enhance productivity and returns on fixed investments.

## VII. CONCLUSION

The profitability and liquidity analysis of Precot Limited over the years 2019-20 to 2023-24 indicates steady revenue growth, improved profitability, and better operational efficiency. The fixed asset turnover and inventory turnover ratios show effective asset utilization and inventory management, though further optimization is possible. Trend and comparative analyses highlight significant growth in net profit, largely driven by increased revenues and controlled expenses. The common-size analysis reflects a stable financial structure, with a focus on maintaining shareholder value and managing liabilities efficiently. However, areas like receivables management, cost control, and digital transformation need attention to sustain long-term profitability and competitiveness. By implementing strategic improvements, the company can further enhance its financial health and market position. By addressing these areas, the company can ensure continued growth and financial stability in the coming years.

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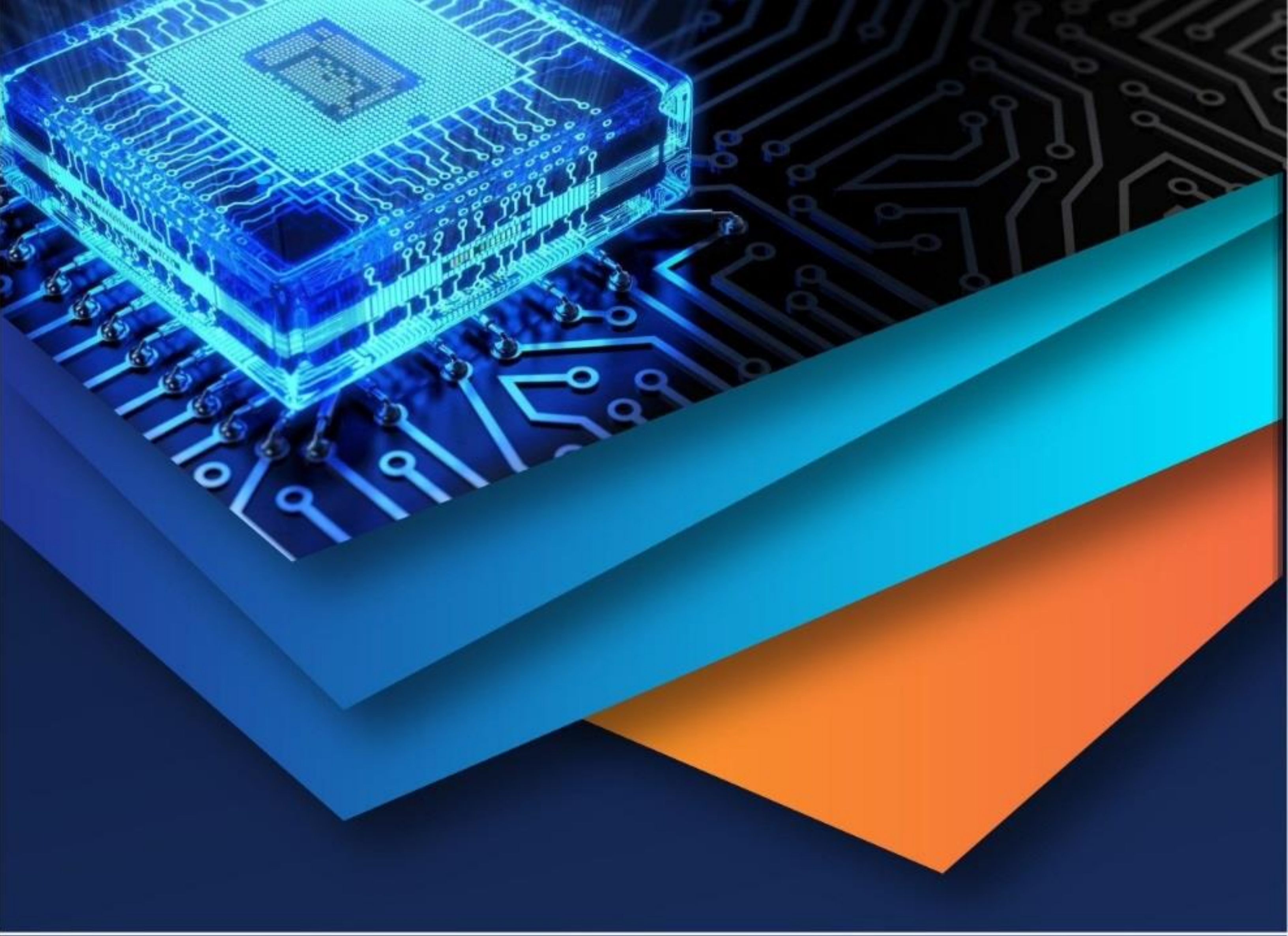


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