

A Study on Optimizing Working Capital Management in Industries

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Abstract - This study examines the working capital management practices at industry where an auto component supplier specializing in window regulators, seating components, and restraint systems for car manufacturers. Working capital management, a crucial aspect of financial management, involves managing short-term assets and liabilities to ensure liquidity and operational efficiency. This study emphasizes the significance of balancing risk and return to maintain liquidity and meet financial obligations in a dynamic business environment. The study investigates the impact of working capital management on profitability, requiring an in-depth understanding of business operations and the application of effective financial tools and techniques. Key findings indicate that the company's working capital has improved over the five-year period from 2019 to 2024, suggesting a move towards a more satisfactory financial position. Recommendations include aligning current liabilities with current assets, extending the average collection period, adopting a more liberal credit policy, and maintaining a minimal cash balance to avoid idle funds.

Key Words: Working Capital Management, Liquidity, Profitability, Financial Efficiency

1.INTRODUCTION (Size 11 , cambria font)

The automotive industry has revolutionized how people live and work. The first modern car appeared in 1895, and shortly after, the first cars were shipped to India. By the turn of the century, Mumbai had three cars, and within ten years, the number had risen to 1,025. This marks the beginning of car history in India, focusing on the production and modernization phases of automobiles.

The origins of vehicle use in India trace back 4,000 years with the first use of the wheel for transport. The arrival of the Portuguese in China in the mid-15th century led to significant innovations, including self-propelled wheels. Early steam-driven engine models appeared in the 1600s, but it wasn't until 1893 that the first horseless carriage was developed by Charles and Frank Duryea in America. This vehicle marked the debut of America's first internal combustion engine car, followed by Henry Ford's first experimental vehicle in the same year.

From 2019 to 2024, India's automotive industry has seen significant growth, ranking as the fourth largest market with 3.99 million units sold in 2018 and being the seventh-largest commercial vehicle producer. The market is dominated by the two-wheeler segment, driven by a growing

young and middle-class population, and automobile companies are increasingly exploring rural markets. Exports grew by 14.50% in 2019 and are expected to continue at a CAGR of 3.05% from 2016 to 2026. BMW recorded an 11% sales growth in 2018. The industry attracted US\$ 22.35 billion in FDI from April 2000 to June 2019, supported by 100% FDI through the automatic route. Government initiatives include a 1.5 lakh tax deduction on EV loan interest, the FAME-2 scheme with a Rs10000 crore allocation for 2020-2022, and skipping BS-5 emission norms to implement BS-6 by 2020. The sector benefits from low-cost skilled labor, affordable steel production, and robust R&D centers, with expectations to reach 16.16-18.18 trillion by 2026.

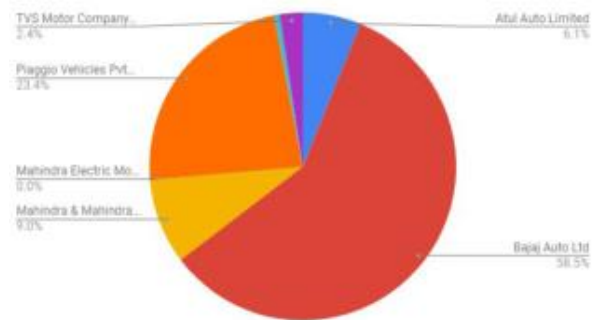


Fig. 1. Complete Indian auto sales in 2023

The automotive industry accounts for 7.5% of India's GDP and an overwhelming 49% of manufacturing GDP with a major impact on the economic multiplier. In the manufacturing and service sector, the automotive industry employs 8 million people directly, including dealers. As we have seen in the above table the sales of all the vehicles as been reduced only the exports are being increased.

1.1 SWOT Analysis

INDUSTRIES, an ISO 9001:2008 certified company. They are one of the leading companies dealing the projection/spot welding, press components and plating of automobile parts. They are specialized in the field of automobiles parts. They take at most care for quality, quantity and timely delivery.

- a. STRENGTHS OF AUTO COMPONENT INDUSTRY
 1. Market Leaders in Automotive Products
 2. Technical & Experienced Manpower
 3. ISO 9001:2008 certified company

4. Improvised Infrastructure
5. Efficient Communication between the employees
6. Automated & Higher sophisticated machines
7. Capacity to meet higher customer demand
8. Environmentally free from pollution
9. Excellent Progress in its profits in comparison with previous year
10. Obsessed with quality
11. Quality control is prevalent.

b. WEAKNESS OF AUTO COMPONENT INDUSTRY

1. Employee's have to be motivated
2. Coordination between the Top Management and the second level management can be efficiently managed.
4. Doesn't have a separate R & D this is very essential for facing the
5. company, competition and achieving the objectives.
6. Customer expectations are increasing and difficult to satisfy their
7. requirements
8. Cost involvement in completing the project is high

c. OPPORTUNITIES OF AUTO COMPONENT INDUSTRY

1. Market share expansion, Product Diversification need to be under taken
2. Company has future expansion program
3. Capacity to meet higher demand and meet opportunities

d. THREATS OF AUTO COMPONENT INDUSTRY

1. Increasing bargaining powers and demand of the labourers
2. Many other firms have entered the industry which may eventually eat
3. away the company prospects
4. Lack of awareness of varied products of

2. LITRATURE REVIEW

Eljelly (2004): Identified the profitability-liquidity relationship, as measured by the present sample ratio and cash gap in a very Asian country business. The study found that the cash conversion period was more important than the present ratio which affects profitability as a measure of liquidity. the scale variable has been shown to possess a considerable effect on the productivity at the industry level. The findings were stable at various Saudi companies with significant liquidity management consequences. First, it had been clear that the analysed Saudi sample had a negative relationship between indicators of profitability and liquidity like current ratio and cash gap.

Lazaridis and Tryfonidis(2006): On the Athens securities market it examined the connection between corporate profitability and WCM. The results indicate a negative relationship between indices of productivity and dealing capital, like receivables, debt and cash conversion cycles. They concluded that the business would generate income by managing effectively every portion of the cash conversion process

Arindam Ghosh (2007): A unique area of research on the cement industry in India is "Working Capital Management," and its rent ability process and impact. The principal purpose of this research is to assess the efficiency of capital management of selected cement companies in India during the amount 1992 to 2001. it's targeted for this study that 20 major cement companies in India have a awfully large share of Indian cement industry

Samilogh F and Demirgunes K(2008): The aim of this research is to appear into the company's welfare. Production companies listed on the study period Istanbul exchange (ISE) were from 1989 to 2007. A statistical approach of multivariate analysis was employed for the analysis.

Viranivarsha(2008): This is a study allotted within the CADILA COMPANY. The study is to look at financial performance and therefore the second is to look at the profitability trend and, lastly, to spot the assets operating model and evaluate the liquidity position of the firm. Two elegant analytical methods were wont to achieve those targets.

Kushwah, Mathur & ball(2009): Five big cement firms in. ACC, Ambuja, Grasim, Prism, and Ultra-Tech. Primary data was used for research purposes as data obtained from the authors from 2007 to 2009

Baig Viqar Ali(2009): This study aims to disclose survey results from selected agribusiness companies from diary cooperatives, MNC, private diary companies as part of a research thesis completed in July 2008 on working capital management practices. Furthermore, attempts were made to recognize the impact of ownership, government legislation, managerial control and cultural factors.

Rao and Rao & Ramchandra(2010): The aim of this study is to research parameters of assets patterns and effectiveness and their utilization in terms of the quantity of companies within the cotton textile industry in India. they're the primary distinct index, output index, consumption index and quality index for the three parameters. we will say on the average that the efficiency of assets isn't very satisfactory despite having a PI rate.

Mohamad and Saad (2010): Using the Bloomberg database of 172 listed companies, randomly selected from Bursa Malaysia's main board for a five-year period from 2003 to 2007; applying correlation and multiple correlation analysis, they found a robust positive relationship between current assets and total assets with Tobin Q, ROA and ROI. They also sent us researchers findings and observations from different areas that they need performed within the same area for various countries and environments.

Sawata Chatterjee (2010): Focuses on the worth of smooth and glued assets in effectively operating an enterprise. It's a robust effect on liquidity for profitability. In industry, there's a trend observed that almost all businesses are rising profit and loss margins as this behavior decreases the dimensions of capital relative to revenue.

Rahman Mohammad M.(2011): The researchers are focused on the connection between working and profitability money. To gauge the success of selected textile companies within the management of assets. The conclusion from this study found that overall good management of some textile companies and so most businesses have the benefit of effective assets management

Dr KaddumiThair. A and Dr Ramadan Imad. Z (2011): The evaluation was conducted in 49 Jordanian companies listed on the Amman securities market, which discussed topics just like the effect of capital management on profitability in companies targeted for the amount 2005 to 2009. With the support of two separate companies, the aim may be achieved. Phase one for productivity and therefore the other for achievement within the management of capital, namely proxies and five proxies, are completely utilized for his or her respective purposes.

Dr Arbab Ahmed and Dr Matarneh Bashar(2012): Researchers bring with registration a method that's a awfully powerful statistical tool for predicting capital within the field of capital management, which allows projections to be made after average relationship has been started within the past. Used for the needs of various components and for final testing.

Dr Panigrahi Ashok Kumar(2012): Relationship between capital management and profitability ACC Cement Company, the leading cement producer within the country for determining the impact of capital management on profitability 1999- 2000 to 2009-2010. This survey is predicated on secondary data.

Ray Sarbapriya(2012): In manufacturing firms the connection between liquidity and productivity is studied. Over a period of 14 years, the author sampled 311 manufacturing firms and analyzed the impact of various variables. This study reveals a transparent bad relationship between the dimensions of assets and profitability of companies.

Joshi Lalitkumar and Ghosh Sudipta(2012): The research was conducted during 2004-05 through 2008-09 at Cipla Ltd. Financial ratios were applied to calculate the efficiency of capital, using statistical and econometric techniques. The chosen ratio showed satisfactory results, and a the liquidity and profitability were found to own a big negative relationship.

KaurHarsh. V and Singh Sukhdev(2013): Focusing on cash conversion quality, and defining the operating cycle. This study examines the link between capital acquisition and productivity that's calculated supported current asset income and average total asset income. They allotted studies with companies registered at BSE 200, cover 19 industries for the amount from 2000 to 2010.

Joseph Jisha(2014): Examines the work capital review performed at Ashok Leyland closely and shows that the company's liquidity and profitability status is unsatisfactory and desires improvement to satisfy its obligations in due course.

Madhavi. K(2014): Do an empirical study of the connection between province 's liquidity situation and mill output. Inefficient management of assets has been observed to harm the profitability and liquidity status of paper mills.

Gurumurthy. N and Reddy Jaychandra. K(2014): Four pharmaceutical companies APSPDCL, APEPDCL, APNPDCL and APDPDCL conducted a report on assets management and concluded that this assets management framework isn't in line with the expectations and desires to be changed.

3. PROBLEM STATEMENT

Finance is often called as the lifeline of the business. Here also, working capital is much more crucial than long term assets or liabilities and occupies large part of day to day life of the manager. That being the case the problem for this project work would be stated in generalized fashion as a follows: "This project tries to analyze present sources of working capital for the company, investment patterns, financial growth of NWC and its reasonableness with growth of sales and how to improve capital management policies of the company".

3.1 NEED FOR STUDY

Working capital requirements cannot over emphasize. Each enterprise requires assets. The requirement exists thanks to the time gap between producing and generating cash from sales. The selling and realization of money is involved in an operational process. There's a suspension between sales and cash realisation. For the subsequent purposes work capital is required.

1. For raw materials, components and spare parts purchases.
2. Paying salaries and bonuses.
3. To incur regular and overhead expenses namely diesel, electricity and office expenses etc.
4. Business to satisfy the sales costs as packaging etc.
5. To provide Consumers with credit facilities.
6. Research in progress to keep inventories of raw materials, shops and spare parts and finished stocks.

Thus the management of capital is a crucial feature of any company.

3.2 OBJECTIVE OF THE STUDY

1. Maintain job capital at a appropriate amount
2. Availability of large amounts of funds when required.
3. The firm's position on liquidity.

The enterprise's output in working capital, whether it is rising or declining

4. DATA ANALYSIS AND INTREPRETATION

4.1. NET WORKING CAPITAL FOR 5 YEARS

TABLE-1: Table showing net working capital

Year	Current assets	Current liabilities	Working Capital	% of working capital
2019-20	1944.086	1006.817	937.269	100
2020-21	2114.957	1062.829	1052.128	112.25
2021-22	3057.047	1431.952	1625.095	173.38
2022-23	3520.231	1188.112	2332.119	248.83
2023-24	4095.737	1744.608	2351.129	250.84

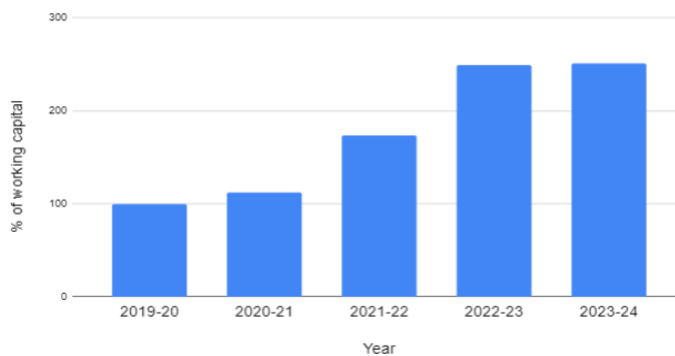


Fig 2: % of working capital vs. Year

Interpretation:

The above table and graph shows that Net Working Capital for the years 2019- 2024 are 100, 112.25, 173.38, 248.82 and 250.84 respectively. This shows that there has been a proportionate increase in working capital. By this we can interpret that the working capital is moving towards satisfactory position.

4.2. CURRENT RATIO:

TABLE-2: Table showing current ratio

Year	Current assets	Current liabilities	Current ratio
2019-20	1944.086	1006.817	1.93
2020-21	2114.957	1062.829	1.99
2021-22	3057.047	1431.952	2.13
2022-23	3520.231	1188.112	2.96
2023-24	4095.737	1744.608	2.35

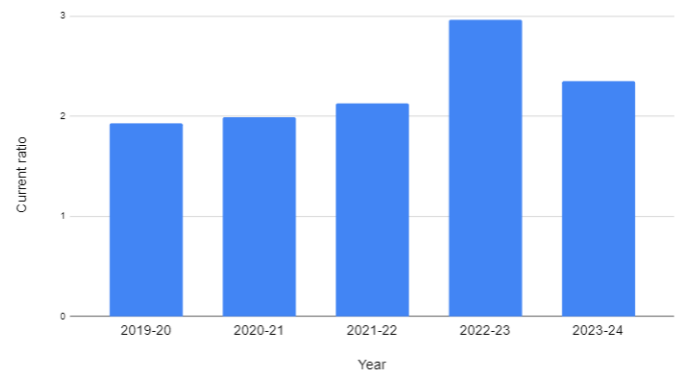


Fig 3: Current ratio vs. Year

Interpretation:

The above table and graph shows that current ratio for the years 2019-2024 are 1.9, 1.99, 2.13, 2.96 and 2.35 respectively. This shows that there has been a proportionate increase in the current assets over current liability. By this we can interpret that the current ratio is moving towards satisfactory position.

4.3. LIQUID RATIO OR QUICK RATIO OR ACID TEST RATIO

TABLE-3: Table showing Quick Ratio

Year	Liquid assets	Current liabilities	Liquid ratio
2019-20	100.135	1006.817	0.10
2020-21	59.968	1062.829	0.06
2021-22	226.094	1431.952	0.16
2022-23	308.984	1188.112	0.26
2023-24	54.175	1744.608	0.03

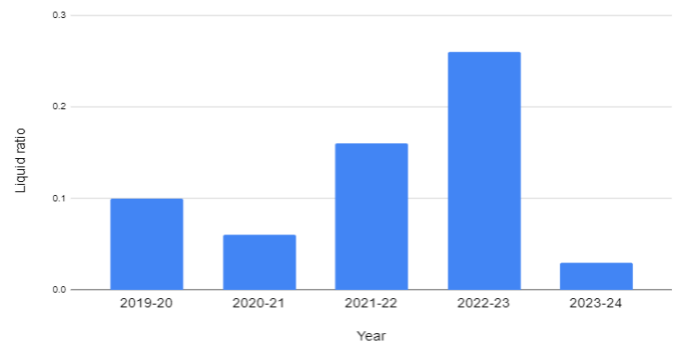


Fig 4: Liquid ratio vs. Year

Interpretation:

The above table and graph shows that liquid ratio for the years 2019-24 are 0.10, 0.06, 0.16, 0.26 and 0.03 respectively. This shows that there has been a proportionate increase in the liquid liabilities excluding 2024. By this we can interpret that the liquid liabilities excluding 2018. By this we can interpret that the liquid ratio is partly moving towards Satisfactory position. Generally it is a non satisfactory position.

4.4. INVENTORY TO WORKING CAPITAL RATIO

TABLE-4: Table showing Inventory to Working Capital Ratio

Year	Inventory	Working capital	Inventory to Working Capital Ratio
2019-20	570.445	937.629	0.61
2020-21	764.126	1052.128	0.73
2021-22	779.532	1625.095	0.48
2022-23	913.686	2332.119	0.39
2023-24	1737.209	2351.129	0.74

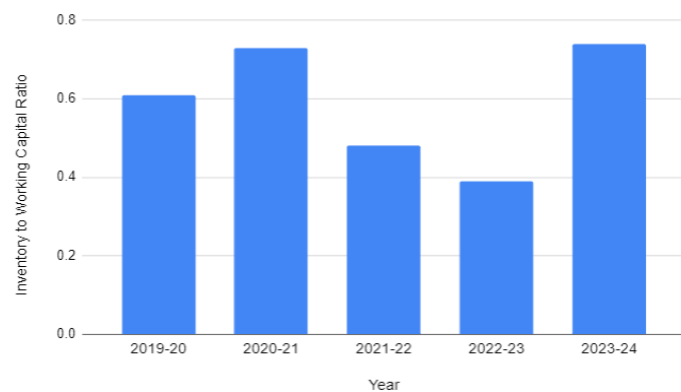


Fig 5: Inventory to Working Capital Ratio vs. Year

Interpretation:

The above table and graph shows the ratio of inventory over working capital for the year 2019-2024. They are 0.61, 0.73, 0.48, 0.39 and 0.74 respectively. This shows that the company's inventory has been gradually increased from 2019-2024. By this we can interpret that the inventory to working capital ratio is in a better position.

4.5. CASH TURN OVER RATIO

TABLE-5: Table showing cash turnover ratio

Year	Net annual sales	Cash	Cash turnover ratio
2019-20	3757.554	100.135	37.52
2020-21	4489.682	59.968	74.87
2021-22	4816.882	226.094	21.30
2022-23	5833.831	308.984	18.88
2023-24	6064.625	54.175	111.95

Interpretation:

From the table below and graph we can interpret that the cash resources of the enterprise are not effectively utilized because it is less than the standard or ideal cash turnover ratio i.e., less than 10%

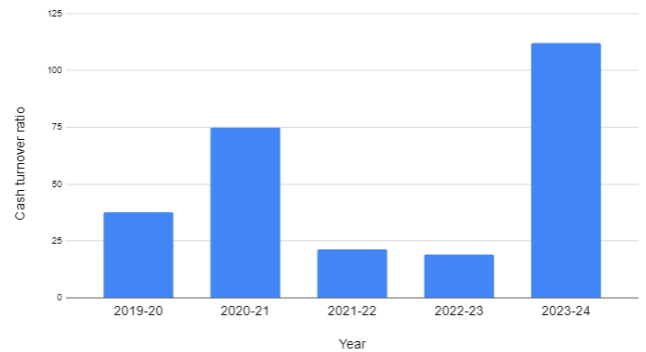


Fig 6: Cash turnover ratio vs. Year

4.6. WORKING CAPITAL TURNOVER RATIO:

TABLE-6: table showing working capital turnover ratio

Year	Net annual sales	Working Capital	Working capital turnover ratio
2019-20	3757.554	937.629	4.01
2020-21	4489.682	1052.128	4.27
2021-22	4816.882	1625.095	2.96
2022-23	5833.831	2332.19	2.50
2023-24	6064.625	2351.129	2.58

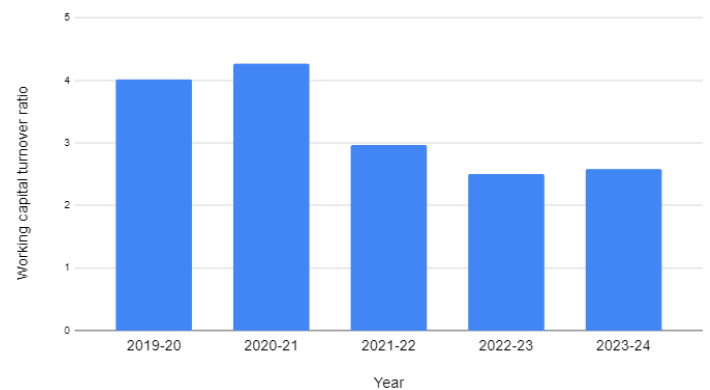


Fig 7: Working capital turnover ratio vs. Year

Interpretation:

The ratio indicates the efficient or inefficient utilization of the working capital of the company. Higher the ratio, lower the investment in working capital and the greater are the profit. Lower the ratio, it would be other way. From the above table and graph we can interpret that there is an inefficiency of the management in the utilization of working capital. Since there is a gradual decrease in the working capital turnover ratio of the company from 2019-2024 i.e., in from 4.01 to 2.58.

4.7. INVENTORY TURNOVER RATIO:

TABLE-7: Table showing Inventory turnover ratio

Year	Net annual sales	Average stock	Inventory turnover ratio
2019-20	3757.554	570.445	6.59
2020-21	4489.682	764.126	5.88
2021-22	4816.882	779.532	6.18
2022-23	5833.831	913.686	6.38
2023-24	6064.625	1737.209	3.49

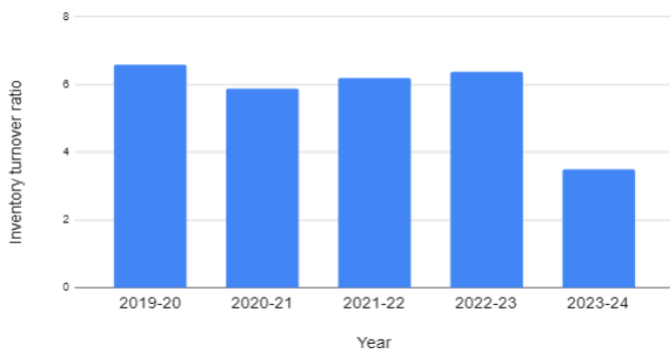


Fig 8: Inventory turnover ratio vs. Year

Interpretation:

From the above table and graph we can analyzes that the inventory turnover ratio is very less compared to that of previous years. By this we can interpret that the company’s sales from its stock is very less which indicates a non-satisfactory position.

4.8. DEBTORS TURNOVER RATIO:

TABLE-8: Table showing Debtors turnover ratio

Year	Sales	Debtors	Debtors turnover ratio
2019-20	3757.554	696.267	5.40
2020-21	4489.682	697.151	6.44
2021-22	4816.882	1185.112	4.06
2022-23	5833.831	1217.135	4.79
2023-24	6064.625	1549.709	3.91

Interpretation:

From the above table and graph we can interpret that the debts utilized by the company because the number of times the debt has been collected by the company in decreasing i.e. in 2019 it was 5.40 times and goes on decreasing to 6.44, 4.06, 4.79 where in 2021 it was only 3.91 times.

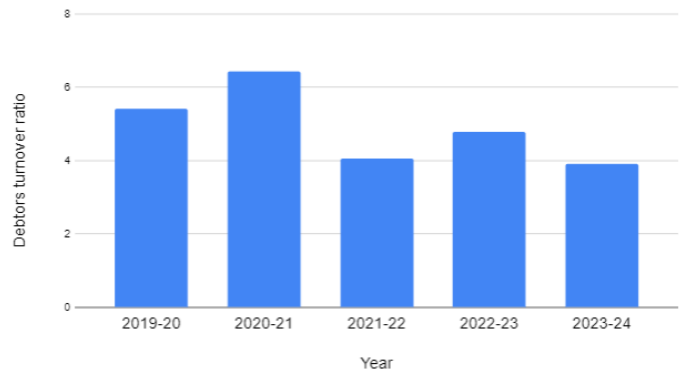


Fig 9: Debtors turnover ratio vs. Year

Interpretation:

From the above table and graph we can interpret that the debts utilized by the company because the number of times the debt has been collected by the company in decreasing i.e. in 2019 it was 5.40 times and goes on decreasing to 6.44, 4.06, 4.79 where in 2021 it was only 3.91 times.

4.9. AVERAGE DEBTORS COLLECTION PERIOD

TABLE -9: table showing Average debtors collection period

Year	No of days in a year	Debtors turnover ratio	Average Debtors Collection Period
2019-20	365	696.267	0.52
2020-21	365	697.151	0.52
2021-22	365	1185.112	0.31
2022-23	365	1217.135	0.30
2023-24	365	1549.709	0.24

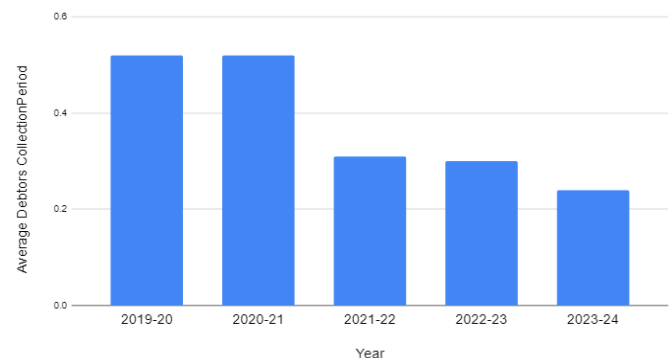


Fig 10: Average Debtors Collection Period vs. Year

Interpretation:

From the above table and graph we can interpret that the actual period of credit allowed by the company is decreasing i.e. during 2019 it was 0.52 which shown the highest period of credit allowed whereas during the year 2024 it is 0.24 i.e. there is an efficient credit collection period by the company.

4.10. CURRENT ASSET TURNOVER RATIO

TABLE-10: Table showing current asset turnover ratio

Year	Sales	Current asset	Current Asset turnover Ratio
2019-20	3757.554	1994.086	1.93
2020-21	4489.682	2114.957	2.12
2021-22	4816.882	3057.047	1.58
2022-23	5833.831	3520.231	1.66
2023-24	6064.625	4095.737	1.48

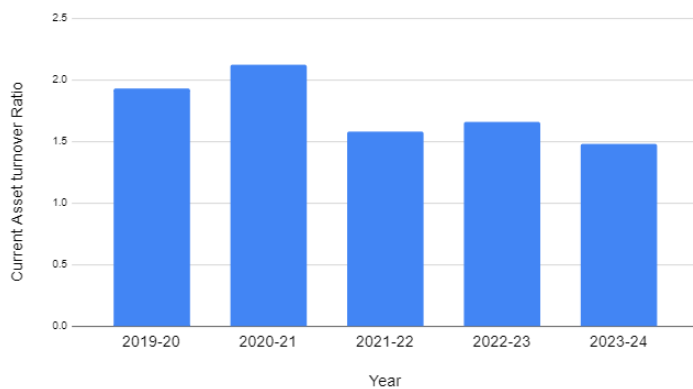


Fig 11: Current Asset turnover Ratio vs. Year

Interpretation:

This ratio demonstrates how current assets relate to the sales. There is no typical current asset turnover ratio an indicator of better current asset utilization. In comparison, a poor current turnover ratio of assets means the new assets have not been used effectively.

5. SUMMARY OF FINDINGS AND SUGGESTIONS

5.1. FINDINGS OF THE STUDY

Managing working capital is a crucial aspect of financial management. This study examines various working capital measurement ratios, such as the current ratio, quick ratio, and debtor's turnover, from 2019-2020 to 2023-24. The key findings are summarized below:

- The net working capital has proportionately increased from 100 to 250.84.
- The current ratio shows a proportional increase in current assets over current liabilities, with values of 1.93, 1.99, 2.13, 2.96, and 2.35.
- The company's inventory has been increasing annually, leading to a gradual rise in working capital from 2019-2024, indicating a better inventory to working capital ratio.

- There is a gradual decrease in the working capital turnover ratio, from 4.01 to 2.58.
- The inventory turnover ratio was most effective in 2019 at 6.59, compared to 3.49 in 2024.
- The company's debt collection efficiency has declined, with the debt collection rate dropping from 5.4 times in 2019 to 3.91 times in 2024.
- The percentage of cash utilized within current assets has decreased significantly from 0.05 to 0.01.

These findings highlight the need for improved management of working capital components to enhance overall financial efficiency.

5.2. SUGGESTIONS

The study aims to analyze the working capital needs of an Auto component industry from 2019-20 to 2023-24, focusing on current ratio, quick ratio, debtors turnover, inventory turnover, and working capital turnover. The key findings and recommendations are as follows:

- Avoid unnecessary liabilities to achieve a current ratio of 2:1, ensuring the ratio is equal to or greater than the ideal standard.
- Maintain current liabilities at a level equal to current assets.
- Improve inventory management by frequently calculating stock quantities for major materials and placing orders accordingly to avoid unnecessary fund blockage in inventory.
- Pay more attention to the average collection period and adopt a strict credit policy to enhance debt recovery.
- Take steps to efficiently recover debts.
- Minimize cash balances to avoid idle funds.
- Exercise proper control at all operational levels to significantly reduce costs.

The marketing department should undertake promotional activities to increase turnover, which will help reduce the investment in finished stock, a component of inventory

5. CONCLUSIONS

Business working capital reflects the use of short-term funds, essential for business operations, and helps in understanding how well a company manages its finances. Effective Working Capital Management significantly influences a company's profitability, liquidity, and structural health. The project study provides an overall view of the working capital management operations at Auto component industry. It reveals the current asset financing practices, utilizing accounting ratios to analyze the data, and offers specific insights into various areas of working capital management. The study includes an analysis of the working capital cycle, detailing the period of inventory for raw materials, the period of work in progress, and the storage period for finished goods. This comprehensive analysis

highlights the efficiency and effectiveness of Auto component industry ' working capital management.

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