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A STUDY ON WORKING CAPITAL MANAGEMENT WITH REFERENCE TO ALF ENGINEERING PVT LTD, CHERIVI

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ABSTRACT

This project focuses on analysis the working capital management practices of ALF Engineering Pvt. Ltd., a leading player in the automotive components manufacturing sector. Efficient working capital management is crucial for maintaining liquidity, optimizing operational efficiency, and ensuring financial stability. The study evaluates the company's management of key components such as inventory, accounts receivable, accounts payable, and cash. By using financial data, ratio analysis, and trend evaluation, the project identifies strengths and gaps in the company's current working capital strategy. Recommendations are provided to improve cash flow, reduce holding costs, and enhance overall financial performance, contributing to the sustainable growth of ALF Engineering Pvt. Ltd.

Keywords: Working Capital, Current Liabilities, Net Working Capital, Liquidity, Solvency.

INTRODUCTION

ALF Engineering Pvt. Ltd., established in 2006 and based in Nashik, Maharashtra, is a leading manufacturer of automotive chassis systems and hydroformed components. With 14 manufacturing facilities across India, the company serves major clients like Mahindra, Tata Motors, and Daimler. It specializes in advanced technologies such as hydroforming and hot stamping, producing over 1,700 frames daily. ALF is ISO-certified and known for its innovation and high-quality engineering solutions in the automotive sector. ALF Engineering Pvt. Ltd. plays a vital role in the Indian automotive and engineering sector by manufacturing high-quality precision components, especially for commercial vehicles and off-highway applications. With a strong focus on innovation, quality, and customer satisfaction, the company supports key industries like agriculture, construction, and transportation. Its contribution to local manufacturing and employment, along with adherence to global standards, makes ALF Engineering an important player in India's industrial growth

The automobile industry plays a vital role in the Indian economy, contributing about 7.1% to the national GDP and nearly 49% of the manufacturing GDP as of 2023. It is one of the largest employment generators, providing direct and indirect jobs to over 37 million people. India is the third-largest automobile market globally, with over 26.7 million vehicles sold in FY 2023, including over 4 million passenger vehicles. The sector attracted $35 billion in FDI between 2000 and 2023, showing its appeal to global investors. It has also spurred growth in

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allied sectors such as steel, rubber, glass, and electronics. Socially, it has enhanced mobility, enabling greater access to education, healthcare, and employment in rural and urban areas alike. The rise of electric vehicles (EVs), with sales crossing 1.5 million units in 2023, marks a shift toward sustainability. Moreover, the industry has driven infrastructure development, such as roads and logistics networks. Overall, the automobile sector is a key driver of economic growth, innovation, and societal transformation in India. Financial Management is that specialized function of general management, which is related to the procurement of finance and its effective utilization for the achievement of common goal of the organization. ALF Engineering Pvt. Ltd. is a reputed manufacturer of automotive components, serving major OEMs in India. The company specializes in products like chassis frames and fuel tanks, with a focus on quality and innovation. Efficient working capital management is vital to its operations, ensuring smooth production, timely deliveries, and financial stability.

LITERATURE REVIEW

Ahmed et al. (2024) This study investigates how corporate capital structure influences firm performance within the framework of innovation strategies in manufacturing firms. The authors find that leveraging innovation amplifies the positive impact of a well-balanced capital structure on performance. Their findings suggest that strategic innovation investments align effectively with optimized financing structures. The study contributes to capital structure literature by emphasizing innovation's mediating role. It also highlights potential implications for managers seeking long-term performance through financial strategy. This is particularly relevant in competitive and tech-driven manufacturing sectors.

Banerjee & Guha Deb (2024) This research analyzes the efficiency of working capital management and its interplay with managerial capability to determine firm performance. The authors use empirical data to demonstrate that both operational efficiency and managerial ability significantly enhance firm value. The study finds that firms with efficient WCM and skilled managers outperform others in profitability and asset utilization. It also identifies key performance metrics influenced by liquidity and inventory cycles. The insights guide practitioners in optimizing financial and human capital simultaneously. It fills a gap by connecting WCM with managerial effectiveness.

Gupta & Sharma (2023) The authors explore the persistent challenges of working capital management in engineering firms, focusing on cash conversion cycles and sustainability. They argue that delayed receivables and inventory inefficiencies hamper long-term financial health. Their analysis reveals that the sustainability of engineering businesses is directly tied to agile capital management strategies. The study suggests policy interventions and

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managerial reforms for smoother capital rotation. It contributes to understanding sector-specific financial obstacles. This is crucial for engineering firms facing fluctuating project timelines and cost structures.

Hasan et al. (2023) This paper delves into big data's role in banking operations, presenting opportunities and addressing data security concerns. The authors find that while big data improves decision-making, it simultaneously raises risks around privacy and infrastructure. The study emphasizes the importance of secure frameworks and compliance with regulatory norms. It also showcases successful case studies of data-driven banking transitions. This research is timely given the digital shift in global finance. It serves as a guide for balancing innovation and security in banking.

Iyer & Malhotra (2025) In this book chapter, the authors investigate diversity and inclusion practices in UAE family businesses, emphasizing cultural integration. The study highlights the complex dynamics of managing traditional values alongside modern diversity policies. Findings indicate that culturally diverse teams can enhance creativity and performance if managed well. The research underscores the role of leadership and training in bridging cultural gaps. It provides actionable strategies for inclusive business practices. This contributes to both HRM and cross-cultural management literature in family-owned enterprises.

Kumar et al. (2022) The authors examine profitability determinants in Indian infrastructure PPPs, revealing that project scale, contract type, and financial structure significantly affect outcomes. Empirical data shows that transparent governance and risk allocation are key drivers of profitability. Their analysis provides insights for investors and policymakers designing PPP frameworks. The study also highlights regulatory and financial barriers specific to the Indian context. It adds depth to PPP profitability literature by using a multi-variable econometric approach. These insights are valuable for improving public infrastructure through partnerships.

López (2023) This article discusses how sovereign wealth funds (SWFs) adapted during the COVID-19 crisis and redefined their investment strategies. The author finds that SWFs shifted toward more resilient, long-term assets and increased focus on sustainability. The pandemic served as a catalyst for strategic realignment and risk diversification. López also highlights structural changes in governance and asset allocation. The paper contributes to the evolving role of SWFs in global finance. It captures a turning point in institutional investment philosophy post-crisis.

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Singh et al. (2023) The study investigates how dividend policy evolves across different stages of a firm's life cycle in Indian companies. Results indicate a clear pattern, where firms in maturity stages are more likely to pay dividends than those in growth or decline phases. The research uses life cycle theory to contextualize financial decision-making. It adds to dividend policy literature by linking corporate evolution with payout behavior. Managers can use these insights to align dividend strategies with business maturity. It has implications for investors assessing firm stability.Thomas (2002) This classic study questions whether lumpy investment behavior is relevant to business cycle dynamics. Using firm-level data, Thomas finds that infrequent, large capital investments significantly influence macroeconomic fluctuations. The paper emphasizes the role of adjustment costs and capital indivisibility. It challenges traditional smooth investment models in economic theory. This work has been foundational in connecting microeconomic behavior to broader economic cycles. It remains influential in modern macroeconomic modeling.

Gupta et al. (2025) The authors explore the use of machine learning models in autonomous finance, focusing on applications in risk management, credit assessment, and investment. The chapter provides a review of current AI techniques being integrated into financial decision systems. It emphasizes accuracy, speed, and adaptability as key benefits of machine learning. The study also discusses ethical and regulatory considerations in deploying autonomous tools. This contributes to literature on fintech and digital finance. It reflects ongoing shifts toward automation in financial services.

METHODOLOGY

Every business needs some amount of working capital. The needs for working capital, arises due to time gap between production and realization of cash from sales. There is an operating cycle involved in sales and realization of cash. There are time gaps in purchases of raw material and production, and sales, and realization of cash.

This study focuses on evaluating the working capital management practices at ALF Engineering Private. Ltd. It aims to analysis key components such as inventory management, accounts receivable, and accounts payable. The study covers a specific financial period to assess the impact of WCM on the company's liquidity and profitability, and suggests measures to improve efficiency.

OBJECTIVES OF THE STUDY

- To analyze the effectiveness of working capital Utilization.
- To study the current structure of working capital.

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- To study the sources of working capital finance. •
- To study the amount of working capital required in organization.

This study adopts a descriptive and analytical research design to evaluate the working capital management of ALF Engineering Pvt. Ltd. over the period 2019 to 2024. It is based on secondary data collected from the company's financial statements, annual reports, and relevant industry sources.

Key financial ratios related to

- liquidity
- efficiency
- profitability
- current ratio,
- inventory turnover
- cash conversion cycle

The study aims to identify trends, evaluate effectiveness, and provide recommendations for improvement.

Thus, project is based on secondary information collected from the annual reports of the company for 5 years, supported by various books and internet sites. The data collection was aimed at study of working capital management of the company.

As there are ratios to be calculated for knowing the working capital in the company

- Current ratio = current assets/ current liabilities
- Quick ratio = quick assets / quick liabilities
- Net working capital = net working capital / net assets
- Net assets turnover ratio = sales/net assets

ANALYSIS AND INTERPRETATION

Current Ratio

The Current Ratio establishes the relationship between Current Assets and Current Liabilities. The objective of computing this Ratio is to measure the ability of the firm. It indicates the availability of Current Assets in Rupees for every Rupee of Current Liability. The Satisfactory Current Ratio is 2:1. The Current Ratio is calculated by dividing Current Assets by Current liabilities. A Ratio of greater than one means that the firm has more Current assets than Current claims against them.

$$\text{Current ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

Table-1 presents the current ratio for the five-year period from 2019–2020 to 2023–2024, highlighting the company's short-term financial position. In 2019–2020, the current ratio stood at 2.34, indicating that the firm possessed more than twice the current assets needed to

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cover its short-term liabilities. A moderate improvement was observed in 2020–2021, with the ratio increasing to 2.82, reflecting a strengthened liquidity position. A significant surge occurred in 2021–2022, where the current ratio peaked at 8.06, suggesting a substantial accumulation of current assets relative to liabilities, possibly due to increased operational efficiency or a conservative approach to short-term obligations.

TABLE-1: Current Ratio

Years	Current Assets(A)	Current Liabilities(B)	A/B
2019-2020	2,674.80	1,140.39	2.34
2020-2021	3,415.67	1,212.64	2.82
2021-2022	12,891.89	1,598.81	8.06
2022-2023	14,684.23	3,464.16	4.24
2023-2024	24,906.58	5,749.21	4.33

Source Table: Secondary Data

The current ratio (A/B) indicates the company's ability to meet short-term obligations. It improved from 2.34 in 2019–2020 to 4.33 in 2023–2024, showing strong liquidity throughout. The spike to 8.06 in 2021–2022 suggests excess current assets, while the later years show better balance and efficient use of resources.

Quick Ratio

Quick Ratio also known as Acid Test Ratio or liquid Ratio is mare rigorous test of liquidity than the Current Ratio. This Ratio establishes a relationship between quick or Liquid Assets and Current Liabilities. An asset is liquid if it can be converted into cash immediately, reasonably soon without a loss of value. Cash is the most liquid and included in quick assets are book debts and marketable Securities.

$$\text{Quick Ratio} = \frac{\text{Quick Assets}}{\text{Current liabilities}}$$

TABLE-2: Quick Ratio

Years	Liquid Assets (A)	Current Liabilities(B)	A/B
2019-2020	1,230.45	1,140.39	1.08
2020-2021	1,238.84	1,212.64	1.02
2021-2022	10,239.17	1,598.81	6.40
2022-2023	11,842.68	3,463.16	3.42
2023-2024	13,170.48	5,749.21	2.29

Source Table: secondary Data

Generally, a Quick Ratio is of 1:1 is considered to represent a Satisfactory Ratio. It is often referred to a Quick Ratio because it is a measurement of a firm’s ability to convert its Current

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assets quickly into cash in order to meet its Current liabilities. Current Liabilities find out the Quick Ratio but dividing Quick Assets. The A/B ratio represents the liquidity position of the company. A ratio above 1 indicates sufficient liquid assets to cover current liabilities. It peaked at 6.40 in 2021-2022, showing strong liquidity, but declined to 2.29 by 2023-2024, suggesting a decreasing but still healthy liquidity trend.

Cash Ratio

Cash ratio is the most stringent measure of liquidity. Cash is the mostly liquid asset. It is suggested that it would be useful for the Management if the liquidity measure also take into account reserve borrowing power. If the company carried a small amount of cash, there is nothing to be worried. This Cash Ratio is also called as Absolute Liquid Ratio.

$$\text{Liquid Ratio} = \frac{\text{Cash + Marketable Securities Absolute}}{\text{Current Liabilities}}$$

TABLE-3: Cash ratio

Years	Cash + marketable securities Absolute (A)	Current Liabilities(B)	A/B
2019-2020	842.62	1,140.39	0.73
2020-2021	912.45	1,212.64	0.75
2021-2022	10,072.44	1,598.81	6.3
2022-2023	11,571.13	3,463.16	3.34
2023-2024	6,466.35	5,749.21	1.12

Source Table: Secondary Data

The A/B ratio reflects the company's ability to pay current liabilities with its most liquid assets. It was below 1 in early years, indicating limited liquidity. A sharp increase to 6.3 in 2021-2022 shows strong liquidity, but the drop to 1.12 in 2023-2024 suggests declining, yet still sufficient, immediate liquidity.

TURNOVER RATIO

Inventory Turnover Ratio (ITOR) is also called stock turnover ratio. It is calculated ascertain the efficiency of inventory management in term of capital investment. It shows the relationship between the cost of goods sold and the amount of average inventory.

$$\textit{Inventory Turnover Ratio} = \frac{\text{Cost of Goods sold}}{\text{Average Inventory}}$$

Table -4: Inventory Turnover Ratio

Years	Cost of Goods Sold(A)	Average stock(B)	A/B
2019-2020	6,244.30	1,125.36	5.5
2020-2021	6,500.08	1,810.59	3.5
2021-2022	4,914.86	2,414.77	2.03
2022-2023	4,768	2,747.13	1.7
2023-2024	30,719.93	7,288.82	4.2

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Source Table: Secondary Data

The A/B ratio shows inventory turnover. It declined from 5.5 in 2019–2020 to 1.7 in 2022–2023, indicating slower stock movement, but improved to 4.2 in 2023–2024, showing better inventory efficiency.

ANALYSIS OF FINDINGS

The Statement of Changes in Working Capital for the Year 2019-2020 is showing that, the year 2017 was 1662.48. It has come down to 1534.61 in the year 2020. Net decrease in working capital is 128.07.

The Statement of Changes in Working Capital for the Year 2020-2021 is showing that, the year 2018 was Rs 1534.41 it has increased to Rs. 2203.03 in the year 2021. Net increase in working capital is 668.62.

The Statement of Changes in Working Capital for the Year 2021-2022 is showing that, the year 2019 was Rs 2203.03. It has increased to Rs 11.293.03. In the year 2022. Net increase in working capital is 9090.05.

The Statement of Changes in Working Capital for the Year 2022-2023 is showing that, the year 2020 was RS 11293.08. It has decreased to Rs 11220.07 in the year 2023. Net decrease in working capital is 73.01.

The Statement of Changes in Working Capital for the Year 2023-2024 is showing that, the year 2021 was Rs11220.07. It has increased to Rs 19.157.37. In the year 2024. Net increase in working capital is 7937.30.

RECOMMENDATIONS

To improve its working capital management, ALF Engineering Pvt. Ltd. should focus on optimizing its cash conversion cycle by tightening control over receivables and reducing the credit period offered to customers. Efficient inventory management techniques such as just-in-time (JIT) or demand forecasting can help reduce holding costs and improve turnover. The company should also renegotiate payable terms with suppliers to better align cash outflows with inflows. Implementing financial planning tools and modern ERP systems can enhance real-time tracking of working capital components, leading to better decision-making and improved liquidity.

To enhance the working capital management of AlF Engineering Pvt. Ltd., policymakers should consider targeted measures that address industry-specific financial challenges. Engineering firms often operate on long project cycles with delayed payments, which strains cash flows. Therefore, policies mandating stricter timelines for government and private sector payments can significantly reduce receivable delays. Access to low-cost, short-term credit should be improved through interest subsidies or collateral-free lending programs for established companies like AlF. Incentives for adopting digital financial tools such as automated inventory systems, real-time billing, and electronic fund management would further streamline working capital processes. Additionally, simplified tax procedures and GST refunds should be expedited to avoid locking up funds. Government-sponsored training

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in advanced financial planning and working capital optimization techniques can also empower the company's finance team. These combined efforts would enable AlF Engineering Pvt. Ltd. to manage its operational liquidity more efficiently, boost productivity, and support sustainable growth.

To foster industry development and strengthen its competitive position, AlF Engineering Pvt. Ltd. should adopt strategic improvements in its working capital management practices. First, the company must implement advanced inventory control systems such as Just-in-Time (JIT) and ABC analysis to reduce holding costs and improve cash flow efficiency. Investing in digital tools for real-time tracking of receivables and payables will enhance transparency and speed up collections. AlF should also renegotiate supplier contracts to secure more favorable credit terms while maintaining strong supplier relationships. Diversifying funding sources such as trade credit, invoice discounting, or short-term market instruments—can reduce dependency on traditional bank loans and improve liquidity. Internally, establishing strict credit policies and proactive customer follow-ups will help reduce days sales outstanding (DSO). Lastly, ongoing training for the finance and operations teams on modern working capital strategies will ensure alignment with industry best practices. These initiatives will not only optimize working capital but also position AlF Engineering Pvt. Ltd. for sustained industry growth and resilience.

To contribute meaningfully to scholarly research and industry knowledge, AlF Engineering Pvt. Ltd. should actively engage in documenting and publishing its experiences, challenges, and innovations in working capital management. The company can collaborate with academic institutions and financial research bodies to conduct case studies on its working capital strategies, such as optimizing the cash conversion cycle, managing inventory, and handling delayed receivables in project-based environments. AlF can encourage its finance and operations teams to participate in conferences, write journal articles, or contribute to white papers that explore the intersection of engineering operations and financial efficiency. Additionally, sharing data-driven insights on the impact of digital tools, credit policy reforms, or sector-specific financial challenges can enrich academic discourse. Establishing an in-house research cell or partnering with universities for internships and joint studies would further bridge the gap between industry practice and theory. These efforts will position AlF not only as a leader in engineering services but also as a thought leader in financial and operational excellence.

SCOPE FOR FURTHER STUDY

There is significant scope for further study in the area of working capital management at AlF Engineering Pvt. Ltd., especially given the dynamic nature of the engineering and manufacturing sector. Future research can delve into the impact of seasonal demand fluctuations on inventory and receivables, as well as the effectiveness of existing credit policies in managing customer defaults. A comparative analysis of working capital practices between AlF and other firms in similar industries can reveal best practices and areas for improvement. Moreover, exploring the role of digitalization—such as ERP systems and automation tools—in optimizing cash flow and reducing cycle times could provide valuable insights. Studies can also examine the relationship between working capital efficiency and long-term profitability or return on capital employed (ROCE). Furthermore, analyzing how

macroeconomic factors like inflation, interest rates, and supply chain disruptions affect short-term financing decisions can deepen the understanding of working capital resilience. These research directions can support data-driven decision-making and enhance both academic and practical knowledge in financial management at AlF.

LIMITATIONS

AlF Engineering Pvt. Ltd. faces several limitations in its working capital management that may hinder operational efficiency and financial performance. One major constraint is the delay in receivables due to long project cycles and extended credit periods offered to clients, which often results in cash flow mismatches. Additionally, limited automation and reliance on manual processes can lead to errors in tracking inventory and payables, causing inefficiencies in asset utilization. The company may also face challenges in negotiating favorable credit terms with suppliers, especially during periods of high raw material costs or market volatility. Furthermore, a lack of real-time financial analytics tools restricts the management's ability to make quick, data-driven decisions regarding short-term funding needs. Inadequate training and awareness among staff about modern working capital practices can also affect policy implementation. These limitations highlight the need for strategic investments in technology, policy reforms, and financial training to enhance working capital effectiveness.

CONCLUSION

It is concluded that maintenance of proper assets and liabilities is very importance for the business to run its operations. Ratio has been decreased drastically and it is not good for the performing the operations in the business. To maintain the proper working capital ratio in the organisation, it is concluded to follow and maintain the sufficient amount of current assets and the current liabilities over the time period and it is concluded that to follow the proper maintaining will give the proper ratio formats for the organisation.

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