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A Financial Analysis of Inventory Management and its Impact on Accounts Payable and Receivable at Velan Valves India Pvt. Ltd

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***Abstract*-- This study examines the financial implications of inventory management and its impact on accounts payable and receivable at Velan Valves India Pvt. Ltd. The research is based on secondary data collected over a five-year period from 2019–20 to 2023–24. Key inventory efficiency indicators such as inventory turnover ratio, inventory conversion period, and working capital trends were analysed using ratio analysis and trend analysis techniques. The findings reveal considerable fluctuations in inventory turnover, a rising inventory conversion period, and persistent liquidity pressures, indicating inefficiencies in inventory utilisation and cash flow management. Regression-based trend forecasting predicts a gradual decline in inventory volume but a continuous increase in inventory holding periods, signalling potential operational and financial risks. The study recommends the adoption of just-in-time inventory practices, agile procurement strategies, and improved coordination between procurement and sales functions to enhance liquidity, operational efficiency, and financial stability.**

Keywords-- Inventory Efficiency, Inventory Conversion Period, Working Capital, Cash Conversion Cycle, Liquidity Management.

I. Introduction

Inventory management plays a critical role in ensuring financial stability and operational efficiency within manufacturing organisations. Effective inventory control ensures optimal stock levels, prevents excessive capital blockage, supports smooth production flow, and enhances working capital efficiency. Poor inventory practices, on the other hand, result in overstocking or stock shortages, adversely affecting liquidity, supplier payments, and customer credit cycles.

From a financial perspective, inventory directly influences accounts payable and accounts receivable by determining payment cycles, cash flow availability, and the cash conversion cycle. Metrics such as inventory turnover ratio and inventory conversion period serve as key indicators of how efficiently inventory is utilised. With the growing adoption of technology and data-driven decision-making, inventory has evolved from a purely operational element into a strategic financial resource linking production, procurement, and sales.

For Velan Valves India Pvt. Ltd., a manufacturing firm operating in a competitive industrial environment, efficient inventory management is essential to ensure uninterrupted production, timely material availability, reduced holding costs, and improved financial performance. This study therefore analyses inventory management practices and their financial implications on accounts payable and receivable.

II. Review Of Literature

1. *Pathirawasam (2021)* examined inventory management practices in Sri Lankan manufacturing firms and found that shorter inventory conversion periods significantly improve return on assets and cash flow, although inventory turnover alone showed limited impact.
2. *Harshitha (2016)* analysed inventory control practices using ratio analysis and trend techniques, concluding that effective inventory management supports smooth operations and contributes to financial stability despite limited impact on current assets.
3. *Lakshmi Suneetha (2022)* studied accounts receivable and payable management and reported improved financial performance resulting from better working capital strategies.
4. *Kannan and Anuradha (2024), Srivastava and Bhatnagar (2023), and Rajasekar (2020)* emphasised the role of digital inventory systems, ERP integration, and lean inventory practices in improving liquidity and cash flow efficiency. Overall, the literature establishes a strong link between inventory management efficiency and financial performance, highlighting the need for systematic inventory control.

III. Objectives

1. To evaluate the effectiveness of inventory management through the analysis of inventory turnover ratios and their impact on financial performance.
2. To forecast the contribution of inventory levels and inventory conversion period in future periods.

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IV. Statement Of The Problem

Inefficient inventory management leads to surplus stock or shortages, both of which negatively affect cash flow and production efficiency. Excess inventory ties up capital, delays supplier payments, and increases holding costs, while poor receivable management lengthens the cash conversion cycle. These issues collectively reduce liquidity and weaken financial health. Hence, it is essential to examine how inventory management influences accounts payable, accounts receivable, and working capital efficiency.

V. Research Methodology

The study is analytical in nature and is based entirely on secondary data. Purposive sampling was adopted, and the sample period consists of five financial years from 2019–20 to 2023–24. Data were collected from published financial statements of the company. Tools such as ratio analysis and trend analysis using regression techniques were employed for analysis and interpretation.

VI. Analysis And Interpretation

1. To evaluate the effectiveness of inventory management through the analysis of turnover ratios and their impact on financial performance.

Inventory Turnover Ratio

This table showing Inventory turnover ratio

Inventory turnover ratio					
Year	2019-20	2020-21	2021-22	2022-23	2023-24
Sales	2139.43	1103.16	1170.41	707.28	847.49
Gross profit	134.32	128.43	82.06	14.83	111.31
Cost of goods sold	2005.11	974.73	1088.35	692.45	736.18
Average inventory	141.25	118.99	98.94	130.84	99.51
Inventory turnover ratio	14.19	8.19	11.00	5.29	7.39

Interpretation

The above table shows about the inventory turnover ratio of the company for the past five years. The ratio fluctuated during the five-year period, indicating varying levels of inventory efficiency. In 2019-20, the ratio was 14.19, showing efficient utilization of inventory.

However, it declined sharply to 8.19 in 2020-21 and further dropped to 5.29 in 2022-23, indicating slower inventory movement and possible overstocking or reduced sales. A slight improvement was noted in 2023-24, where the ratio rose to 7.39, reflecting better stock management and turnover compared to the previous year.

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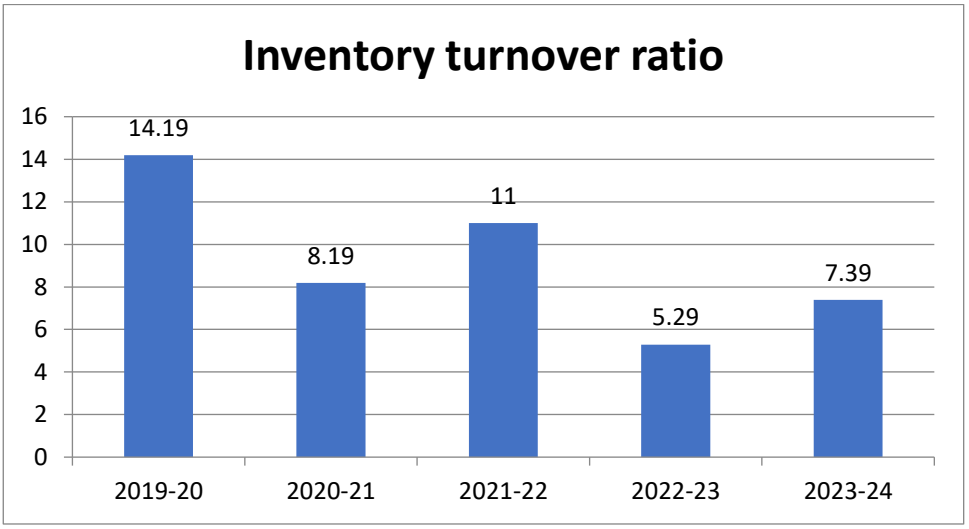
This chart showing Inventory turnover ratio



Inventory Conversion Period

This table showing Inventory conversion period

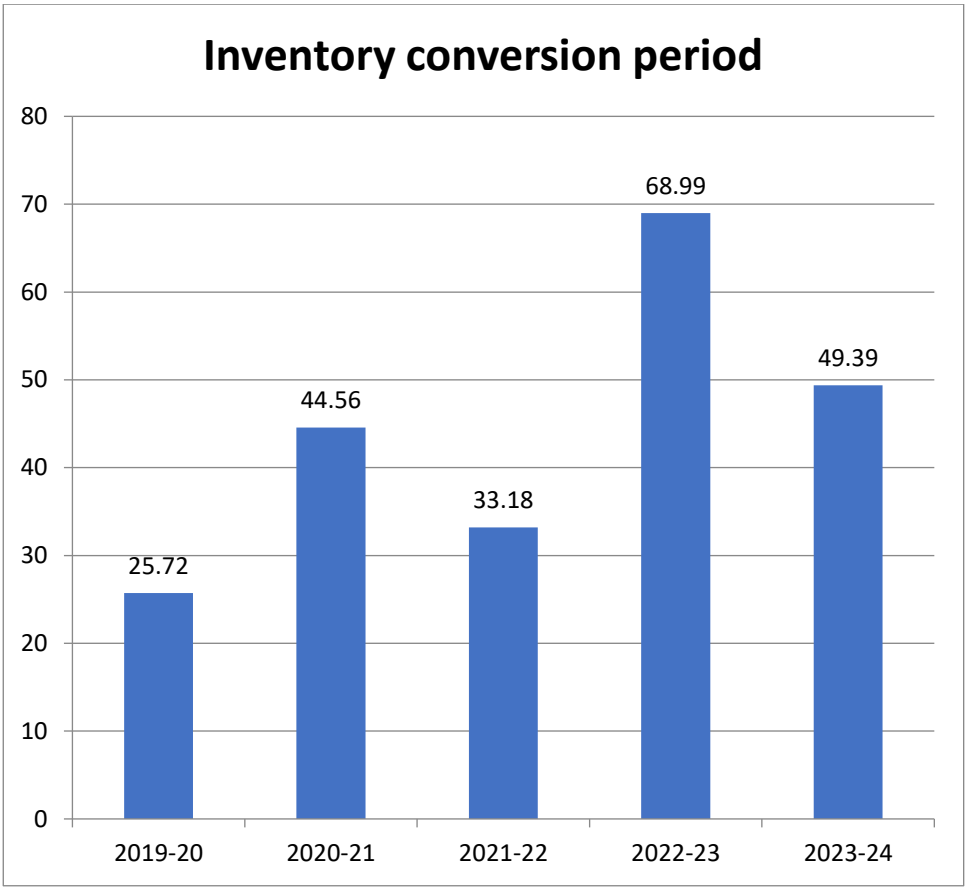
Inventory conversion period					
Year	2019-20	2020-21	2021-22	2022-23	2023-24
Days in a year	365	365	365	365	365
Inventory turnover ratio	14.19	8.19	11.00	5.29	7.39
Inventory conversion period	24.10	39.37	30.86	67.52	42.86

Interpretation

The above table shows the inventory conversion period of the company from 2019-20 to 2023-24. The period increased from 24.10 days in 2019-20 to 67.52 days in 2023-24, indicating slower inventory movement and reduced efficiency.

In 2023-24, it improved to 42.86 days, reflecting better inventory control. The fluctuation over the years suggests variations in demand or production planning. Overall, the company has recently shown signs of improved inventory management and faster stock conversion.

This chart showing Inventory conversion period



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2. *To forecast the contribution of inventory and its conversion period in future period of time.*

Trend Analysis

This table showing regression analysis of average inventory

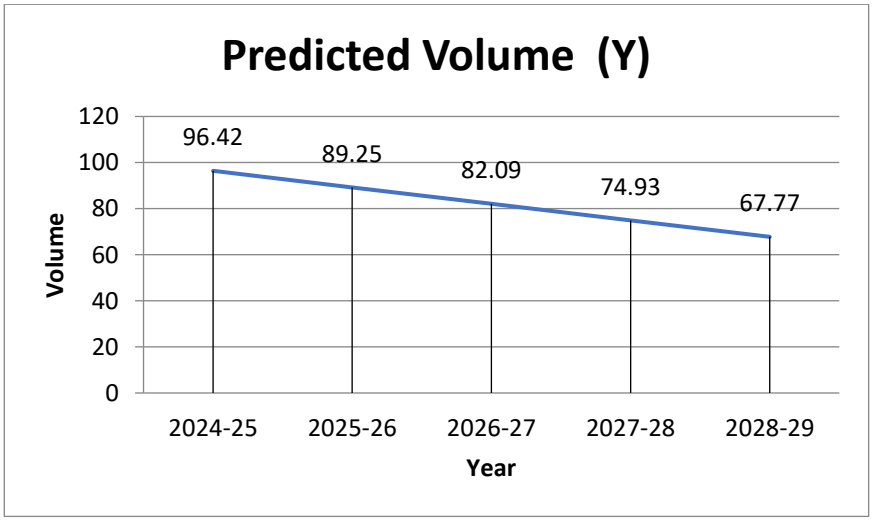
Month	Volume of the product	X	X^2	XY
2019-20	141.25	-2	4	-282.5
2020-21	118.99	-1	1	-118.99
2021-22	98.94	0	0	0
2022-23	130.84	1	1	130.84
2023-24	99.51	2	4	199.02
	589.53		10	-71.63
	A	117.906		
	B	-7.163		
	YEAR (X)	Predicted volume (Y)		
3	2024-25	96.42		
4	2025-26	89.25		
5	2026-27	82.09		
6	2027-28	74.93		
7	2028-29	67.77		

Interpretation

The table shows a regression analysis of average inventory from 2019-20 to 2023-24. Predicted inventory volumes from 2024-25 to 2028-29 show a steady decline.

Volume drops from 96.42 units in 2024-25 to 67.77 units in 2028-29. This trend suggests improved inventory control and operational efficiency. Lower inventory levels may reduce holding costs and enhance profitability.

This chart showing Regression analysis of average inventory



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This table showing Regression analysis of inventory conversion period

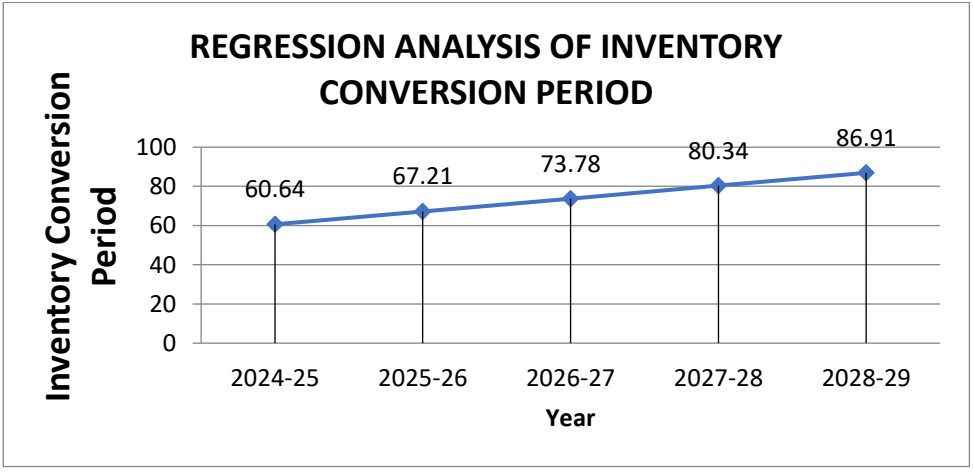
Month	ICP (Days)	X	X^2	XY
2019-20	24.10	-2	4	-48.1962
2020-21	39.37	-1	1	-39.3699
2021-22	30.86	0	0	0
2022-23	67.52	1	1	67.52149
2023-24	42.86	2	4	85.71464
	204.70		10	65.66994
	a	40.94		
	b	6.56		
	YEAR (X)	Predicted ICP (Y)		
3	2024-25	60.64		
4	2025-26	67.21		
5	2026-27	73.78		
6	2027-28	80.34		
7	2028-29	86.91		

Interpretation

The table uses regression analysis to study the inventory conversion period (ICP) from 2019-20 to 2023-24 reveals a rising trend, peaking at 85.71 days in 2023-24. Using the regression equation Y=40.94+6.56X, future ICP values are forecasted, indicating continued growth.

The predicted ICP for 2024-25 is 86.01 days, gradually increasing to 86.91 days by 2028-29. This suggests longer inventory holding periods, potentially impacting cash flow and operational efficiency. Business may need to reassess inventory strategies to maintain financial stability.

This chart showing Regression analysis of inventory conversion period



VII. Findings

The study reveals that inventory turnover at Velan Valves India Pvt. Ltd. has been inconsistent, indicating instability in inventory management practices. Although recent years show signs of improvement, the rising inventory conversion period suggests slower stock movement and inefficiencies in inventory utilisation. Trend analysis forecasts a reduction in inventory levels, which may lower holding costs; however, the projected increase in conversion period poses a risk to cash flow and working capital efficiency. Overall, inventory management continues to exert a significant influence on the company's financial performance, particularly liquidity and payment cycles.

VIII. Suggestion

The company should strengthen inventory planning by identifying the causes of low turnover periods and eliminating operational bottlenecks. Improved coordination between procurement and sales departments is essential to align inventory levels with actual demand. Implementing dynamic safety stock policies and reducing procurement lead times can enhance responsiveness while maintaining lean inventory levels. The adoption of just-in-time inventory practices and digital inventory monitoring systems can further reduce holding periods, improve turnover, and support better cash flow management.

IX. Conclusion

The study highlights the strategic importance of inventory management in influencing financial performance, liquidity, and working capital efficiency.

By analysing inventory turnover ratios, conversion periods, and trend projections over five years, the research provides valuable insights into inventory inefficiencies and future risks. Maintaining consistent sales levels and improving inventory control practices can significantly enhance turnover and profitability. The findings offer practical guidance for optimizing inventory management through data-driven and financially aligned strategies, thereby strengthening the overall financial health of Velan Valves India Pvt. Ltd.

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