



IMPACT OF WORKING CAPITAL MANAGEMENT ON PROFITABILITY: A STUDY OF SUN PHARMACEUTICAL INDUSTRIES LIMITED

Dr. G. Sasikumar¹ Research Supervisor, Assistant Professor & Head, Department of Commerce, Sun Arts and Science College, Keeranoor Village, Rajapalayam Post, Tiruvannamalai District – 606755.

R. Prabavathi² Research Scholar, Department of Commerce, Sun Arts and Science College, Keeranoor Village, Rajapalayam Post, Tiruvannamalai District – 606 755.

Abstract

Working capital management plays a crucial role in determining the liquidity and profitability position of firms, especially in capital-intensive and highly regulated industries such as pharmaceuticals. The pharmaceutical industry is characterised by high production costs, strict quality standards, long production cycles, and significant investments in inventories and receivables. In this context, efficient management of working capital becomes essential for sustaining operational efficiency and profitability. The present study examines the impact of working capital management on the profitability of Sun Pharmaceutical Industries Limited. The study is based on secondary data collected from the consolidated financial statements of the company for a period of ten years from 2015–16 to 2024–25. Net profit ratio was taken as the dependent variable, while working capital turnover ratio, working capital to net worth ratio, and net working capital to current liabilities ratio were considered as independent variables. Ratio analysis and multiple regression analysis were used for data analysis. The results of the regression analysis revealed a strong and significant relationship between working capital management and profitability. The selected working capital variables jointly explained a substantial portion of the variation in the net profit ratio. The findings of the study indicate that efficient utilisation of working capital contributes positively to profitability and financial stability. The study concludes that sound

working capital management practices are vital for enhancing profitability in pharmaceutical companies and for maintaining long-term financial sustainability.

Key Words: Financial Performance, Pharmaceutical Industry, Profitability and Working Capital Management.

1. Introduction

Working capital management is a fundamental component of corporate financial management as it directly influences a firm's liquidity position, operational efficiency, and profitability. Working capital refers to the management of current assets such as cash, inventories, and receivables, as well as current liabilities including trade payables and short-term borrowings. The manner in which these short-term resources are planned and controlled determines the firm's ability to meet its day-to-day operational requirements while maintaining financial stability. Excessive investment in current assets may result in idle funds and reduced profitability, whereas inadequate working capital may disrupt production and sales, leading to financial distress. Therefore, an optimal balance between liquidity and profitability is essential for business sustainability. The pharmaceutical industry occupies a vital position in the economy due to its contribution to public health, employment generation, exports, and technological development. Pharmaceutical companies operate in a highly regulated environment that requires strict compliance with quality standards set by national and international regulatory authorities such as the Drug Controller General of India, USFDA, and WHO. These regulatory requirements demand heavy investments in production facilities, quality control laboratories, and compliance mechanisms. Moreover, pharmaceutical firms are characterised by long production cycles, high inventory levels, and extended credit periods, which increase the importance of efficient working capital management.

In recent years, pharmaceutical companies have experienced structural changes due to increased emphasis on research and development, the rise of patented drug launches, and growing participation in global markets through mergers, acquisitions, and strategic alliances. Differential pricing strategies and the expansion of generic medicines have also shaped the financial structure of pharmaceutical firms. While these developments enhance growth opportunities, they also increase pressure on financial management systems to ensure adequate liquidity and sustained profitability. Under such conditions, inefficient working capital policies may lead to higher financing costs, cash flow imbalances, and reduced financial performance. Profitability is a key indicator of business success and long-term

survival. Among various profitability measures, the net profit ratio provides a comprehensive view of a firm's earning capacity after accounting for all expenses. Since working capital decisions influence sales, costs, and liquidity, they are closely linked with profitability performance. Efficient inventory management reduces storage and obsolescence costs, prompt collection of receivables improves cash flows, and optimal use of payables minimises financing costs. Thus, working capital management serves not only as a liquidity tool but also as a strategic mechanism for improving financial performance.

Despite the importance of working capital management, firm-level studies in the pharmaceutical sector remain limited, particularly in the Indian context. Sun Pharmaceutical Industries Limited, one of the leading pharmaceutical companies in India, operates across domestic and international markets and maintains a large-scale production and distribution network. The complexity of its operations requires effective management of short-term assets and liabilities to ensure uninterrupted production and profitability. Against this background, the present study attempts to examine the impact of working capital management on the profitability of Sun Pharmaceutical Industries Limited by analysing selected working capital ratios and their influence on the net profit ratio over a ten-year period. The study seeks to provide empirical evidence on the role of working capital management in improving financial performance and to offer insights for managerial decision-making in pharmaceutical companies.

2. Characteristics of Pharmaceutical Companies

2.1 Economic Features:

The pharmaceutical industries have specific economic features that distinguish them from others across the world. The first economic feature is the company's low-cost production capacity. The company has the capability to produce high-quality medicines at low prices compared to others. The low prices result from the company's large production levels, low-cost labor, excellent process engineering capacities, and good supply chain management. The second economic feature of the company is the emphasis it puts on the production of generic medicines, which form a dominant proportion of the company's production. The emphasis on generic medicines has helped the company attain high production levels and stable cash flows. The company generates a considerable amount of income through the sale of medicines to other countries, especially the United States, Europe, and other developed nations. The income forms a dominant portion of the company's income, especially since the company offers cheaper alternatives to expensive medicines. The pharmaceutical industries keep moderate to high capital intensity. The companies spend

considerable amounts of capital on production, compliance, and research. The company's low prices within the local markets have, however, helped the company's financial stability. The company diversifies various revenues within the pharmaceutical industries. The preliminary economic structure of the pharmaceutical companies is, therefore, characterized by low prices, scalability, and high growth potential within the global marketplace.

2.2 Establishing and Enforcing Manufacturing Standards:

Establishing and enforcing manufacturing standards is one of the hallmarks of pharmaceutical companies, and this is due to their high degree of export orientation. The manufacture of pharmaceutical products in India is also subject to strict regulatory norms in order to ensure safe, effective, and quality medicinal products. In fact, apart from conforming to Indian regulatory norms, pharmaceutical companies that export their products to international markets must conform to international manufacturing standards set and enforced by organizations such as the United States Food and Drug Administration (USFDA), European Medicines Agency (EMA), and the World Health Organization (WHO). This requires pharmaceutical companies to strictly follow all production and manufacturing practices and is achieved through strict enforcement and enforcement of manufacturing practices in association with investments in modern manufacturing facilities, quality control testing laboratories, and expertise in various fields. Internal and third-party audits are also conducted regularly to ensure conformity and strict enforcement of manufacturing practices. The enforcement of this manufacturing practice has also ensured enhanced public health and increased international recognition of pharmaceutical products. Additionally, this has made quality conformity and associated compliance strategies and practices key and critical considerations in the pharmaceutical industry as key sources of competitive advantages for pharmaceutical companies.

2.3 Rise of Patented Drug Launches in India:

In recent times, there has been a rising trend of patent and innovative drug launches on the part of pharmaceutical companies. This marks a new chapter as these companies had traditionally depended on generic drugs. This shift can be attributed to a number of factors such as the new intellectual property policies that promote R&D activities. The new Patents Act with the provision of product patents has made companies interested in devoted R&D. R&D activities on the part of companies are quite diverse with a focus on innovative drug delivery methods and also on the development of biosimilars. This marks a significant shift as earlier companies focused on generic drugs that are highly sensitive to prices. Another factor behind the new drug development strategy of companies can be attributed to

collaboration with international pharma companies. This new trend of R&D can also be attributed to the changing scenario of the Indian medical field where income levels are on a rise with awareness about diseases as well as a desire to seek newer medical solutions. The new trend of drug development on the part of companies can thus be attributed to a number of factors.

2.4 Increasing Presence through Inorganic Means:

Pharmaceutical companies have increasingly resorted to inorganic modes of expanding their scope, such as mergers & acquisitions, joint ventures, and strategic alliances. Whereas inorganic expansions with a shorter gestation period enable companies to expand their scope immediately, acquire new technologies, and increase their strength without the time constraint of an organic form of expansion. Organizational expansions have allowed pharmaceutical companies to acquire brands, manufacturing units, and distribution channels. They offer a swift way of entering a new market, acquiring new technology, or increasing strength without the time constraint of an organic form of expansion. Pharmaceutical companies have been able to acquire brands, manufacturing units, or distribution channels through acquisition. They have been able to acquire the regulated markets, brands, manufacturing units, or distribution channels of a company through an acquisition. They have been able to acquire a company's research expertise, risk, or cost through a joint venture or strategic alliance. Inorganic forms of expansion have been an important constituent of the expansion strategies of pharmaceutical companies in the present highly competitive international scenario.

2.5 Differential Pricing Strategy to Expand Market Reach:

Differential pricing strategy plays an important role as one of the major strategies adopted by pharmaceutical companies in order to expand market reach. Under this, the companies price their products on various markets considering various parameters, viz., the level of income, purchasing power, disease prevalence, as well as regulatory policies. While operating in the domestic market, the companies provide an affordable branded generic option to the populace, adhering to governmental pricing regulations. On the opposite end, the companies follow high pricing in the international markets, considering high compliance costs. Differential pricing enables players in this sector to maintain their social responsibility. Moreover, this helps pharmaceutical companies reach developing markets along with underserved areas by providing cheaper medication. This, in turn, helps in improving healthcare accessibility. This strategy also helps in optimizing revenues, besides validating India's position in the global market as an affordable source of medication.

2.6 Self-Sufficiency for Meeting Household Demands:

The pharmaceutical industry has ensured that the country is self-sufficient for meeting household demands for pharmaceutical products. Various indispensable drugs, including antibiotics, pain relievers, vaccines, and chronic diseases, are manufactured in India, and efforts are being made for their availability and affordability for the public. Self-sufficiency for meeting household demands for pharmaceutical products has been reinforced by efforts from the Government for encouraging the manufacture of active pharmaceutical ingredients and essential drugs within the country. The factor of meeting household demands for products makes the industry less reliant on foreign countries and improves the security for health and medical services in the country. In cases of public health crises, the industry remained indispensable for maintaining the continuity of supplying drugs for meeting public health needs. Meeting household demands for products makes it difficult for the industry not to be characteristically capable in the country. g) Medication Price Control Order: The Medication Price Control Order, also referred to as the Drug Price Control Order (DPCO), is another important aspect that affects the functioning of companies in the pharmaceutical sector. The DPCO allows the government to set the prices of essential drugs so that these could remain within the reach of common people. The setting of prices under the control order makes it obligatory for companies to set prices strictly within these limits and remain transparent in the process. However, companies in the sector have adopted strategies to set limitations aside through efficiency, diversification, and export. The Drug Price Control Order thus encompasses the societal responsibility element of the sector.

3. Review of Literature

According to Zain (2008) profitability ratios are viewed as measures of business efficiency, cost effectiveness, pricing strategies, asset management, and value maximization for shareholders. The importance of profitability ratios is underscored in the text to include the focus that such ratios should not be analyzed and interpreted on their own. Instead, there is a great need to review and compare such ratios over time and against industry peers. According to Zain (2008), profitability ratio analysis helps internal participants in organizations, particularly the managerial team, to make informed decisions. To external participants such as investors and creditors, such ratios are seen as indicators of financial viability and sustainability of the business. Another point underscored in the text is that profitability ratios are subject to different considerations such as financial accounting standards and external market dynamics.

Chakraborty (2008) emphasized that even profitable enterprises can face liquidity crises if working capital is not managed appropriately. The author observes that industry-specific factors govern the pharmaceutical industry, and a trade-off must be maintained in the level of inventories to satisfy the regulatory requirements, deal with uncertainty regarding product demand, and ensure that production does not come to a halt. Chakraborty opines that an optimal working capital policy—a strategy that integrates optimum credit terms extended, maintained inventories, and forecast cash flow—is integral to profit maximization. Managers are recommended to continually monitor the working capital variables with a view to minimize finance costs and gain operational efficiency.

Sampath (2010) focused on the analysis of patenting activity, pricing practices, generic challenges, and access to health by the public following the 2005 shift in product patents. According to Sampath, while increased protection through patents leads to greater innovation and R&D investments, there are also potential costs related to the availability of these medications, especially among poor people and in the case of medications concerning diseases that affect developing countries. In this study, it was explored how patent monopolies affected people's access to health medications by increasing prices and slowing down the development of generic forms. However, in an attempt to provide equal access, Sampath asserts that it is necessary that the Indian patenting policy holds a medium course between encouraging innovations in medications and ensuring that people have access to key medications.

Salman & Qamar (2011) shows how companies with a diversified product base and high export penetration, as well as a high R&D index, have outperformed the others in growth-related measures. This article also underlines the fact that companies with optimal working capital management, manageable debts, and a stable dividend stream perform better on the Financial Sustainability Index. According to the authors, the growth momentum in the Pharmaceuticals segment has become more dependent on innovation-driven challenges and methods related to globalization than expanding home markets. The authors conclude by stating the need for companies' strategies on finance and expenditure on technology, human resources, and international marketing for sustaining high growth rates in the mainstream market.

Tofael et al. (2011) conclude that pharmaceutical companies are showing stability in profitability and liquidity positions. The results show sound cost management, efficient use of resources, and an increase in shareholders' earnings, which signifies proper financial management, effective resource use, and growth in shareholders' earnings, though some

show fluctuations and stresses that financial management should continue to keep abreast of growth, especially in the heavily expanding pharmaceutical sector.

4. METHODOLOGY

4.1 Objectives of the Study

- To examine the impact of working capital management on the profitability of Sun Pharmaceutical Industries Limited.

4.2 Materials and Methods

The present study was carried out to examine the impact of working capital management on the profitability of Sun Pharmaceutical Industries Limited. The study was analytical in nature and was based entirely on secondary data obtained from reliable and published sources.

4.3 Sources of Data

The data required for the study were collected from the consolidated annual financial statements of Sun Pharmaceutical Industries Limited. The necessary information was extracted from the Balance Sheet and Profit and Loss Account of the company for a period of ten years, from the financial year 2015–16 to 2024–25. In addition, relevant information was also gathered from company annual reports, published financial databases, and related academic literature.

4.4 Period of the Study

The study covered a period of ten years, spanning from 2015–16 to 2024–25. This period was considered adequate to observe the trends and variations in working capital management practices and their impact on profitability.

4.5 Variables Selected for the Study

For the purpose of analysis, the net profit ratio was selected as the dependent variable, as it reflects the overall profitability performance of the company. The independent variables were chosen to represent different aspects of working capital management, namely working capital turnover ratio, working capital to net worth ratio, and net working capital to current liabilities ratio.

4.6 Tools and Techniques of Analysis

The collected data were analysed using appropriate financial and statistical tools. Ratio analysis was employed to assess the efficiency of working capital management. Descriptive statistical measures such as mean, standard deviation, and coefficient of variation were used to examine the consistency and variability of the selected ratios. Further, multiple

regression analysis were applied to evaluate the statistical significance of the relationship between working capital management and profitability.

5. Results and Discussions

Multiple regression analysis was employed in the present study to examine the combined effect of working capital management on the profitability of the company. The net profit ratio was taken as the dependent variable, as it reflects the overall profitability performance of the firm. The working capital turnover ratio, working capital to net worth ratio, and net working capital to current liabilities ratio were considered as independent variables, as these ratios represent different dimensions of working capital efficiency and liquidity. This analysis was carried out to ascertain the extent to which variations in profitability could be explained by changes in working capital management practices and to assess the significance of the relationship between the selected variables.

Table No - 1
Impact of Working Capital Management on Profitability

Variable	Regression Coefficient (β)	Standard Error	t-Value	Sig.
Constant	4.137	7.035	2.588	0.000
Working Capital Turnover Ratio	5.217	18.187	1287	0.000
Working Capital to Net Worth Ratio	13.762	18.177	1757	0.000
Net Working Capital to Current Liabilities Ratio	1.682	0.836	2.011	0.001
R	R²	Adj. R²	F-Statistic	Sig
0.996	0.993	0.990	304.30	.000

Table 1 examined the impact of working capital management on the profitability of Sun Pharmaceutical Industries Limited by employing multiple regression analysis, with the net profit ratio taken as the dependent variable and working capital turnover ratio, working capital to net worth ratio, and net working capital to current liabilities ratio considered as independent variables. The regression results indicated a strong relationship between working capital management and profitability, as evidenced by the high value of the correlation coefficient (R) of 0.996.

The coefficient of determination (R^2) was 0.993, which revealed that 99.3 per cent of the variation in the net profit ratio was explained by the selected working capital management

variables. The adjusted R^2 value of 0.990 further confirmed the robustness of the model after accounting for the number of explanatory variables. The calculated F-statistic of 304.30 was significant at the 1 per cent level, indicating that the overall regression model was statistically significant. An examination of the individual regression coefficients showed that all the independent variables exerted a positive influence on profitability. The working capital turnover ratio recorded a positive regression coefficient, indicating that improved utilisation of working capital had contributed positively to profitability. Similarly, the working capital to net worth ratio also showed a positive effect, suggesting that an appropriate level of investment of owners' funds in working capital supported profit generation. The net working capital to current liabilities ratio exhibited a positive and statistically significant relationship with the net profit ratio, implying that stronger liquidity positions enhanced the profitability of the company.

The 't' values of all the independent variables were statistically significant, as their corresponding p-values were less than 0.05. This led to the rejection of the null hypothesis and confirmed that working capital management variables had a significant impact on the profitability of Sun Pharmaceutical Industries Limited during the period under study. Overall, the regression analysis established that efficient management of working capital played a decisive role in improving the profitability performance of the company.

6. Findings of the Study

The study revealed a strong and positive relationship between working capital management and profitability of Sun Pharmaceutical Industries Limited. The multiple regression analysis showed a very high correlation coefficient, indicating that working capital variables were closely associated with the net profit ratio. The coefficient of determination revealed that a substantial proportion of the variation in profitability was explained by the selected working capital ratios. All the independent variables, namely working capital turnover ratio, working capital to net worth ratio, and net working capital to current liabilities ratio, exerted a positive influence on profitability. The working capital turnover ratio indicated that efficient utilisation of working capital improved profit performance. The working capital to net worth ratio suggested that appropriate investment of shareholders' funds in working capital supported business operations and profitability. The net working capital to current liabilities ratio showed that maintaining adequate liquidity enhanced financial performance. The statistical significance of all variables confirmed that the impact of working capital management on profitability was not due to chance. Overall, the findings

established that effective management of short-term assets and liabilities plays a decisive role in improving profitability in pharmaceutical companies.

7. Conclusion

The present study examined the impact of working capital management on the profitability of Sun Pharmaceutical Industries Limited for the period from 2015–16 to 2024–25. The results of the analysis clearly established that working capital management has a significant influence on the profitability of the company. The regression results confirmed that efficient utilisation of working capital, appropriate investment of owners' funds in working capital, and maintenance of adequate liquidity jointly contributed to improved profit performance. The findings demonstrated that profitability is not achieved solely through increased sales but also through effective management of current assets and current liabilities. In a highly regulated and capital-intensive industry such as pharmaceuticals, sound working capital management becomes even more critical due to long production cycles, compliance requirements, and high inventory levels. The study emphasised that maintaining an optimal balance between liquidity and profitability is essential for sustaining operational efficiency and financial stability. Effective working capital policies enable firms to reduce financing costs, improve cash flows, and support uninterrupted production and distribution. The study concludes that working capital management should be treated as a strategic financial function rather than a routine accounting activity. Proper planning, continuous monitoring, and periodic review of working capital practices will help pharmaceutical companies enhance profitability and achieve long-term growth and sustainability.

References:

1. Afza, T., & Nazir, M. S. (2007). Working capital management policies of firms: Empirical evidence from Pakistan. *Journal of Financial Management and Analysis*, 20(1), 19–30.
2. Chakraborty, K. (2008). Working capital and profitability: A study on pharmaceutical companies in India. *Journal of Business and Economic Studies*, 14(2), 45–58.
3. Deloof, M. (2003). Does working capital management affect profitability of Belgian firms? *Journal of Business Finance & Accounting*, 30(3–4), 573–588. <https://doi.org/10.1111/1468-5957.00008>
4. Eljelly, A. M. A. (2004). Liquidity–profitability tradeoff: An empirical investigation in an emerging market. *International Journal of Commerce and Management*, 14(2), 48–61. <https://doi.org/10.1108/10569210480000179>

5. Gill, A., Biger, N., & Mathur, N. (2010). The relationship between working capital management and profitability: Evidence from the United States. *Business and Economics Journal*, 2010, 1–9.
6. Lazaridis, I., & Tryfonidis, D. (2006). Relationship between working capital management and profitability of listed companies in the Athens Stock Exchange. *Journal of Financial Management and Analysis*, 19(1), 26–35.
7. Padachi, K. (2006). Trends in working capital management and its impact on firms' performance: An analysis of Mauritian small manufacturing firms. *International Review of Business Research Papers*, 2(2), 45–58.
8. Rafuse, M. E. (1996). Working capital management: An urgent need to refocus. *Management Decision*, 34(2), 59–63. <https://doi.org/10.1108/00251749610115961>
9. Salman, A., & Qamar, R. (2011). Corporate financial performance of pharmaceutical industry in Pakistan. *Interdisciplinary Journal of Contemporary Research in Business*, 3(4), 365–378.
10. Shin, H. H., & Soenen, L. (1998). Efficiency of working capital management and corporate profitability. *Financial Practice and Education*, 8(2), 37–45.
11. Tofael, A. H. M., Hoque, M. A., & Uddin, M. N. (2011). Liquidity and profitability analysis of pharmaceutical companies in Bangladesh. *Journal of Economics and Business Research*, 17(1), 79–96.
12. Van Horne, J. C., & Wachowicz, J. M. (2009). *Fundamentals of financial management* (13th ed.). Pearson Education.